STATE OF CALIFORNIA – THE RESOURCES AGENCY Gray Davis, *Governor*

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STAFF REPORT
REGULAR CALENDAR

APPLICATION FILE NO.: **1-97-76**

APPLICANTS: **California Department of Fish and Game and Del Norte County**

PROJECT DESCRIPTION: Periodic breaching of the Lake Earl/Lake Talawa sandbar for flood control purposes during the 1998-99 and 1999-2000 rainy seasons (September 16 to February 15) whenever lake elevations reach 8 feet above mean sea level, and February 15 if lake elevations are 5 feet or more above mean sea level.

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

Plan designation: RCA-1 (General Resource Conservation Area)
Zoning: same as above

LOCAL APPROVALS: No local approvals necessary.

OTHER APPROVALS: State Lands Commission lease and U.S. Army Corps of Engineers permit.

SUBSTANTIVE FILE DOCUMENTS: See Appendix A

STAFF NOTE

Jurisdiction and Standard of Review

The breaching site at the sandbar between Lake Talawa and the Pacific Ocean, along with all of the land and water area of Lake Earl and Talawa approximately up to the fourteen-foot contour, are located within the Coastal Commission's area of original or retained permit jurisdiction. The standard of review is the applicable Chapter 3 policies of the Coastal Act.

Summary of Staff Recommendation

The California Department of Fish and Game (CDFG) and Del Norte County propose to periodically breach the sandbar separating the coastal lagoon system known as Lake Earl and Lake Talawa from the Pacific Ocean for flood control purposes. The U.S. Army Corps of Engineers is currently conducting a study of the lagoon system's biological resources and hydrology. The CDFG and Del Norte County would implement the proposed breaching plan for a two-year period while the study is completed. The applicants intend to apply for a long-term breaching permit and develop a habitat management plan once the study results are available.

A significant flooding hazard to maintained infrastructure is created when the water level in the lagoon reaches approximately 10 feet mean sea level (MSL). The lagoon has been artificially breached, primarily to increase available pasture for grazing livestock over the last 75-100 years. Since 1987, the sandbar has been breached when the water level in the lagoon has reached 8 feet or greater under a series of emergency coastal development permits.

Staff recommends approval of the project with six special conditions. Special Condition No. 1 limits breaching of the sandbar to the middle of the open sandy area of the sandbar, midway between the existing vegetation on either side of the breaching site. This condition will protect sensitive coastal dune communities adjacent to the breaching site by restricting the breaching to the open sand area. Special Condition No. 2 limits the breaching activity to the rainy seasons of 1998-1999 and 1999-2000 only, with the permit to expire on February 16, 2000. To obtain long term breaching authorization, CDFG will be required to apply for a separate coastal development permit. Special Condition No. 3 is a special condition regarding assumption of risk, waiver of liability, and an indemnification agreement. Special Condition No. 4 requires the applicants to restrict public access to the breaching site only during specified times around the breaching. This condition will ensure public safety during breaching and public access at all other times. Special Condition 5 requires the applicants to restrict breaching to periods when brown pelicans are absent from within 200 feet of the breach site and to implement hazing measures throughout the breaching event to protect pelicans and other bird species from harm. Special Condition 6 requires the applicants to search for endangered Tidewater Gobies that are stranded in small pools and return stranded gobies to the main body of the lagoon following breaching.

The proposed development, as conditioned, will prevent flooding of maintained infrastructure while supporting the natural integrity of the coastal estuarine lagoon. The breach will maintain water quality and habitat productivity, and protect natural resources and species of special concern. The staff believes that the proposed project, as conditioned, is consistent with Coastal Act policies and therefore recommends **approval** of the project.

1.0 MOTION, STAFF RECOMMENDATION AND RESOLUTION

The staff recommends that the Commission adopt the following resolution:

Motion:

I move that the Commission approve Coastal Development Permit Application No. 1-97-76, subject to the conditions specified in the staff recommendation dated November 20, 1998.

STAFF RECOMMENDATION OF APPROVAL

Staff recommends a YES vote and adoption of the following resolution and findings. The motion passes only by affirmative vote of a majority of the Commissioners present. Approval of the motion will result in the adoption of the following resolution and findings.

Resolution to Approve Permit:

The Commission hereby **grants** a permit, subject to the conditions specified below, for the proposed development on the grounds that, as conditioned, the development will be in conformity with the provisions of Chapter 3 of the California Coastal Act of 1976, is located between the first public road and the sea and is consistent with the public access and recreation policies of the Coastal Act, and will not have any significant adverse impacts on the environment within the meaning of the California Environmental Quality Act.

2.0 STANDARD CONDITIONS: See Appendix B.

3.0 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. Duration of the Approved Development

Consistent with the interim two year authorization proposed by the applicants, this authorization is for breaching activity between September 16 and February 15 of the years 1998-2000 only, and terminates on February 16, 2000. The applicants must apply for a new Coastal Development Permit for any proposed breaching activity on or beyond that date.

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

PRIOR TO THE ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, each applicant shall submit a signed agreement in a form and content acceptable to the Executive Director, which shall provide that: (a) each applicant acknowledges and agrees that the site may be subject to hazards including flooding, wave action, and erosion and hereby assumes the risk from such hazards; (b) each applicant unconditionally waives any future claims of liability against the California Coastal Commission, its successors in interest, advisors, officers, agents, and employees for any damage from such hazards or arising out of any work performed in connection with the permitted project; (c) each applicant agrees to indemnify and hold harmless the California Coastal Commission, its successors in interest, advisors, officers, agents and employees against any and all claims, demands, damages, costs, and expenses of liability (including without limitation attorneys' fees and costs of suit) arising out of the design, construction, operation, maintenance, existence or failure of the permitted project, including without limitation any and all claims made by any individual or entity or arising out of any work performed in connection with the permitted project; and (d) each applicant agrees that any adverse impacts to property caused by the permitted project shall be fully the responsibility of the applicant.

4. 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. The applicants 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.

5. 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 are at risk from the breaching. The permittees shall use noise or visual methods (e.g. zod guns) to haze all on-water birds near the breach site. Hazing shall begin immediately before and continue throughout the breaching event including evening hours.

6. Tidewater Goby Protection

The permittees shall survey for stranded tidewater gobies (*Eucyclogobius newberryi)* between 3 to 14 days following each breaching event. The permittees shall test seining options to assess the effectiveness of possible methods and shall return stranded gobies to the main basin of the lagoon.

4.0 FINDINGS AND DECLARATIONS

The Commission finds and declares as follows:

4.1 PROJECT DESCRIPTION

4.1.1 Location and Site Description

The project site is located at the outlet channel of the Lake Earl sandbar, on State lands leased to the California Department of Fish and Game (CDFG), approximately 2 miles north of Crescent City, in Del Norte County (Exhibit No. 1). Lake Earl, also known as Lake Earl and Talawa, actually consist of two sections of a single extensive estuarine lagoon (Exhibit No. 2), covering approximately 4800 acres.

Coastal lagoons are estuarine waters intermittently separated from the ocean by sand spits or barriers. They 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 currents form 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 it overtops or liquefies the sand spit and erodes an opening by which the trapped water escapes to the ocean. As the lagoon flows into the ocean, its 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.

The Fish and Wildlife Service characterized Lake Earl and Lake Talawa as "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. In addition, over 14 federally threatened, endangered, or candidate species of plants and animals are known to occur at Lake Earl.

Because of the extremely high fish and wildlife values of the lakes and adjacent wetlands, the California Department of Fish and Game (CDFG) identified Lake Earl as one of the 19 coastal wetlands in a 1970's report entitled, "Acquisition Priorities for Coastal Wetlands of California." To better manage the wildlife and fisheries resources in and around the lakes, CDFG has acquired more than 2,500+ acres of land within or adjacent to Lake Earl and Lake Talawa. An additional 2,600+ acres of land has been leased from the State Lands Commission, placing a total of over 5,090 acres of land and water area under management by CDFG. Only approximately 45 acres of land below the 10-foot contour 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 adjacent to Lake Earl is minimal. Most land is either owned by the California Department of Parks and Recreation, run by CDFG or is dedicated to agriculture and grazing pasture. Adjacent development is limited to three small areas of residential housing (Exhibit No. 3) and one area of industrial development. All of the residential housing is above the 10-foot elevation contour.

Pacific Shores

The Pacific Shores Subdivision is located north of Lake Talawa, south of Kellogg Road, between Lake Earl and the Pacific Ocean (Exhibits Nos. 3 & 4). The Subdivision has 1524 lots on 1486 acres. Approximately 27 miles of paved roads were constructed shortly after the subdivision was approved in 1963. However, except for the road system, the subdivision remains essentially undeveloped. Since 1963, only minimal infrastructure has been installed at Pacific Shores, and no permanent residences have been constructed. Only the main access road has been maintained.

Wildlife Reserves

The California Department of Fish and Game maintains 5,090 acres of land adjacent and within Lake Earl know as the Lake Earl Wildlife Area (LEWA). The California Department of Parks and Recreation manages another 5000 acres of land adjacent to Lake Earl known as the Lake Earl Project. Together they comprise most of the land below the 10-foot lake level and provide both protection for the natural resources and passive recreational opportunities.

Breaching Site

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 extensive dunes. The dune system is well vegetated and relatively stable, although the dunes within the Pacific Shores subdivision are significantly disturbed due to off-road vehicle use. The breaching site itself remains unvegetated.

4.1.2 History of Breaching Activities at Lake Earl

During the last 75-100 years, 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. If allowed to breach naturally, the lagoon would reach a size greater than 4800 acres at about 12-13 feet above mean sea level (12 feet 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 feet MSL, the sandbar is several hundred feet wide and as much as 12 to 13 feet high. As the lagoon level increases toward the natural breach height of approximately 12 feet 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. Certain members of the region's indigenous people (the Tolowa Nation) claim that their ancestors managed the lagoon at 4 feet prior to European settlement using 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 modern 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. However, U.S. Army Corps of Engineers (Corps) records document that the lagoon rose above 7 feet in 1955 and 1970, and County Flood Control records show breaches at 8.9 feet in 1979 and 6.1 feet in 1983. Since 1986, the lagoon has been breached at or above 8 feet. Although the lagoon has been artificially breached for at least 75-100 years, the best available evidence documents that Lake Earl has not been consistently managed at 4 feet throughout that period.

4.1.3 Previous Commission Actions

Between 1976 through 1986, the County breached the lagoon under a Corps permit whenever the water level exceeded 4 feet. 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 has approved a series of emergency permits to breach the sandbar for flood control purposes whenever the elevation of the lagoon is 8 feet MSL or higher. In December of 1991, the Coastal Commission granted Permit No. 1-91-63 to allow periodic breaching of the sandbar at Lake Earl and Talawa by Del Norte County for flood control purposes. In approving Permit No. 1-91-63, the Commission added a special condition to the permit which required the applicant (the Del Norte County Public Works Department) to "breach the sandbar whenever the lake 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 feet MSL until such time that the required studies were completed and all of the outstanding environmental issues had been formally analyzed.

The sandbar is owned by the State of California and leased by the California Department of Fish and Game. Breaching the sandbar whenever the lake elevation is at 4 feet MSL was not acceptable to the California Department of Fish and Game because of concerns about how resulting reduced lake levels would adversely affect wildlife habitat. Therefore, the Department withdrew its permission to allow the County to enter the land to breach the sandbar at 4 feet MSL. In a November 20, 1991 letter to the Coastal Commission from Banky E. Curtis, Region 1 Manager of the CDFG, Mr. Curtis stated:

> *"It should be understood that the Department of Fish and Game agreed to the specific plan contained in Application No. 1-91-63. We would oppose any changes in the plan which would reduce lake levels below those proposed by Del Norte County in Application No. 1-91-63. Is should also be understood that our permission to allow Del Norte County*

to enter our property to breach the sandbar is predicated on the conditions included in the original permit application. This permission would be withdrawn if changes were made which we determined would adversely affect fish and wildlife resources."

If a permittee accepts the benefits of a coastal development permit and commences a project that has been approved by the Coastal Commission, then the permittee is required to adhere to all of the terms and conditions of permit approval. However, an applicant is under no legal obligation to actually perform or undertake a project that has been granted a coastal development permit by the Coastal Commission. If the conditions of permit approval are not acceptable, either the owner of the land or the applicant can simply choose not to exercise the permit. In this case, the Department of Fish and Game chose not to allow the county applicant to exercise Permit No. 1-91-63 on lands subject to their authority.

The Commission has never received a permit request from any party to breach the sandbar for flood control purposes whenever the lagoon is at 4 feet MSL. In fact, since 1987 until now, the Executive Director has received and approved a series of emergency permits from the Del Norte County Department of Public Works to regularly breach the sandbar for flood control purposes whenever the water elevation of the lagoon is at 8 feet MSL or higher. The California Department of Fish and Game has not opposed these emergency permits, and in fact, is often a co-applicant.

Except for the two-year authorization period requested, the project that was approved for Del Norte County under Permit No. 1-91-63 had the same project description that is now being proposed by Del Norte County and the California Department of Fish & Game under this permit (Application No. 1-97-76). In September 1996, the Commission also opened a public hearing for Permit Application No. 1-94-49 for the same breaching proposal as that described in this permit application. 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 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 the application currently before the Commission.

Since 1991, when the Commission acted on CDP 1-91-63, CDFG has continued to purchase property from willing sellers who own land around the lagoon that is below 10 feet MSL. At the 1991 public hearing under Permit No. 1-91-63, the Commission heard testimony from the Brian Ferguson, a local dairy farmer, whose land was being flooded. The Department has since purchased 112 acres of land below the ten-foot contour from the Ferguson family. The Department estimates that about 42 acres of privately held land below the ten-foot contour is still subject to periodic flooding. This 42-acre area is spread among portions of six private ownership's, does not include any permanent inhabitable structures and does not include land within the Pacific Shores subdivision. Although the Pacific Shores subdivision is an area where CDFG has incomplete information as to flooding impacts, Pacific Shores is not developed with residential housing.

Since the 1996 Commission meeting, the Lake Earl Working Group has worked on completing the environmental impact assessment of the proposed breaching of Lake Earl at 8feet. The

California Department of Fish and Game, the U.S. Fish and Wildlife service, and the Army Corps of Engineers have responded to the 48-questions presented by Wakefield. These agencies have provided wildlife life history and hydro-geologic information which demonstrates the appropriateness of the proposed project (CDFG 1996, Stover 1996, Pierce 1997, Del Norte 1998). These reports and letters have provided Commission staff with the additional information needed to make the below findings regarding impacts to sensitive resources.

In addition, Joseph Milton, Staff Counsel of the Department of Fish and Game, in a letter dated October 8, 1998 (Exhibit No. 5), responded to claims of property takings made within the August 19, 1996 Pacific Shores Subdivision Water District letter. The CDFG responded to the District's allegations stating that:

> *"the District offers no credible explanation of how the Breaching, or any of the Department's 'past or present actions' induced a constitutional taking of private property, nor does it explain how those who buy property in an officially designated wetlands area sustain a compensable injury if their land becomes wet."*

4.1.4 Breaching Proposal

The applicants propose to periodically breach the sandbar between September 16 and February 15 when the lake elevation is 8 feet above MSL, and again on February 15 if the lake elevation is 5 feet or more above MSL during the 1998/1999 and 1999/2000 winter rainy seasons.

The breaching activity involves pushing sand to either side on the sandbar with a caterpillar tractor to form a channel. Once the sandbar is breached, the draining water quickly deepens and widens the outlet channel. Within a day or two, the level of the lake is quickly lowered to about mean sea level, depending on the tides and winter storms. 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 sediments deposited by long shore currents. Once the outlet channel is closed, the lake elevation rises again. The rate of lake-elevation rise is a function of the rate of recharge by surrounding ground water, surface water runoff, and precipitation.

The County indicates that breaching at 8 feet MSL allows for some margin of safety (i.e. some additional storage capacity of the lagoon) before serious flooding of County roads occurs. In addition, the CDFG strongly believes that breaching the sandbar under the proposed project description (at 8 feet MSL) minimizes risks to life and property more effectively than breaching the sandbar under a continuing series of emergency permits. This is because lake elevations can rise quite rapidly after a request for an emergency permit is made, particularly if the request is made during a winter storm. It can be extremely dangerous to attempt to breach a sandbar during a winter storm. By the time that the storm subsides, the water level in the lagoon may exceed 10 feet MSL. The difference in the surface area of the lagoon between 8 feet MSL and 10 feet MSL is approximately 692 acres and is equivalent to 5 inches of rain within the watershed. County roads begin to flood when the elevation of the lagoon is between 8 and 9 feet MSL. See Exhibit No. 6. Private wells are overtopped at 10 feet MSL, and an unknown number of low lying septic systems begin to malfunction at 10 feet MSL

Breaching on February 15, when the lake 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 the spring and summer to close the sandbar and allow the lake level to rise. If the sandbar is not closed, the lagoon remain very shallow, small, 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 the sego pond weed, a dominant waterfowl food plant. A smaller lake size also reduces the size of the aquatic habitat and fishing opportunities for the public.

The County estimates that even with an unusually wet spring that there is a zero probability that the lagoon will need to be breached for flood control purposes during the spring and summer months if it is allowed to breach the sandbar on February 15 if the lake elevation is 5 feet or more above MSL.

4.3 Consistency with the Coastal Act

4.3.1 Biological Resources/Environmentally Sensitive Habitat

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 30230 states:

> *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 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.*

Coastal Act section 30231 states in part:

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

Coastal Act section 30233 in part states:

> *(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:

(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, nature study...

Coastal Act section 30240(a) states:

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.

4.3.1.1 Lake Earl Wildlife Area.

The California Department of Fish and Game is a major manager of State-owned property in the Lake Earl and Lake Talawa area, known as the Lake Earl Wildlife Area. The State of California has a fee interest at the breaching site and in the lakes and surrounding lands. See Exhibit No. 7. Lake Earl supports significant fish and wildlife resources, including several threatened or endangered species. Because of the extremely high fish and wildlife values of the lakes and adjacent wetlands, the Department identified Lake Earl as one of the 19 coastal wetlands in a 1970's report entitled, "Acquisition Priorities for Coastal Wetlands of California." The habitat values of the Lake Earl ecosystem are vulnerable to disturbance by human activities such as filling or draining. Because of its significant habitat values and its sensitivity to disturbance, the Lake Earl ecosystem qualifies as an environmentally sensitive habitat area (ESHA) as defined under Coastal Act section 30107.5.

The decision to acquire certain lands to protect and to enhance the natural resources of Lakes Earl and Talawa was approved by the Wildlife Conservation Board in 1979 and in coordination with the California Department of Parks and Recreation and the State Lands Commission. To better manage the wildlife and fisheries resources in and around the lakes, the Department has continued to expand its ownership in the area via an ongoing acquisition program to purchase from willing sellers all private lands around the lakes up to the 10-foot contour. The Department has acquired more than 2,500+ acres of land within or adjacent to Lake Earl and Lake Talawa. Only a relatively small amount of land below the 10 foot contour remains in private hands. An additional 2,600+ acres of land has been leased from the State Lands Commission, placing a total of over 5,090 acres of land and water area under management by the California Department of Fish and Game. In November of 1994, the State Lands Commission amended its lease agreement (No. PRC 5879.9) with the California Department of Fish & Game to expand the lease area and conduct the interim annual breaching that is requested herein. See Exhibit No 7, pages 4 through 9.

In 1987, the California Department of Water Resources began what was originally planned as a two-year water level management study of Lake Earl and Lake Talawa in cooperation with the California Department of Fish and Game. The objective of the study was to determine the most beneficial water level for the lakes throughout the year for fish and wildlife use, considering the

factors of surrounding septic tank problems and the flooding of adjacent land. As proposed, the first year of the study was intended to monitor the lake and nearby groundwater levels. Water quality and lake water level control alternatives were also to be evaluated. The second year of the study was intended to address possible solutions to any water quality problems discovered during the first year and to formulate a recommended management plan for the lakes in concert with the California Department of Fish and Game and Del Norte County.

Unfortunately, the completion of the study was delayed due to State funding problems. However, preliminary information from the study is available. For example, the Department estimates that the lakes would have the following surface areas at different elevations: 4,826 acres at 10 feet MSL; 4,134 acres at 8 feet MSL; 3,573 acres at 6 feet MSL; 2,828 acres at 4 feet MSL; and 2,191 acres at 2 feet MSL. The size of the lakes when they are at 0 feet MSL is not yet available. The Department estimates that the difference in the size between the lakes at 4 feet MSL 4 and 8 feet MSL is 1,306 acres, or a 46 percent increase in the size of the lakes.

4.3.1.2 Army Corps of Engineers Wildlife Monitoring Plan

The proposed breaching plan is intended to improve the natural habitat of the Lake Earl estuarine system. The best information available about the natural history of Lake Earl and its species of special concern supports the assessment that the proposed breaching plan will best protect the natural resources, while providing the necessary flood control (Pierce 1997, Shaw and Wiseman 1992, Hammond 1992, CDFG 1996, Del Norte 1998, Monfroe 1995, Stover 1996, USFWS 1995). There are gaps, however, in the information necessary to gauge the anticipated improvements. Before long term changes (positive or negative) can be assessed, initial information must be acquired.

The Army Corps of Engineers has provided approximately $323,000 to conduct an assessment of the habitat associated with Lake Earl. The study is directed at determining the state of the system at the initial stages of the new breaching plan. The information gathered will be invaluable in determining if habitat and species changes are occurring through time. Present habitat types will be characterized and mapped and compared with historical photos to document changes that have occurred in the past. Bird surveys will document the number of species and size of the populations that visit the lake throughout the year. Water quality parameters important to anadromous fish will be measured throughout the year. Tidewater goby and Oregon silver spot butterfly surveys will be conducted to identify any significant impacts to these species.

4.3.1.3 Tree deaths

There have been suggestions that between 991 and 1497 trees adjacent to Lake Earl were killed by water levels which rose above 4 feet. The CDFG, however, indicates that this allegation is unsubstantiated (Exhibit No. 8). The most common trees along the Lake Earl shore are red alders, willows, and Sitka spruce. These species are commonly found adjacent to and within wetland habitats such as Lake Earl and are often in areas where standing water is present for many months. CDFG staff indicate that the more likely cause of the tree deaths is from increased water salinity. The unusually dry spring of 1992 caused the breach to remain open for several months, increasing salinity of the lake to between 8.5 and 18 ppt. These species are susceptible to increased salinity. The proposed breaching strategy is designed to limit the salinity of the lake during most years and should support new growth of these species. Therefore, the Commission

finds the proposed breaching of Lake Earl as outlined and conditioned above shall protect the biological productivity and habitat values of Lake Earl in conformity with Coastal Act sections 30231 and 30240(a).

4.3.1.4 Threatened & Endangered Species

Anadromous Fishes/Coho Salmon

Federally Listed as Threatened

The threatened Coho Salmon enters Lake Earl between October and February once the lake has been breached, and spawn in gravel deposits within the adjacent creek tributaries. The juvenile fish rear in the cool streams for up to 15 months and then migrate to Lake Earl and the ocean. Breaching after February 15 could lower summer water levels because spring rains often are insufficient to refill the lake. Lower summer lake and stream levels would lead to increased temperature, and decreased oxygen concentrations, which are not favorable to juvenile salmonid survivorship. The proposed breaching schedule would limit the need for late (after February 15) breaching events. This will lead to a more stable spring and summer water level, helping to maintain the habitat and water quality necessary to support juvenile fish survivorship (Pierce 1997).

The breaching schedule would also allow juvenile salmonids to migrate to the ocean and 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. Therefore, the Commission finds the proposed breaching of Lake Earl as outlined and conditioned above will improve water quality and food abundance of Lake Earl to benefit the Coho Salmon population and protect the biological productivity and habitat values of Lake Earl in conformity with Coastal Act sections 30231 and 30240(a).

Tidewater Goby

Federally Listed as Endangered

The endangered tidewater goby has been found in Lake Earl in varying numbers throughout the years. The effects of breaching on the goby population are unknown. However this species has adapted to these dynamic coastal estuarine systems and should benefit from a more natural breaching schedule. Improved summer water quality will also benefit the goby. Low summer water levels associated with the previous breaching schedule increased salinity fluctuations and increased anoxic conditions, which decrease food sources and potentially impacted the goby population. The Corps sponsored monitoring program will further characterize the health of the population to identify the benefits and possible impact of the proposed breaching regime on the Lake Earl goby population.

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. To minimize the loss of gobies from

stranding, the Commission attaches Special Condition No. 6 which requires the permittee to survey stranded tidewater gobies and shall return stranded gobies to the main basin of the lagoon.

Initial seining efforts conducted by California Department of Fish and Game after the November 1998 breaching found that there are large numbers of gobies stranded within the isolated pools of the lagoon after breaching. In addition, this initial seining attempt identified the difficulties of manually seining the numerous pools.

Coastal Act section 30240(a) requires that environmentally sensitive habitat areas shall be protected against significant disruption of habitat values. Coastal Act section 30231 requires that the biological productivity and quality of coastal wetlands be maintained to support optimum populations of marine organisms. As discussed above, breaching of the lagoon causes the stranding and death of tidewater gobies. However, under natural conditions the lagoon would breach regularly. Since natural breaching occurs at a higher water elevation than that proposed, it is likely that even greater strandings would occur during a natural breaching event. Thus, the strandings associated with the proposed project are considered consistent with the natural conditions of the Lake Earl estuarine system.

Preliminary information from the Corps sponsored monitoring program indicates the goby population size within the lake is much greater than previously believed. Population estimates may exceed ten thousand individuals during the height of the season and a larger portion of the lake is being used by the gobies than previously estimated (pers. com. Ray Bosch, USFWS). 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.

Therefore, the Commission finds the proposed breaching of Lake Earl as outlined and conditioned above is (1) consistent with the natural conditions of Lake Earl, (2) is not expected to impact the goby population as a whole, and (3) requires monitoring of the population and remediation if necessary to protect the biological productivity and habitat values of Lake Earl in conformity with Coastal Act sections 30231 and 30240(a).

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 breaching at 4 feet may be responsible for this

decrease. Higher water levels (8 feet) would increase the amount of habitat able to support the growth of the violet and thereby benefit the butterfly (Pierce 1997).

While the breaching schedule is believed not to impact the Oregon silver spot 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 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. A portion of the Corps supported monitoring program will study the violet and butterfly populations to confirm that there are no impacts to the butterfly or violet population from flooding or loss of habitat. Therefore, the Commission finds the proposed breaching of Lake Earl as outlined and conditioned above shall protect the biological productivity and habitat values of Lake Earl in conformity with Coastal Act sections 30231 and 30240(a).

Brown Pelican

Federally Listed as Endangered

While the brown pelican should benefit from the increased health of the Lake Earl habitat, these birds can be harmed during breaching episodes. Although it is unlikely that pelicans will be in the area during breaching (Dec – Feb), 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 in the outflow and surf and would drown. Therefore, to ensure that no brown pelicans are injured during the breaching, **Special Condition 5** requires the applicants to haze any pelicans present prior to breaching (scaring off through noise making and visual methods).

Therefore, the Commission finds the proposed breaching of Lake Earl as outlined and conditioned is (1) consistent with the natural conditions of Lake Earl, (2) is not expected to impact Brown Pelicans, and (3) requires hazing of animals or halting of operations while Brown Pelicans are in the immediate area to protect the biological productivity and habitat values of Lake Earl in conformity with Coastal Act sections 30231 and 30240(a).

Water Fowl

Common Species

During a breach in November 1998, which was approved under an emergency Coastal Development Permit # 1-98-098G, 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. Therefore, Special Condition 5 was modified to include hazing of other bird species immediately prior to and throughout the breaching event. Automatic hazing methods should be employed after dark to keep birds from harm. Hazing of birds during breaching will limit waterfowl impacts while maintaining the lakes natural habitat value.

Therefore, the Commission finds the proposed breaching of Lake Earl as outlined and conditioned is (1) consistent with the natural conditions of Lake Earl, and (2) requires hazing of animals during breaching to protect the biological productivity and habitat values of Lake Earl in conformity with Coastal Act sections 30231 and 30240(a).

The Aleutian Goose

Federally Listed as Threatened

The Aleutian goose requires short grasses as foraging habitat. Higher lake levels may submerge some grazing lands for several months of the year and be unavailable to geese for foraging. The geese not only use the Lake Earl Wildlife Area (LEWA) for grazing but also graze on local farm land. Farmers have voiced concern about the geese on their land. Suggestions that the birds moved to adjacent farmland because of lack of grasslands caused from changes in the breaching schedule have been disputed. Better soils and other favorable grazing conditions occur on adjacent farmland and attract the geese. The Department of Fish and Game suggests that available foraging area is not a limiting resource to the migrating birds. The U.S. Fish and Wildlife Service has indicated that the breaching will not result in adverse impacts to the geese.

In response to concerns over the use of private land by the geese, the Department of Fish and Game is undertaking active management efforts to enhance the Aleutian goose foraging on the LEWA and began a hazing program on private land to encourage the use of the LEWA. Cattle will be used to graze 300 acres of grass within the LEWA to increase the availability of good short grass foraging area. These activities will provide ample grazing area for the present goose population within the LEWA. Therefore, the Commission finds the proposed breaching of Lake Earl as outlined and conditioned above shall protect the biological productivity and habitat values of Lake Earl in conformity with Coastal Act sections 30231 and 30240(a).

Bald Eagle, Peregrine Falcon

Federally Listed as Threatened

There would be no impact from the proposed breaching plan. These birds periodically use the Lake Earl area for hunting. The changes in lake elevation will not disturb their hunting range or nesting areas. Therefore, the Commission finds the proposed breaching of Lake Earl as outlined and conditioned above shall protect the biological productivity and habitat values of Lake Earl in conformity with Coastal Act sections 30231 and 30240(a).

Western Snowy Plover

Federally Listed as Threatened

The 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. Therefore, to avoid any potential impacts, the applicant has modified the breaching plan by changing the initial breaching date from September 1 to September 16 to better coincide with the end of the western snowy plover nesting season. By changing the proposed dates of the breaching to begin after September 16, there is little likelihood of an impact to the nesting birds. Therefore, the

Commission finds the proposed breaching of Lake Earl as outlined and conditioned above shall protect the biological productivity and habitat values of Lake Earl in conformity with Coastal Act sections 30231 and 30240(a).

Western Lily

Federally Listed as Endangered

There is no population of lily in the Lake Earl flood plain.

4.3.1.5 Dredging of Wetlands

The Coastal Act Section 30233 allows the diking, filling, or dredging of open coastal waters and wetland under certain specified conditions. However, the act of breaching the sand bar under the proposed project does not trigger an analysis under Section 30233 for the following reasons. 1) The proposed breaching does not involve the placement of any pipeline or other constructed devise into a wetland or open coastal water area. 2) The proposed breaching involves the parting of dry sand to form a channel to a depth that is approximately at lake level and does not involve any diking or dredging of any wetland or open coastal waters. 3) The proposed breaching does not involve any filling of any wetlands or open coastal waters since the definition of "fill" per Section 30108.4 of the Coastal Act means in applicable part: "Earth or any other substance or material... placed in a submerged area.

4.3.1.6 ESHA Requirements

Section 30240(a) of the Coastal Act requires that "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. For the reasons discussed above, the Commission finds that the proposed breaching strategy protects the Lake Earl estuarine system from "significant disruption of habitat values" and best mimics the natural breaching processes while eliminating water quality contamination from flooding of adjacent wells and infrastructure above 10 feet MSL.

Conclusion—Biological Impacts

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 environmentally sensitive habitat areas will not be affected or will benefit from the proposed breaching level. The present permit is for approval of an interim two-year period. The limited two-year authorization will allow regulated breaching while additional environmental studies are completed to further define and validate the long-term breaching strategy and ensure the long-term protection of sensitive species and habitats. Any results from the Corps study that document environmental impacts will be taken into consideration in two years when the applicants must apply for an additional coastal development permit.

The Commission therefore finds that the proposed project as conditioned will; 1) sustain the biological productivity of coastal waters and maintain healthy populations of all species of marine organisms, 2) maintain the biological productivity and the quality of coastal waters, 3) limit any alteration of coastal wetlands identified in "Acquisition priorities for the Coastal Wetlands of California", and 4) protect environmentally sensitive habitat areas against any significant disruption of habitat values, and is therefore consistent with Coastal Act sections 30230, 30231, 30233, and 30240 respectively.

4.3.2 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.

4.3.2.1 Flooding

Existing Development

The purpose 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 13 feet. At this level, public roads, wells, and septic systems are threatened. Breaching the sandbar for flood control purposes at 8 feet has taken place each year since 1987 under emergency permits. This permit application proposes to continue that practice for a two-year period under more defined and reasonably foreseeable circumstances than what exists under an emergency permit. Planned breaching more effectively minimizes the risks of flooding to life and property than an unplanned breaching under an emergency permit.

Development on the east side of the lagoon and around Lower Lake Road and particularly Lower Lake Road and Kellogg Road (both maintained by the County) would flood without the proposed breaching. First, the roadbed is saturated when water reaches 8 to 9 feet. The surface elevation of the public roads begins to flood when the lake reaches 9 feet or more above MSL. Second, as stated by Garry Monroe of CDFG in a letter dated November 13, 1995, the Department's reason for applying for a breaching permit at the 8-foot level is "in preventing the flooding of nine domestic wells that serve existing development (six are abandoned and three are still in use) located above the 10-foot elevation." All habitable residential structures and industrial development are located above the 10-foot elevation.

The applicants propose to periodically breach the sandbar between September 16 and February 15 when the lake elevation is 8 feet above MSL, and again on February 15 if the lake elevation is 5 feet or more above MSL during the 1998/1999 and 1999/2000 winter rainy seasons. Based on the best available hydrological, runoff, and rainfall data available, the County estimates that under the proposed breaching plan spring and summer lake-elevations would be in the following ranges.

- Average rainfall years: Elevation 5.5 to 7.0 feet (6 out of 10 years)
- Extremely wet years: Elevation 7.0 to 9.0 feet (2 out of 10 years)
- Extremely dry years: Elevation 4.0 to 5.5 feet (2 out of 10 years)

The County indicates that breaching at 8 feet MSL allows for some margin of safety (i.e. some additional storage capacity of the lagoon) before serious flooding of County roads occurs. In addition, breaching on February 15, when the lake 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 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 lake level to rise. If the sandbar is not closed, the lagoon remains very shallow, small, and open to the ocean. The shallow waters may allow water temperatures to rise above optimum levels necessary to maintain salmonids. A smaller lagoon size reduces fishing opportunities for the public, and a prolonged exposure to salt waters can adversely affect the existing aquatic vegetation in the lagoon. The County estimates that even with an unusually wet summer there is a zero probability that the lagoon will need to be breached for flood control purposes during the spring and summer months if it is allowed to breach the sandbar on February 15 if the lagoon elevation is 5 feet or more above MSL.

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. The Subdivision has 1524 lots on 1486 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 has been maintained. To date, no homes have been proposed or constructed within the subdivision, although two mobile homes have been placed on Pacific Shores lots. None of the water wells impacted by water elevations above 10 feet are located within the Pacific Shores subdivision. In 1971, the California Regional Water Quality Control Board adopted requirements for separation between septic systems and the highest anticipated groundwater. The majority of the land area within the subdivision can be characterized as a coastal dune system. Due to sandy soils and high groundwater conditions, development within Pacific Shores could not comply with these standards.

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 a coastal general land use plan and rezone. The County has recommended that an EIR be prepared and the studies are ongoing.

In a letter to Commission staff from Wakefield dated August 19, 1996, the District states that the subdivision was designed based on the assumption that the lagoon would be maintained at 4 feet or lower, and that:

> *"With breaching deferred until the lakes rise to eight feet MSL, at least 75 privately owned parcels will be underwater or partially underwater for many months of the year." [Emphasis in the original]* (Exhibit No. 9)

According to the Corps flood plain mapping, 218 of the 1524 lots within the subdivision are susceptible to flooding during a 100-year flood event. The County of Del Norte predicts that 2.73 miles of private access roads within the subdivision would be inundated at the 9-foot level.

The District proposes that the lagoon level should be managed at 4 feet in order to protect property values within the subdivision. As stated above, only minimal infrastructure has been installed at Pacific Shores since 1963, and no permanent residences have been constructed. Private roads within Pacific Shores are reported by the County to begin to flood when lake levels exceed 8 feet. The Commission has no evidence of flood damage to either of the mobile homes in the subdivision. Until such time that low lying lots within the subdivision are developed, there does not appear to be any actual threat of harm due to flooding of areas below 8 feet MSL. Further, it is unlikely that development permits could be granted within the subdivision due to septic system problems associated with the shallow water table.

The proposal to breach at 8 feet will substantially reduce the maximum area of the lagoon over its natural level at 12-13 feet. Nevertheless, the applicants' proposal is necessary to prevent flooding of County roads and existing infrastructure. Breaching at the 4-foot level, as suggested by the District to protect undeveloped lots from periodic inundation, would further reduce the

area of the lagoon by approximately 40 percent. Therefore, an 8 foot breaching level has been proposed to maintain the greatest area of shallow water lake and wetland habitat and to maintain the summer water quality necessary to support the associated wildlife, while complying with Coastal Act section 30253(1) to "minimize risks to life and property in areas of high geologic, flood and fire hazard".

Hazard Created by Breaching

Breaching the sandbar creates a temporary safety hazard to beach users. When breached, water from the lagoon rapidly escapes to the sea with significant force, endangering anyone who wanders too close. Once the water level in the lagoon reaches equilibrium with sea level, the hazard is abated. Special Condition No. 3 provides for the applicants' assumption of risk, waiver of liability and indemnification of the Commission is generally imposed on applicants proposing projects in areas subject to high risk of flood, wave and erosion hazard. To protect the public from this hazard, **Special Condition 4** requires the applicants to restrict access on the beach near the breach site prior to, during breaching and for a 24-hour period following the end of breaching.

Conclusion – Hazards

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. The Commission therefore finds that the proposed project, as conditioned to protect beach users during breaching events, is consistent with Coastal Act section 30253.

4.3.3 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 and Erl people lived adjacent to the lake prior to European settlement of the region. Previous archaeological surveys conducted in the Lake Earl area have documented Tolowa sites at numerous locations around the lake above the 10-foot elevation.

The Tolowa Nation, an organization representing approximately 40 Tolowa people, have expressed concerns during the public hearing on CDP application no 1-94-49 in September of 1996 that burial grounds and other Tolowa archaeological sites are flooded at lake levels exceeding 4 feet MSL and therefore advocate management at or below that level *(Bowen, 1993, 1995, 1996, 1997)*. To date, the location of these Tolowa archaeological sites have not been documented. However, the Elk Valley Rancheria Tribal Council, and the Smith River Rancheria, representing together approximately 880 Tolowa people, have expressed their support for the Department's proposal to manage the lake at the 8-foot level, and disagree with the assertion that Tolowa archaeological sites are threatened by flooding at levels greater than 4 feet (*Green, 1997; Richards, 1997*).The Corps' Lake Earl study discussed in section 4.3.1.2 above includes an archaeological survey of the lagoon area. Field work for the archaeological survey has been completed and preliminary results do not show evidence that Tolowa burial sites will be

significantly degraded from water levels below the 10-foot contour *(pers. comm. Rosko 10/13/98)*. Additional surveys are scheduled with a representative of the Tolowa Nation to further survey areas below the 10-foot elevation.

Coastal Commission staff has requested Tolowa Nation to provide further information or documentation about archaeological sites that would be flooded by water levels exceeding 4 feet. The people of Tolowa Nation have not yet responded. Without any such documentation, there is no evidence that the proposed project will adversely affect Tolowa archaeological resources. Therefore, the Commission finds the breaching proposal is consistent with Coastal Act Section 30244.

4.3.4 Public Access

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 30211 requires in applicable part, that new development not interfere with the public's right of access to the sea where acquired through use. Coastal Act Section 30212 also requires in applicable part that new development provide public access from the nearest public roadway to the shoreline except where adequate access exists nearby, or where the provision of public access would be inconsistent with public safety. In applying Section 30212, the Commission is limited by the need to show that any denial of a permit application based on these policies, or any decision to grant a permit subject to special conditions requiring public access, is necessary to offset a project's adverse impact on existing or potential public 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. The project will cause some interference with public access along the beach 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. Consequently, the Commission attaches Special Condition No. 4, which requires the applicants to restrict public access to all areas within 500 feet of the breaching location 12 hours prior to breaching, during the 24 hour breaching operation, and for 24 hours afterwards.

As conditioned, temporary (60-hrs) interference of public access from 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 feet 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.

4.3.5 Conversion of 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.*

As discussed above, the lagoon has been artificially breached for at least the past 75-100 years, originally to increase available grazing lands. Since 1991, the CDFG has purchased 112 acres of low-lying lands, mostly pasture, surrounding the lagoon as part of the Lake Earl Wildlife Area. Only 45 acres of grazing land are still in private ownership below the 10 foot contour. 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. Nevertheless, artificially breaching the lagoon at 8 feet will prevent the inundation of grazing lands that would be flooded under natural conditions. Therefore, the proposed project, while not designed to maximize available pasture, will 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 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.

4.4 California Environmental Quality Act

Section 13096 of the Commission's administrative regulations requires Commission approval of CDP applications to be supported by a finding showing the application, as modified by any conditions of approval, to be consistent with any applicable requirements of the California Environmental Quality Act (CEQA). Section 21080.5(d)(2)(A) of the CEQA prohibits approval of a proposed development if there are feasible alternatives or feasible mitigation measures available that would substantially lessen any significant adverse effects that the activity may have on the environment.

As discussed above, the proposed project is conditioned to be consistent with the resource protection policies of the Coastal Act. As conditioned, there are no feasible alternatives or feasible mitigation measures available which would substantially lessen any significant adverse impact 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 to conform to CEQA.

APPENDIX A

SUBSTANTIVE FILE DOCUMENTS

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Authorities Cited

Herb Pierce, Wildlife Biologist, California Department of Fish and Game, Eureka.

Gary Monroe, Wildlife Biologist, California Department of Fish and Game, Eureka.

Anne Henerson-Arzapalo, National Fisheries Research Center, National Fish and Wildlife Service. Fish Culture and Ecology Laboratory, Kerneysville, West Virginia

Jamie Rosko, Native American anthropologist subcontractor to Tetratech inc.

APPENDIX B

STANDARD CONDITIONS

1. Notice of Receipt and Acknowledgment. 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 period of time. Application for extension of the permit must be made prior to the expiration date.

3. Compliance. All development must occur in strict compliance with the proposal as set forth in the application for permit, subject to any special conditions set forth below. Any deviation from the approved plans must be reviewed and approved by the staff and may require Commission approval.

4. Interpretation. Any questions of intent of interpretation of any condition will be resolved by the executive director or the Commission.

5. Inspections. The Commission staff shall be allowed to inspect the site and the development during construction, subject to 24-hour advance notice.

6. 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.

7. 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 C

COASTAL DEVELOPMENT PERMIT HISTORY

1. Emergency permit 1-87-04G (December 17, 1987) and emergency permit 1-88-01G (February 1, 1988) were 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. 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 lake elevation reached 6 feet 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 lake 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;

3. 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 lake 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 lake and in seeking ways to avoid a similar situation from occurring in the future;

4. 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;

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

6. 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 lake elevation reached 4 feet above MSL. Since breaching at 4 feet MSL was not acceptable to the California Dept. of Fish and Game, the Department withdrew its permission to allow the County to enter its land to breach under those conditions;

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

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

9. Emergency Permit 1-94-03G (February 3, 1994) was granted to the Del Norte County Department of Public Works and the California Dept. of Fish and Game to breach the lake at over 8.5 feet MSL for flood control purposes;

10. Emergency Permit Application No. 1-94-04G was received on February 7, 1994 from Tom Resch of the Pacific Shores Property Owners Association when the lagoon were over 8.5 feet MSL. The application was returned to the applicant on February 11, 1994 due to the inability of the applicant to get written permission to breach from the California Dept. of Fish and Game;

11. Emergency Permit 1-95-01G (January 10, 1995) was granted to the Del Norte County Department of Public Works and the California Dept. of Fish & Game to breach the lake at 10.5 feet MSL for flood control purposes;

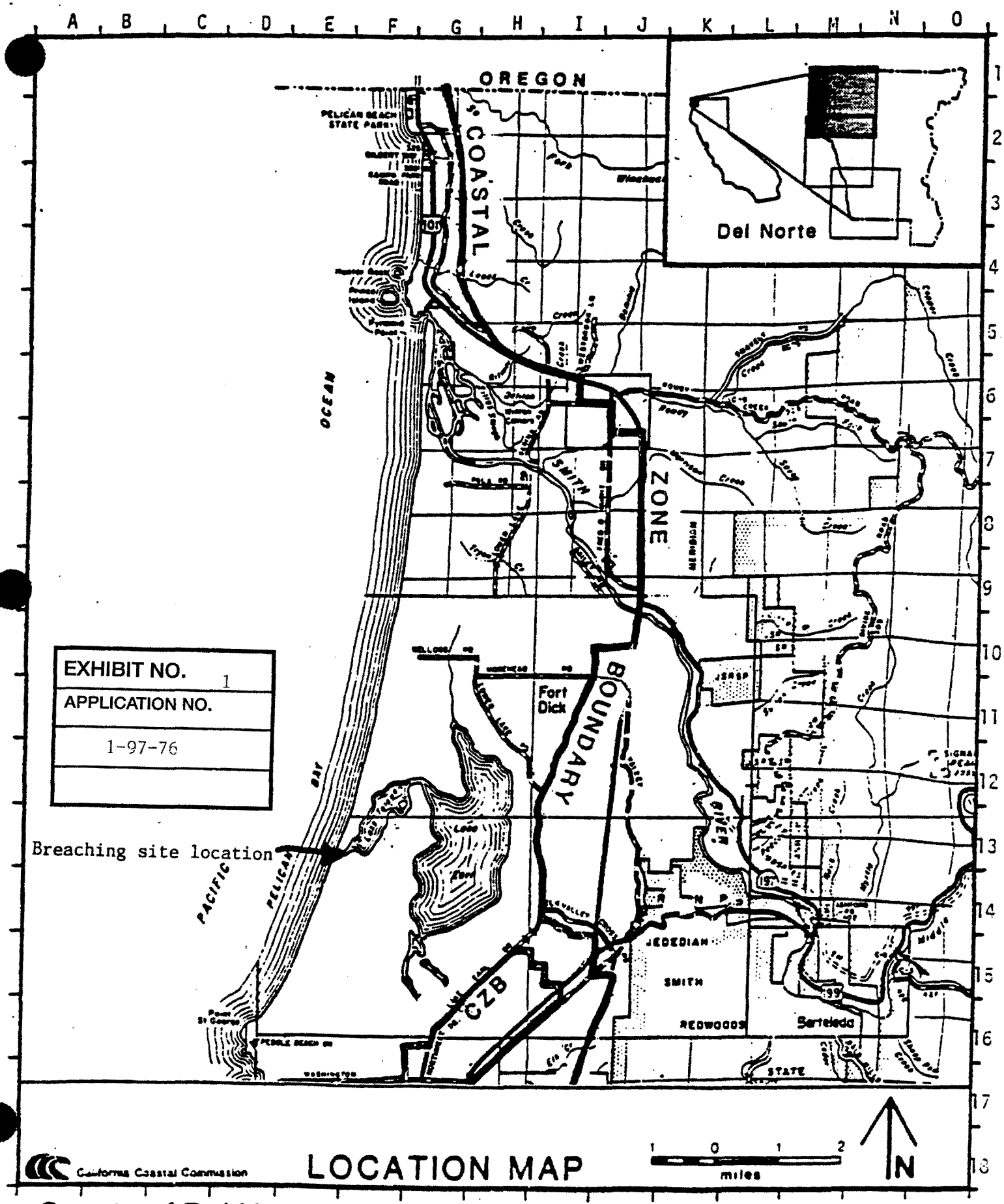
12. Emergency Permit 1-95-12G (December 29, 1995) was granted to the Del Norte County Department of Public Works and the California Dept. of Fish & Game to breach the lake at over 8 feet MSL for flood control purposes;

13. Emergency Permit 1-96-15G (December 2, 1996) was granted to Del Notre County Department of Public Works and California Dept. of Fish & Game to Breach the lake at above 8 feet MSL for flood control purposes;

14. Emergency Permit 1-97-082G (December 2, 1997) was granted to Del Notre County Department of Public Works and California Dept. of Fish & Game to Breach the lake at above 8.9 feet MSL for flood control purposes;

16. Emergency Permit 1-98-022G (March 10, 1998) was granted to Del Notre County Department of Public Works and California Dept. of Fish & Game to breach the lake at above 9 feet MSL for flood control purposes: Emergency Permit 1-98-098G (November 24,1998) was granted to Del Norte County Department of Public Works to breach the lake at above 9 feet MSL for flood control purposes; and

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


A B C D E F G H I J K L M N O
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BOUNDARY
CZB
Fort Dick
SMITH
JEDEDIAN
SMITH
REDWOODS
Del Norte
Breaching site location
EXHIBIT NO. 1
APPLICATION NO.
1-97-76
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California Coastal Commission
LOCATION MAP
County of Del Norte
Sheet 1 of 3

EXHIBIT NO. 2
APPLICATION NO.
1-97-76

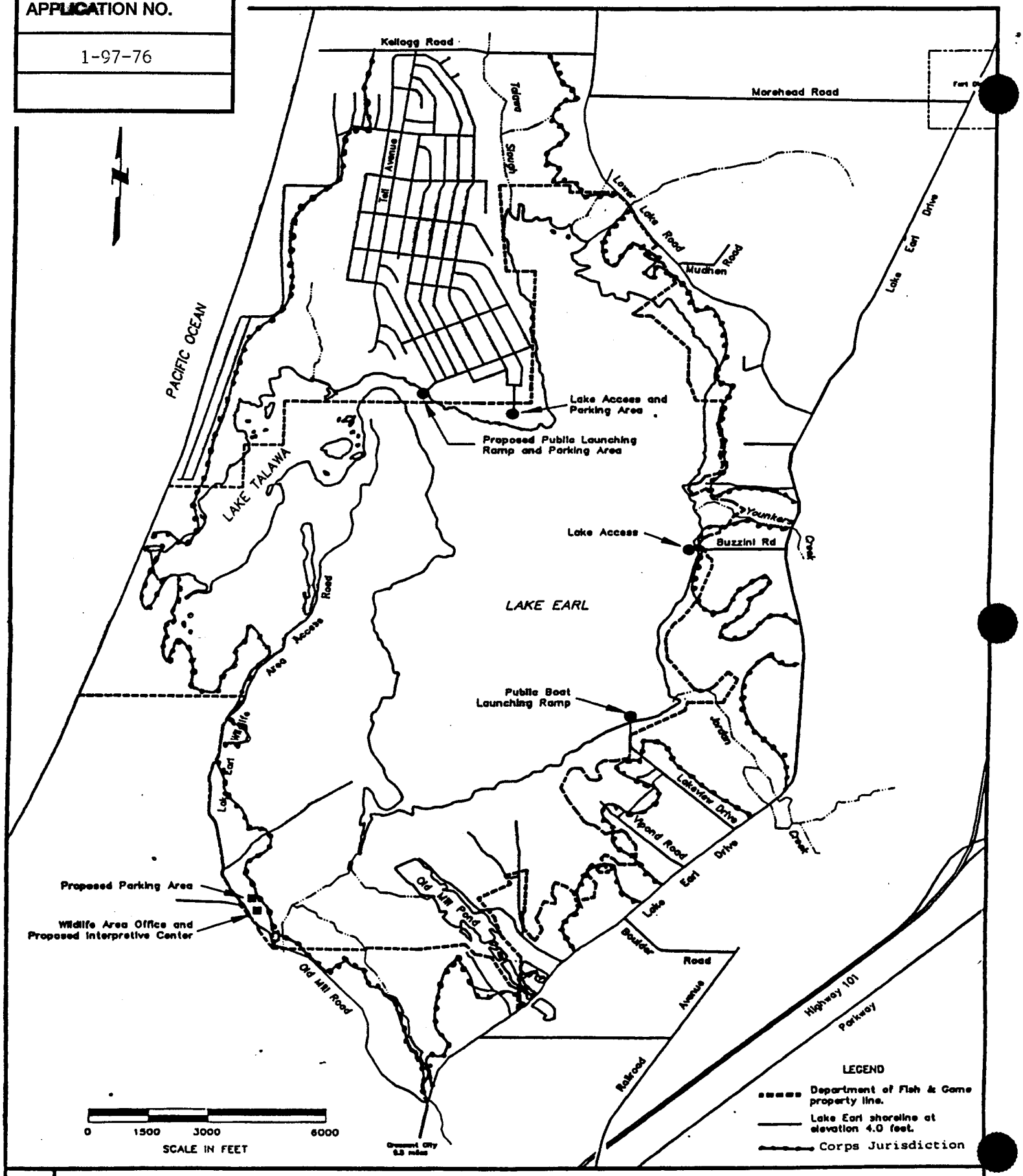


Plate 8

CALIFORNIA DEPARTMENT OF FISH AND GAME

LAKE EARL WILDLIFE AREA

CORPS JURISDICTION

DEL NORTE COUNTY

EXHIBIT NO. 3

APPLICATION NO.

1-97-76

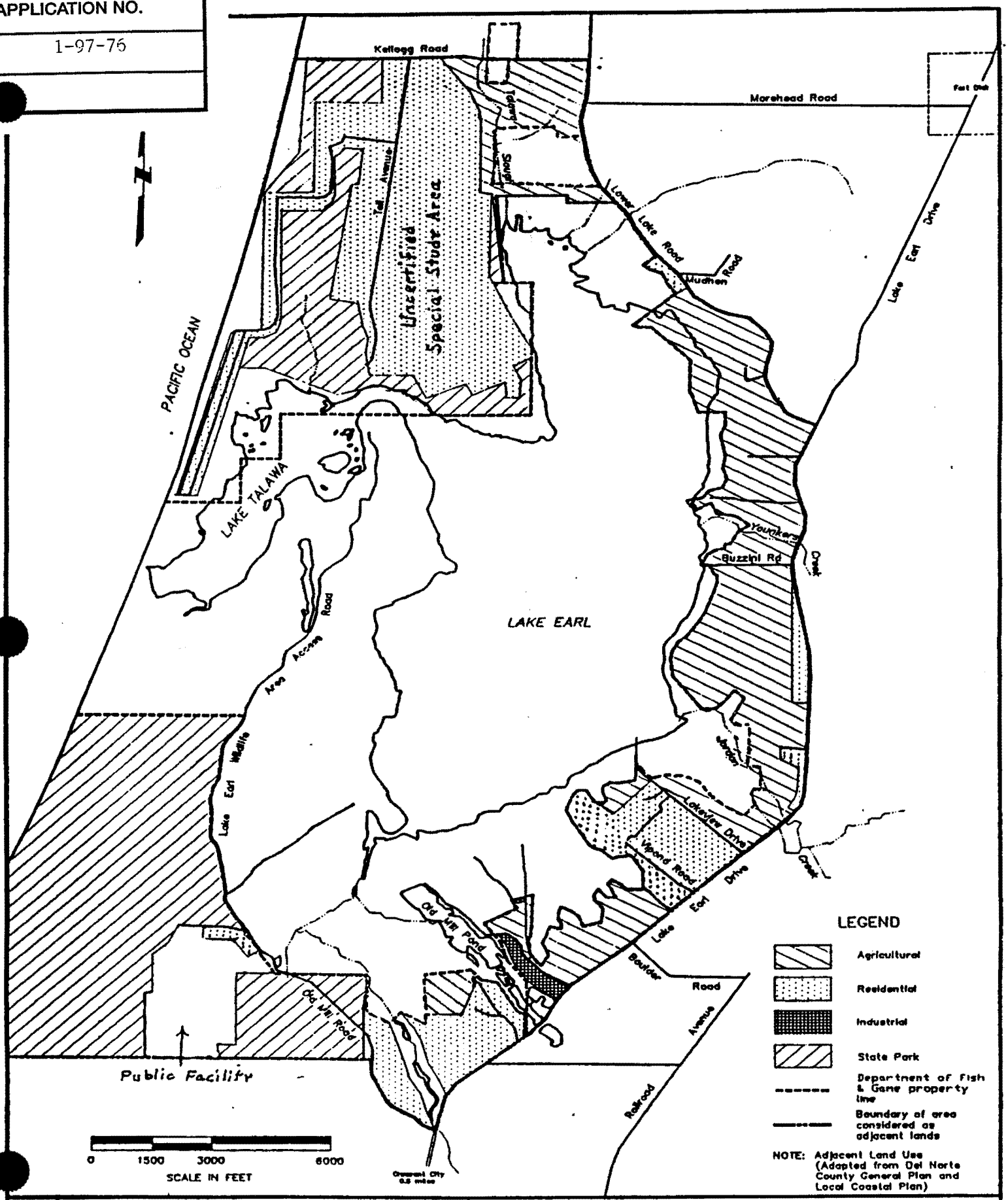


Plate 6

CALIFORNIA DEPARTMENT OF FISH AND GAME

LAKE EARL WILDLIFE AREA

ADJACENT LAND USE

DEL NORTE COUNTY

EXHIBIT NO. 4
APPLICATION NO.
1-97-76

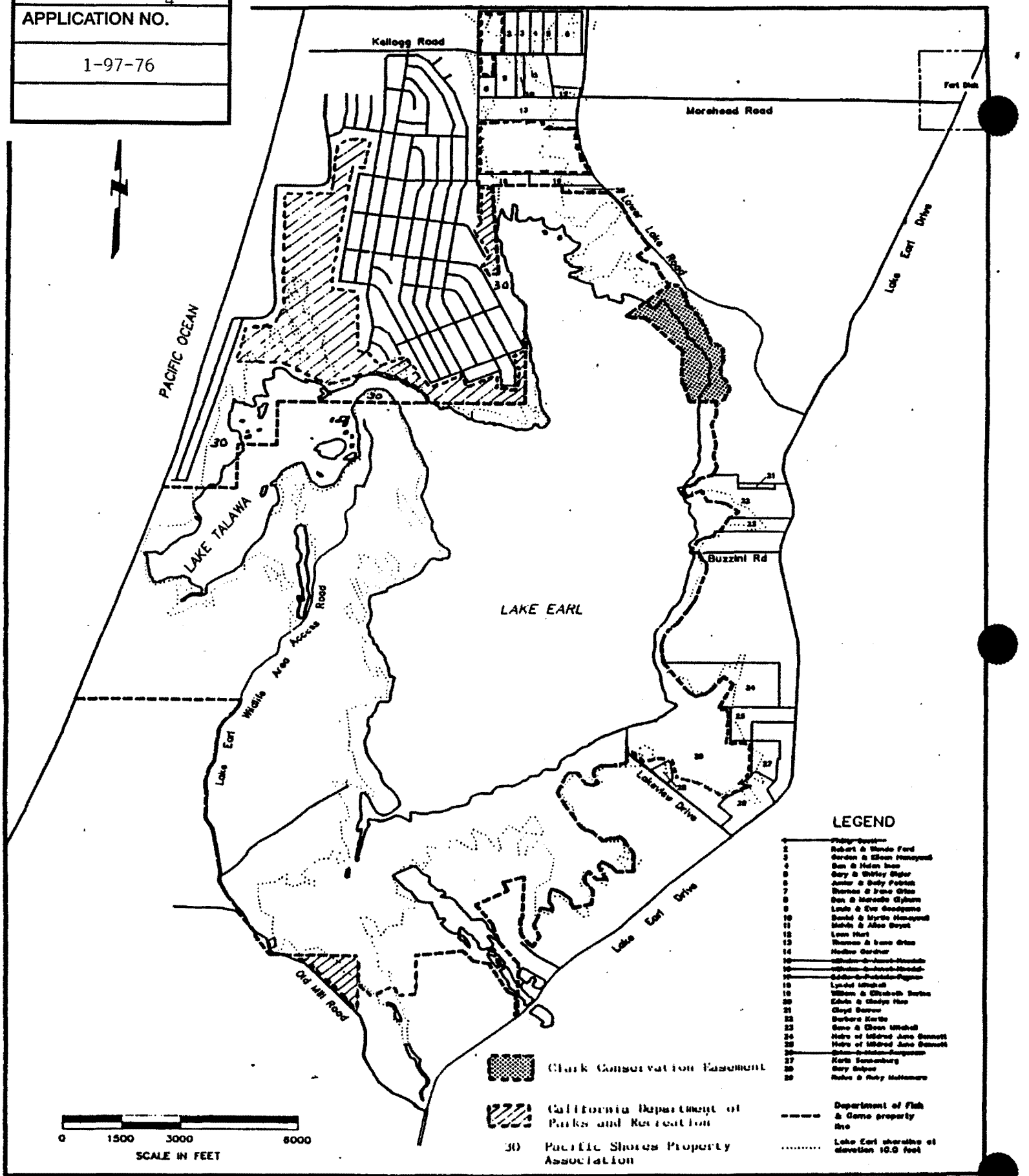


PLATE 9

CALIFORNIA DEPARTMENT OF FISH AND GAME

LAKE EARL WILDLIFE AREA

Land Ownership

DEL NORTE COUNTY

STATE OF CALIFORNIA-THE RESOURCES AGENCY PETE WILSON, Governor

DEPARTMENT OF FISH AND GAME
1416 NINTH STREET
P.O. BOX 944209
SACRAMENTO, CA 94244-2090

Mr. Chris Kern, Energy and Ocean Resources Unit
California Coastal Commission
45 Fremont Street, Suite 2000
San Francisco, CA 94105-2219

October 8, 1998

Dear Mr. Kern:

This letter is in response to your request to Mr. Herb Pierce, dated August 14, 1998, for additional information relating to Coastal Development Permit Application No. 1-97-076 (Lake Earl). Specifically, you had requested an analysis from this office of the merits of the taking claim raised in the District's August 19, 1996 comment letter.

By way of review, the Department's involvement in this Application flows from its natural resource trustee authority (Fish & G. Code §§711.7(a), 1802), from its regulatory authority for lake and stream bed alterations (Fish & G. Code §1600 et seq.) and from its Coastal Zone Act authority to establish and control wildlife management programs (Pub. Resources Code §30411). Since the County, not the Department, has historically undertaken Breaching, this same issue would be before the Commission even were the Department not involved. In 1996, the Department and the County jointly applied to the California Coastal Commission ("Commission") for a two-year interim permit to breach the sand barrier for flood control during rainy seasons between September 1 and February 15, whenever lake elevation reaches eight feet above Mean Sea Level ("MSL"), and on February 15, if lake elevation is five feet MSL or more. In a letter to the Commission dated August 19, 1996 (Letter), the Pacific Shores Subdivision Water District ("District") raised the issue of whether the proposed actions contemplated in the permit Application ("the Breaching") cause a physical invasion of subdivision property ("the Flooding") that constitutes a compensable taking under section 19 of article 1 of the California Constitution. The District does not claim that the waters released by the breaching of the sand barrier, which flow directly into the ocean, cause any injury. For the reasons discussed below, we conclude that there is no case for inverse condemnation and that the Department is not liable for the Flooding.

Discussion

A discussion of inverse condemnation liability in the flood control context must consider the causal connection between the *government action* and the *alleged injury*. The California Supreme Court has stated that this requires a showing of "a substantial cause-and-effect relationship excluding the probability that other forces alone produce the injury." *Belair v. Riverside County Flood Control District* (1988) 47 Cal.3d 550, 559, affirmed *Bunch v. Coachella Valley Water District* (1997) 15 Cal.4th 432. A public improvement is not a

EXHIBIT NO. 5
APPLICATION NO.
1-97-76

substantial contributing factor where the damage would have occurred even if the project had operated perfectly. *Belair* at 560. In applying this test to the District's arguments, several logical inconsistencies are revealed that are fatal to its inverse condemnation claim.

To evaluate the validity of the District's argument, we must first review the physical dynamics of the estuarine lagoon system. Lake Earl forms at the mouth of a freshwater outfall where the land is low, and the outfall is slow enough to not overcome the accretion of sand deposited by the nearshore currents. This deposition gradually forms a sand barrier, which acts as a natural dam. When the lake level reaches about twelve feet MSL, the water pressure erodes a breach in the barrier. The water flows through the breach, and the lagoon's surface area recedes until the water volume reaches equilibrium with the ocean. Meanwhile, the continuing accretion eventually seals the breach and the cycle begins anew. Thus, we see that lake level is determined by two variables: the volume of water flowing into the lake, and the height of the sand barrier that dams the lagoon.

The District's central theme is that "the Application is, in effect, a request to raise the surface level by deferring breaching until the water level rises to eight feet MSL." Letter, page 1, para. 1. Assuming that the Breaching is a "public improvement," we next examine if there is a substantial cause-and-effect relationship excluding the probability that other forces alone produce the Flooding. The District avers that the Breaching, which would occur at eight feet MSL, causes Flooding. However, we know from the lagoon dynamics that Flooding occurs naturally, in the *total absence* of any government action. In fact, without artificial breaching at eight feet MSL, we know that Flooding can occur up to twelve feet MSL. Notwithstanding the District's attempt to characterize an action that *controls* flooding as one that *creates* flooding, there is no causal relationship between the proposed government action and the alleged injury. The general rule is that public entities have no duty to provide protection against flooding from *natural causes*. *Akins* v. *State* (1998) 61 Cal.App.4th 1, 45. If flooding is from natural causes, then there is no constitutional violation, and the statutory immunity for public entities from liability for injuries caused by "any natural condition of any lake" would apply. Gov. Code §831.2.

We believe that this lack of causation is dispositive in disproving the District's argument with regard to the Breaching. However, the District also claims injury from the Department's "past and present actions." This apparently involves the manner in which the Department acquired property for the Lake Earl Wildlife Area ("LEWA"). The District sees in the permit Application evidence of an ongoing pattern of conduct by the Department to intentionally flood the subdivision lots adjoining the LEWA. The District states that the Department had an ongoing acquisition program to purchase land from willing sellers, that it had not purchased a single lot in the subdivision in almost 20 years, and that it did not attempt to acquire any lots, but rather has "repeatedly attempted to flood them by raising the lake level." "This," the District concludes, "suggests that the Department is not interested in paying for private property it can flood and take for free." Letter, Comment 11, pages 6-7.

To the extent that the District complains that the Department has somehow impeded development of the subdivision, we note that the subdivision was platted in 1963. A road and drainage system was put into place, but no further development occurred, and that minimal infrastructure was not maintained. The District fails to explain how the suppression of development is attributable to the Department's "past and present actions" when the LEWA was not created until 1979, *and no development or maintenance had occurred in those intervening 16 years*. Also missing from the District's argument is a fair discussion of District development and its relation to the California Environmental Quality Act, the Coastal Zone Act, the Porter-Cologne Water Quality Act, the federal Clean Water Act and the U.S. Army Corps of Engineers Section 404 wetlands regulations, and the federal Endangered Species Act.

The District does not establish how the Department's failure to buy additional real estate since 1979 is relevant here, nor does it analyze the attendant implication that the Department has an ongoing duty to purchase particular parcels of real estate simply because it had previously acquired property in the area. In this, the District attempts to conjur into being the hitherto unknown and unrecognized legal principle that one's desire to sell creates in another a duty to buy. More troubling is the District's bizarre attributions of conspiracy. Here, the District engages in the logical fallacy of begging the question by asserting in its premise, that the Department has "repeatedly attempted to flood [lots] by raising the lake level," the very thing it concludes. This strained interpretation is also factually deficient in that the Legislature never budgeted for such purchases of District parcels, and that negotiating and processing the purchase of 1,500 legally distinct 0.5 acre parcels would have been administratively impractical. More importantly, the District ignores the fact that all Department property acquisitions are overseen by the Wildlife Conservation Board, which studies and determines what lands within the State should be acquired (Fish & G. Code §1300 et seq.), and that wildlife management area acquisitions in particular are additionally subject to the scrutiny of both the Fish and Game Commission and the Attorney General (Fish & G. Code §§1525, 1527).

We conclude that the District offers no credible explanation of how the Breaching, or any of the Department's "past and present actions" induce a constitutional taking of private property, nor does it explain how those who buy property in an officially designated wetlands area sustain a compensable injury if their land becomes wet. A contention unsupported by legal analysis may be disregarded. *Akins* at 31, citing *Atchley v. City of Fresno* (1984) 151 Cal.App.3d 635. While this rule pertains to appellate court review, we believe that common sense advises its application here. Calumny is no substitute for undistorted facts and reasoned argument. The District's inverse condemnation argument is fallacious. The comments in support of its argument are contrived and unpersuasive, and should be disregarded. We urge that the Commission to approve the Application.

Joseph Milton

JOSEPH MILTON
Staff Counsel

EXHIBIT NO. 6
APPLICATION NO.
1-97-76

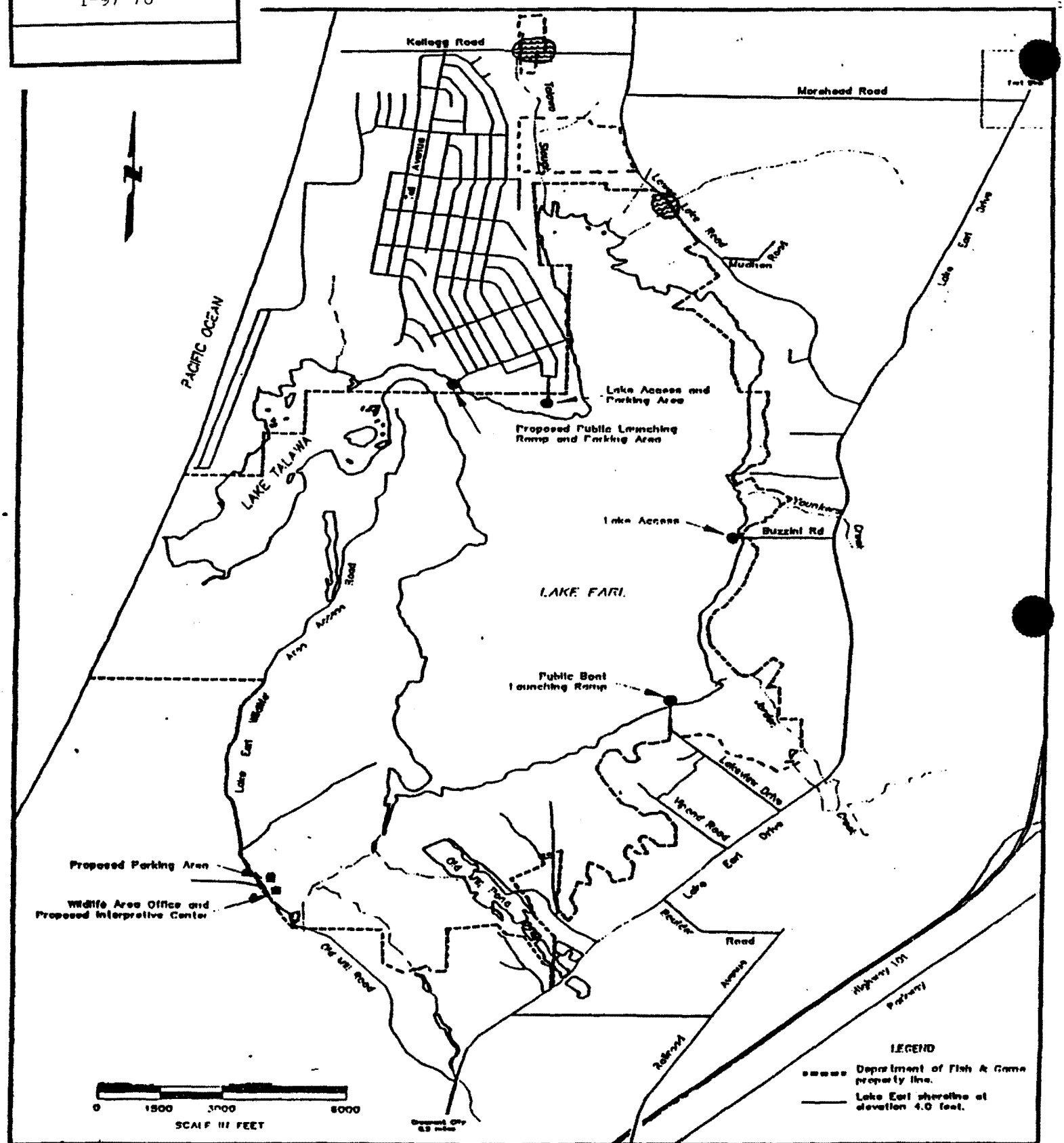


Plate 8

CALIFORNIA DEPARTMENT OF FISH AND GAME

LAKE EARL WILDLIFE AREA

ACCESS & VISITOR FACILITIES | DEL NORTE COUNTY

Flooded at 9+ Feet MSL

STATE OF CALIFORNIA

PETE WILSON, Governor

STATE LANDS COMMISSION

LEO T. McCARTHY, Lieutenant Governor
GRAY DAVIS, Controller
THOMAS W. HAYES, Director of Finance

EXECUTIVE OFFICE
1807 - 13th Street
Sacramento, CA 95814

CHARLES WARREN
Executive Officer

916 323-4673

File Ref.: SD 92-11-16.4

November 20, 1992

Mr. Dwayne B. Smith
Pacific Shores Property
Owners Association Inc.
648 Lausinda Avenue
Long Beach, CA 90803

Re: State Ownership at Lake Talawa

Dear Mr. Smith:

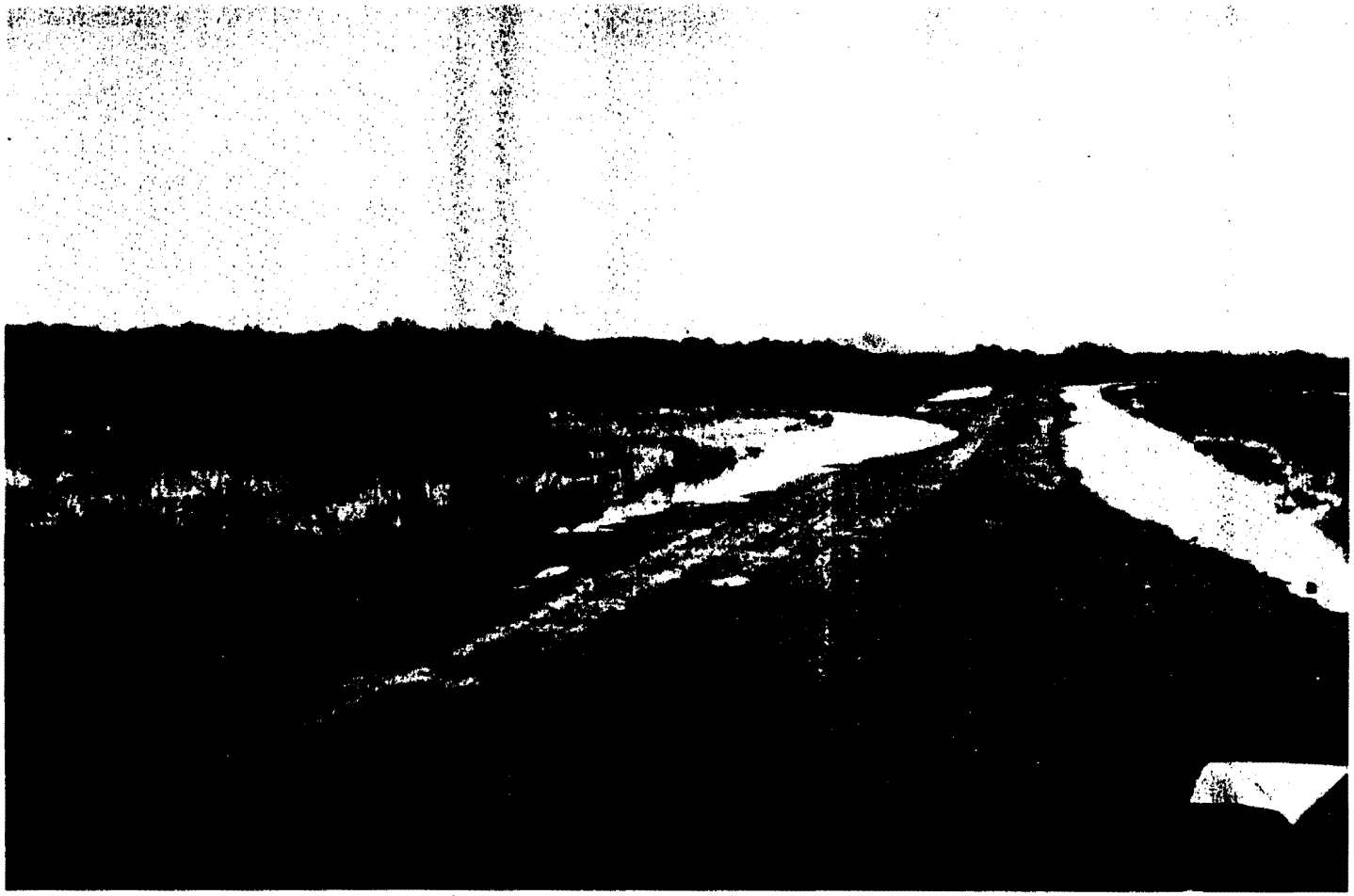
This letter is in response to your letter dated November 2, 1992, in which you inquire about the State's interest in Lake Talawa and Lake Earl. What we are providing you with is a sketch of the basis for state ownership. Please be aware that there are many factors which affect the determination of the State's interest and which cannot be dealt with in a letter such as this. Therefore, you should consult your own attorney if you have any questions about the nature of the law governing state ownership of lands.

Pursuant to the Equal Footing Doctrine the State of California became the owner of all navigable waters and tide and submerged lands within its boundaries when it was admitted to the Union on September 9, 1850. In waterways where there is a tidal influence, the State's ownership extends up to the ordinary high water mark. Where there is no tidal influence, the State has a fee ownership between the ordinary low water marks. In all navigable waters and tide and submerged lands the State exercises the Public Trust up to the ordinary high water mark.

The State Legislature has delegated the administration and management of its sovereign lands to the State Lands Commission. (See Public Resources Code Sections 6216 and 6301.) Under this delegation the Commission has the authority to lease lands for various purposes and to enter into litigation to defend the State's title.

EXHIBIT NO. 7
APPLICATION NO.
1-97-76

Distelrath Drive



February 6, 1994 - 8'6" msl

This is the only road leading to the nine beach access sites for use by the Pacific Shores property owners, and the public.

With regard to Lake Talawa and Lake Earl, the State claims a fee interest in the lakes and surrounding lands. The source of the State's title is based on claims of sovereign ownership. The State's interest was challenged many years ago in litigation. The suit was settled when quitclaim deeds were given to the State. Thus, the State now has two independent bases for asserting title. The area sought to be breached to lower lake elevations is within lands owned by the State. The State's interest extends to the ordinary high tide line of the Pacific Ocean and includes the entire area where any breaching might be sought. We are enclosing copies of some of our records which will track this for you.

A certain Ernestine Buzzini claims an interest in some of the state lands. However, the Commission does not recognize her claim of title to any lands within the beds of Lake Earl or Lake Talawa.

It should also be noted that the Assessor's plat shows a portion of Lake Earl and Lake Talawa to be within lands owned by your Association. These lands are claimed by the State as sovereign lands and the alleged interest of the Association is subject to challenge by the State. Any interest the Association might have would be above the low water marks and would be subject to the Public Trust.

On September 1, 1980 the Commission leased to the Department of Fish and Game the beds of Lake Earl and Lake Talawa. The term of the lease is 49 years. The Department is authorized to use the land for the preservation of wildlife habitat. A copy of the lease and its single amendment is enclosed for your reference.

Enclosed also are copies of Commission agenda items which have granted the Department of Fish and Game the right to breach the sand dunes to reduce water elevations in the lake. Also enclosed is an agenda item denying the County of Del Norte permission to do the same. It is the Commission's position that no party may breach the sand dunes by any means to lower the lake's water elevation without the Commission's prior consent.

We understand, but have no documentary evidence, that the Department of Fish and Game has acquired land in a proprietary capacity through the Wildlife Conservation Board. We suggest that you contact either the Department or the Board for verification of this and the specific location of such lands.

In response to your question regarding State ownership of all lakes within California, the State owns such lakes only if they could be considered sovereign lands at the time California was admitted to the Union.

Very truly yours,

James Frey

JAMES R. FREY
Staff Counsel

STATE OF CALIFORNIA
STATE LANDS COMMISSION
1807 13TH STREET
SACRAMENTO, CALIFORNIA 95814

PETE WILSON, Governor

January 9, 1994

File Ref.: PRC 5879.9
R.A. # 24493

California Department of Fish and Game
Region 1
Attention: Richard L. Elliott, Regional Manager
601 Locust Street
Redding, CA 96001

Dear Mr. Elliott:

SUBJECT: Amendment to Lease PRC 5879.9 to Expand Lease Area and Interim Breaching of Sand Bar at Entrance to Lakes Earl and Talawa near Crescent City, Del Norte County

Enclosed, for your records, is the fully executed Amendment to General Permit - Public Agency Use authorizing the expansion of the lease area and the interim breaching of the sand bar at the entrance to Lakes Earl and Talawa in Del Norte County. This project was approved at the State Lands Commission meeting on November 15, 1994.

Our Accounting Office will be notifying you within 90 days regarding the balance of any deposit or amount due for staff time spent on this project under Reimbursement Agreement No. 24493.

Gary Monroe's cooperation in helping to complete this transaction was very much appreciated. If you have any questions, please call me at the telephone number referenced above.

Sincerely,

ORIGINAL SIGNED BY
JUDY LUDLOW
Public Land Management Specialist

Enclosure

cc: California Dept. of Fish and Game
Attention: Gary Monroe
619 Second Street
Eureka, CA 95501

STATE OF CALIFORNIA
STATE LANDS COMMISSION

2ND AMENDMENT OF LEASE PRC 5879.9

WHEREAS, the **STATE OF CALIFORNIA**, acting through the **STATE LANDS COMMISSION,** hereinafter called Lessor, and **CALIFORNIA DEPARTMENT OF FISH AND GAME,** hereinafter called the Lessee, have heretofore entered into an agreement designated as Lease PRC 5879.9 authorized by the State Lands Commission on August 26, 1980 and executed September 19, 1980, whereby the Lessor granted to said Lessee a General Lease - Public Agency Use covering certain State submerged lands situate in Del Norte County; and

WHEREAS, Pursuant to Paragraph 16(e) of Section 4 of Lease PRC 5879.9, its terms, covenants and conditions may be amended, revised or supplemented by mutual agreement of the parties; and

WHEREAS, Lessee wishes to:

1) Increase the lease area to include all of those lands received by the State of California through quitclaim in and adjacent to the beds of Lake Earl and Talawa for the preservation of a wildlife habitat;

2) Conduct interim annual breaching of the sandbar at the entrance of Lakes Earl and Talawa pending the completion of a feasibility study and any required environmental documents required under the California Environmental Quality Act (CEQA) and/or the National Environmental Policy Act (NEPA) which will be prepared by the Lake Earl Interagency Working Group or their Consulting Contractor, for the purpose of determining whether, or under what conditions, breaching the sand barrier between Lake Earl and the Pacific Ocean is in the public interest;

3) Lessee wishes to breach the openings to Lakes Earl and Talawa by cutting a channel through an unvegetated sand dune. The breaching will be done only between September 1 and February 15 if the lake levels rise above 8.0 feet or on February 15 if the lake levels are above 5.0 feet;

4) Lessee wishes to accomplish the breaching by cutting a channel approximately 200' long, 20' wide and 5' deep through the sand barrier with a bulldozer. Approximately 75 cubic yards of sand will be side cast on either side of the channel and will be carried to the ocean within a few hours of the breaching.

WHEREAS, by reason of the foregoing, it is now the desire of the parties to amend the foregoing Agreement.

NOW THEREFORE, the parties hereto agree as follows:

1) The lease shall be amended to include all those lands received by the State of California through quitclaim donations from private owners in and adjacent to Lakes Earl and Talawa and as shown on the attached Exhibit "A";

2. Lessee or their official contractor is authorized to conduct the interim annual breaching of the sandbar at the entrance of Lakes Earl and Talawa pending the completion of a feasibility study and any required environmental documents required under the California Environmental Quality Act (CEQA) and/or the National Environmental Policy Act (NEPA);

3. The breaching will be done only between September 1 and February 15 if the lake levels rise above 8.0 feet or on February 15 if lake levels are above 5.0 feet;

4. Lessee shall obtain all permits or authorization from the California Coastal Commission, U.S. Army Corps of Engineers, Del Norte County and the Regional Water Quality Control Board prior to any and all proposed breaching activities;

5. All breaching is subject to the terms and conditions as set forth by the California Coastal Commission, United States Army Corps of Engineers or any other regulatory agency, and shall be performed as required.

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/

The effective date of this amendment to the aforesaid Agreement shall be November 15, 1994.

This amendment is a portion of Document No. PRC 5978.9, with a beginning date of September 1, 1980, consisting of four (4) sections with a total of six (6) pages.

All other terms and conditions of Lease PRC 5979.9 shall remain unchanged and in full force and effect.

This Agreement will become binding on the Lessor only when duly executed on behalf of the State Lands Commission of the State of California.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the date hereafter affixed.

LESSEE:

CALIFORNIA DEPARTMENT OF
FISH AND GAME

By Richard L. Elliott

Title Regional Manager

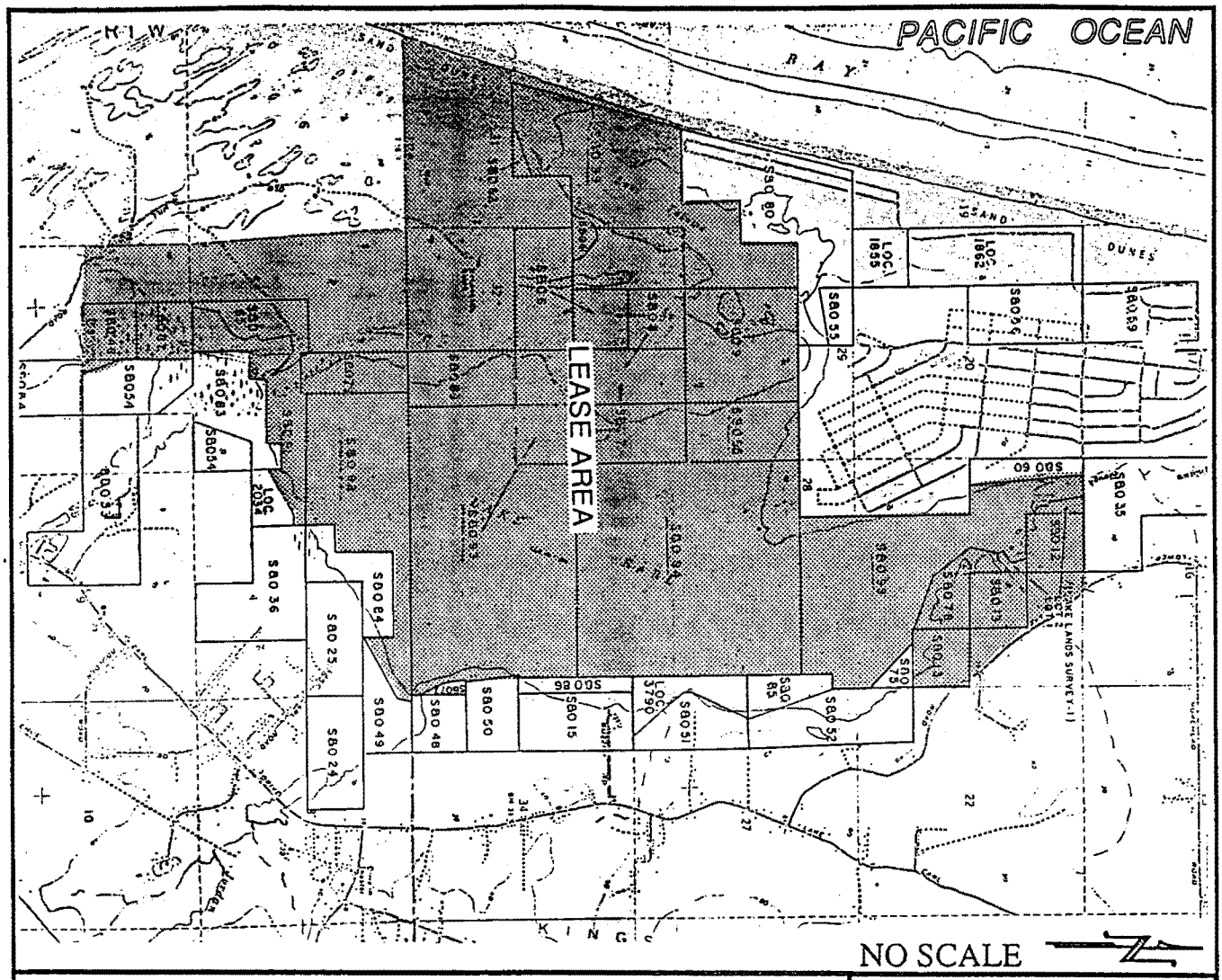
Date 11-14-94

STATE OF CALIFORNIA
STATE LANDS COMMISSION

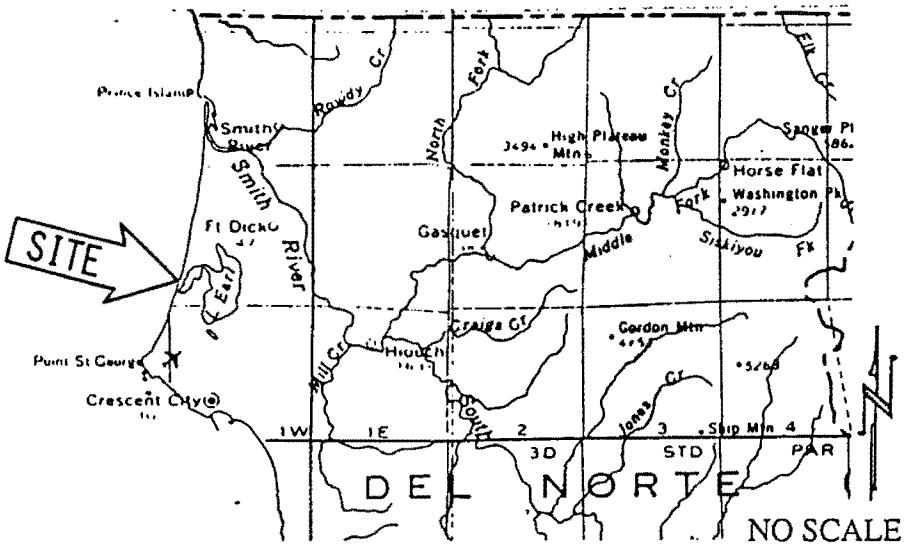
By [signature]

Title Chief, Division of Land Management

Execution of this document was authorized by the State Lands Commission on NOV 15, 1994



LOCATION MAP



This Exhibit is solely for purposes of generally defining the lease premises, and is not intended to be, nor shall it be construed as, a waiver or limitation of any State interest in the subject or any other property.

EXHIBIT "A"

PRC 5879

California Fish & Game

Lakes Earl & Talawa

DEL NORTE COUNTY

CG 5/94

IFORNIA ALL-PURPOSE ACKNOWLEDGMENT No. 5907

State of Calif

County of Shasta

On 11-14-94 (DATE) before me, Lexie Ann Cox (NAME, TITLE OF OFFICER - E.G., "JANE DOE, NOTARY PUBLIC"),

personally appeared Richard L. Elliott (NAME(S) OF SIGNER(S)),

☑ personally known to me - **OR** - ☐ proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

LEXIE ANN COX
Comm. #989113
NOTARY PUBLIC – CALIFORNIA
SHASTA COUNTY
My Commission Expires
March 24, 1997

WITNESS my hand and official seal.

Lexie Ann Cox
SIGNATURE OF NOTARY

OPTIONAL

Though the data below is not required by law, it may prove valuable to persons relying on the document and could prevent fraudulent reattachment of this form.

CAPACITY CLAIMED BY SIGNER

☑ INDIVIDUAL
☐ CORPORATE OFFICER

_____
TITLE(S)

☐ PARTNER(S) ☐ LIMITED ☐ GENERAL

☐ ATTORNEY-IN-FACT
☐ TRUSTEE(S)
☐ GUARDIAN/CONSERVATOR
☐ OTHER: _____

SIGNER IS REPRESENTING:
NAME OF PERSON(S) OR ENTITY(IES)

_____

DESCRIPTION OF ATTACHED DOCUMENT

PRC
2nd Amendment of Lease SP 75 9
TITLE OR TYPE OF DOCUMENT

4
NUMBER OF PAGES

11-14-94
DATE OF DOCUMENT

yes
SIGNER(S) OTHER THAN NAMED ABOVE

DEPARTMENT OF THE ARMY PERMIT

Permittee: California Department of Fish and Game - Del Norte County

Permit No.: 20793N36

Issuing Office: San Francisco District

NOTE: The term "you" and its derivatives, as used in this permit, means the permittee or any future transferee. The term "this office" refers to the appropriate district or division office of the Corps of Engineers having jurisdiction over the permitted activity or the appropriate official of that office acting under the authority of the commanding officer.

You are authorized to perform work in accordance with the terms and conditions specified below.

Project Description: **Breaching the sandbar separating Lakes Talawa and Earl from the Pacific Ocean. Breaching would be done only between September 1 and February 15 if lake levels rise above 8.0 feet Mean Sea Level (MSL), or again on February 15 if lake levels are above 5.0 feet MSL. The purpose of breaching is to prevent flooding of local county roads and domestic wells, and to prevent possible aquifer contamination. All work shall be done in accordance with the attached drawings labeled "Proposed Breaching of Lake Earl by Cutting a Channel to the Ocean", In: Lake Earl, At: 5 miles north of Crescent City, Del Norte County, California, 3 of 3.**

Project Location: **Lakes Talawa and Earl, Crescent City, Del Norte County, California.**

Permit Conditions:

General Conditions:

1. The time limit for completing the work authorized ends on December 31, 1997. If you find that you need more time to complete the authorized activity, submit your request for a time extension to this office for consideration at least one month before the above date is reached.

2. You must maintain the activity authorized by this permit in good condition and in conformance with the terms and conditions of this permit. You are not relieved of this requirement if you abandon the permitted activity, although you may make a good faith transfer to a third party in compliance with General Condition 4 below. Should you wish to cease to maintain the authorized activity or should you desire to abandon it without a good faith transfer, you must obtain a modification of this permit from this office, which may require restoration of the area.

3. If you discover any previously unknown historic or archeological remains while accomplishing the activity authorized by this permit, you must immediately notify this office of what you have found. We will initiate the Federal and state coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

4. If you sell the property associated with this permit, you must obtain the signature of the new owner in the space provided and forward a copy of the permit to this office to validate the transfer of this authorization.

5. If a conditioned water quality certification has been issued for your project, you must comply with the conditions specified in the certification as special conditions to this permit. For your convenience, a copy of the certification is attached if it contains such conditions.

6. You must allow representatives from this office to inspect the authorized activity at any time deemed necessary to ensure that it is being or has been accomplished in accordance with the terms and conditions of your permit.

EXHIBIT NO. 30
APPLICATION NO. 1-94-49
(page 1of 3)
California Coastal Commission

Special Conditions:

1. The permittee shall convene regular meetings of the Lake Earl Working Group to develop the least damaging practicable alternative for long-term lake level management during the (?) year duration of the permit.

2. Specific studies to be accomplished during the 2 year period shall include:

a. Analyzing the extent and depths of the lakes at elevations ranging from 0.0-12.0 ft MSL.

b. Determining the acreage of permanent and seasonal wetland habitat at lake elevations ranging from 0.0 -12.0 ft MSL.

c. Documenting the amount of habitat available to, and the level of use by, migratory bird species under a full range of lake levels.

d. Determining the importance of the coastal lagoon system to various life stages of anadromous fishes.

e. Analyzing the effects of breaching frequency, magnitude, and seasonal timing, on special status species including listed and proposed threatened and endangered species.

f. Determining the population size and habitat use patterns of the tidewater goby.

g. Assessing the cumulative and indirect impacts associated with artificial breaching.

h. Documenting the potential frequency and extent of groundwater contamination from surrounding wells at different lake levels.

3. The permittee shall not begin the activity until notified by the District Engineer that the requirements of the National Historic Preservation Act have been satisfied and that the activity is authorized.

Further Information:

1. Congressional Authorities: You have been authorized to undertake the activity described above pursuant to:

(X) Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403).
(X) Section 404 of the Clean Water Act (33 U.S.C. 1344).

2. Limits of this authorization.

a. This permit does not obviate the need to obtain other Federal, state, or local authorizations required by law.

b. This permit does not grant any property rights or exclusive privileges.

c. This permit does not authorize any injury to the property or rights of others.

d. This permit does not authorize interference with any existing or proposed Federal project.

3. Limits of Federal Liability. In issuing this permit, the Federal Government does not assume any liability for the following:

a. Damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes.

b. Damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the United States in the public interest.

c. Damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit.

d. Design or construction deficiencies associated with the permitted work.

e. Damage claims associated with any future modification, suspension, or revocation of this permit.

4. Reliance on Applicant's Data: The determination of this office that issuance of this permit is not contrary to the public interest was made in reliance on the information you provided.

5. Reevaluation of Permit Decision. This office may reevaluate its decision on this permit at any time the circumstances warrant. Circumstances that could require a reevaluation include, but are not limited to the following:

a. You fail to comply with the terms and conditions of this permit.

b. The information provided by you in support of your permit application proves to have been false, incomplete, or inaccurate (See 4 above).

c. Significant new information surfaces which this office did not consider in reaching the original public interest decision.

Such a reevaluation may result in a determination that it is appropriate to use the suspension, modification, and revocation procedures contained in 33 CFR 325.7 or enforcement procedures such as those contained in 33 CFR 326.4 and 326.5. The referenced enforcement procedures provide for the issuance of an administrative order requiring you to comply with the terms and conditions of your permit and for the initiation of legal action where appropriate. You will be required to pay for any corrective measures ordered by this office, and if you fail to comply with such directive, this office may in certain situations (such as those specified in 33 CFR 209.170) accomplish the corrective measures by contract or otherwise and bill you for the cost.

6. Extensions. General condition 1 establishes a time limit for the completion of the activity authorized by this permit. Unless there are circumstances requiring either a prompt completion of the authorized activity or a reevaluation of the public interest decision, the Corps will normally give favorable consideration to a request for an extension of this time limit.

Your signature below, as permittee, indicates that you accept and agree to comply with the terms and conditions of this permit.

Gary Morgan — 12/28/95

(PERMITTEE) (DATE)

This permit becomes effective when the Federal official, designated to act for the Secretary of the Army, has signed below.

29 Dec 95

(DISTRICT ENGINEER) MICHAEL J. WALSH (DATE)
LTC, EN

Hi Jim
Here is the Biological Evaluation. attached breach of

EXHIBIT NO. 8
APPLICATION NO.
1-97-76

Biological Evaluation
for
Breaching the Sandbar at Lake E

I. Background

Project Area Location and Weather

Lake Earl is a coastal lagoon located in Del Norte County (County), California, eleven miles south of the Oregon border. The County coastal area has an annual average rainfall of 80 inches. Individual storms may drop several inches at a time and may cause a rapid rise in Lake Earl. Rain may fall any time of the year, although most rain falls in December, January and February. Temperatures are moderate throughout the year.

Summary of Coastal Lagoon Biological Function

Estuarine ecosystems are extremely complex systems. The fish and wildlife must be adapted to living in both fresh water and saline conditions. The species that inhabit coastal lagoons have evolve over thousands of years in the estuarine conditions with the periodic opening and closing of the lagoons. Populations that inhabit a particular lagoon are adapted to the unique cycles of that specific ecosystem. Examples of species particularly adapted to estuarine lagoon life include sego pond weed, widgeon grass, sturgeon, tidewater goby, salmon, and starry flounder.

Pre-Project Breaching History for Lake Earl

A history of the natural breaching of the Lake Earl sand bar (bar) is unknown. There were no records kept on the natural functioning of Lake Earl. The Crescent City Herald reported the water elevation at 10 to 12 feet in the lagoon during January, 1856 (Crescent City Herald, 1856). Artificial breaches occurred as early as the 1873. The bar was commonly breached artificially by the 1880's (Crescent City Courier articles, 1873, 1874, 1876, 1877, 1878), although how often or at what elevations is unknown. The lagoon has been artificially manipulated over the last three decades and probably for much longer. County records specify breaching dates back to 1969, but records of breaching elevations were not kept until the mid-1980's. The County was the principal operator breaching the bar by the 1970's and obtained a 10 year Department of the Army Corps of Engineers (Corps) permit in 1977 to breach the bar whenever the lagoon reached four feet msl. Although the permit allowed a breach at four feet, the bar was commonly breached at around six feet msl (Ernest Perry, County Community Development Department, personal communication, 1997).

In 1986 the County requested an extension of the 10 year permit, but the Corps declined to extend the it unless the County completed an environmental impact statement. The County did not initiate environmental documentation and the lagoon rose to between eight and 10+ feet each

year from 1987 and 1995. When the lagoon reached approximately 10 feet msl, and flooded roads and threatened to flood wells, the County declared a state of emergency, supported by the California Office of Emergency Services. The Corps then issued an emergency permit to breach with each declared state of emergency. The declared emergency commonly arose late enough in the rain period that sufficient runoff was not available to recharge the lagoon after the breach. The lagoon commonly remained as low as 2 feet msl, or lower, until the beginning of the following rain season, eight or nine months later. The impacts of extreme low water in the lagoon during the years that it was breached under a declaration of emergency are briefly mentioned later in the report.

II. The Project

Proposed Project

The proposed project is the extension of a Corps permit to artificially breach the bar, separating the coastal lagoon known as Lake Earl and Lake Talawa (collectively known as Lake Earl) from the Pacific Ocean. Breaching will occur between September 16 and February 15 when the lake rises above 8 feet mean sea level (msl). The bar may be breached on February 15 if the lake is at, or above, five feet msl on that date. The bar will not be breached between February 15 and September 16. This proposal is a minor modification from the existing permit. and moves the project time frame outside of the recognized western snowy plover breeding season by moving the beginning date from September 1 to September 16.

A number of variables, including rainfall, runoff, longshore currents, tides and wind affect the rate of rise of the lagoon and the height of the bar. The number of variable makes it impossible to determine when or how often the lagoon will rise to levels that threatened roads, wells or existing occupied development. The average annual number of breaches has varied over the years. One to three breaches per year, depending on rainfall, is most likely.

Artificial breaching is accomplished by digging a channel from the base of the bar on the ocean side into the surf zone with a bulldozer. The bar is then notched to a level just slightly lower than the water level in the lagoon so that the water erodes a drainage channel through the bar.

III. EXISTING CONDITIONS

A. Topography and Soils

Lake Earl is located on the Smith River plain which was submerged about 25 million years ago. Ocean currents and wave action smoothed sediments into a flat submarine plateau. The coastal platform remained more or less submerged until recent times when it was uplifted. Underlying the soils of the Smith River plain is the Battery formation which is about 35 feet thick and has a high water yielding capacity. Beneath the Battery formation, the fine grained St. George formation is fairly impervious to water. There is little variation of true soils in the floodplain. The substrate west of the lake is sand, generally in the form of dunes. The foredunes are moving, but the back dunes have stabilized with a cover of grass, shrubs and some trees. The low areas between the dunes are wetlands that have accumulated thin deposits of organic matter.

The substrate within the floodplain has a higher clay component to the east. A slightly raised coastal terrace exists to east of the lagoon. The soils on the east side of the lagoon are sandy clay Talawa and Timmons soils. The Talawa soils are on lower areas close to the lagoon and support marshes, swamps and wet pasture. The Timmons soils are on the elevated coastal terrace and support higher pastures. The Lake Earl floodplain varies from sea level to approximately 12 feet msl (Corps, 1971). With the exception of the dunes along the beach that create the barrier, of which the bar is part, the floodplain in nearly flat. The breach area is a barren, narrow sand bar approximately 300 feet wide when the lagoon surface is at eight feet.

B. Hydrology of the Lake Earl Coastal Lagoon Area

Lake Earl is an estuarine coastal lagoon. A coastal lagoon develops in the nearly flat floodplain of a stream at the point where it enters the ocean. Longshore currents, tidal action, and wind deposit sand along the beach and in the stream mouth. The stream, because of its low gradient, does not have the energy to carry away the sand. Tide and wind push the sand along the beach up into dunes and form a bar across the mouth of the stream. The bar grows upward along with the dunes and dams the stream so that a water body, the lagoon forms. Runoff from the watershed accumulates and rises behind the bar until it overtops the dam. The rise may take weeks, months, or even years, depending on variables such as size of the watershed, quantity and periodicity of rainfall, rate and quantity of runoff, rate of evaporation and height of the bar. The energy of the fall of the water over the bar, when it overtops, erodes a channel through the dam to allow the water to flow ever more quickly from the lagoon to the ocean. Erosion continues until the water in the lagoon and in the ocean reach equilibrium. During the period that the bar remains open there is a mixing of ocean salt water and stream fresh water within the lagoon. Also during this time, fish and other estuarine related organisms move freely between the ocean and the lagoon. The mouth of the lagoon remains open until ocean currents and tides again overcome the stream flow with sand deposition. Resealing of the mouth may take hours or months, but once sealed, the cycle begins again. When the lagoon is closed and the inflow of water is from streams, salinity declines as the volume increases an large areas of the lagoon may become relatively fresh. When the lagoon is open to the ocean large areas of the lagoon may have a salinity similar to that of pure sea water. The variation from lightly brackish conditions to saline condition are important to a number of organisms in the ecosystem. As an example, the influx of salt water for short periods maintains the dominance of sego pond weed, a major waterfowl food plant. Sego pond weed tolerates salt intrusion better than other species that could out compete it in fresh water. However, it does not do well when there are prolonged periods of high salinity. There is similarity in the functioning of all coastal lagoons, but each lagoon has its specific set of variables and specific dynamics. It is important that the lagoon maintain the exchange of salt and fresh water in a manner similar to the natural functioning of the lagoon.

The Lake Earl watershed is approximately 32 square miles. The major streams that flow into it are Jordan and Yonkers creeks which flow from the east. The water surface of the lagoon varies from 2,191 acres when the water surface is at two feet msl to 4,820 acres when the water surface is at 10 feet msl. The flood plain of the lagoon is even larger and under natural conditions the water surface has the potential to rise as high as 12 feet msl (U.S. Army, 1971). The acreage

the lagoon would cover at that elevation is unknown, although it appears from the flood mapping in the 1971 Corps study (U.S. Army, 1971) that it would be substantially more extensive than when the lagoon is at 10 feet msl. The volume of water in Lake Earl varies from 6,500 acre-feet at 2 feet msl to 34,559 acre-feet at 10 feet msl. A wetted shoreline of 19 miles exists when the water is at 2 feet msl, increasing to 58 miles when the water is at 10 feet msl.

Rainfall may be heavy in Del Norte County and Lake Earl may rise rapidly. The lagoon rose from 4.5 feet msl to 10.1 feet msl during a major rainstorm between January 15 and 27, 1971. The rise of nearly .5 feet per day was entirely from runoff within the lagoon watershed (Corps, 1971). The rate of rainfall is important to understand in relationship to the fact that storm conditions inhibit the ability to get to the mouth of the lagoon and cut a breach.

Essentially, all of the groundwater in the Lake Earl area is stored in the Battery formation. Existing wells draw water from 10 to 35 feet (University of California, 1966). The water table in the vicinity of the lagoon is extremely high. It surfaces and forms ponds in the adjacent sand dunes. Although an official delineation has not been completed for the dunes area, the National Wetlands Inventory (U S Fish and Wildlife Service, 1987) indicates a high percentage the low areas among the dunes is wetland. Past monitoring shows that the water table fluctuates with the level of the lagoon (Department of Water Resources, 1970).

The Lake Earl floodplain is within the greater Smith River floodplain, which is about 770 square miles in area. The Smith River may inundate much of the Lake Earl floodplain during major Smith River flood events. Such an event occurred in 1970 and the Corps studied flooding in Lake Earl and the lower Smith River Delta. The Corps study found that construction of flood control structures to prevent flooding was economically unwarranted (Corps 1971). The Department of Water Resources concluded that the best method of reducing flood damages without the construction of levees or reservoirs is floodplain management (Department of Water Resources, 1970). Floodplain management can include regional planning, land use zoning, and building regulations.

C. Plant and Animal Communities

The lowest area of the lagoon floodplain is perennial aquatic bed. Submergent vegetation within the lagoon is dominated by sego pond weed and widgeon grass. Eighteen species of fish inhabit the lagoon, including chinook and coho salmon, steelhead, coastal cutthroat trout, white sturgeon, starry flounder and tide water goby (David McLeod, personal communication, 1997). Higher areas of the floodplain are mudflat, brackish marsh, deep fresh marsh, shallow fresh marsh, wet meadow, hardstem bulrush marsh, willow swamp, red alder swamp and wet pasture. Adjacent habitats are wet pasture, upland pasture, spruce and redwood forest, stabilized sand dunes, moving sand dunes and coastal beach (DFG, 1988). Over 250 bird species and more than 40 mammal species inhabit the lagoon and the adjacent floodplain. An annual average of nearly three million water-associated bird-days use have been recorded at Lake Earl (Monroe et al., 1975). Waterfowl and shorebirds are particularly abundant. Peregrine falcon, Cooper's hawk, red-shouldered hawk, merlin, river otter, mink, raccoon, skunk and a variety of other species forage on water-associated birds and small mammals. Occasionally, bald eagles and prairie falcons forage at Lake Earl. Meadows provide foraging habitat for northern harrier, red-tailed hawk, rough-legged hawk, white-tailed kite, kestrel, and a variety of owls. Large mammals, such

as Roosevelt elk , black-tailed deer, black bear and coyote forage in meadows, riparian areas and forests within the floodplain and at its edge. The wide biodiversity of the area may be the most significant aspect of the biological values of Lake Earl.

D. Human Disturbance On and Adjacent to Lake Earl.

The primary human uses of the lagoon are hunting, fishing, bird watching, and nature study. Hiking and jogging occur on nearby trails. Disturbance to fish and wildlife is minimal. Hunting pressure is high on the opening weekend of the waterfowl season, then lessens for the remainder of the season. The rest of the year the lake is generally quiet. Fishing is common, but not a heavy use. Occasionally, there is a kayak or wind surfer on the lagoon.

Agriculture has been the dominant activity on the coastal platform around Lake Earl for over a century and was, historically, one of the principal disturbances to Lake Earl. Dairy farmers were artificially breaching the bar as early as the 1870's for the purpose of draining land to increase pasture. In the latter part of the 19th century dairy farming was the largest agricultural industry in Del Norte County (Bledsoe, 1881). The bar was still being breached for the benefit of agriculture in the early 1980's. Most of the private agricultural land immediately adjacent to Lake Earl has been purchased by the California Department of Fish and Game (DFG) as part of the LEWA, and the bar is no longer being breached for agricultural. However, agricultural activities continue to be apart of the activity adjacent to the lagoon. The DFG is enhancing old pastures through agriculture for Aleutian goose forage. These pastures are within the floodplain and some flood seasonally. Management for short grass pastures which benefit wildlife resources such as the Aleutian goose, shorebirds and other wildlife will continue to be an ongoing activity at the LEWA.

Pacific Shores, an undeveloped subdivision of over 1400 lots, is located on the dunes immediately to the north and northwest of the lagoon. Full build-out of the subdivision could place essentially 1400 new residences and families along the shore of the lagoon. The level of disturbance that may occur as a result of the build-out of the subdivision is unknown, but is expected to be substantial.

E. Adjacent Land Uses

The State of California owns Lake Earl and the DFG manages both it and adjacent DFG lands as the LEWA. The LEWA is about 5,500 acres and is managed specifically for fish and wildlife resources. The California Department of Parks and Recreation manages another 5,000 acres of unclassified park land adjacent to the LEWA on the north and south. Not having been classified into a State Park System category (State Park, State Recreation Area, etc.) the area is known as the Lake Earl Project. There are hiking trails and a few small "environmental" campgrounds on the Lake Earl Project. The majority of use of the Lake Earl Project is passive recreation, although during the water fowl season part of the project area is open to hunting under a special agreement with the DFG. About 40 acres of private agricultural land remains along the northeast shore of the lagoon. Existing, developed residential use occurs at points along the east side of the lagoon and to the north of the lagoon. All of the residential development within the floodplain is above 10 feet msl. Del Norte County is closing an old landfill site immediately south of the lagoon, although the location may continue to function as solid waste transfer site.

The Pacific Shores Subdivision is not only adjacent to the lagoon, and within the floodplain, but is also within areas that flood when the lagoon is below 10 feet in elevation. The subdivision was platted in 1963, but is essentially undeveloped. No permanent structures have been built. One mobile home has a valid permit but it utilizes a holding tank for sewage, which must be pumped and carried to a legitimate disposal site. The water table beneath the subdivision is high and the subdivision cannot meet the legal requirements for sewage disposal on site.

The native Tolowa People lived adjacent to Lake Earl when Caucasian settlers first arrived in what is now the County. Tolowa village and cemetery sites exist close to, or within, the Lake Earl floodplain. The Tolowa have concerns about the effect of high water on their cultural sites. Major archeological sites have been mapped (Department of Parks and Recreation, 1981), but further archeological work may be necessary.

II. THREATENED and ENDANGERED SPECIES STATUS

A. Status of Threatened and Endangered Species on the Project Site

There are eight species listed by the Federal government as threatened or Endangered that are definitely known to inhabit or use the area within the flood plain of Lake Earl. They are:

Common Name	Latin Name	Status
1. Oregon silverspot butterfly	*Speyeria zerene hippolyta*	Threatened
2. Tidewater goby	*Eucyclogobius newberryi*	Endangered
3. Coho salmon	*Onchorhynchus kisutch*	Threatened
4. Brown pelican	*Pelicanus occidentalis californicus*	Endangered
5. Aleutian Canada goose	*Branta canadensis leucopareia*	Threatened
6. Bald Eagle	*Haliaeetus leucocephalus*	Threatened
7. American peregrine falcon	*Falco peregrinus*	Threatened
8. Western snowy plover	*Charadrius alexandrinus nivosus*	Threatened

All of these species except the coho salmon were listed by the U.S. Fish and Wildlife Service. The coho salmon was listed by the National Marine Fisheries Service.

The endangered western lily, *Lilium occidentali*, occurs within wetlands in the vicinity of Crescent City and at Point Saint George just south of Lake Earl. It is not known to occur within or immediately adjacent to the project area.

Oregon Silverspot Butterfly

The Oregon silverspot butterfly, *Speyeria zerene hippolyta*, was Federally listed as a threatened species in 1980. It is decreasing in population as habitat losses occur.

Distribution and Abundance

The Oregon silverspot butterfly is historically known from 17 different locations between the central Oregon coast and Grays Harbor, Washington. Viable populations of the Oregon silverspot butterfly were known only from two Oregon populations at the time of listing (USFWS, 1982). Since it was listed, small populations of Oregon silverspot butterfly have been discovered

at several coastal locations north of Point St.George (about 1.5 miles south of Lake Earl), in California. Populations are isolated throughout the range. The largest and most stable California population appears to be located in the dunes on and adjacent to the northern shore of Lake Earl. The prime habitat for this population is on the Lake Earl Project and on the Pacific Shores Subdivision. The Oregon Silverspot butterfly is distributed throughout the subdivision (Shaw and Wiseman, 1992, Alan Barron, personal communication, 1992). .

The female lays its eggs on the ground or on vegetation near western blue violets, usually in late summer. The eggs hatch and the larvae find their way to violets, where they remain in a diapause for over-wintering. The following spring the pupae grow for at least a two month period then pupate. The adults eclose from early July to early September. The adults are dependent upon, forest, brush or tall grass for thermal wind protection (USFWS, 1982). .

Habitat Conditions

The historic habitat of the Oregon silverspot is salt spray-meadows and grassy headlands. The most important feature of the habitat is the presence of the western blue violet, *Viola adunca*, the primary larval forage plant. These butterflies may also be foraging on *Viola langsdorfii*, which grows in association with western blue violet at Lake Earl (Hammond, 1992). Populations of both *Viola adunca* and *Viola langsdorfii* are robust in damp areas north of Lake Earl. The adults forage on the nectar of a variety of plants. Some of the more favored species are common exotic species such as bull thistle, *Cirsium vulgare;* tansey ragwort; *Senesio jacobaea* and rough cat's ear, *Hypochaeris radicata* (Arnold, 1988). The Oregon silverspot butterfly is a weak flier and the close proximity of forest and moist open area provides the most favorable habitat condition. Grass covered dunes and seasonal dune wetlands around Lake Earl appear to take the place of the historically known salt spray meadows as habitat for both the western blue violet and the Oregon silverspot butterfly. Water levels in Lake Earl may regulate the moisture in the dunes vital to maintenance of healthy western blue violet habitat. Sand dunes without low, wet habitats do not support populations of the western blue violet or the Oregon silverspot butterfly. Hammond states that it appears that a lake level of 6-8 feet is probably necessary to maintain adequate moisture levels in the dunes for western blue violet, at least during some of the winter or spring months (Hammond, 1992). Dune hollow willow swamp, beach pine forest stands and tall grass occur on and adjacent to the Pacific Shores Subdivision and provide habitat for the adult Oregon silverspot butterfly.

Identified Threats

The major threat to the Oregon silverspot butterfly is habitat destruction. Salt-spray meadow habitat was never common, but was substantially more extensive than it is today. Residential, commercial, recreational and agricultural activities have caused a loss of the habitat. Introduction of exotic plants, [such as iceplant, *Mesembryanthemum chrystallinum]*, and alteration of the natural fire processes have led to losses of habitat critical to the Oregon silverspot butterfly (USFWS, 1982).

The primary threats to the Oregon silverspot butterfly from the proposed project may be the extremes of low or high water in Lake Earl for extended periods of time. Hammond (1992)

states that the high water table in the sand dunes is maintained by adjacent Lake Earl and is vitally important for providing the moisture required for survival of the violets and the Oregon silverspot butterfly. However, he also commented that if the lake rises much higher than 8 feet, it begins to flood the lower portions of the sand dune habitat. A constant breach below six feet, may reduce the ground water level in the dunes to a point that the western blue violet population will be reduced because of dehydration. Shaw and Wiseman found in 1992 that violet patches that had been lush in the spring were dry and in poor condition in August (Shaw and Wiseman, 1992). The bar was breached on May 5, in 1972, and the water remained extremely low through the summer and fall. August and September tend to be the driest months of the year at Lake Earl. Extremely low water for extended periods could lead to the degradation or loss of western blue violet habitat and a loss of Oregon silverspot butterfly habitat. Allowing the lagoon to rise above eight feet will also potentially impact the Oregon silverspot butterfly. Oregon silverspot butterfly larvae do not have the mobility to escape rising water and may be adversely impacted if populations of the western blue violet are allowed to be inundated for long periods. The natural fluctuations of water in a coastal lagoon may provide excellent habitat conditions for Oregon silverspot butterfly at times and degrade habitat at other times. A managed breaching program, managed for a variety of species may have a similar effect. The USFWS commented that the action of breaching at eight feet could be perceived as beneficial to the Oregon silverspot butterfly, however, regular breaching over a series of years could alter the hydrology of the basin, thereby changing the floral composition. While regular breaching over a series of years could alter the hydrology of the basin, we do not have a baseline on which to determine what that possible alteration may be.

Tidewater Goby

The tidewater goby, *Eucyclogobius newberryi*, was Federally listed as a threatened species in 1994.

Distribution and Abundance

The tidewater goby is historically known from 110 different locations. Twenty six (24%) of the localities are considered extirpated and approximately 50 localities are so small or degraded that long-term persistence is uncertain. The tidewater goby inhabits coastal brackish water habitats entirely within California from Tillas Slough near the mouth of the Smith River to Agua Hedionda Lagoon in northern San Diego County (Ballard and Swift, 1996). Tidewater gobies have been found at various locations of Lake Earl, in various concentrations and seem to move seasonally (Charles Chamberlain, US Fish and Wildlife Service, personal communication, 1997).

Habitat Conditions

The tidewater goby can withstand extreme variations in salinity but prefers brackish water. It is normally found in salinities of 12 parts per thousand (ppt) or less (1/3 sea water) up to 75% sea water. Aquatic vegetation is necessary for survival as it provides escape cover from predators, although tidewater gobies have been found in sandy areas lacking cover in Lake Earl (David McLeod, DFG files; Charles Chamberlain, US Fish and Wildlife Service, personal

communication, 1997). It is usually collected in water less than one meter in depth. Spawning occurs in unconsolidated, clean, coarse sand where the male constructs a burrow in which the female lays her eggs. In general, this occurs in spring to mid-summer after the lagoon closes to the ocean, at salinities of 0-25 ppt (Ballard and Swift, 1996).

Identified Threats

The tidewater goby is a short lived species having an annual life cycle. Species habitat restriction, low vagility, and short life span make populations vulnerable to elimination by human activities (Swift et al. 1989; unpublished). Threats to the tidewater goby include modification and loss of habitat as a result of coastal development and breaching, discharge of agricultural and sewage effluent, increased sedimentation due to cattle grazing, and upstream sediment flows into the lagoonal area (Ballard and Swift, 1996).

With increased development, more wells are dug with the increasing demand for domestic water. This results in groundwater overdrafting which decreases the amount of water reaching the lagoon which leads to a reduction in the brackish zone, which the goby prefers.

Erratic fluctuations from breaching result in decreases in habitat which increases the chances of predation. Abrupt salinity changes can alter the goby's food supply by causing freshwater and marine invertebrates to die depending on which way the salinity change occurs, which necessitates recolonization (Dr. Ramona Swenson, personal communication, 1996). Breaching can affect the tidewater goby in a variety of ways including stranding in shallow pools, leaving breeding burrows above the water level causing desiccation and predation, and entrainment of gobies to the ocean. If breached late in the season, the lagoon reforms at a lower level causing increased aquatic plant growth which can make lagoon water anoxic (Ballard and Swift, 1996).

Coho Salmon

The coho salmon, *Onchorhynchus kisutch*, was Federally listed as a threatened species in the Oregon/Northern California Evolutionarily Significant Unit (ESU) in 1997. This ESU extends from Punta Gorda (CA) to Cape Blanco (OR).

Distribution and Abundance

The coho salmon is an anadromous salmonid species that was historically distributed throughout the North Pacific Ocean from central California to Point Hope, Alaska, through the Aleutian Islands, and from the Anadyr River, Russia, south to Hokkaido, Japan. Historically, this species probably inhabited most coastal streams in Washington, Oregon, and northern and central California. In the 1940's, estimated abundance of coho salmon in the Oregon/ Northern California ESU ranged from 150,000 to 400,000 naturally spawning fish. Today, coho populations in this ESU are very depressed, currently numbering approximately 10,000 naturally produced adults. Populations in the California portion of this ESU could be less than 6 percent of their abundance during the 1940's (Federal Register Vol. 62, No. 87).

Habitat Conditions

Coho salmon exhibit a relatively simple three year life cycle. Coho salmon enter Lake Earl between October and February if the sandbar is open, and spawn from November to February. The sandbar at Lake Earl normally blocks migration into Jordan and Yonkers creeks, the principle spawning tributaries, for most of the year except winter. Spawning occurs in Jordan and Yonkers creeks in gravel deposits in riffles where there are suitable water depths and velocities. Eggs incubate for approximately 35-40 days, followed by emergence of fry from the gravel. Juveniles normally rear in cool fresh water for up to 15 months, then migrate to Lake Earl or to the sea (if the sand bar is open) between March and June. It is unknown to what extent the lagoon serves as rearing habitat along with Jordan and Yonkers creeks. A 18 cm. (7 in.+) coho was netted in Lake Earl in April, 1989 (DFG unpublished). Coho typically spend two growing seasons in the ocean before returning to spawn as three year-olds (National Marine Fisheries Service, 1996).

Identified Threats

Threats to coho salmon in Lake Earl include modification and loss of habitat as a result of coastal development along the lagoon as well as along spawning streams, breaching, discharge of agricultural and sewage effluent, increased sedimentation due to cattle grazing, and upstream sediment flows into the lagoonal area.

Breaching of the sandbar late in the season can lead to low summer water levels and increased aquatic growth, which can make lagoon water anoxic (Ballard and Swift, 1996). During low lake levels, water temperatures could be elevated beyond what is preferred by coho salmon which could lead to stress, poor condition, and poor survival. Frequent breaching causes abrupt salinity changes which can alter the food supply for coho salmon by causing freshwater and marine invertebrates to die, depending on which direction the salinity change occurs, which necessitates recolonization (Dr. Ramona Swenson, personal communication, 1996). It is unknown how lack of breaching in drought years could affect coho salmon by preventing emigration of juveniles to the ocean and immigration of adults from the ocean.

California Brown Pelican

The California brown pelican, *Pelicanus occidentalis californicus*, was Federally listed as endangered in 1971 as a result of species decline caused by breeding failure. The primary cause of breeding failure, legal use of chlorinated hydrocarbons, has been eliminated in the United States and the California brown pelican is now increasing.

Distribution and Abundance

The range of the California brown pelican extends from British Columbia to Central America. It breeds along coastal California and Baja California and along the Gulf of Cortez. The northernmost breeding population occurs on Anacapa Island, along California's central coast. After breeding, the California brown pelican may wander either north or south along the coast. The California brown pelican is usually a rare to uncommon winter and spring visitors in the County, but common on the north coast between August and November. After November their numbers in the County begin to decline. The vast majority are gone by early January although there are a few that remain around Humboldt Bay and the Crescent City harbor all year in some

years. The abundance of the California brown pelican along the north coast of California in 1997 is unusually high, probably as a result of the warm conditions caused by this year's El Nino phenomenon. The limitations to recovery of the California brown pelican now occur in the breeding areas several hundred miles south of the County.

Habitat Conditions

The California brown pelican generally uses offshore areas where it dives for fish and roosts on sea rocks or islands. It may also roost on remote beaches or coastal structures and is commonly seen around fish processing facilities. Rarely seen on north coast beaches, the California brown pelican uncommonly rests on coastal lagoons most years. The use of northern California lagoons and Lake Earl has been unusually high this year. The majority of the use at Lake Earl is close to the beach near the breach site.

Identified Threats

The use of chlorinated hydrocarbon pesticides in the middle decades of this century led to the production of thin shelled eggs which did not withstand the rigors of the wild. Although hydrocarbon pesticides are now illegal in the United States, there are still problems in southern California and parts of the California brown pelican's range outside the United States. Another, more recent threat has been related to the failure of the anchovy population, an important forage item. Other threats include other toxins, human disturbance at roost sites and potential oil spills (DFG, 1992). The California brown pelican is unlikely to be at Lake Earl when artificial breaching of the bar actually occurs in December, January or February. Although the likelihood is small for a conflict between California brown pelicans and a breach, the possibility remains. Birds close to the location of the breach at the time of breaching may be entrained and carried into the rough water of the breach. It is likely that birds so entrained would be unable to negotiate the rough water in the outflow or surf and would drown. Examples of such occurrences have been noted with other species (Jim Lintz, personal communication, 1997; Dr. Paul Springer, personal communication, 1997).

Aleutian Goose

The Aleutian goose, *Branta Canadensis leucopareia,* was Federally listed as an endangered species in 1967 because of a decline in the population. It was downlisted to threatened in 1990. It has been recommended for delisting, but a backlog of work has restricted delisting activities (Brad Bortner, USFWS, personal communication, 1997). The Aleutian goose is stable and increasing (Fisher, 1997).

Distribution and Abundance

The Aleutian goose breeds in Alaska and winters in California's Central Valley. Virtually the entire population make the migration between these two areas (Woolington, et al. 1979). The Aleutian goose probably numbered in the tens of thousands naturally. The decline in population was caused by the introduction of the Arctic fox to the goose's breeding islands. The fox preyed heavily on the ground nesting goose, reducing its population to less than 800 individuals by 1967. The Aleutian Goose Recovery Plan called for the removal of foxes from three Alaskan islands

(Byrd and Springer, 1976). A Canada goose hunting closure was also instituted in northwestern California to protect the Aleutian subspecies. Recovery has been successful with the total population now about 23,000 (Fisher, 1997). Only four or five thousand Aleutian geese stop near Lake Earl on their way from the breeding grounds to the Central Valley in the fall. On the spring northern migration, virtually the entire population spends several weeks in the vicinity of Lake Earl before continuing north. A few geese commonly arrive as early as February, but the vast majority of the population arrives in March and leaves in April (Fisher, 1997). The geese roost on off-shore rocks, primarily Castle Rock, Goat Rock and Prince Island. They forage on short grass pastures and "meadows" in the vicinity of Lake Earl and the Smith River Delta.

Habitat Conditions

Several Alaskan Islands are now fox free and the habitat in the Central Valley and the County is adequate. There is abundant forage available for the Aleutian goose in coastal County, although local farmers and ranchers have concerns with the amount of crop depredation that occurs on private property because of foraging. The DFG is undertaking active management efforts to enhance Aleutian goose forage on the LEWA and a hazing program on private lands by the USFWS and local farmers is being used to encourage the Aleutian goose to forage on the LEWA. Available grazing area for the Aleutian goose on the LEWA is related to the effect of standing water on the areas of the floodplain. Those areas inundated for long periods each year will not produce grass. When the water is low those exposed areas will be largely mudflat. Under natural breaching conditions there would be less goose forage available on the LEWA than with the proposed project. While concerns exist about the location where the Aleutian geese forage, available forage does not appear to be a limiting factor.

Identified Threats

The threats for which the Aleutian goose was listed as endangered have been overcome. There are no substantial threats to the Aleutian goose in the Lake Earl area. There is adequate available foraging habitat for the existing population of Aleutian geese in the vicinity of Lake Earl.

Bald Eagle

The bald eagle, *Haliaeetus leucocephalus*, was Federally listed as endangered in 1967 and downlisted to threatened in 1995. The reason for listing was population decline resulting from chlorinated hydrocarbon use as discussed under Identified Threats for the California brown pelican. The bald eagle has increased substantially in recent years (DFG, 1992 and 1996).

Distribution and Abundance

The range of the bald eagle covers most of North America. It is usually found close to water. It both breeds and is a winter visitor in northwestern California. The bald eagle is an occasional winter visitor at Lake Earl, but is neither a breeder nor a regular resident.

Habitat Conditions

Bald eagles generally feed on birds and fish, although they may also feed on a wide variety of other animal matter, including carrion (DFG, 1992 and 1996). Their feeding habits at Lake Earl are not known.

Identified Threats

The threats to the bald eagle are habitat loss caused by development, agriculture, and timber management. Pesticides and human disturbance, including off-road vehicles and shooting, also impact bald eagles. The proposed project is unlikely to adversely affect the bald eagle which uses the LEWA only as an irregular forage area.

American Peregrine Falcon

The American peregrine falcon was Federally listed as an endangered species in 1970. The reason for listing was population decline caused by chlorinated hydrocarbons as discussed under Identified Threats to the California brown pelican. The peregrine falcon was downlisted to threatened in 1972. The peregrine falcon population has increased substantially since being listed and has been considered for delisting in recent years, but no action has been taken (DFG, 1992 and 1996).

Distribution and Abundance

The range of the peregrine falcon extends throughout North America but the species was never abundant, probably because of its nesting requirements. Peregrine falcons nest on cliffs, spires, bluffs or similar high, nearly vertical locations. They deposit their eggs on a barren ledge or high bluff. Its population is limited by available nesting sites. There is no available nesting habitat at Lake Earl. Peregrine falcons are probably attracted to the lagoon by the high forage base and open hunting area. Peregrine falcons feed primarily on avian prey which they catch in flight, but they may also eat fish. Peregrine falcons at Lake Earl perch on tall snags or at the top of old tree and probably forage almost exclusively on waterfowl, shorebirds, and other water-associated birds.

Identified Threats

The peregrine falcon has increased substantially in recent years, although there are still problems with the use of chlorinated hydrocarbons outside the United States. Threats to the peregrine falcon also include loss of habitat, the existence of power lines and shooting. The only known threat to the peregrine falcon at Lake Earl is a set of power lines that cross both the LEWA and Lake Earl. A breach of the bar is unlikely to have an adverse effect on peregrine falcon.

Western Snowy Plover

The coastal population of the western snowy plover, *Charadrius alexandrinus nivosus*, was listed as a federally threatened species in 1993 as a result of a decline in the coastal breeding population caused by habitat loss. Most losses are the result of heavy beach use for recreational purposes, although commercial and other uses also have an impact. The western snowy plover is declining (Page, G. W. et al., 1995).

Distribution and Abundance

The range of the western snowy plover is from southern Texas to Washington with populations in almost every western state. The range for the coastal population extends from southern Washington to Baja Sur, Mexico (Page, G. W., et al., 1995). It nests on beaches above the wave slope, in foredunes, on salt flats, dredge spoils, levees, and occasionally on river bars. Western snowy plover forages on small invertebrates. The nest is a slight depression in the sand with a few small fragments of shell, driftwood or other material close by. The bird and its eggs are cryptic and difficult for the untrained eye to see, which is the nesting birds' main defense. The young are precocial and leave the nest within one to three hours after hatching. The breeding period for the western snowy plover is mid-March to mid-September (Page, G. W., et al., 1995). Some of the better habitat in the County for western snowy plover is the ocean shore and adjacent sand dunes between Point St. George and the mouth of the Smith River. Lake Earl is situated between these two points. The western snowy plover is a known breeder in this area and has been recorded breeding close to the breach site.

Identified Threats

The principal threat to western snowy plover is disturbance on the beaches particularly during its breeding season. The primary causes of disturbance include all types of recreational beach use such as sun bathing, walking, jogging, beach combing, off-highway vehicle use and the presence of domestic pets. Recreational and commercial beach use may disrupt nesting and cause nest failure directly by crushing eggs or indirectly by causing the birds to leave their eggs exposed long enough to cause them to fail. Breaching will directly impact about an acre to two acres of beach and bar, and indirectly effect about twice that area. Breaching from mid-March through mid-September could effect western snowy plover. A breach during the non-breeding period is not likely to be a concern as the western snowy plover is quite mobile during the non-breeding period. A breach in early September would have the potential to adversely effect nesting western snowy plover, although a breach at that time is highly unlikely. A breach during the rest of the project period is not likely ~~to effect~~ western snowy plover. To assure, that there will be no conflict the time frame for the proposed project has been modified to begin September 16, rather than September 1.

Western Lily

Western lily, *Lilium occidentale*, was listed as federally threatened in 1994 (California Native Plant Society, 1994)

Distribution and Abundance

The western lily is located in small populations in coastal Del Norte and Humboldt counties and in southern coastal Oregon. It is known in the County from a population south of Crescent City and two small populations at Point St. George, about a mile south of Lake Earl. It

is probably the small populations at Point St. George that are recorded by Hammond (1992) and are attributed to the Lake Earl vicinity. Western lily occurs in meadows at the forest edge at Humboldt Bay, but in fens in the County. A vegetative survey conducted in 1987 did not record western lily on the LEWA and it has not been reported on other areas of the lagoon shore or associated wetlands. Its known habitats have rather constant fresh water conditions, unlike the dramatically fluctuating lagoon ecosystem conditions.

Identified Threats

There are no known population of western lily at Lake Earl and does not occur within estuarine area such as those that would be directly effected by breaching.

III. ANALYSIS OF IMPACTS

A. Direct Habitat Impacts

The natural state of the lagoon is the set of conditions under which the lagoon ecosystem and its constituent species evolved and functioned until artificial breaching began. The continuation of the natural state would be the most beneficial to those fish and wildlife resources that evolved with and are a part of that ecosystem. In an ideal situation, where the entire floodplain was still in a natural, or near natural state, natural breaching would be biologically recommended for Lake Earl. However, the floodplain is not in a natural or near natural state. Natural breaching could now be detrimental as it could introduce contaminates to the lagoon from a variety of development sources. The ecosystem is degraded as a result of artificial breaching at low levels for a number of decades. Maintaining the degraded situation is not in the best interest of the biological resources and a return to a no project, natural breach is also probably not in the best interest of the fish and wildlife resources. Determination of a baseline from which to determine the impacts and or benefits of the proposed project is difficult.

Natural hydrological conditions could be considered the baseline for the project. In this case, although a permit is required for any project other than a natural breach, the natural condition is unknown and has not existed for at least thirty, or more, years. A natural breach is probably not likely to be beneficial with the existing development in the upper portions of the floodplain. Vehicles, storage of petroleum products, agricultural and industrial materials could contribute to contamination of the lagoon. The impacts of a natural breach under the existing conditions may be more detrimental to the lagoon ecosystem than an artificial breach at some level below the area where development has taken place. Removal of development to allow for a natural breach is beyond the scope of the proposed project and is also probably not economically or politically feasible.

The "emergency breaching" conditions that have occurred since 1987 are detrimental to fish and wildlife resources. Although the water level is allowed to rise to a high level before breaching, the level at which an emergency commonly is declared is late in the rain year. During many years the late breaches have precluded a resealing and/or reestablishment of an adequate water level for fish and wildlife resources for up to eight or nine months.

The four foot permit level allowed by the Corps between 1977 and 1986 is the lowest level at which the lagoon can be effectively breached. This level is probably the least valuable to

wildlife considering that it leaves the least ecosystem complexity and the least habitat volume and area available for fish and water-associated wildlife. A regulated breach at four feet will require an acceptance of a loss of potential ecosystem complexity and fish and water-associated wildlife habitat volume and area. A loss of potential ecosystem complexity means a loss of natural lagoon functions such as the wide range of salinity changes, natural time lapses between breachings, and a loss of habitat diversity for all organisms. A loss of water volume decreases the habitat for fish and other aquatic organisms including diving waterfowl, other water-associated birds, amphibians, beaver and otter. A loss of water surface, alone, is a loss of habitat for waterfowl and other water-associated birds that rest or feed on the water surface. Likewise, a loss of wetlands means both a loss of diversity and a loss of habitat for aquatic, wetland, riparian and some upland species. Examples of species that will be effected by the potential loss of wetlands are small fish, amphibians, aquatic reptiles, wading birds, shorebirds, puddle ducks, mink, raccoon, and fox.

Conversely, an increase of ecosystem complexity above that which has been allowed to occur over the last several decades means an increase in fish water-associated wildlife habit. An increase in water volume and water surface means an increase in the habitat for fish and water-associated wildlife. Those threatened and endangered species dependent upon aquatic habitats, including the tidewater goby, coho salmon, and California brown pelican would be the most affected. An increase in wetland is an increase in habitat for numerous kinds of wildlife, not only aquatic wildlife, but also a variety of riparian and upland species. The environmental studies being completed during the interim permit period are intended to provide the background necessary to determine the best level for the maintenance of fish and wildlife resources. It will take months, if not years, to determine the best level for long term breaching at Lake Earl. In the interim there is a need to provide the highest level of lagoon biological maintenance possible. As the breaching program that provides the highest level of biological function has not yet been scientifically determined, the best judgement of wildlife biologists and resource managers should be used to guide the management of the resources in the interim. A group including the various Federal, State and County resource managers, among others, has been assembled as stakeholders to help guide the applicants in obtaining permits for the breaching of the bar and to determine the interim breaching activities. Those resource managers and stakeholders determined that the most reasonable level for interim breaching is the proposed project. The proposed project allows a high enough breach to provide greater protection of wildlife than previous artificial breaching programs, but a low enough breach to protect existing, occupied, maintained human development from flooding. It is also recognized by the stakeholders that a regulated breaching program must be established before the environmental studies are completed. Unless a regulated breaching program such as the proposed project is established during the interim period, the breaching will revert to the "emergency" process that is the most detrimental breaching process to fish and wildlife resources. A regulated breach at eight feet msl will allow fluctuations of the water level in the lagoon with each breach, but will also allow the higher, more beneficial water volume, water surface and wetland area between breaches. A regulated breach at eight feet will also allow a two foot of buffer between the authorized breaching level and the flood level in case of a storm at the time the lagoon reaches eight feet.. The two foot buffer will allow a water holding volume of almost 9,000 acre-feet, a capacity equal to a about five inches of rain throughout the

watershed.

B. Indirect Habitat Impacts

The potential for the water level in the lagoon to effect the water table in areas adjacent to the lagoon has substantial indirect habitat impact implications. A large part of the Pacific Shores property is wetland. Over 40% of the Pacific Shores Subdivision appears on the National Wetlands Inventory (NWI) as wetland (USFWS, 1987). The NWI is not an official wetland designation, but it is an indication that there is probably substantial wetland area on the subdivision which should be reviewed. The wetlands are an impediment to development. Maintaining a lowered water level in the lagoon has the potential of lowering the water table under the subdivision and increasing the potential for development. Pacific Shores is an area of sand dune, low areas of which are, as stated earlier, also wetland. Much of the wetland is a result of a high water table which commonly surfaces in low points in the sand dunes. The inability to provide septic systems that meet legal septic criteria have been a problem for the subdivision. The subdivision's Pacific Shores Water District is working to overcome that problem. Federal and State wetland protection policies may also be a problem for the subdivision. If the NWI mapping at Pacific Shores is close to being correct, the subdivision may have considerable problem relative to the Clean Water Act. Development of the subdivision could have further adverse impacts on fish and wildlife resources in general and on threatened and endangered species specifically. It would also add a multitude of other impacts to fish and wildlife of the Lake Earl ecosystem, including loss of habitat, increased human presence at the edge of and on the lagoon, an increase of domestic animals, and potential pollution. Increased concern about the water table, increased impervious surfaces and increased run-off are all likely to increase the pressure to maintain the water in the lagoon at the lowest possible level.

C. Other Considerations

Species protected under the Migratory Bird Treaty Act should be considered in this project. Locally breeding bird species present during the spring and summer tend to form a rather constant population. The resident population is augmented in autumn and winter by thousands of migrants which spend varying lengths of time in the area. Some migrants are summer visitors from the south. Most come from Canada and Alaska, and as far as the Arctic Circle and Siberia. Nearly 3,000,000 water-associated bird-days use is recorded at Lake Earl. Populations of most water-associated birds fluctuate dramatically from season to season, month to month and even from day to day because of their migrant nature. The highest numbers and greatest species variety are evident in the fall and winter months (Monroe, 1975). The majority of the bird species that occur at Lake Earl are protected under the Migratory Bird Treaty Act, even though only a small percentage of the species are threatened or endangered. Many of these species are also California Species of Special Concern (Remsen, 1978). Maintenance of the wetlands and open water conditions at Lake Earl is extremely important to all of the water-associated bird species.

D. Cumulative Impacts

Cumulative impacts are those that result from a combination of the effects from all previous, present and future foreseeable projects which individually may be inconsequential, but in combination are significant. The minimum cumulative impacts that must be considered at Lake Earl are those which occur as a result of activities that in any way effect the rise and fall of water in the lagoon. The effects of artificially keeping the water level low must be reviewed in terms of the impacts on natural resources. Allowing the lagoon to breach naturally does not require a permit, however, allowing the lagoon to rise to natural breaching elevations could also have serious effects on people living within the floodplain and on fish and wildlife resource. All levels of natural and artificial breaching need to be reviewed. Past projects which need to be included in a cumulative impacts analysis include previous development of roads, wells and structures within the floodplain, establishment of the LEWA, the Lake Earl Project and the Pacific Shores Subdivision. Existing planning and zoning designations should also be taken into consideration. Foreseeable potential future activities that need to be considered are the restoration and enhancement of the natural environment of the LEWA and the Lake Earl Project, future potential development of the Pacific Shores Subdivision, the Bay Meadows subdivision, and any others near the lagoon. Floodplain management should be considered as a part of the analysis.

V. MEASURES to AVOID, MINIMIZE and MITIGATE ADVERSE IMPACTS

1. Artificially Breach the Bar as High as Possible Without Flooding Occupied Development

An artificial breach somewhere below ten feet in elevation is necessary if damage to existing occupied residences and county infrastructure is to be avoided. Unless residential use is displaced, the best that can probably be expected for fish and wildlife resources including threatened and endangered species is to minimize the impacts of artificial breaching. Mitigation for impacts of artificial breaching to the ecosystem can most closely be accomplished by allowing the lagoon to function as closely as possible to its natural state while fully protecting existing homes, roads and wells. Based on the information now available, an eight foot breach level comes closest to meeting those criteria. A regulated eight foot breach is a substantial benefit to fish and wildlife over the pre-project artificial breaching levels. It is also protective of existing, occupied development and County infrastructure. The eight foot breach level allows a two vertical foot buffer between the artificial breach elevation and the level at which infrastructure begins to flood. The two feet provides a water storage capacity equivalent to total run off from a five inch rain storm. Even under the most severe storm conditions, the two foot difference should allow the County enough water storage capacity below the flooding level to get to the breach site before inundation of roads or wells occurs. An eight foot breach is within the range suggested by Hammond as acceptable for the management of the Oregon silverspot butterfly.

2. Haze Water-Associated Birds from Near Artificial Breach Site

Birds, including the California brown pelican and the Aleutian goose, sitting on the water inside the lagoon near the breach site may become entrained in the rough, rapid outflow when the artificial breach occurs, and for approximately 48 hours thereafter. The water rushing from just inside the lagoon through the breach channel is extremely swift and much too rough for even the strongest swimming birds to negotiate. Birds must be protected from becoming entrained in the outflow. Mitigation for the potential of birds being entrained could best be provided by monitoring birds at and hazing them away from the breach site during daylight hours. California brown pelicans are unusually abundant this year, probably as a result of the El Nino conditions in the Pacific and have commonly been seen on the lagoon in large numbers, although they are seldom in the immediate area at the actual times the bar is breached. Aleutian geese seldom use the lagoon but, like with the pelican there is a remote potential that they could become entrained in the outflow. Hazing of California brown pelicans and/or Aleutian geese will require coordination with the U.S. Fish and Wildlife Service and an incidental take permit. Monitoring for birds within a 200 foot radius of the lagoon side of the breach and hazing them away from the breach site would begin immediately before breaching and continue during daylight hours for 48 hours after initiation of breaching.

VI. PROJECT ALTERNATIVES

A. Alternative I, Proposed Action - Breach Sand Bar at Eight Foot msl

The proposed action is to breach the bar between Lake Earl and the ocean any time between September 16 and February 15 if the water level in the lagoon has risen to eight feet, or above. The bar may also be breached on February 15, if the lagoon is at five feet or more, at that time. Artificially breaching will not occur between February 15 and September 16. This alternative provides the maximum flood protection for county thoroughfares, wells, and existing, occupied residences. It also provides more protection to fish and wildlife resource than would be provided with a lower breach level.

B. Alternative II, Breach Sand Bar at 4 foot msl

Alternative II would be to breach the bar at four feet any time of the year. Under this alternative the sand bar could be breached at four feet. This specific breach level alternative is the least protective of fish and wildlife of any potential specific breach level. This alternative would be at a substantially greater financial cost than the proposed project as a greater number of breaches would be required to maintain the lagoon at four feet. Occupied dwellings would be protected, but the impacts to the lagoon ecosystem would be significantly impacted beyond what is necessary to protect existing, occupied development. Four feet was not selected as the proposed action because it is no more protective of county thoroughfares, wells or existing, occupied dwellings than Alternative I, but is substantially less protective of the Lake Earl ecosystem and substantially more expensive.

C. Alternative III, No Action (Allow the Sand Berm to Breach Naturally)

The no action alternative would be the most protective of the overall Lake Earl ecosystem if development did not already exist within the floodplain of Lake Earl. A fully natural

functioning lagoon allow the Lake Earl ecosystem to function as it did for millennia before the system was artificially disrupted. However, flooding of development would be damaging to developed facilities and would probably be damaging to the ecosystem by introducing contaminates such as petroleum products and industrial materials to the aquatic system. This alternative was not selected because it would damage the aquifer, flood county thoroughfares and existing dwellings and would contaminate the aquatic environment of Lake Earl.

D. Alternative IV, Study Level of lagoon in Increments beginning with 4'

The Pacific Shores Water District has suggested a lengthy process of studying the lagoon for several years at each one foot elevation beginning at the four foot elevation and moving upward. Under this program the lagoon would be studied relative to both elevation and breach timing, but only one variable at a time would be examined. The first year, the lagoon would be studied at a four foot elevation with a last breaching date of January. The following year the lagoon would be studied at a four foot level with a last breaching date of February, the following year the lagoon would be studied at a four foot level with a last breaching date of March, etc. Then the program would move to the five foot level for a similar number of years. Under this program it could take four or five years before the breaching level would be modified. It could take up to 60 years to get the breaching level up to the proposed project level. This alternative was not selected because it would emphasize the lowest possible breach level for a number of years, would not allow the lagoon to rise to proposed project levels for up to 60 years and would be no more beneficial to existing, occupied development or County thoroughfares than the proposed project. It would also be substantially more costly than the proposed project.

E. Alternative V, Construct a Weir for the Management of Water Levels

The Corps suggested the concept of a weir to manage of water levels on Lake Earl (U.S. Army, 1971). A weir would allow for the maintenance of water levels at a given height in the lagoon and would be protective of development but would adversely impact the natural functions of the lagoon. A weir would mute the movement of saltwater into the lagoon and adversely effect the movement of animals between the ocean and the lagoon. It would also establish a precedent for structural water control which would not be favorable to the lagoon ecosystem. This alternative was not selected because of its adverse impact on the lagoon ecosystem function and its high construction and maintenance costs.

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August 19, 1996

VIA OVERNIGHT COURIER

James Muth
North Coast Planner
California Coastal Commission
45 Fremont Street, Suite 2000
San Francisco, CA 94105-2219

Re: Comments on Application By County of Del Norte and California Department of Fish and Game For Coastal Commission Permit No. 1-94-49

Dear Mr. Muth:

The County of Del Norte (the "County") and the California Department of Fish and Game (the "Department") (jointly, the "Applicants") have submitted an application ("Application") for Permit No. 1-94-49 to the California Coastal Commission (the "Commission"). The Application seeks a permit to breach the sandbar separating Lakes Talawa and Earl from the Pacific Ocean on a two-year interim basis whenever the surface level of the lakes rises above eight feet mean sea level ("MSL"). Since the previous interim permit was conditioned on breaching whenever the lake level rose above the lakes' official four feet MSL surface level (see USGS survey map), the Application is, in effect, a request to raise the surface level by deferring breaching until the water level rises to eight feet MSL. The Pacific Shores Subdivision California Water District (the "Water District") submits these comments in opposition to the proposed action.

A. HISTORIC ISSUES

Comment 1. **The lake level issue has already been considered by the Commission and four foot MSL level approved as the level at which breaching should occur.** The Applicants have not submitted any new information which suggests that a change in policy should be considered. In 1991, the County applied for Permit No. 1-91-63 which sought to raise the high-water level of Lakes Talawa and Earl to eight feet MSL by deferring breaching until the water was at or above the eight feet MSL level. This application for an eight foot level was denied by the Commission, and the permit for Lake Earl was approved only on the condition that the lake breaching occur "whenever the lake elevation reaches four feet above mean sea level."

The revised findings conditioning approval on a four foot MSL high-water level state:

> The Commission finds that the breaching program would be consistent with the Coastal Act if the sand bar were breached when the lake level reaches four feet MSL instead of eight feet MSL. Breaching the sand bar at four feet MSL is consistent with the above-referenced sections of the Coastal Act (Sections 30230, 30231, 30240, 30241, 30242 and 30253) as it serves to maintain the elevation of the lakes at a level which has existed for the past 75 to 100 years and as it avoids the flooding of additional wetland, environmentally sensitive, and agricultural lands. (Emphasis and insert added.)

Notwithstanding the Commission's 1991 findings, the same Applicant (this time as co-Applicant), with the same issue, based on the same facts, is again bringing this issue before the Commission. Therefore, the Applicants are effectively asking the Commission to reconsider the same data and come to a decision contrary to its findings of five years ago.

Based on estimates provided by the Department of Water Resources in 1991, the Commission noted that "it is clear that allowing the elevation of the lakes to rise from 4 feet MSL to 8 feet MSL would result in a 44 percent increase in the size of

the lakes by flooding of an additional 1,130 acres of surrounding land." Commission, Staff Report: Revised Findings, Application 1-91-63 ("1991 Findings"), p. 6. A significant portion of the land flooded at eight feet MSL, over 350 acres of the Pacific Shores Subdivision (the "Subdivision"), is property within the Water District's jurisdiction. See Declaration of Thomas Resch.

The proposed action, if approved, would cause significant flooding of public infrastructure and privately owned parcels served by the Water District, impairing the Water District's ability to carry out its basic function and imposing a severe hardship on its over 1,200 constituents.

Comment 2. **The Application seeks to alter the historic water level of Lakes Talawa and Earl.** Evidence that Lakes Talawa and Earl have historically been maintained at the four foot MSL level has been previously considered by the Commission and is reflected in the Commission's 1991 findings that "the water elevation of the lakes has been maintained at about four feet MSL for the past 75 to 100 years" and that "breaching the sand bar at four feet MSL . . . serves to maintain the elevation of the lakes at a level which has existed for the past 75 to 100 years. . . ." 1991 Findings, pp. 9 and 10. The local ecosystem, infrastructure and landuse developed around the four foot level. The effect of the proposed action on each is addressed in separate comments.

B. GENERAL ADVERSE IMPACTS

Comment 3. **By deferring breaching until the lake has reached eight feet MSL, the proposed action will increase the velocity of flow at the breach site.** Once a breach in the narrow sand dune blocking the mouth of Lake Talawa is made, the flow of water quickly forms a channel by eroding away the sand. The higher the water column behind this breach, the greater the velocity of flow. This will be greatest during the earlier flows and diminish as the lake level recedes.

Comment 4. **The greater volume of water released at eight feel MSL will cause greater erosion at the breaching site.** As a matter of physics, the greater the amount of flow through the breach, the greater the erosion will be, other conditions being equal. This erosion will also increase with velocity of flow acting on the breach site. Greater flow will also increase with higher levels. Given a greater volume and faster velocity

release at eight feet MSL, more of the breach site will likely be eroded than was during historic four foot MSL breaches.

Comment 5. **Closure of the breach site may be delayed because of the higher surface level at which breaching is proposed.** Closure of the breach site is probably related to three major factors: (1) seawater flow and continuity of flow in and out of the lake; (2) wave action of the ocean; (3) the width and depth of the breach site. The first two factors are unrelated to lake water levels at the time of breaching. However, the widened breach site resulting from delaying breaching until the surface level rises to eight feet MSL will impede closure given equal conditions of 1 and 2.

Comment 6. **Higher standing water during summer months will cause additional erosion and more release of sand and other sediments.** One consequence of the proposed action is that if the lakes do not rise to eight feet MSL before summer, high standing water will likely remain throughout the summer months. High water levels during extended periods of the summer months will kill off emergent grasses and vegetation due to flooding. Roots of the grasses impede erosion. For example, in the breaching of 1992, after high lake levels during the summer of 1991 (six to eight feet), large expanses of emergent vegetation died causing considerable organic erosion, especially along the back side of the fore dunes. After the 1992 breach, a large deposit of silt and sand emerged as the water level receded in the channel between the lakes. Substantial erosion ate away lowlands to the south separating the lakes (which are actually saline lagoons) from Lake McLaughlin, a separate freshwater lake unconnected to the lagoons. As a result, Lake McLaughlin was destroyed and became an arm of the lagoons.

In contrast, the following year, when preceding summer waters were not high and the vegetation was not killed, such erosion did not occur. The Pacific Shores Property Owners Association made before and after measurements by monitoring seven different stakes on the backside of the north fore dunes. Only one stake indicated about one inch erosion. Around the other stakes the grass was still green after breaching and no measurable erosion occurred at these stakes. This was an area that had extensive erosion in 1992.

Comment 7. **With the establishment of a long-term higher maximum lake level, emergent vegetation would move to higher ground resulting in increased mudflats between lake and vegetation after breaching.** Higher maximum lake water levels prior to breaching do not increase the water levels after breaching. Therefore, as the emergent vegetation moves to higher ground because of the increased maximum lake level, the distance between the vegetation and lake edge after breaching increases proportionally. The result is large expanses of mudflat areas between low water levels and emergent vegetation. This condition will be aggravated as shallow portions of Lake Earl fill in because of the increased erosion described in prior comments.

C. ADVERSE IMPACTS ON THE WATER DISTRICT

Comment 8. **The proposal to defer breaching until the water level reaches eight feet MSL will interfere with the use of private property within the Water District's jurisdiction.** The Water District, a special district created under the laws of the State of California, has jurisdiction over a two square mile area consisting of the Subdivision and adjoining properties zoned residential. The Subdivision, located on the north shore of Lakes Talawa and Earl, consists of over 1,500 1/2-acre lots. More than 1,200 persons are currently on record as owners of parcels within the Subdivision. Elevations within the subdivision range from approximately four feet MSL to twelve feet MSL. With breaching deferred until the lakes rise to eight feet MSL, at least 75 privately owned parcels will be underwater or partially underwater for many months of the year. Several hundred other privately owned parcels will have access impaired due to flooded public streets within the subdivision. Over 1,000 privately owned parcels will suffer property value reductions because the increased water table will create additional environmental and engineering problems that will need to be addressed before the owners can use their parcels for their intended residential purpose.

Comment 9. **The proposal to defer breaching until the water level reaches eight feet MSL will interfere with infrastructure within the Water District's jurisdiction.** In the early 1960s, the Subdivision was platted and approved by the County and all 1,500 parcels were sold to individual owners. At the time the subdivision was developed and the lots sold, the lakes were maintained at a maximum four foot MSL. Each parcel in the Subdivision is fronted by a paved street and served by a drainage

system, which are now dedicated as part of the County public works. Both the street network and drainage system were designed for the four foot MSL level. Raising the lake levels to eight feet MSL would flood parts of many streets and may reverse the flow in the drainage system, threatening the integrity of the entire Subdivision.

Comment 10. **The proposed high water levels will prevent the Water District from performing its prescribed function as a local agency.** The County has delegated to the Water District the task of engaging in the numerous studies required under CEQA and the Coastal Act to evaluate land uses and the impacts of development by its constituents within its area of jurisdiction. Since 1988, the Water District has been conducting the studies required under the applicable statutes. These studies are based on a four foot MSL maximum lake level. Experience with high water levels in recent years suggests that soil saturation, erosion, and the resulting impacts on habitat caused by raising the lake level to eight feet MSL might invalidate many of the studies. The proposed action also threatens test wells in low lying elevations of the Subdivision. See Declaration of Thomas Resch. If the lake level is increased to eight feet MSL, as proposed in the permit Application, the Water District's six years of studies on the surrounding environment may be rendered useless, resulting in a huge waste of taxpayer funds, and further delay in resolving the local landuse issues.

D. ADVERSE IMPACTS ON, AND TAKINGS OF, PRIVATE PROPERTY

Comment 11. **The Department's past and present actions suggest that it is attempting to take control of private property without payment by flooding it.** In its 1991 Findings, the Commission stated that the Department has "an ongoing acquisition program to purchase from willing sellers all private lands around the lakes up to the 10 foot contour." 1991 Findings, p. 5. Had this been true, this comment would not be necessary. The Department's acquisition program is illusory. The Department has not purchased a single lot in the Subdivision in almost 20 years. During this time many Subdivision parcels below the ten foot contour were listed for sale by their owners, without an offer by the Department. More than a few parcels were eventually abandoned by their owners and forfeited to the County for back taxes. Yet, the Department did not even attempt to acquire these. Instead, the parcels were put up for tax sale and sold to private parties. Rather than purchasing these parcels, the

Department has repeatedly attempted to flood them by raising the lake level. This suggests that the Department is not interested in paying for private property it can flood and take for free.

Comment 12. **Property owners who front or are close to the lake are directly impacted by flooding of their property.** At least 74 parcels would be underwater or partially underwater for many months of the year and mudflats the rest of the year if the lake levels were raised to eight feet MSL. The owners of these parcels would effectively be denied all use of their properties. Governmental action which floods a person's property on a regular basis is clearly a taking of that property.

Comment 13. **Many property owners who front the north end of Lake Talawa will suffer extraordinary erosion if the lake level is increased to eight feet MSL.** The addition of an additional four feet in depth of water over the several thousand acre surface more than doubles the lake's volumes. Therefore, deferring breaching until the lakes rise to eight feet MSL will result in a massive outflow of water in quantities and at rates far more substantial than has historically occurred when the lake is breached at four feet. Past experience with high water level breaches shows that the increased force of that outflow draws substantial quantities of soil from the lakeshore, eroding lakeshore parcels. In particular, the forceful current through the deeper and more narrow Lake Talawa will severely erode the private properties adjoining Lake Talawa. If the erosion and the threat of future erosion renders these properties unfit for use, it would constitute a taking of those properties.

Comment 14. **Increasing the lake level from its historical level will likely increase hydraulic pressure on the shallow aquifer beneath the Subdivision, which may adversely impact parcels above.** Although the Subdivision has sandy soil which ordinarily drains well, increased groundwater levels associated with past flood conditions had led to abnormal saturation of sandy soils throughout the Subdivision. Because groundwater is found within ten feet of the surface throughout much of the Subdivision, any increase in the groundwater level caused by the proposed higher lake level will likely create saturated soils, and may create saturated soils where saturated soils have not existed for more than 100 years. If this action creates new wetlands, it will adversely affect the ability of affected property owners, including those above the eight foot contour, to utilize their parcels. Even where it does not create new

wetlands, high groundwater level may impair the ability of property owners to construct foundations and other improvements required for use of their properties. The proposed action will also increase the risk of earthquake damage throughout the subdivision and adjoining areas because the effect of saturating the sandy soils is to make it more prone to liquefaction.

Comment 15. **Increasing the lake level to eight feet MSL may deny parcel owners use of their properties by impairing development of the sewer and water infrastructure required under state law.** The value of each residential parcel in the Subdivision is substantially based on the Water District's ability to ultimately construct sewage treatment and water delivery facilities to it. If raising the lake level causes a corresponding rise in groundwater levels, it may prevent the Water District from fulfilling this responsibility to part or all of the parcels in its service area. For instance, the impairment of sites for sewage disposal through leaching or ponding, the difficulty of trenching and laying water lines in saturated soils which would not otherwise be saturated, may hinder or preclude the Water District from being able to provide services.

Comment 16. **The proposed increase in water levels will likely lower property values of the private property it adversely affects.** If, by approving the Application to raise the maximum lake level to eight feet MSL, the Commission were to delay the Water District from completing the studies required under the Coastal Act, the effect will be to delay further development within the Subdivision for the foreseeable future. This will likely lower the value of all 1,500+ residential parcels within the Subdivision. Further, if the Commission were to approve raising the maximum lake level to eight feet, the resulting access and drainage problems within the Subdivision would, in effect, be guaranteed for the length of the permit, thus additionally lowering the value of the affected parcels.

E. ADVERSE IMPACTS ON HUMANS

Comment 17. **Raising lake level to eight feet MSL will harm permanent residents of the Subdivision.** Two families permanently reside in the subdivision, as building permits on two parcels were approved prior to enactment of the Coastal Act and CEQA. Backed up drainage systems and flooded roads caused by high water levels have led to flooding and access problems for these residents and, at least once, prevented an emergency vehicle from

responding to an emergency when called. In this case, flooded roads within the Subdivision prevented an ambulance from reaching Mrs. Carl Woods, a permanent resident of the Subdivision, when she required emergency treatment. Although Mrs. Woods survived without permanent harm, the next incident may not be as fortunate.

Comment 18. **Increasing the lake level to eight feet MSL may reduce public access to Lakes Talawa and Earl.** Pacific Shore Property Owners Association in conjunction with the California Department of Parks and Recreation have long maintained several public access points to Lakes Talawa and Earl. With eight foot MSL water levels, these are flooded. Because of the shallow gradient of the lands surrounding the lakes, when high water level breaches have finally occurred, the result is large expanses of mud flats, again rendering the public access point inaccessible. Because the land between four feet and eight feet MSL is of the same shallow gradient, the proposed action would reduce public access to Lakes Talawa and Earl by flooding it for part of the year and reducing it to mudflats the remainder of the year.

Comment 19. **Increasing the lake level to eight feet MSL may expose nearby humans to an increased health risk and nuisance.** A substantial increase in the mosquito population will arise from ponding and standing stagnant water as the lake rises over shallow elevations. During episodes of flooding caused by deferred breaches in the past, a substantial increase in mosquito population has been documented in the Lake Earl and Lake Talawa area. The major problem species, Culex tarsalis, is known to carry the deadly encephalitis virus. Lauck, Lee and Lauck, A Review of Mosquito Problems in the Lake Earl/Lake Talawa Area with Special Reference to Adult Trapping During the Summer and Fall of 1992 and 1993, at p. 22. Major mosquito outbreaks documented in 1961, 1988 and 1991 were each associated with high water levels. Id. at pp. 3-10. In fact, high lake levels during the summer seem to be the greatest contributor to high densities of Cx. tarsalis. Id. at p. 14. All known information supports this correlation. The only individual to question this in the past is employed as an agent of one of the Applicants and is not qualified as an expert in entomology. Id. at p. 17. Expert review and analysis of the conditions at the Subdivision concludes that such outbreaks pose a public health risk:

> Certainly the potential of equine encephalitis does exist during high populations of Culex tarsalis and even other mosquitos in large numbers. An attitude of prevention should be pursued. Lake levels around 4 feet do suppress summer and fall populations of cx. tarsalis and possibly other mosquitos. Summer and early fall is the main periods of equine encephalitis transmission and proper lake water level management should help prevent high mosquito populations.

Id. at p. 22.

Recent studies of the mosquito problem at Lake Earl include the following:

> Hazelrigg and Webb, Types and Abundance of Mosquitos Associated With the Lake Earl Wildlife Area, Del Norte Co., California: Early Seasonal Occurrence and High Lake Water Level (August, 1991).
>
> Letter by Dr. Paul Springer to James Muth, dated August 27, 1991, requesting a two year study.
>
> Lauck, Lee and Lauck, A Review of Mosquito Problems in the Lake Earl/Lake Talawa Area with Special Reference to Adult Trapping During the Summer and Fall of 1992 and 1993 (199_) (two year mosquito study).

F. ADVERSE IMPACTS ON INFRASTRUCTURE

Comment 20. **Raising the lake level above four feet MSL would likely defeat the Subdivision's design.** The Subdivision contains approximately 27 miles of paved streets, the grade of which is based upon a lake level of four feet MSL. The Subdivision contains 4.5 miles of drainage improvements. The drainage outlets into the lake have a flowline of four feet MSL. If the lake is allowed to rise above that level, the drainage flows in the culverts and ditches back up into the Subdivision.

Comment 21. **Existing infrastructure problems attributable to an Applicant (the County) compound drainage problems in the Subdivision associated with raising the lake level above four feet MSL.** The Subdivision design elevations, which were approved by the County in the 1960s, provide for a best case situation. A best case situation no longer is possible. This is because the County has failed to adequately maintain the drainage facility, which it is responsible for. As such, the drainage flow in the ditches is considerably restricted. For example, in Spring 1993, when the lake was only approximately two feet MSL, the unmaintained drainage facilities contributed to flooding of more than two miles of road, degrading the road pavement and subgrade. Until the County cleans the drainage facilities, the level of the lake must be maintained as low as possible. Under current circumstances, raising the lake level to eight feet MSL would cause significantly more roadway within the subdivision to be flooded and damaged.

Although the County is a co-Applicant of this proposed permit, its proposal would adversely affect infrastructure it is responsible for maintaining. The proposed eight foot level would cause tremendous harm to this infrastructure, promoting additional siltation in the drainage facilities as well as further degradation of the road pavement and subgrade. Secondary flooding from the increasingly impaired drainage system would further compound the problems.

Comment 22. **The increased volume of water in Lakes Talawa and Earl associated with an eight foot MSL lake level is inconsistent with the County Flood Control Plan.** A drainage issue on a larger scale that must be resolved prior to approval of the Application is the current application for the Del Norte County Flood Control Plan. In 1978, CH_2M Hill prepared a study for the County of the Lake Earl Drainage Basin. In the study, the lake was assumed to be maintained at a level of four feet MSL. Backwater conditions were derived assuming a 100-year storm. The lake acts as a detention basin. If the lake is kept at a higher level reducing the volume of stormwater it can detain, what will the backwater conditions be? A lake level above four feet MSL may require alteration of the current drainage plan for the Lake Earl Basin. This, in turn, may harm downstream property owners, since the drainage conditions downstream have changed. These issues must be studied and satisfactorily addressed prior to issuance of a permit to breach at a lake level higher than four feet.

Comment 23. **Higher maximum lake water levels will give less buffering for potential flash flooding.** The County regularly records the highest rainfall per area in the State of California and its coast usually receives well over 100 inches of rain annually. Higher maximum lake water levels will provide less buffer not only for flash flooding due to excessively heavy rains but also for times when the Smith River overflows into the ancient mouth (channel) flowing into the Lake. This overflow from the Smith River almost always coincides with times of excessively heavy rains, making emergency breaching difficult or impossible.

G. ADVERSE IMPACTS ON WILDLIFE AND THE ECOSYSTEM

Comment 24. **The proposed action may significantly disrupt environmentally sensitive habitat areas surrounding the lakes.** In its 1991 Findings regarding a virtually identical proposal to defer breaching until the lakes reach eight feet MSL, the Commission found that: "the proposed project has the clear potential to result in adverse environmental impacts to lands surrounding the lakes, such as . . . the significant disruption to environmentally sensitive areas." 1991 Findings, at p. 10. It goes on to state:

> [A]dequate information and analysis has not been presented for the Commission to fully assess the potential adverse environmental impact to the lands surrounding the lakes of waiting to breach the sand bar at 8 feet MSL as proposed. For example, the California Department of Water Resources has not yet completed its hydrological study, no extensive biological or habitat studies have been performed, and no EIR has been prepared.

1991 Findings at p. 10. Since the Applicants have failed to present any new biological or habitat studies, or to prepare an EIR. and because the hydrological study has never been completed and/or released, the Commission's previous finding that it has been presented inadequate information and analysis to fully assess the potential adverse environmental impact of waiting to breach the sand bar at eight feet MSL applies equally to this permit Application.

Comment 25. **The proposal to defer breaching until the water level reaches eight feet MSL will likely disrupt the local ecosystem which has developed around the four feet MSL maximum lake level.** In a Public Notice released by the United States Army Corps of Engineers in April 1995, serving as a Preliminary Environmental Assessment of the effect of water levels on the Lake Earl Wildlife Area located on the opposite shore of the lakes, the Corps states that "[l]ong-term breaching practices carried out over the years, as well as other land uses, have cumulatively resulted in the current 'ecological condition' at the Lake Earl Wildlife Area." Notice, p. 8, ¶ 6. In its 1991 Findings in support of maintaining the lake levels at four feet MSL, the Commission reported:

> The whole ecology of the two lakes is dependent upon the periodic breaching of the sand bar, whether by man or natural forces. The salinity levels, the aquatic vegetation, and the breeding and migratory patterns of the lakes' wildlife and fisheries resources are dependent upon the periodic mixing of salt water with the mostly fresh water of the lakes.

1991 Findings at p. 8. High water breaching at random water levels in the last several years has inflicted serious harm on the ecosystem. The proposal to defer breaching until the water level reaches eight feet MSL will continue to harm the ecosystem, preventing its recovery. Effects on specific species will be addressed by specific comments.

Attached documents:

U.S. Army Corps of Engineers Public Notice No. 20793N36 (April 7, 1995).

David R. Lauck, A Need to More Precisely Define Effects of Higher Lake Level Proposed Lake Earl/Talawa Breaching Permit (1995).

Comment 26. **The plant and animal communities which inhabit the lake and surrounding areas have adapted to and may be dependent on a cyclical pattern of breaching at the four foot level.** This pattern is evident from the wildlife in and around the lakes. A Public Notice released by the United States Army

Corps of Engineers in April 1995 states that wetland plant communities in the Lake Earl area have likely developed to their present condition as a result of breaching practices carried out over the past 70 to 100 years by land owners. Notice, p. 4, ¶ 5. It is abundantly clear in the record that these plant communities did not develop under the high water conditions proposed in this permit Application. The attached Comments of Dr. David Lauck, which the Water District incorporates in this document, describe in detail the destructive effect that high water levels at the level proposed in this permit Application would have had on the established plant community. High water levels, such as that proposed in this permit Application, likely also adversely affect established animal life because of direct and indirect changes in their habitat brought about by the change in the breaching pattern.

Comment 27. **Breaching is a catastrophic event. The greater the surface level of the lakes at the time of breach, the greater the catastrophe.** A breaching event is catastrophic because it causes a sudden and significant change in the lakeshore environment. Although some species may be dependent on such fluctuations, normally in biological systems repeated catastrophic events are associated with reduced biodiversity. There is no apparent reason why the rule would not apply to the Lake Earl area.

The catastrophe increases in both severity and area affected as breaching is deferred to a higher surface level. The resulting effect of a high water breach may be to reduce or eliminate species tolerant of, or even dependent on, lesser fluctuations in water level. Further, the increased area affected may impact populations not affected by a lower level breach. In such case, reduced biodiversity would occur, as populations of species not tolerant would be expected to decrease, to be replaced with populations of the fewer species tolerant to the greater fluctuations.

Specific studies on the effect of catastrophic flooding on species found in Lake Earl and the surrounding area are not known to have been conducted. In the absence of data to the contrary, it cannot be ruled out that the proposed action would cause significant environmental harm and reduction in biodiversity, especially when one considers the steep decline in populations of certain endangered species observed in the past

several years when high water breaches began to occur. See comments below.

Comment 28. **Breaching at a lower surface level is less disruptive than a breach deferred until the lakes rise to eight feet MSL.** The Commission's 1991 Findings state that "breaching on February 15, when the lake elevation is at least 5 feet or more above MSL, is a preemptive measure to avoid having to breach the lakes during the spring and summer months in the event of a wet summer . . . as breaching during this time of the year is more environmentally disruptive." 1991 Findings, pp. 4-5. By deferring breaching until the lake level rises to eight feet MSL, the possibility of a spring or summer breaching event is increased.

H. ADVERSE IMPACTS ON ENDANGERED ANIMAL SPECIES

Comment 29. **Several endangered or threatened animal species or candidate species which have adapted to and may be dependent on a cyclical pattern of breaching at the four foot level may be endangered by the proposed action.** Many species of anadromous fish, including the Tidewater Goby (Eucyclogobius newberryi), Steelhead Salmon and Cutthroat Trout, have traditionally been found in Lake Earl. The Aleutian Goose (Branta canadensis leucopareis) feeds on short grass found alongside the lake. The Oregon Silverspot Butterfly (Speyeria zerene hippolyta) is dependent on a single plant species found near the lake. Notwithstanding the potential adverse effects on diverse species with diverse needs, this Application is supported by little more than speculation regarding the effects of the proposed change on these species. Absent hard evidence that the proposed change in lake management level will not harm any of these species, the historic cyclical pattern of breaching at the four foot level should be continued.

Comment 30. **Lake levels above four feet MSL may threaten the Tidewater Goby.** Little is known about the Tidewater Goby, a small fish that lives in brackish waters associated with lagoons and river mouths. The Tidewater Goby is listed as an endangered species primarily because much of its habitat throughout California has been lost due to degradation by man. Based on information provided by the U.S. Fish and Wildlife Service sometime prior to 1991, the Commission found that the Tidewater Goby was abundant in Lake Earl. The Goby was first found in Lake

Earl in 1981 on the northeast side of Lake Earl and reported again in 1984.

However, subsequent studies indicate that the Goby has been reduced or eliminated from the lake in subsequent years. In a study conducted in 1990, the Department (Monroe) was able to count only two Gobys (one confirmed), which were found in the narrows. In 1993, a survey of Lakes Earl and Talawa for the Tidewater Goby (Salamunovich) found no specimens.

This apparent steep decline in Tidewater Goby population corresponds to a period during which breaching was deferred until lake levels reached flood proportions, suggesting a possible link between high lake levels and the population decline. Possible reasons for the association include a reduced influx of saltwater into the lakes because of less frequent breaching episodes, shoreline erosion and rotting vegetation caused by increased lake levels degrading the water quality of the lakes, and/or the increased current of high water breaches sweeping the Gobys into the ocean. Notwithstanding a lack of information about the Goby's survival needs and the apparent sharp decline in Goby populations during a period of high water breaches, the Applicants have failed to study the effect that their proposal to increase the lake level by four feet before breaching would have on the Goby. In reviewing the problem, Anne Henderson-Arzapalo of the United States Fish and Wildlife Service, National Fisheries Research Center, stated, "I really can't predict what impact increased water levels and decreased salinities will have on most of these fish (including the Goby) without additional fish population and water quality information." Letter from Dr. Anne Henderson-Arzapalo of the United States Fish and Wildlife Service to Thomas Resch dated March 4, 1992. Until the reason(s) for the decline in Tidewater Goby population is ascertained, and evidence is found that a higher breach level would not adversely impact that population, the Commission cannot find that the proposal to increase the maximum lake level will not adversely affect the Tidewater Goby.

Recent studies of the Tidewater Goby include the following:

Lake Earl/Talawa, Del Norte County (Field Notes) written by David A. McLeod (October 3, 1991).

Tidewater Goby Survey of Lakes Earl and Talawa for the Pacific Shores Subdivision EIR by Tim Salamunovich of Thomas R. Payne & Associates dated June 14, 1993.

Pacific Shores Property Owners Association, Fish and Wildlife Documentation, Lake Earl and Lake Talawa, Del Norte County (March 1992). See Comments by Dr. Anne Henderson-Arzapalo of the U.S. Fish and Wildlife Service at pp. 1-4 and studies on the Goby included immediately after Ms. Henderson-Arzapalo's letter.

Comment 31. **Deferring breaching until the lake level rises to eight feet MSL may adversely affect anadromous fish that inhabit Lake Earl but migrate to sea.** Anadromous fish hatch in freshwater, migrate to sea for much of their lives, and return to freshwater to reproduce. The 1991 Findings state: "The periodic breaching of the sand bar allows the seasonal entry of ocean waters into the lakes and allows migratory fish to enter and leave the lakes." 1991 Findings, at p. 8. The migratory patterns of anadromous fish obviously require an open passage from fresh water to the sea.

In 1975, the Department counted 14 species of anadromous fish in Lake Earl. Included in the population was the King Salmon, Silver Salmon, Steelhead Salmon and Cutthroat Trout. Natural Resources of Lake Earl and the Smith River Delta, Natural Resources of Lake Earl and the Smith River Delta, California Department of Fish and Game (March 1975). Each species has different migration habits.

King Salmon usually migrate to sea at an early age. Silver Salmon usually stay in the lake for two years after hatching before migrating to sea. Cutthroat Trout and Rainbow Trout may or may not run to sea. Cutthroat Trout that run to sea are known as Steelhead Salmon. In July 1996, the National Marine Fisheries Service proposed listing as threatened steelhead runs in Coastal Northern California. This includes the Lake Earl run.

When the Department did its survey in 1975, it had been at least 50 years since the practice of regularly breaching the sandbar whenever the lake level rose to approximately four feet MSL. Therefore, it should be clear that four foot MSL is conducive to those species. However, fish surveys conducted in recent years when only infrequent high water level breaches were performed counted few, if any, individuals of these species.

The impact of deferred breaching is obvious. Addressing the breaching of Lake Earl, Anne Henderson-Arzapalo, of the U.S. Fish and Wildlife Service, National Fisheries Research Center, states: "Obviously, the species which get their recruitment from the ocean (flatfish, salmonids, and the herring) will be adversely affected if the ocean access is blocked." Letter from Dr. Anne Henderson-Arzapalo to Thomas Resch dated March 4, 1992.

In 1992, Jim Waldvogl, Fishery Biologist and Sea Grant Advisor of the University of California, wrote a letter to the Army Corps of Engineers. In his letter he states, "It is imperative that Lake Earl be opened to the ocean twice each winter for the survival of its anadromous fish stocks. The exact timing is not presently known, but a reasonable time would be January to mid-February for adult in-migration and March-April for juvenile out-migration. . . . [P]lease make the anadromous fish runs in the Lake Earl system a high priority; it may already be too late."

Yet, the proposed action would both reduce the frequency of breaches from historic levels and may result in improperly timed breaches. Under the circumstances, the proposal to alter and reduce the breaching schedule cannot be found to have no adverse impact on these species, absent scientific evidence to the contrary.

Recent information on anadromous fish in Lake Earl includes:

Army Corps of Engineers Public Hearing in re Permit Application Transcript (August 1995), Minutes of August 1995 Meeting in Crescent City, California, at pp. 14-16. James Waldvogl is the Area Marine Advisor for the University of California, Sea Grant Extension Program. If further information is required, Mr. Waldvogl can be contacted at the following address:

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Pacific Shores Property Owners Association, Fish and Wildlife Documentation, Lake Earl and Lake Talawa, Del Norte County (March 1992). See Comments by Dr. Anne Henderson-Arzapalo of the U.S. Fish and Wildlife Service at pp. 1-4 and studies on fish species in Lake Earl counted by the Department in 1975.

Crescent City Triplicate, "Steelhead Endangered, Northern California Fish Could Join Threatened List" (July 31, 1996).

Comment 32. **The proposed increase in the lake level to eight feet MSL will flood most of the feeding grounds created for the Aleutian Goose.** Creation of migratory feeding grounds for the Aleutian Goose (Branta canadensis leucopareis) was cited as one of the main purposes for the establishment of the Lake Earl Refuge on the south shores of Lakes Talawa and Earl. These geese feed primarily in short grass areas which are usually grazed by cattle. Most of the grass areas within the Refuge are flooding and not available for feeding when the water reaches six to seven feet. At higher water levels, the geese will then move to nearby farms at higher elevations. In the last several years, when high water levels occurred due to deferred breaching, migrating geese did not feed in the area due to high lake water levels. Springer has stated that the geese are opportunistic and will go to available food sources; however, the farmers are not always appreciative of the geese populations feeding on their grazing lands. Since the Refuge was formed in part to accommodate as many geese as possible, then they should do so until Department has purchased other lands for this feeding purpose.

Comment 33. **Deferring breaching until the lake level rises to eight feet MSL may destroy habitat required by another threatened species, the Oregon Silverspot Butterfly.** The Oregon Silverspot Butterfly (Speyeria zerene hippolyta) was listed as a threatened species with critical habitat in 1980. U.S. Fish and Wildlife Service (1980). The butterfly was not known to exist in California until the Lake Earl population was discovered sometime after 1980. Hammond. The coastal dunes around Lake Earl is an important site for the butterfly, because viola adunca and viola langsdorfii, violets which are the only known food source for the butterfly larvae, are found there.

The butterfly appears to feed only on violets found in lowlying areas. Violet plants on higher dune areas may not be a suitable food source because the plants bloom, seed and then

wither by early summer, prior to the larvae hatching. Shaw and Wiseman (1992). In 1993, Dr. David Lauck, of Humboldt State University, visited the site and also observed many plants badly withered as early as June, in spite of the considerable rainfall late in the season of that year. In 1994, he observed that many of the plants had withered considerably by late May. Apparently for this reason, the best butterfly habitat was found in the depression immediately to the north of Lake Talawa. Many violet plants in this area were flooded during the summer of 1991. Low populations of butterflies occurred in 1992. In 1993, after low summer lake water levels in 1992, populations increased.

The decline of Oregon silverspot in 1992 due to flooding of plants during the high waters of the summer of 1991 suggests the harmful effects of high summer waters on the federally listed butterfly. Likewise, the fact that high populations were found in 1993 after low summer lake water levels indicate that historic lake levels are more advantageous to the butterfly. This is confirmed by studies conducted by Hammond on State Parks land immediately to the north of Lake Talawa. Hammond observed:

> During much of February 1992, the lake level was at 9 feet or more. Much of the violet-silverspot habitat on the State Parks land was submerged under water for over a month. This flooding appears to have killed nearly all silverspot larvae in this area. . . . If the Lake Earl silverspot population was completely confined to the habitat on State Parks land, it probably would have been exterminated in 1992 due to the lake flooding.

Hammond, p. 12. Shaw and Wiseman conclude that water levels must be kept lower than six feet MSL if butterfly habitat is not to be adversely impacted.

Even if there was no evidence supporting maintenance of lower water levels, the proposed action should not be approved. Since the Oregon silverspot has successfully succeeded during the 75+ years of breaching the lake at low water levels, why would a change in lake water levels be appropriate with a lack of information to confirm beneficial results? Since the butterfly is federally listed as a threatened species, the proposed action

cannot be justified absent data that it would not harm the butterfly and its habitat.

Available studies of this species are as follows:

Hammond, Field Survey of Habitat for the Oregon Silverspot Butterfly (Speyeria zerene hippolyta) in Curry County, Oregon and Del Norte County, California (1992) (see in particular pp. 11-12).

Shaw and Wiseman, Survey of Habitat for the Oregon Silverspot Butterfly in the Pacific Shores Subdivision, Del Norte County, California (1993).

I. ADVERSE IMPACT ON PLANT SPECIES

Comment 34. **Past high water levels caused by deferred breaching have resulted in large scale tree kills.** In January 1992, a tree survey of chorioallantois of Lakes Talawa and Earl found that 233 sitka spruce, 754 alder and 4 lodgepole pine were killed by high water during the summer of 1991 and up to the time of breaching in 1992. Core samples indicated some of these trees were over 75 years of age. This survey did not include the kill of several thousand willows, some probably rare and deserving of protection status. While it is unclear whether the cause of death was from the high waters themselves or the resulting change in salinity caused by the high water, the effect is the same: long established trees were killed in mass when submerged by high waters. What evidence do the Applicants have to show that more trees will not be killed by similar high water, especially during the summer, if their proposal is accepted? Absent hard data proving no adverse effect, any attempt to raise the lake level above its historic four foot MSL level should be rejected.

Supporting evidence:

Pacific Shore Property Owners Association, Tree Report: Lake Level Seven Feet Eight Inches (MSL) (January 1992).

Pacific Shore Property Owners Association, Tree Report: Lake Level Three Feet (June 1992).

Letter: Scott R.J. Feller (Professional Forester, State of California) to Pacific Shores Property Owners Association

dated September 29, 1992, regarding age of trees and cause of death in and around the shores of Lake Earl-Lake Talawa.

Videos and pictures supporting the reports were taken at the time, and are available upon request.

Comment 35. **Breaching at water levels above four feet MSL may harm endangered, threatened and candidate plant species.** In a 1992 communication to the Army Corp of Engineers, Wayne S. White of the United States Fish and Wildlife Service states that a number of endangered, threatened and candidate species occupy coastal dune areas, and could be affected by breaching activities at Lake Earl. These species include the following: two Category 2 candidate plants, Thurber's reedgrass (Calanagrostis crassiglumis) and Valley sagittaria (Sagittaria sanfordii), Wolf's evening primrose (oenothera volfil), a Category 1 candidate species, and Sand phacelia (phacelia argentea), a Category 2 candidate species.

Comment 36. **Increased salinity in the lakeshore soil caused by an increase in maximum water levels may harm or eliminate Thurber's reedgrass.** In his 1992 communication, Mr. White states that Thurber's reedgrass would be adversely affected by increasing salinity in the lakes. If Thurber's reedgrass is so close to the waterline as to be affected by salt water, would not this species be submerged by high water levels, and would not this species be killed by high water levels during the summer months? In contrast, for it to be present, this species has apparently not been adversely affected by breaching at the four foot level over the past 75+ years.

Comment 37. **Saltwater intrusion caused by the proposed action may destroy the habitat of the Valley sagittaria.** In 1991-1992, deferred breaching caused overflow of saline waters from the lagoons into nearby Lake McLaughlin, an independent freshwater lake and the major known site for the Valley sagittaria in the area. The Valley sagittaria is highly sensitive to salt. This ill-thought action damaged or destroyed this freshwater habitat. If the prior high water level breaching made this species extinct in the area, the continued saltwater intrusion caused by the proposed action might. This issue must be studied and resolved prior to consideration of the proposed action.

Comment 38. **Erosion caused by the proposed action may reduce or eliminate Wolf's evening primrose by destroying its habitat.** Wolf's evening primrose is mostly found on the back side of the fore dunes on the north side of Lake Talawa, which have remained relatively stable during the 75+ years of breaching at low levels. These dunes which were badly eroded during the 1992 breaching at high water levels, and continued high water breaches have washed many of these dunes away. It is virtually certain that this species is being severely damaged, since high water level breaches have washed significant portions of its habitat away. The Applicants do not appear to have studied, or even considered, the effect of high water level on Wolf's evening primrose. Until the Applicants can prove that the proposed action will not harm this species, breaching should not be set at higher levels than the historic 1900-1987 practices.

Comment 39. **Erosion caused by the proposed action may destroy the habitat of the Sand dune phacelia.** The largest local population of the Sand dune phacelia is located on the back side of the fore dunes just south of Lake Talawa. This area was also badly eroded from the high waters of 1992. It is likely that this erosion also damaged this species by eliminating its habitat. The Applicants do not appear to have considered, let alone studied, the effect of high water level on the Sand dune phacelia. Until the Applicants can prove that the proposed action will not harm this species, breaching should not be set at higher levels than those conducted between 1900-1987.

Comment 40. **In contrast to the potentially harmful effect of the proposed action, the above plant species clearly survived regular breaching at the four foot level.** Since all of the above species of plants were present and therefore did survive 75+ years of breaching practices at around the four foot level, why should higher lake levels be set for breaching? The Applicants do not appear to have taken advantage of the high water levels at breaching time in 1988 and 1992 through 1996 to study this. Absent evidence that these species will survive better at these higher water levels for breaching, the lake management level should be reconfirmed at four feet MSL.

Comment 41. **The Applicants have failed to consider possible effects on the proposed action on the Sago pondweed.** The above referenced 1992 communication by Wayne S. White of U.S. Fish and Wildlife states, "The breaching may adversely affect the production of sago pondweed in the Lakes. The pondweed is an

extremely important food source for waterfowl in the Lake." What are these adverse affects? Higher water level breaches have more catastrophic effects on the environment; what is the effect of this on the Sago? Does Sago pondweed grow better in warmer or cooler waters? Does the volume of water have an effect on the water temperature? Does the pondweed thrive at lower water levels during the summer after breaching? Might production of Sago pondweed decrease with larger volumes of water during the summer? The answers to these questions are unknown. However, it is known that Sago pondweed has survived in the lakes over the last 75 years when the lakes were breached at or about four feet MSL. Absent data to the contrary, the lakes should continue to be managed at the four foot MSL level.

J. THE APPLICANTS HAVE FAILED TO JUSTIFY THEIR PROPOSED ACTION

Comment 42. **It is not clear from the proposal why a higher lake water level before breaching is more desirable.** Applicants have failed to show why the historic lake management level should be changed, and have failed to show that raising the maximum lake level to eight feet MSL will be an improvement over the historic breaching level. Just stating that this will improve habitat or be beneficial to a particular species is not enough. Precise reasoning needs to be presented and documented. If the Applicants are concerned about the adverse impacts of the higher level emergency breaches that occurred in the last several years, these concerns are better met by restoration of the lakes to their historic levels breaching at four feet MSL.

Comment 43. **The Applicants have failed to present any studies that analyze the potential impacts of the proposed breaching at high lake water levels.** Absent conclusive evidence that the proposed action will not adversely impact the natural and human environment, it must be rejected.

Comment 44. **The Applicants lack a management plan for their proposed action.** In 1988 the Department submitted a management plan for the Lake Earl Wildlife Refuge located on the southern side of the lakes. This plan was never instituted, and seven years later there is still no management plan. Why should the public trust the management of Fish and Game to do proper investigation during this interim permit period, when they have failed to complete a management plan for their own property? Why should they dictate water levels while lacking proper information and plans to make sound judgment? Should not a management plan

for the Refuge be approved before a permit for breaching is considered?

Comment 45. **The Applicants have failed to present a plan to monitor the foreseen and unforeseen impacts of their proposed action on the natural and human environment.** Assuming that the Applicants were able to show that the proposed action will not adversely impact the natural and human environment and had a management plan to implement it, they have failed to present a plan to monitor the impacts of their actions to insure that unforeseen impacts do not occur. The type of monitoring should be stated and complete procedures for the monitoring outlined. Monitoring should include changes in endangered species, changes in overall biodiversity, major population changes in species, changes in general habitat, and adverse impacts on humans, landuse, infrastructure and private property.

Comment 46. **Since at least some damage can be shown by high lake water, an EIS should be developed to more clearly define the full effects of high lake levels.** Since the present fauna and flora of the area have primarily developed and have survived during 75+ years of breaching at lower lake levels, since human uses have also developed at these lower lake levels, and since this proposal would institute a different set of environmental influences, an EIS should be required. This may realistically occur in the next several years. Congressman Frank Riggs has introduced a bill to fully fund a complete EIS of the Lake Earl basin to be conducted by the federal government. To approve alteration of the historic lake level prior to completion of the EIS would be improvident.

Comment 47. **The "no project" alternative is not an acceptable and environmentally sound alternative and does not satisfy the concerns set forth above.** In 1991, the Commission found that "allowing the lakes to naturally breach themselves would not be advisable at this point of time." 1991 Findings, p. 12. It further notes that:

> The California Department of Fish and Game's policy is that wetland quality should not be favored over wetland quality, and has determined that relying solely on a natural breaching at this point in time would result in extremely high lake levels and have a net detrimental effect on wetland and wildlife

> values. The Commission therefore finds that allowing the lakes to naturally breach themselves is simply not an acceptable and environmentally sound alternative as it would result in significant public health and safety problems and result in diminished wetland and wildlife values.

1991 Findings, p. 13. Because reverting to a natural breaching scheme after 75+ years of managed breaches at the four foot MSL level would destroy the ecosystem that has developed, it must be rejected.

K. CONCLUSION

Comment 48. **The facts have not changed since 1991 when the Commission last considered an interim permit application; therefore, the decision should not change.** In 1991 Findings regarding a virtually identical proposal to defer breaching until the lakes reach eight feet MSL, the Commission found that "the proposed project has the clear potential to result in adverse environmental impacts to lands surrounding the lakes, such as . . . the significant disruption to environmentally sensitive areas." 1991 Findings, at p. 10. It further found that: "[A]dequate information and analysis has not been presented for the Commission to fully assess the potential adverse environmental impact to the lands surrounding the lakes of waiting to breach the sand bar at 8 feet MSL as proposed." Id.

In 1991, the Commission prefaced approval of the last interim on breaching whenever the water level rises to four feet MSL. In rejecting a proposed eight foot MSL request, it found that:

> The fact remains that adequate information analysis has not been presented for the Commission to fully assess the potential adverse environmental impacts to the land surrounding the lakes of waiting to breech the sand bar to eight fee MSL as proposed.
>
> The Commission therefore finds that additional hydrological and biological studies and analysis are necessary under the Coastal Act to fully assess the project's

condition that breaching occur whenever the lake level rises above four fool MSL.

As a public agency charged with protecting the interests of its constituents, the Water District has carefully considered all aspects of this issue before drafting these comments. The Water District respectfully requests that the Commission carefully consider these comments in their entirety prior to action on the proposed action.

Respectfully,

JAMES M. WAKEFIELD
District Counsel
on behalf of the
Pacific Shores Subdivision
California Water District

Enclosures

cc: Robert D. Pearson
Thomas Ryan
Ward L. Stover
(via U.S. Mail w/out enclosures)

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potential adverse environmental impacts to the land surrounding the lakes. Until these additional studies have been completed and until all of the outstanding environmental issues have been formally analyzed, the Commission cannot find that the proposed breaching of the sand bar when the lake is at eight feet MSL is consistent with the Coastal Act Sections 30230, 30231, 30240, 30241, 30242 and 30253 as it is impossible to fully assess the project's potential adverse impacts to biologically productive wetland areas, environmental sensitive habitat areas and agricultural lands which surround the lakes.

The Commission finds that the breaching program would be consistent with the Coastal Act if the sand bar were breached when the lake level reaches four feet MSL instead of eight feet MSL. Breaching the sand bar at four feet MSL is consistent with the above-referenced sections of the Coastal Act as it serves to maintain the elevation of the lakes at a level which has existed for the past 75 to 100 years and as it avoids the flooding of additional wetland, environmentally sensitive, and agricultural lands.

Since the 1991 decision, the Applicants have failed to present any new biological or habitat studies, or to prepare an EIR in support of their proposed action. In contrast, the Water District is presenting considerable new evidence that supports the Commission's previous decision to approve breaching at the four foot MSL level. Finally, a hydrological study of the lakes by the Californian Department of Water Resources, which in 1991 had not been completed, still has not been completed and/or released. For all of these reasons, the Commission's previous finding that it has been presented inadequate information and analysis to fully assess the potential adverse environmental impact of waiting to breach the sand bar at eight feet MSL applies equally to this permit Application. Therefore, the Commission should reaffirm the rationale of its prior decision and make approval of the project contingent on a special