Notice of Completion & Environmental Document Transmittal

Mail to: State Clearinghouse, P.O. Box 3044, Sacramento, CA 95812-3044 (916) 445-0613
For Hand Delivery/Street Address: 1400 Tenth Street, Sacramento, CA 95814

SCH #

Project Title: Lake Earl Wildlife Area Coastal Dune Restoration Plan
Lead Agency: California Department of Fish and Game Contact Person: Steve Burton
Mailing Address: 1724 Ball Mountain Road Phone: 530-495-1129
City: Montague Zip: 96064 County: Siskiyou

Project Location: County: Del Norte City/Nearest Community: Crescent City
Cross Streets: Highway 101, Humboldt Road, Sandmine Road Zip Code: 95531
Longitude/Latitude (degrees, minutes and seconds): 124° 13′ 28.572″ W / 14° 49′ 41.919″ N Total Acres: 110 acres (44 ha)
Assessor's Parcel No.: MAP APN #: 10601005B Section: 30 and 31 Twp.: T17N Range: 1W Base: Humboldt Base Meridian
Within 2 Miles: State Hwy #: 101 Waterways: N/A
Airports: N/A Railways: N/A Schools: N/A

Document Type:

X Mitigated Negative Declaration (MND) (CEQA)

Local Action Type:

x Coastal Permit

- ☐ General Plan Update
- ☐ General Plan Amendment
- ☐ General Plan Element
- ☐ Site Plan
- ☐ Specific Plan
- ☐ Master Plan
- ☐ Planned Unit Development
- ☐ Land Division
- ☐ Rezone
- ☐ Prezone
- ☐ Use Permit
- ☐ Other:
- ☐ Annexation
- ☐ Redevelopment
- ☐ Community Plan

Development Type:

X Other: Removal of European beachgrass from coastal dunes for habitat restoration

- ☐ Residential: Units _____ Acres _____
- ☐ Office: Sq.ft. _____ Acres _____ Employees _____
- ☐ Commercial: Sq.ft. _____ Acres _____ Employees _____
- ☐ Industrial: Sq.ft. _____ Acres _____ Employees _____
- ☐ Educational: _____
- ☐ Recreational: _____
- ☐ Water Facilities: Type _____ MGD _____
- ☐ Transportation: Type _____
- ☐ Mining: Mineral _____
- ☐ Power: Type _____ MW _____
- ☐ Waste Treatment: Type _____ MGD _____
- ☐ Hazardous Waste: Type _____

Project Issues Discussed in Document:

- X Aesthetic/Visual
- ☐ Fiscal
- X Recreation/Parks
- ☐ Vegetation
- ☐ Agricultural Land
- ☐ Flood Plain/Flooding
- ☐ Schools/Universities
- ☐ Water Quality
- X Air Quality
- ☐ Forest Land/Fire Hazard
- ☐ Septic Systems
- ☐ Water Supply/Groundwater
- X Archeological/Historical
- X Geologic/Seismic
- ☐ Sewer Capacity
- ☐ Wetland/Riparian
- X Biological Resources
- ☐ Minerals
- X Soil Erosion/Compaction/Grading
- ☐ Growth Inducement
- ☐ Coastal Zone
- X Noise
- ☐ Solid Waste
- ☐ Land Use
- ☐ Drainage/Absorption
- ☐ Population/Housing Balance
- X Toxic/Hazardous
- ☐ Cumulative Effects
- ☐ Economic/Jobs
- ☐ Public Services/Facilities
- ☐ Traffic/Circulation
- ☐

Present Land Use/Zoning/General Plan Designation:

Zoning: RCA-1-C-(A) (S)

Project Description: *(please use a separate page if necessary)*

Please see attached.

Note: The State Clearinghouse will assign identification numbers for all new projects. If a SCH number already exists for a project (e.g. Notice of Preparation or

Reviewing Agencies Checklist (To be sent)

Lead Agencies may recommend State Clearinghouse distribution by marking agencies below with and "**X**".
If you have already sent your document to the agency, please denote that with an "**S**".

	Air Resources Board		Office of Historic Preservation
	Boating & Waterways, Department of		Office of Public School Construction
	California Emergency Management Agency	X	Parks & Recreation, Department of
	California Highway Patrol		Pesticide Regulation, Department of
	Caltrans District (Eureka Office)		Public Utilities Commission
	Caltrans Division of Aeronautics		Regional WQCB # _____
	Caltrans Planning		Resources Agency
	Central Valley Flood Protection Board		Resources Recycling and Recovery, Department of
	Coachella Valley Mtns. Conservancy		S.F. Bay Conservation & Development Comm.
X	Coastal Commission (Eureka Office)		San Gabriel & Lower L.A. Rivers & Mtns. Conservancy
	Colorado River Board		San Joaquin River Conservancy
	Conservation, Department of		Santa Monica Mtns. Conservancy
	Corrections, Department of		State Lands Commission
	Delta Protection Commission		SWRCB: Clean Water Grants
	Education, Department of		SWRCB: Water Quality
	Energy Commission		SWRCB: Water Rights
	Fish & Game Region 1 (Eureka)		Tahoe Regional Planning Agency
	Food & Agriculture, Department of		Toxic Substances Control, Department of
X	Forestry and Fire Protection (CalFire Crescent City Office)		Water Resources, Department of
	General Services, Department of		Health Services, Department of
X	Del Norte County Planning Department		Native American Heritage Commission
	Housing & Community Development		

Local Public Review Period (to be filled in by lead agency)

Starting Date July 11, 2011 Ending Date August 10, 2011

Lead Agency (Complete if applicable):

Consulting Firm: N/A
Address: _____
City/State/Zip: _____
Contact: _____
Phone: _____

Applicant: N/A
Address: _____
City/State/Zip: _____
Phone: _____

Signature of Lead Agency Representative: [signature] **Date:** 7/7/11

Authority cited: Section 21083, Public Resources Code. Reference: Section 21161, Public Resources Code.

ENVIRONMENTAL CHECKLIST FORM

1 Project Title: Lake Earl Wildlife Area Coastal Dunes Restoration Plan

2 Lead Agency Name and Address:

California Department of Fish and Game, 1724 Ball Mt Rd., Montague, CA 96064

3 Contact Person and Phone Number: R. Robert Smith 530-459-3926

4 Project Location: Lake Earl Wildlife Area, coastal region at the mouth of Lake Tolowa, 10 miles north of Crescent City, California.

5 Project Sponsor's Name and Address:

Tolowa Dunes Stewards (a project of the Smith River Alliance)
P.O. Box 1148
Crescent City, CA 95531

6 General Plan Designation: RCA

7 Zoning: RCA-1-C-(A) (S)

8 Description of Project: (Describe the whole action involved, including but not limited to later phases of the project, and any secondary, support, or off-site features necessary for its implementation. Attach additional sheet(s) if necessary.)

Removal of European beachgrass from coastal dunes for habitat restoration. See attached

9 Surrounding Land Uses and Setting: (Briefly describe the project's surroundings.)

The project consists of a 44 ha (110 ac) area within the 2,486 ha (6,144 ac) Lake Earl Wildlife Area, surrounding lands are coastal wetlands, sand dunes, beaches, and the Pacific Ocean.

10 Other public agencies whose approval is required (e.g., permits, financing approval, or participation agreement):

California Coastal Commission
United States Fish and Wildlife Service

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

☒ Aesthetics	☐ Agriculture Resources	☒ Air Quality
☒ Biological Resources	☒ Cultural Resources	☒ Geology / Soils
☒ Hazards & Hazardous Materials	☒ Hydrology / Water Quality	☐ Land Use / Planning
☐ Mineral Resources	☒ Noise	☐ Population / Housing
☐ Public Services	☒ Recreation	☐ Transportation / Traffic
☐ Utilities / Service Systems	☒ Mandatory Findings of Significance	

DETERMINATION (To be completed by the Lead Agency):

On the basis of this initial evaluation:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☒ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signature	Date
Neil Manji	Regional Manager
Printed Name	For

INITIAL STUDY
AND
MITIGATED NEGATIVE DECLARATION
FOR
THE LAKE EARL WILDLIFE AREA COASTAL DUNES RESTORATION PLAN

Del Norte County, California
July 2011

Project Description

The Lake Earl Wildlife Area coastal dune restoration project proposes to remove invasive European beachgrass (*Ammophila arenaria*) from approximately 14 ha (34 ac) of foredunes on either side of the Lake Tolowa lagoon mouth to restore natural dune processes and improve habitat for native species. Beachgrass will be removed using a combination of manual and mechanical techniques.

Project Location

The project is located on the western border of the 2,486 ha (6,144 acre) Lake Earl Wildlife Area, about 16 km (10 miles) north of Crescent City, California, Del Norte County (Figure 1). Project actions will take place on the foredunes between the Pacific Ocean and the coastal lagoon known as Lake Tolowa.

Determination

Based on the Environmental Checklist and supporting environmental analyses provided herein, the proposed Lake Earl Wildlife Area Coastal Dune Habitat Restoration Plan will result in less than significant impacts for the following issues: (1) aesthetics, (2) agricultural resources, (3) air quality, (4) biological resources, (5) cultural resources, (6) geology and soils, (7) hazards and hazardous materials, (8) hydrology and water quality, (9) land use and planning, (10) greenhouse gas emissions, (11) transportation and traffic, (12) population and planning, (13) mineral resources, (14) noise, (15) public services, (16) recreation, (17) utilities and service systems, and (18) cumulative impacts.

In accordance with §15064(f) of the CEQA Guidelines, a Mitigated Negative Declaration (MND) shall be prepared if the proposed project will not have a significant effect on the environment after inclusion of mitigation measures in the project. Based on available project information and environmental analyses presented herein, there is no substantial evidence that, after incorporation of mitigation measures, the proposed project will have a significant negative effect on the environment. It is proposed that a Mitigated Negative Declaration be adopted in accordance with the CEQA Guidelines.

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Attachments

Lake Earl Coastal Dunes Restoration Plan including:

- Appendix A. Sensitive Plant Survey Results
- Appendix B. Wetland Delineation Survey Results
- Appendix C. Cultural Resources Investigations (Confidential; on file with DFG)
- Appendix D. Geologic Analysis
- Appendix E. Hazardous Spill Contingency Plan
- Appendix F. USFWS Technical Assistance letter May 21, 2010

Documents prepared by: Deborah L. Jaques[1], Sandra E. Jerabek[2], and R. Robert Smith[3.]

[1]Deborah L. Jaques, Pacific Eco Logic, Astoria, Oregon (djaques.pel@charter.net),
[2]Sandra E. Jerabek, Tolowa Dunes Stewards/Smith River Alliance Crescent City, CA (jerabek@jeffnet.org), and [3] R. Robert Smith, California Dept of Fish and Game, Redding, CA (rsmith@dfg.ca.gov)

Introduction

The Lake Earl Wildlife Area (LEWA) Coastal Dune Restoration Project is subject to review under the California Environmental Quality Act (CEQA). CEQA requires government agencies to consider environmental impacts of projects and to avoid or mitigate them where possible. The California Department of Fish and Game (CDFG) is the lead agency for this proposed coastal restoration project as it is located on the CDFG owned and managed LEWA. The CDFG has determined that the LEWA project may have a significant effect on the environment, but that agreed upon conditions would mitigate potentially significant effects to a less than significant level. This Initial Study and Mitigated Negative Declaration (IS/MND) has been prepared to address potential environmental effects of the proposed project. The MND conforms to the content requirements under CEQA Guidelines §15071.

Project Location

The proposed restoration area is located about 16 km (10 miles) north of Crescent City on the western edge of the CDFG managed LEWA (T 17N R 1W, Sections 30 and 31, Humboldt Base Meridian) (Fig. 1). The project is focused on vegetated coastal dunes bordering the ocean and the outlet of the coastal lagoon known as Lake Tolowa. The area slated for restoration consists of about 16 ha (40 ac) of foredune along a 1.3 km (2.1 miles) stretch of coastline at the mouth of the lagoon (Fig. 2). The project is surrounded by the LEWA to the north and east, the Pacific Ocean to the west, and Tolowa Dunes State Park to the south.

Project Summary

The LEWA coastal dune restoration project proposes to remove invasive European beachgrass from approximately 14 ha (34 ac) of foredunes on either side of the mouth of Lake Tolowa lagoon, using a combination of manual and mechanical removal techniques. The goal of the project is to restore natural ecological processes to benefit native plant and animal species by removing this invasive non –native vegetation. Heavy equipment will be used to scrape or excavate deep rooted beachgrass from the foredunes adjacent to the open beach. Crews using hand-shovels in areas adjacent to wetlands and sensitive dune mat vegetation will remove beachgrass manually. Rare and sensitive plant surveys, wetland delineation, a cultural resources investigation and geologic analysis were conducted as precursors to development of the restoration plan. All sensitive locations within the project site will be buffered and protected from harm during restoration. The project will take place in phases and will be closely monitored so that adaptive management can be employed to circumvent any undesirable effects.

Project Need and Objective

Coastal dune habitat was identified as the habitat type most in need of restoration and management in the LEWA Management Plan (Plan) (CDFG 2003). This habitat type represents 2.3% of the total habitat within the LEWA and nearly all of it has been invaded by non-native European beachgrass (*Ammophila arenaria).* European beachgrass is a fast spreading, highly invasive species that has altered shoreline physiography and had numerous negative impacts on

native plant and animal communities on the west coast (Weidemann and Pickart 1996), including the federally threatened western snowy plover (*Charadrius alexandrinus nivosus*) (USFWS 2007a). The coastal dune habitat around the mouth of Lake Tolowa has historically supported nesting plovers and is designated critical habitat for the species (USFWS 2005a). The project area currently supports remnant patches of rare and sensitive coastal dune

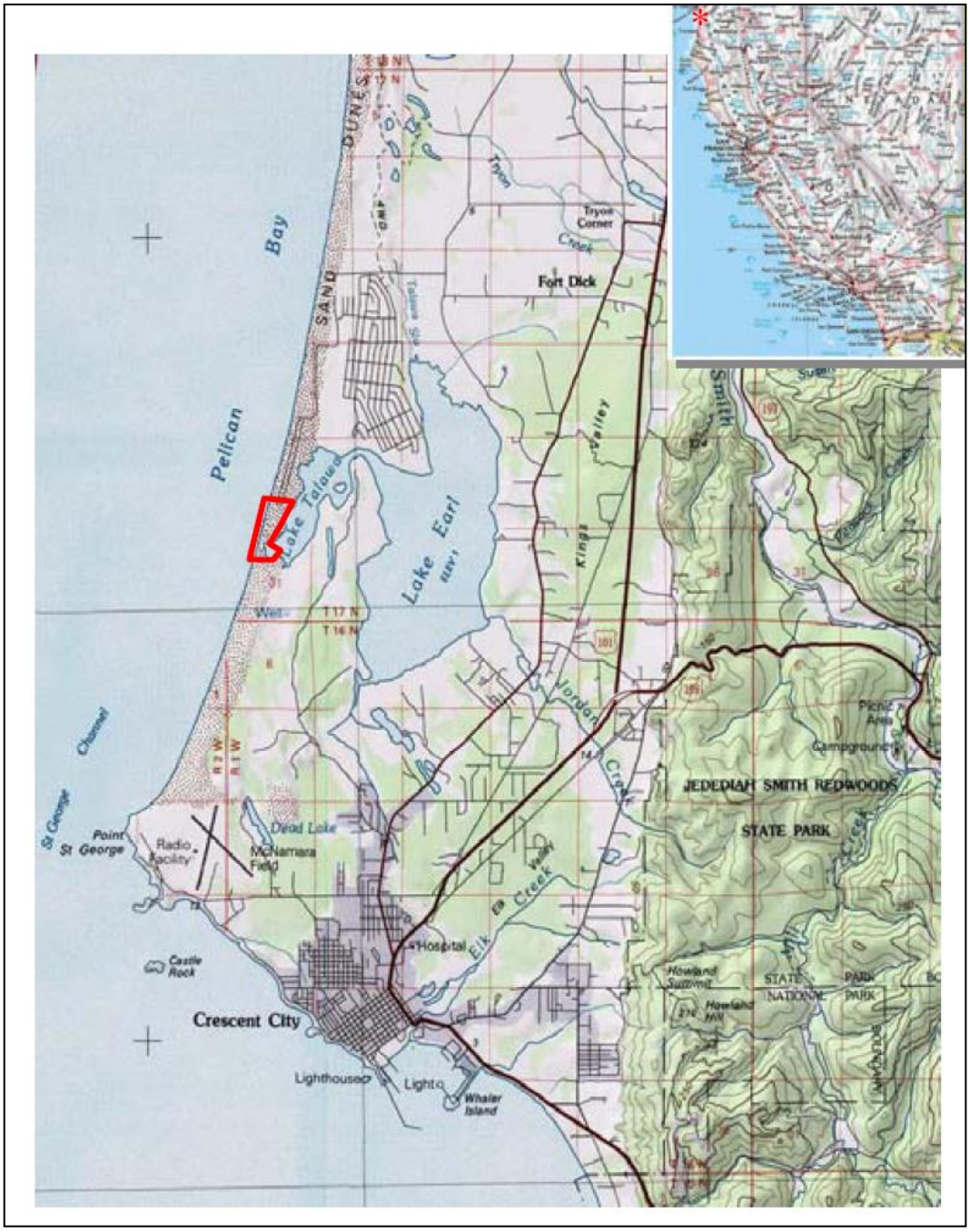

Figure 1. Location of the Lake Earl Wildlife Area Coastal Dunes Restoration Project (outlined in red) in Del Norte County, California.

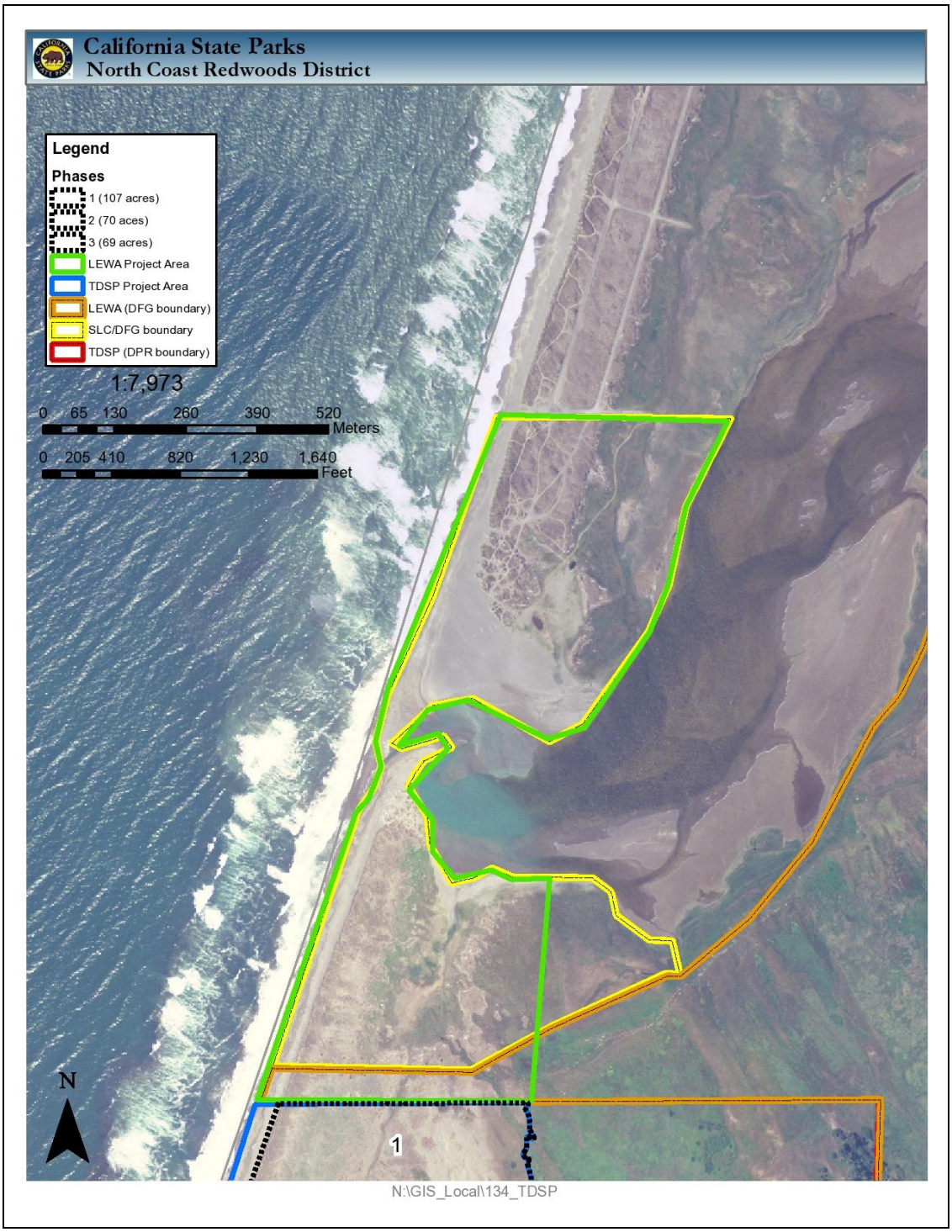

Figure 2. Mouth of Lake Tolowa showing the Lake Earl Wildlife Area Coastal Dunes Restoration Project boundaries (green line) and adjacent Tolowa Dunes State Park project area (blue line) in Del Norte County, California.

mat vegetation; however, some of these species are threatened with extirpation within the site due to continuing encroachment of European beachgrass. Removal of European beachgrass will restore the natural physical processes of coastal dunes. These processes are important in the formation of native dune habitat and restoration therein will providing increased benefits for sensitive species that are dependant upon these areas (e.g. sand dune phacelia (*Phacelia argentea*), dune bees, etc.). While it is unclear if western snowy plover (*Charadrius alexandrinus nivosus*) will utilize these restored areas, there is clearly greater potential for nesting habitat if/when it may occur.

Scope of the Initial Study

The focus of the detailed discussion in this Initial Study is on specific issues and concerns identified in the environmental significance checklist. The following resource topics are analyzed in this Initial Study.

1) Aesthetics
2) Air Quality
3) Biological Resources
4) Cultural Resources
5) Geology and Soils
6) Hazards & Hazardous Materials
7) Hydrology and Water Quality
8) Noise
9) Recreation

Summary of Impacts and Mitigation Measures

SUMMARY OF POTENTIAL IMPACTS AND MITIGATION MEASURES	
Potential Impact	**Mitigation Measure**
Harm to special-status native dune mat plant species	Identify and flag locations of known rare plants and establish a 5 m (16.4 ft) buffer between plants and heavy equipment/burn piles.
Disturbance of Western Snowy Plover	Restrict project operations to the non-breeding season to the extent possible; monitor for nesting plovers and establish a 100 m (323 ft) buffer between nest sites and project activities if work takes place when project site is occupied during the breeding season.
Disturbance of special status birds and other potential grassland breeding birds	Conduct breeding season surveys and establish 100 m (323 ft) buffers between nests and work areas if needed.

Negative impacts on tidewater goby habitat due to increased blowing sand	Sand encroachment on wetland borders of Lake Tolowa will be monitored by photopoint surveys.
Negative impacts to coastal dune mat habitat	Limit heavy equipment use to areas of low native plant density. Use trained manual labor crews to selectively remove targeted invasive plant species in areas of significant dune mat.
Harm to wetland habitats	Establish a 5 m (16.4 ft) buffer around wetlands to exclude heavy equipment; funnel all vehicles and pedestrians away from wetlands and use temporary walkways if foot traffic across wetlands is unavoidable.
Disturbance of cultural resource sites or human remains	Establish a 30 m (98.4 ft) heavy equipment exclusion zone around known archaeological sites and include a professional archeologist on-site when works takes place within 100 m (323 ft) of the known site. Follow established protocol if any new cultural artifacts or human remains are inadvertently found during project actions.
Harm to sensitive habitats due to leakage of fuel or oil from heavy equipment	Adhere to all basic procedures and protective measures outlined in the hazardous spill contingency plan, Appendix E. Ensure that each operator has a spill kit and understands emergency plans.

Project Description

The project has been described in detail in the attached restoration plan, “Lake Earl Wildlife Area Coastal Dunes Restoration Plan.” All references to Appendices, Figures, and Literature Citations are those included in the plan.

Project Timing

The start date of the project is dependent on availability of grant funds and other regulatory authorizations. It is anticipated that the project will be initiated in Summer 2011. The project is expected to require at least 4 years for completion (2011-2015). Further details are provided in the restoration plan.

I. AESTHETICS

ENVIRONMENTAL SETTING

The coastal dunes and beaches of LEWA offer views of the ocean, Lakes Earl and Tolowa, wetlands, mountains and and forests, as well as opportunities to view wildlife and flowering native plants. The project area occurs within a remote area of LEWA, more than 14.5 km (9 miles) from any state scenic highways. The nearest official State Scenic Highway is a portion of Highway 101 that extends from Del Norte Coast Redwoods State Park (SP) south to Prairie Creek Redwoods SP.

WOULD THE PROJECT:	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☒	☐
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☐	☒

DISCUSSION

a) The proposed project area does not include any identified or designated scenic vistas

b) The project is not located near any state scenic highway.

c) Portions of the project area will be visible to the relatively small numbers of people that visit the beaches around the mouth of Lake Tolowa. Short-term negative visual impacts will include presence of heavy equipment (3-4 weeks each year), equipment tracks on the dunes, piles of beachgrass, and temporary project flagging. The project site is not pristine and is currently degraded from off highway vehicles (OHV) and other vehicles. The project is expected to enhance visual quality of the site over the long-term.

d) The proposed project will not create light or glare.

II. AGRICULTURAL RESOURCES

ENVIRONMENTAL SETTING

Existing land uses in the vicinity of LEWA are a mixture of conservation, recreation, agricultural, and residential land with blocks of timberland and pockets of commercial and

industrial uses.
There are no private agricultural operations in the project area or surrounding Lake Tolowa.

WOULD THE PROJECT:	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
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?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use or a Williamson Act contract?	☐	☐	☐	☒
c) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use?	☐	☐	☐	☒

DISCUSSION

a) The project area is located within a state wildlife area.

b) Agriculture activities outside the project area are greater than 4.8 km/3 mi away will not be impacted by project.

c) DFG manages some pastures within LEWA for geese by using livestock grazing to maintain short grass. These pastures are not within the project area and no changes in pasture management or leases are planned due to the proposed project.

III. AIR QUALITY

ENVIRONMENTAL SETTING

The project site is in Del Norte County, which is part of the North Coast Air Basin and is under the jurisdiction of the North Coast Unified Air Quality Management District (NCUAQMD) and the U.S. Environmental Protection Agency (EPA) Region IX. The NCUAQMD is in non-attainment with California standards for inhalable particulate matter (which includes smoke), but is within attainment of all Federal standards. The project includes burning European beachgrass that has been manually extracted and mounded into piles to dry. The NCUAQMD requires a non-standard burn permit and a smoke management plan for this activity. A smoke management plan for the proposed project will be completed prior to the project start date. No burning will take place without authorizations as outlined in the burn permit and management plan. The project will take place completely in sand substrates and will not generate significant airborne dust.

WOULD THE PROJECT:	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
a) Conflict with or obstruct implementation of the applicable air quality plan or regulation?	☐	☐	☐	☒
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	☒	☐
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☐	☐	☒	☐
d) Expose sensitive receptors to substantial pollutant concentrations (e.g., children, the elderly, individuals with compromised respiratory or immune systems)?	☐	☐	☐	☒
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☐	☒

DISCUSSION

a. Work proposed in this plan is not in conflict with or would not obstruct implementation of any applicable air quality plans

b. Burning dried vegetation has the potential to cause temporary adverse impacts to air quality. An AQMD burn permit will be acquired prior to burning and burning will only take place on approved burn days. The smoke management plan described above includes required actions for reducing potential for adverse smoke impacts. Compliance with all NCAQMD requirements will ensure that any adverse impacts to air quality are less than significant.

c. The North Coast Air Basin is in non-attainment status for Inhalable Particulate Matter, which includes smoke. The relatively small amount of smoke generated from the proposed project on any given day will not result in any considerable cumulative net increase in pollutants in the region.

d. The project is located more than 4.8 km (3 miles) from any schools or other concentrations of sensitive receptors.

e. The project is in a relatively remote undeveloped location that experiences strong coastal

winds. Objections to odors associated with burning relatively small amounts of dried vegetation at this site are not anticipated.

Climate Change

In California, there are no statewide significance criteria or approved mitigation methods concerning Green House Gas (GHG) emissions; therefore, this section will discuss climate change qualitatively with no significance conclusion.

In discussing climate change, three fundamental questions must be addressed:

How will the project affect climate change?

The primary objective of the proposed project is to protect resources by promoting a naturally functioning dune ecosystem comprised of native flora and fauna. Methods used to remove beachgrass will involve gas and diesel powered heavy equipment. Given the relatively short amount of time that equipment will be running and the temporary duration of the project, only minor emissions are expected to result from project activities. The proposed restoration will not significantly impact climate change.

How will the project be affected by climate change?

As a result of global climate change including climate warming, the coast of California is expected to experience rising sea levels (Cayan et al. 2006). Although observations and models suggest an increase of one meter or more in the global sea level, the rate of this rise is uncertain (Cayan et al. 2006). It is estimated that much of the potential damage from rising sea levels will occur during periods of already high water (i.e. due to tides, weather, etc.), when sea level is highest, wave energy combined with high tides increases the chances of coastal damage. The project is not expected to have any impacts on configuration or elevation of outer beaches. A significant increase in sea level may inundate portions of the project area regardless of project actions.

If the projects contributions to climate change are considered a significant impact on the environment, what constitutes reasonable "fair share" mitigation?

The project will not significantly impact climate change.

IV. BIOLOGICAL RESOURCES

ENVIRONMENTAL SETTING

LEWA is located in the northwest corner of the Klamath/North Coast Bioregion and is centered around the largest coastal lagoon system on the U.S. Pacific Coast south of Alaska. The lagoons are collectively referred to as "Lake Earl" and consist of two somewhat unique segments (Lakes Earl and Tolowa) separated by a peninsula. The lagoon is surrounded by coastal sand dunes interspersed with coniferous forests, swales and riparian-freshwater wetlands. The area proposed

for restoration at LEWA is comprised of coastal nearshore dunes bordered by estuarine and freshwater wetland habitats. The dunes are largely dominated by invasive European beachgrass although remnant patches of native dune mat plants persist, particularly in the deflation plain. This dune mat habitat is considered globally rare (CDFG 2009). European beachgrass was introduced to the region in the 1800's to stabilize blowing sand and facilitate development. European beachgrass has altered dune morphology (Schlinger et al. 1977, Danin et al. 1998, Wiedemann 1998), sand movement patterns, and native plant community composition along the length of the U.S. Pacific Coast (Breckon and Barbour 1974, Boyd 1992). European beachgrass also decreases invertebrate abundance and diversity (Slobodchikoff and Doyen 1977, Webb et al. 2000), negatively impacts native pollinators (Nyoka 2004), and threatens sensitive species. Removal of European beachgrass is critical to conservation of native dune habitat. Beachgrass removal in the project area is expected to have immediate positive impacts on vigor and extent of native dune mat habitat within LEWA.

Pickart and Sawyer (1998) recognized the Lake Earl dunes as a priority for restoration despite significant natural resource impacts resulting from European beachgrass invasion. Among the factors contributing to the prioritization are the surviving populations of native plants and regional diversity represented. European beachgrass control and reestablishment of native dune processes and species composition is a resource management priority for both the CDFG LEWA (CDFG 2003) and the neighboring Tolowa Dunes State Park (TDSP) (Transou et al. in prep).

Environmentally Sensitive Habitat Types

Five sensitive habitat types recognized by the CDFG and California Coastal Commission are present in the project area and considered in this MND (Table 1). CDFG recognizes "sensitive natural community" types that are rare and worthy of consideration due to highly limited distribution, regardless of presence or absence of rare, threatened, or endangered status species. Community types composed of invasive, exotic species may also be considered sensitive in part due to their inclusion within larger, sensitive community types (Sawyer and Keeler-Wolf 1995). The California Coastal Act (sec. 30240) recognizes "Environmentally Sensitive Habitat Areas" (ESHAs) that shall be protected against significant disruption, and limits development design adjacent to such areas to prevent impacts that would significantly degrade ESHA sites. ESHAs are defined in the Coastal Act as areas where "…plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments." The California Coastal Commission considers all coastal dune habitats and wetlands to be ESHAs, and applies Sections 30230, 30231, 30233 and 30236 of the Coastal Act to regulation of activities in these areas. Section 30240 of the Coastal Act also regulates activities occurring in ESHAs.

Table 1. Habitats and natural communities found within the project area based on the California Natural Diversity Database (CNDDB) list of Terrestrial Natural Communities (CDFG 2003b, and 2009) and the U.S. Army Corps of Engineers (Gedik 2009, Appendix B).

Habitat	Native Plant Community	Project Area Plant Community
Beach Strand	Unvegetated	Unvegetated
Coastal Dunes	Dune Mat (*Abronia latifolia-Ambrosia Chamisonis alliance*) Native Dunegrass Series	European beachgrass alliance Dune Mat
Estuarine		
Saline Emergent Wetland	Variable	Saltgrass, arrowgrass
Fresh Emergent Wetland	Sedge alliance	Sedge alliance

A wetland delineation following the ACOE parameters was completed for the 44 ha (110 acre) project area in 2009 (Gedik 2009b, Appendix B). The wetland delineation defined wetland boundaries surrounding the dunes to be treated, and identified approximately 25 ha (62 acres) of ACOE-jurisdictional wetlands and Other Waters associated with Lake Tolowa in the project area (Appendix B). Areas along the spit where Lake Tolowa typically breaches to the ocean may be recognized as ACOE-jurisdictional Other Waters (approx. 8 acres) during periods when the lagoon is connected to coastal waters (Gedik 2009, Appendix B).

Special Status Species

Plants

A rare plant assessment was conducted by Gedik Biological Asscoiates (GBA) in the project area during 2009 (Appendix A). The California Natural Diversity Database (CNDDB) and the California Native Plant Society (CNPS) Inventory of Rare, threatened and Endangered Plants were queried for the project area and surrounding 7.5-minute USGS quadrangles (Gedik 2009a, Appendix A). It was determined that suitable habitat occurred for 19 Special Status regionally occurring plant species. Focused field surveys were conducted during July and August, 2009 by GBA Principal Biologist Tamara Gedik. Only one Special Status Species, the sand dune phacelia (*Phacelia argentea*) was found in the project area, although a second species, dark-eyed gilia (*Gilia millefoliata*) may have been present but undetected.

Table 2. Special Status Plant Species in the LEWA proposed restoration area.

Species Name	Federal Status	State Status	Preferred Habitat	Bloom Time
Sand-dune phacelia *Phacelia argentea*	None	Special Status Species CNPS: List 1B.1	Coastal dunes and strand, sand dunes less than 20 m (Hickman 1993)	June- Aug, perennial
Dark-eyed gilia *Gilia millefoliata*	None	Special Status Species CNPS: List 1B.2	Coastal dunes, 2-20m (CNPS 2001)	April-July, annual

California Native Plant Society (CNPS) Listing Categories:
1B.1: Plants rare, threatened, or endangered in California and elsewhere
1B.2: Plants rare, threatened, or endangered in California but more common elsewhere

Sand dune phacelia is a CNPS List 1B.1 species known to occur only in California in the Lake Earl dunes and vicinity (Fig. 3). Populations of this perennial plant are typically small and highly fragmented, and most appear to be declining (Kalt 2008). Primary threats to the species are invasion by non-native species, especially European beachgrass, and OHV use (Rittenhouse 1995, Kalt 2008). Sand dune phacelia occurs primarily in dune mat throughout the backdunes of the project area although a few plants are known to occur in the foredune. Sand dune phacelia mats found throughout the project area range in size from single individuals only 2.5 cm (1 inch) in size to single mats 0.6 to 1.2 m (2-4 feet) in width (Gedik 2009, Appendix A).

Dark-eyed gilia is listed as 1B.2 by CNPS. It is annual plant that grows from 8-30 cm tall in coastal dune habitats. Flowering occurs from April to July when 2-6 purple flowers clustered on a stalk are produced. The species range extends from southern Oregon to Marin County, California. Threats include stabilization of the sand dunes by European beachgrass and other non-native species, loss of habitat to development, grazing, and vehicle and foot traffic. Suitable habitat for dark-eyed gilia was thought to occur in the southeast portion of the project area, but surveys were conducted too late in the season to determine if the species was present or not (Gedik 2009, Appendix A). The species occurs in neighboring TDSP.

Animals
Sensitive wildlife species that occur in the area include two federally listed species and six other special status species (Table 3). A federally listed butterfly also occurs in the project vicinity and has the potential to expand into the area following habitat restoration due to creation of more suitable habitat. The two federally listed wildlife species that are known to occur within the project area are the western snowy plover and the tidewater goby. The restoration plan contains additional discussion of wildlife species associated with the project area.

Table 3. Special status species known to occur within the LEWA project area or nearby vicinity.

Species Name	Federal Status	State Status	Breeding Status Within Project Area
Birds			
Western Snowy Plover *Charadrius alexandrinus nivosus*	FT	None	Non-breeding (Historical breeder)
Bald Eagle *Haliaeetus leucocephalus*	FD	CE (under review)	Non-breeding
Northern Harrier *Circus cyaneus*	None	SSC	Possible breeding
Oregon Vesper Sparrow *Pooecetes gramineus affinis*	None	CSC	Unknown Status, possible breeding
Fish			
Tidewater Goby *Eucyclogobius newberryi*	FE	CSC	Possible breeding
Coastal Cutthroat Trout *Oncorhynchus clarkii clarkii*	None	CSC	Non-breeding
Steelhead trout *Oncorhynchus mykiss*	None	CSC	Historically stocked, non-breeding, presence uncertain
Amphibians			
Northern Red-legged Frog *Rana aroura*	None	CSC	Likely to occur in area but habitat not likely to support breeding
Invertebrates			
Oregon Silverspot Butterfly *Speyeria zerene hippolyta*	FT	None	Non-breeding, presence not documented

Table 3 Status Codes: Federally Endangered (FE), Federally Threatened (FT), and Federally Delisted (FD); State Endangered (SE), State Threatened (ST), and California Species of Special Concern (SSC).

The Pacific coast breeding population of the western snowy plover was federally listed as Threatened due to a documented decline in population and number of active breeding areas. Open habitat around the mouth of Lake Tolowa was known as a plover nesting area through the later part of the 1970's (Page and Stenzel 1981, Page et al. 1991) but the last nest was reported in 1989 (A. Barron, pers. comm.). Currently, no known nesting sites are in Del Norte County; however, birds are regularly detected along the waveslope of LEWA and surrounding regions (NCRD data). The project area overlaps with federally-designated critical habitat for the species. The breeding season for the western snowy plover extends from early March to late September in northern California.

The tidewater goby is a federally Endangered fish species endemic to California (USFWS 1994). Lakes Earl and Tolowa are thought to support the largest population of tidewater goby remaining in the state, with numbers estimated at a few million (Swift et al. 1989, USFWS 2005). The entire coastal lagoon has been designated as critical habitat for the species partly due to its

importance as a source population for a genetically distinct metapopulation (USFWS 2008b). Current threats identified for this population include artificial lagoon breaching and non-point source pollution from agricultural run-off. Tidewater goby occur throughout Lakes Earl and Tolowa and appear to adjust their distribution within the lagoon system according to seasonally changing salinity and other environmental conditions (Tetra Tech 2000). During a 1998-1999 study, the primary spawning areas for this species were found to be in sandy substrate along wind-sheltered shorelines of Lake Earl. Rearing occurred primarily in Lake Earl and at the narrows between Lakes Earl and Tolowa. Foraging occurred throughout the lagoon system, with the exception of shoreline areas that are seasonally anaerobic due to detritus build-up. The goby is not known to breed within the wetlands of the project area.

The bald eagle has been federally delisted and is currently under review for delisting in California (CDFG 2010). Breeding bald eagles remain relatively rare in Del Norte County, but one pair has nested in trees at the northern end of TDSP. Large trees in parts of LEWA provide potential nest sites for this species. The species is rarely seen foraging or roosting in the project area and there are no large trees present to support nesting.

California Species of Special Concern (SSC)

Five species identified as CSC may occur within the project area. Two of these birds may breed within the project area, the northern harrier and the Oregon vesper sparrow. Breeding surveys for the species have not been conducted. Waterfowl broods occur in the mouth region and ducks and geese may nest in grasslands associated with the project area to a limited extent. One SSC fish species, the coastal cutthroat trout may occur in the wetlands bordering with the project. The northern red-legged frog has not been documented in the project area probably occurs in relatively low densities as a non-breeder around the wetland borders of the site.

In addition, several species of seabirds and shorebirds roost communally at the mouth of Lake Tolowa. Brown Pelicans (*Pelecanus occidentalis*) routinely move between the ocean and Lake Tolowa to bathe, followed by preening and resting onshore.

Figure 3. Aerial photograph of the Lake Earl Wildlife Area at high water levels in 2009 (NAIP imagery) showing zone for mechanical removal of European beachgrass (red hatched area) and sand dune phacelia plants (purple dots) observed incidentally during reconnaissance in Spring 2010. All mechanical removal will take place at least 5 meters distant from any sand dune phacelia or other rare plants.

WOULD THE PROJECT:	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
a) Have a substantial adverse effect, either directly or through habitat modification, on any species identified as a sensitive, candidate, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game, the U.S. Fish and Wildlife Service, or NOAA Fisheries?	☐	☒	☐	☐
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 the U.S. Fish and Wildlife Service?	☐	☒	☐	☐
c) Have a substantial adverse effect on federally protected wetlands, as defined by §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?	☐	☒	☐	☐
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?	☐	☐	☒	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
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?	☐	☐	☐	☒

Discussion

a) A primary goal of the restoration plan is restoring natural processes that benefit native species and habitats including improvement of habitat for, and protection of, rare, threatened, and endangered species. The restoration project includes avoidance measures to reduce the potential for adverse impacts to sensitive species to a less than significant level. These avoidance measures include surveying for sensitive species and maintaining spatial buffers where necessary for certain restoration activities. Qualified personnel will be on-site during all restoration activities to monitor activities and ensure avoidance measures are implemented. The USFWS has provided Technical Assistance for the planning and implementation phases of the restoration work in relation to the western snowy plover and tidewater goby (Appendix F). **Biological Mitigation Measures** (1-4) (Pages 39-40) address how negative impacts to sensitive species will be minimized. **Biological Mitigation Measures 5 and 6** (Page 40) will function to protect the northern red-legged frog, in addition

to the practice of leaving large woody debris in place as described in the restoration plan.

Despite best efforts to avoid any adverse impacts to sensitive species there is the potential for less-than-significant short-term impacts. However, these short-term impacts to sensitive species are expected to be negligible, and will be offset by the long-term benefits likely to result from the proposed restoration project. The project is expected to benefit sensitive species over the long-term by enhancing and expanding habitat and reducing or eliminating European beachgrass, a primary threat to many of these species.

b) Coastal dunes are considered an environmentally sensitive habitat. Impacts to some typical dune mat plants within dense stands of European beachgrass will be unavoidable in areas where heavy equipment is being used to eradicate European beachgrass. Negative impacts will be offset by the overall increase and improvement in native dune mat plant habitat due to the restoration. **Biological Mitigation Measures 1 and 5** (Pages 39-40) describe how native plant communities and rare plants will be protected.

c) Project activities will take place in the immediate vicinity of coastal wetlands. There is potential for blowing sand to deposit in certain wetland areas at a greater rate than in pre-project conditions, due to removal of stabilizing vegetation. Wind driven sand is a natural feature of coastal dune habitats, but **Biological Mitigation Measure 4** (Page 40) will be employed to avoid wetland filling that may be harmful to the tidewater goby. Potential disturbances to wetland fringe habitat due to presence of work crews, and potential negative impacts on water quality due to use of heavy equipment will further be avoided by implementation of **Biological Mitigation Measure 6** (Page 40).

d) The project is not expected to interfere with movement of fish or wildlife species on any long term basis. The project may cause disruption of birds roosting at the mouth of Lake Tolowa when work crews transit the area a few times a day. Workers will be instructed to avoid flushing birds whenever possible, and to move quickly and infrequently past sensitive sites at the edge of the ocean or wetlands. Established wetland buffers (exclusion zones) will also function to reduce disturbances to fish and wildlife.

Collectively, **Biological Mitigation Measures** identified on Pages 39-40 will ensure that any adverse impacts to sensitive species or habitats that result from project activities will be less than significant.

V. CULTURAL RESOURCES

ENVIRONMENTAL SETTING

The project area is located within the ethnographic territory of the Tolowa people in northwest California. The Tolowa historically used the coastal margins of the Lake Earl dunes for subsistence year round (Gould 1975,1978). Contemporary Tolowa members continue some of these practices, such as surf fishing, shellfish collecting, and fish-drying in the present day. A Cultural Resources Investigation was conducted by the Humboldt State University Cultural Resources Facility (HSU-CRF) for the proposed project (Burns et al 2009; Rich et al 2010, Appendix C). No previously known archaeological sites are present on the project site, but one newly recorded archaeological site (CRF-TDS-01, Property Line Site) was discovered during the course of these studies. Cultural resource protective measures were prescribed by HSU-CRF to

protect this site and any others that may be discovered inadvertently during project implementation. These measures are specifically outlined in the restoration plan and Appendix C, and will be adhered to for this project. The HSU-CRF recommendations concluded that: "*If this dunes restoration project is completed as described in this report and the above recommendations can be met during project implementation, it is the finding of this report that the project will have no effect to significant cultural resources*." This supports a finding of "No Adverse Effects to Historical Resources" (per Public Resource Code 5020.1) and "No Historic Properties Affected" (according to 36 CFR 800.4(d)(1)).

	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
WOULD THE PROJECT:				
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) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☒	☐	☐

DISCUSSION

a) Implementation of **Mitigation Measures Cultural –1** (Page 41) would reduce impacts to archaeological site CRF-TDS-01 to a less than significant level.

b) Same as above.

c) There is potential for unanticipated discoveries of human bone. If any human remains or burial artifacts were identified, implementation of the measures outlined in the restoration plan, summarized in **Mitigation Measure Cultural-1** (Page 41), would reduce the impact to a less than significant level.

VI. GEOLOGY AND SOILS

ENVIRONMENTAL SETTING

GENERAL GEOMORPHOLOGY AND SOILS

A detailed description of the geology can be found in the Lake Earl Wildlife Area Management Plan (2003).

The project areas consist of two taxonomic soil types: the Beaches-Samoa-Dune land complex and the Samoa-Clambeach-Dune land complex (Gedik 2009). The Clambeach series is associated with wetlands in the project area. Restoration activities are proposed to take place

only in the dune associated Beach-Samoa-Dune land complex. Sand comprises the entire profile for this complex in the project area.

The foredune consists of relatively fine sand, while medium grained sand and cobbles are the predominant materials in the deflation plain east of the primary foredune. The coarser grained materials in the deflation plain are less prone to wind transport than the finer grained material that caps the foredune. Substantial sand movement can be expected in the project area during the dry months. Gust speeds in excess of 12 knots (about 14 mph) are reportedly required to transport dry sand; however sand movement has been observed at winds as low as 6.9 knots (6 mph) on the Oregon coast (USDI 2009). Wet or moist southerly winds in winter are far less likely to transport sand in the Pacific Northwest than the drier northerly winds of spring and summer (Hunter et al. 1983). Pacific Watershed Associates conducted an evaluation of the proposed project with respect to geomorpholgical changes that may result from beachgrass removal on the foredunes (Weaver and LeRoy 2010, Appendix D).

A cobble outcrop in the lee of the foredune was observed at LEWA and at neighboring TDSP (Vaughan and Van Dyke 2009). This cobble layer has been hypothesized to be dominantly tsunamigenic. The unique layer has been mapped in TDSP up to the DFG project area boundary. Cobbles are targeted for further study as they potentially provide historic information with respect to North Coast earthquake and tsunami history.

	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
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.)	☐	☐	☐	☒
ii) Strong seismic ground shaking?	☐	☐	☐	☒
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☐	☒
iv) Landslides?	☐	☐	☐	☒
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
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?	☐	☐	☐	☒
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1997),	☐	☐	☐	☒

	creating substantial risks to life or property?				
e)	Have soils incapable of adequately supporting the use of septic tanks or alternative waste disposal systems, where sewers are not available for the disposal of waste water?	☐	☐	☐	☒
f)	Directly or indirectly destroy a unique paleontological resource or site, or unique geologic feature?	☐	☐	☒	☐

DISCUSSION

a) There are no known faults within the project area according to the Alquist-Priolo Earthquake fault zoning maps. An earthquake caused by the Cascadia Subduction Zone could affect the project area along with the surrounding region. Localized liquefaction could occur due to the unconsolidated nature of the beach and dune materials but it is unlikely that it would sink any heavy equipment present beyond retrieval. Spill contingency plans will be implemented if an earthquake causes leaks of hazardous fuels from heavy equipment. No structures are associated with the project and people at the site would have instructions on measures to take in the event of an earthquake.

b) Continuous sand erosion and deposition is a natural feature of dynamic coastal dune systems. An increase in sand movement may occur within the project area but no net loss or gain of sand from the project area is anticipated.

c) The project will not affect the stability of the sand with respect to any of the hazards described.

d) Mapping by the Natural Resource Conservation Service (NRCS) reveals only sand and no expansive soils within the project area.

e) Septic systems are not proposed as part of the project.

f) There are no documented or anticipated unique paleontological resources or unique geological features on the project site.

VII. HAZARDS AND HAZARDOUS MATERIALS

ENVIRONMENTAL SETTING

There are no known hazardous materials within the project site. The only hazardous materials associated with the restoration project are the fuels and lubricants contained within heavy equipment machinery. The restoration plan and Hazardous Spill Contingency Plan contained within it (Appendix E) describe safe operation procedures, spill prevention standards, and spill response protocols.

Schools and Airports

The closest school is Pine Grove elementary school (900 Pine Grove Rd.), over 4.8 km (3 miles)

from the project area. The Del Norte County Airport/Jack McNamara Field is located 3.5 kilometers (2.2 miles) south of the project area and is open to the public.

Wildland Fires

The project is located in a remote coastal area, separated from developed/urban landscapes by large stretches of sand, wetlands, and coastal sitka spruce and shore pine forest. The project will include burning piles of dessicated beachgrass that will be extracted and mounded manually. A smoke management plan for the project will be developed in compliance with the North Coast Unified Air Quality Management District (NCUAQMD). Fire safety precautions are outlined in the restoration plan and include parking vehicles away from flammable material such as dry grass and brush and ensuring that project staff have cell phones or a DFG radio when on site, which will allow direct contact to California Department of Forestry and Fire Protection and centralized dispatch center, to facilitate the rapid dispatch of control crews and equipment in case of a fire.

	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
WOULD THE PROJECT:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☐	☒
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and/or accident conditions involving the release of hazardous materials, substances, or waste into the environment?	☐	☒	☐	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
d) Be located on a site which is included on a list of hazardous materials sites, compiled pursuant to Government Code §65962.5, and, as a result, create a significant hazard to the public or environment?	☐	☐	☐	☒
e) Be 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? If so, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
f) Be located in the vicinity of a private airstrip? If so, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
h) Expose people or structures to a significant risk of	☐	☐	☒	☐

loss, injury, or death from wildland fires, including areas where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

DISCUSSION

a) No direct use, routine transport or disposal of hazardous materials will take place as part of the proposed project. The only hazardous materials entering the proposed project area would be the fuel and oil contained in heavy equipment. Accidental discharge of these substances is discussed below.

b) During the project, hazardous substances could be released to the environment from vehicle or equipment fluid spills or leaks. Accidental spills will be minimized, avoided, or controlled, by implementing the project standards (or Best Management Practices) outlined in the restoration plan and by following protocol outlined in the Hazardous Spill Contingency Plan (Appendix E) as summarized in **Mitigation Measure Hazardous Materials-1** (Pages 41-42).

c) The nearest schools are located over 4.8 km (3 miles) away from the project area.

d) The project area is not included on a list of hazardous materials sites.

e) The nearest airport is located 3.5 km (2.2 miles) south of southern boundary of the project area.

f) The project site is not located within the vicinity of a private airstrip.

g) Project-related activities will not restrict access to or block any public road or impede emergency plans in any way.

h) The project area is not located in an area that puts the public at high wildland fire risk. Burning piles of dry beachgrass will result in some potential for wildfire and smoke in the project area. All burning will be in compliance with the Non-Standard Burn Permit acquired prior to restoration action. A smoke management plan will be developed in compliance with the NCUAQMD. The restoration plan and burn pile management plan developed for the project will provide safety precautions and project standards for reducing potential impacts to a less than significant level.

VIII. HYDROLOGY AND WATER QUALITY

ENVIRONMENTAL SETTING

The project area is located in the Klamath River Basin, which covers an area of approximately 28,049 square kilometers (10,830 square miles) within northern California (NCRWQCB 1993). The project site is located within the Smith River hydrologic unit, where domestic, agricultural, and industrial water needs are supplied through surface water diversions and groundwater pumping. The Department of Water Resources has identified one groundwater basin, the Smith River Plain basin, in this hydrologic unit. Most precipitation in the region occurs from October through April with 152-203 centimeters (60-80 inches) total annual rainfall expected each year

(North Coast Redwoods District 2001). A Wetlands Delineation of the project area was conducted by Gedik Biological Consultants in 2009 (Appendix B).

Lakes Earl and Tolowa are relatively shallow coastal lagoons that are historically part of the Smith River drainage. Lake Earl is mostly freshwater and receives flow from Jordan Creek and Brush Creek to the east. Connected to Lake Earl by only a narrow channel, Lake Tolowa is mostly saline and is bounded from the ocean by a sand berm of about 4 m (13.1 ft) above mean sea level (msl). Unlike other northern California lagoons, Lakes Earl and Tolowa are rarely allowed to reach the elevations necessary for natural breaching to the ocean. Lagoon elevations greater than 3m (10 ft) above msl exacerbate flooding of some rural roads and agricultural pastures in the surrounding area during the rainy season (California Coastal Commission et al. 1987). The County of Del Norte and the CDFG are co-applicants on a lagoon breaching permit issued by the U.S. Army Corps of Engineers. Under this permit, the Lakes Earl and Tolowa lagoon complex is artificially breached using heavy equipment typically once or twice annually when water levels exceed 2.4 m (8 ft) msl. When water levels are high, the combined surface area of Lakes Earl and Tolowa is 1,011 hectares (2,500 acres) although the entire Lake Earl wetland complex spans 2,225 hectares (5,500 acres). When breaching occurs late in the season, the lagoon remains low due to lack of rainfall and stream water recharge.

The project is not expected to have any significant impacts on the breaching regime of the lagoon system (Weaver and LeRoy 2010; Appendix D). Artificial breaching will be conducted as usual to prevent flooding of local roads and pastures. Artificial breaching has taken place throughout much of the last century (CDFG 2003). The lagoon breach regime prior to invasion by European beachgrass is unknown. Although the height of the foredunes surrounding the berm are expected to decrease in elevation following beachgrass removal, the unvegetated barrier beach berm separating the lagoon from the ocean is not expected to lower significantly. The beach berm is built by longshore transport of sand from ocean currents. The berm builds within 30 days on average of lagoon breaching during rainy months (PWA/Jeremy Lowe 2003). No net change in sand volume or cycling in the coastal littoral cell that builds the beach berm is anticipated due to the restoration action.

Coastal Hazards

Most of the proposed project is within a high tsunami hazard zone with the potential for high wave velocity (Patton and Dengler 2006). Rogue waves, typical storm waves, and high tides can inundate the entire outer beach in the project area, but foredunes block landward encroachment of waves and tides. Additional hazards occur when the lagoon is breached to the ocean due to high velocities of water draining from the lagoon and associated bank erosion (Tetra Tech 2000). Workers and equipment will be excluded from the edges of the sand berm area for the first few days after a lagoon breach. Workers will be exposed to natural coastal hazards during project implementation; however, most of the work will take place on top of or in the lee of the foredunes, away from typical wave hazards. Safety training and project protocol will include measures to avoid and respond to potential coastal hazards as per the restoration plan.

WOULD THE PROJECT:	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
a) Violate any water quality standards or waste discharge requirements?	☐	☐	☐	☒
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 that would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☐	☒
c) Substantially alter the existing drainage pattern of the site or area, including through alteration of the course of a stream or river, in a manner which would result in substantial on- or off-site erosion or siltation?	☐	☐	☒	☐
d) 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?	☐	☐	☐	☒
e) Substantially degrade water quality?	☐	☐	☒	☒
f) 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?	☐	☐	☐	☒
g) Place structures that would impede or redirect flood flows within a 100-year flood hazard area?	☐	☐	☐	☒
h) Expose people or structures to a significant risk of loss, injury, or death from flooding, including flooding resulting from the failure of a levee or dam?	☐	☐	☒	☐
i) Result in inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒

DISCUSSION

a) The proposed project actions will not violate any water quality standards or waste discharge requirements.

b) The project is expected to reduce the height of the foredunes on either side of the breach site at Lake Tolowa, which may increase ocean overwash into the lagoon near the mouth of the lagoon. The project is not expected to affect the height of the beach barrier berm that functions as a dam between the lagoon system and the ocean. Changes in the tendency for the

lagoon to breach naturally and potentially lower the groundwater table are not expected due to project actions.

c) The project does not propose to alter the course of a stream or river. An increase in wind driven sand may change the shoreline configuration in the western portion of the project area to some extent, particularly in the region of shorebird slough. The shoreline is historically dynamic and is affected by lagoon levels, breaching patterns, as well as drainage into the project area from surrounding wetlands. Any change in course of drainage patterns would occur within a natural setting and would not affect overall hydrology of the area, resulting in a less than significant impact.

d) No stormwater systems are downslope from the project.

e) The proposed project will not substantially degrade water quality

f) The project does not involve creation of any housing.

g) The project does not involve creation of any structures.

h) The project will not expose people or property outside the project area to flooding. The project will have no impact on the artificial breaching regime that prevents flooding in the area surrounding the coastal lagoon. Project workers and equipment will be exposed to potential tsunami flooding, storm surge, and rogue waves, however. Workers will be required to remain at least 10 m (32.8 ft) away from the edge of the breach channel whenever lagoon breaches create hazardous conditions around the mouth. Worker safety plans reducing potential effects of coastal hazards on project workers to less than significant levels are summarized in the health and safety section of the restoration plan and **Mitigation Measure Hazardous Materials-1** (Pages 41-42).

   The potential for a tsunami wave to overtop the dunes in the project area may increase from the current condition, if the elevation of the foredune is lowered in response to the vegetation removal. The project will not affect the expected primary route of tsunami inundation at the mouth of the lagoon and so will not magnify tsunami effects outside of the project area.

IX. LAND USE AND PLANNING

ENVIRONMENTAL SETTING

The project area is comprised entirely within LEWA, which is public land owned by CDFG. Land use in the area surrounding area is characterized by a sparsely populated mixture of public and private land uses and ownerships, including the TDSP. No residences occur in the project area. The community of Fort Dick and the City of Crescent City are both located outside the boundaries of LEWA and TDSP. Lands to the north, northeast, east, and southeast are unincorporated areas within the County of Del Norte. The City of Crescent City's designated planning area extends as far north as the southern boundaries of TDSP and LEWA.

LEWA is managed primarily to benefit fish and wildlife resources while the management of TDSP focuses on resource protection and public use. These neighboring public areas share a common goal of removing European beachgrass from the coastal dunes to restore the natural physical processes that improve habitat for native species. Planning for habitat restoration at

LEWA is taking place in communication and cooperation with CDPR staff. Coastal dune habitat was the habitat identified as most in need of restoration and management in the LEWA Management Plan (CDFG 2004).

The County of Del Norte's Coastal Element (LCP) addresses coastal resources, constraints, and land issues within the County's coastal areas. Lake Earl and Lake Tolowa and adjacent land areas are addressed both specifically and generally throughout the LCP. Policies and recommendations on this topic support maintaining coastal dunes or returning disturbed areas to their native states.

The proposed project is in agreement with the LEWA Management Plan as well as DFG policies and is not proposing an incompatible or non-permitted use according to current zoning.

WOULD THE PROJECT:	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
a) Physically divide an established community?	☐	☐	☐	☒
b) Conflict with the applicable land use plan, policy, or regulation of any agency with jurisdiction over the project (including, but not limited to, a general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒

DISCUSSION

a) No community exists within the project boundary.

b) The project will not conflict with any land use project, policy, or regulation of any agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect.

c) The project will not conflict with any applicable habitat conservation plan or natural community conservation plan.

X. MINERAL RESOURCES

ENVIRONMENTAL SETTING

No significant mineral resources have been identified within the project area.

WOULD THE PROJECT:	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
a) Result in the loss of availability of a known mineral resource that is or would be of value to the region and the residents of the state?	☐	☐	☐	☒
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?	☐	☐	☐	☒

DISCUSSION

a) No known mineral resources exist within the project area.

b) No locally important mineral resource recovery sites exist within the project area.

XI. NOISE

ENVIRONMENTAL SETTING

Noise currently affecting the project area comes largely from Pacific Ocean waves, winds, and birds. ATV's and other vehicles can occasionally be heard on the dunes waveslope. Occasional air traffic can also be heard from the project area. Noise generation as a result of project implementation will be limited to heavy equipment operation a few weeks a year. The Del Norte County General Plan identifies residences, hospitals, extended care facilities, schools and other educational institutions, and libraries as noise-sensitive land uses. No such facilities occur within 4.8 km (3 miles) of the project area.

WOULD THE PROJECT:	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
a) Generate or expose people to noise levels in excess of standards established in a local general plan or noise ordinance, or in other applicable local, state, or federal standards?	☐	☐	☐	☒
b) Generate or expose people to excessive ground borne vibrations or ground borne noise levels?	☐	☐	☐	☒
c) Create a substantial permanent increase in ambient noise levels in the vicinity of the project (above levels without the project)?	☐	☐	☐	☒
d) Create a substantial temporary or periodic increase in ambient noise levels in the vicinity of the project, in excess of noise levels existing without the project?	☐	☐	☒	☐
e) Be 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? If so, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
f) Be in the vicinity of a private airstrip? If so, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

DISCUSSION

a) Noise is not expected to travel much beyond the project area and will be limited to the sounds of heavy equipment operating. Equipment operators and other workers in the nearby vicinity will be instructed to wear hearing protection. The public will be excluded from the immediate area of equipment operations.

b) The restoration plan does not propose using any equipment that could create excessive ground borne vibrations or ground borne noise levels.

c) All increase in noise levels will be temporary and limited to periods of heavy equipment operation.

d) Mechanized equipment used on-site will also be limited to a few weeks a year. Noise from the project is not expected to be heard in any residential areas.

e) The project area is not located within two miles of a public airport.

f) The project is not within the vicinity of a private airstrip.

XII. POPULATION AND HOUSING

The project site lies within LEWA, a wildlife area owned and managed by the state of California. LEWA is surrounded by a variety of natural habitats, public lands, and some rural properties. The restoration action will not influence population growth or displace existing or potential housing in the surrounding area.

WOULD THE PROJECT:	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
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)?	☐	☐	☐	☒
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

Discussion

a) Not applicable

b) Not applicable

XIII. PUBLIC SERVICES

ENVIRONMENTAL SETTING

Cal-Fire provides fire protection for the project area and maintains a fire station in Crescent City. The Crescent Fire Protection District provides fire protection and emergency medical services to the unincorporated areas around the Crescent City limits, including the project area. The Crescent City volunteer fire department provides fire protection and emergency services for Crescent City.

Law enforcement in LEWA is the responsibility of CDFG wardens. The Del Norte County Sheriff's Office is the primary law enforcement agency for unincorporated Del Norte County. Crescent City Police Department is responsible for all law enforcement within city limits and will respond to other agencies outside city limits when necessary.

WOULD THE PROJECT:	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
a) Result in significant environmental impacts from construction associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities, to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:	☐	☐	☐	☒
Fire protection?	☐	☐	☐	☒
Police protection?	☐	☐	☐	☒
Schools?	☐	☐	☐	☒
Parks?	☐	☐	☐	☒
Other public facilities?	☐	☐	☐	☒

DISCUSSION

a) The project does not involve construction of governmental facilities. Safety precautions identified in the restoration plan and burn plan will ensure that no additional demands are placed on fire protection services. No additional demands on rangers, wardens, or local police are expected as a result of this project. No new or altered facilities or services would be required to maintain acceptable public service at LEWA or neighboring TDSP as a result of this project.

XIV. RECREATION

ENVIRONMENTAL SETTING

Lake Earl Wildlife Area provides for fishing, wildlife/bird viewing, hiking, nature photography, and boating. Waterfowl hunting is permitted during open season. Facilities include an informational kiosk, parking lots, trails, restrooms, and two boat launch areas. Recreation areas within the vicinity of the project area include TDSP and Point St. George Heritage Area. The project area is visited mainly by beachwalkers, birders, surf anglers, and horseback riders. All of these user groups occur primarily on the outer waveslope, which will be largely unaffected by the project.

WOULD THE PROJECT:	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
a) 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?	☐	☐	☐	☒
b) Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?	☐	☐	☐	☒

DISCUSSION

b) The project will not result in any diversion of recreational activities to other areas.

c) The project would not include construction of recreational facilities or expansion of any facility.

XV. TRANSPORTATION/TRAFFIC

ENVIRONMENTAL SETTING

The primary existing access route to the southern region of the project area is via Old Mill Road. The northern portion of the project area will be accessed from Kellogg Road and the County-maintained semi-paved and gravel roads within the Pacific Shores subdivision, including Tell Boulevard. Carpooling to the project site will be encouraged.

Would the project:	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
a) Cause a substantial increase in traffic, in relation to existing traffic and the capacity of the street system (i.e., a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?	☐	☐	☒	☐
b) Exceed, individually or cumulatively, the level of service standards established by the county congestion management agency for designated roads or highways?	☐	☐	☐	☒
c) Cause a change in air traffic patterns, including either an increase in traffic levels or a change in location, that results in substantial safety risks?	☐	☐	☒	☐
d) Contain a design feature (e.g., sharp curves or a dangerous intersection) or incompatible uses (e.g., farm equipment) that would substantially	☐	☐	☐	☒

	increase hazards?				
e)	Result in inadequate emergency access?	☐	☐	☐	☒
f)	Result in inadequate parking capacity?	☐	☐	☒	☐
g)	Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	☐	☐	☐	☒

DISCUSSION

a) Workers will be driving to and from the project area daily during implementation but this small increase in traffic relative to the overall use of the local roads will be insignificant.

b) Not applicable.

c) Transport of heavy equipment through the roads at Pacific Shores may require some vehicles to drive more slowly or select alternate routes within Pacific Shores to reach their destination.

d) The project will not result in any changes to existing emergency access.

e) The project will not result in inadequate parking capacity at the LEWA.

f) The project will not result in changes to programs supporting alternative transportation.

XVI. UTILITIES AND SERVICE SYSTEMS

ENVIRONMENTAL SETTING

The project area is remote beach and dune habitat that does not contain any utilities or service systems. There are no trashcans or trash pickup services in the project area. The project will not generate any wastewater or solid waste that will require removal from the project area. Refuse generated by workers during implementation will be transported off-site and legally disposed of.

		POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
WOULD THE PROJECT:					
a)	Exceed wastewater treatment restrictions or standards of the applicable Regional Water Quality Control Board?	☐	☐	☐	☒
b)	Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities?	☐ Yes	☒ No		
	Would the construction of these facilities cause significant environmental effects?	☐ Yes	☒ No		
c)	Require or result in the construction of new storm water drainage facilities or expansion of existing facilities?	☐	☐	☐	☒

	Would the construction of these facilities cause significant environmental effects?	☐	☐	☐	☒
d)	Have sufficient water supplies available to serve the project from existing entitlements and resources or are new or expanded entitlements needed?	☐	☐	☐	☒
e)	Result in a determination, by the wastewater treatment provider that serves or may serve the project, that it has adequate capacity to service the project's anticipated demand, in addition to the provider's existing commitments?	☐	☐	☐	☒
f)	Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☐	☒
g)	Comply with federal, state, and local statutes and regulations as they relate to solid waste?	☐	☐	☐	☒

DISCUSSION

a) No wastewater will be produced as a result of the project.

b) The proposed project will not result in changes to existing wastewater quantity or quality.

c) No stormwater facilities are needed for the project.

d) The project will not require new or expanded water resources.

e) No wastewater will be generated by this project.

f) No solid waste will be directed to a landfill due to this project.

g) Portable toilets will be used on-site for solid waste and will be disposed of properly.

MANDATORY FINDINGS OF SIGNIFICANCE

	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
WOULD THE PROJECT:				
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?	☐	☒	☐	☐
b) Have the potential to eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐
c) Have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means the incremental effects of a project are considerable when viewed in connection with the effects of past projects, other current projects, and probably future projects?)	☐	☐	☒	☐
d) Have environmental effects that would cause substantial adverse effects on humans, either directly or indirectly?	☐	☐	☐	☒

DISCUSSION

a) The proposed project was evaluated for potential significant adverse impacts to the natural environment and its plant and animal communities. It has been determined that the proposed project has the potential to temporarily degrade the quality of the environment and adversely affect special-status animal species. However, full implementation of all project standards and mitigation measures incorporated into this project will avoid or reduce these potential impacts to a less than significant level.

b) The proposed project has been evaluated for potential significant impacts to cultural resources of the Project Area and its immediate environment. It has been determined that, with implementation of all proposed mitigation measures, no examples of significant cultural resources will be significantly impacted by the project. Less than significant impact with mitigation measures.

c) Projects within the last five years within approximately 1.6 kilometers (1 mile) of the project area include:

1. Removal of European beachgrass from a 42 ha site at TDSP by the California State Parks.
2. Del Norte County Regional Airport, Jack McNamara Field, Terminal Replacement Project. EIR, 2009.

3. Oregon Silverspot Butterfly Habitat Improvement Project, Lake Earl Wildlife Area. NOE. 2007.
4. Environmental Review of a Coastal Development and use Permit (Hangar construction at Crescent City airport). Negative Declaration. 2006.
5. Lake Earl Wildlife Expansion 35. Notice of Exemption. 2006.
6. Lake Earl Wildlife Expansion 34. Notice of Exemption. 2006.
7. Lake Earl Wildlife Area, Pacific Shores Unit, Phase II. Notice of Exemption. 2005.
8. Point St. George -Phase I-Enhancement. Notice of Exemption. 2005.
9. Point St. George Draft Management Plan. Mitigated Negative Declaration. 2004.
10. Lake Earl Wildlife Area Management Plan. Environmental Impact Report. 2004.

The beachgrass removal project at TDSP includes 42 ha (105 acres) of land adjacent to the proposed LEWA project. The project was initiated in 2010 and consists of manual removal of invasive vegetation and pile burning. The LEWA burn plan will be closely coordinated with the TDSP burn plan to ensure no negative cumulative effects on humans. No restrictions on public use are currently associated with the TDSP restoration effort. Cumulative effects from this, or other projects are not expected to cause substantial effects on humans

d) The proposed project is not expected to have any environmental affects that would cause adverse affects on humans.

SUMMARY OF MITIGATION MEASURES

The following mitigation measures will be implemented by CDFG.

MITIGATION MEASURE BIOLOGICAL 1 – RARE PLANTS

Following recommendations provided by Gedik (2009, Appendix A), the following mitigation measures will take place to protect sensitive plants.

1. Prior to project implementation within an area, all known sand dune phacelia sites will be located using stored coordinates on GPS units, and flagged (Fig. 3). Surveys for the rare dark-eyed gilia will take place in spring, prior to restoration activities. Any new rare plant occurrences will be documented and flagged.
2. A 5 m (16.4 ft) buffer will be established between rare plant occurrences and any use, transport, or staging of heavy equipment. Plants will be enclosed by orange construction fencing prior to equipment activities to ensure avoidance of disturbance. Placement of stakes to support fencing will avoid disturbing root systems of sensitive plants.
3. Hand pulling activities around rare plants will avoid disturbing their root systems.
4. Burn piles will not occur within 5 m (16.4 ft) of sensitive plants to protect them from heat damage.
5. All heavy equipment will be thoroughly washed to ensure removal of any nonnative plants and/or seeds outside the project area prior to entering the project area.
6. Any changes to project design, including but not limited to changes in treatment methods will be coordinated with appropriate state and federal agencies.

MITIGATION MEASURE BIOLOGICAL 2- SNOWY PLOVER

To mitigate snowy plover impacts to a less than significant level, Mitigation Measure Biological-2 will be implemented.

1. Habitat restoration activities will be scheduled outside of the snowy plover's breeding season (February 15$^{th\ to}$ September 15th) as much as possible.
2. When the breeding season cannot be avoided <u>and</u> where based on snowy plover surveys that demonstrate nesting activity (or occupancy), habitat restoration work will occur in occupied habitat if an authorized plover monitor is on site during work. A minimum 100 m (323 ft) buffer zone will be maintained between the daily work area and snowy plovers. The monitor will have the authority to halt restoration work if a plover is observed within the daily work area, and have the ability to direct project-related activities away from plovers to maintain a 100 m (323 ft) buffer. Snowy plovers will not be flushed or hazed under any circumstances; whether accidental or intentional.
3. If snowy plovers are detected during the non-breeding season or where it has been determined nesting activity is not occurring, a spatial buffer of 50 m (164 ft) will be maintained between plovers and restoration activities.

MITIGATION MEASURE BIOLOGICAL 3- GRASSLAND NESTING BIRDS

Mitigation measure Biological-3 will reduce impacts to grassland nesting birds, such as the northern harrier, Oregon vesper sparrow, and waterfowl to a less than significant level.

1. During the breeding season (March-August 15), CDFG staff will survey potentially affected areas for European beachgrass ground nesting birds prior to commencement of work in a given area.
2. Any nests that are found during CDFG surveys, or incidentally by other project personnel, will be protected by a 100 meter (323 ft) avoidance buffer for the remainder of the breeding season.

MITIGATION MEASURE BIOLOGICAL 4- TIDEWATER GOBY

Implementation of Mitigation Measure Biological 4 will ensure that impacts to tidewater gobies are reduced to less than significant levels.

1. Photo plots will be established to determine any sand movement into wetland areas.
2. Adaptive management will include installation of sand fences or planting of native vegetation to reduce any undesirable deposition of sand into wetlands adjacent to the project area.

MITIGATION MEASURE BIOLOGICAL 5- COASTAL DUNE MAT HABITAT

To avoid significant disturbance to native coastal dune mat habitat, beachgrass removal using heavy equipment will take place only within areas where European beachgrass comprises >80% of the plant cover (Fig. 3). In the remainder of the project area, trained work crews will use hand shovels to selectively remove only the targeted invasive species. Removal of native plants will be avoided throughout all phases of the project whenever possible.

MITIGATION MEASURE BIOLOGICAL 6 – WETLANDS

The following mitigations will ensure any adverse impacts to wetlands resulting from project activities are less than significant:

1. CDFG will visit work sites prior to occupation by work crews, and will establish a buffer of at least 5 m (16.4 ft) of all ACOE delineated wetlands and any surface waters using exclusionary flagging (yellow and black striped) or temporary fencing within the treatment area. Only manual removal techniques will be allowed within the wetland buffer zone.
2. When crossing wetland sloughs is necessary for manual removal crews to access project lands, temporary bridges and specific paths will be established and flagged to limit impacts to the smallest area possible.
3. Wetlands will be further protected from hazardous waste by adhering to Mitigation Measures Rare Plants-1 (washing equipment) and Hazardous Materials-1.

MITIGATION MEASURE CULTURAL– 1

To reduce impacts to a level of "no adverse effects to historical resources," project implementation will proceed in accordance to the recommendations outlined by HSU-CRF (Appendix C). These measures will include:

1. Establishment of a 30 m (98.4 ft) buffer area excluding heavy equipment from known archaeological site CRF-TDS-1.

2. Presence of a professional archaeologist when project activities occur within 100 m (323 ft) of CRF-TDS-1.

3. Following prescribed protocol if any new artifacts or human remains are discovered during project implementation (Appendix C).

MITIGATION MEASURE HAZARDOUS MATERIALS-1

The following standard operating and emergency procedures will be applied to ensure that negative impacts from accidental release of hazardous materials are reduced to less than significant levels.

1. Heavy equipment will be stored overnight in the lee (eastern) side of the foredune, away from any wave action as well as any sensitive habitats or wetlands. To address potential vandalism, a temporary closure order will be issued for the project area while heavy equipment is being used and stored.

2. Fueling will take place at least 100 ft from any wetland or the waveslope. A hazardous materials spill kit will be carried with the fuel truck and the equipment at all times in case of any leaks or spills.

3. Prior to daily operations, all equipment operators will visually inspect their machinery to identify potential sources for spills. Hoses, caps, etc. will be inspected to assess integrity. Any and all suspect situations will be remedied before the equipment is operated at the project site.

4. Equipment will be cleaned, maintained and repaired (other than emergency procedures) at an established maintenance facility. All contaminated water, sludge, or other hazardous compounds will be disposed of at a lawfully permitted or authorized destination.

5. All lubricating oils, hydraulic fluids, and emergency fuel supplies will be stored in proper, approved containers. All containers will be securely capped or sealed when in storage, and protected from the rain. Valves, caps, hoses, etc. will be routinely inspected. Any identified problems (or potential problems) will be promptly fixed. Because of the

presence of residuals, all empty hydrocarbon containers, oily rags, etc. will be disposed of in accordance with existing hazardous material regulations.

6. Any leaks that develop will be repaired immediately in the field or work will be suspended until repairs can be made.

7. Absorbent materials will be placed on the ground beneath the equipment to catch any fuel or lubricants that may leak during minor maintenance or emergency fueling on-site.

8. In the event of a spill, the spill contingency plan (Appendix E) will be followed and will include stopping the spill at its source, containing the hazardous material, and notifying the appropriate authorities. A spill kit will be readily available, and appropriate materials provided in the kit will be used to contain and absorb the spill. These materials will continue to be used until such time as the hazardous material is completely removed or a HAZMAT specialist takes over the spill treatment. Spills in the sand will be quickly contained by shoveling contaminated sand into large buckets. Once the spill is treated, all material used during cleanup will be removed from the site and disposed of in accordance with proper handling guidelines for hazardous material.

   a) The nearest schools are located >4.8 km (3 miles) away from the project area.

   b) The project area is not included on a list of hazardous materials sites.

   c) The nearest airport is greater than 3.2 km (2 miles) south of the southern boundary of the project area.

   d) The project site is not located within the vicinity of a private airstrip.

   e) Project-related activities will not restrict access to or block any public road or impede emergency plans in any way.

   f) The project area is not located in an area that puts the public at high wildland fire risk. Burning piles of dry beachgrass will result in some potential for wildfire and smoke in the project area. All burning will be in compliance with the Non-Standard Burn Permit acquired prior to restoration action. A smoke management plan will be developed in compliance with the NCUAQMD. The restoration plan and burn pile management plan developed for the project provide safety precautions and project standards for reducing potential impacts to a less than significant level.

MONITORING PLAN

Compliance and effectiveness monitoring will be implemented in conjunction with the activities proposed under the restoration plan. Basic monitoring, including vegetation sampling, plant distribution and abundance, photo documentation and repeated photopoint monitoring for a period of five years is included in the plan. Western snowy plover will be monitored as part of existing efforts by CDPR, USFWS, CDFG and others. Sand movement monitoring will incorporate similar monitoring proposed under the restoration plan as for vegetation including photo documentation for a period of five years.

Adaptive Management

The estimated rate at which major dune features are likely to erode and reactivate following restoration should allow for sufficient time to develop and implement any adaptive management actions that are considered necessary to protect on-site resources. Adaptive management to slow dune erosion or the rate of dune movement into sensitive habitat areas, if such threats develop, would consist of a variety of potential tools and techniques. These might include revegetation and replanting measures using a suite of possible species in different habitat types, ground surface protection (mulching), artificial (temporary) sand trapping measures, or additional mechanical regrading and/or recontouring techniques. Monitoring and site observations employed with the mapping and knowledge of sensitive resources that require protection from burial and encroachment (if there are any) should provide ample time to develop an adaptive management plan and implement the approved response.

Reports will be completed annually during the restoration process and will be available on file at the LEWA headquarters. The annual report will describe the work completed for that year and place that work in the context of previous and future work. Data obtained during effectiveness monitoring will be summarized and analyzed with respect to project goals and objectives.