CALIFORNIA COASTAL COMMISSION
CENTRAL COAST DISTRICT OFFICE
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Th12

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COASTAL DEVELOPMENT PERMIT CONDITION COMPLIANCE

Received:	3/17/2000
Staff:	D.Carl
Staff report prepared:	6/28/2001
Hearing date:	7/12/2001
Hearing item number:	Th12

Description of Condition Compliance Item
Coastal Commission review of the University of California at Santa Cruz's (UCSC) Younger Lagoon Beach/Wetland Area Management and Access Plan as required by Special Condition 8 of Coastal Development Permit (CDP) Amendment 3-83-076-A13 (authorizing construction of the UCSC Institute of Marine Science's Ocean Health building at Long Marine Lab). The crux of the Plan, and the decision before the Commission on this condition compliance submittal, is whether the Younger Lagoon beach and wetland area (or some portion thereof) should remain off limits to unsupervised (i.e., non-docent led) public access.

Permittee
University of California at Santa Cruz (UCSC)

Affected Area
Younger Lagoon Natural Reserve and Younger Lagoon Beach directly adjacent to the UCSC Long Marine Laboratory campus in the Terrace Point area of the City of Santa Cruz (at the western Santa Cruz City limits) in the middle portion of Santa Cruz County (APN 003-321-03).

File Documents
Coastal development permit (CDP) files P-1859 and 3-83-76 and subsequent amendments (for UCSC Long Marine Laboratory); CDP file 3-97-050 and subsequent amendments (for the Marine Discovery Center); consistency determination CD-50-98 and negative determination ND-50-01 (for the National Marine Fisheries Service Research Laboratory).

Staff Recommendation...Approval with Conditions

Staff Report Contents

Staff recommends that Commission conditionally approve the Younger Lagoon Beach/Wetland Area Management and Access Plan and that the Commission find and declare as follows:

A. UCSC's Long Marine Laboratory

UCSC's Long Marine Laboratory (LML) campus is located just within the western boundary of the City of Santa Cruz in Santa Cruz County. This area, known locally as Terrace Point, is also home to the LML Seymour Marine Discovery Center, the California Department of Fish and Game (CDFG) Marine Wildlife Veterinary Care and Research Center and the National Marine Fisheries Service Research Laboratory. Immediately adjacent to the Terrace Point plateau upcoast is Younger Lagoon Reserve and Younger Lagoon Beach. Unincorporated Santa Cruz County's mostly undeveloped and predominantly agrarian North Coast area stretches upcoast past Younger Lagoon itself; a stretch of largely undeveloped coastal lands located between LML and Half Moon Bay to the north. The Monterey Bay National Marine Sanctuary, the largest of twelve such federally protected sanctuaries nationwide, is directly offshore. See exhibit A.

B. Younger Lagoon and Beach Area

Younger Lagoon, the area to which this condition compliance submittal applies, is a roughly 24 acre wetland system which includes a fresh and saltwater marsh, a barrier sandbar, a backdune pickleweed flat, steep bluffs with dense coastal scrub, a pocket beach, dune lagoon slope and a dense willow thicket. The Lagoon is a University of California Natural Reserve, one of 33 making up the University of California Natural Reserve System. Younger Lagoon is directly west of the facilities at LML and CDFG, on the opposite side of the 12 foot tall, almost continuous earthen berm separating LML and CDFG from the Reserve. The Reserve serves as a wildlife refuge and provides for research and teaching in the field sciences. Waterbirds and shorebirds forage and nest along the Lagoon shoreline, as well as the bluff, rocky shoreline, and beach habitats below the LML campus. The connection between the Lagoon to the Monterey Bay, and its management as a nature reserve with limited human disturbance, contributes to an overall high wildlife and habitat value in the immediate project area.[1] Younger Lagoon is an environmentally sensitive habitat area within the meaning of the Coastal Act. See exhibit A for site location information.

Unsupervised public access to Younger Lagoon and its roughly 100 yard beachfront has been prohibited since 1981 when the Coastal Commission concurred with the University that the lagoon and beach area needed to be closed to allow for unimpeded field research and to better protect fragile coastal resources there to foster such research.[2] Up until this decision the Younger Lagoon beach area was quite popular,

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[1] Younger Lagoon Reserve and adjacent coastal bluffs/intertidal areas provide protected habitat for over 200 resident and migratory bird species, 38 mammals, and more than 20 reptiles and amphibians. Many of these species (over 40) are considered sensitive (i.e., listed as threatened, endangered, state species of concern, or locally unique). Over 100 plant species, almost 90 of these native, are present in the Lagoon ecosystem; several of these are considered rare or locally unique. See Exhibit B for flora and fauna species lists.

[2] The unsupervised access closure was authorized by the Commission on November 3, 1981 when a management plan for the lagoon describing such closure and establishing a research focus was approved through condition compliance for CDP P-1859.

particularly with UCSC students, at least partially due to the fact that it was the first remote-type beach as one ventured north from urbanized Santa Cruz. Since the closure, some continued unauthorized public access use has been observed by Commission staff, almost exclusively of the forebeach area by surfers who descend the coastal bluff at the southwest corner of the LML property.[3] In any event, the Permittee continues to provide docent-led access to an existing overlook located above the lagoon proper atop the earthen berm immediately west of LML's marine mammal pools.[4]

C. Special Condition 8 of CDP amendment 3-83-076-A13

On August 11, 1999 the Coastal Commission unanimously approved the development of UCSC's Center for Ocean Health at LML (CDP amendment 3-83-076-A13). The Center for Ocean Health project included the development of approximately 25,300 gross square feet of additional lab and support facilities designed to alleviate space deficiencies at the LML site and help to accommodate program growth for the study of marine sciences. In approving this development, the Commission found that the re-review of the 1981 Younger Lagoon closure, a condition that was required to be met five years after the closure was authorized, had never occurred. In addition, though annual monitoring reports were required to justify the continued closure of the beach and lagoon system,[5] only 3 such reports were subsequently submitted by the Applicant; the last one in 1987.[6] Accordingly, the Commission in 1999 required the University to submit an overall management plan for the beach and lagoon system as a means to evaluate whether a continued prohibition on unsupervised public access was and is appropriate. Special Condition 8 of CDP amendment 3-83-076-A13 states:

> *Younger Lagoon Beach/Wetland Area Management and Access Plan. PRIOR TO THE COMMENCEMENT OF PHASE 2 CONSTRUCTION,[7] the Permittee shall submit to the Coastal Commission for review and approval a Younger Lagoon beach/wetland area management and access plan. Such plan shall include at a minimum: a description of the formal research activities that have taken place, and/or are currently taking place, in the beach/wetland area;*

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3 In order to access the surf break here, one either must paddle from downcoast Natural Bridges State Beach (a paddle of roughly 800 yards parallel to the cliffs to reach the surf break) or one must enter and/or exit the water at Younger Lagoon Beach. Since the surfing area offshore Younger Lagoon only breaks during times of relatively high surf, such surfing access is generally limited. However, the same high swells that make this an attractive surfing break at times, make such a parallel paddle from Natural Bridges difficult. It is because of this that surfer access often involves trespassers that scale the existing fence and clamber up and down the goat trail to and from the forebeach at Younger.

4 Overlook D identified on Appendix IV of the submitted Plan (page B-39 of exhibit B).

5 As a condition of approval of the original management plan (i.e., the management plan detailed the closure), the Permittee was required to submit annual reports of the Lagoon studies being conducted in order to monitor the effects of decreased public use in the area (i.e., upon the dunes, vegetation, estuarine system, birds, mammals, etc.). If the Executive Director were to determine that the closure was not resulting in significant lagoon/beach enhancement and/or research and educational activities, then the management plan was to be brought back to the Commission for review and possible action. If research activities in the lagoon/beach area were to cease, public access was to be reinstated.

6 The last monitoring report was submitted and signed-off in 1987. Although required on an annual basis, this 1987 report is the last management plan monitoring report in the Commission's records.

7 Note that the timing for the required review and approval was modified by CDP amendment 3-83-076-A16 from "prior to the commencement of phase 2 construction" to "within six (6) months of occupancy of the approved project."

identification of existing public access opportunities provided via trails and overlooks from the UCSC Long Marine Laboratory property; a description of the status of research activities at Wilder Ranch State Beach and an analysis of opportunities for combining Wilder Ranch and Younger Lagoon research programs; an analysis of the effects of limiting access to the Younger Lagoon beach/wetland area since 1981 and potential impacts that might be expected were public beach use to be reinstated; and an analysis of the opportunity for installation of a wetland perimeter coastal trail.

Such Younger Lagoon beach/wetland area management and access plan shall include an analysis of trail linkages from McAllister Way through to Younger Lagoon overlooks. At a minimum, the following overlooks shall be analyzed for public access use: (1) the blufftop west of the berm at the southerly extent of the Permittee's property located east of the beach at Younger Lagoon; (2) the area on top of the berm currently developed with an overlook between the existing marine mammal pools and Younger Lagoon; (3) the blufftop west of the berm directly west of the proposed shop building; (4) the blufftop west of the berm at the area to the west of the subject site where there exists a break in the berm area; (5) the blufftop west of the berm and north of the termination of the existing berm where there exists a turnout on the west side of McAllister Way; and (6) the blufftop located south and west of the existing greenhouses on the upper terrace site occupied by the California Department of Fish and Game facility. See Exhibit H.

Such Younger Lagoon beach/wetland area management and access plan shall include a fencing detail for the Permittee's property at Terrace Point.[8] Such fencing detail shall identify: (1) all existing permitted fences on the property; and (2) the Permittee's proposal for all fences and gates necessary to implement the Younger Lagoon beach/wetland area management and access plan.

Accordingly, the University submitted their Younger Lagoon Beach/Wetland Area Management and Access Plan (hereafter "Plan") on March 17, 2000 (see exhibit B).

D. Analysis

The Plan analyzes the issues identified for review by Special Condition 8, describing the reasons why the University believes continued unsupervised public access restrictions are appropriate at this location. In sum, the Plan indicates that allowing public access to the Reserve, even limited public access to the forebeach area, would have a lasting detrimental effect on ongoing research and the preservation of a functionally linked – and relatively undisturbed – habitat that is quite rare in California. Overall, the Permittee has made a strong case that a continued prohibition on unsupervised public access to Younger Lagoon and Beach is appropriate to preserve the system for continued applied research and habitat preservation. The Commission's senior biologist has reviewed the submitted Plan report and concurs

[8] Note that Commission staff is continuing to work with the University on the fencing details for the site.

with its conclusions.

That being said, blocking off public access to and along the coast runs counter to the basic tenets of the Coastal Act and must be given serious thought and consideration. This is why the Commission required that this restriction be reevaluated on a regular basis. There are certainly trade-offs involved. As such, there are several issues that frame the current debate and warrant additional discussion.

Public Access Foregone and Provided

Historically, the Younger Lagoon system provided general beach-going access to the forebeach and ocean. Because of the steep, almost vertical bluffs framing the beach, access to this forebeach area was generally via steep goat trails that still exist. With less severe topography inland, some amount of beach access occurred through trails along the Lagoon and Lagoon slopes proper out to the beach. Access to Younger Beach from up and downcoast was and is essentially precluded by a rocky intertidal shelf area with promontories extending into the ocean at either end of the beach. Some amount of inland lateral access (circumventing the Lagoon) was historically available – primarily along farm roads above the break in slope defining the Lagoon. In any event, general beach and ocean recreational access was – and is – almost exclusively the type of access experience provided here.

The Younger Lagoon system thus continues to have the potential to provide, once again, general beach-going access to the forebeach and ocean. As discussed above, some limited unsupervised surfing access continues despite the closure. Because the Lagoon proper inland of the forebeach area is without a doubt a highly valuable sensitive resource area within which unsupervised human disturbance would likely be inappropriate absent substantial controls, any such access would necessarily need to be exclusively to the forebeach. Since there is currently only a steep goat trail to this area, public access, if endorsed here, would probably necessitate stairway construction of some sort were it to be properly provided.

The Permittee's Plan analyzes a scenario where public access is allowed to the fore beach but the rest of the Reserve maintains the prohibition on unsupervised access (see the submitted plan; page B-9 of exhibit B). The Plan concludes that such forebeach (only) access would directly lead to the loss of habitat diversity through the loss of bird species because of human disturbance. Researchers would be likewise unable to ensure that experiments would be left undisturbed. Thus, the report concludes that such a limited access opening would degrade the reserve as both a preservation habitat area and research facility.

Of note, Natural Bridges State Beach does provide for general public beach access on a rather large beach roughly 800 yards downcoast. This beach can also provide an entry point for the surfing break offshore Younger Beach (when there is adequate swell to allow this spot to break). In addition, pursuant to Special Condition 7 of CDP amendment 3-83-076-A13, the University has developed an interim access plan that has been reviewed and approved by the Executive Director.[9] This interim plan allows daylight-hours access (from one hour before sunrise to one hour after sunset) to the University's property

[9] The plan is "interim" until such time as a formal public access program is approved by the Commission through a Long Range Development Plan for the University's Terrace Point lands.

via an existing trail loop incorporating McAllister Way, the blufftop frontage between McAllister Way and DeAnza mobile homes, and a trail running north-south along the fence line at DeAnza.[10] The local chapter of the Surfrider Foundation has written to support the continued restriction on unsupervised access at Younger Lagoon and Beach (see exhibit C).

Public access around the lagoon is more problematic. The University's property includes the terrace above the Lagoon on the east, but not the opposite terrace on the west of the Lagoon.[11] Although some amount of public access currently occurs on farms roads above the Lagoon and upcoast of Terrace Point, these roads are private. In order to circumvent the entire Lagoon on University property, a trail would have to be placed at least partially within the downward slopes; such trail is not easily placed due to the sensitive habitat in the upper lagoon as well as the topography, and would require some type of blinds or other camouflaging. In addition, since the upcoast property is private, and public access along this property has not yet been perfected, such a trail would not (currently) connect with other upcoast trail segments. Therefore, a trail around the lagoon, lacking a connecting segment upcoast, seems premature at this time given the direct habitat degradation that could result.

The Permittee argues that the loss of unsupervised access is more than made up for by the docent-led supervised access provided, or to-be provided, at the site.[12] On this note the submitted Plan needs some clarification. There is currently only one overlook so provided at the Reserve; the overlook atop the berm that provides views simultaneously of Younger Beach and LML's marine mammal pools (overlook D). Overlooks B and C in the Plan are still being conceptualized within condition compliance for CDPs 3-97-050 and 3-83-076-A13; the Permittee has most recently indicated that these overlooks will be combined into one overlook at the end of McAllister Way. Overlooks A and E are concepts that the Permittee has developed; although some preliminary trail improvements have been made for overlook E and the Plan includes a conceptual elevation of a bird blind there, development of these overlooks has not yet been reviewed nor permitted by the Commission. Likewise, overlook F does not yet exist and is only a conceptual idea at this time.

Based on the information provided by the Permittee and the Commission's current understanding of the site, the Commission can agree to allowing a continued prohibition on unsupervised access to Younger Lagoon Reserve with the caveat that the additional overlooks must be made available to the public within a reasonable period of time. Only two of these overlooks (overlooks D and E on page B-39 of exhibit B) appear to need docent supervision. The other overlooks would appear capable of allowing for

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[10] Note that the interim access plan was signed-off after the submittal of this Younger Lagoon Plan. As such, there are several exhibits in the submitted Younger Lagoon Plan that have changed due to the approved Interim Access Plan. In particular, appendix IV of the Younger Plan incorrectly shows a business hours limitation on access to the blufftop trail (page B-39 of exhibit B). The blufftop trail is actually open during the same time frame (i.e., daylight hours) as the remainder of the site. In addition, appendices Xa and Xb of the Younger Plan identify fencing details (pages B-57 and B-58 of exhibit B). Such fencing details are the subject of ongoing condition compliance for CDP 3-97-050 and CDP amendment 3-83-076-A13 and have not yet been finalized.

[11] The area west of the Lagoon is privately owned and used for row crops, primarily brussel sprouts. The University's property line on the western side of the Lagoon is demarcated by the break in slope defining the Lagoon.

[12] See the submitted Plan (pages B-13 and B-14 of exhibit B) for a description of the overlooks areas and a corresponding site plan (page B-39 of exhibit B). References to specific overlooks are based on the A through E labeling convention in the submitted Plan.

non-docent led use to the extent such use does not otherwise harm habitat. Therefore, this Commission approval is conditioned to require timely filed applications for overlook development (for those identified in the Plan but not yet reviewed nor permitted by the Commission). See condition 2.

Research Agenda

As can be seen from the submitted Plan, research continues to be a focus within Younger Lagoon Reserve. However, some of the Commission's original intent regarding the research agenda has been waylaid in the intervening 25 years. In 1976 the Commission originally required UCSC to submit for Commission approval "a formal research planning program for future management and maintenance of the estuarine lagoon system. The various research programs should be developed in an effort of providing regulatory agencies with information for managing similar type estuarine lagoons in the central California region." While not absent from research done in the past, there has not been a strong connection between the research done at Younger and its ability to inform decision makers on estuarine lagoon questions and issues elsewhere. While part of this is the nature of the research done to date, a larger part of this is likely due to inadequate dialogue between the University and resource managers in the development of research agendas as well as the lack of targeted dissemination tools to get research findings from the hands of researchers and into the public planning debate and vernacular in a useable way.

The Permittee and the UC Natural Reserve System have indicated that the approach to research in Younger Lagoon Reserve as it relates to both of these areas (research themes and dissemination methods) is in the process of being refocused. This is at least partially due to the expanded facilities provided at the site through the Ocean Health project (i.e., the project to which this condition compliance submittal is tied). A draft academic plan for the Reserve recently provided to Commission staff clearly indicates that future research is expected to be directed into areas more relevant (than in the past) to providing information for better protecting fragile wetland habitat systems elsewhere (e.g., the linkage between inland drainage, lagoons, and nearshore ocean habitat; the role of relative wetland size and location to habitat value; direct impacts from surrounding development activities and land use on wetland systems; wetland restoration and monitoring techniques; the role of migratory corridors to overall wetland habitat value; etc.). The Permittee indicates that such research will depend on funding and attracting so-inclined researchers; both of these are directly related to the closure since, absent the closure, researchers cannot be assured that their field work will retain its integrity, particularly over the long periods of time necessary for such studies. Lacking this assurance, researchers are loathe to commit to projects for which the data may be suspect and/or unpublishable.

Research dissemination to decision makers is more problematic. Although there are many methods for such dissemination, there is not currently a direct link to coastal resource managers. The Permittee and the UC Natural Reserve System indicate that some data will be made available in the future on the Natural Reserve System website. This should help for providing raw data to a larger audience. However, the synthesizing of the data into findings useful for managing coastal resources is more problematic. The Monterey Bay National Marine Sanctuary is currently proposing to address this gap within the Sanctuary through their proposed Sanctuary Integrated Monitoring Network (or SIMoN) program. Although there

are not any formal commitments to this program by the University to date, it is hoped that the Permittee can partner with the Sanctuary to bring this to fruition as it relates to Younger Lagoon research at a minimum.

Therefore, again based on the information provided by the Permittee and the Commission's current understanding of the site, the Commission can agree to allowing a continued prohibition on unsupervised access to Younger Lagoon Reserve with the caveat that the research focus can be reframed to comply with the Commission's original intent and that such research can be made available to coastal resource managers in a manner that helps to better inform public policy decisions. See condition 1.

Timing and Re-Review

Although the Commission can agree to allowing a continued prohibition on unsupervised access to Younger Lagoon Reserve, it is not appropriate to make such a decision for all time because circumstances may change at the site making re-review of such a decision warranted. In fact, there are many changing circumstances at Younger Lagoon Reserve and the larger UCSC Terrace Point site. Foremost among these currently is that the University is currently in the midst of a planning process meant to result in certification by the Commission of a Long Range Development Plan (LRDP) at Terrace Point. The outcome of the LRDP process will most certainly affect the future of the Younger Lagoon Reserve as well as development in and around the Reserve. The LRDP is not likely to be in front of the Commission for a number of years. Accordingly, the effect of the LRDP on the question of a continued closure for unsupervised public access must be addressed at a future date. Additionally, habitat and access issues and our understanding of their relation at this site as well as up and downcoast will always be evolving.

Accordingly, this decision to allow continued closure must be re-reviewed every three years. The intent being that a case must be made on a regular interval that the public access and habitat/research trade-offs continue to make sense for this site. See condition 1.

E. Conclusion

The Commission does not take the issue of a public access closure lightly. In this case, because of the sensitive habitat involved, because there exist similar beach and ocean access nearby, because of the publicly relevant research agenda to be established and disseminated, because of the public viewing areas available and to be made available, because of the regular re-review requirement, the Commission finds that a continued prohibition on unsupervised public access is appropriate within Younger Lagoon and Younger Beach and is consistent with Chapter 3 of the Coastal Act. As conditioned, the Commission approves the submitted Plan.

F. Staff Recommendation on Condition Compliance Submittal

Staff recommends that the Commission, after public hearing, approve the Younger Lagoon Beach/Wetland Area Management and Access Plan (Plan) finding that, as conditioned, the Plan is in

conformity with the requirements of Special Condition 8 of Coastal Development Permit Amendment 3-83-076-A13 and Chapter 3 of the Coastal Act.

Motion. I move that the Commission approve the Younger Lagoon Beach/Wetland Area Management and Access Plan subject to the conditions below pursuant to the staff recommendation.

Staff Recommendation of Approval. Staff recommends a **YES** vote. Passage of this motion will result in approval of the Younger Lagoon Beach/Wetland Area Management and Access Plan subject to the conditions below and adoption of the above findings. The motion passes only by affirmative vote of a majority of the Commissioners present.

G. Conditions of Approval

1. **Re-Review.** Every three (3) years, the Permittee shall submit an updated Younger Lagoon Reserve Management and Access Plan (Plan) to the Coastal Commission for review and approval. The first such Plan update shall be submitted by July 13, 2004 and subsequent Plan updates submitted by the same date at three (3) year intervals (i.e., July 13, 2007; July 13, 2010; July 13, 2013; etc.). Such submittal Plan shall, at a minimum, include:

   (a) **Management Plan.** An up-to-date management plan for Younger Lagoon Reserve including at a minimum current resource characterization, management objectives, on-going restoration efforts, and monitoring methods.

   (b) **Research Agenda.** Identification of the current research agenda for projects within the Reserve. Such agenda shall clearly identify: the link between such projects and/or project theme areas and their potential for informing coastal resource managers on specific issues; and the method for ensuring the results of research are adequately disseminated to coastal resource managers (for example, through the Monterey Bay National Marine Sanctuary's "Sanctuary Integrated Monitoring Network" program).

   (c) **Reserve Enhancements.** A summary of resource enhancements and management measures implemented within Younger Lagoon Reserve since the previously approved Plan.

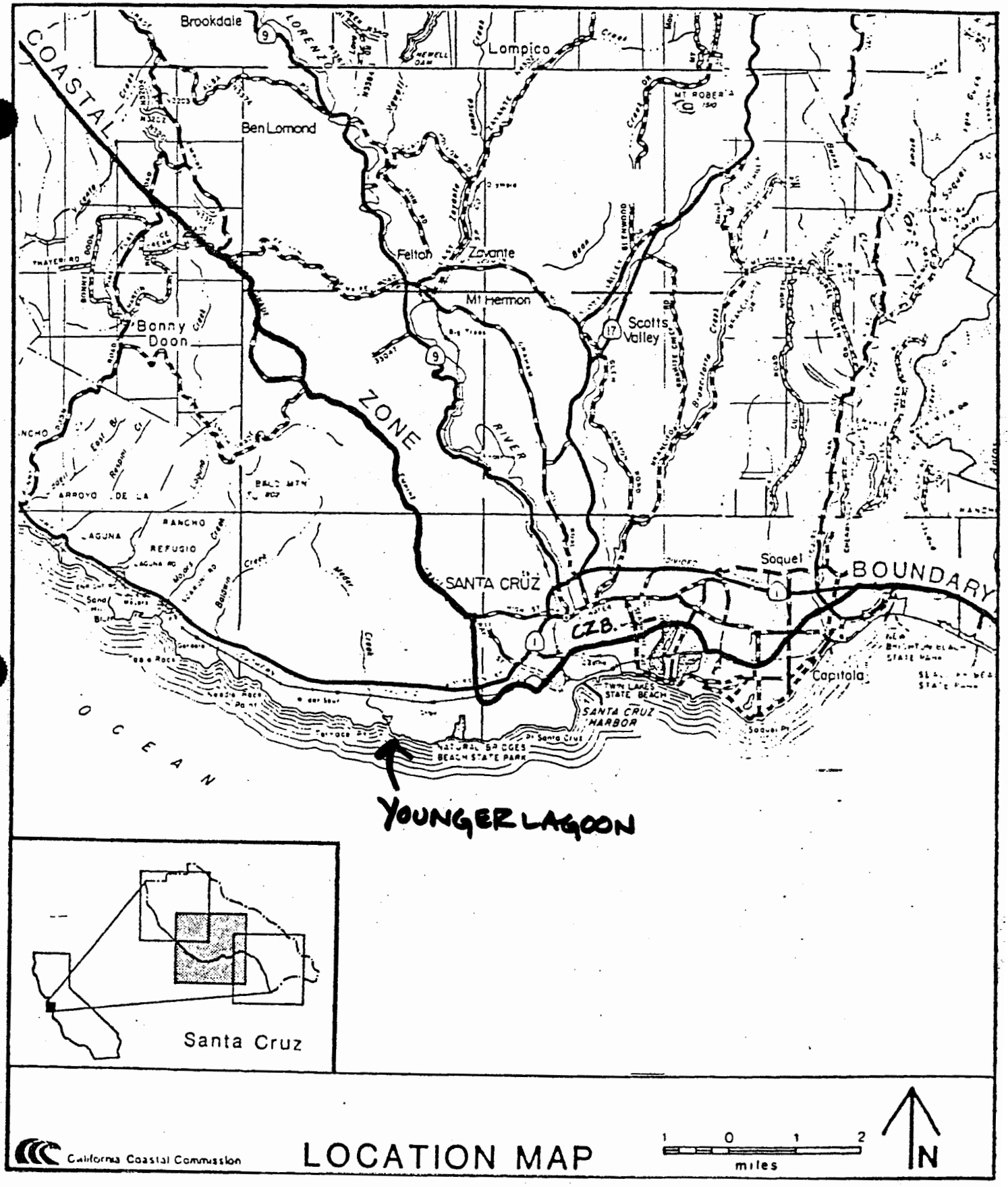
   (d) **Changed Circumstances.** A summary of relevant changes to Younger Lagoon Reserve and/or surrounding areas since the previously approved Plan. The summary shall indicate the effect of such changes on Younger Lagoon Reserve.

   (e) **Public Access Analysis.** An analysis of the potential for providing unsupervised public access to Younger Lagoon Reserve or a portion thereof. At a minimum, such analysis shall include discussion of potential public access: (1) to the forebeach and ocean only; and (2) around the perimeter of the Lagoon.

   The Permittee shall manage Younger Lagoon Reserve in accordance with the approved Plan. Any

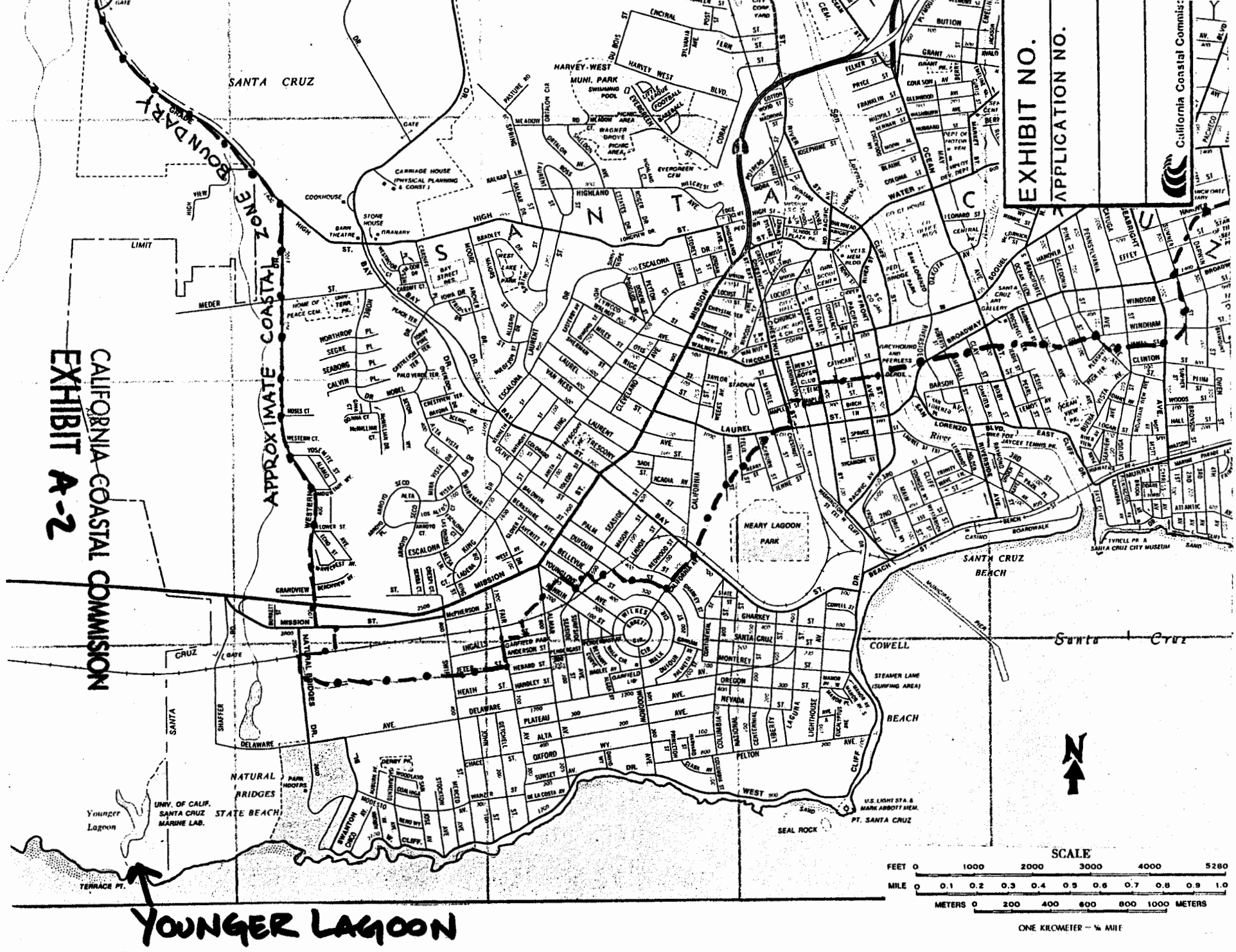
proposed changes to the approved Plan shall be reported to the Executive Director. No changes to the approved Plan shall occur without Coastal Commission review and approval unless the Executive Director determines that the changes do not substantively alter the approved Plan.

2. **Overlooks.** By January 1, 2002, the Permittee shall submit to the Coastal Commission's Central Coast District Office a complete application for development of proposed overlooks E, F, and A (as shown on page B-39 of exhibit B). Such applications shall include at a minimum details regarding appropriate structures, interpretive signage, and use parameters. Overlooks E, F, and A (as shown on page B-39 of exhibit B) shall be made available for public use within six (6) months of the Coastal Commission's action on the submitted application, unless the Coastal Commission's action changes this date.



CALIFORNIA COASTAL COMMISION

EXHIBIT A-1


CALIFORNIA COASTAL COMMISSION
EXHIBIT A-2
APPROXIMATE COASTAL ZONE BOUNDARY
EXHIBIT NO.
APPLICATION NO.
California Coastal Commission
SANTA CRUZ
HARVEY-WEST MUNI. PARK
SWIMMING POOL
FOOTBALL
BASEBALL
HIGHLAND
ESCALONA
MISSION
LAUREL
BAY
CALIFORNIA
NEARY LAGOON PARK
SANTA CRUZ BEACH
COWELL BEACH
Santa Cruz
STEAMER LANE (SURFING AREA)
NATURAL BRIDGES STATE BEACH
Younger Lagoon
UNIV. OF CALIF. SANTA CRUZ MARINE LAB.
SEAL ROCK
U.S. LIGHT STA. & MARK ABBOTT MEM. PT. SANTA CRUZ
TERRACE PT.
YOUNGER LAGOON
SCALE
FEET 0 1000 2000 3000 4000 5280
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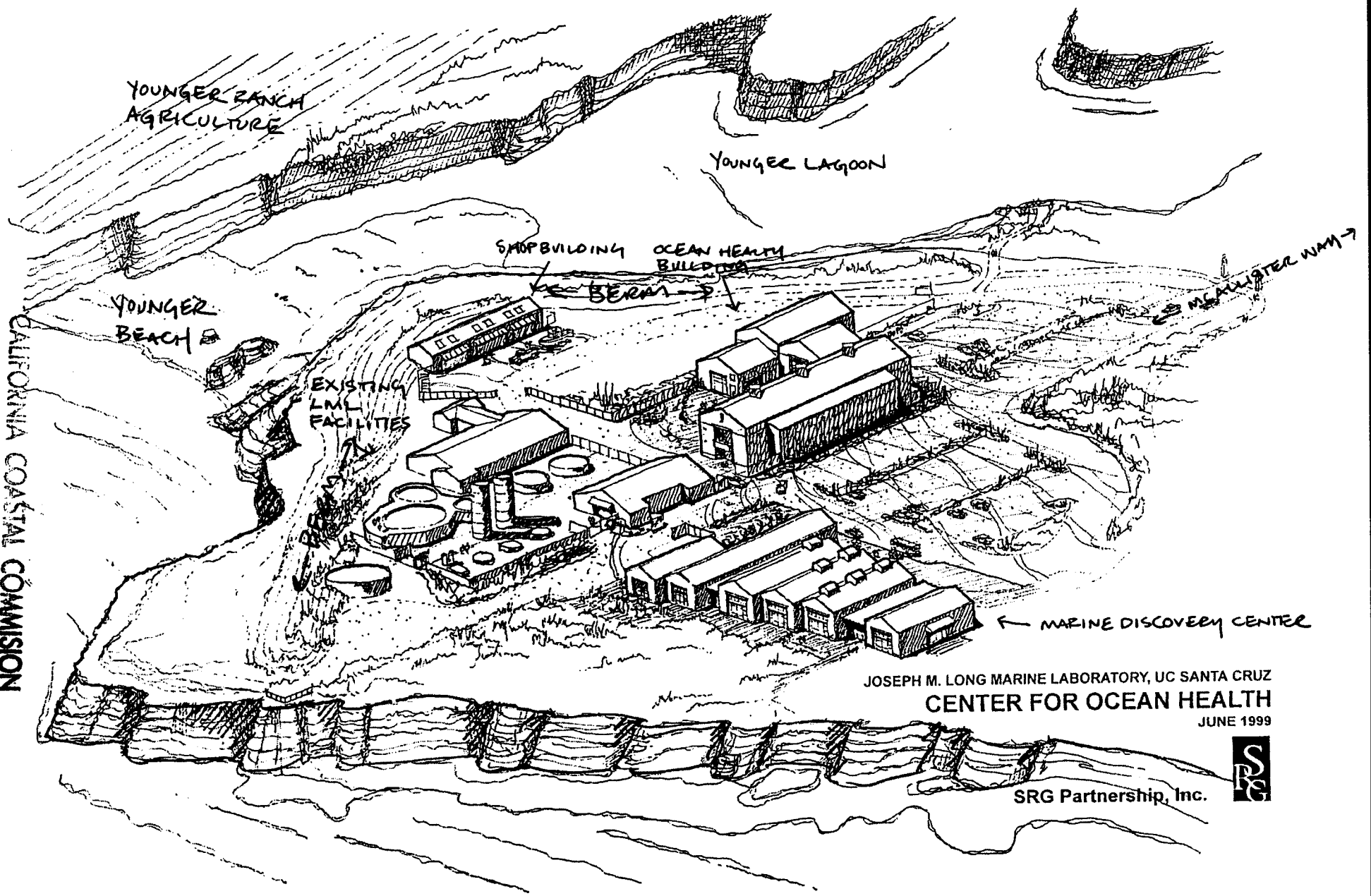
ONE KILOMETER — ⅝ MILE



CALIFORNIA COASTAL COMMISSION
EXHIBIT A-3

RESPONSE:
Amendment 3-83-076-A13 Staff Report
UCSC Long Marine Laboratory Center for Ocean Health
Filed 7/21/99
Condition 8. Younger Lagoon Beach/Wetland Area management and Access Plan
by
Margaret H. Fusari, Director UCSC Natural Reserves
for the Younger Lagoon Reserve (YLR)

Coastal Act Section 30240(a)

"Environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values, and only uses dependent on those resources shall be allowed within those areas."

The official mission statement of the Natural Reserve System is:

"The mission of the Natural Reserve System is to contribute to the understanding and wise management of the Earth and its natural systems by supporting university-level teaching, research, and public service at protected natural areas throughout California."

The official mission statement of the LML Seymour Visitor Center is:

"The Seymour Marine Discovery Center at Long Marine Laboratory educates people about the role scientific research plays in the understanding and conservation of the world's oceans."

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INTRODUCTION:

We understand that the California Coastal Commission (CCC) is concerned that the Younger Lagoon Reserve (YLR), including its beach, is closed to uncontrolled access by the general public. That closure was supported by the Coastal Commission in 1981 albeit with some questions and conditions which we hope are addressed in this document. The closure was recommended by CCC staff who wrote: "The Staff recommends that the Commission adopt the following Resolution: The Commission hereby approves the management plan, as modified, as it is in conformance with Chapter 3 of the Coastal Act and will not prejudice the local coastal planning options." This recommendation was based on documents prepared by Long Marine Lab (LML) and U. C. Natural Reserve System (NRS) personnel who were preparing the reserve for inclusion in the NRS system. In 1986 the YLR was officially accepted into the NRS by action of the UC Regents. Herein we will document that the Younger Lagoon Reserve is of more value closed and operated as an NRS reserve than it would be were it open to public access without restraint. We also document that open public access would severely impinge on the reserve and its mission. In addition we offer specific public access opportunities (in cooperation with the Seymour Discovery Center of the Long Marine Lab) that would not compromise the functioning of the YLR as a teaching and research reserve and will respond to the nine specific points raised by CCC staff. We ask your support in continuing our mission as an NRS reserve providing general public service both directly (through controlled access and interpretive programs) and indirectly through teaching and research on the composition and processes of an undisturbed reserve.

While we recognize that the CCC has a mandate to protect and expand public access to the California coast, we also recognize that there is a CCC mandate to protect sensitive coastal habitats for our native biota[1]. In this second area the NRS and the CCC share a common goal, to protect environmentally sensitive habitats, including the ecology, the flora and fauna, and the overall biodiversity from degradation and loss.

The wetland-beach area and the intact portions of terrestrial vegetation (primarily Northern Coastal Scrub) in YLR are an educational and research resource not matched by any other central California coast area currently open to the public. Because YLR provides habitats that are guaranteed to be free of the severe impacts of public use many types of studies or dimensions to studies can occur that could not otherwise be undertaken. For teaching YLR provides an example of a relatively intact system. For basic research on ecology or on specific organisms, YLR offers a system in which the inputs are known and hence the conclusions of the research can be assured and the papers can comply with peer reviewed publication standards. For baseline studies of the region's flora and fauna, YLR offers a complement of species against which to compare more impacted systems. This type of research is absolutely necessary to document

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[1] Coastal Act Section 30240(a). Environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values, and only uses dependent on those resources shall be allowed within those areas.

Coastal Act Section 30240(b). Development in areas adjacent to environmental sensitive habitat areas and parks and recreation areas shall be sited and designed to prevent impacts which would significantly degrade those areas, and shall be compatible with the continuance of those habitat and recreation areas.

ecosystem changes from human impacted comparison sites in order to provide well founded recommendations on issues such as appropriate setbacks, trail location and design, use levels and type of recreation pursuits appropriate for specific habitats. This applied research provides valuable information for the California Coastal Commission as well as other state/local resource and regulatory agencies. In support of research YLR needs to provide security for the investment of the researcher by assuring that his/her experiments will not be hindered or destroyed.

There is very little beach, coastal strand and coastal bluff and scrub habitat left in the central coast region to support the native flora and fauna that require them. There is very little (and is some cases, no) wetland and beach that remains undisturbed to support feeding by our sea and lagoon birds. YLR remains as a link in a chain of places that still does support active feeding and breeding by resident and migratory bird species. Too many of these ecosystems have been lost already and too much is being lost at a rate that virtually guarantees that the lists of species and habitats at risk are going to grow exponentially.

We understand that many people do not believe that people walking, with or without dogs, cars driving, lights glaring and/or sounds intruding have any impact on wildlife. But they do. Below (in response #5) we provide some specific evidence on the reality of the impacts of public access into bird habitats. This summary and the reference list that supports it present a cursory review of an ever-increasing literature on the impacts of human uses on native species and their habitats. Such research is often made possible because non-disturbed areas such as YLR exist for comparison.

Our basic management strategy is to prevent impacts; limit physical access to that required for management, teaching and research; and provide such public access as adds to the NRS mission while avoiding degradation of the natural values of the reserves and of its future availability as a natural system. We attach our current management plan (Appendix I) our NRS/YLR fact sheets (Appendix II), and as an update to our previous submission we offer the species lists of YLR in Appendices IIIa-d.

YLR is one of a system of 33 NRS[2] reserves. They were founded by UC faculty, including UCSC's own Ken Norris, on the premise that as lands are developed and used and altered, teaching and research would be in ever more serious need of undisturbed natural lands if the goal of understanding how a natural ecology functions is important to students and researchers. The founders also recognized that research and teaching sites had to remain undisturbed in order to undertake long-term projects with confidence. All of the classes, independent projects and research projects listed below (in response #1) were able to learn about and document the ecology of a system where natural processes, if not undisturbed, were at least present and operating.

[2] The NRS maintains a website at http://nrs.ucop.edu/

RESPONSE TO THE NINE QUESTIONS POSED BY CCC

1. Research and Teaching Activities in YLR

Summary of Younger Lagoon Reserve uses. Often use categories overlap as, for example, when a researcher involves student independent studies in his/her project or a management need is met by applied research and student involvement. Sometimes class introduction to the Reserve leads to independent study or research in subsequent terms as students train for a professional career in field science.

The following is representative of the projects supported at and by YLR:

Teaching. The reserve is used by classes and students engaged in internships and independent studies including senior thesis research. Over the past 10 years the Reserve has been used for:

CLASSES:

- Restoration Ecology
- Natural History of Birds
- Biology and Ecology of Vertebrates
- Environmental Field Methods
- Natural History or Amphibians and Reptiles
- Natural History of Mammals
- Aquatic Toxicology
- Invertebrate Biology

SENIOR THESES:

- Vegetation analysis (4)
- Methods of poison hemlock control (3)
- The mammals of YLR (2)
- The reptiles and amphibians of YLR
- The birds of YLR (2)
- Baseline studies of the lagoon invertebrates
- Analysis of the intertidal of YLR and adjacent coastal shelves
- History of the westside Santa Cruz agricultural lands

INDEPENDENT PROJECTS IN:

- Vegetation restoration (many individual projects)
- Comparison of YLR scrub with other, north coast localities
- Analysis of soil salinity after a sea water spill into the upper reserve
- Vegetation monitoring and analysis
- Multiple surveys on the abundance of vertebrate populations (birds, mammals, amphibians and reptiles)
- Lagoon water chemistry
- Air quality in coastal regions
- Development of an interpretive flyer for the LML docent program at YLR
- Hydrogen Sulfide sampling of the lagoon

Research. Research has been mostly in applied ecology, often by graduate and undergraduate students or non-profit organizations. We address the concerns of potential researchers about trespass and security in our response to #5. Projects to date include:

- UCLA doctoral student Todd Haney, working with Los Angeles County Museum project on systematic research on the marine crustaceans, the Leptostraca.
- Participation in the Christmas Bird Count (Santa Cruz Bird Club).
- Methods of poison hemlock control
- Creating buffer strips for prevention of soil loss in agricultural runoff (cooperation with adjacent farmers)
- Mussel watch (a project from UCSB to determine water quality in coastal lagoons)
- Analysis of heavy metals in the lagoon by UCSB
- Analysis of organochemical movements in the air along the coast (Dr. Harry Prest of UCSC)

Public Service. The Younger Lagoon Natural Reserve is closed to public access except through tours led by the docent program of the Long Marine Lab Seymour Marine Discovery Center, the volunteer restoration program of the YLR, and the specific activities of organizations such as the Santa Cruz Bird Club. This is necessary to protect the habitats in support of preservation of a native ecosystem and protection of ongoing projects in teaching, restoration and research. A specific program of constructing overlooks and pathways is in place or proposed as described elsewhere in this document.

Additional UC owned property is accessible to the general public (Appendix IV). UC owns property between mean high tide and the base of the bluff below De Anza Trailer Park. These lands are extensively used by the general public entering from Natural Bridges State Park, and are used extensively by docents providing public tours of the intertidal zone. This public access through De Anza is established via a recorded access plan, which was required by the Coastal Commission. In addition the response by LML to Condition 7 documents additional regional opportunities for public access.

2. Existing Public Access Opportunities at YLR

Existing public access outside of YLR is provided by the roads leading to LML and the Seymour Discovery Center and the path around the UC owned property commonly known as Terrace Point. The access to and around those areas is detailed in response 7: the Interim Access Plan for Long Marine Lab. We understand that the Seymour Center will open to the public in March 11, 2000 and that the docent-led programs for visitors and classroom students will be greatly enhanced.

Existing public access to the Younger Lagoon Reserve; overlooking the beach, lagoon and upper lagoon watershed; is currently provided by two overlooks. These are accessible by individual appointment and with docents from McAllister Way through the LML property. The currently operating overlooks are labeled D and E and correspond with the CCC suggested overlooks (2 & 4), and are shown in Appendix IV.

Overlook D is located on top of the berm just west of the LML marine mammal pools. A path leads through LML to a handicapped access ramp, and then to a platform providing

views of the ocean, beach, south lagoon and east and west facing lagoon side slopes. Further description of this access point is provided in response #8 below.

Overlook E is located north of the Center for Ocean Health building that is presently under construction. An access trail goes from the construction site, up to an opening in the berm and then to a small bench and open observation area just north of the berm. From this observation point, one can see the entire lagoon including both upper arms, the back dune beach, and both lagoon side slopes. However because of the site's open and prominent location we presently limit access to small docent-led tours and birdwatchers who are aware of how to avoid disturbance to wildlife. In the future the YLR intends to install taller native shrubs to screen the access trail, and build a 'duck blind' observation shed at the site in order to limit human disturbance while providing regular, docent-led tours.

There are no public access trails into the lagoon or along its edge due to the sensitive nature of the flora and fauna, the steepness of the slope and the pervasive presence of poison oak. Access into the reserve is by permission for research and teaching purposes only. YLR staff gives prior permission after receipt of a research or teaching plan, so that any wildlife disturbance can be prevented, and other impacts (vegetation disturbance, trail erosion) can be minimized and monitored.

Public access to the observation points is and will continue to be provided through the public programs of the LML Seymour Center to visitors through guided tours. Other than McAllister Way, there are no internal LML trails connecting the two observation sites; use of docent led tours makes these trails unnecessary. The Seymour Center and the YLR staff will continue to train docents in the history and biology-ecology of the lagoon and to produce additional interpretive material and panels, especially on the birds and the restoration ecology projects. Through this program several thousands of visitors each year have and will visit the YLR without inflicting damage on the habitats or adversely impacting the survival of the vegetation and wildlife.

3. Combining YLR and Wilder State Beach Research Activities

According to State Park staff there are some existing 'research' activities at Wilder State Park that are related primarily to restoration work that has or is proposed to be undertaken at the Park (D. Vincent, personal communication, 2/2000; G. Gray, personal communication, 2/2000). Robert Schultz, a student of now-emeritus UCSC Professor Robert Curry, installed a sonar measurement device in Wilder Creek under the Highway 1 overpass to measure water volumes and water quality parameters. Data from these measurements have been sent to State Parks over the last 8 years. Approximately 8 years ago, a Wilder Creek restoration project removed agricultural fields from production, eliminated dredging of the creek, replanted streambanks and restored red-legged frog habitat in the creek. Some monitoring has occurred since the restoration, including bird surveys and review of vegetation transects to determine revegetation success that included some UCSC students. State Parks staff was not able to document any other research efforts.

Because State Parks is underfunded for site specific research that may lead to improved park management, State Parks personnel are very receptive to University research at Wilder State Beach on that issue. UCSC is also receptive to opportunities afforded at Wilder Ranch State Beach and Lagoon, especially for student internship projects. However, State Parks' mission does not include the general support of University research and teaching. Significant research and teaching activities within the State Park may conflict with the State Parks' mandate to preserve resources within the Wilder State Beach Natural Preserve. The requirement to protect State Parks' natural preserves is contained in Section 5019.71, Division 5, Chapter 1, Article 1 of the Public Resources Code. This provision states that natural preserves ... "shall allow the natural dynamics of ecological interaction to continue without interference...." Therefore, considering this statutory mandate, cautious management by SP staff may lead to restrictions on type and amount of teaching/research that could be conducted at Wilder Park State Beach. Certainly, research/teaching activities would have to be limited during the Snowy Plover nesting season. Snowy Plover is a federally listed threatened species.

The habitats are not fully comparable and the primary mandates are not similar. The Wilder State Beach is closed specifically to protect the snowy plover population and general research or public access must not compromise that purpose. We have noted that CCC staff members and CDPR personnel have indicated to UC in the context of discussion of our programs at the Landels-Hill, Big Creek reserve on the Big Sur coast that they value the reserves as comparison sites for their own projects on more heavily used lands and CDPR cannot, by their own mandate, prioritize the goals of teaching, research and public service as defined by the UC and UC/NRS missions. UCSC would be delighted to cooperate farther with them and the Younger Lagoon Reserve could serve as a comparison site for some of their applied work.

4. Effects of Limiting Access to Younger Lagoon since 1981

Except for informal observations and a series of photographs taken regularly since 1986 (the incorporation date for YLR into the NRS) the effects of lagoon and beach closure have not been studied or formally documented. Furthermore, correspondence in CCC files (Application 3-83-96 and P-1859) indicate that the previous owner, Donald Younger, was fairly successful in restricting access before 1975. Apparently some increased public use occurred between 1975 and 1981 when security was not in place. Changes between the mid-1970's and the mid 1980's were not documented and our photograph series indicates that by 1986, five years after limiting access, the beach area was already relatively stable.

Due to the closure, a natural ecosystem appears to exist on the beach, and it has been observed to support a normal complement of shorebird feeding on both the front and back beach. Photographs taken since 1986 show that the vegetation of the backbeach has been increasing and hence the quality of the habitat has been enhanced. There is very little problem with trash. We still have trespassers that get past the security and cross the beach, sometimes impacting wildlife and probably vegetation.

Other possible differences in the Lagoon wetland ecosystem have not been observed or studied. Changes in biological productivity, such as invertebrate species diversity and density, are not known. Observations of invasive plant encroachment, undertaken as part of class projects, student research and restoration efforts, have indicated that we have a problem with encroaching weeds, especially poison hemlock and wild mustard and radish. The worst areas began and have spread from places where physical disturbances have occurred, on uncompacted berms, ad hoc trails, and uncontrolled drainages. It should be admitted that the problems with poison hemlock have been increasing all along the Central Coast region and we are not exempt from this problem. Based on our experience and on research and observations from other areas, significant human disturbance from trails, erosion etc. would be expected to increase numbers and aerial extent of invasive plants species if public access was prevalent within YLR. If our weed control and restoration efforts are to be successful we need to be as free of additional disturbances as possible.

A comparison of wildlife species lists from the 1970's, 1980's and 1990's, as well as Christmas bird counts for the Lagoon shows a somewhat higher density and diversity of waterbirds, shorebirds and terrestrial birds over the last 25 years (although this could be partly due to increased survey effort). Bird counts from the late 1970's listed 163 species, while counts taken during the 1980's show about 217 species. The number of state and federal listed threatened and endangered species has remained about the same, but the number of State species of special concern at YLR have increased. However, this is primarily due to changes in species' listing status over time, rather than an increase/decrease of these species at YLR. The same sensitive or locally unique species observed in the 1970's occur within YLR today. We are in the process of evaluating YLR as bird habitat. We are putting over 10 years worth of bird banding data into computer form for analysis and are supporting fall and spring internships to acquire current data on migrating and breeding bird uses of the reserve.

Unfortunately the YLR still suffers from trespass, mainly by surfers trying to get to good surfing areas upcoast that are relatively inaccessible due to intervening private land. Trespass is causing some impact to wildlife. Margaret Fusari, Director of the UCSC Natural Reserves, observed a footprint that had crushed a bird nest on the backbeach several years ago. This is an example of the direct damage that can occur with casual access through a reserve that protects and promotes breeding wildlife. The indirect effects of such disturbance will be addressed separately below with references.

5. Potential Impacts from Public Beach Use

YLR cannot open public access to the beach and keep the rest of the Reserve secure for teaching and research. Beach use would cause a number of impacts to Reserve biota. These two issues are interrelated and are discussed below.

Natural Reserve Research and Teaching Responsibilities

The UC Natural Reserve system was established from the realization that the state's population and development were increasing at such a pace that few areas remained safe from human disruption, even on partially protected public lands. A growing proportion

of California's natural landscapes were becoming unusable for natural ecosystem research and teaching, particularly California wetlands, where by 1980 over 90 percent were filled or severely impacted. Therefore, in the 1960's, UC faculty decided that there was an immediate need for natural areas managed specifically for academic use, where students, faculty and researchers could undertake long-term projects without the fear that their research or teaching sites would be compromised by human disturbance. Inherent in protection for research and teaching sites is protection of natural habitat.

The Younger Lagoon Reserve was established in 1986 as an official NRS reserve to provide teaching and research opportunities in a relatively undisturbed ecosystem with beach, marsh, riparian and coastal scrub habitats. It was noted that the Lagoon itself is somewhat unique in that a high bedrock shelf creates a relatively permanent barrier beach that allows infrequent saltwater inundation.

The list of classes and research conducted at the YLR in response #2 indicates the importance of this Reserve to the University. In addition letters (Appendix V); submitted in 1981 by Doyle, Briggs, Penaat, and Norris; documented the specific need to restrict public access in order to protect YLR habitat values for teaching and research and make it suitable as an NRS reserve. The information and arguments provided in these letters are the same today as they were in 1981.

Academic researchers have expressed concern about protection of their sites and disturbance to transects and plots from existing trespass and we believe this may have discouraged some research projects at YLR. To fulfill the research mission we especially need to protect the reserve and the researchers' investment in the work. To do that we need to restrict public access and maintain our security of the reserve. CCC support will go a long way to inform potential trespassers that the reserve should be so protected.

Impacts to YLR Natural Resources

The various lagoon plant communities provide protected habitat for over 200 resident and migratory bird species, 38 mammals, and more that 20 reptiles and amphibians (Appendices IIIb-d). Over 40 of these species are listed as sensitive (threatened, endangered, state species of concern, or locally unique). The lagoon ecosystems also contain approximately 88 native plant species and 29 non-native species (Appendix IIIa). Several plant species (including one strand species) are rare or locally unique.

Predicted impacts of humans (particularly with dogs) on avifaunal breeding, feeding and resting are enormous. Of the bird fauna inhabiting Younger Lagoon, a significant number nest within the reserve—some in the beach or near beach environment. A number of other species depend almost entirely upon the lagoon, dune, beach, scrub or a combination of these habitats for food and resting areas. Other migrant species depend upon these same habitats. Studies have confirmed that the presence of people (even those who do not bring dogs or make noise) cause many of these birds to move out of their preferred habitats. Most will leave the greater Younger Lagoon ecosystem entirely. Researchers have also found that because other similar ecosystems in adjacent areas are at or near capacity, this disturbance often results in a direct loss of these species.

Bird disturbance has other impacts. Birds that are resting are conserving energy, as alarm movements cause waste of energy that is needed for survival, and especially for breeding. If a bird is disturbed in the non-breeding season once or twice, there is probably little long term effect, unless a predator happens to note its movements. In the breeding season, energy is at a higher premium for maintaining the nest and territory, foraging and feeding the chicks. Many adult birds are in negative energy balance during this period--that is to say they use more energy than they eat and hence rely on storage from feeding in the non-breeding season.

Unsupervised access would certainly cause serious degradation of the 24-acre YLR as sustainable habitat for sensitive coastal species. Effects are cumulative and multiple disturbances would result in a loss or severe decline of a number of species from YLR. With severe disturbance only the few species that are especially tolerant of humans and inhabit other disturbed wetland/upland habitats would remain at Younger Lagoon. Therefore, in addition to the research and teaching loss, uncontrolled public access would cause loss of this site as another along the coastal network of sites available for migrating and breeding coastal birds.

A review of some of the current literature on human disturbance and bird populations reveals the following (See Appendix VI for the reference list):

According to several researches birds are continually vigilant to avoid unwanted human social interactions, although some species will become habituated to human activities in areas where they are protected from actual harm. However they are still disturbed by the presence of people as evidenced by their often deciding to move, abandoning feeding or breeding activities and devoting additional time and energy to avoidance of contact or the perceived threat of contact. The increased energy drain is evidenced by the increased heart rate and metabolic activity and can have detrimental effects on reproductive success and behavior along with the loss of foraging time or breeding interactions. An increasing number of research studies (see partial list attached as Appendices VI & VII) confirm this conclusion. Studies are also showing that even the most seemingly innocuous type of disturbance (a person walks by and a bird moves a few feet) can have serious cumulative impacts on bird fitness if multiplied by many people and increased by stronger stimuli such as loud noises, fast movements, dogs, etc. If an area is to be a safe haven for feeding and breeding by wildlife it must remain in a relatively undisturbed state. If the reserve is to have serious value for baseline research it must be that safe haven.

The Santa Cruz Bird Club in a letter from current president, Jeff Davis (Appendix VIII) supports this conclusion.

Sensitive species that have been known to breed at YLR and that would be adversely affected by human and dog disturbance include the gray fox and bobcat. According Dr. Michael Soulé, both species' presence are considered critical to prevent the severe depredation of ground and shrub nesting birds by feral cats and invading red foxes. Over 25 bird species nest at YLR. Nesting bird species most susceptible to serious impact from

disturbance include mallard duck, Bewick's wren, Swainson's thrush, wrentit, orange-crowned warbler, common yellowthroat, song sparrow, white-crowned sparrow and red-winged blackbird (J. Davis, personal communication, 1999). These are birds whose continued presence gives the reserve a reasonable complement of bird diversity. If we lose them or even if we lose their normal nesting behavior the reserve loses much of its value.

Finally, public access directly to the beach would be neither safe nor practical due to almost vertical cliffs on each side of the beach. Access across the dunes will quickly eradicate fragile coastal strand vegetation. In addition, it should be noted that it is not physically possible to fence or isolate the beach from the remaining lagoon areas. Any general (unrestricted) public access would inevitably lead to path widening and the creation of additional cross paths contributing to habitat breakup and degradation (as seen from the ad hoc paths that already exist due to the trespassing), as well as erosion and sedimentation into the Lagoon. Lagoon water quality, which is presently good, would suffer, adversely affecting marsh biota and use of the Lagoon for water quality research.

6. Wetland Perimeter Trail

A condition requiring LML to investigate a wetland perimeter trail was a part of the 1976 CCC permit P1859, but was later eliminated by the Commission in 1981 with Amendment 5. The same arguments against a perimeter access trail made by LML and CCC staff in 1981 apply today. Trail development around the north and west perimeter of the lagoon is impossible because the YLR property line extends only up to the rim of the lagoon. A trail on the steep, shrub covered slopes would cause significant habitat degradation and severe erosion. In most areas trail construction would be impossible due to extremely steep terrain. In addition impacts to avifauna noted previously would be significant with human and dog presence around the entire Lagoon perimeter. The adjacent property owner, Younger-Goodes, have indicated they will not permit a coastal trail on their property due to conflicts with agricultural use of that land.

7. Trail Linkages between McAllister Way and YLR Overlooks

The proposed access connections between YLR, LML and UC owned Terrace Point are shown in Appendix IV. Coastal access routs are proposed that will connect overlooks on the east perimeter of YLR to LML, the Seymour Center and Terrace Point properties (See Response to Condition 7, the Long Marine Lab Interim Access Plan, for details). Trails will be fully shielded from view from YLR species by berms, fences, thick vegetation or other appropriate (and hopefully attractive) means.

(Excerpt from LML response to condition 7): "As indicated on the attached Exhibit A, free public access for pedestrians will be provided to the majority of the this coastal site during daylight hours every day of the year. Pedestrians would enter onto the university's Long Marine Laboratory property from the intersection of Delaware Ave. and Shaffer Road by way of the Delaware Extension driveway to McAllister Way, then along McAllister Way southward past the California Department of Fish & Game Marine Wildlife Center, the National Marine Fisheries Service Laboratory, portions of Younger Lagoon Natural Reserve, and on to the Seymour Center at Long Marine Lab. At the

Seymour Center, the through access route will bifurcate. During the hours of operation of the Seymour Center, pedestrians would either continue southward on McAllister Way to the ocean bluff (Overlook C), then proceed eastward along the top of bluff on the seaward side of the Seymour Center and around the seaward side of Overlook B, or would proceed southeastward around the east side of the Seymour Center to the ocean bluff, and then proceed eastward along the top of the bluff. For security of the LML seawater system, the improvements at Overlook B, and the restored native coastal prairie vegetation on the seaward side of the Seymour Center, the route directly to the terminus of McAllister Way and along the bluff directly seaward of the Seymour Center would be closed during times that the Seymour Center is closed. There is no way down the 35-foot seacliff, nor is there any beach along this section of ocean bluff. To the east, at the boundary of the DeAnza Santa Cruz mobile home park, pedestrians would proceed northward along the mobile home park to Delaware Ave. Circulation along this route could occur in either direction. Access would be limited to daylight hours. A series of signs would indicate this accessibility."

We understand there is potential to connect this access inland and across the RR tracks to link up to a public trail from Santa Cruz to Wilder State Park. There is also the walking access to the beach through the De Anza Mobile Home Park to the beach properties of the University of California. The UC owned property extends from mean high tide to the base of the bluff, directly below the DeAnza property. These two small terraces are currently used extensively by the public and accessed most commonly through Natural Bridges State Park. There is no physical access westerly to LML or YLR due to tides, seacaves and the absence of any beach or accessible rock shelf.

8. Public Access Overlooks

The following overlooks are either existing or proposed (and are shown in Appendix IV):

A & B are new overlooks developed by and adjacent to the LML Seymour Discovery Center and are described in the Interim Access Plan (Condition 7). A permits viewing of the seasonal wetland and B permits another wide-angle view of the entire Monterey Bay.

C Blufftop at the end of McAllister Way on LML property: An existing overlook is located at the end of McAllister Way which allows exceptional views of the Monterey Bay National Marine Sanctuary and the north and south coast. Many visitors currently use this site, and its proximity to the Seymour Visitor Center makes it an ideal overlook. It is fully handicapped accessible and open during the hours that the Seymour Visitor Center is open (normally 10-5, T-SU). Fencing would keep visitors outside the secure areas within LML, away from steep bluffs and out of YLR. (Corresponds to CCC suggestion #1)

D LML-YLR beach/marine mammal pool overlook on top of the berm. This is an existing public access, handicapped accessible, built as a cooperative project between LML and YLR by the California Conservation Corps. It overlooks both LML and YLR and therefore affords opportunities for docent interpretation both of the marine mammal research on the LML side, and Monterey Bay, front and back beach, seacliff and lower lagoon portions of YLR on the other side. There are existing interpretive

panels on the dolphin research and plans exist for new YLR interpretive panels on the west side of the overlook. Access to this overlook is by docent-guided tour only through the center of the LML facilities. Public access has and will be carefully controlled to prevent adverse impacts to the marine mammals, marine mammal research efforts, and YLR wildlife. (Corresponds to CCC suggestion #2)

E YLR upper lagoon overlook north of the LML Center for Ocean Health building (under construction). This is also an existing public access served by a temporary path and a bench at the overlook site. The site allows views of the back beach dune, lower and upper lagoon (both arms) and lagoon scrub side slopes. Although a temporary trail and open observation area exist, plans are in preparation to build a fully handicap accessible trail and a 'duck blind' observation shelter that will permit tour groups, students, researchers and permitted birdwatchers to observe the wildlife without disturbing it. The trail within YLR will be screened with native shrub species and will connect to a path to the Seymour Center. The observation area will have interpretive panels and areas for mounting spotting scopes (See Appendix IX for a conceptual drawing by Dr. Ken Norris). This observation area would be open to the general public on docent-guided tours and by application for individual birdwatching activities. (Corresponds to CCC suggestion #4)

F Observation area on McAllister Way just south of existing greenhouse structure. This site affords a possible location for additional views into the upper reserve. A sheltering structure (similar to the E structure but smaller and simpler) would need to be installed to permit easy viewing while protecting birds from disturbance. An interpretive panel would be installed with visitor guidelines to limit disturbance, and pictures of the most common birds of the lagoon. This observation site would be accessible to casual public viewing during daylight hours. YLR staff would monitor potential disturbance to wildlife and alter the structure or location if wildlife disturbance became a problem. (Corresponds to CCC suggestion #5)

Each overlook will have appropriate signage and interpretive panels that identify the major natural features that can be observed. Paths where necessary, especially to site E, will be marked appropriately and will be fully handicap accessible according to ADA regulations. The four suggested observation locations allow the public to view the entire Lagoon ecosystem. Other observation points indicated in previous maps of the area (i.e. suggestions 3 & 6) are either not feasible due to LML security concerns, or would cause significant wildlife disturbance. Some of these sites cannot be made accessible by ADA standards without extensive grading and habitat loss. Moreover, these additional sites afford no additional views of YLR not provided by the four proposed.

9. YLR Fencing Plan

Existing and proposed fencing and gates are shown in Appendix X and in the response to Condition 7.

Existing Fencing
The response to Condition 7 contains a complete list of all the previously obtained permits for fencing and a detailed description of fencing installed to date. Basically the north and west borders of the Reserve, adjacent to the Younger-Goode agricultural fields, are fenced with barbed wire. On-going agricultural operations by the property lessee also protect YLR from trespass. Existing berms and fences have also been constructed on the east Reserve boundary adjacent to LML. Berms or solid fencing between LML and other developments and the Reserve are very important as they reduce noise, light and motion impacts to wildlife caused by vehicles and people.

It should also be noted that temporary construction fencing is required for all construction activities adjacent to YLR in order to prevent inadvertent encroachment into the Reserve. LML and YLR staff monitor this fencing to insure compliance.

Proposed Fencing
Fencing around the YLR property is complete except for a board fence (similar to that behind the CDFG oiled wildlife facility) behind the planned UCSC Predatory Bird facility, the open area very close to McAllister Way and across from the NOAA facility (currently protected by shadecloth on the chainlink security fence). We hope that the density of the willows at the upper end of the east arm of the reserve will be sufficient top protect that area without additional fencing.

Details on proposed fencing for LML and the Seymour Center are in response #7 and in a map (Appendix X)..

SUMMARY AND CONCLUSIONS
YLR, operated as a UC/NRS natural reserve, closed to general public access, provides service in all three categories of the UC mission (teaching, research and public service) in ways not possible on lands unprotected from uncontrolled human disturbances. Further it supports the California Coastal Commission mandate to protect the coastal habitats for sensitive species.

We ask for Coastal Commission support for continued closure of YLR to the public except for the controlled access we have described, and for support of the Seymour Discovery Center of the LML which shares our mission of public education about research, science and conservation of natural resources. This request from the UCSC Natrual Reserves Office is supported by the Director of the NRS, Dr. Alex Glazer, in his letter (Appendix XI).

APPENDICES

I. Current Younger Lagoon Reserve Management Plan
II. NRS/Younger Lagoon Reserve fact sheets (plain)
III. Younger Lagoon Reserve species lists:
    a. Plants
    b. Birds
    c. Mammals
    d. Amphibians and Reptiles
IV. LML-YLR Public Access plan - A map
V. Four letters (Doyle, Penaat, Briggs, & Norris) from original 1981 submission for closure of YLR
VI. Disturbance and impacts of birds - A reference list
VII. Additional references obtained by John Gilchrist on human disturbance and wildlife
VIII. Letter from Santa Cruz Bird Club (J. Davis, President)
IX. Conceptual drawing (by Ken Norris) of the "duck blind" overlook
X. LML-YLR Fencing plan - Two maps (a & b) (see also response to condition #7)
XI. Letter from Natural Reserve System Director Alexander Glazer

YOUNGER LAGOON MANAGEMENT PLAN
Adapted from LML Development Plan, 1977
Current as of 2/1/00

APPENDIX I

HISTORY:

In 1974, Santa Cruz residents Donald and Marian Younger donated approximately 40 acres of land for the development of UC Santa Cruz' coastal marine station. This was a magnificent gift both in generosity and in significance to the University. The land is on the open coast at the western edge of the city of Santa Cruz. The site is physically separated from the campus by approximately 4.5 miles and is about a fifteen minute drive. It is served by the city bus line but access is difficult due to a relative long, if pleasant walk from the bus stop at the De Anza Trailer Park to the lab itself. Approximately 19 acres of the donated land is in the Younger Lagoon system, a small, relatively undisturbed ecosystem that has been surrounded by agriculture for most of this century. Until recently Younger Lagoon has been managed by the Long Marine Lab. It is now managed by UCSC's Natural Reserve Director and has a part-time steward.

The importance of the Younger Lagoon system as a long term study site was recognized by the Regents of the University of California in April 1986 when it was accepted into the U. C. Systemwide Natural Reserves System.

This preliminary management plan is derived from the management plan for the Long Marine Lab dated January 1, 1977. This plan also reflects the mission statement of the Natural Reserve System : "To make available to the University and research communities an array of reserves which broadly represent the ecological diversity of California and to manage these reserves in perpetuity as research study sites, classrooms and laboratories specializing in ecological field studies." Because the Younger Lagoon Reserve and the Long Marine Lab share space, history, developmental procedure and academic interests, it is important that they have coordinated management plans and cooperative management structures.

SITE DESCRIPTION:

Topography and geology:

The LML/Younger Lagoon site consists of three major topographic units: 1) front terrace, 2) back terrace, and 3) Younger Lagoon system (wetland, slopes and beach). The site is characterized by Santa Cruz Mudstone of Miocene age typical of the marine terrace formation of the Santa Cruz North Coast region. Underlying the mudstone at + 250 feet is the coarse sandstone of the Santa Margarita formation.

Younger Lagoon itself and the two sea caves near Terrace Point were caused by rock failure along Miocene jointsets in the mudstone. Wave cutting, combined with jointset failure near the cliff, is responsible for a moderate to slow rate of cliff retreat. No known active faults transect the site or the surrounding area, and the Santa Cruz Mudstone is a relatively stable unit. The Younger Lagoon system is thought to be approximately 100,000 years old.

The site soils vary in depth from extremely shallow at the cliff face (several inches) and very shallow on the lagoon slopes (1-2 feet), to an average of eight feet on the terraces. The soils are mainly in the Watsonville soil series, loam to clay loam in texture, with moderate to poor percolation.

The surface hydrology of the site is complex, although the watershed is only 180 acres in size and separated from the drainages that cross U. S. Route 1 (i.e. Moore Creek and Wilder Creek). The soils which overlie the impervious Santa Cruz Mudstone have poor percolation characteristics, causing precipitation to percolate slowly down to the impervious mudstone interface, and then flow laterally.

The Santa Margarita formation, an artesian water bearing, coarse-sand formation lying about 250 feet below the surface, provides a substantial ground water lens. The land is bordered on three sides by agricultural fields and runoff from irrigation provides most of the fresh water input to the lagoon except during the rainy season.

Marine Environment:

Long Marine Laboratory/Younger Lagoon Reserve are situated on the open coast, close to the west end of Monterey Bay. Monterey Bay is broadly open to the ocean. The bay is cut by the Monterey Submarine Canyon, with its head at Moss Landing and with one arm extending towards Soquel and another arm towards Carmel Bay. The Monterey Submarine Canyon, very poorly studied, is the largest along the California coast, and brings abyssal depths and the unusual creatures of these depths into Monterey Bay. The bay receives fresh water through three major drainages, the Salinas, Pajaro and San Lorenzo rivers.

Three relatively distinct marine seasons occur in this coastal area: the upwelling season, the oceanic season, and the Davidson Current season. The large, sluggish, California Current System moves southward all year, but at some distance offshore. Near shore surface currents, between the California Current and the coast, change direction under the influence of wind. During February through at least midsummer the prevailing coastal wind direction is from the north, driving the surface current to the south, and upwelling occurs. The upwelling brings nutrient laden, cold water close to shore, and because of the Monterey Submarine Canyon, into the bay. This is a period of high plankton growth and active food web dynamics. During September and October, the winds generally decrease in strength and frequency, the southward flowing near shore surface currents disappear, and water from the California Current System comes close to shore and enters the bay, bringing oceanic species. During the late fall and winter, storm winds from the south develop a surface current from the south, bringing the warmer water of the Davidson Current from southern California into the Monterey Bay area, and with it warm water plankton and other marine organisms. During high tides, the storms of winter often breach the surface of the Younger Lagoon beach, flushing the lagoon with sea water.

The combination of substrate geology, Monterey Submarine Canyon, and distinct marine seasons profoundly influence the diversity of plant and animal life in the Monterey Bay region. The shore and the coastal waters provide a rich variety of marine life (algae, invertebrates, fish, marine mammals, birds) and marine communities. Kelp forest, intertidal and sandy bottom communities are all well developed. The bay and open coast attract a number of resident and migrant marine mammals, including sea otters, whales, dolphins, seals, sea lions, and seabirds. Año Nuevo Island, another of the NRS reserves about 19 miles north of LML, is a unique location for the study of pinnipeds and small island biology.

Flora and fauna:

The Younger Lagoon system consists of five identified vegetation subsystems: coastal bluffs; beach and dunes; marsh; promontory; and lagoon slopes. Each presents a discrete microclimate.

The coastal bluffs facing the ocean and lagoon mouth support a variety of typical coastal wet scrub species. These species are adapted to salt spray, strong winds, and cliff erosion. The adaptations include succulent leaves which reduce evaporation, low growing mats which survive the winds, and extensive root systems which provide firm anchorage and water absorption during the dry summers.

The beach and dune area supports a typical strand community. Extreme conditions of wind and salt spray result in a sparse coverage of short grasses and succulents in this zone.

Marsh vegetation is found in the shallow waters and upper areas of the lagoon. The most limiting condition for this system is the fluctuation in salinity of the lagoon due to the breaking of the strand and consequent flushing of the lagoon, which occurs during very wet years. The transient nature of many species can be traced to this factor. Permanent species include pickle weed (*Salicornia*), cattail (*Typha*), and Tule (*Scirpus*). Clumps of willows (*Salix*) are found in the upper areas of the lagoon.

In the promontory area and on some east-facing slopes are areas supporting a large variety of grasses and herbs, native and introduced.

The lagoon slopes occurring beyond the immediate ocean influence support a typical northern coastal scrub community. This area gives indications of disturbance from adjacent agricultural activities. Characteristic species are hardy natives and weedy non-natives. These species form a dense cover, heavily utilized by the lagoon wildlife. Invasion by the non-native, poison hemlock (*Conium maculatum*) is a serious and ongoing problem. This weed has been in the area since the turn of the century and thrives in disturbed soils. A current list of plant species of the lagoon is appended (Appendix I).

The lagoon system is a relatively undisturbed wildlife area surrounded by agricultural fields and the Long Marine Lab facility. The nearest comparable terrestrial shrub vegetation is one third of a mile, while the nearest beach community is one half mile. Birds are the predominant wildlife.

Since the early 1970s (the onset of record keeping) over 200 species of birds have been seen in or near Younger Lagoon (see Appendix II for a bird species list). The list includes oceanic species seen on adjacent waters, transients headed to or from distant latitudes, and rare visitors from across the United States. Over half the species on the list are seasonal or year-round residents of the lagoon. These residents include a diverse range of species which for convenience can be considered as three main groups: shoreline birds, marsh birds and terrestrial birds.

The rather short stretch of shoreline at the lagoon hosts a diverse group of visitors. Foremost among these are the many shorebirds, gulls, etc. which forage and roost on the sandy beach, especially during winter and migration. Rock platforms, stacks, and cliffs support other shorebird species and provide safe roosts for pelicans and cormorants. A few species (Pigeon Guillemot, Black Phoebe) nest on inaccessible cliff ledges and other birds may do so if disturbance can be controlled.

Marsh birds is a catch-all category that includes those species that inhabit the lagoon and its shores. Most conspicuous on the water are ducks (20 species), grebes, and coots. Swans and geese occur periodically. Waders, including herons, egrets, and some shorebirds, forage in muddy substrate or seek shelter along protected banks. The Mallard and Pied-billed Grebe are the only marsh birds known to nest in the lagoon.

Over 100 species of land birds have been identified from the variety of terrestrial habitats at the lagoon. Fifteen species are known to nest within the reserve. Most numerous among these breeding birds are Red-winged Blackbird, House Finch, Song Sparrow, and White-crowned Sparrow. Landbird populations peak during winter when large numbers of sparrows, goldfinches, and other seed-eaters return south from high latitude nesting areas. Diversity is highest during migration (especially spring) when many species of colorful insectivores stop to rest and feed in the willows during their trip north. Sixteen types of raptors have been seen at the lagoon, including both the Peregrine Falcon and Golden Eagle.

The mammals of the lagoon system include the small, resident rodents, rabbits, gophers, and ground squirrels and the mid-sized predators, gray fox, coyote and bobcat, which presumably travel to and from the lagoon in search of food (there has been a report of a gray fox den in the reserve). A reported sighting of a red fox is cause for alarm as these decimate ground nesting birds. Bats are seen in the air. A current species list is appended (Appendix III). Several species on the list, taken from the WHR database, are not likely to occur this close to the coast. Feral and free roaming cats and dogs pose considerable concern as exotic predators. Red foxes, deadly exotic predators on ground nesting birds, occur in the region. Wild pigs, should they come into the lagoon, would also be a serious problem.

Reptiles and amphibians, expected or confirmed to occur in the lagoon, are listed as Appendix IV. Several species on the list, taken from the WHR database, are not likely to occur this close to the coast. One species, the bullfrog (*Rana catesbeiana)* is exotic and undesirable. The Federally listed Red-legged frog has been recorded in the area but there is no suitable breeding habitat in the reserve.

The fauna of the lagoon waters has yet to be surveyed. Sticklebacks (*Gasterosteus aculeatus*) have been confirmed. The lagoon shows evidence of wide fluctuations in salinity (natural and with season) and impacts from agricultural runoff.

MANAGEMENT:
Management Objectives:

The over-riding management objective is to provide the best possible environment for coastal-dependent and coastal-related research and educational activities that are supportive of the U. C. Santa Cruz campus' academic plan, are consistent with the mission and goals of the University of California Natural Reserve System, and serve the best interests and needs of the citizens of the State. Management flexibility to meet these objectives is essential.

General management policies were formulated by IMS faculty and staff during development of the March 1976 Final Environmental Impact Report on the proposed Coastal Marine Laboratory (now named the Joseph M. Long Marine Laboratory). These policies and others developed in setting up the Younger Lagoon Reserve under the U. C. Natural Reserve System are:

1) Lagoon Preservation. Since Younger Lagoon is one of the few remaining undisturbed wetlands in the Central Coast Region and is used as a stopping place and breeding ground by migratory waterfowl and other birds, the lagoon environment shall be preserved and protected.

2) Habitat Preservation. Since Younger Lagoon Reserve provides a remnant of several types of native coastal vegetation that serve as habitat for native animal species, vegetation management to maintain optimum diversity and eliminate weedy exotics should be practiced. Exotic animal species should be kept out of the lagoon.

3) Minimum facilities development in or immediately adjacent to the Reserve boundary. Only such structures as required to permit reasonable public use of the lagoon and required infrastructure for teaching and research should be permitted to abut into the lagoon system. Such developments should be designed to minimize disturbance to lagoon species while supporting legitimate uses.

4) Minimum Disturbance of Adjacent Uses. Minimum impact on the Younger Lagoon Reserve and its flora and fauna is important if the system is to remain a natural system, which, although obviously impacted by surrounding land uses, provides teaching and research opportunities. At the time of incorporation into the U. C. Natural Reserve System the adjacent land was zoned agricultural by Santa Cruz County. Extensive development or building in the immediate surroundings, would cause further isolation of lagoon species and additional disturbances to vegetation and wildlife. Such development should be minimized and carefully buffered from impacting the reserve.

5) Preservation of Scenic Values. The unique scenic value of the North Coast area and its view shed should be maintained. Therefore, any structures in or adjacent to the lagoon system should be designed for minimum visibility and should reflect the agricultural character typical of the area.

6) Facility Security. The boundary of the Lagoon is at the break in slope. There is evidence of repeated entry into the upper edges of the Lagoon and use as a toilet. In addition, access to the surf provides temptation to trespass. The reserve and the Long Marine Lab share concern about security and damage from such trespass. In order to protect the edge of the lagoon from these repeated entries that create erosion and disturb vegetation and wildlife the site should probably have security fencing.

7) Public Access. To ensure lagoon preservation, long term sustainability of wildlife and plant populations and facility security, public access to the site will be controlled. General public access will be limited to overlooks, specifically developed to permit observation without disturbance to lagoon species, and will be escorted. Entry into the lagoon shall be for teaching and/or research purposes and shall be by permission only.

In addition, specific management objectives that preserve, conserve or restore the habitats of the reserve should be developed. These include, but are not limited to: removal of exotic species, plant or animal; replacement of exotic vegetation with locally derived native plant species; management of senescent vegetation to assure continued habitat quality; development of a plan to assure water quality in the lagoon; monitoring to develop a database on lagoon species and environmental conditions; and other management strategies as appropriate to the reserve goals.

Management Elements.

Control of Access:

The Younger Lagoon system historically had not been open to the public except for some use of the beach and the donors specifically expected the area to remain undisturbed. A wetland natural study area was considered a distinctive opportunity by LML planners because of increased coastal wetland habitat disturbance and destruction by the ever-increasing public access to and use of coastal areas. The proximity of the Younger Lagoon system to research facilities was an important consideration for controlling people access to this sensitive wetland region.

A high priority of coastal planning is the identification of sensitive natural areas and to manage human activities so that these areas remain available for future generations of people. Because Younger Lagoon is adjacent to an urban center (City of Santa Cruz), human activity adjacent to and in the wetland area itself must be carefully controlled.

The key elements of the management plan to control people access to and use of the wetland area are:

1. Restrict access to the lagoon and beach except as indicated below.

2. Recognize a need to provide public use of the coast by developing programs to permit public access to the resource without destruction of it. Specific ideas for such public use include but are not limited to:

Docent-lead tours of the area for educational purposes.

Develop overlooks that will provide opportunity to observe the lagoon wildlife without disturbance to it.

Development of demonstration native plant areas located at the lab site and on the approach to the Reserve overlooks.

Develop brochures for use in bird watching or general observation of the reserve habitats and activities.

Develop public awareness and support for maintaining the area as a bird sanctuary and natural area through newspaper articles and other forms of communication.

3. Require that all research and educational activities requiring access into the Younger Lagoon Reserve be approved by the UCSC Natural Reserve Director.

4. Require all users restrict their activities to the specific trails and viewpoints required for their approved purpose and that they register at the LML office prior to entry into the Reserve.

5. Strategically place appropriate signs to apprise people that the area is for research and educational use only and is not open for recreational use.

6. Enforce trespass and parking restrictions as required.

7. Collect data on the reserve that can be used to monitor changes in the reserve as surrounding activities change (i.e. exclusion of human activity, etc.).

Care of the Natural Systems:

1. Develop a database on the species and communities of the Reserve.

2. Encourage programs, such as the bird banding project and student projects, that provide significant database for the Reserve.

3. Develop programs to monitor the impact of agriculture on the erosion and biological activity of the wetlands and on any adjacent land use on the natural system in general.

4. Develop a plan to eliminate the poison hemlock from the reserve and its surroundings and to replace it with locally collected - propagated native plant species.

5. Respond to any emerging impacts on the integrity of the reserve and its flora and fauna by developing and implementing specific plans to deal with the problem.

6. Work with adjacent land users to encourage land use practices that enhance the reserve's natural systems, or at minimum do not increase negative impacts to the natural inhabitants of the reserve.

Management of the Younger Lagoon as a Natural Reserve System reserve:

1. Encourage and support teaching and research projects into the natural systems of the reserve.

Because of the proximity it would be most economic to provide the Long Marine Lab caretaking staff with the task of security for the lagoon. A reserve steward for both the UCSC Campus Reserve and the Younger Lagoon Reserve s more of the hands on management the Lagoon will need as it becomes increasingly impacted by surrounding developments and more guidance of student projects and monitoring of reserve changes over time.

Younger Lagoon Reserve

APPENDIX II

SITE SPECS

ADMINISTERING CAMPUS
UC Santa Cruz

ESTABLISHED
1987

LOCATION
Santa Cruz County, 7 km (4.5 mi) from main Santa Cruz campus in Westside Santa Cruz; adjacent to the UC Santa Cruz Long Marine Laboratory (LML).

SIZE
10 ha (26 acres)

ELEVATION
0 to 15 m (50 ft)

AVERAGE TEMPERATURES
Winter: 12°C (54°F)
Summer: 15°C (59°F)

AVERAGE PRECIPITATION
62 cm (24 in) per year

FACILITIES
Observation platform and access trail provide wheelchair access and full view of beach area without disturbance to wildlife or plants; no on-site housing or laboratory facilities; site best suited for day use.

PERSONNEL
Reserve director and steward on Santa Cruz campus; no personnel on site.

DATABASES
Annotated checklist of over 100 bird species documented on site available at Long Marine Lab bookstore.

CONTACT INFORMATION
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NRS WEBSITE
<http://nrs.ucop.edu>

One of the few relatively undisturbed wetlands remaining on the California Central Coast, the Younger Lagoon Reserve encompasses a remnant Y-shaped lagoon on the open coast just north of Monterey Bay. The site cuts into the Santa Cruz mudstone terrace system, which lies above the Santa Margarita Sandstone formation. Portions of an impressive, natural, free-standing sea wall remain. Most of the time, the lagoon is cut off from the ocean by a barrier sand bar. Infrequently, the mouth of Younger Lagoon opens temporarily to ocean waters. Rich in plant and animal life, the lagoon system provides protected habitat for 100 resident and migratory bird species. Approximately 25 species of water and land birds breed at the reserve, while more than 60 migratory bird species overwinter or stop there to rest and feed. Opossums, weasels, brush rabbits, and harvest mice are known to occupy the lagoon; foxes and bobcats have also been sighted. Terrestrial insects and marine invertebrates are abundant. Lush reserve habitats — salt and freshwater marsh, backdune pickleweed flat, steep bluffs with dense coastal scrub, pocket beach, grassland, and dense willow thickets — provide outstanding opportunities for research and teaching. Diverse university courses using the site include environmental field methods, field sketching, environmental planning and policy, biology, natural history, environmental toxicology, plant systematics, independent studies, and senior theses.

SELECTED RESEARCH

Effects of adjacent developments on vegetation communities and resident and migratory wildlife.

Environmental impacts of lagoon isolation.

SPECIAL PROGRAMS

Habitat restoration: Removal of invasive poison hemlock; development of a mature, diverse coastal scrub; some of this work performed by UC Santa Cruz undergraduates.

Water-quality monitoring: Future development of a sampling program for lagoon waters.

Reserve website: UCSC students helped create an extensive website with information, photos, and sounds: <http://natsci.ucsc.edu/admin/ucreserve/YoungerLagoon/younger.htm>.

10/25/99 sgr

The University of California Natural Reserve System

Our Mission

The mission of the Natural Reserve System is to contribute to the understanding and wise management of the Earth and its natural systems by supporting university-level teaching, research, and public service at protected natural areas throughout California.

Why the NRS Came to Be

By the late 1950s, disruption and loss of wildland field sites in California had already become a significant problem for university researchers and educators in the natural sciences. The state's population was increasing rapidly, and development had accelerated to such a pace that few places remained safe from disruption, even on protected public lands.

As a growing proportion of California's natural landscapes became unusable for wildland or natural ecosystem research and teaching, University faculty stated a need for natural areas managed specifically for academic use — samples of natural ecosystems where they could undertake long-term projects with confidence that their teaching and research sites would remain undisturbed.

Accordingly, in January of 1965, The Regents of the University of California established the Natural Land and Water Reserves System — as the Natural Reserve System was first known — and designated seven University-owned sites as its first reserves. Today the NRS manages 33 reserves that encompass over 120,000 acres across 12 ecological regions in one of the most physiographically diverse U.S. states.

Introduction

Over 30 years ago, the University of California Natural Reserve System (NRS) began to assemble, for scientific study, a system of protected sites that would broadly represent California's rich ecological diversity. By creating this system of outdoor classrooms and laboratories and making it available specifically for long-term study, the NRS supports a variety of disciplines that require field work in wildland ecosystems.

The NRS makes relatively undisturbed samples of the state's natural ecosystems — and the facilities needed to support teaching and research — available not only to students, teachers, and researchers from the University of California, but to any qualified user from any institution, public or private, throughout the world. While other colleges and universities may have one or more sites for fieldwork, none can match the size, scope, and ecological diversity of the NRS. The NRS is the large university-operated system of natural reserves in the world.

Teaching

The NRS supports university-level learning

The NRS is often accurately described as a classroom without walls or a library of ecosystems. Such descriptions recognize that, in order to study the environment, one must go out into it and learn through direct observation and measurement. Those who've experienced university instructional programs conducted in the field will attest: such programs promote learning that cannot be readily achieved in the classroom.

Field study is an important dimension of many disciplines, and the NRS supports a wide variety of disciplines that require field sites. These disciplines include, but are not limited to: botany, entomology, zoology, geology, geography, meteorology, archaeology, paleontology, ecology, environmental planning, wildlife management, public health, even the arts. No limits of a disciplinary sort are normally imposed at NRS sites. The use of the reserves for photography by university-level classes or the composition of outdoor writing — two areas involving landsc interpretation and inspiration — are fully as valid as a natural science project.

NRS Reserves

- Angelo Coast Range Reserve
- Año Nuevo Island Reserve
- Bodega Marine Reserve
- Box Springs Reserve
- Boyd Deep Canyon Desert Research Center
- Burns Piñon Ridge Reserve
- Carpinteria Salt Marsh Reserve
- Chickering American River Reserve
- Coal Oil Point Natural Reserve
- Dawson Los Monos Canyon Reserve
- Eagle Lake Biological Field Station
- Elliott Chaparral Reserve
- Emerson Oaks Reserve
- Fort Ord Natural Reserve
- Hastings Natural History Reservation
- James San Jacinto Mountains Reserve
- Hans Jenny Pygmy Forest Reserve
- Jepson Prairie Reserve
- Kendall-Frost Mission Bay Marsh Reserve
- Landels-Hill Big Creek Reserve
- McLaughlin Natural Reserve
- Motte Rimrock Reserve
- Quail Ridge Reserve
- San Joaquin Freshwater Marsh Reserve
- Santa Cruz Island Reserve
- Scripps Coastal Reserve
- Sedgwick Reserve
- Sierra Nevada Aquatic Research Laboratory (SNARL) / Valentine Eastern Sierra Reserve
- Stebbins Cold Canyon Reserve
- Stunt Ranch Santa Monica Mountains Reserve
- Sweeney Granite Mountains Desert Research Center
- Valentine Camp / Valentine Eastern Sierra Reserve
- Younger Lagoon Reserve

NRS reserves vary in size, remoteness, degree of human impact, and ability to support use. Twelve of 33 sites currently are, or are envisioned as, full-facility reserves, possessing the facilities, equipment, and professional staff necessary to support long-term research projects and multiweek field courses remote from campus services. Nine sites have or will have partial facilities and professional staff. The remaining sites lack improvements other than possible restrooms or trails; they typically share the facilities of a nearby campus or full-service reserve.

Research

The NRS provides a laboratory for research

Researchers view the NRS reserves as outdoor laboratories: sites where they can analyze natural systems, comprehend important, basic, ecological principles, and attain better understanding of the impact of humankind upon the world and it upon us. Thus, the NRS is contributing to the solution of such problems as wildland conversion and loss of native biodiversity, environmental deterioration, and water conservation.

Some reserves serve as representative sites for carrying out studies with regional implications. Others are unique and so allow scientists to conduct site-specific research — work that cannot be carried out anywhere else in the world. Yet, at all NRS reserves, scientists pursue their studies untroubled by the frequent and unpredictable human disturbances that afflict those who attempt to work on public land. The reserves themselves remain relatively free from the varying degrees of disruption that natural habitats elsewhere sustain under the pressures of growing population, urbanization, and intensified use of natural resources. This happy state of affairs means that scientists can use NRS reserves to establish baseline conditions and accurately measure environmental change.

Additional support for research evolves from the fact that NRS reserves draw scientists from many institutions and a variety of fields. Various NRS sites serve as catalysts for interdisciplinary studies, as "think tanks" where collaboration and mutual inspiration are common. Such robust intellectual cross-pollination creates a fertile climate for teaching as well, wherever students have a firsthand opportunity to conduct scientific study and interact with outstanding researchers in a less formal setting.

Public Service

The NRS serves the public in many ways

Teaching and research are the principal activities on NRS reserves, and these endeavors benefit the public indirectly. However, the NRS also serves the public directly by making its reserves and facilities available to government agencies

For more information about the NRS

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NRS Publications Program

All NRS systemwide publications are available upon request. For a current list of brochures and back issues of our newsletter, the *Transect*, contact the systemwide office. *Transect* is published biannually, and subscriptions are free of charge.

Public Service continued

conservation groups, and other appropriate organizations — and by collaborating with these entities to protect the state's natural resources. While reserve use is by permission only and all uses of NRS reserves must be consistent with the University's teaching and research objectives, the NRS makes every effort to allow the general public to visit its reserves and learn of the work conducted there.

The NRS serves the public in many far-reaching ways. One very important way is by providing unparalleled opportunities for the environmental education of K-12 youth (kindergarten through 12th grade) in both elementary/secondary schools and informal instruction programs. Because the NRS is a University-administered program, many people do not realize that all of our University campuses are involved with K-12 education on their reserves. Moreover, resident reserve staff and their families often play leadership roles in the process, not only hosting groups of schoolchildren, but also designing instructional projects, compiling collections & databases, teaching students directly, and coordinating demonstrations by resident and visiting scientists.

NRS reserves help to preserve biodiversity and conserve genetic resources by protecting natural communities and rare, threatened, or endangered species for further study. In addition, NRS personnel provide technical consultation on such important community concerns as watershed protection, fire suppression, regional resource management, and potential land-use impacts.

The most basic rules of the world — the ones we all live by — are ecological rules. You can't study them or even perceive them very well in a classroom or laboratory. It is imperative to go out on the mountainside, watch the rain fall over a valley, dig into the earth beneath a fallen tree, or wade a creek for cobbles with sources upstream. The best work in the natural disciplines all starts with observations in nature.

We need those wild places where we can study nature firsthand, places where all the intricacy and marvel of the natural world is intact. Everywhere, including California, those places are becoming fewer — and more precious.

— Kenneth S. Norris, Founder of the UC Natural Reserve System

The University of California Natural Reserve System

NRS RESERVES LISTED BY ADMINISTERING UC CAMPUS

BERKELEY
1. Angelo Coast Range Reserve
2. Chickering American River Reserve
3. Hastings Natural History Reservation
4. Jenny Pygmy Forest Reserve

DAVIS
5. Bodega Marine Reserve
6. Eagle Lake Field Station
7. Jepson Prairie Reserve
8. McLaughlin Natural Reserve
9. Quail Ridge Reserve
10. Stebbins Cold Canyon Reserve

IRVINE
11. Burns Piñon Ridge Reserve
12. San Joaquin Freshwater Marsh Reserve

LOS ANGELES
13. Stunt Ranch Santa Monica Mountains Reserve

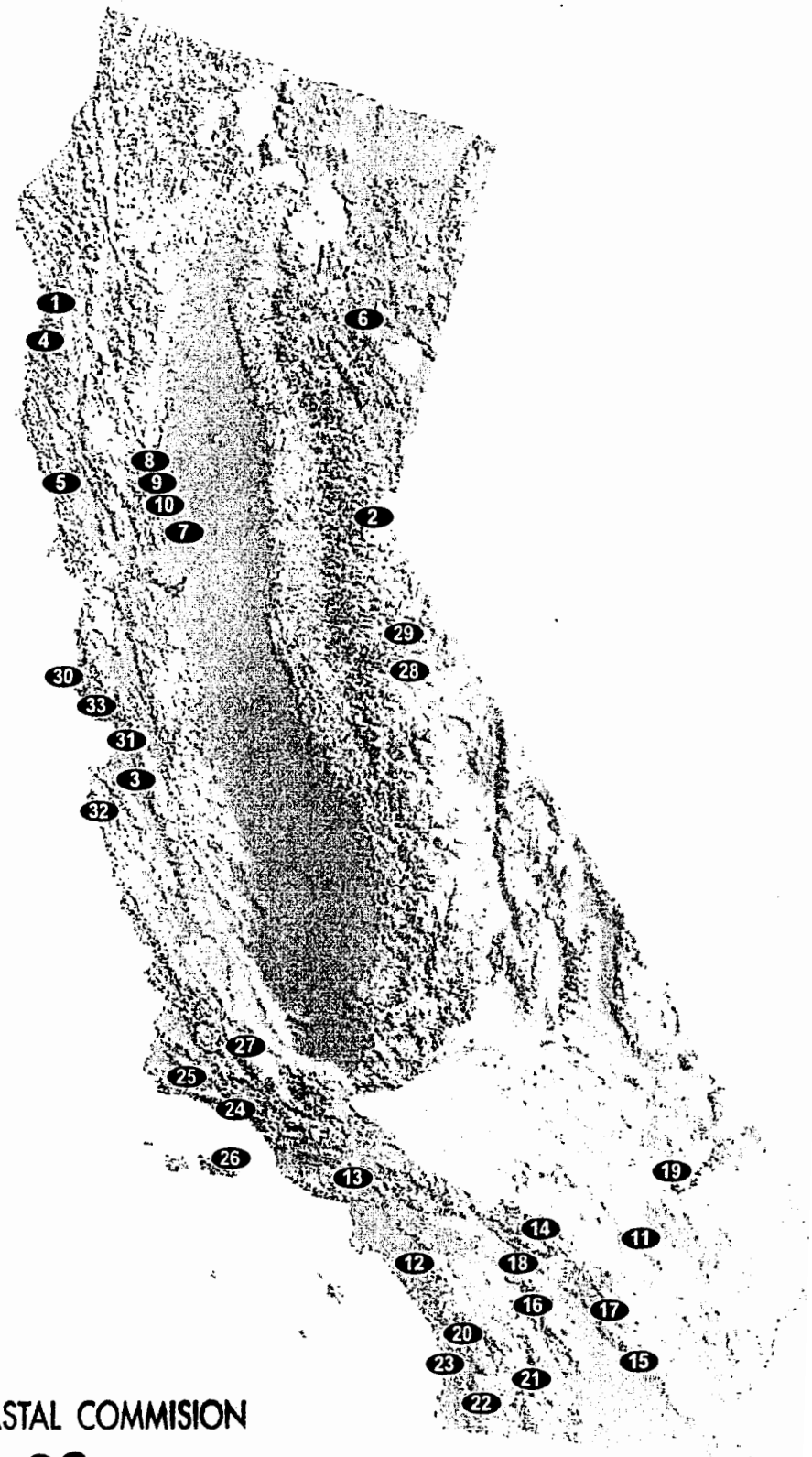
RIVERSIDE
14. Box Springs Reserve
15. Boyd Deep Canyon Desert Research Center
16. Emerson Oaks Reserve
17. James San Jacinto Mountains Reserve
18. Motte Rimrock Reserve
19. Sweeney Granite Mountains Desert Research Center

SAN DIEGO
20. Dawson Los Monos Canyon Reserve
21. Elliott Chaparral Reserve
22. Kendall-Frost Mission Bay Marsh Reserve
23. Scripps Coastal Reserve

SANTA BARBARA
24. Carpinteria Salt Marsh Reserve
25. Coal Oil Point Natural Reserve
26. Santa Cruz Island Reserve
27. Sedgwick Reserve

Valentine Eastern Sierra Reserves:
28. Sierra Nevada Aquatic Research Laboratory
29. Valentine Camp

SANTA CRUZ
30. Año Nuevo Island Reserve
31. Fort Ord Natural Reserve
32. Landels-Hill Big Creek Reserve
33. Younger Lagoon Reserve



CALIFORNIA COASTAL COMMISION
EXHIBIT B.28

:/99

APPENDIX III a

THE PLANT SPECIES OF THE YOUNGER LAGOON RESERVE

last edited March 7, 1996

These data are from surveys conducted by Randall Morgan and by students from UCSC working on survey projects over the course of many years.

Native Plant Species of Younger Lagoon Reserve:

Ferns:

Dryopteris arguta (coastal wood fern)
Polypodium californicum (california polypody)
Polystichum munitum (sword fern)
Pteridium aquilinum var. *pubescens* (bracken fern)

Grasses:

Agrostis diegoensis (bent grass)
Bromus marginatus var. *maritimus* (seaside large mountain brome grass)
Carex obnupta (slough sedge)
Cyperus eragrostis (tall cyperus)
Distichlis spicata var. *stolonifera* (saltgrass)
Elymus glaucus (blue wild rye)
Festuca rubra (creeping red fescue)
Hordeum brachyantherum (meadow barley)
Juncus balticus or mexicanus (baltic rush)
Juncus effusus brunneus (bog rush)
Juncus patens (western rush)
Leymus triticoides (alkali rye grass)
Melica torreyana (Torrey's Melica)
Nassella pulchra (purple needlegrass)
Scirpus americanus (3 square sedge)
Scirpus californicus (bulrush)
Scirpus ceruus var. californicus (low club rush)
Scirpus robustus (prairie bulrush)

Herbs and shrubs:

Abronia latifolia (yellow sand verbena)
Abronia umbellata (pink sand verbena)
Acaena californica (California acaena)
Achillea millefolium (yarrow)
Aesculus californica (buckeye)
Armeria maritima (sea pink)
Artemesia californica (california sagebrush
Artemisia douglasiana (Douglas' mugwort)
Artemesia pycnocephala (beach sagewort)
Aster chilensis (common California aster)
Atriplex patula (saltbush)
Baccharis douglasii (salt marsh baccharis)
Baccharis pilularis (coyote brush)

**Cammisonia ovata* (suncups)
Chenopodium macrospermum var. farinosum (coast goosefoot)
Clorogalum pomeridianum (soap plant)
Convolvulus occidentalis (western morning-glory)
Convolvulus soldanalla (beach morning-glory
Corethrogyne filaginifolia var. rigida (common corethrogyne)
Dudleya farinosa (bluff lettuce)
Epilobium watsonii var franciscanum (San Francisco willow herb)
Epilobium sp. (willow herb)
Erigeron glauca (seaside daisy)
Eriogonum latifolium (coastal buckwheat)
Eriophyllum staechadifolium (seaside wooly sunflower)
Escholtzia californica (california poppy)
Frankenia grandifolia (alkali heath)
Franseria chamissonis (beach bur)
F. chamissonis ssp. bipinnatisect (beach bur)
Galium ssp. (bedstraw)
Gnaphalium californicum (California cudweed)
Gnaphalium chilense (cudweed, cotton batting plant)
Gnaphalium ramosissimum (pink everlasting)
Gnaphalium luteo-Album (ppearly everlastings)
Grindelia latiflolia (coastal gum plant)
Heliotropium curassanicum (seaside heliotrope)
Horkelia californica (California horkelia)
Jaumea carnosa (fleshy jaumea)
Lupinus albifrons (silver leaf lupine)
Lupinus arboreus var. *arboreus* (yellow tree lupine)
Marah fabaceus (wild cucumber)
Mimulus auranticus (stickey monkey flower)
Montia perfoliata (miner's lettuce)
Oenanthe sarmentosa (pacific oenanthe)
Oxalis pilosa (hairy wood sorrel)
Plantago juncoides var. californica (California seaside plantain)
Potentilla egedii var. grandis (Pacific silverweed)
Rhamnus californica (cofffeeberry)
Ranunculus californicus (california buttercup)
Rosa californica (California wild rose)
Rubus ursinus (blackberry)
Rumex salicifolius (willow-leaved dock)
Salicornia virginica (pickleweed)
Salix lasiolepis (arroyo willow)
Sambucus callicarpa (red elderberry)
Sanicula arctopoides (footsteps of spring)
Sanicula crassicaulus (sanicle)

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Scrophularia californica (bee plant)
**Sidalcea malvaeflora* (checkerbloom)
**Sisyrinchium bellum* (blue eyed grass)
Spergularia macrotheca (large-flowered sand spurry)
Stachys bullata (hedge nettle)
Symphoricarpus albus (snowberry)
Toxicodendron diverilobum (poison oak)
Urtica holosericea (hoary nettle)
Zygadenus fremontii (Fremont's star lily)

Introduced Plant Species of Younger Lagoon Reserve:
Grasses:
*Avena barbata (*wild oats)
*Bromus diandrus (*ripgut brome)
Bromus mollis (soft cress)
*Hordeum leporinum (*foxtail barley)
*Lolium multiflorum (*annual ryegrass)
Polypogon monspeliensis (rabbit's foot grass, beard grass)
Vulpia myorus (six weeks grass)
Herbs and shrubs:
*Anagalus arvensis (*scarlet pimpernel (some blue)
*Brassica campestris (*field mustard)
Brassica nigra (black mustard)
Carduus pycnocephalus (Italian thistle)
Cirsium arvense (Canada thistle)
Cirsium vulgare (bull thistle)
Conium maculatum (poison hemlock)
Conyza canadensis (horseweed)
Cotula coronopiflolia (brass buttons)
Erodium bothyrus (stork's bill)
Gnaphalium luteo-album (pearly everlasting)
Malva nicaeensis (bull mallow)
Medicago lupulina (bur clover)
Mesembryanthemum chilense (ice plant)
Melilotus indicus (Indian melilot)
Picris echioides (warty ox tongue)
Plantago coronopus (cut-leaved plantain)
Plantago lanceolata (English plantain)
Raphinus sativa (wild radish)
Rumex crispus (curly (yellow) dock)
Sonchus asper (prickly sowthistle)

APPENDIX III b

THE BIRD SPECIES OF THE YOUNGER LAGOON RESERVE

Annotated list by Breck Tyler

(HABITATS: L=lagoon, O=ocean, B=brush, C=coastal, M=marsh, F=field, W=willows)

See also Tyler, William Breck. 1988.
Annotated Checklist of the Birds of Younger Lagoon Reserve.
Institute of Marine Sciences Publication #10, UCSC.

Species	Habitats
Red-throated Loon	LO
Pacific Loon	LO
Common Loon	LO
Pied-Billed Grebe	L
Horned grebe	LO
Red-necked Grebe	LO
Eared Grebe	LO
Western Grebe	LO
Clarke's Grebe	O
Northern Fulmar	O
Pink-footed Shearwater	O
Buller's Shearwater	O
Sooty Shearwater	O
Black-vented Shearwater	O
Brown Pelican	OC
Double-crested Cormorant	LOC
Brandt's Cormorant	OC
Pelagic Cormorant	OC
Magnificent Frigatebird	O
American Bittern	LM
Great Blue Heron	L
Great Egret	LF
Snowy Egret	LF
Cattle Egret	LF
Green-backed Heron	L
Black-crowned Night-Heron	L
Tundra Swan	L
Mute Swan	L
Snow Goose	O
Brant	L
Canada Goose	LF
Green-winged Teal	LF
Mallard	LF
Northern Pintail	LF
Cinnamon Teal	LF
Northern Shoveler	LF
Gadwall	L
Eurasian Wigeon	L
American Wigeon	L
Ring-necked Duck	L

Greater Scaup	L
Lesser Scaup	L
Harlequin Duck	O
Black Scoter	O
Surf Scoter	LO
White-winged Scoter	LO
Common Glodeneye	L
Bufflehead	L
Hooded Merganser	L
Red-breasted Merganser	LO
Ruddy Duck	L
Turkey Vulture	F
Osprey	LC
Black-Shouldered Kite	FW
Northern Harrier	LBF
Sharp-shinned Hawk	BW
Cooper's Hawk	BW
Red-shouldered Hawk	FW
Red-tailed Hawk	F
Ferruginous Hawk	F
Rough-legged Hawk	F
Golden Eagle	F
American Kestrel	BF
Merlin	F
Peregrine Falcon	F
Ring-necked Pheasant	B
California Quail	BW
Virginia Rail	LM
Sora	LM
Common Moorhen	LM
American Coot	L
Black-bellied Plover	LCF
Snowy Plover	C
Semipalmated Plover	LC
Killdeer	LCF
American Black Oystercatcher	C
Black-necked Stilt	L
American Avocet	L
Greater Yellowlegs	LF
Lesser Yellowlegs	LCF
Willet	LCF
Wandering Tattler	C
Spotted Sandpiper	LC
Whimbrel	CF
Long-billed Curlew	F
Marbled Godwit	LC
Ruddy Turnstone	C
Black Turnstone	C

Surfbird	C
Sanderling	LC
Western Sandpiper	LCF
Least Sandpiper	LCF
Baird's Sandpiper	L
Pectoral Sandpiper	L
Dunlin	L
Short-billed Dowitcher	LF
Long-billed Dowitcher	LF
Common Snipe	LF
Red-necked Phalarope	LOF
Red Phalarope	LOF
Pomarine Jaeger	O
Parasitic Jaeger	O
Bonaparte's Gull	LOF
Heermann's Gull	LOC
Mew Gull	OC
Ring-billed Gull	CF
California Gull	LOCF
Herring Gull	OC
Thayer's Gull	OC
Western Gull	OC
Glaucous-winged Gull	OC
Black-legged Kittiwake	OC
Sabine's Gull	O
Caspian Tern	LO
Elegant Tern	LO
Common Tern	LO
Arctic Tern	O
Forster's Tern	LO
Common Mure	O
Pigeon Guillemont	OC
Marbled Murrelet	O
Ancient Murrelet	O
Rhinoceros Auklet	O
Rock Dove	F
Band-tailed Pigeon	BFW
Mourning Dove	BFW
Common Barn-owl	FW
Great Horned Owl	FW
Burrowing Owl	F
Short-eared Owl	FW
Black Swift	LF
Vaux's Swift	LF
White-throated Swift	LF
Anna's Hummingbird	BW
Rufous Hummingbird	BW
Allen's Humingbird	BW

Belted Kingfisher	L
Downy Woodpecker	BW
Common Flicker	B
Western Wood-Peewee	BW
Willow Flycatcher	W
Western Flycatcher	W
Black Phoebe	LBF
Say's Phoebe	BF
Ash-throated Flycatcher	BW
Tropical Kingbird	BF
Western Kingbird	F
Horned Lark	F
Tree Swallow	LF
Violet-green Swallow	LF
Northern Rough-winged Swallow	LF
Cliff Swallow	LF
Barn Swallow	LF
Scrub Jay	BW
American Crow	F
Common Raven	F
Chestnut-backed Chickadee	BW
Bushtit	BW
Bewick's Wren	B
House Wren	BW
Marsh Wren	LBM
Golden-crowned Kinglet	W
Ruby-crowned Kinglet	BW
Swainson's Thrush	W
Hermit Thrush	BFW
American Robin	BFW
Wrentit	BW
Northern Mockingbird	BF
Sage Thrasher	BW
Yellow Wagtail	LB
Water Pipit	LF
Cedar Waxwing	BF
Loggerhead Shrike	BF
European Startling	BF
Warbling Vireo	BW
Orange-crowned Warbler	BW
Yellow Warbler	W
Yellow-rumped Warbler	BFW
Townsend Warbler	BW
Palm Warbler	BW
Northern Waterthrush	W
MacGillivray's Warbler	W
Common Yellowthroat	LBMW
Wilson's Warbler	BW

Indigo Bunting	BF
Dickcissel	F
Rufous-sided Towhee	BW
Brown Towhee	BW
Chipping Sparrow	BF
Clay-colored Sparrow	BF
Vesper Sparrow	BF
Lark Sparrow	BF
Savannah Sparrow	BF
Fox Sparrow	BF
Song Sparrow	BMFW
Lincoln's Sparrow	BFW
Swamp Sparrow	LBF
White-throated Sparrow	BF
Golden-crowned Sparrow	BF
White-crowned Sparrow	BF
Dark-eyed Junco	BFW
Lapland Longspur	F
Bobolink	F
Red-winged Blackbird	BMF
Tricolored Blackbird	BMF
Western Meadowlark	F
Rusty Blackbird	LF
Brewer's Blackbird	F
Brown-headed Cowbird	B
Hooded Oriole	W
Northern Oriole	W
House Finch	BFW
Pine Siskin	BFW
Lesser Goldfinch	BFW
Lawrence's Goldfinch	BF
American Goldfinch	BFW
House Sparrow	F

APPENDIX III c

SPECIES NAME	SCIENTIFIC NAME	FAMILY	STATUS
VIRGINIA OPOSSUM	Didelphis virginiana	DIDELPHIDAE	X
VAGRANT SHREW	Sorex vagrans	SORICIDAE	X*
ORNATE SHREW	Sorex ornatus	SORICIDAE	
TROWBRIDGE'S SHREW	Sorex trowbridgii	SORICIDAE	
BROAD-FOOTED MOLE	Scapanus latimanus	TALPIDAE	
YUMA MYOTIS	Myotis yumanensis	VESPERTILIONIDAE	X*
LONG-EARED MYOTIS	Myotis evotis	VESPERTILIONIDAE	
FRINGED MYOTIS	Myotis thysanodes	VESPERTILIONIDAE	
LONG-LEGGED MYOTIS	Myotis volans	VESPERTILIONIDAE	
CALIFORNIA MYOTIS	Myotis californicus	VESPERTILIONIDAE	
WESTERN PIPISTRELLE	Pipistrellus hesperus	VESPERTILIONIDAE	
BIG BROWN BAT	Eptesicus fuscus	VESPERTILIONIDAE	
RED BAT	Lasiurus cinereus	VESPERTILIONIDAE	
TOWNSEND'S BIG-EARED BAT	Plecotus townsendii	VESPRTILIONIDAE	
PALLID BAT	Antrozous pallidus	VESPERTILIONIDAE	
BRAZILIAN FREE-TAILED BAT	Tadarida brasiliensis	MOLOSSIDAE	
WESTERN MASTIFF BAT	Eumops perotis	MOLOSSIDAE	
BRUSH RABBIT	Sylvilagus bachmani	LEPORIDAE	X
CALIFORNIA GROUND SQUIRREL	Spermophilus beecheyi	SCIURIDAE	X
BOTTA'S POCKET GOPHER	Thomomys bottae	GEOMYIDAE	X
WESTERN HARVEST MOUSE	Reithrodontomys megalotis	CRICETIDAE	X
DEER MOUSE	Peromyscus maniculatus	CRICETIDAE	X
PINYON MOUSE	Peromyscus truei	CRICETIDAE	
DUSKY-FOOTED WOODRAT	Neotoma fuscipes	CRICETIDAE	X
CALIFORNIA VOLE	Microtus californicus	CRICETIDAE	X
NORWAY RAT	Rattus norvegicus	MURIDAE	X,E
HOUSE MOUSE	Mus musculus	MURIDAE	X,E
COYOTE	Canis latrans	CANIDAE	X
RED FOX	Vulpes vulpes	CANADAE	?, E
GRAY FOX	Urocyon cinereoargenteus	CANIDAE	X
RACCOON	Procyon lotor	PROCYONIDAE	X
LONG-TAILED WEASEL	Mustela frenata	MUSTELIDAE	X
STRIPED SKUNK	Mephitis mephitis	MUSTELIDAE	X
MOUNTAIN LION	Felis concolor	FELIDAE	?
BOBCAT	Felis rufus	FELIDAE	X
CALIFORNIA SEA LION	Zalophus californianus	OTARIIDAE	B
HARBOR SEAL	Phoca vitulina	PHOCIDAE	B
WILD PIG	Sus scrofa	SUIDAE	E
MULE DEER	Odocoileus hemionus	CERVIDAE	X

X = CONFIRMED BY SURVEYS BY SIGHTING, TRAPPING, PHOTO STATION, TRACKS OR SIGN
X* = SHREW NOT IDENTIFIED TO SPECIES, BATS WERE SIGHTED FLYING, NO SPECIFIC ID
B = ON THE BEACH
E = EXOTIC SPECIES, TO BE KEPT OUT
? = REPORTED CASUAL SIGHTING

APPENDIX III d

YOUNGER LAGOON RESERVE - Expected list for amphibians and reptiles (from WHR database):

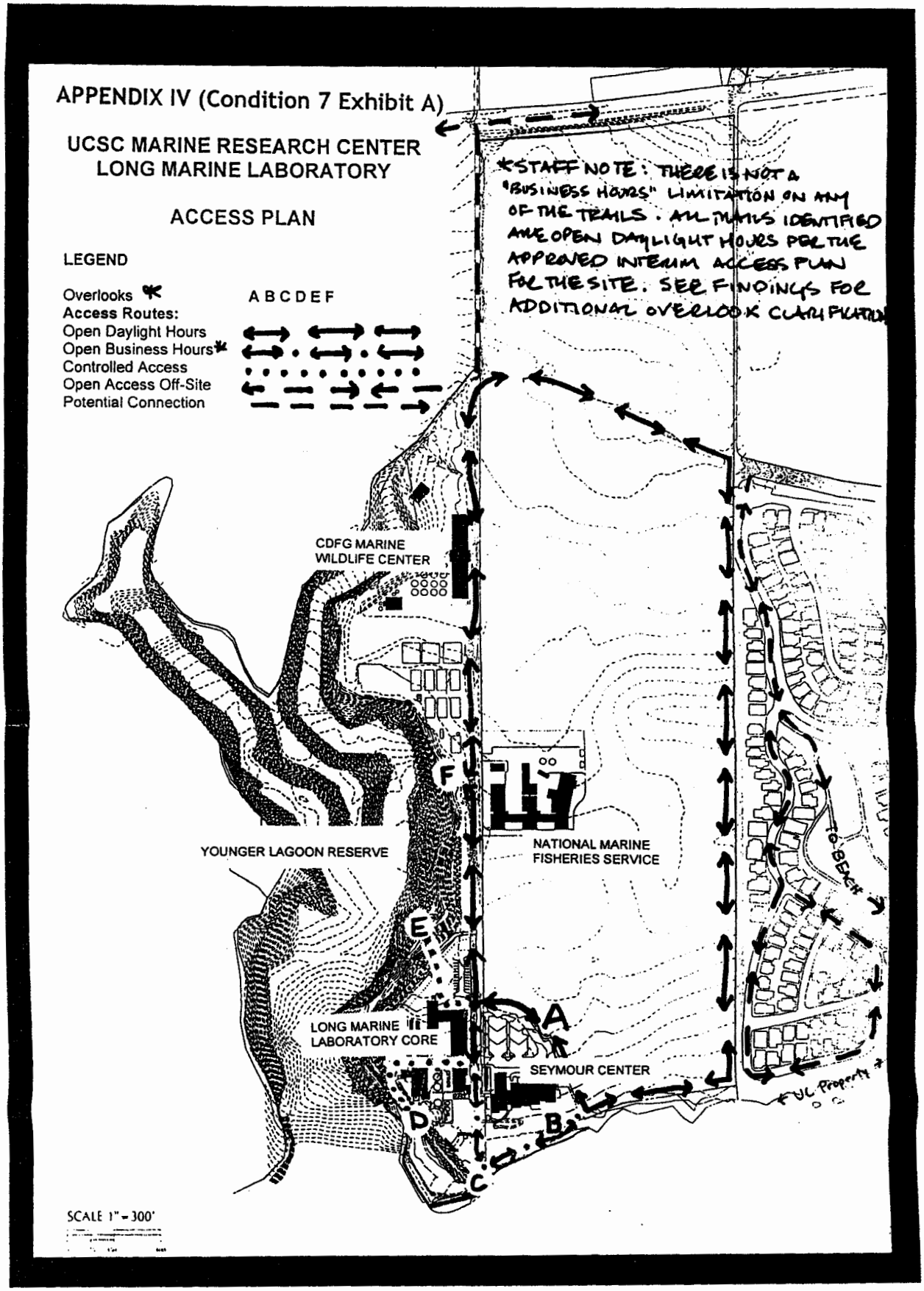
SPECIES NAME	SCIENTIFIC NAME	FAMILY	CONFIRMED
AMPHIBIANS:			
CALIFORNIA NEWT	Taricha torosa	SALAMANDRIDAE	
CA SLENDER SALAMANDER	Batrachoseps attenuatus	PLETHODONTIDAE	
PAC SLENDER SALAMANDER	Batrachoseps pacificus	PLETHODONTIDAE	X*
BLACK SALAMANDER	Aneides flavipunctatus	PLETHODONTIDAE	
ARBOREAL SALAMANDER	Aneides lugubris	PLETHODONTIDAE	
WESTERN TOAD	Bufo boreas	BUFONIDAE	
PACIFIC TREEFROG	Hyla regilla	HYLIDAE	X
RED-LEGGED FROG	Rana aurora	RANIDAE	V
BULLFROG	Rana catesbeiana	RANIDAE	E
REPTILES:			
WESTERN POND TURTLE	Clemmys marmorata	EMYDIDAE	
WESTERN FENCE LIZARD	Sceloporus occidentalis	IGUANIDAE	
WESTERN SKINK	Eumeces skiltonianus	SCINCIDAE	
SOUTHERN ALLIGATOR LIZ	Gerrhonotus multicarinatus	ANGUIDAE	X
RINGNECK SNAKE	Diadophis punctatus	COLUBRIDAE	
RACER	Coluber constrictor	COLUBRIDAE	
CALIFORNIA WHIPSNAKE	Masticophis lateralis	COLUBRIDAE	
GOPHER SNAKE	Pituophis melanoleucus	COLUBRIDAE	
COMMON KINGSNAKE	Lampropeltis getulus	COLUBRIDAE	
COMMON GARTER SNAKE	Thamnophis sirtalis	COLUBRIDAE	
WESTERN TERR GARTER SN	Thamnophis elegans	COLUBRIDAE	X
WESTERN AQ GARTER SNAKE	Thamnophis couchi	COLUBRIDAE	
WESTERN RATTLESNAKE	Crotalus viridis	VIPERIDAE	

X = CONFIRMED BY SURVEY

X* = Batrachoceps is confirmed and the specimen is assigned to pacificus by habitat.

V = seen in vacinity but does not breed in the reserve, no breeding habitat (ponds) available

E = EXOTIC, TO BE KEPT OUT, KNOWN FROM ANTONELLI'S POND

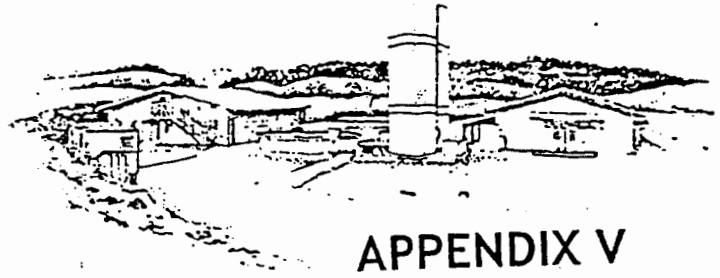


UCSC MARINE RESEARCH CENTER
Long Range Development Plan
Job No 9943
SRG Partnership PC · 503 222-1917 · 503 294-0272 · srg@srgpartnership.com

CALIFORNIA COASTAL COMMISION
EXHIBIT B-39

APPENDIX IV

JOSEPH M. LONG
MARINE LABORATORY
UNIVERSITY OF CALIFORNIA
SANTA CRUZ, CA 95064



APPENDIX V

September 9, 1981

Mrs. Linda Locklin
Coastal Planner
California Coastal Commission
701 Ocean Street, Room 310
Santa Cruz, CA 95060

Dear Mrs. Locklin:

In your July 1981 letter you ask responses to several questions concerning our management plan for the Younger Lagoon-Beach area. I believe it important to note that this area historically has not been open to the public and, because of that fact, the wetland-beach area represents a small, relatively undisturbed wildlife area. The land was given to the University by Donald and Marion Younger with the expectation that such undisturbed use would continue.

From the University's perspective, the wetland-beach area, adjacent to a major coastal and marine research facility (the Long Marine Lab itself), would provide an invaluable educational and research resource to its students, staff and faculty. The nearness of the wetland would permit long-range, longitudinal studies on the birds and other life similar to those being carried out at Año Nuevo Island on elephant seals. However, for the research to be valid, the area must be carefully managed so that experiments and observations are not hindered or destroyed by the casual user. The combination of research lab and adjacent small wetland that can be managed and studied in its entirety because of its small size, is an unparalleled opportunity for the University and the State. The management plan as proposed--access to the beach and wetlands will be controlled and no recreational use of the area--is the key element. Destruction and modification of coastal habitats has been a sorry chapter in human affairs.

The Younger Lagoon-Beach area is small. The beach is only about 100 yards in beachfront. Significant sandy beaches exist for recreational use both to the north and the south. Most importantly, the University is a research and educational institution; the land was obtained from the Youngers for that purpose. We will manage the use of the area with that purpose in mind.

Thus, the answer to question one of your 27 July letter is that the area must have limited access to fulfill the responsibility of the University;

that is, to carry out education and research. The land was conveyed to the University for that sole purpose. Short and long-term research must be carried out in as undisturbed a situation as possible so not to invalidate the research results. Disruption of this type of research already has occurred at the Younger Lagoon area and the proposed management plan will directly address this problem.

Question two of your letter asks why limited or controlled access to the area is not possible. It is, as long as the limited or controlled access has prior approval from the Long Marine Lab office for appropriate educational or research use. The type of permit use approved will depend upon the season so as not to disturb breeding, feeding and resting areas.

In our Environmental Impact Report and subsequent document, considerable information about the geology and biology of the area has been provided. This data has been augmented by the letters of Vice Chancellor Penaat dated May 15, 1981, Professor Kenneth Norris dated July 6, 1981 and Assistant Research Biologist Kenneth T. Briggs dated August 12, 1981.

The following comments are offered to amplify the material already submitted as well as answer specific questions.

Of the 95 species of birds listed in the Santa Cruz County Local Coastal Plan as locally unique to the Santa Cruz County Coastal Zone, 36 species or 38% have been seen at Younger Lagoon and 18 of these species are resident there. Of the 143 species which have been sighted at Younger Lagoon (see attached list) these 36 locally unique species represent 25% of the lagoon-beach population. Of the 36 locally unique species, one third of these are users of the beach and strand areas (7 beach users, 4 strand users, 1 beach and strand). While not identified as locally unique an additional 34 of the Younger Lagoon species also are beach and strand users. Moreover, two species sighted at the lagoon are listed as endangered and rare, and an additional 9 species are of priority concern and in need of protection.

Birds, of course, are not the sole residents of the area and the University is interested in the area as a whole natural area. Yet, few small relatively undisturbed coastal wetlands remain available for study and none are in such close proximity to research facilities.

The potential impact of activities at the marine lab on the birds of the lagoon area was addressed early in planning the lab. Birds, especially when breeding and feeding, are disturbed more by human visibility and movement than by noise. Thus, we constructed a very expensive, but important berm as a visual barrier between the marine lab and the wetland-beach area.

People who would like to see the beach open for recreational use have suggested that the beach be open to the public while access to the strand vegetation and wetland be restricted. This is not possible both because of the small size of the beach-lagoon area and because of the geology-geography of the area.

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APPLICATION NO.
P-1859
UNIVERSITY LETTER

There is no access to the beach except down the slope and across the dunes with their fragile strand vegetation. Never is the beach accessible by walking around the points to the north or south. The cliffs drop off--there is no intertidal shelf or beach. This is part of the importance of this area for research--access can be tightly managed. Thus, all entry to the area is across the vegetation and down the bluff face to the wetland in full view of the wetland and beach. Birds immediately leave the area. The situation at the Younger Lagoon area is not comparable to that of UC Santa Barbara where broad expansive beaches are available to the public and there is restricted access to the wetland.

Thus, limited or controlled access clearly does not address the need to minimize human disturbance of the area. Dr. Brigg's comments more than adequately deal with this issue.

Moreover, controlled public access has security implications. Security has become a major concern at the lab and funds for providing additional police protection are not available. We have requested a permit for an additional trailer at the lab to house a UCSC policeman on-site. While Long Marine Lab is providing housing for a policeman, his normal patrol beat is on campus and thus he is unavailable to us during his regular shift hours.

Because of the distance from campus, the limited staffing and various security priorities, there have been many instances where campus police have been unable to respond to requests for assistance in a timely manner. As a matter of reality and the severe budget restraints the University is under, we do not see this situation being eased in the future. Resources are being stretched to their limits. Without full time security patrols, adequate protection of the lagoon and access by designated routes to areas of restricted use cannot be insured, even if desirable.

It must be remembered that Long Marine Lab is first and foremost a research and educational facility of the University of California, not a public recreational facility. No recreational use of the beach by the public or University personnel will be permitted.

In response to your request for a tentative schedule of docent-led tours of the wetland-beach area, such tours will be given only under very special circumstances, e.g. natural history groups or visitors interested in wildlife management. We foresee use of the beach and wetlands primarily for research; only under exceptional situations will non-researchers be allowed on the beach or in the wetlands area. Tours to specific overlook areas, however, will be possible and these overlook areas will be used by individuals studying bird behavior, etc. Thus, we do not feel that it is appropriate or even feasible to establish a schedule of tours of beach and lagoon area. Our experience has shown that practically all of our visitors are interested in the activities of the lab, the aquarium, the whale skeleton, and the demonstration dune vegetation area which has already been incorporated into the regularly scheduled docent-led tours of the marine lab.

Concerning your question about the establishment of new trails, overlooks, and restoration, our plans are as follows:

Only the trail (shown as the two year old trail on the attached map) that runs along the outside of the berm and the one major access point to the lagoon will be open. This one trail provides more than adequate access as well as several screened overlooks. All other trails and overlooks will be revegetated with appropriate native and coastal acclimated vegetation (see attached list). Much of the strand vegetation recently has been trampled and the area is being denuded. It will take time to heal these wounds, but we will try to speed the process by the propogation of some of the remaining plant materials. Because of vegetation configuration, the proposed overlook areas will be approximately as shown on the attached map. Finally, we are submitting Annual Reports for the years 1978-79 and 1979-80 of our marine program. You can abstract data from the section under Long Marine Laboratory. The 1980-81 Annual Report data is just now being pulled together.

I hope that all points raised in your 27 July letter have been satisfactorily addressed. If not, please let me know.

Sincerely,

William Doyle

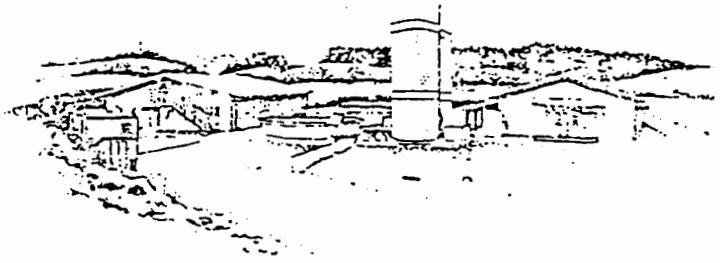
William Doyle
Director, Center for Coastal Marine Studies
Dean, Division of Natural Sciences

WD:rd

Enclosures (5)

cc: Vice Chancellor, Elizabeth Penaat
Associate Director, Richard Pierce
Community Relations Director, Stephen M. Reed

JOSEPH M. LONG
MARINE LABORATORY
UNIVERSITY OF CALIFORNIA
SANTA CRUZ, CA 95064



August 12, 1981

Mr. Edward Brown
Executive Director
Central Coast Regional Commission
701 Ocean Street
Santa Cruz, CA 95061

Dear Mr. Brown:

I am writing you to express my strongest possible support for approval of a management plan for Younger Lagoon that includes the beach and dune areas and that precludes public recreation in order to maintain the site as a wetlands bird sanctuary and study area. I have a long-term familiarity with the natural bird populations using Younger Lagoon and the surrounding habitats resulting from having studied birds there since 1973. In the intervening years my colleagues, students and I have measured species diversity, population sizes and nesting performance of resident and migrant birds and have marked and released over 2,500 birds in studies of coastal migration and timing of nesting. It is clear to me that public beach access and the attendant inadvertant destruction of dune vegetation, trampling of new trails and disturbance of bird feeding and nesting areas will lead to a serious decline in the quality of the lagoon-beach habitats and of the bird populations of the site.

The bird fauna of the Younger Lagoon area includes more than 150 species; at least 24 of these nest at the site. Several species depend almost entirely on the lagoon, dune and beach habitats for food and roosting areas and several others of concern to State wildlife managers (e.g. several hawks, owls and marine species) rely heavily on these same habitats when visiting Younger Lagoon. Our studies have confirmed that the presence on the beach and dunes of people, (even those who do not party, camp or bring dogs) cause all of these birds to move out of their preferred habitats; most depart the Younger Lagoon area entirely. Nesting by waterfowl along the banks of Younger Lagoon has been disrupted by dogs in each of the last two years, and some people have tampered with and destroyed field equipment. Further, the utility of the site as a location for carrying out scientific and educational studies of birds is dramatically reduced by the simple presence of people, whether they be hikers, sunbathers or frisbee-players.

EXHIBIT NO. Q
APPLICATION NO.
P-1859
UNIVERSITY LETTER

CALIFORNIA COASTAL COMMISION
EXHIBIT B.44

Published records from the 1930s and 1940s of Santa Cruz County bird populations show that Younger Lagoon has long been known to be an important bird feeding and nesting area. It can continue to be important in these ways and we can add the dimension of continuing scientific and educational value--but only if the primary use of the lagoon as a wildlife study area is not violated. To this end, I encourage you to take the necessary steps to designate Younger Lagoon as a wetlands sanctuary and approve a management plan that restricts use to non-destructive educational and recreational activities that is compatable with this designation. Many coastal sites have become available to public use over the past several years. It is important to protect a few, such as Younger Lagoon, both because of the needs of the birds themselves and the need to keep available a few undisturbed sites for education and research into the future. Younger Lagoon and beach, as a small, well-defined unit adjacent to the Long Marine Lab, is ideal for this purpose.

Yours truly,

Kenneth T. Briggs, Ph.D.
Assistant Research Biologist
Long Marine Laboratory

KTB:rd

CALIFORNIA COASTAL COMMISION
EXHIBIT B.45

EXHIBIT NO. Q
APPLICATION NO.
P-1859
UNIV. LETTER
California Coastal Commission

UNIVERSITY OF CALIFORNIA, SANTA CRUZ

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OFFICE OF THE VICE CHANCELLOR
ADMINISTRATIVE AFFAIRS

SANTA CRUZ, CALIFORNIA 95064

May 15, 1981

RECEIVED
MAY 15 1981
CENTRAL COAST COMM.
REGION III

Mr. Edward Y. Brown, Executive Director
Central Coast Regional Commission
701 Ocean Street
Santa Cruz, California 95061

Dear Mr. Brown:

The California Coastal plan of December 1975 recognized Younger Lagoon as an important wetland (bird) habitat, p.230, p.336. That wetland needs protection and one of the conditions of Permit P.1859 to the University of California was to submit a formal plan for the management and maintenance of this wetland system. In a letter dated January 26, 1976 to Mr. Les Strand of your staff, we requested that condition be modified to include a research program in order to develop data and criteria for preservation and management of the lagoon as a coastal wetlands bird sanctuary.

Since that time, continuous study of the area has taken place along with a bird banding program. As a result of this active observation program, checklists of the flora and fauna of the area have been updated (see appendices 1, 2, 3).

One of the early studies conducted in 1975 included the following statement:

> The Younger Lagoon property is blessed with a relatively high density of breeding birds and with a high diversity of migrants. Essentially three things make this diversity possible. First, the site includes tracts of eight distinct habitat types ranging from willows to open water to high angle cliffs above surf. This concentration of habitat types brings many different avifauna elements together and provides the student of coastal ornithology with an ideal field situation to study aspects of the ecology and behavior of diverse resident and migratory populations. Second, until now the area has remained relatively unspoiled by human interference. This has been due in large part to restricted access of the public. Third, the agricultural fields adjacent to the lagoon area provide an abundance of forage not otherwise available to the primarily insectivorous and granivorous residents and migrants.

CALIFORNIA COASTAL COMMISION
EXHIBIT B.46

EXHIBIT NO. 3
APPLICATION NO.
P-1859
UNIV. LETTER

The second point in the above needs to be addressed here--namely that of public access. Since 1975 the popularity of the beach and lagoon for recreation has increased tremendously, to the point where substantial degradation of the environment can be documented. Many new trails into areas used by birds have been made by the public in recent years (see map no. 1). On sunny weekend days and holidays as many as 100 people will occupy this small and sensitive beach and lagoon area at any one time. Restroom facilities are non-existent. It is clear that such a fragile area can no longer be maintained given the continued stress by the sheer numbers of people (some with dogs and horses) who come to the area primarily to use the beach and adjacent lagoon. People are killing vegetation and disturbing the wildlife; dogs chase resting and feeding birds and disrupt bird breeding and nesting areas; horses destroy vegetation and enhance trail erosion down the cliff.

Therefore, we request that Permit 1859 be amended to accomplish the following:

1. Designation of the Younger Lagoon-beach area as a coastal wetlands bird sanctuary.

2. Closure of the beach and Younger Lagoon area to public access except as allowed by the management plan.

3. Approve the proposed management plan.

4. Approve proposed signs.

Statement of Opportunity

A high priority of coastal planning is the identification of sensitive natural areas and to manage human activities so that these areas remain available for future generations of people. The Younger Lagoon area of the Long Marine Laboratory is an area in which human activity must be closely managed in order not to destroy the wetlands as a natural area. The Lagoon consists of a small beach, dune vegetation, the wetland, cliff edges and uplands. Because of the diverse habitats, including vegetation diversity, over 150 species of birds use the wetland for breeding, feeding and resting. Because Younger Lagoon is adjacent to an urban center (City of Santa Cruz), human activity adjacent to and in the wetland area itself must be carefully controlled. Evidence is available that present uncontrolled recreational use of the Lagoon area is resulting in deterioration of the wetland as a natural area and, there-

fore, as a bird study area.

Because of the tremendous recent increase in human activity at the Lagoon, it is impossible to carry on research projects with any reasonable scientific control. Because the Lagoon is such a small system, unrestricted human perturbation affects it greatly. Thus approval of a management plan is timely and essential.

Action Requested

Formal identification of the Younger Lagoon-beach area as a natural area for educational and research purposes, as recognized in the Environmental Impact Report for the UCSC Coastal Marine Laboratory and approval of the managment plan.

Management Plan

1. Restrict access to the lagoon and beach except as indicated below.

2. Develop docent-led tours of the area for educational purposes. Tours will be conducted by special arrangement only.

3. Incorporate the use of the recently completed demonstration-dune area located at the lab site as part of the docent-led aquarium tours of Long Marine Laboratory.

4. Require that all research and educational activities at the Younger Lagoon site be approved by the lab office.

5. Require all bird watchers to restrict their activities to marked trails and viewpoints and that they register at the lab office prior to birding.

6. Develop a brochure for use on a self-guided tour of the marked bird watching trail.

7. Continue bird banding and research programs on the lagoon and environ and assess changes, if any, in birds, mammals and vegetation as a result of the exclusion of human activity.

8. Continue to monitor the impact of agriculture on the erosion and biological activity of the wetlands.

9. Strategically place appropriate signs to apprise people that the area is for research and educational use only and is not open for recreational use.

10. Develop public awareness and support through newspaper articles and brochures for maintaining the area as a bird sanctuary and natural area.

Proposed Signs

1. Younger Lagoon and beach are the home of over 150 species of birds. Human traffic to the beach is destroying this valuable habitat. The area is not open to recreation but is restricted to research and education. Permission to enter the lagoon must be obtained from the lab office. You are welcome to visit the aquarium and public areas of the lab facilities during posted hours.

2. Property in lawful possession of The Regents of the University of California. Closed area. No trespassing.

Elizabeth Penaat

Attachments

cc: Chancellor Sinsheimer

UNIVERSITY OF CALIFORNIA, SANTA CRUZ

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ENVIRONMENTAL FIELD PROGRAM
SANTA CRUZ, CALIFORNIA 95064

July 6, 1981

Mr. Ed Brown
Executive Director
California Coastal Commission
Santa Cruz County Governmental Center
701 Ocean Street
Santa Cruz, CA 95062

Dear Mr. Brown:

I write to comment on the preservation of Younger Lagoon and its adjacent coastal habitats. I was Director of the marine program at the time of the gift of land to the University and have intimate knowledge of the area.

The lagoon, long held by Donald and Marion Younger as a part of agricultural holdings, and closed to the public (except for the occasional person coming in below high tide line) was obtained by the University as part of a gift from the Youngers to establish a marine station and to preserve and study these rather rare and certainly threatened California habitats. In planning the station, we very carefully sought to protect this natural area by avoiding all construction there, and by placing earth berms between the station and the lagoon. In planning for such things as avian research we laid plans that would allow viewing and study of the resident and migrant birds on the lagoon without disturbing them. In other words, in planning the station the lagoon was always thought of as a companion natural area reserve. To further this a variety of studies of the natural resources of the area have been sponsored by me and others on campus, and sometimes funded by the Environmental Field Program which I head.

You probably have descriptions of the natural resources of the area so I won't catalog them here. I will only comment on their speciality. There are few such habitats available along the coast that are adequately protected. It is a way station for many migratory birds, a nesting and feeding site for many others, a home for a considerable collection of small mammals, and it harbors a bit of the threatened strand vegetation that occurs spottily along the California coast. It has one extremely rare endemic liverwort. Few, if any, of these things are of interest to most of the visitors now flooding in.

The increasing flood of visitors is indeed destroying these values. Birds that normally are daytime users of the strand area, are now declining because human visitation is so continuous. The plants, many living on the vulnerable sand environment, are being trampled out of existence. This small parcel of natural habitat cannot stand this impact and maintain anything like the character for which we obtained it.

I was a founder of the University's Natural Land and Water Reserves System, which deals with lands for teaching and research throughout California, and I now manage one such reserve on the Big Sur coast. Those experiences make it completely clear to me that habitat preservation and recreational use by humans are not compatible. Use has to be scheduled and carefully monitored. Any major habitat manipulations have to be carefully considered in terms of long term impact. The protection of the natural resource must come first, and public use second and the latter must be determined by the maintenance in perpetuity of the natural elements.

So, I respectfully request that the University be given approval to manage this important piece of habitat in the way we initially intended, for scientific and educational purposes.

Sincerely,

K. S. Norris/RD

Kenneth S. Norris
Professor of Natural History and
Manager, Big Creek Reserve

KSN:rd

Relevant literature on birds and human disturbance: **APPENDIX VI**

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HOLMES, T. L., R. L. KNIGHT, L. STEGALL, AND G. R. CRAIG. 1993. Responses of wintering grassland raptors to human disturbance. Wildlife Society Bulletin 21:461-468.

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KRAMER, D. L., AND M. BONENFANT. 1997. Direction of predator approach and the decision to flee to a refugee. Animal Behaviour 54:289-295.

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APPENDIX VII

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Conditon # 8, Permit 3-83-076-A13

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California Coastal Commission. 1981. Statewide Interpretive Guideline for Wetlands and Other Wet Environmentally Sensitive Habitat Areas.

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California Coastal Zone Conservation Commissions. 1975. California Coastal Plan.

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Van Horne, B. 1974. Birds and Mammals of Allegrini Lagoon, Mid-January through Mid-March.

---------- (unknown author). Intertidal Invertebrates near Younger Lagoon.

----------. Allegrini Lagoon Vegetation Survey.

SANTA CRUZ BIRD CLUB
P.O. Box 1304
Santa Cruz, CA 95061

APPENDIX VIII

Maggie Fusari, Director
UCSC Natural Reserves
University of California
Santa Cruz, CA 95064

10 December 1999

Dear Dr. Fusari:

This letter is in support of your proposal to establish overlook shelters at the Younger Lagoon Reserve in west Santa Cruz. As you know, coastal wetlands like Younger offer important habitats for a variety of wildlife throughout the year. The lagoon itself provides foraging and roosting habitats for many waterbirds during winter. Examples of these are several ducks: Green-winged Teal, Northern Pintail, Cinnamon Teal, American Wigeon, Bufflehead, and Common Goldeneye; and waders: Great Blue Heron, Great and Snowy egrets, Spotted Sandpiper, and Common Snipe. The sheltered beach is critical for wintering shorebirds including Whimbrel, Marbled Godwit, Ruddy and Black turnstones, and Sanderlings. The uplands are important for year-round resident species including Bewick's Wren, Wrentit, Orange-crowned Warbler, Common Yellowthroat, and Song Sparrow; Neotropical migrants including Warbling Vireo and Yellow Warbler; and winter residents such as Loggerhead Shrike and Fox Sparrow.

Younger is an especially valuable wetland because it is essentially free of human-related disturbances. Most coastal wetlands in Santa Cruz County, and especially their associated beaches, get heavy recreational use by people and their dogs. The species I've listed above are ones that are particularly sensitive to human disturbance. A regularly used trail along the rim of the lagoon and an open beach would have serious deleterious consequences for these species. I've attached a list of studies that have documented the impact people and their pets have on birds in similar situations.

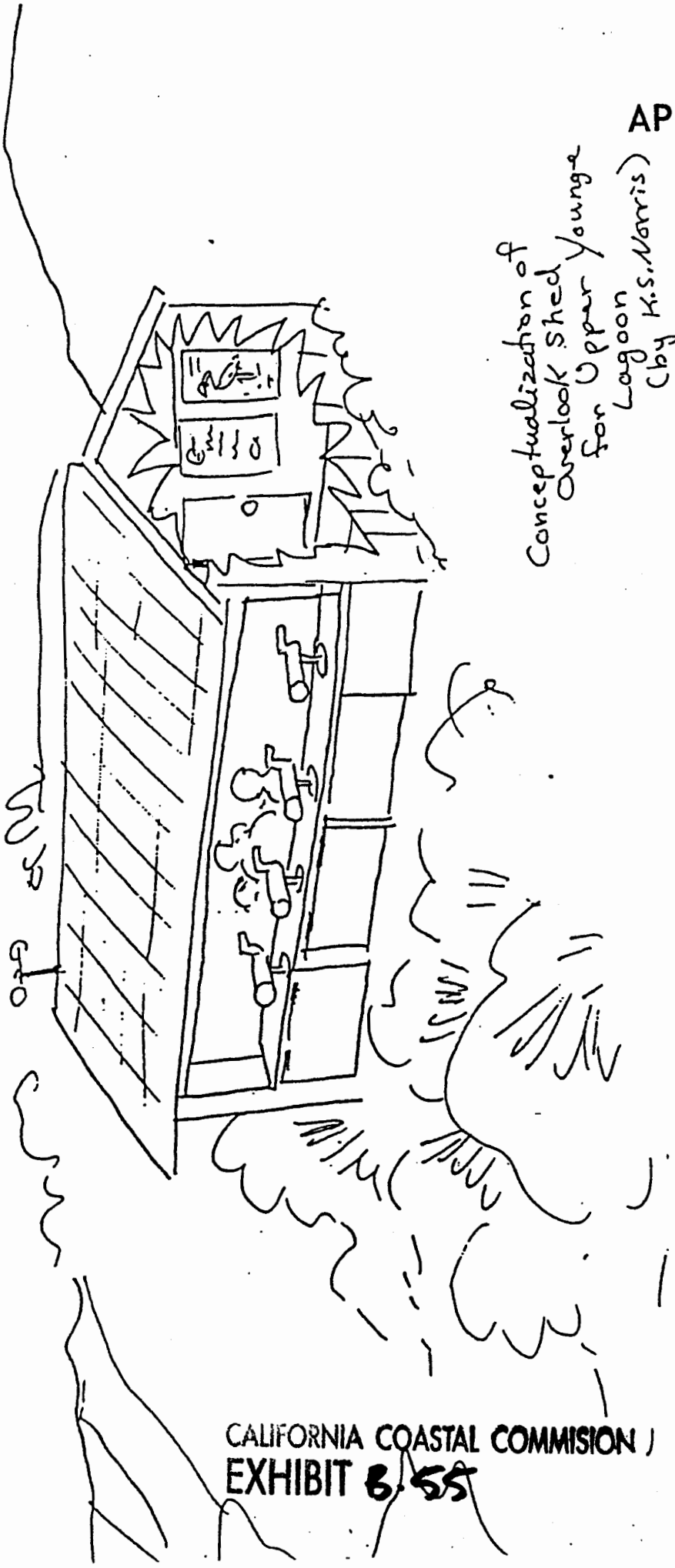
On behalf of the membership and officers of the Santa Cruz Bird Club, I strongly support the establishment of overlooks instead of the development of trails in this sensitive wetland.

Sincerely Yours,

Jeff N. Davis, President

CALIFORNIA COASTAL COMMISION
EXHIBIT B-54

APPENDIX IX



Conceptualization of Overlook Shed for Upper Youngs Lagoon (by K.S. Morris)

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OFFICE OF THE VICE PRESIDENT—
AGRICULTURE AND NATURAL RESOURCES

DIRECTOR, NATURAL RESERVE SYSTEM
(510) 987-0143

OFFICE OF THE PRESIDENT
Division of Agriculture and Natural Resources
1111 Franklin Street, 6th Floor
Oakland, California 94607-5200

APPENDIX XI

February 15, 2000

Mr. Dan Carl
California Coastal Commission
Central Coast District Office
725 Front Street, Suite 300
Santa Cruz, CA 95060

Dear Mr. Carl:

As director of the UC Natural Reserve System I oversee the 33 active NRS reserves and develop their role in providing a unique teaching and research environment for students and faculty not only in the UC system but for teachers and researchers from across the state and beyond. The reserves provide valuable instruction and research and are strongly supported by the UC administration and the Regents. They perform educational functions integral to the functioning of the University of California. The ability of the NRS to fulfil its roles would be severely impacted if uncontrolled public access were permitted on the reserves. I hope we have explained and documented this adequately in the response to Condition 8 of the Long Marine Lab Ocean Health Building Phase II permit. Indeed, only after the security of the property was assured did the NRS accept the Younger Lagoon into its system in 1986.

We at NRS are very glad that, in addition to providing for our teaching and research, we can offer habitat protection to sensitive species and ecosystems as we protect our reserves. We are also glad that this protection is in keeping with your own stated mandate to protect habitat for sensitive, coastal species. We share this goal in common.

As in 1981, when Dr. William Doyle, then Director of the Long Marine Lab, answered questions put to him by Mrs. Locklin of the CCC staff, I concur that continued closure of the Younger Lagoon Reserve, as described by Dr. Doyle and in this document, is necessary to protect its function as an NRS reserve.

Should you need additional comments and documentation, please do not hesitate to contact me at 510-987-0143 or by E-mail at Alexander.Glazer@ucop.edu.

Sincerely yours,

A. N. Glazer

Alexander N. Glazer
Director
Natural Reserve System

CALIFORNIA COASTAL COMMISION
EXHIBIT B-56

APPENDIX Xa (Condition 7 Exhibit B)

UCSC MARINE RESEARCH CENTER
LONG MARINE LABORATORY

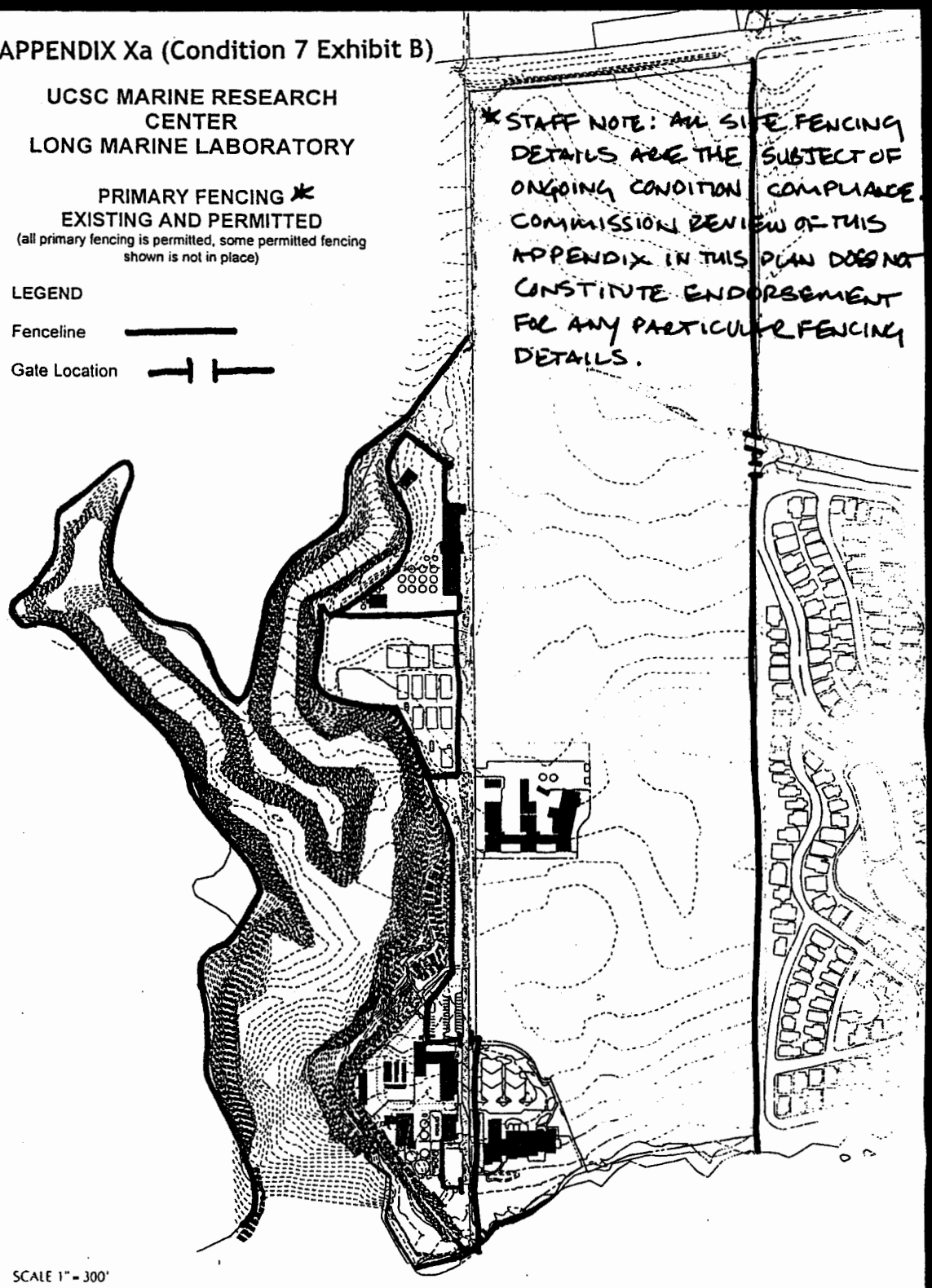
PRIMARY FENCING *
EXISTING AND PERMITTED
(all primary fencing is permitted, some permitted fencing shown is not in place)

LEGEND

Fenceline

Gate Location

* STAFF NOTE: ALL SITE FENCING DETAILS ARE THE SUBJECT OF ONGOING CONDITION COMPLIANCE. COMMISSION REVIEW OF THIS APPENDIX IN THIS PLAN DOES NOT CONSTITUTE ENDORSEMENT FOR ANY PARTICULAR FENCING DETAILS.



SCALE 1" = 300'

UCSC MARINE RESEARCH CENTER
Long Range Development Plan
Job No 9943
SRG Partnership PC

CALIFORNIA COASTAL COMMISION
EXHIBIT B.57

APPENDIX Xa

APPENDIX Xb (Condition 7 Exhibit C)

UCSC MARINE RESEARCH CENTER
LONG MARINE LABORATORY

PRIMARY FENCING *
PROPOSED AND EXISTING

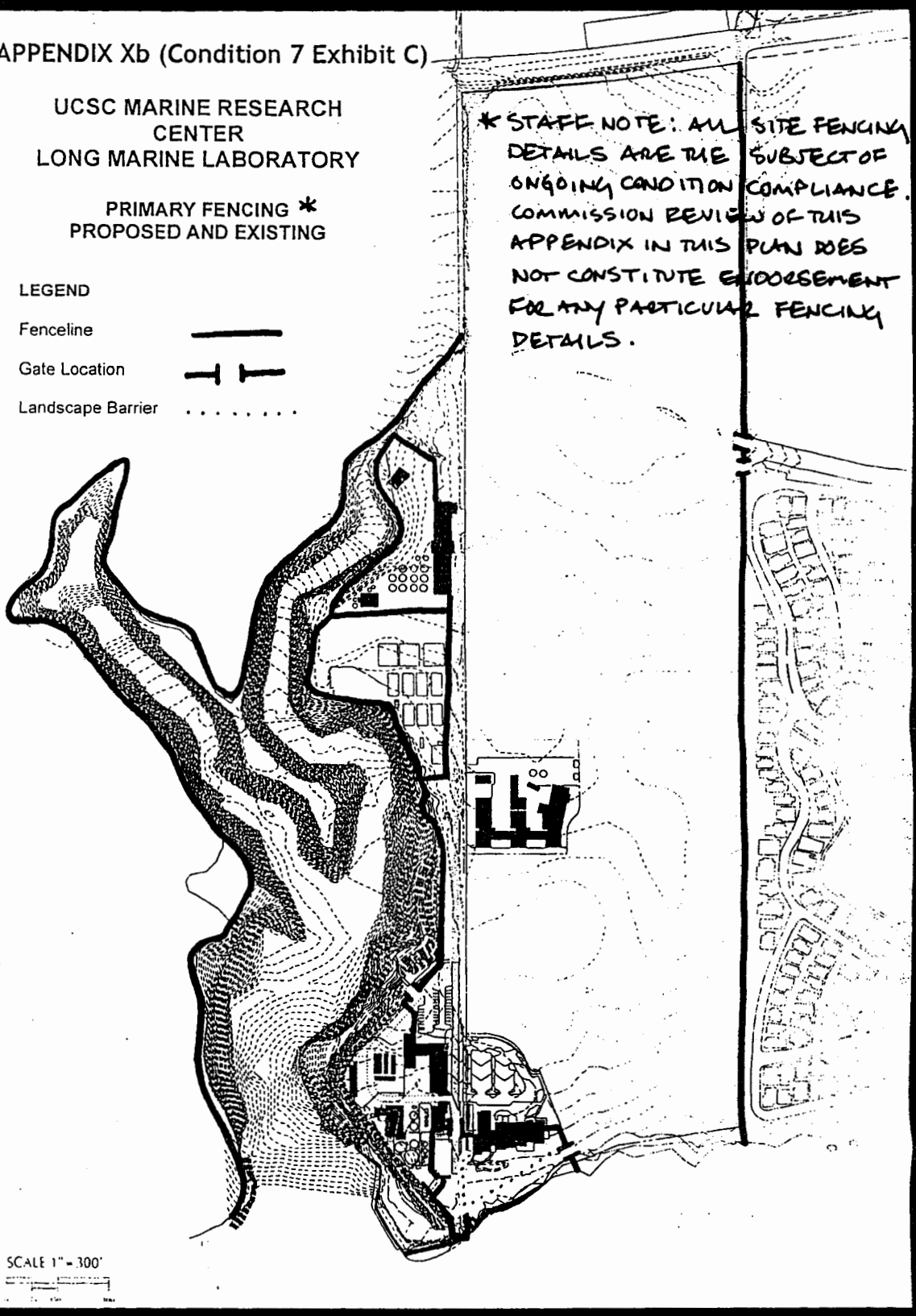
LEGEND

Fenceline

Gate Location

Landscape Barrier

* STAFF NOTE: ALL SITE FENCING DETAILS ARE THE SUBJECT OF ONGOING CONDITION COMPLIANCE. COMMISSION REVIEW OF THIS APPENDIX IN THIS PLAN DOES NOT CONSTITUTE ENDORSEMENT FOR ANY PARTICULAR FENCING DETAILS.



SCALE 1" = 300'

UCSC MARINE RESEARCH CENTER
Long Range Development Plan
Job No 9943
SRG Partnership PC

CALIFORNIA COASTAL COMMISION
EXHIBIT B.58

A2

APPENDIX Xb

Dear Coastal Commissioners,

The Santa Cruz Chapter of the Surfrider Foundation has been asked to support a request by UCSC to continue restricted/limited access to the inter tidal shelf and the beach at Younger Lagoon on the University's property at Terrace Point in Santa Cruz. The Surfrider Foundation is a nonprofit organization dedicated to the protection the world's oceans and beaches. We achieve this through conservation, research and education. We feel that by restricting/limiting access the facility will be working in the public's interest by increasing the educational and research value of the area. A mitigation to the limited beach access at Terrace Point and Long Marine Lab is the nearby access to the ocean at the De Anza Mobile Home Park.

While we agree with the aims of restricting and limiting the access at this site, we expect UCSC to compensate the citizens for their loss of beach access. We feel that compensation in the form of adequate funding to enable guided educational tours of the area is needed. We feel these guided tours should educate citizens on the importance of coastal wetlands and their conservation.

In the past funding to pursue the development of the UCSC reserve system for public education has been inadequate at best. We hope that the Coastal Commission, through its permitting process, can help off set this funding gap. We also hope that by somehow tying the extensive development at Terrace Point and Long Marine Lab to the development of public education stations and guided tours at Younger Lagoon, the money to achieve all goals can be found. In this way the University can address their need to restrict/limit the access through the intertidal and beach area.

By Agreeing to the UCSC request to restrict/limit access, the Santa Cruz Chapter of the Surfrider Foundation is not stating that it agrees to all aspects of the University's Long Range Development Plan at the Terrace Point property. We still have many concerns about the housing component, developing over agricultural land, the lack of water recycling, increasing traffic and the many other problems that arise from coastal development.

We wish you good luck with your deliberations.

Sincerely,

Jamie, Boots, Katie and Nathan

Board Members

Surfrider Foundation

Santa Cruz Chapter