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Staff: Jim Baskin
Staff Report: January 28, 2005
Hearing on Revised Findings: February 18, 2005
Commission Action
On Revised Findings:

STAFF REPORT: REVISED FINDINGS

REGULAR CALENDAR – COASTAL DEVELOPMENT PERMIT

DECISION:	Approval with Conditions
APPLICATION NO.:	**1-00-057**
APPLICANTS:	**California Department of Fish and Game** **County of Del Norte**
PROJECT LOCATION:	On the beach at the Lake Earl/Lake Talawa sandbar, two miles north of Crescent City, Del Norte County. APN 106-010-05 (Breaching Site).
PROJECT DESCRIPTION:	Periodic breaching of the Lake Earl/Lake Talawa sandbar for flood purposes during the 2004-2005 through 2009-2010 rainy seasons (September 1 to February 15) whenever lagoon elevations reach 8 feet above mean sea level, and again on or about February 15 if lagoon elevations are 5 feet or more above mean sea level.
COMMISSIONERS ON THE PREVAILING SIDE:	Burke, Iseman, Kram, Kruer, Neely, Peters, Potter, Reilly, Secord, Shallenberger, Wan, and Caldwell.
SUMMARY OF COMMISSION ACTION:	Approval with conditions of Coastal Development Permit No. 1-00-057 on January 14, 2005.
LAND USE PLAN DESIGNATION:	Resource Conservation Area (RCA)

ZONING:	General Resource Conservation Area (RCA-1)
LOCAL APPROVALS:	No local approvals necessary.
OTHER APPROVALS:	1) (Pending) U.S. Army Corps of Engineers Clean Water Act §404 General Permit, Number 27850N; 2) (Pending) North Coast Regional Water Quality Control Board Clean Water Act §401 Water Quality Certification; and 3) (Pending) U.S. Fish and Wildlife Service Endangered Species Act Consultation Biological Opinion
SUBSTANTIVE FILE DOCUMENTS:	*Final Draft Management Plan – Lake Earl Wildlife Area*, California Department of Fish and Game, January, 2003 *Draft Environmental Impact Report – Lake Earl Wildlife Area*, SCH No. 1989013110, California Department of Fish and Game, June, 2003 *Final Environmental Impact Report Response to Comments About DEIR – Lake Earl Wildlife Area Management Plan*, SCH No. 1989013110, California Department of Fish and Game, June, 2004

STAFF NOTES:

1. Procedure.

The Commission held a public hearing and approved the application at its meeting on January 14, 2005. The Commission found the project consistent with the policies of Chapter 3 of the Coastal Act provided certain specific conditions were included with the approval. The adopted conditions of approval differ from those contained in the written staff recommendation dated December 30, 2004, and in a staff report addendum dated January 12, 2005. The revised Special Condition Nos. 3, 6, and 9 are found on page 4 through 8. The changes to the findings regarding Special Condition Nos. 3 and 6 are found within the "Protection of Marine and Aquatic Biological Resources" findings on pages 26 and 30, and on page 39 of the "Protection of Environmentally Sensitive Areas" findings section. No specific changes to the findings were necessitated by the changes to Special Condition No. 9. The changes to the conditions and findings: (1) set as a goal, rather than mandating as a permit requirement, the breaching of the Lake Earl/Talawa lagoon when the water surface elevation reaches +9.0 to +9.5 MSL; (2) allow for the commencement of the breaching program on September 1, consistent with the U.S. Fish

and Wildlife Service's biological opinion; (3) exclude from the bird hazing requirements at Special Condition No. 6 a requirement to conduct hazing during evening and nighttime hours; (4) require photo-monitoring of potential indirect impacts to archaeological resource sites on an annual basis, instead of on a quarterly basis; and (5) limit the permittees' obligation to mitigate any future damage to archaeological resources to damage caused by the waters of the lagoon and not to damage from other causes not under the control of the permittees.

As the Commission's action differed from the written staff recommendation, staff has prepared the following set of revised findings for the Commission's consideration as the needed findings to support its action. The Commission will hold a public hearing and vote on the revised findings at its February 16-18, 2005 meeting. The purpose of the hearing is to consider whether the revised findings accurately reflect the Commission's previous action rather than to reconsider the merits of the project or the appropriateness of the adopted conditions. Public testimony will be limited accordingly.

The following resolution, conditions, and findings were adopted by the Commission on January 14, 2005 upon conclusion of the public hearing. Language deleted from the conditions and findings presented in the December 30, 2004 staff report and January 12, 2005 addendum is shown in ~~strikethrough~~ text and language to be added is shown in **bold double-underlined** text.

I. MOTION AND RESOLUTION:

Motion, Staff Recommendation and Resolution to Adopt Revised Findings:

The staff recommends that the Commission adopt the revised findings in Section IV below in support of the Commission's action on January 14, 2005 approving the project with conditions. The proper motion is:

Motion:

I move that the Commission adopt the revised findings dated January 28, 2005 in support of the Commission's action on January 14, 2005, approving Coastal Development Permit No. 1-00-057.

Staff Recommendation of Approval:

Staff recommends a **YES** vote on the motion. Passage of this motion will result in the adoption of revised findings as set forth in this staff report. Pursuant to Section 30315.1 of the Coastal Act, adoption of findings requires a majority vote of the members from the prevailing side present at the January 14, 2005 Commission hearing, with at least three of the prevailing members voting. Only

those Commissioners on the prevailing side of the Commission's action are eligible to vote. See the list of eligible Commissioners on page 1.

Resolution to Adopt Revised Findings:

The Commission hereby adopts the findings set forth below for Coastal Development Permit No. 1-01-057 on the ground that the findings support the Commission's decision made on January 14, 2005 and accurately reflect the reasons for it.

ADOPTED RESOLUTION TO APPROVE THE PERMIT:

The Commission hereby approves a coastal development permit for the proposed development and adopts the findings set forth below on grounds that the development as conditioned will be in conformity with the policies of Chapter 3 of the Coastal Act. Approval of the permit complies with the California Environmental Quality Act because either (1) feasible mitigation measures and/or alternatives have been incorporated to substantially lessen any significant adverse effects of the development on the environment, or (2) there are no further feasible mitigation measures or alternatives that would substantially lessen any significant adverse impacts of the development on the environment.

II. STANDARD CONDITIONS: See attached.

III. SPECIAL CONDITIONS:

1. Location of the Breaching Site

The sandbar shall be breached in the middle of the open sandy area and midway between the existing vegetated areas on either side of the breaching site.

2. Permit Termination Date

This permit only authorizes breaching operations through February 15, 2010. All breaching operations after that date shall require a new coastal development permit.

3. Breaching Season and Timing

a. All breaching activity shall occur only between September 16 and February 15 of each year.

b. Except in instances when: (1) an imminent severe storm has been forecasted which could generate storm surge and surf that would pose a safety risk to personnel at the breaching site; or (2) the tidal cycle does not

afford a favorable minus tide in which the breaching could be effectively conducted, **the permittees are encouraged to delay** breaching of the sandbar ~~should be delayed~~ until lagoon elevations reach +9.0 to +9.5 MSL. ~~In no instance shall~~ **Except as provided for in sub-section c below,** breaching **shall not** be undertaken after the lagoon water level exceeds +10 MSL or before the lagoon water level reaches +8 MSL. Additional coastal development permit authorization shall be obtained for breaching at lagoon surface elevations outside of the proposed +8 to +10 MSL range.

c. Preemptive breaching --- to prevent the lagoon level from exceeding +10 MSL during the spring and summer months --- shall be performed between February 1 and 15 when the lagoon surface elevation reaches +5 MSL. Additional coastal development permit authorization shall be obtained for preemptive breaching outside of the period of February 1-15 and/or for a breaching threshold water surface elevation other than +5 MSL.

d. Breaching refers to the actual excavation of the sand at the breach site and does not refer to such preparatory activities such as logistics planning for an upcoming breaching event, the mobilizing and staging of breaching equipment and personnel.

4. Assumption of Risk, Waiver of Liability and Indemnification Agreement

By acceptance of this permit, the applicants, on behalf of: (1) themselves; (2) their successors and assigns; and (3) any other holder of the possessory interest in the development authorized by this permit, acknowledges and agrees: (i) that the site may be subject to hazards from waves, storm waves, flooding and erosion; (ii) to assume the risks to the applicant and the property that is the subject of this permit of injury and damage from such hazards in connection with this permitted development; (iii) to unconditionally waive any claim of damage or liability against the Commission, its officers, agents, and employees for injury or damage from such hazards; (iv) to indemnify and hold harmless the Commission, its officers, agents, and employees with respect to the Commission's approval of the project against any and all liability, claims, demands, damages, costs (including costs and fees incurred in defense of such claims), expenses, and amounts paid in settlement arising from any injury or damage due to such hazards; and (v) to agree to include a provision in any subsequent sublease or assignment of the development authorized by this permit requiring the sublessee or assignee to submit a written agreement to the Commission, for the review and approval of the Executive Director, incorporating all of the foregoing restrictions identified in (i) through (v).

5. Restricting Access to Breach Site

The permittees shall restrict public access to all areas within 500 feet of the breaching location for 12 hours prior to breaching, during the 24 hours of breaching operation, and

for 24 hours afterwards. Public access on Lake Talawa to all boats and other watercraft shall be restricted within 300 yards of the breach site during the same time period. The permittees shall not close any beach area significantly greater than the area within 500 feet of the breach site nor close the breach site for any period of time in excess of 24 hours after breaching. Any temporary signs and/or barriers used to close off the breach site must be removed within 36 hours of the breaching.

6. Brown Pelican and Other Waterfowl Protection

Breaching shall not be conducted when Brown Pelicans (*Pelicanus occidentalis californicus*) are within a 200-foot radius of the breach site. Immediately prior to breaching, a qualified wildlife biologist shall ensure that no pelicans or other waterfowl are at risk from the breaching. The permittees shall use air-boats and/or noise or visual methods (e.g., acoustic exploders, "flash-bang" devices, and/or other such pyrotechnics) to haze all on-water birds near the breach site. Hazing shall begin immediately before and continue throughout the breaching event during ebbing tidal periods, for the first 24-hours after breaching~~, including evening and nighttime hours~~.

7. Army Corps of Engineers Approval

PRIOR TO THE COMMENCEMENT OF BREACHING OPERATIONS, the permittee shall submit a copy of the permit issued by the U.S. Army Corps of Engineers granting approval for the project or evidence that no permit or permission is required. The permittees shall inform the Executive Director of any changes to the project required by the Army Corps of Engineers. Such changes shall not be incorporated into the project until the permittees obtain a Commission amendment to this coastal development permit, unless the Executive Director determines that no amendment is legally required.

8. U.S. Fish and Wildlife Service Endangered Species Act Consultation

A. The permittees shall conduct the authorized breaching program consistent with the non-discretionary Terms and Conditions as set forth in the "Reasonable and Prudent Measures" section of the Final Biological Opinion, File No. 8-14-05-2577, issued by the U.S. Fish and Wildlife Service (USFWS) for the project on January 5, 2005. Specifically, the permittees shall:

(1) Survey the location, area and maximum depth of disconnected ponds of water remaining below the maximum elevation if the lagoon at least once within one week after completion of the breach to determine stranding and refugial areas for the tidewater goby.

(2) Sample fish trapped in disconnected ponds to determine species composition and relative abundance.

(3) Monitor status of disconnected ponds that contain tidewater goby and anadromous salmonids at least every two weeks until water elevations rise to the level that the ponds reconnect with the lagoon.

(4) Develop and implement a plan to monitor tidewater goby population trends within the lagoons in cooperation with the U.S. Army Corps of Engineers and the U.S. Fish and Wildlife Service.
(5) Prior and subsequent to each breaching event, measure the wetted perimeter of the lagoon(s) to determine the extent of habitat affected.
(6) Breach the lagoon at the smallest opening possible.
(7) Monitor lagoon elevation throughout the breaching event to document the rate at which the lagoon drains and refills.

B. Should the USFWS subsequently revise any of the terms and conditions of its biological opinion, the permittees shall inform the Executive Director of any changes to the project required by the U.S. Army Corps of Engineers as set forth in the revised biological opinion. Such changes shall not be incorporated into the project until the permittees obtain a Commission amendment to this coastal development permit, unless the Executive Director determines that no amendment is legally required.

9. Archaeological Resources Final Monitoring Plan

A. **PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT,** the applicant shall submit for the review and approval of the Executive Director, a final plan for the monitoring of potential cumulative effects of the approved development on archaeological resources in the project area. The monitoring plan shall comply with all recommendations and mitigation measures contained in the cultural resources field investigation prepared for the project by Janet P. Eidness MA, RPA, dated July 16, 2002, and shall include:

- Provisions for the systematic monitoring of slope stability conditions in areas adjoining known cultural resource sites during the authorized breaching period, through the establishment of photographic stations for regular ~~quarterly~~ **annual** photo-documentation with accompanying photo logs noting the date, time, and visual observations, and changes in site conditions.

- Provisions for submittal of monitoring reports to the Executive Director by August 1 of each year of the authorized breaching period that contain (1) copies of the ~~quarterly~~ **annual** photo-documentation conducted since submittal of the last monitoring report, (2) an assessment of slope stability conditions in areas adjoining known cultural resource sites, and (3) the identification of management actions to be undertaken to reduce or mitigate any significant adverse impacts to archaeological resources should the site monitoring reveal significant changes relating to erosion or other environmental factors **from the breaching activities**. These actions include, but not limited to: establishing barriers to prohibit access to sensitive areas, providing protective cover for any exposed or at-risk resources, shoreline protective devices to stabilize the site and reduce

further erosion, and archaeological data recovery as a last resort. The management actions shall be developed and implemented in consultation with landowners and agencies consistent with state and federal preservation laws. The permittees shall apply for a coastal development permit from the Commission for the management actions unless the Executive Director determines that no permit is legally required.

B. The permittees shall undertake development in accordance with the approved monitoring plan. Any proposed changes to the approved final archaeological monitoring plan shall be reported to the Executive Director. No changes to the approved monitoring plan shall occur without a Commission amendment to this coastal development permit unless the Executive Director determines that no amendment is required.

IV. FINDINGS AND DECLARATIONS:

The Commission hereby finds and declares:

A. Project Background.

1. History of Breaching Activities at Lake Earl

Coastal lagoons are estuarine waters intermittently separated from the ocean by sand spits or barriers. Coastal lagoons form at the mouths of rivers and streams where the velocity of the freshwater flow to the ocean is too low to overcome the accumulation of sand from nearshore currents. The sand deposited by longshore currents forms a sand spit or barrier across the mouth of the stream, separating the stream from the ocean. Water accumulates behind the barrier to form a lagoon. Water continues to collect increasing the size of the lagoon until, in combination with storm surge and tidal wave erosion, it overtops or liquefies the sand spit and erodes an opening through which the impounded water escapes to the ocean. As the lagoon waters flow into the ocean, the lagoon's size and depth diminish until reaching equilibrium with the average tides. During the period that a lagoon is open to the ocean, saltwater flows in and out with the tides creating a saltwater or brackish condition in the lagoon. Eventually, the nearshore currents deposit sufficient sand to re-form the barrier and close the lagoon, beginning the process anew. The period of this cycle is irregular because of the many variables involved (e.g., rainfall, tides, currents, wind, etc.). The processes that create the Lake Earl lagoon have developed over thousands of years and the species inhabiting the lagoon have evolved over the millennia to adapt to this estuarine ecosystem.

Since the late 1850s, people inhabiting the region have artificially breached the sandbar forming the lagoon to create additional summer grazing lands next to the lagoon for area

farmers.[1] If allowed to breach naturally, the lagoon would reach a size greater than 4800 acres at about 12 to 14 feet above mean sea level (+12 - +14 MSL). Artificially breaching the sandbar when the lagoon is at a lower level prevents areas that would under natural conditions be a part of the lagoon from being inundated, significantly reducing the size of the estuary.

With the surface water elevation at +4 MSL, the sandbar is several hundred feet wide and extends to a typical height of between +12 to +13 high MSL, with a theoretic maximum height of up to +20 MSL. As the lagoon level increases toward the natural breach height of approximately +12 MSL, the quantity of sand needed to be moved to breech the lagoon decreases. Prior to the use of earth moving machinery, the sandbar was breached using horse drawn equipment and hand tools.

Records of breaching elevations have not been regularly maintained. Although it would have been feasible for early settlers to breech the lagoon without the use of modem heavy equipment, available historical records document that the lagoon level was not consistently maintained at the 4-foot level. Even more recently, between 1950 and 1970, historical records show that the lagoon level rose to over eight feet in five different years. The U.S. Army Corps of Engineers (USACE or "Corps") records document that the lagoon rose above +7 MSL in 1955 and 1970, and County Flood Control records show breaches at +8.9 MSL in 1979 and +6.1 MSL feet in 1983. Since 1986, the lagoon has been breached at or above +8 MSL. Although the lagoon has been artificially breached for at least 100 years, the best available evidence documents that Lake Earl has not been consistently managed at +4 MSL feet throughout that period.

2. Previous Commission Breaching Permit Actions

Between 1976 through 1986, the County breached the lagoon under a Corps permit whenever the water level exceeded +4 MSL. The Coastal Commission became involved in 1987 when it received a notice from the Corps that the County had applied for a new five-year Corps permit to continue to breach the sandbar. In response to that notice, the Commission informed the County that the breaching activity required a coastal development permit from the Commission because the activity constitutes development under the Coastal Act and because the breaching site is located within the Commission's original permit jurisdiction.

Beginning in 1987, and continuing to 1998, the Executive Director approved a series of emergency permits to breach the sandbar for flood control purposes whenever the

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[1] The Commission notes that it is the contention of several project stakeholders, most notably the Pacific Shores Water District, the Eastside Property Owners, and Tolowa Nation, that breaching of the lagoon at approximately the +4 MSL level was undertaken by native peoples before the arrival of European settlers to the area in the mid-19th Century. However, as further discussed in Cultural Resources Findings Section No. IV.H below, no evidence other than anecdotal claims has been presented to substantiate such activities having been undertaken.

elevation of the lagoon was +8 feet MSL or higher. On December 11, 1991, the Coastal Commission granted Coastal Development Permit (CDP) No. 1-91-063 to allow periodic breaching of the sandbar at Lake Earl and Talawa by Del Norte County for flood control purposes during the 1991-92 and 1992-93 wet seasons, expiring on February 15, 1993. In approving CDP No. 1-91-063, the Commission added a special condition to the permit that required the applicants, the Del Norte County Public Works Department, to "breach the sandbar whenever the lagoon elevation reaches 4 feet above mean sea level." The Commission found that, in the absence of specific hydrological and biological studies to fully assess the project's impacts upon the surrounding agricultural and other lands that would be subject to flooding if the sandbar were regularly breached at 8 feet MSL, it would be better to maintain the 1976-1986 *status quo* by requiring breaching at +4 MSL until such time that the required studies were completed and all of the outstanding environmental issues had been formally analyzed.

However, breaching the sandbar whenever the lagoon elevation at +4 MSL was not acceptable to the California Department of Fish and Game (CDFG or "Department") based on concerns about how the resulting reduced lagoon levels would adversely affect fish and wildlife habitat. As the sandbar is sovereign state property leased by the CDFG, the County does not possess adequate property rights to independently undertake the breaching without the permission of the lessee. Therefore, upon the Department's withdrawal of its permission to allow the County to enter the breaching site property, the County could not exercise the permit in the form granted by the Commission. As a result, subsequent breaching of the lagoon through the winter of 1998-99, was performed pursuant to emergency permits when the lagoon rose to levels when flooding was imminent.

In September 1996, the Commission also opened a public hearing for CDP Application No. 1-94-049 for a similar breaching proposal as that described in the current permit application for a two-year period during the 1996-1997 and 1997-1998 rainy seasons. Prior to that hearing, James Wakefield, counsel for the Pacific Shores Subdivision Water District, submitted a letter raising a number of issues concerning the Pacific Shores subdivision property owners. The Commission opened the hearing in September 1996, but continued the matter to allow the applicants time to respond to the questions raised in Mr. Wakefield's letter. The applicants subsequently withdrew their application and later resubmitted it as CDP Application No. 1-97-076 in November 1997.

On May 14, 1999, the Commission granted CDP No. 1-97-076 to the County and the CDFG as co-applicants. This permit was intended to serve as an two-year interim permit to allow breaching during the 1998-99 and 1999-2000 rainy seasons, while a study of the lagoon system's biological resources commissioned by the Corps was completed upon which a longer term programmatic permit would be based. The lagoon was breached once, on December 20, 1999.

Since late 1999 until now, the Executive Director has received and approved a series of emergency permits from the County and the CDFG as co-applicants to regularly breach the sandbar for flood control purposes whenever the water elevation of the lagoon is at +8

feet MSL or higher. A full chronology of these emergency authorizations and other permitting actions is summarized in Appendix B of this report.

On December 14, 2000, the County and the CDFG submitted CDP Application No 1-00-57 requesting a permit to breach the lagoon when its waters reached a height of between +8 and +10 MSL during the period of September 1 to February 15, 2000-01, 2001-02, and 2002-03, with a provision for a preemptive breach on or about each February 15 to avoid late-winter / early spring flooding should the waters be at or exceeding a +5 MSL level on that date. Consistent with the direction given to staff during the Commission's consideration of CDP No. 1-97-076 to not accept for filing an application for further interim breaching until a management plan and environmental analyses had been completed for the Lake Earl Wildlife Area (LEWA), further processing of the application was suspended. Subsequently, upon the August 16, 2004 filing of the Notice of Decision for the environmental impact report for the LEWA management plan, CDP Application No. 1-00-057 was accepted as complete for filing. On August 24, 2004, the applicants amended the project description to update the applicable dates for when the breaching would be conducted, requesting a five-year permit term. Except for the change in the requested permit authorization period from two years to five years, and expanding the breaching season by a ½ month, to commence on September 1 instead of September 16, the development currently before the Commission has the same project description as that approved under preceding CDP No. CDP 1-97-076.

Although there has been much contention about the appropriateness of a return to maintaining the lagoon at +4 feet MSL, the Commission has never received a permit request from any party to breach for flood control purposes whenever the surface elevation reaches this level. However, in December 2001, the County of Del Norte acting as the Del Norte Flood Control District, the Pacific Shores Subdivision California Water District, a consortium of owners of properties along the eastern side of the lagoon, and other interested Native American parties submitted an application to the Commission requesting authorization to breach Lake Earl/Talawa at a +5 MSL level. Commission staff reviewed the application and determined the application was incomplete in part because the applicants had not demonstrated that they had legal access to the breach site to carry out the project. Upon the withdrawal of the County as a co-applicant in late August 2003, the likely ability of the remaining applicants to feasibly obtain the legal ability to develop the CDFG-leased breach site became even more doubtful. Consequently, on September 19, 2003, the Commission staff returned the incomplete application to the agent for the remaining co-applicants.

3. Other Project-related Programs

Lake Earl Working Group

The multi-agency "Lake Earl Working Group" was formed in 1996 to develop a management plan for the Lake Earl area. Comprised of representatives of the U.S. Army Corps of Engineers, the U.S. Environmental Protection Agency, the U.S. Fish and Wildlife Service, National Marine Fisheries Service, the Elk Valley Rancheria, the Smith

River Rancheria, the North Coast Regional Water Quality Control Board, the California Department of Fish and Game, the California Department of Water Resources, the California Department of Parks and Recreation, the California Office of Emergency Services, the California State Lands Commission, the California Coastal Commission, the California Coastal Conservancy, the County of Del Norte, and other concerned individuals, the group participants provided input towards the development of a management plan by the CDFG for addressing a host of resource issues germane to the "Lake Earl Project Area," including fish and wildlife habitat protection, flood management, public recreation, depredation by Aleutian Canada geese on private pastures in the area, and the protection of cultural resources.

The U.S. Army Corps of Engineers was subsequently allocated approximately $323,000 to conduct an assessment of the habitat associated with Lake Earl. The study was directed to determine the state of the system at the initial stages of the new breaching plan. The information to be gathered was intended to be instrumental in determining habitat and species changes over time in response to various breaching regimes. Present habitat types were to be characterized and mapped and compared with historical photos to document changes that have occurred in the past. Bird surveys to document the number of species and the size of the populations that visit the lake throughout the year were also to be undertaken. Water quality parameters important to anadromous fish were to be measured throughout the year. Similarly, environmentally vulnerable species, such as the Tidewater goby and Oregon silver spot butterfly were to be surveyed to identify any significant impacts to these species.

In October 1999, the *Draft Intensive Habitat Study for Lake Earl Talawa Del Norte County California* (Tetra Tech Inc.) was released. The report contained a preliminary bottom substrate survey, fishery survey, butterfly survey, surface and subsurface temperature monitoring, vegetation and habitat analysis, and additional hydraulic and biologic studies, as well as mapping of the survey results in a multilayered geographic information system (GIS) format. Unfortunately, due to the exhaustion of funding, a final report was never completed. Following an intensive review of the draft habitat report and identification of additional studies and refinements that would be needed to allow development of a comprehensive management plan, the Working Group disbanded in early 2001.

Lake Earl Wildlife Area Management Plan

The proposed breaching program is intended to both provide flood protection and improve the natural habitat of the Lake Earl estuarine system. The applicants formulated the +8 to +10 MSL breaching protocol to implement certain specified goals within the *Final Draft Management Plan – Lake Earl Wildlife Area* (see Exhibit No. 9) and in response to the conclusions presented in the *Final Environmental Impact Report – Lake Earl Wildlife Management Plan SCH 1989013110* (EIR). The management plan provides a programmatic framework for the operation and administration of the Lake Earl Wildlife Area. The plan includes, in addition to breaching the lagoon for biological resource and flood control management purposes, goals and implementation measures for developing

appropriate levels of public recreational amenities, maintaining the Department's facilities at the Wildlife Area, acquiring additional private property affected by LEWA activities, undertaking land exchanges with Tolowa Dunes State Park to create a more stable boundary between the over 10,000 acres of adjoining public recreational and wildlife preserve lands, and for protecting cultural resources. Many of these other activities will require separate coastal development permits in the future. The related EIR distills and summarizes the best information developed over the last several decades about the natural history of the Lake Earl area, including the habitat study commissioned by the Lake Earl Working Group, and provides the assessment of the differing environmental effects that various breaching plan alternatives would produce in attempting to balance the protection of natural resources with providing necessary flood control. The EIR also sets forth a mitigation program that identifies a variety of actions to be taken to further reduce the project's potentially significant adverse environmental impacts to less than significant levels (see Exhibit No.10).

Acquisition Programs

As further discussed in Hazards Findings Section IV.F, since 1991, when the Commission acted on CDP 1-91-63, CDFG, through its Wildlife Conservation Board (WCB), has continued to purchase private property from willing sellers who own land around the lagoon that is below the +10 feet MSL elevation. In addition to the initial purchase of approximately 5,000 acres in the mid-1970s to establish the LEWA, the Department has acquired additional properties. Since 2001, the Department has purchased ten parcels along the eastern shoreline of Lake Earl, totaling approximately 158 acres of private lands having portions lying at and below the ten-foot contour. The Department estimates that outside of the *Pacific Shores* Subdivision, about 144.7 acres of privately held land below the roughly ten-foot contour[2] is still subject to periodic flooding. This approximately 145-acre area is spread among portions of six private ownerships, does not include any permanent inhabitable structures, and does not include land within the *Pacific Shores* subdivision. The Department has to date purchased 185 ½-acre lots within *Pacific Shores*, and estimates that approximately 136 acres of private land within the subdivision remain subject to flooding impacts at the +9.44 MSL level. The *Pacific Shores* subdivision is also currently not developed with residential housing and efforts to acquire property from willing sellers continues by both the CDFG and the Conservancy. To this end, the Department is finalizing the acquisition of 237 additional lots within the subdivision, representing approximately 118 acres.

B. Project Location and Description.

1. Project Location and Setting

Lake Earl Wildlife Area

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[2] Based upon a review of 1992 aerial photography when the lagoon surface elevation was at a +9.44 MSL level.

The project site entails the Lake Earl/Talawa sub-basin of the Smith River-Lake Earl Hydrologic Unit, consisting of a bilobal estuarine lagoon that comprises the core of the approximately 5,624 acres of the Lake Earl Wildlife Area. Lake Earl/Talawa is located approximately 2 miles north of the City of Crescent City, in west-central Del Norte County (see Exhibit Nos. 1-3).

As tidal and/or submerged lands at the time of entry into the Union, the State of California has a fee interest at the breaching site and in the lagoon and surrounding lands. The breaching site is located on the ocean sandbar that impounds the waters of the lagoon along the western shore of Lake Talawa, on sovereign state lands leased to the California Department of Fish and Game (CDFG or "Department") by the California State Lands Commission. Access to the sandbar (breaching site) is via a road through the Pacific Shores subdivision. The area surrounding the breaching site consists of a broad sandy beach backed by an extensive dune field. The dune system is relatively stable, as it has been extensively vegetated with exotic invasive plant species, most notably European beachgrass (*Ammophila arenaria*) that is holding the dune sands in place. By comparison, the dunes within and adjoining the Pacific Shores subdivision are significantly disturbed due to off-road vehicle use. Due to the scouring caused when the lagoon is opened, the breaching site itself remains unvegetated (see Exhibit No. 4).

The U.S. Fish and Wildlife Service has characterized Lake Earl and Lake Talawa as comprising "one of the most unique and valuable wetland complexes in California." The lagoon system supports numerous habitat types including emergent wetlands, open water, mudflats, flooded pastures, woodland, sand beach, and riverine habitat. Lake Earl is an important resting and wintering area of the Pacific Flyway and is visited or home to over 250 species of birds. Forty species of mammals are known to occur within the coastal lagoon floodplain environs. In addition, 14 federal- and/or state-listed threatened, endangered, or candidate species of plants and animals, and 25 fish, amphibian, and Avian "species of concern" are known to occur at Lake Earl.

Because of the extremely high fish and wildlife values of the lagoon and adjacent wetlands, the California Department of Fish and Game (CDFG or "Department") included Lake Earl as one of the 19 coastal wetlands identified in the 1974 report entitled, "Acquisition Priorities for Coastal Wetlands of California." To better manage the wildlife and fisheries resources in and around the lagoon, CDFG and the California Department of Parks and Recreation acquired more than 5,000 acres of land within or adjacent to Lake Earl and Lake Talawa. An additional 2,600+ acres of land is leased from the State Lands Commission by the CDFG. Today, a total of 5,624 acres of land and water area under management by CDFG lies within the boundaries of the Lake Earl Wildlife Area (LEWA). Only approximately 281 acres of land below the 10-foot contour[3] remains in private hands. Since 1991, CDFG has continued to purchase property from willing sellers who own land around the lagoon that is below 10 feet MSL.

Development immediately adjacent to Lake Earl is minimal. Most land is either in public ownership as managed by the CDFG or CDPR, or is privately held and dedicated to

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[3] This estimate is based upon a review of aerial photographs taken when the lagoon was inundated to +9.44 MSL. Refer to Table F.2-1 on page 2-6 of Exhibit 10.

agricultural, timberland, and resource conservation uses. Only small areas of land lying adjacent to the lagoon are developed with rural residential, commercial, and industrial uses (see Exhibit Nos. 5, 6, and 7). All of the existing developed residential housing in the project vicinity is situated above the +10 MSL elevation.

Pacific Shores

The *Pacific Shores* Subdivision is located north of Lake Talawa, south of Kellogg Road, between Lake Earl and the Pacific Ocean (see Exhibit Nos. 2 & 3). The Subdivision comprises a total of 1,524 roughly ½-acre lots platted over an area of 1,486 acres. Approximately 27 lineal miles of roadway were offered for dedication and subsequently accepted by the County and constructed with paved, chip-sealed, and/or gravel surfaces shortly after the subdivision was approved in 1963. However, except for the road system, the subdivision remains essentially undeveloped. Since 1963, infrastructure improvements within *Pacific Shores* have been minimal, consisting primarily of a system of roadways and an electrical power line corridor. Only the main north-to-south access road, Tell Boulevard, and several other cross streets has been maintained (i.e., vegetation clearing, minor drainage improvements). One permanent residence has been developed within the bounds of the subdivision. The residence was developed prior to the 1972 Coastal Initiative (Proposition 20) and therefore did not require a coastal development permit.

In 1971, as delegated under the Federal Clean Water Act and the Porter-Cologne Water Quality Act (CWC §13000 *et seq.*) the California Regional Water Quality Control Board adopted requirements for individual onsite sewage disposal "septic" systems. These siting and construction requirements include minimum vertical and horizontal separation between septic systems and the highest anticipated surface and groundwater, respectively, and acceptable percolation rates for soils beneath septic system leach fields. The majority of the land area within the subdivision can be characterized as a coastal dune system, interspersed with emergent, scrub-shrub, and palustrine wetlands, that form a mosaic of environmentally sensitive habitats for a wide assortment of threatened, endangered, and/or rare plants and animals. Because of the shallow water table and the rapid percolation rate associated with the sandy soils that underlie the area, the feasibility of relying upon individual lot onsite sewage disposal treatment systems to support any proposed permanent residential development at *Pacific Shores* is doubtful.

In 1981, the Coastal Commission approved the Coastal Element of the County's General Land Use Plan, but denied certification of the Pacific Shores Subdivision area. The Pacific Shores Subdivision then became an area of deferred certification. The subdivision is noted on the County's LUP map as a "Special Study Area."

In 1983, the County of Del Norte Local Agency Formation Commission (LAFCo) authorized the creation of the Pacific Shores Subdivision California Water District ("District"), conditioned upon the District obtaining a coastal development permit from the Commission. The impetus for the formation of the district came in response to the urging of the staff of the North Coast Regional Water Quality Control Board (NCRWQCB) to the County to eschew acceptance of any further applications for individual onsite sewage disposal systems given the history of failures of past

application's to demonstrate compliance with Basin Plan standards. Instead, the NCRWQCB advised the County to establish a public entity to investigate the feasibility of developing a centralized wastewater treatment works for the area.

In 1985, the Coastal Commission approved Permit No. 1-85-038 which allowed the initiation of the District's tax assessment powers for purposes of assessing its property owners to have special studies prepared regarding the feasibility and possible environmental impacts of water and sewer system construction.

In July of 1992, the District submitted an application to Del Norte County for amending the County Local Coastal Program's land use plan and zoning code to provide for rural residential development within *Pacific Shores*. The County determined that as such a planning program change would facilitate development that would have potential unmitigated significant adverse environmental effects, the preparation of an environmental impact report (EIR) would be required. A draft was submitted to the County in late 1992 and was subsequently rejected for lack of technical information to substantiate its findings and conclusions. Although the District continued to commission studies throughout the 1990s and collects assessments to the present day for such purpose, no revised EIR and completed LCP amendment application have been submitted to the County by the District.

The Commission notes that the District has, in the past, proposed that the lagoon level be managed at +4 to +5 MSL to protect property values within the subdivision (see Appendix B). As stated above, only minimal transportation and public utility infrastructure has been installed at Pacific Shores since 1963, and only one residence has been constructed. No public water system has been developed to date. With the exception of Tell Boulevard and certain key cross-connecting streets, County roads within *Pacific Shores* are not maintained and begin to flood when lagoon water levels reach +8 MSL. At water levels exceeding +10 MSL, response time and access to lots on the periphery of the subdivision can be hampered or become inaccessible to public safety and emergency service first responders. In addition, depending upon the particular lot in question, the properties within the subdivision lie 3½ to 5 miles from the closest fire station. These factors can result in unfavorable ISO[4] public protection classification rankings for the properties affected by the lack of these amenities and community services that could compromise the securement of financing or insurance coverage for developing and safeguarding permanent residential uses, especially for those properties located well within the interior of the subdivision five miles or further from the closest fire station in Fort Dick.

As noted above, given the underlying soils and the surface and groundwater conditions, the feasibility of relying upon individual lot onsite sewage disposal treatment systems to support any proposed permanent residential development at *Pacific Shores* is doubtful Furthermore, the staff of the Regional Water Quality Control Board have recommended that the County of Del Norte cease consideration of any additional applications for septic disposal system given their likelihood to be found noncompliant with the North Coast Basin Plan standards for individual wastewater treatment systems. As an alternative, a

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[4] "Insurance Services Office, Inc."

community sewer system could be developed to serve the area. However, this option may be economically infeasible. For example, even under a theoretical ultimate development scenario involving the full build-out of all of the remaining 1,000+ privately-owned lots within the *Pacific Shores* subdivision that have not been purchased or are in the process of being purchased by public agencies, with a resulting overall density of only two dwellings per acre, assessments for paying the bonded capital improvement indebture associated with the roughly $10 million cost of constructing a publicly-owned wastewater treatment plant and conveyance system capable of treating the approximately 300,000 gallons per day of effluent that would be generated by the built-out subdivision (assuming negligible surface water inflow and groundwater infiltration), together with the *pro rata* share of fees to generate revenues necessary for the ongoing operation and maintenance of such a system, would likely be prohibitively expensive.

The CDFG through its Wildlife Conservation is currently pursuing the purchase of additional lots from willing sellers within *Pacific Shores*. By December 30, 2004 237 ½-acre lots comprising an approximately 118-acre area will have been purchased by the Department.

Tolowa Dunes State Park

In October of 2001, the California Parks and Recreation Commission redesignated the 4,398-acre area lying adjacent to the LEWA and managed as a Type "C" wildlife area as Tolowa Dunes State Park (TDSP). The park contains an ancient sand dune complex that has evolved into several distinct ecological communities. TDSP encompasses ocean beach, river, open and vegetated sand dunes, wooded ridges, and some of the most productive wetlands habitat on California's northern coast. A diverse assortment of birds, animals and plant life thrive here, and the area serves as an important stopover on the Pacific flyway for thousands of migrating ducks, geese and swans. The park area represents a crucial habitat linkage between the Smith River to the north, the Lake Earl basin to the east, and the Point Saint George area to the southwest. Basic amenities are provided for campers at two primitive campgrounds, including a ride-in horse camp and six walk-in "environmental camp" sites. The park receives approximately 24,000 visitors per year.

2. Project Description

The applicants propose to periodically breach the sandbar between September 1 and February 15 when the lagoon's water surface elevation is between +8 and +10 MSL, and again on or about February 15 if the water height is at or exceeding +5 MSL, during the 2004/2005 through 2009/2010 winter rainy seasons.

The breaching activity involves creating a channel in the unvegetated sandbar approximately 200 feet long and 20 feet wide (see Exhibit No. 4). Approximately 600 cubic yards of sand is excavated and side-cast using heavy mechanized equipment, such as a bulldozer. The breach is conducted during an outgoing low tide in daylight hours to minimize environmental and worker safety hazards associated with in-water construction

under potentially dangerous high surf conditions. Once the sandbar is breached, the draining water quickly deepens and widens the outlet channel. Within a 24-hour period, the level of the lagoon is quickly lowered to about mean sea level, depending on the tides and winter storms, from a surface area of over 4,800 acres to approximately 2,200 acres. In addition to providing flood control to the lands on the perimeter of the lagoon, the breaching allows salt water from the ocean to mix with the fresh waters of the lagoon for a period of about two to six weeks until the outlet channel is naturally closed again by ocean sediments deposited by long shore currents. This intermixing provides for ingress and egress of aquatic organisms and for brackish water estuarine habitat conditions to be re-initiated in the lagoon. Once the outlet channel is closed, the lagoon elevation rises again. The rate of lagoon-elevation rise is a function of the rate of recharge by surrounding ground water, surface water runoff, and precipitation.

The applicants have requested that breaching the lagoon be authorized within a two-foot range of water surface elevations rather than at the exact level when flooding ensues to afford flexibility to ensure that the breaching is conducted in a safe and efficient manner. Water levels in Lake Earl/Talawa can rise quite rapidly from their typical late summer/ autumnal levels of +2.5 to +6 MSL, especially during winter storms once the ground surrounding the lagoon has become saturated. Moreover, with surge waves routinely reaching 15 to 25 feet in height, attempting to breach the sandbar during a winter storm can be extremely dangerous for the earthmoving equipment operators and other personnel stationed at the breaching site.

Lagoon waters begin to inundate County roadways when the surface elevation reaches approximately +8 to +10 MSL (see Exhibit No. 8). By comparison, private wells do not become overtopped until the water surface elevation exceeds +10 MSL. An unknown number of low-lying septic systems similarly begin to malfunction when lagoon levels rise above +10 MSL. By the time that a storm subsides, the water elevation may exceed +10 MSL. The applicants indicate that structuring the breaching to commence at an +8 MSL level allows for a margin of safety (i.e., additional storage capacity of the lagoon during the time when equipment is being mobilized and/or staged for conducting the breach) before serious flooding of County roads occurs that significantly impacts safe vehicular passage, especially access by public safety first responders. The difference in the surface area of the lagoon between +8 and +10 MSL is approximately 845 acres and is equivalent to approximately 1,300 acre-feet of water storage within the lagoon basin. Accordingly, the applicants reason that although waiting until the point when the water elevation reaches a level where public infrastructure actually begins to be inundated might be the optimum point to breach the lagoon from a habitat management perspective, given the time constraints for when the breach can be safely and effectively performed, the wider window of opportunity that would be afforded by the proposed +8 to +10 MSL time range is needed.

Breaching on or about February 15, when the lagoon elevation is at least 5 feet or more above MSL, is a pre-emptive measure to avoid having to breach the lagoon during the spring and summer months in the event of a wet spring. Both the County and the CDFG prefer to avoid having to breach the lagoon during the spring and summer months, as

breaching during this time of the year is more environmentally disruptive. Long shore currents may not be strong enough during these seasons to close the sandbar. In addition, the volume of runoff entering the lagoon during this period is much less than the volume entering the lagoon during the winter. Thus, breaching during the spring and summer months may not allow the lagoon level to rebound. If the sandbar is not closed, the lagoon will remain very shallow, small in size, and open to the ocean. Shallow summer waters may have higher temperature and salinity levels which can impact many of the sensitive resources living within Lake Earl including juvenile salmonids, tidewater gobies, and sego pondweed, a dominant waterfowl food plant. A smaller lagoon size also reduces the size of the aquatic habitat, and coastal recreational opportunities for the public.

The applicants estimate that even with an unusually wet spring there is a low probability that the lagoon will need to be breached for flood control purposes during the spring and summer months provided the sandbar is allowed to be breached on or about February 15 if the lagoon elevation is +5 MSL or greater.

C. Protection of Marine and Aquatic Biological Resources

Several Coastal Act policies address protection of wetlands and open coastal waters from the impacts of development. These policies include Sections 30230, 30231, and 30233. Section 30230 applies generally to the protection of marine resources. Section 30231 applies generally to any development in coastal waters, wetlands, estuaries, and lakes in the coastal zone. Section 30233 applies to any diking, filling, or dredging project in a river and other coastal waters.

The proposed parting of the sandbar to form a channel to a depth that is one to two feet below the lagoon level at the time of breaching and below the height of the Extreme High Water of Spring Tides (EHWS) level[5] involves dredging of wetlands and open coastal waters. In addition, the side casting of the excavated sandbar materials into adjoining inundated areas involves the filling of wetlands and open coastal waters as the activity involves the dredging of a drainage outlet and the side-casting of excavated materials that meets the definition of "fill" as comprising "...*earth or any other substance or material... placed in a submerged area*," per Section 30108.4 of the Coastal Act.

Section 30230 of the Coastal Act provides:

> *Marine resources shall be maintained, enhanced, and where feasible, restored. Special protection shall be given to areas and species of special biological or economic significance. Uses of the marine environment shall be carried out in a manner that will sustain the biological*

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5 Refer to U.S. Fish and Wildlife Service - Office of Biological Services' Publication No. FWS/OBS-79/31 "Classification of Wetlands and Deepwater Habitats of the United States" (Lewis M. Cowardin, et al, USGPO December 1979) for a further discussion of the definition of the extent of estuarine and marine wetland habitats.

productivity of coastal waters and that will maintain healthy populations of all species of marine organisms adequate for long-term commercial, recreational, scientific, and educational purposes.

Section 30231 provides, in part:

The biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored...

Section 30108.2 of the Coastal Act defines fill as:

...earth or any other substance or material ... placed in a submerged area.

Section 30233 of the Coastal Act reads, in applicable part, as follows:

(a) The diking, filling, or dredging of open coastal waters, wetlands, estuaries, and lakes shall be permitted in accordance with other applicable provisions of this division, where there is no feasible less environmentally damaging alternative, and where feasible mitigation measures have been provided to minimize adverse environmental effects, and shall be limited to the following:...

(5) Incidental public service purposes, including but not limited to, burying cables and pipes or inspection of piers and maintenance of existing intake and outfall lines...

(7) Restoration purposes.

(8) Nature study, aquaculture, or similar resource dependent activities.

(b) Dredging and spoils disposal shall be planned and carried out to avoid significant disruption to marine and wildlife habitats and water circulation....

(c) In addition to the other provisions of this section, diking, filling, or dredging in existing estuaries and wetlands shall maintain or enhance the functional capacity of the wetland or estuary. Any alteration of coastal wetlands identified by the Department of Fish and Game, including, but not limited to, the 19 coastal wetlands identified in its report entitled, 'Acquisition Priorities for the Coastal Wetlands of California', shall be limited to very minor incidental public facilities, restorative measures, (and) *nature study...*

> *(d) Erosion control and flood control facilities constructed on water courses can impede the movement of sediment and nutrients which would otherwise be carried by storm runoff into coastal waters. To facilitate the continued delivery of these sediments to the littoral zone, whenever feasible, the material removed from these facilities may be placed at appropriate points on the shoreline in accordance with other applicable provisions of this division, where feasible mitigation measures have been provided to minimize adverse environmental effects. Aspects that shall be considered before issuing a coastal development permit for such purposes are the method of placement, time of year of placement, and sensitivity of the placement area.* [Emphases and parenthetic added.]

The above policies set forth a number of different limitations on what development projects may be allowed in wetlands within the coastal zone. For analysis purposes, the limitations can be grouped into four general categories or tests. These tests are:

(1) That the purpose of the filling, diking, or dredging is for one of the eight uses allowed under Section 30233;

(2) That feasible mitigation measures have been provided to minimize adverse environmental effects;

(3) That there is no feasible less environmentally damaging alternative; and

(4) That the biological productivity and functional capacity of the habitat shall be maintained and enhanced where feasible.

1. Permissible Diking, Dredging, and Filling

The first test set forth above is that any proposed filling, diking or dredging must be allowable as specified under Section 30233 of the Coastal Act. One of the allowable purposes for diking, filling, or dredging, under Section 30233(a)(5) is "incidental public service purposes." Examples of incidental public service purposes include, but are not limited to, the burying of cables and pipes, inspection of piers, and the maintenance of existing intake and outfall lines. The environmental effects of this type of dredging, diking, and filling are generally limited in scope and short-term. As further discussed in detail in Findings Section IV.F below, opening the lagoon between +8 and +10 MSL provides flood protection to public road infrastructure and private properties that become inundated at higher water elevations. These public service purposes will be undertaken by public agencies in pursuit of their public agency mission. To accomplish this objective, the sandbar between where the lagoon in the ocean is parted by the removal of beach materials deposited over the preceding months to allow the lagoon to drain out though a defined channel that has formed in the bed of Lake Talawa over the millennia. In this way, the annual breaching of the lagoon sandbar by a public agency to clear a channel through which the lagoon may drain represents a form of maintenance of an

existing outfall and is one of the permissible purposes for diking, filling, or dredging of wetlands that is expressly enumerated in Section 30233(a)(5) of the Coastal Act.

In addition, another allowable purpose for diking, filling, or dredging under Section 30233(a)(7) is "restoration purposes." The proposed dredging and filling in the wetland areas of the sandbar within the ocean intertidal reaches and at the periphery of the impounded estuary would be performed to create a channel through which lagoon waters would be breached. The project is designed to increase the diversity of wetland types within the wildlife area and enhance habitat values for water-associated wildlife. Breaching the Lake Earl/Talawa sandbar would temporarily remove the separation between freshwater and saltwater habitats and allow intrusion of euhaline[6] ocean waters into the mixohaline[7] to freshwater wetland areas within and bordering the lagoon. Intermittently opening the lagoon to the ocean revitalizes estuarine water chemistry, especially by lowering the pH and increasing the amount of dissolved oxygen in the lagoon that has become more alkaline and anoxic over the previous growing season. Seasonally opening Lake Earl/Talawa also allows anadromous salmonids and other aquatic organisms ingress and egress into and from the lagoon to feed and complete crucial phases of their life stages. Thus, breaching the lagoon is instrumental to restoring the correct balance of physical conditions in Lake Earl/Talawa necessary for sustaining the biological resources currently contained therein. Accordingly, these proposed dredging and filling activities are allowable pursuant to both Section 30233(a)(5) and 30233(7) of the Coastal Act.

Section 30233(c) sets further restrictions on the dredging, diking, and filling of certain wetlands within the state. As one of the 19 identified high priority wetlands for acquisition by the CDFG, the allowable dredging, diking, and filling within Lake Earl/Talawa is further limited to: (a) very minor incidental public facilities; (b) restorative measures; or (3) nature study. As discussed above, the breaching of the lagoon is intended for a combination of incidental public service and restoration purposes. The proposed filling and dredging for "restoration" purposes" is effectively synonymous with being "restorative measures." However, in order for the proposed filling and dredging that is for "incidental public service purposes" to be approvable under Section 30233(c), it must be limited to "very minor" facilities. As the generally annual to biannual parting of the sandbar for a period that lasts on average of only two to six weeks in duration, the activity represents an intermittent, temporary event. Furthermore, no physical structure, such as a culvert or equipment, such as pumps, are necessary to be installed for the proposed lagoon opening for flood control purposes to function. Thus, given the limited scope and temporary nature of the breaching activity, the Commission considers the alteration of the coastal wetland to be limited to very minor incidental public facilities. Therefore, the proposed dredging and filling activities associated with breaching Lake Earl/Talawa are also consistent with the limitations on allowable uses set forth in Section 30233(c).

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[6] Water with a salinity range of 30 to 40 parts per thousand, effective "pure seawater."

[7] Water with a salinity range of 5 to 30 parts per thousand, generally referred to as "brackish water."

2. Feasible Mitigation Measures

The second test set forth by the dredging and fill policy of the Coastal Act is whether feasible mitigation measures have been provided to minimize the adverse environmental impacts of the proposed filling, diking, or dredging of wetlands.

The proposed filling and dredging activities of the proposed project to be conducted in wetlands could have potentially significant adverse effects on a number of threatened, endangered and special status species and or their habitat that depend on the wetland environment of Lake Earl.

Vulnerable Fish and Wildlife Species and Their Habitats

A total of 27 plant and animal species that depend on the wetland environment of Lake Earl are formally listed or have candidacy as either "endangered," or "threatened" under the Federal (FESA) and California (CESA) Environmental Species Acts, or have been identified as "species of special concern" by CDFG's Habitat Conservation Planning Branch. Table 1 below, summarizes the status of these species:

Table One: Environmentally Sensitive Animal and Plant Species That Depend on the Wetland Environment of Lake Earl/Talawa

Taxonomic Group/Name	Common Name	Federal/State ESA Status
Fishes		
Oncorhynchus kisutch	Coho (Silver) salmon	FT/CCT
Eucyclogobius newberryi	Tidewater Goby	FE/CSC
Oncorhynchus clarki clarki	Coastal Cutthroat Trout	CSC
Oncorhynchus tshawytscha	Chinook (King) Salmon	CSC
Oncorhynchus mykiss	Steelhead	CSC
Thaleichthys pacificus	Eulachon	CSC
Spirinichus thaleichthys	Longfin Smelt	CSC
Acipenser medirostris	Green Sturgeon	CSC
Insects		
Speyeria zerene hippolyta	Oregon Silverspot Butterfly	FT
Amphibians		
Plethodon elongatus	Del Norte Salamander	CSC
Rana aurora aurora	Northern Red-legged Frog	CSC
Rana boyleii	Foothill Yellow-legged Frog	CSC
Birds		
Pelecanus occidentalis califomicus	California Brown Pelican	FE/CE
Branta canadensis leucopareia	Aleutian Canada Goose	FD
Haliaetus leucocephalus	Bald Eagle	FD/CE

[illegible]	[illegible]	[illegible]
Falco peregrinus anatum	American Peregrine Falcon	FD/CE
Empidonax traillii	Willow Flycatcher	CE
Riparia riparia	Bank Swallow	CT
Gavia immer	Common Loon	CSC
Phalacrocorax auritus	Double-crested Cormorant	CSC
Pandion haliaetus	Osprey	CSC
Circus cyaneus	Northern Harrier	CSC
Coturnicops noueboracensis	Yellow Rail	CSC
Progne subis	Purple Martin	CSC
Mammals		
Eumetopias jubatus	Stellar's Sea Lion	FT
Vascular Plants		
Sagittaria sanfordii	Sanford's Sagittaria	CNPS "1B"
Oenothera wolfii	Wolf's Evening Primrose	CNPS "1B"

Legend:
FE – FESA "Endangered"
FT – FESA "Threatened"
FD – FESA "Delisted;" remains subject to federal regulatory concern
CE – CESA "Endangered"
CT – CESA "Threatened"
CCT – CESA "Candidate Threatened"
CSC – California "Species of Special Concern"
CNPS "1B" – California Native Plants Society "1B" Listing[8]

The potential impacts to these species and habitat and their mitigation are discussed in the following sub-sections:

Coho Salmon – Federally Listed as Threatened

Coho salmon (*Oncorhynchus kisutch*) are found in many of the short coastal drainage basins between the Oregon border and Monterey Bay. In larger coastal drainages this species is usually found primarily in the lower-gradient reaches closer to the coast. The Lake Earl watershed does not appear to have supported natural coho populations prior to the 20th Century, when coho fingerlings were planted in Lake Earl on several occasions beginning in the 1920s. The last planting occurred in 1982, and the last documented coho occurrence in Lake Earl was recorded in 1989.

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[8] Pursuant to the Native Plant Protection Act and the California Endangered Species Act, plants appearing on the California Native Plant Society's "List 1B" meet the definition as species eligible for state listing as a rare, threatened, or endangered plant. List 1B plants are defined as "rare plant species vulnerable under present circumstances or to have a high potential for becoming so because of its limited or vulnerable habitat, its low numbers of individuals per population (even though they may be wide ranging), or its limited number of populations."

In commenting on the project EIR, the National Marine Fisheries Service (NOAA Fisheries) observed that as Smith River area coho appear to enter the river later than some other ecological sub-units of the species, late breaches should favor the presence of coho in the lagoon. In addition, NOAA Fisheries states that breaching after February 15 could make the lower stream habitat of the creeks that drain into the Lake Earl basin intermittently available to coho that might incidentally utilize the lagoon during the later wintertime. Although the CDFG concurred that such a measure might serve as an important evolutionary hedge against overall species extirpation, the Department maintains that the regular presence of a barrier sand spit, as contrasted with the open mouth of a watercourse or embayment, limits the natural potential for coho to occupy the Lake Earl basin. Furthermore, based upon the observed October 30 to January 2 timeframe for migration of coho at Rowdy Creek, a tributary of the lower Smith River, the Department notes that it is doubtful that any significant number of coho that inhabit the ecological sub-unit in which Lake Earl is situated would reach the lagoon if it is breached after mid-February. Additionally, another factor that would limit the habitat potential of the Lake Earl basin for coho is that breaching events conducted in the late winter or spring would favor the occupation of the basin by non-anadromous salmonid species, such as rainbow trout and resident coastal cutthroat trout, and anadromous steelhead who enter spawning streams in January to March. Moreover, the lower summer lagoon and stream levels that would likely result from late winter and springtime breaching would lead to increased temperature and decreased oxygen concentrations, which are not favorable to juvenile salmonid survivorship.

Accordingly, the proposed breaching schedule would limit the need for late (after February 15) breaching events. This breaching protocol will lead to a more stable spring and summer water level, helping to maintain the habitat and water quality necessary to support survivorship among all juvenile salmonids, including any opportunistic coho that might find their way into the opened lagoon.

Under the current proposed breaching protocols as summarized in Mitigation Measure No. SS-1-B (see Exhibit No. 10), the CDFG would consult with the National Oceanographic and Atmospheric Administration's National Marine Fisheries Service (NOAA Fisheries) and monitor the effects the proposed breaching would have on juvenile salmonids, including surveying for the presence of coho within the lagoon to further assess their actual and potential habitat utilization. On November 22, 2004, NOAA Fisheries received a request from the U.S. Army Corps of Engineers (Corps) for informal consultation on the issuance of Corps permits for the proposed project. In its response dated December 13, 2004 (see Exhibit No. 13), NOAA Fisheries concludes that based on consideration of the limited coho salmon presence in lake Earl and the periodic natural breaching of the lagoon system, the proposed project may affect, but is not likely to adversely affect SONCC coho salmon and their critical habitat.

Therefore, the Commission finds that as conditioned, the proposed breaching program would not result in significant adverse environmental effects on coho salmon consistent with the requirements of Sections 30231 and 30233 of the Coastal Act.

Tidewater Goby – Federally Listed as Endangered: The endangered tidewater goby has been found in Lake Earl in varying numbers throughout the years. Tidewater gobies occur in near-estuarine tidal stream-bottoms with salinities close to that of fresh water, although this species is very tolerant of elevated salinities that may even approach those of full seawater (35 parts per thousand). Tidewater gobies are bottom-dwelling fish that prefer gravelly bottom areas with submerged plants. As a result, not all parts of the lagoon bottom are suitable habitat. However, in general, the availability of suitable bottom habitat increases roughly proportionately with increases in the overall lagoon volume. Thus, in general, the higher the surface elevation, the more gobies are anticipated to derive habitat benefits. The proposed breaching program will maintain lake levels essentially within the same range as has been maintained by the breaching that has occurred over the last approximately 18 years. In that regard, the project will not have any adverse environmental effects on gobies. The principal difference between the proposed breaching program and the breaching that has occurred in recent years is that by providing for a breaching on February 15 if the lagoon level at that time is +5 MSL or higher, there would be fewer years when a spring breaching would be needed that could result in relatively low summer lake levels. In that respect, the proposed breaching project will have a positive effect on gobies.

Furthermore, as related in the hydrologic study dated August 28, 2003, prepared by Phillip Williams and Associates, breaching the lagoon within the two weeks leading up to the February 15 date would afford additional time during the late winter rainy season for the lagoon breach to close and for precipitation occurring during that period to be impounded within the lagoon contributing to higher, more sustained water levels and greater surface area in the lagoon throughout the drier summer and fall months that would benefit gobies and other aquatic habitat related species. Moreover, as discussed within the PWA report and stated within the U.S. Fish and Wildlife Service in the conservation recommendations within their biological opinion and in comments on the CDFG environmental document, delaying the breaching of the lagoon until the water surface elevation reached +9 to +9.5 MSL, would further support higher lagoon levels and area for an extended period of days to weeks which would provide greater overall habitat area for the goby during this period, as well as benefit other aquatic species and incrementally improve the condition of wetland ecotonal areas on the perimeter of the lagoon basin by helping to sustain saturated soil conditions for a longer period throughout the growing season. Accordingly, the Commission attaches Special Condition No. 3. In addition to setting the calendar period in which annual flood control maintenance breaching between +8 and +10 MSL would be conducted, Special Condition No. 3 sets the period of February 1 through 15 as the period in which the mid-winter preemptive breaching is to be undertaken. Furthermore, Special Condition No. 3 ~~requires~~ **states** that whenever not precluded by weather and tide conditions that could cause worker safety risks to breaching personnel, **the permittees are encouraged to delay** breaching ~~should not be undertaken~~ until the lagoon water levels reach +9 to +9.5 MSL.

Regardless of the particular water surface elevation when it takes place, breaching of the lagoon causes gobies to be stranded within isolated pools that remain around the margins of the lagoon after water levels have receded. However, the effects of breaching on the goby population are not fully understood from a species-wide perspective. It can be

observed that this species has adapted over the millennia to be capable of surviving in dynamic coastal estuarine systems and, as such, should benefit from a more natural breaching schedule. Improved summer water quality will also benefit the goby. Low summer water levels associated with previous breaching schedules increase salinity fluctuations and produce anoxic conditions which decrease food sources and potentially significantly impact the goby population.

Seining efforts conducted by CDFG after the November 1998 breaching pursuant to a condition of Corps Permit No. 20793N found large numbers of gobies stranded within the isolated pools of the lagoon after that breaching event. In addition, this initial seining attempt identified the difficulties of manually seining the numerous pools and returning stranded gobies to the main basin of the lagoon.

After the November 1998 breaching, the Corps, in consultation with the USFWS, modified the Corps permit for the project (Permit No. 20793N) to eliminate the requirement for seining and returning stranded Tidewater Gobies from remnant pools to the main basin of the lagoon. The USFWS determined that the initial seining and relocation effort conducted after the November 1998 breaching was ineffective and difficult to implement and such seining and relocation is not necessary in the future. The USFWS determined that the loss of gobies stranded in remnant pools after a breaching event is not a biologically significant portion of the goby population in the lagoon and does not threaten the viability of the species in the lagoon.

Based upon information initially gathered from the Corps sponsored monitoring program and in subsequent surveys, as reflected in the USFWS' draft recovery plan, the goby population size within the lagoon is much greater than previously believed (see Exhibit No. 11). Population estimates may exceed millions of individuals during the height of the season, with a larger portion of the lagoon being used by the gobies than had been previously thought. A population of this size would be the largest known population in the region. This information indicates that the losses due to stranding will not significantly impact the viability of the population and the proposed breaching schedule will sustain the environmental parameters required by this species.

Under the current proposed breaching protocols as summarized in Mitigation Measure No. SS-1-A (see Exhibit No. 10), the CDFG would continue to consult with the USFWS and monitor goby populations within the lagoon to further characterize the health of the population, identify the benefits and possible impacts the proposed breaching regime would have on goby populations. On January 5, 2005, the USFWS released a biological opinion for the current proposed breaching program containing seven non-discretionary specific terms and conditions which must be satisfied such that greater than incidental levels of take of tidewater gobies would not result from the proposed periodic breaching. These terms and conditions have been made a requirement of the issuance of this permit as Special Condition No. 8. Therefore, the Commission finds that as conditioned, the proposed breaching program would not result in adverse environmental effects on the Tidewater goby consistent with the requirements of Sections 30231 and 30233 of the Coastal Act.

Coastal Cutthroat Trout, Chinook Salmon, Steelhead, Eulachon, Longfin Smelt, and Green Sturgeon – State Listed as Species of Special Concern: Coastal cutthroat trout is a resident salmonid in coastal streams in northern California and southern Oregon, and is the most abundant salmonid in Lake Earl/Talawa. All of the life requisites for this species are provided by the conditions in the streams in which it resides or in Lake Earl/Talawa Although this species is a "species of special concern" under the California Endangered Species Act, the Department has concluded that the proposed breaching program would not significantly adversely impact populations of this species or the viability of its habitat within the Lake Earl/Talawa basin or its feeder streams. The proposed project essentially represents a continuation of existing water management practices. Thus, the project would not change stream or lagoon extent or characteristics from current conditions and as a result, would not affect the extent or viability of Coastal cutthroat trout.

Chinook salmon generally spawn in upstream reaches of large streams and rivers along the Pacific Coast, but young fish spend several months during their first year "rearing" in suitable habitat in coastal estuaries and lagoons. There are no definitive records of Chinook in Lake Earl or any of its tributaries during historic times, although, in the past, CDFG biologists have expressed opinions informally that Lake Earl and Jordan Creek offer a habitat combination potentially useful for this species. The Department considers the best available information indicates that this species is not present in the LEWA, as the Department's fisheries biologists have not caught Chinook in the Lake Earl ecosystem complex.

Steelhead are seagoing trout. Steelhead have a life history similar to that of *coho* salmon, although the steelhead (which is closely related to non-seagoing rainbow trout) find appropriate habitat conditions in smaller streams, and in more upstream reaches, than do the larger salmonids. CDFG data indicate that steelhead are common in Lake Earl. Natural breaching processes that opened the lagoon between January and April may have evolutionarily favored this species. Spawning probably occurs in Jordan Creek and Yonkers Creek. The particular ecologically significant unit in which the steelhead of the Lake Earl region belong are not listed under the federal or state Endangered Species Act.

The tidal reaches of the tributary streams of Lake Earl/Talawa provides habitat for both the Longfin smelt and the eulachon. Although these two smelt species have been detected in sampling conducted by CDFG biologists during the past two decades, the Department has concluded that the uncommon occurrence of these species in Lake Earl was related to historically high abundances along the northwest Pacific coast, and that the species are not normally constituent species in Lake Earl/ Talawa.

Juvenile salmonids rearing in an estuary like the lagoon complex may be expected to benefit according to the water column volume within the lagoon complex, rather than benefiting in terms of bottom area. Accordingly, rearing habitat viability would increase correspondingly with higher lagoon levels. Some rearing habitat for salmonids and potential spawning habitat for the smelt species identified above is also located within tributary streams to the lagoon complex. Thus, because less stream length would be flooded as the lagoon is breached at lower levels, more riparian rearing habitat would become available. Accordingly, some trade-off would occur between the water column and stream habitats for juvenile salmonids and smelt depending upon the height at which

the lagoon would be undertaken. However, the proposed project essentially represents a continuation of existing water management practices. Thus, the project would not change stream or lagoon extent or characteristics from current conditions and as a result, would not affect juvenile salmonids rearing in the lagoon complex.

Little is known definitively regarding the occurrence of green sturgeon in Lake Earl. Though adults forage in the nearshore marine environment and could enter the lagoon mouth following breaching, their spawning historically has been documented in larger river systems, including the Klamath River system. Juvenile sturgeon have been discovered in Lake Earl fishery samples. However, the Department considers this species not to constitute a significant element in the Lake Earl fishery fauna, as the Department indicates in the EIR that green sturgeon are seldom present in Lake Earl and the regular occurrence of these species is unlikely. Therefore, for all of the reasons specified above, the Commission finds that as conditioned, the proposed breaching program would not result in adverse environmental effects on coastal cutthroat trout, Chinook salmon, steelhead, eulachon, longfin smelt, and green sturgeon, consistent with the requirements of Sections 30231 and 30233 of the Coastal Act.

Oregon Silver Spot Butterfly – Federally Listed as Threatened: The Oregon silver spot butterfly is found in and adjacent to the dunes on the northern shore of Lake Earl. This species relies on the western blue violet for food and larval attachment. The western blue violet requires a high water table to survive the summer months. Historical records indicate that the violet population has decreased in abundance, and once grew in many areas it now does not. A lowered water table caused by past breaching at +4 feet may be responsible for this decrease. Persistent higher water levels that would result from programmatic breaching at higher water surface elevations could increase the amount of habitat able to support the growth of the violet and thereby benefit the butterfly. While the proposed breaching program is believed not to impact the Oregon silverspot butterfly, it is possible that the butterfly larvae could be flooded in the lower portion of violet habitat. The higher water table associated with the proposed breaching schedule or at even higher elevations, naturally or human-induced, could allow for the expansion of the violet population and potentially increase the available habitat and numbers of the butterfly. Thus, to the degree that butterfly larvae are disturbed in the lower portion of the habitat by the proposed breaching schedule, this impact will be more than off set by the benefits to the species derived from the higher water table. The applicants propose to consult with the USFWS and other federal, state, and local agencies, and to implement any management actions, including monitoring programs to study the violet and butterfly populations to confirm that there are no adverse environmental effects to the butterfly or violet population from flooding or loss of habitat (see Exhibit No. 10). On January 5, 2005, the USFWS released a biological opinion for the current proposed breaching program concluding that breaching up to a February 15 cut-off date as proposed by the applicants would not likely jeopardize the continued existence of the Oregon silver spot butterfly. Therefore, the Commission finds that as conditioned, the proposed breaching program would not result in significant adverse environmental effects on the Oregon silver spot butterfly, consistent with the requirements of Sections 30231 and 30233 of the Coastal Act.

Brown Pelican – State and Federally Listed as Endangered: As the brown pelican is a predator that feeds on aquatic resources that would likely occur in greater numbers with large lagoon volumes, they should benefit from increased water levels. However, these birds can be harmed during breaching episodes. Although it is unlikely that pelicans will be in the area when breaching is most commonly undertaken (December to mid-February), birds that are in the area can be caught in the strong and turbulent flows that occur during breaching. It is likely that birds so entrained would be unable to negotiate the rough water within the outflow and the surf crash zone and would drown. To minimize the likelihood of this situation, the CDFG hazes waterfowl in proximity of the breaching site with air-boats, acoustic exploders, "flash-bang" devices, and/or other such pyrotechnics. Therefore, to ensure that no brown pelicans are injured during the breaching, the Commission attaches Special Condition No. 6. Special Condition No. 6 requires the applicants to haze any pelicans and other waterfowl, such as American coots, that are present prior to breaching and to continue such hazing on out-going tides throughout the first 24-hours following the breaching~~, including~~ **except for** evening and nighttime hours.

Therefore, the Commission finds the proposed breaching of Lake Earl as outlined and conditioned to haze brown pelicans and other waterfowl or halt breaching operations while such avian species are in the immediate area would minimize all adverse environmental effects and protect the biological productivity and habitat values of the Lake Earl basin for brown pelicans in conformity with the requirements of Coastal Act Sections 30231 and 30233.

Aleutian Canada Goose – Federally Delisted as Threatened, but Remaining Fully Protected: The Aleutian goose requires short grasses as foraging habitat. As lagoon waters levels rise above +8 MSL or so, these grazing lands may get submerged for several months of the year and be unavailable to geese for foraging. Similarly breaching at lower lagoon levels could overtime alter groundwater dynamics that could cause a similar loss of these grasslands through instigating succession to more xeric plants. Therefore, the Commission finds that as conditioned, at the managed lagoon levels proposed, the breaching program would not result in adverse environmental effects on Aleutian Canada geese, consistent with the requirements of Sections 30231 and 30233 of the Coastal Act.

Bald Eagle – State Listed as Endangered, Federally Listed as Threatened; Peregrine Falcon – State Listed as Endangered; Bank Swallow – State Listed as Threatened: In general these species are predators that feed upon resources related to the lagoon's area, and they are expected to find that those prey resources increase in proportion to the lagoon surface elevation. The changes in lagoon elevation would not disturb their hunting range or nesting areas, or significantly limit the amount of available prey. Therefore, the Commission finds that as conditioned, the proposed breaching program would not result in adverse environmental effects on bald eagles, Peregrine falcons, and bank swallows consistent with the requirements of Sections 30231 and 30233 of the Coastal Act.

Willow Flycatcher – State Listed as Endangered: The Willow Flycatcher is uncommon in the project area, arriving in Northern California in May and June. Willow flycatchers prefer dense willow thickets for nesting and roosting. Habitat for the willow flycatcher would comprise riparian forest and forested wetland areas on the periphery of Lake Earl. Thus, insofar that more favorable conditions are provided (wetlands) or deprived (stream corridors) at higher water surface elevations, habitat for the willow flycatcher would correspondingly change. The proposed breaching program will maintain lagoon levels essentially within the same range as has been maintained by the breaching that has occurred over the last approximately 18 years. In that regard, the project will not have any adverse impact on the willow flycatcher habitat. Therefore, the Commission finds that as conditioned, the proposed breaching program would not result in adverse environmental effects on the willow flycatcher, consistent with the requirements of Sections 30231 and 30233 of the Coastal Act.

Various Amphibia, Raptors, and Passerine Birds – State Listed as Species of Special Concern: The CDFG has reviewed the ecological dynamics affecting the various wetland-related species of special concern and have indicated that the proposed breaching of Lake Earl would result in no significant adverse impacts to these species either directly, indirectly, or cumulatively. The proposed project essentially represents a continuation of existing water management practices. Thus, the project would not change the habitat extent or characteristics of amhibia, raptors, and passerine birds from current conditions and as a result, would not affect the extent or viability of these species. Therefore, the Commission finds that as conditioned, the proposed breaching program would not result in adverse environmental effects on amhibia, raptors, and passerine birds, consistent with the requirements of Sections 30231 and 30233 of the Coastal Act.

Stellar's Sea Lion – Federally Listed as Threatened: Stellar's Sea lions forage opportunistically, singly or in large groups, in nearshore waters on a variety of fish, cephalopods, crustaceans, and other invertebrates. The species prefers offshore haulout and breeding sites with unrestricted access to water, near aquatic food supply in areas of minimal human disturbance; the species is disturbed or frightened by human presence. Nonetheless, sea lions forage near the outflow of Lake Earl and could potentially enter the lagoon complex during open periods.

The foraging and general habitat requirements of sea lions appear to be largely unaffected by water level in the lagoons, since they are associated more closely with the beach and outer dunes than with the lagoon waters and interior shoreline areas. This species may indirectly benefit from increased resource availability resulting from a greater production within the lagoon; however, because the sea lions are more closely associated with the beach and the outer dunes, it does not appear likely that sea lions would benefit directly or be disproportionately harmed by breaching of the lagoon irrespective of the maintained water level. Therefore, the Commission finds that as conditioned, the proposed breaching program would not result in adverse environmental effects on Stellar's sea lions, consistent with the requirements of Sections 30231 and 30233 of the Coastal Act.

Sanford's Sagittaria, and Wolf's Evening Primrose – CNPS List 1B Sate Candidate Rare, Threatened, or Endangered: No plant species that are listed as rare, threatened, or endangered under the state or federal Endangered Species Act occur at or near the Lake Earl Wildlife Area. However, two species that are considered as environmentally sensitive by the California Native Plant Society (CNPS) are known to occur in the project vicinity. Sanford's sagittaria and Wolf's evening primrose are found in the emergent, scrub-shrub, and palustrine wetlands at the interior margins of the lagoon. These two species are obligate wetland and facultative plants, respectively; their viability is directly related to the wetlands conditions in which they are found. The proposed project essentially represents a continuation of existing water management practices. Thus, the project would not change wetland extent or characteristics from current conditions and as a result, would not affect the extent or viability of Sanford's sagittaria and Wolf's evening primrose. Therefore, the Commission finds that as conditioned, the proposed breaching program would not result in adverse environmental effects on Sanford's sagittaria, and Wolf's evening primrose, consistent with the requirements of Sections 30231 and 30233 of the Coastal Act.

Water Fowl Common Species

During past breaching episodes, approximately one thousand birds including coots and ducks died after being caught in the turbulent flows. Impromptu hazing efforts were ineffective and many of the deaths occurred at night when hazing did not occur. While these birds are common and not federally listed species, such losses are a concern. As stated above, Special Condition No. 6 requires the hazing of federal- and state-listed endangered or threatened species such as the brown pelican immediately prior to and throughout the breaching event. The Commission notes that hazing of such listed birds during breaching will also limit impacts to common species of waterfowl while maintaining the lagoon's natural habitat value.

Conclusion

The present permit is for approval of a programmatic five-year breaching time period. The five-year authorization period will allow regulated breaching to be undertaken while additional environmental monitoring studies are completed to further define and validate the breaching strategy and ensure the long-term protection of sensitive species and habitats. Any results from the CDFG's studies that document environmental impacts that are not addressed under the current protocols will be taken into consideration when the applicants apply for additional authorizations for breaching in future years.

~~The~~ **As discussed above in the findings sub-section regarding the tidewater goby, the** applicants ~~propose to consult~~ **have consulted** with the USFWS and other federal, state and local agencies, and ~~to~~ **previously made commitments to** implement any management actions, including monitoring programs to study each listed species to confirm that there are no adverse environmental effects to any of the listed species from flooding or loss of habitat (see Exhibit No. 10 **and 14**). ~~Any additional or modified mitigation measures identified as part of these consultations may require that permit~~

~~amendments be granted by the Commission. Accordingly pursuing these consultations, carrying out the related implementation measures pursuant to any needed coastal development permit amendment has been made a condition of permit issuance under Special Condition No. 8.~~

To ensure that the ~~current permit~~ **approved development** incorporates all reasonable and prudent measures ~~that may come from~~ **within** the **USFWS'** endangered species ~~and other federal, state, and local agency consultations~~ **consultation and biological opinion**, the Commission imposes Special Condition No. 8. Special Condition No. 8 requires the applicants to ~~submit evidence, for the review and approval of the Executive Director, that the U.S. Fish and Wildlife Service has issued a~~ **conduct the breaching program consistent with the non-discretionary Terms and Conditions as set forth in the "Reasonable and Prudent Measures" section of the** Final Biological Opinion pursuant to consultations initiated by Mitigation Measure No. SS-1-A as detailed in the project EIR~~, and that the applicants apply for a permit amendment to implement any changes to this approved permit that are required by the U.S. Army Corps of Engineers as directed by the requirements of the USFWS' biological opinion~~. As conditioned to ~~obtain the consultation,~~ incorporate ~~any identified mitigation~~ **all reasonable and prudent** measures ~~it identifies~~ **identified in the biological opinion**, ~~and obtain a permit amendment prior to commencement of development if additional mitigation measures are identified,~~ the project will ensure that all mitigation measures have been provided and, as conditioned, will minimize or avoid adverse environmental effects.

The Commission also notes that any additional or modified mitigation measures identified as part of any future consultations reinitiated by the USFWS may require that permit amendments be obtained from the Commission. Accordingly, Special Condition No. 8 also includes provisions that should any future consultations require different or additional protective measures for the avoidance of greater than incidental take of listed species, the permittees shall inform the Executive Director of such changes for a determination as to whether a permit amendment would be required, and to not implement the new or different measures until an amendment has been approved by the Commission.

The Commission finds, as conditioned herein, the proposed breaching program is consistent with the requirements of Section 30230, 30231, and 30233 of the Coastal Act, in that feasible mitigation measures have been provided to minimize or avoid adverse environmental effects.

3. Alternatives

The third test set forth by the Commission's dredging and fill policies is that the proposed dredge or fill must have no feasible less environmentally damaging alternative. In this case, the Commission has considered various identified alternatives, and determines that there are no feasible less environmentally damaging alternatives to the project as conditioned. A total of four possible alternatives have been considered by the Commission, including: (a) a "no project" alternative; (b) the so-called "low-level

breaching alternative," breaching the lagoon between +4 and +6 MSL; (c) the so-called "natural breaching alternative," allowing the lagoon to breach within human intervention somewhere between the +12 and +14 MSL levels; and (d) a modified project alternative, wherein the breaching would be required to be performed within a tighter water level regime of +9 to +9.5 MSL. The first three of these alternatives were identified by CDFG in preparing the environmental analysis for the wildlife area management plan. The fourth modified project alternative was derived from comments submitted by the U.S. Fish and Wildlife Service (USFWS) (see Exhibit No. 12).

"No Project" Alternative: Reactive Breaching Upon Occurrence of Flood Emergency

Under the no project alternative, the applicants' current procedures for seeking an emergency permit and "managing" the Lake Earl/Talawa water elevations at approximately +8 MSL would be continued. In practice, however, the breach generally occurs when the lagoon is between the +9 and +10 MSL levels. This delay is due primarily to the need for a flooding situation to become imminent to prompt the issuance of a proclamation of emergency by the County with which the issuance of emergency permit authorizations by the U.S. Army Corps of Engineers, the Commission, and other entities could be justifiably granted. Occasionally, because of delays associated with waiting for favorable tide and weather conditions when the breach can be safely and effectively conducted, the lagoon has risen above the +10 MSL level, with resulting significant flooding occurring on County roads and private properties, before the breaching could be performed. As discussed further in Findings Sections IV.C.1 above, and IV.D and F below, the no project alternative would result in greater overall adverse impacts to coastal marine-, aquatic-, and terrestrial-based biological organisms and environmentally sensitive areas, and, in some instances, would not provide timely flood control to prevent County roads and properties from becoming significantly inundated. In addition, the no project alternative would not provide for the preemptive breaching on February 15 if the lagoon level at that time is +5 MSL or higher. As a result, there would be more years when a spring breaching would be needed that could result in relatively low summer lake levels which would provide less wetland habitat and would be more environmentally damaging than the proposed project. Consequently, the no project alternative is not a feasible less environmentally damaging alternative.

Low Level Breaching Alternative – Programmatic Breaching at +4 to +6 MSL

Under this option, Lake Earl/Talawa would be breached in the same manner as that proposed, utilizing heavy mechanized equipment to form a channel through the sandbar on the southwestern margins of Lake Talawa; however, the lagoon would be opened when the surface water elevation reached +4 and +6 MSL levels. At these lower levels, breaching would likely need to be conducted more often and over a greater portion of the year. As a result, the episodic frequency of the lagoon transitioning from an enclosed estuarine wetland to a marine wetland embayment would be increased. As discussed further in Findings Sections IV.C.1 above, and IV.D and F below, this action would result in changes to the overall water regime within the lagoon, including its water

chemistry and the composition of plants and animals within and adjacent to its waters. In addition, habitat areas including emergent, scrub-shrub, and palustrine wetlands would received less surface inundation and/or sub-surface saturation. This effect could instigate relatively rapid ecotonal shifts between the terrestrial and aquatic environments that could adversely affect biological organisms that utilize these areas and reduce overall wetland habitat within the lagoon basin. Furthermore, very little appreciable flood control would result under this option. Additionally, depending upon the conditions present when a low-level breaching is undertaken, if the differential between the water elevations of the lagoon and the ocean is only a few feet, insufficient "head" would exist to instigate the draining of the lagoon resulting in the sandbar reforming in a very short timeframe that would necessitate additional and more frequent breaching. As summarized in Table 2 below, CDFG estimates that breaching the lagoon at these lower levels would reduce the total amount of wetland habitat by a total of 1,507 acres. Accordingly, as the Low Level Breaching project alternative would have significant adverse impact upon coastal resources greater than that resulting from the proposed development, it is not a feasible less environmentally damaging alternative.

Table Two: Calculated Wetland Acreages Under the Various Project Alternatives

Wetland Category	Wetland Area (Acres) by Category		
	Low Level Breaching Alternative (+8 MSL Elevation)	Proposed Project Alternative (+8 MSL Elevation)	Natural Breaching Alternative (+12 MSL Elevation)
Estuarine/Brackish	2,338	2,493	2,518
Freshwater/ Emergent	465	1,219	1,976
Forested	19	157	442
Grazed	1	21	419
Additional Wetlands[A]	1,312	1,752	1,059[B]
Total Wetland Area	**4,135**	**5,642**	**6,414**

A Wetlands occurring because of hydrological factors at elevations above the lagoon surface elevations; category not assigned.

B The higher elevation reached by the lagoon under the alternative leaves less surrounding area between the lagoon shoreline and the nearby upland hill slopes that is suitable for wetland development.

Source: *Draft Environmental Impact Report – Lake Earl Wildlife Area, SCH No. 1989013110*, California Department of Fish and Game, June, 2003

Natural Breaching Alternative –Breaching at ≈+12 to ≈+14 MSL

A third project alternative involves allowing the lagoon to breach itself without any human intervention when its water levels reached +12 to +14 MSL or even higher. As discussed further in Findings Sections IV.C.1 above, and IV.D, F and H below, breaching the lagoon within this water level range would result in arguably a greater habitat area being made available for aquatic organisms and waterfowl utilization, and would likely, overtime, increase the amount of peripheral wetland areas within the lagoon basin by

approximately 772 acres. However, allowing the lagoon to exceed water elevations at or above the +10 MSL level would result in greater inundation of public road and recreational facilities for longer periods of time and, at +12 to +14 MSL, inundation of improvements on developed private properties. In addition, "managing" the lagoon at these levels would likely result in impacts to Native American burial sites. Therefore, this alternative would have adverse effects on public health and safety, fail to minimize risks to life and property in areas of high flood hazard, and adversely impact cultural resources. Therefore, the natural breaching alternative is not a feasible less environmentally damaging alternative.

Modified Proposed Project Alternative – Programmatic Breaching at +9' to +9.5' MSL

The fourth option examined by the Commission staff in response to comments received from the USFWS, NOAA Fisheries, and others involves the breaching of the lagoon within a tighter threshold regime of +9 to +9.5 MSL. Under this option, the lagoon waters would be allowed to rise and/or remain in the +8 to +9 MSL range so that the benefits of greater available habitat associated with the increased lagoon surface area and basin volume could be realized by waterfowl, aquatic organisms, such as the Tidewater goby and rearing salmonid species, and waterbody-dependent bird species, such as the bald eagle. In addition, the prolonged saturation of the soils in the areas surrounding the lagoon would sustain moisture levels that could serve to benefit the growth of obligate wetland, facultative wetland, and facultative plant species, such as the early blue violet (*Viola adunca*), that provide crucial food to the threatened Oregon silverspot butterfly (OSB). Conversely, the breaching would be required to be undertaken at a slightly lower maximum water surface elevation to prevent the inundation of facultative plants, such as the marsh violet, that could result in impacts to OSB habitat.

However, as described further in Findings Section IV.B.2 above, near instantaneous dispatching of equipment and personnel to conduct the breaching at any given water surface elevation is not possible without exposing such equipment and persons to significant safety risks if the lagoon were to reach specified levels during the course of a severe winter storm event. In addition, the benefits that might be afforded to the aquatic and waterbody-dependent species would be short-term, lasting only days or weeks at a time. Moreover, as the suggested tighter +9 to +9.5 MSL water surface elevation range for breaching falls within the +8 to +10 MSL range proposed by the applicants, and given that the applicants are required to consult with the commenting agencies regarding effects of the project on listed species and incorporate any required reasonable and prudent measures, the modified proposed project alternative is not a feasible less environmentally damaging alternative.

Conclusion

As summarized above, the proposed project involves the seasonal breaching of a coastal lagoon between +8 and +10 MSL surface elevations during September 1 through February 15 and again on or about February 15 if the water on February 15 is +5 MSL or higher, for a combination of very minor public service purposes (flood control) and as a

aquatic habitat restorative measure. As conditioned, the proposed project includes all feasible mitigation measures and would minimize or avoid all adverse environmental effects upon marine and aquatic biological resources. Under the approved alternative, flood hazards to public road infrastructure and private property would be largely avoided. Therefore, the Commission finds the proposed project is consistent with the requirements of Section 30233(a) of the Coastal Act that no feasible less environmentally damaging alternative to the proposed development exists.

4. Maintenance and Enhancement of Estuarine Habitat Values

The fourth general limitation set by Sections 30230, 30231 and 30233 is that any proposed dredging or filling in coastal waters must maintain and enhance the biological productivity and functional capacity of the habitat, where feasible.

For the reasons discussed above, the Commission finds that the proposed breaching strategy maintains, enhances, and acts to restore marine resources, protects the Lake Earl estuarine system from significant disruption of habitat values and best mimics the natural breaching processes while eliminating water quality impacts associated with contamination from the potential flooding of adjacent wells and infrastructure located above +10 MSL. The proposed project effectively protects the important habitat values of the Lake Earl lagoon system while minimizing the risk to life and property from flood hazards. All available information suggests that all pertinent marine resources and environmentally sensitive habitat areas will not be significantly adversely affected and/or will benefit from the proposed breaching level. The proposed breaching schedule would also allow juvenile salmonids species likely to utilize the lagoon environs for habitat to both out-migrate to the ocean and for adult fish to return to spawn. Breaching events would be determined by water level rather than calendar date and would closely mimic the true variability of the natural breaching cycle. Undertaking the breaching in this manner would be consistent with the natural conditions of Lake Earl, is not expected to significantly impact either of the listed coho and goby populations as a whole, and includes monitoring of these populations and remediation if necessary to protect and enhance the biological productivity and habitat values of Lake Earl. Therefore, the Commission finds the proposed breaching of Lake Earl as outlined and conditioned above, is in conformity with Coastal Act Sections 30230, 30231 and 30233 with regard to the maintenance and enhancement of habitat values.

5. Conclusions

The Commission thus finds that the dredging and filling of wetlands is for an allowable purpose, that there is no feasible less environmentally damaging alternative, that feasible mitigation measures have been provided and the adverse environmental effects associated with the dredging and filling of coastal waters have been avoided or minimized, and that estuarine habitat values will be maintained or enhanced. Therefore, the Commission finds that the proposed development, as conditioned, is consistent with Sections 30230, 30231 and 30233 of the Coastal Act.

D. Protection of Environmentally Sensitive Areas

Coastal Act Section 30107.5 states:

> *'Environmentally sensitive area' means any area in which 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.*

Coastal Act Section 30240 states:

> *(a) Environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values, and only uses dependent on those resources shall be allowed within those areas.*
>
> *(b) Development in areas adjacent to environmentally sensitive habitat areas and parks and recreation areas shall be sited and designed to prevent impacts which would significantly degrade those areas, and shall be compatible with the continuance of those habitat and recreation areas.*

The Coastal Act also sets forth a variety of policies for protecting biological resources in environmentally sensitive areas, other than wetlands, that provide habitat for easily disturbed or vulnerable plant and animal species (i.e., threatened, endangered, or special status species), such as those non-aquatic organisms that utilize the lands adjoining Lake Earl/Talawa not previously discussed in Findings Section IV.C above. In addition, Section 30240(b) requires that development adjacent to environmentally sensitive habitat areas, including wetlands, and parks and recreational areas, be sited and designed to prevent impacts that would significantly degrade the ESHA, and be compatible with the continuance of, both environmentally sensitive habitat areas and parks and recreational areas.

1. Threatened, Endangered, and Special Status Species

A total of two species of terrestrial plant and animal species are formally listed or have candidacy as either "endangered," or "threatened," species or represent "species of special concern" under the Federal (FESA) and California (CESA) Environmental Species Acts. Table 2 below, summarizes the status of these species:

Table 3: Environmentally Sensitive Terrestrial Plant and Animal Species That May Occur in the Lake Earl/Talawa Area

[illegible]	[illegible]	[illegible]
Charadrius alexandrinus nivosus	Western Snowy Plover	FT
Phacelia argentea	Sand Dune Phacelia	CNPS "1B"

Legend: FT – FESA "Threatened"
CNPS "1B" – California Native Plants Society "1B" Listing[9]

1. Threatened, Endangered, and Special Status Species

Western Snowy Plover – Federally Listed as Threatened: In addition to the listed species dependent on the wetland environment of Lake Earl as discussed above in Findings Section IV.C.1, the proposed development has the potential to affect the terrestrial habitat of the western snowy plover, a federal threatened species and the sand dune phacelia, a qualified candidate species for listing as a threatened or endangered plant under the California Endangered Species Act. The foraging and general habitat requirements of the western snowy plover appear to be largely unaffected by water level in the lagoons, since they are associated more closely with the beach and outer dunes than with the lagoon waters and shoreline or the denuded breaching site. Although plovers might benefit indirectly from increased resource availability resulting from a greater production within the lagoon associated with a higher average water elevations, because the species is more closely associated with the beach and outer dunes, the species does not appear likely to benefit directly or be disproportionately harmed by breaching the lagoon proper. However, breaching of Lake Earl requires the use of heavy machinery on the beach at the breach site. Western snowy plovers are documented to nest seasonally in the breaching area and near the beach access ways. These nests can be easily impacted by vehicle or foot traffic.

Coastal Act Section 30240(a) requires that: (1) only resource-dependent uses be allowed in environmentally sensitive habitat areas; and (2) environmentally sensitive habitat areas be protected against any significant disruption of habitat values. With regard to the first requirement, the project would not entail the introduction of a new use into the sand dune habitat area utilized by the snowy plover as no permanent development will be placed in the breaching areas and the subject area has been utilized for annually breaching the lagoon since at least the late 1980s. As to the second requirement, the CDFG states that, "Because the breaching process occurs outside the period of plover nesting, the Department has concluded that the effect will not cross a known threshold of significance for this species (i.e., the potential for temporary wintertime disturbance is not environmentally significant)." ~~However, this statement is only accurate if the breaching is conducted outside of the plover's March 15 to September 15 nesting season for north coastal California. While the likely timeframe in which most breaching would be expected to be undertaken (December through mid-February) would fall outside of the plover's nesting season in the project region, the applicant's have nonetheless requested~~

[9] Pursuant to the Native Plant Protection Act and the California Endangered Species Act, plants appearing on the California Native Plant Society's "List 1B" meet the definition as species eligible for state listing as a rare, threatened, or endangered plant. List 1B plants are defined as "rare plant species vulnerable under present circumstances or to have a high potential for becoming so because of its limited or vulnerable habitat, its low numbers of individuals per population (even though they may be wide ranging), or its limited number of populations."

~~authorization to breach as early as September 1. Therefore, to avoid any significant disruption of habitat values, the Commission attaches Special Condition No. 3. Special Condition No. 3 requires that the breaching not occur before September 16, rather than begin as early as September 1 as proposed by the applicants, to better coincide with the end of the western snowy plover nesting season. By limiting the dates of the breaching to after September 16, there is little likelihood of a significant disruption of habitat values for nesting birds which may be occupying areas needed for transporting equipment and personnel through to the breaching site.~~ **Moreover, as stated within the biological opinion issued by the U.S. Fish and Wildlife Service, conducting the breaching program between September 1 and February 15 as proposed by the applicants would not result in significant adverse impacts to the western snowy plover (see Exhibit No. 12).** Therefore, the Commission finds the proposed breaching of Lake Earl ~~as conditioned above~~ shall protect the biological productivity and habitat values of Lake Earl area for western snowy plovers in conformity with Coastal Act Section 30240(a).

Sand Dune Phacelia – CNPS List 1B Sate Candidate Rare, Threatened, or Endangered: No plant species that are listed as rare, threatened, or endangered under the state or federal Endangered Species Act occur at or near the Lake Earl Wildlife Area. However, one terrestrial species that is considered as environmentally sensitive by the California Native Plant Society (CNPS) are known to occur in the project vicinity. The Commission notes that that sand dune phacelia inhabitants the vegetated dune lands well removed from the breaching site and are not affected by the breaching operations of the resulting level of the lagoon.

2. Adjacent Parks and Recreational Areas

Section 30240(b) also requires that development be sited and designed to prevent impacts which would significantly degrade parks and recreational areas and shall be compatible with the continuance of parks and recreational areas. The project site vicinity contains a variety of public parkland and recreational areas. As discussed further in Findings Section IV.B.1 above, intermingled with the CDFG's wildlife area are lands within the boundaries of Tolowa Dunes State Park(TDSP). With respect to these neighboring parklands, the breaching program has been developed as part of an overall management plan for the Lake Earl Wildlife Area (LEWA), and includes plan modules addressing area parkland and recreational facilities issues. The plan includes provisions for the development of appropriate levels of recreational facilities within the LEWA for such activities as hunting, fishing, bird-watching, recreational boating, and hiking, and identifies a land exchange program to establish a more appropriate boundary between the LEWA and TDSP that would be more in keeping with the differing management objectives for these two areas.

In addition, the County of Del Norte provides several coastal access facilities at road termini within the Pacific Shores Subdivision and along the eastern shore of Lake Earl. Several of these sites are used extensively for launching boats on Lake Earl. Although the lower extent of these County areas may become inundated when the lagoon reaches levels greater than +8 MSL, this flooding does not preclude their use for boat launching

and does not significantly degrade any developed support facilities, such as developed parking areas.

Therefore the Commission finds that the project has been sited and designed to prevent impacts which would significantly degrade parks and recreational areas, and would be compatible with the continuance of those areas, consistent with Coastal Act Section 30240(b).

3. Conclusions

Therefore, the Commission finds the proposed development, as conditioned to require: (1) the incorporation of the results of consultations on the direct, indirect, and cumulative impacts on listed endangered and threatened species and other sensitive species and habitats within the breaching program; (2) a limitation on the commencement of the breaching season until September 16 to avoid significant disruption to the habitat values of nesting western snowy plovers; and (3) the incorporation of the hazing of brown pelicans and other common waterfowl during breaching, would protect the biological productivity and habitat values of Lake Earl and prevent impact that would significantly degrade adjoining parks and recreational areas, and be compatible with the continuance of such areas, in conformity with Coastal Act Section 30240.

E. Hazards.

Coastal Act Section 30253 states in relevant part:

> *New development shall:* (1) *Minimize risks to life and property in areas of high geologic, flood; and fire hazard.* (2) *Assure stability and structural integrity, and neither create nor contribute significantly to erosion, geologic instability, or destruction of the site or surrounding area or in any way require the construction of protective devices that would substantially alter natural landforms along bluffs and cliffs.*

1. Minimizing Flood Hazards

One of the purposes of the proposed project is to minimize the risk of flooding developed areas surrounding the lagoon. Natural breaching typically does not occur until the lagoon reaches +12 to +14 MSL. At this level, public roads, wells, and septic systems are threatened. Breaching the lagoon for flood control purposes at +8 to +10 MSL has taken place each year since 1987 under emergency and regular coastal development permits (see Appendix B). This permit application proposes to continue that practice for a five-year period in conjunction with other activities identified within an overall management plan for the Lake Earl Wildlife area that specifically includes a mechanical breaching module for reducing flood hazards in concert with administering other wildlife area activities. Moreover, a planned breaching program more effectively minimizes the risks of flooding to life and property than unplanned breaching under a series of emergency permits.

Areas Subject to Flooding

County Roads – Based upon topographic and hydrologic analyses conducted by the CDFG during the environmental review of the management plan for the wildlife area, approximately 681 lineal feet of County roads, including the maintained and non-maintained streets within the *Pacific Shores* subdivision, would be subject to inundation commencing at a lagoon water surface elevation of +8 MSL that could temporarily impede traffic. The degree of inundation on any given segment of roadway varies depending upon the actual elevation of the roadway in that location relative to the lagoon's water at that time, and can range from mere saturation of the overlying roadbed, to shallow puddling that can be prudently traversed at low vehicular speeds, to water depths that prevent safe transit through the submerged roadway section. These potentially affected roadways at the +8 MSL level include:

- The southern and southwestern portions of the Pacific Shores Subdivision grid of developed roads;
- A segment of Kellogg Road east of Tell Avenue;
- Lower Lake Road in the vicinity of Russell Creek;
- The boat launching site and parking/turnaround area at the end of Lakeview Drive; and
- The western end of Buzzini Road below the bluff and its boat launching site and parking/turnaround area.

By the time the lagoon waters reach +9.44 MSL, a total of 22,874 lineal feet, or approximately 4⅓ miles of public roadways become inundated.

Lake Earl Shoreline Private Lands – Some privately-owned properties on the south, east and northern sides of the Lake Earl/Talawa lagoon become inundated at water elevations of +8 MSL or greater (see Exhibit No. 8). These lands comprise a total of approximately 59.07 acres and consist of lands with Commission-certified land use planning and zoning designations for a variety of general agriculture (34 acres), commercial (1.8 acres), residential (0.27 acre), and timberland (1.0 acre). The majority of these flood-vulnerable private lands are designated as resource conservation areas whose zoning regulations limit permissible development generally to resource-dependent uses such as fish and wildlife management, nature study, hunting and fishing and wetland restoration. The remaining areas are currently in cattle grazing, forage production, or in open space uses. By the time the lagoon waters reach +9.44 MSL, a total of 144.7 acres of private lands become inundated. All habitable residential structures are located above the +10 MSL elevation. Furthermore, in commenting on the environmental impact report prepared for the Lake Earl Wildlife Area management plan, the North Coast Regional Water Quality Control Board indicates that no evidence exists that lagoon surface elevations up to +10 MSL would result in onsite septic system failures or domestic well contamination on these or other private lands.

Pacific Shores Subdivision – The *Pacific Shores* Subdivision is located north of Lake Talawa, south of Kellogg Road, and generally between Lake Earl and the Pacific Ocean (Exhibits No.3 & 4). The *Pacific Shores* Subdivision was approved and recorded in 1963, nearly a decade before voter approval of the 1972 Coastal Initiative. *Pacific Shores* has 1,524 lots on 1,486 acres. Approximately 27 miles of paved roads were constructed shortly after the subdivision was approved. However, except for the road system, the subdivision remains essentially undeveloped. Only the main access road and certain collector side roads have been maintained (e.g., vegetation clearing of rights-of-way, minor drainage improvements and repairs). One permanent residence has been developed within the bounds of the subdivision. The residence was developed prior to the 1972 Coastal Initiative (Proposition 20) and thus did not require a coastal development permit. This dwelling is located in the interior of the subdivision and is not affected by the water levels within the lagoon. No other single-family residences have been proposed or constructed within the subdivision, although several mobilehomes, recreational vehicles, and other more transient encampment structures have been placed on approximately two dozen Pacific Shores lots without the securement of coastal development permits. The Commission's Statewide Enforcement Unit is conducting ongoing investigations to resolve these violations.

None of the water wells that could be impacted by water elevations above +10 MSL are located within the *Pacific Shores* subdivision. In 1971, as delegated under the Federal Clean Water Act and the Porter-Cologne Water Quality Act (CWC §13000 *et seq.*), the California Regional Water Quality Control Board adopted requirements for individual onsite sewage disposal "septic" systems. These siting and construction requirements include minimum vertical and horizontal separation between septic systems and the highest anticipated surface and groundwater, respectively, and maximum percolation rates for soils beneath septic system leach fields. The majority of the land area within the subdivision can be characterized as a coastal dune system, interspersed with emergent, scrub-shrub, and palustrine wetlands, that form a mosaic of environmentally sensitive habitats for a wide assortment of threatened, endangered, and/or rare plants and animals.

Because of the shallow water table and the rapid percolation rate associated with the sandy soils that underlie the area, it is doubtful that requisite approvals could be secured for the septic system-based wastewater treatment facilities that would be required to serve most if not all such permanent residential development at *Pacific Shores*. Alternately, a community sewer system could be developed to serve the area. However, even under a theoretical ultimate development scenario involving the full build-out of all of the remaining 1,000+ privately-owned lots within the *Pacific Shores* subdivision that have not been purchased by public agencies, with a resulting overall density of only two dwellings per acre, assessments for paying the bonded capital improvement indebture associated with constructing a publicly-owned wastewater treatment plant, together with the *pro rata* share of fees to generate revenues necessary for the ongoing operation and maintenance of such a sprawling system may likely render the option of a community sewer system economically infeasible.

In 1981, the Coastal Commission approved the Coastal Element of the County's General Land Use Plan, but denied certification of the Pacific Shores Subdivision area. The Pacific Shores Subdivision then became an area of deferred certification. The subdivision is noted on the County's LUP map as a "Special Study Area."

In 1985, the Coastal Commission approved Permit No. 1-85-38 which allowed the creation of the Pacific Shores Subdivision California Water District ("District") for purposes of assessing its property owners to have special studies prepared regarding the feasibility and possible environmental impacts of water and septic system construction. In July of 1992, the District submitted an application to Del Norte County for amending the County Local Coastal Program's land use plan and zoning code to provide for rural residential development within *Pacific Shores*. The County determined that as such a planning program change would facilitate development that could potentially have unmitigated significant adverse environmental effects, the preparation of an environmental impact report (EIR) would be required. A draft was submitted to the County in late 1992 and was subsequently rejected for lack of technical information to substantiate its findings and conclusions. Although the District continued to commission studies throughout the 1990s and collects assessments to the present day for such purpose, no revised EIR and completed LCP amendment application have been submitted to the County by the District.

The CDFG through its Wildlife Conservation is currently pursuing the purchase of additional lots from willing sellers within *Pacific Shores*. By December 30, 2004, 237 ½-acre lots comprising an approximately 118-acre area will have been purchased by the Department.

According to the Federal Emergency Management Agency's Flood Insurance Rate Maps No. 065025 0025B and C, dated January 24, 1983 and July 3, 1986, 218 of the 1,524 lots within the subdivision are susceptible to flooding during a 100-year flood event (+12 MSL base flood elevation). The applicants predict that 31 lineal feet of access roads and approximately 22 acres of lot area within the subdivision would be inundated at the +8 MSL level. At a water surface elevation of +9.44 MSL, 21,485 lineal feet of *Pacific Shores*' access roads and 136 acres of lot area would be potentially affected.

The Commission notes that the District has, in the past, proposed that the lagoon level be managed at +4 to +5 MSL to protect property values within the subdivision (see Appendix B). As stated above, only minimal transportation and public utility infrastructure has been installed at Pacific Shores since 1963, and only one caretaker's residence has been constructed. No public water system has been developed to date. With the exception of Tell Boulevard and certain key cross-connecting streets, County roads within *Pacific Shores* are not maintained and begin to flood when lagoon water levels reach +8 MSL. In comparison, at water levels exceeding +10 MSL, access to lots on the periphery of the subdivision can become inaccessible to public safety and emergency service first responders. These factors can result in unfavorable ISO[10] risk assessment ratings for the properties affected by the lack of these amenities and

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[10] "Insurance Services Office, Inc."

community services, that could compromise the securement of financing and insurance for developing and safeguarding permanent residential uses.

Lake Earl Wildlife Area / Tolowa Dunes State Park – As described further in Finding Section IV.B.1 above, over 10,000 acres of public lands surround Lake Earl/Talawa which are managed co-operatively by the CDFG and the California Department of Parks and Recreation, and which comprise the Lake Earl Wildlife Area and Tolowa Dunes State Park. Developed coastal recreational facilities within their combined area consist of over 20 miles of hiking trails, including segments of the California Coastal Trail, a walk-in environmental camp and a horse camp. Hiking, bicycling and horseback riding are permitted on the paths and gravel roads; motorized vehicular use in the area in prohibited. All of the developed facilities within the wildlife area and park (i.e., through trails and camps) lie at elevations greater than +12 MSL and would not be affected by the breaching of the lagoon as proposed by the applicants. Non-through trails terminating at the lagoon edge become submerged as the water surface rises. However, this inundation does not impede their use for the launching of small watercraft or entry into the lagoon for other recreational pursuits, such as swimming or waterfowl hunting.

Flood Control Benefits of the Proposed Breaching Program

The applicants propose to periodically breach the sandbar between September 1 and February 15 when the lagoon elevation is between +8 MSL and +10, and again on or about February 15 if the lagoon elevation is +5 MSL or more during the 2004-2005 through 2009/2010 winter rainy seasons. The County indicates that breaching at +8 to +10 MSL allows for some margin of safety (i.e. some additional storage capacity of the lagoon) before serious flooding of County roads occurs. At higher elevations, flood waters begin to block access to roads such as Kellogg Road that are needed to provide access to emergency vehicles for certain areas. In addition, breaching on February 15, when the lagoon elevation is at least +5 MSL, is a pre-emptive measure to avoid having to breach the lagoon during the spring and summer months in the event of a wet summer.

Both the County and the CDFG prefer to avoid having to breach the lagoon during the spring and summer months as breaching during this time of the year is more environmentally disruptive. Long shore currents may not be strong enough during the spring and summer to close the sandbar and allow the lagoon level to rise. If the sandbar is not closed, the lagoon remains very shallow, small, and open to the ocean. As discussed further in Findings Section IV.C above, the shallow waters may allow water temperatures to rise above optimum levels necessary to maintain salmonids and other aquatic organisms and adversely impact wetlands. A smaller lagoon size reduces fishing opportunities for the public, and a prolonged exposure to salt waters can adversely affect the existing brackish water fauna and flora in the lagoon. The applicants contend that even with an unusually wet summer there is a very low probability that the lagoon will need to be breached for flood control purposes during the spring and summer months if they are allowed to breach the sandbar on February 15 if the lagoon elevation is 5 feet or more above MSL.

Breaching at +8 to +10 MSL will substantially reduce the volume of the lagoon from the maximum area that would result if the lagoon were allowed to breach naturally at a estimated level between +12 to +14 MSL or higher. Nevertheless, the applicants' proposal is necessary to prevent significant flooding of County roads and existing infrastructure. By comparison, breaching at the +4 to +5 MSL level, as suggested by the District and others to protect undeveloped lots from periodic inundation, would reduce the surface area of the lagoon from the approximately 4,000 to 4,800 acres proposed by the applicants to roughly 2,800 to 3,250 acres, or by approximately 31 percent. With respect to the relative amounts of public road infrastructure that would be affected at the differing water surface elevations, Table 4 below, presents a summary comparison of the effects of the various flood control management options:

Table 4: Potentially Affected Road Lengths at Varying Lagoon Water Elevations

Affected Roads	Inundated Roadway Length (Linear Feet)					
	+4 MSL	+6 MSL	+8 MSL[11]	≥+10 MSL[12]	+12 MSL	+14 MSL
Developed County Roads within Pacific Shores Subdivision	0	109	31	21,285	32,623	41,474
Other County Roads	301	436	650	1,489	13,656	25, 868
Totals	301	545	681	22,874	46,279	67,342

In addition to these comparative roadway impacts, the CDFG estimates that at an +8 MSL level, 72 of the [privately-held lots within the *Pacific Shores* lots would experience some or all of the parcels being inundated from the lagoon waters. In comparison, at the +9.44 MSL level reviewed in the FEIR, 356 lots would be affected by the lagoon waters. The Commission notes that with regard to the significance of the degree of flooding hazard at either the proposed +8 MSL level or the higher +9.44 MSL level, (1) none of these affected lots are physically developed with approved residential dwellings; and (2) none of the affected roadways are needed to provide access to developed areas or to provide needed access for emergency vehicles. Thus, the flooding effects are insignificant. Therefore, although physical property and access thereto may become inundated for relatively short periods during the year, the project as conditioned minimizes the risks to life and property in areas of high flood hazard consistent with the requirements of Section 30253.

Therefore, the Commission finds that the +8 MSL breaching threshold level that has been proposed by the applicants will maintain the greatest area of aquatic and wetland habitats as well as maintain the summer water quality necessary to support associated fish and wildlife, while complying with the direction of Coastal Act Section 30253(1) to "*minimize risks to life and property in areas of high geologic, flood and fire hazard.*"

2. Geologic and Flood Hazards at Breaching Site

Breaching the sandbar creates a temporary safety hazard to beach users and people using small watercraft, such as canoes or kayaks, within close proximity to the breaching site. When breached, water from the lagoon rapidly escapes to the sea with significant force,

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[11] Figures derived from a GIS-based analysis conducted by the CDFG utilizing Department of Water Resources topographic data and a review of additional aerial photographs taken when the lagoon was at a +8 MSL level.

[12] Figures derived from a GIS-based analysis conducted by the CDFG utilizing Department of Water Resources topographic data and a review of 1992 aerial photography when the lagoon surface elevation was at a +9.44 MSL level.

endangering anyone who wanders or paddles too close. Once the water level in the lagoon reaches equilibrium with sea level, generally within the first 24 hours following the opening of the lagoon, the hazard is abated. Special Condition No. 4 requires the applicants' assumption of risk, waiver of liability and indemnification of the Commission that is generally imposed on applicants proposing projects in areas subject to high risk of flood, wave and erosion hazard. To protect the public from identified hazards, Special Condition 5 requires the applicants to restrict access on the beach and boating access near the breach site prior to, during breaching and for a 24-hour period following the end of breaching.

The breaching excavation has the potential to instigate lateral erosion of sandbar within the channel as lagoon waters drain out and tidal surges pour back through the channel. If continued unchecked for some distance, such erosion could dramatically alter the dynamics of the lagoon's coastal barrier strand and result in impacts to adjoining dune areas containing sensitive plant and animal habitat for the Western snowy plover and the sand dune phacelia. However, this lateral erosion of the sandbar reaches an equilibrium point after spreading out to a width of approximately 200 feet, at which point further lateral erosion ceases and the breach can begin to seal back up over the next days to weeks.

Conclusion

The proposed project effectively protects the important habitat values of the Lake Earl/Talawa lagoon system while minimizing the risk to life and property from flood and geologic hazards. The Commission therefore finds that the proposed project, as conditioned to protect beach users during breaching events, is consistent with Coastal Act Section 30253.

F. Archaeological Resources.

Coastal Act Section 30244 states:

> *Where development would adversely impact archaeological or paleontological resources as identified by the State Historic Preservation Officer, reasonable mitigation measures shall be required.*

The native Tolowa people lived adjacent to the lagoon prior to European settlement of the region commencing in the 1850s. Previous archaeological surveys conducted in the Lake Earl area have documented Tolowa sites at numerous locations around the lagoon above the +10 MSL elevation.

The Tolowa Nation, an organization representing approximately 40 Tolowa people, expressed concerns during the public hearings on CDP Application Nos. 1-94-49 and 1-97-076 in September 1996 and March and May 1999 that burial grounds and other Tolowa archaeological sites are flooded at lagoon levels exceeding +4 MSL and therefore advocate management at or below that level. To date, the location of Tolowa

archaeological sites alleged to be situated along the lagoon margins and/or in other low lying areas has not been disclosed or documented. However, the Elk Valley Rancheria Tribal Council, and the Smith River Rancheria, representing together approximately 1,000 Tolowa people, have expressed their support for the Department's proposal to manage the lagoon at +8 MSL or higher levels, and disagree with the assertion that Tolowa archaeological sites are threatened by flooding at levels greater than +4 feet (see Exhibit No. 12, pages 9-11)

Often cited by the parties voicing concerns over the potential impacts to cultural resources including archaeological materials, is the cultural resources investigation performed as part of the Corps *Lake Earl Intensive Habitat Study* (J. Roscoe in Tetra Tech, Inc., October 1999). This report concluded that archaeological resources would not be affected at lagoon surface levels of +6 MSL or lower.

However, in a subsequent study conducted on behalf of the Smith River and Elk Valley Rancherias entitled *Tolowa Cultural Sites and Lakes Earl and Talawa in Del Norte County California* (Janet P. Eidsness, July 16, 2002), based on compiled field observations and investigations the report concluded, counter to the allegations made by Tolowa Nation and others, that:

> The measured site and other geographic feature elevation data obtained by this study (Table 1) indicate that the most sensitive site features are located above 15 ft AMSL. A high lake stand at 8 to 10 feet AMSL appears to be reasonable for avoiding impacts to the more sensitive site areas. [Parenthetic in original; emphasis added.

Thus, by breaching the Lake Earl/Talawa lagoon between +8 and +10 MSL, potentially significant adverse impacts to archaeological resources would be avoided. However, while these resources would not be either inundated or subject to direct erosion associated with the proposed managed lagoon levels, both the Roscoe and Eidsness reports conclude that wave action associated with higher water elevations likely would lead to increased erosion around low-lying archaeological sites that could overtime undermine and cumulatively impact these resources. With respect to other appropriate mitigation to offset the potential damage of cultural resources located above the proposed managed lagoon surface elevations that might result from wind and wave erosion at their bases, the Eidsness report states :

> Regardless of which lake level elevation is selected, systematic monitoring of site conditions will be necessary to objectively measure and document cultural resources... Should site monitoring reveal changes in site conditions relating to erosion or other factors, management actions to reduce or mitigate such efforts will then need to be considered and implemented in consultation with the appropriate landowners and agencies and consistent with Federal and/or State historic preservation laws. Site protection measure that may be considered depending upon the severity of impact threat or damage might include: establishing barriers to prohibit

> access to cultural resources, such as fences, geotechnical fabrics, rip-rap or covering with fill; constructing more formidable engineered structures to stabilize or reduce erosion of sites; or archaeological data recovery (a last report). [Parenthetics in original; emphasis added.]

Thus, to prevent potential cumulative damage to archaeological resources, the Commission attaches Special Condition No. 9. Special Condition No. 9 requires that the applicants prepare and submit for the approval of the Executive Director, a final archaeological resources monitoring plan, to be developed in consultation with appropriate federal, state, and local agencies, for conducting the required photographic monitoring, recordation of observations of site conditions, and the identification of management actions to be taken to stabilize and reduce erosion at known cultural sites to protect archaeological resources from impacts associated with breaching the lagoon.

Therefore, the Commission finds the breaching proposal as conditioned to include the participation in the monitoring program recommended in the cultural resources study is consistent with Coastal Act Section 30244.

G. Conversion of Agricultural Lands.

Section 30113 of the Coastal Act defines "prime agricultural land" as follows:

> *'Prime agricultural land' means those lands defined in paragraph (1), (2), (3), or (4) of subdivision (c) of Section 51201 of the Government Code.*

Cited California Government Code Section 51201 at paragraphs (1) through (4) of subdivision (c) reads as follows:

> *(1) All land that qualifies for rating as class I or class II in the Natural Resource Conservation Service land use capability classifications.*
> *(2) Land which qualifies for rating 80 through 100 in the Storie Index Rating.*
> *(3) Land which supports livestock used for the production of food and fiber and which has an annual carrying capacity equivalent to at least one animal unit per acre as defined by the United States Department of Agriculture.*
> *(4) Land planted with fruit- or nut-bearing trees, vines, bushes or crops which have a nonbearing period of less than five years and which will normally return during the commercial bearing period on an annual basis from the production of unprocessed agricultural plant production not less than two hundred dollars ($200) per acre.*

Coastal Act Section 30241 states:

> *The maximum amount of prime agricultural land shall be maintained in agricultural production to assure the protection of the areas agricultural*

economy, and conflicts shall be minimized between agricultural and urban land uses through all of the following:

(a) By establishing stable boundaries separating urban and rural areas, including, where necessary, clearly defined buffer areas to minimize conflicts between agricultural and urban land uses.

(b) By limiting conversions of agricultural lands around the periphery of urban areas to the lands where the viability of existing agricultural use is already severely limited by conflicts with urban uses or where the conversion of the lands would complete a logical and viable neighborhood and contribute to the establishment of a stable limit to urban development.

(c) By permitting the conversion of agricultural land surrounded by urban uses where the conversion of the land would be consistent with Section 30250.

(d) By developing available lands not suited for agriculture prior to the conversion of agricultural lands.

(e) By assuring that public service and facility expansions and nonagricultural development do not impair agricultural viability, either through increased assessment costs or degraded air and water quality.

(f) By assuring that all divisions of prime agricultural lands, except those conversions approved pursuant to subdivision (b), and all development adjacent to prime agricultural lands shall not diminish the productivity of such prime agricultural lands.

Coastal Act Section 30242 states:

All lands suitable for agricultural use shall not be converted to nonagricultural uses unless (1) *continued or renewed agriculture is not feasible, or* (2) *such conversion would preserve prime agricultural land or concentrate development consistent with Section 30250. Any such permitted conversion shall be compatible with continued agricultural use on surrounding lands.*

Coastal Act Section 30241 requires that the maximum amount of prime agricultural land be maintained in agricultural production to assure the protection of an area's agricultural economy and that conflicts between agricultural and urban land uses be minimized. The policy sets forth a variety of methods for achieving these goals, including assuring that nonagricultural development does not impair agricultural viability and that all development adjacent to prime agricultural lands does not diminish the productivity of such prime agricultural lands.

With respect to maintaining the maximum amount of "prime agricultural land," as stated in Footnote C of Table F.2-1 of the Final EIR, the 34 to 134 acres of privately-owned agricultural lands that would be inundated at lagoon water surface levels between +8 and +9.44 MSL are stated as including "both 'prime' and 'general' agricultural land" (see Exhibit Nos. 6 and 10). These figures were derived generically from the County of Del Norte's Geographic Information System mapping. However, by reporting the amount of land potentially inundated by the proposed breaching program as including both general and prime agricultural lands areas within the same value, confusion is raised as to the exact amount of prime agricultural land that would be affected by the development.

A close examination of the County's certified land use plan and zoning maps for the Lake Earl planning area reveals that the extent of those lands designated as prime agricultural lands, particularly those situated on the southside of Buzzini Road are portrayed as extending to within approximately 330 to 660 feet of shoreline Lake Earl at a +4 MSL elevation. However, when compared with detailed 2-foot contour interval topographic maps within the Draft Intensive Habitat Study prepared for under contract for the U.S. Army Corps of Engineers (Tetra Tech, Inc. October 1999), an approximately six-foot escarpment is shown to exist between the shoreline of the lagoon as exposed at the roughly +4 MSL surface level and the gently sloped to flat terrace to the east containing the subject pasturelands. This heavily shrub-covered area appears to correspond to the above-described 330- to 660-foot-wide transitional area between the lagoon's +4 MSL shoreline and the edge of the designated prime agricultural lands. Accordingly, based upon this information, the proposed project at the upper end of the requested elevation range in which breaching of the lagoon would be undertaken would only result in water surface levels that would extend to the outer boundary of prime agricultural lands and would not result in their inundation.

In regard to the requirements of Section 30241 that all development adjacent to prime agricultural lands not diminish the productivity of such adjoining prime agricultural lands, where such lands adjacent to prime agricultural lands are saturated by higher lagoon levels, grazing uses could be disrupted, at least temporarily. Should water not recede within a short time, upland pasture grasses could be lost, reducing the amount of land available for livestock grazing. Persistent saturated ground conditions can also put cattle at risks of developing hoof-rot or other maladies associated with chronically mired pasture conditions. However, given that: (1) the areas immediately adjoining the subject prime lands would only be inundated during the wet season of the year when the fields would already be saturated from rainfall downpours; (2) there is a generally a short period of time when the surface of the lagoon is between +8 and +10 MSL; and (3) the applicants have proposed to breach the lagoon before the lagoon's water levels would reach +10 feet when such potential saturation of the adjoining prime agricultural lands would occur, the potential for the proposed project to diminish the productivity of prime agricultural lands is viewed as insignificant.

Therefore, the Commission finds that that the subject program for breaching Lake Earl/Talawa at levels between +8 and +10 MSL would not significantly interfere with the maintenance in agricultural production of prime agricultural lands and would not

diminish the productivity of such adjoining prime agricultural as required under Section 30241 of the Coastal Act.

Coastal Act Section 30242 requires that all lands suitable for agricultural use not be converted to nonagricultural uses unless continued or renewed agriculture is not feasible or in doing so such a conversion would preserve prime agricultural land or result in a concentrated development pattern. In addition, any such permitted conversion must be found to be compatible with continued agricultural use on surrounding lands.

As discussed above, the lagoon has been artificially breached for at least the past approximately 140 years, originally to increase available grazing lands. Although consistent records were not maintained during most of this period, it is generally accepted that prior to 1987, the lagoon was breached at a lower level than is proposed by the applicants. Since 1991, the CDFG has purchased significant acreage of low-lying lands, mostly pasture, surrounding the lagoon as part of the Lake Earl Wildlife Area. Based on a recent assessment of aerial photographs as reflected in the Final EIR response to comments, approximately 138 acres of grazing land are still in private ownership below the +9.44 MSL elevation.

Mechanically breaching the lagoon at +8 to +10 MSL will prevent the inundation of grazing lands that would be flooded when the lagoon water surface levels reaches +12 to +14 MSL under natural conditions. Therefore, though the proposed project is not designed to maximize available pasture, it would prevent the loss of agricultural lands that otherwise would be flooded. Furthermore, the proposed project does not involve the conversion of agricultural lands to another use such as residential development. Rather, the project will maintain these lands in their current state. Thus, the Commission finds that the proposed project will not cause the conversion of agricultural lands to non-agricultural uses and is compatible with continued agricultural use on surrounding lands in conformance with Coastal Act Section 30242.

H. Public Access and Coastal Recreation.

Coastal Act section 30210 states:

> *In carrying out the requirement of Section 4 of Article X of the California Constitution, maximum access, which shall be conspicuously posted, and recreational opportunities shall be provided for all the people consistent with public safety needs and the need to protect public rights, rights of private property owners, and natural resource areas from overuse.*

Coastal Act section 30211 states:

> *Development shall not interfere with the public's right of access to the sea where acquired through use or legislative authorization, including, but not limited to, the use of dry sand and rocky coastal beaches to the first line of terrestrial vegetation.*

Section 30212 (a) in part states:

> *Public access from the nearest public roadway to the shoreline and along the coast shall be provided in new development projects ...*

Coastal Act section 30214(a) states:

(a) The public access policies of this article shall be implemented in a manner that takes into account the need to regulate the time, place, and manner of public access depending on the facts and circumstances in each case including, but not limited to, the following:

(1) Topographic and geologic site characteristics.

(2) The capacity of the site to sustain use and at what level of intensity.

(3) The appropriateness of limiting public access to the right to pass and repass depending on such factors as the fragility of the natural resources in the area and the proximity of the access area to adjacent residential uses.

(4) The need to provide for the management of access areas so as to protect the privacy of adjacent property owners and to protect the aesthetic values of the area by providing for the collection of litter.

Section 30210 of the Coastal Act requires that maximum public access shall be provided consistent with public safety needs and the need to protect natural resource areas from overuse. Section 30212 of the Coastal Act requires that access from the nearest public roadway to the shoreline be provided in new development projects except where it is inconsistent with public safety, military security, or protection of fragile coastal resources, or adequate access exists nearby. Section 30211 requires that development not interfere with the public's right to access gained by use or legislative authorization. Section 30214 of the Coastal Act provides that the public access policies of the Coastal Act shall be implemented in a manner that takes into account the capacity of the site and the fragility of natural resources in the area. In applying Sections 30210, 30211, 30212, and 30214, the Commission is also limited by the need to show that any denial of a permit application based on these sections, or any decision to grant a permit subject to special conditions requiring public access, is necessary to avoid or offset a project's adverse impact on existing or potential access.

The breaching site is located between the first public road and the sea. Therefore, the Commission must consider whether requiring public access is appropriate in this case. The proposed breaching activity does not require the provision of any new public access under Section 30212(a)(2) as adequate public access exists nearby, to and along adjacent beaches, and to the lake waters. Moreover, sections 30210-30214 require that the public

access policies be implemented in a manner that takes into account public safety and the protection of fragile coastal resources. The project will cause some interference with public access along the beach and boating access near the breach site when the lake waters are periodically released into the Pacific Ocean. The breaching creates a hazard for those who venture too near the breach site as the water from the lakes rapidly discharges through the breach with terrific force. Therefore, the Commission attaches Special Condition No. 5, which requires the applicants to restrict public access to all land areas within 500 feet of the breaching location 12 hours prior to breaching, during the 24-hour breaching operation, and for 24 hours afterwards. The condition also restricts boating access within 300 yards of the breach site during the same period.

As conditioned, the temporary 60-hour period of interference of public access associated with the breaching will pose no significant or lasting adverse impacts on public access or recreational beach use. Furthermore, breaching the sand bar when the lake elevation is at +8 to +10 MSL rather than at higher lake elevations, will result in a shorter period of time that boat launching ramps and other public access facilities scattered around the lakes are unusable due to high water conditions. The Commission therefore finds that the project, as conditioned, is consistent with the public access and recreational policies of the Coastal Act.

I. Visual Resources.

Section 30251 of the Coastal Act states:

> *The scenic and visual qualities of coastal areas shall be considered and protected as a resource of public importance. Permitted development shall be sited and designed to protect views to and along the ocean and scenic coastal areas, to minimize the alteration of natural land forms, to be visually compatible with the character of surrounding areas, and, where feasible, to restore and enhance visual quality in visually degraded areas. New development in highly scenic areas such as those designated in the California Coastline Preservation and Recreation Plan prepared by the Department of Parks and Recreation and by local government shall be subordinate to the character of its setting.*

In addition, Section 30240(b) of the Coastal Act states that:

> *Development in areas adjacent to environmentally sensitive habitat areas and parks and recreation areas shall be sited and designed to prevent impacts which would significantly degrade those areas, and shall be compatible with the continuance of those habitat and recreation areas.*

The project will affect public views in two ways: (1) the side-casting of sandbar materials on the sides of the channel excavated to breach the lagoon channel would form berms that could partially obstruct views to and along the ocean and scenic coastal areas from various public vantage points in the proximity to the breaching site for a temporary

period of time; and (2) the breaching of the lagoon barrier strand would entail the significant alteration of a natural landform and will lower the water level of the estuary exposing submerged areas that would change the visual characteristics of the lagoon shoreline. However, none of these impacts would result in a significant impairment of scenic resources, for the following respective reasons: (1) the bermed sand materials would only extend to heights of between four to five feet and will quickly winnow away in tidal actions in a few days following the breaching of the lagoon as the breaching channel widens and is planed-down in the surf; and (2) the alteration of the sandbar and lagoon shoreline landforms would result if the lagoon were allowed to fill to higher levels and breach naturally.

The resulting appearance of the formerly submerged estuarine margins would appear as a horizontal band of sandy substrate and exposed aquatic vegetation that would blend in hue and color with the former shoreline and the lagoon waters at their new levels. Although the differences in lagoon levels and the appearance of the shoreline may be noticeable to hikers and other users of the parklands and recreational facilities in and around the lagoon, the change in appearance will not be out of character with the surroundings and would likely enhance the outdoor recreational experience by providing the opportunity to view the dynamic changes in the environment of a coastal lagoon system when in a breached state.

Therefore, given its temporary and transient nature, and the fact that the proposed breaching activity will not significantly alter scenic public views at Lake Earl, the Commission finds that this project is consistent with Sections 30251 and 30240(b) of the Coastal Act.

J. Permit Approval Resulting in the Uncompensated Taking of Property.

As discussed above in Findings Sections IV.C through K, the proposed development is consistent with applicable Chapter 3 policies of the Coastal Act. These Coastal Act policies include Sections 30230, 30231, 30233, 30240, 30253, 30244, 30241, 30242, 30211, 20214, 30221, and 30251 regarding the protection and enhancement of marine resources and coastal water quality, permissible dredging, diking, and/or filling of wetlands, the protection of environmentally sensitive habitat areas, minimization of flooding and geologic hazards, and the inclusion of reasonable mitigation measures for protecting archaeological resources, agricultural lands, coastal access and recreational opportunities, and visual resources respectively. Accordingly, the Coastal Act instructs that the project be approved.

However, the Commission is also governed by Section 30010, which it has interpreted to preclude authority to grant or deny a coastal development permit in a manner that will take private property without just compensation. Where application of relevant Chapter 3 policies of the Coastal Act would otherwise result in a permit decision that would result in a "taking," the Commission examines whether the proposed development has been designed to maximize consistency with Coastal Act while not depriving any property

owners of interests that would require compensation. This determination is made a on case-by-case basis depending on the circumstances of each proposed development and is made pursuant to the applicable legal standards for determining whether a compensable "taking" will otherwise occur.

In commenting on the environmental documentation prepared by CDFG for the proposed breaching project, several owners of properties surrounding the Lake Earl/Talawa basin have alleged that allowing the lagoon levels to rise where its waters would extend onto private parcels, particularly those within the Pacific Shores subdivision, would represent a form of taking of property for public purposes.

Initially, the Commission finds that it is reviewing an application for a coastal development permit and is not the public agency that determined or will carry out the proposed lake management practices that are contained in the proposed development. Even assuming that the proposed development will cause harm to any private property, the Commission is not a proximate cause of any such purported harm. The Commission also notes that the proposed development is effectively a continuation of the breaching practices that have taken place for more than a decade and that similar "takings" claims have previously been present in the consideration of other permit items before the Commission.

In responding to comments submitted by the attorney representing the Pacific Shores Water District during the review of CDP Application No. 1-97-075 in May 1999, an allegation was made that the flooding of private properties within the *Pacific Shores* Subdivision constituted a uncompensated taking of property. In response, Commission staff noted that the Commission's role in considering the issuance of a coastal development permit application for a particular development project was limited to reviewing the application for its consistency with the policies of the Coastal Act. Deferring to information submitted by the applicant, staff incorporated within the findings for the permit a letter from the CDFG's legal counsel arguing that the flooding of the Pacific Shores lots did not constitute such a taking (Joseph Milton, Esq., October 8, 1998). Salient points to substantiate the legal opinion put forth in Mr. Milton's correspondence included:

- A substantial causal relationship must be established between the effects of the proposed development and the alleged injuries to properties that excluded other forces that would have separately caused the alleged injuries, as required in Belair v. Riverside County Flood Control District (1988) 47 Cal.3d 550, 559, as affirmed in Bunch v. Coachella Valley Water District (1997) 15 Cal.4th 432.

- The allegation that the project is somehow causing the flooding is not borne out by the fact that the Lake Earl/Talawa barrier lagoon would, on its own and without any human interaction, fill to levels equal to and exceeding the maximum water surface elevation of the proposed flood management program and inundate the subject private lands as part of its natural hydrologic cycle.

- The allegation that the CDFG's "past and present actions" has structured its flood control management parameters for the purpose of flooding unimproved private properties within *Pacific Shores* to negatively affect their fair market value, as based on appraisals that would in part consider their potential developability for their original intended use (rural residential homesites), so that such properties could be acquired through eminent domain proceedings at less than fair market prices does not consider that: (1) other more pronounced impediments to development exist that exert more significant effects on their valuation (i.e., the absence of developed and maintained transportation, community service, and public utility infrastructure); and (2) the subdivision lots were platted in 1963 and the Department only became involved in the management of the surrounding wildlife area and related acquisition programs since 1979, whereby in the 15-year period between these milestones, no appreciable development occurred.

This analysis provided by CDFG's legal staff is reinforced by discussion in Findings, Section IV.E1 regarding the inundation impacts of the proposed development and the infrastructure and land use constraints that could preclude any development of the private parcels. For all of these reasons, the Commission finds that approving the subject coastal lagoon breaching flood control development would not constitute the granting of a permit in a manner which will take or damage private property for public use, without the payment of just compensation therefor, consistent with Section 30010 of the Coastal Act.

K. U.S. Army Corps of Engineers Review.

The project is within and adjacent to a navigable waterway and involves "waters of the United States," and is therefore subject to review by the U.S. Army Corps of Engineers (USACE) pursuant to the Federal Clean Water Act (33 USC §1341). Pursuant to the Federal Coastal Management Zone Act (16 USC 1451 *et seq.*), any permit issued by a federal agency for activities that affect the coastal zone must be consistent with the coastal zone management program for that state. Under agreements between the Coastal Commission and the USACE, the Corps will not issue a permit until the Coastal Commission approves a federal consistency certification for the project or approves a permit. To ensure that the project ultimately approved by the Corps is the same as the project authorized herein, the Commission attaches Special Condition No. 7 that requires the permittees, prior to commencing breaching operations, to: (1) demonstrate that all necessary approvals from the USACE for the proposed dredging and filling have been obtained; and (2) incorporate any changes required by the Army Corps only after the permittees obtain any necessary Commission-approved amendment to this permit.

L. California Environmental Quality Act (CEQA)

Section 13906 of the Commission's administrative regulation requires Coastal Commission approval of Coastal Development Permit applications to be supported by a finding showing the application, as modified by any conditions of approval, is consistent with any applicable requirements of the California Environmental Quality Act (CEQA).

Section 21080.5(d)(2)(A) of CEQA prohibits a proposed development from being approved if there are any feasible alternatives or feasible mitigation measures available, which would substantially lessen any significant adverse effect the proposed development may have on the environment.

The Commission incorporates its findings on Coastal Act consistency at this point as if set forth in full, including all associated environmental review documentation and related technical evaluations incorporated-by-reference into this staff report. Those findings address and respond to all public comments regarding potential significant adverse environmental effects of the project that were received prior to preparation of the staff report. As discussed above, the proposed project has been conditioned to be consistent with the policies of the Coastal Act. As specifically discussed in these above findings, which are hereby incorporated by reference, mitigation measures that will minimize or avoid all significant adverse environmental impacts have been required. As conditioned, there are no other feasible alternatives or feasible mitigation measures available which would substantially lessen any significant adverse impacts, which the activity may have on the environment. Therefore, the Commission finds that the proposed project, as conditioned to mitigate the identified impacts, can be found consistent with the requirements of the Coastal Act and to conform to CEQA.

V. EXHIBITS:

1. Regional Location Map
2. Vicinity Map
3. Project Location Map
4. Breaching Diagrams
5. Land Use Within and Adjacent to Lake Earl Wildlife Area (LEWA)
6. Portion, Land Use Plan Map – *Crescent City / Lake Earl Planning Area*
7. Property Ownership Within and Adjacent to LEWA
8. Project Alternatives – Areas Subject to Inundation at Different Breaching Thresholds
9. Excerpt, *Final Draft Management Plan – Lake Earl Wildlife Area* (California Department of Fish and Game, January 2003)
10. Summary of Impacts and Mitigation Measures, *Draft Environmental Impact Report – Lake Earl Wildlife Area* (California Department of Fish and Game, June 2003) and *Clarifications of Draft EIR Assessments* (California Department of Fish and Game, July 2004)
11. Excerpts, *Draft Recovery Plan for the Tidewater Goby (Eucycloglobius newberryi)* (U.S. Fish and Wildlife Service, October 2004)
12. Agency Correspondence
13. NOAA Fisheries Consultation Letter

14. ***Formal Consultation on the 10-year Permit to Breach Lake Earl Sandbar, Del Norte County, California*** **(Biological Opinion), issued January 5, 2005 by the U.S. Fish and Wildlife Service, facsimile copy received January 6, 2005**
15. ***Issuance of Clean Water Act Section 401 Certification for Lake Earl/Lake Talawa Flood Control Project,*** **issued October 13, 2004 by North Coast Regional Water Quality Control Board, facsimile copy received January 6, 2005**

APPENDIX A

STANDARD CONDITIONS

1. Notice of Receipt and Acknowledgement. The permit is not valid and development shall not commence until a copy of the permit, signed by the permittee or authorized agent, acknowledging receipt of the permit and acceptance of the terms and conditions, is returned to the Commission office.

2. Expiration. If development has not commenced, the permit will expire two years from the date on which the Commission voted on the application. Development shall be pursued in a diligent manner and completed in a reasonable amount of time. Application for extension of the permit must be made prior to the expiration date.

3. Interpretation. Any questions of intent of interpretation of any condition will be resolved by the Executive Director of the Commission.

4. Assignment. The permit may be assigned to any qualified person, provided assignee files with the Commission an affidavit accepting all terms and conditions of the permit.

5. Terms and Conditions Run with the Land. These terms and conditions shall be perpetual, and it is the intention of the Commission and the permittee to bind all future owners and possessors of the subject property to the terms and conditions.

APPENDIX B

LAKE EARL/TALAWA BREACHING COASTAL DEVELOPMENT PERMIT HISTORY

1. Emergency Permit No. 1-87-04G (December 17, 1987) was granted to the Del Norte County Department of Public Works to breach the lagoon at 8 feet MSL to avoid flooding of Kellogg Road and Lower Lake Road.

2. Emergency Permit No. 1-88-01G (February 1, 1988) was granted to the Del Norte County Department of Public Works to breach the lagoon at 8 feet MSL to avoid flooding of Kellogg Road and Lower Lake Road.

3. Coastal Development Permit No. 1-87-216 was granted to the Del Norte County Department of Public Works and the California Department of Fish and Game as co-applicants. The breaching was scheduled to occur between October 15 and April 15 when the lagoon elevation reached +6 MSL primarily for wildlife management purposes (i.e., to avoid flooding of the seasonal grazing areas for the federally endangered Aleutian Canada Goose). Special conditions of the permit established: bench elevation markers for lagoon levels required notice of breaching to other agencies review by both the State Lands Commission and the U.S. Army Corps of Engineers and limited the duration of the permit for two years with a June 1, 1990 expiration date. Among other things the permit ended the practice of breaching the lagoon in the late spring and summer months for the benefit of gaining additional summer grazing lands in low lying areas. The Commission resolved the conflict between agricultural and natural resource interests in favor of protecting the wildlife and fisheries resources under Coastal Act Section 30007.5. At the same time the California Department of Fish and Game developed a draft management plan for the Lake Earl and Lake Talawa area and the California Department of Water Resources began a study of the hydrology of Lake Earl and Lake Talawa.

4. Emergency Permit 1-88-06G (August 29, 1988) was granted to the California Department of Fish and Game to abate a mosquito problem which is believed to have been caused by a combination of factors such as a higher summer lagoon level than years past and an unusually warm and wet summer. The Department informally agreed to work more closely with local health department officials in monitoring mosquito populations in the lagoon and in seeking ways to avoid a similar situation from occurring in the future.

5. Coastal Development Permit Application No. 1-90-196 was submitted by the California Department of Fish and Game for a 5-year permit to continue the breaching operations approved under Permit No. 1-87-216. The Department withdrew its permit application in May of 1991 on the basis of comments from the U.S. Fish and Wildlife Service that breaching to protect the seasonal grazing lands of the federally endangered Aleutian Canada Goose was no longer necessary as the goose had shifted its grazing areas to higher ground and to new

areas in the Smith River area. The Service also recommended that additional studies be conducted before a long-term breaching program is approved.

6. Emergency Permit 1-91-1-G (January 3, 1991) was granted to the Del Norte County Department of Public Works to breach the lagoon at +8.6 MSL for flood control purposes.

7. Coastal Development Permit Application No. 1-91-63 was submitted by the Del Norte County Public Works Department for a 2-year permit to breach the sandbar as proposed under the permit application herein. The Commission approved the permit on December 11, 1991, with a special condition that the sandbar be breached whenever the lagoon elevation reached 4 feet above MSL. Since breaching at 4 feet MSL was not acceptable to the California Department of Fish and Game, the Department withdrew its permission to allow the County to enter its land to breach under those conditions.

8. Emergency Permit 1-92-04-G (February 4, 1992) was granted to the Del Norte County Department of Public Works to breach the lagoon at +8.9 feet MSL for flood control purposes.

9. Emergency Permit 1-93-01-G (January 13, 1993) was granted to the Del Norte County Department of Public Works to breach the lagoon at +9.8 feet MSL for flood control purposes.

10. Emergency Permit 1-94-030-G (February 3, 1994) was granted to the Del Norte County Department of Public Works and the California Department of Fish and Game to breach the lagoon at over +8.5 MSL for flood control purposes.

11. Emergency Permit Application No. 1-94-040-G was received on February 7, 1994 from Tom Resch of the Pacific Shores Property Owners Association for breaching the lagoon when its waters were over +8.5 MSL. The application was returned to the applicants on February 11, 1994 due to the inability of the applicants to obtain written permission to breach from the California Department of Fish and Game.

12. Emergency Permit 1-95-010-G (January 10, 1995) was granted to the Del Norte County Department of Public Works and the California Department of Fish & Game to breach the lagoon at 10.5 feet MSL for flood control purposes.

13. Emergency Permit 1-95-12-G (December 29,1995) was granted to the Del Norte County Department of Public Works and the California Department of Fish & Game to breach the lagoon at over +8 MSL for flood control purposes.

14. Emergency Permit 1-96-015-G (December 2, 1996) was granted to the Del Norte County Department of Public Works and the California Department of Fish & Game to breach the lagoon at above +8 MSL for flood control purposes.

15. Emergency Permit 1-97-082-G (December 2, 1997) was granted to the Del Norte County Department of Public Works and the California Department of Fish & Game to Breach the lagoon at above +8.9 MSL for flood control purposes.

16. Emergency Permit 1-98-022-G (March 10, 1998) was granted to the Del Norte County Department of Public Works and the California Department of Fish & Game to breach the lagoon at above +9 MSL for flood control purposes.

17. Emergency Permit 1-98-098-G (November 24,1998) was granted to the Del Norte County Department of Public Works to breach the lagoon at above +9 MSL for flood control purposes.

18. Emergency Permit 1-99-007-G (February 10, 1999) was granted to the Del Norte County Department of Public Works to breach the lagoon at above +9 MSL for flood control purposes.

19. Coastal Development Permit No. 1-97-076 (May 14, 1999) was granted to the Del Norte County Department of Public Works and the California Department of Fish and Game as co-applicants. The breaching was scheduled to occur between September 16 and February 15 when the lagoon elevation reached +8 MSL, and on February 15 if the lagoon elevation was at +5 MSL or greater.

20. Emergency Permit 1-00-059-G (December 22, 2000) was granted to the Del Norte County Department of Public Works and the California Department of Fish & Game to breach the lagoon at above +8 MSL for flood control purposes.

21. Emergency Permit 1-01-068-G (December 21, 2001) was granted to the Del Norte County Department of Public Works and the California Department of Fish & Game to breach the lagoon at above +8 MSL for flood control purposes.

22. Coastal Development Permit Application No. 1-02-005 was received on December 21, 2001 from East Side Property Owners, Tolowa Nation, Pacific Shores Calif. Water District, and Del Norte County Flood Control District for breaching the lagoon over a ten-year period when the water elevation was over +5 MSL. On August 26, 2003, the Del Norte County Flood Control District withdrew as a co-applicants. The application was returned to the applicants on September 19, 2003 due to the inability of the remaining co-applicants to obtain permission from the California Department of Fish and Game to enter the proposed breaching site and breach the lagoon.

23. Emergency Permit 1-02-008-G (February 8, 2002) was granted to the Del Norte County Department of Public Works and the California Department of Fish & Game to breach the lagoon at above +8 MSL for flood control purposes.

24. Emergency Permit 1-02-163-G (December 27, 2002) was granted to the Del Norte County Department of Public Works and the California Department of Fish & Game to breach the lagoon at above +8 MSL for flood control purposes.

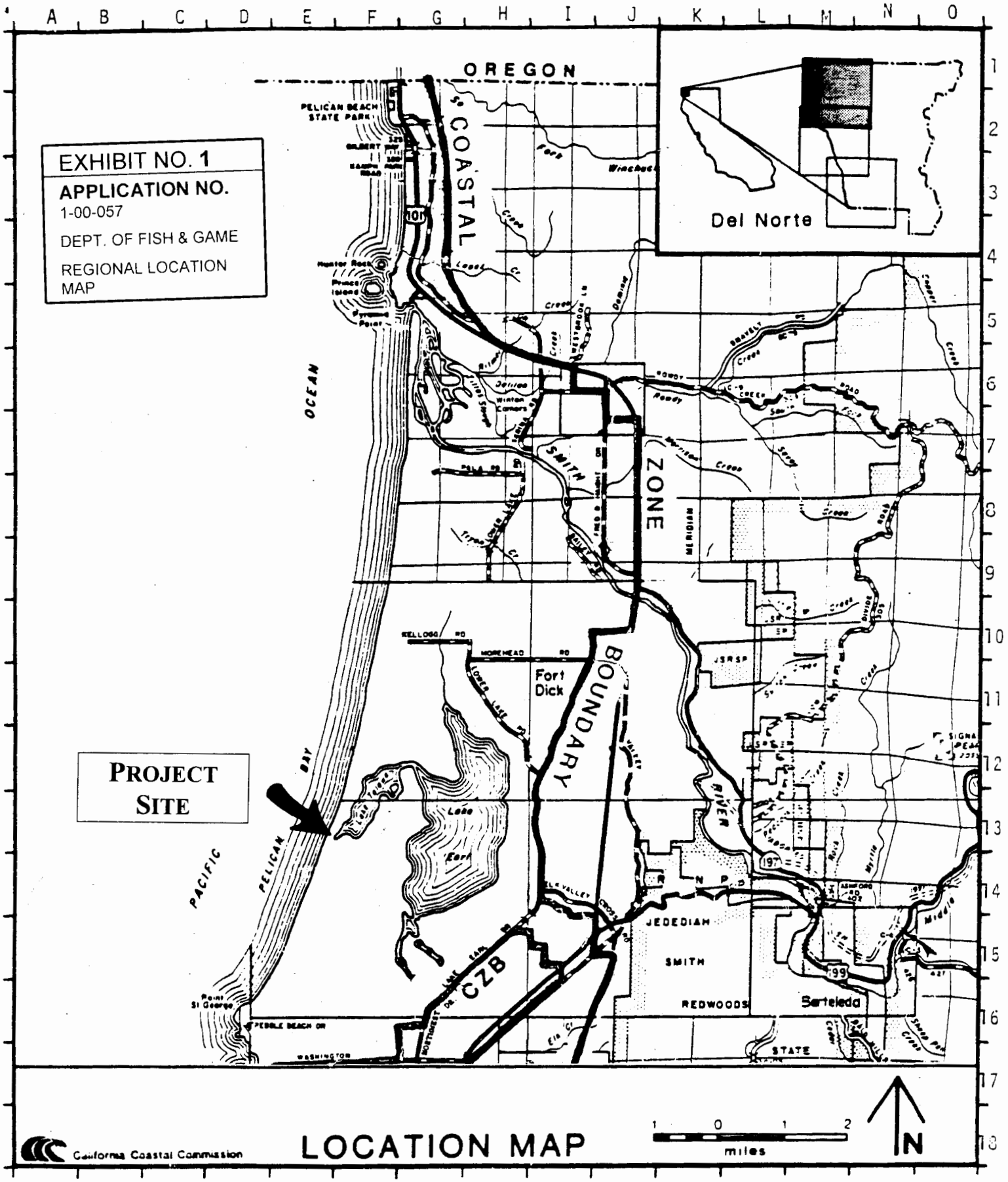
25. Emergency Permit Application 1-03-007-G (February 14, 2003) was received from the Del Norte County Department of Public Works and the California Department of Fish & Game to breach the lagoon at above +8 MSL for flood control purposes. The County subsequently decided that as the water elevation had not actually reached the level where flooding was occurring, conditions did not as yet exist to warrant the issuance of a proclamation of emergency. The application was subsequently withdrawn.

26. Emergency Permit 1-03-018-G (March 26, 2003) was granted to the Del Norte County Department of Public Works and the California Department of Fish & Game to breach the lagoon at above +8 MSL for flood control purposes. The breach was scheduled to be undertaken on the early morning of March 28, 2003. Upon entering the breaching site, the applicants discovered that the lagoon had been illegally breached by unknown parties sometime during the previous night.

27. Emergency Permit 1-03-071-G (December 30, 2003) was granted to the Del Norte County Department of Public Works and the California Department of Fish & Game to breach the lagoon at above +8 MSL for flood control purposes.

28. Emergency Permit 1-04-007-G (February 11, 2004) was granted to the Del Norte County Department of Public Works and the California Department of Fish & Game to breach the lagoon at above +8 MSL for flood control purposes.

29. Emergency Permit 1-04-012-G (March 4, 2004) was granted to the Del Norte County Department of Public Works and the California Department of Fish & Game to breach the lagoon at above +8 MSL for flood control purposes. This breaching was necessitated by the relatively rapid closure and refilling on the lagoon following the preceding breach.



County of Del Norte

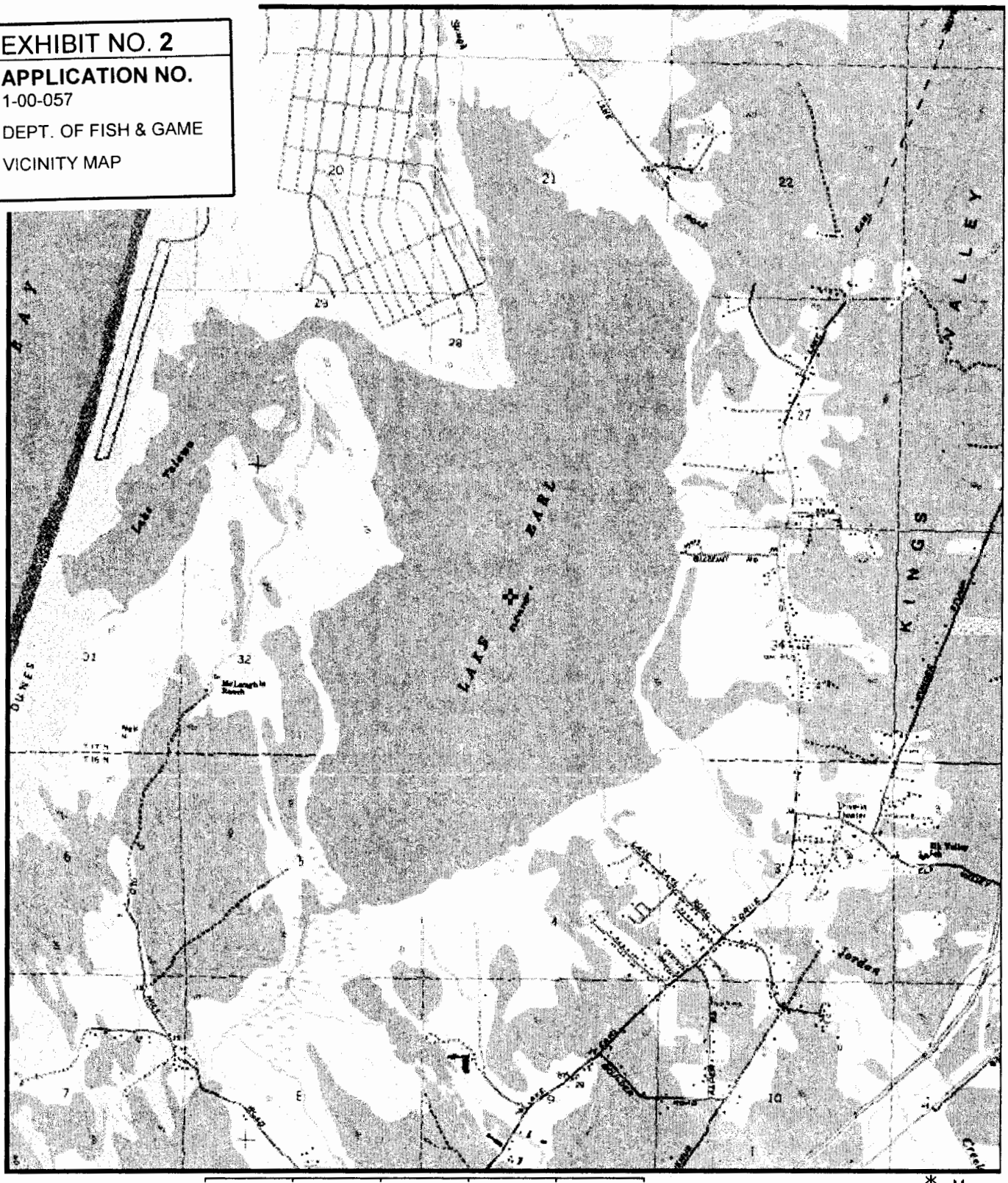
Sheet 1 of 3

EXHIBIT NO. 2

APPLICATION NO.
1-00-057

DEPT. OF FISH & GAME

VICINITY MAP



0 0.6 1.2 1.8 2.4 3 km

0 0.4 0.8 1.2 1.6 2 mi

Map center is UTM 10 401286E 4631103N (WGS84/NAD83)
CRESCENT CITY quadrangle
Projection is UTM Zone 10 NAD83 Datum

M=16.558
G=-0.793

EXHIBIT NO. 3

APPLICATION NO.
1-00-057

DEPT. OF FISH & GAME

PROJECT LOCATION MAP

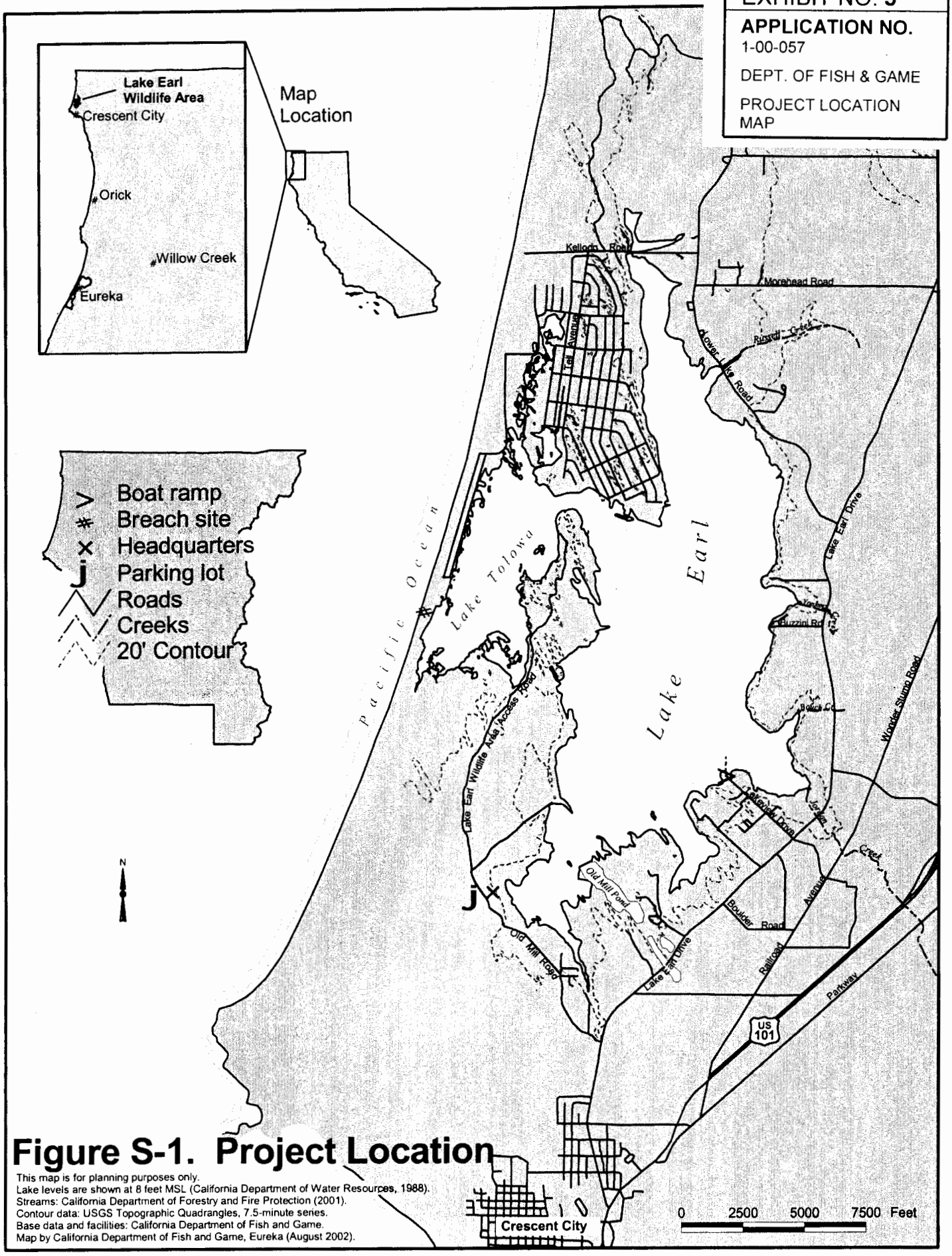
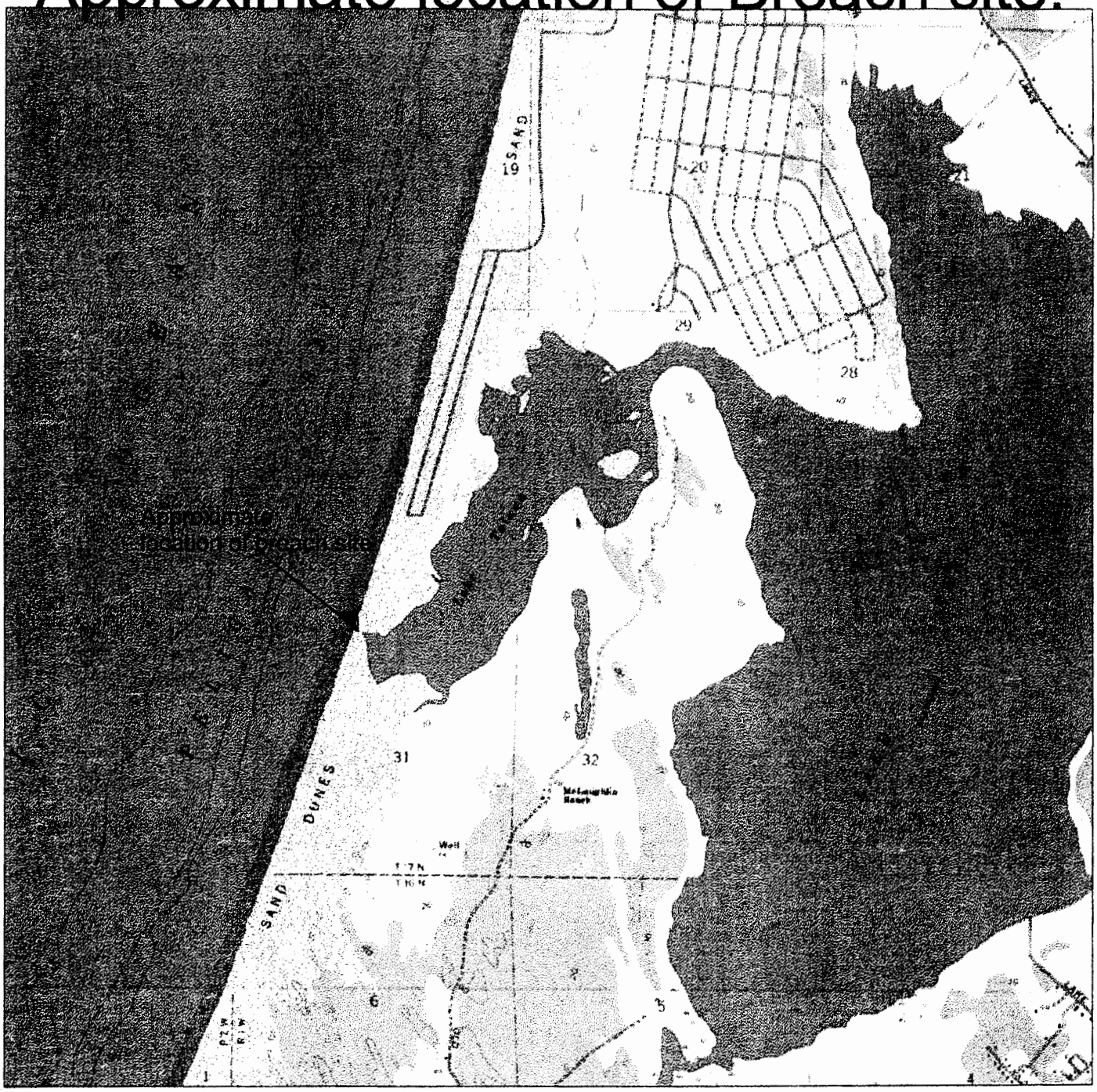


Figure S-1. Project Location

This map is for planning purposes only.
Lake levels are shown at 8 feet MSL (California Department of Water Resources, 1988).
Streams: California Department of Forestry and Fire Protection (2001).
Contour data: USGS Topographic Quadrangles, 7.5-minute series.
Base data and facilities: California Department of Fish and Game.
Map by California Department of Fish and Game, Eureka (August 2002).

Approximate location of Breach site.



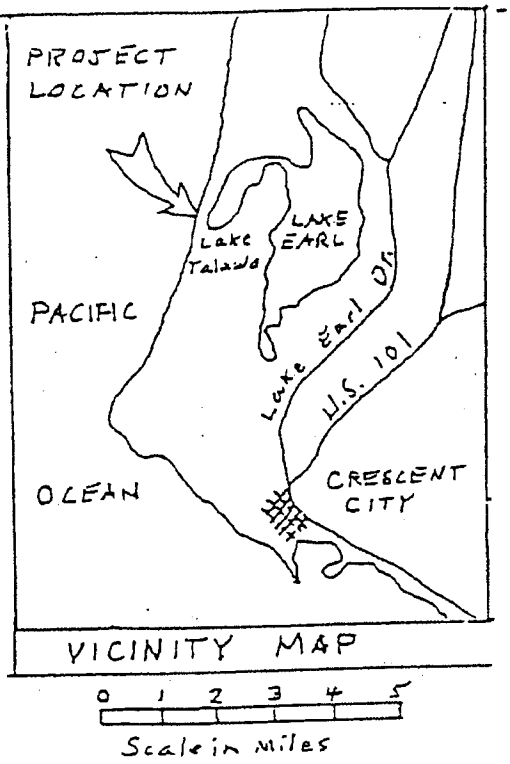
0 0.5 Miles

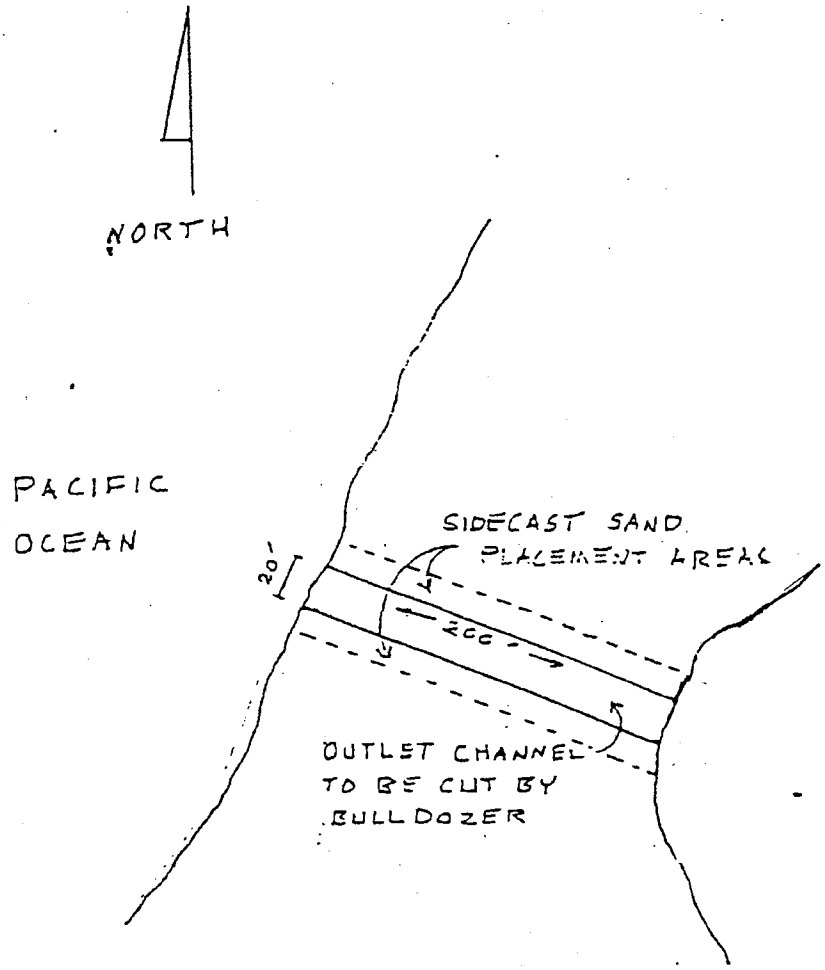
N

Application by
Cal Fish and Game & Del Norte County

Action ID: 278500
Purpose: Maintain lagoon levels.
State: CA
County: Del Norte
Legal: Sec. 31, T17NORTH, R1WEST
River Mile:
Lat: 41-49-46.1637
Long: 124-13-33.8307

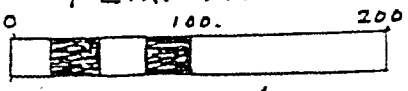
EXHIBIT NO. 4
APPLICATION NO.
1-00-057
DEPT. OF FISH & GAME
BREACHING DIAGRAMS
(1 of 4)





ADJACENT LANDOWNERS:
1. CA. STATE LANDS COMMISSION
2. CA. DEPT OF PARKS AND RECREATION
3. PACIFIC SHORES SUBDIVISION

PLAN VIEW

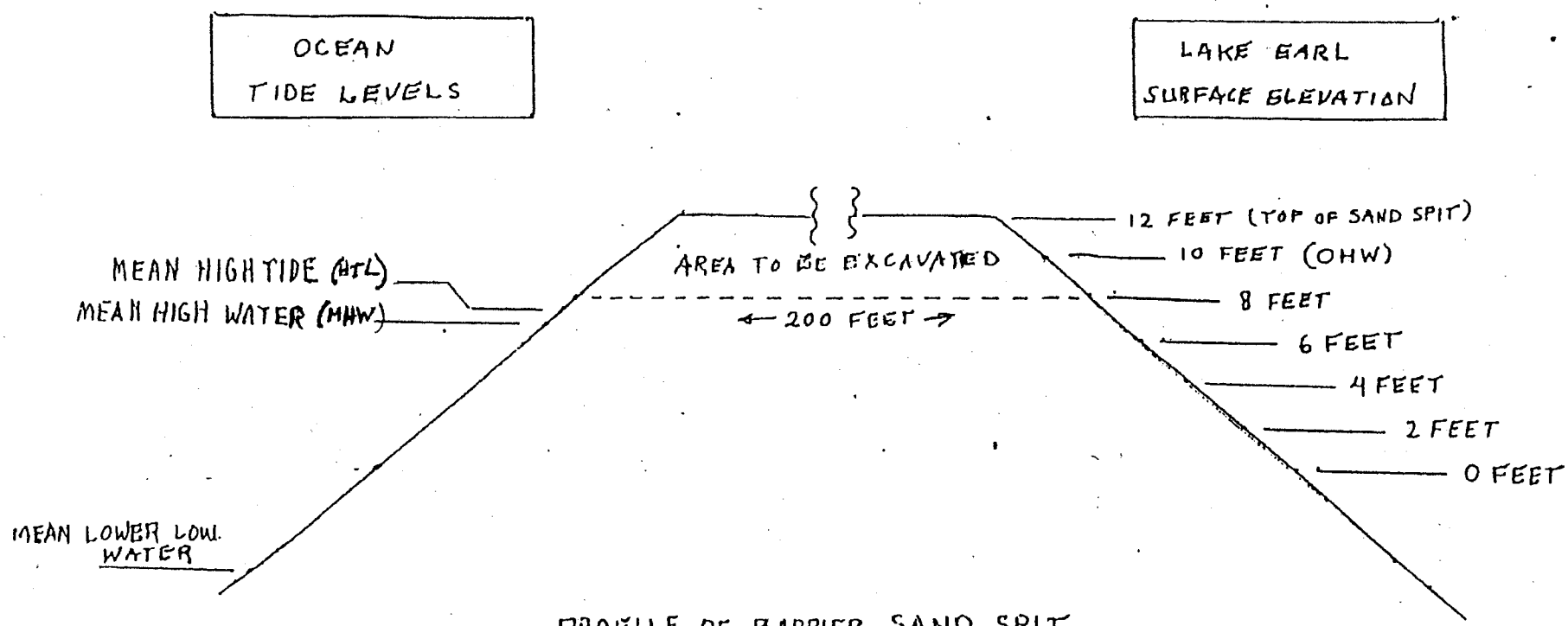


1" = 100'

CA. DEPT OF FISH & GAME
619 2nd STREET
EUREKA, CA. 95501
&
DEL NORTE COUNTY

PROPOSED BREACHING OF LAKE EARL BY CUTTING A CHANNEL TO THE OCEAN.

IN: LAKE EARL
AT: 5 MILES NORTH OF CRESCENT CITY
COUNTY OF: DEL NORTE
APPLICATION BY: CA. DEPT OF FISH + GAME/DEL NORTE CO.



PROFILE OF BARRIER SAND SPIT
AT SITE OF PROPOSED BREACHING

0 8 16

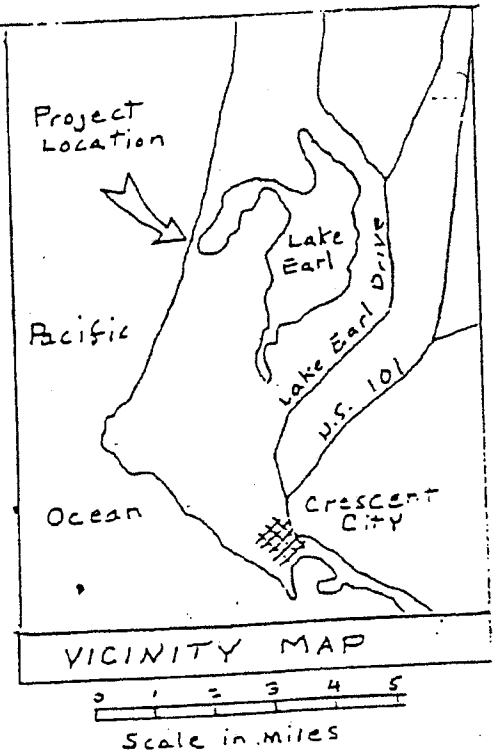
Sheet 4 of 5

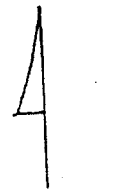
PROFILE VIEW

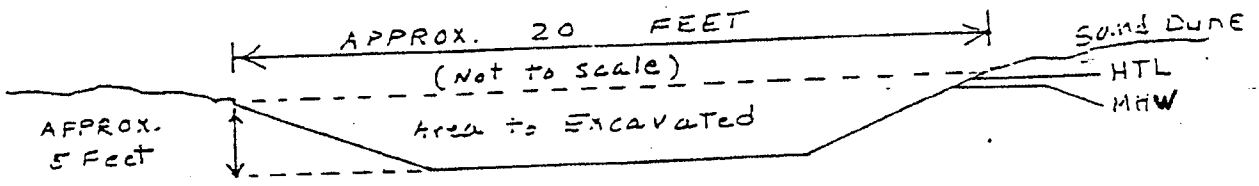
CA. DEPT. OF FISH + GAME
619 2nd STREET
EUREKA, CA. 95501
AND
DEL NORTE COUNTY

PROPOSE BREACHING OF LAKE EARL BY CUTTING A CHANNEL TO THE OCEAN.

IN: LAKE EARL
AT: 5 MILES NORTH OF CRESCENT CITY
COUNTY OF: DEL NORTE
APPLICATION BY: CA. DEPT. OF FISH & GAME / DEL NORTE COUNTY







CROSS SECTION

LAKE EARL PROJECT

CA. DEPT. OF FISH AND GAME

DEL NORTE COUNTY

PROPOSED BREACHING of Lake Earl

IN: Lake Earl

AT: 5 miles north of Crescent City

County of: Del Norte

Sheet 5 of 5

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EXHIBIT NO. **5**

APPLICATION NO.
1-00-057
DEPT. OF FISH & GAME
LAND USE WITHIN AND ADJACENT TO LAKE EARL WILDLIFE AREA (LEWA)

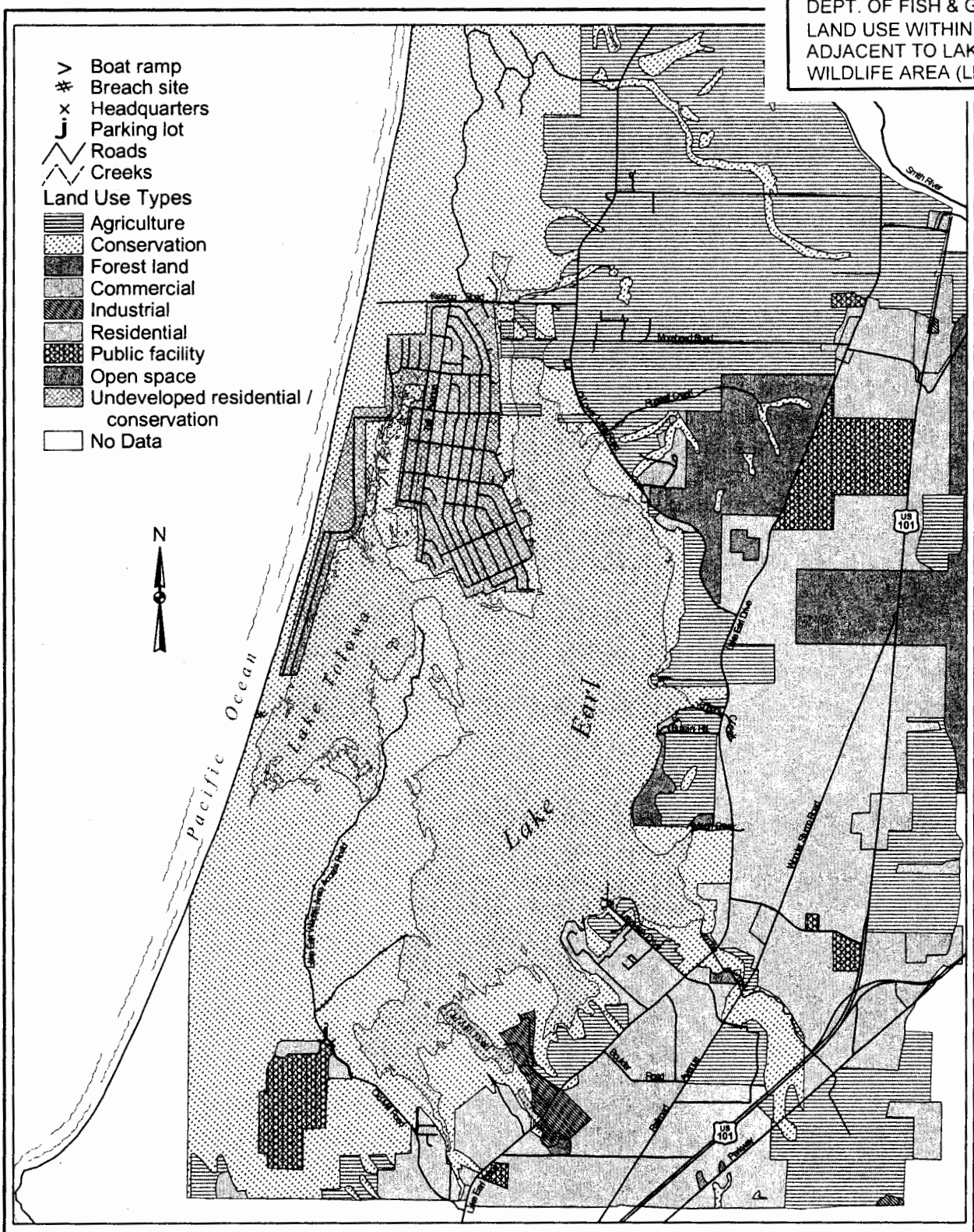

Figure 5-1. Existing Land Use in and Adjacent to the Lake Earl Wildlife Area

This map is for planning purposes only.
Lake levels are shown at 8 feet MSL (California Department of Water Resources, 1988).
Existing Land Use: Modified from Crescent City/Lake Earl Area, Planning Area No. 3, Local Coastal Plan (1984), and Smith River Area, Planning Area No. 1, Local Coastal Plan (1984).
Streams: California Department of Forestry and Fire Protection (2001).
Base data and facilities: California Department of Fish and Game.
Map by California Department of Fish and Game, Eureka (August 2002).

Scale 1:39826

0 2500 5000 7500 Feet

EXHIBIT NO. 6

APPLICATION NO.
1-00-057
DEPT. OF FISH & GAME
PLANNED & ZONED LAND USE – *CRESCENT CITY / LAKE EARL PLANNING AREA*

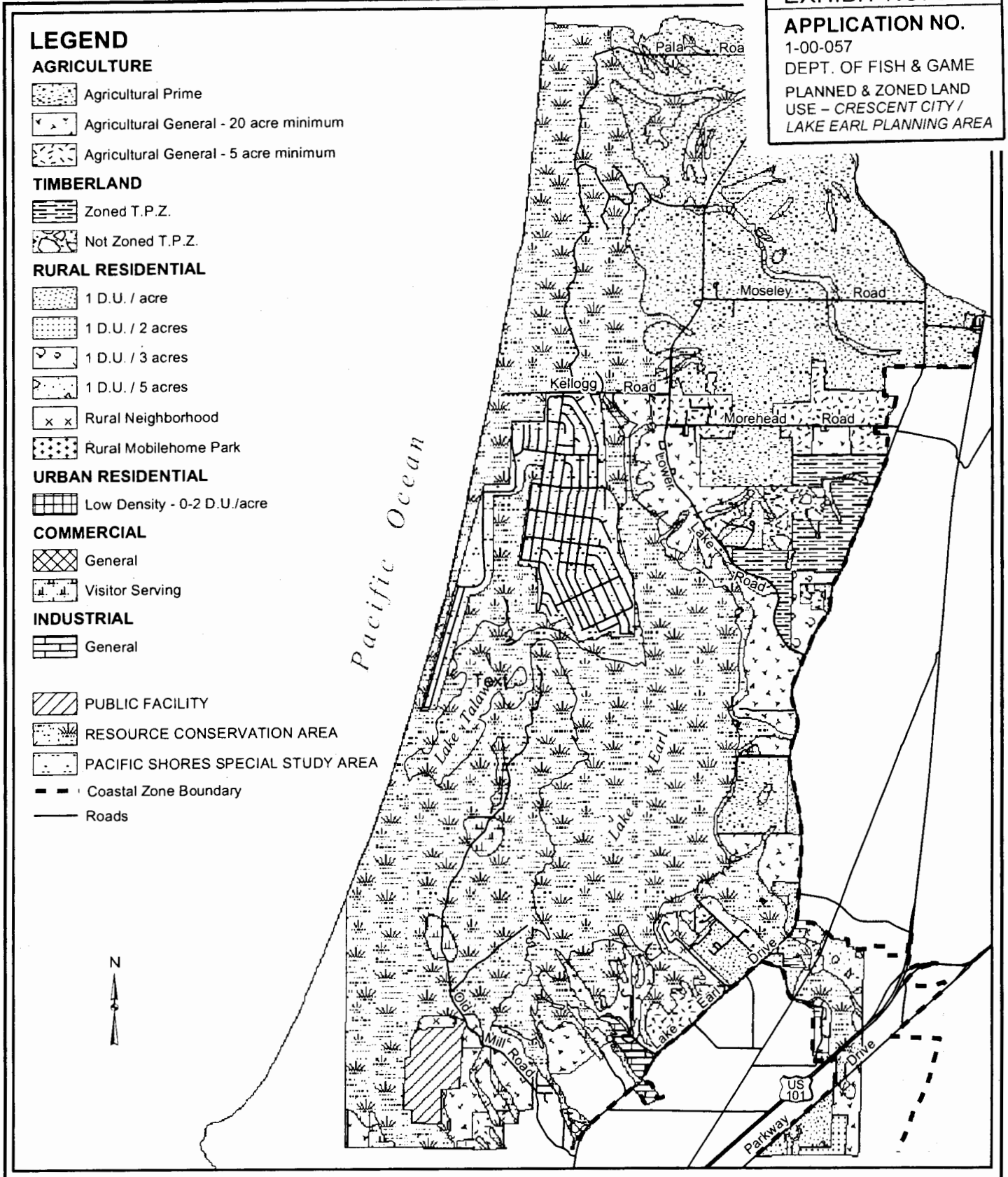

Figure 5-2. Land Use - Crescent City/Lake Earl Area, Planning Area No. 3, Del Norte County Local Coastal Plan, 1984

This map is for planning purposes only.
Lake levels are shown at 4 feet MSL (California Department of Water Resources, 1988).
Land Use Designations: Digitized from LCP mapping provided by the Del Norte County Planning Department.
Base data: California Department of Fish and Game.
Map by California Department of Fish and Game, Eureka (August 2002).

0 2,500 5,000 7,500 10,000 Feet

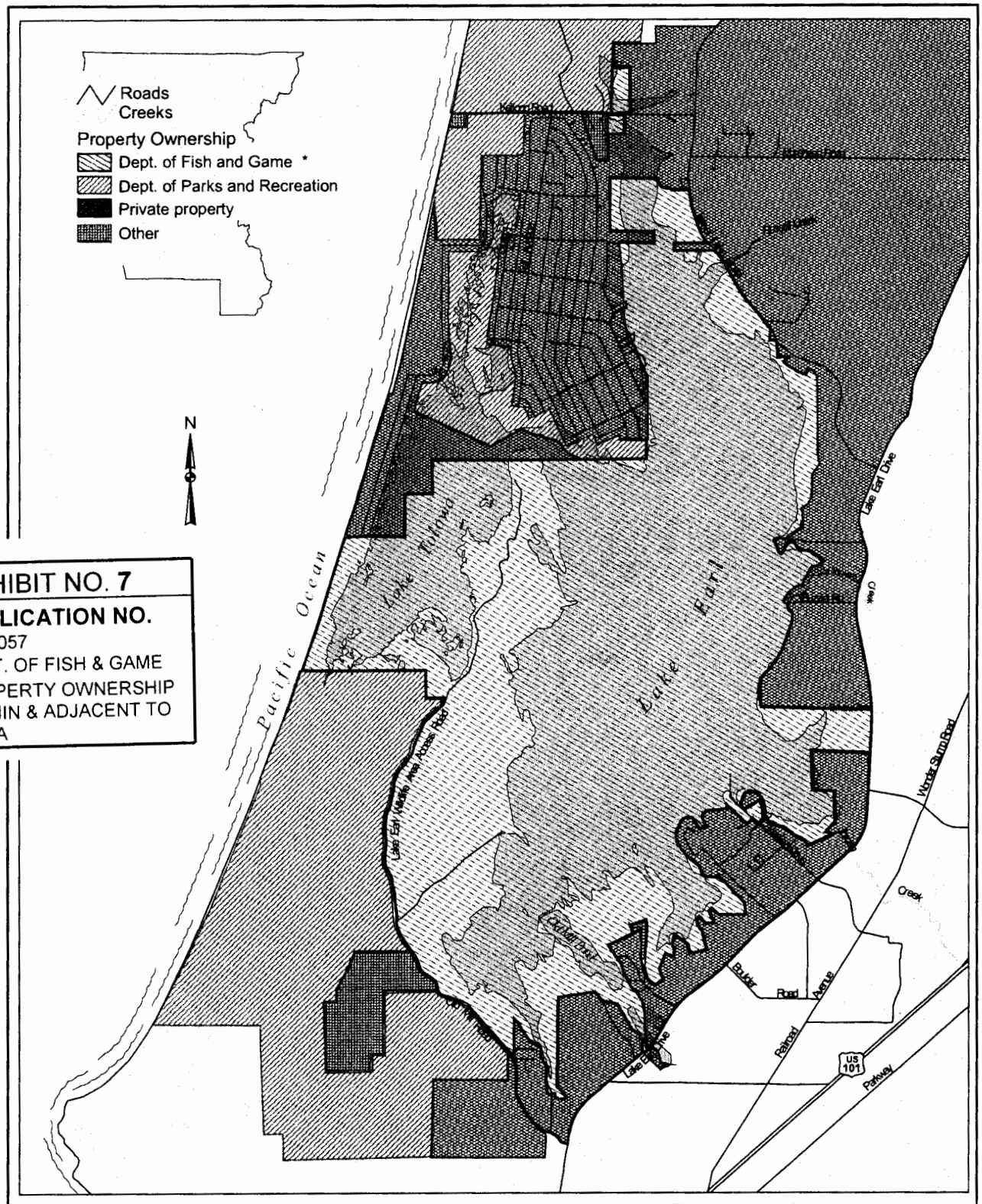

EXHIBIT NO. 7

APPLICATION NO.
1-00-057
DEPT. OF FISH & GAME
PROPERTY OWNERSHIP
WITHIN & ADJACENT TO
LEWA

Figure 6. Property Ownership and Boundaries Adjacent to the Lake Earl Wildlife Area

* Denotes land either owned or leased by the Department of Fish and Game.
This map is for planning purposes only.
Lake levels are shown at 8 feet MSL (Department of Water Resources, 2001).
Data sources: Ownership (modified), California Department of Fish and Game (2000).
Roads (2000)(modified), Property Boundaries (2001)(modified), Facilities (2002), California Department of Fish and Game. Streams (2001). California Department of Forestry.
Map: California Department of Fish and Game, Eureka (June 2002).

Scale 1:46,000
0 2500 5000 Feet

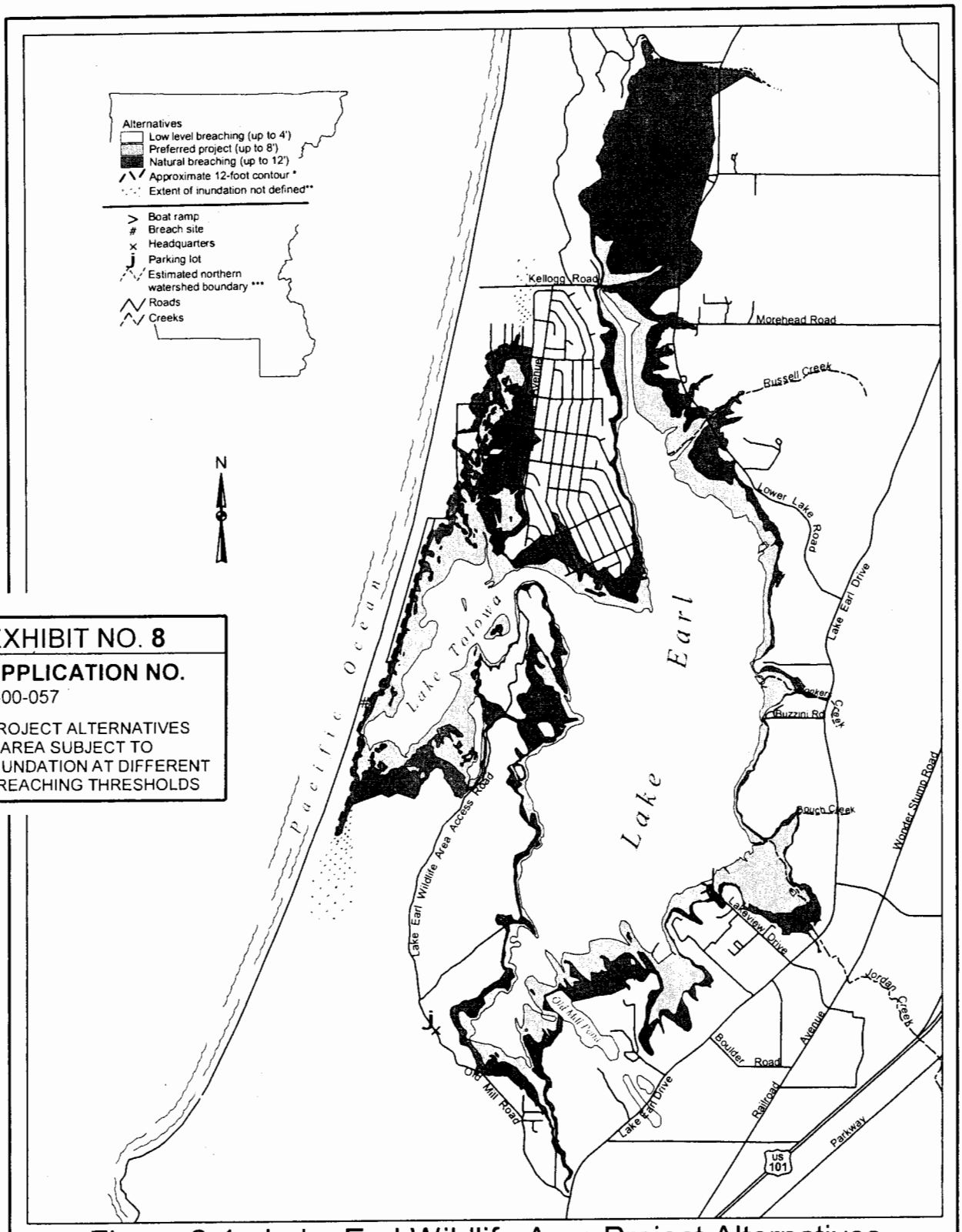

EXHIBIT NO. **8**

APPLICATION NO.
1-00-057

PROJECT ALTERNATIVES
-- AREA SUBJECT TO INUNDATION AT DIFFERENT BREACHING THRESHOLDS

Figure 2-1. Lake Earl Wildlife Area Project Alternatives

*** Detailed topographic information is currently unavailable west of Lake Tolowa; location approximated.**
**** Extent of inundation not defined due to incomplete information.**
***** Watershed boundary refers to the maximum expected area affected by Lake Earl and Tolowa as mapped by Army Corps of Engineers (ACOE) (1971) and verified by anecdotal information from longtime local residents in the vicinity.**

This map is for planning purposes only.
Alternative contours: Based on COFG topographic model with data input from Richard B. Davis Company (1975).
California Department of Water Resources (1988), and USGS Topographic Maps, 7.5-minute series.
Streams: California Department of Forestry and Fire Protection (2001). Base data and facilities: California Department of Fish and Game
Map by California Department of Fish and Game, Eureka (August 2002)

Scale 1:39198

0 2500 5000 7500 Feet

State of California
The Resources Agency

DEPARTMENT OF FISH AND GAME

Final DRAFT MANAGEMENT PLAN

Lake Earl Wildlife Area

January 2003

EXHIBIT NO. 9

APPLICATION NO.
1-00-057
EXCERPT, *FINAL DRAFT* MANAGEMENT PLAN – LAKE EARL WILDLIFE AREA (CALIF. DEPT. OF FISH & GAME, JAN. 2003) (1 of 21)

IV. MANAGEMENT GOALS

A. DEFINITION OF TERMS USED IN THIS PLAN

1. **Element**: An element refers to any biological, public use, or facility maintenance program as defined below for which goals and objectives have been prepared and presented within this plan.

2. **Biological Element**: These elements consist of species, habitats, or communities for which specific management goals and objectives have been developed within the plan.

3. **Public Use Elements**: Public use elements are any recreational, scientific, or other use programs appropriate to and compatible with the purposes for which this property was acquired

4. **Facility Maintenance Element**: This is a general purpose element describing the maintenance and administrative program which helps maintain orderly and beneficial management of the area.

5. **Biological Goal**: A biological goal is the statement of intended long-range results of management based upon the feasibility of maintaining, enhancing or restoring species populations and/or habitat .

6. **Public Use Goal**: A public use goal is the statement of the desired type and level of public use compatible with the biological element goals previously specified within the plan.

7. **Tasks**: Tasks are the individual projects or work elements which implement the objective and are useful in planning operation and maintenance budgets.

B. BIOLOGICAL ELEMENTS: GOALS

The overall biological management goal for the wildlife area is to optimize ecological and habitat productivity for all species in balance with the needs of the public. In order to do so, it is important to protect and maintain the physical processes that contribute to ecological productivity. Discussion of the goals and tasks in this chapter have been organized by general goals common to all biological elements and major vegetation types or habitats.

DFG management of the LEWA does not directly focus on single threatened and/or endangered (T&E) species but on ecosystem integrity to benefit the maximum number of species. All management goals are designed to minimize detriment to a species as a result of management activities for an individual species. T&E species are included and discussed in Chapter III under the habitat they most utilize. As stated previously in Chapter III, consultation with the USFWS and internal DFG coordination for California Endangered Species Act will occur for listed species before any LEWA activities that may potentially impact T&E species.

This section guides the daily activities and provides basic biological information necessary to obtain permits for any DFG activities on LEWA subject to federal and State regulations. Imposed conditions of permit approval are unknown at this time and are not described in this document and will be contained in individual permits at the time of approval. For a discussion of the environmental impacts and mitigation associated with the proposed management goals and activities as outlined in this document see the attached Environmental Impact Report.

Long Range Goals: Biological

1. To maintain, protect, restore, enhance, and maximize ecological productivity of the LEWA to the optimal extent possible while balancing the needs of all species with the needs of the public.

Tasks

1. Monitor habitat distribution to assess ecological function and productivity of the LEWA.

1. Wetlands

The protection of remaining wetlands in California was the impetus for the acquisition and creation of the LEWA. As such, the primary goals are focused on maintaining as many acres of wetlands as feasible.

There are several types of wetlands which occupy 80% of the LEWA. There

are three major wetland types for which management goals will be discussed separately:

A. Estuarine
B. Freshwater Emergent
C. Forested and Riparian Wetlands

Long Range Goals: Wetlands General

1. To maintain, protect, enhance, and restore wetlands and wetland functions to the optimal extent possible while balancing the needs of wetland dependant species with the needs of the public.

Tasks

1. Manage the lagoon level between 8-10 feet msl in order to maintain approximately 4,950 acres of wetlands through manual breaching.

2. Monitor and inventory wetland acreages over time.

A. Estuarine

The most common and abundant wetland type within the LEWA is estuarine. Estuarine encompasses all of the open water in Lake Earl and Lake Tolowa totaling about 2,300 acres. Estuarine habitat ranges from 2 feet and deeper and supports rooted, submerged aquatic vegetation such as widgeon grass and sago pondweed that provides a tremendous volume of food for thousands of resident and migratory waterfowl. In 2001, when lagoon elevations were at 5 feet, it was estimated that there were 1135 acres of widgeon grass and sago pondweed in Lake Earl and about 140 acres on Lake Tolowa. This habitat type also supports fish and invertebrates which become part of the food chain utilized by many other water-associated wildlife, including river otters, mink, raccoons, egrets, herons, cormorants, gulls, terns, loons, grebes, shore birds, osprey and bald eagles.

T & E species, or species of special concern that are potentially dependent on estuarine habitat at Lake Earl for breeding, foraging, or loafing are the tidewater goby, double-crested cormorant, bald eagle, peregrine falcon, osprey, California brown pelican, common loon, bank swallow, coastal cutthroat trout, and coho salmon.

Long Range Goals: Estuarine

1. To maintain, protect, enhance, and restore estuarine wetlands to the optimal extent possible while balancing the needs of wetland dependant species with the needs of the public.

2. Assess effectiveness of management goals.

Tasks

1. Manage lagoon level between 8 -10 feet mean sea level.
2. Monitor habitat type including exotic species.
3. Monitor water birds each spring and fall to establish population trends.
4. Monitor fish species for presence and absence and determine population trends.

B. Freshwater Emergent Wetland

Lake Earl and Lake Tolowa support a variety of freshwater emergent wetland types encompassing approximately 1,650 acres. The most abundant type is located around the edge of the lagoon where emergent bulrushes, sedges and cattails are present. This vegetation type is suitable for rails and bitterns and also important for nesting grebes and some passerine birds. Since the lagoon water levels are dependent on rainfall and fluctuate seasonally the extent of wetland inundation along the shoreline is variable.

Other freshwater emergent wetlands found within the LEWA are seasonal in nature. They occur in depressions or "hollows" between sand dunes and above the level of permanent inundation around the lagoon shoreline. They are typified by rushes, sedges, knotgrass and silverweed. In some places patches of willows have become established. Standing water is normally evident only during the rainy season; however the water table is close to the surface in the summer. Seasonal freshwater emergent wetlands are extensively used by waterfowl, passerines, shorebirds and wading birds.

Additional freshwater emergent wetlands are located within the LEWA that are not hydrologically connected with Lake Earl or Tolowa. An old log pond off Lake Earl Drive is almost a mile long and averages about 100 yards in width. It is bordered by alders, willows, fir and spruce. Yellow pond lilies form floating mats on the water surface. Water-soaked logs (some floating and others resting on the bottom) and old pilings are scattered throughout the pond. Wood ducks, ring-necked ducks, hooded mergansers, black-crowned night herons and green-backed herons frequent this habitat type.

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T & E species, or species of special concern that are potentially dependent on this habitat type are the tidewater goby, yellow rail, and northern red-legged frog.

Long Range Goals

1. To maintain, protect, enhance, and restore freshwater emergent wetland habitat type to the optimal extent possible while balancing the needs of wetland dependant species with the needs of the public.

Tasks

1. In suitable locations, maintain early successional freshwater emergent wetland habitat type through the use of controlled livestock grazing, mowing, burning, disking, and water level manipulation, etc.
2. Identify specific locations appropriate for restoration and enhancement.
3. In suitable locations where hydrology is sufficient, enhance or restore additional acres of freshwater emergent wetland by using impoundments and/or water control structures with ponding restricted to State-owned lands.
4. Monitor habitat type including exotic species.
5. Monitor fish and wildlife occurrence within this habitat type.
6. Monitor enhancement and restoration efforts.

C. Forested and Riparian Wetlands

There are a variety of forested wetland types found on the LEWA totaling about 490 acres. The occurrence of these habitat types are dictated by the amount and duration of seasonal flooding and proximity to groundwater during the drier summer months. During seasonally high water, willows and alders can tolerate a foot or more of water. Wooded swamps, dominated by stands of willows, and red alders occur in poorly-drained depressions between forested dunes on the western portion of the LEWA. Along the shoreline of the lagoons, willows, red alder, and Sitka spruce occur respectively as the bank elevation increases. Additionally, along Jordan, Yonkers, Russell, and Bouch (Bush, Brush) creeks minor extents of riparian forest occur within the floodplains.

Skunk cabbage is the most common understory, thriving in the saturated soils and shade of the alder trees. Salmonberry, salal, red-flowering currant and huckleberry are also common. The shorelines that are densely vegetated by alder, willow and spruce are favored nesting areas for wood ducks.

6 9 21

T & E species, or species of special concern that are potentially dependent on this habitat type are coho salmon, yellow warbler, willow flycatcher, Del Norte salamander, and yellow breasted chat.

Long Range Goals

1. Maintain existing acreage of forested wetlands and where suitable expand and restore this habitat type.

Tasks

1. Identify areas on the LEWA suitable for restoration and enhancement.
2. Restore areas through vegetation management and planting of desired species.
3. Inventory and monitor wildlife occurrence within habitat type and presence of exotic species.
4. Monitor restoration efforts.

2. Coastal Maritime Forest

Coastal maritime forest describes the complex mixture of non-wetland forested habitat types found on the LEWA. Most of it occurs on the crests of western sand dunes or on undisturbed uplands on the eastern side of the lagoons. Sitka spruce, grand fir, beach pine and red alder are the dominant species that occur in varying degrees due to soil type, salt tolerance, soil moisture, micro-climate, and elevation. Most of the conifers are young second growth scattered with older individual trees. The understory is composed of salal, blackberry, huckleberry, rhododendron, coyote bush, currant, cascara and a variety of other shrubs that often form impenetrable jungles beneath the trees. Because of a history of intensive logging, the ground is littered with logs and woody debris. Many snags are also present.

T & E species, or species of special concern that are potentially dependent on this habitat type are black-capped chickadee, yellow-breasted chat, and the Del Norte salamander.

Long Range Goals

1. Maintain existing acreage of coastal maritime forest and where suitable expand and restore this habitat type.

Tasks

1. Identify areas on the LEWA suitable for restoration and enhancement.
2. Restore areas through vegetation management and planting of desired species.
3. Inventory and monitor wildlife occurrence within habitat type and presence of exotic species.
4. Monitor restoration efforts.

3. Riverine

Jordan, Yonkers, Russell, and Bouch (Bush, Brush) Creeks are tributaries of Lake Earl. Only the mouths and short segments of these creeks are located within the LEWA. In the past, these tributaries were known to support coho salmon but presently only support coastal cutthroat trout and rainbow trout (steelhead). Little current data exists regarding the present population status of these species. Some stream improvement work to enhance spawning and rearing habitat has been done on Lake Earl tributaries by other organizations in conjunction with private landowners.

Jordan Creek is the primary stream providing spawning habitat for Lake Earl salmonids. It is a small stream about four miles in length. Past land uses upstream from Lake Earl have caused deterioration of spawning potential through siltation, bank erosion, stream blockages and loss of riparian vegetation. Reed canary grass is an aggressive exotic species present in riverine and wetland habitats. Seasonal livestock grazing has been shown to be an effective management tool in controlling reed canary grass.

Long Range Goals

1. Maintain existing riverine habitat above 10 feet msl and where suitable expand and restore this habitat type.

Tasks

1. Identify segments of creeks on the LEWA suitable for restoration and restore these areas through vegetation management, instream structures (i.e. large woody debris), and planting of desired species.
2. Inventory and monitor fish species within this habitat type through presence and absence surveys.
3. Monitor restoration efforts.

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4. Coastal Dunes

The entire west half of the LEWA is dominated by coastal sand dunes. The dunes closer to the ocean that were previously active have been stabilized and dominated by European beach grass. Where coastal maritime forest and freshwater emergent wetlands do not occur, much of the native dune mat species including sand verbena, beach buckwheat, beach sagewort, silver bursage, and beach evening primrose have been displaced by European beach grass. Silvery phacelia, a plant listed by the California Native Plant Society (CNPS) as rare, is found within this coastal dune plant community. This community is now restricted to a small area on either side of the outlet from Lake Tolowa and two small areas about a half mile south of the outlet.

Other important plant communities on inland dunes have also been displaced by European beach grass. Violets that serve as larval food for the Oregon silver spot butterfly have been severely restricted. The butterfly is federally threatened and the only California population is found in the dunes to the northwest of Lake Earl.

Long Range Goals

1. To maintain, protect, enhance, and restore coastal dune plant communities.

Tasks

1. Monitor and inventory existing Oregon silver spot butterfly and dune mat habitat.
2. Work with the Oregon silver spot butterfly Working Group to identify areas suitable for butterfly and native dune mat enhancement, restoration, and management.
4. In suitable locations, pursue opportunities to implement habitat management and restoration program on DFG land.
5. Monitor habitat restoration project.
6. Manage lagoon levels at 8-10 feet to maintain adequate soil moisture for plants that provide OSB habitat.

5. Grasslands/Pasture

Grasslands and pasture are important habitat within the LEWA. Native grassland is limited and actively maintained pasture is more common. Within the LEWA, there are approximately 590 acres of grassland/pasture of varying grass

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heights. Adjacent to the LEWA there is abundant acreage held in private and DPR ownership. Short grass pastures are utilized seasonally by Aleutian Canada geese, shorebirds and raptors. Tall and medium grass is used by a wide variety of raptors and passerine species.

An invasive plant, tansy ragwort dominates grassland pasture areas and requires periodic control measures. The tansy ragwort is classified as a noxious weed in Del Norte County and control is required by law. Periodic hand spraying of individual plants with "Roundup" has proved effective.

Long Range Goals

1. To maintain, protect, enhance, grassland/pasture to the optimal extent possible while balancing the needs of wetland dependant species with the needs of the public.

Tasks

1. Monitor bird species occurrence by habitat.
2. Maintain existing grasslands/pasture by farming practices.
3. In suitable locations convert existing uplands to short grass pasture.
4. Implement tansy ragwort control measures where needed.

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C. PUBLIC USE ELEMENTS: GOALS

For discussion of the environmental impacts associated with the following proposed recreational, scientific, and educational management goals and activities see the attached Environmental Impact Report.

1. Recreation

The overall recreation goal will be to provide the opportunity for a wide variety of public uses to the extent that such uses do not have significant adverse impacts on biological resources. Permitted uses will be limited to the following activities:

- hunting
- fishing and boating
- hiking
- bird watching/nature photography
- horseback riding

The LEWA has the potential to provide a great deal of public recreational use. Although the Lake Earl area offers outstanding scenic and recreational opportunities, it is remote from a major population center. In the last 10 years recreational demands have increased as more people have become aware of the LEWA's amenities. Community interest and stewardship of LEWA has been increasing and demonstrated by the annual Aleutian Goose Festival held annually in March. This event sponsored by the community attracts an ever increasing number of visitors.

A. Hunting

Ample opportunities for waterfowl, coot, and snipe hunting exist on Lakes Earl and Tolowa. Approximately 5,000 acres of lagoon surface area are available during waterfowl season. The LEWA is operated as a Type C wildlife area whereby no permit or pass is required (see Section 550 and 551, Title 14, California Code Regulations). On DFG lands, hunting is permitted from the shoreline inland to a distance of 100 feet. Hunting is open on a daily basis with no hunter quota. Boats are permitted for hunting waterfowl, but no motors will be allowed during the waterfowl hunting season. Boat launching facilities are maintained at the existing ramp at the end of Lakeview Drive and at an undeveloped site accessed through County roads within Pacific Shores subdivision. Firearms are restricted to shotguns.

A special junior pheasant hunt is held annually in November which has become quite popular with the local community. It is anticipated that this opportunity will continue on the LEWA.

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Long Range Goals

1. Maintain the existing level of waterfowl and snipe opportunities from the shoreline and by boat of Lake Earl and Lake Tolowa.
2. Maintain and improve existing access for hunters.
3. Maintain special junior pheasant hunts.
4. Pursue opportunities to develop Americans with Disabilities Act (ADA) facilities for hunting and fishing.

Tasks

1. Monitor hunter use.
2. Provide area maps identifying open and closed hunt areas.
3. Identify the feasibility of new boat access.

B. Fishing and Boating

Lake Earl is home to a coastal cutthroat trout fishery. Fishing is permitted on Lakes Earl and Tolowa under the appropriate rules and regulations in the Fish and Game Code and Title 14, (California Code Regulations). Lake Earl also provides excellent smooth water boating opportunities such as kayaking and canoeing. Angling and boating access is provided at the existing boat launching ramp at Lakeview Drive and an undeveloped site off of County roads within the Pacific Shores subdivision.

Long Range Goals

1. Maintain fishing opportunities from the shoreline and by boat of Lake Earl and Lake Tolowa.
2. Maintain and improve boat access for fishing and recreation.
3. Pursue opportunities to develop ADA facilities for hunting and fishing.

Tasks

1. Provide maps identifying areas open to fishing and location of boat ramps.

D. Bird watching and Nature Photography

The LEWA provides exceptional bird watching, photography, and nature study opportunities with over 250 species of birds present seasonally. Except for areas which may be closed for management purposes, public safety or resource protection, the LEWA will be open for nature study and bird watching on designated trails and access points. During waterfowl season, only non-motorized boats are permitted. All other times, motorized boats are permitted subject to speed restrictions.

Long Range Goals

1. Maintain and improve opportunities for bird watching and nature study.

Tasks

1. Monitor bird usage of LEWA and maintain a current bird list.
2. Make the bird list available to the public.
3. Improve interpretive information on birds.
4. Improve bird watching and nature study facilities such as bird blinds, etc.

E. Hiking

There are approximately 4 miles of trails within the LEWA. The Cadre Point Trail is 2 miles and starts at the LEWA Headquarters and ends at the tip of the peninsula. The Cadre Point trail traverses through all habitat types found within LEWA. Numbered markers are placed along the trail to correspond with numbered sections in handout materials which will discuss habitat/wildlife associations. The Brush Creek trail begins at the Brush Creek parking area just off of Lower Lake Road and ends at the shoreline of Lake Earl. It is 2 miles long and goes through coastal maritime forest, forested wetland, and estuarine habitat types.

Long Range Goals

1. Maintain existing and create new hiking opportunities.

Tasks

1. Improve signage and interpretive information along existing and proposed trails.
2. Identify for development new trail routes in areas that will not conflict with wildlife resources.

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3. Work with DPR and the County of Del Norte to identify trail connections with DFG trails and identify new trail corridors into other areas.

H. Horseback Riding

Horseback riding is permissible on the LEWA on designated trails and on the beach. Additionally, there are ample opportunities on adjacent Tolowa Dunes State Park property.

Long Range Goals

1. Maintain opportunities for horseback riding at existing levels.

Tasks

1. Identify designated trails and areas where horseback riding is permitted on LEWA maps and make maps available to the public.

2. Scientific and Education Use

Scientific studies by competent investigators will be encouraged. Proposed uses of the LEWA for scientific purposes must be approved by the Area Manager and must be in compliance with the Fish and Game Code and Title 14 regulations.

Educational use will also be encouraged, although demands are not expected to be high because of the remoteness of the LEWA and long travel distances from human population centers.

Long Range Goals

1. Support and encourage scientific and education use of the LEWA which promotes natural resources conservation and community stewardship.

Tasks

1. Work collaboratively with local schools and universities to develop a list of research projects to be undertaken within and surrounding the LEWA.
2. Once research projects are undertaken, work with individual groups to guide and facilitate projects.
3. Visit local schools on an annual basis or host school field trips to the LEWA.
4. Develop educational facilities in conjunction with local schools and educational institutions.

D. FACILITY MAINTENANCE ELEMENTS: GOALS

Facilities at the LEWA which requires maintenance include: headquarters office, residences, miscellaneous buildings, boundary and management fencing, heavy equipment, vehicles, roads and parking lots, and visitor facilities such as trails and interpretive displays (See Figure 18).

1. Visitor Facilities

Visitor facilities are those that provide public access to and interpretation of the resources at LEWA. These facilities include trails, restrooms, and interpretive displays. Most of the interpretive facilities at LEWA are contained within the headquarters which also serves as administrative office space. The LEWA headquarters building includes public and handicapped accessible restrooms, drinking water, and a conference room.

Long Range Goals

1. Maintain existing visitor facilities and plan and implement (where feasible) for additional facilities.

Tasks

1. Identify location, determine feasibility and secure funding for the construction of a new boat ramp facility.
2. Identify funding sources for new and improved interpretive displays for headquarters office, trails, and vista points.
3. Coordinate interpretive information with personnel from the adjacent Tolowa Dunes State Park.

2. Roads and Parking

Public road access is provided to the lagoon shore at the end of Tell Avenue and Lakeview Drive. No motorized vehicles of any kind will be permitted off of designated access roads except for management purposes or in cases of emergency. Parking is provided at LEWA headquarters. A new parking lot is being constructed at the trailhead of the Bush (or Bouch, Brush) Creek trail.

Long Range Goals

1. Maintain existing roads and parking areas for public and administrative traffic.
2. Identify any future parking needs and construct where needed.

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3. Fencing and Gates

Fencing and gates are used to denote LEWA boundaries, to restrict public access, and to contain management activities such as livestock grazing.

Long Range Goals

1. Maintain existing fencing and gates.

Tasks

1. Install new fencing around newly acquired parcels where necessary.

4. General

General facilities and maintenance include all items not previously covered such as heavy equipment, vehicles, miscellaneous buildings, residences, storage facilities, and tools.

Long Range Goals

1. Continue to maintain all equipment, vehicles, residences, office structures, workshop and storage buildings, and any related item in optimum working condition, so as to maximize the efficient use of operating budget.
2. Properly administer overall LEWA management.

Tasks

1. Regularly inspect and service all heavy equipment and vehicles in accordance with manufacturer's specifications;
2. Regularly inspect and repair all buildings, residences, and other structures. This includes, but is not limited to, features such as plumbing, roofing, electrical, interior and exterior paint, windows, doors, signs, fixtures, office equipment, tools, communications devices, fire extinguishers, air compressors, appliances, and any other feature necessary for the health, safety, job performance, or reasonable accommodation of human welfare and safety.
3. Maintain accurate expenditure records, personnel records, maintenance records, and other routine office records.
4. Maintain regular office hours in order to respond in a timely manner to public requests for information and otherwise conduct the State's business in a normal manner.

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5. Maintain proper storage of hazardous material and other materials that require special care.

E. ACQUISITION AND LAND EXCHANGES: GOALS

Since the original acquisition in 1979, DFG has continued to acquire (in fee or conservation easement) additional properties from willing sellers. DFG has focused on obtaining properties below the 10 foot contour so that management of the lagoon can mimic natural fluctuation within the lagoons, however, DFG has also obtained adjacent forested and upland areas as well. Acquisition is dependent on available funding through the Wildlife Conservation Board, grants, or other sources and willing sellers.

Additionally, DFG has entered into negotiations with DPR to exchange lands that better fit within each agency's management mandate. The current proposed land exchange would transfer to State Parks areas that contain significant cultural and historical resources. This includes 1,057 acres of the peninsula with the exception of the lagoon edge. In exchange, DFG will receive approximately 1,057 acres that contain wetlands and sensitive habitats (see Figure 17).

Long Range Goals

1. Continue acquisition program focusing on parcels affected by the lagoons.
2. Pursue and finalize land exchange with DPR.

Tasks

1. As funding permits, acquire remaining properties below the 10 foot contour from willing sellers.
2. Seek additional sources of funds (i.e. grants) to acquire parcels that contain sensitive habitats.
3. Identify and process new acquisition proposals for additional parcels that contain significant sensitive habitat.
4. Pursue acquisition of any parcels that have been identified in the EIR as mitigation to offset significant impacts.
5. Work jointly with DPR to continue to maintain, restore, and enhance existing habitat on LEWA and Tolowa Dunes State Park.

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F. CULTURAL RESOURCE PROTECTION

As previously stated in Chapter II, the history and prehistory of the Lake Earl area is important to the current understanding and management of lagoon ecosystem. The Crescent City plain was part of the ancestral home of the Tolowa people, the most recent Native Americans to inhabit the area. Archaeological investigations to date have resulted in the identification of 14 archaeological sites within the LEWA and surrounding areas. Five of these sites are considered to be higher sensitivity habitation sites, which may include house pit depressions and burials; these habitation sites are considered to be eligible or potentially eligible for the National Register of Historic Places. The remaining sites generally represent stone-working areas, cooking areas, refuse disposal sites (e.g., middens), and resource procurement and processing sites.

Long Range Goals

1. Maintain relationship with local tribal entities such that all DFG activities associated with the management of LEWA are consistent with the protection of significant cultural resources.

Tasks

1. Establish a Cultural Resources Advisory Group in cooperation with the Department of Parks and Recreation, the Smith River and Elk Valley Rancherias, the County of Del Norte, affected private property owners, and professionals to oversee the preservation and interpretation of cultural resources in the Lake Earl area.

2. Maintain surveillance of known resources in cooperation with the Smith River and Elk Valley Rancherias by monitoring (photo monitoring) ongoing activities and lagoon water levels to detect any erosion, inundation, or other degradation of archaeologically significant materials. If, in the opinion of DFG, DPR, and the Rancherias, any such adverse effects appear imminent, DFG will consult with a qualified archaeologist and tribal representatives at the earliest feasible time regarding additional mitigation requirements.

3. Maintain surveillance for previously undetected resources in cooperation with the Smith River and Elk Valley Rancherias, by monitoring ongoing activities and lagoon water levels to detect any occurrence, exposure, or erosion of archaeologically significant materials. If any previously unknown archaeological sites are encountered, they will be evaluated promptly by a qualified archaeologist. If necessary, the Department will consult with a qualified archaeologist and tribal representatives at the earliest feasible time regarding additional mitigation requirements.

4. DFG in conjunction with DPR, will investigate the feasibility of formally designating a Tolowa Cultural Heritage District that includes the Lake Earl and Lake Tolowa area. If feasible, DFG will nominate the Tolowa District for National Register in cooperation with the Department of Parks and Recreation, the U.S. Department of the Interior's National Park Service, the California State Office of Historic Preservation, and tribal representatives.

G. MECHANICAL (ARTIFICIAL) BREACHING

Since the 1850's, the lagoons have been manually breached to lower water levels so the lagoon periphery could be reclaimed for agricultural purposes. Currently, the sandbar between Lake Tolowa and the ocean is breached during the winter, between September 1 and February 15, when the lagoon waters levels reach eight feet or more in order to prevent inundation of public roads and structures. It is breached again on February 15 if the water surface elevation reaches 5 feet mean sea level.

Additional conditions under which a breach occurs is based on weather, daylight hours, public safety, and the next highest and lowest tidal cycle. A bulldozer is brought to the breach site (on a trailer) via County roads within Pacific Shores and then unloaded and walked across unvegetated portion of the dunes. A channel is created in the unvegetated sandbar approximately 200 feet long and 20 feet wide. The excavated sand (600 cubic yards) is side cast on either side of the cut channel. The lagoon surface water begins to flow through the cut channel and eventually erodes the bar as the lagoons empty rapidly to the ocean. Generally, it takes 24 hours for the beach to be complete. The surface area of the lagoons goes from over 4,800 acres to just under 2,200 acres after the breach.

Because the lagoons empty so quickly, there is the potential for waterfowl, primarily coots, to become entrained in the outflow and wash out of the lagoon into the surf where they perish. During the breach and for the period that the lagoons remain under tidal influence, juvenile anadromous fish leave the lagoon to complete the ocean stage of their life history. Conversely, adult anadromous fish such as steelhead and sea-run cutthroat trout enter the lagoons and move into the tributaries to spawn. Other fish such as the federally listed tidewater goby that reside in the lagoons year round are weak swimmers and may wash out to sea or become stranded in pools that become disconnected from the lagoon after the breach.

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Long Range Goals

1. Manage the winter lagoon level between 8 -10 feet mean sea level to maximize ecological productivity of the LEWA to the optimal extent possible while balancing the needs of all species with the needs of the public.

As conditioned as under permits to mechanically breach the lagoons, DFG and the County of Del Norte (as co-applicants) implement actions to minimize and monitor the affects of the breaching. They include, but are not limited to the following tasks:

Tasks

1. Immediately prior to the beginning and during the breach, haze water birds away from the breach site. Hazing methods may include but are not limited to water craft and noise .
2. After breaching is complete, survey and quantify the number and species of water birds found dead along the beach as a result of the breach.
3. Survey the location, area, and maximum depth of disconnected ponds of water remaining below the maximum elevation of the lagoon at least once with in one week after completion of the breach to determine stranding and refugia area for the tidewater goby.
4. Sample fish trapped in disconnected ponds to determine species composition and relative abundance.
5. Monitor status of disconnected ponds that contain tidewater goby and anadromous salmonids at least every two weeks until lagoon water elevations rise to the level that the ponds reconnect with the lagoon.
6. Develop and implement a plan to monitor tidewater goby population trends within the lagoons in cooperation with Corps of Engineers(COE) and the USFWS.
7. Prior and subsequent to each breaching event measure the wetted perimeter of the lagoons to determine extent of habitat affected.
8. Breach the lagoons with the smallest opening possible.
9. Monitor lagoon elevation throughout the breaching event to document the rate at which the lagoon drains and refills.
10. Monitor water quality prior, during and after the breach to measure total coliform, fecal coliform and enterococcus.
11. Report results of above referenced monitoring to the COE, USFWS, Regional Water Quality Control Board, and National Marine Fisheries Service (NMFS).

12. Report any dead or injured listed species that are the responsibility of the USFWS or the NMFS.

S.0 SUMMARY

Lake Earl and Lake Tolowa together comprise a large estuarine or brackish lagoon system, located about two miles north of Crescent City, in Del Norte County, on the northern California coast (Figure S-1 and Figure S-2). The lagoon system, which is periodically open to the Pacific Ocean through what is known as "breaching," is a resource of statewide importance, providing a rich diversity of habitats for a wide variety of fish and wildlife species, including special-status species. The Lake Earl Wildlife Area (LEWA), managed by the California Department of Fish and Game (hereafter, the Department or DFG), consists of approximately 5,500 acres within an irregular boundary around most of the coastal lagoon.

The Department has prepared and proposes to implement a Management Plan for the Lake Earl Wildlife Area. The California Environmental Quality Act (CEQA)[1] requires public agencies to prepare Environmental Impact Reports (EIRs) for projects that may have a significant effect upon the environment. This EIR has been prepared by the Department pursuant to CEQA and the CEQA Guidelines to provide Department decision-makers, other agencies, and the general public with an objective assessment of the potential effects of the Lake Earl Wildlife Area Management Plan. The purpose of the EIR is to provide information so that the Department and other agencies can make factual findings to support decisions regarding the project.

S.1 SCOPE AND USES OF THIS EIR

This EIR has elements that are "programmatic," that means it addresses the general implementation of managing the LEWA as an overall course of future action. Under CEQA, a "program EIR" may be prepared to generally analyze the broad environmental effects of an overall plan. This type of CEQA document anticipates the future development of implementation elements, which may have environmental consequences that are not evident at the present time. Subsequent CEQA evaluations for these specific implementing actions in the future are anticipated, and the environmental reviews that are conducted for those actions will be expected to "tier to" and incorporate the contents of this EIR to the maximum extent possible; this process, which requires future actions by Department staff in carrying out the selected alternative, is described in Section 1.2.2 of this EIR. However, for certain specific management actions at the LEWA, like breaching, the document is not programmatic, but is project-specific. That means that for those specific actions, additional CEQA compliance is not contemplated prior to their implementation. In Table 2-1 of this EIR, the Department has identified the elements of the Management Plan and whether this EIR treats that element on a programmatic level, or on a project-specific level.

S.1.1 Scope of This EIR

As part of the process to determine the scope of this EIR, the Department conducted a preliminary review of the potential environmental effects related to its proposal and issued a Notice of Preparation (NOP). In addition, the Department has conducted extensive consultations with interested parties in Del Norte County. The preliminary review and

[1] Public Resources Code, Division 13, section 21000 *et seq.*

these consultations, in combination with the responses to the NOP, identified the following as subjects that would need to be addressed in the EIR:

- Biological effects on sensitive bird, fish, insect, or plant species and their habitats, on sensitive biological communities, and on wetlands and riparian areas.
- Physical changes to agricultural lands and designated sensitive habitats, and potential direct and indirect effects on nearby residentially designated lands.
- Traffic/circulation effects resulting from potential inundation of local roadways by high water.
- Potential effects on archaeological resources located in the Lake Earl vicinity.

S.1.2 Uses of This EIR

This EIR is intended to support decisions by the Department concerning its management of the Lake Earl Wildlife Area. The LEWA Management Plan does not specify the precise timing or scope of actions that may occur in implementing the elements of the Management Plan. Because the Plan does not explicitly identify all future activities, it will be necessary for the Department to conduct a preliminary CEQA screening for future elements proposed to implement the Plan (see CEQA Guidelines § 15168).

Guidelines section 15124(d) requires that the EIR identify the intended uses of the EIR, including a list of the agencies expected to use the document and a list of approvals for which the EIR will be used.

Accordingly, this EIR may support some or all of the following uses:

- Decisions by the Department concerning management of the Lake Earl Wildlife Area.
- Decisions by the County of Del Norte regarding county land use plan approvals; in addition, the EIR may support Coastal Development Permit application reviews for one or more projects that would carry out Management Plan elements that also need approvals from Del Norte County.
- Any other state or local agency which must make decisions with respect to the Management Plan will be expected to use the EIR to meet CEQA-review obligations. Specifically included in this category is the North Coast Regional Water Quality Control Board, with respect to a Section 401 certification review associated with Army Corps Clean Water Act Section 404/Endangered Species Act Section 7 permit applications covering breaching actions.
- The California Coastal Commission may use this EIR as an informational document regarding its functionally equivalent environmental reviews for Coastal Development Permit applications for Lake Earl Management Plan elements, including breaching actions.
- The Department may use this EIR in conjunction with Streambed Alteration Agreements under Fish and Game Code, Section 1600 *et seq.*
- The EIR will serve as an informational document for any federal agency application review processes (including any Army Corps Clean Water Act Section 404/Endangered Species Act Section 7 applications covering breaching actions) or any other reviews conducted pursuant to the requirements of federal law, including the National Environmental Policy Act (NEPA); this document is not, however, a joint CEQA-NEPA document.

S.2 PROJECTS CONSIDERED

The "project" addressed in this EIR is the Lake Earl Wildlife Area (LEWA) Management Plan and its implementation, including the periodic manual breaching of the spit or sandbar that separates Lakes Earl and Tolowa from the Pacific Ocean. The breaching is done with a bulldozer, which pushes sand aside until a trough is formed, and lagoon water flows into the ocean. In this EIR the Department has adopted the CEQA convention that the baseline for computing environmental effects caused by the breaching is the physical environmental conditions in the vicinity of the project as they existed at the time the NOP was published. The main component in implementing the Management Plan is the set of goals and tasks that defines the Department's approach to managing the Wildlife Area. The Department manages the Lake Earl Wildlife Area for the benefit of its natural resources and the State's citizens. The Plan also includes land acquisition and exchange, including land exchanges between the Department of Fish and Game and the Department of Parks and Recreation. In addition to considering the effects of a "no project" alternative, the EIR presents three alternatives developed by the Department:

- The ***Low Level Breaching Alternative***, under which the lagoon would be mechanically breached whenever an elevation of four feet above mean sea level (MSL) was reached, and in which the water surface elevations would generally be less than four feet MSL but could reach as high as six feet MSL.
- The ***Preferred Alternative*** under which the lagoon would be mechanically breached whenever the water surface elevation reaches 8.0 feet MSL in the period between September 1st and February 15th, and again on February 15th if the water surface elevation were above 5.0 feet MSL; actual surface elevations could reach 10 feet MSL, under unusual circumstances, before the breaching could be completed. Water surface elevations would generally be less than eight feet MSL.[2]
- The ***Natural Breaching Alternative***, under which natural processes would be allowed to occur without human intervention, and the expected resulting water surface elevation could reach 12 feet MSL or perhaps higher.

The alternatives used for analysis in the EIR do not represent "hard targets" for management; the water surface elevation in the Lake Earl/Tolowa lagoon complex cannot be physically controlled with precision. Instead, the alternatives are intended to represent a range or set of references for environmental effects resulting from water surface elevations that are higher or lower than the Department's Preferred Alternative, in order to allow decision-makers, other agencies, and members of the public to gain an understanding of the relative environmental consequences. In addition to broadly considering the effects of the differing water surface elevations resulting from the alternatives on a number of stated subjects, this EIR also broadly considers the general effects of a set of implementation projects that would be carried out to put each alternative into effect. See EIR Chapter 2 for additional information.

[2] The average annual water surface elevation under the current management regime is approximately 4.6 feet MSL. The Department generally expects that the average annual water surface elevation under the Preferred Alternative will also be 4.6 feet MSL.

S.3 SUMMARY OF POTENTIALLY SIGNIFICANT EFFECTS AND MITIGATION MEASURES

The heart of the EIR's analysis of potential effects and mitigation measures is presented in Chapter 3 for the physical environment, Chapter 4 for the biological environment, and Chapter 5 for the human environment. The topic-specific assessment for the proposed project – i.e., the LEWA Management Plan's Preferred Alternative – is summarized in Table S-1. The other alternatives considered in the EIR would be associated with similar effects to a greater or lesser degree. In addition to Table S-1, brief narrative descriptions of the Preferred Alternative's potential effects are presented.

S.3.1 Physical Environment

Hydrology. Neither the Preferred Alternative nor any other alternative considered by the Department has a significant potential for affecting hydrological processes in the Lake Earl/Tolowa vicinity. The lagoon complex occurs at the "bottom" of the basin, and has no potential for altering hydrological relationships in the basin. In addition, there is no evidence that any of the alternatives considered by the Department has a potential for affecting the physical processes that "seal" the breach in the sand berm to the west of the lagoon complex. The lagoon filling process and the breach-sealing process will not be affected by the water-level management alternative selected by the Department. See Section 3.1 for additional information.

Water Quality. Under the alternatives considered by the Department there may be minor differences among alternatives in water quality. Generally the "natural" water quality in the lagoon complex under any alternative considered by the Department would continue to be within the historical range of water quality conditions in the lagoon, and these conditions are virtually the same as the conditions present under current water-level management. Under any alternative, water quality would fluctuate within the range of conditions that are bounded by years when no breaching occurs and years when multiple breaching events occur. Thus, while some differences in water quality under various alternatives could affect various aquatic species groups occurring in Lake Earl/Tolowa differently, these differences do not, in themselves, constitute significant adverse effects on the environment.

The implementation elements identified in the Management Plan for the Preferred Alternative (and the similar elements that would be implemented should another alternative be selected) have a potential for introducing sediment and other nonpoint source pollutants into the lagoon complex. These pollutants would be associated with the construction of both habitat enhancement projects (such as low levees in existing seasonal wetlands that would be used to enhance wetland values) and various visitor-serving uses (such as parking areas or boat launching facilities). These effects, should they occur, would also be part of a potential cumulative water quality effect that may cross a threshold of environmental significance. Such potentially significant effects may be reduced below generally accepted thresholds of environmental significance by including Best Management Practices that have been identified by the State Water Resources Control Board into the implementation elements. In addition, the Department will provide short-term sanitation facilities in association with the development of the

implementation elements. See Section 3.2 for additional information about these effects and the need for mitigation measures.

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Table S-1. Summary of Potentially Significant Environmental Effects Identified in this EIR for the Lake Earl Wildlife Area Management Plan's Preferred Alternative, and Mitigation Measures.

Potential Effect	Mitigation Measures	Significance After Mitigation
PHYSICAL ENVIRONMENTAL: HYDROLOGY, WATER QUALITY		
WQ-1. Water Quality Effects from Carrying Out Implementation Elements. Some of the implementing actions identified for the Preferred Alternative could be associated with potential effects on water quality because of generalized pollutant release, especially sediment; this category of pollution is generally described as "nonpoint source" pollution. Activities such as habitat improvement through vegetation manipulation, steam restoration using instream structures, installation of water control structures, creation of impoundments, and mowing or planting land adjacent to or in the lagoon waters could introduce sediment or other materials into Lake Earl/Lake Tolowa.	**WQ-1. Implement Best Management Practices and Other Construction Practice Mitigation Measures.** For activities and tasks that involve construction the Department will implement best management practices (BMPs) identified in the state's recommended BMP handbooks (Camp Dresser & McKee and others 1993) or other sources (e.g., Washington State Department of Ecology 1992). For improved lagoon access and boat launching ramps, the Department will use non-polluting natural or inert synthetic materials; the Department will conduct boat access area improvements or new boat ramp construction projects to coincide with low water levels. The Department will design projects to prevent runoff from vehicle maneuvering and parking areas from discharging directly into the lagoon, using appropriate design elements and BMPs to intercept runoff and manage water quality. This measure does not specifically identify all potentially suitable measures, and the Department may identify additional appropriate BMPs in consultation with the North Coast Regional Water Quality Control Board.	Less-than-significant.
WQ-2. Water Quality Effects Associated with Additional Public Use. The Preferred Alternative also includes public use and facility maintenance elements. The elements of the Preferred Alternative include maintaining and enhancing the public's use of the LEWA in the areas of hunting, fishing and boating, hiking, bird watching and nature photography, and horseback riding. Increased public use would be expected to result in potential water quality effects associated with increased	**WQ-2A. Implement Best Management Practices and Other Construction Practice Mitigation Measures.** The mitigation measure described as Measure WQ-1 will also be implemented to address potential water quality effects that may result from constructing visitor-serving facilities. As noted above, the Department may identify additional appropriate BMPs in consultation with the North Coast Regional Water Quality Control Board. **WQ-2B. Provide Sanitation Facilities.** To reduce the	Less-than-significant.

Potential Effect	Mitigation Measures	Significance After Mitigation
visitation. For example, improving the existing boat access points or building new boat launching ramps could introduce sediment during construction and could serve during operation as sources of additional sediment and contaminated runoff. Increased public use will increase the demand for visitor-serving facilities such as parking lots and restrooms. Other management activities may include constructing hiking trails, nature study improvements such as bird blinds, signage and interpretive displays, and fencing.	potentially adverse effect on water quality from additional public use within the LEWA, the Department will provide sanitation facilities at locations within LEWA that are designated and managed for public use.	
WQ-3. Cumulative Nonpoint Source Water Quality Effect. The implementation projects associated with the alternatives may create nonpoint source pollutant generation, mobilization, or release as a result of various construction activities and improvements, including parking areas, boat ramps, trails, etc.; also, assuming the successful implementation of these activities and the prospective recreation and visitor-serving facilities objectives, future use of the area by the public could increase, creating a potential for cumulative effects to water quality within the Lake Earl watershed because of effects from sediment, runoff-entrained toxic chemicals, fertilizers or other nutrients, and similar pollutants that would act in concert within the lagoon. Other "past, present, or reasonably foreseeable" development projects in the upstream parts of the Lake Earl basin may have had or may have the potential for creating this effect. The effects of the implementation projects, in combination with other projects elsewhere in the basin, may cross a "cumulative" threshold of significance.	**WQ-3: Implement Best Management Practices and Other Construction Practice Mitigation Measures.** The mitigation measure described as Measure WQ-1 will also be implemented to address potential cumulative water quality effects. The Department may identify additional appropriate BMPs in consultation with the North Coast Regional Water Quality Control Board.	Less-than-significant.
BIOLOGICAL ENVIRONMENT: SENSITIVE SPECIES, WATERBIRDS, WETLANDS		

Potential Effect	Mitigation Measures	Significance After Mitigation
SS-1. Breaching Could Directly Affect Listed Fish. Breaching (under any alternative) could directly result in the loss of tidewater gobies and juvenile salmonids, which may be washed out through the breach or become stranded within isolated pools. The breaching program could be associated with: (a) washing gobies and juvenile salmonids out through the breach, and (b) isolating individual fish or population segments in isolated pools for a period of time until the rising water level in the lagoon reconnects the pools to the lagoon.	**SS-1A. Monitor Status and Consult with the U.S. Fish & Wildlife Service (USFWS) Regarding Tidewater Goby.** The Department will implement management actions based on USFWS consultation that will reduce direct or indirect effects to this species. **SS-1B. Monitor Status and Consult with the National Oceanic and Atmospheric Administration (NOAA-Fisheries) Regarding Salmonids.** The Department will implement management actions based on NOAA-Fisheries consultation that will reduce direct or indirect effects to this species.	Less-than-significant.
SS-2. Implementation Elements Could Alter Habitat Conditions for Listed Fish. Some implementation projects identified for the Preferred Alternative could indirectly reduce habitat values within the lagoon for tidewater gobies or for listed salmonids that may occur there. These effects most likely would arise from the introduction of sediment and other nonpoint source pollutants as a consequence of new construction and/or or new visitor-serving facilities.	**SS-2A. Monitor Status and Consult with the U.S. Fish & Wildlife Service Regarding Tidewater Goby.** (See SS-1A, above.) **SS-2B. Monitor Status and Consult with the NOAA-Fisheries Regarding Salmonids.** (See SS-1B, above.)	Less-than-significant.
SS-3. Implementation Elements Could Alter Habitat for Oregon Silverspot Butterfly. The Department anticipates that duneland restoration projects identified for the Preferred Alternative will increase both the total habitat area for Oregon silverspot butterfly and the ecological value of the habitat. However, these restoration activities also have a potential for creating short-term adverse effects on the value of these habitats for the Oregon silverspot butterfly, by locally affecting individual host plants, during the process of restoring native dune vegetation.	**SS-3. Monitor Status and Consult with the U. S. Fish & Wildlife Service Regarding Oregon Silverspot Butterfly.** The Department will implement management actions based on USFWS consultation that will reduce direct or indirect effects to this species.	Less-than-significant.
SS-4. Cumulative Effect on Sensitive Species and	**SS-4. Consult with Local, State, and Federal Agencies**	Less-than-

Potential Effect	Mitigation Measures	Significance After Mitigation
Habitats. The Department finds that there has been a significant cumulative effect on the listed species and their habitats which has resulting in the listed statuses of these species, and that past manipulations in the Lake Earl/Tolowa basin have contributed to that effect. The Department also finds habitat changes associated with the management of the Lake Earl Wildlife Area may further affect these species or their habitats. The Low Level Breaching Alternative, in particular, would further contribute to this significant effect by decreasing the areas of existing habitat available for virtually all of the species covered in this section.	**to Identify and Implement Programs to Offset LEWA Contributions to Cumulative Effects on Sensitive Species and Habitats.** The Department will continue to work with representatives of local, state, and federal agencies to develop appropriate management models for the sensitive species that occur within the Lake Earl Wildlife Area, including where feasible the development of additional scientific studies that will help to characterize the ecological status and habitat relationships of these species at the Lake Earl Wildlife Area. The Department will identify opportunities for restoring or enhancing habitats used by these species, and will carry out habitat restoration or enhancement projects where these actions are consistent with the Department's policies and with existing laws.	significant.
W-1. Introduction of Fill Material into Wetlands During Construction of Enhancement Elements. The implementation of enhancement projects for freshwater emergent wetlands may be associated with possible wetland effects. Activities such as grazing, mowing, burning, and disking wetlands may be associated with the introduction of sidecast "fill" as part of the construction process, and may create adverse effects on wetland functions or potential effects on beneficial uses. The creation of impoundments and the construction of water control structures such as levees have a clear potential to be associated with adverse effects, and these activities may be regulated under the Clean Water Act, the Coastal Act, and Del Norte County planning policies. Similarly, the proposed future manipulation of forested and riverine wetlands and riparian areas through vegetation removal, planting, or instream structure placement (i.e., large woody debris) raises a potential that the projects could be associated with adverse effects and/or approval	**W-1A: Implement Best Management Practices and Other Construction Practice Mitigation Measures.** This measure is the same as Mitigation Measure WQ-1. This measure will assure that there are no unavoidable effects on wetland functions as a result of water quality changes, such as excessive sediment mobilization or the inadvertent introduction of non-native materials along with construction equipment. **W-1B: Perform In-kind Wetland Enhancement to Offset Short-term Wetland Effects.** The wetland enhancement and restoration projects that are included as implementation elements for the project alternatives may be associated with short-term wetland function losses. In the long term these enhancement and restoration projects will result in wetland function increases. The Department will develop project-specific wetland mitigation proposals for each implementation element that offset any short-term wetland function losses. Each mitigation proposal will identify in-kind wetland enhancement proposals, located	Less-than-significant.

Potential Effect	Mitigation Measures	Significance After Mitigation
requirements from other agencies.	as close to the project site as is feasible, that will offset any temporary loss of wetland functions that may occur as a consequence of each implementation element.	
W-2. Pollutant Introduction to Wetlands Resulting From Improvement Construction. A number of additional elements involve the construction of visitor-serving facilities, including parking areas, trails, interpretive devices, boat ramps, and other improvements. These construction activities have a potential for creating significant indirect effects through the introduction of sediment or other pollutants into wetlands or other waters of the state.	**W-2A. Implement Best Management Practices and Other Construction Practice Mitigation Measures.** For activities and tasks that involve construction the Department will implement best management practices (BMPs) identified in the state's recommended BMP handbooks (Camp Dresser & McKee and others 1993) or other sources (e.g., Washington State Department of Ecology 1992). For improved lagoon access and boat launching ramps, the Department will use non-polluting natural or inert synthetic materials; the Department will conduct boat access area improvements or new boat ramp construction projects to coincide with low water levels. The Department will design projects to prevent runoff from vehicle maneuvering and parking areas from discharging directly into the lagoon, using appropriate design elements and BMPs to intercept runoff and manage water quality. This measure does not specifically identify all potentially suitable measures, and the Department may identify additional appropriate BMPs in consultation with the North Coast Regional Water Quality Control Board. **WQ-2B. Provide Sanitation Facilities.** To reduce the potentially adverse effect on water quality from additional public use within the LEWA, the Department will provide sanitation facilities at locations within LEWA that are designated and managed for public use.	Less-than-significant.

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Potential Effect	Mitigation Measures	Significance After Mitigation
HUMAN ENVIRONMENT: PLANNING AND LAND USE, TRANSPORTATION, PUBLIC HEALTH AND SAFETY EFFECTS, CULTURAL RESOURCES		
The Department identified no potentially significant effects with respect to the Human Environment that would not be reduced to a less-than-significant level by actions taken pursuant to the LEWA Management Plan.	None required.	Not applicable.

S.3.2 Biological Environment

Sensitive Species. The Lake Earl Wildlife Area provides habitat for a number of sensitive plant, fish, or wildlife species. The habitats that are currently present within the LEWA, and the values of these habitats for the sensitive species, are present because the lagoon elevation has been managed consistently for more than a decade and the habitat conditions have adjusted to current management practices. The Department has concluded that the Preferred Alternative, which represents a continuation of the water-management program currently in place, would not lead to significant changes in the existing habitat values within the LEWA. Should an alternative be selected that would lead to initiating a lagoon breach when surface elevation were significantly above or below eight feet, then it would be possible that habitat conditions within the LEWA could be altered enough that adverse effects on one or more of the sensitive species and their habitats might be unavoidable.

Because there are species within the LEWA that are listed under the federal Endangered Species Act, the Department consults with federal agencies regarding current management. Significant impacts to habitat values could be considered a potential transgression of federal law, and extended consultation with the appropriate federal trustee agencies would be mandatory before the proposal that created such impacts could be implemented. The Department views the overall reduction in habitats for all of these species together that would result from the Low Level Breaching Alternative as an adverse environmental effect of that alternative, for which no mitigation is available that would reduce the net effect to a less-than-significant level.

Several of the listed species fall under the purview of the U.S. Fish & Wildlife Service (the Oregon Silverspot Butterfly, the western snowy plover, the bald eagle, the brown pelican, and the tidewater goby); with respect to these species and their habitats the Department will continue consulting with the U.S. Fish & Wildlife Service. Another species known to occur in the LEWA (the coho or silver salmon) falls under the purview of the National Oceanic and Atmospheric Administration (NOAA-Fisheries); with respect to this species the Department will continue consulting with NOAA-Fisheries. The lagoon complex also provides habitat for a variety of species that are sensitive under California laws or policies (see Section 4.1).

Some of the implementation elements that are identified for the Preferred Alternative may alter habitat conditions in ways that are beneficial for some of the sensitive species. To the extent that the other alternatives considered by the Department involve similar implementation elements, those alternatives would have similar effects and would require similar consultations and species-specific considerations. All of the alternatives under consideration for the LEWA appear likely to maintain conditions for the sensitive species within the range of historical variability for the lagoon complex as a whole, and it is unlikely that any of the alternatives would remove all habitat utility for these species from the LEWA. The Department will continue to interact with interested members of the public in developing implementation projects to carry out the Preferred Alternative; to the extent feasible these implementation projects will be used to enhance habitat conditions for the other sensitive species found at the LEWA.

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Waterbirds. The Lake Earl Wildlife Area provides substantial habitat values for a variety of water-dependent bird species, including ducks, geese, and swans; shorebirds; loons and grebes; herons and egrets; and rails. The alternatives considered by the Department would alter the habitat utility of the LEWA for these species groups, with the various activities in each of the alternatives favoring some groups and reducing potential habitat values for others, although the entire range of conditions that would result from any of the alternatives falls within the range of historical conditions known for the lagoon complex. The Department does not judge the habitat value tradeoffs that would occur among the various waterbird groups as necessarily having positive or negative environmental significance, although the Department views an overall reduction in habitat for all species as a significant effect.

Because the Preferred Alternative continues current management directions for the LEWA, it would not result in altering the habitat availability for any of these waterbird groups. The Natural Breaching Alternative would generally increase the overall habitat area available for most of these species groups. The Low Level Breaching Alternative would represent an overall loss of habitat for all of these species groups; the Department has concluded that this overall reduction in waterbird habitat is an environmentally significant effect that could not be mitigated to a less-than-significant level. In addition, the Department considers that result to be contrary to the Fish & Game Code requirements established for the Department regarding its management of the state's natural resources (see Section 2.1).

Implementing any of the alternatives may involve minor changes in habitat conditions for some of the species groups considered. However, the Department has concluded that the potential changes do not cross any of the thresholds of significance that are used under the California Environmental Quality Act in this subject area. See Section 4.2 for additional information.

Wetlands. The Department manages land in the Lake Earl vicinity in order to maintain the lagoon complex's wetlands for their ecological and habitat benefits. These wetlands incorporate the lagoon complex itself, which includes estuarine wetlands, freshwater emergent wetlands, forest (or riparian) wetlands, and seasonal wetlands that appear similar to pasturelands. In addition, the lagoon complex's wetlands include a variety of similar wetlands, at elevations above the lagoon surface, which are related to surface water and groundwater dynamics near the lagoon. The wetlands within the Lake Earl Wildlife Area provide a variety of wetland functions, including providing water quality benefits, flood storage and peak-flow attenuation, habitat for aquatic and terrestrial species, recreational benefits, and ecosystem support, among other functions. These wetlands support a number of beneficial uses identified in the basin plan for the North Coast Region.

Because the Preferred Alternative essentially continues the current management focus, the Preferred Alternative is not associated with a significant change in wetlands within the LEWA, or in wetland functions or beneficial uses. The Natural Breaching Alternative likely would be associated with increased wetland areas, and perhaps with enhanced wetland functions (except for flood storage, which this alternative would not provide) and augmented beneficial uses. However, the Low Level Breaching Alternative would result in an overall decrease in wetland area within the LEWA, as well as in decreased wetland

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functions (with the exception of flood storage). The Department identifies this decrease as a significant impact; no mitigation is known that could reduce the effect to a less-than-significant level. The Department has concluded that this effect is incompatible with its mandates to protect and manage habitats for California's natural heritage (see Section 2.1).

The implementation elements of the Preferred Alternative, as well as those that the Department has considered for the other alternatives, are associated with potential adverse effects on wetlands, largely relating to the possible introduction of sediment and other nonpoint source pollutants into the wetlands as the implementation projects are carried out. The Department will incorporate appropriate Best Management Practices into the elements, as described under "water quality" effects above. In addition, the Department will identify additional wetland restoration or enhancement elements in each project that will offset any temporal losses of wetland functions; the result of these mitigation measures will be that the implementation projects for each alternative may be completed without significant unmitigated environmental effects. See Section 4.3 for additional information.

S.3.3 Human Environment

Land Use. The Department considered whether the effects of fluctuating lagoon water levels under various conditions should be considered as potentially significant effects to land uses adjacent to the lagoon margin. The Preferred Alternative is a continuation of current management practices that will lead to no changes from conditions in effect at the time the Notice of Preparation was issued. The average annual water surface elevation for the lagoon complex under current management operation is approximately 4.6 feet MSL; the Department does not expect that this average level would differ significantly under the Preferred Alternative. With a completed Management Plan and a certified CEQA document in place, the Department and the County will be able to breach sooner than they have in the past, because the Department and the County will be able to obtain long-term permits which would be in place prior to the need to breach. Once conditions are appropriate to breach, the Department and the County would be able to take that action, and thus the effects of any inundation would be minimized.

The LEWA Preferred Alternative is consistent with local coastal planning in the areas of habitat preservation and coastal agriculture. The main purpose of management of the LEWA – i.e., to maintain and enhance sensitive wildlife habitat – is consistent with the County Coastal Element/Local Coastal Plan (LCP), which seeks to protect Lake Earl as a sensitive biological habitat and wetland, while "allowing continued agricultural uses." The entire lagoon system and the designated land uses around the lagoon margin are also subject to a Resource Conservation Area (RCA) and Flood Hazard area "overlay." Under the LCP, within the RCA, and specifically within "farmed wetlands" or agricultural parcels, "agricultural operations are a principal use but such uses should maintain long-term habitat values and, where feasible, minimize short-term degradation." In addition, recommendations in the LCP support continued use of "overflow land" for pasture. Management of the lagoon at or close to the eight-foot level would not conflict with these designations and policies.
The LEWA Management Plan is also consistent with local coastal planning in the areas of public access, acquisition, and recreation. The Preferred Alternative proposes to continue

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and, in some cases improve, public use activities such as hunting, fishing, boating, and hiking; among the anticipated access improvements are parking areas and improved or new boat launching sites. As is evident in the quoted excerpts from the Coastal Element/LCP in Section 5.1.1.3.3, State acquisition has long been anticipated as a means to resolve land use compatibility problems in the Lake Earl area.

The Department has concluded that land use impacts are less than significant, but measures have been proposed to further reduce the less-than-significant impact. The Department expects that actions conducted pursuant to the LEWA Management Plan will reduce potential land use effects to a less-than-significant level. These actions include the following:

- The Department, in coordination with the County of Del Norte, will implement the proposed project to breach the spit so that, to the extent possible, breaching is initiated between September 1st and February 15th whenever the lagoon surface elevations reach 8.0 feet MSL and also on February 15th if the lagoon surface elevation stands at 5.0 feet.
- The Department will continue its program of land acquisition in fee title from willing sellers of adjacent properties affected by Department management activities.
- Where acquisition in fee is not feasible, the Department will continue its program of obtaining conservation easements from willing sellers on portions of adjacent properties affected by Department management activities.
- Where compatible with the Department's management goals for maintaining, establishing, or enhancing grassland/pasture habitat, and where environmental effects of livestock grazing would not be significant, the Department will offer leases on Department-owned lands within the LEWA to agricultural operations affected by high lagoon water levels.
- The Department will work with the County of Del Norte and the California Coastal Commission to consider the compatibility of the proposed Management Plan with adopted planning documents. Following certification of this EIR, the Department will coordinate with the County of Del Norte Community Development Department and, if appropriate, initiate an amendment application to ensure that the General Plan Update and the LEWA Management Plan are consistent.
- The Department will review, and comment upon, requests from the County of Del Norte Community Development Department regarding future zoning classifications, reclassifications, and specific land use development applications and proposals submitted to the County for lands adjacent to LEWA. This review process will be directed toward ensuring compatibility of the proposed land use activities with the Department's management of Lake Earl water elevations and other management activities.

Transportation. Most of the time, when the lagoon water surface level is well below eight feet, no significant effects on circulation would be expected. Because the Preferred Alternative does not represent a change from conditions that were in effect at the time the Notice of Preparation was issued, the alternative technically cannot have a significant environmental effect. At lagoon surface elevations generally above ten feet, water levels in the lagoon could temporarily inundate County roads, which could impede travel during the periods prior to breaching the sand spit.

Inundation of County roads under the Preferred Alternative is judged by the Department to fall below the identified thresholds of significance. High water levels (generally above eight feet elevation) could result in "offsite" flooding that would result in water on the roads, but would not expose people or property to a risk of loss or injury. Few people

inhabit areas that are only accessible by the roads subject to inundation, and therefore few people are affected by the water on the roads. These locations are also subject to flood warning signs posted by the County. To minimize impacts, when roads are inundated with water, the Department will post signs on the side of any inundated roads to indicate the locations of any roadside ditches. The Department has concluded that impacts from roadway inundation are less than significant. The Department expects that actions conducted pursuant to the LEWA Management Plan will further reduce the less-than-significant impact. These actions include the following:

- The Department, in coordination with the County of Del Norte, will implement the proposed project to breach so that, to the extent possible, breaching is initiated between September 1st and February 15th when the lagoon surface water elevation is at eight feet MSL, and again on February 15th if the surface water elevation stands at five feet MSL.
- The Department will continue its program of land acquisition from willing sellers of adjacent properties affected by Department management activities.
- The Department will work with the County of Del Norte to seek funding (through Caltrans or other potential sources of grant funds) to reconstruct and elevate road segments affected by fluctuating water levels at Lake Earl. Suitable measures to accommodate fluctuating inundation could include, should funding be identified to implement these measures, installing adequately sized culverts to expedite drainage or raising the surfaces of affected County roadways.

Given these factors, the Department concludes that impacts to roads and transportation because of possible high water levels under the Preferred Alternative will be a less-than-significant effect.

Public Health and Safety. The analysis of public health and safety effects is constrained by insufficient verifiable data and, to some extent, by inconsistent information, especially for the Fort Dick Burn Dump Site. However, the Department's analysis indicates that, when the lagoon surface is in the range of eight feet to ten feet, inundation is not likely to affect water supply wells or septic systems.

Regarding the potential for lagoon waters to interact with the County Landfill the Department has concluded that, under any alternative, high lagoon surface levels would not directly contact landfill waste, but that the possible effect on water quality is undetermined because of the lack of information about the landfill circumstances. The Department has concluded that the Preferred Alternative is not likely to cause significant impacts related to the landfill or to water quality in the area.

The Department has concluded that the existing evidence indicates that the abandoned Fort Dick Burn Dump is located above the 10-foot elevation contour and thus would not be directly affected by inundation under the Preferred Alternative or the Low Level Breaching Alternative; it is unclear that the Natural Breaching Alternative would avoid water surface elevations that intersect the Burn Dump remnants.

Regarding mosquitoes and mosquito-borne illness, the Department accepts statements by the County Health Department indicating potential health and nuisance effects related to mosquito populations in the lake. The Department concludes that mosquito populations are not necessarily related to lagoon water levels and that increased mosquito populations

would not constitute a significant adverse effect resulting from any of the alternatives considered.

The Department expects that actions pursuant to the LEWA Management Plan will further ensure that significant public health effects do not occur. These actions include the following:

- The Department, in cooperation with the County of Del Norte, will implement the proposed breaching project so that, to the extent possible, breaching occurs between September 1st and February 15th when the lagoon surface water elevation is at eight feet MSL, and again on February 15th if the surface water elevation stands at five feet MSL.
- The Department will continue its program of land acquisition from willing sellers of adjacent properties affected by Department management activities. As properties are acquired, existing wells will be closed or properly sealed, and septic systems will be removed or abandoned in place.
- The Department, in consultation with Del Norte County, will assist property owners in identifying the condition and status of wells that may be affected as a result of Lake Earl water levels. Where potential health effects can be verified, the Department will work with the County to seek grant funding to assist with well rehabilitation. If rehabilitation is not feasible, the Department will coordinate with Del Norte County to seek alternative water sources (or sanitary disposal options) on a case-by-case basis.

Cultural Resources. Archaeological resources are well documented in the Lake Earl area, both by the Department and by the Rancherias that represent tribal interests. Generally, archaeological resources would not be affected at lake levels of six feet or lower, and the Low Level Breaching Alternative would not be associated with potential effects. At surface elevations above eight feet, increased wave-related erosion could occur around low-lying archaeological sites. The more sensitive habitation sites, particularly house pits and burials, all occur at elevations above 10 feet, and are unlikely to be affected by the Preferred Alternative. The Department has concluded that while the Preferred Alternative may affect cultural resources, implementing cultural resource protection tasks in the LEWA Management Plan can be expected to reduce potential effects to a less-than-significant level. Under the Natural Breaching Alternative, the effects on cultural resources are judged to be environmentally significant, unavoidable, and potentially unmitigable.

S.4 OTHER CEQA CONSIDERATIONS

S.4.1 Areas of Environmental Controversy

Subsection 15123(b)(2) of the CEQA Guidelines requires that the summary of an EIR include a listing of known or expected areas of environmental controversy for the project covered by the EIR.

Managing Lake Earl's water surface level has been a subject of controversy among various parties for more than a century; the Department, as the current owner and manager of the Lake Earl Wildlife Area, has inherited that extended controversy, as discussed in Chapter II of the LEWA Management Plan. The areas of controversy include questions regarding land use decision-making that are beyond the scope of this EIR. Another area of controversy is a philosophical difference among various stakeholders, some of whom

favor mechanically breaching the sand spit at lagoon surface elevations lower than the Department has proposed and others who favor a "natural" breaching process that could result in lagoon surface elevations higher than the Department has proposed. Thus the elevation at which the lagoon's surface should be managed is a controversial subject for this EIR. This area of controversy includes, but extends beyond, a focus on the natural resources that are affected by different water surface elevations.

The alternatives identified in this EIR cover a range of possible lagoon surface water levels, from relatively low elevations that would result from mechanical breaching to relatively high levels that would (presumably) result from allowing natural processes to occur. The philosophical determination of whether or not breaching *should* be used as a management tool is not an environmental controversy, in the context of CEQA, and is not addressed in this EIR; however, the potential effects resulting from both approaches are addressed through the range of alternatives addressed in this document.

Different lagoon water surface elevations affect habitat locations and could affect habitat quality. Artificially breaching the sand spit since the early 1900s may have caused a shift in the geographic distributions of species that use the lagoon complex, including sensitive species. There is considerable controversy – and technical difficulty – associated with determining what breaching scheme, if any, would result in the "optimal" lagoon level that balances the needs of all species and habitats under the stewardship of the Department. Determining the "optimal" mix of habitats and Lake conditions is an ongoing concern for the Department, other agencies, and the public; the LEWA Management Plan that is the subject of this EIR is the current expression of the Department's goals and objectives.

Another area of controversy known to the Department concerns inundation of private property as a result of management of the lagoon water level. To the extent that inundation is an "environmental" impact or is associated with environmental impacts (i.e., within the meaning and intent of the CEQA Guidelines) it is addressed in this EIR. The EIR considers inundation effects on land use, roads and access, cultural resources, and public health (including wells, septic systems, and waste disposal sites). These effects, which occur not only on private property but on State lands as well, are addressed in EIR Chapter 5, where facts enable a reasoned assessment.

Resolution of such controversial matters will involve debate and decision-making beyond the scope of this EIR; however, this EIR provides environmental information, including identifying potential environmental consequences and possible mitigation measures that can be included in such discussions and decision-making.

In general, the Department identified the following topics as areas of environmental controversy that should be addressed in this EIR:

- *Biological Resources*: threatened and endangered species and critical habitat (tidewater goby, Oregon silver spot butterfly, coho salmon, cutthroat trout, brown pelican, snowy plover, peregrine falcon, and Aleutian Canada goose); migratory waterfowl; and wetlands and wetland-dependant species.
- *Hydrology and Water Quality*: management impacts to wetlands, wildlife, anadromous fish, land use, and water quality.

- *Public Health and Safety*: flooding effects on private land, public roads, drinking water wells, and septic systems; water quality contamination from adjacent landfills; mosquito populations.
- *Land Use*: effects of management options, including land transfers with the State Department of Parks and Recreation, and compatibility with uses on state and private property, including agriculture and recreational and urban land uses.
- *Transportation*: impacts from flooding, either natural or managed, on public roads, and emergency vehicle access.
- *Cultural Resources*: potential impacts on archeological sites in the Lake Earl area that may be affected by water levels and erosion.

S.4.2 Effects Found Not to be Environmentally Significant

Section 15128 of the CEQA Guidelines requires that an EIR contain a statement briefly indicating why various possible effects were found "not to be significant and were therefore not discussed in detail in the EIR." The CEQA Guidelines also generally encourage agencies to prepare EIRs that focus on issues and effects that are potentially significant and to minimize other discussions that are clearly less important.

The Department considered the potential significance of a variety of possible effects in developing the EIR, including considering the results derived from a number of public meetings in Del Norte County. Effects that were judged potentially significant were the focus of the EIR; other effects not identified as potential areas of impact or environmental controversy were all judged by the Department to fall below thresholds of environmental significance.[3] More specifically, the environmental subject areas that the Department found to be not significant in terms of LEWA management, and which, therefore, were not addressed in detail in this EIR, were effects related to:

- *Aesthetics*, including possibly substantial changes in visual quality or introduction of new sources of nighttime lighting or glare. The "project" does not propose any major new construction or new lighting that would reasonably be expected to significantly affect visual quality.
- *Air quality,* including possible violation of air quality standards due to project-related air emissions. The Department found no evident connection between LEWA management and significant air quality effects. Future increases in emissions due to increases in local traffic are possible over time, but such increases would not be exclusively or significantly connected to LEWA management.
- *Geology and soils*, including project-related components that would expose people to seismic hazards. The north coast is seismically active; however, the project does not propose new housing or other inhabited structures. Soil-related effects are discussed at an appropriate level in the context of possible erosion and agricultural productivity.
- *Hydrology*. The location of the LEWA within the basin means that changes in management within the LEWA are incapable of affecting hydrological processes in the basin that regulate lagoon filling. In addition, there is no evidence to indicate that management processes would affect the physical processes regulating breach closure by sand movement.

[3] The Department maintains extensive records of public comments and comments received from public agencies for the Lake Earl Wildlife Area. Interested persons may make appointments with Department staff (at 619 Second Street, Eureka; 707-445-6493) to review these records.

- *Hazardous materials*, including transport, disposal, or use of such materials, because they are not substantial components of the proposed action or substantial components of the affected environment. Landfill-related hazards are addressed within a project-related context.
- *Airport noise or safety hazards.* The project is not related to air traffic or airport land use planning in any evident way. The EIR does acknowledge the presence of the County Airport just north of Crescent City.
- *Risk of wildfires.* The project does not include any component in a location that to any reasonable extent has a relation to, or would increase the risk of, wildfire hazards.
- *Mineral resources.* The project is not related to the extraction, conservation, use, or restriction on use of mineral resources in any evident way.
- *Noise.* Management of the LEWA involves no substantial noise generation, nor are there any obvious offsite sources of substantial noise that would reasonably be expected to affect fish and wildlife or visitor-related activities significantly.
- *Population and housing.* Managing the LEWA does not include any potential for inducing substantial population growth.
- *Government services.* The Department's management of the LEWA cannot reasonably be linked directly or indirectly to any physical effects associated with new schools, parks, or other public facilities, nor is it likely to be associated with increased demand for fire or police services.
- *Utilities and services*, such as the need for new water or wastewater supplies or pipeline extensions, substantial new electric or gas service, or stormwater management improvements. Management of the LEWA does not include any meaningful increase in the demand for new utilities or services.

S.4.3 Summary of Effects Reduced to a Level of Insignificance

The assessments in Chapters 3, 4, and 5 of this EIR consider the potential effects of the considered alternatives and, where appropriate, identify mitigation measures that will reduce potential effects to levels that are consistent with findings that the mitigated effects are less-than-significant. With respect to the Preferred Alternative, the EIR has identified the following environmental concerns as capable of being reduced to levels of insignificance by identified mitigation measures:

- Water quality effects related to implementation of LEWA management tasks.
- Potential effects on sensitive species, including the tidewater goby, coho salmon, Oregon Silverspot Butterfly (OSB), and sensitive plant species and communities. Effects on the OSB resulting from the Low Level Breaching Alternative or the Natural Breaching Alternative would be significant but transitory. Appropriate mitigation measures will be developed during the consultation process with appropriate federal agencies.
- Effects on wetland areas or functions, or on beneficial uses, as a consequence of carrying out the implementation measures identified in the Management Plan.
- Land use plan compatibility, including compatibility with adjacent uses and consistency with adopted plans.
- Interference with adjacent land uses because of fluctuations in lagoon water surface elevations.
- Inundation of County roads at high lagoon water surface elevations.
- Inundation of water wells and septic systems at high lagoon water surface elevations.

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- Effects on cultural resources resulting from possible erosion, under the Preferred Alternative and the Low Level Breaching Alternative.

S.4.4 Significant Effects that Cannot Be Avoided

Section 15126.2(b) of the CEQA Guidelines requires that this EIR identify any effects of the proposed project that are both significant and unavoidable, including effects that can be mitigated, but not to a level that is less-than-significant.

The Department has identified no potentially significant effects of the Preferred Alternative that may not be reduced to a level of insignificance by identified mitigation measures and by implementation of the LEWA Management Plan itself.

S.4.5 Irreversible Changes

Section 15126.2(c) of the CEQA Guidelines requires that this EIR identify any significant irreversible changes in the environment that would occur should the proposed project be implemented. Irreversible commitments of resources include both direct and indirect effects that would be associated with the proposal and which would commit future residents and decision-makers to courses of action based on the current proposal.

The Department has concluded that the proposed Preferred Alternative is not associated with significant irreversible commitments of resources or changes in the environment. The Low Level Breaching Alternative would be associated with irreversible and significant losses of wetland area, and of habitat for wetland-associated wildlife.

The Natural Breaching Alternative would be associated with significant inundation-related effects, but these effects would be irreversible to the degree that this alternative remains in effect.

S.4.6 Summary of Cumulative Effects

Section 15130 of the Guidelines requires that this EIR identify cumulative impacts. The assessment of cumulative effects requires, for each category of effect, an analytical mechanism which allows the impacts of the project and other past, present, and reasonably foreseeable future projects to be jointly assessed. Such mechanisms are described in chapters 3, 4, and 5 for each category of impact discussed in this report, and cumulative effects were included in the assessments of each topic considered in this EIR.

Several effects considered in this EIR appear to indicate that management of Lake Earl and Lake Tolowa as proposed may have a potential for participating in environmentally significant cumulative effects.

- Qualitatively, it is likely that cumulative effects on sensitive wildlife and plant species, or their habitats, have occurred, resulting from residential and other kinds of development in the watershed, timber management activities, and the general erodibility of the landscape in this part of California. All alternatives considered by the Department are considered to have the potential to participate in this effect.
- Qualitatively, it is likely that cumulative effects have occurred for population numbers, range distributions, and habitat quality for water-related birds addressed in this EIR, resulting from

human modifications of the landscape in all parts of the ranges of these species. The Low Level Breaching Alternative, if implemented, would contribute to this significant effect; it does not appear that the other alternatives would participate in this effect.

- Should the Department elect to implement the Low Level Breaching Alternative, it would participate in an environmentally significant cumulative loss of wetlands; it does not appear that the other alternatives would participate in this effect.
- Should the Department elect to implement the Natural Breaching Alternative, it would participate in the cumulative loss of cultural resources.

S.4.7 Growth Inducement

Section 15126.2(d) of the CEQA Guidelines requires that this EIR evaluate potential growth-inducing aspects of the proposed project. These are identified as aspects fostering economic or population growth, either directly or indirectly, by removing obstacles to population growth, or by encouraging and facilitating other activities that could have adverse environmental effects.

The land use planning context of the Lake Earl Wildlife Area is addressed in section 5.1 of this EIR. There are no elements of the Lake Earl Wildlife Area management program that are considered by the Department to be growth-inducing.

S.4.8 Environmentally Superior Alternative

Section 15126.6(e)(2) of the Guidelines includes the following text: "If the environmentally superior alternative is the 'no project' alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives." Inferentially the EIR is thus required to identify an "environmentally superior alternative" from among the proposed action alternatives, if one of those is environmentally superior.

Among the other alternatives considered in this EIR, there is a range of potential environmental effects. Determining which alternative is "environmentally superior" requires a judgment based on all components and effects of each alternative.

The Department finds that the "no project" alternative is not the environmentally superior alternative because it does not include the improvements of visitor-serving facilities and habitat enhancement actions that are included in the other alternatives considered.

The Department finds that neither the Low Level Breaching Alternative nor the Natural Breaching Alternative is the environmentally superior project. Implementing the Low Level Breaching Alternative might be expected to reduce inundation and associated adverse environmental effects on land use and public health and safety; however, it would contribute to significant losses of wetland and to habitats required by species under the Department's stewardship, including those identified as sensitive or special-status species. At the highest end of the lagoon water surface elevation range, the Natural Breaching Alternative would result in more acres of wetland habitat and generally improved conditions for species under the Department's stewardship; however, the adverse environmental effects associated with land surface inundation (on land use, cultural resources, and public health and safety) are significant and to a great extent unmitigable.

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The Department finds that, because it represents a balance between adverse effects on resources under the Department's trusteeship and adverse effects on other land uses in the lagoon vicinity, the Preferred Alternative is the environmentally superior alternative.

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U.S. Fish & Wildlife Service

Draft Recovery Plan for the Tidewater Goby

(Eucyclogobius newberryi)

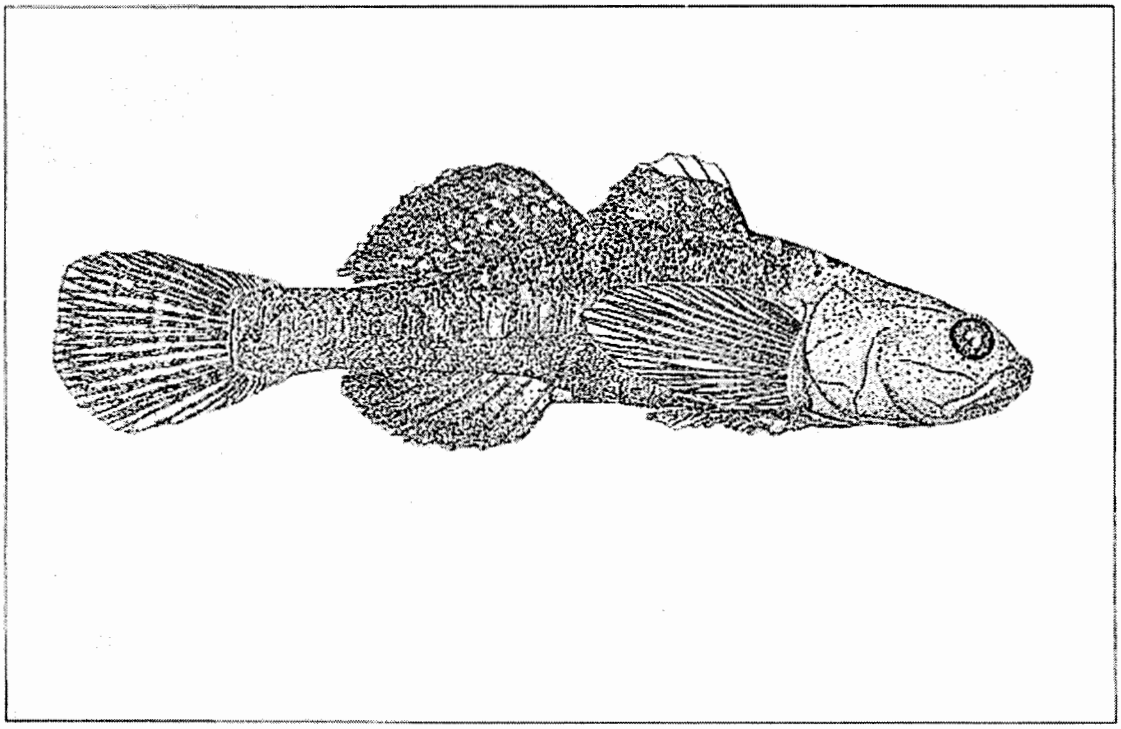


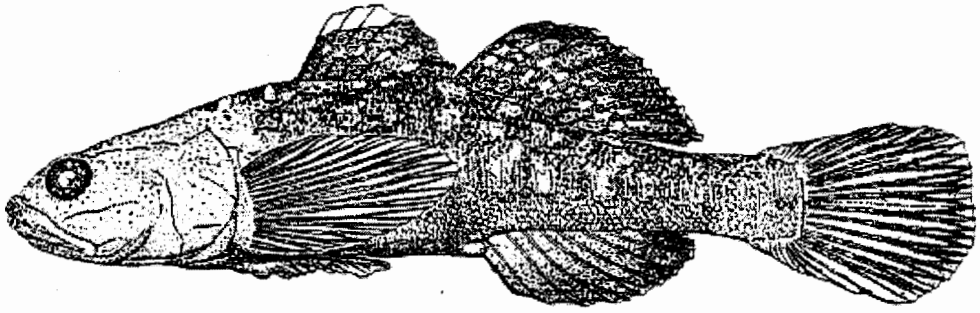
EXHIBIT NO. **11**

APPLICATION NO.
1-00-057
EXCERPTS, *DRAFT RECOVERY PLAN FOR THE TIDEWATER GOBY (EUCYCLOGLOBIUS NEWBERRI)* (U.S. FISH & WILDLIFE SERVICE, (OCT. 2004) (1 of 10)

Draft Recovery Plan
For the
Tidewater Goby

(*Eucyclogobius newberryi*)

(October 2004)



Pacific Region
U. S. Fish and Wildlife Service
Portland, Oregon

Approved: XXXXXXXXXXXXXXXXXXXXXXXXXXXXX
Manager, California/Nevada Operations Office
Region 1, U.S. Fish and Wildlife Service

Date: _____

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Appendix C. Status of Recovery Sub-Units

This list of 149 localities is current to June 2004; all are represented on Figures B-1 to B-21 in Appendix B. This list includes 124 locations where tidewater gobies either occur or are known historically to have occurred, and 23 locations where tidewater gobies are not known to occur, but could potentially be introduced. More detailed original data are in Swift *et al.* (1989); additional data are given for new localities, or those that have changed. The localities are organized geographically in order from north to south, and are grouped by unit and Sub-Unit (*e.g.*, North Coast Unit, Sub-Unit NC 1). County names are included with the Sub-Unit headings and, as necessary, with specific localities. The localities are separated by distinctly marine habitats, usually open coastline of the Pacific Ocean or lower San Francisco Bay. Closely located tributaries in more estuarine situations, such as within Humboldt Bay, are treated as one locality. For each locality, we present the following information: 1) The surface area of the body of water, based on estimates from topographic sheets and notes taken during visits over the last 25 years, and based on a relatively high water mark at or near the maximum surface area within the relatively steep shores typical of the upper two-thirds or more of the lagoons at most localities, 2) land ownership, 3) the most recent year (for locations where tidewater gobies are known to occur) when tidewater gobies were collected or observed to be present or absent, and 4) water quality description, based upon the State Water Resources Control Board's 2002 Clean Water Act Section 303(d) List of Water Quality Limited Segments.

NORTH COAST UNIT

Sub-Unit NC1 (Del Norte County)

Tillas Slough - The available tidewater goby habitat encompasses approximately 2 to 3 hectares (5 to 7.5 acres) minimum, but there may be as much as 200 hectares (500 acres) of habitat in the Smith River estuary. All land adjacent to Tillas Slough is privately owned. Tidewater gobies were collected in 1996 (C. Chamberlain, graduate student, Humboldt State University, pers. comm., 1996), and the species was considered common here in 1988. Tidewater gobies were collected in October 1999 by C. Swift (February 2000 recovery permit report). Tidewater gobies were not found there during a 2003 survey by G. Goldsmith. Threats at this site include pollution from pasture runoff, and disturbance/modification of drainage pattern. The area supporting tidewater gobies is small, and immediately down channel from a metal culvert crossing a trail/road with access to people staying at nearby lodging. Although connected to the Smith River estuary, this site is the only recorded location of tidewater gobies in the Smith River watershed. Tidewater gobies appear to be associated with the structure near the culvert, which has included a large root wad. The population is vulnerable to any catastrophic event in this small area that would alter water quality, stream flow regime, or connectivity to other habitats. An event such as dredging or filling the area, chemical spills, stream channelization could quickly extirpate the population. Tillas Slough and the Smith River estuary are not designated as "Water Quality Limited" by the State Water Resources Control Board.

Lake Earl/Lake Talawa - Lake Earl and Lake Talawa constitute two connected coastal lagoons that range in size from several hundred to a few thousand acres depending on the season, time

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since breaching, and current water level. Much of this lagoon is within the Lake Earl Wildlife Area, managed by the California Department of Fish and Game, and a California State Parks. This site is also adjacent to Pacific Shores Association land development. Tidewater gobies are always present, possibly in the millions (C. Chamberlain, pers. comm. 1999). Tidewater gobies were collected during extensive surveys in 1999 by C. Page and in October 1999 by C. Swift (February 2000 recovery permit report). Gobies were also collected by G. Goldsmith and California Department of Fish and Game personnel in February 2002 and March 2003. Threats include artificial breaching of Lake Talawa, causing a rapid emptying of the lagoon which transports many thousands of gobies into the Pacific Ocean. Stranding of tidewater gobies within Lake Talawa and Lake Earl is well documented after breach events, as well as the presence of gobies at the breach site immediately prior to breaching. Despite annual breaching for several years, the population of gobies has recovered and persisted in these lagoons in large numbers. Lake Earl and Lake Talawa are not designated as "Water Quality Limited" by the State Water Resources Control Board.

Elk Creek - The available tidewater goby habitat encompasses approximately 0.4 hectare (1.0 acre). Elk Creek empties into Crescent City Harbor. This locality is entirely encompassed by private land. There are no historic tidewater goby records for this locality, which is a potential introduction site. Tidewater gobies were supposedly found by a Caltrans biologist; however, this account is undated and unsubstantiated. C. Page surveyed the site in May of 1999 with no detections. Tidewater gobies were not found during surveys in 2003 by G. Goldsmith. Threats include sedimentation from upstream development and local channelization and culverting. Elk Creek is not designated as "Water Quality Limited" by the State Water Resources Control Board.

Sub-Unit NC2 (Humboldt County)

Redwood Creek Estuary, North Slough - The available tidewater goby habitat encompasses 1.0 to 4.0 hectares (2.5 to 10 acres). The site is managed by Redwood National and State Parks and private landowners. Tidewater gobies were collected February to December 1980 by T. Salamunovich (M.S. thesis, Humboldt State University). Collected specimens were deposited at Natural History Museum of Los Angeles County (LACM). Tidewater gobies have not been detected since 1980. Gobies were not found here in 1996 (D. Anderson, pers. comm. 2004), or in 1997 or 1998 (C. Chamberlain, pers. comm. 1998). Tidewater gobies are assumed extirpated here due to anoxic conditions in prior habitat, following a thorough search by D. Anderson that yielded no detections. Threats include channelization of Redwood Creek, separation of North Slough from main channel, and severe alteration of natural flood flow regime in slough and channel immediate upstream of slough. Redwood Creek is designated as "Water Quality Limited" by State Water Resources Control Board. Pollutants and stressors and their respective potential sources (in parentheses) include sedimentation/siltation (range grazing, silviculture, restoration, residue management, logging road construction/maintenance, land development, removal of riparian* vegetation, streambank modification/destabilization, erosion/siltation, natural sources) and temperature (logging road construction/maintenance, removal of riparian vegetation, streambank modification/destabilization, erosion/siltation, natural sources, nonpoint source).

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Non-Point Source Pollution
AG = Agricultural run-off or effluent
MR = Municipal run-off
OL = Oil contamination, oil fields in vicinity of habitat
GC = Golf course run-off
CO = Vehicular or railroad contamination
RA = recreational activity in or in vicinity of lagoon

Point Source Pollution
ST = Sewage treatment effluent
OL = Oil contamination, oil fields in vicinity of habitat
TW = Toxic waste

Habitat Degradation
BR = Breaching
DV = Development encroaching on habitat
CH = Stream channelization
GR = Cattle grazing
WD = Water diversions/groundwater pumping
SR = Salinity regime affected: dikes, levees, dams, *etc.*
RH = Reduction or modification of habitat
ER = Soil erosion in vicinity of habitat, sedimentation of habitat
RA = Recreational activity in or in vicinity of lagoon
CL = Complete loss of habitat

Predators-Competitors
NP = Native Predators
FI = Exotic fish species
FR = Exotic frog species

Recovery Unit	Sub-Unit	Site Code	Locality	Location Status[1]						Known and Potential Threats																						
				Habitat Size	Population Density	Presence	Source of population	Approximate Distance from Nearest Extant Population (miles)	Habitat Restoration Needed	Non-Point Source Pollution						Point Source Pollution			Habitat Degradation											Predators-competitors		
										AG	MR	OL	GC	CO	RA	ST	OL	FW	BR	DV	CH	GR	WD	SR	RH	FR	RA	CL	NP	FI	FR
NORTH COAST UNIT	NC1	a	Tillas Slough (South River)	Small	Variable	Intermittent	Historic	8	Some	●											●	●	●	●					●		
		b	Lake Earl-Lake Talawa	Large	Abundant	Regular	Historic	8	Some	*									●	*		*		●	*		●		●	*	●
		c	Elk Creek[2]	Medium	-	-	-	10	Some																							
	NC2	a	Redwood Creek Estuary	Medium	-	Extirpated	Historic	3	Much	*									*		●	●		●	●			●	●		*
		b	Freshwater Lagoon	Large	-	Extirpated	Historic	2	Much	NT														●	●		*		●	*	*
		c	Stone Lagoon	Large	Abundant	Regular	Historic	2	None																		*		●	*	*
		d	Big Lagoon	Large	Abundant	Regular	Historic	2	None																				●	*	*
	NC3	a	Mad River[2]	Large	-	-	-	20	Some																							
		b	Mad River Slough	Medium	Rare	Intermittent	Historic	3	Some	*													●	*					●		*
		c	Klopp Lake (McDaniel)	Medium	Rare	Intermittent	Recolonized	0.5	Some							*							*	*				●			
		d	Jacoby Creek	Small	Variable	Intermittent	Historic	0.5	Some	*											●			●					●	*	*
		e	KATA Station Site	Small	Rare	Intermittent	Historic	0.5	Some		*													*	*				*		*
		f	Freshwater Slough	Medium	-	Intermittent	Historic	6	Some	*													●		●	●			●		
		g	Eel River	Large	Rare	Regular	Historic	20	Some																							
	NC4	a	Ten Mile River	Large	Abundant	Regular	Historic	6	None																					●		*
	NC5	a	Virgin Creek	Medium	Abundant	Regular	Historic	1	None		*									●										●		*
		b	Pudding Creek	Medium	Abundant	Regular	Historic	1	Much											*			*	●	●		*			●		*
	NC6	a	Davis Pond	Medium	-	-	-	1	Some																							
		b	Brush Creek	Medium	-	-	Historic	1	None										●				*								●	
		c	Lagoon Creek	Medium	-	-	Historic	1	None										●				*								●	
GREATER BAY UNIT	GB1	a	Marshall Gulch[2]	Small	-	-	-	2	Some																						●	
		b	Salmon Creek	Medium	Abundant	Regular	Historic	12	Some						●				●			●	●			●			●		
	GB2	a	Johnson Gulch[2]	Small	-	-	-	9	Some																							
		b	Cheney Gulch	Small	-	Extirpated	Historic	9	Some	NT					●																	
		c	Estero Americano	Large	Variable	Regular	Historic	15	Some	●						*						●	*	●						●		
		d	Estero de San Antonio	Large	Abundant	Regular	Historic	15	Some	●						●			●			●	●			●				●	●	
		e	Walker Creek	Large	-	Extirpated	Historic	8	Some	NT										●			■							●	●	
	GB3	a	Lagunitas Creek	Medium	Rare	Regular	Historic	16	Much	●	*									●	●		●							●	●	
		b	Millerton[2]	Small	-	-	-	14	Some																							
		c	Fish Hatchery Creek[2]	Small	-	-	-	0.75	Some																							
	GB4	a	Horseshoe Cove[2]	Large	-	-	-	30	Some																							
		b	Estero de Limantour[2]	Large	-	-	-	29	Some																							
		c	Bolinas Lagoon[2]	Large	-	-	-	10	Some																							
		d	Rodeo Lagoon	Medium	Abundant	Regular	Historic	43	Some	*		*												●				●	●		
		e	Corte Madera Creek	Medium	-	Extirpated	Historic	15	Much	NT										●			●									
		f	Mill Creek[2]	Medium	-	-	-	10	Much											●			●									
		g	Novato Creek	Medium	-	Extirpated	Historic	30	Much	NT										●			●									
		h	Petaluma Creek	Large	-	Extirpated	Historic	30	Much	NT										●			●									
		i	Strawberry Creek	Small	-	Extirpated	Historic	14	Much											●			●					●				
		j	Lake Merrit	Large	-	Extirpated	-	18	Much											●			●									
		k	Cliff House	NA	-	Extirpated	Historic	5	Much																			●				
		l	Lake Merced	Large	-	Extirpated	-	11	Much	NT													●							●		
		m	Laguna Salada[2]	Medium	-	-	-	18	Some																							
		n	San Pedro Creek[2]	Small	-	-	-	20	Some																							
	GB5	a	San Gregorio Creek	Medium	Abundant	Regular	Historic	4	None										●		●						*		●			
		b	Pompino Creek[2]	Medium	-	-	-	2	Some																							
		c	Pescadero-Butano Creek	Medium	Variable	Intermittent	Historic	4	Much	●									●	●	●				*							
		d	Bean Hollow Creek	Small	Variable	Intermittent	Historic	4	Much					*								●	●	●								
	GB6	a	Waddell Creek	Medium	-	Extirpated	Historic	5	Some	●					●						●								●	●		
		b	Scott Creek	Medium	Variable	Intermittent	Recolonized	6	Some	●											●		*						●			
		c	Laguna Creek	Small	Abundant	Regular	Historic	3	Some	●	NT												●						●			
	GB7	a	Baldwin Creek	Small	Abundant	Regular	Historic	0.7	Some	●													●									
		b	Lombardi Creek	Small	Rare	Intermittent	Historic	0.7	Some	●																						
		c	Old Dairy Creek	Small	Rare	Intermittent	Historic	0.8	Some	●																						

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because males in lab studies preferred to dig spawning burrows in sand rather than mud. Although lagoons are considered the typical habitat of tidewater gobies, brackish marshes can also be important, perhaps due to better food resources or reduced disturbance regimes. Marshes may serve as refugia, providing a source population for recolonization of the creek and lagoon habitats after high-flow events.

Developing monitoring programs to assess abundance patterns can be difficult because tidewater gobies can be patchily distributed within habitats.

2.1 Legal Status

On March 7, 1994, we listed the tidewater goby as endangered throughout its range under the Act (U.S. Fish and Wildlife Service 1994). We designated critical habitat on November 20, 2000, for the southern California populations (U.S. Fish and Wildlife Service 2000). On June 24, 1999, we published a proposed rule to remove the northern populations of the tidewater goby from the endangered species list (U.S. Fish and Wildlife Service 1999). The proposed rule to delist was withdrawn on November 7, 2002 (U.S. Fish and Wildlife Service 2002), following significant public and species expert comments. Therefore, the current status of the species remains listed as endangered throughout its range, and critical habitat remains as designated in 2000. A recovery plan is in development.

The tidewater goby was listed as a species of special concern by the California Department of Fish and Game in 1980, and was elevated to fully protected status in 1987 (Swift *et al.* 1997).

2.3 Methods Applied to Prior Surveys

This section provides a brief summary of survey methods used in the past, their success, and the recommendations for improvement by those who used them. This information is provided to assist the reader in understanding the effectiveness of those methods, and the relative efficiency of each. In addition, this information assists the reader in understanding why we recommend the methods in the protocol, described later in this document, rather than other methods that to the uninitiated might seem better or more cost effective. We believe that this information adequately supports our proposed protocol, thus promoting consistency among all surveyors. However, any and all methods proposed to conduct surveys for tidewater goby should receive our consideration, as appropriate.

Tidewater goby abundance and distribution can be affected by habitat characteristics such as vegetation, substrate and depth (Swift *et al.* 1989, Worcester 1992, Swenson 1995). These factors can also influence the efficiency of sampling methods. Tidewater gobies have been successfully collected with both seines (Swift *et al.* 1989, Swenson 1995) and meter-square throw traps (Worcester 1992, Swenson 1995). Other reported methods include dip nets, minnow traps, ichthyoplankton net, snorkeling/direct observation, and plastic tubes. Each is described in more detail below.

2.3.1 Seine Netting

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Appendix G. Description of Recovery Units and Sub-Units

The six Recovery Units and 26 Sub-Units are described below. Information reviewed includes each Recovery Unit's and Sub-Units distinguishing phylogeographical features, location, geological characterization, and tidewater goby morphological descriptions. Primary recovery tasks are also described for each location. In some cases, where data and research are lacking, descriptions are brief or incomplete. Table G-1, provided below, lists source populations for potential tidewater goby reintroduction and introduction sites.

North Coast Unit (NC)

This Recovery Unit extends from Smith River near the Oregon border to the southern end of Mendocino County. It has the greatest geographic extent along the coast (approximately 150 miles) of any of the proposed recovery units. This unit forms a discrete clade in phylogeographic analysis (Dawson *et al.* 2001) and is also differentiated from other units in that all fish observed have complete supraorbital canal structures (D. Jacobs pers comm. 2004). South of Mendocino County for approximately 70 miles to Salmon Creek the coast is rocky and steep, and there appear to be few of the small estuarine habitats preferred by tidewater gobies. No tidewater gobies have been captured or detected within the estuaries, lagoons, and river mouths along this stretch of coast, further supporting our assumption that it is a significant barrier to tidewater goby dispersal.

Only a limited number of mitochondrial sequences have been generated from within the North Coast Recovery Unit. These data alone are insufficient to define Sub-Units in the region. Therefore, Sub-Units are based on distance between sites and on coastal geomorphology, where differential dispersal over sand and rock, as observed elsewhere (Dawson *et al.* 2001; Barlow 2002; Lafferty *et al.* 1999) and discussed above, comes into play.

Sub-Units

The **NC1** Sub-Unit is delineated by the extent of the Holocene alluvial surface along the coast in the Region of Smith River and Lake Earl/Talawa. This stretch of coast is characterized by low-lying sandy shores. Lake Earl, a large dune-dammed lagoon, likely sustains the largest tidewater goby population in the species range. However, Lake Earl is a single locale and is subject to breaching, which affects the population. In addition, the only other known habitat in the area in Tillas Slough of the Smith River has been difficult to collect at times, implying scarcity or intermittency of this population. Given the proximity and soft substrate, it is unlikely that these sites are genetically distinct except perhaps for potential loss of genetic variation in Tillas Slough due to bottlenecks or recolonization. Tidewater gobies are not known from the steeper coast extending 30 miles to the south, suggesting that these populations are genetically isolated from the next Sub-Unit to the south. Thus, there is reason to be concerned given the presence of only two populations. It is possible that locations in the Smith River Estuary other than Tillas Slough might make viable tidewater goby habitat or that fish could be transplanted to Elk Creek or other small drainages just to the south on contiguous coastal lowlands.

Primary tasks recommended for recovery:

1) Monitor
2) Establish degree of genetic isolation of the Sub-Unit.
3) Confirm that Lake Earl is the source of genetic variation in the region.
4) Transplant Tillas Slough with tidewater gobies from Lake Earl after 3 years of recorded absence.
5) Establish populations in Elk Creek.

The **NC2** Sub-Unit consists of four occupied tidewater goby localities along approximately 15 miles of low-lying coast associated with Holocene alluvium. This region, extending north of Patrick's Point, is isolated from other regions by steep coasts. NC2 is primarily defined on the basis of the natural extent of the species range and geomorphology. The northernmost site, Redwood Creek estuary, is a seasonally breached freshwater estuary with sloughs. The other three sites are large open lagoons. Tidewater gobies have often proved difficult to locate in Redwood Creek estuary. One lagoon (Freshwater Lagoon) has high populations of introduced predators (centrarchids) and populations of tidewater gobies have not been observed there in over 50 years. The other two lagoons (Stone Lagoon, Big Lagoon) have a more continuous population history although frequency of sampling has been limited.

Primary tasks recommended for recovery:
1) Monitor
2) Establish degree of genetic isolation of the Sub-Unit.
3) Confirm that Stone and Big Lagoons are the most genetically variable potential source populations in the region.
4) Restore and transplant Redwood Creek estuary with tidewater gobies from Stone Lagoon after 3 years of recorded absence (Table G-1).

The **NC 3** Sub-Unit consists of a region of sandy coast and coastal Holocene alluvium about 25 miles in length from the mouth of the Mad River in the north across Arcata /Humboldt Bay to the Eel River to the south. Again, this Sub-Unit is defined largely by the isolation of this sandy shoreline limited by rocky shores to the north and south. Tidewater gobies have been recovered from the margin of Arcata/Humboldt Bay. Here they occupy high marsh channels. In the case of the Mad River Slough (not the Mad River proper) the habitat appears to be a long abandoned tide-gated irrigation channel marginal to the Slough, which in turn empties into Arcata Bay. This elevated habitat appears to be isolated from tidal action except perhaps during spring tides. This site is atypical in that it is not in a typical seasonally closed coastal setting (although the population in Lagunitas Creek that debouches into Tomales Bay and extirpated populations around San Francisco Bay may represent similar bay margin habitats). It seems likely that geomorphologic modification of this region may have led to less seasonally closed habitat over time. Dredging and jetties may also serve to maintain the open condition of Arcata Bay. Agricultural and transportation activity have also greatly modified the bay margins, likely eliminating tidewater goby habitat.

The Mad River Slough is the only location where collections have been predictably successful in recent years. This habitat is small and potentially subject to further modification. Tidewater gobies have also recently been reported from southern Arcata Bay in Jacoby Creek, KATA Station, and Freshwater Slough, all of which are similar small habitat. Nevertheless, the status of the tidewater goby in the NC3 region seems particularly precarious. Thus, a proactive effort to

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Table G-1. Tidewater Goby Reintroduction Sites

Recovery Unit	Sub-Unit	Site Code	Recipient population*	Source population(s) if restorable	Years to wait from extirpation to re-introduction**
NORTH COAST UNIT	NC1	a	Tillas Slough (Smith River)	NC1b	3
		b	Lake Earl-Lake Talawa	NC1a	3
		c	Elk Creek	NC1b	0/3
	NC2	a	Redwood Creek estuary	NC2b, c	3
		b	Freshwater Lagoon	NC2c	3
		c	Stone Lagoon	NC2d	3
		d	Big Lagoon	NC2c	3
	NC3	a	Mad River	NC3a	0/2
		b	Mad River Slough	NC3c-g	2
		c	Klopp Lake	NC3b	0/2
		d	Jacoby Creek	NC3b	0/2
		e	KATA Station Site	NC3f	0/2
		f	Freshwater Slough	NC3b	2
		g	Eel River	NC3b,f	0/2
	NC4	a	Ten Mile River	NC5a	5
	NC5	a	Virgin Creek	NC5b	2
		b	Pudding Creek	NC5a	0/2
	NC6	a	Davis Pond	NC6b	2
		b	Brush Creek	NC6c	2
		c	Lagoon Creek	NC6b	2
GREATER BAY UNIT	GB1	a	Marshall Gulch	GB1b	2
		b	Salmon Creek	GB1a	3
	GB2	a	Johnson Gulch	GB2c	0/2
		b	Cheney Gulch	GB2c	0/2
		c	Estero Americano	GB2d	4
		d	Estero de San Antonio	GB2c	4
		e	Walker Creek	GB2d	0/2
	GB3	a	Lagunitas Creek	GB3b,c	3
		b	Millerton	GB3a	0/2
		c	Fish Hatchery Creek	GB3a	0/2
	GB4	a	Horseshoe Lagoon	GB4d	0/3
		b	Estero de Limantour	GB4d	0/3
		c	Bolinas Lagoon	GB4a	0/3
		d	Rodeo Lagoon	GB4d	4
		e	Corte Madera Creek	GB4d	0/2
		f	Mill Creek	GB4d	0/2
		g	Novato Creek	GB4d	0/2
		h	Petaluma Creek	GB4d	0/2
		i	Strawberry Creek	GB4d	0/2
		j	Lake Merrit	GB4d	0/2
		k	Cliff House/Golden Gate Park	GB4d	0/2

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

Colonel Philip T. Feir
District Engineer
U.S. Army Corps of Engineers
San Francisco District, Regulatory Branch
333 Market Street
San Francisco, California 94105-2197

Subject: Public Notice No. 27850N, Lake Earl Breaching, Del Norte County, California

Dear Colonel Feir:

We have reviewed the subject public notice regarding an application for a Department of Army permit to breach the Lake Earl and Lake Talawa lagoon. The applicants are the County of Del Norte (County) and the California Department of Fish and Game (CDFG). These public agencies have applied for a ten-year permit for breaching the lagoon under Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act.

We are submitting these comments under the authority of, and in accordance with, the provisions of the Federal Guidelines (40 CFR 230) promulgated under Section 404(b)(1) of the Clean Water Act. Our comments are based on the information in the subject public notice of October 27, 2004, and on our involvement, since 1987, in the management of the Lake Earl and Lake Talawa lagoon water levels.

The Lake Earl/Talawa lagoon complex is located near Crescent City, California. It is the largest estuarine lagoon in California and supports some 4,950 acres of wetlands and related habitats. Water levels in the lagoon have been actively managed for more than seventy years. During the past decade, the County and CDFG have jointly managed water levels in a manner to prevent unnecessary inundation of roads, drinking water wells, and other facilities and properties, while optimizing habitat values for fish and wildlife resources and their habitats.

Recently, CDFG developed the Lake Earl Wildlife Area Management Plan. In July 2004, CDFG released the Final Environmental Impact Report that evaluated, under the California Environmental Quality Act, the environmental impacts of implementing the Management Plan. Through the processes of developing the Management Plan and the Environmental Impact Report, CDFG evaluated several alternatives for managing lagoon water levels. The preferred alternative is the one for which the applicants are currently seeking the Department of the Army authorization. Under this alternative, water levels in the lagoon would be managed the same way they have been since the early-1990s.

Based on the available information, we believe the proposed project represents the Least Environmentally Damaging Practicable Alternative as defined in the Section 404(b)(1) Guidelines. We also believe the project is in accordance with all other relevant parts of the Guidelines. Accordingly, we do not object to issuance of a Department of the Army permit for the proposed breaching.

We appreciate the opportunity to comment on this public notice. If you have questions regarding our comments or would like to discuss this matter, please contact me at (415) 972-3464 or Michael Monroe of my staff at (415) 972-3453.

Sincerely,

Thomas X. Gibson for TV

Tim Vendlinski, Supervisor
Wetlands Regulatory Office

cc: Karen Kovacs, CDFG, Eureka
Katherine Kuhlman, North Coast Regional Water Board, Santa Rosa
Mike Long, USFWS, Arcata
Bob Merrill, California Coastal Commission, Eureka
Jim Simondet, NOAA Fisheries, Arcata

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California Regional Water Quality Control Board

North Coast Region

William R. Massey, Chairman

Winston H. Hickox
Secretary for Environmental Protection

Gray Davis
Governor

Internet Address: http://www.swrcb.ca.gov/rwqcb1/
5550 Skylane Boulevard, Suite A, Santa Rosa, California 95403
Phone 1-877-721-9203 Office (707) 576-2220 FAX (707) 523-0135

September 2, 2003

Karen Kovacks
California Department of Fish and Game
619 Second Street
Eureka, CA 95501

Dear Ms. Kovacks:

Subject: Draft EIR Lake Earl Management Plan; SCH No. 1989013110

File: CDFG – Lake Earl

I reviewed the subject EIR and have the following comments. My comments address water quality issues only.

Lake Earl Water Quality – Water quality constituents described in the EIR include temperature, pH, dissolved oxygen, and salinity. These constituents fluctuate widely for a variety of reasons such as: from winter to summer, before a rain and after a rain, from top to bottom of the lake, various locations in the lake, and before a breach and after a breach. They probably also fluctuate widely from year to year, depending on climatic conditions; however, water quality data are available for only a short period time.

The EIR states that the data does not indicate any biologically or physically important difference in the water quality parameters among breaching events and that none should be expected. Further, that there is no indication that water quality changes would be different if the lake were breached naturally or mechanically. I cannot comment on these statements due to the paucity of data needed to make the comparison.

3.1.1 There is no evidence that any lake level up to ten feet causes failure of on-site sewage disposal systems, contamination of drinking water wells, or leaching of pollutants from the old Fort Dick burn dump or the active Del Norte County landfill. Allowing the lake level to rise to twelve or fourteen feet certainly increases the risk of lake contamination from these sources. I support mechanical breaching of the lake, and I do not believe that water quality impacts would be significantly different if it is breached at 4 to 6 feet or 8 to 10 feet.

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3.1.2 Lake Earl Water Quality Objectives – The Water Quality Control Plan for the North Coast Region (Basin Plan) establishes water quality objectives for Lake Earl and Lake Talawa for dissolved oxygen and pH. These water quality objectives are not met fairly frequently due to fluctuating conditions described above. Breaching the lake is one factor that could cause a violation of water quality objectives. I cannot determine if lesser water quality violations would result more frequently from different breaching elevations.

3.1.3 Lake Earl Beneficial Uses – Beneficial uses of Lake Earl and Lake Talawa are established in the Basin Plan and are discussed in the EIR. They include contact and noncontact water recreation, commercial and sport fishing, warm freshwater habitat, wildlife habitat, migration of aquatic organisms, estuarine habitat, and aquaculture. The EIR states that none of the beneficial uses would be impaired by breaching the lake at any level. Obviously, that there would be less water and smaller surface area of the lakes at lower breach elevations. This would result in less water and less surface area for habitat and recreation. Thus, beneficial uses would be reduced if the lake were breached at a lower elevation than at a higher elevation.

3.1.4 Ocean Water Quality – The Regional Water Board's concern early in the enviornmental review process was that Lake Earl and Lake Talawa may have high bacterial concentrations from wildlife or human sources that would impact the Pacific Ocean during a breach. Bacterial sampling of Lake Earl, Lake Talawa, and the Pacific Ocean at the breach site was required by the Regional Water Board as a condition of water quality certification permits issued during the past three breaching seasons. Bacterial concentrations were high in the lakes during the January/February 2001 breach but were low during the December 2001 and March 2003 breaches. The sampling data indicate that breaching the lake does not cause adverse impacts to the Pacific Ocean. The EIR should address this water quality issue.

3.1.5 Conclusion – It appears as though adverse water quality impacts are minimized by mechanical breaching as opposed to natural breaching. Beneficial uses of the lakes are maximized by breaching at the 8 to 10 feet elevation.

Thank you for the opportunity to comment. If you have any questions about these comments or wish clarification, please call me at 707-576-2701.

Sincerely,

Thomas B. Dunbar
Senior Water Resource Control Engineer

TBD:js/LEWA_EIR

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United States Department of the Interior

FISH AND WILDLIFE SERVICE
Arcata Fish and Wildlife Office
1655 Heindon Road
Arcata, CA 95521
(707) 822-7201
FAX (707) 822-8411

In Reply Refer To: 1-14-03-1985

September 5, 2003

Karen Kovacs
California Department of Fish and Game
619 2nd Street
Eureka, California 95501

Subject: Review and Comment on the Lake Earl Wildlife Area Management Plan and Environmental Impact Report

Dear Ms. Kovacs:

We appreciate the opportunity to review and comment on the California Department of Fish and Game's (Department) Lake Earl Wildlife Area Management Plan and accompanying Environmental Impact Report (EIR). We have supported the Department's past efforts to manage the lagoon's water levels to benefit biological resources, and continue to provide that support. The Management Plan would provide thoughtful direction to management of the area, and would be a vast improvement over the emergency permitting process that has driven management over the past many years. Our comments will focus on aspects of the Management Plan that could be modified to increase benefits to fish and wildlife resources. However, we acknowledge the difficult regulatory and social issues facing the Department. As a result, we respectively provide the following comments to document issues we raised during our meeting with you on September 2, 2002, concerning the subject proposal and alternatives.

Water Management

Maximum Lagoon Level (Winter)

The U.S. Fish and Wildlife Service (Service) believes that fish and wildlife resources in and around Lake Earl and Lake Tolowa (hereafter referred to as lagoons) would benefit most from a natural breach regime; we recommend this regime be the Department's ultimate goal. With that in mind, we believe the development of the Lake Earl Management Plan is a good first step in achieving that long-term goal.

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The Department's proposal is to breach the lagoons when the water level reaches 8 feet above mean sea level. Both the Management Plan and EIR state that breaching at 9 feet, or above, would be rare. Our review of the Department's breach data for the most recent 15-year period indicates that the majority of the breaches occurred above 9 feet. Consequently, we are concerned that an 8-foot breach level would reduce the area of aquatic and emergent/moist soil wetlands compared to the area of such habitats supported by the 9-feet plus breaching regime that has been the norm in the recent past.

We believe that maximizing the lagoon elevation over a longer period of time, contributes towards an elevated groundwater table. An elevated groundwater table supports established and developing wetlands, and also influences the distribution of species such as the early blue violet (*Viola adunca*) which utilizes moist soils at higher shoreline elevations. Long-term management of lagoon levels at or near 8 feet above mean sea level would cause plant communities which have developed and adaped under the past 9 to 9.5 feet breaching regime to retreat.

We believe that the difference between managing the lagoons at an 8-foot level, as compared to 9 feet, is significant. A 1-foot difference in water elevation at higher water elevations significantly affects the surface area and volume of the lagoons, as well as the moist soil area surrounding the lagoons (refer to EIR Appendix B, Figure 1). This 1-foot difference between a lagoon level of 8 and 9 feet accounts for an estimated 375 acre-feet of water. This amount of freshwater contributes towards desirable water quality by reducing salinity and water temperature. Although temporary, the additional aquatic habitat at the 9 feet level produces foraging habitat that would not otherwise be available for fishes. Shallow water species, such as the Federally endangered tidewater goby (*Eucyclogobius newberryi*), would benefit from the flooding of areas around the lagoons. Certain shorebirds and waterfowl, especially dabbling ducks, would also benefit from the flooding. The Federally threatened bald eagle (*Haliaeetus leucocephalus*) would indirectly benefit because they feed on fish within the first 1 to 3 feet of the water's surface, and on wintering waterfowl. Bald eagles are present at the lagoons primarily during the post-breeding and winter seasons when the extra 375 acre-feet of water would be available.

The Department proposes management at the 8-foot level, in part, because infrastructure on County and private lands are vulnerable after lagoon levels reach 9 feet. In addition, it often took many days to get all necessary authorizations to conduct the breaching in the past when emergency permitting processes were employed. When lagoon levels were rising quickly, this sometimes resulted in impacts to infrastructure. Breaching and hazing activities, if conducted under adverse conditions, could be hazardous to workers and are a legitimate concern. The 8-foot elevation "trigger" provides a buffer for the Department and County to breach the lagoons before water levels exceed 9 feet. However, we believe that an approved Management Plan combined with upfront issuance of all permits required to breach the lagoons would facilitate breaching almost immediately once the need to do so is identified. By eliminating the lag time for permitting, breaching could occur when the lagoon approaches 9 feet.

Managing the lagoons at lower water levels may also require additional breaches. Although the tidewater goby is adapted to estuarine and lagoon habitats, breaching, whether natural or man induced, results in their mortality due to individuals being flushed to the ocean or stranded in pools or on land. Consequently, each additional breach results in additional financial and biological resource costs.

Therefore, we recommend breaching of the lagoons not occur during the winter before they reach 9 feet above mean sea level. With necessary permitting in place, and proper planning, the lagoons could be maintained at a 9-foot level without inundation of existing infrastructure. If the Department concludes that a 9-foot breach level is not prudent, we recommend the need to breach at the 8-foot level be evaluated on a case-by-case basis to determine if breaching coud be delayed until the lagoons were closer to 9-feet mean sea level. For example, if lagoon levels are rising slowly, and no storms are expected in the near future, serious consideration should be given to delaying breaching even if the 8-foot level has been reached.

Summer Lagoon Levels

Our comments to this point have focused on maximum lagoon elevations. However, an equally important issue is when to conduct the final breach of the year, and at what lagoon level that breach should take place. Lagoons are dynamic. The species that inhabit them have evolved to take advantage of changing conditions that lagoons and estuaries offer. A stabilized lagoon does not function properly and results in static conditions that lead to succession. Without variation offered by a changing system, succession will lead to changes in plant communities and their associated wildlife.

Breaches too late in winter or early spring have resulted in the lagoon not closing again until late summer. When this happens, lagoon levels may represent only a fraction of their potential summer level under natural conditions. Artificially low water levels in late summer provides the Federally threatened Oregon silverspot butterfly (*Speyeria zerene hippolyta*) access to early blue violets at lower shoreline levels, on which they lay their eggs. These eggs, and subsequent larvae, become vulnerable to rising water levels during winter. Therefore, higher water levels in late summer, which corresponds to the butterfly's flight and egg-laying period, reduces the potential for subsequent inundation of eggs and larvae.

We concur that the last breach of the year should occur on February 15th, if the lagoon is at 5 feet above mean sea level, as proposed. The decision to breach on February 15th should be based solely on a determination of whether the lagoons have reached 5 feet mean sea level. Later breaches are more likely to result in the lagoon not closing, thereby affecting the tidewater goby during its breeding period. The peak of the tidewater goby breeding period occurs from late-spring to mid-summer. Low water levels in the lagoons reduces the amount of habitat available for goby breeding.

We also recommend modeling the dynamics in the lagoons to determine if breaching at an earlier date would be effective at producing higher lagoon levels during summer. Analyses need to

consider the benefits and adverse effects of an earlier breach, as well as effects on wildlife associated with potential additional breaches.

Oregon Silverspot Butterfly

We have previously expressed some of our concerns regarding the effects of the proposed management of the lagoons on the Oregon silverspot butterfly and its larval host plant, the early blue violet. The effects are discussed in past biological opinions on the mechanical breaching of the lagoons. Impacts to the butterfly are virtually unavoidable under an scenario of artificial breaching. We encourage the Department to proactively manage for the Oregon silverspot butterfly, whether on lands the Department currently owns or lands acquired in trade with the California Department of Parks and Recreation, as proposed.

Our office remains available for technical assistance. We encourage the Department to implement actions identified in the Revised Oregon Silverspot Butterfly Recovery Plan, which are intended to facilitate recovery and delisting of the Oregon silverspot butterfly. We commend the Department for its participation in helping to fund butterfly surveys through the Service's Section 6 program, and encourage continued cooperation between our agencies in this regard.

Please direct your comments regarding our review on the Lake Earl Wildlife Area Management Plan and EIR to Jim Watkins of my staff at the letterhead address or telephone number. Again, thank you for meeting with us, and for providing us an opportunity to review and comment on your proposed actions. We look forward to assisting the Department in its conservation efforts at the Lake Earl Wildlife Area

Sincerely,

Michael M. Long
Field Supervisor

cc: K. Reid, USACE, Eureka
B. Merrill, CA Coastal Commission, Eureka
J. Engbring, CNO, Sacramento

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Crescent City, CA

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September 3, 2003

California Department of Fish and Game
619 2nd St. Eureka, CA 95501
Attn: Karen Kovacs
Re: Lake Earl Wildlife Management Plan and EIS

Dear Ms. Kovacs:

In response to the State of California The Resources Agency Department of Fish and Game Final Draft Management Plan, Lake Earl Wildlife Area, January 2003, please note the following comments:

1) The Elk Valley Rancheria (the Tribe) will support the breaching of Lake Earl and Lake Tolowa when it reaches a maximum level of eight feet.

2) The Lake Earl Wildlife Area Management Plan states in Chapter IV, Section F, Cultural Resource Protection, that the Department of Fish and Game shall maintain a relationship with the local tribal entities such that all DFG activities associated with the management of the Lake Earl Wildlife Area are consistent with the protection of significant cultural sites. This should include surveillance, monitoring and the formation of a Cultural Resources Advisory Group. Proper representation of the Tribes should be included in these activities. The Elk Valley Rancheria should be notified when any new items or areas are discovered, and shall be involved in the restoration, reparation, or relocation processes. Any reburials shall be done in accordance with local Native American traditions.

3) The Tribe should be included in all processes that could potentially affect any of the areas that are of known sensitivity. The Tribe should also be notified when additional archeological work is to be performed, and shall have the right to a cultural monitor being present.

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Thank you for taking the time to review our comments, and we look forward to any additional thoughts you may have on these, and any other topics. The Tribal Council approved these comments for submittal on Wednesday, September 3rd, 2003. If you have any additional questions, please feel free to contact me.

Sincerely,

Dale A. Miller
Tribal Chairman, Elk Valley Rancheria

DAM/rm

Smith River Rancheria

250 N. Indian Road
Smith River, CA 95567
tele: (707) 487-9255 fax: (707) 487-0930

18 October 2002

Jim Baskin
California Coastal Commission
710 E Street, Suite 200
Eureka, CA 95501

Mr. Baskin,

Pursuant to our telephone conversation today, I am sending you the attached report on the cultural resources surrounding the Lake Earl Coastal Lagoon. There are a hefty number of site records and other information included by the archaeologist in the appendix of the document, but the main information is included in the summary report provided here. Other information is available to you upon your request. Please let me know if you have any questions on this document, or if you would like to meet with our Tribal Council or our Cultural Committee to further discuss the Tribe's beliefs and stance on the ongoing lake levels debate. The Tribal Council of the Smith River Rancheria has twice resoluted to support a minimum of an eight foot lake level, and supports levels higher than eight feet where they support native species and are not damaging to existing cultural resources. The elevations of cultural resources are indicated in the report.

Respectfully,

Laura M. Mayo
Environmental Programs Director
Smith River Rancheria

SMITH RIVER RANCHERIA

Laura M. Mayo
Environmental Programs Director

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UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southwest Region
501 West Ocean Boulevard, Suite 4200
Long Beach, California 90802-4213

DEC 13 2004

In response reply to:
151422SWR2003AR8827:DA

EXHIBIT NO. 13
APPLICATION NO.
1-00-057
DEPT. OF FISH & GAME
NOAA FISHERIES
CONSULTATION LETTER
(1 of 3)

Mr. Calvin Fong
Chief, Regulatory Branch
San Francisco District
U.S. Army Corps of Engineers
333 Market Street
San Francisco, California 94105-2197

Re: Informal Consultation on Breaching of the Lake Earl/Lake Talawa Sandbar, Del Norte County, California, File Number 27850N

Dear Mr. Fong:

On November 22, 2004, the National Marine Fisheries Service (NOAA Fisheries) received the U.S. Army Corps of Engineers' (Corps) request for informal consultation on the issuance of a Clean Water Act section 404 permit and a Rivers and Harbors Act of 1899 section 10 permit to the California Department of Fish and Game (CDFG) and the County of Del Norte (County) to breach the sandbar separating Lake Earl and Lake Talawa coastal lagoons from the Pacific Ocean, pursuant to section 7(a)(2) of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 *et seq.*) and its implementing regulations, 50 CFR § 402. The Corps also requested consultation regarding potential project impacts to Essential Fish Habitat (EFH), pursuant to the Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA), as amended by the Sustainable Fisheries Act of 1996 (Public Law 104-267, U.S.C. 1801 *et seq.*). You asked NOAA Fisheries to concur with your conclusion that the proposed breaching may affect, but is not likely to adversely affect Southern Oregon/Northern California Coast (SONCC) coho salmon critical habitat or EFH. You determined that the proposed breaching would have no effect on coho salmon because no adults or juveniles have been observed in surveys since 1989, and therefore, requested ESA consultation only on SONCC coho salmon critical habitat.

The SONCC coho salmon (*Onchorhynchus kisutch*) Evolutionarily Significant Unit (ESU) was listed as threatened under the ESA by NOAA Fisheries on May 5, 1997 (62 FR 24588). Critical habitat for SONCC coho salmon was designated by NOAA Fisheries on May 5, 1999 (64 FR 24049). SONCC coho salmon and their critical habitat are in the action area and were considered in this consultation.

The proposed project involves the mechanical breaching of the sandbar using a bulldozer when: (1) the water surface level reaches eight feet Mean Sea Level (MSL) in the period between September 1st and February 15th, and (2) when the water surface is above five feet MSL on

February 15th. The project is a component of the Lake Earl Wildlife Area Management Plan and is intended to promote ecological productivity while minimizing potential flooding of adjacent private and public property. The County and CDFG will excavate a trench 20 feet wide, 200 feet long, and four feet deep. Approximately 600 cubic yards of sand will be sidecast on the adjacent dunes, however, some sand may fall back into the lagoons. For 24-48 hours after creation of the initial trench, movement of water from the lagoons will widen the trench from 200 to 1000 feet or more at an elevation of two to four feet MSL. Following breaching, the surface area of the lagoons will change from 4,800 acres to 2,200 acres. The County and CDFG have requested a 10-year (2005-2015) permit for annual breaching of the sandbar.

Between 1920 and 1982, CDFG periodically stocked coho salmon in the lagoons, and coho salmon were last officially observed in the Lake Earl system in 1989. Post breach surveys within the lagoons during the past three years have not found any juvenile or adult coho salmon, nor have any been observed during other CDFG presence/absence surveys. The breaching of the lagoon system is a periodic natural occurrence during this period without this management action. However, if coho salmon (0+) were rearing in Lake Earl during the proposed breaching between September and February, they could be forced to enter the ocean prematurely prior to smolting. In Oregon (Winchester Creek, South Slough) and California (Freshwater Creek, Eureka Slough), coho salmon (0+) move into estuarine areas during the spring and summer, and adults return to freshwater for the fall and winter. In Prairie Creek, a tributary to Redwood Creek, California, coho salmon can remain in freshwater for two years, possibly an adaptation to occasional development of a sandbar across the mouth of Redwood Creek. Consequently, NOAA Fisheries thinks it is unlikely that coho salmon would be present in Lake Earl during the timing of the proposed breaching.

However in 2001 and 2003, the Corps issued permits for replacement of two culverts in Jordan Creek, a tributary to Lake Earl. The culverts at Parkway Drive and Elk Valley Road were identified as fish passage barriers to SONCC coho salmon adults and juveniles, and the State of California Fishery Restoration Grants Program funded their replacement. The fact that fish passage barriers to SONCC coho salmon within the Lake Earl system are proposed for replacement indicates that SONCC coho salmon are in the system. Therefore, NOAA Fisheries does not agree with the Corps' no effect determination. However, based on consideration of the limited coho salmon presence in Lake Earl and the periodic natural breaching of the lagoon system, NOAA Fisheries thinks that the proposed action may affect, but is not likely to adversely affect SONCC coho salmon and their critical habitat.

The project area is also located within an area identified as EFH for various life stages of fish species Federally-managed under the Pacific Salmon Fishery Management Plan (coho salmon and Chinook salmon) as well as the Pacific Groundfish Fishery Management Plan (rockfish, starry flounder, leopard shark) and Coastal Pelagics Fishery Management Plan (northern anchovy, Pacific sardine). NOAA Fisheries has evaluated the proposed project for potential adverse effects to EFH and has determined, based on the best available scientific and commercial information, that the proposed action will not adversely affect EFH.

This concludes ESA consultation, in accordance with 50 CFR § 402.14(b)(1) for the proposed breaching of Lake Earl in Del Norte County, California. However further consultation may be required if: (1) new information becomes available indicating that listed species, critical habitat, or EFH may be affected by the project in a manner not previously considered; (2) current project plans change in a manner that affects listed species, critical habitat, or EFH; or (3) a new species or critical habitat is designated that may be affected by the proposed action.

Please contact Ms. Diane Ashton at (707) 825-5185 if you have any questions.

Sincerely,

for Rodney R. McInnis
Regional Administrator

cc: K. Reid – Corps
K. Kovacs – CDFG
E. Perry – County

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United States Department of the Interior

FISH AND WILDLIFE SERVICE
1655 Heindon Road
Arcata, CA 95521
Phone (707) 822-7201 FAX (707) 822-8411

EXHIBIT NO. **14** (1 of 22)
APPLICATION NO. 1-00-057
USFWS BIOLOGICAL OPINION
Formal consult. on 10-year Prmt. to Breach Lake Earl Sandbar, Del Norte Co., CA, issued 1/5/05 by USFWS, fax received 1/6/05.

In Reply Refer to:
AFWO

JAN 05 2005

Mr. Calvin Fong
Chief, Regulatory Branch
Department of the Army
San Francisco District, Corps of Engineers
333 Market St.
San Francisco, California 94105-2197

Subject: Formal Consultation on the 10-year Permit to Breach the Lake Earl Sandbar, Del Norte County, California (Public Notice 27850N; AFWO file number 8-14-05-2577)

Dear Mr. Fong:

This document transmits the Fish and Wildlife Service's (Service) biological/conference opinion on the proposed 10-year permit to breach the sandbar at Lake Earl coastal lagoon in Del Norte County, California, and its effects on endangered and threatened species in accordance with section 7 of the Endangered Species Act of 1973, as amended (Act). We received your November 8, 2004, request for expedited formal consultation on November 12, 2004. The U.S. Army Corps of Engineers (Corps) has determined that the project may adversely affect the Federally-listed endangered tidewater goby (*Eucyclogobius newberryi*) and Federally-listed threatened Oregon silverspot butterfly (*Speyeria zerene hippolyta*). In addition, you have determined that the proposed action may affect, but is not likely to adversely affect, the Federally-listed endangered brown pelican (*Pelecanus occidentalis californicus*), and the Federally-listed threatened, western snowy plover (*Charadrius alexandrinus nivosus*), and bald eagle (*Haliaeetus leucocephalus*). Your letter of request also states that the proposed project will have no effect on the Federally-listed endangered western lily (*Lilium occidentale*).

On December 17, 2004, critical habitat was proposed for the western snowy plover within the project area. The rule proposing critical habitat was published subsequent to the Corps' request for consultation (Federal Register 2004). As per a telephone conversation with the Corps' staff in Eureka, California, this biological opinion will also serve as a conference opinion for the plover's proposed critical habitat (Reid 2004, pers. comm.). Incidental take associated with proposed critical habitat developed in a conference opinion may be adopted as the biological opinion when critical habitat is designated (50 CFR § 402.10(d)).

This biological/conference opinion was prepared based on information in the request for consultation, informal consultation between our staffs and personnel from the California Department of Fish and Game (Department), previous biological opinions for similar, albeit shorter-term actions at Lake Earl, studies funded by the Corps and conducted by Tetra Tech (2000), monitoring reports for the

Oregon silverspot butterfly, the Department's monitoring reports and Final Draft Environmental Impact Report (DEIR)(California Department of Fish and Game 2003.), and our files. A complete administrative record for this consultation is on file in this office.

Consultation History

On May 16, 1995, the Service responded to a Corps proposal to issue a 2-year permit to breach the sandbar at Lake Earl. The permit was issued and expired on December 31, 1997.

Informal discussions on a proposed 1-year extension began in early 1997. On August 5, 1997, the Corps submitted to the Service a draft biological evaluation prepared by the applicant. The Service responded to the Corps with comments on September 23, 1997. Informal discussions concerning the proposed permit extension took place within the framework of the Lake Earl Working Group through September 29, 1997. The Corps requested consultation on breaching for a 2-year period on October 1, 1997. The Service issued a biological opinion for the artificial breaching of Lake Earl on December 1, 1997.

The Corps requested Section 7 consultation under the Act from the Service regarding a 1-year extension of the permit covered by the December 1, 1997 biological opinion. The subsequent biological opinion was issued December 1, 1998, to extend the Corps' permit to December 31, 1999.

On December 20, 1999, prior to the expiration of the permit, the Corps requested formal consultation regarding an additional 1-year extension to the previously-issued extended permit. The biological opinion for the second permit extension was issued by the Service on January 28, 2000. That permit extension expired December 31, 2000. In the interim, the Corps finalized studies they funded to collect additional information on listed species and other resources affected by Lake Earl breaching (Tetra Tech 2000).

The Service received a request for expedited consultation on January 24, 2001, for a 1-year permit to breach Lake Earl while the Department developed an interim permit that would cover breaching actions until a management plan was in place. The Service issued its biological opinion on January 25, 2001.

The Corps initiated formal, expedited consultation on December 6, 2001, for a 2-year interim permit to breach Lake Earl. The interim permit was to provide the Department time to develop a management plan for Lake Earl and the surrounding lands under State management. The biological opinion for that request was issued on December 13, 2002. A supplemental letter issued by the Service on January 14, 2002, further defined the authorized breach period The biological opinion expired February 15, 2003. On February 24, the Del Norte County Board of Supervisors voted not to breach Lake Earl; therefore failing to take advantage of the last authorized opportunity to implement a breach. On Tuesday, March 25, the Del Norte County Supervisors again voted; this time to breach due to conditions they believe presented an emergency. Because the situation was predictable and foreseeable, the emergency consultation provisions of the Act did not apply. Consequently, the Corps initiated formal consultation, and requested an expedited consultation period. The Service issued its biological opinion on March 28, 2003; however, the lagoon was illegally breached by persons other than the applicants on March 29, 2003, prior to implementation of the project.

Similar to previous years, the Del Norte County Board of Supervisors declared that rising lagoon water levels constituted an emergency on December 22, 2003. The Corps requested, via electronic mail, on December 29, 2003, expedited formal consultation for breaching Lake Earl between December 23, 2003

and February 15, 2004. The County attempted to breach the Lake Earl sandbar on February 13, 2004, as per their Corps permit; however, the breach attempt was unsuccessful. As a result, the County and Department requested an additional permit application to breach Lake Earl in March 2004 to accomplish objectives not achieved during the February 13, 2004, attempt. We issued an amended biological opinion (1-14-2004-2103.1) on March 4, 2004, to address potential effects to listed species not previously considered.

The Corps' current biological assessment for the Department's 10-year permit is based on the an Environmental Impact Report (EIR) (California Department of Fish and Game 2004.), and DEIR completed by the Department under provisions of the California Environmental Quality Act, and the Department's application.

BIOLOGICAL and CONFERENCE OPINIONS

Description of the Proposed Action

The project is described in Public Notice 27850N, the Department's DEIR and associated EIR, and are hereby incorporated by reference. Both the Department and County of Del Norte (County) are co-applicants to the Corps for permits under provisions in Section 404 of the Clean Water Act (CWA S.404) (33 U.S.C. 1344 et sec) and Section 10 of the Rivers and Harbors Act of 1899 (RHA S.10) (33 U.S.C. 403 et sec). The Corps' proposed permit would expire 10 years after its issuance. Although not specifically stated in the Public Notice (27850N), the Corps estimates that the permit would extend through February 15, 2015 (Reid 2004, pers. comm.). Consequently, this biological opinion is valid through February 15, 2015, unless reinitiation is required previous to that date.

The lagoon will be managed to allow water levels that reach a maximum elevation between 8 to 10 feet mean sea level (msl) in order to maintain approximately 4, 950 acres of wetlands through mechanical breaching (bulldozer). Salient features of the project are identified by number and summarized here:

1. Immediately prior to and during the early stages of the breaching event, an effort will be made to haze water birds away from the breach site. This would be conducted in an attempt to prevent birds from becoming entrained in the outflow from the lagoon to the ocean. Hazing methods may include the use of watercraft and noise producing devices.

2. After breaching is complete, survey and quantify the number and species of water birds found dead along the beach as a result of the breach.

3. Survey the location, area and maximum depth of disconnected ponds of water remaining below the maximum elevation of the lagoon at least once within one week after completion of the breach to determine stranding and refugial areas for the tidewater goby.

4. Sample fish trapped in disconnected ponds to determine species composition and relative abundance.

5. Monitor status of disconnected ponds that contain tidewater goby and anadromous salmonids at least every two weeks until lagoon water elevations rise to the level that the ponds reconnect with the lagoon.

6. Develop and implement a plan to monitor tidewater goby population trends within the lagoons in cooperation with the Corps and Service.
7. Prior and subsequent to each breaching event, measure the wetted perimeter of the lagoon(s) to determine the extent of habitat affected.
8. Breach the lagoon with the smallest opening possible.
9. Monitor lagoon elevation throughout the breaching event to document the rate at which the lagoon drains and refills.
10. Monitor water quality prior, during and after the breach to measure total coliform, fecal coliform and enterococcus.
11. Report results of the above referenced monitoring to the Corps, California North Coast Regional Water Quality Board, and Service.
12. Report any dead or injured listed species that are the responsibility of the Service or NOAA Fisheries.

The action area is defined at 50 CFR § 402 as "all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action". For the purposes of this consultation, the Service describes the action area to include all lands within the Lake Earl watershed, including the upland flood plain. This analysis area enables the Service and the Corps to more fully understand the cumulative and interrelated and interdependent effects of the action within a more appropriate landscape context.

Status of the Species (range-wide)

Tidewater Goby

The tidewater goby is a small brackish-water fish endemic to California estuaries. Tidewater gobies are reported to occur as far north as the Tillas Slough at the mouth of the Smith River in Del Norte County, California and as far south as Agua Hedionda Lagoon in San Diego County (Swift et al. 1989). The Lake Earl population is 6 miles south of the northernmost population.

Tidewater gobies are generally found in waters with salinity levels between 10 and 15 parts per thousand (Swift et al. 1989, Capelli 1997). In larger estuaries, tidewater gobies are found near the freshwater-saltwater interface. They typically occur in 3 to 6 feet of standing water over a sandy or mixed sandy/silty bottom with sparse vegetation. They are weak swimmers and generally avoid swiftly moving waters. Most individuals complete their life cycle within 1 year. Spawning usually occurs from spring to mid-summer, when most estuaries are closed to the ocean. However, gravid females have been collected throughout the year, suggesting they can breed whenever habitat conditions are suitable. Females lay their eggs in burrows which males excavate in sandy substrate. The lack of a marine phase, and the fact that tidewater gobies are weak swimmers, suggest that the formation of inter-basin metapopulations is unlikely. This conclusion is supported by genetic studies (Crabtree 1985).

The tidewater goby was listed as an endangered species on February 4, 1994 (Federal Register 1994). Human development, stream channelization, water diversion, groundwater extraction, pollution, and introduction of exotic organisms are all believed responsible for the decline and extirpation of tidewater

goby populations. Approximately one-quarter of the known disjunct populations are believed extirpated; approximately 84 populations are currently extant, 34 of which are considered viable (Capelli 1997). Regular and frequent breaching is associated with extirpation of several populations (Capelli 1997). Artificial breaching is speculated as having a greater adverse impact than natural breaching because it is often abrupt and without warning cues that could allow fish to seek refuge.

The Service proposed to delist tidewater goby populations in northern California on June 24, 1999 (Federal Register 1999a), including the population in the proposed project area. The Service sought additional information regarding the delisting proposal, which resulted in a reopening of the comment period on February 15, 2000 (Federal Register 2000). The public comment period on the proposal to delist the northern populations of the tidewater goby was reopened for a second time on January 3, 2001, and closed February 2, 2001 (Federal Register 2001). As a result of public comments received on the delisting proposal, the Service determined that the goby would remain listed as endangered throughout its range. A draft recovery plan for the goby was issued in October of 2004 (U.S. Fish and Wildlife Service 2004).

The Service proposed designation of critical habitat for the tidewater goby August 3, 1999 (Federal Register 1999b). The project area lies outside of the area currently proposed as critical habitat, which is limited to Orange and San Diego Counties, California. Critical habitat will likely be revised as a result of the Service's decision to keep the entire tidewater goby population listed as endangered.

Western Snowy Plover

The Pacific Coast population of the western snowy plover was Federally-listed as a threatened species on March 5, 1993 (Federal Register 1993). Critical habitat for the plover was designated December 7, 1999 (Federal Register 1999c), and later remanded to the Service by court order due to the inadequacy of its economic analysis. The Service proposed revised critical habitat on December 17, 2004 (Federal Register 2004), subsequent to the Corps' request for consultation on the proposed project. The project area is outside of designated critical habitat for the plover, which remains in place during remand; however, the breach location and adjacent beach south of Kellogg Road is proposed as critical habitat (refer to attachment). Therefore, this biological opinion will also serve as a conference opinion to address the effects to critical habitat should designation occur during the 10-year life of the project. A draft recovery plan for the Pacific Coast population of the western snowy plover was circulated to the public in May, 2001.

The western snowy plover is a small shorebird that forages on invertebrates in intertidal zones, the wrack line, dry sandy areas above the high tide line, salt pans, the edges of marshes, and along river gravel bars. The Pacific Coast population nests near tidal waters along the mainland coast, offshore islands, and river gravel bars from southern Washington to southern Baja California, Mexico. Most nesting occurs on un-vegetated to moderately vegetated, dune-backed beaches and sand spits. Other less common nesting habitats include salt pans, dredge spoils, pond levees, and gravel bars. Nest site fidelity is common. Nesting and chick rearing activity generally occurs between March 1 and September 30. During the non-breeding season, western snowy plovers may remain at breeding sites or migrate to other locations. Most plovers spend the winter south of Bodega Bay, California. Many plovers from the interior population spend the winter on the central and southern coast of California.

The Pacific Coast population of the western snowy plover has experienced widespread loss of nesting habitat and reduced reproductive success at many nesting locations due to urban development and the encroachment of European beachgrass (*Ammophila arenaria*). Pedestrian traffic and recreational

activities such as jogging, running pets, horseback riding, and use of off-road vehicles frequently crush and destroy the western snowy plovers's cryptic nests and chicks. These activities also flush adults off nests and away from chicks and, thus, interfere with essential incubation and chick rearing behaviors. Predation is apparently a major source of nest and chick loss within recovery unit 2, which encompasses the project area (Colwell, et al. 2004).

The range of the Pacific Coast population of the western snowy plover in the United States extends from Damon Point, Washington, to the international border with Mexico in California. Based on 2003 range-wide window surveys, the Service estimates the a total of 1,529 breeding snowy plovers are distributed along the Pacific Coast as follows: California (1444); Oregon (63); and Washington (22). Analysis of the 2004 breeding season has not been completed; although at first look it appears that the number of breeders range-wide has increased over 2003 numbers.

The recovery unit is an intermediate level between the range-wide distribution of the species and the action area. Recovery Unit 2 (i.e., Del Norte, Humboldt, and Mendocino Counties) contains an estimated 60 breeding individuals with a sex ratio of 1:1 (Colwell, et al.2003). No breeding of snowy plovers was observed in Del Norte County during 2003 or 2004, although the project area is considered to be historical breeding habitat. An estimated 100 individuals breed north of San Francisco in California. Survey results from the 2001 breeding season indicate that 74 breeding adults occupied Del Norte, Humboldt, and Mendocino Counties. However, 64 adult plovers were observed breeding within Humboldt County, and 10 breeding within Mendocino County. The northernmost nest site was located at Gold Bluffs Beach in northern Humboldt County.

Data on reproductive success is available on a site-specific basis where banding occurs, not on a range-wide basis. Overall, the number of chicks fledged increased along the coast at Monterey Bay, and the Oregon Coast. While nest success (surviving to hatch) was good during the 2004 breeding season for the recovery unit, it was not as good as 2001.

Brown Pelican

The brown pelican was Federally listed as endangered in 1970. The recovery plan for the California brown pelican describes its biology, reasons for decline, and the actions needed for its recovery (Service 1983). Critical habitat for the pelican has not been designated.

The brown pelican is a large bird recognized by the long, pouched bill that is used to catch surface schooling fishes. Brown pelicans nest in colonies on small coastal islands that are free of mammalian predators and human disturbance, and that have an adequate and consistent food supply. Nesting colonies range from the Channel Islands in the southern California bight to the islands off Nayarit, Mexico. Prior to 1959, intermittent nesting was observed as far north as Point Lobos in Monterey County, California. Dispersal outside the breeding season occurs from British Columbia, Canada, to southern Mexico and, possibly, to Central America. Outside the breeding season brown pelicans roost communally in areas that are near adequate food supplies, have some type of physical barrier to predation and disturbance, and provide some protection from environmental stresses, such as wind and high surf.

Brown pelicans exhibited widespread reproductive failures in the 1960s and early 1970s. Much of the failure was attributed to eggshell thinning caused by high concentrations of DDE, a metabolite of DDT.

Other factors implicated in the decline of this subspecies include human disturbances at nesting colonies and food shortages. Brown pelicans have not nested north of the Channel Islands since the species'

decline in the late 1950s and early 1960s. Brown pelicans are known to use Lake Earl and other coastal lagoons for foraging and roosting. They can often be observed using beach areas, especially those areas associated with the mouths of rivers or streams, for loafing and bill washing.

Bald Eagle

The bald eagle was Federally-listed as endangered on February 14, 1978, in all of the conterminous United States except Minnesota, Wisconsin, Michigan, Oregon, and Washington, where it was classified as threatened. On August 15, 1995, the bald eagle was down-listed to threatened throughout its listed range. On July 4, 1999, the Service proposed to delist the bald eagle throughout its range. Critical habitat has not been designated for the bald eagle. The recovery plan for the Pacific population of the bald eagle was published in August 1986, and describes the biology, reasons for decline, and the actions needed for recovery of bald eagles (U.S. Fish and Wildlife Service 1986).

Habitat loss is the greatest threat to bald eagle recovery. Urban and recreational development, logging, mineral exploration and extraction, and other forms of human activities are adversely affecting the suitability of breeding, wintering, and foraging areas. Shooting is the most frequently recorded single cause of bald eagle mortality, though the rate apparently is declining. Evidence indicates that bald eagle reproduction throughout the species' range has improved since registration of DDT and other organochlorine pesticides in the early 1970's. Some evidence indicates that predator control programs are having an impact on bald eagle mortality. Injuries and mortalities have occurred to bald eagles as a result of accidental trapping and use of poisoned baits. Although electrocutions of raptors has decreased, electrocutions may continue to be an issue for bald eagles on transmission lines that do not meet suggested standards for raptor protection. In areas where bald eagles congregate, collisions with transmission lines may cause more injuries and mortalities than electrocutions.

Oregon Silverspot Butterfly

The Oregon silverspot butterfly was listed as a threatened species, with critical habitat, in 1980 (Federal Register 1980). Critical habitat was designated at the Rock Creek/Big Creek population in Lane County, Oregon. The initial recovery plan for the species was issued in 1982, and was revised and reissued November 30, 2001.

The Oregon silverspot butterfly is a true fritillary, within the family Nymphalidae. The Oregon silverspot butterfly is 1 of 15 subspecies of *S. zerene*. It is a small, darkly marked coastal subspecies. The historical range of the subspecies extends from Wesport, Grays Harbor County, Washington, south to Del Norte County, California. Within its range, the butterfly is known to have been extirpated from at least 11 colonies (2 in Washington, 8 in Oregon, and 1 in California).

The Oregon silverspot butterfly has six larval instars and a pupal stage before metamorphosis into the adult. Adults appear throughout the late summer and early fall for mating. The eggs are laid on the western blue violet (*Viola adunca*) during the fall and hatch shortly thereafter. The larvae may feed for a short time in the fall and then enter a dormant state for winter. In the spring, the larvae come back out and resume feeding until some time in the late spring or summer when they pupate for a short time before emerging as adults to continue the cycle. Adult butterflies may use a variety of nectar plants as

food sources.

Habitat for the Oregon silverspot butterfly is declining due to residential and commercial development, invasion of non-native plant species, and suppression of periodic natural fires. In addition to efforts to reintroduce or augment butterfly populations through captive propagation and translocation, the recovery plan recommends actions to protect and manage habitat.

Environmental Baseline (in the action area)

Regulations implementing the Act (50 CFR § 402.02) define the environmental baseline as the past and present impacts of all Federal, State, or private actions and other human activities in the action area, the anticipated impacts of all proposed Federal projects in the action area that have already undergone formal or early section 7 consultation, and the impact of State or private actions which are contemporaneous with the consultation process.

Natural breaching of Lake Earl lagoon is assumed to occur somewhere between 12 and 14 feet msl. Artificial breaching of the lagoon has apparently occurred as early as 1873. Data, such as number and frequency of breachings and lagoon level at time of breaching, are generally not available for most historic breachings. The encroachment of European beachgrass has stabilized the sandbar at the breach site, making a natural breach more difficult.

In 1977, Del Norte County obtained a 10-year Corps permit to breach the sandbar at 4 feet msl; breaching generally occurred around 6 feet msl (Department 1997). Since 1986, the sandbar has been breached under emergency provisions of the CWA S.404, RHA S.10, and other authorities, generally when water levels reach 10 feet msl.

Artificial breaching of Lake Earl over the long-term has encouraged human development in the flood plain. Breaching of Lake Earl was originally conducted primarily to promote agricultural activities. However, the Department has recently acquired most agricultural land, and the land is now managed for wildlife purposes. Recreational activities occur on former agricultural lands that were regularly inundated by the lagoon. In recent times, residential developments and associated infrastructure have been established at approximately 10 feet msl. A proposed, but mostly undeveloped, subdivision of 1,400 lots named Pacific Shores exists within the flood plain at elevations as low as approximately 8 feet msl.

Tidewater Goby

Surveys in 1997 detected tidewater gobies at several locations throughout Lake Earl, generally near the shoreline, where suitable habitat most likely occurs (C. Chamberlain, pers. comm.). The population in Lake Earl is considered healthy, however, quantitative data are not currently available. Gobies were found in 1997 at both ends of the sandbar proposed as a breach site. Habitat characteristics along the length of the bar are comparable to those of areas where gobies were detected. Therefore, gobies are assumed to occur along the entire bar.

Studies of tidewater goby population studies were conducted in 1998 and 1999 (Tetra Tech 2000). These survey efforts indicate that the tidewater goby uses a variety of shallow water habitats throughout the lagoon, their distribution depending on changes in water quality and the amount of available habitat,

which vary seasonally. Optimum reproductive and recruitment efforts occur from June through August; burrows used for spawning are constructed within the shallow littoral zone. Gravid females were first noted during April sampling (Tetra Tech 2000). As lagoon water levels rise during the course of the year, the amount of shallow water habitat increases, providing greater habitat availability and increasing foraging opportunities. For example, shallow water habitat increases by 1,306 surface acres at 8 feet msl, compared to the 4-foot level.

Western Snowy Plover

Del Norte County and the Lake Earl region are a historical breeding location. Nesting has not occurred in the action area during recent times, therefore, no recent information on reproduction is available. Observation of birds during the breeding are summarized as follows. Point Reyes Bird Observatory completed surveys in this area to detect adult snowy plovers in 1977 through 1980, 1989, 1991, and 1995. In Del Norte County, adult plover observed on these "window surveys" conducted during the breeding season found 11, 8, 3, and 0, respectively, for each survey period. Springer (2001, pers.comm.) observed a snowy plover nest on the bank of Lake Talawa, a subunit of Lake Earl, near the narrows in the late 1980s. A pair of western snowy plovers was observed on the ocean beach west of Lake Talawa on May 13, 1974 (Yocom C. and S. Harris 1975). It is unknown these birds were a breeding pair, although the timing of the observation suggests that they might have been.

Observations of wintering birds are summarized as follows. A single snowy plover was observed on the south spit of the Smith River during a January 2001 "winter window survey." Five snowy plovers were observed at the breach site on October 19, 2003 (D. Jaques 2003, pers. comm.), and three banded snowy plovers were observed at the same location on December 14, 2003 (S. McAllister 2003, pers. comm.). Four snowy plovers were observed by the Department's observer prior to the breach of the sandbar in January 3, 2004. Two of the four plovers apparently were birds banded in Humboldt County (J. Dayton 2004, pers. comm.). These two banded birds are likely first year breeders in 2004 based on their color band combinations. No plovers were observed at the breach site during the breach attempt of February 13, 2004 (T. Willamson 2004, pers. comm.); however, three snowy plovers were observed at the breach location on February 14, 2004. Two of the three were likely those observed on January 3, 2004 (personal observation); these plovers showed no outward appearance of adverse effects due to the breaching attempt on January 3, 2004, or the failed breach attempt of February 13, 2004. Six plovers were observed at the breach site on October 28, 2004 (D. Jaques 2003, pers. comm.), five of which were marked. Those birds were banded at Siltcoos and Ten Mile beaches in Oregon, and Humboldt County, California.

Brown Pelican

The DEIR states that brown pelicans feed just offshore of the strand that separates Lake Talawa from the Pacific Ocean. They frequently roost, loaf and preen at Lake Talawa, on sand bars and woody snags that form each year near the breach site. Harris (1991) reports that brown pelicans breed from March through June. Most brown pelicans occur on the north coast of California from late June through early November after post-breeding dispersal. Post-breeding numbers can exceed 300+ birds in a single raft or beach location; however, only a few birds overwinter in the Crescent City area. The number of brown pelicans is believed to be increasing range-wide, although there are no data to quantify use within the project area.

Bald Eagle

The DEIR states that bald eagles are common winter migrants to the project area, but does not quantify their use of the lagoon or surrounding forest habitat. Harris (1991) reported that bald eagles regularly use Lake Earl and the Smith River during the winter months. The estimated winter eagle use at Lake Earl

ranges from 1 to 5 individuals. The nearest nests to the project area are in the vicinity of Freshwater Lagoon, and Blue Creek, a tributary of the Klamath River. Both of these nest locations are in northern Humboldt County.

Oregon Silverspot Butterfly

Oregon silverspot butterfly population size, and the total extent of habitat at Point Saint George and Lake Earl, have not been determined. However, a 1998 survey on habitat owned by the Department estimated 62 butterflies on State land (Tetra Tech 2000). The Department manages approximately 1/3 of the potential habitat in Del Norte County. Hammond speculated that population levels on State land had declined by over 90 percent in the previous 10 years (Tetra Tech 2000); but, annual surveys of total habitat had not been conducted to provide a quantitative basis for these estimates. Early blue violet habitat is known to exist from Lake Earl to Point Saint George, but the area has not been extensively inventoried for Oregon silverspot butterflies or their habitat. Limited surveys conducted in 2003 indicate that the Oregon silverspot butterfly population adjacent to Lake Earl is similar to, or marginally better than, results reported by Lauck (1997). The 2003 study also suggests that Oregon silverspot butterfly numbers are low compared to the amount of potential habitat available and what one would expect from a temperate grassland butterfly (Wright 2003).

The DEIR does not provide information on the Oregon silverspot butterfly population within the project area, or the butterfly's use of localized habitats.

Effects of the Action

Direct Effects

Tidewater Goby

Based upon past experience, the breaching of Lake Earl will likely result in a discharge from the lagoon to the ocean that has high water volumes and velocities. This discharge may entrain tidewater gobies at the breach site, resulting in direct mortality. As the lagoon margins recede, gobies will be stranded in the dewatered shallows or in isolated pools that form around the margins of the lagoon. Gobies in these isolated pools are subject to mortality due to asphyxia, dessication, or increased predation. Salient features numbered 3, 4, 5, 6, and 8 of the proposed project description will clarify effects of the proposed action on the tidewater goby.

Artificial, mechanical breaching, as proposed in the Public Notice, will likely result in more breaching events than would occur under natural conditions. Breaching on, or before, February 15 will likely reduce the number of tidewater gobies flushed to the ocean and caught in stranding pools. The main reproductive period of the tidewater goby, which is linked to water temperature, generally occurs after March 12. Breaching no later than February 15 avoids that period when female gobies are most likely to be gravid, presumably improving conditions for tidewater goby reproductive success. Samples by

Tetra Tech (2000) in April revealed the first concentration of spawning gobies for the year with 312 adults, 101 of which were gravid females. Post-larval goby numbers remained low until June when 140 were counted. June through August was identified as the peak spawning period for the Lake Earl lagoon system (Tetra Tech 2000). Population trend monitoring is needed to ensure that artificial breaching of the lagoon does not significantly reduce goby density to a point where the gobies are unable to effectively reproduce.

Breaching the lagoon after February 15 reduces the likelihood that the sandbar will reform and that freshwater-dominated conditions will be restored during the summer months. An open sandbar, or reduced water level during the summer, adversely affects water quality (e.g., dissolved oxygen, temperature, salinity, etc.). At higher water levels, marsh areas containing the best tidewater goby habitat may remain intact (Stillwater Sciences 2003). These marshes are identified in the final report produced by Tetra Tech (2000). A breach earlier than February 15, could potentially result in higher lagoon water levels during summer months (PWA 2003), improving water quality and providing additional habitat for the tidewater goby in summer and fall. The amount and extent of affected habitat depends on lagoon level at the time of breaching.

Western Snowy Plover

The breach location appears to be the preferred winter habitat for plovers in Del Norte county based on recent, repeated observations. The proposed action will displace wintering western snowy plovers from the beach where breaching occurs. The number of plovers that could potentially be displaced depends on the number present when breaching occurs. Plovers were observed at the site the day following a breach in 2004 (Watkins, pers. observation). The temporary displacement of wintering plovers does not appear to be significant based on the low number of plovers observed during surveys and ample availability of habitat for them to move to. The proposed action is not likely to result in long-term or permanent alteration of their behavior because artificial breaching of the lagoon is completed in a short time period and with minimal disturbance to snowy plover habitat. Consequently, we believe the effects on habitat are discountable, given that the sand bar should reform and will restore the availability of habitat. Surveys during the annual breach period should provide the Service with an estimate of the relative number of plovers to be displaced.

Adult snowy plovers have been killed and injured by vehicle use within their habitat. Winter plovers are particularly difficult to observe from a vehicle as they use pre-existing tire tracks and foot prints, kelp, and other features to conceal themselves and protect them from winds. An adult plover was struck by an ATV at Vandenberg Air Force Base in 1993. Another adult plover was struck and killed by a pickup truck at Oceano Dunes State Vehicular Recreation Area in 1998. Both incidents occurred at night. Plovers are likely most susceptible to vehicle strikes at night or under low-light conditions. We believe that headlights make it difficult for plovers to judge the speed and distance of oncoming vehicles. Therefore, all breach-related vehicle activities should occur during daylight to avoid direct impacts to plovers.

Snowy plovers initiate their nests later in the season within the action area, compared to the southern part of their range. Plover courtship has been observed in February (Watkins, pers. observation), usually resulting in the formation of nest scrapes. If the observed wintering plovers attempt to nest at the breach location, nest scrapes may be present. The presence of scrapes does not necessarily indicate that a nest is present, or that a nest would occur at that site. Snowy plovers make multiple scrapes at varying locations prior to nest initiation; i.e. egg laying (U.S. Fish and Wildlife Service 2001). The earliest recorded date which snowy plovers initiated a nest in the Monterey Bay Area, which is located in the

southern part of the plover's range, is March 5. The earliest known nest initiation date for snowy plovers in Humboldt County is March 18. The earliest observed nest initiation date for Oregon is March 24. No data exist on snowy plover nest initiation dates for Del Norte County. Because the proposed project site is located between Humboldt County and Oregon, both of which have substantial nest initiation date databases and are located at the plover's northern range extent, it is unlikely that snowy plovers would established a nest prior to March 18. The proposed breachings would be completed by February 15, thereby preceding the March 18 nest initiation date in nearby Humboldt County. Therefore, we do not anticipate that the proposed action will directly affect western snowy plover nests or broods.

Brown Pelican

The likelihood that a brown pelican would be entrained in the discharge following a breach is low. Brown pelicans are able to quickly take flight from water roosts, requiring a relatively short take-off distance to achieve flight. Brown pelicans have never been observed among those birds killed by a breach at Lake Earl. Implementation of salient feature number 1 would further reduce the likelihood of a brown pelican being trapped by outflows resulting from a mechanical breach. Pelicans would also be at some risk of entrainment during a breach under natural conditions. Artificial breaching occurs at lower lagoon levels than would occur under natural conditions and is likely to result in additional breaching events. Consequently, the risk to brown pelicans is increased, however is only minimally.

The hazing of water birds in salient feature number 1, will also displace brown pelicans. The result of hazing would be a temporary disturbance that would flush pelicans to other, nearby habitats. Ample habitat of good quality for brown pelicans is nearby, therefore making the disturbance a minor impact. The number of pelicans to be disturbed is dependent on the number of pelicans present prior to breaching and hazing activities. Surveys during the annual breach period should provide the Service with an estimate of the relative number of brown pelicans to be disturbed.

Indirect Effects

Tidewater Goby

Tidewater gobies may be indirectly killed or injured by predators or degraded water quality when they are stranded in the pools that form as the lagoon level drops. Lowered water levels may also expose and dessicate burrows if a breach occurs during late-spring or summer. The surface area of the lake will be reduced substantially, dropping from approximately 4,500 surface acres to approximately 2,000 surface acres after each breach. However, the precise change in amount and quality of goby habitat cannot be determined at this time. Salient feature number 4 in the project description is designed to quantify the amount of degraded tidewater goby habitat after a breaching event.

Tidewater gobies were stranded in isolated pools when artificial breaching occurred at a lagoon level greater than 8 feet msl during breaches in 1998 and 1999 (Tetra Tech 2000). The Department's monitoring reports noted similar observations. The largest isolated pools may initially provide some refuge for gobies which seek shelter during breach events. Fish stranded within larger pools when the lagoon is breached during winter may survive until water surface levels increase and reconnect pools with the lagoon proper (Tetra Tech 2000). A significantly greater numbers of tidewater goby survived within larger pools (Tetra Tech 2000). Small, shallow, isolated pools, especially those located furthest from the breach site, support significantly fewer numbers of gobies and will likely dry up before rising water levels reconnect these pools with the lagoon proper.

The peak spawning period for the tidewater goby is June through August at Lake Earl (Tetra Tech 2000), although gravid females can be found year-around (Moyle 2002). Water temperature is a trigger for tidewater goby reproduction, and may vary from year-to-year. Salient features numbered 3, 5, and 6 are designed to provide the Service with a basis to determine long-term population trends for the tidewater goby.

Artificial breaching at lower lagoon levels would result in an additional number of breachings per year, which increases the number of stranding events. However, if water levels in the lagoon are maintained at lower levels, fewer pools may be available to strand gobies. Low water levels would also reduce the lake surface area and the amount of goby habitat.

Western Snowy Plover

After breaching occurs, an area is exposed along the shoreline which provides western snowy plovers with suitable nesting habitat. As the lagoon fills, suitable nesting habitat becomes inundated with water. This loss of suitable nesting habitat is an adverse effect. Public and agency use of the beach and lagoon shore may result in disturbance to nesting plovers. As a consequence, western snowy plovers attempting to breed in Del Norte County may seek nest sites located away from disturbance and flooded areas.

Brown Pelican and Bald Eagle

Both the brown pelican and bald eagle are primarily fish eaters, although the bald eagle will take waterfowl and occasionally mammals. Additionally, eagles are opportunistic carrion eaters.

Lowered lagoon levels would result in reduced water surface area, decreasing the overall amount of fish habitat, and therefore, foraging habitat for both the pelican and eagle. The additional breaching that would occur under an artificial breaching regime will reduce foraging opportunities for both bird species. Bald eagles use Lake Earl to the greatest extent during winter months. This period also corresponds to when the proposed breaching is most likely to occur. Consequently, the more numerous the breaching events, the greater the impact on bald eagle foraging opportunities. Peripheral marshes identified in Tetra Tech (2000), and Stillwater Sciences (2003), support habitat for waterfowl. Dewatering those marshes reduces habitat for the eagle's prey base. Loss of foraging opportunities also holds true for the brown pelican, although their greatest occurrence in the project area is prior to when most proposed breachings would likely be implemented. Breaching at the 9 to10 foot lagoon level maximizes the amount of foraging habitat available to the pelican and eagle. The reduced summer lagoon levels due to breaching on February 15, may result in a lagoon that is less attractive to brown pelicans during the summer and fall months as a result of the its smaller size and likely degraded water quality. A breach earlier than February 15, could potentially result in higher lagoon water levels during summer months (PWA 2003), increasing water quality and providing additional habitat for the pelican and eagle in summer and fall. Ample foraging habitat exists for both the pelican and eagle at sea, or in the nearby Smith River estuary. Bald eagles also forage along the Smith River.

Oregon Silverspot Butterfly and Western Lily

Habitat for, and the occurrence of, both Oregon silverspot butterfly and western lily, are not well documented in the project area. The Department and Service coordinated to acquire Federal funding

under section 6 of the Act to complete surveys for both species. Section 6 funding was secured for the studies completed by Dr. Wright (Wright, et al. 2003).

Historical maintenance of the lagoon at lower water levels has led to the establishment of habitat for the Oregon silverspot butterfly, and potentially the western lily, at water elevations that could be flooded under the proposed breaching regime, or a natural regime. However, it is the Service's belief that once a long-term breaching regime is established, habitat for both the butterfly and lily will become established at the adjusted lagoon level, provided that soil conditions are favorable to the lily and violets. Current flooding on sandy soils in the vicinity of the Pacific Shores development is unlikely to affect the western lily, which prefers more mature soils such as those near Point Saint George. However, violets that serve as the host plant for the larval stages of the Oregon silverspot butterfly are likely to be flooded, potentially drowning butterfly eggs and larvae. A breaching regime that drains the lagoon more frequently than that proposed could improve the immediate, current conditions for the violet, and consequently, the butterfly. However, the increased amount of saturated soils that would result from a maintained higher lagoon level should support more violets in the long-term (larger lagoon perimeter), and therefore, should ultimately benefit the Oregon silverspot butterfly. An additional issue is the invasion of wetland and non-native plant species that occur with a change in lagoon water elevation since 1988. The taller, more aggressive plants out compete *V. adunca*, making it less accessible to female butterflies looking to oviposit, and can crowd violets out and make them less abundant. A breach earlier than February 15, could potentially result in higher lagoon water levels during summer months (PWA 2003), increasing water quality and discouraging the propagation of violets at lower lagoon levels by keeping habitat flooded during the growing season. The violets at the lowest elevation are the ones most likely to be flooded when the lagoon rises. If violets are unavailable to ovipositing female Oregon silverspot butterflies in late summer, the potential for egg and larvae drowning is reduced.

Interrelated and Interdependent Activities

Regulations implementing the Act require the Service to consider the effect of activities which are interrelated and interdependent to the proposed action (50 CFR § 402.02). The Act defines interrelated activities as those which are part of a larger action and depend upon the larger action for their justification, and interdependent activities as those projects which have no independent utility apart from the action that is under consideration. There are no interrelated or interdependent activities associated with this project.'

Cumulative Effects

Cumulative effects include the effects of future State or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act.

Future actions regarding management of Lake Earl will likely require Federal involvement (e.g., Clean Water Act permits). Although several significant private actions could occur that would affect Federally listed species, they are contingent on actions that require Federal involvement. Such actions would appropriately be assessed in future section 7 consultations.

Conclusion

After reviewing the current status of the tidewater goby, western snowy, brown pelican, bald eagle, Oregon silverspot butterfly, and western lily, the environmental baseline in the action area, effects of the proposed action, and cumulative effects, it is the Service's biological opinion that breaching up to February 15, 2015, is not likely to jeopardize the continued existence of the tidewater goby, western snowy, brown pelican, bald eagle, Oregon silverspot butterfly, and western lily. Critical habitat for these species does not occur in the action area, although critical habitat for the western snowy plover has been proposed south of Kellogg Road to the Talawa breach site. The proposed action would not result in destruction or adverse modification of any proposed or designated critical habitat.

INCIDENTAL TAKE STATEMENT

Section 9 of the Act and Federal regulation pursuant to section 4(d) of the Act, prohibit the take of endangered and threatened species, respectively, without a special exemption. Take is defined as harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harm is further defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns, including breeding, feeding, or sheltering. Harass is defined by the Service as actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding or sheltering. Incidental take is defined as take that is incidental to and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under that Act provided that such taking is in compliance with this Incidental Take Statement.

Amount or Extent of Incidental Take Anticipated

The Service anticipates that incidental take of the tidewater goby will be difficult to quantify for several reasons. First, finding the number of dead or injured individuals is unlikely: high water velocity at the breach site precludes normal sampling techniques; predators or scavengers will remove stranded or dead gobies prior to sampling; and once carried to the ocean, the species would be difficult to detect. Second, basic data needed to quantify effects are not currently available, including: morphology of the lagoon bottom at variable water levels; specific information on goby habitat requirements, behavior and abundance.

Tidewater Goby

The Service anticipates that an undetermined number of individuals could be taken as a result of the proposed action. The incidental take is expected to be in the following forms:

> **Harm** - Approximately 2,500 acres of suitable habitat would be unavailable to tidewater gobies after each breach event as the water's edge recedes, exposing sheltering, spawning, rearing, and foraging habitat. The number of acres of suitable habitat affected depends on lagoon water levels at the time of breaching. We anticipate up to three breaches annually, depending on rainfall and ocean sand transport. Therefore, up to 7,500 acres of suitable tidewater goby habitat may be affected annually, or up to 75,000 acres over the life of the 10-year permit.

Injury or mortality - An undetermined number of gobies would be entrained during each breach, carried to the ocean, stranded in pools or on land, and subject to death due to changes in water quality, dessication, scavenging or predation.

Effect of the Incidental Take

The Service has determined that this level of anticipated take is not likely to result in jeopardy to the tidewater goby.

Reasonable and Prudent Measures

The measures described below are non-discretionary, and must be undertaken by the Corps so that they become binding conditions of any grant or permit issued to the applicant, as appropriate, for the exemption in section 7(o)(2) to apply. The Corps has a continuing duty to regulate the activity covered by this incidental take statement. If the Corps; (1) fails to require the applicant to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, and/or (2) fails to retain oversight to ensure compliance with these terms and conditions, the protective coverage of section 7(o)(2) may lapse.

The Service believes the following reasonable and prudent measures are necessary and appropriate to minimize take of the tidewater goby:

Minimize entrainment of tidewater gobies during the breaching event.

Minimize stranding of tidewater gobies as a result of lowering water levels.

Minimize changes in water quality.

Terms and Conditions

In order to be exempt from the prohibitions of section 9 of Act, the Corps must comply with the following terms and conditions, which implement the reasonable and prudent measures described above, as well as the reporting requirements. These terms and conditions are non-discretionary.

1. Minimize entrainment of tidewater gobies during the breaching event.

   a. Fully implement the project's salient features number 8 and 9.

2. Minimize the stranding of tidewater gobies as a result of lowering lagoon water levels.

   a. Fully implement the project's salient features number 3, 4, 5, 6, and 7.

These reasonable and prudent measures, with their implementing terms and conditions, are designed to minimize incidental take that might otherwise result from the proposed action. If, during the course of the action, this level of incidental take is exceeded, such incidental take represents new information

requiring review of the reasonable and prudent measures provided. The Corps must immediately provide an explanation of the causes of the taking and review with the Service the need for possible modification of the reasonable and prudent measures.

Reporting Requirements

Any dead or injured listed species must be reported to the Service's Law Enforcement Division at (916) 979-2987, as soon as possible, and turned over to the Law Enforcement Division or to a game warden or biologist of the Department for care or analysis. The Service is to be notified in writing within 3 days of the accidental death of, or injury to, any listed species as a result of the project, or of the finding of any dead or injured listed species during implementation of the proposed action. Notification must include the date, time, and location of the incident or discovery of a dead or injured endangered or threatened species, as well as any pertinent information on circumstances surrounding the incident or discovery. The Service contact for this written information is the Arcata Fish and Wildlife Office which can be contacted at the letterhead address and telephone number..

Regulations at 50 CFR § 402.14(i)(3) states that in order to monitor the impacts of incidental take, the Federal agency or any applicant must report the progress of the action and its impact on the species to the Service as specified in the incidental take statement. The reporting requirements must be established in accordance with 50 CFR §13.35 and 222.23(d).

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information.

1. Minimize the potential effects to western snowy plovers.

   Use a Service approved snowy plover biologist to survey the breach site and quantify the number of plovers observed scraping, roosting, foraging, or engaged in any other activity at the breach site throughout the annual breach period (September 1 through February 15). Leg band color combinations and the presence of nest scrapes must be noted, and if possible, individual plovers sexed. If plovers continue to be present in the project area after March 18, 2004, then a Service approved snowy plover biologist should survey the exposed lagoon shoreline to determine if plovers may initiate nesting along the exposed shoreline. Habitat restoration along the sand spit that forms the bar across the lagoon mouth would increase the amount of habitat available to the plover, and would restore primary constituent elements to the area surrounding proposed critical habitat.

2. Minimize the potential effects to the tidewater goby.

   The Service acknowledges that natural breaches of the lagoon result in effects similar to those attributed to artificial breaches. However, artificial breaches, that occur during wetter and cooler periods will provide conditions that are more favorable for survival of gobies in stranding pools. As a consequence, the Service suggests that artificial breaching of the lagoon occur prior to

February 15. The optimal date for breaching should be pursued by data collection and continued development of a hydraulic model such as that initiated by Philip Williams and Associates, Ltd. (PWA 2003).

3. Minimize the potential effects to the Oregon silverspot butterfly.

The Service and Department continue to work together to design an adequate monitoring program. The Department and California Department of Parks and Recreation should work to restore habitat for the butterfly on their lands. Research should be developed and implemented regarding the butterfly egg and

larval mortality associated with inundation. The Department should also continue data collection and development of a hydraulic model such as that initiated by Philip Williams and Associates, Ltd. (PWA 2003) to help determine how water table levels affect violet distribution.

The Service will coordinate with the Department regarding the implementation of the conservation recommendation to keep informed of actions designed to minimized or avoid adverse effects or benefits to listed, proposed, or candidate species or their habitats.

REINITIATION NOTICE

This concludes formal consultation on the proposed action outlined in your February 20 , 2004, request. As provided in 50 CFR § 402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been maintained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this opinion; or (4) a new species is listed or critical habitat is designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

If you have any questions regarding this biological opinion, please contact Jim Watkins of my staff at (707) 822-7201.

Sincerely,

Michael M. Long
Field Supervisor

cc:
CDFG, Eureka, California (Attn: K. Kovacs)
Del Norte County, Crescent City (Attn: E. Perry)

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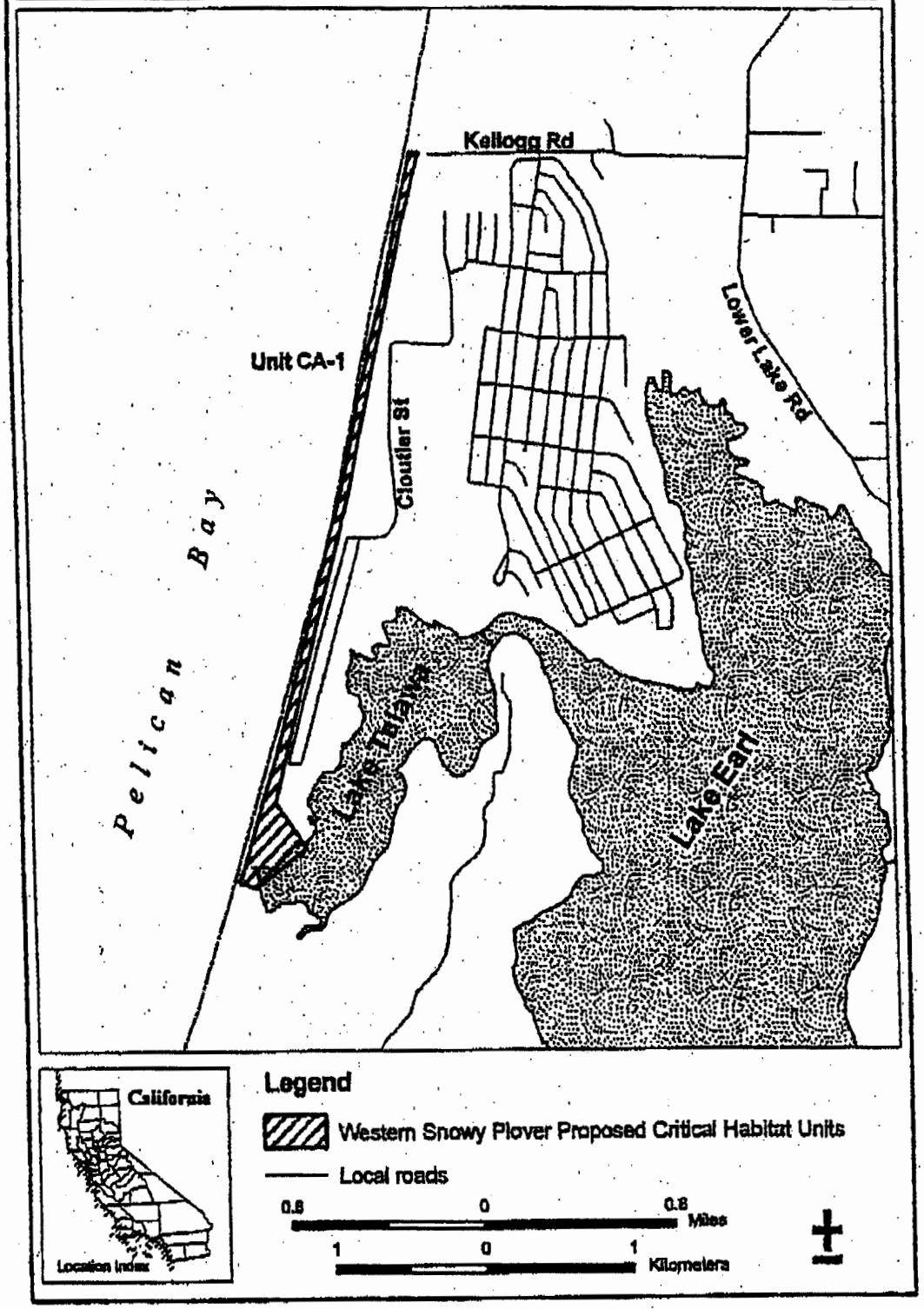
Map 27. Lake Earl (CA-1), Del Norte County, California.



(29) Unit CA–1, Del Norte County, California.

(i) From USGS 1:24,000 quadrangle map Crescent City, California, land bounded by the following UTM 10 NAD 27 coordinates (E,N): 399441, 4635774; 399504, 4635777; 399425, 4635468; 399384, 4635314; 399275, 4634785; 398991, 4633566; 398468, 4631552; 398670, 4631260; 398324, 4631005; 398324, 4631005; 398209, 4631037; proceed generally N following the mean low water mark (defined at the beginning of the section) and returning to 399441, 4635774.

(ii) **Note:** Units CA–1 (Map M27) follows:

DLF

California Regional Water Quality Control Board
North Coast Region
William R. Massey, Chairman

Terry Tamminen
Secretary for Environmental Protection

http://www.swrcb.ca.gov/rwqcb1/
5550 Skylane Boulevard, Suite A, Santa Rosa, California 95403
Phone 1-877-721-9203 Office (707) 576-2220 FAX (707) 523-0135

Arnold Schwarzenegger
Governor

October 13, 2004

EXHIBIT NO. 15 (1 of 7)
APPLICATION NO. 1-00-057
NCRWQCB Water Quality Cert.
Issue Clean Water Act Section
401 Cert.Lake Earl/Lake Talawa
Flood Ctrl. Project, iss. 10/13/04
No. Cst. Reg. Quality Ctrl. Board.

Ms. Karen Kovacs
California Department of Fish and Game
619 Second Street
Eureka, CA 95501

Mr. Ernie Perry
Del Norte County
981 H Street, Suite 110
Crescent City, CA 95531

Dear Ms. Kovacs and Mr. Perry:

Subject: Issuance of Clean Water Act Section 401 Certification (Water Quality Certification) for the Lake Earl/Lake Talawa Flood Control Project

File: CDFG – Lake Earl Flood Control Project
WDID No. 1A1001WNDN

This Order by the California Regional Water Quality Control Board, North Coast Region (Regional Water Board), is being issued pursuant to Section 401 of the Clean Water Act (33 USC 1341). The Order is being issued in response to your request, on behalf of the California Department of Fish and Game (CDFG) and Del Norte County (applicants), for a Clean Water Act, Section 401, Water Quality Certification to breach the sandbar between Lake Talawa and the Pacific Ocean as proposed in the Lake Earl Wildlife Area Management Plan. The Regional Water Board received an application and processing fee in the amount of $559.26 on August 25, 2004. The application was deemed complete on September 13, 2004. Information describing the proposed project was noticed for public comment for a 21-day period starting on September 21, 2004, on the Regional Water Board's web site. No comments were received.

Project Description: The Final Environmental Impact Report - Lake Earl Wildlife Area Management Plan (Plan) was certified by CDFG on August 13, 2004. The Plan contains criteria for implementing sandbar breaching events and provides long-term direction for managing the Lake Earl Wildlife Area (LEWA) in order to optimize the management of a variety of plant and animal species with an

emphasis on wetland dependent wildlife. Long-term management of the LEWA will seek the best balance between private property concerns, agriculture, and management of fish and wildlife habitat.

A breaching event is allowed whenever the water surface elevation of the lakes reaches 8.0 feet above mean sea level (MSL) during the period between September 1 and February 15. A final breaching event is allowed again on February 15 if the water surface elevation in the lakes is above 5.0 MSL. The actual surface elevation of the lakes could reach 10.0 feet MSL before a breaching event is completed. The Plan specifies that sandbar breaching events shall take place at the narrowest part of the sandbar between Lake Talawa and the Pacific Ocean. Breaching the sandbar involves excavating a trench approximately 200 feet long by 20 feet wide by 4 feet deep between Lake Talawa and the Pacific Ocean to start the flow of water from the lakes into the ocean. The estimated volume of material mechanically dredged during a breaching event is 741 cubic yards. Once water starts flowing through the breach site the flow increases rapidly and causes additional erosion of the sandbar.

Receiving Water:	The proposed project will cause disturbances to Waters of the United States associated with the Pacific Ocean and Lakes Earl and Talawa in the Smith River Plain Hydrologic Subarea No. 103.11.
Filled or Excavated Area:	Area Temporarily Impacted: 0.1 acre Area Permanently Impacted: none
Federal Permit:	United States Army Corps of Engineers Individual Permit (File No. 28435N)
Compensatory Mitigation:	None
Noncompensatory Mitigation:	Best Management Practices will be implemented for each breaching event. Del Norte County has applied for a Lake or Streambed Alteration Agreement (1600 Agreement) from the CDFG.
CEQA Compliance:	The CDFG, as the lead California Environmental Quality Act (CEQA) agency, certified an Environmental Impact Report for the Lake Earl Wildlife Area Management Plan (SCH#1989013110) on August 13, 2004.

Standard Conditions:

Pursuant to Title 23, California Code of Regulations, Section 3860 (23 CCR 3860), the following three standard conditions shall apply to the project:

1) This certification action is subject to modification or revocation upon administrative or judicial review, including review and amendment pursuant to Section 13330 of the California Water Code and 23 CCR 3867.

2) This certification action is not intended and shall not be construed to apply to any discharge from any activity involving a hydroelectric facility requiring a Federal Energy Regulatory Commission (FERC) license or an amendment to a FERC license unless the pertinent certification application was filed pursuant to 23 CCR 3855(b) and the application specifically identified that a FERC license or amendment to a FERC license for a hydroelectric facility was being sought.

3) The validity of any nondenial certification action (actions 1 and 2) shall be conditioned upon total payment of the full fee required under 23 CCR 3833, unless otherwise stated in writing by the certifying agency.

Additional Conditions:

Pursuant to 23 CCR 3859(a), the applicants shall comply with the following additional conditions:

1) Regional Water Board staff shall be notified as soon as possible that a breaching event has been scheduled and prior to the commencement of a breaching event in order to allow staff to be present on-site and to answer any public inquiries that may arise regarding the project.

2) The breaching location shall be at the narrowest part of the sandbar between Lake Talawa and Pacific Ocean.

3) A breaching event is allowed whenever the water surface elevation of the lakes reaches 8.0 feet above mean sea level (MSL) during the period between September 1 and February 15. A final breaching event is allowed again on February 15 if the water surface elevation in the lakes is above 5.0 MSL. This authorization is for breaching events

conducted between September 1, 2004, and February 15, 2009. The applicants must apply for a new Water Quality Certification for any proposed breaching activities beyond February 15, 2009.

4) The applicants shall restrict public access to all areas within 500 feet of the breaching location for 12 hours prior to breaching, during the 24 hours of breaching operation, and for 24 hours afterwards.

5) Breaching shall not be conducted when Brown Pelicans are within a 200-foot radius of the breach site. Immediately prior to breaching, a qualified wildlife biologist shall ensure that no pelicans are at risk from the breaching. The applicants shall use noise or visual methods (e.g. zod guns) to haze all on-water birds near the breach site. Hazing shall continue throughout the breaching event.

6) The applicants shall survey for stranded tidewater gobies for 14 days following each breaching event. The applicants shall return stranded gobies to the main basin of the lagoon.

7) The applicants shall collect one water sample from the channel (the narrows) between Lake Earl and Lake Talawa immediately prior to each breaching event. The sample shall be analyzed for total coliform, fecal coliform, and enterococcus. The time of sample collection and the water level at the sampling location shall be noted when the samples are collected.

8) The applicants shall collect water samples from the narrows during the 48-hour period immediately following each breaching event. At least four samples shall be collected at regular intervals during the 48-hour period (two a.m. samples and two p.m. samples). These samples shall be analyzed for total coliform, fecal coliform, and enterococcus. The time of sample collection and the water level at the sampling location shall be noted when the samples are collected.

9) Within four weeks of a breach event the applicants shall submit a written report to the Regional Water Board containing the results of the sampling required in Additional Conditions 7and 8.

10) No debris, soil, silt, sand, bark, slash, sawdust, rubbish, cement or concrete washings, oil or petroleum products, or other organic or earthen material from any construction or associated activity of whatever nature, other than that authorized by this permit, shall be allowed to enter into or be placed where it may be washed by rainfall into waters of the State. When operations are completed, any excess material or debris shall be removed from the work area. No rubbish shall be deposited within 150 feet of the high water mark of any surface water.

11) Fueling, lubrication, maintenance, operation, and storage of vehicles and equipment shall not result in a discharge or a threatened discharge to waters of the United States. At no time shall the applicants use any vehicle or equipment, which leaks any substance that may impact water quality. Staging and storage areas for vehicles and equipment shall be located outside of waters of the United States.

12) A copy of this permit must be provided to the contractor and all subcontractors conducting the work, and must be in their possession at the work site.

13) If, at any time, an unauthorized discharge to surface waters occurs, or any water quality problem arises, the project shall cease immediately and the Regional Water Board shall be notified promptly.

14) This Order is not transferable. In the event of any change in control of ownership of land presently owned or controlled by the applicants, the applicants shall notify the successor-in-interest of the existence of this Order by letter and shall forward a copy of the letter to the Regional Water Board at the above address.

To discharge dredged or fill material under this Order, the successor-in-interest must send to the Regional Water Board Executive Officer a written request for transfer of the Order. The request must contain the requesting entity's full legal name, the state of incorporation if a corporation, address and telephone number of the person(s) responsible for contact with the Regional Water Board. The request must also describe any changes to the project proposed by the successor-in-interest or confirm that the successor-in-interest intends to implement the project as described in this Order.

Water Quality Certification: I hereby issue an order [23 CCR Subsection 3831(e)] certifying that any discharge from the Lake Earl Flood Control Project (Facility No. 1A1001WNDN) will comply with the applicable provisions of sections 301 ("Effluent Limitations"), 302 ("Water Quality Related Effluent Limitations"), 303 ("Water Quality Standards and Implementation Plans"), 306 ("National Standards of Performance"), and 307 (" Toxic and Pretreatment Effluent Standards") of the Clean Water Act [33 USC Subsection 1341 (a)(1)], and with other applicable requirements of State law. This discharge is also regulated under State Water Resources Control Board Order No. 2003 - 0017 - DWQ, "General Waste Discharge Requirements for Dredge and Fill Discharges That Have Received State Water Quality Certification" which requires compliance with all conditions of this Water Quality Certification.

Except as may be modified by any preceding conditions, all certification actions are contingent on: a) the discharge being limited and all proposed mitigation being completed in strict compliance with the applicants' project description, and b) compliance with all applicable requirements of the Regional Water Board's Water Quality Control Plan for the North Coast Region (Basin Plan).

Expiration: The authorization of this certification for any dredge and fill activities expires on February 15, 2009. Conditions and monitoring requirements outlined in this certification are not subject to the expiration date outlined above, and remain in full effect and are enforceable.

Please notify Dean Prat of our staff at (707) 576-2801 or pratd@rb1.swrcb.ca.gov prior to construction (pursuant to Additional Condition No. 1 above) so that we can answer any public inquiries about the work.

Sincerely,

Catherine Kuhlman

Catherine E. Kuhlman
Executive Officer

DLP:js/101304_CDFGLakeEarl401cert092704

Enclosure: State Water Resources Control Board Order No. 2003-0017 - DWQ, "General Waste Discharge Requirements for Dredge and Fill Discharges That Have Received State Water Quality Certification"

cc: Ms. Sheryl Schaffner, SWRCB, Office of Chief Counsel
Mr. Erik Spiess, SWRCB, Office of Chief Counsel
Mr. Oscar Balaguer, 401 Program Manager, Water Quality Certification Unit
State Water Resources Control Board, 1001 I Street, 15th Floor, Sacramento, CA 95814
Mr. Tim Vendlinski, Supervisor of Wetlands Regulatory Office (WTR-8), U.S. Environmental Protection Agency, Region 9, 75 Hawthorne Street, San Francisco, CA 94105
Ms. Jane Vorpagel, California Department of Fish and Game, 601 Locust Street, Redding, CA 96002
Ms. Vicki Frey, CA Dept. of Fish and Game, 619 2nd Street, Eureka, CA 95501
U.S. Army Corps of Engineers, District Engineer, P.O. Box 4863, Eureka, CA 95502
Ms. Jane Hicks, U.S. Army Corps of Engineers, Regulatory Functions, 333 Market Street, San Francisco, CA 94105
Mr. Mike Long, U.S. Fish and Wildlife Service, Arcata Field Office, 1655 Heindon Road, Arcata, CA 95521