

**DRAFT INITIAL STUDY/ENVIRONMENTAL ASSESSMENT:
KENT ISLAND RESTORATION AT BOLINAS LAGOON**



Marin County Open Space District

and

**US Army Corps of Engineers
San Francisco District**

August 2012

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KENT ISLAND RESTORATION AT BOLINAS LAGOON**

PREPARED FOR

**Marin County Open Space District
Marin County Civic Center
3501 Civic Center Drive, Room 260
San Rafael, CA 94903
(415) 499-6387**

and

**US Army Corps of Engineers
San Francisco District
1455 Market St
San Francisco, CA 94103
(415) 503-6703**

PREPARED BY

**Carmen Ecological Consulting
Grassetti Environmental Consulting
Peter R. Baye, Coastal Ecologist, Botanist**

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Acronyms and Abbreviations

BAAQMD	Bay Area Air Quality Management District
CARB	California Air Resources Board
CCC	California Coastal Commission
CDFG	California Department of Fish and Game
CCR	California Code of Regulations
CEQ	Council on Environmental Quality
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CH ₄	Methane
CNDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level
CO	Carbon Monoxide
CO ₂	Carbon Dioxide
CO ₂ E	Carbon Dioxide Equivalent
CSLC	California State Lands Commission
dBA	A-weighted Decibels
EA	Environmental Assessment
EFH	Essential Fish Habitat
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
ER	Engineering Regulation
ESA	Endangered Species Act
FONSI	Finding of No Significant Impact
GHG	Greenhouse Gases
HFC	Hydrofluorocarbons
Ldn	Average Day-Night 24-Hour Average Sound Level
IS	Initial Study
N ₂ O	Nitrogen Oxides
N/A	Not Applicable
NEPA	National Environmental Policy Act
NF ₃	Nitrogen Trifluoride
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
PFC	Perfluorocarbons
PM _{2.5}	Fine Particulate Matter
PM ₁₀	Coarse Particulate Matter
PRC	Public Resources Code
SHPO	State Historic Preservation Officer
SFBAAB	San Francisco Bay Area Air Basin
SFRWQCB	San Francisco Regional Water Quality Control Board
SF ₆	Sulfur Hexafluoride
SO ₂	Sulfur Dioxide
USACE	United States Army Corps of Engineers
USC	United States Code
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
WRDA	Water Resources Development Act

1.0 INTRODUCTION

1.1 Purpose of this Document

This document serves as a joint National Environmental Policy Act (NEPA) Environmental Assessment (EA) and California Environmental Quality Act (CEQA) Initial Study (IS) of the proposed Kent Island Restoration at Bolinas Lagoon project. Kent Island is located in Bolinas Lagoon, in western Marin County, California (see Figures 1 and 2). The project is intended to help ensure the long-term stability and viability of the Island through removal of non-native plant species and passive and active revegetation with appropriate native species. The EA/IS is written in compliance with the National Environmental Policy Act of 1969 (42 U.S.C. § 4321 et seq), as amended, the Council on Environmental Quality (CEQ) Regulations for Implementing the Procedural Provisions of the NEPA (40 C.F.R. §§1500-1508), U.S. Army Corps of Engineers (USACE) Planning Regulations (Engineering Regulation (ER) 200-2-2), the California Environmental Quality Act of 1970 (California Public Resources Code (P.R.C.) §§ 21000-21177), as amended, and the CEQA Guidelines (Title 14 California Code of Regulations (C.C.R.) §§ 15000-15387) as amended.

The analysis in this document concentrates on aspects of the project that are likely to have a significant effect on the environment, and identifies feasible measures to mitigate (*i.e.* reduce or avoid) these impacts. The CEQA Guidelines define “significant effect on the environment” as a “substantial or potentially substantial adverse change in any of the physical conditions within the area affected by the project...” (CEQA Guidelines, Section 15382). This IS/EA will be circulated for a 30-day public and agency review, as required by CEQA and NEPA. Comments on the IS/EA will be evaluated, and responses will be incorporated into the Negative Declaration or Mitigated Negative Declaration and Finding of No Significant Impact to be prepared for the proposed project.

The NEPA Lead Agency for the project is USACE, and the CEQA Lead Agency for the project is the Marin County Open Space District, (District). The District, who manages the land on behalf of Marin County, and USACE will use this IS/EA in implementation of the proposed project. The District is the non-federal sponsor and USACE is the federal sponsor for the project.

1.2 Document Structure

The content and format of this document, described below, are designed to meet the requirements of CEQA and NEPA. Where relevant, CEQA terminology is listed first, followed by NEPA terminology.

- Chapter 1, Introduction, identifies the purpose, scope, and terminology of the document and identifies public involvement procedures.
- Chapter 2, Proposed Project and Alternatives, describes the objectives and characteristics of the proposed project and the No Project/No Action Alternative, and alternatives considered but eliminated from further study. It also identifies the required permits and approvals.
- Chapter 3, Environmental Checklist, presents responses to the CEQA-based environmental checklist questions for each resource topic for the impacts associated with the proposed project.
- Chapter 4, Other NEPA Considerations, includes a discussion of the additional environmental analysis topics required by NEPA.

- Chapter 5, References, identifies all printed references and personal communications cited in this report.
- Chapter 6, List of Preparers, identifies the individuals involved in preparing this document and their areas of technical specialty.

2.0. PROPOSED PROJECT AND ALTERNATIVES

2.1 Introduction

Kent Island is a 29-acre natural dune-capped flood tidal delta located in Bolinas Lagoon north of its tidal inlet (see Figures 1 and 2). The island is owned by the County of Marin and the Audubon Canyon Ranch. Most of the native terrestrial vegetation on Kent Island has been overwhelmed by weedy non-native vegetation. The proposed project seeks to restore Kent Island through removal of non-native vegetation from the island and facilitating the natural regeneration of native vegetation, with only limited planting. Removal of invasive vegetation will be accomplished primarily through salt-water irrigation and manual removal techniques. The initial restoration phase of the proposed project is expected to begin in August 2012 and extend through July 2013. This phase would be followed by five years of monitoring and subsequent removal and native replanting in areas where invasives recolonize.

2.2 Environmental Setting

Bolinas Lagoon was designated a Wetland of International Importance in 1998 by the USFWS under the RAMSAR Convention on Wetlands. The lagoon attracts more than 35,000 birds annually (Shuford *et al.* 1989) and is a critical feeding ground and stopover for migratory birds on the Pacific Flyway. Great Blue Herons and Great Egrets nest on Kent Island and on the adjacent mainland. The lagoon's tidal flats and subtidal channels provide important habitat for fish and invertebrates and Coho salmon and steelhead trout use the lagoon to access spawning grounds in the watershed. Harbor seals use the tidal flats and bars at Bolinas Lagoon as haul-out and pupping areas.

Kent Island, located across subtidal channels and intertidal shoals that separate it from Stinson Beach spit and the Bolinas shoreline, is geomorphically unique in California. It is an emergent, vegetated dune-capped island formed by deposited sand transported through Bolinas Lagoon's inlet by waves, flood currents and wind. The island's dynamic response to wind, wave, and tidal current transport of sand is highly important for the natural hydrological and sediment dynamics within the Lagoon.

Historically, the island was partially stabilized by resilient native salt marsh and dune vegetation and complete or partial submergence of the island occurred during seismic subsidence events. Such native pioneer shoreline vegetation includes many creeping native grasses (saltgrass, Vancouver wildrye, beach wildrye) that are capable of regenerating from eroded fragments, sand burial, and pulses of seawater flooding. Other important pioneer vegetation of the beach and salt marsh is composed of low-growing spreading forbs such as beach-bur, California saltbush, beach saltbush, alkali-heath, and pickleweed. As such vegetation spreads to closed, continuous cover, sand is temporarily stabilized; hence, this vegetation actively shapes the island over time. The resilience of Kent Island's ecosystem therefore depends on a diversity of beach, salt marsh, and dune plants adapted to recover from sand erosion and deposition as well as pulses of seawater flooding.

Kent Island is designated in the Marin's Countywide Plan and local coastal program as Open Space and all but the southwestern area containing the Monterey pine and cypress stand area is owned by the County of Marin and maintained by the District as part of the Bolinas Lagoon Open Space Preserve. Audubon Canyon Ranch owns a majority of the area covered by the pine and cypress stand. Public access to Kent Island is limited due to the location and lack of access to the site from the mainland, however people access the island at low tide or on small boats and use it for recreational purposes. There are no structures or infrastructure on the island.

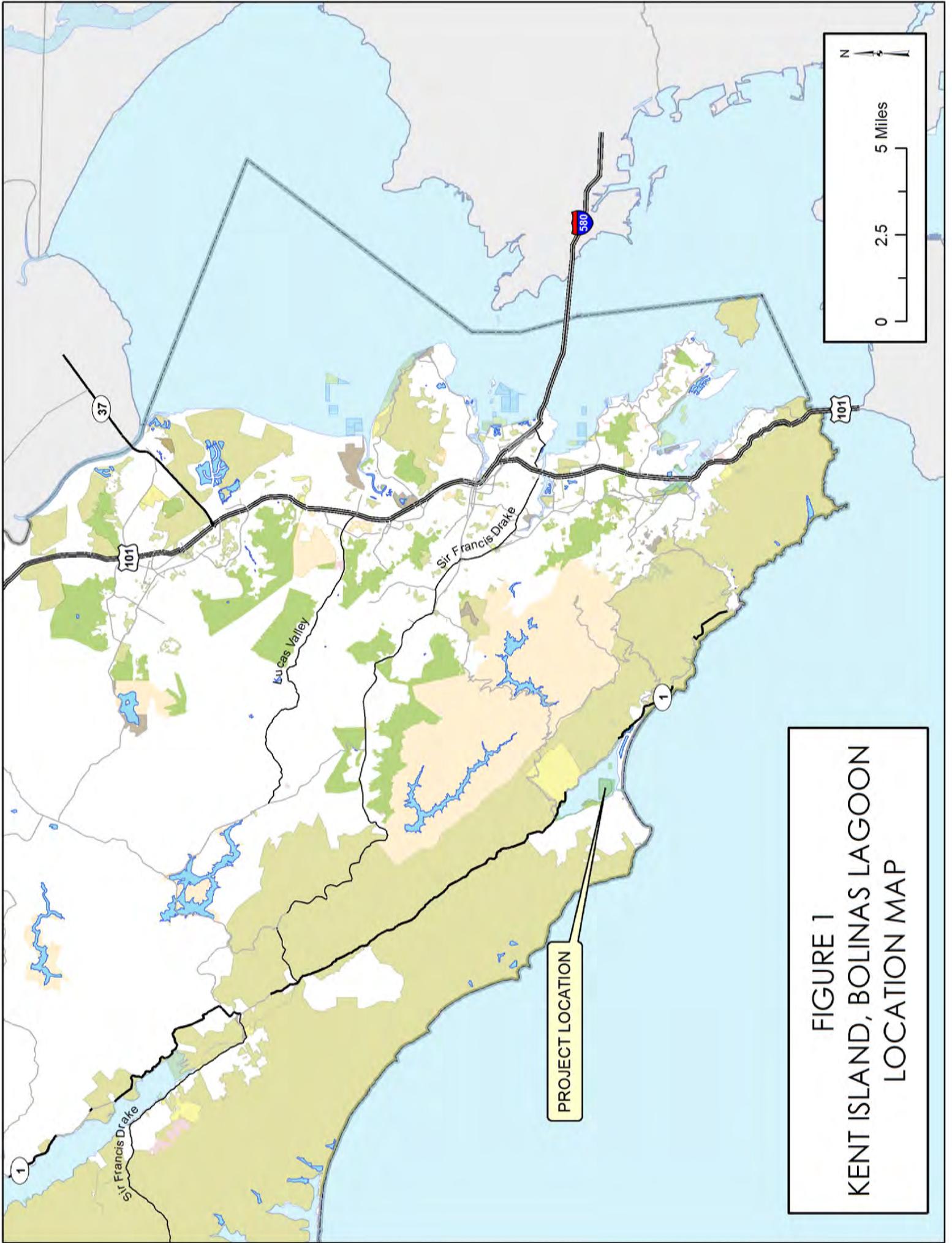


FIGURE 1
KENT ISLAND, BOLINAS LAGOON
LOCATION MAP



Figure 2
Project Site

— Project Area

0 500 1,000 Feet



The approximately 29-acre island's vegetation is a mix of native plant communities and invasive non-native vegetation (coastal weeds). The project is divided into eight vegetation management units (see Figure 3) that reflect the various plant communities, ecological processes, and management considerations:

1. West shore fringing salt marsh (0.2 acres): steep, hummocky tidal salt marsh banks with an extensive colony of rose iceplant (*Drosanthemum floribundum*) in the natural channel bank levee of high salt marsh.
2. Western conifer woodland (5.1 acres): stabilized dune grassland (European beachgrass, fescue, wildrye) with a patchy shrub layer (bush lupine, French broom, toyon, coyote brush, pine saplings) in pine canopy gaps, and predominant pine litter ground layer under the pine canopy. The overstory consists of mature and juvenile Monterey pine trees (with few Monterey cypress) occupied by a seasonal nesting and roosting colony of herons.
3. Central foredune terrace (2.3 acres): highest (low) dune topography and most active wind-transport of sand; vegetation is predominantly Vancouver ryegrass, saltgrass, red fescue, and iceplant, above the erosional foredune scarp and gently prograding (building seaward) foredunes, with large stands dominated by European beachgrass or iceplant.
4. Central beach-salt marsh ecotone (1.9 acres): vegetated beach terrace dominated by saltgrass and associated native salt marsh forbs at the seaward end of the gradient, grading into terrestrial grassland: red fescue, Vancouver wildrye, and beach wildrye.
5. Central terrestrial grassland (relict washover) (5.4 acres): highly diverse, including a matrix of stabilized washover and dune veneer supporting terrestrial grassland, stabilized European beachgrass dune, iceplant patches and diffuse senescent iceplant, widespread conifer saplings and seedlings with a few isolated mature conifers, and stands of French broom, fennel, wattle.
6. Backbarrier salt marsh ecotone (9.3 acres): gently sloping deflated washover flats and chains of low sand ridges and mounds grading into high tidal salt marsh along the back (north shore) of the island, with patchy high density to diffuse, extensive and inconspicuous populations of two rare salt marsh wildflowers, northern salt marsh bird's-beak and salt marsh owl's-clover in the upper salt marsh, extending to the lower zones of mounds and ridges. Extensive dense colonies of bird's-foot trefoil occur along the ecotone
7. Eastern grassland terrace (2.2 acres): long, relatively flat stabilized sand terrace occupying the eastern end of the island, predominantly native red fescue grassland with extensive diffuse, low-vigor populations of iceplant, and intermittent large, dense iceplant patches.
8. Southeastern beach-salt marsh ecotone (transition zone) (1.7 acres): beach-salt marsh transition zone distinguished by sensitive wildlife habitat (seal haul-out) at the extreme east end, and broader zones of dense gumplant in the high marsh; iceplant stands are also widely distributed here.

2.3 Purpose and Need

The purpose of the project is to remove non-native invasive plants from Kent Island. Kent Island has been colonized by non-native vegetation - in particular invasive beachgrass, acacia, iceplant, and pine - that displace native plant communities and stabilizes the island.



- 1: West Shore Fringe Salt Marsh
- 2: Western Conifer Woodland
- 3: Central Foredune Terrace
- 4: Central Beach-Salt Marsh Ecotone
- 5: Central Terrestrial Grassland
- 6: Backbarrier Salt Marsh Ecotone
- 7: Eastern Grassland Terrace
- 8: Southeastern Beach-Salt Marsh Ecotone

Figure 3
Vegetation Map Units



The invasion of European beachgrass at Kent Island in the 20th century changed its ecology and elevated the island above the reach of most storm flooding that with seawater and sand allowed colonization by iceplant, acacia and pines. This converts the island's vegetation to one that is less well-adapted to natural disturbance cycles and maturation of the island's vegetation will further reduce its ability to recover from inevitable natural coastal disturbances to maintain a high diversity of natural habitats and native species. The dominant non-native vegetation also displaces suitable habitat for special-status species, such as North Coast pink sand-verbena, salt marsh owl's-clover, northern salt marsh bird's-beak, and coastal marsh milkvetch.

The proposed action is necessary to restore and maintain resilient, dynamic physical coastal processes and topography of the flood tidal delta and the natural diversity of native plant and wildlife communities.

2.4 Proposed Actions and Alternatives

Proposed Action (Agency and Environmentally Preferred Alternative)

The proposed project would remove non-native invasive vegetation including tree seedlings, invasive beach grass, iceplant, wattle (acacia), French broom, and fennel among others, from the island. The 5-acre primary stand of Monterey pine and cypress would not be removed due to recent nesting of Great Blue Herons and Great Egrets on the island. Specific trees to be eliminated are shown on Figure 4. The vegetation management would be accomplished by salt-water inundation and manual removal methods. A community-based approach would be used to perform vegetation removal, replanting with native species, and monitoring.

The project is an action included in the *Bolinas Lagoon Ecosystem Restoration Project: Recommendations for Restoration and Management* (August 2008) prepared by a Working Group of the Sanctuary Advisory Council and made up of the District, Gulf of the Farallones National Marine Sanctuary, USACE, Audubon Canyon Ranch, other agencies personnel, scientists, environmental groups and community members. The funding for the project is being provided through the National Estuary Restoration Act (ERA). The ERA promotes the restoration of estuary habitats and provides Federal assistance for estuary habitat restoration projects through cooperative agreements with project partners. As prescribed under the ERA, USACE and MCOSD have entered into a cooperative agreement to cost share the project. USACE is providing oversight to ensure all USACE requirements are met to carry out the project and that MCOSD is responsible for project implementation. The District is finalizing a detailed Project Design Plan and Monitoring Plan. Other partners in the effort include the Gulf of the Farallones National Marine Sanctuary and Audubon Canyon Ranch.

Vegetation Management Methods. The project proposes to remove invasive vegetation (except for the existing mature trees in the 5-acre tree stand) and provide conditions conducive to the reestablishment of native dune communities and natural ecological processes. Trees to be eliminated are shown on Figure 4. Nearly all of the 29 acres would be subject to vegetation management but to varying intensity depending on specific location and condition—some locations have extensive invasion of non-natives and will require intensive treatment while others, with few invasives or with rare or sensitive plants, may be lightly or untreated. Methods for implementing the vegetation management are summarized below.

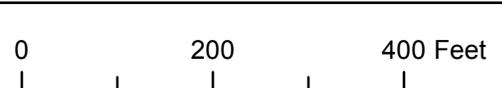
The primary methods for vegetation management include salt-water irrigation (via two water intakes in the tidal flat adjacent to the island) to kill or weaken salt-intolerant invasive plants, coupled with hand tools. Grasses and iceplant may be fragmented or pulled up and trees may be girdled or felled. Other methods may include smothering (covering with debris or fabric), and limited use of herbicides by wick or brush application to treat plants that are likely to re-sprout after cutting, such as acacia. All tree seedlings within the primary grove and elsewhere on the island would be removed on a continuing basis, as would all other invasive plants. Harvested woody vegetation debris generated by removal would be



Tree #	Species	DBH (Inches)
1	Monterey Pine	3
2	Monterey Pine	6
3	Monterey Pine	3.5
4	Monterey Pine	3
5	Monterey Pine	2 + 2 (twin trunk)
6	Monterey Pine	6
7	Monterey Pine	2.75
8	Monterey Pine	2
9	Monterey Pine	13
10	Monterey Pine	12
11	Douglas Fir	4

Tree #	Species	DBH (Inches)
12	Monterey Pine	8 + 10 (twin trunk)
13	Monterey Pine	5
14	Monterey Pine	1
15	Monterey Cypress	Multiple Stems 2 to 4 inches
16	Monterey Pine	1.5
17	Monterey Pine	3 at 3 ft then multiple splits
18	Monterey Cypress	12 + 12 + 12 (triple trunk)
19	Monterey Pine	16
20	Monterey Pine	1.5
21	Monterey Cypress	12
22	Monterey Cypress	11

Figure 4
Locations of Trees to be Eliminated



Source: Kent Island Draft Vegetation Management and Restoration Plan

disposed of on the island.

The project is designed to rely primarily on natural recolonization and succession to revegetate vegetation gaps left by removal of non-native vegetation, but some transplanting of dominant native species is anticipated in larger gaps. The project would provide habitat for expansion of local populations of the regionally rare salt marsh owl's-clover and northern salt marsh bird's-beak and proposed reintroduction of the rare coast marsh milkvetch and north coast pink sand verbena.

Irrigation equipment on Kent Island would consist of a portable, small, 160 gallon per minute, gas-powered, low-noise (79 decibel) pump connected to a mainline PVC irrigation pipe. The pump would be connected to an intake pipe placed adjacent to the island in the tidal flat. Alternative intake locations are shown on Figure 5. Valves at appropriate locations on the mainline PVC pipe will allow connection to a high volume portable sprinkler or fire hose and nozzle to quickly inundate treatment areas. The primary intake would be northwest of the island and the secondary intake to the south. The secondary intake would be used primarily if shifts in the tidal channel to the north or other physical changes make adequate water flow unavailable at the primary intake. The proposed locations of the water intake and pump are shown in Figure 5. Only one intake would be used at any one time. The water intake would be housed in a 24-inch-diameter perforated culvert pipe wrapped with 3/8-inch or smaller mesh fish screen. The pump intake would be hand-dug about 2-3 feet into the channel. The small gas engine for the pump would be housed in a sound attenuating box on the island within a container to prevent fuel spills. Pumping would occur intermittently in autumn and spring and summer depending on plant phenology.

Substrate salinization methods would be applicable over wide areas where primary reliance on manual removal of abundant invasive species may be excessively inefficient, costly or burdensome. At this time, the project anticipates multi-day (2 to 4 days) irrigation events in the fall, spring and summer during the first and second year of restoration. All irrigation events (and generator use) would occur only from 7 am to 6 pm on weekdays. Non-native species may, however, regenerate in subsequent years from persistent, resistant dormant seeds or deep root systems. Thus, the salinization procedure may be repeated for over several years, after which the irrigation array including the intake, pump and irrigation pipe would be removed. Although two successive growing seasons of sufficient seawater irrigation will likely result in mass dieback or extirpation of the weed species within treated areas, a third season may be required for areas with persistent recruitment of non-native species. Low densities of survivors and low-vigor sprouts would then be amenable to manual removal with low effort.

Manual removal methods would include hand tool methods using saws, mattocks for fragmentation of European beachgrass and iceplant clones, girdling or trees, and digging of deeply rooted plants. It may be necessary to wick or brush herbicide on acacia (and other similar species) to avoid re-growth of the plant from the stump. Manual removal of viable perennial plants would require temporary stockpile management and final disposal. Secured tarps would be placed below and above stockpiled debris, treated to reduce viability of live debris by desiccation, self-shading and composting, or saline irrigation. Debris stockpiles would be placed in locations where they would not create esthetic nuisances. Final disposal of debris would occur on-site (to avoid impacts of hauling and staging barges), in pits deep enough to prevent regeneration of weeds (0.5 m cover, monitored for resprouts).

The work would be accomplished with paid biologists and community volunteers. The District will limit volunteers on the island to 25 people at one time to allow better oversight and minimize disturbance to sensitive resources on the island. The number of volunteer days is expected to be highest during the first year implementation period and decline during the subsequent five-year monitoring period but is dependent on the success of initial treatment, the persistence of established plants, and rate of recolonization/recruitment of new individuals. Volunteers would be trained to avoid disturbance to wildlife and rare plants, in appropriate vegetation management practices, and in safety. They would be provided a guide to identify non-native and native plants on the island. Oversight of volunteers would



- Intake Locations
- Project Area

Source: William Carmen Ecological Consulting

Figure 5
Proposed Intake Locations (Approximate)

be conducted by the District's volunteer coordinator and the Farallones Marine Sanctuary Association.

Project Timing. Vegetation management is expected to begin in September 2012 and continue through 2018. Pre-project monitoring will begin in June 2012 and general project monitoring will continue through 2018. Focused surveys for sensitive wildlife and plants will precede seasonal vegetation management activities and adequate buffers established to avoid any potential disturbance to these species. The project also includes numerous avoidance measures as described in following sections.

No-Action Alternative

Under the No-Action alternative, no vegetation management or restoration would occur including the placement of the water intakes and pumps, salt-water irrigation or removal of non-native plant species. This alternative would not meet the stated purpose and need of achieving ecological or hydrological benefits and enhancing the island's long-term viability.

Currently, non-native conifer saplings are present throughout the central portion of the island, outlining the future canopy that may coalesce if they mature before the next extreme storm or seismic disturbance event. Over time as the non-native plants expand over the island, native species diversity associated with open grassland habitats would decline significantly. Many native species would likely become locally extirpated on Kent Island as conifer-dominated area increases during a temporary stable, low-disturbance phase of the island's ecological development.

If the disturbance-intolerant conifer stand spreads to dominate a major portion of the Kent Island before the next major storm or seismic disturbance, the island's overall ability to recover from subsequent major, inevitable natural disturbances would be impaired. In addition, the growth and stabilization of the island will have an adverse impact on sediment dynamics and hydrological processes within the lagoon.

Alternatives Considered but Eliminated from Further Study

Several alternatives to the proposed action were considered but eliminated from further study as described below.

One alternative to the proposed action included the removal of all non-native plants including the mature Pines and Cypress trees on the island that support the heron/egret rookery (see Figure 11). Under this alternative, the mature trees would have been girdled, or drowned with seawater from pumping, to allow the trees to die over time. This would provide a transition through decay-classes of dying and dead trees and allow the herons to move to the adjacent mainland site. However, after discussion with Audubon Canyon Ranch, their biologist's opinion was that this would be detrimental to the newly established rookery. Given current projections for sea level rise and for increased high wave/storm surge events, it is expected that the trees will be killed from salt water exposure from brief, intense episodes of storm surge flooding (El Niño high tide storm events) within 5-30 years. The depositional processes that will raise the island naturally in pace with sea level will be lethal to the trees but not to other invasive plants such as non-native dune grass. Because the entire island will be subject to invasive plant removal and over the longer term the island trees will die-off, there is no significant difference between this Alternative and the proposed Project in terms of long-term functional response or overall benefit. Therefore this alternative was eliminated to avoid adversely affecting the heron rookery in the short- and medium-term.

Alternatives based on conventional non-native vegetation removal methods, such as spray application of herbicides or large-scale mechanical removal using motorized vehicle equipment, were considered to be infeasible for the Bolinas Lagoon and island setting because of (a) impractical logistic and cost constraints of mobilization of heavy equipment (transport and access to the island); (b) high environmental sensitivity of Bolinas Lagoon and its protected status as a sanctuary; (c) likely feasibility of non-herbicide and manual alternative methods of non-native vegetation removal in this setting.

3.0 INITIAL STUDY / ENVIRONMENTAL ASSESSMENT

3.1 Project Information

1. **Project title:** Kent Island Restoration at Bolinas Lagoon
2. **CEQA Lead agency name and address:** Marin County Open Space District
3501 Civic Center Dr # 260
San Rafael, CA 94903
3. **Contact person & phone number:** James Raives, Senior Open Space Planner
(415) 473-3745
4. **Project location:** Kent Island, located in the northwest part of Bolinas Lagoon in unincorporated Marin County (APNs 195-290-05 [Audubon Canyon Ranch parcel], 195-290-08 and 195-290-10 [County of Marin parcels]) (See Figure 1, Project Location).
5. **Project sponsor's name and address:** Marin County Open Space District
3501 Civic Center Dr # 260
San Rafael, CA 94903
6. **General plan designation:** C-OS (Coastal Open Space)
7. **Zoning:** C-OA (Coastal – Open Area), C-ARP-10, Coastal, Agricultural, Residential Planned (1 unit per 10 acres)
8. **Description of project:** See Chapter 2, Proposed Project and Alternatives.
9. **Setting and surrounding land uses:** See Chapter 2, Project Description and Alternatives.
10. **Other public agencies whose approval may be required:**

The proposed project would require permits, other authorizations, or review from the following agencies with jurisdiction over the project area (in addition to the county and federal lead agencies):

- **Gulf of the Farallones National Marine Sanctuary:** A Marine Sanctuary Permit would be required from the Director of the Sanctuary for placement of the temporary pump intake.
- **California Coastal Commission:** The project would require a consistency determination under the Federal Coastal Zone Management Act and a permit pursuant to the California Coastal Act.
- **California Department of Fish and Game (CDFG):** The CDFG may require a Streambed Alteration Agreement under Fish and Game Code Section 1602.
- **Regional Water Quality Control Board (RWQCB):** The RWQCB may require an approval pursuant to Section 401 of the federal Clean Water Act.
- **National Marine Fisheries Service:** Through informal consultation with NOAA's Marine Mammal Protection Unit, it has been determined that an Incidental Harassment Authorization under the Marine Mammal Protection Act would not be necessary because no harassment of marine mammals (harbor seals) are expected to occur as a result of this project.
- **State Historic Resource Preservation Office (SHPO):** The SHPO will be given the opportunity to review the project for impacts to cultural resources pursuant to the federal Historic Preservation Act.
- **US Army Corps of Engineers:**
 - **Federal Clean Water Act Section 10:** The USACE, as the lead federal agency, is exempt from specific compliance procedures but will ensure consistency with Section 10.
 - **Federal Clean Water Act Section 404:** Compliance with 404(b)(1) Guidelines would be required for discharge of dredged or fill material into waters of the United States but for this project, USACE has determined that the action does not constitute dredge or fill under section 404.
- **National Marine Fisheries Service (NMFS):**
 - **Endangered Species Act (ESA):** Given the temporary nature of the pumping activity, the low water diversion rate, and the design measures to prevent entrainment or impacts to salmonids, USACE, as the lead federal agency, has determined the project will have no effect on listed species of salmonids with the potential to occur in the lagoon (Coho and California Central Coast steelhead) or their critical habitats. The National Marine Fisheries Service has concurred with this determination.
 - **Marine Mammal Protection Act:** Based on the proposed avoidance measures, no harassment of marine mammals (harbor seals) is expected to occur as a result of this project. Therefore, through informal consultation with NOAA's Marine Mammal Protection Unit, it has been determined that an Incidental Harassment Authorization under the Marine Mammal Protection Act will not be necessary for this project.

- **Magnuson-Stevens Fishery Conservation and Management Act:** Bolinas Lagoon is located in an area designated as Essential Fish Habitat (EFH) fish species managed with the following Fishery Management Plans (FMP) under the Magnuson-Stevens Fishery Conservation and Management Act: 1) Pacific Groundfish FMP (e.g., English sole, brown rockfish, starry flounder, leopard shark etc.); 2) Coastal Pelagics FMP (e.g., northern anchovy, Pacific sardine) and 3) Pacific Coast Salmon (coho salmon). Given the small area of potential effect, the temporary nature of the culvert pipe and intake, the measures designed to protect fish species, the location of the intake close to the shoreline of a side channel, and the low diversion rate, USACE has determined that the project will have no effect on EFH.
- **U.S. Fish and Wildlife Service (USFWS):** No effect to listed species under USFWS purview is anticipated as a result of this project.

3.2. Environmental Factors

The environmental factors checked below would be potentially affected by this project, involve mitigation measures that avoid any potentially significant impacts as indicated by the checklist on the following pages.

- | | | |
|--|---|---|
| <input type="checkbox"/> Aesthetics | <input type="checkbox"/> Agriculture and Forest Resources | <input type="checkbox"/> Air Quality |
| <input checked="" type="checkbox"/> Biological Resources | <input type="checkbox"/> Cultural Resources | <input type="checkbox"/> Geology/Soils |
| <input type="checkbox"/> Greenhouse Gas Emissions | <input type="checkbox"/> Hazards/Hazardous Materials | <input type="checkbox"/> Hydrology/Water Quality |
| <input type="checkbox"/> Land Use/Planning | <input type="checkbox"/> Mineral Resources | <input checked="" type="checkbox"/> Noise |
| <input type="checkbox"/> Population/Housing | <input type="checkbox"/> Public Services | <input type="checkbox"/> Recreation |
| <input type="checkbox"/> Transportation/Traffic | <input type="checkbox"/> Utilities/Service Systems | <input type="checkbox"/> Mandatory Findings of Significance |

3.3. Lead Agency Determination

NEGATIVE DECLARATION
Marin County Open Space District
Environmental Coordination and Review

Pursuant to Section 21000 et. seq. of the Public Resources Code and the Marin County Environmental Impact Review Guidelines and Procedures, the Marin County Open Space District grants a Negative Declaration for the following project.

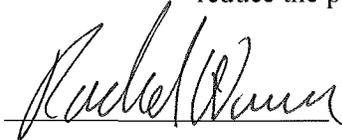
- 1. Project Name:** Kent Island Restoration Project
- 2. Location and Description:** Bolinas Lagoon Open Space Preserve, Stinson Beach, Marin County, California. Assessor's Parcel # 195-290-08, 09, and 10
- 3. Project Sponsor:** Marin County Open Space District

4. Finding:

Based on the attached Initial Study and without a public hearing, it is my judgment that:

The project will not have a significant effect on the environment.

The Marin County Open Space District has mitigated the project's significant effects, as described in the attached Initial Study, by modifying the project to reduce the potential adverse effects to a level of insignificance.



Environmental Coordinator

Date: 8/14/12

Based on the attached Initial Study and the comments received during the public review period, the Marin County Open Space District grants a Negative Declaration.

Linda Dahl, General Manager
Marin County Open Space District

Date: _____

5. Mitigation Measures:

(Select one of the following statements)

The Initial Study did not identify any potential adverse impacts and, therefore, the project does not require mitigation measures.

Please refer to mitigation measures in the attached Initial Study.

The Initial Study concludes that the Marin County Open Space District can modify the project's potential adverse impacts, as noted under the following factors in the attached in the Initial Study.

The Marin County Open Space District has incorporated into the project all of the mitigation measures described in the attached Initial Study.

6. Preparation:

The Marin County Open Space District prepared this Negative Declaration and interested parties may obtain copies at the address listed below.

Monday through Friday
Marin County Parks
3501 Civic Center Drive, #260
San Rafael, California 94903

8:30 a.m. to 4:30 p.m.
Telephone (415) 473-6387

3.3 Evaluation Of Environmental Effects

The Environmental Checklist and discussion that follows is based on sample questions provided in the CEQA Guidelines, Appendix G, which focus on various individual concerns within 16 different broad environmental categories, such as air quality, cultural resources, land use, and traffic (and arranged in alphabetical order). Each possible answer to the questions in the Checklist, and the different type of discussion required is discussed below:

- Potentially Significant Impact. Checked if a discussion of the existing setting and project characteristics, based on substantial evidence, supporting information, previously adopted environmental documents, and specific significance criteria, that the project will have a potentially significant impact of the type described in the question.
- Less Than Significant With Mitigation. Checked if the discussion of existing conditions and specific project characteristics, also adequately supported, determine that the project clearly will or is likely to have physical impacts that will exceed the significance threshold, but that with clearly defined mitigation measures that the project applicant or proponent has agreed to, such impacts will be avoided or reduced to less-than-significant levels.
- Less Than Significant Impact. Checked if a more detailed discussion of existing conditions and specific project features, demonstrates that, while some effects may be discernible, the effect would not exceed the threshold of significance, and no mitigation measures are required.
- No Impact. Checked if brief statements (one or two sentences) or cited reference materials (maps, reports or studies) clearly show that the type of impact could not be reasonably expected to occur.

3.4 Checklist Responses

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
I. AESTHETICS -- Would the project:				
a) Have a substantial adverse effect on a scenic vista?			X	
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?				X
c) Substantially degrade the existing visual character or quality of the site and its surroundings?			X	
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?				X

Background:

Kent Island is visually characterized as an undeveloped, low-lying, mostly grass and scrub vegetated island dotted with a grove of tall Monterey pine trees at the western end of the site. Periodically flooded mudflats and vegetated marsh areas border the site to the north, and it is bordered by tidal sandflats and channels on the south, east, and west.

The island is visible (wholly or in part) in primary views from roadway, houses, and business vantages in the town of Bolinas and the houses in the Seadrift area of Stinson Beach. The island is also visible in mid-distance and background views from Highway 1. The island is also visible from boats in the waters of Bolinas Lagoon. Because the island is low-lying, except for the trees, it is not clearly distinguishable from background features in these more distant views. Views of and from Kent Island are shown on Figures 6 through 10.

Discussion of Impacts:

a) Have a substantial adverse effect on a scenic vista.

Less than Significant Impact. The project site is visible in scenic vistas from private houses, roads and highways, local parks and open spaces.



Figure 6. View of Kent Island Looking North from the Bolinas Channel



Figure 7. View from Kent Island towards Seadrift Looking Southeast



Figure 8. View Northwest looking across Kent Island



Figure 9. View of Interior of Kent Island Showing Range of Vegetation Types (non-native pine and cypress in background; native dune grassland and beach-salt marsh transition vegetation in foreground, with non-native iceplant patches)



Figure 10. View from Kent Island towards the inlet and Pacific Ocean

The proposed project includes removal of non-native vegetation and revegetation of portions of the island with native species. Some of the smaller and isolated trees on the site would be girdled and would slowly die, turning to snags (standing dead skeletal trees). The grove of large pines would be left mostly intact. During the clearing phase, some areas of the island's appearance would change from that of a green (or brown, depending on the season) vegetated landscape, to more brown areas indicative of dead vegetation. The project does not include construction of permanent structures, fences or planting of trees that could obstruct views. Because of the lack of unusual scenic character of the existing vegetation, as well as the short-term nature of this visual change, this impact is considered to be less than significant.

Vegetation would be monitored and subject to treatment for a five-year period following the initial year of vegetation management. The improved ability of the native vegetation to survive extreme tidal events would add to the site's long-term visual quality. Therefore, the visual impact would be less than significant.

b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway.

No Impact. Most of the existing Monterey pine trees on Kent Island would not be removed by the project. The existing mature pine and cypress trees are expected to die without stand replacement within 30 years; they are not likely to persist as scenic resources even without the project. Vegetation restoration that better survives extreme tidal events and sea-level rise would likely extend the potential life of the island's native vegetation. There are no scenic rock outcroppings on the sand-created island. The island has no structures, historic or otherwise. Although Highway

1 near the site is eligible for scenic highway designation, no designated state scenic highways occur in Marin County (http://www.dot.ca.gov/hq/LandArch/scenic_highways/index.htm). Therefore, the proposed project would not affect any scenic resources.

c) Substantially degrade the existing visual character or quality of the site and its surroundings.

Less than Significant Impact. As described above, the island is visible as a low vegetated island in near and more distant views. Much of the vegetation is low-lying and non-native, however the large trees on the site are prominent in local views of the island. The methods for removing non-native vegetation are gradual and rely largely on creating conditions for natural revegetation by native dune species. This would minimally alter views of the island from private houses, roadways, and public parks and open spaces. New vegetation would gradually grow to maturity over a period of one to five years. The primary visual impact would be the prevention of new tree growth and spread (due to seedling and sampling removal) and removal of trees outside the main grove and the removal of wattle, bush lupine, acacia– species that are taller than native dune plants. These actions would prevent the island from developing more extensive evergreen pine and cypress groves that would obstruct scenic views of Bolinas Lagoon from Stinson Beach and the town of Bolinas in the next two decades. Other changes in visual quality would largely go unnoticed (i.e., change from European beachgrass to beach wildrye). More open sand may be expected in some areas as native species do not typically form dense expanses of cover. The salt marshes of the island would remain unmodified by the project below the high tide line. The impact on scenic resources would be less than significant (potentially beneficial) because of the lack of visual prominence of the island currently, retention of the large pines, and because the island would be revegetated with native vegetation.

The project would temporarily place two 24-inch water intake culverts in the tidal flat adjacent to the island powered by a small Honda water pump and connected to a 3-inch PVC pipe across the surface of the island. Low contrast flagging stakes will mark pathways for workers and sensitive plant locations but will be kept to a minimum. Low contrast tarps may be used to cover brush piles but would be covered also with cut limbs of trees and rack found on the island. The island currently has substantial rack washed up from winter storms, small play structures (forts) built from debris and downed trees, and the adjacent Bolinas channel has numerous floating docks with boats tied up. Hence, the project materials would not substantially degrade the visual character of the island.

d) Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area.

No Impact. The project would not include any lighting or structures. Therefore it would have no impact to light and glare.

Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
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II. AGRICULTURE AND FOREST

RESOURCES: In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state’s inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:

- | | | | |
|--|--|--|---|
| a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use? | | | X |
| b) Conflict with existing zoning for agricultural use, or a Williamson Act contract? | | | X |
| c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)) or timberland (as defined by Public Resources Code section 4526)? | | | X |
| d) Resulting in the loss of forest land or conversion of forest land to non-forest use? | | | X |
| e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use. | | | X |

Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
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Background:

No agricultural activity or designated prime farmland exists in the project area. The island was occasionally grazed by horses early in the century but was never farmed. It has been protected as open space by Audubon Canyon Ranch and Marin County since 1967.

Discussion of Impacts:

- a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use.**

No impact. All land within the project area is designated “Other Land” by the California Department of Conservation (CDC) Farmland Mapping and Monitoring Program (CDC, Marin County Important Farmland, 2008, June 2009). Therefore, the project would not impact prime agricultural lands.

- b) Conflict with existing zoning for agricultural use, or a Williamson Act contract.**

No impact. The project area is not located within or adjacent to any lands protected by the Williamson Act, nor is the area zoned for agricultural use (Marin County, 2007).

- c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)) or timberland (as defined by Public Resources Code section 4526)?**

No impact. The proposed Project is in an area that is zoned Coastal Open Space. No adjacent lands exist that meet the definitions of forest land or timberland and no impact would occur.

- d) Result in the loss of forest land or conversion of forest land to non-forest use?**

No impact. The isolated stand of pines on the island does not comprise ‘forest lands’ as defined in California PRC Sections 12220(g) or 4526. No forest lands are located within or adjacent to the project area and, as such, the project would not result in any direct loss of forest land.

- e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use.**

No impact. The proposed project would be located in a tidal lagoon (designated “Other Land” on CDC maps), and would not involve any other changes that would result in conversion of farmland.

Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
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III. AIR QUALITY -- Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations.

Would the project:

- | | | | |
|---|--|---|---|
| a) Conflict with or obstruct implementation of the applicable air quality plan? | | | X |
| b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation? | | X | |
| c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)? | | X | |
| d) Expose sensitive receptors to substantial pollutant concentrations? | | | X |
| e) Create objectionable odors affecting a substantial number of people? | | X | |

Background:

The project is located in Marin County, which is part of the Bay Area Air Basin and under the regulatory jurisdiction of the Bay Area Air Quality Management District (BAAQMD). Marin County is bounded on the west by the Pacific Ocean, on the east by San Pablo Bay, on the south by the Golden Gate and on the north by the Petaluma Gap. The prevailing wind directions throughout Marin County are generally from the northwest and wind speeds are in the range of five miles per hour. In the summer months, areas along the coast are usually subject to onshore movement of cool marine air. In the winter, proximity to the ocean keeps the coastal regions relatively warm, with temperatures varying little throughout the year. Coastal temperatures are usually in the high-50s in the winter and the low-60s in the summer. The warmest months are September and October (BAAQMD 1999).

Discussion of Impacts:

- a) Conflict with or obstruct implementation of the applicable air quality plan.**

No impact. The Bay Area Air Basin is currently designated “nonattainment” for state and national (1-hour and 8-hour) ozone standards, for the state PM10 standards, and for state and national (annual average and 24-hour) PM2.5 standards. The Bay Area Air Basin is designated “attainment” or “unclassified” with respect to the other ambient air quality standards.

A project would be judged to conflict with or obstruct implementation of the regional air quality plans if it would be inconsistent with the growth assumptions, in terms of population, employment or regional growth in vehicle miles traveled. The growth assumptions used for the regional air quality plans are based upon the growth assumptions provided in local general plans. This Project would not result in any population growth or vehicle miles increase for the county.

Project construction includes two water intakes and a single gas-powered pump that would be used to irrigate up to 11 acres of the island (only one intake would be operated at a time; the pump would be moved to operate at the secondary intake if required). The largest pump anticipated for use would be the Honda GX160. According to engine specifications, the generator would combust about 0.54 gallons of gasoline per hour, an amount that would result in insignificant amounts of criteria pollutants of concern. Standard emission factors from US EPA publication AP42, *Compilation of Air Pollutant Emission Factors*, were used to calculate criteria emissions. Table 1 provides the estimated emissions from daily use of the pump and compares the emissions to the current and proposed Bay Area Air Quality Management District thresholds. Small work crews would also be associated with the construction and their vehicle emissions from commuting would be expected to be minimal, perhaps more than the emissions from the generator but minimal also in comparison to the thresholds.

Operational emissions associated with the proposed project would be minimal, only occasional work crews a few times per year.

TABLE 1
Project Irrigation (Construction) Criteria Pollutant Emissions
(pounds per day)

Emission Sources	ROG	NO_x	PM10	PM2.5	CO	CO₂
Irrigation Generator	3.0	1.6	<1	<1	62	155
Current Thresholds (BAAQMD 1999)	80	80	80	---	550	---
Proposed Thresholds (BAAQMD 2010) ^a	54	54	82	54	---	---
Significant Impact?	No	No	No	No	No	No

Notes: ROG = Reactive Organic Gases; NO_x = Oxides of nitrogen; PM10 = particulate matter less than 10 microns in diameter; PM2.5 = particulate matter less than 2.5 microns in diameter; CO = Carbon monoxide; CO₂ = Carbon dioxide.

^a Proposed BAAQMD revised thresholds. BAAQMD adopted new guidelines and more restrictive thresholds in 2010 but they are no longer recommending that the 2010 thresholds be used as a generally applicable measure of a project’s significant air quality impacts. (BAAQMD 2012).

The project would have a less than significant impact on any of the growth assumptions made in the preparation of the clean air plans (no housing is proposed), and would not obstruct implementation of any of the proposed control measures contained in these plans.

Federal Clean Air Act General Conformity Rule Compliance

Federal projects are subject to either the Transportation Conformity Rule (40 CFR, Part 51, Subpart T), which applies to federal highway and transit projects, or the General Conformity Rule (40 CFR, Part 51, Subpart W), which applies to all other federal projects. The General Conformity Rule implements Section 176(c) of the federal Clean Air Act, which requires that a federal agency ensure conformity with an approved state implementation plan (SIP) for those air emissions that would be generated by an agency action. The proposed action is located in the BAAQMD. The BAAQMD is currently designated nonattainment for federal standards related to ozone and PM2.5. To ensure compliance with the General Conformity Rule, emissions generated by the project within the BAAQMD have been evaluated to determine whether they would exceed applicable thresholds or be regionally significant. General Conformity Rule *de minimis* thresholds are as follows:

VOC or ROG	50 tons per year
NOx	100 tons per year
PM10	100 tons per year
Carbon Monoxide	100 tons per year

Based on the emission estimated in Table 1 and an estimate of up to 60 days of emissions from the irrigation motor pump, Project emissions would be far below the General Conformity Rule threshold for the region. Carbon monoxide emission might reach 3 tons per year from the irrigation and 5-10 tons per year including any mobile emissions for transportation of workers to the project site. None of the other pollutants would reach even 1 ton per year. The project would clearly not exceed *de minimis* levels of direct emissions of a criteria pollutant or its precursors and the project activities would be exempted from any further air quality General Conformity Rule Review.

b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation.

Less than significant impact. The proposed project would have only a minimal air quality impact during implementation (see Table 1) and less with long-term operation and monitoring. The area near Kent Island is near the ocean and has minimal pollutant sources. The ocean breeze disperses any pollutant generated in the area quickly.

c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors).

Less than significant impact. As discussed above, the proposed project would result in air pollutant emissions well below the BAAQMD significance thresholds and therefore, the proposed project’s individual impact on regional air quality would be less than significant.

d) Expose sensitive receptors to substantial pollutant concentrations.

No impact. As noted in b), operation of the proposed project would not generate substantial pollutant concentrations and thus would not expose sensitive receptors to substantial pollutant concentrations.

e) Create objectionable odors affecting a substantial number of people.

Less than significant impact. In general, the types of land uses that pose potential odor problems include refineries, chemical plants, wastewater treatment plants, landfills, composting facilities, and transfer stations. No such uses are proposed.

A gasoline engine would be used for the water pumping equipment. Gasoline and/or diesel-powered boats would not be used to access the project site. Odors generated by the pump would be variable but negligible. Operation of the proposed project would not be anticipated to result in odor emissions. Offensive odors are typically associated with industrial land uses, not open space uses. The impact of the project with regard to odors is considered to be less than significant.

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
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IV. BIOLOGICAL RESOURCES --

Would the project:

- | | | | | |
|--|---|---|---|---|
| a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service? | X | | | |
| b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or US Fish and Wildlife Service? | | X | | |
| c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means? | | | X | |
| d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites? | | X | | |
| e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance? | | | | X |

Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
---	--	---	----------------------

X

f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

Background:

Bolinas Lagoon was designated a Wetland of International Importance in 1998 by the USFWS under the RAMSAR Convention on Wetlands. The lagoon attracts more than 35,000 birds annually (Shuford *et al.* 1989) and is a critical feeding ground and stopover for migratory birds on the Pacific Flyway. The tidal flats of Bolinas Lagoon serve as primary foraging habitat of many of the region’s most abundant shorebirds (Page and Shuford 1999) that feed on invertebrates, crustaceans, and small fish in the tidal flats and channels (Audubon Canyon Ranch 1996; Stenzel *et al.* 1983). Numerous special status birds are found seasonally on the Lagoon (Appendix A) including over a thousand Brown Pelicans in some years. Great Blue Herons and Great Egrets nest on Kent Island and on the adjacent mainland and Audubon Canyon Ranch (ACR) is home to large rookery of Great Egrets.

The lagoon’s tidal flats and subtidal channels provide important habitat for fish and invertebrates including nursery habitat. Coho salmon and steelhead trout use the lagoon to access spawning grounds found in the streams in the watershed and the lagoon is used by smolts prior to moving into the Pacific Ocean.

Harbor seals use the tidal flats and bars at Bolinas Lagoon as haul-out and pupping areas. Surveys in May 2006 found a high pup count of 174 and a peak molt count of 448 in July. Due to Bolinas Lagoon’s close proximity to Highway 1, the seals are exposed to humans and traffic and experience a high rate of disturbance, primarily caused by humans in non-motorized boats and less frequently on foot. Allen *et al.* (1984) found that almost all disturbances by people on foot were within 100 meters but the seals were disturbed at greater distances by non-motorized boats.

Kent Island itself provides habitat for several known and potential occurring special status plants and animals. Specific surveys have been conducted for special status plants on the island along with general floristic surveys. No systematic inventory of wildlife has been performed for Kent Island specifically although numerous biological studies and reviews have been conducted on the lagoon including those associated with planning documents such as the Bolinas Lagoon Management Update (1996), the Bolinas Lagoon Ecosystem Restoration Project Draft Feasibility Study and DEIR/S (USACE 2002), and the Bolinas Lagoon Ecosystem Restoration Feasibility Project: *Projecting the Future of Bolinas Lagoon* (MCOSED 2006). Conservation organizations such as ACR and Point Reyes Bird Observatory (PRBO) have monitored bird use of the lagoon and watershed—PRBO’s continuing surveys of shorebird and waterfowl use of the lagoon began in 1971. The CDFG has sampled fish and invertebrate species in Bolinas Lagoon on several occasions between 1994 and 1998.

Because of its size and relative isolation, the island does not support substantial wildlife populations. The island provides habitat for mammals, such as California voles (grassland areas) and deer mice (forested areas); deer and raccoons frequently move across the tidal flats at lower tides to forage on the flats and on the island. Alligator lizards can be found under the wrack that is spread across the island’s dunes. Several raptors (e.g., short-eared owls, white-tailed kites, and northern harriers) forage on the island for rodents

and/or small passerines and shorebirds. Ravens and crows are frequently observed on the island. The tidal marshes and tidal flats provide foraging and resting sites for numerous shorebirds and waterfowl.

The five-acre grove of non-native pines and cypress trees supports a typical assemblage of resident and migratory passerines species. In the last few years, Great Blue Herons and Great Egrets have nested in the southernmost extent of the grove of trees on the island (see Figure 11).

Special Status Species

For the purposes of this IS/EA, the term “special-status species” refers to all plants or animals listed as threatened, endangered, or proposed for listing under the federal Endangered Species Act (ESA) or the California Endangered Species Act (CESA); plants listed as rare under the California Native Plant Protection Act; plants considered by the California Native Plant Society to be “rare, threatened, or endangered in California”; species that meet the definition of rare or endangered under CEQA; species listed as “fully protected” in the California Fish and Game Code; nesting raptors and other migratory birds; and plants recognized by the U.S. Fish and Wildlife Service as species of conservation concern in recovery planning of listed species. The potential and known occurrence of special status plants and animals comes from project-specific surveys (plants) and from lists compiled from USFWS species lists (USFWS 2012), *California Natural Diversity Database* (CNDDDB) (CDFG 2012) for the United States Geologic Survey (USGS) Bolinas Quadrangle, and from planning documents and studies associated with the *Bolinas Lagoon Ecosystem Restoration Feasibility Study* (USACE DEIR/S 2002) and *Projecting the Future of Bolinas Lagoon* (MCOSD 2006).

Plants

Kent Island is occupied by large populations of two rare annual salt marsh plants, the north coast salt marsh bird’s-beak (*Chloropyron maritimum* subsp. *palustre*; syn. *Cordylanthus maritimus* subsp. *palustris*) and a salt marsh ecotype (ecologically adapted population) of owl’s-clover (*Castilleja ambigua* subsp. *ambigua*). These salt marsh annuals inhabit the sparse, low-growing turfy high salt marsh in the lee of Kent Island, along the edges of its north shore. The abundance of these annuals varies considerably among years, presumably influenced by seasonal rainfall patterns, insect predation of fruits and seeds, and changes in salt marsh vegetation structure. These annual species are sensitive to variations in seasonal rainfall patterns and soil salinity, and may be absent, scarce, or exhibit strongly inhibited growth and reproduction in years with low rainfall or long wet-season droughts. Table 2 lists the status and occurrence of rare plants of Bolinas Lagoon beach, dune and salt marsh.

Bolinas Lagoon was the original locality where a rare coastal plant, the coast marsh milkvetch (*Astragalus pycnostachyus* var. *pycnostachyus*), was discovered in the 19th century. It has been extirpated from the lagoon. However, Kent Island supports suitable habitat for this species along the high tide line of sandy salt marshes.

Another rare beach plant, north coast pink sand verbena (*Abronia umbellata* subsp. *breviflora*), which occurs at one large, precarious erosion-prone colony at Stinson Beach, has suitable local habitat on parts of the Kent Island shoreline. Surveys in July 2012 found two individuals on Kent Island. Hence, the island is an important refuge for two existing rare plants, and is a potential refuge for two others. This project proposes to restore coast marsh milkvetch to its type locality by introducing seeds and transplants into suitable habitat at Kent Island, using nearby Drakes-Limantour Estero population sources. Pink sand verbena is also proposed for translocation to Kent Island from the exposed Stinson Beach population.

Table 2
Status of Rare Plants of Bolinas Lagoon Beach, Dune, and Salt Marsh

Species	Status Fed/State/CNPS	Occurrence
North Coast pink sand-verbena <i>Abronia umbellata</i> subsp. <i>breviflora</i>	FSC / - / 1B	Extant east Stinson Beach foredune population, many thousands 2010-2011. Two plants detected on Kent Island and additional receptive suitable habitat exists along beach and beach-salt marsh ecotone edge.
coast marsh milkvetch <i>Astragalus pycnostachyus</i> A. Gray var. <i>pycnostachyus</i>	- / - / 1B	Historic type locality at Bolinas Lagoon, unspecified location; most recently collected by J.T. Howell 1945 at Stinson Beach (likely backbarrier lagoon shore), W.S. Cooper 1925. Receptive suitable habitat throughout beach-salt marsh ecotone.
salt marsh owl's-clover <i>Castilleja ambigua</i> Hook. & Arn. subsp. <i>ambigua</i>	FSC / - / 4.2	Widespread in backbarrier salt marsh ecotone, north side of Kent Island, mostly unbranched dwarfed plants, above bird's-beak zone, associated with sparse depauperate cover of pickleweed, seaside plantain, saltgrass, and sicklegrass
North Coast salt marsh bird's-beak <i>Chloropyron maritimum</i> (Benth.) A. Heller subsp. <i>palustre</i> (Behr) Tank & J.M. Egger	FSC / - / 1B	Widespread in backbarrier salt marsh, high marsh zone with sparse, low turf-like salt marsh vegetation, often in association with creeping sea-arrow grass, seaside plantain, California sea-lavender, and depauperate pickleweed, saltgrass, alkali-heath.
Marin knotweed <i>Polygonum marinense</i> T.R. Mert. & P.H. Raven Marin knotweed	FSC / - / 3	Not detected at Kent Island or surrounding brackish to salt marsh edges of Bolinas Lagoon. Native status and taxonomic affinity uncertain; spreading like invasive species in San Francisco Estuary.

FSC: Federal Species of Concern

List 1B - CNPS 1B List, Endangered, Threatened, or Rare in California

List 2- CNPS List 2 plants are rare, threatened, or endangered in California, but more common elsewhere

List 3- CNPS List 3 plants are rare and needing more information/evaluation

List 4 – CNPS List 4.2 plants have limited distribution and are fairly threatened in California

Wildlife

A list of special status species that could potentially occur on the project vicinity (the lagoon and adjacent watershed) can be found in Appendix A. Many of the species listed in Appendix A are not expected to be found on Kent Island and many that may occur in the project vicinity will not be affected by vegetation management action on Kent Island (for example, bats that may forage over the island or waterfowl that forage in the subtidal shallows or channels). Table 3 provides a list of special status species that may potentially be affected by the project.

Table 3
Special Status Fish and Wildlife That May Occur on Kent Island or May be Affected by
Vegetation Management Actions

Species	Status	Occurrence
Birds		
Great egret (rookery) <i>Ardea alba</i>		Present. Rookery site at Audubon Canyon Ranch and across Bolinas Channel from Kent Island.
Great blue heron (rookery) <i>Ardea herodias</i>		Present. Rookery at ACR and in the pines on Kent Island and across Bolinas Channel on the mainland.
Northern harrier <i>Circus cyaneus</i>	CSC	Present. Forages on island. May possibly nest on island on ground in grasslands, swales and shrubs but not recorded.
White-tailed Kite <i>Elanus leucurus</i>	CFP	Present. Forages on Kent Island. Could nest in pines or cypress on island (follows vole outbreaks) but no records.
Short-eared Owl <i>Asio flammeus</i>	CSC	Present (non-breeding). Uncommon, sporadic but observed in winter on Kent Island. Roosts in the dunes on Kent Island. Breeds in salt- and freshwater marshes and grasslands. No breeding records.
Western snowy plover <i>Charadrius alexandrinus nivosus</i>	FT, CSC	No recent occurrence on Kent Island. Nests on sand spits, dune-backed beaches, beaches at creek and river mouths, and salt pans at lagoons and estuaries. Project may improve habitat value for nesting plovers.
Allen's hummingbird <i>Selasphorus sasin</i>	FSC	Potential. Could breed on island in the denser shrubs and trees on the island.
Fishes		
Pacific lamprey <i>Lampetra tridentata</i>	FSC	Present. CDFG surveys in 1994-96 found lamprey ammocoetes in Pine Gulch Creek. May therefore occur in migration near water intake.
Coho salmon-central CA coast ESU <i>Oncorhynchus kisutch</i>	FT, SE	Present. Spawns in Pine Gulch Creek and smolts therefore may occur in the Lagoon near the water intake.
Steelhead-central CA coast ESU <i>Oncorhynchus mykiss</i>	FT	Present. Spawns in Pine Gulch Creek and possibly other Lagoon creeks. Smolts therefore may occur in the Lagoon near the water intake.
Invertebrates		
Bumblebee scarab beetle <i>Lichnanthe ursina</i>	FSC	Potential. Inhabits coastal dunes. No records from site. Project could provide improved habitat conditions.
Sandy beach tiger beetle <i>Cicindela hirticollis gravida</i>	FSC	Potential. Inhabits coastal dunes. Project could provide improved habitat conditions for this species

* **Key to status codes:**

Status codes used above are:

FE - Federal Endangered

FC - Federal Candidate

NMFS - Species under the Jurisdiction of the National Marine Fisheries Service

FSC - United States Fish and Wildlife Service Federal Species of Concern

CSC - CDFG Species of Special Concern, CSC (Draft) - 4 April 2001 Draft

CFP - California Fully Protected Species

None - No status given but rookery sites are monitored by CDFG

FT - Federal Threatened

FPD - Federal Proposed Delisted

CDFG Species of Special Concern

SLC - Species of Local Concern

SE - State Endangered

Discussion of Impacts:

a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

Less than significant with mitigation. Overall, the proposed methods for vegetation management may have moderate to relatively low, short-term to recurrent impacts on native plants and animals. Weed removal and treatment actions in the vicinity of special-status annual salt marsh plants would be delayed until ripe seed capsules have matured or dispersed seed. Saline flooding is proposed for areas with high density of invasive plants and may result in some growth inhibition and die-back of native plants, but these species are expected to recover rapidly as they are well adapted to occasional tidal wash-over and are generally much more salt tolerant than the non-native target species. A phased approach would be used to determine the response of both native and non-native plants to saltwater flooding and an assessment of the monitoring results would allow for adaptive management and refinement of saltwater flooding by habitat, specific area, and season. The saltwater flooding itself would have no direct significant impact to wildlife on the island. Besides saltwater flooding, hand removal methods for vegetation could result in impacts to sensitive plants from trampling or accidental removal and worker activity, and has the potential to disturb sensitive wildlife such as harbor seals and Great Blue Herons; however, as described in the sections below, proposed mitigation measures will avoid any potential impacts to special status species.

Plants

There are three special status plant species that occur in the project site: north coast salt marsh bird's-beak, salt marsh owl's-clover, and North Coast pink sand-verbena. Vegetation management actions (saltwater flooding, hand removal, and access to removal sites) could potentially affect populations of rare plants on the island. For example, saltwater flooding to reduce infestations of bird's-foot trefoil (highly invasive in owl's clover habitat) could adversely affect owl's clover if implemented during the spring growing and flowering period. Weed removal and treatment actions in the vicinity of special-status annual salt marsh plants would be delayed until ripe seed capsules have matured or dispersed seed (after seeds are dispersed annual plant populations will not be impacted by removal or injury of post-reproductive individual plants) and would avoid impacts to annual plants (Mitigation IV-1). Removal of non-native plant species would improve habitat conditions for owl's clover, North Coast pink sand-verbena and other native species, expanding their current distribution on the island. Trampling of seedlings and pre-flowering sensitive plant species of north coast salt marsh bird's-beak, salt marsh owl's-clover, and other sensitive dune and marsh plants by volunteer workers could adversely impact these species on the island; however, this impact will be avoided by marking pathways for worker movement that avoids sensitive plants. As described in Mitigation Measure IV-2, pre-vegetation management surveys will identify areas with sensitive and special status plants. Travel corridors for workers would be flagged to reduce overall trampling of the island's vegetation and avoid areas of sensitive and special status plants species. The project would potentially result in substantial benefits to at least several special-status plant species by improving habitat conditions and by active planting of seeds collected on-site (owl's clover) or from nearby source populations (north coast pink sand-verbena, coast marsh milkvetch). Seed collection from off-site source populations of two rare plants, north coast pink sand-verbena and coast marsh milkvetch, are unlikely to be impacted by relatively small numbers of seed anticipated to be collected (several hundred seed) because donor populations produce several orders of magnitude more seed than the amount proposed for harvest under permits from the National

Park Service. To prevent any possibility of adverse impact of seed collection in years of naturally declining seed production in source populations, seed harvest for later revegetation or reestablishment on the island will be limited to less than 1% of current year seed production. Implementation of mitigation measures described below would avoid potentially significant impacts.

Mitigation Measure IV-1: In areas with high density of invasive plants that also contain sensitive or special status plants, saltwater flooding shall occur in short durations and be seasonally timed to when the target invasive plants are susceptible but the native rare plants are dormant.

Mitigation Measure IV-2: A qualified plant biologist shall identify and mark populations of sensitive plants and identify a footpath access for workers that avoid these sensitive plant populations. The biologist will also train staff, contractors, and volunteers to avoid impacts on sensitive plants.

Mitigation Measure IV-3: Collection of rare plant seeds by a qualified plant biologist shall be limited to less than 1% seed harvest of current year seed production to avoid depletion of seeds in these plant populations.

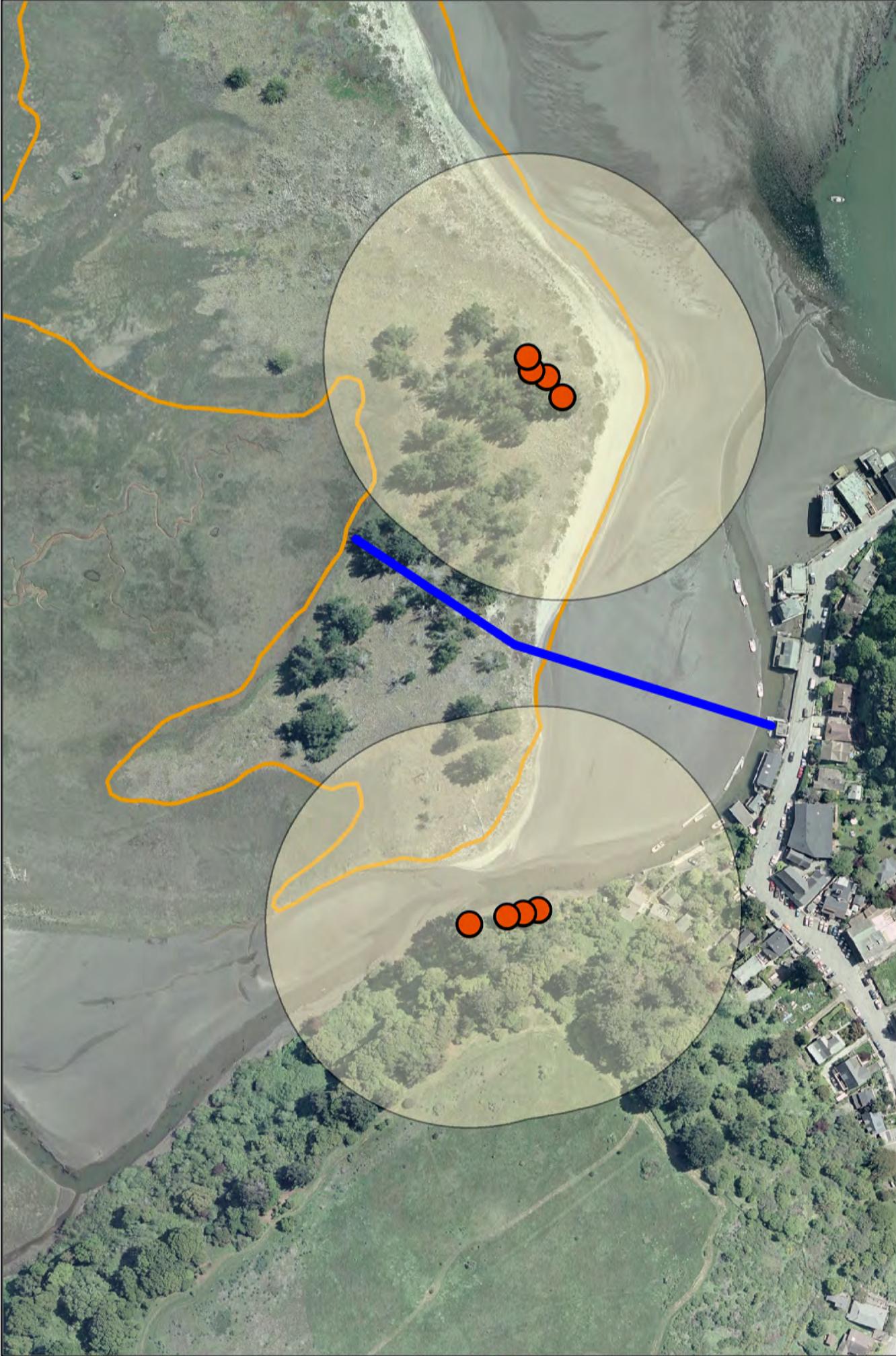
Birds

Heron Rookery. Herons and egrets nest on the island and across the Bolinas channel on the mainland (see Figure 11). In 2011, four Great Blue Herons nested on the island and four to five pairs in the pines across the channel. In 2012, three pairs of herons and two pairs of Great Egrets nested on the island and 3+ pairs of herons and 2+ pairs of egrets across the channel.

The public dock (College of Marin) would be used to provide access to the island. Figure 11 shows approximate heron and egret nest locations in 2011 and 2012 and proposed buffer zones. The green line illustrates a pathway that would be established to keep workers out of the buffer zone and minimize foot traffic through the conifer grove. Vegetation management actions could potentially disturb the nesting herons and egrets and result in reproductive loss or rookery abandonment. A MOU with Audubon Canyon Ranch provides measures to conserve habitat values within the main grove of pines including: 1) If ACR biologists deem that removal of invasive plants in the understory of the primary grove of trees significantly reduces fledgling cover for herons, suitable native plants will be planted to provide lost habitat value; 2) Vegetation removal and other restoration work on ACR property shall be conducted after the heron nesting season; 3) All individuals engaging in removal of non-native vegetation on ACR property shall be given training in plant identification in order to prevent removal of native vegetation; and 4) All vegetation removed from ACR property shall be disposed of consistent with best management practices. The project also includes the establishment of a 100-meter buffer around the active nests to avoid disturbance during the breeding season. The 100-meter buffer is included here as Mitigation Measure IV-4. Implementation of mitigation measure IV-4 would avoid potentially significant impacts.

Mitigation Measure IV-4: A 100-meter buffer shall be established around active nests during the heron and egret breeding season (February-July) inside of which no Vegetation Management actions would take place.

Other special status and sensitive bird species: The project could disturb nesting avian special status species, including those protected under the Migratory Bird Treaty Act and California Fish and Game Code and could lead to the loss or abandonment of an active nest. If vegetation management activities occur during the breeding season (typically February 15 through August 1 in the project area), implementation of mitigation measure IV-5 would avoid potentially significant impacts.



-  Heron Nests
-  Access Route
-  Project Area
-  Heron Buffers

Source: William Carmen Ecological Consulting

Figure 11
Blue Heron Nest Locations

Mitigation Measure IV-5: The following measures shall be implemented if construction activities take place during the bird-breeding season, defined as the period between February 15 and August 1.

When vegetation management activities take place during the typical nesting/breeding season, the applicant shall have surveys conducted by a qualified biologist (e.g., experienced with the nesting behavior of bird species of the region) within two weeks prior to the commencement of vegetation management activities. The surveys shall be timed such that the last survey is concluded no more than one week prior to initiation of vegetation clearance or other construction work. If nesting birds are detected during surveys, the biologist shall flag trees and map active nests within the project area. If active nests are located, measures to avoid impacts shall include one or more of the following:

- For active nests of raptors a buffer of 100 ft. from the nest shall be established.
- For active nests of bird species other than raptors a buffer zone of 50 ft. will be established.

No vegetation management activities shall be allowed within the buffer zone until one of the following conditions has been met:

- The young have fledged from the nest.
- The birds abandon the nest on their own.
- The nest fails and the birds do not re-nest.

Marine Mammals

Harbor seals, which are protected under the Marine Mammals Protection Act, use Bolinas Lagoon, including the tidal flats at low tide adjacent Kent Island, as haul out and pupping sites. The locations of the pump/water intakes are more than 400 meters from areas where harbor seals haul-out (secondary intake location; see Figure 5). Other actions include use of hand tools by workers to cut or remove vegetation such as iceplant and European beachgrass grass. Approach by workers and manual weed removal could cause an impact though disturbance to harbor seals if performed at times when the seals are hauled out on the tidal flats adjacent to the island. Mitigation measure IV-6) would establish a 100-meter buffer between workers and any seals hauled-out on the tidal flats near the island. This buffer was developed in consultation with NOAA National Marine Fisheries Service and provides more substantial buffer distance than recommended in the California Seal and Sea Lion Viewing Guidelines (NOAA NMFS, Southwest Regional Office Brochure) and would avoid any potential short-term, temporary, adverse disturbance impacts during vegetation management activities. Implementation of mitigation measure IV-6 would avoid potentially significant impacts.

Mitigation Measure IV-6: A 100-meter buffer shall be established around any seal hauled out on the adjacent tidal flats. A qualified biologist shall monitor the island for seals (e.g. with binoculars) and if there is a pattern of seals hauling out during certain times of day (or tidal cycle) then work near the haul-out sites shall be scheduled to avoid those times as much as possible. Volunteer coordinators shall provide instructions to volunteers to keep voices low and avoid quick movements if seals haul out near where work is being conducted. In addition, if activities on the island indicate disturbance to the seals, such activities will stop and workers will move to a greater distance.

Fish

Bolinas Lagoon provides access to spawning streams in the watershed and habitat for smolts for the Federally and state listed Coho salmon and steelhead trout. Bolinas Lagoon is part of the Central California Coast Evolutionary Significant Units for both species. Other special status fish present in the lagoon include Pacific lamprey-- CDFG surveys in 1994-96 found lamprey ammocoetes in Pine Gulch Creek. These species may therefore occur in migration near water the intakes and pump. Pumping of seawater from the intakes in tidal flats immediately adjacent to the island has the potential to entrain smolts and juvenile Coho and steelhead. The design of the pump intake system was developed with technical assistance by NMFS to avoid entrainment of smolts. The intake would be housed in a 24 inch perforated culvert set vertically in the tidal flat and wrapped with fish screen of 3/8 inch or smaller. The maximum pump volume would be 160 gpm. Given the temporary nature of the pumping activity, the low water diversion rate, and the design measures to prevent entrainment or impacts to salmonids, the project would not affect listed species of salmonids with the potential to occur in the lagoon or their critical habitats. The National Marine Fisheries Service has concurred with this determination. In addition, as recommended by NMFS, the following additional measures will be implemented to further prevent any impacts to salmonids: 1) care should be taken such that there is no inadvertent de-watering of any adjacent pools that might trap fish or prevent their egress to deeper waters, 2) operators should check periodically to see that the screen mesh does not get significantly clogged with aquatic debris or detritus, and 3) operators should have a means of manual screen cleaning to ensure the screening system continues to function as intended. These measures are included here as Mitigation Measure IV-7; implementation of this measure would avoid potentially significant impacts.

Mitigation Measure IV-7: Operators shall be trained in proper placement of the intake within the intake pipe and perform inspection of the fish screen prior to each use to make sure it is clean and free of debris. At lower tidal levels, adjacent pools and smaller channels shall be inspected each hour to ensure that they are not dewatered or could potentially strand fish.

Bolinas Lagoon is also located in an area designated as Essential Fish Habitat (EFH) for various life stages of fish species managed with the following Fishery Management Plans (FMP) under the Magnuson-Stevens Fishery Conservation and Management Act:

Pacific Groundfish FMP (e.g., English sole, brown rockfish, starry flounder, leopard shark etc.)
Coastal Pelagics FMP (e.g., northern anchovy, Pacific sardine)
Pacific Coast Salmon (coho salmon)

The only impact to EFH could arise from the placement of the two water intake culverts in the tidal flats adjacent to the island. However, given the small area of potential effect (e.g. the culvert pipe for each of the two intakes would temporarily effect approximately 3.1 square feet of EFH), the temporary nature of the culvert pipe and intake, the measures designed to protect fish species, the location of the intake close to the shoreline of a side channel, and the low diversion rate, USACE has determined that the project will have no effect on EFH and the NMFS has concurred with this determination.

Invertebrates

The two special-status invertebrates (FSC) that could potentially be found on the island are the Bumblebee scarab beetle and the Sandy beach tiger beetle. The former may occur as adults in the upland area of the island and the larvae inhabit burrows in sandy areas such as riparian and coastal dunes and feed on decaying leaf litter and detritus in the sand. The Sandy beach tiger beetle burrows are found on broad sandy beaches, with adults in the zone between the high-tide line and the dunes and the larvae

inhabiting burrows in the upper tidal zone. It is as adapted to habitat that is often unstable because of storm erosion. These species are unlikely to be present in densely vegetated areas that are the target of weed removal activities. Qualified field biologists will inspect the island to detect the presence of scarab beetles or tiger beetle species in May and June in any year and location where vegetation management is planned in potential beetle habitat. If any tiger beetle or scarab beetle species are detected, project biologists will provide photographs, sufficient for diagnostic identification, to a qualified entomologist to verify the identity of sensitive species. If sensitive beetles species are present, their preferred habitat areas (open sand and marginal vegetation) will be avoided. The project would have a very low short-term potential to adversely affect these species. It is likely that the project would have long-term benefits to these species.

b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations by the California Department of Fish and Game or US Fish and Wildlife.

Less than significant with mitigation. No riparian woodland or scrub habitats are found on the site. Fringing tidal marsh is found on the island and is classified as a sensitive natural community within standard California vegetation classification systems such as the Manual of California Vegetation (Sawyer *et al.* 2009) or the CDFG CNDDDB Vegetation Classification and Mapping Program (CDFG 2003), and as discussed in response to Item IV c), below. The red fescue dune grassland (dry dune slack) vegetation and fescue-Vancouver wildrye stands of the island are treated here as a phase of native coastal prairie, and are a sensitive natural community. The project will benefit this sensitive habitat by removing invasive iceplant, bird's-foot trefoil, Monterey pine, acacia, bush lupine, and French broom saplings. Fescue stands and fescue-wildrye stands treated with saltwater irrigation during the growing season may sustain temporary growth inhibition due to physiological salinity stress, or may undergo dieback. The fescue and fescue-wildrye stands are naturally subject to ephemeral saltwater flooding events during extreme high tides and winter storms, and are likely to recover within one growing season following salinity stress episodes. Impacts to the fescue and wildrye stands would be avoided by Mitigation Measure IV-8, which would be incorporated into the project.

Mitigation Measure IV-8: Impacts to fescue and wildrye will be minimized by targeted application of salt water narrowly within iceplant patches (hose application), avoiding broad overhead irrigation of large fescue patches and interspersed patches of fescue and wildrye to the greatest extent possible. If significant dieback (complete mortality, not merely senescence or dormancy) is observed following saltwater irrigation the rate of application will be reduced or suspended, and manual or mechanical methods of weed removal will be increased. If unavoidable dieback of fescue and wildrye stands occurs, they will be replanted the following winter with divisions (dormant plugs obtained from intact stands) at a minimum planting density of 1 plug per square foot, transplanted during wet, cool weather after rainfall leaches salt from the soil to less than 2 parts per thousand salinity.

c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.

Less than significant impact. The project would occur in upland areas of the island. One seasonal wetland depression occurs within the upland portion of the island, along the north central shoreline, but no weed removal activities are proposed or needed at this location, and no impacts are expected. Where non-native plant species occur in tidal wetland areas or wetland/upland ecotones, some salt-water flooding and hand removal of vegetation would occur. However, these actions would not involve any filling, removal or hydrological interruption of these habitats.

d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.

Less than significant with mitigation. The project could potentially alter movement of fish as described above—Coho, steelhead and lamprey move through the lagoon as adults, spawn in Pine Gulch Creek and perhaps other watershed streams, and smolts and juveniles move back through the Lagoon to the ocean. The Coho and steelhead smolts use the lagoon for smoltification. The lagoon also provides nursery habitat for numerous fish and invertebrates, some of commercial value. Given the temporary nature of the pumping activity, the low water diversion rate, and the design measures to prevent entrainment or impacts to salmonids, USACE, as the lead federal agency, has determined the project will have no effect on listed species of salmonids with the potential to occur in the lagoon (Coho and steelhead) or their critical habitats. Also, see Mitigation Measure IV-7 that addresses measures to avoid stranding fish in tidal channels.

The project could have moderate, short to long-term impacts on breeding herons and egrets from disturbance resulting from Vegetation Management actions (pumping and spraying sea water, movement of workers); however, implementation of Mitigation Measure IV-5 would avoid any significant impacts.

Harbor seals use the tidal flats of the lagoon, including those adjacent to Kent Island and resting and pupping/nursery areas. Seals are easily disturbed by humans on foot or in watercraft. Implementation of mitigation measure IV-6 would avoid any significant impacts. .

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

No impact. The project would not conflict with any local policies or ordinances aimed at protecting biological resources because the project would enhance island habitat. The County's native tree ordinance does not apply to Monterey Pine or Cypress.

f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

No impact. The project is not within an area covered by an adopted Habitat Conservation Plan or Natural Community Conservation Plan.

Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
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V. CULTURAL RESOURCES -- Would the project:

- | | | | |
|---|--|--|---|
| a) Cause a substantial adverse change in the significance of a historical resource as defined in '15064.5? | | | X |
| b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to '15064.5? | | | X |
| c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature? | | | X |
| d) Disturb any human remains, including those interred outside of formal cemeteries? | | | X |

Background:

As described in Section VI, Geology and Soils the island is comprised of recent (post 1906) sediments and therefore it is unlikely that any historic, archaeological, or paleontological cultural resources would exist in the upper few feet of sand on the island or adjacent tidal flats.

A cultural resources survey was conducted of various areas of Bolinas Lagoon, including Kent Island, as part of the 2002 Bolinas Lagoon Ecosystem Restoration Feasibility Study EIR/EIS (USACE and Marin County Open Space District, 2002)—the Study found no cultural resources on Kent Island but documented eleven archaeological sites in the Bolinas watershed, mostly along the mainland shoreline of the lagoon.

There is no record of any survey for submerged cultural resources within the lagoon itself or in Bolinas Bay. Within the lagoon, there may be the remains of watercraft dating to both the prehistoric and historic period, in addition to the possible remains of early habitation sites that were at one time on land. There are 18 reported shipwrecks in the vicinity of Bolinas Bay reported to the State Lands Shipwreck database. The locations of most of the wrecks are vague and some may have been salvaged (USACE and Marin County Open Space District, 2002).

Discussion of Impacts:

- a) **Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?**
- b) **Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?**

c) **Directly or indirectly destroy a unique paleontological resource or site or unique geological feature?**

No impact. As discussed in the Background section, above, there are no known historic structures, archaeological resources, or paleontological resources on the island or adjacent channel (USACE 2002). The proposed project would involve a few feet of excavation in sediments of post-1906 origin. Therefore, no historic, archaeological, or paleontological resources would be affected by the proposed Project.

d) **Disturb any human remains, including those interred outside of formal cemeteries?**

No impact. As described in the Background discussion, above, these sediments are of post-1906 origin. There are no known human remains or cemeteries on the site and, because of the proposed shallow excavation in recently deposited sand on the island, none are likely to be encountered in project construction.

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
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VI. GEOLOGY AND SOILS -- Would the project:

a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.

X

ii) Strong seismic ground shaking?

X

iii) Seismic-related ground failure, including liquefaction?

X

iv) Landslides?

X

b) Result in substantial soil erosion or the loss of topsoil?

X

c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?

X

d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?

X

e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?

X

Background:

Bolinas Lagoon was formed following the last ice age and has persisted as an intertidal lagoon for at least the past 7,000 years. During this time, the particular shape or ‘morphology’ of the lagoon has responded to earthquakes, waves, tsunamis, tides, sea level rise, and changing land use in the watershed. The large earthquakes that occur roughly every 300 years along the San Andreas Fault result in tectonic subsidence and compaction that drops the elevation of intertidal marsh and mudflats. This is followed by rapid and then decreasing rates of sediment accumulation within the Lagoon.

Geologically, the Bolinas Lagoon is mapped as being composed of and underlain by Quaternary Alluvium (Clark and Brabb, 1997); Blake *et al.* (2000); and Bruns *et al.* (2002). Near the northern end of the lagoon poorly sorted and poorly consolidated alluvial terrace gravels of Quaternary age (the Olema Formation) can be seen in the road cut. Clark and Brabb (1997) show that deposits of terrace gravels occur scattered throughout Olema Valley. Franciscan rocks occur along the eastern side of the Golden Gate Fault and are exposed extensively along Highway 1 and the coast southward toward the Marin Headlands.

Three major earthquake faults of the San Andreas Fault Zone merge together from the south in the Bolinas area: the Golden Gate, San Andreas, and San Gregorio faults, from east to west, respectively (Bruns *et al.*, 2002). Golden Gate Fault runs along the eastern shore of Bolinas Lagoon and crosses to the west of the Golden Gate before running onshore in the vicinity of Lake Merced. The rupture zone of the 1906 earthquake runs just east of the current opening of Bolinas lagoon to the Pacific Ocean, and directly under Kent Island (See Figure 12)

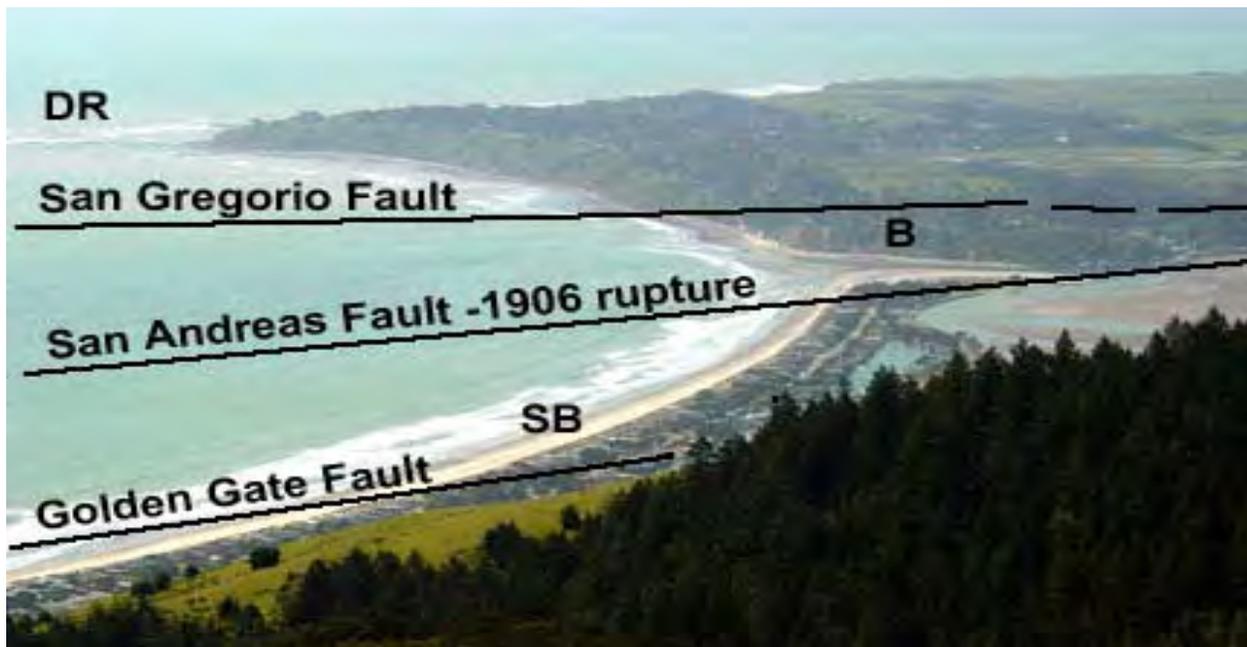


Figure 12: Locations of Fault Zones at Bolinas Lagoon (DR: Duxbury Reef, B: Bolinas, SB: Stinson Beach)¹.

¹ Source: Phillip W. Stoffer, The San Andreas Fault In The San Francisco Bay Area, California: A Geology Fieldtrip Guidebook to Selected Stops on Public Lands. US Geological Survey Open File Report 2005-1127, 2005.

To the south, these faults are submerged or covered by sediments beneath the beach and lagoon. All of these faults show signs of tectonic activity extending from late Miocene time to the present. A 2003 report by the U.S. Geologic Survey (USGS) predicts a 62% probability of an earthquake of magnitude 6.7 or greater by 2031 (USGS 2003) on the Bay Area faults.

The United States Department of Agriculture (USDA) soil survey of Marin County does not map the soils within Bolinas Lagoon, including Kent Island (<http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx>).

Discussion of Impacts:

a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.

Less than significant impact. All of Kent Island except its eastern end is within an Alquist-Priolo earthquake fault rupture hazard zone (State of California, Special Studies Zones, Bolinas Quadrangle, July 1, 1974). This map shows the 1906 earthquake fault rupture as running through the island. Although very strong seismic shaking can be expected in the project area in a major earthquake on a nearby fault, there are no structures currently on the island, nor are any proposed as part of the project, that could be potentially harmed by an earthquake. It is possible that the entire island could be substantially altered by fault-related shaking and tectonic movement. The island is completely formed by sand deposited by flood tides and the sand is the same and continuous with the surrounding tidal flats. The island is an open space preserve and human access is limited to occasional visits for recreational activities. The project would not increase the likelihood of property damage or human injury on the site, or in the surrounding areas, resulting from seismic activity.

ii) Strong seismic shaking?

Less than significant impact. See response to item VI.(i), above.

iii) Seismic-related ground failure?

Less than Significant impact. See response to item (i), above. Although ground failure could potentially occur at the island in a major earthquake, ground failure would not result in loss of property, injury, or death because the island is not and would not be used for structures or human occupancy with the project.

iv) Landslides?

No impact. See response to item VI. (i), above. The site is generally flat and low-lying, and therefore not prone to landslides.

b) Result in substantial soil erosion or the loss of topsoil?

Less than significant. The project would remove areas of existing vegetation and restore them with native vegetation. One of the goals of the project is to remove non-native plants that capture sand and stabilize the island—preventing its resilience to recover from earthquakes, storm events and accelerated sea level rise. Because it is a flood shoal island composed of littoral sand, deposition and erosion are fundamental and continual natural processes. The irrigation of non-native plants with sea water would not directly result in erosion because of the porosity of the sand substrate. Wind erosion after removal of non-native plants would be minimal because most of the bared soils would be revegetated rapidly by native species. Additionally, some erosion/re-deposition of sands is a natural process that helps to maintain the island. Therefore this impact would be less than significant.

c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?

Less than significant impact. As described above, the project site is subject to seismic hazards including liquefaction, lateral spreading, and subsidence. However, the proposed project would not involve any structures or new facilities that could be subject to damage in the event any of these ground failures occur.

d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?

No impact. No structures or infrastructure are proposed as part of the project; therefore, soils hazards, if any, would not create any substantial risks to life or property. Additionally, the proposed project does not involve any grading or earthwork that could substantially affect this hazard.

e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?

No impact. No septic tanks or waste-water disposal systems exist on the island, nor are any proposed in the proposed project.

Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
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VII. GREENHOUSE GAS

EMISSIONS – Would the project:

- | | |
|--|---|
| a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? | X |
| b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases? | X |

Background:

In 2006, California passed the California Global Warming Solutions Act of 2006, which requires the California Air Resources Board (CARB) to design and implement emission limits, regulations, and other measures, such that feasible and cost-effective statewide greenhouse gas (GHG) emissions are reduced to 1990 levels by 2020 (representing an approximate 25 percent reduction in emissions).

California now recognizes seven GHG: carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆) (California Health and Safety Code section 38505(g)), and nitrogen trifluoride (NF₃). Carbon dioxide is the reference gas for climate change because it gets the most attention and is considered the most important GHG. To account for the warming potential of different GHGs, GHG emissions are quantified and reported as CO₂ equivalents (CO₂E). The effects of GHG emission sources (i.e., individual projects) are reported in metric tons/year of CO₂E.

In June 2008, CARB published its Climate Change Draft Scoping Plan (CARB 2008a). The Climate Change Draft Scoping Plan reported that CARB met the first milestones to develop a list of early actions to begin sharply reducing GHG emissions; assembling an inventory of historic emissions; and establishing the 2020 emissions limit. After consideration of public comment and further analysis, CARB released the Climate Change Proposed Scoping Plan in October 2008 (CARB 2008b). The Proposed Scoping Plan proposed a comprehensive set of actions designed to reduce overall carbon emissions in California.

The Climate Change Proposed Scoping Plan also included recommended measures that were developed to reduce GHG emissions from key sources and activities while improving public health, promoting a cleaner environment, preserving natural resources, and ensuring that the impact of GHG reductions are equitable and do not disproportionately impact low-income and minority communities. These measures also put the State on a path to meet the long-term 2050 goal of reducing California’s GHG emissions to 80 percent below 1990 levels. These measures were presented to and approved by CARB on December 11, 2008. The measures in the Scoping Plan approved by the Board will be developed over the next two years and be in place by 2012. In June 2010, the BAAQMD adopted CEQA significance criteria for emissions of GHG’s from

project operations. To be in compliance with the proposed GHG operational threshold, a project must be in (1) compliance with an adopted County Climate Action Plan or (2) generate GHG operational emissions less than 1,100 tons/year (CO₂E). The BAAQMD's recently adopted guidelines have no thresholds for construction GHG emissions.

State law requires local agencies to analyze the environmental impact of GHG under CEQA. The Natural Resources Agency adopted the CEQA Guidelines Amendments in December 2009. Marin County adopted the Marin County Greenhouse Gas Reduction Plan October 2006 for the purpose of reducing GHG emissions. The plan identifies a target to reduce GHG emission 15-20% below 2000 levels by the year 2020 for internal government and 15% countywide and a list of measures intended to add to Marin's GHG reduction.

Discussion of Impacts:

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Less than significant. Operational emissions associated with the proposed project would be generated primarily from periodic vegetation management activities on the island: driving to the town of Bolinas by workers and operation of the small gas powered water pump. Annual CO₂E operational emissions associated with the proposed project were estimated using the CARB-approved URBEMIS 2007 (version 9.2.4) computer program based on the Project Description. Maximum Project construction GHG emissions would be less than 20 metric tons per year of CO₂E. This is far below the proposed BAAQMD proposed GHG threshold of 1,100 metric tons per year of CO₂E.

Also, the project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHG. The Project would be consistent with the Marin County Greenhouse Gas Reduction Plan.

b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

No Impact. As stated in response to item VII a) above, the project would not conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHG and no impact would occur.

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
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VIII. HAZARDS AND HAZARDOUS MATERIALS -- Would the project:

- | | | | | |
|--|--|--|---|---|
| a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials? | | | | X |
| b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment? | | | X | |
| c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school? | | | | X |
| d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment? | | | | X |
| e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area? | | | | X |
| f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area? | | | | X |
| g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan? | | | | X |
| h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands? | | | | X |

Background:

The island was formed since 1906 of naturally deposited sands and other alluvial deposits, primarily from the Pacific Ocean. No land uses have occurred on the site since its construction that may have resulted in the use, generation, or disposal of hazardous materials on or near the site. Implementation of the proposed project would not involve the use or transport of any hazardous materials, aside from small amounts of fuels for the temporary pump. A Phase I Environmental Assessment was conducted for the site by the USACE in May 2011 (USACE 2011). That assessment found no hazardous or toxic conditions on the site.

Discussion of Impacts:

- a) **Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?**

No impact. The proposed project does not include any elements that would expose people to potential health hazards through the routine transport of hazardous materials.

- b) **Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?**

Less than significant impact. The project would involve the use of small amounts of fuels for the water pump and may involve small amounts of environmentally safe herbicides. None of the materials being transported to the island for use in the project could be considered hazardous. The project would not result in any reasonably foreseeable upset or accident conditions, on either water or land.

- c) **Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?**

No impact. The Bolinas campus of the Bolinas-Stinson School is located one mile north of Bolinas. The Stinson Beach campus is located about half a mile north of Stinson Beach. As noted in response to Items (a) and (b), above, the project would not handle or emit any hazardous materials. Therefore it would have no impact on either of the campuses.

- d) **Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?**

No impact. The site is not included on the Hazardous Waste and Substances Site List (California Department of Toxic Substances Control, 2010).

- e) **For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?**

No impact. The project area is not within an airport land use plan (Marin County, Airport Land Use Plan, 1991) and the proposed project is a revegetation effort that would not result in any new structures or other features that could potentially pose an airport safety hazard.

- f) **For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?**

No impact. The project site is not located in the vicinity of a private airstrip (Countywide General Plan, 2007).

- g) **Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?**

No impact. The proposed vegetation management and restoration project would not interfere with any adopted emergency response or evacuation plans because the project would be located on an uninhabited island not easily accessible to the public where the need for emergency access is not needed. There would be no change from current conditions

- h) **Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?**

No impact. Kent Island is not located within the designated wildland-urban interface, although nearby areas in and near the town of Bolinas are mapped as within that zone. The proposed removal of vegetation, and revegetation with native species on an island separated by water from nearby urbanized areas would not create new fire hazards. Removal on small pine cypress and non-native brush would lessen the probability of fires on the island.

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
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IX. HYDROLOGY AND WATER

QUALITY -- Would the project:

- | | | | | |
|---|--|--|---|---|
| a) Violate any water quality standards or waste discharge requirements? | | | X | |
| b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)? | | | | X |
| c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site? | | | | X |
| d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site? | | | | X |
| e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff? | | | | X |
| f) Otherwise substantially degrade water quality? | | | | X |
| g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map? | | | | X |

h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	X
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	X
j) Inundation by seiche, tsunami, or mudflow?	X

Background:

The project site is located in Bolinas Lagoon, which lies within the Gulf of the Farallones National Marine Sanctuary, 15 miles northwest of San Francisco. The entire island is naturally comprised of beach sand surrounded by identical unvegetated sand in the intertidal zone—and, in fact, one of the goals of the project is to increase natural sand movement and natural erosional process inherent in flood shoal islands with native plant communities.

The center of the island rises to above the line of tidal action, however, but the presence of lines of dried marine vegetation and salt tolerant vegetation indicate that certain areas of the island are occasionally subject to tidal inundation and storm overwash. The presence of a grove of trees, primarily Monterey Pines, on the island, indicates that a perched, fresh groundwater table exists in certain areas of the island. Saline groundwater saturation likely underlies the perched freshwater on the island.

Bolinas Lagoon is home to several sensitive aquatic resources including tidal marsh and mudflats, which are sensitive to changes in water quality. The island was historically an active sediment and dune area, and was formed by sands and sediments transported by currents, wind, and wave action. The island and surrounding tidal flats are subject to ongoing sediment disposition and erosion, and are part of the natural system in the lagoon.

The San Francisco Bay Regional Water Quality Control Board (RWQCB) has identified the following Beneficial Uses for Bolinas Lagoon in the current Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) (RWQCB 2007). The Basin Plan sets narrative and numeric water quality objectives for a wide range of physical, chemical, and biological properties to protect the following beneficial uses in Bolinas Lagoon:

- Commercial fishing
- Marine habitat
- Fish migration
- Navigation
- Preservation of rare and endangered species
- Water contact recreation
- Non-contact water recreation
- Shellfish harvesting
- Wildlife habitat
- Fish spawning

Discussion of Impacts:

a) Violate any water quality standards or waste discharge requirements?

Less than significant. It is possible that vegetation management and restoration activities on the island could cause short-term, temporary impacts to water quality. Non-native vegetation would be irrigated with lagoon water pumped directly adjacent to the island. Salt-water inundation is naturally recurrent on large parts of the island--the distribution of rack on the island indicates that during extreme-high tide and storm events the island is periodically over washed. Vegetation would be manipulated and removed with hand tools in order to minimize disturbance to native vegetation. The project may also include wick or brush application of environmentally safe herbicides on cut stumps of trees and shrubs that have the potential to re-sprout, such as acacia. If the project includes the use of herbicides, the District will use it consistent with the County's Integrated Pest Management Ordinance or any other applicable state or federal requirement. Therefore, if herbicides are used, it will not violate any water quality standard or waste discharge requirement.

Hand digging for the pump intake culvert would occur at low tide when the intake site is not inundated, which would result in no impacts from suspended sediment on water quality. The project could introduce small quantities of petroleum contaminants associated with the pump (oil, grease, fuel, etc.) onto the island and, if spilled, they could reach the waters of the Lagoon. The pump would be housed in a containment structure designed to prevent any spills of fuels or lubricants from reaching the ground surface. As a additional measure, the containment structure would be placed on a larger plastic lined area surrounded by a small berm. Fuel would be transported to (not stored on) the island (5 gallon or less in an EPA-approved container).

Although the project includes BMPs that reduce the probability of spills to a very low level, accidental spills may still occur. These BMPs include the placement of fuel spill clean-up kit (oil only absorbent pads for use on land or water, shovel, 5 gallon plastic cans, absorbent kitty-litter, plastic garbage bags) at the pump site and while transporting fuel that would provide for the contingency for a small gasoline spill.

b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?

No impact. The proposed project would pump small quantities of salt water for irrigation of the island for several-week periods over a two to three years from a shallow intake to be located adjacent to the island that is constantly replenished by the Pacific Ocean. It would not include any features that would interfere with local groundwater recharge or supply.

c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on- or off-site?

No impact. The proposed project would not involve grading, excavation, and substrate material placement on the island that could result in altered drainage patterns.

- d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner, which would result in flooding on- or off-site?**

No impact. There would be no increase in surface runoff from the site as a result of the project that could lead to flooding of adjacent areas. The island is comprised of porous sand that is the same as the contiguous tidal flat. Any runoff from the island enters Bolinas Lagoon, the hydrology of which is primarily controlled by the tidal inlet just south of the island and winter runoff, primarily from the Pine Gulch Creek watershed. The project would increase the long-term viability of the island, which would help maintain historic hydrologic functions of the Lagoon.

- e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?**

No impact. Stormwater systems do not exist on the island and the proposed project would not add stormwater systems. The project involves enhancement of natural habitats and would not be a source of polluted runoff.

- f) Otherwise substantially degrade water quality?**

No impact. All potential water quality degradations are covered in the above responses.

- g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?**

No impact. The entire island is mapped as within a 100-year Flood Hazard Zone (Marin County Local Coastal Plan, Map 18, Stinson Beach FEMA DFIRM Flood Hazard Zones, December 5, 2011). No housing is proposed as part of the project, therefore there would be no impact to housing.

- h) Place within a 100-year flood hazard area structures, which would impede or redirect flood flows?**

No impact. The project does not involve the construction of any new structures. See response to item g, above.

- i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?**

No impact. No people, structures, levees, or dams occur on the island nor proposed for the island. The project would not change flooding conditions on the island or in its vicinity. The island is not within an area subject to flooding in the event of failure of a levee or dam. The project would not raise water levels or increase exposure to wind wave energy on nearby properties.

- j) Inundation by seiche, tsunami, or mudflow?**

No impact. The island is in an area that could be inundated by seiche or tsunami waves. The project would have no effect on this condition, nor would it place any structures in a seiche or tsunami zone.

Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
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X. LAND USE AND PLANNING - Would the project:

- | | |
|---|---|
| a) Physically divide an established community? | X |
| b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect? | X |
| c) Conflict with any applicable habitat conservation plan or natural community conservation plan? | X |

Background:

The project site is undeveloped open space designated as C-OS, Coastal Open Space in the County Local Coastal Plan, which is the overarching land use plan for the area (Marin County Local Coastal Plan, 1980). Most of Kent Island is zoned C-OA (Coastal, Open Area) in the Local Coastal Plan, however a small area at the southern edge of the island is zoned C-ARP-10, Coastal, Agricultural, Residential Planned (1 unit per 10 acres) Marin County Local Coastal Plan, Map 29c, Bolinas Zoning, January 4, 2012. Since Kent Island is in the Coastal Commission’s retained jurisdiction and any coastal permit would rely on the Coastal Act, rather than the LCP for approval.

Kent Island is undeveloped open space and is separated from nearby urbanized areas of Bolinas and Stinson Beach by tidal channels and the waters of Bolinas Lagoon.

Bolinas Lagoon below mean higher high water is under the jurisdiction of the Gulf of the Farallones National Marine Sanctuary (GFNMS), which was established to preserve and protect the area’s unique and fragile ecological community. Certain activities within the Sanctuary that may disturb sensitive protected species require permits from the Sanctuary Director (CFR Part 922, Subpart H). A permit from the GFNMS is required for the placement of the water intakes in the tidal flats of the lagoon.

Discussion of Impacts:

a) Physically divide an established community?

No impact. The proposed restoration project would be located on an uninhabited island and would not change the island’s character or land use. Therefore it would not physically divide an

established community.

- b) **Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?**

No impact. The Marin County Local Coastal Plan (LCP) was approved in 1980 (Marin County, 1980). As noted above, the site is designated as Coastal Open Space in the Local Coastal Plan. The project would comply with this designation. The LCP also has policies for the protection of Bolinas Lagoon that limit land uses in the lagoon, limit dredging and filling, protect water quality, and protect wetlands.

Permitted uses of the Resource Management Area under the 1980 LCP include fishing, bird watching, photography, nature study, and other similar scientific and recreational uses. The project would be consistent with these uses. The 1980 LCP also has policies for dune and sandy beach protection that specifically address protection of the rare plants that inhabit these sandy areas. The LCP (Policy 28) also promotes removal of invasive species in the Coastal Zone as a condition of any development permit. The project would be consistent with these policies and help to implement the goals of protecting and enhancing these areas. The LCP’s Habitat Protection policies for the Bolinas area specifically identify the trees on Kent Island that provide roosting habitat for special-status birds as an important habitat to be protected. The project would protect these trees. Specific 1980 LCP policies applicable to this type of project in Bolinas Lagoon are summarized in Table 4, below, along with an assessment of the project’s compliance. As can be seen in the table, the proposed project would fully comply with and help to implement relevant general Plan goals and policies.

Marin County is currently in the process of updating the 1980 LCP. The 2012 update has been approved by the County Planning Commission and is currently undergoing review by the Board of Supervisors.

Table 4. Applicable Marin County Local Coastal Plan and Countywide Plan Land Use Policies

LCP Policy Compliance	
POLICY	PROJECT COMPLIANCE
<p>Policy 12. A single, coordinate, resource management plan to guide the future use and activities in and around Bolinas Lagoon shall be developed with the involvement of the various public agencies that have specific legislative and regulatory responsibilities over different activities in and around the Lagoon.</p>	<p>The County prepared the Bolinas Lagoon Resource Management Plan in 1981 to comply with the LCP requirement. The 1996 update of that plan includes the removal of non-native plants from Kent Island. The Bolinas Lagoon Ecosystem Restoration Project Recommendations for Restoration and Management (August 2008) prepared by a Working Group of the Sanctuary Advisory Council and made up of the Marin County Open Space District, Gulf of the Farallones National Marine Sanctuary, USACE, Audubon Canyon</p>

	Ranch, other agencies personnel, scientists, environmental groups and community members, is an implementation of the 1996 update. This Project is an action included in the Bolinas Lagoon Ecosystem Restoration Project:
Policy 18. To the maximum extent feasible a buffer strip, a minimum of 100 feet in width, shall be maintained in natural conditions along the periphery of all wetlands as delineated by the California Department of Fish and Game and in accordance with Section 30121 of the Coastal Act and with criteria developed by the US Fish and Wildlife Service. No uses other than those dependent on the resources shall be allowed within the buffer strip.	The proposed project is a restoration project that is dependent on, and intended to enhance, the wetland resources.
Countywide Plan Policy Compliance	
BIO-1.1 Protect Wetlands, Habitat for Special-Status Species, Sensitive Natural Communities, and Important Wildlife Nursery Areas and Movement Corridors. Protect sensitive biological resources, wetlands, migratory species of the Pacific flyway, and wildlife movement corridors through careful environmental review of proposed development applications, including consideration of cumulative impacts, participation in comprehensive habitat management programs with other local and resource agencies, and continued acquisition and management of open space lands that provide for permanent protection of important natural habitats.	The project would protect and enhance habitat for sensitive bird species on the island. It also would create additional wetland and marine mammal habitat.
BIO-1.2 Acquire Habitat. Continue to acquire areas containing sensitive resources for use as permanent open space, and encourage and support public and private partnerships formed to acquire and manage important natural habitat areas, such as baylands, wetlands, coastal shorelines, wildlife corridors, and other lands linking permanently protected open space lands.	The project would be a public/private partnership between Marin County and the Audubon Society to manage and enhance sensitive island habitat.
BIO-1.3 Protect Woodlands, Forests, and Tree Resources. Protect large native trees, trees with historical importance; oak woodlands; healthy and safe eucalyptus groves that support colonies of monarch butterflies, colonial nesting birds, or	The project would not remove of the stand of mature trees on the island.

<p>known raptor sites; and forest habitats. Prevent the untimely removal of trees through implementation of standards in the Development Code and the Native Tree Preservation and Protection Ordinance. Encourage other local agencies to adopt tree preservation ordinances to protect native trees and woodlands, regardless of whether they are located in urban or undeveloped areas.</p>	
<p>BIO-1.5 Promote Use of Native Plant Species. Encourage use of a variety of native or compatible nonnative, non-invasive plant species indigenous to the site vicinity as part of project landscaping to improve wildlife habitat values.</p>	<p>The proposed revegetation plan would use native, non-invasive species designed to improve habitat values.</p>
<p>BIO-1.6 Control Spread of Invasive Exotic Plants. Prohibit use of invasive species in required landscaping as part of the discretionary review of proposed development. Work with landowners, landscapers, the Marin County Open Space District, nurseries, and the multi-agency Weed Management Area to remove and prevent the spread of highly invasive and noxious weeds. Invasive plants are those plants listed in the State’s Noxious Weed List, the California Invasive Plant Council’s list of “Exotic Pest Plants of Greatest Ecological Concern in California,” and other priority species identified by the agricultural commissioner and California Department of Agriculture.</p>	<p>One of the project’s primary goals is to remove invasive, non-native, weedy species and their effective seed banks from the island. The project would replace those species with native species.</p>
<p>BIO-1.7 Remove Invasive Exotic Plants. Require the removal of invasive exotic species, to the extent feasible, when considering applicable measures in discretionary permit approvals for development projects unrelated to agriculture, and include monitoring to prevent re-establishment in managed areas.</p>	<p>As noted above, the project would remove invasive, non-native species from the site and replace them with natives. Ongoing monitoring and management are included in the project plans to prevent re-establishment of invasive species.</p>
<p>BIO-1.8 Restrict Use of Herbicides, Insecticides, and Similar Materials. Encourage the use of integrated pest management and organic practices to manage pests with the least possible hazard to the environment. Restrict the use of insecticides, herbicides, or any toxic chemical substance in sensitive habitats, except when an emergency has been declared; the habitat itself is threatened; a substantial risk to public health and safety exists, including maintenance for flood control; or such use is authorized pursuant to a permit issued by the agricultural commissioner. Encourage nontoxic</p>	<p>The primary methods of removing invasive plants is soil salinization (by irrigation with lagoon water) or burial of existing non-native seed banks. However, the project may include minimal amounts of herbicides, if other treatment methods fail to prevent re-sprouting of some invasive plants, such as acacia.</p>

<p>strategies for pest control, such as habitat management using physical and biological controls, as an alternative to chemical treatment, and allow use of toxic chemical substances only after other approaches have been tried and determined unsuccessful. Continue to implement the Integrated Pest Management ordinance for county-related operations.</p>	
<p>BIO-2.1 Include Resource Preservation in Environmental Review. Require environmental review pursuant to CEQA of development applications to assess the impact of proposed development on native species and habitat diversity, particularly special-status species, sensitive natural communities, wetlands, and important wildlife nursery areas and movement corridors. Require adequate mitigation measures for ensuring the protection of any sensitive resources and achieving “no net loss” of sensitive habitat acreage, values, and function.</p>	<p>This IS/EA contains an extensive review of the impact of the proposed project on sensitive species and habitats.</p>
<p>BIO-2.3 Preserve Ecotones. Condition or modify development permits to ensure that ecotones, or natural transitions between habitat types, are preserved and enhanced because of their importance to wildlife. Ecotones of particular concern include those along the margins of riparian corridors, baylands and marshlands, vernal pools, and woodlands and forests where they transition to grasslands and other habitat types.</p>	<p>The project is designed to improve transitions between aquatic, wetland, and terrestrial habitats. Specific design elements include beach, tidal marsh, seasonal wetland, and transitional grassland enhancements.</p>
<p>BIO-2.4 Protect Wildlife Nursery Areas and Movement Corridors. Ensure that important corridors for wildlife movement and dispersal are protected as a condition of discretionary permits, including consideration of cumulative impacts. Features of particular importance to wildlife for movement may include riparian corridors, shorelines of the coast and bay, and ridgelines. Linkages and corridors shall be provided that connect sensitive habitat areas such as woodlands, forests, wetlands, and understory species and associated wildlife, and providing for sustainable regeneration</p>	<p>The project is designed to enhance a variety of habitats for native species on an island designated as open space. The project, by its nature, protects wildlife nursery areas and movement corridors.</p>
<p>BIO-2.5 Restrict Disturbance in Sensitive Habitat During Nesting Season. Limit construction and other sources of potential disturbance in sensitive riparian corridors,</p>	<p>As described in Section IV of this checklist, project construction has been timed to avoid sensitive nesting periods.</p>

<p>wetlands, and baylands to protect bird-nesting activities. Disturbance should generally be set back from sensitive habitat during the nesting season from March 1 through August 1 to protect bird nesting, rearing, and fledging activities. Preconstruction surveys should be conducted by a qualified professional where development is proposed in sensitive habitat areas during the nesting season, and appropriate restrictions should be defined to protect nests in active use and ensure that any young have fledged before construction proceeds.</p>	
<p>BIO-2.8 Coordinate with Trustee Agencies. Consult with trustee agencies (the California Department of Fish and Game, U.S. Fish and Wildlife Service, National Oceanic and Atmospheric Administration Fisheries, U.S. Army Corps of Engineers, Environmental Protection Agency, Regional Water Quality Control Board, and Bay Conservation and Development Commission) during environmental review when special-status species, sensitive natural communities, or wetlands may be adversely affected.</p>	<p>The project would be developed in close coordination with all of the applicable resource agencies. The CEQA and NEPA documents would be provided to all applicable resource agencies for review. In addition, permits would be obtained from the various resources agencies.</p>
<p>BIO-2.9 Promote Early Consultation with Other Agencies. Require applicants to consult with all agencies with review authority for projects in areas supporting wetlands and special-status species at the outset of project planning.</p>	<p>See response to Policy BIO-2.8, above.</p>
<p>BIO-3.1 Protect Wetlands. Require development to avoid wetland areas so that the existing wetlands and upland buffers are preserved and opportunities for enhancement are retained (areas within setbacks may contain significant resource values similar to those within wetlands and also provide a transitional protection zone). Establish a Wetland Conservation Area (WCA) for jurisdictional wetlands to be retained, which includes the protected wetland and associated buffer area. Development shall be set back a minimum distance to protect the wetland and provide an upland buffer. Larger setback standards may apply to wetlands supporting special-status species or associated with riparian systems and baylands under tidal influence, given the importance of protecting the larger ecosystems for these habitat types as called for under Stream Conservation and Baylands</p>	<p>The island is designated as open space and is a dedicated wildlife preserve. There are currently no threats of development on the Island, and the surrounding lagoon serves as a natural buffer.</p>

<p>Conservation policies defined in Policy BIO-4.1 and BIO-5.1, respectively. Regardless of parcel size, a site assessment is required either where incursion into a WCA is proposed or where full compliance with all WCA criteria would not be met.</p>	
<p>BIO-5.3 Leave Tidelands in Their Natural State. Require that all tidelands be left in their natural state to respect their biological importance to the estuarine ecosystem. Any modifications should be limited to habitat restoration or enhancement plans approved by regulatory agencies.</p>	<p>The proposed project modifications to tidelands would be limited to habitat restoration and enhancement to be approved by regulatory agencies.</p>
<p>BIO-5.4 Restore Marshlands. Enhance wildlife and aquatic habitat value of diked bay marshlands, and encourage land uses that provide or protect wetland or wildlife habitat and do not require diking, filling, or dredging.</p>	<p>The project is not located on diked marshlands. There would be no diking or filling.</p>
<p>BIO-5.7 Limit Access to Wetlands. Design public access to avoid or minimize disturbance to wetlands, necessary buffer areas, and associated important wildlife habitat while facilitating public use, enjoyment, and appreciation of bayfront lands.</p>	<p>The proposed project would continue the controls currently in existence on the island to protect wildlife habitat while facilitating public appreciation of this sensitive site.</p>
<p>BIO-5.8 Control Shoreline Modification. Ensure that any modifications to the shoreline do not result in a loss of biodiversity or opportunities for wildlife movement. Possible modifications may include construction of revetments, sea walls, and groins, as permitted by State and federal agencies.</p>	<p>No impediments to wildlife movement would be constructed. All improvements would be fully permitted by state and federal agencies.</p>
<p>OS-1.1 Enhance Open Space Stewardship. Promote collaborative resource management among land management agencies. Monitor resource quality. Engage the public in the stewardship of open space resources.</p>	<p>The proposed project is a collaborative effort between the Marin County Open Space District (District), Audubon Canyon Ranch and US Army Corps of Engineers. The District is the primary landowner and would continue to clear the island of debris and trash. The District would also engage the public in stewardship efforts focused on the newly established native habitats.</p>
<p>OS-1.2 Protect Open Space for Future Generations. Ensure that protected lands remain protected in perpetuity, and that adequate funding is available to maintain it for the benefit of residents, visitors, wildlife, and the environment.</p>	<p>The island is protected in perpetuity. The project includes an adaptive management plan to assure long-term maintenance of habitat and other environmental attributes.</p>

c) **Conflict with any applicable habitat conservation plan or natural community conservation plan?**

No impact. There are no Habitat Conservation Plans or Natural Community Conservation Plans that apply to Kent Island or the Bolinas Lagoon.

Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
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XI. MINERAL RESOURCES -- Would the project:

- | | |
|---|---|
| a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state? | X |
| b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan? | X |

Background:

Kent Island was created naturally from ocean sand and does not contain any economically valuable mineral resources.

Discussion of Impacts:

- a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?**

No impact. No mineral resources that would be of value to the region and the residents of the state are known to occur within the project area (Countywide General Plan, 2007).

- b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?**

No impact. No locally important mineral resources recovery area is designated for the site on in the Countywide General Plan (2007).

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
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XII. NOISE -- Would the project result in:

- | | | | | |
|---|--|---|---|---|
| a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies? | | X | | |
| b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels? | | | X | |
| c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project? | | | | X |
| d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project? | | X | | |
| e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels? | | | | X |
| f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels? | | | | X |

Background:

Introduction to Noise Concepts, Terms, and Descriptors

Table 5 identifies decibel levels for common sounds heard in the environment.

Table 5: Typical Noise Levels		
Noise Level decibels (dBA)	Outdoor Activity	Indoor Activity
90+	Gas lawn mower at 3 feet, jet flyover at 1,000 feet	Rock Band
80–90	Diesel truck at 50 feet	Loud television at 3 feet
70–80	Gas lawn mower at 100 feet, noisy urban area	Garbage disposal at 3 feet, vacuum cleaner at 10 feet
60–70	Commercial area	Normal speech at 3 feet
40–60	Quiet urban daytime, traffic at 300 feet	Large business office, dishwasher next room
20–40	Quiet rural, suburban nighttime	Concert hall (background), library, bedroom at night
10–20		Broadcast / recording studio
0	Lowest threshold of human hearing	Lowest threshold of human hearing

Source: (modified from Caltrans Technical Noise Supplement, 1998)

The A-weighted decibel scale (dBA)² is cited in most noise criteria. The most commonly used noise descriptors are the equivalent sound level over a given time period (Leq)³; average day-night 24-hour average sound level (Ldn)⁴; and community noise equivalent level (CNEL)⁵.

Noise levels that are generally considered acceptable or unacceptable can characterize various environments. Lower levels are expected in rural or suburban areas than what would be expected for commercial or industrial zones.

Marin County Standards

The applicable noise standards governing the project site are set forth in the County's noise ordinance.

The County of Marin has an adopted noise regulation in the County's Code of Ordinances, Title 6 Public Peace, Safety, and Morals, Chapter 6.70 Loud and Unnecessary Noises (Marin County

² A decibel (dB) is a unit of sound energy intensity. Sound waves, traveling outward from a source, exert a sound pressure level (commonly called "sound level") measured in dB. An A-weighted decibel (dBA) is a decibel corrected for the variation in frequency response to the typical human ear at commonly encountered noise levels.

³ The Equivalent Sound Level (Leq) is a single value of a constant sound level for the same measurement period duration, which has sound energy equal to the time-varying sound energy in the measurement period.

⁴ Ldn is the day-night average sound level that is equal to the 24-hour A-weighted equivalent sound level with a ten-decibel penalty applied to night between 10:00 p.m. and 7:00 a.m.

⁵ CNEL is the average A-weighted noise level during a 24-hour day, obtained by addition of five decibels in the evening from 7:00 to 10:00 p.m., and an addition of a ten-decibel penalty in the night between 10:00 p.m. and 7:00 a.m.

2010). Per 6.70.030 – Enumerated Noises (5) Construction Activities and Related Noise, hours for construction activities shall be limited to Monday through Friday, 7 a.m. to 6 p.m. and Saturday, 9 a.m. to 5 p.m., and prohibited on Sundays and holidays. Loud noise generating construction related equipment (backhoes, generators, jackhammers) can be maintained, operated, or serviced at a construction site for permits administered by the community development agency from 8 a.m. to 5 p.m. Monday through Friday only. Special exceptions to these limitations may occur for construction projects of city, county, state, other public agency, or other public utility.

Existing Conditions

Noise sensitive receptors (land uses associated with indoor and/or outdoor activities that may be subject to stress and/or significant interference from noise) typically include residential dwellings, hotels, motels, hospitals, nursing homes, educational facilities, and libraries. The nearest sensitive receptors to the proposed pumping location would be residential areas in Bolinas. The primary water intake and pump location would be approximately 780 feet (235 meters) from the nearest residence. The secondary intake and pump location would be over 1100 feet (335 meters) from the nearest residence.

The existing ambient noise levels at the project site are low because the island is not developed and noise levels from nearby land uses in Bolinas and Seadrift are generally low. Motor boats in the lagoon also result in occasional audible noise levels.

Discussion of Impacts:

- a) **Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?**

Impact of Initial Vegetation Management Activities

Less than significant with mitigation. Project irrigation is anticipated to span about a 15-24 hours per acre and in total could run for up to 60 weekdays or 12 weeks per year for two years. Activities associated with the project would result in a temporary increase in ambient noise levels in the vicinity of the site. The increase in noise could result in temporary annoyance to nearby residents. However, proposed construction activities would occur only during the hours permitted in accordance with the County's Noise Regulations and the pump would be shielded in a noise-reducing enclosure.

At the closest location, the irrigation pump could be within 780 feet (235 meters) of the nearest home west of the proposed project. In order to reduce or mitigate short-term noise impacts to nearby noise sensitive receptors, the construction should be restricted to weekdays 8 a.m. to 5 p.m. Monday through Friday and should incorporate the additional mitigation measures identified below. Implementation of Mitigation Measure XII-1 would avoid significant construction noise impacts.

Impact of Long-Term Management

Less than significant. No substantial noise-generating activities would be expected after the irrigation period. Activities would be limited to minimal amount of monitoring and maintenance. The project would have a less-than-significant impact on long-term noise.

Mitigation Measure XII-1:

- Salt-water irrigation and pumping shall be limited from 8 a.m. to 5 p.m. Monday through Friday.
- The pump shall include manufacturer recommended mufflers or the equivalent.
- The project shall use the noise enclosure identified in the Project Description. If noise levels are still unacceptable (defined as complaints received from nearby residents), an additional noise deflector or absorption barrier shall be used to block the line of site from the pump motor noise enclosure to the nearest residences.

b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

Less than significant. Gasoline-powered pumps (especially small engines such as those identified for this project) would not cause high vibration levels. Use of the proposed pump would not result in perceptible vibrations at the nearest residence, which is across the channel in Bolinas. Therefore, this would be a less-than-significant impact.

c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

No impact. See discussion under a) above. The project would have no impact on long-term noise.

d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

Less than significant with mitigation. As discussed above in a), the project would result in an incremental increase in temporary or periodic noise levels in the area due to the short-term vegetation management activities. Implementation of Mitigation Measure XII-1 would avoid significant noise impacts.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

No impact. The project site is not located within two miles of a public airport land use plan area. No impact would occur.

f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

No impact. The project site is not located within the vicinity of a private airstrip. The project would not increase onsite exposure to aircraft noise and thus, no impact would occur.

Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
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XIII. POPULATION AND HOUSING --

Would the project:

- | | |
|---|---|
| a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)? | X |
| b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere? | X |
| c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere? | X |

Background:

Kent Island is undeveloped and contains no residences or other habitable structures.

Discussion of Impacts:

- a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?**

No impact. As noted in the Project Description, the project would not involve construction of any new homes, or any growth inducement.

- b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?**

No impact. No housing exists on the island and none would be displaced with Project implementation.

- c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?**

No impact. See Item (b), above. The project would not displace any people or housing.

Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
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XIV. PUBLIC SERVICES

a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

Fire protection?			X
Police protection?			X
Schools?			X
Parks?			X
Other public facilities?			X
Vector Control Services		X	

Background:

The site currently requires minimal public services. The Bolinas Fire Protection District and the Marin County Sheriff’s Department provide fire and police services to the site, respectively. The Marin-Sonoma Mosquito Abatement District is responsible for vector control on the island.

Discussion of Impacts:

- a) **Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the following public services:**
- i) **Fire protection**
 - ii) **Police protection**
 - iii) **Schools**
 - iv) **Parks**
 - v) **Other public services – Vector Control**

Fire and Police Protection, Schools, Parks

No impact. The proposed project would reduce the weedy vegetation and remove some trees from the site and, therefore, reduce fire hazards compared with existing conditions. The proposed project would have no impact on the need for police services. The project site would remain under the management of the District and Audubon Canyon Ranch. The project does not include new housing or commercial uses and would not result in demand for schools or other public services.

Other Public Services – Vector Control

Less than significant impact. The proposed project would not increase the spatial extent of tidal or freshwater wetlands on the site. Therefore it is unlikely to increase mosquito production on the island in the long term. Saline irrigation of the island would mostly seep quickly into the sandy soils and therefore minimally affect mosquito production. The Marin Sonoma Mosquito Abatement District would continue to be responsible for any monitoring and treatment activities on the island.

Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
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XV. RECREATION --

- | | |
|---|---|
| <p>a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?</p> | X |
| <p>b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?</p> | X |

Background:

Kent Island is owned by the Marin County and Audubon Canyon Ranch and receives periodic general maintenance (debris and trash removal). There is currently limited public use of the island. The project site would continue to be stewarded by the District and Audubon Canyon Ranch as bird and wildlife habitat.

Discussion of Impacts:

- a) **Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?**

No impact. The proposed vegetation management and restoration plan would have no adverse effect on existing parks. Access and use would not change from current conditions.

- b) **Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?**

No impact. See response to Item a), above. The project includes no recreational facilities and is not designed to alter public use of the island.

XVI. TRANSPORTATION/TRAFFIC --

Would the project:

- | | |
|--|---|
| a) Exceed the capacity of the existing circulation system, based on applicable measures of effectiveness (as designated in a general plan policy, ordinance, etc.), taking into account all relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit? | X |
| b) Conflict with an applicable congestion management program, including but not limited to, level of service standards and travel demand measures and other standards established by the county congestion management agency for designated roads or highways? | X |
| c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks? | X |
| d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)? | X |
| e) Result in inadequate emergency access? | X |
| g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)? | X |

Background:

Access to the project area by land is via Horseshoe Hill Road from State Route 1. Access to Kent Island is available by boats and, at low tide, by foot. There is no roadway access to the island. There are no airports or rail lines near the site.

Discussion of Impacts:

- a) **Exceed the capacity of the existing circulation system, based on applicable measures of effectiveness (as designated in a general plan policy, ordinance, etc.), taking into account all relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?**

No impact. The proposed project would generate minimal amounts of traffic (fewer than 5 trips per day) during vegetation removal and restoration activities. Workers would arrive and park on Wharf Road, from which they would be transported by boat to the site. Therefore would have no effect on circulation, roadway capacities, intersection operations, bicycle paths, or mass transit.

- b) Conflict with an applicable congestion management program, including but not limited to, level of service standards and travel demand measures and other standards established by the county congestion management agency for designated roads or highways?**

No impact. See response to Item a), above.

- c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?**

No impact. The proposed project would not result in increased air travel or otherwise affect air travel.

- d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?**

No impact. No new roads or new/changes land uses are proposed as part of this project.

- e) Result in inadequate emergency access?**

No impact. The proposed project would not affect access along local streets.

- f) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?**

No impact. The proposed project would not interfere with the provision of alternative transportation services, and would therefore not conflict with any associated alternative transportation policies.

Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
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XVII. UTILITIES AND SERVICE

SYSTEMS - Would the project:

- | | | | |
|---|--|--|---|
| a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board? | | | X |
| b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects? | | | X |
| c) Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects? | | | X |
| d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed? | | | X |
| e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments? | | | X |
| f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs? | | | X |
| g) Comply with federal, state, and local statutes and regulations related to solid waste? | | | X |

Background:

Kent Island is undeveloped and has no public services or utilities.

Discussion of Impacts:

a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

No impact. The proposed project is a habitat enhancement and shoreline protection project, and, as such, would result in no demand for wastewater treatment.

b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

No impact. The proposed project is a habitat restoration project, and, as such, would result in no demand for, or construction of, water or wastewater treatment facilities. Saline irrigation would be from salt water pumped from the surrounding lagoon waters. No freshwater irrigation would occur.

c) Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

No impact. No new stormwater runoff would be generated by the project and no stormwater facilities exist or are proposed.

d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?

No impact. The project does not include irrigation of plants with freshwater.

e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

No impact. See response to Item a), above.

f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?

No impact. No solid waste would be generated other than vegetation that would be disposed of on-site.

g) Comply with federal, state, and local statutes and regulations related to solid waste?

No impact. All solid wastes would be either buried/composted onsite (for vegetation removed) or disposed of at approved facilities.

Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
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XVIII. MANDATORY FINDINGS OF SIGNIFICANCE --

a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?

X

b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?

X

c) Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?

X

Discussion of Impacts:

a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?

Less than significant impact with mitigation. As noted throughout the Checklist above, the project area contains some sensitive biological resources that could be affected by the project. All potentially significant impacts to biological resources would be avoided with the implementation of mitigation measures identified in this Initial Study and measures already incorporated into the project. No potential impacts to cultural or historic resources were identified in this document.

b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are

considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?

Less than significant impact. The County is currently considering adoption of its Local Coastal Plan Amendment, which includes policies and land use designations for the Bolinas Lagoon area. Adoption is proposed in Fall of 2012 (Marin County Community Development Agency, website). No specific projects are proposed in that plan that may overlap with implementation of the proposed project.

The project is located within the Bolinas Lagoon. A review of the Marin County Community Development Agency's current projects list shows no pending applications for development in the immediate Project area (Marin County Community Development Agency, website). A power-line undergrounding project is proposed for Horseshoe Hill Road, however impacts of that project would not overlap with those of the proposed project.

Two restoration-related projects are under consideration in the lagoon - transitional habitat restoration along Dipsea Road and treatment of invasive *Spartina*. The transitional habitat project is in the conceptual phase and there has been no design, planning, or funding. The *Spartina* treatment is proposed for initiation in fall 2012, however the County has not yet done any permitting or CEQA work (James Raives, MCOSD, email May 3, 2012).

Based on the foregoing, the cumulative impact of the proposed Kent Island vegetation management and restoration project and past, present, and likely future projects would be less than significant.

c) Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?

No impact. As noted above in the Environmental Review Checklist, the proposed project would not have any unavoidable significant environmental effects. All mitigation measures identified in the Initial Study are incorporated into the project and will be implemented by the applicant. A Mitigation Monitoring and Reporting Plan will be developed prior to Project implementations.

4.0 OTHER NEPA CONSIDERATIONS

4.1 Additional Environmental Considerations

Socioeconomics

Implementation of the project would generate a minor amount of economic activity in the project area. However, because implementation would be over a relatively short period (a few months per year over several years) and because some of the labor would be volunteers, this impact would be minimal. The project would have no long-term social or economic effects.

Environmental Justice

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority and Low-Income Populations, requires that a federal agency analyze the effects of a proposed action to ensure that it does not disproportionately affect low income or minority populations. Incorporation of environmental justice principles throughout the planning and decision-making processes implements the principles of NEPA, Title VI of the Civil Rights Act, and the Uniform Relocation Act. The project's potential effects on environmental justice will be minimal because it would have no significant unmitigable impacts and would be a small, short-term project not involving any minority or low-income populations.

4.2 Summary of Environmental Compliance

Detailed compliance information, supporting reports, and environmental compliance history for this project can be found in the preceding Environmental Checklist discussion. This is summarized in Table 6, below.

Table 6: Summary of Environmental Compliance

Statute	Status of Compliance
<p>National Environmental Policy Act (NEPA) of 1969 (42 USC § 4321 <i>et seq</i>)</p> <p>Council on Environmental Quality (CEQ) Regulations for Implementing the Procedural Provisions of the NEPA (40 CFR §§ 1500-1508) dated July 1986</p> <p>U.S. Army Corps of Engineers (USACE) Planning Regulations (Engineering Regulation (ER) 200-2-2)</p> <p>California Environmental Quality Act of 1970 (California P.R.C. §§ 21000-21177) as amended</p> <p>CEQA Guidelines (Title 14 C.C.R. §§ 15000-15387) as amended</p>	<p>This EA has been prepared in compliance with NEPA, CEQ, and USACE Planning regulations. All agency and public comments will be considered and evaluated. If appropriate, a Finding of No Significant Impact (FONSI) will be signed with a conclusion of no significant impacts from this proposed action. A Draft FONSI is provided in Appendix C</p> <p>This IS document has been prepared in compliance with CEQA regulations. All agency and public comments will be considered and evaluated. If appropriate, a Negative Declaration will be signed with a conclusion of no significant impacts from this proposed action.</p>
<p>Clean Air Act, as amended (42 USC § 7401 <i>et seq</i>)</p>	<p>The proposed action is not expected to exceed <i>de minimus</i> thresholds for pollutant emissions or adversely impact air quality. Air emissions associated with the proposed action will be temporary.</p>
<p>Clean Water Act, as amended (33 USC § 1251 <i>et seq</i>)</p> <p>Rivers and Harbors Act of 1899 (33 USC § 403)</p> <p>Executive Order 11990, Protection of Wetlands, (42 FR 26961, 1977)</p>	<p>The proposed action, with mitigation identified in this document, is not expected to significantly affect surface waters or drainages.</p> <p>This action involves minor work or structures in navigable waters of the U.S. As described in the Environmental Checklist, Section IX, above, this impact would be mitigated to a less-than-significant level.</p> <p>As described in the Environmental Checklist, Section IV (c), although most of the proposed work would be in upland areas, some wetlands occur within the proposed project area. The project would not adversely affect those wetlands.</p>
<p>National Oceanic and Atmospheric Administration Federal Consistency Regulation (15 CFR part 930)</p> <p>Coastal Zone Management Act of 1972 (16 USC § 1451 <i>et seq</i>)</p> <p>California Coastal Act of 1976</p>	<p>The project is within of the jurisdiction of the California Coastal Commission and, as described in the Environmental Checklist, Section X, above, would be consistent with the applicable Local Coastal Plan, CCA, and California Coastal Management Program policies that are applicable to the project.</p>

<p>Endangered Species Act as amended (16 USC § 1531 <i>et seq</i>)</p> <p>Fish and Wildlife Coordination Act (16 USC § 661<i>et seq</i>)</p> <p>Magnuson-Stevens Fishery Conservation and Management Act - Fishery Conservation Amendments of 1996, (16 USC § 1801 <i>et seq</i>) – Essential Fish Habitat (EFH)</p> <p>Migratory Bird Treaty Act (16 USC 703-711)</p> <p>Marine Mammal Protection Act (16 USC § 1361 <i>et seq</i>)</p> <p>National Marine Sanctuaries Act (16 USC 1§ 431 <i>et seq</i>)</p> <p>Marine Protection Research and Sanctuaries Act of 1972 (33 USC § 1401 <i>et seq</i>)</p>	<p>Given the proposed project design and mitigation measures, the USACE has determined the project will have no effect on Endangered species.</p> <p>The proposed project is designed to minimize impacts to fish, wildlife, and existing habitat</p> <p>As described in Section IV of the Environmental Checklist, no impacts to EFH are expected from the proposed action.</p> <p>The project includes mitigation and avoidance measures for any potential impacts to nesting migratory birds.</p> <p>As described in Section IV of the Environmental Checklist, with buffer zone measures included as part of the project, no impacts to marine mammals are expected from the proposed action.</p> <p>The proposed action will take place in a national marine sanctuary (Gulf of the Farallones), however, as detailed in Section IV of the Environmental Checklist, above, will not adversely affect resources in that sanctuary.</p>
<p>National Historic Preservation Act (16 USC § 470 and 36 CFR part 800): Protection of Historic Properties</p> <p>Executive Order 11593: Protection and Enhancement of the Cultural Environment</p> <p>Archaeological and Historic Preservation Act of 1974, (16 USC § 469 <i>et seq</i>)</p> <p>Federal Water Project Recreation Act (16 USC § 4601 <i>et seq</i>)</p> <p>Abandoned Shipwreck Act of 1987, (43 USC § 2101 <i>et seq</i>)</p> <p>Submerged Lands Act, (Public Law 82-3167; 43 USC § 1301 <i>et seq</i>)</p>	<p>The State Historical Preservation Officer (SHPO) will be notified by USACE of the proposed project and given the opportunity to comment on the proposed action.</p> <p>See above.</p> <p>See above.</p> <p>The proposed action is not expected to impact recreation.</p> <p>None occur on the site.</p> <p>None occur on the site.</p>

4.3 Determinations and Statement of Findings

The proposed project would help ensure the long-term stability and viability of the island through removal of non-native plant species and passive and active revegetation with appropriate native species. In addition to meeting the project objectives, this proposed action would not be cost prohibitive and has been designed such that it would not significantly adversely affect environmental resources. Therefore, the proposed action is the agency-preferred alternative.

No significant direct, indirect, or cumulative adverse impacts to environmental resources are expected from the agency-preferred alternative upon incorporation of mitigation measures. The no-action alternative will result in a continued degradation and increase in vulnerability of the existing condition of environmental resources in and around the action area. Conversely, the agency-preferred alternative is expected to result in indirect benefits to special habitats, organisms, and special status species on Kent Island by removing non-native species and increasing the island's resilience and long-term viability.

Given that the agency-preferred alternative is not expected to adversely affect environmental resources and is expected to benefit specific resources, the agency-preferred alternative is also the environmentally preferred alternative.

A Finding of No Significant Impact (FONSI) and CEQA Negative Declaration are anticipated (33 CFR Part 325; Title 14 C.C.R. §§ 15070-15075). The determination of whether to prepare the FONSI and Negative Declaration will be made after agency and individual comments are incorporated into this Environmental Assessment/ Initial Study. A draft FONSI is included with this document (Appendix C).

5.0 REFERENCES

- S. G. Allen D. G. Ainley G. W. Page C. A. Ribic. 1984. The Effect of Disturbance on Harbor Seal Haul-Out Patterns at Bolinas Lagoon, California. *Fishery Bulletin* 82:3
- Bay Area Air Quality Management District (BAAQMD), *BAAQMD CEQA Guidelines*, Assessing the Air Quality Impacts of Projects and Plans, December 1999.
- Bay Area Air Quality Management District (BAAQMD), *BAAQMD CEQA Guidelines*, June 2010.
- Bay Area Air Quality Management District (BAAQMD), Status of Guidelines, accessed from website on May 10, 2012. <http://www.baaqmd.gov/Divisions/Planning-and-Research/CEQA-GUIDELINES.aspx>
- Brabb, E.E., Jones, D.L., and Wentworth, C.M., 1998, Regional relations of Paleocene and Eocene strata of the Gualala block: *AAPG Bulletin*, v. 82 (5), p. 843.
- Bruns, T.R., Cooper, A.K., Carlson, P.R., and McCulloch, D.S., 2002, Structure of the submerged San Andreas and San Gregorio Fault Zones in the Gulf of the Farrallones off San Francisco, California, from high-resolution seismic-reflection data: In *Crustal Structure of the Coastal and Marine San Francisco Bay Region, California*, Parsons, T., ed., U.S. Geological Survey Professional Paper 1658, p. 77-117.
- California, State of, Special Studies Zones, Bolinas Quadrangle, July 1, 1974
- California Department of Transportation (Caltrans), *Transportation- and Construction-Induced Vibration Guidance Manual*, 2004.
- Clark, J.C., Brabb, E.E., Greene, H.G., and Ross, D.C., 1984, Geology of Point Reyes Peninsula and implications for San Gregorio Fault history: In *Tectonics and Sedimentation Along the California Margin*: Crouch, J.K. and Bachman, S.B., eds., Society of Economic Paleontologists and Mineralogists, Pacific Section, Book 38, p. 67-86.
- Clark, J.C., and E.E. Brabb, 1997, Geology of the Point Reyes National Seashore and Vicinity, Marin County California: A Digital Database: U.S. Geological Survey Open-File Report 97-456; available on-line at: <http://wrgis.wr.usgs.gov/open-file/of97-456/>.
- California Natural Diversity Data Base/Rare Find. 2012. California department of Fish and Game.
- California Department of Toxic Substances Control, Hazardous Waste and Substances Site List, 2012
- Federal Emergency Management Agency, DFIRM Flood Hazard Zone maps
- Marin County, *Airport Land Use Plan*, 1991
- Marin County Department Parks, Open Space and Cultural Services. 1996. Bolinas Lagoon Management Plan Update.
- Marin County Open Space District. 2006. Bolinas lagoon Ecosystem Restoration Feasibility Project—Predicting the Future of Bolinas Lagoon.
- Marin County, *Code of Ordinances*, Title 6 Public Peace, Safety and Morals, Chapter 6.70 Loud and Unnecessary Noises, April 2010.
- Marin County Community Development Agency, Local Coastal Program, Unit 1, Amended, April 1, 1980.
- Marin County, *Countywide General Plan*, Adopted November 6, 2007, as amended January 27, 2009

Marin County, *Marin County Greenhouse Gas Reduction Plan*, October 2006

Marin County, website:

http://www.co.marin.ca.us/depts/CD/Main/comdev/CURRENT/notices/public_notices.htm

Page, G. W. and W. D. Shuford. 1999. Draft US National Shorebird Conservation Plan. Southern Pacific Coast Regional Development Plan. Point Reyes Bird Observatory, Stinson Beach CA.

Shuford, W. D., G. W. Page, J. e. Evens, L. E. Stenzel. Seasonal abundance of waterbirds at Point Reyes: a coastal perspective. *Western Birds* 20:4 pp. 137-265.

Stenzel, L. E., G. W. Page, and J. Young. 1983. The trophic relationships between shorebirds and their prey on Bolinas Lagoon. Contribution #268. Point Reyes Bird Observatory.

US Army Corps of Engineers and Marin County Open Space District (USACE 2002), *Bolinas Lagoon Ecosystem Restoration Project Feasibility Study, Draft Environmental Impact Statement/Environmental Impact Report*, July 2002.

US Army Corps of Engineers, *Kent Island Limited Phase I Environmental Site Assessment*, May 2011.

U.S. EPA, Report on Revisions to 5th Edition AP-42 Section 3.3, Gasoline and Diesel Industrial Engines, 1996.

U.S. EPA, website. <http://www.epa.gov/oar/genconform/deminimis.html>

U.S. FWS. 2012. <http://www.fws.gov/endangered/species/us-species.html>

U.S. Geological Survey (USGS) Working Group on California Earthquake Probabilities. *Earthquake Probabilities in the San Francisco Bay Region: 2002-2031*. Open-File Report 03-214. US Geological Survey. 2003.

6.0 REPORT PREPARERS

Marin County Parks

James Raives, Senior Open Space Planner

US Army Corps of Engineers San Francisco District

Tessa Bernhardt, Biological Sciences Environmental Manager

William Carmen Ecological Consulting

William Carmen, Ecologist

Grassetti Environmental Consulting

Richard Grassetti, Principal

Peter Baye, Coastal Ecologist

Miller Environmental Consulting (Air Quality, Noise, GHG)

Paul Miller, Principal

Appendix A. Special status wildlife species that may occur in the vicinity of Bolinas Lagoon. Shaded rows indicate that may occur on Kent Island (KI) or in adjacent habitat that could be impacted by the project. List compiled from USFWS Species Lists (USFWS 2012) and CNDDDB (CDFG 2012) for the USGS Bolinas Quadrangle. Modified and updated from Table A-5 in the *Bolinas Lagoon Ecosystem Restoration Feasibility Study (2006)*.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE (lagoon and vicinity)	ON KENT ISLAND and POTENTIAL FOR EFFECT
Mammals				
Yuma myotis <i>Myotis yumanensis</i>	FSC, CSC	From urbanized environments to heavily forested settings. Day roosts in buildings, trees, mines, caves, bridges and rock crevices. Night roosts associated with man-made structures.	Moderate Potential. Common and widespread in California. May forage in open forest and woodland habitat in vicinity.	May forage over island. No effect.
pallid bat <i>Antrozous pallidus</i>	CSC	Found in wide variety of habitats. Most common in open, dry habitats with rocky areas for roosting. Very sensitive to disturbance of roosting sites.	Moderate Potential. Closest occurrence at Olema Creek in riparian vegetation dominated by alders. Similar habitat available at Pine Gulch, northern tip of lagoon.	May forage over island. No effect.
Pt. Reyes mountain beaver <i>Aplodontia rufa phaea</i>	FSC, CSC	Occurs near springs or seepages in densely vegetated riparian and scrub areas in the vicinity of Pt Reyes peninsula. Population status unknown.	Low Potential. Formerly occurring throughout Pt. Reyes National Seashore. Most populations are now thought to be extirpated.	None. No suitable habitat on KI. No effect.

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Pt. Reyes jumping mouse <i>Zapus trinotatus orarius</i>	FSC, CSC	Occurs in riparian areas, grasslands, and wet meadows of Pt. Reyes peninsula. Population status unknown.	Low Potential. Suitable habitat available in Pine Gulch riparian area. Population status uncertain.	None. No suitable habitat on KI. No effect.
Guadalupe fur seal <i>Arctocephalus townsendi</i>	FT	Guadalupe fur seals reside in the tropical waters of the Southern California/Mexico region. During breeding season, they are found in coastal rocky habitats and caves.	Not Present. Guadalupe fur seals are non-migratory and their breeding grounds are almost entirely on Guadalupe Island, Mexico.	No effect.
Steller sea lion <i>Eumetopias jubatus</i>	FT	Distributed along coasts to the outer continental shelf along the North Pacific Ocean rim from Japan through the Aleutian Islands and central Bering Sea, southern coast of Alaska and south to California.	Southeast Farallon Island is designated Critical Habitat for this species. Occurs of the coast of Bolinas.	No suitable habitat in the Lagoon. No effect.
Sei whale <i>Balaenoptera borealis</i>	FE	Prefer subtropical to subpolar waters on the continental shelf edge and slope worldwide. They are usually observed in deeper waters of oceanic areas far from the coastline.	Not present in the Lagoon.	No suitable habitat. No effect.
Blue whale <i>Balaenoptera musculus</i>	FE	Blue whales are found in oceans worldwide.	Not present in the Lagoon but occurs offshore.	No suitable habitat in the Lagoon. No effect.

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Fin Whale <i>Balaenoptera physalus</i>	FE	Fin whales are found in deep, offshore waters of all major oceans.	Not present in the Lagoon but may occur offshore.	No suitable habitat in the Lagoon. No effect.
North Pacific Right Whale <i>Eubalaena japonica</i>	FE	Occurred historically in all the world's oceans primarily in coastal or shelf waters.	Not present in the Lagoon but may occur offshore.	No suitable habitat in the Lagoon. No effect.
Sperm Whale <i>Physeter macrocephalus</i>	FE	Inhabit areas with a water depth of 600 m or more, and are uncommon in waters less than 300 m deep. Sperm whales inhabit all oceans of the world.	Present in offshore waters.	No suitable habitat in Lagoon. No effect.
Birds				
short-tailed albatross <i>Phoebastria albatrus</i>	FE	Nests on oceanic atolls in Pacific. Very rare along California coast in nonbreeding season.	Not present.	No effect.
common loon <i>Gavia immer</i>	FSC, CSC	Winter in estuarine and subtidal marine habitats along the California coast, San Francisco Bay.	Present. Known to winter in Bolinas Lagoon.	Winter occurrence in Lagoon. No effect.
California brown pelican <i>Pelecanus occidentalis californicus</i>	FE, SE, CFP	Found in estuarine, marine subtidal, and marine pelagic waters along the coast. Nest on rocky or low brushy slopes of undisturbed islands.	Present. Documented to forage in Lagoon; nesting habitat not available.	Forages in the Lagoon. May use exposed sand bars adjacent to the island for resting in non-breeding season. No effect.

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double-crested cormorant <i>Phalacrocorax auritus</i>	CSC	Nests along coast on sequestered islets, usually on ground with sloping surface or in tall trees along lake margins.	Present. Documented to forage in Lagoon.	Forages in the Lagoon. May use exposed sand bars adjacent to the island for resting. No effect.
great egret (rookery) <i>Ardea alba</i>		Colonial nester in large trees. Rookery sites located near marshes, tide-flats, irrigated pastures, and margins of rivers and lakes.	Present. Rookery site at Audubon Canyon Ranch and adjacent to Kent Island.. Forages in Lagoon.	Occurs in the Lagoon. Began nesting in heron rookery across Bolinas Channel from KI in 2011.
black-crowned night heron (rookery) <i>Nycticorax nycticorax</i>		Colonial nester, usually in trees, occasionally in tule patches. Rookery sites located adjacent to foraging areas: lake margins, mud-bordered bays, marshy spots.	Present. Documented to forage throughout Lagoon. No documented rookeries in vicinity of Lagoon	Forages in the Lagoon but no rookeries. No effect.
great blue heron (rookery) <i>Ardea herodias</i>		Colonial nester in tall trees, cliffsides, and sequestered spots on marshes. Found in close proximity to foraging areas (rivers and streams, tide-flats, wet meadows.)	Present. Rookies in vicinity of Inverness, Olema, and the east and north arm of Drakes Estero. Formerly nested at ACR. Nest on Kent Island and across channel on mainland.	There is a rookery in the pines on KI and across Bolinas Channel on the mainland.
white-tailed kite <i>Elanus leucurus</i>	FSC, CFP	Year-long resident of coastal and valley lowlands; rarely found away from agricultural areas. Preys on small diurnal mammals and occasional birds, insects, reptiles, and amphibians.	Low Potential. Suitable breeding and foraging habitat is available in the vicinity but species is not likely to utilize lagoon habitat. May occur as transient.	Occasional foraging use of KI. No effect.

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Short-eared Owl <i>Asio flammeus</i>		Short-eared Owls are frequent winter visitors and closely tied to rodent abundance. Forage in open meadow grasslands and marshes. Nest sporadically on the coast.	Present. Observed in winter foraging on and around the lagoon. No nest records for the Lagoon vicinity.	Present (non-breeding). Observed in winter on Kent Island. Known to roost in the dunes on the island. Breeds in salt- and freshwater marshes and grasslands. No breeding records.
osprey <i>Pandion haliaetus</i>	CSC	Nests along ocean shores, bays, freshwater lakes and larger streams in treetops.	Present. Nest along Inverness Ridge and observed foraging over Bolinas Lagoon.	Forages on Lagoon. No effect.
northern harrier <i>Circus cyaneus</i>	CSC	Frequents meadows, grasslands, rangelands, fresh and saltwater emergent wetlands throughout California. Nests in shrubby vegetation on ground.	High Potential. Suitable foraging habitat available in saltmarsh areas. Known to forage and breeds in vicinity	Forages on island. May possibly nest on island but not recorded.
ferruginous hawk <i>Buteo regalis</i>	FSC, CSC	Frequents open grasslands, sagebrush flats, desert scrub, low foothills surrounding valleys and fringes of pinyon-juniper habitats.	Low Potential. Uncommon winter resident and migrant at lower elevations. May occur as transient.	Rare visitor. No effect from Project.
American peregrine falcon <i>Falco peregrinus anatum</i>	FD, SE, CFP	Winters throughout Central Valley. Requires protected cliffs and ledges for cover. Feeds on a variety of birds, and some mammals, insects, and fish.	High Potential. Anecdotal evidence of occurrence at Lagoon. Suitable foraging and nesting habitat available.	May forage on Lagoon. No effect.

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California clapper rail <i>Rallus longirostris obsoletus</i>	FE,SE	Found in tidal marshes of SF Bay. Requires mudflats for foraging and dense vegetation on higher ground for nesting.	Potential. 1975 observation in Lagoon.	No suitable habitat in vegetation management areas. No effect.
black rail <i>Laterallus jamaicensis coturniculus</i>	FSC, ST, CFP	Rarely seen resident of saline, brackish, and fresh emergent wetlands in the San Francisco Bay area. Nest in dense stands of pickleweed	Present. Observed at coves in Bolinas Lagoon at the mouth of Audubon Canyon, Pike County Gulch, as well as suitable marsh habitat in the vicinity of Pt. Reyes National Seashore.	Resident in Lagoon brackish marsh. No suitable habitat on or adjacent to KI. No effect.
western snowy plover <i>Charadrius alexandrinus nivosus</i>	FT, CSC	Found on sandy beaches, salt pond levees and shores of large alkali lakes. Need sandy gravelly or friable soils for nesting.	Present. Nests on Bolinas Lagoon spit, Point Reyes Beach, Drake's Beach spit, Limantour spit.	Suitable habitat present on south island shore beach. No recent occurrence on KI. Project may improve habitat value of KI for nesting plovers.
whimbrel <i>Numenius phaeopus</i>	FSC	Spring migrant at the Central California Coast. Forages on rocky intertidal, sandy beach marine habitats, and intertidal mudflats of estuarine habitats.	Present. Documented to occur by PRBO. Suitable foraging habitat available, may occur as spring migrant.	Forages in Lagoon. No effect.
long-billed curlew <i>Numenius americanus</i>	FSC, CSC	Winters in large coastal estuaries, upland herbaceous areas, and croplands. Breeds in northeastern California in wet meadow habitat.	Present. Observed foraging in tidal mudflats of Lagoon. Winter visitor.	Forages in Lagoon. No effect.

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marbled godwit <i>Limosa fedoa</i>	FSC	Migrant and winter visitor along California Coast. Most common on estuarine mudflats but also occurs on sandy beaches, open shores, saline emergent wetlands, and adjacent wet upland fields.	Present. Observed foraging in tidal mudflats of Lagoon. Winter visitor.	Forages in Lagoon. No effect.
red knot <i>Calidris canutus</i>	FSC	Fall and spring migrant in coastal estuarine habitats. Prefers estuarine sand or mud flats.	High Potential. May occur as spring or fall migrant to forage in mudflats of the Lagoon.	Forages in Lagoon. No effect.
California least tern <i>Sterna antillarum browni</i>	CSC	Nests along the coast from San Francisco Bay to Baja. Colonial breeder on sparsely vegetated flat substrates.	Not Present. No known nesting records of species in Lagoon	May forage on Lagoon. No effect.
black skimmer <i>Rynchops niger</i>	CSC	Nests on gravel bars, low islets, and sandy beaches in unvegetated sites.	Moderate Potential. No records of nesting colony at lagoon but may occur to forage as transient.	May forage on Lagoon. No effect.
Marbled murrelet <i>Brachyramphus marmoratus</i>	FT, SE	Breeds in old-growth redwood stand along coast.	Not present. No suitable habitat on Lagoon.	No effect.
tufted puffin <i>Fratercula cirrhata</i>	CSC	Uncommon species that nests on islands and coastal cliffs. Breeding colony on Farallon Islands.	Low Potential. May occur to forage in Lagoon, suitable nesting habitat not available.	May forage on Lagoon. No effect.

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western burrowing owl <i>Athene cunicularia hypugea</i>	FSC, CSC	Frequents open grasslands and shrublands with perches and burrows. Preys upon insects, small mammals, reptiles, birds, and carrion. Nests and roosts in old burrows of small mammals.	Low Potential. Uncommon species in region. May occur in grassland	No records for island nor suitable nesting habitat. No effect.
northern spotted owl <i>Strix occidentalis caurina</i>	FT	Rely on large patches of old growth forest for hunting, roosting, nesting.	Low Potential. Breeding population located at nearby Bolinas Ridge. Not likely to utilize the Lagoon or adjacent area for roosting, nesting, or hunting.	No suitable habitat on island. No effect.
Vaux's swift <i>Chaetura vauxi</i>	FSC, CSC	Forages high in the air over most terrain and habitats but prefers rivers/lakes. Requires large hollow trees for nesting.	Present. Documented nesting occurrence in chimney just north of Bolinas Lagoon.	May forage over island. No effect.
black swift <i>Cypseloides niger</i>	FSC, CSC	Nests in riparian jungles of willow, often mixed with cottonwoods with thick lower story.	Moderate Potential. Suitable habitat available at Pine Gulch Creek. Documented to occur at Pt. Reyes National Seashore.	May forage over island. No effect.
rufous hummingbird <i>Selasphorus rufus</i>	FSC	Found in a wide variety of habitats that provide nectar-producing flowers. A common migrant and uncommon summer resident of California.	High Potential. Suitable nesting and foraging habitat available in upland areas adjacent to lagoon.	May forage on island. No effect.

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Allen's hummingbird <i>Selasphorus sasin</i>	FSC	Breeds in sparse and open woodlands, coastal redwoods, and sparse to dense scrub habitats. Distribution highly dependent on abundance of nectar sources.	High Potential. Suitable nesting and foraging habitat available in upland areas adjacent to lagoon.	Could breed on island.
olive-sided flycatcher <i>Contopus cooperi</i>	FSC	Most often found in montane conifer forests where tall trees overlook canyons, meadows, lakes or other open terrain	Present. Observed singing in willow adjacent to lagoon during May 2004 assessment. Suitable breeding and foraging habitat available in upland riparian areas.	May forage over island. No effect.
little willow flycatcher <i>Empidonax traillii brewsteri</i>	FSC, SE	Most numerous where extensive thickets of low, dense willows edge on wet meadows, ponds, or backwaters. Winter migrant.	Low Potential. May occur as winter migrant. Willow riparian habitat available adjacent to Lagoon.	Very little suitable habitat on the island; winter migrant only. No effect.
purple martin <i>Progne subis</i>	CSC	Inhabits woodlands, low elevation coniferous forest. Nest in old woodpecker cavities and human-made structures.	High Potential. May occur as transient or nest in woodland habitat adjacent to the lagoon.	May forage over island. No effect.
bank swallow <i>Riparia riparia</i>	FSC, ST	Migrant in riparian and other lowland habitats in western California. Nests in riparian areas with vertical cliffs and banks with fine-textured or sandy soils in which to nest.	High Potential. May occur as migrant to forage over lagoon and adjacent upland areas.	May forage over island. No effect.

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California thrasher <i>Toxostoma redivivum</i>	FSC	Common resident of foothills and lowlands in cismontane California. Occupies moderate to dense chaparral habitats and extensive thickets in young or open valley foothill riparian habitat.	High Potential. Suitable chaparral habitat available in upland habitat adjacent to lagoon.	No suitable habitat on island. No effect.
loggerhead shrike <i>Lanius ludovicianus</i>	FSC, CSC	Prefers open habitats with scattered shrubs, trees, or posts from which to forage for large insects. Nest well concealed above ground in densely-foliaged shrub or tree.	Low Potential. Typical open grassland habitat is not present.	No suitable habitat on island. No effect.
yellow warbler <i>Dendroica petechia brewsteri</i>	CSC	Nests in riparian stands of willows, cottonwoods, aspens, sycamores, and alders. Also nests in montane shrubbery in open conifer forests.	Low Potential. Suitable breeding habitat available in riparian habitat adjacent to Lagoon. Relatively uncommon. Documented breeder at Olema Marsh.	No suitable habitat on island. No effect.
hermit warbler <i>Dendroica occidentalis</i>	FSC	Frequents mature stands of conifers with open to dense canopy for breeding.	Low Potential. May rarely occur in transitional habitat during migration.	No suitable habitat on island. No effect.

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saltmarsh common yellowthroat <i>Geothlypis trichas sinuosa</i>	FSC, CSC	Frequents low, dense vegetation near water including fresh to saline emergent wetlands. Brushy habitats used in migration.	Present. Commonly observed species in wetlands in the vicinity. May occupy salt marsh and riparian habitats	May forage on island. No effect.
tricolored blackbird <i>Agelaius tricolor</i>	FSC, CSC	Usually nests over or near freshwater in dense cattails, tules, or thickets of willow, blackberry, wild rose or other tall herbs.	Low Potential. Typical freshwater emergent vegetation is not present. Foraging habitat (grassland, pasture) is not present.	No suitable habitat on island. No effect.
Reptiles and Amphibians				
western pond turtle <i>Clemmys marmorata</i>	FSC, CSC	Occurs in perennial ponds, lakes, rivers and streams with suitable basking habitat (mud banks, mats of floating vegetation, partially submerged logs) and submerged shelter.	No Potential. Excluded by marine salinity surrounding island and lack of fresh-brackish perennial water on island.	No suitable habitat on island. No effect.

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California red-legged frog <i>Rana aurora draytonii</i>	FT, CSC	Associated with quiet perennial to intermittent ponds, stream pools and wetlands. Prefers shorelines with extensive vegetation. Documented to disperse through upland habitats after rains.	Present. Known to occur in Pt. Reyes National Seashore vicinity, including Pine Gulch Creek and freshwater areas around the Lagoon.	No suitable habitat on island. No effect.
foothill yellow-legged frog <i>Rana boylei</i>	FSC, CSC	Found in or near rocky streams in a variety of habitats. Feed on both aquatic and terrestrial invertebrates.	Moderate Potential. Pine Gulch Creek may provide suitable habitat conditions; not associated with saline habitats.	No suitable habitat on island. No effect.
loggerhead turtle <i>Caretta caretta</i>	FE	Circumglobal, occurring throughout the temperate and tropical regions. In the eastern Pacific, most records are of juveniles off the coast of California.	Present in offshore waters.	No suitable habitat in the Lagoon. No effect.
Green turtle <i>Chelonia mydas</i>	FE	In the eastern North Pacific, green turtles have been sighted from Baja California to southern Alaska, but most commonly occur from San Diego south.	Present in offshore waters.	No suitable habitat in the Lagoon. No effect.
Leatherback turtle <i>Dermochelys coriacea</i>	FE	Pelagic but also forage in coastal waters. The most migratory and wide ranging of sea turtle species.	Present in offshore waters. Offshore waters designated as critical habitat from Pt. Arena to Pt. Arguello.	No suitable habitat in the Lagoon. No effect.

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Fishes				
Pacific lamprey <i>Lampetra tridentata</i>	FSC	Anadromous fish found in the Sacramento-San Joaquin estuary and river system. Spawn in riffle areas with strong current in cool streams. Adults occur in bay and ocean waters.	High Potential. CDFG surveys during 1994-96 found lamprey ammocoetes in Pine Gulch Creek.	Occurs in the Lagoon. Potential for impact from water intake.
green sturgeon <i>Acipenser medirostris</i>	FSC, CSC	Anadromous fish that spawns in Sacramento river. Feeds in estuaries and bays, including San Francisco Bay.	Low Potential. May rarely occur in Bolinas Lagoon. Not encountered during CDFG surveys.	Rare occurrence. Water intake poses no threat to this species.
Delta smelt <i>Hypomesus transpacificus</i>	FE	Found only in the Sacramento and San Joaquin River estuary.	Not present.	No effect.
coho salmon-central CA coast ESU <i>Oncorhynchus kisutch</i>	FT, SE	Require beds of loose, silt-free, coarse gravel for spawning. Also need cover, cool water and sufficient oxygen.	Present. Anecdotal reports suggest that Pine Gulch Creek supported runs of this species. Not encountered during CDFG surveys 1994-96. Also occurs in Lagunitas Creek drainage, Redwood Creek Watershed.	Spawns in Pine Gulch Creek and smolts therefore occur in the Lagoon.
steelhead-central CA coast ESU <i>Oncorhynchus mykiss</i>	FT	From Russian River south to Soquel Creek and Pajaro River. Also San Francisco and San Pablo Bay Basins.	Present. Documented to occur in Pine Gulch Creek during CDFG surveys 1994-96.	Spawns in Pine Gulch Creek and possibly in Easkoot Creek. Smolts therefore occur in the Lagoon.

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Steelhead—central valley ESU <i>Oncorhynchus mykiss</i>	FT	This population occurs in the Central Valley of California (Sacramento and San Joaquin Rivers and their tributaries)	Not present.	No effect.
California coastal chinook salmon <i>Oncorhynchus tshawytscha</i>	FT, SE, NMFS	Spawn in coastal streams at temps. from 4-14C. Prefer beds of loose, silt-free, coarse gravel and cover nearby for adults.	Low Potential. Not documented to occur in Pine Gulch Creek.	Not present. No effect
Tomales roach <i>Lavinia symmetricus ssp. 2</i>	CSC	Found in small, warm intermittent streams in the Tomales Bay watershed. Habitat generalists.	Not Present. Known from tributaries to Tomales Bay. Roach documented in Pine Gulch Creek are likely the Sacramento-San Joaquin subspecies.	Not present. No effect
tidewater goby <i>Eucyclogobius newberryi</i>	FE, CSC	Found in the brackish waters of coastal lagoons, marshes, creeks, and estuaries. Unique among fishes of the Pacific coast, gobies are restricted to waters of low salinity in coastal wetlands..	Low Potential. Suitable habitat available in Bolinas Lagoon though no known occurrences despite biological survey efforts.	Not present. No effect
Invertebrates				
Black abalone <i>Haliotis cracherodii</i>	FE	Range from about Point Arena to Baja but are rare north of San Francisco. Typically found in crevices, cracks, and holes of intertidal and shallow subtidal rocks in areas of moderate to high surf.	Areas along coast are designated critical habitat.	No suitable habitat in Lagoon. No effect.

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White abalone <i>Haliotis sorenseni</i>	FE	Found in open low and high relief rock or boulder habitat that is interspersed with sand channels from the Channel Islands south.	Not present	No effect.
mimic tryonia (California brackish-water snail) <i>Tryonia imitator</i>	none	Inhabits coastal lagoons, estuaries and salt marshes from Sonoma Co. south to San Diego Co. Able to withstand a wide range of salinities.	Moderate Potential. Suitable habitat available in Bolinas Lagoon though no records exist of occurrence.	May occur in the lagoon. No effect.
California freshwater shrimp <i>Syncaris pacifica</i>	FE, SE	Endemic to Marin, Napa, and Sonoma Cos. Found in shallow pools away from streamflow in low gradient streams where riparian cover is moderate to heavy.	Low Potential. Uncommon species though observed at Lagunitas Creek and Olema Creek.	No habitat on the island. No effect.
Tomales isopod <i>Caecidotea tomalensis</i>		Inhabits localized fresh-water ponds or streams with still or near-still water.	High Potential. 1984 observation in Audubon Canyon Ranch (Volunteer Canyon) tributary to Bolinas Lagoon.	No habitat on the island. No effect.
Ricksecker's water scavenger beetle <i>Hydrochara rickseckeri</i>	FSC	Aquatic, known from the San Francisco Bay area.	High Potential. 1940 record from the vicinity of Bolinas.	May occur in the Lagoon. No effect.

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bumblebee scarab beetle <i>Lichnanthe ursina</i>	FSC	Inhabits coastal sand dunes from Sonoma Co. south to San Mateo Co. . Usually flies close to sand surface near the crest of dunes.	Low Potential. Observed along shoreline near Inverness, 1980; however, dune habitat is limited in Bolinas Lagoon.	Project could provide improved habitat conditions for this species.
sandy beach tiger beetle <i>Cicindela hirticollis gravida</i>	FSC	Occurs along non-brackish areas of coast.	Moderate Potential. Suitable habitat on south shore beach and high sand flats.	Project could provide improved habitat conditions for this species
Myrtle’s silverspot butterfly <i>Speyeria zerene myrtleae</i>	FE	Restricted to the foggy coastal dunes/hills of the Point Reyes peninsula. Larval foodplant thought to be <i>Viola adunca</i> .	Low Potential. Larval host plant is not likely present in Bolinas Lagoon area. Observed as recently as 2003 in the vicinity of North Beach and Drake’s Estero.	No habitat on the island. No effect.
Point Reyes blue butterfly <i>Icaricia icarioides parapheres</i>	FSC	Confined to the Pt. Reyes Peninsula. Occurs in stable sand dunes with <i>Lupinus arboreus</i> and <i>L. varicolor</i> .	Low Potential. 1974 record from Point Reyes Dunes. Suitable habitat limited in Bolinas Lagoon.	No habitat on the island. No effect.

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monarch butterfly <i>Danaus plexippus</i>	none	Winter roost sites located in wind-protected tree groves with nectar and water sources nearby.	Low Potential. Roost trees are not likely present in Bolinas Lagoon. Documented to roost throughout Bolinas, Pt. Reyes National Seashore, Tennessee Valley, Muir Beach, Fort Barry Military Reservation.	Not observed to roost in Pines or Cypress on KI. No effect.
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*** Key to status codes:**

Status codes used above are:

FE - Federal Endangered

FT - Federal Threatened

FC - Federal Candidate

FPD - Federal Proposed Delisted

FSC - United States Fish and Wildlife Service Federal Species of Concern

NMFS - Species under the Jurisdiction of the National Marine Fisheries Service

SE - State Endangered

CSC - CDFG Species of Special Concern, CSC (Draft) - 4 April 2001 Draft

CDFG Species of Special Concern

CFP - California Fully Protected Species

SLC - Species of Local Concern

None - No status given but rookery sites are monitored by CDFG

List 1B - CNPS 1B List, Endangered, Threatened, or Rare in California

List 2- CNPS List 2 Plants are rare, threatened, or endangered in California, but more common elsewhere

Appendix B – MITIGATION MONITORING AND REPORTING PROGRAM
(To be added after public comment, prior to adoption of MND)

FINDING OF NO SIGNIFICANT IMPACT (FONSI)

(33 CFR Part 230-325)

Kent Island Restoration at Bolinas Lagoon Bolinas, Marin County, California

1. **Action:** Removal of non-native invasive vegetation and replanting of native species on Kent Island in Bolinas lagoon in order to restore approximately 29-acres of wetland habitat. Removal of invasives would be accomplished through salt-water inundation and manual removal methods. A community-based approach would be used to perform replanting with native species and five years of post-construction monitoring would be performed.
2. **Factors Considered:** Factors considered for this FONSI were direct, indirect, and cumulative impacts to air and water quality, aquatic and terrestrial habitat, biologic resources, endangered/threatened species, recreation and public facilities/services, transportation and traffic, noise, aesthetics, public health and safety, hazardous and toxic materials, land use, and cultural, archeological and historic resources.
3. **Conclusion:** Based on a review of the information incorporated in the joint Initial Study/Environmental Assessment, including views of the United States Army Corps of Engineers (USACE), the general public, and resource agencies having special expertise or jurisdiction by law, as well as the stated best management practices and mitigation measures, USACE concludes the proposed activity would not significantly affect the quality of the physical, biological, and human environment. Pursuant to the provisions of the National Environmental Policy Act of 1969, the preparation of an additional Environmental Impact Statement (EIS) will therefore, not be required.

Approved by:

John K. Baker, P.E.
Lieutenant Colonel, U.S. Army
Commander and District Engineer

Date