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Tu 15a–d

May 24, 1999

To: Coastal Commissioners and Interested Parties

From: Susan M. Hansch, Deputy Director
Alison J. Dettmer, Manager, Energy and Ocean Resources Unit
Moira B. McEnespy, Analyst, Energy and Ocean Resources Unit

Re: **Suggestions for Reading the Staff Reports for Coastal Development Permit Applications E-98-17, E-98-18, E-98-19, and E-98-20**

Tuesday, June 8, 1999, Item Nos. 15a–d

The Coastal Commission has before it four separate coastal development permit applications (E-98-17, E-98-18, E-98-19, and E-98-20) to construct and operate abalone grow-facilities within four separate license areas of Pillar Point Harbor that have been set aside by the San Mateo County Harbor District for aquaculture.

Although the proposed projects are similar in design and location (but differ in amount of area and maximum abalone production), the Commission staff reviewed and processed each application separately. Nevertheless, all four staff reports have similar individual and identical cumulative impact analyses. Accordingly, some portions of the staff reports are repetitive. Therefore, if your time is limited, we suggest you read through the entirety of one report and then read only the synopses, impact tables, and proposed conditions in the other three reports. A separate Exhibit/Correspondence Packet covers all four permit applications.

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Tu15a

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STAFF REPORT: REGULAR CALENDAR

Application No.: **E-98-17**

Project Applicant: **Doug Hayes (Pacific Offshore Farms)**

Location: Northwest corner of Pillar Point outer harbor, San Mateo County (Exhibits 1 and 2).

Project Description: Anchor and operate a raft grow-out facility in a 248' x 60' (14,880 sq. ft., 0.34 acre) area of Pillar Point Harbor to culture up to 500,000 red abalone.

Related Approvals: San Mateo County Harbor District. "License Agreement for Submerged Lands and Overlying Water and Other Described Facilities and Equipment for the Purpose of Abalone Aquaculture" (January 29, 1997).

Regional Water Quality Control Board, San Francisco Bay Region. "National Pollutant Discharge Elimination System ("NPDES") Permit No. CA0036277" (June 17, 1998).

California Department of Fish and Game. "1999 Aquaculture Registration."

California Department of Fish and Game. "1999 Kelp Harvesting License."

U.S. Army Corps of Engineers. Regional Permit No. 22808S pending (Public Notice date: December 22, 1997).

Substantive File Documents: **Appendix D**

SYNOPSIS

Note: Exhibits 1 - 4 and Appendices A - E are contained in a separate corresponding packet.

Project Location and Description

Doug Hayes, *dba* "Pacific Offshore Farms," proposes to cultivate up to 500,000 red abalone *(Haliotis rufescens)* from juveniles to maturity in screened plastic cages hung from up to 20 floating rafts moored within a 248' x 60' area of Pillar Point Harbor.

Pillar Point Harbor is located 20 miles south of San Francisco at the northern end of Half Moon Bay in San Mateo County, adjacent to the Monterey Bay National Marine Sanctuary (Exhibit 1, "Project Location"). It is the only protected ocean harbor between Bodega Bay and Santa Cruz. Existing facilities at the harbor include fish processing and freezing operations, a fuel dock, berths, parking lots, and a public boat launch ramp. The harbor also provides opportunities for commercial fishing, recreational boating and fishing, clamming, sailing, kayaking, windsurfing, marine-related commercial and retail facilities, restaurants, and other visitor-serving activities such as pedestrian and bike paths and birdwatching.

Background

In September, 1994, the San Mateo County Harbor District ("SMCHD") designated an area approximately 500 yards by 750 yards (77.5 acres) in the northwest corner of the outer harbor, adjacent to the outer breakwater, as appropriate for aquaculture facilities (Exhibit 2, "Area in Pillar Point Harbor deemed appropriate for aquaculture by the San Mateo County Harbor District").

As "lead agencies" under the California Environmental Quality Act ("CEQA") the SMCHD and the California Department of Fish and Game ("CDFG") certified on July 10, 1996, a mitigated negative declaration ("MND") for aquaculture operations in Pillar Point Harbor. The MND evaluates operation of up to five abalone facilities within 2.4 acres of the 77.5-acre area of Pillar Point Harbor set aside for aquaculture, with a combined density of up to 5,150,000 abalone at full build-out. Since certification of the MND, one applicant has withdrawn its application, and the total number of abalone proposed has decreased to 2,250,000.

In February, 1997, the SMCHD ratified license agreements with four licensees for areas of submerged lands and overlying water within the designated aquaculture area of the harbor for the purpose of abalone aquaculture. In June, 1998, the Regional Water Quality Control Board ("RWQCB") issued a national pollutant discharge elimination system ("NPDES") permits to each of the four proposed operators.

The Coastal Commission is reviewing the following four applications separately:

- Pacific Offshore Farms (Doug Hayes): Application No. E-98-17 to culture up to 500,000 abalone within a 248' x 60' (14,880 sq. ft., or 0.34 acre) area;
- Princeton Abalone (Jon Locke): Application No. E-98-18 to culture up to 500,000 abalone within a 250' x 75' (18,750 sq. ft., or 0.43 acre) area;
- Blue Pacific Abalone (Lyle Wagner): Application No. E-98-19 to culture up to 800,000 abalone within a 250' x 105' (26,250 sq. ft., or 0.60 acres) area;
- Pearl Abalone Company (Christian Zajac): Application No. E-98-20 to culture up to 450,000 abalone within a 98' x 40' (3,920 sq. ft., or 0.09 acre) area.

This coastal development permit application (No. E-98-17) is only for Pacific Offshore Farms' proposed project.

The individual and cumulative impacts of this project and the other three related aquaculture projects currently proposed in Pillar Point Harbor raise significant Coastal Act issues. The key issues raised are the potential introduction of exotic species into the Monterey Bay National Marine Sanctuary; resource and use conflicts with kelp harvesting; use conflicts with the fishing community for harbor space; and potential adverse effects to the marine benthic environment.

Aquaculture is a coastal-dependent development and therefore a preferred use under the Coastal Act, but nevertheless must still meet the resource protection standards of the Coastal Act.

Table 1 summarizes project-related significant issues, potential impacts, and the mitigation measures and extensive conditions that the applicant will implement to avoid said impacts or reduce them to a level of insignificance.

The staff recommends approval of the project only as extensively conditioned. The proposed permit conditions include several "prior to permit issuance" requirements that the applicants will not be able to meet immediately. These include obtaining all abalone seed stock from facilities that have been certified by the California Department of Fish and Game as "sabellid-free."

Table 1. Issue Summary: Potential Impacts and Proposed Conditions and Measures

Significant Issue Area	Proposed Special Conditions and Mitigation Measures
Marine Resources: Sabellid Polychaete Worm	Issue: Possible introduction of the sabellid polychaete worm, an exotic species that deforms the shell and ultimately inhibits growth, and would have very serious impacts on stocks of native marine gastropods if spread. Mitigation Measure: **Special Condition 4** requires that all stock come from facilities that have been certified by the California Department of Fish and Game ("CDFG") as "sabellid-free," and then implements the CDFG stock inspection procedures that apply to sabellid-free facilities periodically thereafter as described in Appendix B. This condition provides also that if a sabellid infestation is detected, the cage or container in which the infested animal was found must be immediately removed. **Parts of this condition must be met prior to permit issuance, and it could be over two years before there are any facilities certified "sabellid-free" facilities in the state.** This Commission condition regarding sabellids is more stringent than the CDFG requirements, but staff thinks that it is warranted to use the precautionary principle to protect native stocks of marine resources as required under the Coastal Act. The CDFG thinks their standards—that only the seed stock source, not the entire facility, must meet a pre-transfer inspection—are adequate to protect native marine resources and support aquaculture. **Special Condition 9** prohibits waste disposal, including shells, except as authorized under the NPDES permit. **Special Condition 1** requires evidence that the anchoring design has been approved by the harbor master of the San Mateo County Harbor District ("SMCHD") to ensure that the grow-out structures do not break free.
Marine Resources: Withering Syndrome	Issue: Spread of withering syndrome, a disease established in the wild approximately south of Point San Pedro, near the City of Pacifica in San Mateo County. Mitigation Measure: CDFG has imposed a conditional ban on transfer of seed stock to facilities north of Point San Pedro, near the City of Pacifica in San Mateo County, and between facilities within the area north of Point San Pedro, contingent upon the results of a CDFG health exam showing no signs of rickettsia, the suspected causative agent.
Marine Resources: Water Quality and Benthic Habitat	Issues: Potential for (1) depletion of dissolved oxygen in the water column; (2) benthic impacts due to shading and placement of anchoring devices; (3) changes in the benthic community due to accumulation of detritus and fecal material on the sea floor; and (4) marine debris. Mitigation Measures: **Special Condition 5** imposes dissolved oxygen monitoring, and a benthic monitoring and reporting program per specific standards contained in Appendix C.

Significant Issue Area	Proposed Special Conditions and Mitigation Measures
	Special Condition 6 provides for phased increases in production based on the results of the dissolved oxygen and benthic monitoring required in Special Condition 5. **Special Condition 7** requires cessation of operations if results of the benthic infaunal sampling and analysis indicate a significant change in the infaunal community under the grow-out facilities, and removal of all abalone, grow-out structures, anchoring devices, materials, and equipment within 90 days. **Special Condition 9** prohibits waste disposal, including shells, except as authorized under the NPDES permit. **Special Condition 1** requires evidence that the anchoring design has been approved by the harbor master of the SMCHD to ensure that the grow-out structures do not break free. **Special Condition 10** requires removal of all abalone, grow-out structures, anchoring devices, materials, and equipment upon cessation of operations.
Marine Resources: Kelp Harvesting	**Issue:** The new demand for kelp to feed the abalone, especially in conjunction with the three other proposed abalone aquaculture projects, could lead to adverse impacts on the kelp bed community. **Mitigation Measures:** **Special Condition 8** prohibits harvest, take, or purchase of kelp obtained from (1) open bed #220 between the Monterey breakwater and Point Pinos, and (2) open bed #221 between New Brighton State Beach and Soquel Point (Pleasure Point area), off the Santa Cruz County coast, between December 1 and May 15 (seasonal times of low abundance). The CDFG is reviewing and updating its kelp harvesting regulations, which should be completed with new, more comprehensive standards by the end of 2000. Based on this new forthcoming information, it may be appropriate for the Commission to consider an amendment request for this condition after the Fish & Game Commission has certified the revised regulations.
Commercial Fishing Operations	**Issue:** (1) Potential use conflicts with existing commercial fishing anchorage space in Pillar Point Harbor; (2) increased use of ancillary boating facilities; and (3) potential navigational and safety hazards. **Mitigation Measures:** **Special Condition 1** requires that anchoring designs be approved by the harbor master of the SMCHD. **Special Condition 2** prohibits loading or unloading any equipment or materials on, at or from the public boat launch ramp, docks, or vehicle approach road. It also provides that prior to using the public boat launch ramp to install or remove its grow-out structures, an operator must submit evidence to the executive director that it has coordinated with the harbor master on use

Significant Issue Area	Proposed Special Conditions and Mitigation Measures
	of the public boat launch ramp to conduct said activities (e.g., use during a time when demand for use of the boat launch is anticipated to be light). **Special Condition 3** requires marking of grow-out structures to ensure navigational safety pursuant to all U.S. Coast Guard and harbor master requirements. **Special Condition 9** prohibits waste disposal except as authorized under the NPDES permit.
Public Access	**Issue**: Installation and/or operation of the abalone aquaculture facilities could restrict public access. **Mitigation Measures**: **Special Condition 2** prohibits loading or unloading any equipment or materials on, at or from the public boat launch ramp, docks, or vehicle approach road. It also provides that prior to using the public boat launch ramp to install or remove its grow-out structures, an operator must submit evidence to the executive director that it has coordinated with the harbor master on use of the public boat launch ramp to conduct said activities (e.g., use during a time when demand for use of the boat launch is anticipated to be light).
Recreation	**Issue:** Harvesting the kelp canopy around Monterey Bay could affect recreational opportunities and/or exacerbate existing use conflicts. **Mitigation Measures:** **Special Condition 8** prohibits harvest, take, or purchase of kelp obtained from (1) open bed #220 between the Monterey breakwater and Point Pinos, and (2) open bed # 221 between New Brighton State Beach and Soquel Point (Pleasure Point area), off the Santa Cruz County coast, between December 1 and May 15 (seasonal times of low abundance). The CDFG is reviewing and updating its kelp harvesting regulations, which should be completed with new, more comprehensive standards by the end of 2000. Based on this new forthcoming information, it may be appropriate for the Commission to consider an amendment request for this condition after the Fish & Game Commission has certified the revised regulations.

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Note: Appendices A - E are contained in a separate corresponding packet.

1.0 STAFF RECOMMENDATION

Approval with Conditions

The staff recommends conditional approval of Coastal Development Permit Application No. E-98-17.

Motion:

I move that the Commission approve Coastal Development Permit Application No. E-98-17, subject to the conditions specified below.

The staff recommends a YES vote. To pass the motion, a majority of the Commissioners present is required. Approval of the motion will result in the adoption of the following resolution and findings.

Resolution:

The Coastal Commission hereby **grants** permit No. E-98-17, subject to the conditions below, for the proposed development on the grounds that (1) as conditioned, the development will be in conformity with the provisions of Chapter 3 of the California Coastal Act of 1976 and (2) there are no feasible alternatives or feasible mitigation measures, other than those specified in this permit, which would substantially lessen any significant adverse impact which the activity may have on the environment.

2.0 STANDARD CONDITIONS Appendix A

3.0 SPECIAL CONDITIONS

This permit is granted subject to the following special conditions:

1. **Approval from the Harbor Master of the San Mateo County Harbor District ("SMCHD") on Anchoring Grow-Out Structures. Prior to issuance of this permit,** Pacific Offshore Farms shall submit to the executive director of the Coastal Commission ("executive director") written evidence that its anchoring design has been approved by the harbor master.

2. **Use of the Public Boat Launch Ramp.** Pacific Offshore Farms shall not load or unload any equipment or materials on, at, or from the public boat launch ramp, docks, or vehicle approach road. **Prior to using the public boat launch ramp to install or remove its grow-out structures**, Pacific Offshore Farms shall submit evidence to the executive director that it has coordinated with the harbor master on use of the public boat launch ramp to conduct said activities (e.g., during a time when demand for use of the boat launch is anticipated to be light).

3. **Markings to Ensure Navigational Safety.** Pacific Offshore Farms shall mark its grow-out structures to ensure navigational safety pursuant to all U.S. Coast Guard and SMCHD harbor master requirements.

4. **Sabellid Polychaete Worm -- California Department of Fish and Game ("CDFG")-Approved Transfer and Inspection Procedures.** Pacific Offshore Farms shall only obtain stock from a facility that has been certified by the CDFG as "sabellid-free." **Prior to issuance of this permit**, Pacific Offshore Farms shall submit to the executive director evidence that its source facilities have been certified by the CDFG as "sabellid-free." Pacific Offshore Farms shall then fully adhere to the transfer and inspection procedures contained in **Appendix B**, with the following additional requirement: If a sabellid infestation is detected, Pacific Offshore Farms shall **immediately** remove the cage or container in which the infested animal was found.

5. **Monitoring and Reporting Program.**

   a. Pacific Offshore Farms shall implement dissolved oxygen monitoring as required in its NPDES permit;

   b. Pacific Offshore Farms shall submit and implement plans to conduct **sediment and benthic infaunal surveys** in accordance with the sampling methods and requirements listed in **Appendix C**. The executive director shall respond to all plan submittals within 30 days.

   c. Pacific Offshore Farms shall submit to the executive director for review and approval (1) the technical report prepared pursuant to Provision 2 of its NPDES permit by January 15 of each year, (2) a report of all results from its monitoring program according to the guidelines contained in **Appendix C** within six months of completing each field survey, and (3) a summary of dissolved oxygen monitoring if levels are detected to be below 5.0 mg/l for five consecutive days within five business days.

6. **Annual Phased Increase in Abalone Culturing Operations.** Pacific Offshore Farms shall phase its total number of abalone to a maximum of 800,000, annually increasing growth in 25% increments contingent upon authorization by the executive director of the Coastal Commission as follows:

   - At the end of Year 1 *(year 1 sampling conducted by September 30, 2000; report submitted by March 31, 2001)*, the maximum number of abalone may not exceed 200,000 (25% of 800,000);
   - at the end of Year 2, the maximum number may not exceed 400,000;
   - at the end of Year 3, the maximum number may not exceed 600,000; and
   - at the end of Year 4, the maximum number may not exceed 800,000.

The executive director will base his response to incremental expansion requests on the dissolved oxygen and benthic monitoring required in Special Condition 5, and will give said respond within 30 days of request and report submittal.

7. **Cessation of Operations.** If results of the benthic infaunal sampling and analysis indicate a significant change in the infaunal community under the grow-out facilities as defined in the "Thresholds of Significance" section of **Appendix C**, Pacific Offshore Farms shall remove all abalone, grow-out structures, anchoring devices, materials, and equipment within 90 days.

8. **Kelp Harvesting**. Pacific Offshore Farms shall not harvest, take, or purchase kelp obtained from (1) open bed #220 between the Monterey breakwater and Point Pinos, and (2) open bed #221 between New Brighton State Beach and Soquel Point (Pleasure Point area), off the Santa Cruz County coast, between December 1 and May 15.

   (Note that Pacific Offshore Farms may request that the Commission modify this restriction through an amendment to this permit based upon emergence of new information that may affect kelp harvesting, such as the CDFG's review of its kelp harvesting regulations. The review process for the next such revision will begin summer or fall, 1999, and the regulations are scheduled to be certified by the Fish & Game Commission by the end of Year 2000.)

9. **Waste Disposal.** Pacific Offshore Farms shall not dispose any equipment or waste, including shells, into the marine environment, except as authorized in its NPDES permit.

10. **Facility Removal.** Upon termination of operations, Pacific Offshore Farms shall remove all abalone, grow-out structures, anchoring devices, materials, and equipment within 90 days.

4.0 FINDINGS AND DECLARATIONS

Note: Exhibits 1 - 4 and Appendices A - E are contained in a separate corresponding packet.

4.1 Project Location

Pillar Point Harbor is located 20 miles south of San Francisco at the northern end of Half Moon Bay in San Mateo County. It is the only protected ocean harbor between Bodega Bay and Santa Cruz. Breakwaters separate the harbor into inner and outer areas.

The unincorporated community of Princeton-by-the-Sea lies to the northwest, and the community of El Granada lies to the northeast and east, across Highway 1. The City of Half Moon Bay lies to the south. The harbor is located adjacent to the Monterey Bay National Marine Sanctuary. (Exhibit 1, "Project Location")

Existing facilities at the harbor include fish processing and freezing operations, a fuel dock, berths, parking lots, and a public boat launch ramp. Romeo Pier, which is owned and operated by the San Mateo County Harbor District ("SMCHD"), lies in the northern area of the harbor.

Pillar Point Harbor provides opportunities for commercial fishing, recreational boating and fishing, clamming, sailing, kayaking, windsurfing, marine-related commercial and retail facilities, restaurants, and other visitor-serving activities such as pedestrian and bike paths and birdwatching.

4.2 Provision of an Aquaculture Area within Pillar Point Harbor by the San Mateo County Harbor District, and Preparation of a Mitigated Negative Declaration

In September, 1994, the SMCHD designated an area approximately 500 yards by 750 yards (77.5 acres) in the northwest corner of the outer harbor, adjacent to the outer breakwater, as appropriate for aquaculture facilities (Exhibit 2, "Area in Pillar Point Harbor deemed appropriate for aquaculture by the San Mateo County Harbor District").

As "lead agencies" under the California Environmental Quality Act ("CEQA")[1] the SMCHD and the California Department of Fish and Game ("CDFG") certified on July 10, 1996, a mitigated negative declaration ("MND") for aquaculture operations in Pillar Point Harbor.

In February, 1997, the SMCHD ratified license agreements with four licensees for areas of submerged lands and overlying water within the designated aquaculture area of the harbor for the purpose of abalone aquaculture.

In June, 1998, the Regional Water Quality Control Board ("RWQCB") issued a national pollutant discharge elimination system ("NPDES") permits to each of the four proposed operators.

4.2.1 Description of Project Evaluated in the Mitigated Negative Declaration

The MND evaluates a project defined as operation of <u>up to five abalone facilities</u> within <u>2.4 acres</u> of the 77.5-acre area of Pillar Point Harbor set aside for aquaculture, with a combined density of up to <u>5,150,000 abalone</u> at full build-out. A 300-foot buffer will exist between each of the five aquaculture operations/facilities (not between each raft structure within a single facility).

The five facilities that constitute the project defined in the MND include: "U.S. Abalone" (Thomas Ebert), which operated in Pillar Point harbor between 1989 and 1998 without benefit of a coastal development permit, and the proposals of Jon Locke, *dba* "Princeton Abalone," Brian Price and Joel Roberts, *dba* "Deeper Blue Enterprises," Lyle Wagner, *dba* "Blue Pacific Abalone," and Christian Zajac, *dba* "Pearl Abalone Company."

[1] Pursuant to a cooperative agreement as authorized by California Environmental Quality Act Guidelines, Title 14, California Code of Regulations Section 15051(d).

Two of the four applicants, Jon Locke ("Princeton Abalone") and Lyle Wagner ("Blue Pacific Abalone") proposed both onshore and offshore components to their facilities.

Since completion of the MND, the following changes have occurred:

- US Abalone removed all abalone from its raft system in Pillar Point Harbor as of November, 1998, and removed the rafts themselves as of January, 1999;
- Doug Hayes, *dba* "Pacific Offshore Farms," has replaced "Deeper Blue Enterprises" as an applicant;
- Princeton Abalone now proposes only an offshore component; and
- The combined total number of abalone at full build-out has decreased by 56%, from 5,150,000 to 2,250,000. Each applicant now proposes to culture the following maximum number of abalone:

  -Pacific Offshore Farms: up to 500,000 (offshore rafts only);
  -Princeton Abalone: up to 500,000 (offshore structures only);
  -Blue Pacific Abalone: up to 800,000 (onshore and offshore components);
  -Pearl Abalone Company: up to 450,000 (offshore rafts only).

Exhibit 3, "SMCHD License Agreement Areas," shows the proposed facility locations.

Coastal Commission Review
The Coastal Commission is reviewing each application separately:

- Pacific Offshore Farms (Doug Hayes): Application No. E-98-17 to culture up to 500,000 abalone within a 248' x 60' (14,880 sq. ft., or 0.34 acre) area;
- Princeton Abalone (Jon Locke): Application No. E-98-18 to culture up to 500,000 abalone within a 250' x 75' (18,740 sq. ft., or 0.43 acre) area;
- Blue Pacific Abalone (Lyle Wagner): Application No. E-98-19 to culture up to 800,000 abalone within a 250' x 105' (26,250 sq. ft., or 0.60 acre) area;
- Pearl Abalone Company (Christian Zajac): Application No. E-98-20 to culture up to 450,000 abalone within a 98' x 40' (3,920 sq. ft., or 0.09 acre) area.

This coastal development permit application (No. E-98-17) is only for Pacific Offshore Farms' proposed project.

4.3 Project Description for the "Pacific Offshore Farms" Facility

Project Purpose
Doug Hayes, *dba* "Pacific Offshore Farms," proposes to cultivate red abalone *(Haliotis rufescens)* from juveniles to maturity in screened plastic cages hung from floating rafts moored within Pillar Point Harbor. Hayes also proposes to study the impact of aquaculture on Pillar Point Harbor for possible future expansion.

Facility Description
Pacific Offshore Farms will use a 248' x 60' (14,880 sq. ft., or 0.34 acre) area to moor its rafts. (See Exhibit 3, "SMCHD License Agreement Areas"). Rafts will be constructed of marine-grade wood, bolted together with heavy-duty galvanized hardware, and will support submerged screened plastic cages (buckets) that have open access to seawater. None of the wood will be treated with the preservative creosote *(personal communication with Doug Hayes, Pacific Offshore Farms, September 24, 1998).*

Rafts will be kept afloat by four 55-gallon plastic barrels installed between the raft top and the cage, or USCG-approved plastic-covered foam. Each cage will contain a natural substrate on which the abalone will live. (See Exhibits 5 and 6 for schematic diagrams of Pacific Offshore Farms' raft and cage structures). The rafts will be anchored in a way that is acceptable and approved by the SMCHD, pursuant to **Special Condition 1**, to ensure that they will not break free.

As seedlings (which are very small, about the size of a thumb nail) approach 2 inches, they will be moved into individual floating cages, also moored within the license area. Dissolved oxygen monitoring will dictate the actual biomass in each cage (density will be reduced if dissolved oxygen levels decrease). Animals will be harvested from the larger cages in three to four years, when they reach 3.5 inches.

4.4 Coastal Act Issues

Coastal Act Section 30411(c) states in part:

> *The Legislature finds and declares that salt water or brackish water aquaculture is a coastal-dependent use which should be encouraged to augment food supplies and to further the policies set forth in Chapter 4 (commencing with Section 825) of Division 1.*

Coastal Act Section 30222.5 states:

> *Ocean front land that is suitable for coastal dependent aquaculture shall be protected for that use, and proposals for aquaculture facilities located on those sites shall be given priority, except over other coastal dependent developments or uses.*

Coastal Act Sections 30250(a) and 30105.5 provide for review of cumulative impacts. Section 30250(a) states in relevant part:

> *New residential, commercial, or industrial development...shall be located...where it will not have significant adverse effects, either individually or cumulatively, on coastal resources.*

Section 30105.5 states:

> *Coastal Act Section 30105.5 defines "cumulatively" or "cumulative effect" to mean the incremental effects of an individual project shall be reviewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.*

Creation and operation of the proposed abalone grow-out facility will constitute aquaculture. Furthermore, ocean-front land includes submerged lands. Hence, the Commission finds that said project is a coastal-dependent use that is given priority status in the Coastal Act pursuant to Coastal Act Section 30222.5.

Therefore, the remainder of this section will analyze the proposed aquaculture project with other coastal-dependent developments and uses, and Coastal Act policies concerning (1) marine resources and biological productivity, (2) existing commercial fishing operations, (3) recreation, including recreational fishing and boating operations, and (4) placement of fill in coastal waters.

Furthermore, analysis will address cumulative impacts where appropriate pursuant to Coastal Act Sections 30250(a) and 30105.5.

4.4.1 Marine Resources

Coastal Act Section 30230 states:

> *Marine resources shall be maintained, enhanced, and where feasible, restored. Special protection shall be given to areas and species of special biological or economic significance. Uses of the marine environmental shall be carried out in a manner that will sustain the biological productivity of coastal waters and that will maintain healthy populations of all species of marine organisms adequate for long-term commercial, recreational, scientific, and educational purposes.*

Coastal Act Section 30231 states:

> *The biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored through, among other means, minimizing adverse effects of waste water discharges and entrainment, controlling runoff, preventing depletion of ground water supplies and substantial interference with surface water flow, encouraging waste water reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.*

There are several potential impacts associated with cultivating abalone in the manner proposed: (1) introduction of exotic parasites, particularly a sabellid polychaete worm, into harbor and marine waters through infected abalone; (2) spread of disease, particularly "withering syndrome;" (3) impaired water quality due to deficient dissolved oxygen levels; (4) impacts to

benthic habitat, fish, and invertebrates; (5) reduction in avian habitat area; and (6) overharvesting of kelp in order to feed the abalone.

4.4.1.1 The Sabellid Polychaete Worm[2]

Discovery / Background
Abalone culturists in California began to observe shell deformities and slow growth in their abalone in the late 1980s. The problem was soon attributed to a non-native sabellid polychaete worm from South Africa that was accidentally introduced to California when infested abalone were imported.

The sabellid polychaete worm that parasitizes abalone and other mollusks does not feed on its host, but rather uses the hard shell as an attachment site. The worm itself is a suspension feeder, removing food from the surrounding waters. It damages its host by interfering with natural growth. Thus, although infestations do not directly affect the quality of the abalone's meat, they can deform the shell to the point where the animal's growth slows or virtually ceases.

Because low infestations are not readily noticeable, the sabellid was spread rapidly through transfer of infested stock to virtually all abalone mariculture facilities in California by the mid 1990's. Various eradication methods were tried, but proved to be infeasible or unsuccessful. Thus, growers have focused on controlling the spread of infestation.

Transmission mechanism
The larval parasite reaches infestation stage when it is able to crawl. Larvae typically crawl to a new location on their hosts' shell or to a new host. Fortunately, the worm's larvae do not swim or float in the water column where they would be widely dispersed by currents. Rather, the benthic larvae crawl along the substrate until they find a suitable host. Transmission does not require direct contact between infested and uninfested animals. Furthermore, once the sabellid has been encased by shell, it no longer requires a living host for its development and reproduction (i.e., empty shells of animals that were infested before they died act as a source of infestation). Thus, larvae can spread if they become dislodged from the host shell or from a substrate, and can be transported by kelp, equipment, wet hands, and infested shells.

Environmental threat
Spread of the sabellid is of particular concern for the following reasons:

- The sabellid is an introduced species. Biological control experiments using native California intertidal and subtidal fishes and invertebrates have not turned up any predators of adult sabellids, though screening for potential predators of the larval stage is needed.

[2] Much of the factual information in this section about the sabellid is taken from the following source: "Identification and Management of the Exotic Sabellid Pest in California Cultured Abalone." (Carolynn S. Culver, Armand M. Kuris, and Benjamin Beede. A publication of the California Sea Grant College System. Publication No. T-041; ISBN 1-888691-05-0. (La Jolla, 1997).

- The biological and ecological characteristics of the sabellid suggest that it has a high potential for successful invasion in California, as demonstrated by its successful infestation and reinfestation of abalone facilities throughout California, and in Mexico and Oregon.
- Sabellid worm larvae accept a broad range of hosts and are capable of infesting several native species of mollusks in addition to abalone, creating a threat of spread from infested aquaculture facilities into wild populations and establishment in state waters. Preliminary experiments conducted by Culver and her colleagues (1997) suggest that bivalves, such as mussels and oysters, are much less susceptible to infestation than snails.

The threat to natural populations is real as evidenced by the fact that the sabellid worm has infested populations of native snails in the rocky intertidal zone within a small cove adjacent to the discharge pipe from an abalone aquaculture facility in central California *(Culver, personal communication February 25, 1999)*. After the infestation was discovered, the aquaculture company in cooperation with the CDFG and researchers at the University of California at Santa Barbara began an eradication program. Several million individuals of the main host species (a turban snail) have been removed from the intertidal zone and destroyed since 1996. The most recent field survey (1998) indicates that there were few infested snails remaining and that there was no evidence of recent transmission of the parasite as indicated by the absence of young worms *(C. Culver, UCSB, personal communication February 25, 1999)*.

Response by the California Department of Fish and Game

The California Department of Fish and Game ("CDFG" or "Department") concluded in May, 1996, that based on continuing investigations by the Department, the aquaculture industry, and the University of California at Santa Barbara, "every abalone aquaculture facility in the state is to be considered positive for presence of the [sabellid] worm unless, and until, inspections by the Department's Fish Health Laboratory ("FHL"), or other FHL approved inspectors, determine otherwise."[3]

To prevent the further introduction and spread of the sabellid worm, and to achieve its goal of complete sabellid eradication by December, 1999, the CDFG has promulgated the following requirements:[4]

> Outplanting of abalone into the wild. The Department will continue to emphasize the requirement of Fish and Game Code §6400 that any abalone to be planted into the wild must be inspected by the Department prior to planting. The Department will only approve the planting of sabellid-free abalone from sabellid-free broodstock.
>
> Approved sabellid eradication and prevention plans. All registered abalone aquaculturists were required to submit to the Department no later than December 31, 1996, a sabellid eradication plan. The FHL will review each plan and assess the risk each

[3] Memo to all registered abalone aquaculturists from Jacqueline E. Schafer, CDFG, dated May 20, 1996.

[4] Memos to all registered abalone aquaculturists from Jacqueline E. Schafer, CDFG, dated May 20, 1996, and December 6, 1996. Personal communication with Fred Wendell, Chair, CDFG Aquaculture Team, on July 17, 1998.

facility may represent to California resources. Each facility will then be required to conform to approved cleanup plan. New facilities must obtain an approved sabellid prevention plan. The CDFG received and informally approved Pacific Offshore Farms' sabellid polychaete worm prevention plan in November, 1997.

Certification of facilities as "sabellid-free." On July 7, 1998, the director of the CDFG signed a policy containing procedures for the CDFG to certify facilities as sabellid-free. Each operator must request initiation of CDFG's inspection program to certify a facility as sabellid-free. CDFG personnel will then conduct three inspections over a two-year period. Each inspection will entail inspection of each container (e.g., tank, cage, barrel) in the facility. The sampling protocol will include sufficient replication to allow CDFG to conclude that the stock is sabellid-free with 95% statistical confidence if no sabellids are observed in the sample.

Commission evaluation and mitigation of impacts

The CDFG aquaculture team has made significant progress in developing and implementing procedures for the sampling, reduction, and eventual eradication of sabellid worms in existing shore facilities, and for preventing new infestations. However the sabellid problem is not solved and the risks to the marine resources of the Monterey Bay Marine Sanctuary are real.

How serious is the risk to natural populations from the proposed aquaculture facilities? To answer this question one needs information regarding the likelihood of infested animals being placed in cage culture, the likelihood of sabellid larvae escaping the cages, and the likelihood of escaped larvae infesting natural populations.

If the animals used for cage culture come from facilities that contain the parasite, the chance of introducing infested animals to Pillar Point Harbor is small but real. Shore facilities are managing infestation through cultural practices *(F. Wendell, CDFG, personal communication February 23, 1999).* The small abalone used as "seed" are kept in tanks which are isolated from the tanks housing larger animals known to be infested. Prior to transfer, these "seed" animals are inspected by the CDFG. They examine a sufficient number of individuals that there is no more than a 1% probability of missing an infestation rate of 5% or greater.

Such sampling programs are based on the assumption that infested animals are randomly distributed within the population and that each individual within the population has an equal change of being sampled. In practice, infested animals probably occur in clusters because of the manner of larval dispersal, and truly random samples are difficult to collect. In addition, recently attached worms are difficult to see. Therefore, it is the professional opinion of the Commission's marine ecologist that the actual probability of missing a 5% infestation is somewhat larger than 1% by an unknown amount.

If infested abalone are introduced to culture facilities in Pillar Point Harbor, the chance of the larvae escaping into the natural environment is near certainty. Culver et al. (1997) suspended infested abalone in cages above uninfested animals. All the individuals below the suspended cages became infested. The larva apparently fall into the water column either because of

physical disturbance or as part of their natural behavior. The worms can also travel on shell and kelp debris.

After falling to the sea floor in the harbor, the sabellid larvae must then find a suitable host. The probability of this occurring is low. The harbor bottom is composed of sand and mud and gastropods occur in low density. A second avenue of dispersal is on kelp debris that gets washed out of the harbor. The information needed to estimate the probability of dispersal out of the harbor on kelp debris is not available. Finally, there is the possibility of culture rafts breaking loose in storms. This has occurred in the past and some of the abalone were not recovered *(F. Wendell, CDFG, personal communication February 23, 1999).* In these previous occurrences, the rafts remained within the harbor, but on one occasion the raft drifted onto the breakwater where snails would be expected to occur.

As stated above, the CDFG's established procedures to certify an abalone-culturing facility as sabellid-free entail three inspections by CDFG personnel over a two-year period once the operator has requested initiation of the inspection program. Currently, only two facilities in the state have requested said initiation as of February 25, 1999. The CDFG inspected one facility twice and found it to be sabellid-infested. The CDFG will inspect the other facility soon.

Although said certification could occur more quickly than two years if an existing facility were to shut down and be kept dry for a long enough period to ensure that all sabellids were killed, or if a new facility were to be built, it will likely be two years before stock from a certified sabellid-free facility is available.

Nevertheless, considering the following factors, the Commission finds it necessary to require in **Special Condition 4** that prior to issuance of this permit, Pacific Offshore Farms prove it can and will obtain all stock from a facility that has been certified by the CDFG as "sabellid-free" in order to ensure that implementation of said project will maintain marine resources, protect the adjacent marine sanctuary, and maintain healthy populations of existing species of marine gastropods as required by Coastal Act Section 30230:

- the sabellid worm has not yet been eradicated;
- the probability of introducing the sabellid parasite into the natural environment as a result of aquaculture activities in Pillar Point Harbor is small but real;
- potential spread of the sabellid poses a documented environmental threat;
- a successful introduction of this non-native sabellid parasite into native populations of mollusks could have extremely serious consequences;
- once established, eradication of the sabellid demands drastic measures; and
- Pillar Point Harbor is located directly adjacent to the Monterey Bay National Marine Sanctuary, an ocean currents connect harbor and sanctuary waters.

Furthermore, the Commission staff has worked with the CDFG's aquaculture team to develop abalone transfer and inspection procedures appropriate for Pillar Point Harbor culturing

operations. The goals were to (1) address the frequent stocking of rafts with stock from various existing facilities; (2) where applicable, require that facilities request as soon as possible to initiate the inspections necessary to become certified as sabellid-free; and (3) remove sabellid-infested animals, should they be discovered, as soon as feasible. The Commission imposes these transfer and inspection procedures, which are contained in **Appendix B**, as **Special Condition 4**. **Special Condition 4** further requires that if a sabellid infestation is detected, Pacific Offshore Farms shall immediately remove the cage or container in which the infested animal was found.

In addition, the Commission imposes **Special Condition 9**, which prohibits Pacific Offshore Farms from discharging abalone shells into the marine environment.

Finally, the Commission imposes **Special Condition 1**, which requires evidence that Pacific Offshore Farms' anchoring design has been approved by the harbor master of the SMCHD to ensure that its grow-out structures do not break free.

Project consistency with Coastal Act policies
The Commission finds that with the requirements of **Special Conditions 1, 4, and 9,** the proposed project will be carried out so as to avoid to the greatest extent feasible the introduction of sabellid worms into marine waters, and ensure that the facility remains sabellid-free. The Commission therefore finds that the proposed project as extensively conditioned can be carried out in a manner that will sustain and maintain the biological productivity and quality of coastal waters, and maintain healthy populations of all species of marine organisms as required by Coastal Act Sections 30230 and 30231.

4.4.1.2 Withering Syndrome

Background
First discovered in 1986, withering syndrome caused populations of black abalone from San Diego to Cayucos, San Luis Obispo County, to decline by as much as 99 percent. Withering syndrome is not harmful to humans, but can cause abalone to lose weight and eventually die of starvation.

Recent identification and action by the CDFG[5]
The CDFG first determined that withering syndrome was well-established in the wild south of the City of Carmel, a rough dividing point between endemic and clear areas. As an immediate stop-gap measure, on August 26, 1998, the CDFG director placed a conditional ban on transfer of seed stock to facilities north of Carmel and between facilities within the area north of Carmel. The condition allows transfers only if a CDFG health exam does not find signs of the rickettsia bacteria, the likely causative agent for withering syndrome (only small seed, <20 mm will pass this test).

Recently, however, some locations north of Carmel have shown signs of both withering syndrome and rickettsia. In response, on March 22, 1999, the CDFG director adjusted the dividing line between endemic and clear areas northward to Point San Pedro, near the City of

[5] Telephone communication with Fred Wendell, Aquaculture Coordinator, CDFG, on October 26, 1998.

Pacifica in San Mateo County (thus the conditional ban on seed stock transfer is now based on Point San Pedro, not the City of Carmel).

Meanwhile, the CDFG has been implementing the following actions to confirm the area in which the disease is established and develop appropriate eradication measures:

1. Developing a sampling plan for wild abalone stocks in the north (sampling mainly around facilities, but also at some sites well-removed);
2. Conducting research to determine all transmission pathways (suspect water-borne transmission through water column); and
3. Conducting research to provide certainty that rickettsia is actually the causative agent.

Research results will not be available for at least six months to one year, at which time the CDFG's Aquaculture Disease Committee will review the data and make further recommendations. In the interim, the conditional ban will remain in effect, and the approximate dividing line at Point San Pedro between endemic and clear areas may be adjusted northward if necessary.

Project consistency with Coastal Act policies
Pillar Point Harbor lies south of Point San Pedro, in an area within which the CDFG has determined withering syndrome to be endemic. Any transfer of Pacific Offshore Farms' stock to locations north of Point San Pedro, into areas clear of withering syndrome, would be subject to the conditional ban imposed by the CDFG (i.e., transfers would not be allowed unless a health exam does not find signs of rickettsia, the likely causative agent for withering syndrome).

The Commission thus finds that the proposed project as subject to the CDFG-imposed conditional ban will be carried out in a manner that will maintain healthy populations of all species of marine organisms as required by Coastal Act Section 30230.

4.4.1.3 Water Quality and Benthic Habitat

An aquaculture facility, such as the one proposed by Pacific Offshore Farms, has the potential to reduce the dissolved oxygen concentration in the water column and cause adverse changes to the benthic community.

Species and uses potentially affected[6]
Pillar Point Harbor supports ocean, commercial, and sport fishing; marine habitat; fish migration; preservation of rare and endangered species; contact and non-contact water recreation; shellfish harvesting; fish spawning; and wildlife habitat.

The harbor supports a diverse population of benthic fauna that includes polychaete worms, crustaceans (e.g., crabs, shrimp), and mollusks (e.g., snails, bivalves). Other invertebrates include anemones and seastars.

The harbor is also an important nursery area for juvenile fish in the summer. Flatfish, including English sole, various rockfish species, members of the surfperch family, and Pacific herring are abundant in the summer. Smaller numbers of many other significant commercial and sport species are also found. Starry flounder and topsmelt are abundant in winter, and northern anchovy, Pacific sardine, mackerel, and striped bass are also present.

Potential for depletion of dissolved oxygen in the water column
The dissolved oxygen ("DO") concentration in water is critical to the health of marine organisms; deficient DO concentrations could result in both lethal and sublethal effects. As a general rule, DO levels less than 5.0 mg/l are unacceptable to aquatic organisms.[7] The San Francisco Bay Region Basin Plan establishes a DO objective of 5.0 mg/l *(Chapter 3, p. 3-3)*, and the California Ocean Plan sets forth that the DO concentration shall not at any time be depressed more than 10 percent from that which occurs naturally as the result of the discharge of oxygen-demanding waste materials *(Chapter II, Section D, No. 1; p. 4)*. Abalone can tolerate lower DO levels than fish.

At very high numbers, the respiration of the abalone themselves could reduce DO levels in the water column. In addition, cage culture operations introduce the potential that abalone feed and fecal material could accumulate on the sea floor within the harbor. High concentrations of particulate organic material result in increases in decay organisms which consume available DO. Calm, poorly-mixed environments are especially susceptible to low DO levels. Increases in organic matter in bottom sediments could result in a local reduction in available DO from the surrounding environment below the level necessary to support local plant and animal species.

The MND contains a simple model of abalone DO uptake versus DO availability in the harbor. This model ultimately suggests that the potential for depletion of dissolved oxygen in the water column throughout the harbor by up to 5,150,000 abalone will not be significant.[8]

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[6] According to data from the following sources, referenced in the *Revised Expanded Initial Study for Abalone Aquaculture Operations, Pillar Point Harbor, San Mateo County* (Huffman & Associates, June, 1996): (1) *Biological Survey of Pillar Point Harbor*; Water Quality, Bird and Mammal Survey, Fish Survey, Benthic Survey, Diver Transects (Marine Ecological Institute, 1976); (2) Pillar Point Harbor Water Quality Data Summary 1990-1993 (Entrix, Inc.); (3) Bird Sampling Data – Mitigation Monitoring Program for Pillar Point Harbor Boat Launch Ramp Mitigation Site (Entrix, Inc., 1993); (4) Pillar Point Boat Ramp Facility Mitigation Site Monitoring Program Baseline Data Report (Entrix, Inc., June 24, 1991).

[7] Stickney, Robert. *Principles of Aquaculture.* (John Wiley and Sons, 1994).

[8] There was a lot of initial concern over DO availability because a conversion error in the MND's (Huffman report's) model calculations--using the density of water instead of the density of oxygen--led to a gross

Potential for benthic impacts
The MND states that the proposed raft structures will create shade that could adversely affect algae and benthic organisms. Also, placement of the raft anchoring devices will change the existing substrate.

Most importantly, the proposed facilities could impact the benthic community via disturbance resulting from the potential build up of detritus, including kelp and/or substitute feed, and fecal material on the seafloor. There is general consensus that substantial organic enrichment causes deleterious changes in the community of organisms that lives in sand or mud.

For example, said accumulation could favor species that thrive in disturbed organically rich sediments. In addition, large accumulation of organic material could result in decreases in DO near the bottom due to the respiration of decay organisms, and cause a loss of most of the natural invertebrate community in the sediments. Furthermore, invertebrate community changes could lead to changes in the fish community (e.g., change the forage value of the seafloor to bottom-feeding fishes).

Finally, the grow-out structures and associated equipment could become marine debris if they are not properly removed upon cessation of operations.

Provisions and prohibitions contained in the NPDES permits
Since the MND analysis, the collective abalone total for all proposed abalone operations at Pillar Point Harbor has been reduced to 1,950,000 abalone at full buildout (of which Pacific Offshore Farms will produce 200,000, or about 10%). Notwithstanding the decrease in abalone production, the NPDES permits granted to the four proposed aquaculturists state that some concern about potential DO depletion still remains (but cite the initial suggestion of the MND DO model, which has since been found to grossly underestimate the amount of available DO – See Footnote 9).

The NPDES permits also state that intensive monitoring of DO concentrations, benthic infauna, and bottom sediment will provide a suitable index of how the proposed facilities may affect benthic fish communities residing in the harbor.

Thus, Pacific Offshore Farms' NPDES permit, like those the RWQCB granted to the other three proposed operators, requires several mitigation measures, consistent with those identified in the MND:

- Monitoring Program. Each operator shall sample DO levels and water temperature on a daily basis, and periodically sample bottom sediment and benthic infauna as specified in its NPDES permit to evaluate the significance of potential project-related impacts and effects.

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underestimate of available DO and the suggestion that 5,150,000 abalone have the potential to severely impact DO levels in the harbor with resultant negative impacts to the biota. Correction of said error shows that there is actually about 700 times more available oxygen than first calculated (36,000,000 liters instead of 52,000 liters).

- Annual Reporting. Each operator shall submit an annual technical report to the RWQCB's executive officer that (i) summarizes the past year's monitoring data and documents that all receiving water limitations are being met; (ii) summarizes potential water quality problems and describes how they will be solved; and (iii) proposes an increase in number of abalone to be grown in the coming year. Production shall not be increased until the executive officer accepts the proposal in the technical report.

- Phased Growth in Abalone Culturing Operations. Each operator shall phase production during its five-year NPDES permit period (June, 1998 – June, 2003), increasing growth annually in 20% increments contingent upon the executive officer's authorization. Pacific Offshore Farms originally proposed a maximum production of 500,000 abalone, but has since scaled back to 200,000.[9]

Pursuant to another measure, Pacific Offshore Farms submitted a DO contingency plan to the RWQCB and the Coastal Commission staff on September 27, 1998. The plan states that if DO levels drop to below 5.0 mg/l, Pacific Offshore Farms will aerate the water inside the abalone cages with an off-the shelf aeration system. A battery-powered air pump will pump air through a small plastic tube to a defuser that is mounted to the inside bottom of the modified 5-gallon containers used as abalone cages. The aeration system will be mounted under the security hatches on the rafts.

Commission evaluation and mitigation of impacts

Potential depletion of dissolved oxygen in the water column

Based on the MND's DO model (which concludes that the potential for depletion of DO in the water column throughout the harbor by up to 5,150,000 abalone will not be significant--see Footnote 9), it seems unlikely that Pacific Offshore Farms' grow-out of up to 200,000 abalone or the four potential operator's cumulative total grow-out of up to 1,950,000 abalone will cause significant depletion of DO in the water column throughout the harbor. This conclusion is nevertheless based upon the findings of one simple model.

The Commission therefore imposes several special conditions to ensure that the proposed projects will not significantly deplete DO from the water column. To detect any local DO depletion, the Commission imposes **Special Conditions 5(a) and 5(c)**, which incorporate the DO monitoring required by Pacific Offshore Farms' NPDES permit and provide for reporting of monitoring results.

To further mitigate any DO depletion not satisfactorily mitigated by Pacific Offshore Farms' aerating its abalone cages, the Commission imposes **Special Condition 6**, which institutes phased annual increases in total abalone stock contingent upon executive director approval. The executive director shall base said approval on the results of the dissolved oxygen and benthic monitoring required in Special Condition 5.

[9] Letter from Doug Hayes, Pacific Offshore Farms, to Moira McEnespy, CCC, dated December 20, 1998.

Potential benthic impacts due to shading and placement of the anchoring devices
With respect to potential impacts to benthic habitat due to shading and placement of anchoring devices, the Commission finds said impacts will not be significant for the following reasons: (1) the 300-foot buffers between each facility will reduce shading; (2) shading impacts will not have a significant effect because water clarity is very poor near the harbor bottom most of the time; (3) placement of rafts will not prevent use of the substrate underneath; and (4) the anchoring devices will require a very small amount of bottom area.

Potential benthic impacts due to accumulation of kelp and abalone feces
The proposed facilities, both individually and cumulatively, could adversely affect the benthic community by causing a build up of detritus and fecal material on the seafloor. There is general consensus that substantial organic enrichment causes deleterious changes in the community of organisms that live in sand or mud. The Commission therefore finds that each operator must conduct independent benthic monitoring, and associated annual reporting, to ensure that its facility is not significantly affecting Pillar Point Harbor's existing benthic community. Operators can coordinate the work of monitoring contractors to reduce costs.

Organic enrichment can be monitored directly by taking sediment samples and analyzing them for total organic carbon ("TOC"). There is evidence, however, from studies around a fish farm that changes in the benthic community can take place beyond the area within which increases in TOC are obvious (Weston 1990). In order to strengthen inferences based on samples taken during the period of aquaculture operations, a preliminary survey of the benthic community is considered necessary.

The Commission thus imposes **Special Condition 5(b)** which requires Pacific Offshore Farms to conduct initial and subsequent sediment and benthic infaunal surveys in accordance with the sampling methods and requirements listed in **Appendix C**. The Commission also imposes **Special Condition 5(c)** which provides for reporting of monitoring results.

Furthermore, the Commission imposes **Special Condition 7** which states that if results of the benthic infaunal sampling and analysis indicate a significant change in the infaunal community under the grow-out facilities as defined in the "Thresholds of Significance" section of **Appendix C**, Pacific Offshore Farms shall remove all abalone, grow-out structures, anchoring devices, materials, and equipment within 90 days.

In addition, the Commission imposes **Special Condition 9**, which prohibits waste disposal except as authorized under the NPDES permit.

Finally, **Special Condition 6** institutes phased annual increases in total abalone stock contingent upon executive director approval. The executive director will base his response to incremental expansion requests on the dissolved oxygen and benthic monitoring required in Special Condition 5, and will give said respond within 30 days of request and report submittal.

Pacific Offshore Farms may apply for an amendment to this permit that seeks to modify or delete Special Condition 5 based on an alternate way to meet the intent of the requirements of Special Condition 5 and Appendix C. One such alternative could be demonstration that Pacific Offshore

Farms has modified its facility and/or cage design to ensure that only a negligible amount of waste kelp or abalone feces will be released into the marine environment.

Potential marine debris

To avoid any potential residual marine debris, the Commission imposes **Special Conditions 1 and 10. Special Condition 1** requires evidence that the anchoring design has been approved by the harbor master of the SMCHD to ensure that the grow-out structures do not break free. **Special Condition 10** requires, upon cessation of abalone grow-out operations, Pacific Offshore Farms to remove all abalone, grow-out structures, anchoring devices, materials, and equipment within 90 days. Pacific Offshore Farms' license agreement with the SMCHD provides for an "environmental protection and remediation fund," which will ensure implementation of Special Condition 10.

Consistency with Coastal Act policies

The Commission finds that with the requirements of **Special Conditions 1, 5, 6, 7, 9, and 10**, the proposed project as reviewed pursuant to Coastal Act Section 30105.5 in conjunction with three concurrent projects *(CDP Application Nos. E-98-18, E-98-19, and E-98-20)*, which will be conditioned similarly, will be carried out in a manner that maintains marine resources, sustains the biological productivity and quality of coastal waters, and maintains healthy populations of all species of marine organisms as required by Coastal Act Sections 30230 and 30231.

4.4.1.4 Avian Habitat

Avian species that use Pillar Point Harbor

Pillar Point Harbor provides refuge, foraging and roosting habitat for a great diversity of migrating and wintering birds. The harbor is unique along the San Mateo County Coast in providing calm waters of mixed depths, attracting many bird species that are otherwise rare or unknown in the area.

Furthermore, several species of special concern use the harbor or surrounding areas: the western snowy plover *(Charadrius alexandrinus nivosus)* (federally listed as threatened, California species of special concern) winters at the northwest beach area between September and mid April; the brown pelican *(Pelicanus occidentalis)* (federally and state listed as endangered) uses the harbor area in late summer, fall, and early winter; and the marbled murrelet *(Brachyramphus marmoratus)* (state listed as endangered, federally listed as threatened), has been sighted in the Half Moon Bay and Pillar Point areas.

Bird census data reveals that the harbor's four habitat types support the following percentages of bird use, respectively: Open water, 51%; shoreline edges, 30%; sandy areas, 12%; and rock areas, 7%.[10]

[10] Results of 1990-1991 baseline study bird census data (Entrix, 1991), as contained in the *Revised Expanded Initial Study for Abalone Aquaculture Operations, Pillar Point Harbor, San Mateo County* (Huffman & Associates, June, 1996, p. 27).

The MND and several interested parties have identified concerns about the proposed project's potential impacts on avian species.

Loss of avian habitat due to placement of the physical structures (e.g., rafts)
The raft or ladder structures used in the aquaculture facilities will decrease the amount of open water habitat available for birds to feed, dive, and rest in the outer harbor.

Loss of open-water habitat is especially important because many species (e.g., loons, scaup, scoters, mergansers, grebes) do not sleep or rest on land or a hard surface such as the proposed abalone rafts. They remain on the water where they can dive or take flight, using land only to nest. *(Letter from Eileen Jennis-Sauppe, Sequoia Audubon Society, to James Stilwell, SMCHD, dated December 19, 1995)* Other species such as cormorants and pelicans may, however, use the rafts as additional roosting areas.

Furthermore, all species that use the harbor require unobstructed open-water areas to taxi for take-off (only puddle ducks such as mallards, pintails and teals that feed in shallow water and marshes take direct flight upward). *(Letter from Eileen Jennis-Sauppe, Sequoia Audubon Society, to James Stilwell, SMCHD, dated December 19, 1995)*

Interested parties have identified the following other impacts and requirements: (1) the birds cannot go eastward, out of the harbor, because the main boat channel is there, causing too much disturbance; (2) many birds that spend their entire lives at sea, nesting on islands, need to rest in the harbor during heavy storms; and (3) an adequate buffer must be maintained between the rafts and the western beach.

Commission evaluation of impacts
Placement and operation of Pacific Offshore Farms' abalone grow-out structures will occupy 0.34 acre of open water habitat, which is only about 0.6% of the 58 acres of biologically productive area in the northwest corner of the harbor. Furthermore, birds will not be precluded from using the buffer areas between each grow-out facility.[11] Thus the actual area of open water habitat precluded by all four proposed operations will be only 1.46 acres, or about 2.5 percent of the 58 acres of biologically productive area in the northwest corner of the harbor.[12]

In addition, all structures will be placed at least 500 feet from the western beach area, the second most highly-used habitat type.

Consistency with Coastal Act policies
The Commission thus finds that, for the reasons stated in its evaluation above, placement and operation of the proposed project as reviewed pursuant to Coastal Act Section 30105.5 in conjunction with three concurrent projects *(CDP Application Nos. E-98-18, E-98-19, and E-98-*

[11] E-mail correspondence from Gary Page, Point Reyes Bird Observatory, to Moira McEnespy, CCC, dated January 20, 1999, stating the opinion that all birds could get off the water with a 300-foot take-off distance (although not necessarily endorsing said buffer distance).

[12] Pacific Offshore Farms, 0.34 acre; Princeton Abalone, 0.43 acre; Blue Pacific Abalone, 0.60 acre; and Pearl Abalone, 0.09 acre.

20) will be carried out in a manner that will maintain healthy bird populations as required by Coastal Act Section 30230.

4.4.1.5 Kelp Harvesting

Regulatory framework
Fish and Game Code §6653 and §6750 provide the Fish and Game Commission ("F&GC") with authority to establish regulations as may be necessary to ensure the proper harvesting of kelp and aquatic plants for commercial and sport purposes. [13] The CDFG is the lead agency responsible for managing both giant kelp *(Macrocystis pyrifera)* and bull kelp *(Nereocystis luetkeana)* pursuant to commercial and sport fishing regulations *(14 CCR §30 and § 165).* The F&GC last amended these regulations in March, 1996, in accord with the California Environmental Quality Act.[14].

To manage commercial harvesting, the CDFG charts and numbers the state's kelp beds. Official beds are designated in Section 165.5(j) and (k) of Title 14, California Code of Regulations. Beds are actually geographic areas, not individual patches, and thus vary in length and contain differing amounts of kelp canopy that change with time. Although one management objective is to "endeavor to maintain a maximum sustained harvest and utilization of the state's kelp resources,"[15] the CDFG has no fixed standard for sustainable harvest because kelp production is so highly variable.

The CDFG uses aerial surveys to assess the kelp resources; the extent of giant kelp is determined by measuring the kelp bed's surface canopy on the photographs. Aerial surveys are scheduled to be conducted every five years, subject to financial constraints; the last survey of all designated beds was done in 1989. The F&GC then designates which kelp beds may be harvested, and places limitations on the method of harvest:

- Kelp beds are designated as either (a) available for <u>lease</u> and exclusive harvest by the lessee, (b) <u>open</u> beds available for harvest by any licensed kelp harvester, or (c) <u>closed</u> beds that cannot be harvested for environmental reasons.

  A kelp harvesting license from the CDFG is required to harvest kelp commercially from designated "open" beds. The license enables the licensee to harvest to the limit the regulations allow at designated open beds on a "first-come, first-served" basis. If a bed has been cut to the limit the regulations allow, the licensee is prohibited from harvesting

[13] Under §6650, the F&GC may establish license and permit requirements; establish fees and royalties; require report of take; establish open and closed seasons; establish or change possession limits; establish and change area or territorial limits for harvesting; and prescribe the manner and the means of taking kelp and aquatic plants for commercial purposes. Under §6750, the F&GC may establish, extend, shorten or abolish open seasons and closed seasons; establish, change, or abolish bag limits, possession limits, and size limits; establish and change areas or territorial limits for taking; and prescribe the manner and means of taking kelp and aquatic plants for recreational purposes.

[14] "Giant and Bull Kelp Commercial and Sport Fishing Regulations." *Section 30 and 165, Title 14, California Code of Regulations.* California Department of Fish and Game. Final Draft Environmental Document (January, 1996).

[15] Ibid., pp. 2-6.

and must go to another bed. Under the "open" designation, a bed's canopy could be heavily or completely removed by harvest. Sixty percent of the kelp beds in California are set aside for small harvesters.[16]

- Kelp plants (giant and bull) may be cut no deeper than four feet below the ocean surface. For giant kelp, this restriction protects the plants' holdfasts, juvenile and reproductive blades, and young subsurface plants from being harvested before reaching maturity. Bull kelp is killed by this procedure.
- The F&GC may recommend temporary closure of a kelp bed for up to one year if it finds a bed has been significantly damaged (e.g., via storm, oil spill, or harvesting activities). Notice of the closure is sent to all licensed harvesters.

Kelp cannot be cut or harvested in marine life refuges, ecological reserves, national parks, or state underwater parks.

Finally, the F&GC requires harvesters to keep harvest and landing records, which record, among other statistical information, the wet weight of harvest, date of landing, and bed of origin. Harvest records are submitted once per month.

New project-related demand for kelp
There are fairly widely-varying estimates of the amount of kelp needed to grow out red abalone from seedlings to market size.

Estimate contained in the Mitigated Negative Declaration
The MND estimates the amount of kelp needed for the grow-out life of each abalone at between 3.0 and 4.7 lbs. of kelp. Assuming a grow-out life of three years, this estimate translates into a cumulative total of between 1,125 and 1,800 tons of kelp per year (which equals 21.6 – 34.6 tons per week, or 3.1 – 4.9 tons per day), broken down per company as follows:

- Pacific Offshore Farms: 250 – 400 tons/yr. (4.8 – 7.7 tons/wk., or 0.7 – 1.1 tons/day);
- Princeton Abalone: 250 – 400 tons/yr. (4.8 – 7.7 tons/wk., or 0.7 – 1.1 tons/day);
- Blue Pacific Abalone: 400 – 640 tons/yr. (7.7 – 12.3 tons/wk., or 1.1 – 1.8 tons/day);
- Pearl Abalone: 225 – 360 tons/yr. (4.3 – 6.9 tons/wk., or 0.6 – 1.0 tons/day).

Estimates from the applicants
Doug Hayes ("Pacific Offshore Farms") states that 100,000 abalone need about 600 lbs. of kelp per week at 10-15 mm in size, and about 1,100 lbs. per week at 30 mm, but asserts that the exact amount of kelp needed is impossible to calculate because he will buy 5,000 abalone at a time and they will all grow at different rates.

Princeton Abalone states that it will require about 466,470 lbs./yr. for 224,000 abalone (which translates to 1,041,228 lbs./yr., or 521 tons/yr. (10 tons/wk., or 1.4 tons/day), at its maximum

[16] Telephone conversation with Rob Collins, Nearshore Ecosystem Coordinator, Marine Region, CDFG, on December 12, 1994 (referenced in the *Revised Expanded Initial Study for Abalone Aquaculture Operations, Pillar Point Harbor, San Mateo County (June, 1996)*, p. 46)

operational capacity of 500,000 animals), but cautions that its estimates are educated guesses at best.

Blue Pacific Abalone states that it is not comfortable guessing at the amount of needed kelp, due to wide variations in growth rates between abalone of the same age, and unknown mortality rates.

Pearl Abalone estimates that it will require 100 tons of kelp to feed 90,000 abalone in the first year, and 500 tons of kelp in the fifth year. These estimates do not appear to account for different consumption rates based on abalone size, or the total number of abalone at each size once full build-out is reached.

Estimates from existing growers

Mr. Chris Van Hook, owner of Abalone International, Inc., located in Crescent City, estimates that 100,000 abalone will need about 1 ton of kelp per week at between one to two inches in size, and about 1.5 tons of kelp per week at between two and three inches in size. This estimate translates into a cumulative total of about 1,561 tons of kelp per year (30.0 tons/wk., or 4.3 tons/day), broken down per company as follows:

- Pacific Offshore Farms: 347 tons/yr. (6.7 tons/wk., or 1.0 tons/day);
- Princeton Abalone: 347 tons/yr. (6.7 tons/wk., or 1.0 tons/day);
- Blue Pacific Abalone: 555 tons/yr. (10.7 tons/wk., or 1.5 tons/day);
- Pearl Abalone: 312 tons/yr. (6 tons/wk., or 0.9 tons/day).

An existing onshore abalone farm in Cayucos, San Luis Obispo County, could not provide a feeding figure.

Potential impacts to the kelp bed community

All prospective Pillar Point abalone aquaculturists, including Pacific Offshore Farms, will harvest kelp from designated open beds pursuant to annual kelp harvesting licenses and/or purchase kelp from existing suppliers. The MND states that the facility operators plan to obtain kelp primarily from south of Half Moon Bay, in the Santa Cruz or Monterey areas, and from local beds. There are currently only six kelp beds between San Mateo County and Point Sur from which the growers could legally and feasibly obtain kelp.[17]

Furthermore, some kelp beds located off Santa Cruz and in Monterey Bay may not necessarily be viable options for the growers due to concerns expressed by various local interest groups regarding the harvesting of kelp from these beds (e.g. the prime area for kelp harvesting in Monterey Bay is being proposed as an underwater park, and thus a "no take" area). *(Letter from DeWayne Johnston, CDFG, to Richard Thompson, ACOE, dated February 27, 1998)*

[17] Technically there are nine beds, but one is designated for private lease only, and two have little or no kelp *(Personal communication with Robson Collins, Nearshore Ecosystem Coordinator, Marine Region, CDFG, on February 1, 1999).*

The new kelp demand will be added to that of existing harvesters in the Monterey Bay region. Six harvesters formed the Monterey Kelp Cooperative in September, 1998, under which they seek to self-regulate the resource. Existing harvest levels are about 20 – 25 tons per week.

In addition, the volume of kelp needed to sustain aquaculture operations remains relatively constant throughout the year, but there are significant seasonal fluctuations in kelp abundance (e.g., due to storms). Thus, during the winter, kelp must be taken from a few sheltered beds at levels similar to summer needs, which intensifies take from specific beds and may result in the removal of a significant portion of the total canopy. Hence, potential adverse impacts from kelp removal would be more likely to occur during winter, after canopies are thinned by storms.

Thus, given the minimal amount of kelp available near the project area, the existence of competing harvesters, local interest in limiting harvest of some beds, and natural factors such as the recurring el Nino weather pattern that cause kelp abundance to fluctuate, local kelp resources could be adversely impacted by the proposed grow-out facilities. *(Letters from DeWayne Johnston, CDFG, to Richard Thompson, ACOE, dated February 27, 1998, and April 1, 1998)*

Finally, kelp harvesting potentially affects the entire kelp bed community beyond the kelp plants themselves, such as finfish populations that live in giant kelp forests (e.g., the young of some rockfish species recruit specifically to the upper kelp canopy); invertebrates that live on and among kelp; birds that forage in and adjacent to and rest in giant kelp beds; and sea otters, seals and sea lions that raft, rest, or forage in giant kelp forests.

In response to the potential for limited kelp, Pacific Offshore Farms has stated it will employ the following alternatives if the legal harvest of local kelp beds proves to be insufficient to support its operation: (1) Truck kelp purchased from Southern California in plastic 55-gallon drums; (2) travel beyond local beds to any open bed within the state to obtain kelp (3) stockpile and freeze kelp during abundant periods to use during the winter months; and (4) purchase dried kelp or pellet food from suppliers via the internet.

Concerns about the existing kelp harvesting program

There is debate about whether or not the California Department of Fish and Game's and the Fish and Game Commission's kelp harvesting program is adequate to ensure the continued viability of the kelp bed community, and whether the regulations properly address the multiple uses of the kelp beds. Concerns have been voiced by the superintendents of the Monterey Bay and Gulf of the Farallones National Marine Sanctuaries[18] and other interested parties.[19]

First, the existing regulations allow take of both giant and bull kelp down to four feet below the water surface. While this distance protects the reproductive blades of giant kelp, which are located just above the structure that attaches a plant to the substrate, it does not protect those of bull kelp, which are located on the surface blades. Because bull kelp does not recruit year-round, heavy harvest of its surface canopy can eventually have a severely adverse impact on a bed. For

[18] Recall that Pillar Point Harbor is located adjacent to the Monterey Bay National Marine Sanctuary.

[19] See Appendix E, "Correspondence," for the record of written concerns, including those from the marine sanctuaries.

example, clearing mature plants may increase the amount of benthic light and allow other benthic or subsurface species to become dominant and then limit later bull kelp recruitment success. Or, the local spore source may be decreased significantly by continual removal of the reproductive portions of the blades.

In response to potential bull kelp impacts, the F&GC has restricted take of bull kelp in beds north of San Francisco to hand harvest only, and designated all bull kelp beds in that region as either "for lease" (seven beds) or "closed" (five beds).[20] No bull kelp beds are designated "open," the designation in which the canopy could be heavily or completely removed by harvest. Furthermore, most of the beds in which giant and bull kelp are mixed are found north of San Francisco, where they have received the "lease" or "closed" designation. In the few beds south of San Francisco in which the two kelp types mix and the beds are designated as "open," bull kelp only constitutes about two to three percent of the bed. No purely bull kelp beds exist south of San Francisco. *(Conversation with Robson Collins, Nearshore Ecosystem Coordinator, Marine Region, CDFG, February 22, 1999).*

Second, the program does not appear to some to adequately address harvesting impacts to the entire kelp bed community, although the CDFG and F&GC have reached the following conclusions relative to 1996 levels of harvest:[21]

- Populations of fishes in southern and central California are not seriously impacted by commercial harvesting, though some fishes may be displaced for a time following harvesting, and harvesting of canopies may open some areas to predation by fishes that otherwise would not feed in the areas;
- While kelp harvesting does incidentally remove some sessile and motile invertebrates, the overall effect on invertebrate populations appears not to be significant;
- While it is recognized that numerous species of birds use the kelp forests, the effect of canopy removal and kelp harvesting operations on bird populations is not significant; and
- Based on a review of available information, kelp harvesting activities have little to no effect on marine mammals using the kelp forests.

Other concerns with the existing kelp harvesting program are that it appears to be self-patrolled and self-enforced, and lack over-harvesting penalties. Furthermore, aerial surveys to assess the kelp resource do not occur very frequently or regularly (the last survey was done in 1989, and the one before that in 1967), do not differentiate between giant and bull kelp beds, and do not provide seasonal assessments of canopy removal due to natural events (e.g., storms) versus commercial harvest. Finally, some think that kelp beds are currently being harvested at their maximum.

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[20] As designated in *CCR Title 14, Section 165(c)(5).*

[21] "Giant and Bull Kelp Commercial and Sport Fishing Regulations." *Section 30 and 165, Title 14, California Code of Regulations.* California Department of Fish and Game. Final Draft Environmental Document (January, 1996), Chapter 4, "Environmental Impacts."

Concerns have been exacerbated by the fact that no "kelp budget" was prepared to evaluate the new demands of the four proposed abalone-culturing operations, (i.e., no recent inventory of the amount and location of existing kelp, assessment of the new demand from the four proposed abalone aquaculture proposals, and conclusion of how and where said demand could be accommodated in a manner that would sustain the kelp resource and associated uses), especially considering that the new proposals could about double the existing demand for kelp from the Monterey Bay region.[22]

Collaboration between CDFG and CCC staff to address potential kelp harvesting impacts
On April 15, 1999, Commission staff sent a letter to the CDFG director and the staff and the chair of the Fish and Game Commission requesting that both agencies work cooperatively to develop solutions to the kelp harvesting issues.[23] The Commission staff outlined its concerns regarding use conflicts, impacts to associated species and the kelp bed community, the seasonal nature of impacts, reporting requirements, and the lack of information available about the effects of kelp removal on kelp forests at present levels. The staff highlighted additional concerns about the potential impacts of increased kelp harvesting on the Monterey Bay region.

CDFG staff responded on April 20, 1999, in a letter stating the following:

- The CDFG has also been concerned that the demand for kelp resulting from new or expanded abalone culture operations will exceed the supply available locally, especially during periods of low abundance;
- The CDFG is aware of the need for more frequent monitoring of the health of harvested kelp beds;
- In December, 1998, the Fish and Game Commission directed the CDFG to address the issue of kelp harvesting by existing Monterey Bay area abalone growers and its impact on other uses as part of its upcoming review of kelp management regulations due to the F&GC in 2000; and
- The CDFG welcomes the opportunity to explore new, alternative approaches to the management of kelp harvest with Coastal Commission staff, other agencies, and the national marine sanctuaries.[24]

Staff of the CDFG, the CCC, and the MBNMS met on May 6, 1999, to further discuss kelp harvesting issues and possible solutions. At the meeting, CDFG staff indicated that it would specifically address use conflict issues in its upcoming review of its kelp harvesting and management regulations.

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[22] Letters from Ed Ueber, GFNMS/MBNMS, to Loretta Barsamian, RWQCB, February 23, 1998, and June 16, 1998. See also Appendix E, "Correspondence" for the record of written concerns.

[23] Letter from Peter Douglas, Executive Director, CCC, to Richard Thieriot, President, F&GC, Robert Hight, Director, CDFG, and Robson Collins, Nearshore Ecosystem Coordinator, Marine Region, CDFG, April 15, 1999.

[24] Letter from Robson Collins, Nearshore Ecosystem Coordinator, Marine Region, CDFG, to Peter Douglas, Executive Director, CCC, April 20, 1999.

The Commission staff welcomes the opportunity to work closely with the CDFG during its review and revision of the kelp harvesting regulations, and supports the CDFG's role as the agency responsible for developing and implementing the harvesting regulations. The Coastal Commission finds, however, that if the currently-proposed aquaculture projects are to proceed before the end of 2000, when the CDFG updates its kelp harvesting regulations in a manner that fully addresses Coastal Act policies, the Commission must condition the permits to prohibit use of kelp from the identified impacted kelp beds for use in the permitted abalone facilities. Without this prohibition, the Commission cannot make the requisite findings that individually and cumulatively the kelp harvesting needed to sustain the proposed abalone projects is consistent with Coastal Act policies.

Commission evaluation of impacts

It appears that Pacific Offshore Farms' project should not cause significant adverse additional impacts to the kelp resource itself because Pacific Offshore Farms states it will obtain kelp from open beds throughout the state, via purchase or direct harvest, which will help mitigate potential impacts to local kelp beds. From a statewide perspective, an additional take of about 400 tons of kelp per year (the largest estimate of Pacific Offshore Farms' annual take) is small compared with the current annual statewide take of over 100,000 tons per year (0.40%).

Based on the information currently available, it also appears that the four abalone-culturing projects proposed for Pillar Point Harbor will not cause significant adverse additional impacts to the kelp resource itself for the following reasons: (1) the CDFG's existing commercial kelp harvesting program limits harvest to the upper four feet of kelp plants, and thus protects mature giant kelp plants' holdfasts, reproductive and juvenile blades, and young juvenile plants; (2) removing the entire canopy of a giant kelp bed down to four feet from the surface will not harm the bed in the long term; (3) kelp beds are extremely productive, increasing by about 100 tons per acre per year; and (4) the majority of bull kelp beds are protected from heavy harvest by "lease" or "closed" designations.

The proposed project both individually and in conjunction with the other three proposed abalone aquaculture facilities may, however, cause adverse impacts to the larger kelp bed community. Although the CDFG staff will address these issues in its upcoming review of its kelp harvesting and management regulations, said review and recommended revisions may not be acted on by the Fish and Game Commission until the end of 2000. The Coastal Commission thus finds that if the currently-proposed aquaculture projects are to proceed before the end of 2000, when the CDFG updates its kelp harvesting regulations in a manner that fully addresses Coastal Act policies, the Commission must condition the permits to prohibit use of kelp from the identified impacted kelp beds for use in the permitted abalone facilities. Without this prohibition, the Commission cannot make the requisite findings that individually and cumulatively the kelp harvesting needed to sustain the proposed abalone projects is consistent with Coastal Act policies.

The Coastal Commission therefore requires **Special Condition 8**, which restricts harvest, take, or purchase of kelp obtained from (1) open bed #220 between the Monterey breakwater and Point Pinos, and (2) open bed #221 between New Brighton State Beach and Soquel Point

(Pleasure Point area), off the Santa Cruz County coast, from December 1 until May 15 (a seasonal time of low abundance).

Pacific Offshore Farms may request that the Commission modify this restriction through an amendment to this permit based upon emergence of new information that may affect kelp harvesting (i.e., information in addition to that set forth in this section of the Commission's findings). Each of the following two developments, for example, may provide a vehicle through which such new information may emerge, and thus may provide an appropriate basis on which to request an amendment to Special Condition 8.

> First, the CDFG reviews and amends its kelp harvesting regulations every five years. The review process for the next such revision will begin this summer or fall, and the regulations are scheduled to be certified by the F&GC by the end of Year 2000. CDFG staff have indicated that these revisions will address new or expanded demand, especially during periods of low abundance, and the need for more frequent monitoring of the health of harvested beds.[25]
>
> Second, the Monterey Kelp Cooperative seeks to self-regulate its hand-harvesting along the area from the Monterey Coast Guard Breakwater to Lover's Point in Pacific Grove, via a kelp plan drafted by its members, to ensure ongoing sustainable harvests of kelp and to avoid conflicts with other users of the beds. Thus, evidence of membership in the Monterey Kelp Cooperative and submittal of its annual kelp plan[26] could provide a key mechanism to address kelp harvesting impacts, and could constitute an appropriate basis for the Commission to consider an amendment to Special Condition 8.

Note: Recreational and use conflict issues regarding kelp will be discussed in section 4.4.3 of this report, "Public Access and Recreation."

Consistency with Coastal Act policies
The Commission finds that with the requirement of **Special Condition 8**, and as implemented according to the CDFG's existing commercial kelp harvesting management program, the proposed project, as reviewed pursuant to Coastal Act Section 30105.5 in conjunction with three concurrent projects *(CDP Application Nos. E-98-18, E-98-19, and E-98-20)* will be carried out in a manner that maintains the state's kelp resource as required by Coastal Act Section 30230.

4.4.1.6 Conclusion – Marine Resources

The Commission concludes that, for the reasons stated in sections 4.4.1.1 – 4.4.1.5 of this report, the project as proposed and conditioned, and as reviewed pursuant to Coastal Act Section

[25] Letter from Rob Collins, Nearshore Ecosystem Coordinator, Marine Region, CDFG, to Peter Douglas, Executive Director, CCC, April 20, 1999.

[26] The kelp plan must be approved by the Board of Governors each October 31. The board of governors is comprised of three members: (1) Member Governor (elected annually by a majority vote and appointed by the members of the cooperative); (2) Manager Governor (the Regional Manager for the Marine Region of the CDFG); and (3) Scientist Governor (nominated by the other governors and approved by the Superintendent of the MBNMS; must be a marine scientist with a proven understanding and research background of giant kelp biology).

30105.5 in conjunction with three concurrent projects *(CDP Application Nos. E-98-18, E-98-19, and E-98-20)*, which will be conditioned in a similarly, will be consistent with Coastal Act Sections 30230 and 30231.

4.4.2 Potential Use Conflicts with Existing Commercial Fishing Operations

Coastal Act Section 30234 states in pertinent part:

> *Facilities serving the commercial fishing and recreational boating industries shall be protected and, where feasible, upgraded. Existing commercial fishing and recreational boating harbor space shall not be reduced unless the demand for those facilities no longer exists or adequate substitute space has been provided....*

Coastal Act Section 30234.5 states:

> *The economic, commercial, and recreational importance of fishing activities shall be recognized and protected.*

4.4.2.1 Potential Use Conflicts with Existing Commercial Fishing Anchorage Space

The area set aside by the SMCHD for aquaculture operations, which includes the proposed abalone grow-out project license areas, currently provides general (or transient) anchorage space for both recreational and commercial vessels (i.e., open-water space where vessels can drop anchor). This area also contains specific mooring sites (specific spaces that vessels can tie up to).

A private consultant retained by the SMCHD ("Concept Marine") calculated the entire outer harbor area (which includes the area set aside by the SMCHD for aquaculture operations) to have approximately 202 acres of available anchorage space (i.e., areas at least six feet in depth, and not within the navigation channel).[27] Assuming that two vessels can safely anchor in one acre[28] yields space enough for about 404 vessels.

Pacific Offshore Farms' grow-out structures will preclude 14,880 sq. ft., or 0.34 acre, of available anchorage space. The more significant issue is the combined loss of anchorage space due to the operation of all four abalone-culturing proposals. The Harbor Master and a representative of the commercial fishing community have agreed that as the four license areas are presently configured, (1) operation of the four currently-proposed abalone grow-out facilities would preclude vessel use of the buffer areas,[29] (2) the license and buffer areas combined total

[27] Pillar Point Area Calculations by Concept Marine, November 6, 1998 (File no. 29829/102/1301).

[28] Letter from Bob Miller, Crab Boat Owners Association of San Francisco, President, and Pacific Coast Federation of Fisherman's Associations' Vessel Safety Committee, Chair, to Joy Chase, CCC, February 17, 1997, p. 2.

[29] Based on recommendations for scope of anchor rode stated in Chapman's *Piloting, Seamanship and Small Boat Handling*, a vessel in Pillar Point Harbor requires approximately 352 feet to safely anchor using a danforth-type

about 23.05 acres, and hence (3) that the facilities (including the license and buffer areas) would preclude anchorage for at least 40 vessels (about 40 vessels spaced 100 feet apart; about 50 vessels spaced 75 feet apart).[30] (Exhibit 4, "Area of Anchorage Lost")

Subtracting 23.05 acres (license and buffer areas for the four currently-proposed abalone grow-out facilities) from the total 202 acres of available anchorage space leaves 178.95 (rounded to 179) remaining acres that are available for anchorage space, or available space for 358 vessels, if the four proposed abalone grow-out facilities are constructed.

Commercial fishing industry concerns about lost anchorage space
The commercial fishing community has expressed the following concerns about the potential loss of safe anchorage space:[31]

- Pillar Point Harbor provides the only safe anchorage space between Point Reyes and Santa Cruz;
- Under present fishery management schemes, Pillar Point Harbor at times becomes the focus of the entire salmon fleet (there is a waiting list for slips, so in rough weather or when the bite is on, the outer harbor is filled with anchored vessels);
- Loss of anchorage space at Pillar Point Harbor would effectively deny access to about half of the fishing grounds between the Farallon Islands and Santa Cruz;
- Reducing anchorage area would cause problems, congestion, or even eliminate Pillar Point as a safe harbor. Furthermore, the harbor's bottom composition is such that a vessel operator needs to maintain an extra margin of space from other vessels in case his or her anchor should slip on a windy day;
- Reducing anchorage area would cause inconvenience and interference with fishing operations and significant adverse economic impacts on fishermen and women as well as the fish processors of the harbor and elsewhere;
- The U.S. Army Corps of Engineers created Pillar Point Harbor as a "safe harbor" for exclusive fishing and boating uses; and
- Approval of the proposed abalone grow-out facilities would create a special business opportunity for aquaculturists at the expense of fishermen and women.

anchor (the type currently required under existing SMCHD regulations). Thus the 300-foot buffers between the license areas are not adequate for use as safe anchorage area.

[30] The MND calculates the combined area of the five facilities it evaluates to be 2.4 acres, and assumes that vessels will be able to use the buffer areas between the abalone facilities. The MND concludes that removal of 2.4 acres of open water anchorage area is not expected to be a significant impact because (1) vessels would be free to use the 300-foot buffer zones between the licensed areas and (2) vessels would still be able to use the remaining outer harbor area. The MND does not contain any further facts, figures, or analysis to support its conclusion.

[31] In addition to letters from various individuals, the Commission staff has received letter from representatives of the following organizations: Moss Landing Commercial Fishermen's Association; Crab Boat Owners Association of San Francisco; Pacific Coast Federation of Fishermen's Associations, Inc.; Salmon Trollers Marketing Association; Humboldt Fishermen's Marketing Association; and Half Moon Bay Fisherman's Marketing Association. Appendix E, "Correspondence," contains the full record of written comments.

Commission evaluation

Aquaculture as a Use in Pillar Point Harbor Consistent with the Public Trust

The State Lands Commission granted the Pillar Point Harbor tide and submerged lands to the SMCHD in July, 1960. The grant provides that the SMCHD may grant franchises thereon and may lease any part of said lands for purposes consistent with the trust upon which said lands are held by the state.[32] Aquaculture is a use consistent with the public trust,[33] and the SMCHD executed license agreements for the four proposed abalone aquaculture facilities in February, 1997. Thus, Pillar Point does not have to function solely as a "harbor of refuge" or "safe harbor," to the exclusion of other uses, in this case aquaculture. Furthermore, Coastal Act Section 30411(c) encourages salt water or brackish water aquaculture as a coastal-dependent use.

Demand for Anchorage Space

The Commission has attempted to quantify the existing demand for anchorage space in the outer harbor. Neither the applicants, the SMCHD, nor the commercial fishing industry has any records of historical use. Furthermore, there are broad discrepancies between each party's estimate of demand. The applicants contend that the outer harbor is sparsely used for anchorage and is never full. A representative of the commercial fishing industry estimates, however, that there is already more demand than there is space. He states that about 400-500 commercial vessels may need to use the harbor during the salmon season, which runs from approximately Memorial Day until Labor Day (May 1 – September 1).[34] Representatives of the commercial fishing community believe that the burden of proof should be on the aquaculture applicants that their projects will not reduce needed anchorage space. Finally, the SMCHD estimates that about 200 vessels use the outer harbor during peak use periods.

Because there are (1) no records documenting levels of historical use in the outer harbor and (2) very disparate estimates of the amount of anchorage space needed during peak use periods (e.g., the SMCHD estimates 200 vessels and the commercial fishing industry estimates 400-500 vessels), it is difficult to accurately determine the existing levels of demand for anchorage space in the outer harbor. The Commission thus finds that based on the best information available at this time, 358 anchorage spaces appears to be sufficient to accommodate existing anchorage space demand.

Consistency with Coastal Act policies

The Commission finds that based on the best information currently available the proposed project as reviewed pursuant to Coastal Act Section 30105.5 in conjunction with three concurrent projects *(CDP Application Nos. E-98-18, E-98-19, and E-98-20)* will not reduce the anchorage space needed to accommodate the existing demand for commercial boating harbor space as required by Coastal Act Section 30234, and will allow continuance of the commercial activities that currently use Pillar Point Harbor as required by Coastal Act Section 30234.5.

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[32] Statues of 1960, Chapter 68, Section 1(a).

[33] Verbal communication with Mary Howe, State Lands Commission, May 17, 1999.

[34] Meeting with Bob Miller, Crab Boat Owners Association of San Francisco, President, and Pacific Coast Federation of Fisherman's Associations' Vessel Safety Committee, Chair, on December 7, 1998.

4.4.2.2 Increased Use of Ancillary Harbor Facilities

The proposed abalone grow-out operations will increase use of Pillar Point Harbor's public boat launch and parking facilities. Pacific Offshore Farms, along with the three other prospective operators, plans to depart from the public boat launch ramp when towing its raft modules to its license space. Launching activities may interfere with recreational and commercial boat launch activities. In addition, all four operators propose to either collect kelp from local beds by boat and/or truck kelp from other areas to the harbor. Transporting kelp by boat to the facilities will also require use of the public boat launch ramp.

The Commission is therefore imposing **Special Condition 2** to prevent use conflicts with the public boat launch ramp. This condition prohibits Pacific Offshore Farms from loading or unloading any equipment or materials on, at or from the public boat launch ramp, docks, or vehicle approach road. The intent of this condition is not to prevent Pacific Offshore Farms from using the launch ramp, docks, or vehicle approach road, but simply to prevent tying up an area specifically meant for launching activities to conduct potentially lengthy loading and unloading activities. Pacific Offshore Farms' license agreement with the SMCHD provides for its use of the existing hoist on Romeo Pier, which the SMCHD will make available to all abalone licensees, to off-load kelp, cages, and equipment into a boat that can be taken to the offshore grow-out area.

Special Condition 2 also provides that prior to using the public boat launch ramp to install or remove its grow-out structures, Pacific Offshore Farms shall submit evidence to the executive director that it has coordinated with the harbor master on use of the public boat launch ramp to conduct said activities (e.g., during a time when demand for use of the boat launch is anticipated to be light).

With regard to parking, the SMCHD has concluded that the proposed aquaculture operations will not significantly impact the harbor's existing regular and overflow parking areas.

Consistency with Coastal Act policies
The Commission finds that with the requirement of **Special Condition 2**, the proposed project as reviewed pursuant to Coastal Act Section 30105.5 in conjunction with three concurrent projects *(CDP Application Nos. E-98-18, E-98-19, and E-98-20)*, which will be conditioned similarly, will be carried out in a manner that protects use of the public boat launch ramp and parking facilities as required by Coastal Act Section 30234.

4.4.2.3 Potential Navigational or Safety Hazards

The SMCHD chose to set aside the northwest corner of the harbor for aquaculture facilities in part because that area is located outside of the navigational routes used to access the inner harbor. Nevertheless, placement and operation of the aquaculture facilities could create navigational or safety hazards if the raft structures are not properly marked, aquaculture apparatus becomes dislodged or breaks apart, or any debris is disposed of in the harbor area.

To mitigate these potential impacts to a level of insignificance, the Commission imposes three special conditions. **Special Condition 3** requires Pacific Offshore Farms to mark its grow-out structures to ensure navigational safety pursuant to all U.S. Coast Guard and SMCHD harbor master requirements. **Special Condition 1** requires Pacific Offshore Farms to submit evidence to the executive director that its anchoring design has been approved by the harbor master to ensure that the grow-out structures do not break free. **Special Condition 9** prohibits Pacific Offshore Farms from disposing any equipment or waste into the marine environment, except as authorized in its NPDES permit.

Consistency with Coastal Act policies
The Commission finds that with the requirements of **Special Conditions 1, 2, 3, and 9**, the proposed project as reviewed pursuant to Coastal Act Section 30105.5 in conjunction with three concurrent projects *(CDP Application Nos. E-98-18, E-98-19, and E-98-20)*, which will be conditioned similarly, will be carried out in a manner that protects the harbor facilities, and the commercial fishing and recreational boating industries, as required by Coastal Act Section 30234.

4.4.2.4 Conclusion –Commercial Fishing

The Commission concludes that, based on the findings in sections 4.5.2.1 – 4.5.2.3 of this report, the project as proposed, conditioned, and reviewed pursuant to Coastal Act Section 30105.5 in conjunction with three concurrent projects *(CDP Application Nos. E-98-18, E-98-19, and E-98-20)* will be consistent with Coastal Act Sections 30224, 30234, and 30234.5.

4.4.3 Public Access and Recreation

Coastal Act Section 30210 states:

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

Coastal Act Section 30211 states:

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

Coastal Act Section 30220 states:

> *Coastal areas suited for water-oriented recreational activities that cannot readily be provided at inland water areas shall be protected for such uses.*

Coastal Act Section 30234 states:

> *Facilities serving the commercial fishing and recreational boating industries shall be protected and, where feasible, upgraded. Existing commercial fishing and recreational boating harbor space shall not be reduced unless the demand for those facilities no longer exists or adequate substitute space has been provided. Proposed recreational boating facilities shall, where feasible, be designed and located in such a fashion as not to interfere with the needs of the commercial fishing industry.*

Coastal Act Section 30234.5 states:

> *The economic, commercial, and recreational importance of fishing activities shall be recognized and protected.*

Public Access
The proposed abalone aquaculture facilities do not include any construction of new development on land. Some operators do, however, plan to use the public boat launch ramp. With regard to parking, the SMCHD has concluded that the proposed aquaculture operations will not significantly impact the harbor's existing regular and overflow parking areas.

Recreation at Pillar Point Harbor
Pillar Point Harbor offers a wide variety of recreational activities including boating, clamming, fishing, sailing, kayaking, and windsurfing. In addition, the public access trail and associated beach area along the western shoreline of the harbor, near the highly productive northwest corner, are used by hikers, bicyclists, and birders.

Particular demand for sailboat anchorage space occurs during races (which occur approximately three times per year) and Labor Day weekend.[35]

Recreation around the Monterey Bay
The four proposed aquaculturists' plans to harvest kelp to support their abalone operations could affect nearshore recreational users around Monterey Bay.

In its 1995/96 review of its the kelp harvesting regulations,[36] the CDFG and the F&GC concluded, however, that kelp harvesting operations have no significant effect on the recreational use of the nearshore environment. The review concludes that although some recreational users are temporarily displaced by harvesting operations, they receive some benefits as well. For example, harvesting opens up lanes in the canopy which allow access to areas that were

[35] Telephone conversation with Jennifer Solestri, Commodore, Half Moon Bay Yacht Club, in March, 1996 (referenced in the *Responses to Comments on the Expanded Initial Study for Abalone Aquaculture Operations, Pillar Point Harbor, San Mateo County (June, 1996)*, p. 18)

[36] "Giant and Bull Kelp Commercial and Sport Fishing Regulations." *Section 30 and 165, Title 14, California Code of Regulations.* California Department of Fish and Game. Final Draft Environmental Document (January, 1996).

previously closed due to the density of the kelp and more light to penetrate subsurface areas (to the benefit of kayakers and underwater photographers, etc.).[37]

There is general consensus, nevertheless, that use conflicts involving the kelp resource exist.[38] Specifically, many ocean-related educational and recreational activities, such as viewing see otters or the kelp itself, are greatly enhanced by the existence of the kelp canopy. Thus conflicts arise when kelp is harvested, as the canopy can be cut down to four feet below the water surface.

Furthermore, the volume of kelp needed to sustain aquaculture operations remains relatively constant throughout the year, but there are significant seasonal fluctuations in kelp abundance (e.g., due to storms). Thus, during the winter, kelp must be taken from a few sheltered beds at levels similar to summer needs, which intensifies take from specific beds and may result in the removal of a significant portion of the total canopy. Hence, potential use conflicts would be more likely to occur during winter, after canopies are thinned by storms.

These use conflicts currently exist in areas offshore Monterey and Santa Cruz with the current kelp harvesting levels. For example, kelp bed #220, offshore the Monterey coast, is designated as an open bed. Various local interest groups have expressed concern about harvesting kelp from beds offshore Cannery Row, and the City of Monterey has asserted regulatory (permit) authority over kelp harvesting offshore its jurisdiction.

Collaboration between CDFG and CCC staff to address potential kelp harvesting impacts
On April 15, 1999, Commission staff sent a letter to CDFG staff and the chair of the Fish and Game Commission requesting that both agencies work cooperatively to develop solutions to the kelp harvesting issues.[39] The Commission staff outlined its concerns regarding use conflicts, impacts to associated species and the kelp bed community, the seasonal nature of impacts, reporting requirements, and the lack of information available about the effects of kelp removal on kelp forests at present levels. The staff highlighted additional concerns about the potential impacts of increased kelp harvesting on the Monterey Bay region.

CDFG staff responded on April 20, 1999, in a letter stating the following:

- The CDFG has also been concerned that the demand for kelp resulting from new or expanded abalone culture operations will exceed the supply available locally, especially during periods of low abundance;

[37] "Giant and Bull Kelp Commercial and Sport Fishing Regulations." *Section 30 and 165, Title 14, California Code of Regulations.* California Department of Fish and Game. Final Draft Environmental Document (January, 1996), Section 4.6."

[38] (1) Letter from DeWayne Johnston, CDFG, to Richard Thompson, ACOE, dated February 27, 1998; (2) Conversation with Jerry Spratt, CDFG, February 2, 1999; (3) Conversation with Ed Ueber, Gulf of the Farallones National Marine Sanctuary, February 16, 1999; (4) Conversation with Bill Douros, Montery Bay National Marine Sanctuary, February 16, 1999.

[39] Letter from Peter Douglas, Executive Director, CCC, to Richard Thieriot, President, F&GC, Robert Hight, Director, CDFG, and Robson Collins, Nearshore Ecosystem Coordinator, Marine Region, CDFG, April 15, 1999.

- The CDFG is aware of the need for more frequent monitoring of the health of harvested kelp beds;
- In December, 1998, the Fish and Game Commission directed the CDFG to address the issue of kelp harvesting by existing Monterey Bay area abalone growers and its impact on other uses as part of its upcoming review of kelp management regulations due to the F&GC in 2000; and
- The CDFG welcomes the opportunity to explore new, alternative approaches to the management of kelp harvest with Coastal Commission staff, other agencies, and the national marine sanctuaries.[40]

Staff of the CDFG, the CCC, and the MBNMS met on May 6, 1999, to further discuss kelp harvesting issues and possible solutions. At the meeting, CDFG staff indicated that it would specifically address use conflict issues in its upcoming review of its kelp harvesting and management regulations.

The Commission staff welcomes the opportunity to work closely with the CDFG during its review and revision of the kelp harvesting regulations, and supports the CDFG's role as the agency responsible for developing and implementing the harvesting regulations. The Coastal Commission finds, however, that if the currently-proposed aquaculture projects are to proceed before the end of 2000, when the CDFG updates its kelp harvesting regulations in a manner that fully addresses Coastal Act policies, the Commission must condition the permits to prohibit use of kelp from the identified impacted kelp beds for use in the permitted abalone facilities. Without this prohibition, the Commission cannot make the requisite findings that individually and cumulatively the kelp harvesting needed to sustain the proposed abalone projects is consistent with Coastal Act policies.

Commission evaluation of impacts

The four proposed aquaculture projects will not interfere with the public's right of access to or along the shoreline because they will not include any construction of new development on land, restrict access to the project vicinity, or significantly impact the harbor's existing parking areas.

Because some operators do plan to use the public boat launch ramp, the Commission is imposing **Special Condition 2** to prevent use conflicts with said ramp. This condition prohibits Pacific Offshore Farms from loading or unloading any equipment or materials on, at or from the public boat launch ramp, docks, or vehicle approach road. The intent of this condition is not to prevent Pacific Offshore Farms from using the launch ramp, docks, or vehicle approach road, but simply to prevent tying up an area specifically meant for launching activities to conduct potentially lengthy loading and unloading activities. Pacific Offshore Farms' license agreement with the SMCHD provides for its use of the existing hoist on Romeo Pier, which the SMCHD will make available to all abalone licensees, to off-load kelp, cages, and equipment into a boat that can be taken to the offshore grow-out area.

[40] Letter from Robson Collins, Nearshore Ecosystem Coordinator, Marine Region, CDFG, to Peter Douglas, Executive Director, CCC, April 20, 1999.

Special Condition 2 also provides that prior to using the public boat launch ramp to install or remove its grow-out structures, Pacific Offshore Farms shall submit evidence to the executive director that it has coordinated with the harbor master on use of the public boat launch ramp to conduct said activities (e.g., during a time when demand for use of the boat launch is anticipated to be light).

Furthermore, combination of the four proposed aquaculture project's physical structures and operations will not significantly impact recreational opportunities in Pillar Point Harbor for the following reasons:

- They will preclude only 1.46 acres of open water space, which leaves more than adequate space to accommodate other recreational uses;
- They will not hinder access to the vicinity of the breakwaters themselves, and thus will not impact clamming, eeling, and other recreational sportfishing activities that occur in the area; and
- They will be located at least 500 feet from the western beach area, the second most highly-used avian habitat area, and thus will not hinder birding opportunities.

The proposed project's kelp harvesting requirements, especially in conjunction with the kelp requirements of the three other proposed abalone grow-out facilities, will, however, exacerbate recreational use conflicts in the Monterey Bay area because these conflicts already exist with the current level of kelp harvest. Although the CDFG staff will address use conflicts in its upcoming review of its kelp harvesting and management regulations, said review and recommended revisions may not be acted on by the Fish and Game Commission until the end of 2000. The Coastal Commission thus finds that if the currently-proposed aquaculture projects are to proceed before the end of 2000, when the CDFG updates its kelp harvesting regulations in a manner that fully addresses Coastal Act policies, the Commission must condition the permits to prohibit use of kelp from the identified impacted kelp beds for use in the permitted abalone facilities. Without this prohibition, the Commission cannot make the requisite findings that individually and cumulatively the kelp harvesting needed to sustain the proposed abalone projects is consistent with Coastal Act policies.

The Coastal Commission therefore requires **Special Condition 8**, which restricts harvest, take, or purchase of kelp obtained from (1) open bed #220 between the Monterey breakwater and Point Pinos, and (2) the open bed between New Brighton State Beach and Soquel Point (Pleasure Point area), off the Santa Cruz County coast, from December 1 until May 15 (a seasonal time of low abundance).

Pacific Offshore Farms may request that the Commission modify this restriction through an amendment to this permit based upon emergence of new information that will affect kelp harvesting. (i.e., information in addition to that set forth in this section of the Commission's findings). Each of the following two developments, for example, may provide a vehicle through which such new information may emerge, and thus may provide an appropriate basis on which to request an amendment to Special Condition 8.

First, the CDFG reviews and amends its kelp harvesting regulations every five years. The review process for the next such revision will begin this summer or fall, and the regulations are scheduled to be certified by the F&GC by the end of Year 2000. CDFG staff have indicated that these revisions will address use conflict issues.[41]

Second, the Monterey Kelp Cooperative seeks to self-regulate its hand-harvesting along the area from the Monterey Coast Guard Breakwater to Lover's Point in Pacific Grove, via a kelp plan drafted by its members, to ensure ongoing sustainable harvests of kelp and to avoid conflicts with other users of the beds. Thus, evidence of membership in the Monterey Kelp Cooperative and submittal of its annual kelp plan[42] could provide a key mechanism to address kelp harvesting impacts, and could constitute an appropriate basis for the Commission to consider an amendment to Special Condition 8.

Consistency with Coastal Act policies
The Commission finds that with the requirements of **Special Conditions 2 and 8**, the proposed project as reviewed pursuant to Coastal Act Section 30105.5 in conjunction with three concurrent projects *(CDP Application Nos. E-98-18, E-98-19, and E-98-20)* will be carried out in a manner that protects maximum access as required by Coastal Act Sections 30210 and 30211, will accommodate existing recreational fishing and boating harbor space needs as required by Coastal Act Sections 30234 and 30234.5, and will protect water-oriented recreational uses as required by Coastal Act Sections 30210 and 30220.

Conclusion – Public Access and Recreation
Hence, the Commission concludes that for the reasons stated above in this report, the project as proposed and conditioned, and as reviewed pursuant to Coastal Act Section 30105.5, will be consistent with Coastal Act Sections 30210, 30211, 30220, 30234, and 30234.5.

4.4.4 Scenic and Visual Qualities

Coastal Act Section 30251 states in part:

> *The scenic and visual qualities of coastal areas shall be considered and protected as a resource of public importance. Permitted development shall be sited and designed to protect views to and along the ocean and scenic coastal areas, to minimize the alteration of natural land forms, to be visually compatible with the character of surrounding areas, and, where feasible, to restore and enhance visual quality in visually degraded areas.*

[41] Meeting with Rob Collins, Nearshore Ecosystem Coordinator, Marine Region, CDFG, May 6, 1999, at the MBNMS office in Monterey.

[42] The kelp plan is approved by the Board of Governors each October 31. The board of governors is comprised of three members: (1) Member Governor (elected annually by a majority vote and appointed by the members of the cooperative); (2) Manager Governor (the Regional Manager for the Marine Region of the CDFG); and (3) Scientist Governor (nominated by the other governors and approved by the Superintendent of the MBNMS; must be a marine scientist with a proven understanding and research background of giant kelp biology).

The proposed abalone grow-out facilities will be visible in the distance to both north- and south-bound motorists on State Route 1, also known as Cabrillo Highway, a designated "scenic highway" that parallels the coast and runs adjacent to Pillar Point Harbor. The abalone grow-out facilities will also be visible from certain areas of El Granada. Closer views of the project area will be obtained from Capistrano Road, which is parallel to the northern portion of the harbor, and from the public access trail in the northwest beach area.

The proposed project area is currently used to moor boats. To minimize visual intrusion and ensure that the proposed structures will blend in with existing boat features (masts, pilot houses, etc.) and be in character with the nature of the harbor, the SMCHD is prohibiting any structure placed on the rafts from extending more than five feet from the raft surface, and from having elements that will reflect light and cause significant glare.

The Commission finds that Pacific Offshore Farms' grow-out facility will be consistent with the existing visual character of the harbor as required by Coastal Act Section 30251 because it will occupy a very small portion of the open water area, 0.34 acre of the 284-acre outer harbor, and will be restricted in height and character by the SMCHD.

All four proposed abalone grow-out facilities will occupy a relatively small portion of the open water area, 1.46 acres of the 284-acre outer harbor, and will be restricted in height and character by the SMCHD. The Commission thus finds that the proposed project as reviewed pursuant to Coastal Act Section 30105.5 in conjunction with three concurrent projects *(CDP Application Nos. E-98-18, E-98-19, and E-98-20)* will be consistent with the existing visual character of the harbor as required by Coastal Act Section 30251, and thus will be consistent with said section.

4.4.5 Placement of Fill in Coastal Waters

Coastal Act Section 30108.2 defines "fill" as "earth or any other substance or material, including pilings placed for purposes of erecting structures thereon, placed in a submerged area." The concrete drums and anchoring structures that will be placed on the harbor floor to secure the abalone grow-out facilities constitute fill as defined in Coastal Act Section 30108.2.

Coastal Act Section 30233(a) states in part:

> *The diking, filling, or dredging of open coastal waters, wetlands, estuaries, and lakes shall be permitted in accordance with other applicable provisions of this division where there is no feasible less environmentally damaging alternative, and where feasible mitigation measures have been provided to minimize adverse environmental effects, and shall be limited to the following:*
>
> *(1) New or expanded port, energy, and coastal-dependent industrial facilities, including commercial fishing facilities.*
>
> *(2) Maintaining existing, or restoring previously dredged depths on existing navigational channels, turning basins, vessel berthing and mooring areas, and boat launching ramps.*

(3) *In wetland areas only, entrance channels for new or expanded boating facilities; and in a degraded wetland, identified by the Department of Fish and Game pursuant to subdivision (b) of Section 30411, for boating facilities if, in conjunction with such boating facilities, a substantial portion of the degraded wetland is restored and maintained as a biologically productive wetland. The size of the wetland area used for boating facilities, including berthing space, turning basins, necessary navigation channels, and any necessary support service facilities, shall not exceed 25 percent of the degraded wetland.*

(4) *In open coastal waters, other than wetlands, including streams, estuaries, and lakes, new or expanded boating facilities and the placement of structural pilings for public recreational piers that provide public access and recreational opportunities.*

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

(6) *Mineral extraction, including sand for restoring beaches, except in environmentally sensitive areas.*

(7) *Restoration purposes.*

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

Coastal Act Section 30233(a) permits fill in coastal waters if three tests are met. The first test requires that the project fit into one of the eight categories of uses permitted for open coastal water fill enumerated in Coastal Act Section 30233(a). The Commission finds that the proposed aquaculture facilities and operations are clearly allowed under use number (8), "nature study, aquaculture, or similar resource dependent activities."

The second test requires that there be no feasible less environmentally damaging alternative. The proposed abalone grow-out facility is premised on direct interface with marine waters. Pillar Point Harbor provides the necessary saline conditions to support cage culture of abalone, and a protected area in which to place the grow-out structures. Furthermore, the projects are proposed to be located within the harbor where they will have the least amount of impacts (e.g., out of the navigation channel, near the breakwaters and harbor mouth where there is the greatest amount of mixing). The Commission therefore finds that no feasible less environmentally-damaging alternative exists.

The third and final test requires that feasible mitigation measures be provided to minimize adverse environmental effects. The Commission finds that the conditions contained in this permit provide feasible measures to mitigate potential adverse effects on marine resources, commercial fishing, and public access and recreation, including recreational boating, as discussed in Sections 4.4.1 through 4.4.3 of this report.

Hence, the Commission concludes that the project as proposed and conditioned satisfies the three tests of Coastal Act Section 30233(a) and thus is consistent with said section.

4.5 California Environmental Quality Act

As "lead agencies" under the California Environmental Quality Act ("CEQA") the San Mateo County Harbor District and the California Department of Fish and Game certified on July 10, 1996, a mitigated negative declaration for aquaculture operations in Pillar Point Harbor, Half Moon Bay, California.

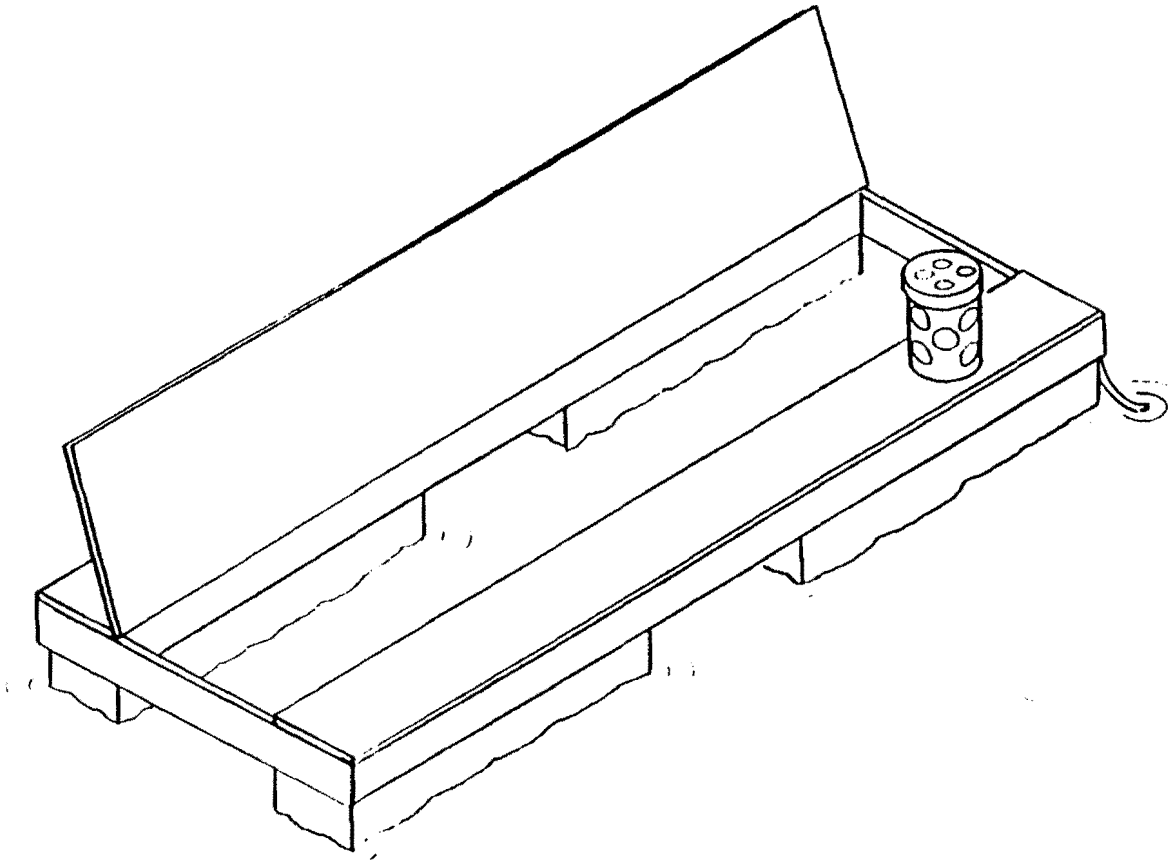
The Commission's permit process has also been designated by the State Resources Agency as the functional equivalent of the CEQA environmental impact review process. The Commission's permit review process identified numerous impacts that were not resolved in the mitigated negative declaration. Pursuant to section 21080.5(d)(2)(A) of the CEQA and section 15252(b)(1) of Title 14, California Code of Regulations (CCR), the Commission may not approve a development project "if there are feasible alternatives or feasible mitigation measures available which would substantially lessen any significant adverse impact which the activity may have on the environment." The Commission finds that only as extensively conditioned are there no feasible less environmentally damaging alternatives or additional feasible mitigation measures that would substantially lessen any significant adverse impact which the activity may have upon the environment, other than those identified herein. Therefore, the Commission finds that the project as fully conditioned is consistent with the provisions of the CEQA.

NOTE:

The following exhibits and appendices are contained in a separate corresponding packet:

Exhibit 1:	"Project Location"
Exhibit 2:	"Area in Pillar Point Harbor deemed appropriate for aquaculture by the San Mateo County Harbor District"
Exhibit 3:	"San Mateo County Harbor District License Agreement Areas"
Exhibit 4:	"Area of Anchorage Lost"

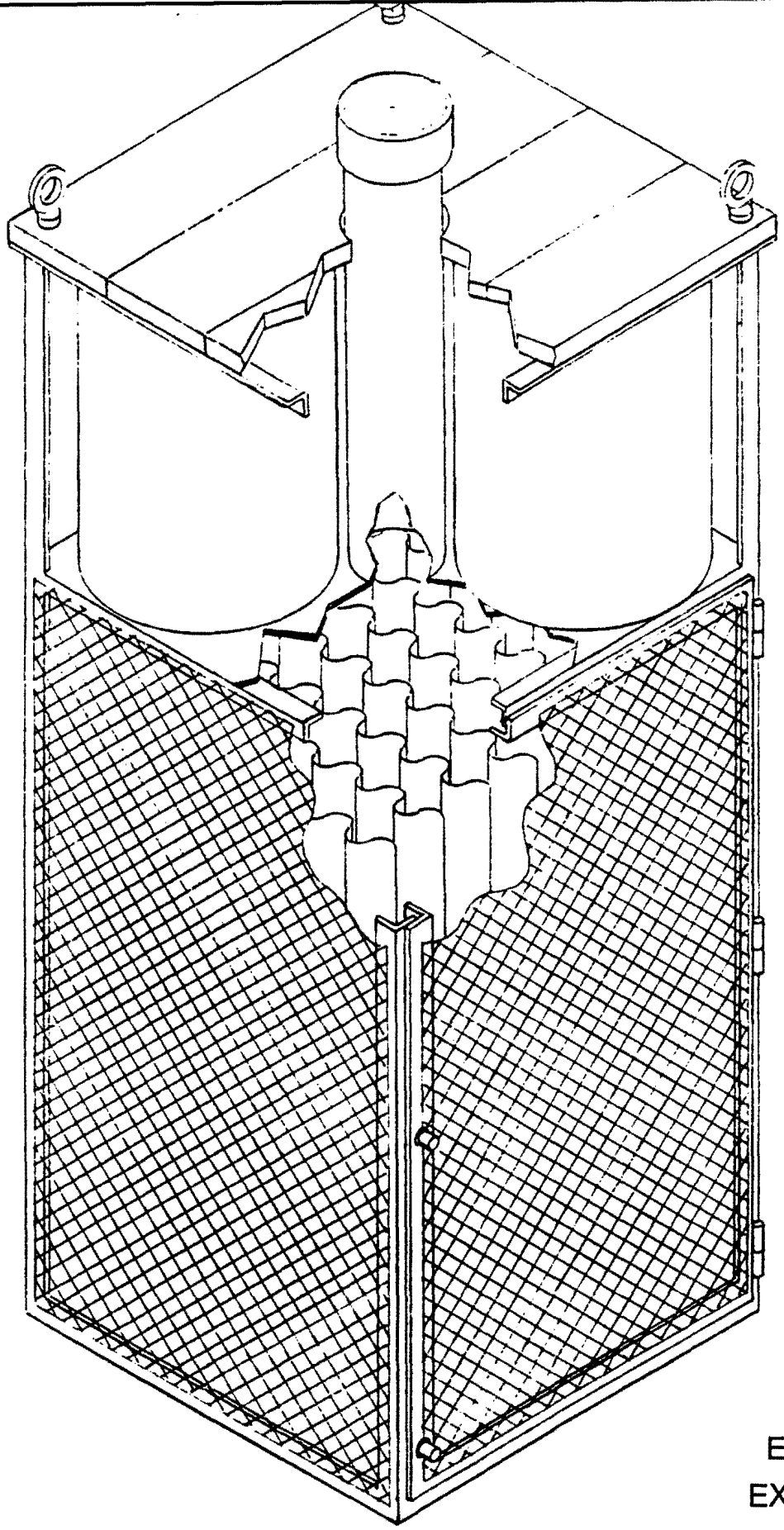
Appendix A.	Standard Conditions
Appendix B.	CDFG Stock Inspection Procedures for Aquaculture Operations in Pillar Point Harbor
Appendix C.	Sampling, Analysis and Reporting Requirements
Appendix D.	Substantive File Documents
Appendix E.	Correspondence



E-98-17

EXHIBIT 5

In this illustration, you can see a 4' x 10' raft with the security hatch open and a plastic cage on the deck. These cages are hung from the inside opening of the raft.



E-98-17
EXHIBIT 6

This cut-away drawing shows the cages design used for the larger abalone (2 - 3.5 "). These are 4' x 4' x 10' tall and can hold up to 5,000 animals. The tube at the top is for adding kelp.

STATE OF CALIFORNIA—THE RESOURCES AGENCY GRAY DAVIS, *GOVERNOR*

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STAFF REPORT: REGULAR CALENDAR

Application No.: **E-98-18**

Project Applicant: **Jon Locke (Princeton Abalone)**

Location: Northwest corner of Pillar Point outer harbor; San Mateo County. (Exhibits 1 and 2)

Project Description: Anchor and operate a grow-out facility in a 250' x 75' (18,750 sq. ft., or 0.43 acre) area of Pillar Point Harbor to culture up to 500,000 red abalone. Offshore component only. A separate coastal development permit is required for any other facilities.

Related Approvals: San Mateo County Harbor District. "License Agreement for Submerged Lands and Overlying Water and Other Described Facilities and Equipment for the Purpose of Abalone Aquaculture" (January 29, 1997).

Regional Water Quality Control Board, San Francisco Bay Region. "National Pollutant Discharge Elimination System ("NPDES") Permit No. CA0036251" (June 17, 1998).

California Department of Fish and Game. "1999 Aquaculture Registration."

California Department of Fish and Game. "1999 Kelp Harvesting License."

U.S. Army Corps of Engineers. Regional Permit No. 22808S pending (Public Notice date: December 22, 1997).

Substantive File Documents: **Appendix D**

SYNOPSIS

Note: Exhibits 1 - 4 and Appendices A - E are contained in a separate corresponding packet.

Project Location and Description

Jon Locke and Jim Foster, *dba* "Princeton Abalone," propose to cultivate up to 500,000 red abalone *(Haliotis rufescens)* from juveniles to maturity in a floating cage system moored within a 250' x 75' area of Pillar Point Harbor.

Pillar Point Harbor is located 20 miles south of San Francisco at the northern end of Half Moon Bay in San Mateo County, adjacent to the Monterey Bay National Marine Sanctuary (Exhibit 1, "Project Location"). It is the only protected ocean harbor between Bodega Bay and Santa Cruz. Existing facilities at the harbor include fish processing and freezing operations, a fuel dock, berths, parking lots, and a public boat launch ramp. The harbor also provides opportunities for commercial fishing, recreational boating and fishing, clamming, sailing, kayaking, windsurfing, marine-related commercial and retail facilities, restaurants, and other visitor-serving activities such as pedestrian and bike paths and birdwatching.

Background

In September, 1994, the San Mateo County Harbor District ("SMCHD") designated an area approximately 500 yards by 750 yards (77.5 acres) in the northwest corner of the outer harbor, adjacent to the outer breakwater, as appropriate for aquaculture facilities (Exhibit 2, "Area in Pillar Point Harbor deemed appropriate for aquaculture by the San Mateo County Harbor District").

As "lead agencies" under the California Environmental Quality Act ("CEQA") the SMCHD and the California Department of Fish and Game ("CDFG") certified on July 10, 1996, a mitigated negative declaration ("MND") for aquaculture operations in Pillar Point Harbor. The MND evaluates operation of up to five abalone facilities within 2.4 acres of the 77.5-acre area of Pillar Point Harbor set aside for aquaculture, with a combined density of up to 5,150,000 abalone at full build-out. Since certification of the MND, one applicant has withdrawn its application, and the total number of abalone proposed has decreased to 2,250,000.

In February, 1997, the SMCHD ratified license agreements with four licensees for areas of submerged lands and overlying water within the designated aquaculture area of the harbor for the purpose of abalone aquaculture. In June, 1998, the Regional Water Quality Control Board ("RWQCB") issued a national pollutant discharge elimination system ("NPDES") permits to each of the four proposed operators.

The Coastal Commission is reviewing the following four applications separately:

- Pacific Offshore Farms (Doug Hayes): Application No. E-98-17 to culture up to 500,000 abalone within a 248' x 60' (14,880 sq. ft., or 0.34 acre) area;
- Princeton Abalone (Jon Locke): Application No. E-98-18 to culture up to 500,000 abalone within a 250' x 75' (18,750 sq. ft., or 0.43 acre) area;
- Blue Pacific Abalone (Lyle Wagner): Application No. E-98-19 to culture up to 800,000 abalone within a 250' x 105' (26,250 sq. ft., or 0.60 acres) area;
- Pearl Abalone Company (Christian Zajac): Application No. E-98-20 to culture up to 450,000 abalone within a 98' x 40' (3,920 sq. ft., or 0.09 acre) area.

This coastal development permit application (No. E-98-18) is only for Princeton Abalone' proposed project.

The individual and cumulative impacts of this project and the other three related aquaculture projects currently proposed in Pillar Point Harbor raise significant Coastal Act issues. The key issues raised are the potential introduction of exotic species into the Monterey Bay National Marine Sanctuary; resource and use conflicts with kelp harvesting; use conflicts with the fishing community for harbor space; and potential adverse effects to the marine benthic environment.

Aquaculture is a coastal-dependent development and therefore a preferred use under the Coastal Act, but nevertheless must still meet the resource protection standards of the Coastal Act.

Table 1 summarizes project-related significant issues, potential impacts, and the mitigation measures and extensive conditions that the applicant will implement to avoid said impacts or reduce them to a level of insignificance.

The staff recommends approval of the project only as extensively conditioned. The proposed permit conditions include several "prior to permit issuance" requirements that the applicants will not be able to meet immediately. These include obtaining all abalone seed stock from facilities that have been certified by the California Department of Fish and Game as "sabellid-free."

Table 1. Issue Summary: Potential Impacts and Proposed Conditions and Measures

Significant Issue Area	Proposed Special Conditions and Mitigation Measures
Marine Resources: Sabellid Polychaete Worm	Issue: Possible introduction of the sabellid polychaete worm, an exotic species that deforms the shell and ultimately inhibits growth, and would have very serious impacts on stocks of native marine gastropods if spread. Mitigation Measure: **Special Condition 4** requires that all stock come from facilities that have been certified by the California Department of Fish and Game ("CDFG") as "sabellid-free," and then implements the CDFG stock inspection procedures that apply to sabellid-free facilities periodically thereafter as described in Appendix B. This condition provides also that if a sabellid infestation is detected, the cage or container in which the infested animal was found must be immediately removed. **Parts of this condition must be met prior to permit issuance, and it could be over two years before there are any facilities certified "sabellid-free" facilities in the state.** This Commission condition regarding sabellids is more stringent than the CDFG requirements, but staff thinks that it is warranted to use the precautionary principle to protect native stocks of marine resources as required under the Coastal Act. The CDFG thinks their standards—that only the seed stock source, not the entire facility, must meet a pre-transfer inspection—are adequate to protect native marine resources and support aquaculture. **Special Condition 9** prohibits waste disposal, including shells, except as authorized under the NPDES permit. **Special Condition 1** requires evidence that the anchoring design has been approved by the harbor master of the San Mateo County Harbor District ("SMCHD") to ensure that the grow-out structures do not break free.
Marine Resources: Withering Syndrome	Issue: Spread of withering syndrome, a disease established in the wild approximately south of Point San Pedro, near the City of Pacifica in San Mateo County. Mitigation Measure: CDFG has imposed a conditional ban on transfer of seed stock to facilities north of Point San Pedro, near the City of Pacifica in San Mateo County, and between facilities within the area north of Point San Pedro, contingent upon the results of a CDFG health exam showing no signs of rickettsia, the suspected causative agent.
Marine Resources: Water Quality and Benthic Habitat	Issues: Potential for (1) depletion of dissolved oxygen in the water column; (2) benthic impacts due to shading and placement of anchoring devices; (3) changes in the benthic community due to accumulation of detritus and fecal material on the sea floor; and (4) marine debris. Mitigation Measures: **Special Condition 5** imposes dissolved oxygen monitoring, and a benthic monitoring and reporting program per specific standards contained in Appendix C.

Significant Issue Area	Proposed Special Conditions and Mitigation Measures
	Special Condition 6 provides for phased increases in production based on the results of the dissolved oxygen and benthic monitoring required in Special Condition 5. **Special Condition 7** requires cessation of operations if results of the benthic infaunal sampling and analysis indicate a significant change in the infaunal community under the grow-out facilities, and removal of all abalone, grow-out structures, anchoring devices, materials, and equipment within 90 days. **Special Condition 9** prohibits waste disposal, including shells, except as authorized under the NPDES permit. **Special Condition 1** requires evidence that the anchoring design has been approved by the harbor master of the SMCHD to ensure that the grow-out structures do not break free. **Special Condition 10** requires removal of all abalone, grow-out structures, anchoring devices, materials, and equipment upon cessation of operations.
Marine Resources: Kelp Harvesting	**Issue:** The new demand for kelp to feed the abalone, especially in conjunction with the three other proposed abalone aquaculture projects, could lead to adverse impacts on the kelp bed community. **Mitigation Measures:** **Special Condition 8** prohibits harvest, take, or purchase of kelp obtained from (1) open bed #220 between the Monterey breakwater and Point Pinos, and (2) open bed #221 between New Brighton State Beach and Soquel Point (Pleasure Point area), off the Santa Cruz County coast, between December 1 and May 15 (seasonal times of low abundance). The CDFG is reviewing and updating its kelp harvesting regulations, which should be completed with new, more comprehensive standards by the end of 2000. Based on this new forthcoming information, it may be appropriate for the Commission to consider an amendment request for this condition after the Fish & Game Commission has certified the revised regulations.
Commercial Fishing Operations	**Issue:** (1) Potential use conflicts with existing commercial fishing anchorage space in Pillar Point Harbor; (2) increased use of ancillary boating facilities; and (3) potential navigational and safety hazards. **Mitigation Measures:** **Special Condition 1** requires that anchoring designs be approved by the harbor master of the SMCHD. **Special Condition 2** prohibits loading or unloading any equipment or materials on, at or from the public boat launch ramp, docks, or vehicle approach road. It also provides that prior to using the public boat launch ramp to install or remove its grow-out structures, an operator must submit evidence to the executive director that it has coordinated with the harbor master on use

Significant Issue Area	Proposed Special Conditions and Mitigation Measures
	of the public boat launch ramp to conduct said activities (e.g., use during a time when demand for use of the boat launch is anticipated to be light). **Special Condition 3** requires marking of grow-out structures to ensure navigational safety pursuant to all U.S. Coast Guard and harbor master requirements. **Special Condition 9** prohibits waste disposal except as authorized under the NPDES permit.
Public Access	**Issue**: Installation and/or operation of the abalone aquaculture facilities could restrict public access. **Mitigation Measures**: **Special Condition 2** prohibits loading or unloading any equipment or materials on, at or from the public boat launch ramp, docks, or vehicle approach road. It also provides that prior to using the public boat launch ramp to install or remove its grow-out structures, an operator must submit evidence to the executive director that it has coordinated with the harbor master on use of the public boat launch ramp to conduct said activities (e.g., use during a time when demand for use of the boat launch is anticipated to be light).
Recreation	**Issue:** Harvesting the kelp canopy around Monterey Bay could affect recreational opportunities and/or exacerbate existing use conflicts. **Mitigation Measures:** **Special Condition 8** prohibits harvest, take, or purchase of kelp obtained from (1) open bed #220 between the Monterey breakwater and Point Pinos, and (2) open bed # 221 between New Brighton State Beach and Soquel Point (Pleasure Point area), off the Santa Cruz County coast, between December 1 and May 15 (seasonal times of low abundance). The CDFG is reviewing and updating its kelp harvesting regulations, which should be completed with new, more comprehensive standards by the end of 2000. Based on this new forthcoming information, it may be appropriate for the Commission to consider an amendment request for this condition after the Fish & Game Commission has certified the revised regulations.

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Note: Appendices A - E are contained in a separate corresponding packet.

1.0 STAFF RECOMMENDATION

Approval with Conditions

The staff recommends conditional approval of Coastal Development Permit Application No. E-98-18.

Motion:

I move that the Commission approve Coastal Development Permit Application No. E-98-18, subject to the conditions specified below.

The staff recommends a YES vote. To pass the motion, a majority of the Commissioners present is required. Approval of the motion will result in the adoption of the following resolution and findings.

Resolution:

The Coastal Commission hereby **grants** permit No. E-98-18, subject to the conditions below, for the proposed development on the grounds that (1) as conditioned, the development will be in conformity with the provisions of Chapter 3 of the California Coastal Act of 1976 and (2) there are no feasible alternatives or feasible mitigation measures, other than those specified in this permit, which would substantially lessen any significant adverse impact which the activity may have on the environment.

2.0 STANDARD CONDITIONS Appendix A

3.0 SPECIAL CONDITIONS

This permit is granted subject to the following special conditions:

1. **Approval from the Harbor Master of the San Mateo County Harbor District ("SMCHD") on Anchoring Grow-Out Structures. Prior to issuance of this permit,** Princeton Abalone shall submit to the executive director of the Coastal Commission ("executive director") written evidence that its anchoring design has been approved by the harbor master.

2. **Use of the Public Boat Launch Ramp.** Princeton Abalone shall not load or unload any equipment or materials on, at, or from the public boat launch ramp, docks, or vehicle approach road. **Prior to using the public boat launch ramp to install or remove its grow-out structures,** Princeton shall submit evidence to the executive director that it has coordinated with the harbor master on use of the public boat launch ramp to conduct said activities (e.g., during a time when demand for use of the boat launch is anticipated to be light).

3. **Markings to Ensure Navigational Safety.** Princeton shall mark its grow-out structures to ensure navigational safety pursuant to all U.S. Coast Guard and SMCHD harbor master requirements.

4. **Sabellid Polychaete Worm -- California Department of Fish and Game ("CDFG")-Approved Transfer and Inspection Procedures.** Princeton Abalone shall only obtain stock from a facility that has been certified by the CDFG as "sabellid-free." **Prior to issuance of this permit,** Princeton Abalone shall submit to the executive director evidence that its source facilities have been certified by the CDFG as "sabellid-free." Princeton Abalone shall then fully adhere to the transfer and inspection procedures contained in **Appendix B,** with the following additional requirement: If a sabellid infestation is detected, Princeton shall **immediately** remove the cage or container in which the infested animal was found.

5. **Monitoring and Reporting Program.**

   a. Princeton Abalone shall implement dissolved oxygen monitoring as required in its NPDES permit;

   b. Princeton Abalone shall submit and implement plans to conduct **sediment and benthic infaunal surveys** in accordance with the sampling methods and requirements listed in **Appendix C.** The executive director shall respond to all plan submittals within 30 days.

   c. Princeton Abalone shall submit to the executive director for review and approval (1) the technical report prepared pursuant to Provision 2 of its NPDES permit by January 15 of each year, (2) a report of all results from its monitoring program according to the guidelines contained in **Appendix C** within six months of completing each field survey, and (3) a summary of dissolved oxygen monitoring if levels are detected to be below 5.0 mg/l for five consecutive days within five business days.

6. **Annual Phased Increase in Abalone Culturing Operations.** Princeton Abalone shall phase its total number of abalone to a maximum of 800,000, annually increasing growth in 25% increments contingent upon authorization by the executive director of the Coastal Commission as follows:

   - At the end of Year 1 *(year 1 sampling conducted by September 30, 2000; report submitted by March 31, 2001)*, the maximum number of abalone may not exceed 200,000 (25% of 800,000);
   - at the end of Year 2, the maximum number may not exceed 400,000;
   - at the end of Year 3, the maximum number may not exceed 600,000; and
   - at the end of Year 4, the maximum number may not exceed 800,000.

The executive director will base his response to incremental expansion requests on the dissolved oxygen and benthic monitoring required in Special Condition 5, and will give said respond within 30 days of request and report submittal.

7. **Cessation of Operations.** If results of the benthic infaunal sampling and analysis indicate a significant change in the infaunal community under the grow-out facilities as defined in the "Thresholds of Significance" section of **Appendix C**, Princeton Abalone shall either (a) remove all abalone, grow-out structures, anchoring devices, materials, and equipment within 90 days.

8. **Kelp Harvesting**. Princeton Abalone shall not harvest, take, or purchase kelp obtained from (1) open bed #220 between the Monterey breakwater and Point Pinos, and (2) open bed #221 between New Brighton State Beach and Soquel Point (Pleasure Point area), off the Santa Cruz County coast, between December 1 and May 15.

   (Note that Princeton Abalone may request that the Commission modify this restriction through an amendment to this permit based upon emergence of new information that may affect kelp harvesting, such as the CDFG's review of its kelp harvesting regulations. The review process for the next such revision will begin summer or fall, 1999, and the regulations are scheduled to be certified by the Fish & Game Commission by the end of Year 2000.)

9. **Waste Disposal.** Princeton Abalone shall not dispose any equipment or waste, including shells, into the marine environment, except as authorized in its NPDES permit.

10. **Facility Removal.** Upon termination of operations, Princeton Abalone shall remove all abalone, grow-out structures, anchoring devices, materials, and equipment within 90 days.

4.0 FINDINGS AND DECLARATIONS

Note: Exhibits 1 - 4 and Appendices A - E are contained in a separate corresponding packet.

4.1 Project Location

Pillar Point Harbor is located 20 miles south of San Francisco at the northern end of Half Moon Bay in San Mateo County. It is the only protected ocean harbor between Bodega Bay and Santa Cruz. Breakwaters separate the harbor into inner and outer areas.

The unincorporated community of Princeton-by-the-Sea lies to the northwest, and the community of El Granada lies to the northeast and east, across Highway 1. The City of Half Moon Bay lies to the south. The harbor is located adjacent to the Monterey Bay National Marine Sanctuary. (Exhibit 1, "Project Location")

Existing facilities at the harbor include fish processing and freezing operations, a fuel dock, berths, parking lots, and a public boat launch ramp. Romeo Pier, which is owned and operated by the San Mateo County Harbor District ("SMCHD"), lies in the northern area of the harbor.

Pillar Point Harbor provides opportunities for commercial fishing, recreational boating and fishing, clamming, sailing, kayaking, windsurfing, marine-related commercial and retail facilities, restaurants, and other visitor-serving activities such as pedestrian and bike paths and birdwatching.

4.2 Provision of an Aquaculture Area within Pillar Point Harbor by the San Mateo County Harbor District, and Preparation of a Mitigated Negative Declaration

In September, 1994, the SMCHD designated an area approximately 500 yards by 750 yards (77.5 acres) in the northwest corner of the outer harbor, adjacent to the outer breakwater, as appropriate for aquaculture facilities (Exhibit 2, "Area in Pillar Point Harbor deemed appropriate for aquaculture by the San Mateo County Harbor District").

As "lead agencies" under the California Environmental Quality Act ("CEQA")[1] the SMCHD and the California Department of Fish and Game ("CDFG") certified on July 10, 1996, a mitigated negative declaration ("MND") for aquaculture operations in Pillar Point Harbor.

In February, 1997, the SMCHD ratified license agreements with four licensees for areas of submerged lands and overlying water within the designated aquaculture area of the harbor for the purpose of abalone aquaculture.

In June, 1998, the Regional Water Quality Control Board ("RWQCB") issued a national pollutant discharge elimination system ("NPDES") permits to each of the four proposed operators.

4.2.1 Description of Project Evaluated in the Mitigated Negative Declaration

The MND evaluates a project defined as operation of up to five abalone facilities within 2.4 acres of the 77.5-acre area of Pillar Point Harbor set aside for aquaculture, with a combined density of up to 5,150,000 abalone at full build-out. A 300-foot buffer will exist between each of the five aquaculture operations/facilities (not between each raft structure within a single facility).

The five facilities that constitute the project defined in the MND include: "U.S. Abalone" (Thomas Ebert), which operated in Pillar Point harbor between 1989 and 1998 without benefit of a coastal development permit, and the proposals of Jon Locke, *dba* "Princeton Abalone," Brian Price and Joel Roberts, *dba* "Deeper Blue Enterprises," Lyle Wagner, *dba* "Blue Pacific Abalone," and Christian Zajac, *dba* "Pearl Abalone Company."

[1] Pursuant to a cooperative agreement as authorized by California Environmental Quality Act Guidelines, Title 14, California Code of Regulations Section 15051(d).

Two of the four applicants, Jon Locke ("Princeton Abalone") and Lyle Wagner ("Blue Pacific Abalone") proposed both onshore and offshore components to their facilities.

Since completion of the MND, the following changes have occurred:

- US Abalone removed all abalone from its raft system in Pillar Point Harbor as of November, 1998, and removed the rafts themselves as of January, 1999;
- Doug Hayes, *dba* "Pacific Offshore Farms," has replaced "Deeper Blue Enterprises" as an applicant;
- Princeton Abalone now proposes only an offshore component; and
- The combined total number of abalone at full build-out has decreased by 56%, from 5,150,000 to 2,250,000. Each applicant now proposes to culture the following maximum number of abalone:

  -Pacific Offshore Farms: up to 500,000 (offshore rafts only);
  -Princeton Abalone: up to 500,000 (offshore structures only);
  -Blue Pacific Abalone: up to 800,000 (onshore and offshore components);
  -Pearl Abalone Company: up to 450,000 (offshore rafts only).

Exhibit 3, "SMCHD License Agreement Areas," shows the proposed facility locations.

Coastal Commission Review
The Coastal Commission is reviewing each application separately:

- Pacific Offshore Farms (Doug Hayes): Application No. E-98-17 to culture up to 500,000 abalone within a 248' x 60' (14,880 sq. ft., or 0.34 acre) area;
- Princeton Abalone (Jon Locke): Application No. E-98-18 to culture up to 500,000 abalone within a 250' x 75' (18,740 sq. ft., or 0.43 acre) area;
- Blue Pacific Abalone (Lyle Wagner): Application No. E-98-19 to culture up to 800,000 abalone within a 250' x 105' (26,250 sq. ft., or 0.60 acre) area;
- Pearl Abalone Company (Christian Zajac): Application No. E-98-20 to culture up to 450,000 abalone within a 98' x 40' (3,920 sq. ft., or 0.09 acre) area.

This coastal development permit application (No. E-98-18) is only for Princeton Abalone's proposed project.

4.3 Project History / Background

In May, 1994, Princeton Abalone first applied for a coastal development permit ("CDP") to conduct abalone-culturing operations in Pillar Point Harbor.

In September, 1995, Princeton Abalone installed a small structure (approximately 5' x 15') in the harbor to conduct long-term flotation module, cage, and suspension hardware assembly tests without benefit of a CDP. Princeton Abalone subsequently stocked its cages with abalone.

In March, 1997, Princeton Abalone submitted a new CDP application.

On April 29, 1997, Coastal Commission staff opened a violation case against Princeton Abalone (No. V-3-97-010).

In May, 1998, Princeton Abalone's structures were reported cut loose and vandalized. About 1,500 abalone escaped into the water. On June 2, 1998, Commission staff informed Princeton Abalone that any re-introduction of their structures would constitute a knowing and intentional violation of the coastal act.

4.4 Project Description for the "Princeton Abalone" Facility

Project Purpose
Jon Locke and Jim Foster, *dba* "Princeton Abalone," propose to develop a rearing system design for openwater-based aquaculture using red abalone *(Haliotis rufescens)* as a model within 250' x 75' (18,750 sq ft, or 0.43 acre) area of Pillar Point Harbor, and to use this system to establish a sustainable abalone production facility.

Princeton Abalone intends to eventually create a complete modular system that includes the offshore floating cage systems and an onshore laboratory and rearing facility that is capable of being easily transported from the manufacturing facility to any site in the world. **This coastal development permit application is, however, only for the offshore component.**

Facility Description
Abalone cages will be suspended by ¾" chain from ladder-like flotation structures (Exhibit 5). Each flotation structure will be comprised of modular units (10 foot-long polypropylene highway culverts 10 filled with polystyrene foam), connected like rungs in a ladder, able to be attached/detached as needed via shackles at either end (Exhibit 6). A full flotation structure will contain 10 "rungs," measure approximately 10' x 80', and support five cages. The structures will be anchored in a way that is acceptable and approved by the SMCHD, pursuant to **Special Condition 1**, to ensure that they will not break free.

Each cage will consist of a 55-gallon polypropylene drum from which panels will be cut and mesh plastic-welded over. Cages will contain an appropriate substrate for the abalone to adhere to and feed from. Cage development and design research will continue as the population grows in number and size.

Princeton Abalone will also construct a self-propelled service vessel, essentially a hoist and shelter. This unit will straddle and move along each "ladder," lifting the individual flotation assemblies from the water to allow personnel to service the five suspended cages and pre-process the harvest. The service vessel will have a catch basin and sump system to contain waste

products from the cages during service and feeding. When not in use, the service unit will be secured at a mooring or motored to another location for maintenance or shelter.

4.5 Coastal Act Issues

Coastal Act Section 30411(c) states in part:

> *The Legislature finds and declares that salt water or brackish water aquaculture is a coastal-dependent use which should be encouraged to augment food supplies and to further the policies set forth in Chapter 4 (commencing with Section 825) of Division 1.*

Coastal Act Section 30222.5 states:

> *Ocean front land that is suitable for coastal dependent aquaculture shall be protected for that use, and proposals for aquaculture facilities located on those sites shall be given priority, except over other coastal dependent developments or uses.*

Coastal Act Sections 30250(a) and 30105.5 provide for review of cumulative impacts. Section 30250(a) states in relevant part:

> *New residential, commercial, or industrial development...shall be located...where it will not have significant adverse effects, either individually or cumulatively, on coastal resources.*

Section 30105.5 states:

> *Coastal Act Section 30105.5 defines "cumulatively" or "cumulative effect" to mean the incremental effects of an individual project shall be reviewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.*

Creation and operation of the proposed abalone grow-out facility will constitute aquaculture. Furthermore, ocean-front land includes submerged lands. Hence, the Commission finds that said project is a coastal-dependent use that is given priority status in the Coastal Act pursuant to Coastal Act Section 30222.5.

Therefore, the remainder of this section will analyze the proposed aquaculture project with other coastal-dependent developments and uses, and Coastal Act policies concerning (1) marine resources and biological productivity, (2) existing commercial fishing operations, (3) recreation, including recreational fishing and boating operations, and (4) placement of fill in coastal waters.

Furthermore, analysis will address cumulative impacts where appropriate pursuant to Coastal Act Sections 30250(a) and 30105.5.

4.5.1 Marine Resources

Coastal Act Section 30230 states:

> *Marine resources shall be maintained, enhanced, and where feasible, restored. Special protection shall be given to areas and species of special biological or economic significance. Uses of the marine environmental shall be carried out in a manner that will sustain the biological productivity of coastal waters and that will maintain healthy populations of all species of marine organisms adequate for long-term commercial, recreational, scientific, and educational purposes.*

Coastal Act Section 30231 states:

> *The biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored through, among other means, minimizing adverse effects of waste water discharges and entrainment, controlling runoff, preventing depletion of ground water supplies and substantial interference with surface water flow, encouraging waste water reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.*

There are several potential impacts associated with cultivating abalone in the manner proposed: (1) introduction of exotic parasites, particularly a sabellid polychaete worm, into harbor and marine waters through infected abalone; (2) spread of disease, particularly "withering syndrome;" (3) impaired water quality due to deficient dissolved oxygen levels; (4) impacts to benthic habitat, fish, and invertebrates; (5) reduction in avian habitat area; and (6) overharvesting of kelp in order to feed the abalone.

4.5.1.1 The Sabellid Polychaete Worm[2]

Discovery / Background

Abalone culturists in California began to observe shell deformities and slow growth in their abalone in the late 1980s. The problem was soon attributed to a non-native sabellid polychaete worm from South Africa that was accidentally introduced to California when infested abalone were imported.

The sabellid polychaete worm that parasitizes abalone and other mollusks does not feed on its host, but rather uses the hard shell as an attachment site. The worm itself is a suspension feeder, removing food from the surrounding waters. It damages its host by interfering with natural

[2] Much of the factual information in this section about the sabellid is taken from the following source: "Identification and Management of the Exotic Sabellid Pest in California Cultured Abalone." (Carolynn S. Culver, Armand M. Kuris, and Benjamin Beede. A publication of the California Sea Grant College System. Publication No. T-041; ISBN 1-888691-05-0. (La Jolla, 1997).

growth. Thus, although infestations do not directly affect the quality of the abalone's meat, they can deform the shell to the point where the animal's growth slows or virtually ceases.

Because low infestations are not readily noticeable, the sabellid was spread rapidly through transfer of infested stock to virtually all abalone mariculture facilities in California by the mid 1990's. Various eradication methods were tried, but proved to be infeasible or unsuccessful. Thus, growers have focused on controlling the spread of infestation.

Transmission mechanism

The larval parasite reaches infestation stage when it is able to crawl. Larvae typically crawl to a new location on their hosts' shell or to a new host. Fortunately, the worm's larvae do not swim or float in the water column where they would be widely dispersed by currents. Rather, the benthic larvae crawl along the substrate until they find a suitable host. Transmission does not require direct contact between infested and uninfested animals. Furthermore, once the sabellid has been encased by shell, it no longer requires a living host for its development and reproduction (i.e., empty shells of animals that were infested before they died act as a source of infestation). Thus, larvae can spread if they become dislodged from the host shell or from a substrate, and can be transported by kelp, equipment, wet hands, and infested shells.

Environmental threat

Spread of the sabellid is of particular concern for the following reasons:

- The sabellid is an introduced species. Biological control experiments using native California intertidal and subtidal fishes and invertebrates have not turned up any predators of adult sabellids, though screening for potential predators of the larval stage is needed.
- The biological and ecological characteristics of the sabellid suggest that it has a high potential for successful invasion in California, as demonstrated by its successful infestation and reinfestation of abalone facilities throughout California, and in Mexico and Oregon.
- Sabellid worm larvae accept a broad range of hosts and are capable of infesting several native species of mollusks in addition to abalone, creating a threat of spread from infested aquaculture facilities into wild populations and establishment in state waters. Preliminary experiments conducted by Culver and her colleagues (1997) suggest that bivalves, such as mussels and oysters, are much less susceptible to infestation than snails.

The threat to natural populations is real as evidenced by the fact that the sabellid worm has infested populations of native snails in the rocky intertidal zone within a small cove adjacent to the discharge pipe from an abalone aquaculture facility in central California *(Culver, personal communication February 25, 1999).* After the infestation was discovered, the aquaculture company in cooperation with the CDFG and researchers at the University of California at Santa Barbara began an eradication program. Several million individuals of the main host species (a turban snail) have been removed from the intertidal zone and destroyed since 1996. The most recent field survey (1998) indicates that there were few infested snails remaining and that there

was no evidence of recent transmission of the parasite as indicated by the absence of young worms *(C. Culver, UCSB, personal communication February 25, 1999).*

Response by the California Department of Fish and Game

The California Department of Fish and Game ("CDFG" or "Department") concluded in May, 1996, that based on continuing investigations by the Department, the aquaculture industry, and the University of California at Santa Barbara, "every abalone aquaculture facility in the state is to be considered positive for presence of the [sabellid] worm unless, and until, inspections by the Department's Fish Health Laboratory ("FHL"), or other FHL approved inspectors, determine otherwise."[3]

To prevent the further introduction and spread of the sabellid worm, and to achieve its goal of complete sabellid eradication by December, 1999, the CDFG has promulgated the following requirements:[4]

> Outplanting of abalone into the wild. The Department will continue to emphasize the requirement of Fish and Game Code §6400 that any abalone to be planted into the wild must be inspected by the Department prior to planting. The Department will only approve the planting of sabellid-free abalone from sabellid-free broodstock.
>
> Approved sabellid eradication and prevention plans. All registered abalone aquaculturists were required to submit to the Department no later than December 31, 1996, a sabellid eradication plan. The FHL will review each plan and assess the risk each facility may represent to California resources. Each facility will then be required to conform to approved cleanup plan. New facilities must obtain an approved sabellid prevention plan. The CDFG received and informally approved Princeton Abalone's sabellid polychaete worm prevention plan in November, 1997.
>
> Certification of facilities as "sabellid-free." On July 7, 1998, the director of the CDFG signed a policy containing procedures for the CDFG to certify facilities as sabellid-free. Each operator must request initiation of CDFG's inspection program to certify a facility as sabellid-free. CDFG personnel will then conduct three inspections over a two-year period. Each inspection will entail inspection of each container (e.g., tank, cage, barrel) in the facility. The sampling protocol will include sufficient replication to allow CDFG to conclude that the stock is sabellid-free with 95% statistical confidence if no sabellids are observed in the sample.

Commission evaluation and mitigation of impacts

The CDFG aquaculture team has made significant progress in developing and implementing procedures for the sampling, reduction, and eventual eradication of sabellid worms in existing shore facilities, and for preventing new infestations. However the sabellid problem is not solved and the risks to the marine resources of the Monterey Bay Marine Sanctuary are real.

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[3] Memo to all registered abalone aquaculturists from Jacqueline E. Schafer, CDFG, dated May 20, 1996.

[4] Memos to all registered abalone aquaculturists from Jacqueline E. Schafer, CDFG, dated May 20, 1996, and December 6, 1996. Personal communication with Fred Wendell, Chair, CDFG Aquaculture Team, on July 17, 1998.

How serious is the risk to natural populations from the proposed aquaculture facilities? To answer this question one needs information regarding the likelihood of infested animals being placed in cage culture, the likelihood of sabellid larvae escaping the cages, and the likelihood of escaped larvae infesting natural populations.

If the animals used for cage culture come from facilities that contain the parasite, the chance of introducing infested animals to Pillar Point Harbor is small but real. Shore facilities are managing infestation through cultural practices *(F. Wendell, CDFG, personal communication February 23, 1999).* The small abalone used as "seed" are kept in tanks which are isolated from the tanks housing larger animals known to be infested. Prior to transfer, these "seed" animals are inspected by the CDFG. They examine a sufficient number of individuals that there is no more than a 1% probability of missing an infestation rate of 5% or greater.

Such sampling programs are based on the assumption that infested animals are randomly distributed within the population and that each individual within the population has an equal change of being sampled. In practice, infested animals probably occur in clusters because of the manner of larval dispersal, and truly random samples are difficult to collect. In addition, recently attached worms are difficult to see. Therefore, it is the professional opinion of the Commission's marine ecologist that the actual probability of missing a 5% infestation is somewhat larger than 1% by an unknown amount.

If infested abalone are introduced to culture facilities in Pillar Point Harbor, the chance of the larvae escaping into the natural environment is near certainty. Culver et al. (1997) suspended infested abalone in cages above uninfested animals. All the individuals below the suspended cages became infested. The larva apparently fall into the water column either because of physical disturbance or as part of their natural behavior. The worms can also travel on shell and kelp debris.

After falling to the sea floor in the harbor, the sabellid larvae must then find a suitable host. The probability of this occurring is low. The harbor bottom is composed of sand and mud and gastropods occur in low density. A second avenue of dispersal is on kelp debris that gets washed out of the harbor. The information needed to estimate the probability of dispersal out of the harbor on kelp debris is not available. Finally, there is the possibility of culture rafts breaking loose in storms. This has occurred in the past and some of the abalone were not recovered *(F. Wendell, CDFG, personal communication February 23, 1999).* In these previous occurrences, the rafts remained within the harbor, but on one occasion the raft drifted onto the breakwater where snails would be expected to occur.

As stated above, the CDFG's established procedures to certify an abalone-culturing facility as sabellid-free entail three inspections by CDFG personnel over a two-year period once the operator has requested initiation of the inspection program. Currently, only two facilities in the state have requested said initiation as of February 25, 1999. The CDFG inspected one facility twice and found it to be sabellid-infested. The CDFG will inspect the other facility soon.

Although said certification could occur more quickly than two years if an existing facility were to shut down and be kept dry for a long enough period to ensure that all sabellids were killed, or if a new facility were to be built, it will likely be two years before stock from a certified sabellid-free facility is available.

Nevertheless, considering the following factors, the Commission finds it necessary to require in **Special Condition 4** that prior to issuance of this permit, Princeton Abalone prove it can and will obtain all stock from a facility that has been certified by the CDFG as "sabellid-free" in order to ensure that implementation of said project will maintain marine resources, protect the adjacent marine sanctuary, and maintain healthy populations of existing species of marine gastropods as required by Coastal Act Section 30230:

- the sabellid worm has not yet been eradicated;
- the probability of introducing the sabellid parasite into the natural environment as a result of aquaculture activities in Pillar Point Harbor is small but real;
- potential spread of the sabellid poses a documented environmental threat;
- a successful introduction of this non-native sabellid parasite into native populations of mollusks could have extremely serious consequences;
- once established, eradication of the sabellid demands drastic measures; and
- Pillar Point Harbor is located directly adjacent to the Monterey Bay National Marine Sanctuary, an ocean currents connect harbor and sanctuary waters.

Furthermore, the Commission staff has worked with the CDFG's aquaculture team to develop abalone transfer and inspection procedures appropriate for Pillar Point Harbor culturing operations. The goals were to (1) address the frequent stocking of rafts with stock from various existing facilities; (2) where applicable, require that facilities request as soon as possible to initiate the inspections necessary to become certified as sabellid-free; and (3) remove sabellid-infested animals, should they be discovered, as soon as feasible. The Commission imposes these transfer and inspection procedures, which are contained in **Appendix B**, as **Special Condition 4**. **Special Condition 4** further requires that if a sabellid infestation is detected, Princeton Abalone shall immediately remove the cage or container in which the infested animal was found.

In addition, the Commission imposes **Special Condition 9**, which prohibits Princeton Abalone from discharging abalone shells into the marine environment.

Finally, the Commission imposes **Special Condition 1**, which requires evidence that Princeton Abalone's anchoring design has been approved by the harbor master of the SMCHD to ensure that its grow-out structures do not break free.

Project consistency with Coastal Act policies

The Commission finds that with the requirements of **Special Conditions 1, 4, and 9,** the proposed project will be carried out so as to avoid to the greatest extent feasible the introduction of sabellid worms into marine waters, and ensure that the facility remains sabellid-free. The

Commission therefore finds that the proposed project as extensively conditioned can be carried out in a manner that will sustain and maintain the biological productivity and quality of coastal waters, and maintain healthy populations of all species of marine organisms as required by Coastal Act Sections 30230 and 30231.

4.5.1.2 Withering Syndrome

Background
First discovered in 1986, withering syndrome caused populations of black abalone from San Diego to Cayucos, San Luis Obispo County, to decline by as much as 99 percent. Withering syndrome is not harmful to humans, but can cause abalone to lose weight and eventually die of starvation.

Recent identification and action by the CDFG[5]
The CDFG first determined that withering syndrome was well-established in the wild south of the City of Carmel, a rough dividing point between endemic and clear areas. As an immediate stop-gap measure, on August 26, 1998, the CDFG director placed a conditional ban on transfer of seed stock to facilities north of Carmel and between facilities within the area north of Carmel. The condition allows transfers only if a CDFG health exam does not find signs of the rickettsia bacteria, the likely causative agent for withering syndrome (only small seed, <20 mm will pass this test).

Recently, however, some locations north of Carmel have shown signs of both withering syndrome and rickettsia. In response, on March 22, 1999, the CDFG director adjusted the dividing line between endemic and clear areas northward to Point San Pedro, near the City of Pacifica in San Mateo County (thus the conditional ban on seed stock transfer is now based on Point San Pedro, not the City of Carmel).

Meanwhile, the CDFG has been implementing the following actions to confirm the area in which the disease is established and develop appropriate eradication measures:

1. Developing a sampling plan for wild abalone stocks in the north (sampling mainly around facilities, but also at some sites well-removed);
2. Conducting research to determine all transmission pathways (suspect water-borne transmission through water column); and
3. Conducting research to provide certainty that rickettsia is actually the causative agent.

Research results will not be available for at least six months to one year, at which time the CDFG's Aquaculture Disease Committee will review the data and make further recommendations. In the interim, the conditional ban will remain in effect, and the approximate dividing line at Point San Pedro between endemic and clear areas may be adjusted northward if necessary.

[5] Telephone communication with Fred Wendell, Aquaculture Coordinator, CDFG, on October 26, 1998.

Project consistency with Coastal Act policies
Pillar Point Harbor lies south of Point San Pedro, in an area within which the CDFG has determined withering syndrome to be endemic. Any transfer of Princeton Abalone's stock to locations north of Point San Pedro, into areas clear of withering syndrome, would be subject to the conditional ban imposed by the CDFG (i.e., transfers would not be allowed unless a health exam does not find signs of rickettsia, the likely causative agent for withering syndrome).

The Commission thus finds that the proposed project as subject to the CDFG-imposed conditional ban will be carried out in a manner that will maintain healthy populations of all species of marine organisms as required by Coastal Act Section 30230.

4.5.1.3 Water Quality and Benthic Habitat

An aquaculture facility, such as the one proposed by Princeton Abalone, has the potential to reduce the dissolved oxygen concentration in the water column and cause adverse changes to the benthic community.

Species and uses potentially affected[6]
Pillar Point Harbor supports ocean, commercial, and sport fishing; marine habitat; fish migration; preservation of rare and endangered species; contact and non-contact water recreation; shellfish harvesting; fish spawning; and wildlife habitat.

The harbor supports a diverse population of benthic fauna that includes polychaete worms, crustaceans (e.g., crabs, shrimp), and mollusks (e.g., snails, bivalves). Other invertebrates include anemones and seastars.

The harbor is also an important nursery area for juvenile fish in the summer. Flatfish, including English sole, various rockfish species, members of the surfperch family, and Pacific herring are abundant in the summer. Smaller numbers of many other significant commercial and sport species are also found. Starry flounder and topsmelt are abundant in winter, and northern anchovy, Pacific sardine, mackerel, and striped bass are also present.

Potential for depletion of dissolved oxygen in the water column
The dissolved oxygen ("DO") concentration in water is critical to the health of marine organisms; deficient DO concentrations could result in both lethal and sublethal effects. As a general rule, DO levels less than 5.0 mg/l are unacceptable to aquatic organisms.[7] The San Francisco Bay Region Basin Plan establishes a DO objective of 5.0 mg/l *(Chapter 3, p. 3-3)*, and the California Ocean Plan sets forth that the DO concentration shall not at any time be depressed

[6] According to data from the following sources, referenced in the *Revised Expanded Initial Study for Abalone Aquaculture Operations, Pillar Point Harbor, San Mateo County* (Huffman & Associates, June, 1996): (1) *Biological Survey of Pillar Point Harbor*; Water Quality, Bird and Mammal Survey, Fish Survey, Benthic Survey, Diver Transects (Marine Ecological Institute, 1976); (2) Pillar Point Harbor Water Quality Data Summary 1990-1993 (Entrix, Inc.); (3) Bird Sampling Data – Mitigation Monitoring Program for Pillar Point Harbor Boat Launch Ramp Mitigation Site (Entrix, Inc., 1993); (4) Pillar Point Boat Ramp Facility Mitigation Site Monitoring Program Baseline Data Report (Entrix, Inc., June 24, 1991).

[7] Stickney, Robert. *Principles of Aquaculture.* (John Wiley and Sons, 1994).

more than 10 percent from that which occurs naturally as the result of the discharge of oxygen-demanding waste materials *(Chapter II, Section D, No. 1; p. 4)*. Abalone can tolerate lower DO levels than fish.

At very high numbers, the respiration of the abalone themselves could reduce DO levels in the water column. In addition, cage culture operations introduce the potential that abalone feed and fecal material could accumulate on the sea floor within the harbor. High concentrations of particulate organic material result in increases in decay organisms which consume available DO. Calm, poorly-mixed environments are especially susceptible to low DO levels. Increases in organic matter in bottom sediments could result in a local reduction in available DO from the surrounding environment below the level necessary to support local plant and animal species.

The MND contains a simple model of abalone DO uptake versus DO availability in the harbor. This model ultimately suggests that the potential for depletion of dissolved oxygen in the water column throughout the harbor by up to 5,150,000 abalone will not be significant.[8]

Potential for benthic impacts

The MND states that the proposed raft structures will create shade that could adversely affect algae and benthic organisms. Also, placement of the raft anchoring devices will change the existing substrate.

Most importantly, the proposed facilities could impact the benthic community via disturbance resulting from the potential build up of detritus, including kelp and/or substitute feed, and fecal material on the seafloor. There is general consensus that substantial organic enrichment causes deleterious changes in the community of organisms that lives in sand or mud.

For example, said accumulation could favor species that thrive in disturbed organically rich sediments. In addition, large accumulation of organic material could result in decreases in DO near the bottom due to the respiration of decay organisms, and cause a loss of most of the natural invertebrate community in the sediments. Furthermore, invertebrate community changes could lead to changes in the fish community (e.g., change the forage value of the seafloor to bottom-feeding fishes).

Finally, the grow-out structures and associated equipment could become marine debris if they are not properly removed upon cessation of operations.

Provisions and prohibitions contained in the NPDES permits

Since the MND analysis, the collective abalone total for all proposed abalone operations at Pillar Point Harbor has been reduced to 1,950,000 abalone at full buildout (of which Princeton Abalone will produce 500,000, or about 26%). Notwithstanding the decrease in abalone production, the NPDES permits granted to the four proposed aquaculturists state that some concern about

[8] There was a lot of initial concern over DO availability because a conversion error in the MND's (Huffman report's) model calculations--using the density of water instead of the density of oxygen--led to a gross underestimate of available DO and the suggestion that 5,150,000 abalone have the potential to severely impact DO levels in the harbor with resultant negative impacts to the biota. Correction of said error shows that there is actually about 700 times more available oxygen than first calculated (36,000,000 liters instead of 52,000 liters).

potential DO depletion still remains (but cite the initial suggestion of the MND DO model, which has since been found to grossly underestimate the amount of available DO – See Footnote 8).

The NPDES permits also state that intensive monitoring of DO concentrations, benthic infauna, and bottom sediment will provide a suitable index of how the proposed facilities may affect benthic fish communities residing in the harbor.

Thus, Princeton Abalone's NPDES permit, like those the RWQCB granted to the other three proposed operators, requires several mitigation measures, consistent with those identified in the MND:

- Monitoring Program. Each operator shall sample DO levels and water temperature on a daily basis, and periodically sample bottom sediment and benthic infauna as specified in its NPDES permit to evaluate the significance of potential project-related impacts and effects.

- Annual Reporting. Each operator shall submit an annual technical report to the RWQCB's executive officer that (i) summarizes the past year's monitoring data and documents that all receiving water limitations are being met; (ii) summarizes potential water quality problems and describes how they will be solved; and (iii) proposes an increase in number of abalone to be grown in the coming year. Production shall not be increased until the executive officer accepts the proposal in the technical report.

- Phased Growth in Abalone Culturing Operations. Each operator shall phase production during its five-year NPDES permit period (June, 1998 – June, 2003), increasing growth annually in 20% increments contingent upon the executive officer's authorization.

Pursuant to another measure requiring a DO contingency plan, Princeton Abalone has stated it will begin phasing its operations out of Pillar Point Harbor if DO levels decline to at or below 6 ppm for extended periods (and that DO levels below 7 ppm are cause for concern). It further states that aeration will be too expensive on a long-term basis. *(Letter from Jim Foster, Princeton Abalone, to Moira McEnespy, CCC, November 12, 1998; incorporated as part of Princeton Abalone's application.).*

Commission evaluation and mitigation of impacts

Potential depletion of dissolved oxygen in the water column

Based on the MND's DO model (which concludes that the potential for depletion of DO in the water column throughout the harbor by up to 5,150,000 abalone will not be significant--see Footnote 8), it seems unlikely that Princeton Abalone's grow-out of up to 500,000 abalone or the four potential operator's cumulative total grow-out of up to 1,950,000 abalone will cause significant depletion of DO in the water column throughout the harbor. This conclusion is nevertheless based upon the findings of one simple model.

The Commission therefore imposes several special conditions to ensure that the proposed projects will not significantly deplete DO from the water column. To detect any local DO depletion, the Commission imposes **Special Conditions 5(a) and 5(c)**, which incorporate the

DO monitoring required by Princeton Abalone's NPDES permit and provide for reporting of monitoring results.

To further mitigate any DO depletion, the Commission imposes **Special Condition 6**, which institutes phased annual increases in total abalone stock contingent upon executive director approval. The executive director shall base said approval on the results of the dissolved oxygen and benthic monitoring required in Special Condition 5.

Potential benthic impacts due to shading and placement of the anchoring devices
With respect to potential impacts to benthic habitat due to shading and placement of anchoring devices, the Commission finds said impacts will not be significant for the following reasons: (1) the 300-foot buffers between each facility will reduce shading; (2) shading impacts will not have a significant effect because water clarity is very poor near the harbor bottom most of the time; (3) placement of rafts will not prevent use of the substrate underneath; and (4) the anchoring devices will require a very small amount of bottom area.

Potential benthic impacts due to accumulation of kelp and abalone feces
The proposed facilities, both individually and cumulatively, could adversely affect the benthic community by causing a build up of detritus and fecal material on the seafloor. There is general consensus that substantial organic enrichment causes deleterious changes in the community of organisms that live in sand or mud. The Commission therefore finds that each operator must conduct independent benthic monitoring, and associated annual reporting, to ensure that its facility is not significantly affecting Pillar Point Harbor's existing benthic community. Operators can coordinate the work of monitoring contractors to reduce costs.

Organic enrichment can be monitored directly by taking sediment samples and analyzing them for total organic carbon ("TOC"). There is evidence, however, from studies around a fish farm that changes in the benthic community can take place beyond the area within which increases in TOC are obvious (Weston 1990). In order to strengthen inferences based on samples taken during the period of aquaculture operations, a preliminary survey of the benthic community is considered necessary.

The Commission thus imposes **Special Condition 5(b)** which requires Princeton Abalone to conduct initial and subsequent sediment and benthic infaunal surveys in accordance with the sampling methods and requirements listed in **Appendix C**. The Commission also imposes **Special Condition 5(c)** which provides for reporting of monitoring results.

Furthermore, the Commission imposes **Special Condition 7** which states that if results of the benthic infaunal sampling and analysis indicate a significant change in the infaunal community under the grow-out facilities as defined in the "Thresholds of Significance" section of **Appendix C**, Princeton Abalone shall remove all abalone, grow-out structures, anchoring devices, materials, and equipment within 90 days.

In addition, the Commission imposes **Special Conditions 9**, which prohibits waste disposal except as authorized under the NPDES permit.

Finally, **Special Condition 6** institutes phased annual increases in total abalone stock contingent upon executive director approval. The executive director will base his response to incremental expansion requests on the dissolved oxygen and benthic monitoring required in Special Condition 5, and will give said respond within 30 days of request and report submittal.

Princeton Abalone may apply for an amendment to this permit that seeks to modify or delete Special Condition 5 based on an alternate way to meet the intent of the requirements of Special Condition 5 and Appendix C. One such alternative could be demonstration that Princeton Abalone has modified its facility and/or cage design to ensure that only a negligible amount of waste kelp or abalone feces will be released into the marine environment.

Potential marine debris

To avoid any potential residual marine debris, the Commission imposes **Special Conditions 1 and 10. Special Condition 1** requires evidence that the anchoring design has been approved by the harbor master of the SMCHD to ensure that the grow-out structures do not break free. **Special Condition 10** requires, upon cessation of abalone grow-out operations, Princeton Abalone to remove all abalone, grow-out structures, anchoring devices, materials, and equipment within 90 days. Princeton Abalone's license agreement with the SMCHD provides for an "environmental protection and remediation fund," which will ensure implementation of Special Condition 10.

Consistency with Coastal Act policies

The Commission finds that with the requirements of **Special Conditions 1, 5, 6, 7, 9, and 10**, the proposed project as reviewed pursuant to Coastal Act Section 30105.5 in conjunction with three concurrent projects *(CDP Application Nos. E-98-17, E-98-19, and E-98-20)*, which will be conditioned similarly, will be carried out in a manner that maintains marine resources, sustains the biological productivity and quality of coastal waters, and maintains healthy populations of all species of marine organisms as required by Coastal Act Sections 30230 and 30231.

4.5.1.4 Avian Habitat

Avian species that use Pillar Point Harbor

Pillar Point Harbor provides refuge, foraging and roosting habitat for a great diversity of migrating and wintering birds. The harbor is unique along the San Mateo County Coast in providing calm waters of mixed depths, attracting many bird species that are otherwise rare or unknown in the area.

Furthermore, several species of special concern use the harbor or surrounding areas: the western snowy plover *(Charadrius alexandrinus nivosus)* (federally listed as threatened, California species of special concern) winters at the northwest beach area between September and mid April; the brown pelican *(Pelicanus occidentalis)* (federally and state listed as endangered) uses the harbor area in late summer, fall, and early winter; and the marbled murrelet *(Brachyramphus marmoratus)* (state listed as endangered, federally listed as threatened), has been sighted in the Half Moon Bay and Pillar Point areas.

Bird census data reveals that the harbor's four habitat types support the following percentages of bird use, respectively: Open water, 51%; shoreline edges, 30%; sandy areas, 12%; and rock areas, 7%.[9]

The MND and several interested parties have identified concerns about the proposed project's potential impacts on avian species.

Loss of avian habitat due to placement of the physical structures (e.g., rafts)
The raft or ladder structures used in the aquaculture facilities will decrease the amount of open water habitat available for birds to feed, dive, and rest in the outer harbor.

Loss of open-water habitat is especially important because many species (e.g., loons, scaup, scoters, mergansers, grebes) do not sleep or rest on land or a hard surface such as the proposed abalone rafts. They remain on the water where they can dive or take flight, using land only to nest. *(Letter from Eileen Jennis-Sauppe, Sequoia Audubon Society, to James Stilwell, SMCHD, dated December 19, 1995)* Other species such as cormorants and pelicans may, however, use the rafts as additional roosting areas.

Furthermore, all species that use the harbor require unobstructed open-water areas to taxi for take-off (only puddle ducks such as mallards, pintails and teals that feed in shallow water and marshes take direct flight upward). *(Letter from Eileen Jennis-Sauppe, Sequoia Audubon Society, to James Stilwell, SMCHD, dated December 19, 1995)*

Interested parties have identified the following other impacts and requirements: (1) the birds cannot go eastward, out of the harbor, because the main boat channel is there, causing too much disturbance; (2) many birds that spend their entire lives at sea, nesting on islands, need to rest in the harbor during heavy storms; and (3) an adequate buffer must be maintained between the rafts and the western beach.

Commission evaluation of impacts
Placement and operation of Princeton Abalone's grow-out structures will occupy 0.43 acre of open water habitat, which is only about 0.74% of the 58 acres of biologically productive area in the northwest corner of the harbor. Furthermore, birds will not be precluded from using the buffer areas between each grow-out facility.[10] Thus the actual area of open water habitat precluded by all four proposed operations will be only 1.46 acres, or about 2.5 percent of the 58 acres of biologically productive area in the northwest corner of the harbor.[11]

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[9] Results of 1990-1991 baseline study bird census data (Entrix, 1991), as contained in the *Revised Expanded Initial Study for Abalone Aquaculture Operations, Pillar Point Harbor, San Mateo County* (Huffman & Associates, June, 1996, p. 27).

[10] E-mail correspondence from Gary Page, Point Reyes Bird Observatory, to Moira McEnespy, CCC, dated January 20, 1999, stating the opinion that all birds could get off the water with a 300-foot take-off distance (although not necessarily endorsing said buffer distance).

[11] Pacific Offshore Farms, 0.34 acre; Princeton Abalone, 0.43 acre; Blue Pacific Abalone, 0.60 acre; and Pearl Abalone, 0.09 acre.

In addition, all structures will be placed at least 500 feet from the western beach area, the second most highly-used habitat type.

Consistency with Coastal Act policies
The Commission thus finds that, for the reasons stated in its evaluation above, placement and operation of the proposed project as reviewed pursuant to Coastal Act Section 30105.5 in conjunction with three concurrent projects *(CDP Application Nos. E-98-17, E-98-19, and E-98-20)* will be carried out in a manner that will maintain healthy bird populations as required by Coastal Act Section 30230.

4.5.1.5 Kelp Harvesting

Regulatory framework
Fish and Game Code §6653 and §6750 provide the Fish and Game Commission ("F&GC") with authority to establish regulations as may be necessary to ensure the proper harvesting of kelp and aquatic plants for commercial and sport purposes.[12] The CDFG is the lead agency responsible for managing both giant kelp *(Macrocystis pyrifera)* and bull kelp *(Nereocystis luetkeana)* pursuant to commercial and sport fishing regulations *(14 CCR §30 and § 165)*. The F&GC last amended these regulations in March, 1996, in accord with the California Environmental Quality Act.[13].

To manage commercial harvesting, the CDFG charts and numbers the state's kelp beds. Official beds are designated in Section 165.5(j) and (k) of Title 14, California Code of Regulations. Beds are actually geographic areas, not individual patches, and thus vary in length and contain differing amounts of kelp canopy that change with time. Although one management objective is to "endeavor to maintain a maximum sustained harvest and utilization of the state's kelp resources,"[14] the CDFG has no fixed standard for sustainable harvest because kelp production is so highly variable.

The CDFG uses aerial surveys to assess the kelp resources; the extent of giant kelp is determined by measuring the kelp bed's surface canopy on the photographs. Aerial surveys are scheduled to be conducted every five years, subject to financial constraints; the last survey of all designated beds was done in 1989. The F&GC then designates which kelp beds may be harvested, and places limitations on the method of harvest:

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[12] Under §6650, the F&GC may establish license and permit requirements; establish fees and royalties; require report of take; establish open and closed seasons; establish or change possession limits; establish and change area or territorial limits for harvesting; and prescribe the manner and the means of taking kelp and aquatic plants for commercial purposes. Under §6750, the F&GC may establish, extend, shorten or abolish open seasons and closed seasons; establish, change, or abolish bag limits, possession limits, and size limits; establish and change areas or territorial limits for taking; and prescribe the manner and means of taking kelp and aquatic plants for recreational purposes.

[13] "Giant and Bull Kelp Commercial and Sport Fishing Regulations." *Section 30 and 165, Title 14, California Code of Regulations.* California Department of Fish and Game. Final Draft Environmental Document (January, 1996).

[14] Ibid., pp. 2-6.

- Kelp beds are designated as either (a) available for lease and exclusive harvest by the lessee, (b) open beds available for harvest by any licensed kelp harvester, or (c) closed beds that cannot be harvested for environmental reasons.

  A kelp harvesting license from the CDFG is required to harvest kelp commercially from designated "open" beds. The license enables the licensee to harvest to the limit the regulations allow at designated open beds on a "first-come, first-served" basis. If a bed has been cut to the limit the regulations allow, the licensee is prohibited from harvesting and must go to another bed. Under the "open" designation, a bed's canopy could be heavily or completely removed by harvest. Sixty percent of the kelp beds in California are set aside for small harvesters.[15]

- Kelp plants (giant and bull) may be cut no deeper than four feet below the ocean surface. For giant kelp, this restriction protects the plants' holdfasts, juvenile and reproductive blades, and young subsurface plants from being harvested before reaching maturity. Bull kelp is killed by this procedure.

- The F&GC may recommend temporary closure of a kelp bed for up to one year if it finds a bed has been significantly damaged (e.g., via storm, oil spill, or harvesting activities). Notice of the closure is sent to all licensed harvesters.

Kelp cannot be cut or harvested in marine life refuges, ecological reserves, national parks, or state underwater parks.

Finally, the F&GC requires harvesters to keep harvest and landing records, which record, among other statistical information, the wet weight of harvest, date of landing, and bed of origin. Harvest records are submitted once per month.

New project-related demand for kelp

There are fairly widely-varying estimates of the amount of kelp needed to grow out red abalone from seedlings to market size.

Estimate contained in the Mitigated Negative Declaration

The MND estimates the amount of kelp needed for the grow-out life of each abalone at between 3.0 and 4.7 lbs. of kelp. Assuming a grow-out life of three years, this estimate translates into a cumulative total of between 1,125 and 1,800 tons of kelp per year (which equals 21.6 – 34.6 tons per week, or 3.1 – 4.9 tons per day), broken down per company as follows:

- Pacific Offshore Farms: 250 – 400 tons/yr. (4.8 – 7.7 tons/wk., or 0.7 – 1.1 tons/day);
- Princeton Abalone: 250 – 400 tons/yr. (4.8 – 7.7 tons/wk., or 0.7 – 1.1 tons/day);
- Blue Pacific Abalone: 400 – 640 tons/yr. (7.7 – 12.3 tons/wk., or 1.1 – 1.8 tons/day);
- Pearl Abalone: 225 – 360 tons/yr. (4.3 – 6.9 tons/wk., or 0.6 – 1.0 tons/day).

[15] Telephone conversation with Rob Collins, Nearshore Ecosystem Coordinator, Marine Region,CDFG, on December 12, 1994 (referenced in the *Revised Expanded Initial Study for Abalone Aquaculture Operations, Pillar Point Harbor, San Mateo County (June, 1996)*, p. 46)

Estimates from the applicants
Doug Hayes ("Pacific Offshore Farms") states that 100,000 abalone need about 600 lbs. of kelp per week at 10-15 mm in size, and about 1,100 lbs. per week at 30 mm, but asserts that the exact amount of kelp needed is impossible to calculate because he will buy 5,000 abalone at a time and they will all grow at different rates.

Princeton Abalone states that it will require about 466,470 lbs./yr. for 224,000 abalone (which translates to 1,041,228 lbs./yr., or 521 tons/yr. (10 tons/wk., or 1.4 tons/day), at its maximum operational capacity of 500,000 animals), but cautions that its estimates are educated guesses at best.

Blue Pacific Abalone states that it is not comfortable guessing at the amount of needed kelp, due to wide variations in growth rates between abalone of the same age, and unknown mortality rates.

Pearl Abalone estimates that it will require 100 tons of kelp to feed 90,000 abalone in the first year, and 500 tons of kelp in the fifth year. These estimates do not appear to account for different consumption rates based on abalone size, or the total number of abalone at each size once full build-out is reached.

Estimates from existing growers
Mr. Chris Van Hook, owner of Abalone International, Inc., located in Crescent City, estimates that 100,000 abalone will need about 1 ton of kelp per week at between one to two inches in size, and about 1.5 tons of kelp per week at between two and three inches in size. This estimate translates into a cumulative total of about 1,561 tons of kelp per year (30.0 tons/wk., or 4.3 tons/day), broken down per company as follows:

- Pacific Offshore Farms: 347 tons/yr. (6.7 tons/wk., or 1.0 tons/day);
- Princeton Abalone: 347 tons/yr. (6.7 tons/wk., or 1.0 tons/day);
- Blue Pacific Abalone: 555 tons/yr. (10.7 tons/wk., or 1.5 tons/day);
- Pearl Abalone: 312 tons/yr. (6 tons/wk., or 0.9 tons/day).

An existing onshore abalone farm in Cayucos, San Luis Obispo County, could not provide a feeding figure.

Potential impacts to the kelp bed community
All prospective Pillar Point abalone aquaculturists, including Princeton Abalone, will harvest kelp from designated open beds pursuant to annual kelp harvesting licenses and/or purchase kelp from existing suppliers. The MND states that the facility operators plan to obtain kelp primarily from south of Half Moon Bay, in the Santa Cruz or Monterey areas, and from local beds. There are currently only six kelp beds between San Mateo County and Point Sur from which the growers could legally and feasibly obtain kelp.[16]

[16] Technically there are nine beds, but one is designated for private lease only, and two have little or no kelp *(Personal communication with Robson Collins, Nearshore Ecosystem Coordinator, Marine Region, CDFG, on February 1, 1999).*

Furthermore, some kelp beds located off Santa Cruz and in Monterey Bay may not necessarily be viable options for the growers due to concerns expressed by various local interest groups regarding the harvesting of kelp from these beds (e.g. the prime area for kelp harvesting in Monterey Bay is being proposed as an underwater park, and thus a "no take" area). *(Letter from DeWayne Johnston, CDFG, to Richard Thompson, ACOE, dated February 27, 1998)*

The new kelp demand will be added to that of existing harvesters in the Monterey Bay region. Six harvesters formed the Monterey Kelp Cooperative in September, 1998, under which they seek to self-regulate the resource. Existing harvest levels are about 20 – 25 tons per week.

In addition, the volume of kelp needed to sustain aquaculture operations remains relatively constant throughout the year, but there are significant seasonal fluctuations in kelp abundance (e.g., due to storms). Thus, during the winter, kelp must be taken from a few sheltered beds at levels similar to summer needs, which intensifies take from specific beds and may result in the removal of a significant portion of the total canopy. Hence, potential adverse impacts from kelp removal would be more likely to occur during winter, after canopies are thinned by storms.

Thus, given the minimal amount of kelp available near the project area, the existence of competing harvesters, local interest in limiting harvest of some beds, and natural factors such as the recurring el Nino weather pattern that cause kelp abundance to fluctuate, local kelp resources could be adversely impacted by the proposed grow-out facilities. *(Letters from DeWayne Johnston, CDFG, to Richard Thompson, ACOE, dated February 27, 1998, and April 1, 1998)*

Finally, kelp harvesting potentially affects the entire kelp bed community beyond the kelp plants themselves, such as finfish populations that live in giant kelp forests (e.g., the young of some rockfish species recruit specifically to the upper kelp canopy); invertebrates that live on and among kelp; birds that forage in and adjacent to and rest in giant kelp beds; and sea otters, seals and sea lions that raft, rest, or forage in giant kelp forests.

In response to the potential for limited kelp, Princeton Abalone states it realizes its business depends on and must therefore help to ensure the sustainability of the kelp resource. It also points out that sustainable yields are on the order of 20 tons per acre per year *(citing Birilotti, D.C., Kelco, Div. Merck and Co., Private Communication, March, 1994).*

Concerns about the existing kelp harvesting program

There is debate about whether or not the California Department of Fish and Game's and the Fish and Game Commission's kelp harvesting program is adequate to ensure the continued viability of the kelp bed community, and whether the regulations properly address the multiple uses of the kelp beds. Concerns have been voiced by the superintendents of the Monterey Bay and Gulf of the Farallones National Marine Sanctuaries[17] and other interested parties.[18]

[17] Recall that Pillar Point Harbor is located adjacent to the Monterey Bay National Marine Sanctuary.

[18] See Appendix E, "Correspondence," for the record of written concerns, including those from the marine sanctuaries.

First, the existing regulations allow take of both giant and bull kelp down to four feet below the water surface. While this distance protects the reproductive blades of giant kelp, which are located just above the structure that attaches a plant to the substrate, it does not protect those of bull kelp, which are located on the surface blades. Because bull kelp does not recruit year-round, heavy harvest of its surface canopy can eventually have a severely adverse impact on a bed. For example, clearing mature plants may increase the amount of benthic light and allow other benthic or subsurface species to become dominant and then limit later bull kelp recruitment success. Or, the local spore source may be decreased significantly by continual removal of the reproductive portions of the blades.

In response to potential bull kelp impacts, the F&GC has restricted take of bull kelp in beds north of San Francisco to hand harvest only, and designated all bull kelp beds in that region as either "for lease" (seven beds) or "closed" (five beds).[19] No bull kelp beds are designated "open," the designation in which the canopy could be heavily or completely removed by harvest. Furthermore, most of the beds in which giant and bull kelp are mixed are found north of San Francisco, where they have received the "lease" or "closed" designation. In the few beds south of San Francisco in which the two kelp types mix and the beds are designated as "open," bull kelp only constitutes about two to three percent of the bed. No purely bull kelp beds exist south of San Francisco. *(Conversation with Robson Collins, Nearshore Ecosystem Coordinator, Marine Region, CDFG, February 22, 1999).*

Second, the program does not appear to some to adequately address harvesting impacts to the entire kelp bed community, although the CDFG and F&GC have reached the following conclusions relative to 1996 levels of harvest:[20]

- Populations of fishes in southern and central California are not seriously impacted by commercial harvesting, though some fishes may be displaced for a time following harvesting, and harvesting of canopies may open some areas to predation by fishes that otherwise would not feed in the areas;
- While kelp harvesting does incidentally remove some sessile and motile invertebrates, the overall effect on invertebrate populations appears not to be significant;
- While it is recognized that numerous species of birds use the kelp forests, the effect of canopy removal and kelp harvesting operations on bird populations is not significant; and
- Based on a review of available information, kelp harvesting activities have little to no effect on marine mammals using the kelp forests.

Other concerns with the existing kelp harvesting program are that it appears to be self-patrolled and self-enforced, and lack over-harvesting penalties. Furthermore, aerial surveys to assess the kelp resource do not occur very frequently or regularly (the last survey was done in 1989, and the

[19] As designated in *CCR Title 14, Section 165(c)(5).*

[20] "Giant and Bull Kelp Commercial and Sport Fishing Regulations." *Section 30 and 165, Title 14, California Code of Regulations.* California Department of Fish and Game. Final Draft Environmental Document (January, 1996), Chapter 4, "Environmental Impacts."

one before that in 1967), do not differentiate between giant and bull kelp beds, and do not provide seasonal assessments of canopy removal due to natural events (e.g., storms) versus commercial harvest. Finally, some think that kelp beds are currently being harvested at their maximum.

Concerns have been exacerbated by the fact that no "kelp budget" was prepared to evaluate the new demands of the four proposed abalone-culturing operations, (i.e., no recent inventory of the amount and location of existing kelp, assessment of the new demand from the four proposed abalone aquaculture proposals, and conclusion of how and where said demand could be accommodated in a manner that would sustain the kelp resource and associated uses), especially considering that the new proposals could about double the existing demand for kelp from the Monterey Bay region.[21]

Collaboration between CDFG and CCC staff to address potential kelp harvesting impacts
On April 15, 1999, Commission staff sent a letter to the CDFG director and the staff and the chair of the Fish and Game Commission requesting that both agencies work cooperatively to develop solutions to the kelp harvesting issues.[22] The Commission staff outlined its concerns regarding use conflicts, impacts to associated species and the kelp bed community, the seasonal nature of impacts, reporting requirements, and the lack of information available about the effects of kelp removal on kelp forests at present levels. The staff highlighted additional concerns about the potential impacts of increased kelp harvesting on the Monterey Bay region.

CDFG staff responded on April 20, 1999, in a letter stating the following:

- The CDFG has also been concerned that the demand for kelp resulting from new or expanded abalone culture operations will exceed the supply available locally, especially during periods of low abundance;
- The CDFG is aware of the need for more frequent monitoring of the health of harvested kelp beds;
- In December, 1998, the Fish and Game Commission directed the CDFG to address the issue of kelp harvesting by existing Monterey Bay area abalone growers and its impact on other uses as part of its upcoming review of kelp management regulations due to the F&GC in 2000; and
- The CDFG welcomes the opportunity to explore new, alternative approaches to the management of kelp harvest with Coastal Commission staff, other agencies, and the national marine sanctuaries.[23]

[21] Letters from Ed Ueber, GFNMS/MBNMS, to Loretta Barsamian, RWQCB, February 23, 1998, and June 16, 1998. See also Appendix E, "Correspondence" for the record of written concerns.

[22] Letter from Peter Douglas, Executive Director, CCC, to Richard Thieriot, President, F&GC, Robert Hight, Director, CDFG, and Robson Collins, Nearshore Ecosystem Coordinator, Marine Region, CDFG, April 15, 1999.

[23] Letter from Robson Collins, Nearshore Ecosystem Coordinator, Marine Region, CDFG, to Peter Douglas, Executive Director, CCC, April 20, 1999.

Staff of the CDFG, the CCC, and the MBNMS met on May 6, 1999, to further discuss kelp harvesting issues and possible solutions. At the meeting, CDFG staff indicated that it would specifically address use conflict issues in its upcoming review of its kelp harvesting and management regulations.

The Commission staff welcomes the opportunity to work closely with the CDFG during its review and revision of the kelp harvesting regulations, and supports the CDFG's role as the agency responsible for developing and implementing the harvesting regulations. The Coastal Commission finds, however, that if the currently-proposed aquaculture projects are to proceed before the end of 2000, when the CDFG updates its kelp harvesting regulations in a manner that fully addresses Coastal Act policies, the Commission must condition the permits to prohibit use of kelp from the identified impacted kelp beds for use in the permitted abalone facilities. Without this prohibition, the Commission cannot make the requisite findings that individually and cumulatively the kelp harvesting needed to sustain the proposed abalone projects is consistent with Coastal Act policies.

Commission evaluation of impacts

From a statewide perspective, an additional take of about 400 tons of kelp per year (the largest estimate of Princeton Abalone's annual take) is small compared with the current annual statewide take of over 100,000 tons per year (0.4%).

Based on the information currently available, it appears that the four abalone-culturing projects proposed for Pillar Point Harbor will not cause significant adverse additional impacts to the kelp resource itself for the following reasons: (1) the CDFG's existing commercial kelp harvesting program limits harvest to the upper four feet of kelp plants, and thus protects mature giant kelp plants' holdfasts, reproductive and juvenile blades, and young juvenile plants; (2) removing the entire canopy of a giant kelp bed down to four feet from the surface will not harm the bed in the long term; (3) kelp beds are extremely productive, increasing by about 100 tons per acre per year; and (4) the majority of bull kelp beds are protected from heavy harvest by "lease" or "closed" designations.

The proposed project both individually and in conjunction with the other three proposed abalone aquaculture facilities may, however, cause adverse impacts to the larger kelp bed community. Although the CDFG staff will address these issues in its upcoming review of its kelp harvesting and management regulations, said review and recommended revisions may not be acted on by the Fish and Game Commission until the end of 2000. The Coastal Commission thus finds that if the currently-proposed aquaculture projects are to proceed before the end of 2000, when the CDFG updates its kelp harvesting regulations in a manner that fully addresses Coastal Act policies, the Commission must condition the permits to prohibit use of kelp from the identified impacted kelp beds for use in the permitted abalone facilities. Without this prohibition, the Commission cannot make the requisite findings that individually and cumulatively the kelp harvesting needed to sustain the proposed abalone projects is consistent with Coastal Act policies.

The Coastal Commission therefore requires **Special Condition 8**, which restricts harvest, take, or purchase of kelp obtained from (1) open bed #220 between the Monterey breakwater and

Point Pinos, and (2) open bed #221 between New Brighton State Beach and Soquel Point (Pleasure Point area), off the Santa Cruz County coast, from December 1 until May 15 (a seasonal time of low abundance).

Princeton Abalone may request that the Commission modify this restriction through an amendment to this permit based upon emergence of new information that may affect kelp harvesting (i.e., information in addition to that set forth in this section of the Commission's findings). Each of the following two developments, for example, may provide a vehicle through which such new information may emerge, and thus may provide an appropriate basis on which to request an amendment to Special Condition 8.

> First, the CDFG reviews and amends its kelp harvesting regulations every five years. The review process for the next such revision will begin this summer or fall, and the regulations are scheduled to be certified by the F&GC by the end of Year 2000. CDFG staff have indicated that these revisions will address new or expanded demand, especially during periods of low abundance, and the need for more frequent monitoring of the health of harvested beds.[24]
>
> Second, the Monterey Kelp Cooperative seeks to self-regulate its hand-harvesting along the area from the Monterey Coast Guard Breakwater to Lover's Point in Pacific Grove, via a kelp plan drafted by its members, to ensure ongoing sustainable harvests of kelp and to avoid conflicts with other users of the beds. Thus, evidence of membership in the Monterey Kelp Cooperative and submittal of its annual kelp plan[25] could provide a key mechanism to address kelp harvesting impacts, and could constitute an appropriate basis for the Commission to consider an amendment to Special Condition 8.

Note: Recreational and use conflict issues regarding kelp will be discussed in section 4.4.3 of this report, "Public Access and Recreation."

Consistency with Coastal Act policies

The Commission finds that with the requirement of **Special Condition 8**, and as implemented according to the CDFG's existing commercial kelp harvesting management program, the proposed project, as reviewed pursuant to Coastal Act Section 30105.5 in conjunction with three concurrent projects *(CDP Application Nos. E-98-17, E-98-19, and E-98-20)* will be carried out in a manner that maintains the state's kelp resource as required by Coastal Act Section 30230.

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[24] Letter from Rob Collins, Nearshore Ecosystem Coordinator, Marine Region, CDFG, to Peter Douglas, Executive Director, CCC, April 20, 1999.

[25] The kelp plan must be approved by the Board of Governors each October 31. The board of governors is comprised of three members: (1) Member Governor (elected annually by a majority vote and appointed by the members of the cooperative); (2) Manager Governor (the Regional Manager for the Marine Region of the CDFG); and (3) Scientist Governor (nominated by the other governors and approved by the Superintendent of the MBNMS; must be a marine scientist with a proven understanding and research background of giant kelp biology).

4.5.1.6 Conclusion – Marine Resources

The Commission concludes that, for the reasons stated in sections 4.5.1.1 – 4.5.1.5 of this report, the project as proposed and conditioned, and as reviewed pursuant to Coastal Act Section 30105.5 in conjunction with three concurrent projects *(CDP Application Nos. E-98-17, E-98-19, and E-98-20)*, which will be conditioned in a similarly, will be consistent with Coastal Act Sections 30230 and 30231.

4.5.2 Potential Use Conflicts with Existing Commercial Fishing Operations

Coastal Act Section 30234 states in pertinent part:

> *Facilities serving the commercial fishing and recreational boating industries shall be protected and, where feasible, upgraded. Existing commercial fishing and recreational boating harbor space shall not be reduced unless the demand for those facilities no longer exists or adequate substitute space has been provided....*

Coastal Act Section 30234.5 states:

> *The economic, commercial, and recreational importance of fishing activities shall be recognized and protected.*

4.5.2.1 Potential Use Conflicts with Existing Commercial Fishing Anchorage Space

The area set aside by the SMCHD for aquaculture operations, which includes the proposed abalone grow-out project license areas, currently provides general (or transient) anchorage space for both recreational and commercial vessels (i.e., open-water space where vessels can drop anchor). This area also contains specific mooring sites (specific spaces that vessels can tie up to).

A private consultant retained by the SMCHD ("Concept Marine") calculated the entire outer harbor area (which includes the area set aside by the SMCHD for aquaculture operations) to have approximately 202 acres of available anchorage space (i.e., areas at least six feet in depth, and not within the navigation channel).[26] Assuming that two vessels can safely anchor in one acre[27] yields space enough for about 404 vessels.

Princeton Abalone's rafts will preclude 18,750 sq. ft., or 0.43 acre, of available anchorage space. The more significant issue is the combined loss of anchorage space due to the operation of all four abalone-culturing proposals. The Harbor Master and a representative of the commercial fishing community have agreed that as the four license areas are presently configured, (1) operation of the four currently-proposed abalone grow-out facilities would preclude vessel use of

[26] Pillar Point Area Calculations by Concept Marine, November 6, 1998 (File no. 29829/102/1301).

[27] Letter from Bob Miller, Crab Boat Owners Association of San Francisco, President, and Pacific Coast Federation of Fisherman's Associations' Vessel Safety Committee, Chair, to Joy Chase, CCC, February 17, 1997, p. 2.

the buffer areas,[28] (2) the license and buffer areas combined total about 23.05 acres, and hence (3) that the facilities (including the license and buffer areas) would preclude anchorage for at least 40 vessels (about 40 vessels spaced 100 feet apart; about 50 vessels spaced 75 feet apart).[29] (Exhibit 4, "Area of Anchorage Lost")

Subtracting 23.05 acres (license and buffer areas for the four currently-proposed abalone grow-out facilities) from the total 202 acres of available anchorage space leaves 178.95 (rounded to 179) remaining acres that are available for anchorage space, or available space for 358 vessels, if the four proposed abalone grow-out facilities are constructed.

Commercial fishing industry concerns about lost anchorage space
The commercial fishing community has expressed the following concerns about the potential loss of safe anchorage space:[30]

- Pillar Point Harbor provides the only safe anchorage space between Point Reyes and Santa Cruz;
- Under present fishery management schemes, Pillar Point Harbor at times becomes the focus of the entire salmon fleet (there is a waiting list for slips, so in rough weather or when the bite is on, the outer harbor is filled with anchored vessels);
- Loss of anchorage space at Pillar Point Harbor would effectively deny access to about half of the fishing grounds between the Farallon Islands and Santa Cruz;
- Reducing anchorage area would cause problems, congestion, or even eliminate Pillar Point as a safe harbor. Furthermore, the harbor's bottom composition is such that a vessel operator needs to maintain an extra margin of space from other vessels in case his or her anchor should slip on a windy day;
- Reducing anchorage area would cause inconvenience and interference with fishing operations and significant adverse economic impacts on fishermen and women as well as the fish processors of the harbor and elsewhere;
- The U.S. Army Corps of Engineers created Pillar Point Harbor as a "safe harbor" for exclusive fishing and boating uses; and

[28] Based on recommendations for scope of anchor rode stated in Chapman's *Piloting, Seamanship and Small Boat Handling*, a vessel in Pillar Point Harbor requires approximately 352 feet to safely anchor using a danforth-type anchor (the type currently required under existing SMCHD regulations). Thus the 300-foot buffers between the license areas are not adequate for use as safe anchorage area.

[29] The MND calculates the combined area of the five facilities it evaluates to be 2.4 acres, and assumes that vessels will be able to use the buffer areas between the abalone facilities. The MND concludes that removal of 2.4 acres of open water anchorage area is not expected to be a significant impact because (1) vessels would be free to use the 300-foot buffer zones between the licensed areas and (2) vessels would still be able to use the remaining outer harbor area. The MND does not contain any further facts, figures, or analysis to support its conclusion.

[30] In addition to letters from various individuals, the Commission staff has received letter from representatives of the following organizations: Moss Landing Commercial Fishermen's Association; Crab Boat Owners Association of San Francisco; Pacific Coast Federation of Fishermen's Associations, Inc.; Salmon Trollers Marketing Association; Humboldt Fishermen's Marketing Association; and Half Moon Bay Fisherman's Marketing Association. Appendix E, "Correspondence," contains the full record of written comments.

- Approval of the proposed abalone grow-out facilities would create a special business opportunity for aquaculturists at the expense of fishermen and women.

Commission evaluation

Aquaculture as a Use in Pillar Point Harbor Consistent with the Public Trust

The State Lands Commission granted the Pillar Point Harbor tide and submerged lands to the SMCHD in July, 1960. The grant provides that the SMCHD may grant franchises thereon and may lease any part of said lands for purposes consistent with the trust upon which said lands are held by the state.[31] Aquaculture is a use consistent with the public trust,[32] and the SMCHD executed license agreements for the four proposed abalone aquaculture facilities in February, 1997. Thus, Pillar Point does not have to function solely as a "harbor of refuge" or "safe harbor," to the exclusion of other uses, in this case aquaculture. Furthermore, Coastal Act Section 30411(c) encourages salt water or brackish water aquaculture as a coastal-dependent use.

Demand for Anchorage Space

The Commission has attempted to quantify the existing demand for anchorage space in the outer harbor. Neither the applicants, the SMCHD, nor the commercial fishing industry has any records of historical use. Furthermore, there are broad discrepancies between each party's estimate of demand. The applicants contend that the outer harbor is sparsely used for anchorage and is never full. A representative of the commercial fishing industry estimates, however, that there is already more demand than there is space. He states that about 400-500 commercial vessels may need to use the harbor during the salmon season, which runs from approximately Memorial Day until Labor Day (May 1 – September 1).[33] Representatives of the commercial fishing community believe that the burden of proof should be on the aquaculture applicants that their projects will not reduce needed anchorage space. Finally, the SMCHD estimates that about 200 vessels use the outer harbor during peak use periods.

Because there are (1) no records documenting levels of historical use in the outer harbor and (2) very disparate estimates of the amount of anchorage space needed during peak use periods (e.g., the SMCHD estimates 200 vessels and the commercial fishing industry estimates 400-500 vessels), it is difficult to accurately determine the existing levels of demand for anchorage space in the outer harbor. The Commission thus finds that based on the best information available at this time, 358 anchorage spaces appears to be sufficient to accommodate existing anchorage space demand.

Consistency with Coastal Act policies

The Commission finds that based on the best information currently available the proposed project as reviewed pursuant to Coastal Act Section 30105.5 in conjunction with three concurrent projects *(CDP Application Nos. E-98-17, E-98-19, and E-98-20)* will not reduce the anchorage

[31] Statues of 1960, Chapter 68, Section 1(a).

[32] Verbal communication with Mary Howe, State Lands Commission, May 17, 1999.

[33] Meeting with Bob Miller, Crab Boat Owners Association of San Francisco, President, and Pacific Coast Federation of Fisherman's Associations' Vessel Safety Committee, Chair, on December 7, 1998.

space needed to accommodate the existing demand for commercial boating harbor space as required by Coastal Act Section 30234, and will allow continuance of the commercial activities that currently use Pillar Point Harbor as required by Coastal Act Section 30234.5.

4.5.2.2 Increased Use of Ancillary Harbor Facilities

The proposed abalone grow-out operations will increase use of Pillar Point Harbor's public boat launch and parking facilities. Princeton Abalone, along with the three other prospective operators, plans to depart from the public boat launch ramp when towing its raft modules to its license space. Launching activities may interfere with recreational and commercial boat launch activities. In addition, all four operators propose to either collect kelp from local beds by boat and/or truck kelp from other areas to the harbor. Transporting kelp by boat to the facilities will also require use of the public boat launch ramp.

The Commission is therefore imposing **Special Condition 2** to prevent use conflicts with the public boat launch ramp. This condition prohibits Princeton Abalone from loading or unloading any equipment or materials on, at or from the public boat launch ramp, docks, or vehicle approach road. The intent of this condition is not to prevent Princeton Abalone from using the launch ramp, docks, or vehicle approach road, but simply to prevent tying up an area specifically meant for launching activities to conduct potentially lengthy loading and unloading activities. Princeton Abalone's license agreement with the SMCHD provides for its use of the existing hoist on Romeo Pier, which the SMCHD will make available to all abalone licensees, to off-load kelp, cages, and equipment into a boat that can be taken to the offshore grow-out area.

Special Condition 2 also provides that prior to using the public boat launch ramp to install or remove its grow-out structures, Princeton Abalone shall submit evidence to the executive director that it has coordinated with the harbor master on use of the public boat launch ramp to conduct said activities (e.g., during a time when demand for use of the boat launch is anticipated to be light).

With regard to parking, the SMCHD has concluded that the proposed aquaculture operations will not significantly impact the harbor's existing regular and overflow parking areas.

Consistency with Coastal Act policies
The Commission finds that with the requirement of **Special Condition 2**, the proposed project as reviewed pursuant to Coastal Act Section 30105.5 in conjunction with three concurrent projects *(CDP Application Nos. E-98-17, E-98-19, and E-98-20)*, which will be conditioned similarly, will be carried out in a manner that protects use of the public boat launch ramp and parking facilities as required by Coastal Act Section 30234.

4.5.2.3 Potential Navigational or Safety Hazards

The SMCHD chose to set aside the northwest corner of the harbor for aquaculture facilities in part because that area is located outside of the navigational routes used to access the inner harbor. Nevertheless, placement and operation of the aquaculture facilities could create

navigational or safety hazards if the raft structures are not properly marked, aquaculture apparatus becomes dislodged or breaks apart, or any debris is disposed of in the harbor area.

To mitigate these potential impacts to a level of insignificance, the Commission imposes three special conditions. **Special Condition 3** requires Princeton Abalone to mark its grow-out structures to ensure navigational safety pursuant to all U.S. Coast Guard and SMCHD harbor master requirements. **Special Condition 1** requires Princeton Abalone to submit evidence to the executive director that its anchoring design has been approved by the harbor master to ensure that the grow-out structures do not break free. **Special Condition 9** prohibits Princeton Abalone from disposing any equipment or waste into the marine environment, except as authorized in its NPDES permit.

Consistency with Coastal Act policies
The Commission finds that with the requirements of **Special Conditions 1, 2, 3, and 9**, the proposed project as reviewed pursuant to Coastal Act Section 30105.5 in conjunction with three concurrent projects *(CDP Application Nos. E-98-17, E-98-19, and E-98-20)*, which will be conditioned similarly, will be carried out in a manner that protects the harbor facilities, and the commercial fishing and recreational boating industries, as required by Coastal Act Section 30234.

4.5.2.4 Conclusion –Commercial Fishing

The Commission concludes that, based on the findings in sections 4.5.2.1 – 4.5.2.3 of this report, the project as proposed, conditioned, and reviewed pursuant to Coastal Act Section 30105.5 in conjunction with three concurrent projects *(CDP Application Nos. E-98-17, E-98-19, and E-98-20)* will be consistent with Coastal Act Sections 30224, 30234, and 30234.5.

4.5.3 Public Access and Recreation

Coastal Act Section 30210 states:

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

Coastal Act Section 30211 states:

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

Coastal Act Section 30220 states:

> *Coastal areas suited for water-oriented recreational activities that cannot readily be provided at inland water areas shall be protected for such uses.*

Coastal Act Section 30234 states:

> *Facilities serving the commercial fishing and recreational boating industries shall be protected and, where feasible, upgraded. Existing commercial fishing and recreational boating harbor space shall not be reduced unless the demand for those facilities no longer exists or adequate substitute space has been provided. Proposed recreational boating facilities shall, where feasible, be designed and located in such a fashion as not to interfere with the needs of the commercial fishing industry.*

Coastal Act Section 30234.5 states:

> *The economic, commercial, and recreational importance of fishing activities shall be recognized and protected.*

Public Access
The proposed abalone aquaculture facilities do not include any construction of new development on land. Some operators do, however, plan to use the public boat launch ramp. With regard to parking, the SMCHD has concluded that the proposed aquaculture operations will not significantly impact the harbor's existing regular and overflow parking areas.

Recreation at Pillar Point Harbor
Pillar Point Harbor offers a wide variety of recreational activities including boating, clamming, fishing, sailing, kayaking, and windsurfing. In addition, the public access trail and associated beach area along the western shoreline of the harbor, near the highly productive northwest corner, are used by hikers, bicyclists, and birders.

Particular demand for sailboat anchorage space occurs during races (which occur approximately three times per year) and Labor Day weekend.[34]

Recreation around the Monterey Bay
The four proposed aquaculturists' plans to harvest kelp to support their abalone operations could affect nearshore recreational users around Monterey Bay.

In its 1995/96 review of its the kelp harvesting regulations,[35] the CDFG and the F&GC concluded, however, that kelp harvesting operations have no significant effect on the recreational

[34] Telephone conversation with Jennifer Solestri, Commodore, Half Moon Bay Yacht Club, in March, 1996 (referenced in the *Responses to Comments on the Expanded Initial Study for Abalone Aquaculture Operations, Pillar Point Harbor, San Mateo County (June, 1996)*, p. 18)

[35] "Giant and Bull Kelp Commercial and Sport Fishing Regulations." *Section 30 and 165, Title 14, California Code of Regulations.* California Department of Fish and Game. Final Draft Environmental Document (January, 1996).

use of the nearshore environment. The review concludes that although some recreational users are temporarily displaced by harvesting operations, they receive some benefits as well. For example, harvesting opens up lanes in the canopy which allow access to areas that were previously closed due to the density of the kelp and more light to penetrate subsurface areas (to the benefit of kayakers and underwater photographers, etc.).[36]

There is general consensus, nevertheless, that use conflicts involving the kelp resource exist.[37] Specifically, many ocean-related educational and recreational activities, such as viewing see otters or the kelp itself, are greatly enhanced by the existence of the kelp canopy. Thus conflicts arise when kelp is harvested, as the canopy can be cut down to four feet below the water surface.

Furthermore, the volume of kelp needed to sustain aquaculture operations remains relatively constant throughout the year, but there are significant seasonal fluctuations in kelp abundance (e.g., due to storms). Thus, during the winter, kelp must be taken from a few sheltered beds at levels similar to summer needs, which intensifies take from specific beds and may result in the removal of a significant portion of the total canopy. Hence, potential use conflicts would be more likely to occur during winter, after canopies are thinned by storms.

These use conflicts currently exist in areas offshore Monterey and Santa Cruz with the current kelp harvesting levels. For example, kelp bed #220, offshore the Monterey coast, is designated as an open bed. Various local interest groups have expressed concern about harvesting kelp from beds offshore Cannery Row, and the City of Monterey has asserted regulatory (permit) authority over kelp harvesting offshore its jurisdiction.

Collaboration between CDFG and CCC staff to address potential kelp harvesting impacts
On April 15, 1999, Commission staff sent a letter to CDFG staff and the chair of the Fish and Game Commission requesting that both agencies work cooperatively to develop solutions to the kelp harvesting issues.[38] The Commission staff outlined its concerns regarding use conflicts, impacts to associated species and the kelp bed community, the seasonal nature of impacts, reporting requirements, and the lack of information available about the effects of kelp removal on kelp forests at present levels. The staff highlighted additional concerns about the potential impacts of increased kelp harvesting on the Monterey Bay region.

CDFG staff responded on April 20, 1999, in a letter stating the following:

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[36] "Giant and Bull Kelp Commercial and Sport Fishing Regulations." *Section 30 and 165, Title 14, California Code of Regulations.* California Department of Fish and Game. Final Draft Environmental Document (January, 1996), Section 4.6."

[37] (1) Letter from DeWayne Johnston, CDFG, to Richard Thompson, ACOE, dated February 27, 1998; (2) Conversation with Jerry Spratt, CDFG, February 2, 1999; (3) Conversation with Ed Ueber, Gulf of the Farallones National Marine Sanctuary, February 16, 1999; (4) Conversation with Bill Douros, Montery Bay National Marine Sanctuary, February 16, 1999.

[38] Letter from Peter Douglas, Executive Director, CCC, to Richard Thieriot, President, F&GC, Robert Hight, Director, CDFG, and Robson Collins, Nearshore Ecosystem Coordinator, Marine Region, CDFG, April 15, 1999.

- The CDFG has also been concerned that the demand for kelp resulting from new or expanded abalone culture operations will exceed the supply available locally, especially during periods of low abundance;
- The CDFG is aware of the need for more frequent monitoring of the health of harvested kelp beds;
- In December, 1998, the Fish and Game Commission directed the CDFG to address the issue of kelp harvesting by existing Monterey Bay area abalone growers and its impact on other uses as part of its upcoming review of kelp management regulations due to the F&GC in 2000; and
- The CDFG welcomes the opportunity to explore new, alternative approaches to the management of kelp harvest with Coastal Commission staff, other agencies, and the national marine sanctuaries.[39]

Staff of the CDFG, the CCC, and the MBNMS met on May 6, 1999, to further discuss kelp harvesting issues and possible solutions. At the meeting, CDFG staff indicated that it would specifically address use conflict issues in its upcoming review of its kelp harvesting and management regulations.

The Commission staff welcomes the opportunity to work closely with the CDFG during its review and revision of the kelp harvesting regulations, and supports the CDFG's role as the agency responsible for developing and implementing the harvesting regulations. The Coastal Commission finds, however, that if the currently-proposed aquaculture projects are to proceed before the end of 2000, when the CDFG updates its kelp harvesting regulations in a manner that fully addresses Coastal Act policies, the Commission must condition the permits to prohibit use of kelp from the identified impacted kelp beds for use in the permitted abalone facilities. Without this prohibition, the Commission cannot make the requisite findings that individually and cumulatively the kelp harvesting needed to sustain the proposed abalone projects is consistent with Coastal Act policies.

Commission evaluation of impacts

The four proposed aquaculture projects will not interfere with the public's right of access to or along the shoreline because they will not include any construction of new development on land, restrict access to the project vicinity, or significantly impact the harbor's existing parking areas.

Because some operators do plan to use the public boat launch ramp, the Commission is imposing **Special Condition 2** to prevent use conflicts with said ramp. This condition prohibits Princeton Abalone from loading or unloading any equipment or materials on, at or from the public boat launch ramp, docks, or vehicle approach road. The intent of this condition is not to prevent Princeton Abalone from using the launch ramp, docks, or vehicle approach road, but simply to prevent tying up an area specifically meant for launching activities to conduct potentially lengthy loading and unloading activities. Princeton Abalone's license agreement with the SMCHD

[39] Letter from Robson Collins, Nearshore Ecosystem Coordinator, Marine Region, CDFG, to Peter Douglas, Executive Director, CCC, April 20, 1999.

provides for its use of the existing hoist on Romeo Pier, which the SMCHD will make available to all abalone licensees, to off-load kelp, cages, and equipment into a boat that can be taken to the offshore grow-out area.

Special Condition 2 also provides that prior to using the public boat launch ramp to install or remove its grow-out structures, Princeton Abalone shall submit evidence to the executive director that it has coordinated with the harbor master on use of the public boat launch ramp to conduct said activities (e.g., during a time when demand for use of the boat launch is anticipated to be light).

Furthermore, combination of the four proposed aquaculture project's physical structures and operations will not significantly impact recreational opportunities in Pillar Point Harbor for the following reasons:

- They will preclude only 1.46 acres of open water space, which leaves more than adequate space to accommodate other recreational uses;
- They will not hinder access to the vicinity of the breakwaters themselves, and thus will not impact clamming, eeling, and other recreational sportfishing activities that occur in the area; and
- They will be located at least 500 feet from the western beach area, the second most highly-used avian habitat area, and thus will not hinder birding opportunities.

The proposed project's kelp harvesting requirements, especially in conjunction with the kelp requirements of the three other proposed abalone grow-out facilities, will, however, exacerbate recreational use conflicts in the Monterey Bay area because these conflicts already exist with the current level of kelp harvest. Although the CDFG staff will address use conflicts in its upcoming review of its kelp harvesting and management regulations, said review and recommended revisions may not be acted on by the Fish and Game Commission until the end of 2000. The Coastal Commission thus finds that if the currently-proposed aquaculture projects are to proceed before the end of 2000, when the CDFG updates its kelp harvesting regulations in a manner that fully addresses Coastal Act policies, the Commission must condition the permits to prohibit use of kelp from the identified impacted kelp beds for use in the permitted abalone facilities. Without this prohibition, the Commission cannot make the requisite findings that individually and cumulatively the kelp harvesting needed to sustain the proposed abalone projects is consistent with Coastal Act policies.

The Coastal Commission therefore requires **Special Condition 8**, which restricts harvest, take, or purchase of kelp obtained from (1) open bed #220 between the Monterey breakwater and Point Pinos, and (2) the open bed between New Brighton State Beach and Soquel Point (Pleasure Point area), off the Santa Cruz County coast, from December 1 until May 15 (a seasonal time of low abundance).

Princeton Abalone may request that the Commission modify this restriction through an amendment to this permit based upon emergence of new information that will affect kelp harvesting. (i.e., information in addition to that set forth in this section of the Commission's

findings). Each of the following two developments, for example, may provide a vehicle through which such new information may emerge, and thus may provide an appropriate basis on which to request an amendment to Special Condition 8.

> First, the CDFG reviews and amends its kelp harvesting regulations every five years. The review process for the next such revision will begin this summer or fall, and the regulations are scheduled to be certified by the F&GC by the end of Year 2000. CDFG staff have indicated that these revisions will address use conflict issues.[40]
>
> Second, the Monterey Kelp Cooperative seeks to self-regulate its hand-harvesting along the area from the Monterey Coast Guard Breakwater to Lover's Point in Pacific Grove, via a kelp plan drafted by its members, to ensure ongoing sustainable harvests of kelp and to avoid conflicts with other users of the beds. Thus, evidence of membership in the Monterey Kelp Cooperative and submittal of its annual kelp plan[41] could provide a key mechanism to address kelp harvesting impacts, and could constitute an appropriate basis for the Commission to consider an amendment to Special Condition 8.

Consistency with Coastal Act policies
The Commission finds that with the requirements of **Special Conditions 2 and 8**, the proposed project as reviewed pursuant to Coastal Act Section 30105.5 in conjunction with three concurrent projects *(CDP Application Nos. E-98-17, E-98-19, and E-98-20)* will be carried out in a manner that protects maximum access as required by Coastal Act Sections 30210 and 30211, will accommodate existing recreational fishing and boating harbor space needs as required by Coastal Act Sections 30234 and 30234.5, and will protect water-oriented recreational uses as required by Coastal Act Sections 30210 and 30220.

Conclusion – Public Access and Recreation
Hence, the Commission concludes that for the reasons stated above in this report, the project as proposed and conditioned, and as reviewed pursuant to Coastal Act Section 30105.5, will be consistent with Coastal Act Sections 30210, 30211, 30220, 30234, and 30234.5.

4.5.4 Scenic and Visual Qualities

Coastal Act Section 30251 states in part:

> *The scenic and visual qualities of coastal areas shall be considered and protected as a resource of public importance. Permitted development shall be sited and designed to protect views to and along the ocean and scenic coastal areas, to minimize the alteration of natural land forms, to be visually compatible with the*

[40] Meeting with Rob Collins, Nearshore Ecosystem Coordinator, Marine Region, CDFG, May 6, 1999, at the MBNMS office in Monterey.

[41] The kelp plan is approved by the Board of Governors each October 31. The board of governors is comprised of three members: (1) Member Governor (elected annually by a majority vote and appointed by the members of the cooperative); (2) Manager Governor (the Regional Manager for the Marine Region of the CDFG); and (3) Scientist Governor (nominated by the other governors and approved by the Superintendent of the MBNMS; must be a marine scientist with a proven understanding and research background of giant kelp biology).

character of surrounding areas, and, where feasible, to restore and enhance visual quality in visually degraded areas.

The proposed abalone grow-out facilities will be visible in the distance to both north- and south-bound motorists on State Route 1, also known as Cabrillo Highway, a designated "scenic highway" that parallels the coast and runs adjacent to Pillar Point Harbor. The abalone grow-out facilities will also be visible from certain areas of El Granada. Closer views of the project area will be obtained from Capistrano Road, which is parallel to the northern portion of the harbor, and from the public access trail in the northwest beach area.

The proposed project area is currently used to moor boats. To minimize visual intrusion and ensure that the proposed structures will blend in with existing boat features (masts, pilot houses, etc.) and be in character with the nature of the harbor, the SMCHD is prohibiting any structure placed on the rafts from extending more than five feet from the raft surface, and from having elements that will reflect light and cause significant glare.

The Commission finds that Princeton Abalone's grow-out facility will be consistent with the existing visual character of the harbor as required by Coastal Act Section 30251 because it will occupy a very small portion of the open water area, 0.43 acre of the 284-acre outer harbor, and will be restricted in height and character by the SMCHD.

All four proposed abalone grow-out facilities will occupy a relatively small portion of the open water area, 1.46 acres of the 284-acre outer harbor, and will be restricted in height and character by the SMCHD. The Commission thus finds that the proposed project as reviewed pursuant to Coastal Act Section 30105.5 in conjunction with three concurrent projects *(CDP Application Nos. E-98-17, E-98-19, and E-98-20)* will be consistent with the existing visual character of the harbor as required by Coastal Act Section 30251, and thus will be consistent with said section.

4.5.5 Placement of Fill in Coastal Waters

Coastal Act Section 30108.2 defines "fill" as "earth or any other substance or material, including pilings placed for purposes of erecting structures thereon, placed in a submerged area." The concrete drums and anchoring structures that will be placed on the harbor floor to secure the abalone grow-out facilities constitute fill as defined in Coastal Act Section 30108.2.

Coastal Act Section 30233(a) states in part:

> *The diking, filling, or dredging of open coastal waters, wetlands, estuaries, and lakes shall be permitted in accordance with other applicable provisions of this division where there is no feasible less environmentally damaging alternative, and where feasible mitigation measures have been provided to minimize adverse environmental effects, and shall be limited to the following:*
>
> *(1) New or expanded port, energy, and coastal-dependent industrial facilities, including commercial fishing facilities.*

(2) *Maintaining existing, or restoring previously dredged depths on existing navigational channels, turning basins, vessel berthing and mooring areas, and boat launching ramps.*

(3) *In wetland areas only, entrance channels for new or expanded boating facilities; and in a degraded wetland, identified by the Department of Fish and Game pursuant to subdivision (b) of Section 30411, for boating facilities if, in conjunction with such boating facilities, a substantial portion of the degraded wetland is restored and maintained as a biologically productive wetland. The size of the wetland area used for boating facilities, including berthing space, turning basins, necessary navigation channels, and any necessary support service facilities, shall not exceed 25 percent of the degraded wetland.*

(4) *In open coastal waters, other than wetlands, including streams, estuaries, and lakes, new or expanded boating facilities and the placement of structural pilings for public recreational piers that provide public access and recreational opportunities.*

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

(6) *Mineral extraction, including sand for restoring beaches, except in environmentally sensitive areas.*

(7) *Restoration purposes.*

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

Coastal Act Section 30233(a) permits fill in coastal waters if three tests are met. The first test requires that the project fit into one of the eight categories of uses permitted for open coastal water fill enumerated in Coastal Act Section 30233(a). The Commission finds that the proposed aquaculture facilities and operations are clearly allowed under use number (8), "nature study, aquaculture, or similar resource dependent activities."

The second test requires that there be no feasible less environmentally damaging alternative. The proposed abalone grow-out facility is premised on direct interface with marine waters. Pillar Point Harbor provides the necessary saline conditions to support cage culture of abalone, and a protected area in which to place the grow-out structures. Furthermore, the projects are proposed to be located within the harbor where they will have the least amount of impacts (e.g., out of the navigation channel, near the breakwaters and harbor mouth where there is the greatest amount of mixing). The Commission therefore finds that no feasible less environmentally-damaging alternative exists.

The third and final test requires that feasible mitigation measures be provided to minimize adverse environmental effects. The Commission finds that the conditions contained in this permit provide feasible measures to mitigate potential adverse effects on marine resources,

commercial fishing, and public access and recreation, including recreational boating, as discussed in Sections 4.5.1 through 4.5.3 of this report.

Hence, the Commission concludes that the project as proposed and conditioned satisfies the three tests of Coastal Act Section 30233(a) and thus is consistent with said section.

4.6 California Environmental Quality Act

As "lead agencies" under the California Environmental Quality Act ("CEQA") the San Mateo County Harbor District and the California Department of Fish and Game certified on July 10, 1996, a mitigated negative declaration for aquaculture operations in Pillar Point Harbor, Half Moon Bay, California.

The Commission's permit process has also been designated by the State Resources Agency as the functional equivalent of the CEQA environmental impact review process. The Commission's permit review process identified numerous impacts that were not resolved in the mitigated negative declaration. Pursuant to section 21080.5(d)(2)(A) of the CEQA and section 15252(b)(1) of Title 14, California Code of Regulations (CCR), the Commission may not approve a development project "if there are feasible alternatives or feasible mitigation measures available which would substantially lessen any significant adverse impact which the activity may have on the environment." The Commission finds that only as extensively conditioned are there no feasible less environmentally damaging alternatives or additional feasible mitigation measures that would substantially lessen any significant adverse impact which the activity may have upon the environment, other than those identified herein. Therefore, the Commission finds that the project as fully conditioned is consistent with the provisions of the CEQA.

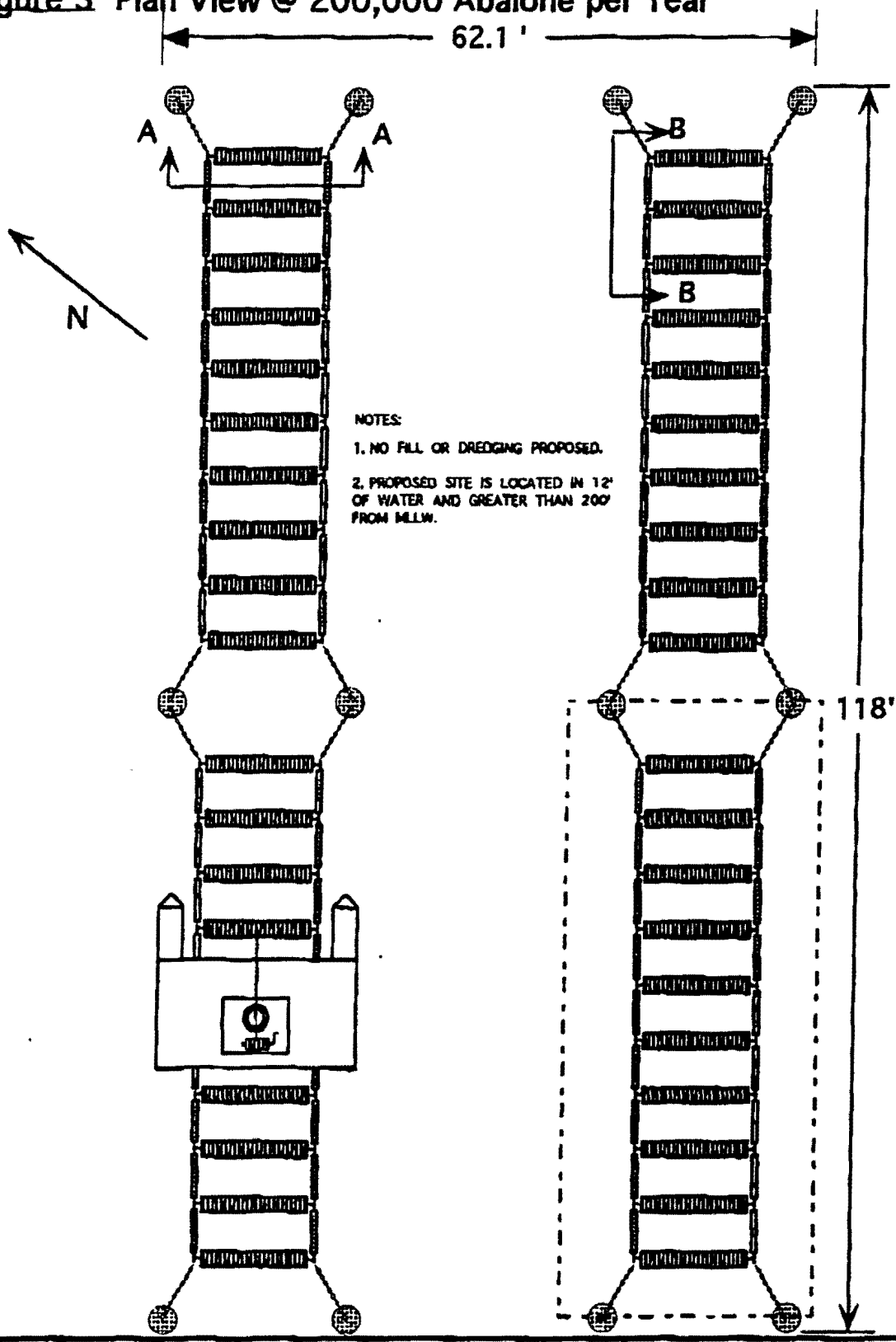
NOTE:

The following exhibits and appendices are contained in a separate corresponding packet:

Exhibit 1:	"Project Location"
Exhibit 2:	"Area in Pillar Point Harbor deemed appropriate for aquaculture by the San Mateo County Harbor District"
Exhibit 3:	"San Mateo County Harbor District License Agreement Areas"
Exhibit 4:	"Area of Anchorage Lost"

Appendix A.	Standard Conditions
Appendix B.	CDFG Stock Inspection Procedures for Aquaculture Operations in Pillar Point Harbor
Appendix C.	Sampling, Analysis and Reporting Requirements
Appendix D.	Substantive File Documents
Appendix E.	Correspondence

Figure 3 Plan View @ 200,000 Abalone per Year



E-98-18
EXHIBIT 5

PLAN VIEW	0 10 20 1"=15' PRINCETON ABALONE RR1 BOX 57B HALF MOON BAY, CA 94019	PROPOSED ABALONE GROW OUT FACILITY IN: PILLAR POINT HARBOR COUNTY OF: SAN MATEO APPL. BY: PRINCETON ABALONE

Figure 4. Elevation View -East/West

NOTES:

1. The cage float consists of a polystyrene foam-filled corrugated polyethylene pipe conforming to ASTM F667. Foam max. density = 1.2 pounds per cubic foot. Ends capped with polyethylene. Total nominal support capacity = 3000 pounds.
2. Cage hanger rings, 2" X 3/16", hoist rings (A) 3" X 1/4". Both stainless steel.
3. End link assembly, hot-dipped galvanized iron dead-men cast into foam.
4. Cage support straps black nylon webbing per MIL-W-4088, type 18 (6000 lb tensile).

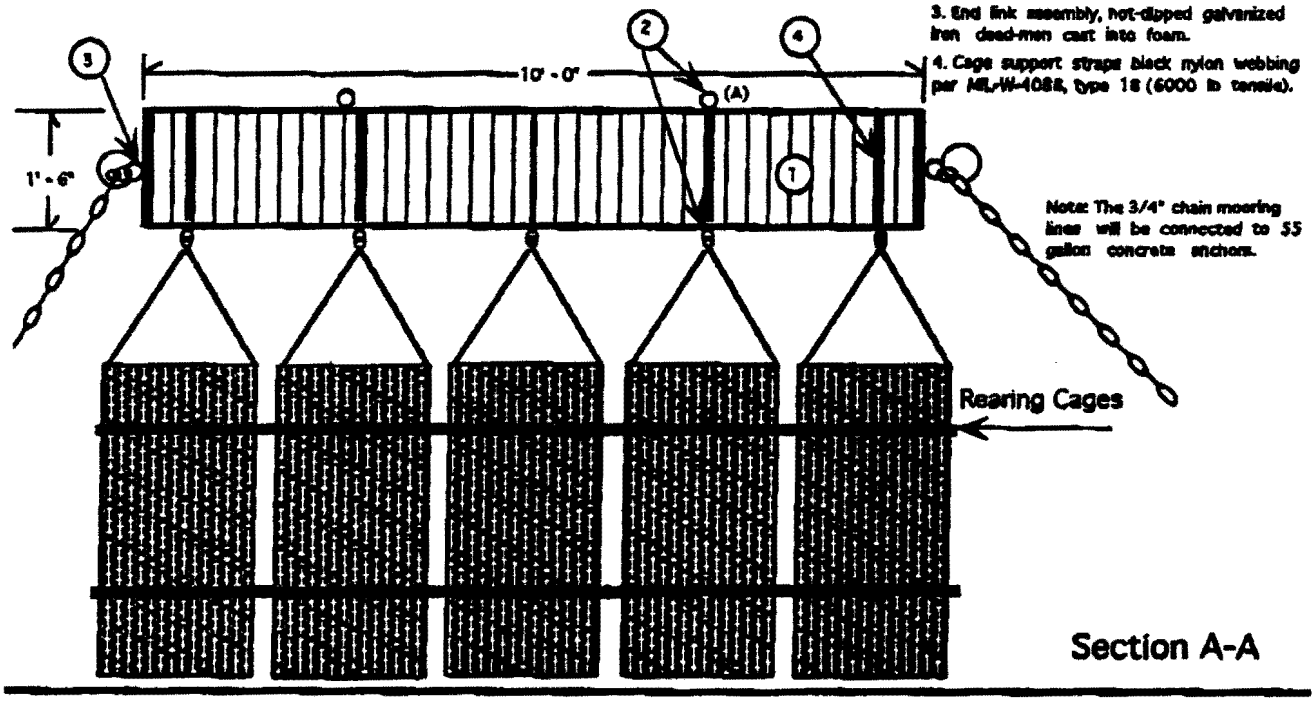
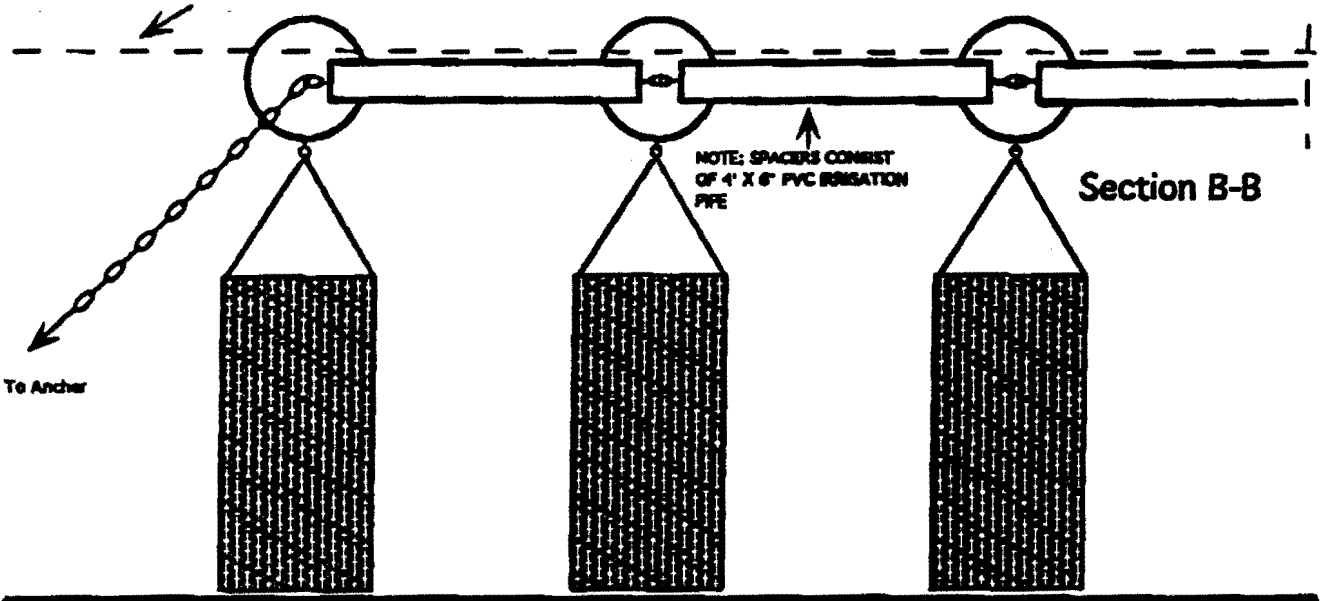


Figure 5 Elevation View - North/South



SECTION VIEWS	Feet 0 1 2 3 4 5 PRINCETON ABALONE RR1 BOX 57B HALF MOON BAY, CA 94019	PROPOSED ABALONE GROW OUT FACILITY IN: PILLAR POINT HARBOR COUNTY OF: SAN MATEO APPLICATION BY: PRINCETON ABALONE

E-98-18

EXHIBIT 6

STATE OF CALIFORNIA—THE RESOURCES AGENCY GRAY DAVIS, *GOVERNOR*

CALIFORNIA COASTAL COMMISSION

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Tu15c

Date Filed:	02/11/99
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Staff:	MBM/JD-SF
Staff Report:	05/24/99
Hearing Date:	06/08/99
Commission Action/Vote:	

STAFF REPORT: REGULAR CALENDAR

Application No.: **E-98-19**

Project Applicant: **Lyle Wagner (Blue Pacific Abalone)**

Location: Northwest corner of Pillar Point outer harbor; San Mateo County. (Exhibits 1 and 2)

Project Description: Anchor and operate a raft grow-out facility in a 250' x 105' (26,250 sq. ft., or 0.60 acre) area of Pillar Point Harbor to culture up to 800,000 red abalone.

Related Approvals: San Mateo County Harbor District. "License Agreement for Submerged Lands and Overlying Water and Other Described Facilities and Equipment for the Purpose of Abalone Aquaculture" (January 23, 1997).

Regional Water Quality Control Board, San Francisco Bay Region. "National Pollutant Discharge Elimination System ("NPDES") Permit No. CA0036269" (June 17, 1998).

California Department of Fish and Game. "1999 Aquaculture Registration."

California Department of Fish and Game. "1999 Kelp Harvesting License."

U.S. Army Corps of Engineers. Regional Permit No. 22808S pending (Public Notice date: December 22, 1997).

Substantive File Documents: **Appendix D**

SYNOPSIS

Note: Exhibits 1 - 4 and Appendices A - E are contained in a separate corresponding packet.

Project Location and Description

Lyle Wagner, *dba* "Blue Pacific Abalone," proposes to cultivate up to 800,000 red abalone *(Haliotis rufescens)* from juveniles to maturity in wire mesh cages hung from floating rafts moored within a 250' x 105' area of Pillar Point Harbor.

Pillar Point Harbor is located 20 miles south of San Francisco at the northern end of Half Moon Bay in San Mateo County, adjacent to the Monterey Bay National Marine Sanctuary (Exhibit 1, "Project Location"). It is the only protected ocean harbor between Bodega Bay and Santa Cruz. Existing facilities at the harbor include fish processing and freezing operations, a fuel dock, berths, parking lots, and a public boat launch ramp. The harbor also provides opportunities for commercial fishing, recreational boating and fishing, clamming, sailing, kayaking, windsurfing, marine-related commercial and retail facilities, restaurants, and other visitor-serving activities such as pedestrian and bike paths and birdwatching.

Background

In September, 1994, the San Mateo County Harbor District ("SMCHD") designated an area approximately 500 yards by 750 yards (77.5 acres) in the northwest corner of the outer harbor, adjacent to the outer breakwater, as appropriate for aquaculture facilities (Exhibit 2, "Area in Pillar Point Harbor deemed appropriate for aquaculture by the San Mateo County Harbor District").

As "lead agencies" under the California Environmental Quality Act ("CEQA") the SMCHD and the California Department of Fish and Game ("CDFG") certified on July 10, 1996, a mitigated negative declaration ("MND") for aquaculture operations in Pillar Point Harbor. The MND evaluates operation of up to five abalone facilities within 2.4 acres of the 77.5-acre area of Pillar Point Harbor set aside for aquaculture, with a combined density of up to 5,150,000 abalone at full build-out. Since certification of the MND, one applicant has withdrawn its application, and the total number of abalone proposed has decreased to 2,250,000.

In February, 1997, the SMCHD ratified license agreements with four licensees for areas of submerged lands and overlying water within the designated aquaculture area of the harbor for the purpose of abalone aquaculture. In June, 1998, the Regional Water Quality Control Board ("RWQCB") issued a national pollutant discharge elimination system ("NPDES") permits to each of the four proposed operators.

The Coastal Commission is reviewing the following four applications separately:

- Pacific Offshore Farms (Doug Hayes): Application No. E-98-17 to culture up to 500,000 abalone within a 248' x 60' (14,880 sq. ft., or 0.34 acre) area;

- Princeton Abalone (Jon Locke): Application No. E-98-18 to culture up to 500,000 abalone within a 250' x 75' (18,750 sq. ft., or 0.43 acre) area;
- Blue Pacific Abalone (Lyle Wagner): Application No. E-98-19 to culture up to 800,000 abalone within a 250' x 105' (26,250 sq. ft., or 0.60 acres) area;
- Pearl Abalone Company (Christian Zajac): Application No. E-98-20 to culture up to 450,000 abalone within a 98' x 40' (3,920 sq. ft., or 0.09 acre) area.

This coastal development permit application (No. E-98-19) is only for Blue Pacific Abalone's proposed project.

The individual and cumulative impacts of this project and the other three related aquaculture projects currently proposed in Pillar Point Harbor raise significant Coastal Act issues. The key issues raised are the potential introduction of exotic species into the Monterey Bay National Marine Sanctuary; resource and use conflicts with kelp harvesting; use conflicts with the fishing community for harbor space; and potential adverse effects to the marine benthic environment.

Aquaculture is a coastal-dependent development and therefore a preferred use under the Coastal Act, but nevertheless must still meet the resource protection standards of the Coastal Act.

Table 1 summarizes project-related significant issues, potential impacts, and the mitigation measures and extensive conditions that the applicant will implement to avoid said impacts or reduce them to a level of insignificance.

The staff recommends approval of the project only as extensively conditioned. The proposed permit conditions include several "prior to permit issuance" requirements that the applicants will not be able to meet immediately. These include obtaining all abalone seed stock from facilities that have been certified by the California Department of Fish and Game as "sabellid-free."

Table 1. Issue Summary: Potential Impacts and Proposed Conditions and Measures

Significant Issue Area	Proposed Special Conditions and Mitigation Measures
Marine Resources: Sabellid Polychaete Worm	Issue: Possible introduction of the sabellid polychaete worm, an exotic species that deforms the shell and ultimately inhibits growth, and would have very serious impacts on stocks of native marine gastropods if spread. Mitigation Measure: **Special Condition 4** requires that all stock come from facilities that have been certified by the California Department of Fish and Game ("CDFG") as "sabellid-free," and then implements the CDFG stock inspection procedures that apply to sabellid-free facilities periodically thereafter as described in Appendix B. This condition provides also that if a sabellid infestation is detected, the cage or container in which the infested animal was found must be immediately removed. **Parts of this condition must be met prior to permit issuance, and it could be over two years before there are any facilities certified "sabellid-free" facilities in the state.** This Commission condition regarding sabellids is more stringent than the CDFG requirements, but staff thinks that it is warranted to use the precautionary principle to protect native stocks of marine resources as required under the Coastal Act. The CDFG thinks their standards—that only the seed stock source, not the entire facility, must meet a pre-transfer inspection—are adequate to protect native marine resources and support aquaculture. **Special Condition 9** prohibits waste disposal, including shells, except as authorized under the NPDES permit. **Special Condition 1** requires evidence that the anchoring design has been approved by the harbor master of the San Mateo County Harbor District ("SMCHD") to ensure that the grow-out structures do not break free.
Marine Resources: Withering Syndrome	Issue: Spread of withering syndrome, a disease established in the wild approximately south of Point San Pedro, near the City of Pacifica in San Mateo County. Mitigation Measure: CDFG has imposed a conditional ban on transfer of seed stock to facilities north of Point San Pedro, near the City of Pacifica in San Mateo County, and between facilities within the area north of Point San Pedro, contingent upon the results of a CDFG health exam showing no signs of rickettsia, the suspected causative agent.
Marine Resources: Water Quality and Benthic Habitat	Issues: Potential for (1) depletion of dissolved oxygen in the water column; (2) benthic impacts due to shading and placement of anchoring devices; (3) changes in the benthic community due to accumulation of detritus and fecal material on the sea floor; and (4) marine debris. Mitigation Measures: **Special Condition 5** imposes dissolved oxygen monitoring, and a benthic monitoring and reporting program per specific standards contained in Appendix C.

Significant Issue Area	Proposed Special Conditions and Mitigation Measures
	Special Condition 6 provides for phased increases in production based on the results of the dissolved oxygen and benthic monitoring required in Special Condition 5. **Special Condition 7** requires cessation of operations if results of the benthic infaunal sampling and analysis indicate a significant change in the infaunal community under the grow-out facilities, and removal of all abalone, grow-out structures, anchoring devices, materials, and equipment within 90 days. **Special Condition 9** prohibits waste disposal, including shells, except as authorized under the NPDES permit. **Special Condition 1** requires evidence that the anchoring design has been approved by the harbor master of the SMCHD to ensure that the grow-out structures do not break free. **Special Condition 10** requires removal of all abalone, grow-out structures, anchoring devices, materials, and equipment upon cessation of operations.
Marine Resources: Kelp Harvesting	**Issue:** The new demand for kelp to feed the abalone, especially in conjunction with the three other proposed abalone aquaculture projects, could lead to adverse impacts on the kelp bed community. **Mitigation Measures:** **Special Condition 8** prohibits harvest, take, or purchase of kelp obtained from (1) open bed #220 between the Monterey breakwater and Point Pinos, and (2) open bed #221 between New Brighton State Beach and Soquel Point (Pleasure Point area), off the Santa Cruz County coast, between December 1 and May 15 (seasonal times of low abundance). The CDFG is reviewing and updating its kelp harvesting regulations, which should be completed with new, more comprehensive standards by the end of 2000. Based on this new forthcoming information, it may be appropriate for the Commission to consider an amendment request for this condition after the Fish & Game Commission has certified the revised regulations.
Commercial Fishing Operations	**Issue:** (1) Potential use conflicts with existing commercial fishing anchorage space in Pillar Point Harbor; (2) increased use of ancillary boating facilities; and (3) potential navigational and safety hazards. **Mitigation Measures:** **Special Condition 1** requires that anchoring designs be approved by the harbor master of the SMCHD. **Special Condition 2** prohibits loading or unloading any equipment or materials on, at or from the public boat launch ramp, docks, or vehicle approach road. It also provides that prior to using the public boat launch ramp to install or remove its grow-out structures, an operator must submit evidence to the executive director that it has coordinated with the harbor master on use

Significant Issue Area	Proposed Special Conditions and Mitigation Measures
	of the public boat launch ramp to conduct said activities (e.g., use during a time when demand for use of the boat launch is anticipated to be light). **Special Condition 3** requires marking of grow-out structures to ensure navigational safety pursuant to all U.S. Coast Guard and harbor master requirements. **Special Condition 9** prohibits waste disposal except as authorized under the NPDES permit.
Public Access	**Issue**: Installation and/or operation of the abalone aquaculture facilities could restrict public access. **Mitigation Measures**: **Special Condition 2** prohibits loading or unloading any equipment or materials on, at or from the public boat launch ramp, docks, or vehicle approach road. It also provides that prior to using the public boat launch ramp to install or remove its grow-out structures, an operator must submit evidence to the executive director that it has coordinated with the harbor master on use of the public boat launch ramp to conduct said activities (e.g., use during a time when demand for use of the boat launch is anticipated to be light).
Recreation	**Issue:** Harvesting the kelp canopy around Monterey Bay could affect recreational opportunities and/or exacerbate existing use conflicts. **Mitigation Measures:** **Special Condition 8** prohibits harvest, take, or purchase of kelp obtained from (1) open bed #220 between the Monterey breakwater and Point Pinos, and (2) open bed # 221 between New Brighton State Beach and Soquel Point (Pleasure Point area), off the Santa Cruz County coast, between December 1 and May 15 (seasonal times of low abundance). The CDFG is reviewing and updating its kelp harvesting regulations, which should be completed with new, more comprehensive standards by the end of 2000. Based on this new forthcoming information, it may be appropriate for the Commission to consider an amendment request for this condition after the Fish & Game Commission has certified the revised regulations.

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Appendix D. Substantive File Documents .....

Appendix E. Correspondence .....

Note: Appendices A - E are contained in a separate corresponding packet.

1.0 STAFF RECOMMENDATION

Approval with Conditions

The staff recommends conditional approval of Coastal Development Permit Application No. E-98-19.

Motion:

I move that the Commission approve Coastal Development Permit Application No. E-98-19, subject to the conditions specified below.

The staff recommends a YES vote. To pass the motion, a majority of the Commissioners present is required. Approval of the motion will result in the adoption of the following resolution and findings.

Resolution:

The Coastal Commission hereby **grants** permit No. E-98-19, subject to the conditions below, for the proposed development on the grounds that (1) as conditioned, the development will be in conformity with the provisions of Chapter 3 of the California Coastal Act of 1976 and (2) there are no feasible alternatives or feasible mitigation measures, other than those specified in this permit, which would substantially lessen any significant adverse impact which the activity may have on the environment.

2.0 STANDARD CONDITIONS Appendix A

3.0 SPECIAL CONDITIONS

This permit is granted subject to the following special conditions:

1. **Approval from the Harbor Master of the San Mateo County Harbor District ("SMCHD") on Anchoring Grow-Out Structures. Prior to issuance of this permit,** Blue Pacific Abalone shall submit to the executive director of the Coastal Commission ("executive director") written evidence that its anchoring design has been approved by the harbor master.

2. **Use of the Public Boat Launch Ramp.** Blue Pacific Abalone shall not load or unload any equipment or materials on, at, or from the public boat launch ramp, docks, or vehicle approach road. **Prior to using the public boat launch ramp to install or remove its grow-out structures**, Blue Pacific Abalone shall submit evidence to the executive director that it has coordinated with the harbor master on use of the public boat launch ramp to conduct said activities (e.g., during a time when demand for use of the boat launch is anticipated to be light).

3. **Markings to Ensure Navigational Safety.** Blue Pacific Abalone shall mark its grow-out structures to ensure navigational safety pursuant to all U.S. Coast Guard and SMCHD harbor master requirements.

4. **Sabellid Polychaete Worm -- California Department of Fish and Game ("CDFG")-Approved Transfer and Inspection Procedures.** Blue Pacific Abalone shall only obtain stock from a facility that has been certified by the CDFG as "sabellid-free." **Prior to issuance of this permit,** Blue Pacific Abalone shall submit to the executive director evidence that its source facilities have been certified by the CDFG as "sabellid-free." Blue Pacific Abalone shall then fully adhere to the transfer and inspection procedures contained in **Appendix B,** with the following additional requirement: If a sabellid infestation is detected, Blue Pacific Abalone shall **immediately** remove the cage or container in which the infested animal was found.

5. **Monitoring and Reporting Program.**

   a. Blue Pacific Abalone shall implement dissolved oxygen monitoring as required in its NPDES permit;

   b. Blue Pacific Abalone shall submit and implement plans to conduct **sediment and benthic infaunal surveys** in accordance with the sampling methods and requirements listed in **Appendix C.** The executive director shall respond to all plan submittals within 30 days.

   c. Blue Pacific Abalone shall submit to the executive director for review and approval (1) the technical report prepared pursuant to Provision 2 of its NPDES permit by January 15 of each year, (2) a report of all results from its monitoring program according to the guidelines contained in **Appendix C** within six months of completing each field survey, and (3) a summary of dissolved oxygen monitoring if levels are detected to be below 5.0 mg/l for five consecutive days within five business days.

6. **Annual Phased Increase in Abalone Culturing Operations.** Blue Pacific Abalone shall phase its total number of abalone to a maximum of 800,000, annually increasing growth in 25% increments contingent upon authorization by the executive director of the Coastal Commission as follows:

   - At the end of Year 1 *(year 1 sampling conducted by September 30, 2000; report submitted by March 31, 2001)*, the maximum number of abalone may not exceed 200,000 (25% of 800,000);
   - at the end of Year 2, the maximum number may not exceed 400,000;
   - at the end of Year 3, the maximum number may not exceed 600,000; and
   - at the end of Year 4, the maximum number may not exceed 800,000.

The executive director will base his response to incremental expansion requests on the dissolved oxygen and benthic monitoring required in Special Condition 5, and will give said respond within 30 days of request and report submittal.

7. **Cessation of Operations.** If results of the benthic infaunal sampling and analysis indicate a significant change in the infaunal community under the grow-out facilities as defined in the "Thresholds of Significance" section of **Appendix C**, Blue Pacific Abalone shall remove all abalone, grow-out structures, anchoring devices, materials, and equipment within 90 days.

8. **Kelp Harvesting**. Blue Pacific Abalone shall not harvest, take, or purchase kelp obtained from (1) open bed #220 between the Monterey breakwater and Point Pinos, and (2) open bed #221 between New Brighton State Beach and Soquel Point (Pleasure Point area), off the Santa Cruz County coast, between December 1 and May 15.

   (Note that Blue Pacific Abalone may request that the Commission modify this restriction through an amendment to this permit based upon emergence of new information that may affect kelp harvesting, such as the CDFG's review of its kelp harvesting regulations. The review process for the next such revision will begin summer or fall, 1999, and the regulations are scheduled to be certified by the Fish & Game Commission by the end of Year 2000.)

9. **Waste Disposal.** Blue Pacific Abalone shall not dispose any equipment or waste, including shells, into the marine environment, except as authorized in its NPDES permit.

10. **Facility Removal.** Upon termination of operations, Blue Pacific Abalone shall remove all abalone, grow-out structures, anchoring devices, materials, and equipment within 90 days.

4.0 FINDINGS AND DECLARATIONS

Note: Exhibits 1 - 4 and Appendices A - E are contained in a separate corresponding packet.

4.1 Project Location

Pillar Point Harbor is located 20 miles south of San Francisco at the northern end of Half Moon Bay in San Mateo County. It is the only protected ocean harbor between Bodega Bay and Santa Cruz. Breakwaters separate the harbor into inner and outer areas.

The unincorporated community of Princeton-by-the-Sea lies to the northwest, and the community of El Granada lies to the northeast and east, across Highway 1. The City of Half Moon Bay lies to the south. The harbor is located adjacent to the Monterey Bay National Marine Sanctuary. (Exhibit 1, "Project Location")

Existing facilities at the harbor include fish processing and freezing operations, a fuel dock, berths, parking lots, and a public boat launch ramp. Romeo Pier, which is owned and operated by the San Mateo County Harbor District ("SMCHD"), lies in the northern area of the harbor.

Pillar Point Harbor provides opportunities for commercial fishing, recreational boating and fishing, clamming, sailing, kayaking, windsurfing, marine-related commercial and retail facilities, restaurants, and other visitor-serving activities such as pedestrian and bike paths and birdwatching.

4.2 Provision of an Aquaculture Area within Pillar Point Harbor by the San Mateo County Harbor District, and Preparation of a Mitigated Negative Declaration

In September, 1994, the SMCHD designated an area approximately 500 yards by 750 yards (77.5 acres) in the northwest corner of the outer harbor, adjacent to the outer breakwater, as appropriate for aquaculture facilities (Exhibit 2, "Area in Pillar Point Harbor deemed appropriate for aquaculture by the San Mateo County Harbor District").

As "lead agencies" under the California Environmental Quality Act ("CEQA")[1] the SMCHD and the California Department of Fish and Game ("CDFG") certified on July 10, 1996, a mitigated negative declaration ("MND") for aquaculture operations in Pillar Point Harbor.

In February, 1997, the SMCHD ratified license agreements with four licensees for areas of submerged lands and overlying water within the designated aquaculture area of the harbor for the purpose of abalone aquaculture.

In June, 1998, the Regional Water Quality Control Board ("RWQCB") issued a national pollutant discharge elimination system ("NPDES") permits to each of the four proposed operators.

4.2.1 Description of Project Evaluated in the Mitigated Negative Declaration

The MND evaluates a project defined as operation of up to five abalone facilities within 2.4 acres of the 77.5-acre area of Pillar Point Harbor set aside for aquaculture, with a combined density of up to 5,150,000 abalone at full build-out. A 300-foot buffer will exist between each of the five aquaculture operations/facilities (not between each raft structure within a single facility).

The five facilities that constitute the project defined in the MND include: "U.S. Abalone" (Thomas Ebert), which operated in Pillar Point harbor between 1989 and 1998 without benefit of a coastal development permit, and the proposals of Jon Locke, *dba* "Princeton Abalone," Brian Price and Joel Roberts, *dba* "Deeper Blue Enterprises," Lyle Wagner, *dba* "Blue Pacific Abalone," and Christian Zajac, *dba* "Pearl Abalone Company."

[1] Pursuant to a cooperative agreement as authorized by California Environmental Quality Act Guidelines, Title 14, California Code of Regulations Section 15051(d).

Two of the four applicants, Jon Locke ("Princeton Abalone") and Lyle Wagner ("Blue Pacific Abalone") proposed both onshore and offshore components to their facilities.

Since completion of the MND, the following changes have occurred:

- US Abalone removed all abalone from its raft system in Pillar Point Harbor as of November, 1998, and removed the rafts themselves as of January, 1999;
- Doug Hayes, *dba* "Pacific Offshore Farms," has replaced "Deeper Blue Enterprises" as an applicant;
- Princeton Abalone now proposes only an offshore component; and
- The combined total number of abalone at full build-out has decreased by 56%, from 5,150,000 to 2,250,000. Each applicant now proposes to culture the following maximum number of abalone:

  -Pacific Offshore Farms: up to 500,000 (offshore rafts only);
  -Princeton Abalone: up to 500,000 (offshore structures only);
  -Blue Pacific Abalone: up to 800,000 (onshore and offshore components);
  -Pearl Abalone Company: up to 450,000 (offshore rafts only).

Exhibit 3, "SMCHD License Agreement Areas," shows the proposed facility locations.

Coastal Commission Review
The Coastal Commission is reviewing each application separately:

- Pacific Offshore Farms (Doug Hayes): Application No. E-98-17 to culture up to 500,000 abalone within a 248' x 60' (14,880 sq. ft., or 0.34 acre) area;
- Princeton Abalone (Jon Locke): Application No. E-98-18 to culture up to 500,000 abalone within a 250' x 75' (18,750 sq. ft., or 0.43 acre) area;
- Blue Pacific Abalone (Lyle Wagner): Application No. E-98-19 to culture up to 800,000 abalone within a 250' x 105' (26,250 sq. ft., or 0.60 acres) area;
- Pearl Abalone Company (Christian Zajac): Application No. E-98-20 to culture up to 450,000 abalone within a 98' x 40' (3,920 sq. ft., or 0.09 acre) area.

This coastal development permit application (No. E-98-19) is **only** for Blue Pacific Abalone's proposed project.

4.3 Project Description for the "Blue Pacific Abalone" Facility

Project Purpose
Lyle Wagner, *dba* "Blue Pacific Abalone," proposes to cultivate red abalone *(Haliotis rufescens)* from juveniles to maturity in wire mesh cages hung from floating rafts moored within a 250' x 105' (26,250 sq ft, or 0.60 acre) area of Pillar Point Harbor. In addition, Blue Pacific Abalone is

concurrently applying under a separate application to install and operate a hatchery and nursery facility, and install holding tanks on Romeo Pier, located within the Harbor.

Facility Description
Rafts will be constructed of wood, with either wood or concrete decks, and will support submerged wire cages suspended by ropes that have open access to seawater. None of the wood will be treated with the preservative creosote. Covered foam or barrels will hold the raft decks above the water, and floating shade panels will encircle each raft perimeter. The raft structures will be anchored in a way that is acceptable and approved by the SMCHD harbor master, pursuant to **Special Condition 1,** to ensure that they will not break free.

Each raft deck space will have removable plywood panels covering the cage access openings. Cages will be hoisted up onto the raft deck to feed and sort the abalone. Each deck space will also contain a shed to house sub-electrical panels that will be connected via underwater cable to the main electrical panel located at the end of Romeo Pier. (Exhibits 5 – 7)

The SMCHD included in its license agreement to Blue Pacific Abalone use of areas and equipment on Romeo Pier. Blue Pacific Abalone will use this area for storage, and to conduct support activities such as cage construction, and cleaning and repair work. It will also place aeration equipment on the pier, which will pump air through plastic pipe to its rafts.

Blue Pacific Abalone's license agreement with the SMCHD provides for its use of the existing hoist on Romeo Pier (which the SMCHD will make available to all abalone licensees, to off-load kelp, cages, and equipment into a boat that can be taken to the offshore raft grow-out area), the existing pier restroom facilities, electrical connections, freshwater, and trash dumpsters.

Blue Pacific Abalone's license agreement provides also for exclusive use and control of specific premises on Romeo Pier: (1) A 12' x 38' open deck area on the west side and south of the existing freezer; and (2) a 8' x 30' open deck area on the west side and immediately west of the existing storage, ice, and fillet rooms. Blue Pacific Abalone will use these areas for storage (e.g., to place a 12' x 38' mobile storage structure that will be mounted either on wheels or on wooden skids).

4.4 Coastal Act Issues

Coastal Act Section 30411(c) states in part:

> *The Legislature finds and declares that salt water or brackish water aquaculture is a coastal-dependent use which should be encouraged to augment food supplies and to further the policies set forth in Chapter 4 (commencing with Section 825) of Division 1.*

Coastal Act Section 30222.5 states:

> *Ocean front land that is suitable for coastal dependent aquaculture shall be protected for that use, and proposals for aquaculture facilities located on those*

sites shall be given priority, except over other coastal dependent developments or uses.

Coastal Act Sections 30250(a) and 30105.5 provide for review of cumulative impacts. Section 30250(a) states in relevant part:

New residential, commercial, or industrial development...shall be located...where it will not have significant adverse effects, either individually or cumulatively, on coastal resources.

Section 30105.5 states:

Coastal Act Section 30105.5 defines "cumulatively" or "cumulative effect" to mean the incremental effects of an individual project shall be reviewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.

Creation and operation of the proposed abalone grow-out facility will constitute aquaculture. Furthermore, ocean-front land includes submerged lands. Hence, the Commission finds that said project is a coastal-dependent use that is given priority status in the Coastal Act pursuant to Coastal Act Section 30222.5.

Therefore, the remainder of this section will analyze the proposed aquaculture project with other coastal-dependent developments and uses, and Coastal Act policies concerning (1) marine resources and biological productivity, (2) existing commercial fishing operations, (3) recreation, including recreational fishing and boating operations, and (4) placement of fill in coastal waters.

Furthermore, analysis will address cumulative impacts where appropriate pursuant to Coastal Act Sections 30250(a) and 30105.5.

4.4.1 Marine Resources

Coastal Act Section 30230 states:

Marine resources shall be maintained, enhanced, and where feasible, restored. Special protection shall be given to areas and species of special biological or economic significance. Uses of the marine environmental shall be carried out in a manner that will sustain the biological productivity of coastal waters and that will maintain healthy populations of all species of marine organisms adequate for long-term commercial, recreational, scientific, and educational purposes.

Coastal Act Section 30231 states:

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

feasible, restored through, among other means, minimizing adverse effects of waste water discharges and entrainment, controlling runoff, preventing depletion of ground water supplies and substantial interference with surface water flow, encouraging waste water reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.

There are several potential impacts associated with cultivating abalone in the manner proposed: (1) introduction of exotic parasites, particularly a sabellid polychaete worm, into harbor and marine waters through infected abalone; (2) spread of disease, particularly "withering syndrome;" (3) impaired water quality due to deficient dissolved oxygen levels; (4) impacts to benthic habitat, fish, and invertebrates; (5) reduction in avian habitat area; and (6) overharvesting of kelp in order to feed the abalone.

4.4.1.1 The Sabellid Polychaete Worm[2]

Discovery / Background
Abalone culturists in California began to observe shell deformities and slow growth in their abalone in the late 1980s. The problem was soon attributed to a non-native sabellid polychaete worm from South Africa that was accidentally introduced to California when infested abalone were imported.

The sabellid polychaete worm that parasitizes abalone and other mollusks does not feed on its host, but rather uses the hard shell as an attachment site. The worm itself is a suspension feeder, removing food from the surrounding waters. It damages its host by interfering with natural growth. Thus, although infestations do not directly affect the quality of the abalone's meat, they can deform the shell to the point where the animal's growth slows or virtually ceases.

Because low infestations are not readily noticeable, the sabellid was spread rapidly through transfer of infested stock to virtually all abalone mariculture facilities in California by the mid 1990's. Various eradication methods were tried, but proved to be infeasible or unsuccessful. Thus, growers have focused on controlling the spread of infestation.

Transmission mechanism
The larval parasite reaches infestation stage when it is able to crawl. Larvae typically crawl to a new location on their hosts' shell or to a new host. Fortunately, the worm's larvae do not swim or float in the water column where they would be widely dispersed by currents. Rather, the benthic larvae crawl along the substrate until they find a suitable host. Transmission does not require direct contact between infested and uninfested animals. Furthermore, once the sabellid has been encased by shell, it no longer requires a living host for its development and reproduction (i.e., empty shells of animals that were infested before they died act as a source of

[2] Much of the factual information in this section about the sabellid is taken from the following source: "Identification and Management of the Exotic Sabellid Pest in California Cultured Abalone." (Carolynn S. Culver, Armand M. Kuris, and Benjamin Beede. A publication of the California Sea Grant College System. Publication No. T-041; ISBN 1-888691-05-0. (La Jolla, 1997).

infestation). Thus, larvae can spread if they become dislodged from the host shell or from a substrate, and can be transported by kelp, equipment, wet hands, and infested shells.

Environmental threat
Spread of the sabellid is of particular concern for the following reasons:

- The sabellid is an introduced species. Biological control experiments using native California intertidal and subtidal fishes and invertebrates have not turned up any predators of adult sabellids, though screening for potential predators of the larval stage is needed.
- The biological and ecological characteristics of the sabellid suggest that it has a high potential for successful invasion in California, as demonstrated by its successful infestation and reinfestation of abalone facilities throughout California, and in Mexico and Oregon.
- Sabellid worm larvae accept a broad range of hosts and are capable of infesting several native species of mollusks in addition to abalone, creating a threat of spread from infested aquaculture facilities into wild populations and establishment in state waters. Preliminary experiments conducted by Culver and her colleagues (1997) suggest that bivalves, such as mussels and oysters, are much less susceptible to infestation than snails.

The threat to natural populations is real as evidenced by the fact that the sabellid worm has infested populations of native snails in the rocky intertidal zone within a small cove adjacent to the discharge pipe from an abalone aquaculture facility in central California *(Culver, personal communication February 25, 1999).* After the infestation was discovered, the aquaculture company in cooperation with the CDFG and researchers at the University of California at Santa Barbara began an eradication program. Several million individuals of the main host species (a turban snail) have been removed from the intertidal zone and destroyed since 1996. The most recent field survey (1998) indicates that there were few infested snails remaining and that there was no evidence of recent transmission of the parasite as indicated by the absence of young worms *(C. Culver, UCSB, personal communication February 25, 1999).*

Response by the California Department of Fish and Game
The California Department of Fish and Game ("CDFG" or "Department") concluded in May, 1996, that based on continuing investigations by the Department, the aquaculture industry, and the University of California at Santa Barbara, "every abalone aquaculture facility in the state is to be considered positive for presence of the [sabellid] worm unless, and until, inspections by the Department's Fish Health Laboratory ("FHL"), or other FHL approved inspectors, determine otherwise."[3]

[3] Memo to all registered abalone aquaculturists from Jacqueline E. Schafer, CDFG, dated May 20, 1996.

To prevent the further introduction and spread of the sabellid worm, and to achieve its goal of complete sabellid eradication by December, 1999, the CDFG has promulgated the following requirements:[4]

> Outplanting of abalone into the wild. The Department will continue to emphasize the requirement of Fish and Game Code §6400 that any abalone to be planted into the wild must be inspected by the Department prior to planting. The Department will only approve the planting of sabellid-free abalone from sabellid-free broodstock.
>
> Approved sabellid eradication and prevention plans. All registered abalone aquaculturists were required to submit to the Department no later than December 31, 1996, a sabellid eradication plan. The FHL will review each plan and assess the risk each facility may represent to California resources. Each facility will then be required to conform to approved cleanup plan. New facilities must obtain an approved sabellid prevention plan. The CDFG received and informally approved Blue Pacific Abalone's sabellid polychaete worm prevention plan in November, 1997.
>
> Certification of facilities as "sabellid-free." On July 7, 1998, the director of the CDFG signed a policy containing procedures for the CDFG to certify facilities as sabellid-free. Each operator must request initiation of CDFG's inspection program to certify a facility as sabellid-free. CDFG personnel will then conduct three inspections over a two-year period. Each inspection will entail inspection of each container (e.g., tank, cage, barrel) in the facility. The sampling protocol will include sufficient replication to allow CDFG to conclude that the stock is sabellid-free with 95% statistical confidence if no sabellids are observed in the sample.

Commission evaluation and mitigation of impacts

The CDFG aquaculture team has made significant progress in developing and implementing procedures for the sampling, reduction, and eventual eradication of sabellid worms in existing shore facilities, and for preventing new infestations. However the sabellid problem is not solved and the risks to the marine resources of the Monterey Bay Marine Sanctuary are real.

How serious is the risk to natural populations from the proposed aquaculture facilities? To answer this question one needs information regarding the likelihood of infested animals being placed in cage culture, the likelihood of sabellid larvae escaping the cages, and the likelihood of escaped larvae infesting natural populations.

If the animals used for cage culture come from facilities that contain the parasite, the chance of introducing infested animals to Pillar Point Harbor is small but real. Shore facilities are managing infestation through cultural practices *(F. Wendell, CDFG, personal communication February 23, 1999).* The small abalone used as "seed" are kept in tanks which are isolated from the tanks housing larger animals known to be infested. Prior to transfer, these "seed" animals are

[4] Memos to all registered abalone aquaculturists from Jacqueline E. Schafer, CDFG, dated May 20, 1996, and December 6, 1996. Personal communication with Fred Wendell, Chair, CDFG Aquaculture Team, on July 17, 1998.

inspected by the CDFG. They examine a sufficient number of individuals that there is no more than a 1% probability of missing an infestation rate of 5% or greater.

Such sampling programs are based on the assumption that infested animals are randomly distributed within the population and that each individual within the population has an equal change of being sampled. In practice, infested animals probably occur in clusters because of the manner of larval dispersal, and truly random samples are difficult to collect. In addition, recently attached worms are difficult to see. Therefore, it is the professional opinion of the Commission's marine ecologist that the actual probability of missing a 5% infestation is somewhat larger than 1% by an unknown amount.

If infested abalone are introduced to culture facilities in Pillar Point Harbor, the chance of the larvae escaping into the natural environment is near certainty. Culver et al. (1997) suspended infested abalone in cages above uninfested animals. All the individuals below the suspended cages became infested. The larva apparently fall into the water column either because of physical disturbance or as part of their natural behavior. The worms can also travel on shell and kelp debris.

After falling to the sea floor in the harbor, the sabellid larvae must then find a suitable host. The probability of this occurring is low. The harbor bottom is composed of sand and mud and gastropods occur in low density. A second avenue of dispersal is on kelp debris that gets washed out of the harbor. The information needed to estimate the probability of dispersal out of the harbor on kelp debris is not available. Finally, there is the possibility of culture rafts breaking loose in storms. This has occurred in the past and some of the abalone were not recovered *(F. Wendell, CDFG, personal communication February 23, 1999).* In these previous occurrences, the rafts remained within the harbor, but on one occasion the raft drifted onto the breakwater where snails would be expected to occur.

As stated above, the CDFG's established procedures to certify an abalone-culturing facility as sabellid-free entail three inspections by CDFG personnel over a two-year period once the operator has requested initiation of the inspection program. Currently, only two facilities in the state have requested said initiation as of February 25, 1999. The CDFG inspected one facility twice and found it to be sabellid-infested. The CDFG will inspect the other facility soon.

Although said certification could occur more quickly than two years if an existing facility were to shut down and be kept dry for a long enough period to ensure that all sabellids were killed, or if a new facility were to be built, it will likely be two years before stock from a certified sabellid-free facility is available.

Nevertheless, considering the following factors, the Commission finds it necessary to require in **Special Condition 4** that prior to issuance of this permit, Blue Pacific Abalone prove it can and will obtain all stock from a facility that has been certified by the CDFG as "sabellid-free" in order to ensure that implementation of said project will maintain marine resources, protect the adjacent marine sanctuary, and maintain healthy populations of existing species of marine gastropods as required by Coastal Act Section 30230:

- the sabellid worm has not yet been eradicated;
- the probability of introducing the sabellid parasite into the natural environment as a result of aquaculture activities in Pillar Point Harbor is small but real;
- potential spread of the sabellid poses a documented environmental threat;
- a successful introduction of this non-native sabellid parasite into native populations of mollusks could have extremely serious consequences;
- once established, eradication of the sabellid demands drastic measures; and
- Pillar Point Harbor is located directly adjacent to the Monterey Bay National Marine Sanctuary, an ocean currents connect harbor and sanctuary waters.

Furthermore, the Commission staff has worked with the CDFG's aquaculture team to develop abalone transfer and inspection procedures appropriate for Pillar Point Harbor culturing operations. The goals were to (1) address the frequent stocking of rafts with stock from various existing facilities; (2) where applicable, require that facilities request as soon as possible to initiate the inspections necessary to become certified as sabellid-free; and (3) remove sabellid-infested animals, should they be discovered, as soon as feasible. The Commission imposes these transfer and inspection procedures, which are contained in **Appendix B**, as **Special Condition 4**. **Special Condition 4** further requires that if a sabellid infestation is detected, Blue Pacific Abalone shall immediately remove the cage or container in which the infested animal was found.

In addition, the Commission imposes **Special Condition 9**, which prohibits Blue Pacific Abalone from discharging abalone shells into the marine environment.

Finally, the Commission imposes **Special Condition 1**, which requires evidence that Blue Pacific Abalone's anchoring design has been approved by the harbor master of the SMCHD to ensure that its grow-out structures do not break free.

Project consistency with Coastal Act policies
The Commission finds that with the requirements of **Special Conditions 1, 4, and 9,** the proposed project will be carried out so as to avoid to the greatest extent feasible the introduction of sabellid worms into marine waters, and ensure that the facility remains sabellid-free. The Commission therefore finds that the proposed project as extensively conditioned can be carried out in a manner that will sustain and maintain the biological productivity and quality of coastal waters, and maintain healthy populations of all species of marine organisms as required by Coastal Act Sections 30230 and 30231.

4.4.1.2 Withering Syndrome

Background
First discovered in 1986, withering syndrome caused populations of black abalone from San Diego to Cayucos, San Luis Obispo County, to decline by as much as 99 percent. Withering syndrome is not harmful to humans, but can cause abalone to lose weight and eventually die of starvation.

Recent identification and action by the CDFG[5]

The CDFG first determined that withering syndrome was well-established in the wild south of the City of Carmel, a rough dividing point between endemic and clear areas. As an immediate stop-gap measure, on August 26, 1998, the CDFG director placed a conditional ban on transfer of seed stock to facilities north of Carmel and between facilities within the area north of Carmel. The condition allows transfers only if a CDFG health exam does not find signs of the rickettsia bacteria, the likely causative agent for withering syndrome (only small seed, <20 mm will pass this test).

Recently, however, some locations north of Carmel have shown signs of both withering syndrome and rickettsia. In response, on March 22, 1999, the CDFG director adjusted the dividing line between endemic and clear areas northward to Point San Pedro, near the City of Pacifica in San Mateo County (thus the conditional ban on seed stock transfer is now based on Point San Pedro, not the City of Carmel).

Meanwhile, the CDFG has been implementing the following actions to confirm the area in which the disease is established and develop appropriate eradication measures:

1. Developing a sampling plan for wild abalone stocks in the north (sampling mainly around facilities, but also at some sites well-removed);
2. Conducting research to determine all transmission pathways (suspect water-borne transmission through water column); and
3. Conducting research to provide certainty that rickettsia is actually the causative agent.

Research results will not be available for at least six months to one year, at which time the CDFG's Aquaculture Disease Committee will review the data and make further recommendations. In the interim, the conditional ban will remain in effect, and the approximate dividing line at Point San Pedro between endemic and clear areas may be adjusted northward if necessary.

Project consistency with Coastal Act policies

Pillar Point Harbor lies south of Point San Pedro, in an area within which the CDFG has determined withering syndrome to be endemic. Any transfer of Blue Pacific Abalone's stock to locations north of Point San Pedro, into areas clear of withering syndrome, would be subject to the conditional ban imposed by the CDFG (i.e., transfers would not be allowed unless a health exam does not find signs of rickettsia, the likely causative agent for withering syndrome).

The Commission thus finds that the proposed project as subject to the CDFG-imposed conditional ban will be carried out in a manner that will maintain healthy populations of all species of marine organisms as required by Coastal Act Section 30230.

[5] Telephone communication with Fred Wendell, Aquaculture Coordinator, CDFG, on October 26, 1998.

4.4.1.3 Water Quality and Benthic Habitat

An aquaculture facility, such as the one proposed by Blue Pacific Abalone, has the potential to reduce the dissolved oxygen concentration in the water column and cause adverse changes to the benthic community.

Species and uses potentially affected[6]
Pillar Point Harbor supports ocean, commercial, and sport fishing; marine habitat; fish migration; preservation of rare and endangered species; contact and non-contact water recreation; shellfish harvesting; fish spawning; and wildlife habitat.

The harbor supports a diverse population of benthic fauna that includes polychaete worms, crustaceans (e.g., crabs, shrimp), and mollusks (e.g., snails, bivalves). Other invertebrates include anemones and seastars.

The harbor is also an important nursery area for juvenile fish in the summer. Flatfish, including English sole, various rockfish species, members of the surfperch family, and Pacific herring are abundant in the summer. Smaller numbers of many other significant commercial and sport species are also found. Starry flounder and topsmelt are abundant in winter, and northern anchovy, Pacific sardine, mackerel, and striped bass are also present.

Potential for depletion of dissolved oxygen in the water column
The dissolved oxygen ("DO") concentration in water is critical to the health of marine organisms; deficient DO concentrations could result in both lethal and sublethal effects. As a general rule, DO levels less than 5.0 mg/l are unacceptable to aquatic organisms.[7] The San Francisco Bay Region Basin Plan establishes a DO objective of 5.0 mg/l *(Chapter 3, p. 3-3)*, and the California Ocean Plan sets forth that the DO concentration shall not at any time be depressed more than 10 percent from that which occurs naturally as the result of the discharge of oxygen-demanding waste materials *(Chapter II, Section D, No. 1; p. 4)*. Abalone can tolerate lower DO levels than fish.

At very high numbers, the respiration of the abalone themselves could reduce DO levels in the water column. In addition, cage culture operations introduce the potential that abalone feed and fecal material could accumulate on the sea floor within the harbor. High concentrations of particulate organic material result in increases in decay organisms which consume available DO. Calm, poorly-mixed environments are especially susceptible to low DO levels. Increases in organic matter in bottom sediments could result in a local reduction in available DO from the surrounding environment below the level necessary to support local plant and animal species.

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[6] According to data from the following sources, referenced in the *Revised Expanded Initial Study for Abalone Aquaculture Operations, Pillar Point Harbor, San Mateo County* (Huffman & Associates, June, 1996): (1) *Biological Survey of Pillar Point Harbor*; Water Quality, Bird and Mammal Survey, Fish Survey, Benthic Survey, Diver Transects (Marine Ecological Institute, 1976); (2) Pillar Point Harbor Water Quality Data Summary 1990-1993 (Entrix, Inc.); (3) Bird Sampling Data – Mitigation Monitoring Program for Pillar Point Harbor Boat Launch Ramp Mitigation Site (Entrix, Inc., 1993); (4) Pillar Point Boat Ramp Facility Mitigation Site Monitoring Program Baseline Data Report (Entrix, Inc., June 24, 1991).

[7] Stickney, Robert. *Principles of Aquaculture.* (John Wiley and Sons, 1994).

The MND contains a simple model of abalone DO uptake versus DO availability in the harbor. This model ultimately suggests that the potential for depletion of dissolved oxygen in the water column throughout the harbor by up to 5,150,000 abalone will not be significant.[8]

Potential for benthic impacts
The MND states that the proposed raft structures will create shade that could adversely affect algae and benthic organisms. Also, placement of the raft anchoring devices will change the existing substrate.

Most importantly, the proposed facilities could impact the benthic community via disturbance resulting from the potential build up of detritus, including kelp and/or substitute feed, and fecal material on the seafloor. There is general consensus that substantial organic enrichment causes deleterious changes in the community of organisms that lives in sand or mud.

For example, said accumulation could favor species that thrive in disturbed organically rich sediments. In addition, large accumulation of organic material could result in decreases in DO near the bottom due to the respiration of decay organisms, and cause a loss of most of the natural invertebrate community in the sediments. Furthermore, invertebrate community changes could lead to changes in the fish community (e.g., change the forage value of the seafloor to bottom-feeding fishes).

Finally, the grow-out structures and associated equipment could become marine debris if they are not properly removed upon cessation of operations.

Provisions and prohibitions contained in the NPDES permits
Since the MND analysis, the collective abalone total for all proposed abalone operations at Pillar Point Harbor has been reduced to 1,950,000 abalone at full buildout (of which Blue Pacific Abalone will produce 800,000, or about 41%). Notwithstanding the decrease in abalone production, the NPDES permits granted to the four proposed aquaculturists state that some concern about potential DO depletion still remains (but cite the initial suggestion of the MND DO model, which has since been found to grossly underestimate the amount of available DO – See Footnote 8).

The NPDES permits also state that intensive monitoring of DO concentrations, benthic infauna, and bottom sediment will provide a suitable index of how the proposed facilities may affect benthic fish communities residing in the harbor.

Thus, Blue Pacific Abalone's NPDES permit, like those the RWQCB granted to the other three proposed operators, requires several mitigation measures, consistent with those identified in the MND:

[8] There was a lot of initial concern over DO availability because a conversion error in the MND's (Huffman report's) model calculations--using the density of water instead of the density of oxygen--led to a gross underestimate of available DO and the suggestion that 5,150,000 abalone have the potential to severely impact DO levels in the harbor with resultant negative impacts to the biota. Correction of said error shows that there is actually about 700 times more available oxygen than first calculated (36,000,000 liters instead of 52,000 liters).

- Monitoring Program. Each operator shall sample DO levels and water temperature on a daily basis, and periodically sample bottom sediment and benthic infauna as specified in its NPDES permit to evaluate the significance of potential project-related impacts and effects.

- Annual Reporting. Each operator shall submit an annual technical report to the RWQCB's executive officer that (i) summarizes the past year's monitoring data and documents that all receiving water limitations are being met; (ii) summarizes potential water quality problems and describes how they will be solved; and (iii) proposes an increase in number of abalone to be grown in the coming year. Production shall not be increased until the executive officer accepts the proposal in the technical report.

- Phased Growth in Abalone Culturing Operations. Each operator shall phase production during its five-year NPDES permit period (June, 1998 – June, 2003), increasing growth annually in 20% increments contingent upon the executive officer's authorization.

Pursuant to another measure, Blue Pacific Abalone submitted a DO contingency plan to the RWQCB and the Coastal Commission staff on October 13, 1998. The plan states that if DO levels drop to below 5.0 mg/l, Blue Pacific Abalone will immediately greatly decrease the feed available in the abalone cages. If after 48 hours DO levels remain at or below 5.0 mg/l, Blue Pacific Abalone will aerate the water below the abalone cages.

Commission evaluation and mitigation of impacts

Potential depletion of dissolved oxygen in the water column

Based on the MND's DO model (which concludes that the potential for depletion of DO in the water column throughout the harbor by up to 5,150,000 abalone will not be significant--see Footnote 8), it seems unlikely that Blue Pacific Abalone's grow-out of up to 800,000 abalone or the four potential operator's cumulative total grow-out of up to 1,950,000 abalone will cause significant depletion of DO in the water column throughout the harbor. This conclusion is nevertheless based upon the findings of one simple model.

The Commission therefore imposes several special conditions to ensure that the proposed projects will not significantly deplete DO from the water column. To detect any local DO depletion, the Commission imposes **Special Conditions 5(a) and 5(c)**, which incorporate the DO monitoring required by Blue Pacific Abalone's NPDES permit and provide for reporting of monitoring results.

To further mitigate any DO depletion not satisfactorily mitigated by Blue Pacific Abalone's aerating its abalone cages, the Commission imposes **Special Condition 6**, which institutes phased annual increases in total abalone stock contingent upon executive director approval. The executive director shall base said approval on the results of the dissolved oxygen and benthic monitoring required in Special Condition 5.

Potential benthic impacts due to shading and placement of the anchoring devices
With respect to potential impacts to benthic habitat due to shading and placement of anchoring devices, the Commission finds said impacts will not be significant for the following reasons: (1) the 300-foot buffers between each facility will reduce shading; (2) shading impacts will not have a significant effect because water clarity is very poor near the harbor bottom most of the time; (3) placement of rafts will not prevent use of the substrate underneath; and (4) the anchoring devices will require a very small amount of bottom area.

Potential benthic impacts due to accumulation of kelp and abalone feces
The proposed facilities, both individually and cumulatively, could adversely affect the benthic community by causing a build up of detritus and fecal material on the seafloor. There is general consensus that substantial organic enrichment causes deleterious changes in the community of organisms that live in sand or mud. The Commission therefore finds that each operator must conduct independent benthic monitoring, and associated annual reporting, to ensure that its facility is not significantly affecting Pillar Point Harbor's existing benthic community. Operators can coordinate the work of monitoring contractors to reduce costs.

Organic enrichment can be monitored directly by taking sediment samples and analyzing them for total organic carbon ("TOC"). There is evidence, however, from studies around a fish farm that changes in the benthic community can take place beyond the area within which increases in TOC are obvious (Weston 1990). In order to strengthen inferences based on samples taken during the period of aquaculture operations, a preliminary survey of the benthic community is considered necessary.

The Commission thus imposes **Special Condition 5(b)** which requires Blue Pacific Abalone to conduct initial and subsequent sediment and benthic infaunal surveys in accordance with the sampling methods and requirements listed in **Appendix C**. The Commission also imposes **Special Condition 5(c)** which provides for reporting of monitoring results.

Furthermore, the Commission imposes **Special Condition 7** which states that if results of the benthic infaunal sampling and analysis indicate a significant change in the infaunal community under the grow-out facilities as defined in the "Thresholds of Significance" section of **Appendix C**, Blue Pacific Abalone shall remove all abalone, rafts and associated structures, materials, and equipment within 90 days.

In addition, the Commission imposes **Special Condition 9**, which prohibits waste disposal except as authorized under the NPDES permit.

Finally, **Special Condition 6** institutes phased annual increases in total abalone stock contingent upon executive director approval. The executive director will base his response to incremental expansion requests on the dissolved oxygen and benthic monitoring required in Special Condition 5, and will give said respond within 30 days of request and report submittal.

Blue Pacific Abalone may apply for an amendment to this permit that seeks to modify or delete Special Condition 5 based on an alternate way to meet the intent of the requirements of Special Condition 5 and Appendix C. One such alternative could be demonstration that Blue Pacific

Abalone has modified its facility and/or cage design to ensure that only a negligible amount of waste kelp or abalone feces will be released into the marine environment.

Potential marine debris

To avoid any potential residual marine debris, the Commission imposes **Special Conditions 1 and 10. Special Condition 1** requires evidence that the anchoring design has been approved by the harbor master of the SMCHD to ensure that the grow-out structures do not break free. **Special Condition 10** requires, upon cessation of abalone grow-out operations, Blue Pacific Abalone to remove all abalone, grow-out structures, anchoring devices, materials, and equipment within 90 days. Blue Pacific Abalone's license agreement with the SMCHD provides for an "environmental protection and remediation fund," which will ensure implementation of Special Condition 10.

Consistency with Coastal Act policies

The Commission finds that with the requirements of **Special Conditions 1, 5, 6, 7, 9, and 10**, the proposed project as reviewed pursuant to Coastal Act Section 30105.5 in conjunction with three concurrent projects *(CDP Application Nos. E-98-17, E-98-18, and E-98-20)*, which will be conditioned similarly, will be carried out in a manner that maintains marine resources, sustains the biological productivity and quality of coastal waters, and maintains healthy populations of all species of marine organisms as required by Coastal Act Sections 30230 and 30231.

4.4.1.4 Avian Habitat

Avian species that use Pillar Point Harbor

Pillar Point Harbor provides refuge, foraging and roosting habitat for a great diversity of migrating and wintering birds. The harbor is unique along the San Mateo County Coast in providing calm waters of mixed depths, attracting many bird species that are otherwise rare or unknown in the area.

Furthermore, several species of special concern use the harbor or surrounding areas: the western snowy plover *(Charadrius alexandrinus nivosus)* (federally listed as threatened, California species of special concern) winters at the northwest beach area between September and mid April; the brown pelican *(Pelicanus occidentalis)* (federally and state listed as endangered) uses the harbor area in late summer, fall, and early winter; and the marbled murrelet *(Brachyramphus marmoratus)* (state listed as endangered, federally listed as threatened), has been sighted in the Half Moon Bay and Pillar Point areas.

Bird census data reveals that the harbor's four habitat types support the following percentages of bird use, respectively: Open water, 51%; shoreline edges, 30%; sandy areas, 12%; and rock areas, 7%.[9]

[9] Results of 1990-1991 baseline study bird census data (Entrix, 1991), as contained in the *Revised Expanded Initial Study for Abalone Aquaculture Operations, Pillar Point Harbor, San Mateo County* (Huffman & Associates, June, 1996, p. 27).

The MND and several interested parties have identified concerns about the proposed project's potential impacts on avian species.

Loss of avian habitat due to placement of the physical structures (e.g., rafts)
The raft or ladder structures used in the aquaculture facilities will decrease the amount of open water habitat available for birds to feed, dive, and rest in the outer harbor.

Loss of open-water habitat is especially important because many species (e.g., loons, scaup, scoters, mergansers, grebes) do not sleep or rest on land or a hard surface such as the proposed abalone rafts. They remain on the water where they can dive or take flight, using land only to nest. *(Letter from Eileen Jennis-Sauppe, Sequoia Audubon Society, to James Stilwell, SMCHD, dated December 19, 1995)* Other species such as cormorants and pelicans may, however, use the rafts as additional roosting areas.

Furthermore, all species that use the harbor require unobstructed open-water areas to taxi for take-off (only puddle ducks such as mallards, pintails and teals that feed in shallow water and marshes take direct flight upward). *(Letter from Eileen Jennis-Sauppe, Sequoia Audubon Society, to James Stilwell, SMCHD, dated December 19, 1995)*

Interested parties have identified the following other impacts and requirements: (1) the birds cannot go eastward, out of the harbor, because the main boat channel is there, causing too much disturbance; (2) many birds that spend their entire lives at sea, nesting on islands, need to rest in the harbor during heavy storms; and (3) an adequate buffer must be maintained between the rafts and the western beach.

Commission evaluation of impacts
Placement and operation of Blue Pacific Abalone's grow-out structures will occupy 0.60 acre of open water habitat, which is only about 1.0% of the 58 acres of biologically productive area in the northwest corner of the harbor. Furthermore, birds will not be precluded from using the buffer areas between each grow-out facility.[10] Thus the actual area of open water habitat precluded by all four proposed operations will be only 1.46 acres, or about 2.5 percent of the 58 acres of biologically productive area in the northwest corner of the harbor.[11]

In addition, all structures will be placed at least 500 feet from the western beach area, the second most highly-used habitat type.

Consistency with Coastal Act policies
The Commission thus finds that, for the reasons stated in its evaluation above, placement and operation of the proposed project as reviewed pursuant to Coastal Act Section 30105.5 in conjunction with three concurrent projects *(CDP Application Nos. E-98-17, E-98-18, and E-98-*

[10] E-mail correspondence from Gary Page, Point Reyes Bird Observatory, to Moira McEnespy, CCC, dated January 20, 1999, stating the opinion that all birds could get off the water with a 300-foot take-off distance (although not necessarily endorsing said buffer distance).

[11] Princeton Abalone, 0.43 acre; Pacific Offshore Farms, 0.067 acre; Blue Pacific Abalone, 0.60 acre; and Pearl Abalone, 0.09 acre.

20) will be carried out in a manner that will maintain healthy bird populations as required by Coastal Act Section 30230.

4.4.1.5 Kelp Harvesting

Regulatory framework

Fish and Game Code §6653 and §6750 provide the Fish and Game Commission ("F&GC") with authority to establish regulations as may be necessary to ensure the proper harvesting of kelp and aquatic plants for commercial and sport purposes.[12] The CDFG is the lead agency responsible for managing both giant kelp *(Macrocystis pyrifera)* and bull kelp *(Nereocystis luetkeana)* pursuant to commercial and sport fishing regulations *(14 CCR §30 and § 165)*. The F&GC last amended these regulations in March, 1996, in accord with the California Environmental Quality Act.[13]

To manage commercial harvesting, the CDFG charts and numbers the state's kelp beds. Official beds are designated in Section 165.5(j) and (k) of Title 14, California Code of Regulations. Beds are actually geographic areas, not individual patches, and thus vary in length and contain differing amounts of kelp canopy that change with time. Although one management objective is to "endeavor to maintain a maximum sustained harvest and utilization of the state's kelp resources,"[14] the CDFG has no fixed standard for sustainable harvest because kelp production is so highly variable.

The CDFG uses aerial surveys to assess the kelp resources; the extent of giant kelp is determined by measuring the kelp bed's surface canopy on the photographs. Aerial surveys are scheduled to be conducted every five years, subject to financial constraints; the last survey of all designated beds was done in 1989. The F&GC then designates which kelp beds may be harvested, and places limitations on the method of harvest:

- Kelp beds are designated as either (a) available for <u>lease</u> and exclusive harvest by the lessee, (b) <u>open</u> beds available for harvest by any licensed kelp harvester, or (c) <u>closed</u> beds that cannot be harvested for environmental reasons.

  A kelp harvesting license from the CDFG is required to harvest kelp commercially from designated "open" beds. The license enables the licensee to harvest to the limit the regulations allow at designated open beds on a "first-come, first-served" basis. If a bed has been cut to the limit the regulations allow, the licensee is prohibited from harvesting

[12] Under §6650, the F&GC may establish license and permit requirements; establish fees and royalties; require report of take; establish open and closed seasons; establish or change possession limits; establish and change area or territorial limits for harvesting; and prescribe the manner and the means of taking kelp and aquatic plants for commercial purposes. Under §6750, the F&GC may establish, extend, shorten or abolish open seasons and closed seasons; establish, change, or abolish bag limits, possession limits, and size limits; establish and change areas or territorial limits for taking; and prescribe the manner and means of taking kelp and aquatic plants for recreational purposes.

[13] "Giant and Bull Kelp Commercial and Sport Fishing Regulations." *Section 30 and 165, Title 14, California Code of Regulations.* California Department of Fish and Game. Final Draft Environmental Document (January, 1996).

[14] Ibid., pp. 2-6.

and must go to another bed. Under the "open" designation, a bed's canopy could be heavily or completely removed by harvest. Sixty percent of the kelp beds in California are set aside for small harvesters.[15]

- Kelp plants (giant and bull) may be cut no deeper than four feet below the ocean surface. For giant kelp, this restriction protects the plants' holdfasts, juvenile and reproductive blades, and young subsurface plants from being harvested before reaching maturity. Bull kelp is killed by this procedure.
- The F&GC may recommend temporary closure of a kelp bed for up to one year if it finds a bed has been significantly damaged (e.g., via storm, oil spill, or harvesting activities). Notice of the closure is sent to all licensed harvesters.

Kelp cannot be cut or harvested in marine life refuges, ecological reserves, national parks, or state underwater parks.

Finally, the F&GC requires harvesters to keep harvest and landing records, which record, among other statistical information, the wet weight of harvest, date of landing, and bed of origin. Harvest records are submitted once per month.

New project-related demand for kelp
There are fairly widely-varying estimates of the amount of kelp needed to grow out red abalone from seedlings to market size.

Estimate contained in the Mitigated Negative Declaration
The MND estimates the amount of kelp needed for the grow-out life of each abalone at between 3.0 and 4.7 lbs. of kelp. Assuming a grow-out life of three years, this estimate translates into a cumulative total of between 1,125 and 1,800 tons of kelp per year (which equals 21.6 – 34.6 tons per week, or 3.1 – 4.9 tons per day), broken down per company as follows:

- Pacific Offshore Farms: 250 – 400 tons/yr. (4.8 – 7.7 tons/wk., or 0.7 – 1.1 tons/day);
- Princeton Abalone: 250 – 400 tons/yr. (4.8 – 7.7 tons/wk., or 0.7 – 1.1 tons/day);
- Blue Pacific Abalone: 400 – 640 tons/yr. (7.7 – 12.3 tons/wk., or 1.1 – 1.8 tons/day);
- Pearl Abalone: 225 – 360 tons/yr. (4.3 – 6.9 tons/wk., or 0.6 – 1.0 tons/day).

Estimates from the applicants
Doug Hayes ("Pacific Offshore Farms") states that 100,000 abalone need about 600 lbs. of kelp per week at 10-15 mm in size, and about 1,100 lbs. per week at 30 mm, but asserts that the exact amount of kelp needed is impossible to calculate because he will buy 5,000 abalone at a time and they will all grow at different rates.

Princeton Abalone states that it will require about 466,470 lbs./yr. for 224,000 abalone (which translates to 1,041,228 lbs./yr., or 521 tons/yr. (10 tons/wk., or 1.4 tons/day), at its maximum

[15] Telephone conversation with Rob Collins, Nearshore Ecosystem Coordinator, Marine Region, CDFG, on December 12, 1994 (referenced in the *Revised Expanded Initial Study for Abalone Aquaculture Operations, Pillar Point Harbor, San Mateo County (June, 1996)*, p. 46)

operational capacity of 500,000 animals), but cautions that its estimates are educated guesses at best.

Blue Pacific Abalone states that it is not comfortable guessing at the amount of needed kelp, due to wide variations in growth rates between abalone of the same age, and unknown mortality rates.

Pearl Abalone estimates that it will require 100 tons of kelp to feed 90,000 abalone in the first year, and 500 tons of kelp in the fifth year. These estimates do not appear to account for different consumption rates based on abalone size, or the total number of abalone at each size once full build-out is reached.

Estimates from existing growers

Mr. Chris Van Hook, owner of Abalone International, Inc., located in Crescent City, estimates that 100,000 abalone will need about 1 ton of kelp per week at between one to two inches in size, and about 1.5 tons of kelp per week at between two and three inches in size. This estimate translates into a cumulative total of about 1,353 tons of kelp per year (26 tons/wk., or 3.7 tons/day), broken down per company as follows:

- Pacific Offshore Farms: 139 tons/yr. (2.7 tons/wk., or 0.4 tons/day);
- Princeton Abalone: 347 tons/yr. (6.7 tons/wk., or 1.0 tons/day);
- Blue Pacific Abalone: 555 tons/yr. (10.7 tons/wk., or 1.5 tons/day);
- Pearl Abalone: 312 tons/yr. (6 tons/wk., or 0.9 tons/day).

An existing onshore abalone farm in Cayucos, San Luis Obispo County, could not provide a feeding figure.

Potential impacts to the kelp bed community

All prospective Pillar Point abalone aquaculturists, including Blue Pacific Abalone, will harvest kelp from designated open beds pursuant to annual kelp harvesting licenses. The MND states that the facility operators plan to obtain kelp primarily from south of Half Moon Bay, in the Santa Cruz or Monterey areas, and from local beds. There are currently only six kelp beds between San Mateo County and Point Sur from which the growers could legally and feasibly obtain kelp.[16]

Furthermore, some kelp beds located off Santa Cruz and in Monterey Bay may not necessarily be viable options for the growers due to concerns expressed by various local interest groups regarding the harvesting of kelp from these beds (e.g. the prime area for kelp harvesting in Monterey Bay is being proposed as an underwater park, and thus a "no take" area). *(Letter from DeWayne Johnston, CDFG, to Richard Thompson, ACOE, dated February 27, 1998)*

[16] Technically there are nine beds, but one is designated for private lease only, and two have little or no kelp *(Personal communication with Robson Collins, Nearshore Ecosystem Coordinator, Marine Region, CDFG, on February 1, 1999).*

The new kelp demand will be added to that of existing harvesters in the Monterey Bay region. Six harvesters formed the Monterey Kelp Cooperative in September, 1998, under which they seek to self-regulate the resource. Existing harvest levels are about 20 – 25 tons per week.

In addition, the volume of kelp needed to sustain aquaculture operations remains relatively constant throughout the year, but there are significant seasonal fluctuations in kelp abundance (e.g., due to storms). Thus, during the winter, kelp must be taken from a few sheltered beds at levels similar to summer needs, which intensifies take from specific beds and may result in the removal of a significant portion of the total canopy. Hence, potential adverse impacts from kelp removal would be more likely to occur during winter, after canopies are thinned by storms.

Thus, given the minimal amount of kelp available near the project area, the existence of competing harvesters, local interest in limiting harvest of some beds, and natural factors such as the recurring el Nino weather pattern that cause kelp abundance to fluctuate, local kelp resources could be adversely impacted by the proposed grow-out facilities. *(Letters from DeWayne Johnston, CDFG, to Richard Thompson, ACOE, dated February 27, 1998, and April 1, 1998)*

Finally, kelp harvesting potentially affects the entire kelp bed community beyond the kelp plants themselves, such as finfish populations that live in giant kelp forests (e.g., the young of some rockfish species recruit specifically to the upper kelp canopy); invertebrates that live on and among kelp; birds that forage in and adjacent to and rest in giant kelp beds; and sea otters, seals and sea lions that raft, rest, or forage in giant kelp forests.

In response to the potential for limited kelp, Blue Pacific Abalone has stated it will employ the following alternatives if the legal harvest of local kelp beds proves to be insufficient to support its operation: (1) look to commercial kelp harvesters from other areas, including southern California, to fill in the shortage; and (2) use artificial feed and/or dried kelp.

Concerns about the existing kelp harvesting program

There is debate about whether or not the California Department of Fish and Game's and the Fish and Game Commission's kelp harvesting program is adequate to ensure the continued viability of the kelp bed community, and whether the regulations properly address the multiple uses of the kelp beds. Concerns have been voiced by the superintendents of the Monterey Bay and Gulf of the Farallones National Marine Sanctuaries[17] and other interested parties.[18]

First, the existing regulations allow take of both giant and bull kelp down to four feet below the water surface. While this distance protects the reproductive blades of giant kelp, which are located just above the structure that attaches a plant to the substrate, it does not protect those of bull kelp, which are located on the surface blades. Because bull kelp does not recruit year-round, heavy harvest of its surface canopy can eventually have a severely adverse impact on a bed. For example, clearing mature plants may increase the amount of benthic light and allow other benthic or subsurface species to become dominant and then limit later bull kelp recruitment

[17] Recall that Pillar Point Harbor is located adjacent to the Monterey Bay National Marine Sanctuary.

[18] See Appendix E, "Correspondence," for the record of written concerns, including those from the marine sanctuaries.

success. Or, the local spore source may be decreased significantly by continual removal of the reproductive portions of the blades.

In response to potential bull kelp impacts, the F&GC has restricted take of bull kelp in beds north of San Francisco to hand harvest only, and designated all bull kelp beds in that region as either "for lease" (seven beds) or "closed" (five beds).[19] No bull kelp beds are designated "open," the designation in which the canopy could be heavily or completely removed by harvest. Furthermore, most of the beds in which giant and bull kelp are mixed are found north of San Francisco, where they have received the "lease" or "closed" designation. In the few beds south of San Francisco in which the two kelp types mix and the beds are designated as "open," bull kelp only constitutes about two to three percent of the bed. No purely bull kelp beds exist south of San Francisco. *(Conversation with Robson Collins, Nearshore Ecosystem Coordinator, Marine Region, CDFG, February 22, 1999).*

Second, the program does not appear to some to adequately address harvesting impacts to the entire kelp bed community, although the CDFG and F&GC have reached the following conclusions relative to 1996 levels of harvest:[20]

- Populations of fishes in southern and central California are not seriously impacted by commercial harvesting, though some fishes may be displaced for a time following harvesting, and harvesting of canopies may open some areas to predation by fishes that otherwise would not feed in the areas;
- While kelp harvesting does incidentally remove some sessile and motile invertebrates, the overall effect on invertebrate populations appears not to be significant;
- While it is recognized that numerous species of birds use the kelp forests, the effect of canopy removal and kelp harvesting operations on bird populations is not significant; and
- Based on a review of available information, kelp harvesting activities have little to no effect on marine mammals using the kelp forests.

Other concerns with the existing kelp harvesting program are that it appears to be self-patrolled and self-enforced, and lack over-harvesting penalties. Furthermore, aerial surveys to assess the kelp resource do not occur very frequently or regularly (the last survey was done in 1989, and the one before that in 1967), do not differentiate between giant and bull kelp beds, and do not provide seasonal assessments of canopy removal due to natural events (e.g., storms) versus commercial harvest. Finally, some think that kelp beds are currently being harvested at their maximum.

Concerns have been exacerbated by the fact that no "kelp budget" was prepared to evaluate the new demands of the four proposed abalone-culturing operations, (i.e., no recent inventory of the

[19] As designated in *CCR Title 14, Section 165(c)(5).*

[20] "Giant and Bull Kelp Commercial and Sport Fishing Regulations." *Section 30 and 165, Title 14, California Code of Regulations.* California Department of Fish and Game. Final Draft Environmental Document (January, 1996), Chapter 4, "Environmental Impacts."

amount and location of existing kelp, assessment of the new demand from the four proposed abalone aquaculture proposals, and conclusion of how and where said demand could be accommodated in a manner that would sustain the kelp resource and associated uses), especially considering that the new proposals could about double the existing demand for kelp from the Monterey Bay region.[21]

Collaboration between CDFG and CCC staff to address potential kelp harvesting impacts
On April 15, 1999, Commission staff sent a letter to the CDFG director and the staff and the chair of the Fish and Game Commission requesting that both agencies work cooperatively to develop solutions to the kelp harvesting issues.[22] The Commission staff outlined its concerns regarding use conflicts, impacts to associated species and the kelp bed community, the seasonal nature of impacts, reporting requirements, and the lack of information available about the effects of kelp removal on kelp forests at present levels. The staff highlighted additional concerns about the potential impacts of increased kelp harvesting on the Monterey Bay region.

CDFG staff responded on April 20, 1999, in a letter stating the following:

- The CDFG has also been concerned that the demand for kelp resulting from new or expanded abalone culture operations will exceed the supply available locally, especially during periods of low abundance;
- The CDFG is aware of the need for more frequent monitoring of the health of harvested kelp beds;
- In December, 1998, the Fish and Game Commission directed the CDFG to address the issue of kelp harvesting by existing Monterey Bay area abalone growers and its impact on other uses as part of its upcoming review of kelp management regulations due to the F&GC in 2000; and
- The CDFG welcomes the opportunity to explore new, alternative approaches to the management of kelp harvest with Coastal Commission staff, other agencies, and the national marine sanctuaries.[23]

Staff of the CDFG, the CCC, and the MBNMS met on May 6, 1999, to further discuss kelp harvesting issues and possible solutions. At the meeting, CDFG staff indicated that it would specifically address use conflict issues in its upcoming review of its kelp harvesting and management regulations.

The Commission staff welcomes the opportunity to work closely with the CDFG during its review and revision of the kelp harvesting regulations, and supports the CDFG's role as the

[21] Letters from Ed Ueber, GFNMS/MBNMS, to Loretta Barsamian, RWQCB, February 23, 1998, and June 16, 1998. See also Appendix E, "Correspondence" for the record of written concerns.

[22] Letter from Peter Douglas, Executive Director, CCC, to Richard Thieriot, President, F&GC, Robert Hight, Director, CDFG, and Robson Collins, Nearshore Ecosystem Coordinator, Marine Region, CDFG, April 15, 1999.

[23] Letter from Robson Collins, Nearshore Ecosystem Coordinator, Marine Region, CDFG, to Peter Douglas, Executive Director, CCC, April 20, 1999.

agency responsible for developing and implementing the harvesting regulations. The Coastal Commission finds, however, that if the currently-proposed aquaculture projects are to proceed before the end of 2000, when the CDFG updates its kelp harvesting regulations in a manner that fully addresses Coastal Act policies, the Commission must condition the permits to prohibit use of kelp from the identified impacted kelp beds for use in the permitted abalone facilities. Without this prohibition, the Commission cannot make the requisite findings that individually and cumulatively the kelp harvesting needed to sustain the proposed abalone projects is consistent with Coastal Act policies.

Commission evaluation of impacts

It appears that Blue Pacific Abalone's project should not cause significant adverse additional impacts to the kelp resource itself because Blue Pacific Abalone states it will obtain kelp from open beds throughout the state, via purchase or direct harvest, which will help mitigate potential impacts to local kelp beds. From a statewide perspective, an additional take of about 640 tons of kelp per year (the largest estimate of Blue Pacific Abalone's annual take) is small compared with the current annual statewide take of over 100,000 tons per year (0.64%).

Based on the information currently available, it also appears that the four abalone-culturing projects proposed for Pillar Point Harbor will not cause significant adverse additional impacts to the kelp resource itself for the following reasons: (1) the CDFG's existing commercial kelp harvesting program limits harvest to the upper four feet of kelp plants, and thus protects mature giant kelp plants' holdfasts, reproductive and juvenile blades, and young juvenile plants; (2) removing the entire canopy of a giant kelp bed down to four feet from the surface will not harm the bed in the long term; (3) kelp beds are extremely productive, increasing by about 100 tons per acre per year; and (4) the majority of bull kelp beds are protected from heavy harvest by "lease" or "closed" designations.

The proposed project both individually and in conjunction with the other three proposed abalone aquaculture facilities may, however, cause adverse impacts to the larger kelp bed community. Although the CDFG staff will address these issues in its upcoming review of its kelp harvesting and management regulations, said review and recommended revisions may not be acted on by the Fish and Game Commission until the end of 2000. The Coastal Commission thus finds that if the currently-proposed aquaculture projects are to proceed before the end of 2000, when the CDFG updates its kelp harvesting regulations in a manner that fully addresses Coastal Act policies, the Commission must condition the permits to prohibit use of kelp from the identified impacted kelp beds for use in the permitted abalone facilities. Without this prohibition, the Commission cannot make the requisite findings that individually and cumulatively the kelp harvesting needed to sustain the proposed abalone projects is consistent with Coastal Act policies.

The Coastal Commission therefore requires **Special Condition 8**, which restricts harvest, take, or purchase of kelp obtained from (1) open bed #220 between the Monterey breakwater and Point Pinos, and (2) open bed #221 between New Brighton State Beach and Soquel Point (Pleasure Point area), off the Santa Cruz County coast, from December 1 until May 15 (a seasonal time of low abundance).

Blue Pacific Abalone may request that the Commission modify this restriction through an amendment to this permit based upon emergence of new information that may affect kelp harvesting (i.e., information in addition to that set forth in this section of the Commission's findings). Each of the following two developments, for example, may provide a vehicle through which such new information may emerge, and thus may provide an appropriate basis on which to request an amendment to Special Condition 8.

> First, the CDFG reviews and amends its kelp harvesting regulations every five years. The review process for the next such revision will begin this summer or fall, and the regulations are scheduled to be certified by the F&GC by the end of Year 2000. CDFG staff have indicated that these revisions will address new or expanded demand, especially during periods of low abundance, and the need for more frequent monitoring of the health of harvested beds.[24]
>
> Second, the Monterey Kelp Cooperative seeks to self-regulate its hand-harvesting along the area from the Monterey Coast Guard Breakwater to Lover's Point in Pacific Grove, via a kelp plan drafted by its members, to ensure ongoing sustainable harvests of kelp and to avoid conflicts with other users of the beds. Thus, evidence of membership in the Monterey Kelp Cooperative and submittal of its annual kelp plan[25] could provide a key mechanism to address kelp harvesting impacts, and could constitute an appropriate basis for the Commission to consider an amendment to Special Condition 8.

Note: Recreational and use conflict issues regarding kelp will be discussed in section 4.4.3 of this report, "Public Access and Recreation."

Consistency with Coastal Act policies

The Commission finds that with the requirement of **Special Condition 8**, and as implemented according to the CDFG's existing commercial kelp harvesting management program, the proposed project, as reviewed pursuant to Coastal Act Section 30105.5 in conjunction with three concurrent projects *(CDP Application Nos. E-98-17, E-98-18, and E-98-20)* will be carried out in a manner that maintains the state's kelp resource as required by Coastal Act Section 30230.

4.4.1.6 Conclusion – Marine Resources

The Commission concludes that, for the reasons stated in sections 4.4.1.1 – 4.4.1.5 of this report, the project as proposed and conditioned, and as reviewed pursuant to Coastal Act Section 30105.5 in conjunction with three concurrent projects *(CDP Application Nos. E-98-17, E-98-18, and E-98-20)*, which will be conditioned in a similarly, will be consistent with Coastal Act Sections 30230 and 30231.

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[24] Letter from Rob Collins, Nearshore Ecosystem Coordinator, Marine Region, CDFG, to Peter Douglas, Executive Director, CCC, April 20, 1999.

[25] The kelp plan must be approved by the Board of Governors each October 31. The board of governors is comprised of three members: (1) Member Governor (elected annually by a majority vote and appointed by the members of the cooperative); (2) Manager Governor (the Regional Manager for the Marine Region of the CDFG); and (3) Scientist Governor (nominated by the other governors and approved by the Superintendent of the MBNMS; must be a marine scientist with a proven understanding and research background of giant kelp biology).

4.4.2 Potential Use Conflicts with Existing Commercial Fishing Operations

Coastal Act Section 30234 states in pertinent part:

> *Facilities serving the commercial fishing and recreational boating industries shall be protected and, where feasible, upgraded. Existing commercial fishing and recreational boating harbor space shall not be reduced unless the demand for those facilities no longer exists or adequate substitute space has been provided....*

Coastal Act Section 30234.5 states:

> *The economic, commercial, and recreational importance of fishing activities shall be recognized and protected.*

4.4.2.1 Potential Use Conflicts with Existing Commercial Fishing Anchorage Space

The area set aside by the SMCHD for aquaculture operations, which includes the proposed abalone grow-out project license areas, currently provides general (or transient) anchorage space for both recreational and commercial vessels (i.e., open-water space where vessels can drop anchor). This area also contains specific mooring sites (specific spaces that vessels can tie up to).

A private consultant retained by the SMCHD ("Concept Marine") calculated the entire outer harbor area (which includes the area set aside by the SMCHD for aquaculture operations) to have approximately 202 acres of available anchorage space (i.e., areas at least six feet in depth, and not within the navigation channel).[26] Assuming that two vessels can safely anchor in one acre[27] yields space enough for about 404 vessels.

Blue Pacific Abalone's rafts will preclude 26,250 sq. ft., or 0.60 acre, of available anchorage space. The more significant issue is the combined loss of anchorage space due to the operation of all four abalone-culturing proposals. The Harbor Master and a representative of the commercial fishing community have agreed that as the four license areas are presently configured, (1) operation of the four currently-proposed abalone grow-out facilities would preclude vessel use of the buffer areas,[28] (2) the license and buffer areas combined total about 23.05 acres, and hence (3) that the facilities (including the license and buffer areas) would

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[26] Pillar Point Area Calculations by Concept Marine, November 6, 1998 (File no. 29829/102/1301).

[27] Letter from Bob Miller, Crab Boat Owners Association of San Francisco, President, and Pacific Coast Federation of Fisherman's Associations' Vessel Safety Committee, Chair, to Joy Chase, CCC, February 17, 1997, p. 2.

[28] Based on recommendations for scope of anchor rode stated in Chapman's *Piloting, Seamanship and Small Boat Handling*, a vessel in Pillar Point Harbor requires approximately 352 feet to safely anchor using a danforth-type anchor (the type currently required under existing SMCHD regulations). Thus the 300-foot buffers between the license areas are not adequate for use as safe anchorage area.

preclude anchorage for at least 40 vessels (about 40 vessels spaced 100 feet apart; about 50 vessels spaced 75 feet apart).[29] (Exhibit 4, "Area of Anchorage Lost")

Subtracting 23.05 acres (license and buffer areas for the four currently-proposed abalone grow-out facilities) from the total 202 acres of available anchorage space leaves 178.95 (rounded to 179) remaining acres that are available for anchorage space, or available space for 358 vessels, if the four proposed abalone grow-out facilities are constructed.

Commercial fishing industry concerns about lost anchorage space
The commercial fishing community has expressed the following concerns about the potential loss of safe anchorage space:[30]

- Pillar Point Harbor provides the only safe anchorage space between Point Reyes and Santa Cruz;
- Under present fishery management schemes, Pillar Point Harbor at times becomes the focus of the entire salmon fleet (there is a waiting list for slips, so in rough weather or when the bite is on, the outer harbor is filled with anchored vessels);
- Loss of anchorage space at Pillar Point Harbor would effectively deny access to about half of the fishing grounds between the Farallon Islands and Santa Cruz;
- Reducing anchorage area would cause problems, congestion, or even eliminate Pillar Point as a safe harbor. Furthermore, the harbor's bottom composition is such that a vessel operator needs to maintain an extra margin of space from other vessels in case his or her anchor should slip on a windy day;
- Reducing anchorage area would cause inconvenience and interference with fishing operations and significant adverse economic impacts on fishermen and women as well as the fish processors of the harbor and elsewhere;
- The U.S. Army Corps of Engineers created Pillar Point Harbor as a "safe harbor" for exclusive fishing and boating uses; and
- Approval of the proposed abalone grow-out facilities would create a special business opportunity for aquaculturists at the expense of fishermen and women.

[29] The MND calculates the combined area of the five facilities it evaluates to be 2.4 acres, and assumes that vessels will be able to use the buffer areas between the abalone facilities. The MND concludes that removal of 2.4 acres of open water anchorage area is not expected to be a significant impact because (1) vessels would be free to use the 300-foot buffer zones between the licensed areas and (2) vessels would still be able to use the remaining outer harbor area. The MND does not contain any further facts, figures, or analysis to support its conclusion.

[30] In addition to letters from various individuals, the Commission staff has received letter from representatives of the following organizations: Moss Landing Commercial Fishermen's Association; Crab Boat Owners Association of San Francisco; Pacific Coast Federation of Fishermen's Associations, Inc.; Salmon Trollers Marketing Association; Humboldt Fishermen's Marketing Association; and Half Moon Bay Fisherman's Marketing Association. Appendix E, "Correspondence," contains the full record of written comments.

Commission evaluation

Aquaculture as a Use in Pillar Point Harbor Consistent with the Public Trust

The State Lands Commission granted the Pillar Point Harbor tide and submerged lands to the SMCHD in July, 1960. The grant provides that the SMCHD may grant franchises thereon and may lease any part of said lands for purposes consistent with the trust upon which said lands are held by the state.[31] Aquaculture is a use consistent with the public trust,[32] and the SMCHD executed license agreements for the four proposed abalone aquaculture facilities in February, 1997. Thus, Pillar Point does not have to function solely as a "harbor of refuge" or "safe harbor," to the exclusion of other uses, in this case aquaculture. Furthermore, Coastal Act Section 30411(c) encourages salt water or brackish water aquaculture as a coastal-dependent use.

Demand for Anchorage Space

The Commission has attempted to quantify the existing demand for anchorage space in the outer harbor. Neither the applicants, the SMCHD, nor the commercial fishing industry has any records of historical use. Furthermore, there are broad discrepancies between each party's estimate of demand. The applicants contend that the outer harbor is sparsely used for anchorage and is never full. A representative of the commercial fishing industry estimates, however, that there is already more demand than there is space. He states that about 400-500 commercial vessels may need to use the harbor during the salmon season, which runs from approximately Memorial Day until Labor Day (May 1 – September 1).[33] Representatives of the commercial fishing community believe that the burden of proof should be on the aquaculture applicants that their projects will not reduce needed anchorage space. Finally, the SMCHD estimates that about 200 vessels use the outer harbor during peak use periods.

Because there are (1) no records documenting levels of historical use in the outer harbor and (2) very disparate estimates of the amount of anchorage space needed during peak use periods (e.g., the SMCHD estimates 200 vessels and the commercial fishing industry estimates 400-500 vessels), it is difficult to accurately determine the existing levels of demand for anchorage space in the outer harbor. The Commission thus finds that based on the best information available at this time, 358 anchorage spaces appears to be sufficient to accommodate existing anchorage space demand.

Consistency with Coastal Act policies

The Commission finds that based on the best information currently available the proposed project as reviewed pursuant to Coastal Act Section 30105.5 in conjunction with three concurrent projects *(CDP Application Nos. E-98-17, E-98-18, and E-98-20)* will not reduce the anchorage space needed to accommodate the existing demand for commercial boating harbor space as required by Coastal Act Section 30234, and will allow continuance of the commercial activities that currently use Pillar Point Harbor as required by Coastal Act Section 30234.5.

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[31] Statues of 1960, Chapter 68, Section 1(a).

[32] Verbal communication with Mary Howe, State Lands Commission, May 17, 1999.

[33] Meeting with Bob Miller, Crab Boat Owners Association of San Francisco, President, and Pacific Coast Federation of Fisherman's Associations' Vessel Safety Committee, Chair, on December 7, 1998.

4.4.2.2 Increased Use of Ancillary Harbor Facilities

The proposed abalone grow-out operations will increase use of Pillar Point Harbor's public boat launch and parking facilities. Blue Pacific Abalone, along with the three other prospective operators, plans to depart from the public boat launch ramp when towing its raft modules to its license space. Launching activities may interfere with recreational and commercial boat launch activities. In addition, all four operators propose to either collect kelp from local beds by boat and/or truck kelp from other areas to the harbor. Transporting kelp by boat to the facilities will also require use of the public boat launch ramp.

The Commission is therefore imposing **Special Condition 2** to prevent use conflicts with the public boat launch ramp. This condition prohibits Blue Pacific Abalone from loading or unloading any equipment or materials on, at or from the public boat launch ramp, docks, or vehicle approach road. The intent of this condition is not to prevent Blue Pacific Abalone from using the launch ramp, docks, or vehicle approach road, but simply to prevent tying up an area specifically meant for launching activities to conduct potentially lengthy loading and unloading activities. Blue Pacific Abalone's license agreement with the SMCHD provides for its use of the existing hoist on Romeo Pier, which the SMCHD will make available to all abalone licensees, to off-load kelp, cages, and equipment into a boat that can be taken to the offshore grow-out area.

Special Condition 2 also provides that prior to using the public boat launch ramp to install or remove its grow-out structures, Blue Pacific Abalone shall submit evidence to the executive director that it has coordinated with the harbor master on use of the public boat launch ramp to conduct said activities (e.g., during a time when demand for use of the boat launch is anticipated to be light).

With regard to parking, the SMCHD has concluded that the proposed aquaculture operations will not significantly impact the harbor's existing regular and overflow parking areas.

Consistency with Coastal Act policies
The Commission finds that with the requirement of **Special Condition 2**, the proposed project as reviewed pursuant to Coastal Act Section 30105.5 in conjunction with three concurrent projects *(CDP Application Nos. E-98-17, E-98-18, and E-98-20)*, which will be conditioned similarly, will be carried out in a manner that protects use of the public boat launch ramp and parking facilities as required by Coastal Act Section 30234.

4.4.2.3 Potential Navigational or Safety Hazards

The SMCHD chose to set aside the northwest corner of the harbor for aquaculture facilities in part because that area is located outside of the navigational routes used to access the inner harbor. Nevertheless, placement and operation of the aquaculture facilities could create navigational or safety hazards if the raft structures are not properly marked, aquaculture apparatus becomes dislodged or breaks apart, or any debris is disposed of in the harbor area.

To mitigate these potential impacts to a level of insignificance, the Commission imposes three special conditions. **Special Condition 3** requires Blue Pacific Abalone to mark its grow-out

structures to ensure navigational safety pursuant to all U.S. Coast Guard and SMCHD harbor master requirements. **Special Condition 1** requires Blue Pacific Abalone to submit evidence to the executive director that its anchoring design has been approved by the harbor master to ensure that the grow-out structures do not break free. **Special Condition 9** prohibits Blue Pacific Abalone from disposing any equipment or waste into the marine environment, except as authorized in its NPDES permit.

Consistency with Coastal Act policies
The Commission finds that with the requirements of **Special Conditions 1, 2, 3, and 9**, the proposed project as reviewed pursuant to Coastal Act Section 30105.5 in conjunction with three concurrent projects *(CDP Application Nos. E-98-17, E-98-18, and E-98-20)*, which will be conditioned similarly, will be carried out in a manner that protects the harbor facilities, and the commercial fishing and recreational boating industries, as required by Coastal Act Section 30234.

4.4.2.4 Conclusion –Commercial Fishing

The Commission concludes that, based on the findings in sections 4.5.2.1 – 4.5.2.3 of this report, the project as proposed, conditioned, and reviewed pursuant to Coastal Act Section 30105.5 in conjunction with three concurrent projects *(CDP Application Nos. E-98-17, E-98-18, and E-98-20)* will be consistent with Coastal Act Sections 30224, 30234, and 30234.5.

4.4.3 Public Access and Recreation

Coastal Act Section 30210 states:

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

Coastal Act Section 30211 states:

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

Coastal Act Section 30220 states:

> *Coastal areas suited for water-oriented recreational activities that cannot readily be provided at inland water areas shall be protected for such uses.*

Coastal Act Section 30234 states:

> *Facilities serving the commercial fishing and recreational boating industries shall be protected and, where feasible, upgraded. Existing commercial fishing and recreational boating harbor space shall not be reduced unless the demand for those facilities no longer exists or adequate substitute space has been provided. Proposed recreational boating facilities shall, where feasible, be designed and located in such a fashion as not to interfere with the needs of the commercial fishing industry.*

Coastal Act Section 30234.5 states:

> *The economic, commercial, and recreational importance of fishing activities shall be recognized and protected.*

Public Access
The proposed abalone aquaculture facilities do not include any construction of new development on land. Some operators do, however, plan to use the public boat launch ramp. With regard to parking, the SMCHD has concluded that the proposed aquaculture operations will not significantly impact the harbor's existing regular and overflow parking areas.

Recreation at Pillar Point Harbor
Pillar Point Harbor offers a wide variety of recreational activities including boating, clamming, fishing, sailing, kayaking, and windsurfing. In addition, the public access trail and associated beach area along the western shoreline of the harbor, near the highly productive northwest corner, are used by hikers, bicyclists, and birders.

Particular demand for sailboat anchorage space occurs during races (which occur approximately three times per year) and Labor Day weekend.[34]

Recreation around the Monterey Bay
The four proposed aquaculturists' plans to harvest kelp to support their abalone operations could affect nearshore recreational users around Monterey Bay.

In its 1995/96 review of its the kelp harvesting regulations,[35] the CDFG and the F&GC concluded, however, that kelp harvesting operations have no significant effect on the recreational use of the nearshore environment. The review concludes that although some recreational users are temporarily displaced by harvesting operations, they receive some benefits as well. For example, harvesting opens up lanes in the canopy which allow access to areas that were

[34] Telephone conversation with Jennifer Solestri, Commodore, Half Moon Bay Yacht Club, in March, 1996 (referenced in the *Responses to Comments on the Expanded Initial Study for Abalone Aquaculture Operations, Pillar Point Harbor, San Mateo County (June, 1996)*, p. 18)

[35] "Giant and Bull Kelp Commercial and Sport Fishing Regulations." *Section 30 and 165, Title 14, California Code of Regulations.* California Department of Fish and Game. Final Draft Environmental Document (January, 1996).

previously closed due to the density of the kelp and more light to penetrate subsurface areas (to the benefit of kayakers and underwater photographers, etc.).[36]

There is general consensus, nevertheless, that use conflicts involving the kelp resource exist.[37] Specifically, many ocean-related educational and recreational activities, such as viewing see otters or the kelp itself, are greatly enhanced by the existence of the kelp canopy. Thus conflicts arise when kelp is harvested, as the canopy can be cut down to four feet below the water surface.

Furthermore, the volume of kelp needed to sustain aquaculture operations remains relatively constant throughout the year, but there are significant seasonal fluctuations in kelp abundance (e.g., due to storms). Thus, during the winter, kelp must be taken from a few sheltered beds at levels similar to summer needs, which intensifies take from specific beds and may result in the removal of a significant portion of the total canopy. Hence, potential use conflicts would be more likely to occur during winter, after canopies are thinned by storms.

These use conflicts currently exist in areas offshore Monterey and Santa Cruz with the current kelp harvesting levels. For example, kelp bed #220, offshore the Monterey coast, is designated as an open bed. Various local interest groups have expressed concern about harvesting kelp from beds offshore Cannery Row, and the City of Monterey has asserted regulatory (permit) authority over kelp harvesting offshore its jurisdiction.

Collaboration between CDFG and CCC staff to address potential kelp harvesting impacts
On April 15, 1999, Commission staff sent a letter to CDFG staff and the chair of the Fish and Game Commission requesting that both agencies work cooperatively to develop solutions to the kelp harvesting issues.[38] The Commission staff outlined its concerns regarding use conflicts, impacts to associated species and the kelp bed community, the seasonal nature of impacts, reporting requirements, and the lack of information available about the effects of kelp removal on kelp forests at present levels. The staff highlighted additional concerns about the potential impacts of increased kelp harvesting on the Monterey Bay region.

CDFG staff responded on April 20, 1999, in a letter stating the following:

- The CDFG has also been concerned that the demand for kelp resulting from new or expanded abalone culture operations will exceed the supply available locally, especially during periods of low abundance;

[36] "Giant and Bull Kelp Commercial and Sport Fishing Regulations." *Section 30 and 165, Title 14, California Code of Regulations.* California Department of Fish and Game. Final Draft Environmental Document (January, 1996), Section 4.6."

[37] (1) Letter from DeWayne Johnston, CDFG, to Richard Thompson, ACOE, dated February 27, 1998; (2) Conversation with Jerry Spratt, CDFG, February 2, 1999; (3) Conversation with Ed Ueber, Gulf of the Farallones National Marine Sanctuary, February 16, 1999; (4) Conversation with Bill Douros, Montery Bay National Marine Sanctuary, February 16, 1999.

[38] Letter from Peter Douglas, Executive Director, CCC, to Richard Thieriot, President, F&GC, Robert Hight, Director, CDFG, and Robson Collins, Nearshore Ecosystem Coordinator, Marine Region, CDFG, April 15, 1999.

- The CDFG is aware of the need for more frequent monitoring of the health of harvested kelp beds;
- In December, 1998, the Fish and Game Commission directed the CDFG to address the issue of kelp harvesting by existing Monterey Bay area abalone growers and its impact on other uses as part of its upcoming review of kelp management regulations due to the F&GC in 2000; and
- The CDFG welcomes the opportunity to explore new, alternative approaches to the management of kelp harvest with Coastal Commission staff, other agencies, and the national marine sanctuaries.[39]

Staff of the CDFG, the CCC, and the MBNMS met on May 6, 1999, to further discuss kelp harvesting issues and possible solutions. At the meeting, CDFG staff indicated that it would specifically address use conflict issues in its upcoming review of its kelp harvesting and management regulations.

The Commission staff welcomes the opportunity to work closely with the CDFG during its review and revision of the kelp harvesting regulations, and supports the CDFG's role as the agency responsible for developing and implementing the harvesting regulations. The Coastal Commission finds, however, that if the currently-proposed aquaculture projects are to proceed before the end of 2000, when the CDFG updates its kelp harvesting regulations in a manner that fully addresses Coastal Act policies, the Commission must condition the permits to prohibit use of kelp from the identified impacted kelp beds for use in the permitted abalone facilities. Without this prohibition, the Commission cannot make the requisite findings that individually and cumulatively the kelp harvesting needed to sustain the proposed abalone projects is consistent with Coastal Act policies.

Commission evaluation of impacts

The four proposed aquaculture projects will not interfere with the public's right of access to or along the shoreline because they will not include any construction of new development on land, restrict access to the project vicinity, or significantly impact the harbor's existing parking areas.

Because some operators do plan to use the public boat launch ramp, the Commission is imposing **Special Condition 2** to prevent use conflicts with said ramp. This condition prohibits Blue Pacific Abalone from loading or unloading any equipment or materials on, at or from the public boat launch ramp, docks, or vehicle approach road. The intent of this condition is not to prevent Blue Pacific Abalone from using the launch ramp, docks, or vehicle approach road, but simply to prevent tying up an area specifically meant for launching activities to conduct potentially lengthy loading and unloading activities. Blue Pacific Abalone's license agreement with the SMCHD provides for its use of the existing hoist on Romeo Pier, which the SMCHD will make available to all abalone licensees, to off-load kelp, cages, and equipment into a boat that can be taken to the offshore grow-out area.

[39] Letter from Robson Collins, Nearshore Ecosystem Coordinator, Marine Region, CDFG, to Peter Douglas, Executive Director, CCC, April 20, 1999.

Special Condition 2 also provides that prior to using the public boat launch ramp to install or remove its grow-out structures, Blue Pacific Abalone shall submit evidence to the executive director that it has coordinated with the harbor master on use of the public boat launch ramp to conduct said activities (e.g., during a time when demand for use of the boat launch is anticipated to be light).

Furthermore, combination of the four proposed aquaculture project's physical structures and operations will not significantly impact recreational opportunities in Pillar Point Harbor for the following reasons:

- They will preclude only 1.46 acres of open water space, which leaves more than adequate space to accommodate other recreational uses;
- They will not hinder access to the vicinity of the breakwaters themselves, and thus will not impact clamming, eeling, and other recreational sportfishing activities that occur in the area; and
- They will be located at least 500 feet from the western beach area, the second most highly-used avian habitat area, and thus will not hinder birding opportunities.

The proposed project's kelp harvesting requirements, especially in conjunction with the kelp requirements of the three other proposed abalone grow-out facilities, will, however, exacerbate recreational use conflicts in the Monterey Bay area because these conflicts already exist with the current level of kelp harvest. Although the CDFG staff will address use conflicts in its upcoming review of its kelp harvesting and management regulations, said review and recommended revisions may not be acted on by the Fish and Game Commission until the end of 2000. The Coastal Commission thus finds that if the currently-proposed aquaculture projects are to proceed before the end of 2000, when the CDFG updates its kelp harvesting regulations in a manner that fully addresses Coastal Act policies, the Commission must condition the permits to prohibit use of kelp from the identified impacted kelp beds for use in the permitted abalone facilities. Without this prohibition, the Commission cannot make the requisite findings that individually and cumulatively the kelp harvesting needed to sustain the proposed abalone projects is consistent with Coastal Act policies.

The Coastal Commission therefore requires **Special Condition 8**, which restricts harvest, take, or purchase of kelp obtained from (1) open bed #220 between the Monterey breakwater and Point Pinos, and (2) the open bed between New Brighton State Beach and Soquel Point (Pleasure Point area), off the Santa Cruz County coast, from December 1 until May 15 (a seasonal time of low abundance).

Blue Pacific Abalone may request that the Commission modify this restriction through an amendment to this permit based upon emergence of new information that will affect kelp harvesting. (i.e., information in addition to that set forth in this section of the Commission's findings). Each of the following two developments, for example, may provide a vehicle through which such new information may emerge, and thus may provide an appropriate basis on which to request an amendment to Special Condition 8.

First, the CDFG reviews and amends its kelp harvesting regulations every five years. The review process for the next such revision will begin this summer or fall, and the regulations are scheduled to be certified by the F&GC by the end of Year 2000. CDFG staff have indicated that these revisions will address use conflict issues.[40]

Second, the Monterey Kelp Cooperative seeks to self-regulate its hand-harvesting along the area from the Monterey Coast Guard Breakwater to Lover's Point in Pacific Grove, via a kelp plan drafted by its members, to ensure ongoing sustainable harvests of kelp and to avoid conflicts with other users of the beds. Thus, evidence of membership in the Monterey Kelp Cooperative and submittal of its annual kelp plan[41] could provide a key mechanism to address kelp harvesting impacts, and could constitute an appropriate basis for the Commission to consider an amendment to Special Condition 8.

Consistency with Coastal Act policies
The Commission finds that with the requirements of **Special Conditions 2 and 8**, the proposed project as reviewed pursuant to Coastal Act Section 30105.5 in conjunction with three concurrent projects *(CDP Application Nos. E-98-17, E-98-18, and E-98-20)* will be carried out in a manner that protects maximum access as required by Coastal Act Sections 30210 and 30211, will accommodate existing recreational fishing and boating harbor space needs as required by Coastal Act Sections 30234 and 30234.5, and will protect water-oriented recreational uses as required by Coastal Act Sections 30210 and 30220.

Conclusion – Public Access and Recreation
Hence, the Commission concludes that for the reasons stated above in this report, the project as proposed and conditioned, and as reviewed pursuant to Coastal Act Section 30105.5, will be consistent with Coastal Act Sections 30210, 30211, 30220, 30234, and 30234.5.

4.4.4 Scenic and Visual Qualities

Coastal Act Section 30251 states in part:

> *The scenic and visual qualities of coastal areas shall be considered and protected as a resource of public importance. Permitted development shall be sited and designed to protect views to and along the ocean and scenic coastal areas, to minimize the alteration of natural land forms, to be visually compatible with the character of surrounding areas, and, where feasible, to restore and enhance visual quality in visually degraded areas.*

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[40] Meeting with Rob Collins, Nearshore Ecosystem Coordinator, Marine Region, CDFG, May 6, 1999, at the MBNMS office in Monterey.

[41] The kelp plan is approved by the Board of Governors each October 31. The board of governors is comprised of three members: (1) Member Governor (elected annually by a majority vote and appointed by the members of the cooperative); (2) Manager Governor (the Regional Manager for the Marine Region of the CDFG); and (3) Scientist Governor (nominated by the other governors and approved by the Superintendent of the MBNMS; must be a marine scientist with a proven understanding and research background of giant kelp biology).

The proposed abalone grow-out facilities will be visible in the distance to both north- and south-bound motorists on State Route 1, also known as Cabrillo Highway, a designated "scenic highway" that parallels the coast and runs adjacent to Pillar Point Harbor. The abalone grow-out facilities will also be visible from certain areas of El Granada. Closer views of the project area will be obtained from Capistrano Road, which is parallel to the northern portion of the harbor, and from the public access trail in the northwest beach area.

The proposed project area is currently used to moor boats. To minimize visual intrusion and ensure that the proposed structures will blend in with existing boat features (masts, pilot houses, etc.) and be in character with the nature of the harbor, the SMCHD is prohibiting any structure placed on the rafts from extending more than five feet from the raft surface, and from having elements that will reflect light and cause significant glare.

The Commission finds that Blue Pacific Abalone's grow-out facility will be consistent with the existing visual character of the harbor as required by Coastal Act Section 30251 because it will occupy a very small portion of the open water area, 0.60 acre of the 284-acre outer harbor, and will be restricted in height and character by the SMCHD.

All four proposed abalone grow-out facilities will occupy a relatively small portion of the open water area, 1.46 acres of the 284-acre outer harbor, and will be restricted in height and character by the SMCHD. The Commission thus finds that the proposed project as reviewed pursuant to Coastal Act Section 30105.5 in conjunction with three concurrent projects *(CDP Application Nos. E-98-17, E-98-18, and E-98-20)* will be consistent with the existing visual character of the harbor as required by Coastal Act Section 30251, and thus will be consistent with said section.

4.4.5 Placement of Fill in Coastal Waters

Coastal Act Section 30108.2 defines "fill" as "earth or any other substance or material, including pilings placed for purposes of erecting structures thereon, placed in a submerged area." The concrete drums and anchoring structures that will be placed on the harbor floor to secure the abalone grow-out facilities constitute fill as defined in Coastal Act Section 30108.2.

Coastal Act Section 30233(a) states in part:

> *The diking, filling, or dredging of open coastal waters, wetlands, estuaries, and lakes shall be permitted in accordance with other applicable provisions of this division where there is no feasible less environmentally damaging alternative, and where feasible mitigation measures have been provided to minimize adverse environmental effects, and shall be limited to the following:*
>
> *(1) New or expanded port, energy, and coastal-dependent industrial facilities, including commercial fishing facilities.*
>
> *(2) Maintaining existing, or restoring previously dredged depths on existing navigational channels, turning basins, vessel berthing and mooring areas, and boat launching ramps.*

(3) *In wetland areas only, entrance channels for new or expanded boating facilities; and in a degraded wetland, identified by the Department of Fish and Game pursuant to subdivision (b) of Section 30411, for boating facilities if, in conjunction with such boating facilities, a substantial portion of the degraded wetland is restored and maintained as a biologically productive wetland. The size of the wetland area used for boating facilities, including berthing space, turning basins, necessary navigation channels, and any necessary support service facilities, shall not exceed 25 percent of the degraded wetland.*

(4) *In open coastal waters, other than wetlands, including streams, estuaries, and lakes, new or expanded boating facilities and the placement of structural pilings for public recreational piers that provide public access and recreational opportunities.*

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

(6) *Mineral extraction, including sand for restoring beaches, except in environmentally sensitive areas.*

(7) *Restoration purposes.*

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

Coastal Act Section 30233(a) permits fill in coastal waters if three tests are met. The first test requires that the project fit into one of the eight categories of uses permitted for open coastal water fill enumerated in Coastal Act Section 30233(a). The Commission finds that the proposed aquaculture facilities and operations are clearly allowed under use number (8), "nature study, aquaculture, or similar resource dependent activities."

The second test requires that there be no feasible less environmentally damaging alternative. The proposed abalone grow-out facility is premised on direct interface with marine waters. Pillar Point Harbor provides the necessary saline conditions to support cage culture of abalone, and a protected area in which to place the grow-out structures. Furthermore, the projects are proposed to be located within the harbor where they will have the least amount of impacts (e.g., out of the navigation channel, near the breakwaters and harbor mouth where there is the greatest amount of mixing). The Commission therefore finds that no feasible less environmentally-damaging alternative exists.

The third and final test requires that feasible mitigation measures be provided to minimize adverse environmental effects. The Commission finds that the conditions contained in this permit provide feasible measures to mitigate potential adverse effects on marine resources, commercial fishing, and public access and recreation, including recreational boating, as discussed in Sections 4.4.1 through 4.4.3 of this report.

Hence, the Commission concludes that the project as proposed and conditioned satisfies the three tests of Coastal Act Section 30233(a) and thus is consistent with said section.

4.5 California Environmental Quality Act

As "lead agencies" under the California Environmental Quality Act ("CEQA") the San Mateo County Harbor District and the California Department of Fish and Game certified on July 10, 1996, a mitigated negative declaration for aquaculture operations in Pillar Point Harbor, Half Moon Bay, California.

The Commission's permit process has also been designated by the State Resources Agency as the functional equivalent of the CEQA environmental impact review process. The Commission's permit review process identified numerous impacts that were not resolved in the mitigated negative declaration. Pursuant to section 21080.5(d)(2)(A) of the CEQA and section 15252(b)(1) of Title 14, California Code of Regulations (CCR), the Commission may not approve a development project "if there are feasible alternatives or feasible mitigation measures available which would substantially lessen any significant adverse impact which the activity may have on the environment." The Commission finds that only as extensively conditioned are there no feasible less environmentally damaging alternatives or additional feasible mitigation measures that would substantially lessen any significant adverse impact which the activity may have upon the environment, other than those identified herein. Therefore, the Commission finds that the project as fully conditioned is consistent with the provisions of the CEQA.

NOTE:

The following exhibits and appendices are contained in a separate corresponding packet:

Exhibit 1: "Project Location"

Exhibit 2: "Area in Pillar Point Harbor deemed appropriate for aquaculture by the San Mateo County Harbor District"

Exhibit 3: "San Mateo County Harbor District License Agreement Areas"

Exhibit 4: "Area of Anchorage Lost"

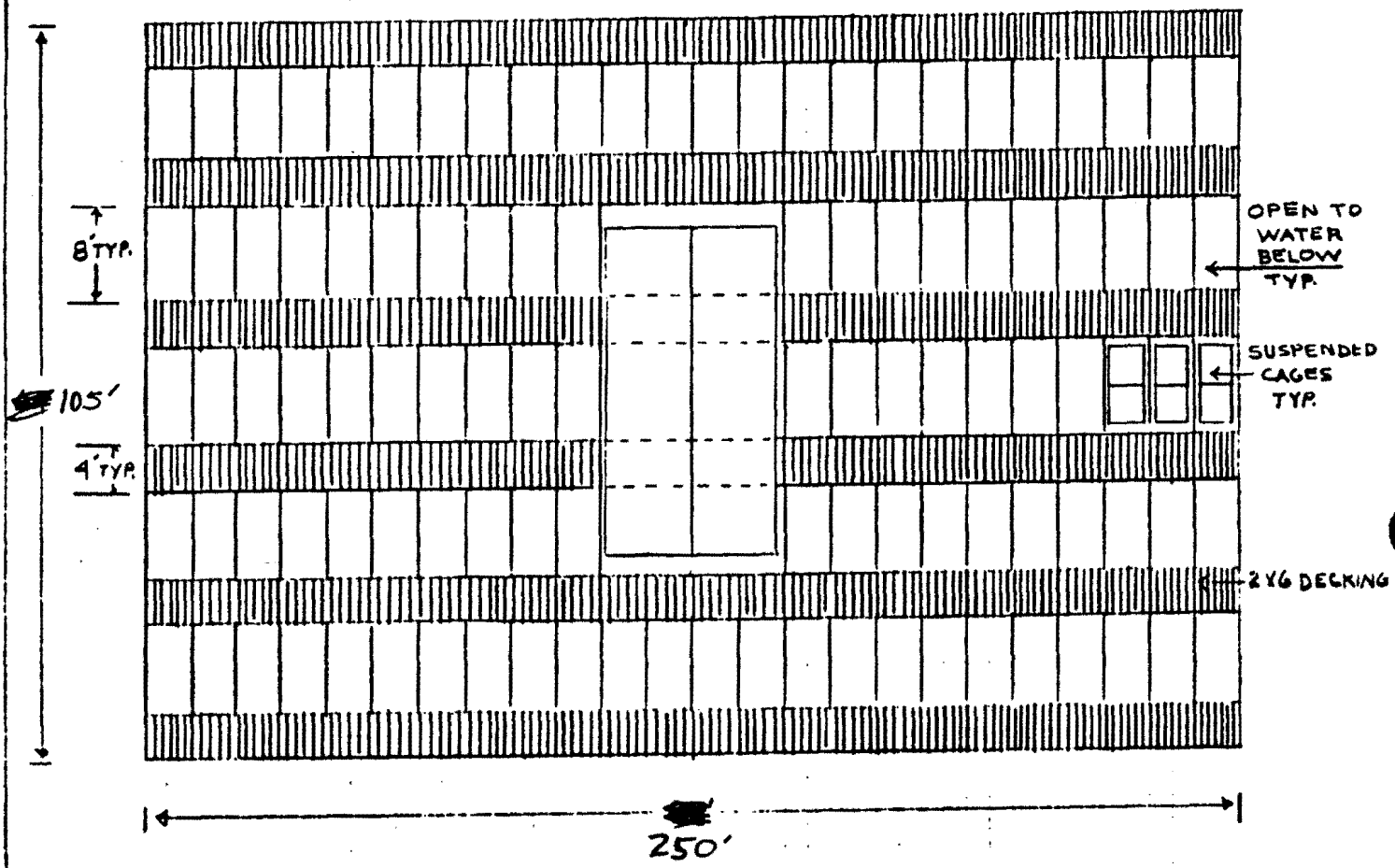
Appendix A. Standard Conditions

Appendix B. CDFG Stock Inspection Procedures for Aquaculture Operations in Pillar Point Harbor

Appendix C. Sampling, Analysis and Reporting Requirements

Appendix D. Substantive File Documents

Appendix E. Correspondence

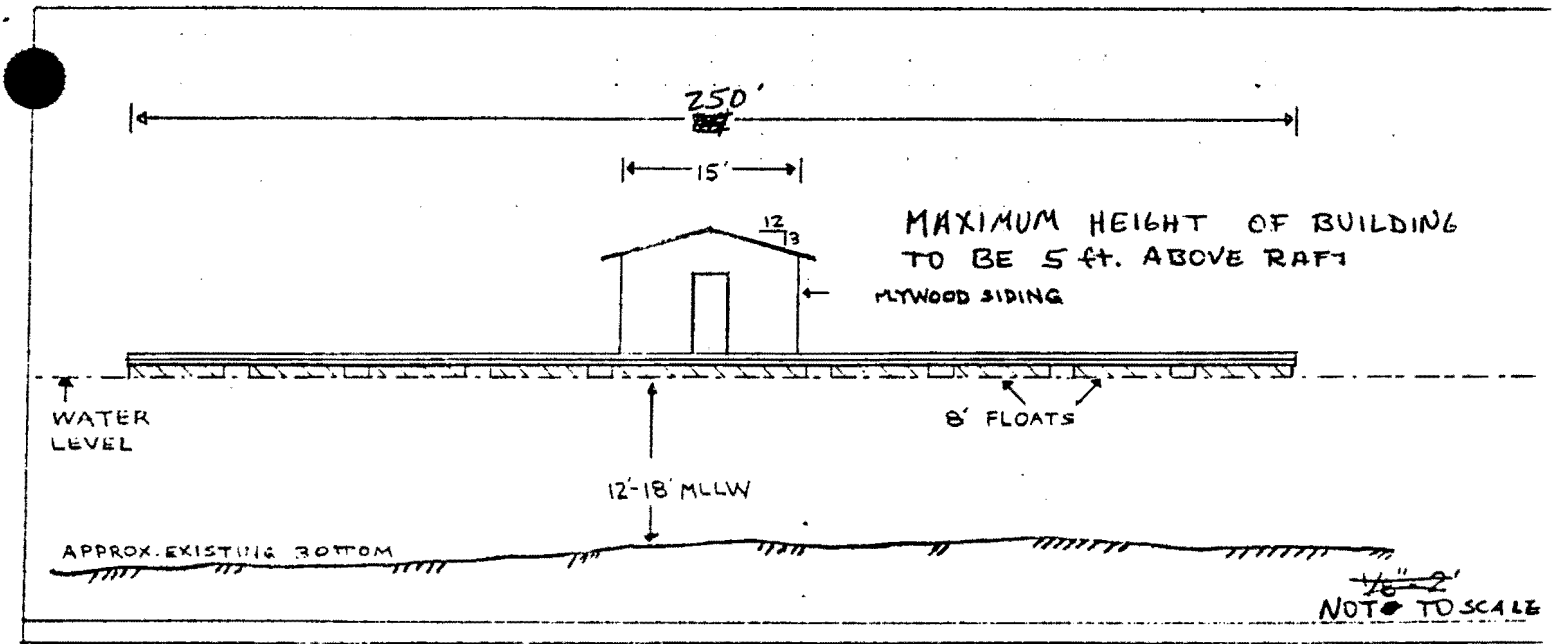


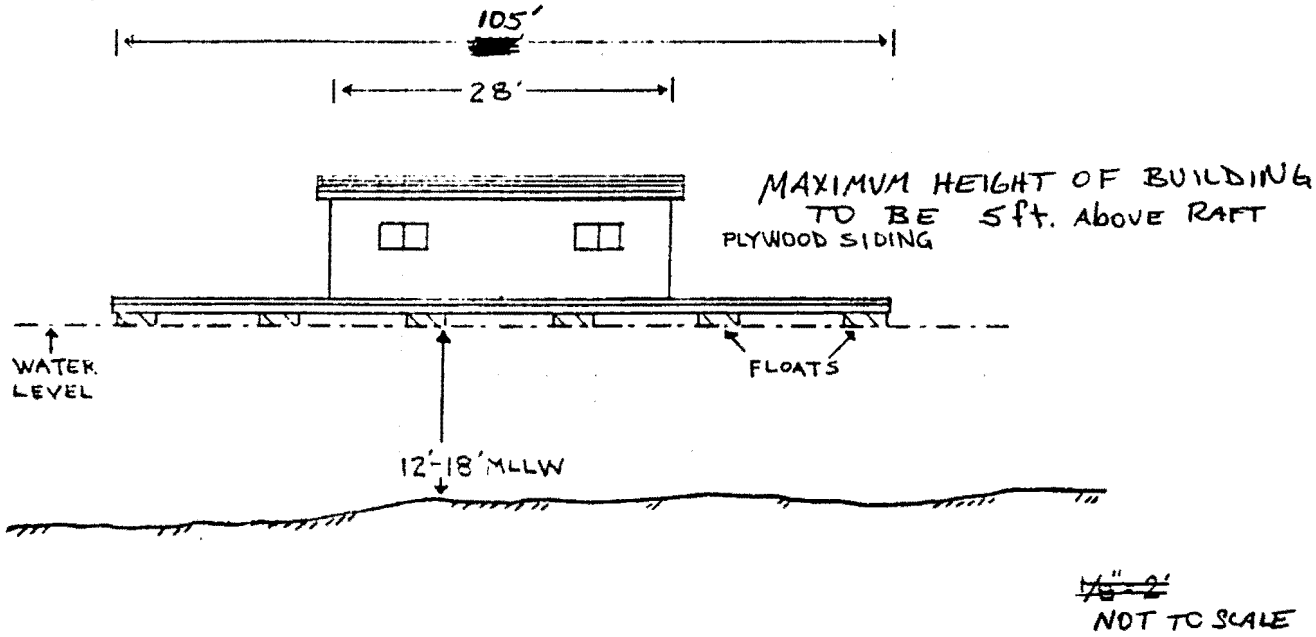
NOT TO SCALE

PURPOSE: COMMERCIALLY RAISE ABALONE IN NATURAL ENVIRNMENT	TOP VIEW LYLE WAGNER 7745 TEXHOMA AVE NORTHRIDGE, CA 91325	PROPOSED ABALONE GROW-OUT FACILITY IN: PILLAR POINT HARBOR AT: HALF MOON BAY COUNTY OF: SAN MATEO SHEET 1 OF 2 DATE 1-11-99

E-98-19

EXHIBIT 5

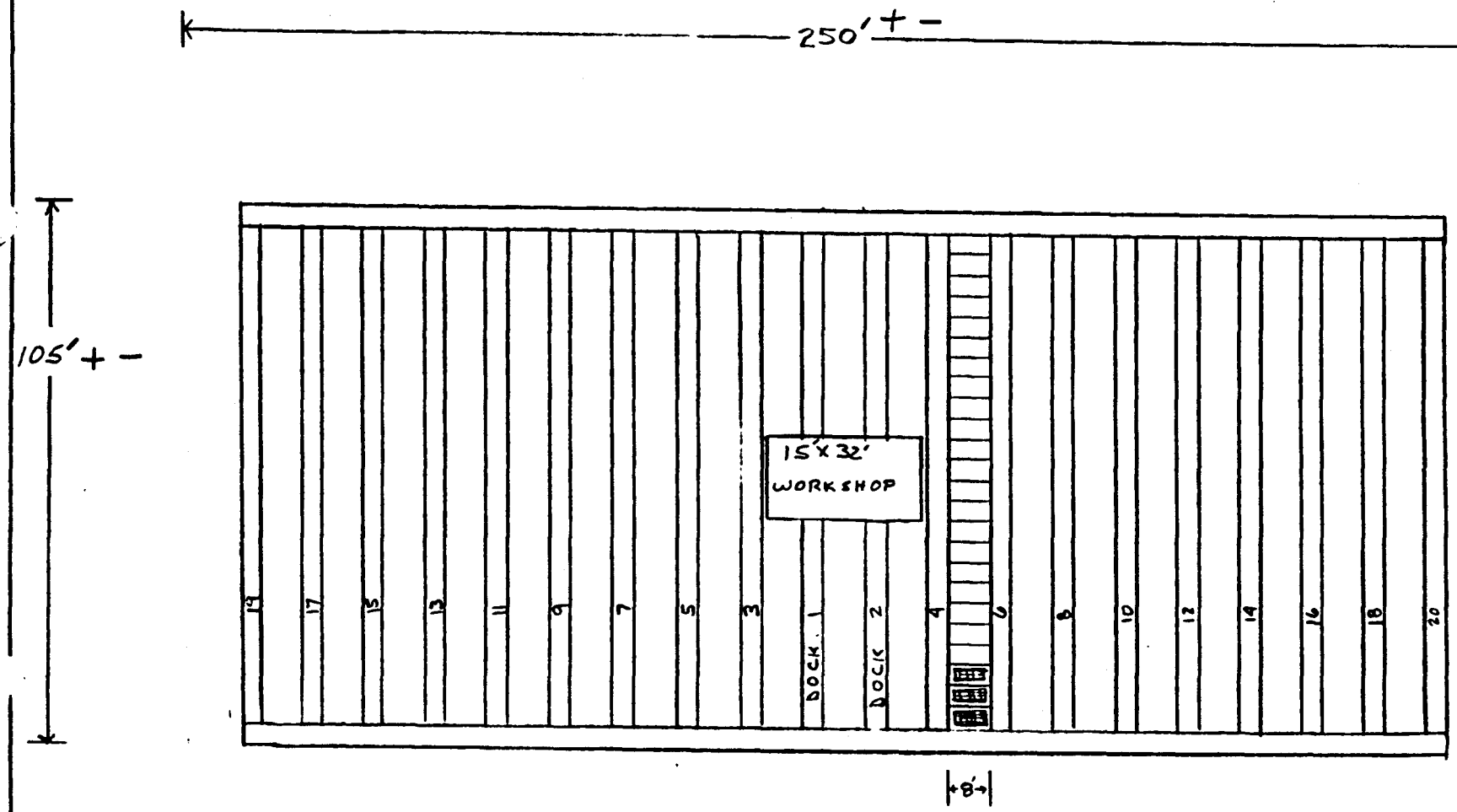




PURPOSE: COMMERCIALLY RAISE ABALONE	ELEVATION VIEWS PHASE 1 LYLE WAGNER 7745 TEXHOMA AVE NORTHRIDGE, CA 91325	PROPOSED ABALONE GROW-OUT FACILITY IN: PILLAR POINT HARBOR AT: HALF MOON BAY COUNTY OF: SAN MATEO CA APPLICATION BY: LYLE WAGNER SHEET 2 OF 2 DATE 1-11-94

E-98-19

EXHIBIT 6



TYPICAL 8' BETWEEN DOCKS WITH SUSPENDED CAGES SEPERATED W/ 2X2

1/32 = 1'

ABALONE GROW OUT FARM
PILLAR POINT HARBOR

TOP VIEW

LYLE WAGNER
818-344-4236 FAX 818-344-1506

OVERHEAD VIEW

MAXIMUM BUILDOUT SIZE

SUSPEND CAGES IN WATER BETWEEN DOCKS
ACCESS BY LIFTING 4X8 PLYWOOD PANALS
2X SUPPORTS REQUIRED FOR PLYWOOD PANALS
TYPICAL DOCK WIDTH - 36"

E-98-19
EXHIB

STATE OF CALIFORNIA—THE RESOURCES AGENCY GRAY DAVIS, *GOVERNOR*

CALIFORNIA COASTAL COMMISSION

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Tu15d

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Staff:	MBM/JD-SF
Staff Report:	05/24/99
Hearing Date:	06/08/99
Commission Action/Vote:	

STAFF REPORT: REGULAR CALENDAR

Application No.: **E-98-20**

Project Applicant: **Christian Zajac (Pearl Abalone Company)**

Location: Northwest corner of Pillar Point outer harbor, and portion of Romeo Pier; San Mateo County. (Exhibits 1 and 2)

Project Description: Anchor and operate a raft grow-out facility in a 98' x 40' (3,920 sq. ft., or 0.09 acre) area of Pillar Point Harbor to culture up to 450,000 red abalone.

Related Approvals: San Mateo County Harbor District. "License Agreement for Submerged Lands and Overlying Water and Other Described Facilities and Equipment for the Purpose of Abalone Aquaculture" (February 6, 1997).

Regional Water Quality Control Board, San Francisco Bay Region. "National Pollutant Discharge Elimination System ("NPDES") Permit No. CA0036285" (June 17, 1998).

California Department of Fish and Game. "1999 Aquaculture Registration."

California Department of Fish and Game. "1999 Kelp Harvesting License."

U.S. Army Corps of Engineers. Regional Permit No. 22808S pending (Public Notice date: December 22, 1997).

Substantive File Documents: **Appendix D**

SYNOPSIS

Note: Exhibits 1 - 4 and Appendices A - E are contained in a separate corresponding packet.

Project Location and Description

Christian Zajac, *dba* "Pearl Abalone," proposes to cultivate up to 450,000 red abalone *(Haliotis rufescens)* from juveniles to maturity in wire mesh cages hung from floating rafts moored within a 98' x 40' area of Pillar Point Harbor.

Pillar Point Harbor is located 20 miles south of San Francisco at the northern end of Half Moon Bay in San Mateo County, adjacent to the Monterey Bay National Marine Sanctuary (Exhibit 1, "Project Location"). It is the only protected ocean harbor between Bodega Bay and Santa Cruz. Existing facilities at the harbor include fish processing and freezing operations, a fuel dock, berths, parking lots, and a public boat launch ramp. The harbor also provides opportunities for commercial fishing, recreational boating and fishing, clamming, sailing, kayaking, windsurfing, marine-related commercial and retail facilities, restaurants, and other visitor-serving activities such as pedestrian and bike paths and birdwatching.

Background

In September, 1994, the San Mateo County Harbor District ("SMCHD") designated an area approximately 500 yards by 750 yards (77.5 acres) in the northwest corner of the outer harbor, adjacent to the outer breakwater, as appropriate for aquaculture facilities (Exhibit 2, "Area in Pillar Point Harbor deemed appropriate for aquaculture by the San Mateo County Harbor District").

As "lead agencies" under the California Environmental Quality Act ("CEQA") the SMCHD and the California Department of Fish and Game ("CDFG") certified on July 10, 1996, a mitigated negative declaration ("MND") for aquaculture operations in Pillar Point Harbor. The MND evaluates operation of up to five abalone facilities within 2.4 acres of the 77.5-acre area of Pillar Point Harbor set aside for aquaculture, with a combined density of up to 5,150,000 abalone at full build-out. Since certification of the MND, one applicant has withdrawn its application, and the total number of abalone proposed has decreased to 2,250,000.

In February, 1997, the SMCHD ratified license agreements with four licensees for areas of submerged lands and overlying water within the designated aquaculture area of the harbor for the purpose of abalone aquaculture. In June, 1998, the Regional Water Quality Control Board ("RWQCB") issued a national pollutant discharge elimination system ("NPDES") permits to each of the four proposed operators.

The Coastal Commission is reviewing the following four applications separately:

- Pacific Offshore Farms (Doug Hayes): Application No. E-98-17 to culture up to 500,000 abalone within a 248' x 60' (14,880 sq. ft., or 0.34 acre) area;
- Princeton Abalone (Jon Locke): Application No. E-98-18 to culture up to 500,000 abalone within a 250' x 75' (18,750 sq. ft., or 0.43 acre) area;
- Blue Pacific Abalone (Lyle Wagner): Application No. E-98-19 to culture up to 800,000 abalone within a 250' x 105' (26,250 sq. ft., or 0.60 acres) area;
- Pearl Abalone Company (Christian Zajac): Application No. E-98-20 to culture up to 450,000 abalone within a 98' x 40' (3,920 sq. ft., or 0.09 acre) area.

This coastal development permit application (No. E-98-20) is only for Pearl Abalone's proposed project.

The individual and cumulative impacts of this project and the other three related aquaculture projects currently proposed in Pillar Point Harbor raise significant Coastal Act issues. The key issues raised are the potential introduction of exotic species into the Monterey Bay National Marine Sanctuary; resource and use conflicts with kelp harvesting; use conflicts with fishermen and women for harbor space; and potential adverse effects to the marine benthic environment.

Aquaculture is a coastal-dependent development and therefore a preferred use under the Coastal Act, but nevertheless must still meet the resource protection standards of the Coastal Act.

Table 1 summarizes project-related significant issues, potential impacts, and the mitigation measures and extensive conditions that the applicant will implement to avoid said impacts or reduce them to a level of insignificance.

The staff recommends approval of the project only as extensively conditioned. The proposed permit conditions include several "prior to permit issuance" requirements that the applicants will not be able to meet immediately. These include obtaining all abalone seed stock from facilities that have been certified by the California Department of Fish and Game as "sabellid-free."

Table 1. Issue Summary: Potential Impacts and Proposed Conditions and Measures

Significant Issue Area	Proposed Special Conditions and Mitigation Measures
Marine Resources: Sabellid Polychaete Worm	Issue: Possible introduction of the sabellid polychaete worm, an exotic species that deforms the shell and ultimately inhibits growth, and would have very serious impacts on stocks of native marine gastropods if spread. Mitigation Measure: **Special Condition 4** requires that all stock come from facilities that have been certified by the California Department of Fish and Game ("CDFG") as "sabellid-free," and then implements the CDFG stock inspection procedures that apply to sabellid-free facilities periodically thereafter as described in Appendix B. This condition provides also that if a sabellid infestation is detected, the cage or container in which the infested animal was found must be immediately removed. **Parts of this condition must be met prior to permit issuance, and it could be over two years before there are any facilities certified "sabellid-free" facilities in the state.** This Commission condition regarding sabellids is more stringent than the CDFG requirements, but staff thinks that it is warranted to use the precautionary principle to protect native stocks of marine resources as required under the Coastal Act. The CDFG thinks their standards—that only the seed stock source, not the entire facility, must meet a pre-transfer inspection—are adequate to protect native marine resources and support aquaculture. **Special Condition 9** prohibits waste disposal, including shells, except as authorized under the NPDES permit. **Special Condition 1** requires evidence that the anchoring design has been approved by the harbor master of the San Mateo County Harbor District ("SMCHD") to ensure that the grow-out structures do not break free.
Marine Resources: Withering Syndrome	Issue: Spread of withering syndrome, a disease established in the wild approximately south of Point San Pedro, near the City of Pacifica in San Mateo County. Mitigation Measure: CDFG has imposed a conditional ban on transfer of seed stock to facilities north of Point San Pedro, near the City of Pacifica in San Mateo County, and between facilities within the area north of Point San Pedro, contingent upon the results of a CDFG health exam showing no signs of rickettsia, the suspected causative agent.
Marine Resources: Water Quality and Benthic Habitat	Issues: Potential for (1) depletion of dissolved oxygen in the water column; (2) benthic impacts due to shading and placement of anchoring devices; (3) changes in the benthic community due to accumulation of detritus and fecal material on the sea floor; and (4) marine debris. Mitigation Measures: **Special Condition 5** imposes dissolved oxygen monitoring, and a benthic monitoring and reporting program per specific standards contained in Appendix C.

Significant Issue Area	Proposed Special Conditions and Mitigation Measures
	Special Condition 6 provides for phased increases in production based on the results of the dissolved oxygen and benthic monitoring required in Special Condition 5. **Special Condition 7** requires cessation of operations if results of the benthic infaunal sampling and analysis indicate a significant change in the infaunal community under the grow-out facilities, and removal of all abalone, grow-out structures, anchoring devices, materials, and equipment within 90 days. **Special Condition 9** prohibits waste disposal, including shells, except as authorized under the NPDES permit. **Special Condition 1** requires evidence that the anchoring design has been approved by the harbor master of the SMCHD to ensure that the grow-out structures do not break free. **Special Condition 10** requires removal of all abalone, grow-out structures, anchoring devices, materials, and equipment upon cessation of operations.
Marine Resources: Kelp Harvesting	**Issue:** The new demand for kelp to feed the abalone, especially in conjunction with the three other proposed abalone aquaculture projects, could lead to adverse impacts on the kelp bed community. **Mitigation Measures:** **Special Condition 8** prohibits harvest, take, or purchase of kelp obtained from (1) open bed #220 between the Monterey breakwater and Point Pinos, and (2) open bed #221 between New Brighton State Beach and Soquel Point (Pleasure Point area), off the Santa Cruz County coast, between December 1 and May 15 (seasonal times of low abundance). The CDFG is reviewing and updating its kelp harvesting regulations, which should be completed with new, more comprehensive standards by the end of 2000. Based on this new forthcoming information, it may be appropriate for the Commission to consider an amendment request for this condition after the Fish & Game Commission has certified the revised regulations.
Commercial Fishing Operations	**Issue:** (1) Potential use conflicts with existing commercial fishing anchorage space in Pillar Point Harbor; (2) increased use of ancillary boating facilities; and (3) potential navigational and safety hazards. **Mitigation Measures:** **Special Condition 1** requires that anchoring designs be approved by the harbor master of the SMCHD. **Special Condition 2** prohibits loading or unloading any equipment or materials on, at or from the public boat launch ramp, docks, or vehicle approach road. It also provides that prior to using the public boat launch ramp to install or remove its grow-out structures, an operator must submit evidence to the executive director that it has coordinated with the harbor master on use

Significant Issue Area	Proposed Special Conditions and Mitigation Measures
	of the public boat launch ramp to conduct said activities (e.g., use during a time when demand for use of the boat launch is anticipated to be light). **Special Condition 3** requires marking of grow-out structures to ensure navigational safety pursuant to all U.S. Coast Guard and harbor master requirements. **Special Condition 9** prohibits waste disposal except as authorized under the NPDES permit.
Public Access	**Issue**: Installation and/or operation of the abalone aquaculture facilities could restrict public access. **Mitigation Measures**: **Special Condition 2** prohibits loading or unloading any equipment or materials on, at or from the public boat launch ramp, docks, or vehicle approach road. It also provides that prior to using the public boat launch ramp to install or remove its grow-out structures, an operator must submit evidence to the executive director that it has coordinated with the harbor master on use of the public boat launch ramp to conduct said activities (e.g., use during a time when demand for use of the boat launch is anticipated to be light).
Recreation	**Issue**: Harvesting the kelp canopy around Monterey Bay could affect recreational opportunities and/or exacerbate existing use conflicts. **Mitigation Measures:** **Special Condition 8** prohibits harvest, take, or purchase of kelp obtained from (1) open bed #220 between the Monterey breakwater and Point Pinos, and (2) open bed # 221 between New Brighton State Beach and Soquel Point (Pleasure Point area), off the Santa Cruz County coast, between December 1 and May 15 (seasonal times of low abundance). The CDFG is reviewing and updating its kelp harvesting regulations, which should be completed with new, more comprehensive standards by the end of 2000. Based on this new forthcoming information, it may be appropriate for the Commission to consider an amendment request for this condition after the Fish & Game Commission has certified the revised regulations.

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Note: Appendices A - E are contained in a separate corresponding packet.

1.0 STAFF RECOMMENDATION

Approval with Conditions

The staff recommends conditional approval of Coastal Development Permit Application No. E-98-20.

Motion:

I move that the Commission approve Coastal Development Permit Application No. E-98-20, subject to the conditions specified below.

The staff recommends a YES vote. To pass the motion, a majority of the Commissioners present is required. Approval of the motion will result in the adoption of the following resolution and findings.

Resolution:

The Coastal Commission hereby **grants** permit No. E-98-20, subject to the conditions below, for the proposed development on the grounds that (1) as conditioned, the development will be in conformity with the provisions of Chapter 3 of the California Coastal Act of 1976 and (2) there are no feasible alternatives or feasible mitigation measures, other than those specified in this permit, which would substantially lessen any significant adverse impact which the activity may have on the environment.

2.0 STANDARD CONDITIONS Appendix A

3.0 SPECIAL CONDITIONS

This permit is granted subject to the following special conditions:

1. **Approval from the Harbor Master of the San Mateo County Harbor District ("SMCHD") on Anchoring Grow-Out Structures. Prior to issuance of this permit,** Pearl Abalone shall submit to the executive director of the Coastal Commission ("executive director") written evidence that its anchoring design has been approved by the harbor master.

2. **Use of the Public Boat Launch Ramp.** Pearl Abalone shall not load or unload any equipment or materials on, at, or from the public boat launch ramp, docks, or vehicle approach road. **Prior to using the public boat launch ramp to install or remove its grow-out structures,** Pearl Abalone shall submit evidence to the executive director that it has coordinated with the harbor master on use of the public boat launch ramp to conduct said activities (e.g., during a time when demand for use of the boat launch is anticipated to be light).

3. **Markings to Ensure Navigational Safety.** Pearl Abalone shall mark its grow-out structures to ensure navigational safety pursuant to all U.S. Coast Guard and SMCHD harbor master requirements.

4. **Sabellid Polychaete Worm -- California Department of Fish and Game ("CDFG")-Approved Transfer and Inspection Procedures.** Pearl Abalone shall only obtain stock from a facility that has been certified by the CDFG as "sabellid-free." **Prior to issuance of this permit**, Pearl Abalone shall submit to the executive director evidence that its source facilities have been certified by the CDFG as "sabellid-free." Pearl Abalone shall then fully adhere to the transfer and inspection procedures contained in **Appendix B**, with the following additional requirement: If a sabellid infestation is detected, Pearl Abalone shall **immediately** remove the cage or container in which the infested animal was found.

5. **Monitoring and Reporting Program.**

   a. Pearl Abalone shall implement dissolved oxygen monitoring as required in its NPDES permit;

   b. Pearl Abalone shall submit and implement plans to conduct **sediment and benthic infaunal surveys** in accordance with the sampling methods and requirements listed in **Appendix C**. The executive director shall respond to all plan submittals within 30 days.

   c. Pearl Abalone shall submit to the executive director for review and approval (1) the technical report prepared pursuant to Provision 2 of its NPDES permit by January 15 of each year, (2) a report of all results from its monitoring program according to the guidelines contained in **Appendix C** within six months of completing each field survey, and (3) a summary of dissolved oxygen monitoring if levels are detected to be below 5.0 mg/l for five consecutive days within five business days.

6. **Annual Phased Increase in Abalone Culturing Operations.** Pearl Abalone shall phase its total number of abalone to a maximum of 800,000, annually increasing growth in 25% increments contingent upon authorization by the executive director of the Coastal Commission as follows:

   - At the end of Year 1 *(year 1 sampling conducted by September 30, 2000; report submitted by March 31, 2001)*, the maximum number of abalone may not exceed 200,000 (25% of 800,000);
   - at the end of Year 2, the maximum number may not exceed 400,000;
   - at the end of Year 3, the maximum number may not exceed 600,000; and
   - at the end of Year 4, the maximum number may not exceed 800,000.

The executive director will base his response to incremental expansion requests on the dissolved oxygen and benthic monitoring required in Special Condition 5, and will give said respond within 30 days of request and report submittal.

7. **Cessation of Operations.** If results of the benthic infaunal sampling and analysis indicate a significant change in the infaunal community under the grow-out facilities as defined in the "Thresholds of Significance" section of **Appendix C**, Pearl Abalone shall remove all abalone, grow-out structures, anchoring devices, materials, and equipment within 90 days.

8. **Kelp Harvesting**. Pearl Abalone shall not harvest, take, or purchase kelp obtained from (1) open bed #220 between the Monterey breakwater and Point Pinos, and (2) open bed #221 between New Brighton State Beach and Soquel Point (Pleasure Point area), off the Santa Cruz County coast, between December 1 and May 15.

   (Note that Pearl Abalone may request that the Commission modify this restriction through an amendment to this permit based upon emergence of new information that may affect kelp harvesting, such as the CDFG's review of its kelp harvesting regulations. The review process for the next such revision will begin summer or fall, 1999, and the regulations are scheduled to be certified by the Fish & Game Commission by the end of Year 2000.)

9. **Waste Disposal.** Pearl Abalone shall not dispose any equipment or waste, including shells, into the marine environment, except as authorized in its NPDES permit.

10. **Facility Removal.** Upon termination of operations, Pearl Abalone shall remove all abalone, grow-out structures, anchoring devices, materials, and equipment within 90 days.

4.0 FINDINGS AND DECLARATIONS

Note: Exhibits 1 - 4 and Appendices A - E are contained in a separate corresponding packet.

4.1 Project Location

Pillar Point Harbor is located 20 miles south of San Francisco at the northern end of Half Moon Bay in San Mateo County. It is the only protected ocean harbor between Bodega Bay and Santa Cruz. Breakwaters separate the harbor into inner and outer areas.

The unincorporated community of Princeton-by-the-Sea lies to the northwest, and the community of El Granada lies to the northeast and east, across Highway 1. The City of Half Moon Bay lies to the south. The harbor is located adjacent to the Monterey Bay National Marine Sanctuary. (Exhibit 1, "Project Location")

Existing facilities at the harbor include fish processing and freezing operations, a fuel dock, berths, parking lots, and a public boat launch ramp. Romeo Pier, which is owned and operated by the San Mateo County Harbor District ("SMCHD"), lies in the northern area of the harbor.

Pillar Point Harbor provides opportunities for commercial fishing, recreational boating and fishing, clamming, sailing, kayaking, windsurfing, marine-related commercial and retail facilities, restaurants, and other visitor-serving activities such as pedestrian and bike paths and birdwatching.

4.2 Provision of an Aquaculture Area within Pillar Point Harbor by the San Mateo County Harbor District, and Preparation of a Mitigated Negative Declaration

In September, 1994, the SMCHD designated an area approximately 500 yards by 750 yards (77.5 acres) in the northwest corner of the outer harbor, adjacent to the outer breakwater, as appropriate for aquaculture facilities (Exhibit 2, "Area in Pillar Point Harbor deemed appropriate for aquaculture by the San Mateo County Harbor District").

As "lead agencies" under the California Environmental Quality Act ("CEQA")[1] the SMCHD and the California Department of Fish and Game ("CDFG") certified on July 10, 1996, a mitigated negative declaration ("MND") for aquaculture operations in Pillar Point Harbor.

In February, 1997, the SMCHD ratified license agreements with four licensees for areas of submerged lands and overlying water within the designated aquaculture area of the harbor for the purpose of abalone aquaculture.

In June, 1998, the Regional Water Quality Control Board ("RWQCB") issued a national pollutant discharge elimination system ("NPDES") permits to each of the four proposed operators.

4.2.1 Description of Project Evaluated in the Mitigated Negative Declaration

The MND evaluates a project defined as operation of up to five abalone facilities within 2.4 acres of the 77.5-acre area of Pillar Point Harbor set aside for aquaculture, with a combined density of up to 5,150,000 abalone at full build-out. A 300-foot buffer will exist between each of the five aquaculture operations/facilities (not between each raft structure within a single facility).

The five facilities that constitute the project defined in the MND include: "U.S. Abalone" (Thomas Ebert), which operated in Pillar Point harbor between 1989 and 1998 without benefit of a coastal development permit, and the proposals of Jon Locke, *dba* "Princeton Abalone," Brian Price and Joel Roberts, *dba* "Deeper Blue Enterprises," Lyle Wagner, *dba* "Blue Pacific Abalone," and Christian Zajac, *dba* "Pearl Abalone Company."

[1] Pursuant to a cooperative agreement as authorized by California Environmental Quality Act Guidelines, Title 14, California Code of Regulations Section 15051(d).

Two of the four applicants, Jon Locke ("Princeton Abalone") and Lyle Wagner ("Blue Pacific Abalone") proposed both onshore and offshore components to their facilities.

Since completion of the MND, the following changes have occurred:

- US Abalone removed all abalone from its raft system in Pillar Point Harbor as of November, 1998, and removed the rafts themselves as of January, 1999;
- Doug Hayes, *dba* "Pacific Offshore Farms," has replaced "Deeper Blue Enterprises" as an applicant;
- Princeton Abalone now proposes only an offshore component; and
- The combined total number of abalone at full build-out has decreased by 56%, from 5,150,000 to 2,250,000. Each applicant now proposes to culture the following maximum number of abalone:

  -Pacific Offshore Farms: up to 500,000 (offshore rafts only);
  -Princeton Abalone: up to 500,000 (offshore structures only);
  -Blue Pacific Abalone: up to 800,000 (onshore and offshore components);
  -Pearl Abalone Company: up to 450,000 (offshore rafts only).

Exhibit 3, "SMCHD License Agreement Areas," shows the proposed facility locations.

Coastal Commission Review
The Coastal Commission is reviewing each application separately:

- Pacific Offshore Farms (Doug Hayes): Application No. E-98-17 to culture up to 500,000 abalone within a 248' x 60' (14,880 sq. ft., or 0.34 acre) area;
- Princeton Abalone (Jon Locke): Application No. E-98-18 to culture up to 500,000 abalone within a 250' x 75' (18,740 sq. ft., or 0.43 acre) area;
- Blue Pacific Abalone (Lyle Wagner): Application No. E-98-19 to culture up to 800,000 abalone within a 250' x 105' (26,250 sq. ft., or 0.60 acre) area;
- Pearl Abalone Company (Christian Zajac): Application No. E-98-20 to culture up to 450,000 abalone within a 98' x 40' (3,920 sq. ft., or 0.09 acre) area.

This coastal development permit application (No. E-98-20) is only for Pearl Abalone's proposed project.

4.3 Project Description for the "Pearl Abalone" Facility

Christian Zajac, *dba* "Pearl Abalone," proposes to cultivate up to 450,000 red abalone (*Haliotis rufescens*) from juveniles to maturity in plastic mesh cages hung from floating rafts moored within a 98' x 40' area of Pillar Point Harbor. The rafts will be comprised of interconnected 200' x 10' modules. (Exhibit 5) The rafts will be anchored in a way that is acceptable and

approved by the SMCHD, pursuant to **Special Condition 1**, to ensure that they will not break free.

4.4 Coastal Act Issues

Coastal Act Section 30411(c) states in part:

> *The Legislature finds and declares that salt water or brackish water aquaculture is a coastal-dependent use which should be encouraged to augment food supplies and to further the policies set forth in Chapter 4 (commencing with Section 825) of Division 1.*

Coastal Act Section 30222.5 states:

> *Ocean front land that is suitable for coastal dependent aquaculture shall be protected for that use, and proposals for aquaculture facilities located on those sites shall be given priority, except over other coastal dependent developments or uses.*

Coastal Act Sections 30250(a) and 30105.5 provide for review of cumulative impacts. Section 30250(a) states in relevant part:

> *New residential, commercial, or industrial development...shall be located...where it will not have significant adverse effects, either individually or cumulatively, on coastal resources.*

Section 30105.5 states:

> *Coastal Act Section 30105.5 defines "cumulatively" or "cumulative effect" to mean the incremental effects of an individual project shall be reviewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.*

Creation and operation of the proposed abalone grow-out facility will constitute aquaculture. Furthermore, ocean-front land includes submerged lands. Hence, the Commission finds that said project is a coastal-dependent use that is given priority status in the Coastal Act pursuant to Coastal Act Section 30222.5.

Therefore, the remainder of this section will analyze the proposed aquaculture project with other coastal-dependent developments and uses, and Coastal Act policies concerning (1) marine resources and biological productivity, (2) existing commercial fishing operations, (3) recreation, including recreational fishing and boating operations, and (4) placement of fill in coastal waters.

Furthermore, analysis will address cumulative impacts where appropriate pursuant to Coastal Act Sections 30250(a) and 30105.5.

4.4.1 Marine Resources

Coastal Act Section 30230 states:

> *Marine resources shall be maintained, enhanced, and where feasible, restored. Special protection shall be given to areas and species of special biological or economic significance. Uses of the marine environmental shall be carried out in a manner that will sustain the biological productivity of coastal waters and that will maintain healthy populations of all species of marine organisms adequate for long-term commercial, recreational, scientific, and educational purposes.*

Coastal Act Section 30231 states:

> *The biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored through, among other means, minimizing adverse effects of waste water discharges and entrainment, controlling runoff, preventing depletion of ground water supplies and substantial interference with surface water flow, encouraging waste water reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.*

There are several potential impacts associated with cultivating abalone in the manner proposed: (1) introduction of exotic parasites, particularly a sabellid polychaete worm, into harbor and marine waters through infected abalone; (2) spread of disease, particularly "withering syndrome;" (3) impaired water quality due to deficient dissolved oxygen levels; (4) impacts to benthic habitat, fish, and invertebrates; (5) reduction in avian habitat area; and (6) overharvesting of kelp in order to feed the abalone.

4.4.1.1 The Sabellid Polychaete Worm[2]

Discovery / Background

Abalone culturists in California began to observe shell deformities and slow growth in their abalone in the late 1980s. The problem was soon attributed to a non-native sabellid polychaete worm from South Africa that was accidentally introduced to California when infested abalone were imported.

The sabellid polychaete worm that parasitizes abalone and other mollusks does not feed on its host, but rather uses the hard shell as an attachment site. The worm itself is a suspension feeder, removing food from the surrounding waters. It damages its host by interfering with natural

[2] Much of the factual information in this section about the sabellid is taken from the following source: "Identification and Management of the Exotic Sabellid Pest in California Cultured Abalone." (Carolynn S. Culver, Armand M. Kuris, and Benjamin Beede. A publication of the California Sea Grant College System. Publication No. T-041; ISBN 1-888691-05-0. (La Jolla, 1997).

growth. Thus, although infestations do not directly affect the quality of the abalone's meat, they can deform the shell to the point where the animal's growth slows or virtually ceases.

Because low infestations are not readily noticeable, the sabellid was spread rapidly through transfer of infested stock to virtually all abalone mariculture facilities in California by the mid 1990's. Various eradication methods were tried, but proved to be infeasible or unsuccessful. Thus, growers have focused on controlling the spread of infestation.

Transmission mechanism

The larval parasite reaches infestation stage when it is able to crawl. Larvae typically crawl to a new location on their hosts' shell or to a new host. Fortunately, the worm's larvae do not swim or float in the water column where they would be widely dispersed by currents. Rather, the benthic larvae crawl along the substrate until they find a suitable host. Transmission does not require direct contact between infested and uninfested animals. Furthermore, once the sabellid has been encased by shell, it no longer requires a living host for its development and reproduction (i.e., empty shells of animals that were infested before they died act as a source of infestation). Thus, larvae can spread if they become dislodged from the host shell or from a substrate, and can be transported by kelp, equipment, wet hands, and infested shells.

Environmental threat

Spread of the sabellid is of particular concern for the following reasons:

- The sabellid is an introduced species. Biological control experiments using native California intertidal and subtidal fishes and invertebrates have not turned up any predators of adult sabellids, though screening for potential predators of the larval stage is needed.
- The biological and ecological characteristics of the sabellid suggest that it has a high potential for successful invasion in California, as demonstrated by its successful infestation and reinfestation of abalone facilities throughout California, and in Mexico and Oregon.
- Sabellid worm larvae accept a broad range of hosts and are capable of infesting several native species of mollusks in addition to abalone, creating a threat of spread from infested aquaculture facilities into wild populations and establishment in state waters. Preliminary experiments conducted by Culver and her colleagues (1997) suggest that bivalves, such as mussels and oysters, are much less susceptible to infestation than snails.

The threat to natural populations is real as evidenced by the fact that the sabellid worm has infested populations of native snails in the rocky intertidal zone within a small cove adjacent to the discharge pipe from an abalone aquaculture facility in central California *(Culver, personal communication February 25, 1999)*. After the infestation was discovered, the aquaculture company in cooperation with the CDFG and researchers at the University of California at Santa Barbara began an eradication program. Several million individuals of the main host species (a turban snail) have been removed from the intertidal zone and destroyed since 1996. The most recent field survey (1998) indicates that there were few infested snails remaining and that there

was no evidence of recent transmission of the parasite as indicated by the absence of young worms *(C. Culver, UCSB, personal communication February 25, 1999).*

Response by the California Department of Fish and Game

The California Department of Fish and Game ("CDFG" or "Department") concluded in May, 1996, that based on continuing investigations by the Department, the aquaculture industry, and the University of California at Santa Barbara, "every abalone aquaculture facility in the state is to be considered positive for presence of the [sabellid] worm unless, and until, inspections by the Department's Fish Health Laboratory ("FHL"), or other FHL approved inspectors, determine otherwise."[3]

To prevent the further introduction and spread of the sabellid worm, and to achieve its goal of complete sabellid eradication by December, 1999, the CDFG has promulgated the following requirements:[4]

> Outplanting of abalone into the wild. The Department will continue to emphasize the requirement of Fish and Game Code §6400 that any abalone to be planted into the wild must be inspected by the Department prior to planting. The Department will only approve the planting of sabellid-free abalone from sabellid-free broodstock.
>
> Approved sabellid eradication and prevention plans. All registered abalone aquaculturists were required to submit to the Department no later than December 31, 1996, a sabellid eradication plan. The FHL will review each plan and assess the risk each facility may represent to California resources. Each facility will then be required to conform to approved cleanup plan. New facilities must obtain an approved sabellid prevention plan. The CDFG received and informally approved Pearl Abalone's sabellid polychaete worm prevention plan in November, 1997.
>
> Certification of facilities as "sabellid-free." On July 7, 1998, the director of the CDFG signed a policy containing procedures for the CDFG to certify facilities as sabellid-free. Each operator must request initiation of CDFG's inspection program to certify a facility as sabellid-free. CDFG personnel will then conduct three inspections over a two-year period. Each inspection will entail inspection of each container (e.g., tank, cage, barrel) in the facility. The sampling protocol will include sufficient replication to allow CDFG to conclude that the stock is sabellid-free with 95% statistical confidence if no sabellids are observed in the sample.

Commission evaluation and mitigation of impacts

The CDFG aquaculture team has made significant progress in developing and implementing procedures for the sampling, reduction, and eventual eradication of sabellid worms in existing shore facilities, and for preventing new infestations. However the sabellid problem is not solved and the risks to the marine resources of the Monterey Bay Marine Sanctuary are real.

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[3] Memo to all registered abalone aquaculturists from Jacqueline E. Schafer, CDFG, dated May 20, 1996.

[4] Memos to all registered abalone aquaculturists from Jacqueline E. Schafer, CDFG, dated May 20, 1996, and December 6, 1996. Personal communication with Fred Wendell, Chair, CDFG Aquaculture Team, on July 17, 1998.

How serious is the risk to natural populations from the proposed aquaculture facilities? To answer this question one needs information regarding the likelihood of infested animals being placed in cage culture, the likelihood of sabellid larvae escaping the cages, and the likelihood of escaped larvae infesting natural populations.

If the animals used for cage culture come from facilities that contain the parasite, the chance of introducing infested animals to Pillar Point Harbor is small but real. Shore facilities are managing infestation through cultural practices *(F. Wendell, CDFG, personal communication February 23, 1999).* The small abalone used as "seed" are kept in tanks which are isolated from the tanks housing larger animals known to be infested. Prior to transfer, these "seed" animals are inspected by the CDFG. They examine a sufficient number of individuals that there is no more than a 1% probability of missing an infestation rate of 5% or greater.

Such sampling programs are based on the assumption that infested animals are randomly distributed within the population and that each individual within the population has an equal change of being sampled. In practice, infested animals probably occur in clusters because of the manner of larval dispersal, and truly random samples are difficult to collect. In addition, recently attached worms are difficult to see. Therefore, it is the professional opinion of the Commission's marine ecologist that the actual probability of missing a 5% infestation is somewhat larger than 1% by an unknown amount.

If infested abalone are introduced to culture facilities in Pillar Point Harbor, the chance of the larvae escaping into the natural environment is near certainty. Culver et al. (1997) suspended infested abalone in cages above uninfested animals. All the individuals below the suspended cages became infested. The larva apparently fall into the water column either because of physical disturbance or as part of their natural behavior. The worms can also travel on shell and kelp debris.

After falling to the sea floor in the harbor, the sabellid larvae must then find a suitable host. The probability of this occurring is low. The harbor bottom is composed of sand and mud and gastropods occur in low density. A second avenue of dispersal is on kelp debris that gets washed out of the harbor. The information needed to estimate the probability of dispersal out of the harbor on kelp debris is not available. Finally, there is the possibility of culture rafts breaking loose in storms. This has occurred in the past and some of the abalone were not recovered *(F. Wendell, CDFG, personal communication February 23, 1999).* In these previous occurrences, the rafts remained within the harbor, but on one occasion the raft drifted onto the breakwater where snails would be expected to occur.

As stated above, the CDFG's established procedures to certify an abalone-culturing facility as sabellid-free entail three inspections by CDFG personnel over a two-year period once the operator has requested initiation of the inspection program. Currently, only two facilities in the state have requested said initiation as of February 25, 1999. The CDFG inspected one facility twice and found it to be sabellid-infested. The CDFG will inspect the other facility soon.

Although said certification could occur more quickly than two years if an existing facility were to shut down and be kept dry for a long enough period to ensure that all sabellids were killed, or if a new facility were to be built, it will likely be two years before stock from a certified sabellid-free facility is available.

Nevertheless, considering the following factors, the Commission finds it necessary to require in **Special Condition 4** that prior to issuance of this permit, Pearl Abalone prove it can and will obtain all stock from a facility that has been certified by the CDFG as "sabellid-free" in order to ensure that implementation of said project will maintain marine resources, protect the adjacent marine sanctuary, and maintain healthy populations of existing species of marine gastropods as required by Coastal Act Section 30230:

- the sabellid worm has not yet been eradicated;
- the probability of introducing the sabellid parasite into the natural environment as a result of aquaculture activities in Pillar Point Harbor is small but real;
- potential spread of the sabellid poses a documented environmental threat;
- a successful introduction of this non-native sabellid parasite into native populations of mollusks could have extremely serious consequences;
- once established, eradication of the sabellid demands drastic measures; and
- Pillar Point Harbor is located directly adjacent to the Monterey Bay National Marine Sanctuary, an ocean currents connect harbor and sanctuary waters.

Furthermore, the Commission staff has worked with the CDFG's aquaculture team to develop abalone transfer and inspection procedures appropriate for Pillar Point Harbor culturing operations. The goals were to (1) address the frequent stocking of rafts with stock from various existing facilities; (2) where applicable, require that facilities request as soon as possible to initiate the inspections necessary to become certified as sabellid-free; and (3) remove sabellid-infested animals, should they be discovered, as soon as feasible. The Commission imposes these transfer and inspection procedures, which are contained in **Appendix B**, as **Special Condition 4**. **Special Condition 4** further requires that if a sabellid infestation is detected, Pearl Abalone shall immediately remove the cage or container in which the infested animal was found.

In addition, the Commission imposes **Special Condition 9**, which prohibits Pearl Abalone from discharging abalone shells into the marine environment.

Finally, the Commission imposes **Special Condition 1**, which requires evidence that Pearl Abalone's anchoring design has been approved by the harbor master of the SMCHD to ensure that its grow-out structures do not break free.

Project consistency with Coastal Act policies

The Commission finds that with the requirements of **Special Conditions 1, 4, and 9,** the proposed project will be carried out so as to avoid to the greatest extent feasible the introduction of sabellid worms into marine waters, and ensure that the facility remains sabellid-free. The

Commission therefore finds that the proposed project as extensively conditioned can be carried out in a manner that will sustain and maintain the biological productivity and quality of coastal waters, and maintain healthy populations of all species of marine organisms as required by Coastal Act Sections 30230 and 30231.

4.4.1.2 Withering Syndrome

Background
First discovered in 1986, withering syndrome caused populations of black abalone from San Diego to Cayucos, San Luis Obispo County, to decline by as much as 99 percent. Withering syndrome is not harmful to humans, but can cause abalone to lose weight and eventually die of starvation.

Recent identification and action by the CDFG[5]
The CDFG first determined that withering syndrome was well-established in the wild south of the City of Carmel, a rough dividing point between endemic and clear areas. As an immediate stop-gap measure, on August 26, 1998, the CDFG director placed a conditional ban on transfer of seed stock to facilities north of Carmel and between facilities within the area north of Carmel. The condition allows transfers only if a CDFG health exam does not find signs of the rickettsia bacteria, the likely causative agent for withering syndrome (only small seed, <20 mm will pass this test).

Recently, however, some locations north of Carmel have shown signs of both withering syndrome and rickettsia. In response, on March 22, 1999, the CDFG director adjusted the dividing line between endemic and clear areas northward to Point San Pedro, near the City of Pacifica in San Mateo County (thus the conditional ban on seed stock transfer is now based on Point San Pedro, not the City of Carmel).

Meanwhile, the CDFG has been implementing the following actions to confirm the area in which the disease is established and develop appropriate eradication measures:

1. Developing a sampling plan for wild abalone stocks in the north (sampling mainly around facilities, but also at some sites well-removed);
2. Conducting research to determine all transmission pathways (suspect water-borne transmission through water column); and
3. Conducting research to provide certainty that rickettsia is actually the causative agent.

Research results will not be available for at least six months to one year, at which time the CDFG's Aquaculture Disease Committee will review the data and make further recommendations. In the interim, the conditional ban will remain in effect, and the approximate dividing line at Point San Pedro between endemic and clear areas may be adjusted northward if necessary.

[5] Telephone communication with Fred Wendell, Aquaculture Coordinator, CDFG, on October 26, 1998.

Project consistency with Coastal Act policies
Pillar Point Harbor lies south of Point San Pedro, in an area within which the CDFG has determined withering syndrome to be endemic. Any transfer of Pearl Abalone's stock to locations north of Point San Pedro, into areas clear of withering syndrome, would be subject to the conditional ban imposed by the CDFG (i.e., transfers would not be allowed unless a health exam does not find signs of rickettsia, the likely causative agent for withering syndrome).

The Commission thus finds that the proposed project as subject to the CDFG-imposed conditional ban will be carried out in a manner that will maintain healthy populations of all species of marine organisms as required by Coastal Act Section 30230.

4.4.1.3 Water Quality and Benthic Habitat

An aquaculture facility, such as the one proposed by Pearl Abalone, has the potential to reduce the dissolved oxygen concentration in the water column and cause adverse changes to the benthic community.

Species and uses potentially affected[6]
Pillar Point Harbor supports ocean, commercial, and sport fishing; marine habitat; fish migration; preservation of rare and endangered species; contact and non-contact water recreation; shellfish harvesting; fish spawning; and wildlife habitat.

The harbor supports a diverse population of benthic fauna that includes polychaete worms, crustaceans (e.g., crabs, shrimp), and mollusks (e.g., snails, bivalves). Other invertebrates include anemones and seastars.

The harbor is also an important nursery area for juvenile fish in the summer. Flatfish, including English sole, various rockfish species, members of the surfperch family, and Pacific herring are abundant in the summer. Smaller numbers of many other significant commercial and sport species are also found. Starry flounder and topsmelt are abundant in winter, and northern anchovy, Pacific sardine, mackerel, and striped bass are also present.

Potential for depletion of dissolved oxygen in the water column
The dissolved oxygen ("DO") concentration in water is critical to the health of marine organisms; deficient DO concentrations could result in both lethal and sublethal effects. As a general rule, DO levels less than 5.0 mg/l are unacceptable to aquatic organisms.[7] The San Francisco Bay Region Basin Plan establishes a DO objective of 5.0 mg/l *(Chapter 3, p. 3-3)*, and the California Ocean Plan sets forth that the DO concentration shall not at any time be depressed

[6] According to data from the following sources, referenced in the *Revised Expanded Initial Study for Abalone Aquaculture Operations, Pillar Point Harbor, San Mateo County* (Huffman & Associates, June, 1996): (1) *Biological Survey of Pillar Point Harbor*; Water Quality, Bird and Mammal Survey, Fish Survey, Benthic Survey, Diver Transects (Marine Ecological Institute, 1976); (2) Pillar Point Harbor Water Quality Data Summary 1990-1993 (Entrix, Inc.); (3) Bird Sampling Data – Mitigation Monitoring Program for Pillar Point Harbor Boat Launch Ramp Mitigation Site (Entrix, Inc., 1993); (4) Pillar Point Boat Ramp Facility Mitigation Site Monitoring Program Baseline Data Report (Entrix, Inc., June 24, 1991).

[7] Stickney, Robert. *Principles of Aquaculture.* (John Wiley and Sons, 1994).

more than 10 percent from that which occurs naturally as the result of the discharge of oxygen-demanding waste materials *(Chapter II, Section D, No. 1; p. 4)*. Abalone can tolerate lower DO levels than fish.

At very high numbers, the respiration of the abalone themselves could reduce DO levels in the water column. In addition, cage culture operations introduce the potential that abalone feed and fecal material could accumulate on the sea floor within the harbor. High concentrations of particulate organic material result in increases in decay organisms which consume available DO. Calm, poorly-mixed environments are especially susceptible to low DO levels. Increases in organic matter in bottom sediments could result in a local reduction in available DO from the surrounding environment below the level necessary to support local plant and animal species.

The MND contains a simple model of abalone DO uptake versus DO availability in the harbor. This model ultimately suggests that the potential for depletion of dissolved oxygen in the water column throughout the harbor by up to 5,150,000 abalone will not be significant.[8]

Potential for benthic impacts
The MND states that the proposed raft structures will create shade that could adversely affect algae and benthic organisms. Also, placement of the raft anchoring devices will change the existing substrate.

Most importantly, the proposed facilities could impact the benthic community via disturbance resulting from the potential build up of detritus, including kelp and/or substitute feed, and fecal material on the seafloor. There is general consensus that substantial organic enrichment causes deleterious changes in the community of organisms that lives in sand or mud.

For example, said accumulation could favor species that thrive in disturbed organically rich sediments. In addition, large accumulation of organic material could result in decreases in DO near the bottom due to the respiration of decay organisms, and cause a loss of most of the natural invertebrate community in the sediments. Furthermore, invertebrate community changes could lead to changes in the fish community (e.g., change the forage value of the seafloor to bottom-feeding fishes).

Finally, the grow-out structures and associated equipment could become marine debris if they are not properly removed upon cessation of operations.

Provisions and prohibitions contained in the NPDES permits
Since the MND analysis, the collective abalone total for all proposed abalone operations at Pillar Point Harbor has been reduced to 1,950,000 abalone at full buildout (of which Pearl Abalone will produce 450,000, or about 23%). Notwithstanding the decrease in abalone production, the NPDES permits granted to the four proposed aquaculturists state that some concern about

[8] There was a lot of initial concern over DO availability because a conversion error in the MND's (Huffman report's) model calculations--using the density of water instead of the density of oxygen--led to a gross underestimate of available DO and the suggestion that 5,150,000 abalone have the potential to severely impact DO levels in the harbor with resultant negative impacts to the biota. Correction of said error shows that there is actually about 700 times more available oxygen than first calculated (36,000,000 liters instead of 52,000 liters).

potential DO depletion still remains (but cite the initial suggestion of the MND DO model, which has since been found to grossly underestimate the amount of available DO – See Footnote 8).

The NPDES permits also state that intensive monitoring of DO concentrations, benthic infauna, and bottom sediment will provide a suitable index of how the proposed facilities may affect benthic fish communities residing in the harbor.

Thus, Pearl Abalone's NPDES permit, like those the RWQCB granted to the other three proposed operators, requires several mitigation measures, consistent with those identified in the MND:

- Monitoring Program. Each operator shall sample DO levels and water temperature on a daily basis, and periodically sample bottom sediment and benthic infauna as specified in its NPDES permit to evaluate the significance of potential project-related impacts and effects.

- Annual Reporting. Each operator shall submit an annual technical report to the RWQCB's executive officer that (i) summarizes the past year's monitoring data and documents that all receiving water limitations are being met; (ii) summarizes potential water quality problems and describes how they will be solved; and (iii) proposes an increase in number of abalone to be grown in the coming year. Production shall not be increased until the executive officer accepts the proposal in the technical report.

- Phased Growth in Abalone Culturing Operations. Each operator shall phase production during its five-year NPDES permit period (June, 1998 – June, 2003), increasing growth annually in 20% increments contingent upon the executive officer's authorization.

Pursuant to another measure, on December 22, 1998, Pearl Abalone submitted a DO contingency plan to the RWQCB and the Coastal Commission staff. The plan states that if DO levels drop to below 5.0 mg/l, Pearl Abalone will artificially oxygenate the water at the site by using marine battery-powered air pumps. The pumps have plastic tubing that can be lowered down four feet with weighted air diffusers.

Commission evaluation and mitigation of impacts

Potential depletion of dissolved oxygen in the water column

Based on the MND's DO model (which concludes that the potential for depletion of DO in the water column throughout the harbor by up to 5,150,000 abalone will not be significant--see Footnote 8), it seems unlikely that Pearl Abalone's grow-out of up to 450,000 abalone or the four potential operator's cumulative total grow-out of up to 1,950,000 abalone will cause significant depletion of DO in the water column throughout the harbor. This conclusion is nevertheless based upon the findings of one simple model.

The Commission therefore imposes several special conditions to ensure that the proposed projects will not significantly deplete DO from the water column. To detect any local DO depletion, the Commission imposes **Special Conditions 5(a) and 5(c)**, which incorporate the

DO monitoring required by Pearl Abalone's NPDES permit and provide for reporting of monitoring results.

To further mitigate any DO depletion not satisfactorily mitigated by Pearl Abalone's aerating its abalone cages, the Commission imposes **Special Condition 6**, which institutes phased annual increases in total abalone stock contingent upon executive director approval. The executive director shall base said approval on the results of the dissolved oxygen and benthic monitoring required in Special Condition 5.

Potential benthic impacts due to shading and placement of the anchoring devices
With respect to potential impacts to benthic habitat due to shading and placement of anchoring devices, the Commission finds said impacts will not be significant for the following reasons: (1) the 300-foot buffers between each facility will reduce shading; (2) shading impacts will not have a significant effect because water clarity is very poor near the harbor bottom most of the time; (3) placement of rafts will not prevent use of the substrate underneath; and (4) the anchoring devices will require a very small amount of bottom area.

Potential benthic impacts due to accumulation of kelp and abalone feces
The proposed facilities, both individually and cumulatively, could adversely affect the benthic community by causing a build up of detritus and fecal material on the seafloor. There is general consensus that substantial organic enrichment causes deleterious changes in the community of organisms that live in sand or mud. The Commission therefore finds that each operator must conduct independent benthic monitoring, and associated annual reporting, to ensure that its facility is not significantly affecting Pillar Point Harbor's existing benthic community. Operators can coordinate the work of monitoring contractors to reduce costs.

Organic enrichment can be monitored directly by taking sediment samples and analyzing them for total organic carbon ("TOC"). There is evidence, however, from studies around a fish farm that changes in the benthic community can take place beyond the area within which increases in TOC are obvious (Weston 1990). In order to strengthen inferences based on samples taken during the period of aquaculture operations, a preliminary survey of the benthic community is considered necessary.

The Commission thus imposes **Special Condition 5(b)** which requires Pearl Abalone to conduct initial and subsequent sediment and benthic infaunal surveys in accordance with the sampling methods and requirements listed in **Appendix C**. The Commission also imposes **Special Condition 5(c)** which provides for reporting of monitoring results.

Furthermore, the Commission imposes **Special Condition 7** which states that if results of the benthic infaunal sampling and analysis indicate a significant change in the infaunal community under the grow-out facilities as defined in the "Thresholds of Significance" section of **Appendix C**, Pearl Abalone shall remove all abalone, rafts and associated structures, materials, and equipment within 90 days.

In addition, the Commission imposes **Special Condition 9**, which prohibits waste disposal except as authorized under the NPDES permit.

Finally, **Special Condition 6** institutes phased annual increases in total abalone stock contingent upon executive director approval. The executive director will base his response to incremental expansion requests on the dissolved oxygen and benthic monitoring required in Special Condition 5, and will give said respond within 30 days of request and report submittal.

Pearl Abalone may apply for an amendment to this permit that seeks to modify or delete Special Condition 5 based on an alternate way to meet the intent of the requirements of Special Condition 5 and Appendix C. One such alternative could be demonstration that Pearl Abalone has modified its facility and/or cage design to ensure that only a negligible amount of waste kelp or abalone feces will be released into the marine environment.

Potential marine debris

To avoid any potential residual marine debris, the Commission imposes **Special Conditions 1 and 10. Special Condition 1** requires evidence that the anchoring design has been approved by the harbor master of the SMCHD to ensure that the grow-out structures do not break free. **Special Condition 10** requires, upon cessation of abalone grow-out operations, Pearl Abalone to remove all abalone, grow-out structures, anchoring devices, materials, and equipment within 90 days. Pearl Abalone's license agreement with the SMCHD provides for an "environmental protection and remediation fund," which will ensure implementation of Special Condition 10.

Consistency with Coastal Act policies

The Commission finds that with the requirements of **Special Conditions 1, 5, 6, 7, 9, and 10**, the proposed project as reviewed pursuant to Coastal Act Section 30105.5 in conjunction with three concurrent projects *(CDP Application Nos. E-98-17, E-98-18, and E-98-19)*, which will be conditioned similarly, will be carried out in a manner that maintains marine resources, sustains the biological productivity and quality of coastal waters, and maintains healthy populations of all species of marine organisms as required by Coastal Act Sections 30230 and 30231.

4.4.1.4 Avian Habitat

Avian species that use Pillar Point Harbor

Pillar Point Harbor provides refuge, foraging and roosting habitat for a great diversity of migrating and wintering birds. The harbor is unique along the San Mateo County Coast in providing calm waters of mixed depths, attracting many bird species that are otherwise rare or unknown in the area.

Furthermore, several species of special concern use the harbor or surrounding areas: the western snowy plover *(Charadrius alexandrinus nivosus)* (federally listed as threatened, California species of special concern) winters at the northwest beach area between September and mid April; the brown pelican *(Pelicanus occidentalis)* (federally and state listed as endangered) uses the harbor area in late summer, fall, and early winter; and the marbled murrelet *(Brachyramphus marmoratus)* (state listed as endangered, federally listed as threatened), has been sighted in the Half Moon Bay and Pillar Point areas.

Bird census data reveals that the harbor's four habitat types support the following percentages of bird use, respectively: Open water, 51%; shoreline edges, 30%; sandy areas, 12%; and rock areas, 7%.[9]

The MND and several interested parties have identified concerns about the proposed project's potential impacts on avian species.

Loss of avian habitat due to placement of the physical structures (e.g., rafts)
The raft or ladder structures used in the aquaculture facilities will decrease the amount of open water habitat available for birds to feed, dive, and rest in the outer harbor.

Loss of open-water habitat is especially important because many species (e.g., loons, scaup, scoters, mergansers, grebes) do not sleep or rest on land or a hard surface such as the proposed abalone rafts. They remain on the water where they can dive or take flight, using land only to nest. *(Letter from Eileen Jennis-Sauppe, Sequoia Audubon Society, to James Stilwell, SMCHD, dated December 19, 1995)* Other species such as cormorants and pelicans may, however, use the rafts as additional roosting areas.

Furthermore, all species that use the harbor require unobstructed open-water areas to taxi for take-off (only puddle ducks such as mallards, pintails and teals that feed in shallow water and marshes take direct flight upward). *(Letter from Eileen Jennis-Sauppe, Sequoia Audubon Society, to James Stilwell, SMCHD, dated December 19, 1995)*

Interested parties have identified the following other impacts and requirements: (1) the birds cannot go eastward, out of the harbor, because the main boat channel is there, causing too much disturbance; (2) many birds that spend their entire lives at sea, nesting on islands, need to rest in the harbor during heavy storms; and (3) an adequate buffer must be maintained between the rafts and the western beach.

Commission evaluation of impacts
Placement and operation of Pearl Abalone's grow-out structures will occupy 0.09 acre of open water habitat, which is only about 0.16% of the 58 acres of biologically productive area in the northwest corner of the harbor. Furthermore, birds will not be precluded from using the buffer areas between each grow-out facility.[10] Thus the actual area of open water habitat precluded by all four proposed operations will be only 1.46 acres, or about 2.5 percent of the 58 acres of biologically productive area in the northwest corner of the harbor.[11]

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[9] Results of 1990-1991 baseline study bird census data (Entrix, 1991), as contained in the *Revised Expanded Initial Study for Abalone Aquaculture Operations, Pillar Point Harbor, San Mateo County* (Huffman & Associates, June, 1996, p. 27).

[10] E-mail correspondence from Gary Page, Point Reyes Bird Observatory, to Moira McEnespy, CCC, dated January 20, 1999, stating the opinion that all birds could get off the water with a 300-foot take-off distance (although not necessarily endorsing said buffer distance).

[11] Pacific Offshore Farms, 0.34 acre; Princeton Abalone, 0.43 acre; Blue Pacific Abalone, 0.60 acre; and Pearl Abalone, 0.09 acre.

In addition, all structures will be placed at least 500 feet from the western beach area, the second most highly-used habitat type.

Consistency with Coastal Act policies
The Commission thus finds that, for the reasons stated in its evaluation above, placement and operation of the proposed project as reviewed pursuant to Coastal Act Section 30105.5 in conjunction with three concurrent projects *(CDP Application Nos. E-98-17, E-98-18, and E-98-19)* will be carried out in a manner that will maintain healthy bird populations as required by Coastal Act Section 30230.

4.4.1.5 Kelp Harvesting

Regulatory framework
Fish and Game Code §6653 and §6750 provide the Fish and Game Commission ("F&GC") with authority to establish regulations as may be necessary to ensure the proper harvesting of kelp and aquatic plants for commercial and sport purposes. [12] The CDFG is the lead agency responsible for managing both giant kelp *(Macrocystis pyrifera)* and bull kelp *(Nereocystis luetkeana)* pursuant to commercial and sport fishing regulations *(14 CCR §30 and § 165).* The F&GC last amended these regulations in March, 1996, in accord with the California Environmental Quality Act.[13].

To manage commercial harvesting, the CDFG charts and numbers the state's kelp beds. Official beds are designated in Section 165.5(j) and (k) of Title 14, California Code of Regulations. Beds are actually geographic areas, not individual patches, and thus vary in length and contain differing amounts of kelp canopy that change with time. Although one management objective is to "endeavor to maintain a maximum sustained harvest and utilization of the state's kelp resources,"[14] the CDFG has no fixed standard for sustainable harvest because kelp production is so highly variable.

The CDFG uses aerial surveys to assess the kelp resources; the extent of giant kelp is determined by measuring the kelp bed's surface canopy on the photographs. Aerial surveys are scheduled to be conducted every five years, subject to financial constraints; the last survey of all designated beds was done in 1989. The F&GC then designates which kelp beds may be harvested, and places limitations on the method of harvest:

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[12] Under §6650, the F&GC may establish license and permit requirements; establish fees and royalties; require report of take; establish open and closed seasons; establish or change possession limits; establish and change area or territorial limits for harvesting; and prescribe the manner and the means of taking kelp and aquatic plants for commercial purposes. Under §6750, the F&GC may establish, extend, shorten or abolish open seasons and closed seasons; establish, change, or abolish bag limits, possession limits, and size limits; establish and change areas or territorial limits for taking; and prescribe the manner and means of taking kelp and aquatic plants for recreational purposes.

[13] "Giant and Bull Kelp Commercial and Sport Fishing Regulations." *Section 30 and 165, Title 14, California Code of Regulations.* California Department of Fish and Game. Final Draft Environmental Document (January, 1996).

[14] Ibid., pp. 2-6.

- Kelp beds are designated as either (a) available for lease and exclusive harvest by the lessee, (b) open beds available for harvest by any licensed kelp harvester, or (c) closed beds that cannot be harvested for environmental reasons.

  A kelp harvesting license from the CDFG is required to harvest kelp commercially from designated "open" beds. The license enables the licensee to harvest to the limit the regulations allow at designated open beds on a "first-come, first-served" basis. If a bed has been cut to the limit the regulations allow, the licensee is prohibited from harvesting and must go to another bed. Under the "open" designation, a bed's canopy could be heavily or completely removed by harvest. Sixty percent of the kelp beds in California are set aside for small harvesters.[15]

- Kelp plants (giant and bull) may be cut no deeper than four feet below the ocean surface. For giant kelp, this restriction protects the plants' holdfasts, juvenile and reproductive blades, and young subsurface plants from being harvested before reaching maturity. Bull kelp is killed by this procedure.

- The F&GC may recommend temporary closure of a kelp bed for up to one year if it finds a bed has been significantly damaged (e.g., via storm, oil spill, or harvesting activities). Notice of the closure is sent to all licensed harvesters.

Kelp cannot be cut or harvested in marine life refuges, ecological reserves, national parks, or state underwater parks.

Finally, the F&GC requires harvesters to keep harvest and landing records, which record, among other statistical information, the wet weight of harvest, date of landing, and bed of origin. Harvest records are submitted once per month.

New project-related demand for kelp
There are fairly widely-varying estimates of the amount of kelp needed to grow out red abalone from seedlings to market size.

Estimate contained in the Mitigated Negative Declaration
The MND estimates the amount of kelp needed for the grow-out life of each abalone at between 3.0 and 4.7 lbs. of kelp. Assuming a grow-out life of three years, this estimate translates into a cumulative total of between 1,125 and 1,800 tons of kelp per year (which equals 21.6 – 34.6 tons per week, or 3.1 – 4.9 tons per day), broken down per company as follows:

- Pacific Offshore Farms: 250 – 400 tons/yr. (4.8 – 7.7 tons/wk., or 0.7 – 1.1 tons/day);
- Princeton Abalone: 250 – 400 tons/yr. (4.8 – 7.7 tons/wk., or 0.7 – 1.1 tons/day);
- Blue Pacific Abalone: 400 – 640 tons/yr. (7.7 – 12.3 tons/wk., or 1.1 – 1.8 tons/day);
- Pearl Abalone: 225 – 360 tons/yr. (4.3 – 6.9 tons/wk., or 0.6 – 1.0 tons/day).

[15] Telephone conversation with Rob Collins, Nearshore Ecosystem Coordinator, Marine Region, CDFG, on December 12, 1994 (referenced in the *Revised Expanded Initial Study for Abalone Aquaculture Operations, Pillar Point Harbor, San Mateo County (June, 1996)*, p. 46)

Estimates from the applicants
Doug Hayes ("Pacific Offshore Farms") states that 100,000 abalone need about 600 lbs. of kelp per week at 10-15 mm in size, and about 1,100 lbs. per week at 30 mm, but asserts that the exact amount of kelp needed is impossible to calculate because he will buy 5,000 abalone at a time and they will all grow at different rates.

Princeton Abalone states that it will require about 466,470 lbs./yr. for 224,000 abalone (which translates to 1,041,228 lbs./yr., or 521 tons/yr. (10 tons/wk., or 1.4 tons/day), at its maximum operational capacity of 500,000 animals), but cautions that its estimates are educated guesses at best.

Blue Pacific Abalone states that it is not comfortable guessing at the amount of needed kelp, due to wide variations in growth rates between abalone of the same age, and unknown mortality rates.

Pearl Abalone estimates that it will require 100 tons of kelp to feed 90,000 abalone in the first year, and 500 tons of kelp in the fifth year. These estimates do not appear to account for different consumption rates based on abalone size, or the total number of abalone at each size once full build-out is reached.

Estimates from existing growers
Mr. Chris Van Hook, owner of Abalone International, Inc., located in Crescent City, estimates that 100,000 abalone will need about 1 ton of kelp per week at between one to two inches in size, and about 1.5 tons of kelp per week at between two and three inches in size. This estimate translates into a cumulative total of about 1,561 tons of kelp per year (30.0 tons/wk., or 4.3 tons/day), broken down per company as follows:

- Pacific Offshore Farms: 347 tons/yr. (6.7 tons/wk., or 1.0 tons/day);
- Princeton Abalone: 347 tons/yr. (6.7 tons/wk., or 1.0 tons/day);
- Blue Pacific Abalone: 555 tons/yr. (10.7 tons/wk., or 1.5 tons/day);
- Pearl Abalone: 312 tons/yr. (6 tons/wk., or 0.9 tons/day).

An existing onshore abalone farm in Cayucos, San Luis Obispo County, could not provide a feeding figure.

Potential impacts to the kelp bed community
All prospective Pillar Point abalone aquaculturists, including Pearl Abalone, will harvest kelp from designated open beds pursuant to annual kelp harvesting licenses. The MND states that the facility operators plan to obtain kelp primarily from south of Half Moon Bay, in the Santa Cruz or Monterey areas, and from local beds. There are currently only six kelp beds between San Mateo County and Point Sur from which the growers could legally and feasibly obtain kelp.[16]

[16] Technically there are nine beds, but one is designated for private lease only, and two have little or no kelp *(Personal communication with Robson Collins, Nearshore Ecosystem Coordinator, Marine Region, CDFG, on February 1, 1999).*

Furthermore, some kelp beds located off Santa Cruz and in Monterey Bay may not necessarily be viable options for the growers due to concerns expressed by various local interest groups regarding the harvesting of kelp from these beds (e.g. the prime area for kelp harvesting in Monterey Bay is being proposed as an underwater park, and thus a "no take" area). *(Letter from DeWayne Johnston, CDFG, to Richard Thompson, ACOE, dated February 27, 1998)*

The new kelp demand will be added to that of existing harvesters in the Monterey Bay region. Six harvesters formed the Monterey Kelp Cooperative in September, 1998, under which they seek to self-regulate the resource. Existing harvest levels are about 20 – 25 tons per week.

In addition, the volume of kelp needed to sustain aquaculture operations remains relatively constant throughout the year, but there are significant seasonal fluctuations in kelp abundance (e.g., due to storms). Thus, during the winter, kelp must be taken from a few sheltered beds at levels similar to summer needs, which intensifies take from specific beds and may result in the removal of a significant portion of the total canopy. Hence, potential adverse impacts from kelp removal would be more likely to occur during winter, after canopies are thinned by storms.

Thus, given the minimal amount of kelp available near the project area, the existence of competing harvesters, local interest in limiting harvest of some beds, and natural factors such as the recurring el Nino weather pattern that cause kelp abundance to fluctuate, local kelp resources could be adversely impacted by the proposed grow-out facilities. *(Letters from DeWayne Johnston, CDFG, to Richard Thompson, ACOE, dated February 27, 1998, and April 1, 1998)*

Finally, kelp harvesting potentially affects the entire kelp bed community beyond the kelp plants themselves, such as finfish populations that live in giant kelp forests (e.g., the young of some rockfish species recruit specifically to the upper kelp canopy); invertebrates that live on and among kelp; birds that forage in and adjacent to and rest in giant kelp beds; and sea otters, seals and sea lions that raft, rest, or forage in giant kelp forests.

Concerns about the existing kelp harvesting program

There is debate about whether or not the California Department of Fish and Game's and the Fish and Game Commission's kelp harvesting program is adequate to ensure the continued viability of the kelp bed community, and whether the regulations properly address the multiple uses of the kelp beds. Concerns have been voiced by the superintendents of the Monterey Bay and Gulf of the Farallones National Marine Sanctuaries[17] and other interested parties.[18]

First, the existing regulations allow take of both giant and bull kelp down to four feet below the water surface. While this distance protects the reproductive blades of giant kelp, which are located just above the structure that attaches a plant to the substrate, it does not protect those of bull kelp, which are located on the surface blades. Because bull kelp does not recruit year-round, heavy harvest of its surface canopy can eventually have a severely adverse impact on a bed. For example, clearing mature plants may increase the amount of benthic light and allow other

[17] Recall that Pillar Point Harbor is located adjacent to the Monterey Bay National Marine Sanctuary.

[18] See Appendix E, "Correspondence," for the record of written concerns, including those from the marine sanctuaries.

benthic or subsurface species to become dominant and then limit later bull kelp recruitment success. Or, the local spore source may be decreased significantly by continual removal of the reproductive portions of the blades.

In response to potential bull kelp impacts, the F&GC has restricted take of bull kelp in beds north of San Francisco to hand harvest only, and designated all bull kelp beds in that region as either "for lease" (seven beds) or "closed" (five beds).[19] No bull kelp beds are designated "open," the designation in which the canopy could be heavily or completely removed by harvest. Furthermore, most of the beds in which giant and bull kelp are mixed are found north of San Francisco, where they have received the "lease" or "closed" designation. In the few beds south of San Francisco in which the two kelp types mix and the beds are designated as "open," bull kelp only constitutes about two to three percent of the bed. No purely bull kelp beds exist south of San Francisco. *(Conversation with Robson Collins, Nearshore Ecosystem Coordinator, Marine Region, CDFG, February 22, 1999).*

Second, the program does not appear to some to adequately address harvesting impacts to the entire kelp bed community, although the CDFG and F&GC have reached the following conclusions relative to 1996 levels of harvest:[20]

- Populations of fishes in southern and central California are not seriously impacted by commercial harvesting, though some fishes may be displaced for a time following harvesting, and harvesting of canopies may open some areas to predation by fishes that otherwise would not feed in the areas;
- While kelp harvesting does incidentally remove some sessile and motile invertebrates, the overall effect on invertebrate populations appears not to be significant;
- While it is recognized that numerous species of birds use the kelp forests, the effect of canopy removal and kelp harvesting operations on bird populations is not significant; and
- Based on a review of available information, kelp harvesting activities have little to no effect on marine mammals using the kelp forests.

Other concerns with the existing kelp harvesting program are that it appears to be self-patrolled and self-enforced, and lack over-harvesting penalties. Furthermore, aerial surveys to assess the kelp resource do not occur very frequently or regularly (the last survey was done in 1989, and the one before that in 1967), do not differentiate between giant and bull kelp beds, and do not provide seasonal assessments of canopy removal due to natural events (e.g., storms) versus commercial harvest. Finally, some think that kelp beds are currently being harvested at their maximum.

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[19] As designated in *CCR Title 14, Section 165(c)(5).*

[20] "Giant and Bull Kelp Commercial and Sport Fishing Regulations." *Section 30 and 165, Title 14, California Code of Regulations.* California Department of Fish and Game. Final Draft Environmental Document (January, 1996), Chapter 4, "Environmental Impacts."

Concerns have been exacerbated by the fact that no "kelp budget" was prepared to evaluate the new demands of the four proposed abalone-culturing operations, (i.e., no recent inventory of the amount and location of existing kelp, assessment of the new demand from the four proposed abalone aquaculture proposals, and conclusion of how and where said demand could be accommodated in a manner that would sustain the kelp resource and associated uses), especially considering that the new proposals could about double the existing demand for kelp from the Monterey Bay region.[21]

Collaboration between CDFG and CCC staff to address potential kelp harvesting impacts
On April 15, 1999, Commission staff sent a letter to the CDFG director and the staff and the chair of the Fish and Game Commission requesting that both agencies work cooperatively to develop solutions to the kelp harvesting issues.[22] The Commission staff outlined its concerns regarding use conflicts, impacts to associated species and the kelp bed community, the seasonal nature of impacts, reporting requirements, and the lack of information available about the effects of kelp removal on kelp forests at present levels. The staff highlighted additional concerns about the potential impacts of increased kelp harvesting on the Monterey Bay region.

CDFG staff responded on April 20, 1999, in a letter stating the following:

- The CDFG has also been concerned that the demand for kelp resulting from new or expanded abalone culture operations will exceed the supply available locally, especially during periods of low abundance;
- The CDFG is aware of the need for more frequent monitoring of the health of harvested kelp beds;
- In December, 1998, the Fish and Game Commission directed the CDFG to address the issue of kelp harvesting by existing Monterey Bay area abalone growers and its impact on other uses as part of its upcoming review of kelp management regulations due to the F&GC in 2000; and
- The CDFG welcomes the opportunity to explore new, alternative approaches to the management of kelp harvest with Coastal Commission staff, other agencies, and the national marine sanctuaries.[23]

Staff of the CDFG, the CCC, and the MBNMS met on May 6, 1999, to further discuss kelp harvesting issues and possible solutions. At the meeting, CDFG staff indicated that it would specifically address use conflict issues in its upcoming review of its kelp harvesting and management regulations.

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[21] Letters from Ed Ueber, GFNMS/MBNMS, to Loretta Barsamian, RWQCB, February 23, 1998, and June 16, 1998. See also Appendix E, "Correspondence" for the record of written concerns.

[22] Letter from Peter Douglas, Executive Director, CCC, to Richard Thieriot, President, F&GC, Robert Hight, Director, CDFG, and Robson Collins, Nearshore Ecosystem Coordinator, Marine Region, CDFG, April 15, 1999.

[23] Letter from Robson Collins, Nearshore Ecosystem Coordinator, Marine Region, CDFG, to Peter Douglas, Executive Director, CCC, April 20, 1999.

The Commission staff welcomes the opportunity to work closely with the CDFG during its review and revision of the kelp harvesting regulations, and supports the CDFG's role as the agency responsible for developing and implementing the harvesting regulations. The Coastal Commission finds, however, that if the currently-proposed aquaculture projects are to proceed before the end of 2000, when the CDFG updates its kelp harvesting regulations in a manner that fully addresses Coastal Act policies, the Commission must condition the permits to prohibit use of kelp from the identified impacted kelp beds for use in the permitted abalone facilities. Without this prohibition, the Commission cannot make the requisite findings that individually and cumulatively the kelp harvesting needed to sustain the proposed abalone projects is consistent with Coastal Act policies.

Commission evaluation of impacts

From a statewide perspective, an additional take of about 360 tons of kelp per year (the largest estimate of Pearl Abalone's annual take) is small compared with the current annual statewide take of over 100,000 tons per year (0.36%).

Based on the information currently available, it appears that the four abalone-culturing projects proposed for Pillar Point Harbor will not cause significant adverse additional impacts to the kelp resource itself for the following reasons: (1) the CDFG's existing commercial kelp harvesting program limits harvest to the upper four feet of kelp plants, and thus protects mature giant kelp plants' holdfasts, reproductive and juvenile blades, and young juvenile plants; (2) removing the entire canopy of a giant kelp bed down to four feet from the surface will not harm the bed in the long term; (3) kelp beds are extremely productive, increasing by about 100 tons per acre per year; and (4) the majority of bull kelp beds are protected from heavy harvest by "lease" or "closed" designations.

The proposed project both individually and in conjunction with the other three proposed abalone aquaculture facilities may, however, cause adverse impacts to the larger kelp bed community. Although the CDFG staff will address these issues in its upcoming review of its kelp harvesting and management regulations, said review and recommended revisions may not be acted on by the Fish and Game Commission until the end of 2000. The Coastal Commission thus finds that if the currently-proposed aquaculture projects are to proceed before the end of 2000, when the CDFG updates its kelp harvesting regulations in a manner that fully addresses Coastal Act policies, the Commission must condition the permits to prohibit use of kelp from the identified impacted kelp beds for use in the permitted abalone facilities. Without this prohibition, the Commission cannot make the requisite findings that individually and cumulatively the kelp harvesting needed to sustain the proposed abalone projects is consistent with Coastal Act policies.

The Coastal Commission therefore requires **Special Condition 8**, which restricts harvest, take, or purchase of kelp obtained from (1) open bed #220 between the Monterey breakwater and Point Pinos, and (2) open bed #221 between New Brighton State Beach and Soquel Point (Pleasure Point area), off the Santa Cruz County coast, from December 1 until May 15 (a seasonal time of low abundance).

Pearl Abalone may request that the Commission modify this restriction through an amendment to this permit based upon emergence of new information that may affect kelp harvesting (i.e., information in addition to that set forth in this section of the Commission's findings). Each of the following two developments, for example, may provide a vehicle through which such new information may emerge, and thus may provide an appropriate basis on which to request an amendment to Special Condition 8.

> First, the CDFG reviews and amends its kelp harvesting regulations every five years. The review process for the next such revision will begin this summer or fall, and the regulations are scheduled to be certified by the F&GC by the end of Year 2000. CDFG staff have indicated that these revisions will address new or expanded demand, especially during periods of low abundance, and the need for more frequent monitoring of the health of harvested beds.[24]
>
> Second, the Monterey Kelp Cooperative seeks to self-regulate its hand-harvesting along the area from the Monterey Coast Guard Breakwater to Lover's Point in Pacific Grove, via a kelp plan drafted by its members, to ensure ongoing sustainable harvests of kelp and to avoid conflicts with other users of the beds. Thus, evidence of membership in the Monterey Kelp Cooperative and submittal of its annual kelp plan[25] could provide a key mechanism to address kelp harvesting impacts, and could constitute an appropriate basis for the Commission to consider an amendment to Special Condition 8.

Note: Recreational and use conflict issues regarding kelp will be discussed in section 4.4.3 of this report, "Public Access and Recreation."

Consistency with Coastal Act policies
The Commission finds that with the requirement of **Special Condition 8**, and as implemented according to the CDFG's existing commercial kelp harvesting management program, the proposed project, as reviewed pursuant to Coastal Act Section 30105.5 in conjunction with three concurrent projects *(CDP Application Nos. E-98-17, E-98-18, and E-98-19)* will be carried out in a manner that maintains the state's kelp resource as required by Coastal Act Section 30230.

4.4.1.6 Conclusion – Marine Resources

The Commission concludes that, for the reasons stated in sections 4.4.1.1 – 4.4.1.5 of this report, the project as proposed and conditioned, and as reviewed pursuant to Coastal Act Section 30105.5 in conjunction with three concurrent projects *(CDP Application Nos. E-98-17, E-98-18, and E-98-19)*, which will be conditioned in a similarly, will be consistent with Coastal Act Sections 30230 and 30231.

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[24] Letter from Rob Collins, Nearshore Ecosystem Coordinator, Marine Region, CDFG, to Peter Douglas, Executive Director, CCC, April 20, 1999.

[25] The kelp plan must be approved by the Board of Governors each October 31. The board of governors is comprised of three members: (1) Member Governor (elected annually by a majority vote and appointed by the members of the cooperative); (2) Manager Governor (the Regional Manager for the Marine Region of the CDFG); and (3) Scientist Governor (nominated by the other governors and approved by the Superintendent of the MBNMS; must be a marine scientist with a proven understanding and research background of giant kelp biology).

4.4.2 Potential Use Conflicts with Existing Commercial Fishing Operations

Coastal Act Section 30234 states in pertinent part:

> *Facilities serving the commercial fishing and recreational boating industries shall be protected and, where feasible, upgraded. Existing commercial fishing and recreational boating harbor space shall not be reduced unless the demand for those facilities no longer exists or adequate substitute space has been provided....*

Coastal Act Section 30234.5 states:

> *The economic, commercial, and recreational importance of fishing activities shall be recognized and protected.*

4.4.2.1 Potential Use Conflicts with Existing Commercial Fishing Anchorage Space

The area set aside by the SMCHD for aquaculture operations, which includes the proposed abalone grow-out project license areas, currently provides general (or transient) anchorage space for both recreational and commercial vessels (i.e., open-water space where vessels can drop anchor). This area also contains specific mooring sites (specific spaces that vessels can tie up to).

A private consultant retained by the SMCHD ("Concept Marine") calculated the entire outer harbor area (which includes the area set aside by the SMCHD for aquaculture operations) to have approximately 202 acres of available anchorage space (i.e., areas at least six feet in depth, and not within the navigation channel).[26] Assuming that two vessels can safely anchor in one acre[27] yields space enough for about 404 vessels.

Pearl Abalone's rafts will preclude 3,920 sq. ft., or 0.09 acre, of available anchorage space. The more significant issue is the combined loss of anchorage space due to the operation of all four abalone-culturing proposals. The Harbor Master and a representative of the commercial fishing community have agreed that as the four license areas are presently configured, (1) operation of the four currently-proposed abalone grow-out facilities would preclude vessel use of the buffer areas,[28] (2) the license and buffer areas combined total about 23.05 acres, and hence (3) that the facilities (including the license and buffer areas) would preclude anchorage for at least 40 vessels

[26] Pillar Point Area Calculations by Concept Marine, November 6, 1998 (File no. 29829/102/1301).

[27] Letter from Bob Miller, Crab Boat Owners Association of San Francisco, President, and Pacific Coast Federation of Fisherman's Associations' Vessel Safety Committee, Chair, to Joy Chase, CCC, February 17, 1997, p. 2.

[28] Based on recommendations for scope of anchor rode stated in Chapman's *Piloting, Seamanship and Small Boat Handling*, a vessel in Pillar Point Harbor requires approximately 352 feet to safely anchor using a danforth-type anchor (the type currently required under existing SMCHD regulations). Thus the 300-foot buffers between the license areas are not adequate for use as safe anchorage area.

(about 40 vessels spaced 100 feet apart; about 50 vessels spaced 75 feet apart).[29] (Exhibit 4, "Area of Anchorage Lost")

Subtracting 23.05 acres (license and buffer areas for the four currently-proposed abalone grow-out facilities) from the total 202 acres of available anchorage space leaves 178.95 (rounded to 179) remaining acres that are available for anchorage space, or available space for 358 vessels, if the four proposed abalone grow-out facilities are constructed.

Commercial fishing industry concerns about lost anchorage space
The commercial fishing community has expressed the following concerns about the potential loss of safe anchorage space:[30]

- Pillar Point Harbor provides the only safe anchorage space between Point Reyes and Santa Cruz;
- Under present fishery management schemes, Pillar Point Harbor at times becomes the focus of the entire salmon fleet (there is a waiting list for slips, so in rough weather or when the bite is on, the outer harbor is filled with anchored vessels);
- Loss of anchorage space at Pillar Point Harbor would effectively deny access to about half of the fishing grounds between the Farallon Islands and Santa Cruz;
- Reducing anchorage area would cause problems, congestion, or even eliminate Pillar Point as a safe harbor. Furthermore, the harbor's bottom composition is such that a vessel operator needs to maintain an extra margin of space from other vessels in case his or her anchor should slip on a windy day;
- Reducing anchorage area would cause inconvenience and interference with fishing operations and significant adverse economic impacts on fishermen and women as well as the fish processors of the harbor and elsewhere;
- The U.S. Army Corps of Engineers created Pillar Point Harbor as a "safe harbor" for exclusive fishing and boating uses; and
- Approval of the proposed abalone grow-out facilities would create a special business opportunity for aquaculturists at the expense of fishermen and women.

[29] The MND calculates the combined area of the five facilities it evaluates to be 2.4 acres, and assumes that vessels will be able to use the buffer areas between the abalone facilities. The MND concludes that removal of 2.4 acres of open water anchorage area is not expected to be a significant impact because (1) vessels would be free to use the 300-foot buffer zones between the licensed areas and (2) vessels would still be able to use the remaining outer harbor area. The MND does not contain any further facts, figures, or analysis to support its conclusion.

[30] In addition to letters from various individuals, the Commission staff has received letter from representatives of the following organizations: Moss Landing Commercial Fishermen's Association; Crab Boat Owners Association of San Francisco; Pacific Coast Federation of Fishermen's Associations, Inc.; Salmon Trollers Marketing Association; Humboldt Fishermen's Marketing Association; and Half Moon Bay Fisherman's Marketing Association. Appendix E, "Correspondence," contains the full record of written comments.

Commission evaluation

Aquaculture as a Use in Pillar Point Harbor Consistent with the Public Trust

The State Lands Commission granted the Pillar Point Harbor tide and submerged lands to the SMCHD in July, 1960. The grant provides that the SMCHD may grant franchises thereon and may lease any part of said lands for purposes consistent with the trust upon which said lands are held by the state.[31] Aquaculture is a use consistent with the public trust,[32] and the SMCHD executed license agreements for the four proposed abalone aquaculture facilities in February, 1997. Thus, Pillar Point does not have to function solely as a "harbor of refuge" or "safe harbor," to the exclusion of other uses, in this case aquaculture. Furthermore, Coastal Act Section 30411(c) encourages salt water or brackish water aquaculture as a coastal-dependent use.

Demand for Anchorage Space

The Commission has attempted to quantify the existing demand for anchorage space in the outer harbor. Neither the applicants, the SMCHD, nor the commercial fishing industry has any records of historical use. Furthermore, there are broad discrepancies between each party's estimate of demand. The applicants contend that the outer harbor is sparsely used for anchorage and is never full. A representative of the commercial fishing industry estimates, however, that there is already more demand than there is space. He states that about 400-500 commercial vessels may need to use the harbor during the salmon season, which runs from approximately Memorial Day until Labor Day (May 1 – September 1).[33] Representatives of the commercial fishing community believe that the burden of proof should be on the aquaculture applicants that their projects will not reduce needed anchorage space. Finally, the SMCHD estimates that about 200 vessels use the outer harbor during peak use periods.

Because there are (1) no records documenting levels of historical use in the outer harbor and (2) very disparate estimates of the amount of anchorage space needed during peak use periods (e.g., the SMCHD estimates 200 vessels and the commercial fishing industry estimates 400-500 vessels), it is difficult to accurately determine the existing levels of demand for anchorage space in the outer harbor. The Commission thus finds that based on the best information available at this time, 358 anchorage spaces appears to be sufficient to accommodate existing anchorage space demand.

Consistency with Coastal Act policies

The Commission finds that based on the best information currently available the proposed project as reviewed pursuant to Coastal Act Section 30105.5 in conjunction with three concurrent projects *(CDP Application Nos. E-98-17, E-98-18, and E-98-19)* will not reduce the anchorage space needed to accommodate the existing demand for commercial boating harbor space as required by Coastal Act Section 30234, and will allow continuance of the commercial activities that currently use Pillar Point Harbor as required by Coastal Act Section 30234.5.

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[31] Statues of 1960, Chapter 68, Section 1(a).

[32] Verbal communication with Mary Howe, State Lands Commission, May 17, 1999.

[33] Meeting with Bob Miller, Crab Boat Owners Association of San Francisco, President, and Pacific Coast Federation of Fisherman's Associations' Vessel Safety Committee, Chair, on December 7, 1998.

4.4.2.2 Increased Use of Ancillary Harbor Facilities

The proposed abalone grow-out operations will increase use of Pillar Point Harbor's public boat launch and parking facilities. Pearl Abalone, along with the three other prospective operators, plans to depart from the public boat launch ramp when towing its raft modules to its license space. Launching activities may interfere with recreational and commercial boat launch activities. In addition, all four operators propose to either collect kelp from local beds by boat and/or truck kelp from other areas to the harbor. Transporting kelp by boat to the facilities will also require use of the public boat launch ramp.

The Commission is therefore imposing **Special Condition 2** to prevent use conflicts with the public boat launch ramp. This condition prohibits Pearl Abalone from loading or unloading any equipment or materials on, at or from the public boat launch ramp, docks, or vehicle approach road. The intent of this condition is not to prevent Pearl Abalone from using the launch ramp, docks, or vehicle approach road, but simply to prevent tying up an area specifically meant for launching activities to conduct potentially lengthy loading and unloading activities. Pearl Abalone's license agreement with the SMCHD provides for its use of the existing hoist on Romeo Pier, which the SMCHD will make available to all abalone licensees, to off-load kelp, cages, and equipment into a boat that can be taken to the offshore grow-out area.

Special Condition 2 also provides that prior to using the public boat launch ramp to install or remove its grow-out structures, Pearl Abalone shall submit evidence to the executive director that it has coordinated with the harbor master on use of the public boat launch ramp to conduct said activities (e.g., during a time when demand for use of the boat launch is anticipated to be light).

With regard to parking, the SMCHD has concluded that the proposed aquaculture operations will not significantly impact the harbor's existing regular and overflow parking areas.

Consistency with Coastal Act policies
The Commission finds that with the requirement of **Special Condition 2**, the proposed project as reviewed pursuant to Coastal Act Section 30105.5 in conjunction with three concurrent projects *(CDP Application Nos. E-98-17, E-98-18, and E-98-19)*, which will be conditioned similarly, will be carried out in a manner that protects use of the public boat launch ramp and parking facilities as required by Coastal Act Section 30234.

4.4.2.3 Potential Navigational or Safety Hazards

The SMCHD chose to set aside the northwest corner of the harbor for aquaculture facilities in part because that area is located outside of the navigational routes used to access the inner harbor. Nevertheless, placement and operation of the aquaculture facilities could create navigational or safety hazards if the raft structures are not properly marked, aquaculture apparatus becomes dislodged or breaks apart, or any debris is disposed of in the harbor area.

To mitigate these potential impacts to a level of insignificance, the Commission imposes three special conditions. **Special Condition 3** requires Pearl Abalone to mark its grow-out structures

to ensure navigational safety pursuant to all U.S. Coast Guard and SMCHD harbor master requirements. **Special Condition 1** requires Pearl Abalone to submit evidence to the executive director that its anchoring design has been approved by the harbor master to ensure that the grow-out structures do not break free. **Special Condition 9** prohibits Pearl Abalone from disposing any equipment or waste into the marine environment, except as authorized in its NPDES permit.

Consistency with Coastal Act policies
The Commission finds that with the requirements of **Special Conditions 1, 2, 3, and 9**, the proposed project as reviewed pursuant to Coastal Act Section 30105.5 in conjunction with three concurrent projects *(CDP Application Nos. E-98-17, E-98-18, and E-98-19)*, which will be conditioned similarly, will be carried out in a manner that protects the harbor facilities, and the commercial fishing and recreational boating industries, as required by Coastal Act Section 30234.

4.4.2.4 Conclusion –Commercial Fishing

The Commission concludes that, based on the findings in sections 4.5.2.1 – 4.5.2.3 of this report, the project as proposed, conditioned, and reviewed pursuant to Coastal Act Section 30105.5 in conjunction with three concurrent projects *(CDP Application Nos. E-98-17, E-98-18, and E-98-19)* will be consistent with Coastal Act Sections 30224, 30234, and 30234.5.

4.4.3 Public Access and Recreation

Coastal Act Section 30210 states:

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

Coastal Act Section 30211 states:

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

Coastal Act Section 30220 states:

> *Coastal areas suited for water-oriented recreational activities that cannot readily be provided at inland water areas shall be protected for such uses.*

Coastal Act Section 30234 states:

Facilities serving the commercial fishing and recreational boating industries shall be protected and, where feasible, upgraded. Existing commercial fishing and recreational boating harbor space shall not be reduced unless the demand for those facilities no longer exists or adequate substitute space has been provided. Proposed recreational boating facilities shall, where feasible, be designed and located in such a fashion as not to interfere with the needs of the commercial fishing industry.

Coastal Act Section 30234.5 states:

The economic, commercial, and recreational importance of fishing activities shall be recognized and protected.

Public Access
The proposed abalone aquaculture facilities do not include any construction of new development on land. Some operators do, however, plan to use the public boat launch ramp. With regard to parking, the SMCHD has concluded that the proposed aquaculture operations will not significantly impact the harbor's existing regular and overflow parking areas.

Recreation at Pillar Point Harbor
Pillar Point Harbor offers a wide variety of recreational activities including boating, clamming, fishing, sailing, kayaking, and windsurfing. In addition, the public access trail and associated beach area along the western shoreline of the harbor, near the highly productive northwest corner, are used by hikers, bicyclists, and birders.

Particular demand for sailboat anchorage space occurs during races (which occur approximately three times per year) and Labor Day weekend.[34]

Recreation around the Monterey Bay
The four proposed aquaculturists' plans to harvest kelp to support their abalone operations could affect nearshore recreational users around Monterey Bay.

In its 1995/96 review of its the kelp harvesting regulations,[35] the CDFG and the F&GC concluded, however, that kelp harvesting operations have no significant effect on the recreational use of the nearshore environment. The review concludes that although some recreational users are temporarily displaced by harvesting operations, they receive some benefits as well. For example, harvesting opens up lanes in the canopy which allow access to areas that were

[34] Telephone conversation with Jennifer Solestri, Commodore, Half Moon Bay Yacht Club, in March, 1996 (referenced in the *Responses to Comments on the Expanded Initial Study for Abalone Aquaculture Operations, Pillar Point Harbor, San Mateo County (June, 1996)*, p. 18)

[35] "Giant and Bull Kelp Commercial and Sport Fishing Regulations." *Section 30 and 165, Title 14, California Code of Regulations.* California Department of Fish and Game. Final Draft Environmental Document (January, 1996).

previously closed due to the density of the kelp and more light to penetrate subsurface areas (to the benefit of kayakers and underwater photographers, etc.).[36]

There is general consensus, nevertheless, that use conflicts involving the kelp resource exist.[37] Specifically, many ocean-related educational and recreational activities, such as viewing see otters or the kelp itself, are greatly enhanced by the existence of the kelp canopy. Thus conflicts arise when kelp is harvested, as the canopy can be cut down to four feet below the water surface.

Furthermore, the volume of kelp needed to sustain aquaculture operations remains relatively constant throughout the year, but there are significant seasonal fluctuations in kelp abundance (e.g., due to storms). Thus, during the winter, kelp must be taken from a few sheltered beds at levels similar to summer needs, which intensifies take from specific beds and may result in the removal of a significant portion of the total canopy. Hence, potential use conflicts would be more likely to occur during winter, after canopies are thinned by storms.

These use conflicts currently exist in areas offshore Monterey and Santa Cruz with the current kelp harvesting levels. For example, kelp bed #220, offshore the Monterey coast, is designated as an open bed. Various local interest groups have expressed concern about harvesting kelp from beds offshore Cannery Row, and the City of Monterey has asserted regulatory (permit) authority over kelp harvesting offshore its jurisdiction.

Collaboration between CDFG and CCC staff to address potential kelp harvesting impacts
On April 15, 1999, Commission staff sent a letter to CDFG staff and the chair of the Fish and Game Commission requesting that both agencies work cooperatively to develop solutions to the kelp harvesting issues.[38] The Commission staff outlined its concerns regarding use conflicts, impacts to associated species and the kelp bed community, the seasonal nature of impacts, reporting requirements, and the lack of information available about the effects of kelp removal on kelp forests at present levels. The staff highlighted additional concerns about the potential impacts of increased kelp harvesting on the Monterey Bay region.

CDFG staff responded on April 20, 1999, in a letter stating the following:

- The CDFG has also been concerned that the demand for kelp resulting from new or expanded abalone culture operations will exceed the supply available locally, especially during periods of low abundance;

[36] "Giant and Bull Kelp Commercial and Sport Fishing Regulations." *Section 30 and 165, Title 14, California Code of Regulations.* California Department of Fish and Game. Final Draft Environmental Document (January, 1996), Section 4.6."

[37] (1) Letter from DeWayne Johnston, CDFG, to Richard Thompson, ACOE, dated February 27, 1998; (2) Conversation with Jerry Spratt, CDFG, February 2, 1999; (3) Conversation with Ed Ueber, Gulf of the Farallones National Marine Sanctuary, February 16, 1999; (4) Conversation with Bill Douros, Montery Bay National Marine Sanctuary, February 16, 1999.

[38] Letter from Peter Douglas, Executive Director, CCC, to Richard Thieriot, President, F&GC, Robert Hight, Director, CDFG, and Robson Collins, Nearshore Ecosystem Coordinator, Marine Region, CDFG, April 15, 1999.

- The CDFG is aware of the need for more frequent monitoring of the health of harvested kelp beds;
- In December, 1998, the Fish and Game Commission directed the CDFG to address the issue of kelp harvesting by existing Monterey Bay area abalone growers and its impact on other uses as part of its upcoming review of kelp management regulations due to the F&GC in 2000; and
- The CDFG welcomes the opportunity to explore new, alternative approaches to the management of kelp harvest with Coastal Commission staff, other agencies, and the national marine sanctuaries.[39]

Staff of the CDFG, the CCC, and the MBNMS met on May 6, 1999, to further discuss kelp harvesting issues and possible solutions. At the meeting, CDFG staff indicated that it would specifically address use conflict issues in its upcoming review of its kelp harvesting and management regulations.

The Commission staff welcomes the opportunity to work closely with the CDFG during its review and revision of the kelp harvesting regulations, and supports the CDFG's role as the agency responsible for developing and implementing the harvesting regulations. The Coastal Commission finds, however, that if the currently-proposed aquaculture projects are to proceed before the end of 2000, when the CDFG updates its kelp harvesting regulations in a manner that fully addresses Coastal Act policies, the Commission must condition the permits to prohibit use of kelp from the identified impacted kelp beds for use in the permitted abalone facilities. Without this prohibition, the Commission cannot make the requisite findings that individually and cumulatively the kelp harvesting needed to sustain the proposed abalone projects is consistent with Coastal Act policies.

Commission evaluation of impacts

The four proposed aquaculture projects will not interfere with the public's right of access to or along the shoreline because they will not include any construction of new development on land, restrict access to the project vicinity, or significantly impact the harbor's existing parking areas.

Because some operators do plan to use the public boat launch ramp, the Commission is imposing **Special Condition 2** to prevent use conflicts with said ramp. This condition prohibits Pearl Abalone from loading or unloading any equipment or materials on, at or from the public boat launch ramp, docks, or vehicle approach road. The intent of this condition is not to prevent Pearl Abalone from using the launch ramp, docks, or vehicle approach road, but simply to prevent tying up an area specifically meant for launching activities to conduct potentially lengthy loading and unloading activities. Pearl Abalone's license agreement with the SMCHD provides for its use of the existing hoist on Romeo Pier, which the SMCHD will make available to all abalone licensees, to off-load kelp, cages, and equipment into a boat that can be taken to the offshore grow-out area.

[39] Letter from Robson Collins, Nearshore Ecosystem Coordinator, Marine Region, CDFG, to Peter Douglas, Executive Director, CCC, April 20, 1999.

Special Condition 2 also provides that prior to using the public boat launch ramp to install or remove its grow-out structures, Pearl Abalone shall submit evidence to the executive director that it has coordinated with the harbor master on use of the public boat launch ramp to conduct said activities (e.g., during a time when demand for use of the boat launch is anticipated to be light).

Furthermore, combination of the four proposed aquaculture project's physical structures and operations will not significantly impact recreational opportunities in Pillar Point Harbor for the following reasons:

- They will preclude only 1.2 acres of open water space, which leaves more than adequate space to accommodate other recreational uses;
- They will not hinder access to the vicinity of the breakwaters themselves, and thus will not impact clamming, eeling, and other recreational sportfishing activities that occur in the area; and
- They will be located at least 500 feet from the western beach area, the second most highly-used avian habitat area, and thus will not hinder birding opportunities.

The proposed project's kelp harvesting requirements, especially in conjunction with the kelp requirements of the three other proposed abalone grow-out facilities, will, however, exacerbate recreational use conflicts in the Monterey Bay area because these conflicts already exist with the current level of kelp harvest. Although the CDFG staff will address use conflicts in its upcoming review of its kelp harvesting and management regulations, said review and recommended revisions may not be acted on by the Fish and Game Commission until the end of 2000. The Coastal Commission thus finds that if the currently-proposed aquaculture projects are to proceed before the end of 2000, when the CDFG updates its kelp harvesting regulations in a manner that fully addresses Coastal Act policies, the Commission must condition the permits to prohibit use of kelp from the identified impacted kelp beds for use in the permitted abalone facilities. Without this prohibition, the Commission cannot make the requisite findings that individually and cumulatively the kelp harvesting needed to sustain the proposed abalone projects is consistent with Coastal Act policies.

The Coastal Commission therefore requires **Special Condition 8**, which restricts harvest, take, or purchase of kelp obtained from (1) open bed #220 between the Monterey breakwater and Point Pinos, and (2) the open bed between New Brighton State Beach and Soquel Point (Pleasure Point area), off the Santa Cruz County coast, from December 1 until May 15 (a seasonal time of low abundance).

Pearl Abalone may request that the Commission modify this restriction through an amendment to this permit based upon emergence of new information that will affect kelp harvesting. (i.e., information in addition to that set forth in this section of the Commission's findings). Each of the following two developments, for example, may provide a vehicle through which such new information may emerge, and thus may provide an appropriate basis on which to request an amendment to Special Condition 8.

First, the CDFG reviews and amends its kelp harvesting regulations every five years. The review process for the next such revision will begin this summer or fall, and the regulations are scheduled to be certified by the F&GC by the end of Year 2000. CDFG staff have indicated that these revisions will address use conflict issues.[40]

Second, the Monterey Kelp Cooperative seeks to self-regulate its hand-harvesting along the area from the Monterey Coast Guard Breakwater to Lover's Point in Pacific Grove, via a kelp plan drafted by its members, to ensure ongoing sustainable harvests of kelp and to avoid conflicts with other users of the beds. Thus, evidence of membership in the Monterey Kelp Cooperative and submittal of its annual kelp plan[41] could provide a key mechanism to address kelp harvesting impacts, and could constitute an appropriate basis for the Commission to consider an amendment to Special Condition 8.

Consistency with Coastal Act policies
The Commission finds that with the requirements of **Special Conditions 2 and 8**, the proposed project as reviewed pursuant to Coastal Act Section 30105.5 in conjunction with three concurrent projects *(CDP Application Nos. E-98-17, E-98-18, and E-98-19)* will be carried out in a manner that protects maximum access as required by Coastal Act Sections 30210 and 30211, will accommodate existing recreational fishing and boating harbor space needs as required by Coastal Act Sections 30234 and 30234.5, and will protect water-oriented recreational uses as required by Coastal Act Sections 30210 and 30220.

Conclusion – Public Access and Recreation
Hence, the Commission concludes that for the reasons stated above in this report, the project as proposed and conditioned, and as reviewed pursuant to Coastal Act Section 30105.5, will be consistent with Coastal Act Sections 30210, 30211, 30220, 30234, and 30234.5.

4.4.4 Scenic and Visual Qualities

Coastal Act Section 30251 states in part:

> *The scenic and visual qualities of coastal areas shall be considered and protected as a resource of public importance. Permitted development shall be sited and designed to protect views to and along the ocean and scenic coastal areas, to minimize the alteration of natural land forms, to be visually compatible with the character of surrounding areas, and, where feasible, to restore and enhance visual quality in visually degraded areas.*

[40] Meeting with Rob Collins, Nearshore Ecosystem Coordinator, Marine Region, CDFG, May 6, 1999, at the MBNMS office in Monterey.

[41] The kelp plan is approved by the Board of Governors each October 31. The board of governors is comprised of three members: (1) Member Governor (elected annually by a majority vote and appointed by the members of the cooperative); (2) Manager Governor (the Regional Manager for the Marine Region of the CDFG); and (3) Scientist Governor (nominated by the other governors and approved by the Superintendent of the MBNMS; must be a marine scientist with a proven understanding and research background of giant kelp biology).

The proposed abalone grow-out facilities will be visible in the distance to both north- and south-bound motorists on State Route 1, also known as Cabrillo Highway, a designated "scenic highway" that parallels the coast and runs adjacent to Pillar Point Harbor. The abalone grow-out facilities will also be visible from certain areas of El Granada. Closer views of the project area will be obtained from Capistrano Road, which is parallel to the northern portion of the harbor, and from the public access trail in the northwest beach area.

The proposed project area is currently used to moor boats. To minimize visual intrusion and ensure that the proposed structures will blend in with existing boat features (masts, pilot houses, etc.) and be in character with the nature of the harbor, the SMCHD is prohibiting any structure placed on the rafts from extending more than five feet from the raft surface, and from having elements that will reflect light and cause significant glare.

The Commission finds that Pearl Abalone's grow-out facility will be consistent with the existing visual character of the harbor as required by Coastal Act Section 30251 because it will occupy a very small portion of the open water area, 0.09 acre of the 284-acre outer harbor, and will be restricted in height and character by the SMCHD.

All four proposed abalone grow-out facilities will occupy a relatively small portion of the open water area, 1.46 acres of the 284-acre outer harbor, and will be restricted in height and character by the SMCHD. The Commission thus finds that the proposed project as reviewed pursuant to Coastal Act Section 30105.5 in conjunction with three concurrent projects *(CDP Application Nos. E-98-17, E-98-18, and E-98-19)* will be consistent with the existing visual character of the harbor as required by Coastal Act Section 30251, and thus will be consistent with said section.

4.4.5 Placement of Fill in Coastal Waters

Coastal Act Section 30108.2 defines "fill" as "earth or any other substance or material, including pilings placed for purposes of erecting structures thereon, placed in a submerged area." The concrete drums and anchoring structures that will be placed on the harbor floor to secure the abalone grow-out facilities constitute fill as defined in Coastal Act Section 30108.2.

Coastal Act Section 30233(a) states in part:

> *The diking, filling, or dredging of open coastal waters, wetlands, estuaries, and lakes shall be permitted in accordance with other applicable provisions of this division where there is no feasible less environmentally damaging alternative, and where feasible mitigation measures have been provided to minimize adverse environmental effects, and shall be limited to the following:*
>
> *(1) New or expanded port, energy, and coastal-dependent industrial facilities, including commercial fishing facilities.*
>
> *(2) Maintaining existing, or restoring previously dredged depths on existing navigational channels, turning basins, vessel berthing and mooring areas, and boat launching ramps.*

(3) *In wetland areas only, entrance channels for new or expanded boating facilities; and in a degraded wetland, identified by the Department of Fish and Game pursuant to subdivision (b) of Section 30411, for boating facilities if, in conjunction with such boating facilities, a substantial portion of the degraded wetland is restored and maintained as a biologically productive wetland. The size of the wetland area used for boating facilities, including berthing space, turning basins, necessary navigation channels, and any necessary support service facilities, shall not exceed 25 percent of the degraded wetland.*

(4) *In open coastal waters, other than wetlands, including streams, estuaries, and lakes, new or expanded boating facilities and the placement of structural pilings for public recreational piers that provide public access and recreational opportunities.*

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

(6) *Mineral extraction, including sand for restoring beaches, except in environmentally sensitive areas.*

(7) *Restoration purposes.*

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

Coastal Act Section 30233(a) permits fill in coastal waters if three tests are met. The first test requires that the project fit into one of the eight categories of uses permitted for open coastal water fill enumerated in Coastal Act Section 30233(a). The Commission finds that the proposed aquaculture facilities and operations are clearly allowed under use number (8), "nature study, aquaculture, or similar resource dependent activities."

The second test requires that there be no feasible less environmentally damaging alternative. The proposed abalone grow-out facility is premised on direct interface with marine waters. Pillar Point Harbor provides the necessary saline conditions to support cage culture of abalone, and a protected area in which to place the grow-out structures. Furthermore, the projects are proposed to be located within the harbor where they will have the least amount of impacts (e.g., out of the navigation channel, near the breakwaters and harbor mouth where there is the greatest amount of mixing). The Commission therefore finds that no feasible less environmentally-damaging alternative exists.

The third and final test requires that feasible mitigation measures be provided to minimize adverse environmental effects. The Commission finds that the conditions contained in this permit provide feasible measures to mitigate potential adverse effects on marine resources, commercial fishing, and public access and recreation, including recreational boating, as discussed in Sections 4.4.1 through 4.4.3 of this report.

Hence, the Commission concludes that the project as proposed and conditioned satisfies the three tests of Coastal Act Section 30233(a) and thus is consistent with said section.

4.5 California Environmental Quality Act

As "lead agencies" under the California Environmental Quality Act ("CEQA") the San Mateo County Harbor District and the California Department of Fish and Game certified on July 10, 1996, a mitigated negative declaration for aquaculture operations in Pillar Point Harbor, Half Moon Bay, California.

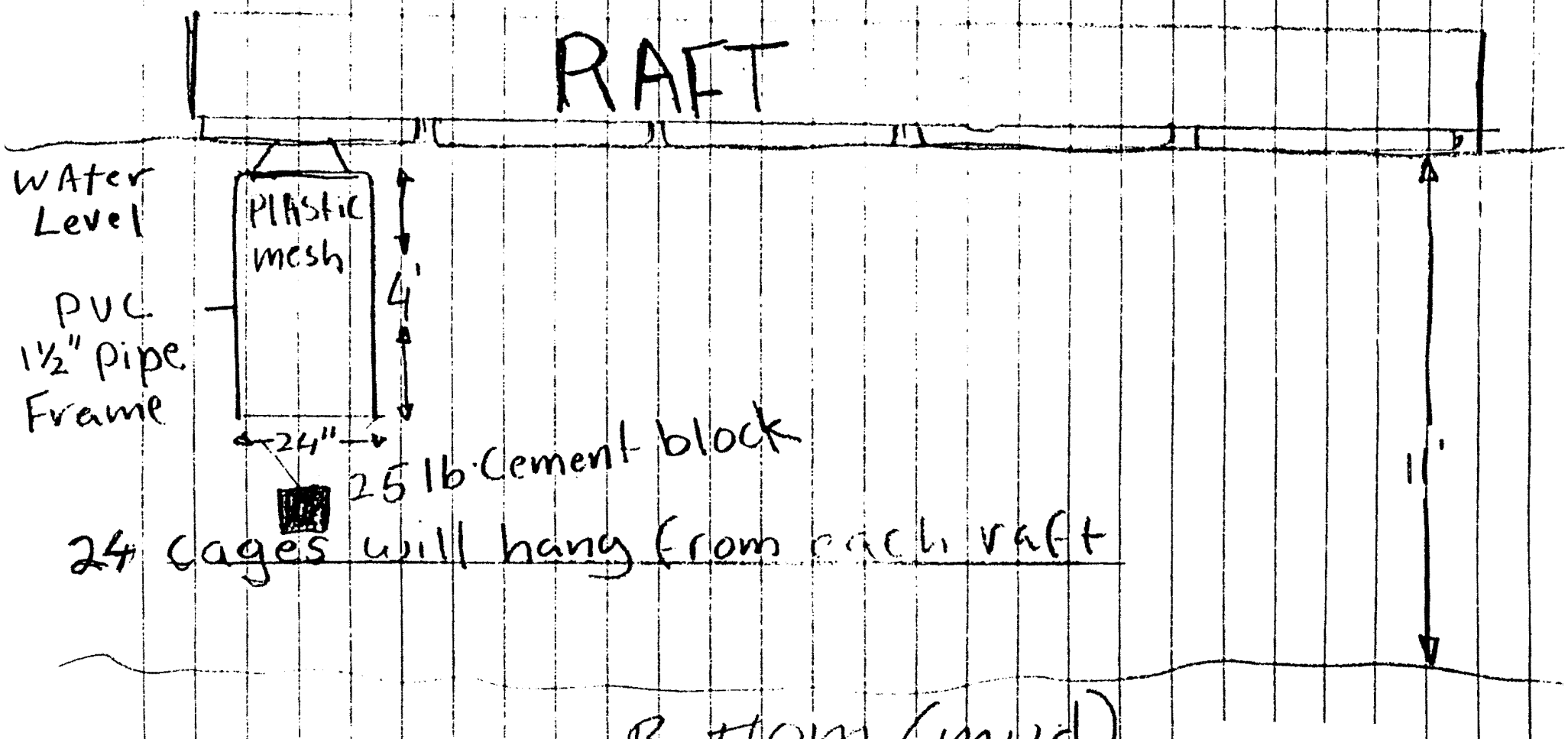
The Commission's permit process has also been designated by the State Resources Agency as the functional equivalent of the CEQA environmental impact review process. The Commission's permit review process identified numerous impacts that were not resolved in the mitigated negative declaration. Pursuant to section 21080.5(d)(2)(A) of the CEQA and section 15252(b)(1) of Title 14, California Code of Regulations (CCR), the Commission may not approve a development project "if there are feasible alternatives or feasible mitigation measures available which would substantially lessen any significant adverse impact which the activity may have on the environment." The Commission finds that only as extensively conditioned are there no feasible less environmentally damaging alternatives or additional feasible mitigation measures that would substantially lessen any significant adverse impact which the activity may have upon the environment, other than those identified herein. Therefore, the Commission finds that the project as fully conditioned is consistent with the provisions of the CEQA.

NOTE:

The following exhibits and appendices are contained in a separate corresponding packet:

Exhibit 1:	"Project Location"
Exhibit 2:	"Area in Pillar Point Harbor deemed appropriate for aquaculture by the San Mateo County Harbor District"
Exhibit 3:	"San Mateo County Harbor District License Agreement Areas"
Exhibit 4:	"Area of Anchorage Lost"

Appendix A.	Standard Conditions
Appendix B.	CDFG Stock Inspection Procedures for Aquaculture Operations in Pillar Point Harbor
Appendix C.	Sampling, Analysis and Reporting Requirements
Appendix D.	Substantive File Documents
Appendix E.	Correspondence



24 cages will hang from each raft

E-98-20
EXHIBIT 5

Items Tu15a-d

Exhibits and Appendices for:

E-98-17 (Hayes, "Pacific Offshore Farms")

E-98-18 (Locke, "Princeton Abalone")

E-98-19 (Wagner, "Blue Pacific Abalone")

E-98-20 (Zajac, "Pearl Abalone")

- Exhibit 1: "Project Location"
- Exhibit 2: "Area in Pillar Point Harbor deemed appropriate for aquaculture by the San Mateo County Harbor District"
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- Appendix A. Standard Conditions
- Appendix B. CDFG Stock Inspection Procedures for Aquaculture Operations in Pillar Point Harbor
- Appendix C. Sampling, Analysis and Reporting Requirements
- Appendix D. Substantive File Documents
- Appendix E. Correspondence

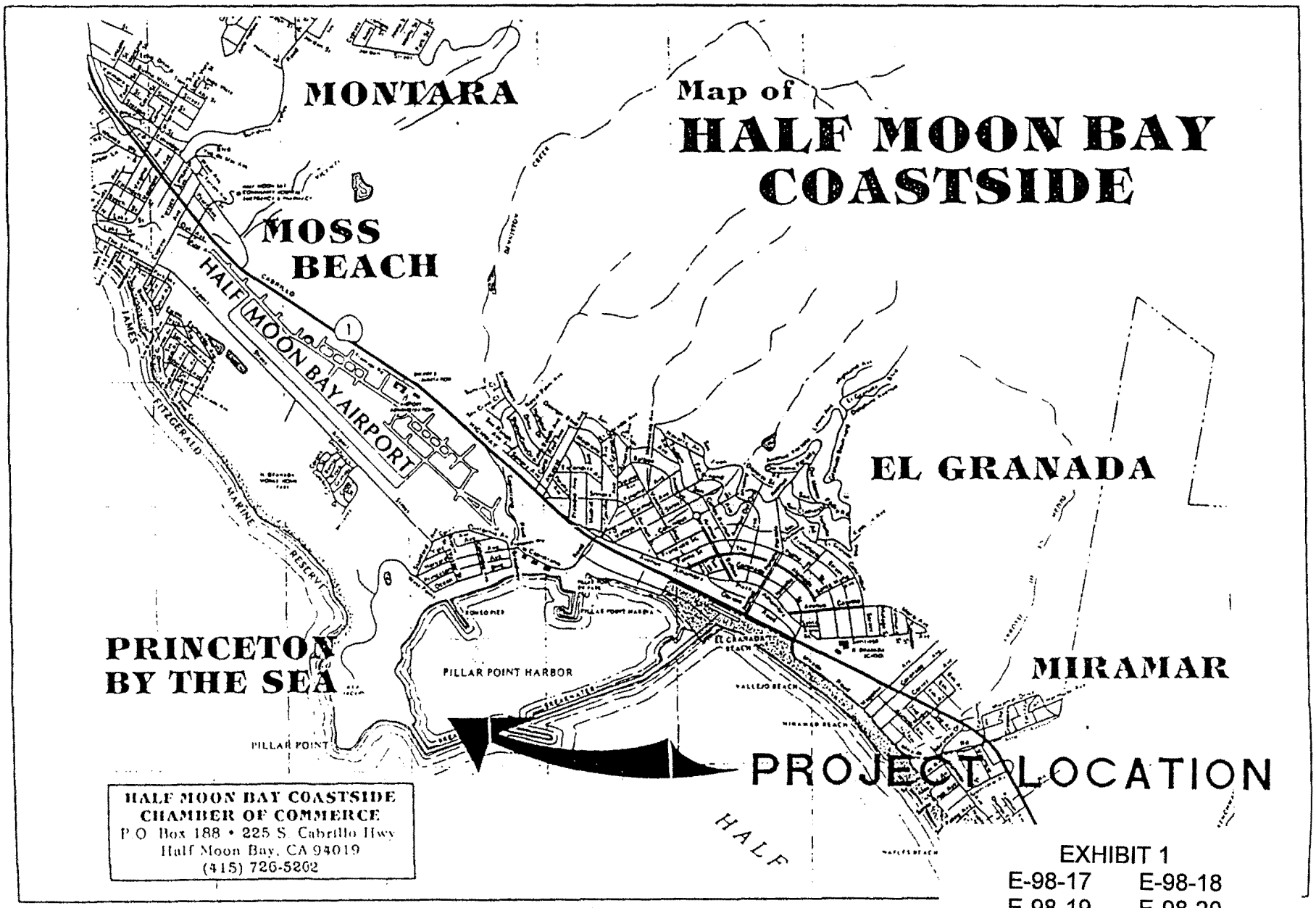


EXHIBIT 1
E-98-17 E-98-18
E-98-19 E-98-20

FIGURE 1: PROJECT LOCATION MAP

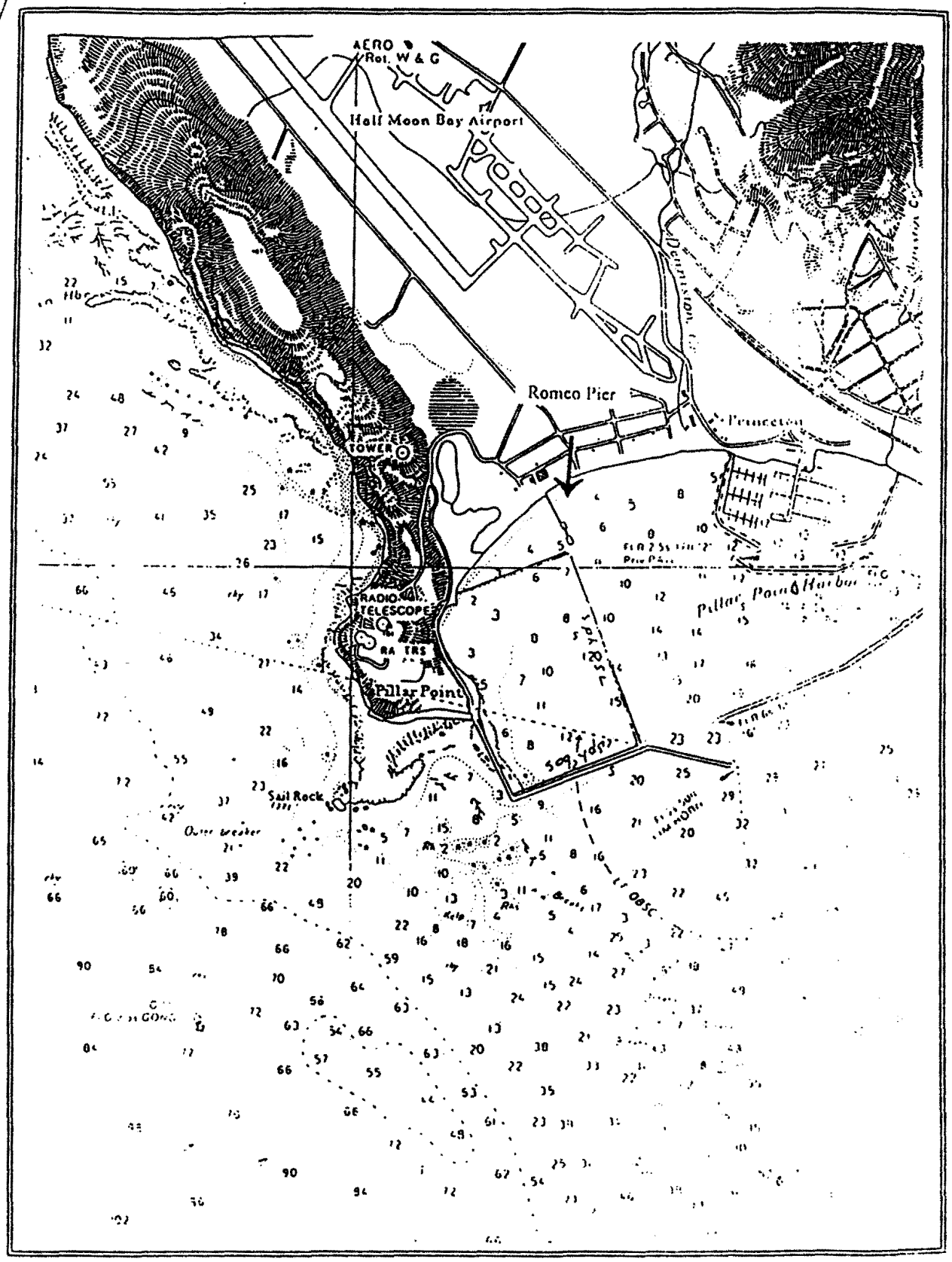


Figure 2. Location of 500 Yard by 750 Yard Area Within Which Abalone Operations Will Be Located

EXHIBIT 2
E-98-17 E-98-18
E-98-19 E-98-20

14.

REVISED

Location	Latitude	Longitude
Blue Pacific Abalone		
Southeast Corner	37.47882 N	122.51228 W
Northeast Corner	37.48828 N	122.52673 W
Northwest Corner	37.46575 N	122.56115 W
Southwest Corner	37.45628 N	122.54670 W
Pacific Offshore Farms		
Southeast Corner	37.54688 N	122.56805 W
Northeast Corner	37.55228 N	122.57630 W
Northwest Corner	37.52992 N	122.61046 W
Southwest Corner	37.52452 N	122.60220 W
US Abalone		
~~Southeast Corner~~	~~37.39479 N~~	~~122.47033 W~~
~~Northeast Corner~~	~~37.40417 N~~	~~122.48465 W~~
~~Northwest Corner~~	~~37.38209 N~~	~~122.51839 W~~
~~Southwest Corner~~	~~37.37271 N~~	~~122.50406 W~~
Princeton Abalone		
Southeast Corner	37.34496 N	122.61761 W
Northeast Corner	37.35172 N	122.62793 W
Northwest Corner	37.32918 N	122.66235 W
Southwest Corner	37.32242 N	122.65203 W
Pearl Abalone		
Southeast Corner	37.51173 N	122.63099 W
Northeast Corner	37.51534 N	122.63650 W
Northwest Corner	37.50650 N	122.65000 W
Southwest Corner	37.50290 N	122.64449 W

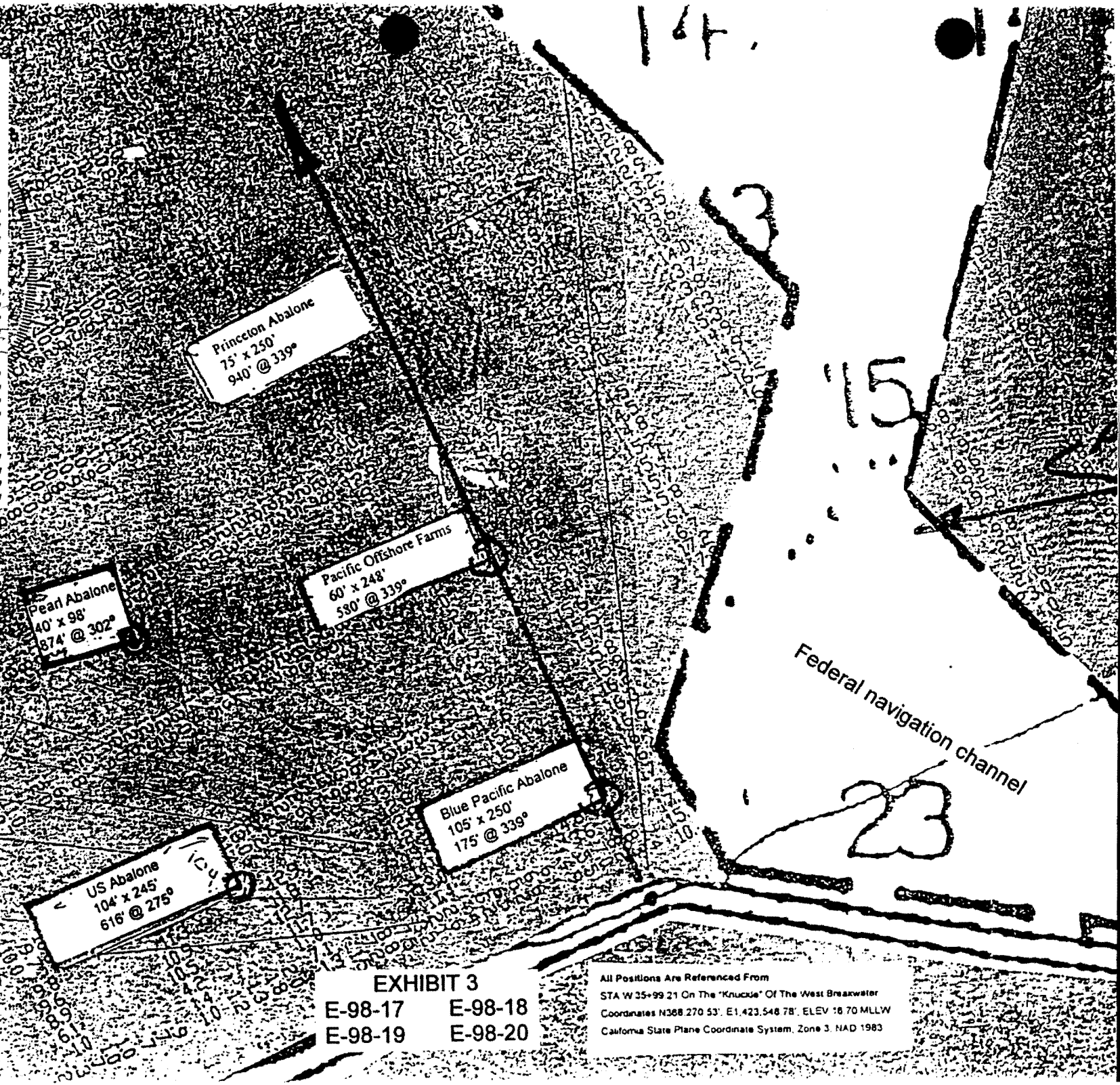


EXHIBIT 3

E-98-17 E-98-18

E-98-19 E-98-20

All Positions Are Referenced From

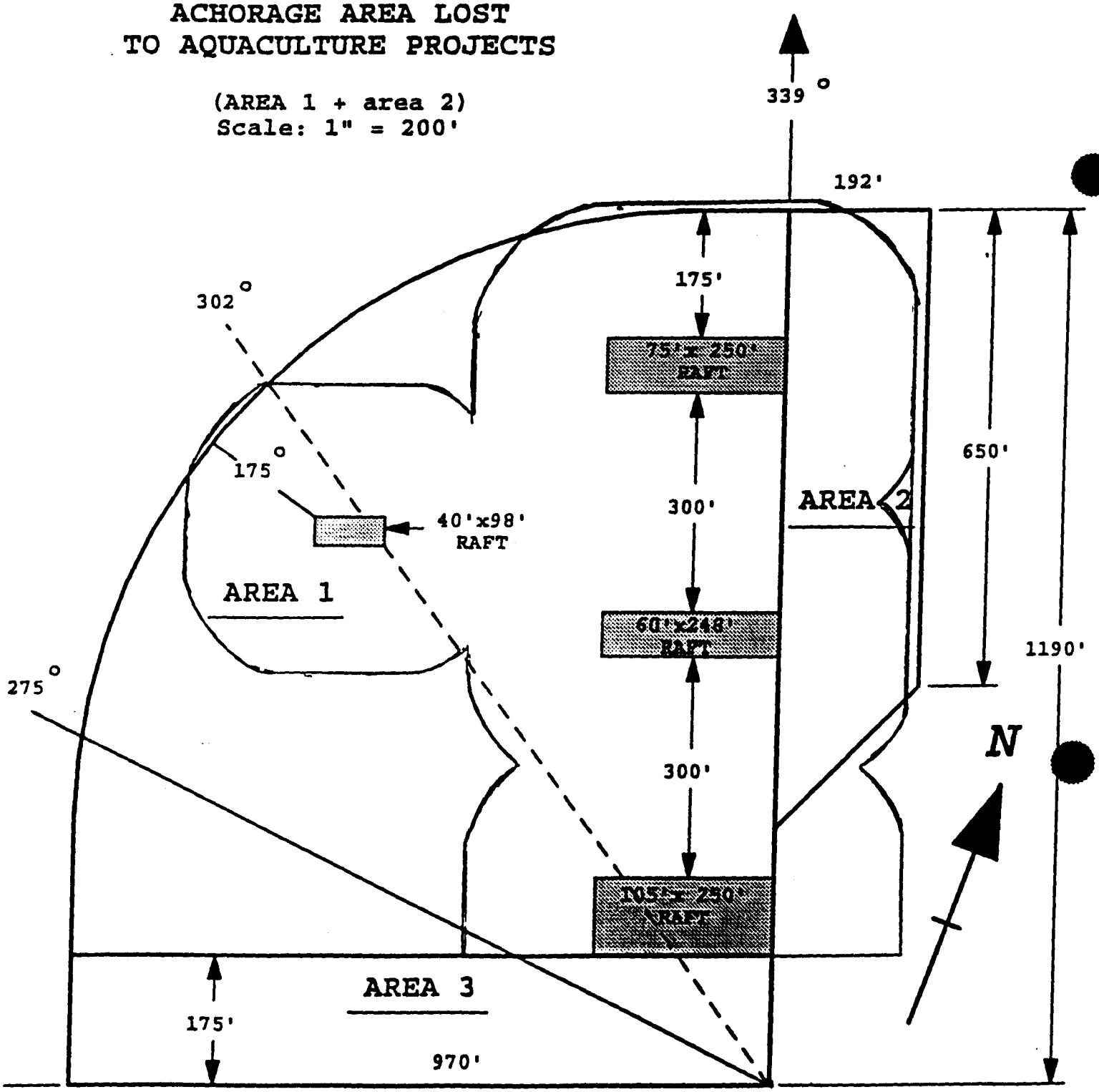
STA W 35+99.21 On The "Knuckle" Of The West Breakwater

Coordinates N368,270.53', E1,423,548.78', ELEV 16.70 MLLW

California State Plane Coordinate System, Zone 3, NAD 1983

PILLAR POINT HARBOR
ACHORAGE AREA LOST
TO AQUACULTURE PROJECTS

(AREA 1 + area 2)
Scale: 1" = 200'



AREA OF ANCHORAGE LOST

AREA 1 = 860,998 SQ. FT.
AREA 2 = 143,232 SQ. FT.
TOTAL = 1,004,230 SQ. FT.

= 23.05 ACRES

EXHIBIT 4
E-98-17 E-98-18
E-98-19 E-98-20

NOTE: AREA 3 NOT INCLUDED BECAUSE OF PROXIMITY TO BREAKWATER

APPENDIX A

Standard Conditions

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

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

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

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

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

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

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

APPENDIX B

California Department of Fish and Game
Stock Inspection Procedures for Aquaculture Operations
in
Pillar Point Harbor

STATE OF CALIFORNIA--THE RESOURCES AGENCY GRAY DAVIS, Governor

DEPARTMENT OF FISH AND GAME
213 BEACH STREET
MORRO BAY, CALIFORNIA 93442
805/772-1714

February 17, 1999

Ms. Moira McEnespy
Energy and Ocean Resources Unit
California Coastal Commission
45 Fremont Street, Suite 2000
San Francisco, CA 94105

Ms. McEnespy;

The attached document identifies the stock inspection procedures that the Department of Fish and Game will use to prevent the introduction of a South African parasitic sabellid worm infestation into abalone aquaculture facilities or into naturally occurring host populations in the Pillar Point harbor area. If you have any questions regarding implementation of these procedures, please contact me through the information provided above.

Sincerely,

Fred Wendell

Fred Wendell
Marine Aquaculture Coordinator

cc: Mr. Bob Hulbrock, Aquaculture Coordinator, CDFG - Sacramento
Mr. Frank Henry, Northern California Area Manager, CDFG - Menlo Park

Department of Fish and Game
Stock Inspection Procedures for Aquaculture Operations in Pillar Point Harbor

I. If an applicant plans to obtain stock from an existing facility and:

A. the existing source facility has not yet been certified as sabellid-free:

Special Condition 5 supercedes I.A.

1. Department personnel will inspect source stock for the presence of sabellid worms no more than 45 days prior to transfer. The sampling protocol will allow the Department to conclude with 99% statistical confidence that an infestation rate of 5% or greater would be detected if no sabellids are observed in the sample. Once source stock has been inspected for transfer, no other stock may be mixed with that group until after the transfer has been completed.

2. After the first transfer of stock to the new facility is completed, Department personnel will inspect that facility after six months and annually thereafter (i.e., first inspection at six months, second inspection at 1.5 years, third inspection at 2.5 years, etc.) until the Department's director determines that such inspections are no longer necessary.

   a. Inspection of the facility will entail sampling from each container (e.g.,cage, barrel) in the facility. The sampling protocol will allow the Department to conclude with 95% statistical confidence that an infestation rate of 5% or greater would be detected if no sabellids are observed in the sample.

   b. If a sabellid infestation is detected, the operator shall market or destroy all animals in the container (e.g., cage, barrel) in which the infested animal was found within 2 weeks.

B. the existing source facility <u>is</u> certified as sabellid-free:

1. If <u>all</u> stock is obtained from a certified sabellid-free facility:

   a. Department personnel may conduct an inspection of the new facility six months after transfer of stock to insure that all stock can be deemed sabellid-free.

      (1) If no sabellids are found, the Department will certify the facility as sabellid-free as long as no new transfers of stock to the facility occur. However, spot inspections may be conducted to insure that all stock remains

sabellid-free. If subsequent/additional stock is obtained from a certified sabellid-free facility, procedures will be as described in (I)(B)(1) above. If and when stock is obtained from a facility that is not certified as sabellid-free, regulation will be as described in (I)(A)(2) above.

(2) If a sabellid infestation is detected, the operator shall market or destroy all animals in the container (e.g., cage, barrel) in which the infested animal is found within 2 weeks. Procedures will then be as described in (I)(A)(2) above.

II. If an applicant plans to develop own broodstock in a new facility (using a broodstock collecting permit or obtaining broodstock from a certified sabellid-free facility):

1. Each operator will notify Department personnel when broodstock are being collected. When the facility is fully stocked and producing seed, Department personnel will conduct one facility-wide inspection of the facility to determine whether the facility can be deemed sabellid-free. The inspection will adhere to procedures detailed in the Department's Sabellid Worm-Free Certification Policy.

a. If no sabellids are found, the facility will be certified as sabellid-free as long as no additional stock are transferred to the facility from a non-certified source. The Department may conduct spot inspections as necessary if additional stock is obtained from the wild, from a certified source, or to insure that all stock can be deemed sabellid-free. If additional stock is obtained from an existing uncertified source facility, regulation will be as described in (I)(A)(2) above.

b. If a sabellid infestation is detected:

(1) The operator shall market or destroy all animals in the tank or container in which the infested animal was found within 2 weeks.

(2) Sabellid worm-free certification will be lost and Department personnel will then conduct either inspections intended to achieve certification as described in the Department's Sabellid Worm-Free Certification Policy or follow procedures described in (1)(A) above.

APPENDIX C

Sampling, Analysis and Reporting Requirements

The following required surveys shall be conducted according to the timeline and methods provided below:

- The operator shall retain qualified independent contractors approved by the executive director and the California Department of Fish and Game ("CDFG") to conduct a sediment survey (which includes total organic carbon ("TOC") and grain size) during the period April 1 through September 30 (1) prior to placing any abalone in the field and (2) annually thereafter.

- The operator shall retain qualified independent contractors approved by the executive director and the CDFG to conduct a benthic infaunal survey during the period April 1 through September 30 (1) prior to placing any abalone in the field; (2) five years after placing abalone in the field; and (3) if the annual sediment surveys detect a significant increase in TOC within the sediments under the grow-out facilities, as defined in the "Thresholds of Significance" section of this appendix.

- For both sediment surveys and benthic infaunal surveys, the operator may provide logistical support and personnel to assist in collecting and processing field samples. Any such personnel must be acceptable to the qualified independent contractor who must provide direct, on-site supervision and will be responsible for maintaining records of chain-of-custody for all field samples.

Timing of Plan Submittal and Sampling

1. Prior to issuance of this coastal development permit, the operator shall submit for executive director approval a sampling plan for conducting the initial sediment and benthic infaunal surveys in accordance with the methods detailed below.

   [Once plan is approved and this coastal development permit has been issued, the operator may commence placing grow-out structures in the harbor.]

2. Prior to placing any abalone in the waters of Pillar Point Harbor, the operator shall conduct initial sediment and benthic infaunal sampling.

   [Once sampling conducted, the operator may commence placing abalone in the harbor.]

3. Based on the results of the initial surveys, the operator shall submit for executive director approval a sampling plan for conducting the second and subsequent sediment and benthic infaunal surveys that has sufficient replication to detect with 80% power at the alpha = 0.10 level (1) an absolute increase of 0.5% in the average TOC,(2) a 3-fold increase in the average number of individuals of the two most abundant negative indicator species and (3) a halving in the average number of individuals of the two most abundant positive indicator species.

   - Negative indicator "species" are taxa, such as the *Capitella capitata* complex, whose populations are known to increase in density with increases in the organic content of sediments.
   - Positive indicator "species" are taxa whose populations are known to decrease in density with increases in the organic content of sediments and are characteristic of natural, undisturbed environments.
   - An alpha level of 0.10 shall be considered statistically significant in any subsequent statistical test unless the applicant voluntarily samples with sufficient replication to provide 80% power with an alpha = 0.05 to detect effects as described above. In the latter case, an alpha level of 0.05 will be considered significant in statistical tests.

4. Survey samples shall be analyzed and a report submitted to the executive director for review within six months of completing each field survey.

Sampling Methods (for both sediment and benthic infaunal sampling)

Independent Monitoring. The operator shall retain qualified, independent contractors approved by the executive director and the CDFG to conduct all sediment and benthic infaunal sampling. The operator may provide logistical support and personnel to assist in collecting and processing field samples. Any such personnel must be acceptable to the qualified independent contractor who must provide direct, on-site supervision and will be responsible for maintaining records of chain-of-custody for all field samples

Location Determination. The operator shall determine the location of the corners of its grow-out structures (or contiguous cluster of grow-out structures) and the location of each sampling station using a differential global positioning system.

Sampling stations along a linear transect (the primary sampling transect). Sediment and benthic infaunal samples shall be collected at four stations along a linear transect:

1. A primary impact station within the footprint of the aquaculture lease (0 m);
2. 20 m from the edge of the facility;
3. 60 m from the edge of the facility, and;
4. 140 m from the edge of the facility.

- The transect shall be oriented away from other lease areas and located so that the bottom sediment texture along the transect is as similar as possible. This will require some preliminary sampling.
- The same stations shall be used in subsequent surveys.

Sampling locations under the license area. The 0-m station is intended to encompass the area of greatest potential impact. In the initial sampling plan submitted to the executive director, the applicant shall include a diagram showing the license area, the location (within the license area) of the aquaculture rafts that will be installed during the first year, the location of additional rafts that are proposed to be installed in later years, and the proposed sampling locations. During the initial survey, for both sediment and infaunal invertebrate sampling, at least three replicate samples must be taken under the rafts that will be used for abalone culture during the first year and subsequent years. The area below this raft cluster will be divided into equal spatial strata from each of which one random sample will be collected. Any additional replicates that are required will be placed in the area of projected build-out and collected in a similar, stratified random fashion. The number of cells used for the initial samples shall be related to the size of the lease hold as follows:

- three cells for areas up to 1000 m^2;
- six cells for areas 1001 – 2000 m^2; and
- nine cells for areas 2001 – 3000 m^2.

Sample Collection. Depending on license area size, both sediment and benthic infaunal sampling will require an initial collection of a total of 12 to 18 samples.

- For the initial survey, three replicate samples shall be collected at the 20-m, 60-m, and 140-m stations. These samples shall be collected along a 15-m line perpendicular to and centered on the primary sampling transect. This 15-m line will be divided into three contiguous 5-m strata (or sections), within each of which one random sample shall be collected. *[Note that each operator must determine the number of replicates for subsequent surveys—see #3 under "Timing of Plan Submittal and Sampling"]*

- Each replicate sample shall be a composite from 3 sediment cores collected 1 m apart along a line parallel to the primary transect.
- Sediments and associated invertebrates shall be collected by divers using 4-in diameter x 4-in long (10.16-cm d x 10.16-cm l) cores. The sediment shall be extruded from the cores and cut radially into 3 sections or splits. One split from each core shall be combined for the sample of infaunal invertebrates. The upper 2 cm of two splits from each core shall be combined for the sediment sample.
- Core samples shall be handled, preserved, and shipped using standard methods specified by the laboratory doing the analysis.
- Alternative methods of sample collection that substantially accomplish the same goals by maintaining the desired spacing and area sampled may be used upon approval of the executive director.

Laboratory Analysis

- Laboratory analyses shall be conducted by qualified laboratories approved by the executive director and the CDFG.
- Each composite sediment sample shall be homogenized and analyzed for grain size and TOC. The percent sand and percent silt plus clay shall be determined using standard sieving techniques. TOC shall be determined with an elemental analyzer using standard techniques.
- For each composite sample of the benthic infauna, the macroinvertebrates shall be separated from the sediment by washing through a 1-mm screen. Individuals shall be identified to the lowest possible taxon and counted. The biomass of each taxon shall be determined.

Thresholds of Significance

<u>Criteria for identifying a significant effect of abalone-culturing activities on TOC</u>:

- A significant trend of decreasing TOC with distance from the aquaculture facility that did not exist at the time of the initial survey; or
- significantly greater TOC at the 0-m station compared to the 140-m station, where this pattern was not present during the initial survey; or
- a significant increase in TOC at the 0-m station, but not at the 140-m station.

Criteria for identifying a significant effect of abalone-culturing activities on the benthic infaunal community:

- Based on species abundances, a clustering of samples such that the 140-m station is distinct from the 0-m station, where there was no spatial pattern to the clusters using the data from the initial sample; or

- a significant trend of a) decreasing average number of species, or b) decreasing average abundance of the most abundant "negative indicator species", or c) increasing average abundance of the most abundant "positive indicator species" with distance from the aquaculture facility that did not exist at the time of the initial survey; or

- significantly a) smaller average number of species, or b) greater average abundance of the most abundant "negative indicator species", or c) smaller average abundance of the most abundant "positive indicator" species at the 0-m station compared to the 140-m station, where this pattern was not present during the initial survey; or

- a significant a) decrease in the average number of species, b) increase in the average abundance of the most abundant "negative indicator species", or c) decrease in the average abundance of the most abundant "positive indicator" species at the 0-m station, but not at the 140-m station.

Reporting

- Based on data analyses and best professional judgment, each report shall determine whether there is a trend among the stations and whether there is evidence of impacts to the 0-m station under the aquaculture rafts. The first report shall identify any pre-existing trends. The subsequent reports shall evaluate statistically the various criteria for identifying significant effects.

- All data shall be georeferenced and provided in ACCESS databases on computer diskette. Metadata, including detailed methods and identification of fields and units shall be provided in rich text format (rtf).

- Stations shall be grouped according to faunal similarities using Euclidean distance as the clustering criterion (Pielou 1984). Euclidean distances shall be calculated using log (abundance). Species occurring in only one of the samples shall not be used in this analysis. The unweighted pair-groups method of average linkage clustering shall be used as a clustering algorithm (Gauch 1982, Pielou 1984).

- Species shall be identified as those known to react positively or negatively to organic enrichment or as those for which there is no pertinent information available in the literature..

- A one-way analysis of variance followed by a multiple comparisons test shall be applied to each taxon which contributes more than 1% to the total abundance or biomass at any station and to TOC and percent silt + clay.

Citations

Gauch, H. G. Jr. 1982. Multivariate analysis in community ecology. Cambridge University Press, N. Y.

Pielou, E. C. 1984. The interpretation of ecological data. A primer on classification and ordination. John Wiley & Sons, N.Y.

Weston, D. P. 1990. Quantitative examination of macrobenthic community changes along an organic enrichment gradient. Marine Ecology Progress Series 61:233-244.

APPENDIX D

Substantive File Documents

Reports

Culver, Carolynn S., Armand M. Kuris, and Benjamin Beede. *Identification and Management of the Exotic Sabellid Pest in California Cultured Abalone.* A publication of the California Sea Grant College System (La Jolla: 1997). Publication No. T-041; ISBN 1-888691-05-0.

Mitigated Negative Declaration, Aquaculture Operations, Pillar Point Harbor, Half Moon Bay, California. San Mateo County Harbor District, California Department of Fish and Game (July 29, 1996).

Revised Expanded Initial Study for Abalone Aquaculture Operations, Pillar Point Harbor, San Mateo County. Prepared for the San Mateo County Harbor District by Huffman & Associates, Inc. (June, 1996).

Responses to Comments on the Expanded Initial Study for Abalone Aquaculture Operations, Pillar Point Harbor, San Mateo County. Prepared for the San Mateo County Harbor District by Huffman & Associates, Inc. (June, 1996).

Results of Pillar Point Harbor Intertidal Mitigation Site Investigations: A. Benthic Invertebrates; B. Shorebirds. Prepared for the San Mateo County Harbor District by Entrix, Inc. (Walnut Creek, CA: April 6, 1995). Report No. 322900.

"Giant and Bull Kelp Commercial and Sport Fishing Regulations." *Section 30 and 165, Title 14, California Code of Regulations.* California Department of Fish and Game. Final Draft Environmental Document (January, 1996).

"Pillar Point Area Calculations" by Concept Marine (November 6, 1998). File no. 29829/102/1301.

Correspondence

Letter from Zeke Grader, Pacific Coast Federation of Fishermen's Associations, to Peter Douglas, CCC, May 14, 1999.

Letter from Robson Collins, California Dept. of Fish & Game, to Peter Douglas, CCC, April 20, 1999.

Letter from Peter Douglas, CCC, to Richard Thieriot, Fish & Game Commission, Robert Hight, California Dept. of Fish & Game, and Robson Collins, California Dept. of Fish & Game, April 15, 1999.

E-mail correspondence from Gary Page, Point Reyes Bird Observatory, to Moira McEnespy, California Coastal Commission, January 20, 1999.

Letters from Ed Ueber, Gulf of the Farallones and Monterey Bay National Marine Sanctuaries, to Loretta Barsamian, SF Regional Water Quality Control Board, June 16, 1998, and February 23, 1998.

Letters from DeWayne Johnston, California Dept. of Fish & Game, to Richard Thompson, U.S. Army Corps of Engineers, April 1, 1998, and February 27, 1998.

E-98-17 (Hayes, "Pacific Offshore Farms")
E-98-18 (Locke, "Princeton Abalone")
E-98-19 (Wagner, "Blue Pacific Abalone")
E-98-20 (Zajac, "Pearl Abalone")

Letter from Bob Miller, Crab Boat Owners Association, to Joy Chase, California Coastal Commission, February 17, 1997, p. 2.

Memos to all registered abalone aquaculturists from Jacqueline E. Schafer, California Dept. of Fish & Game, dated December 6, 1996, and May 20, 1996.

Memorandum from Dan Temko, San Mateo County Harbor District, to the Board of Harbor Commissioners, May 31, 1996.

Letter from Eileen Jennis-Sauppe, Sequoia Audubon Society, to James Stilwell, San Mateo County Harbor District, December 19, 1995.

E-98-17 (Hayes, "Pacific Offshore Farms")
E-98-18 (Locke, "Princeton Abalone")
E-98-19 (Wagner, "Blue Pacific Abalone")
E-98-20 (Zajac, "Pearl Abalone")

APPENDIX E

Correspondence

455 County Center, 4th floor, Redwood City, CA 94063

To: San Mateo County Park and Recreation Commission

From: Wade Leschyn, Chair - Fish and Wildlife Advisory Committee

Date: May 19, 1999

Subject: Kelp Bed Closure

Background:

The San Mateo Fish and Wildlife Advisory Group unanimously approved the initiation of following action at meeting of 3/17/99 and ratified the recommendation on 4/21/99.

Recommendation for Initiation of a Kelp Bed Closure:

This action requests that the San Mateo County Board of Supervisors initiate the procedures necessary to seek closure of San Mateo's kelp beds to commercial harvest. The action requests special closures by the California Coastal Commission relative to pending aquaculture permits and a closure of San Mateo's kelp beds by action of the California Fish and Game Commission.

An affirmative action by the Park and Recreation Commission will forward this recommendation to the Board of Supervisors. Approval by Board of Supervisors will result in a petition to the California Fish and Game Commission and a request to the California Coastal Commission for closure of the kelp beds.

Overview:

The kelp beds in San Mateo represent a significant resource to the County. Nereocystis (Bull Kelp) and Macrocystis (Giant Kelp) provide food and shelter to a myriad of organisms throughout their life cycle. Kelp provides food for abalone, urchins, and other bottom dwellers and provides shelter for a large number species of crustaceans, mollusks, fish, marine mammals, and birds. The kelp canopy serves as a nursery for juvenile rockfish. Sea otters use the kelp as shelter.

The kelp in San Mateo County, north of Ano Nuevo has declined in recent years, due to unknown causes that may include sewer outfall and water temperature changes. In particular, the massive bull kelp bed that formerly outlined the reef bordering Half Moon Bay has virtually disappeared.

Small, scattered clusters of kelp are found along the San Mateo coast, but not in quantities that would support even "light" commercial harvest without serious environmental

consequences. Because of the low populations of kelp in these areas and the potential that commercial harvesting will further damage remaining populations, the San Mateo Fish and Wildlife Advisory Group has unanimously recommended the following kelp bed closures to commercial harvest:

Bed 226 - Golden Gate to Point Montara - No kelp "beds" of any consequence exist north of Daly City. Nereocystis is found in small quantities near Mussel Rock in Daly City. A small bed of Nereocystis exists in the cove south of Pedro Point. Neither of these "beds" could support commercial harvest. The bed is designated as "open" to harvest by DFG meaning it may be harvested on a first come, first served basis.

Bed 225 - Point Montara to Pescadero Point - A small bed Macrocystis exists at Pillar Point. The Half Moon Bay Nereocystis bed which formerly covered the reef from Miramontes Point to Pillar Point is gone. No significant Macrocystis beds occur in this area. Commercial harvest should be prohibited. The bed is designated as "open".

Bed 224 - Pescadero Point to Ano Nuevo - No significant Nereocystis or Macrocystis beds occur in this area. Commercial harvest should be prohibited. The bed is designated as "open".

Procedure:

This petition is pursuant to Section 6654 of the California Fish & Game code which supports closure of kelp beds if the Fish and Game Commission finds that a kelp resource may be impaired or destroyed. Because of the low volume of kelp in these areas and the apparent decline in the kelp beds, the County of San Mateo requests protective closure of these beds. There is believed to be no direct fiscal effect caused by passage of this action since the extremely low stocks of kelp surviving in this area are of little economic consequence. Rather, this action will protect the remaining kelp resource and aid in the protection of resident marine life and in reestablishing the former beds when environmental conditions improve.

Sincerely,

Wade Leschyn

Wade Leschyn
Chairperson
San Mateo County Fish and Wildlife Advisory Committee

Pietro Parravano
President
David Bitts
Vice-President
bara Stickel
Secretary
Robert Miller
Treasurer

PACIFIC COAST FEDERATION OF FISHERMEN'S ASSOCIATIONS

INCORPORATED

W.F. "Zeke" Grader, Jr.
Executive Director
Nathaniel S. Bingham
Habitat Protection Director
Glen H. Spain
Northwest Regional Director
Mitch Farro
Fishery Enhancement Director

WEB:http/www.pond.net/~pcffa

Please Respond to:

☑ California Office
P.O. Box 29910
San Francisco, CA 94129-0910
Tel: (415) 561-5080
Fax: (415) 561-5464

☐ Office of the President
215 Spruce Street
Half Moon Bay, CA 94019
Tel: (650) 726-1607
Fax: (650) 726-1607

☐ Habitat Office
P.O. Box 783
Mendocino, CA 95460
Tel: (707) 937-4145
Fax: (707) 937-2617

☐ Northwest Office
P.O. Box 11170
Eugene, OR 97440-3370
Tel: (541) 689-2000
Fax: (541) 689-2500

14 May 1999

RECEIVED
MAY 20 1999
CALIFORNIA
COASTAL COMMISSION

Mr. Peter Douglas
Executive Director
California Coastal Commission
45 Fremont Street, Suite 2000
San Francisco, CA 94105

RE: Coastal Permit Applications E-98-17 (Pacific Offshore Farms), E-98-18 (Princeton Abalone), E-98-19 (Blue Pacific Abalone), and E-98-20 (Pearl Abalone) - Request Denial

Dear Mr. Douglas:

The Pacific Coast Federation of Fishermen's Associations (PCFFA), representing working men and women in the west coast commercial fishing fleet, requests the Commission move its scheduled hearing of the above four permit applications from its June meeting in Santa Barbara to its July meeting in San Rafael. The reason for this request is to make your hearing more accessible to the persons who would be most directly affected by these proposed abalone "farms" in the anchorage at Pillar Point Harbor in San Mateo County. It is our understanding that the originally scheduled hearing on these permits was changed, at the request of one of the applicants, from your Carmel meeting. Certainly it is not unreasonable, therefore, that some consideration be given to a request by affected parties that the hearing be in a location hundreds of miles nearer the site of proposed operations.

PCFFA objects to the four permits as they have been submitted to the Commission for the following reasons:

Loss of Vessel Anchorage - Violation of Public Resources Code Sec. 30234. The four permit applications for abalone grow-out facilities in the open water anchorage of Pillar Point Harbor will reduce the amount of anchorage available to commercial fishing and recreational craft by an estimated 40 or more vessels. Because of the current salmon season structure, Half Moon Bay is now the most used salmon fishing port in California with both its marina and anchorage full during much of the salmon season. It is also heavily used in the summer months by recreational craft. Moreover, it is the only harbor of refuge available to small craft during storms between

Santa Cruz and San Francisco. Indeed, the breakwater was constructed with financing from federal small craft harbor funds, while other facilities within the harbor were financed through the California Department of Boating & Waterways. Clearly, this harbor and its anchorage were built expressly to service and act as a port of refuge for small craft, not as an aquaculture facility.

At no time, to our knowledge, did the San Mateo County Harbor District conduct any study to determine that the amount of anchorage that would be displaced by the four proposed abalone facilities is not now used or needed by fishing vessels and recreational craft. Nor, to our knowledge, did the San Mateo County Harbor District make any warranties to the permit applicants that the proposed abalone facilities in the anchorage would not displace or interfere with vessels using the anchorage and therefore be in violation of the California Coastal Act.

The Coastal Act, at Public Resources Code (PRC) Section 30234, states:

Facilities serving the commercial fishing and recreational boating industries shall be protected and, where feasible, upgraded. Existing commercial fishing and recreational boating harbor space shall not be reduced unless the demand for those facilities no longer exists or adequate substitute space has been provided.....

There appears to be no dispute among the fishing fleet, Commission staff or the Harbor District that the proposed abalone facilities will reduce the amount of anchorage, i.e., harbor space, available. Further, neither the applicants, nor the Harbor District have offered any proof that the anchorage at Pillar Point Harbor is not fully utilized, i.e., in demand, during critical periods of the year. And, there is nothing in the permit applications to upgrade commercial fishing and recreational boating facilities or provide adequate substitute space. The applications are therefore, on their face, in violation of PRC Section 30234.

Moreover, neither the findings in the California Coastal Act at Public Resources Code Section 30411(c), nor PRC Code Section 30222.5 provide for aquaculture operations, such as the proposed abalone facilities, displacing existing commercial fishing and recreational boating facilities. PRC Section 30411(c) "encourages" aquaculture, <u>but</u> not at the expense of coastal dependent uses such as commercial fishing or recreational boating. PRC Section 30222.5 states:

*Ocean **front** land that is suitable for coastal dependent aquaculture shall be protected for that use, and proposals for aquaculture located on those sites shall be given priority, **except over other coastal dependent developments or uses.** (emphasis added)*

PRC Code Section 30222.5, which staff relies on in part for justifying their permit approval recommendation, speaks to ocean front land, <u>not</u> vessel anchorages that may be "suitable" for aquaculture purposes. The section is also explicit that facilities for aquaculture are given priority in the coastal zone only to the extent they do not conflict with other coastal dependent developments or uses, which include commercial fishing and recreational boating. PRC Section 30222.5, therefore, does not get around PRC Section 30234.

Diminution of Water Quality - Violation of Public Resources Code Section 30231. The four permit applications fail to adequately address the impact of the discharge of fecal effluent from their highly concentrated abalone grow-out facilities on the water quality within Pillar Point Harbor where circulation is restricted by the existing breakwater. There is no proof submitted by the applicants that the effluent from their proposed operations will not adversely affect water quality, including dissolved oxygen in the water, at Pillar Point Harbor and this area of the coastal zone, impacting aquatic vegetation and animals, as well as commercial fishing operations there dependent on good water quality in the harbor for maintaining live Dungeness crab and other fish and shellfish species.

The California Coastal Act at PRC Section 30230 states:

The biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health ***shall*** *be maintained and, where feasible, restored through, among other means,* ***minimizing adverse effects of waste water discharges*** *and entrainment.....(emphasis added)*

Although the proposed facilities have gotten approval from the Regional Water Quality Control Board, this does not, to us, mean that water quality will not be diminished. Indeed, our organization has had to take both the U.S. EPA and regional boards to court to direct them to enforce clean water measures under the federal Clean Water Act. The Coastal Commission, therefore, should not rely simply on an approval of a former Regional Water Quality Control Board as the last word on water quality, but must demand the applicants clearly demonstrate that their projects will not diminish water quality, as required of the Commission pursuant to PRC Section 30230. PCFFA does not believe the applicants, based on their permit submission, can demonstrate that the discharges of fecal effluent from their proposed facilities will not adversely effect water quality, particularly within the closed confines of Pillar Point Harbor.

Spread of the Sabellid Worm - Violation of Public Resources Code Section 30230. The permit applications are for abalone aquaculture in open waters that can allow for the spread of the Sabellid Polychaete Worm, which was first introduced to California from cultured abalone seed stock imported from South Africa. This parasite, which is found in abalone aquaculture operations, can be spread to the wild if the aquaculture operations are sited, as proposed by the applicants here, in an open ocean water setting (as opposed to a land-based closed system). The assurances by the applicants of inspections by the Department of Fish & Game are no guarantee the worm will not be spread to the wild.

All abalone commercial and sport fishing was closed two years ago south of San Francisco because of concerns over depleted abalone stocks. The State is now attempting to rebuild these populations. That rebuilding could easily be thwarted and the Northern California sport abalone fishery threatened if the Sabellid worm begins infecting wild, native stocks of abalone.

The Department of Fish & Game is short-staffed and inadequately funded. It has not been able in the past to prevent the introduction of invasive species, including parasites such as the Sabellid worm, nor does it have containment or eradication plans for nearly all of the invasive species now in California. Indeed, this agency has been mostly concerned with promoting aquaculture, not regulating it. Moreover, there is nothing stated about closing any of the facilities if their stock is found to be infected, or requiring a bond to provide funds for clean-up and to mitigate damage to native abalone stocks from an infestation. While our organization has a great deal of hope for the new Fish & Game leadership with Director Hight, it is still an agency that is underfunded and understaffed, that has neither a policy nor program for prevention, containment or eradication of invasive species.

The Coastal Act at PRC Section 30230 states:

Marine resources shall be maintained, enhanced, and where feasible, restored. Special protection shall be given to areas of special biological or economic significance. Use of the marine environment ***shall*** *be carried out in a manner that will* ***sustain the biological productivity of coastal waters and that will maintain healthy populations of all species of marine organisms for long-term commercial, recreational****, scientific, and educational purposes. (emphasis added)*

Clearly, given the fact that abalone aquaculture seed stock and facilities have been found to be infected with the Sabellid worm, that the proposed operations are for open ocean waters, and that the Department of Fish & Game is ill-equipped to carry out the inspection and oversight to prevent Sabellid worm infestation from the proposed facilities into wild, native abalone populations, the proposed operations here threaten the productivity of our coastal waters and the maintenance of healthy populations of marine organisms (e.g., wild abalone). As a result, the operations proposed under the four permits violate PRC Section 30230.

PCFFA has reviewed the Commission's staff proposed conditions and finds those recommendations, unfortunately, inadequate for the protection of coastal dependent uses, such as commercial fishing and recreational boating, or for the protection of coastal resources as provided for under the California Coastal Act. While PCFFA understands staff efforts attempting to placate applicants by recommending approval with conditions, strict adherence to the law demands the applications as submitted be denied.

For the reasons stated above, PCFFA believes the Commission in following the Coastal Act has no option but to deny the permit applications. To ensure a full and complete hearing on these four permits, however, it is necessary the hearing be held in a location convenient not simply to the applicants, but those who would be impacted as well. For that reason PCFFA, again, respectfully requests that this matter be moved from the Commission's June meeting in Santa Barbara to its July meeting in San Rafael. Your attention to this matter is appreciated.

Sincerely,

W.F. "Zeke" Grader, Jr.
Executive Director

WFG:rtd

cc: The Honorable Tom Hayden, Chair, Senate Natural Resources & Wildlife Committee
The Honorable Byron Sher, Chair, Senate Environmental Quality Committee
The Honorable Howard Wayne, Chair, Assembly Natural Resources Committee
The Honorable Mike Machado, Chair, Assembly Water, Parks & Wildlife Committee
The Honorable Virginia Strom-Martin, Chair, Joint Committee on Fisheries & Aquaculture
Mr. Richard Theriot, President, California Fish & Game Commission

Calif. Coastal Commission 5-13-99

RECEIVED
MAY 14 1999
CALIFORNIA
COASTAL COMMISSION

Dear Maria,

Per our telephone conversation of this a.m. I am forwarding the following:

(1) Chapter 68 Statutes of California with map of Grant to S.M. County Harbor District.

(2) Copy of Judgment Quieting Title with reference to to above Law (see p 721)

I obtaind this material from the County + then contacted the State Lands Commission who sent me a copy of Chapter 68 + map.

This came about because a local Writer (Barbara Vanderwerf) said that someone should go to the County + research how it was that the Harbor District of San Mateo came to attain the Burnam buffer strip between Hwy. 1 + El Granada + Harbor area. It seems to me that this land + waters in the harbor were forced from the original owners.

At any rate the Grant is in a land trust for the people of the State of California and there are conditions that the Harbor District must comply with — it is stipulated that they are only custodians + must maintain the harbor for fishermen, recreation + navajation — No where is it →

stated that they may exploit + destroy the waters in the Harbor or the adjacent land.

Can you please research this + bring this new information into the matter in front of you — of the destructive proposals of placing abalone in our Working Fishing Harbor?

Also, I am formally asking that E-98-17, 18, 19 + 20 be heard in San Rafael in July as this is a critical Coastside issue + needs to be discussed where the fishermen + community can attend and require the appliants to do a full EIR on their proposals including explanation of where they would get their stock from. It is illegal to transfer abalone from one area to another.

We are very concerned here to not let exploitation or destruction of our Working Fishing Harbor by these proposals.

Thank-You, (650) 726-4013

Barbara K. Maus
P.O. Box 1284
El Granada, CA 94018

P.S. please send me all future material. Thanks!

Doug Hayes
Pacific Offshore Farms
651 Torrington Drive
Sunnyvale, CA 94087

Secretary Mary Nichols
Resource Agency

May 10, 1999

Dear Ms. Nichols,

Sharon at the Governor's office suggested I contact you about some problems I'm having with the Coastal Commission staff. I hope somehow you can help, especially in settling some differences between the Coastal Commission and the Department of Fish and Game. I'll have to give you a little back ground, so please read on.

My name is Doug Hayes, I live in Sunnyvale, I'm an engineer, and I want to grow abalone (aquaculture) in floating cages in the harbor in Half Moon Bay, Ca. (CCC application no.E-98-17).

After many years, tons of money, countless public hearings (a lot of fishermen hate aquaculture), an EIR, the CEQA process...Good news! I got a forty year lease with the San Mateo County Harbor District to grow abalone in their sparsely used outer harbor!

Next step, I need a Coastal Development Permit, I submit my application in January of 1997, The CCC (Lee Otter) has been coming to all the meetings, we've incorporated all of their suggestions, they seemed nice and objective with everything so far, I'm hoping it will go smooth, after ail, it's in their charter to *encourage* aquaculture. But no! Since I submitted my application, they've tried everything to delay, obstruct or stop my project even though it conforms with the coastal act.

The CCC staff sent me a letter in March of 97 with a list of other letters and permits I needed to complete my application. The hardest was the Regional Water Quality Control Board permit. They wanted to give me a waiver like all the other abalone operations the State (its just abalone and kelp), but the CCC insisted. Dozens of meeting and thousands of dollars later, I got the RWQCB permit!

Now I have everything to complete my coastal development permit application (7/2/98), and by law I think they'll have to bring it to the full board for a vote within 42 days! Does the CCC have to comply with this requirement?

This is where things really start to go bad.

I call Lee Otter at the Santa Cruz CCC office to tell him I've gotten everything they wanted, But now he won't take my call! I try a few other times over the next few days, he still won't take my call, finally, CCC staff tells me they've transferred my application to the Energy and Ocean Resource Unit of the CCC in San Francisco!

Now I write the San Francisco CCC office (7/15/98) and basically say "please file my application, you now have everything you asked for to complete it". Well, as it turns out, Lee Otter didn't send

any of his notes along from the years of meeting we had and now the San Francisco office doesn't have any of the details to write their staff report. And, they're not in any rush to get them. Months go by... dozens of letters and phone calls back and forth, then Staff tells me they'll have their staff report in September, later they tell me Oct... then Nov, on and on.

Then 8 days before the February 1999 Coastal Commission meeting they give me their 50 page staff report, and say the full board will vote this next Wensday. I then say, "8 day notice on this?" and they actually said things like "the copy machine was broken" and I swear to god..."we thought we sent it." I tell them I needed a little more time to review it, They tell me it's a "positive staff report," they've recommended that the Coastal Commission approve this project (with their 12 conditions), and its in my best interest to have the Commission vote on it the following Wensday. I told them to take it off their calendar because their "conditions" are designed to put me out of business.

It would take another 10 pages do describe in how many ways their staff report kills my project. But here are some highlights.

1. I can only buy DFG "certified stock, even though there are no stocks that can presently be certified and DFG says that is an overly burdensome requirement, and no other abalone aquaculturist in the State has this requirement. The DFG may never certify stock. The CCC staff report acknowledges that it will be a minimum of 2 years before certified stock may be available, yet another condition says if the project doesn't get started within 2 years, the permit expires! They won't change this.
2. I can't harvest or feed my abalone kelp from the open kelp beds in my area, but all the other abalone aquaculturists in the State, and an industrial kelp harvester (Kelco) can. DFG regulates kelp harvest and I have a permit to harvest from them. They say the harvest does not harm the local bed and when they prepared their EIR and regulations a few years ago, the CCC didn't argue, it's just that I (and the other hopeful Half Moon Bay abalone aquaculturists) can't use it.
3. I have to complete a benthic infaunal survey ($20,000+) at some point (its so poorly written it's hard to tell when or how often). Even though this is a major requirement of my RWQCB permit, the CCC has taken it over. I guess they don't think the Regional Board understands how badly abalone pooping in the ocean might violate the clean water act.
4. The CCC is reducing the area I can use in the harbor because of the imaginary anchorage needs identified by a project opponent with a personal agenda, despite what an unbiased contractor, an independent survey of the harbor, the Harbor District, and the Harbor Master have said.

Ms Nichols, this is where you can help. My project will be voted by the CCC full board June 9th, the staff won't change anything of substance in their report. These are examples where the CCC is piling on excessive restrictions where other regulatory agencies are doing their job. The first 2 are regulation and management by DFG, another of the departments in your agency. I've been working with the DFG for 4 years on this project, they've been great, very helpful. Now the CCC is not letting me use my permits issued by the DFG and are now going to regulate the abalone and kelp just for me. The two agencies have met a few times, but the CCC won't back off. **Can you get the CCC to let the DFG regulate the things they regulate?**

If you would like to talk to me, please call anytime at (408)739-1148.

Sincerely,

Doug Hayes

Doug Hayes, Owner of Pacific Offshore Farms

STATE OF CALIFORNIA—THE RESOURCES AGENCY PETE WILSON, *Governor*

DEPARTMENT OF FISH AND GAME
20 LOWER RAGSDALE DRIVE, SUITE 100
MONTEREY, CA 93940
(408) 649-2870

April 20, 1999

RECEIVED
APR 22 1999
CALIFORNIA
COASTAL COMMISSION

Mr. Peter M. Douglas, Executive Director
California Coastal Commission
45 Fremont Street, Suite 2000
San Francisco, California 94105-2219

Dear Mr. Douglas:

Thank you for your letter expressing concern about the potential harvest of kelp by abalone aquaculture operations proposed for Pillar Point Harbor, San Mateo County.

The Department has also been concerned that the demand for kelp resulting from these new or expanded abalone culture operations will exceed the supply available locally, especially during periods of low abundance. The Fish and Game Commission has the authority under Section 6653, Fish and Game Code to regulate the harvest of kelp and other aquatic plants. The issue of the harvest of kelp by existing Monterey Bay area abalone growers and its impact on other uses has already been brought before the Fish and Game Commission at its December 1998 meeting in Monterey. The Commission then directed the Department to address the issue as a part of its upcoming review of kelp management regulations due to the Commission in 2000.

However, I believe that we must explore new, alternative approaches to the management of kelp harvest, especially with regard to the Monterey Bay area, as well as the need for more frequent monitoring of the health of harvested kelp beds. The Department's Marine Region welcomes the opportunity to discuss this issue and possible solutions with other agencies, such as your own, and the National Marine Sanctuaries. We would be happy to host such a meeting at our office in Monterey, or attend a meeting elsewhere in the area if it's convenient for you or your staff. I have already contacted your staff with regard to such meetings, and hope to finalize a time and place in the near future.

Meanwhile, should you or your staff have further comments or questions on this issue, please feel free to contact me or my assistant, Teresa Lauchaire, at (831) 649-2883 or via e-mail at RACollin@hq.dfg.ca.gov.

Sincerely,

Robson A. Collins
Nearshore Ecosystem Coordinator
Marine Region

cc: See Page Two

cc: Mr. Robert Hight, Director, Sacramento
Mr. LB Boydstun, Intergovernmental Affairs Representative, Sacramento
Mr. DeWayne Johnston, Regional Manager, Marine Region
Mr. Richard Thieriot, President, Fish and Game Commission
Mr. Robert R. Treanor, Executive Director, Fish and Game Commission
Mr. Jerry Spratt, Associate Marine Biologist, Marine Region

STATE OF CALIFORNIA—THE RESOURCES AGENCY GRAY DAVIS, *GOVERNOR*

CALIFORNIA COASTAL COMMISSION

45 FREMONT, SUITE 2000
SAN FRANCISCO, CA 94105-2219
VOICE AND TDD (415) 904-5200
FAX (415) 904-5400

April 15, 1999

Richard Thieriot
Chair
Fish and Game Commission
1416 - 9th Street, 3rd Floor
Sacramento, CA 95814

Robert Hight
Director
California Department of Fish and Game
1416 - 9th Street, 12th Floor
Sacramento, CA 95814

Robson Collins
Central Area Marine Manager
California Department of Fish and Game
20 Lower Ragsdale Drive, #100
Monterey, CA 93940

Subject: Kelp Canopy Removal Practices

Dear Mr. Thieriot, Mr. Hight, and Mr. Collins:

The Coastal Commission staff is reviewing four coastal development permit applications to grow-out up to 2,250,000 red abalone collectively in Pillar Point Harbor, San Mateo County.[1] Estimates of the amount of kelp that would be needed to support these facilities at full build-out range between 1,125 - 1,800 tons per year. The applicants propose to take the needed kelp from designated open beds pursuant to annual kelp harvesting licenses (primarily from south of Half Moon Bay, in the Santa Cruz or Monterey areas, and from local beds) and/or purchase kelp from existing suppliers.

Concerns have arisen that this new kelp demand, which could triple the existing regional demand,[2] could cause adverse impacts to the kelp bed community as an ecosystem (e.g., deplete kelp available for habitat and as a food source) and could exacerbate existing use conflicts (e.g., kelp and sea otter viewing v. removal of the canopy for commercial uses).

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[1] Pacific Offshore Farms (CDP Application No. E-98-17): 500,000 (increased from 200,000); Princeton Abalone (CDP Application No. E-98-18): 500,000; Blue Pacific Abalone (CDP Application No. E-98-19): 800,000; Pearl Abalone (CDP Application No. E-98-20): 450,000.

[2] One estimate of the current annual kelp harvest offshore Monterey and Pacific Grove, bounded approximately by the Monterey breakwater and Lover's Point, is 600 tons per year (Donnellan, Michael D. and Michael S. Foster, "The Effects of Small-Scale Kelp Harvesting on Giant Kelp Surface Canopy Dynamics in the Ed Ricketts Underwater Park Region," Final Report to the Monterey Bay National Marine Sanctuary and the Cities of Monterey and Pacific Grove, March, 1999.)

The Superintendent and Manager of the Monterey Bay and Gulf of the Farallones National Marine Sanctuaries, respectively, have expressed their concerns about these potential kelp-related impacts for several years, throughout the proposed projects' review and evaluation processes.. Their concerns about impacts to the kelp bed community and increased use conflicts are exacerbated by the lack of (1) a recent inventory of the amount and location of existing kelp, (2) assessment of the new demand from the four abalone aquaculture proposals, and (3) conclusion of how and where said demand could be accommodated in a manner that will sustain the kelp resource, the biological resources that depend on kelp for their existence, and associated uses.[3]

To address these concerns, the Commission staff recommended to its Commission in a staff report dated February 25, 1999, that the coastal permits be conditioned to preclude the use for abalone feed of kelp obtained from (1) open bed #220 between the Monterey breakwater and Point Pinos, and (2) the open bed between New Brighton State Beach and Pleasure Point, off the Santa Cruz County coast. The applications were scheduled to be heard at the Coastal Commission's March meeting, but were postponed at the request of the applicants.

The Commission staff is now analyzing these kelp-related issues further, and would like to work cooperatively with the California Department of Fish and Game and the Fish and Game Commission to find solutions. To facilitate such collaboration, the staff has outlined the major issues, and some possible solutions, to be used as a starting point.

Applicable Coastal Act Policies

The Coastal Act contains policies requiring the protection of marine resources, and that uses of the marine environment be carried out in a manner that will sustain the biological productivity of coastal waters and maintain healthy populations of all species of marine organisms adequate for long-term commercial, recreational, scientific, and educational purposes.

The Coastal Act also contains policies requiring protection of coastal water-oriented recreational activities. Commission staff is looking for ways to establish commercial kelp removal strategies that promote year-round sustainability of the kelp canopy at a level adequate to support multiple uses.

Use Conflicts

It is apparent that use conflicts involving kelp ecosystems exist.[4] Specifically, many ocean-related educational and recreational activities--such as viewing sea otters or the kelp itself,

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[3] As evidenced, for example, by the following references: (1) Letters from Ed Ueber, Gulf of the Farallones National Marine Sanctuary ("GFNMS"), to Loretta Barsamian, RWQCB, dated February 3, 1998, and June 16, 1998; (2) Letter from William Douros, Monterey Bay National Marine Sanctuary ("MBNMS"), to John Wolfe, dated January 12, 1999.

[4] As evidenced, for example, by the following references: (1) Letter from DeWayne Johnston, CDFG, to Richard Thompson, ACOE, dated February 27, 1998; (2) Conversation with Jerry Spratt, CDFG, February 2, 1999; (3) Letter from William Douros, MBNMS, to John Wolfe, dated January 12, 1999; (4) Letter from Ed Ueber, GFNMS,

kayaking, SCUBA diving--are greatly enhanced by the existence of the kelp canopy. Thus conflicts arise when kelp removal creates a temporal loss of the canopy, as kelp can be cut down to four feet below the water surface.

Impacts to Associated Species / Entire Kelp Bed Community

Increased rates of removal of kelp canopy may adversely affect the ecological balance of the system resulting, among other things, in an overall reduction of biological productivity and diversity in the kelp forest community. Using current canopy information, it is difficult to determine if there is sufficient winter canopy available throughout the region to support, for example, sea otter rafting and rock fish recruitment in the spring. Additionally, changes in algal composition in rocky reefs due to canopy removal have not been fully studied. The staff hopes information adequate to evaluate these potential impacts can be collected now before there are significant increases in the amount of kelp removed from the areas of particular concern (i.e., those identified in our staff reports on the pending permits) in the future.

Seasonal Nature of Impacts

While the volume of kelp needed to sustain abalone farms remains relatively constant throughout the year, there are significant seasonal fluctuations in kelp abundance due to storms and environmental conditions that affect growth. Thus, during the winter, kelp must be taken from a few sheltered beds at levels similar to summer needs, which intensifies take from specific beds and may result in the removal of a significant portion of the total canopy. Hence, potential adverse impacts from kelp removal would be more likely to occur during the winter, after canopies are thinned by storms. Furthermore, the magnitude of impacts are difficult to assess because little winter canopy information is available.

Reporting and Inadequate Information

At present, each individual licensee reports his or her daily take to the Department of Fish and Game as weight taken within a designated bed (e.g., Bed 220). The Commission staff has found this data as required and reported at a bed-level scale too imprecise to identify and evaluate the potential environmental impacts and use conflicts of concern (e.g., use conflicts in the area off Cannery Row). For instance, while local licensees presently collect more than 400 tons of kelp annually from Bed 220, the amount of kelp taken from specific locations within this larger designated bed[5] is indiscernible.

The staff is similarly concerned that the available information regarding the effects of kelp removal on kelp forests at present levels[6] is insufficient. Previous studies which found limited impacts (conducted during periods of lower intensity of removal) cannot be extrapolated to present or future take rates. The staff is concerned that without more frequent aerial surveys to

to Loretta Barsamian, RWQCB, dated June 16, 1998; (5) Letter from Ed Ueber, GFNMS, to Loretta Barsamian, RWQCB, dated April 30, 1998.

[5] Bed 220 spans approximately 13km of the Monterey coast.

[6] Characterized as "high" in Donnellan and Foster (1999).

characterize kelp canopies at present levels of intensity of removal (the last survey was done in 1989), it will be difficult to identify changes after additional abalone farms begin production and the intensity of kelp removal increases up to three-fold.

Possible Solutions

The Coastal Commission staff wants to work with the Department of Fish and Game in jointly developing approaches and solutions to address these environmental issues relating to kelp removal. One suggestion is to modify the scope and precision of kelp take and canopy cover estimates. Such modifications could include requiring reporting at a more detailed geographic scale than at present, defining subsections of designated beds, or requiring global positioning system ("GPS") coordinate information.

The staff also encourages the Department to conduct aerial photo surveys of the central coast on a yearly interval at the time of maximum canopy cover (late summer or early fall) to improve the robustness of data needed to quantify present canopy cover and the impacts of kelp removal, and to compare and assess future impacts if take levels increase significantly. Some additional winter surveys over the next few years would also be useful because winter kelp biomass may be the limiting resource that eventually governs the intensity or level of allowable removal.

Such information would allow regulatory agencies to better identify, assess, and address kelp bed impacts at various take intensities and times of the year, and would enable Coastal Commission staff to develop permit conditions that will ensure project consistency with Coastal Act policies based on rigorous and timely information.

Finally, the staff encourages the regulatory agencies to work with the Monterey Bay Area Kelp Harvester Co-op to implement voluntary improvements to monitoring and impact assessment.

The Coastal Commission staff looks forward to working with Department of Fish and Game staff to address these kelp-related issues, refine monitoring and reporting requirements, and identify funding sources to support the needed additional photo surveillance. The staff hopes that through this collaboration, we can ensure the sustainability of the local kelp forests for all interested parties and associated species. To this end, the staff would like to arrange a meeting with the CDFG staff, the marine sanctuaries' staff, and other interested parties to discuss these issues prior to rescheduling the applications for a Coastal Commission hearing.

If you have any questions about these comments, please call Susan Hansch, Deputy Director, at 415/904-5244, or John Dixon, Ph.D., staff ecologist, at 415/904-5250.

Sincerely,

Peter M. Douglas
Executive Director

cc: Ed Ueber
Manager
Gulf of the Farallones/Cordell Banks National Marine Sanctuary
Fort Mason, Building 201
San Francisco, CA 94123

Bill Douros
Superintendent
Monterey Bay National Marine Sanctuary
299 Foam Street
Monterey, CA 93940

G:/energy/Fish and Game kelp ltr 04.15.99

US ABALONE

245 Davenport Landing Road
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Davenport, California 95017

Telephone (408) 457-2700
Facsimile (408) 457-2747

Lisa de Marignac
Monterey Bay National Marine Sanctuary
299 Foam Street, Suite D
Monterey, CA 93940

6 April 1999

Att: Sanctuary Advisory Council

I am writing this letter to clarify a number of inaccurate statements that have been made at previous public hearings and in the news media regarding the proposed Pillar Point Harbor abalone project. Most of my comments were made last Friday, 2 April 1999, at the Sanctuary Advisory Council meeting. US Abalone is neither for nor against the proposed project at Pillar Point Harbor. We are mainly concerned about the inaccurate information that has been disseminated by the various interests involved on both sides of the issue.

The entire project has unfortunately become a political football with competing interests making exaggerated claims of production or applying excessive constraints that make the success of the proposal unlikely. Below I have attempted to address some of the issues for the SAC's benefit. I hope that my comments will be incorporated into the minutes of the 2 April 1999 meeting.

1. Abalone farming is a clean and environmentally friendly industry, especially where water quality is concerned. Studies by the California Regional Water Quality Control Board of land based operations have shown them to be exceptionally clean with the water going back out to sea cleaner than the water coming into the facility. At least one-half dozen in the sea growers have operated in various bays and harbors in central and northern California for the past 20 years with no known degradation to the environment. Several other groups have operated in the southern part of the State over a similar time span. Other larger operators in Mexico and Chile that have operated for years have not reported any environmental problems associated with their development.

2. The kelp issue is essentially one of a user conflict between various businesses. Kelp harvesting has been conducted in the Monterey Bay area for over 70 years. The most important impact that the kelp forest have experienced during that time is the return of the sea otter. During the mid-1960's the sea otters returned to Cannery Row and removed most of the large herbivorous invertebrates, such as abalone and sea urchins. The removal of these invertebrates changed the composition of the kelp beds from one of mostly bull kelp *Nereocystis* spp., to a giant kelp forest composed mainly of *Macrocystis*. It is the *Macrocystis* that is harvested for abalone farming. The change in this kelp forest by the sea otter has been documented by researchers at Hopkins Marine Station and the California Department of Fish and Game.

Abalone farming in Monterey Bay has been going on since the late 1960's with kelp being harvested in that area. A recent collaborative study by the Monterey Bay National Marine Sanctuary and Moss Landing Marine Laboratories concluded that kelp harvesting has no detectable effect on the kelp forest as currently practiced. It was estimated that the amount of drift kelp in the area between the Breakwater and Cypress Point was approximately 200,000 tons annually. Based on the MBNMS and Fish and Game records about 1,300 tons of kelp is harvested for abalone farming; down substantially from the over 3,000 tons harvested annually by other non-abalone farming user groups recorded up to the 1980's. The total amount of kelp utilized by abalone farmers in Monterey Bay represents about 0.65% of the amount of drift kelp available in the area between Breakwater and Cypress Point.

The proposed project at Pillar Point projects using 1,500 tons of kelp annually to feed 2,250,000 abalone. Yet those currently farming abalone in the Monterey Bay area require only 1,300 tons to feed over 5,000,000 abalone annually. This highlights the problem with the entire project. "Wannabee" abalone farmers with little to no knowledge or experience to develop a feasible business plan. A recent publication in the Journal of Shellfish Biology (vol. 17, no. 5, 1999) reports that to produce 1 ton of abalone requires about 3.8 tons of kelp. Running some numbers using these figures to estimate the amount of kelp required for Pillar Point gives a figure of about 700 tons. However, I would disagree with the numbers in question since in reality the amount of kelp required to raise about 2,000,000 abalone is closer to 350 tons rather than the 1,500 tons estimated by those applicants for the Pillar Point Project. A difference of about 75% from what the applicants propose.

3. Abalone fecal matter has been another issue that has been raised by opponents of the project. Abalone fecal matter is flocculant and thus is taken up and consumed by the environment almost immediately. Unlike pen salmon farming abalone fecal matter doesn't accumulate. As noted at the SAC meeting and concurred by Dr. Greg Cailliet, Moss Landing Marine Laboratories, the penned live bait fish at Pillar Point represent a greater consumer of oxygen and a much higher source of fecal matter than the abalone project. The California Coastal Commission and the State Regional Water Quality Control Board have documented these live bait pens, which I might add do not have the proper permits to operate, but to date has declined to enforce their own regulations regarding this activity.

4. Oxygen is another issue that has been misrepresented in the debate. The staff of the Regional Water Quality Control Board among other agencies recognizes that the model provided in the Huffman Report is inaccurate, but have failed to examine other current data that would be more appropriate in this instance.

The oxygen model being used to establish standards for monitoring are not science based, and in fact makes several poor assumptions including:

i. The model discounts oxygen production from kelp and phytoplankton. This oxygen contribution is substantial and when added into the model shows that there is no oxygen depletion predicted even with five million abalone in the Harbor.

ii. Seasonality and water temperature fluctuations are not considered even though they can greatly influence the amount of dissolved oxygen in the water.

iii. There is no basis or data for the unwarranted assumptions of the model. Data does exist from past research in similar settings, habitats, and programs. For example, data is available from oyster aquaculture on both coasts of the US, yet this data has not been taken into account.

iv. There are numerous examples of similar types of aquaculture, including abalone, taking place in other countries that have not experienced any of the problems being discussed for the current project. Both Mexico and Chile have in the sea operations similar in scope to the Pillar Point project and have been operating for years without any apparent environmental problems.

v. The model builds assumptions on top of poor assumptions and then assumes a worse case scenario of 5.2 million abalone. If the model assumes 2.25 million abalone rather than 5.2 million then as indicated by the model there should be no oxygen problem.

vi. A proposal by US Abalone working in conjunction with the Moss Landing Marine Laboratories to develop an algal operation at Pillar Point Harbor was rejected by the Coastal Commission and the San Mateo County Harbor District. This proposed project would have enhanced the oxygen in the Harbor.

vii. See comments regarding penned fish above.

5. The monitoring required for the project is inconsistent with regards to other operators in the Harbor that are not being required to monitor their activities. It would also be impossible to distinguish between the abalone growers and the other dischargers in the harbor unless they to were monitored.

6. Any suggested monitoring program would not meet even the minimal requirement of basic scientific rigor unless these other dischargers were taken into account and required to also monitor their activities. Several of the other dischargers that under Coastal Commission regulations should be monitored, but are currently operating without the proper permits include:

i. Live fish wells on the Romeo Pier. The proprietor of this business maintains an intake and discharge system without having obtained the necessary permits. This operator leases from the Harbor District which is the owner of the property.

ii. A live seafood market that operates next to the Romero Pier. This operator also maintains an intake and discharge seawater system that does not have the proper agency permit. Furthermore this same proprietor maintains exotic non-native species for market. To the best of my knowledge no one knows for certain what exotic pests may have accidentally discharged into the environment by this business. This live seafood market operates with no monitoring of its effluent.

iii. During salmon season a number of operators maintain floating fish pens of live bait fish (i.e. anchovies). A species that arguably will consume more oxygen and discharge more fecal matter that the entire abalone project. Yet none of these groups have been required to submit to a monitoring program.

iv. At least 3 commercial seafood processors operate at the end of the commercial wharf, all of which discharge tons of fish offal. This activity is not currently monitored yet represents a potential environmental nightmare with eutrophication, i.e. oxygen depletion of the Harbor from the fish offal being discharged.

v. Fish cleaning stations around the Harbor all represent unregulated dischargers with no monitoring of this activity.

vi. Sewage discharge lines that periodically require the Health Department to close the adjacent beaches to the Harbor do to contamination inside the Harbor.

vii. Storm runoff from the boatyard and light industrial area. The types of contaminants have not been quantified to determine their impact on the environmental health of the Harbor and to the citizens in the community.

viii. Diesel and oil spills from boats. On 31 May 1997 a five hundred gallon oil spill from a salmon boat occurred near the abalone rafts endangering the entire operation.

ix. Fish are processed on the weekends at an open Fishermen's Market in the Harbor, whereby fish are processed and sold from boats in what amounts to a non-HACCP approved facility. The fish offal from the processing is discarded into the Harbor.

All of the above examples have been observed, recorded and photographed by Coastal Commission staff with virtually no follow up regarding these various non-abalone user groups to obtain permits or required monitoring of their activities. All of these other user groups have a profound and significant influence on the health of the Harbor. This in addition to the fact that they are discharging into the Sanctuary without any monitoring of their activity.

7. The sabellid worm is an issue that the abalone industry has been extremely proactive in exterminating. Department of Fish and Game biologists have surveyed Pillar Point Harbor looking specifically for the sabellid worm and have been unable to find any evidence that it is in the Harbor. Furthermore both the Department and the Industry have adapted a no tolerance stance for the sabellid with the expectation that it will be eradicated from those farms that still have it.

The Department currently has a two year moratorium on the transfer of abalone seed from hatcheries to in the sea growout facilities. Even if Pillar Point were permitted today it would take two years before the applicants could get seed for their operations.

8. Withering foot syndrome, otherwise known as WS, is caused by a native bacterium that occurs naturally in abalone. It is known to occur in wild abalone populations at least as far north as San Francisco.

9. The previous abalone operation at Pillar Point was viewed as a positive for the environment since the rafts served as a refuge for birds and as a fish attracting device (FAD). Many of the bird species are frequently chased off the beach by dogs that are not on their leashes and thus seek refuge on the rafts. The rafts acted as an attractant for numerous fish species that otherwise would move to other areas. There has been considerable research conducted on FADs and how they can enhance the local fish population. In addition, numerous plant and invertebrate species grew on the raft structures further increasing the biodiversity in that area. Unfortunately the Coastal Commission forced the removal of those raft, thus reducing the biodiversity in the Harbor.

10. The issue of boat anchorage was considered early in the project and it was determined by the Harbor District that the area in question was "dead space", i.e. used very little by fishing boats for anchorage. An earlier Harbor District administration felt that the area may be suitable for aquaculture since there are very few sites in the State. A recent study determined that of the 1,000 miles of coast line in the State only about 27 hectares is currently used for aquaculture. Furthermore, much of the area in question is not even suitable for aquaculture, but the applicants for the project appear willing to take the risk regardless.

11. The proposed benthic study is onerous given the above reasons already discussed. The Harbor is mostly a mud and sand bottom that experiences tremendous flushing action do to the currents, tides, and wind action. Unless the other user groups are required to develop similar monitoring programs the information from a scientific standpoint will be of little use.

12. The number of abalone currently proposed, 2.25 million, is unlikely to ever be obtained. The largest in the sea growers in the State have less than 300,000 abalone. The number proposed by the various groups are simply unrealistic. This again highlights a lack of "realistic" planning by the applicants.

I would encourage the SAC members to contact the various agencies and institutes that I have mentioned. I would be happy to provide additional sources of information if any of the SAC members wish to follow up on my comments.

As I stated at the beginning of my letter, US Abalone does not have a position on the proposed project, rather we are concerned about the negative hysteria vocalized by some individuals and organizations regarding aquaculture. Just as I would expect those applying for aquaculture permits to develop a feasible, reasonable, and responsible business plan I would expect and hope that the various regulatory agencies would act in a similar manner. With many of our State fisheries in decline we need to examine other alternatives to our traditional "hunting and gathering" method of providing seafood. Farming the sea is not the solution to our fishery problems, but an alternative to help manage many of our already over-exploited marine species.

Thank you for your time.

Sincerely,

David A. Ebert, Ph.D.
Vice President

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
Monterey Bay National Marine Sanctuary
299 Foam Street, Suite D
Monterey, California 93940

VIA FAX (63 pages, including cover letter)

February 24, 1999

Susan Hansch
California Coastal Commission
45 Fremont Street
San Francisco, California 94105

SUBJECT: Letters on the Pillar Point Harbor Abalone Mariculture Project and Kelp Harvesting

Dear Ms. Hansch:

I received a call from Bill Douros today asking that the Sanctuary fax you copies of our comment letters that contain concerns about: (1) the volume of kelp needed for the four abalone mariculture permit applicants in Pillar Point Harbor, (2) potential environmental impacts to Sanctuary resources from sabellid worm parasites that may infest abalone mariculture operations, and (3) concerns about kelp harvesting in the Monterey and Santa Cruz coasts. Aaron King and I have compiled the following letters to respond to your request:

Sanctuary letter (January 12, 1999) to John Wolfe: Kelp harvesting issues (2 pages).

Sanctuary letter (June 16, 1998) to the RWQCB: Four NPDES permits for abalone mariculture facilities in Pillar Point Harbor, San Mateo County, California (4 pages).

Sanctuary letter (June 10, 1998) to the CDFG: Fish and Game Commission meeting on June 18, 1998 (4 pages).

Sanctuary letter (May 29, 1998) to the RWQCB: Concerns about the NPDES permits for the four abalone mariculture facilities in Pillar Point Harbor (2 pages).

Sanctuary letter (April 30, 1998) to the RWQCB: Review of four revised draft NPDES permits for abalone facilities in Pillar Point Harbor, San Mateo County (9 pages).

Sanctuary letter (February 23, 1998) to the Corps of Engineers: abalone grow out facilities, Pillar Point Harbor, San Mateo County, Public Notice No. 22808S (5 pages).

Sanctuary letter (February 23, 1998) to the RWQCB: Four administrative draft NPDES permits for abalone facilities in Pillar Point Harbor, San Mateo County (5 pages).

Sanctuary letter (December 3, 1997) to the RWQCB: Proposed expansion of abalone mariculture facilities, Pillar Point Harbor, San Mateo County, California (6 pages).

Sanctuary Advisory Council letter (July 1, 1997) to Mr. Cavanaugh: looking forward to a signed memorandum of agreement for the kelp cooperative (1 page).

Sanctuary Research Activities Panel letter (May 29, 1997) to CCC: Review of concerns for the Pillar Point abalone expansion project (4 pages).

Sanctuary Advisory Council letter (May 13, 1997) to the Monterey Kelp Harvesting Cooperative: request for a progress report (1 page).

Sanctuary letter (April 4, 1997) to the RWQCB: Proposed expansion of abalone mariculture facilities, Pillar Point Harbor, San Mateo County, California (8 pages).

I have also included copies of letters that we have received from the California Department of Fish and Game.

CDFG letter (June 8, 1998) to the RWQCB: Tentative Waste Discharge Requirements, monitoring plan, and NPDES permit for Pillar Point Harbor abalone grow-out facilities (3 pages).

CDFG comments (April 1, 1998) to the Corps of Engineers: Corps Public Notice on construction of abalone mariculture facilities in Pillar Point Harbor (3 page).

CDFG comments (February 27, 1998) to the Corps of Engineers: Corps Public Notice on construction of abalone mariculture facilities in Pillar Point Harbor (4 page).

If you have any questions on these letters, please call me at (831) 647-4252.

Sincerely,

Patrick Cotter
Environmental Scientist

Moira McEnespy

From: Gary Page [gpage@prbo.org]
Sent: Wednesday, January 20, 1999 4:20 PM
To: Moira McEnespy
Subject: Re: questions about bird habits/needs

Dear Moira,

I can not give you a definitive answer to your question. There is truth in both view points under point 1. The rafts will provide additional roosting areas for some birds such as pelicans and cormorants but other species that only come to land to nest such as loons and grebes would not use them.

Do the cormorants and pelicans need additional land roosting areas at Half Moon Bay? Possibly, but probably not. There are already long jetties there.

Open water habitat will be lost. I do not know if the amount lost will be great enough to be detrimental to birds that rely on open water. It depends on the number of birds, the amount of open water remaining and the amount of open water each bird requires. I don't have the answer to any.

I think that all of the birds could get off the water with a 300 foot take off distance but do not take this as an endorsement for that buffer distance.

In summary, I doubt that birds require additional land roosting sites. They will lose open water habitat.

Sincerely,

Gary Page

Moira McEnespy wrote:
>
> Hi Gary,
>
> My name is Moira McEnespy and I work for the California Coastal Commission.
> We're reviewing a permit application request that involves more or less
> permanently mooring rafts in the outer harbor of Pillar Point Harbor, San
> Mateo County. There will be four clusters of rafts, separated by a 300-foot
> buffer area. The issue is the resulting loss of open-water habitat
> available for birds to feed, dive, and rest. Specifically, the following
> questions have come up that I'm hoping you could help us with:
>
> 1. We have received conflicting information about whether placement of
> the rafts would be a detriment or benefit. One opinion is that loss of
> open-water habitat is especially important because many species (e.g.,
> loons, cormorants, scaup, scoters, mergansers, grebes, Brown Pelicans) do
> not sleep or rest on land or a hard surface such as the proposed rafts.
> They remain on the water where they can dive or take flight, using land only
> to nest. The opposing opinion is that cormorants and pelicans, as well as
> gulls, could be expected to use the rafts as additional roosting areas.
>
> 2. Secondly, it has been pointed out that all species that use the

> harbor require unobstructed open-water areas to taxi for take-off. How much
> open-water space is required? Could they use the 300-foot buffer areas?
>
> Thank you for any help you are able to provide.
>
> Sincerely,
>
> Moira McEnespy
> Energy and Ocean Resources Unit
>
> CALIFORNIA COASTAL COMMISSION phone 415-904-5253
> 45 Fremont Street, Suite 2000 fax 415-904-5400
> San Francisco, CA 94105-2219 e-mail mmcenespy@coastal.ca.gov
>
>

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
Monterey Bay National Marine Sanctuary
299 Foam Street, Suite D
Monterey, California 93940

January 12, 1999

John R. Wolfe, SE
2320 Blake Street
Berkeley, CA 94704
510-540-0422
jwolfe@igc.org

Dear Mr. Wolfe:

Thank you for contacting the Monterey Bay National Marine Sanctuary (MBNMS) about these important environmental /resource use issues. The MBNMS is, like you, concerned about these matters and has been involved in these issues for quite some time.

I would first like to address your concerns about kelp harvesting and the diver disturbance study that you mention. The studies you refer to for both issues were conducted by Dr. Michael Foster, a Phycologist and Marine Ecologist at Moss Landing Marine Laboratories, and two of his graduate students. Dr. Foster's reputation for his expertise on kelp forest ecology is world renown. In neither the Diver Disturbance or the Kelp Harvesting study did Dr. Foster receive any funding or compensation from the kelp harvesting industry. I have heard this incorrect statement several times and I want to be clear on the response to it. The Kelp Harvesting study was conducted with funding from the cities of Monterey and Pacific Grove, as well as the MBNMS. The Diver Disturbance study was completely funded by the MBNMS. Both studies were reviewed (enclosed below) by a committee of independent scientists, who found nothing in the methodologies and conclusions to question the integrity of the researchers. Furthermore, besides presenting the paper at a scientific symposium in 1997 (the Western Society of Naturalists), it is my understanding that Dr. Foster has already submitted the paper for publication in a peer-reviewed journal.

MBNMS staff have had numerous discussions with recognized kelp experts, both in the California Department of Fish and Game (CDFG) as well as in academia, who believe the issue of kelp harvesting is not necessarily an environmental issue. Rather, they have advised us that the issue is really more of a "user-conflict". In other words, there are users who prefer a more dense surface canopy, and there are interests who want to harvest that surface canopy.

Nonetheless, most experts do agree that kelp harvesting, as with any resource use, has certain limits to the amount of consumptive use. Our efforts at the MBNMS on kelp harvesting will be:

o Monitor the kelp resource situation to ensure that these limits are not exceeded;

o Work to facilitate solutions and compromises between the non-consumptive and consumptive users of the kelp resource; and,

o Facilitate research for a better understanding of the whole-system effects from kelp harvesting to ensure the best resource management strategies are employed.

Finally, regarding "Pipe Fishing" (AKA "Tree Fishing," "Live Fish Fishing," "Premium Fish Fishing", etc.), the MBNMS shares your concerns about this emerging fishery. While the MBNMS does not directly manage commercial fisheries, we do work closely with other agencies who do, such as CDFG and the National Marine Fisheries Service. I have asked an independent group of scientists (letter enclosed) to look into this issue further to determine if there is anything the MBNMS can do to help speed up the process of getting the necessary regulations in place on this emerging fishery. I, and our Sanctuary Advisory Council, have sent a letter (also enclosed) to the director of the CDFG to express our concerns about the fishery and urged that they take action to ensure the ecosystem is protected. I can assure you that the MBNMS will continue to stay on top of this issue until a proper management regime has been developed by the fisheries management authorities.

Thank you again for contacting the MBNMS. If you would like to discuss this matter further, please contact my staff person on these issues, Mr. Aaron King (831-647-4257). More information on these issues is available on the MBNMS Webpage at:

http://bonita.mbnms.nos.noaa.gov

You may particularly be interested in reviewing the section on the diver disturbance study at:

http://bonita.mbnms.nos.noaa.gov/resourcepro/diver_report.html

Sincerely,

William J Douros
Superintendent

Enclosures

NANCY PELOSI
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Congress of the United States
House of Representatives
Washington, DC 20515–0508

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PERMANENT SELECT COMMITTEE ON INTELLIGENCE
HUMAN INTELLIGENCE, ANALYSIS, AND COUNTERINTELLIGENCE

CONGRESSIONAL WORKING GROUP ON CHINA, CHAIR

AT-LARGE WHIP

December 15, 1998

Lt. General Joe N. Ballard
Commander
United States Army Corps of Engineers
Attn: CECG-ZA
20 Massachusetts Avenue, NW
Washington, D.C. 20314-1000

Dear Lt. General Ballard:

This letter concerns the Abalone Aquaculture Projects Proposals at Pillar Point Harbor. The leadership of the California commercial fishing industry have brought to my attention several concerns over the project. Pillar Point Harbor was originally created with federal funds by the Army Corps of Engineers because it was determined that a harbor of refuge to protect the lives and property of the commercial fishing fleet as well as recreational boaters was necessary.

I have been informed that the proposed project rafts would eliminate the usable vessel anchorage space for more than 40 boats of the transient commercial and recreational fleet which use Pillar Point Harbor as a safe harbor during inclement weather thereby risking loss of life and property. There could also be adverse effects on the San Francisco fishing industry. I am concerned that this project may eliminate jobs in the local fish processing plants and among the local and transient fishing fleets.

I would like the assurance of the U.S. Army Corps of Engineers that there will be a complete Environmental Impact Report conducted on the Abalone Aquaculture Projects Proposals in order to determine its effects on the harbor and the California Coastal commercial fishing industry.

Sincerely,

Nancy Pelosi

NANCY PELOSI
Member of Congress

THIS STATIONERY PRINTED ON PAPER MADE OF RECYCLED FIBERS

TOM LANTOS
CALIFORNIA

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Ranking Member,
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and Human Rights
Subcommittee on International Economic Policy
and Trade

GOVERNMENT REFORM AND OVERSIGHT COMMITTEE
Subcommittee on Human Resources
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International Affairs, and Criminal Justice

Cochairman, Permanent United States
Congressional Delegation to the
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Member, United States
Congressional Delegation to the
North Atlantic Assembly

Cochairman, Congressional
Human Rights Caucus

Congress of the United States
House of Representatives
Washington, D.C. 20515

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JUL 30 1998
CALIFORNIA
COASTAL COMMISSION

July 27, 1998

Lt. General Joe N. Ballard
Commander
United States Army Corps of Engineers
Attn: CECG-ZA
20 Massachusetts Ave., NW
Washington, DC 20314-1000

Dear Lt. General Ballard,

This letter concerns the Abalone Aquaculture Projects Proposals at Pillar Point Harbor. The leadership of the California commercial fishing industry have brought to my attention several concerns over the project. Pillar Point Harbor was originally created with federal funds by the Army Corps of Engineers because it was determined that a harbor of refuge to protect the lives and property of the commercial fishing fleet as well as recreational boaters was necessary.

I have been informed that the proposed project rafts would eliminate the usable vessel anchorage space for more than 40 boats of the transient commercial and recreational fleet which use Pillar Point Harbor as a safe harbor during inclement weather thereby risking loss of life and property. There could also be adverse effects on the local fishing industry. I am concerned that this project may eliminate jobs in the local fish processing plants and among the local and transient fishing fleets.

I would like the assurance of the U.S. Army Corps of Engineers that there will be a complete Environmental Impact Report conducted on the Abalone Aquaculture Projects Proposals in order to determine its effects on the harbor and the California Coastal commercial fishing industry.

Cordially,

Tom Lantos

Tom Lantos
Member of Congress

cc: Moira McEnespy, California Coastal Commission
San Mateo County Harbor District
Congresswoman Nancy Pelosi

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Post-it® Fax Note 7671	Date 7/13	# of pages ▶ 5
To Moira	From Bob Hollyock	
Co./Dept. Coastal Comm	Co. DFG	
Phone #	Phone # 916-653-9583	
Fax # 415 904 5400	Fax # 916-653-4	

STATE OF CALIFORNIA—THE RESOURCES AGENCY

DEPARTMENT OF FISH AND GAME
1416 NINTH STREET
P.O. BOX 944209
SACRAMENTO, CA 94244-2090
(916) 653-7664

December 6, 1996

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To All Registered Abalone Aquaculturists:

This letter is a follow up to the Department of Fish and Game (Department) letter of May 20, 1996, notifying all registered abalone aquaculturists of the serious sabellid worm infestation issues and the Departments's plan and requirements for its control and eventual eradication. The May 20th letter notified each abalone aquaculturist of the requirement to develop an approved plan to eradicate the sabellid worm as a condition for renewal of 1997 Aquaculture Registrations. These plans must be submitted to the Department no later than December 31, 1996.

In response to new information, and to advice from the Department's Aquaculture Disease Committee, resource managers, and university researchers, the Department will require that the following specific terms be included as part of every clean-up plan before each plan may be approved by the Department.

1. (Insert name of your farm) will not sell, or transfer, any live in-the-shell abalone for bait.

2. Before any abalone are shipped to (insert name of your farm), we shall notify the Department's Marine Resources Division in Sacramento, not less than 10 days in advance of the proposed shipment date in order to make arrangements for an inspection to determine that abalone shipped to our facility are free of sabellids.

3. Before any abalone are shipped from (insert name of your farm) to another California Registered Aquaculture Facility, we shall notify the Department's Marine Resources Division in Sacramento, not less than 10 days in advance of the proposed shipment date in order to make arrangements for an inspection to determine that abalone shipped to other aquaculture facilities are free of sabellids.

4. (Insert name of your farm) will not sell, or transfer, live abalone, or abalone larvae, for out planting into California State waters, without advance Department approval.

5. (Insert name of your farm) will not return any wild broodstock to California State waters, without advance Department approval.

By itself, this group of required terms could constitute a complete cleanup plan only for a facility where Department inspections find no sabellids. Until Department inspections fail to find sabellids at your facility, you must include in your cleanup plan, in addition to these five

Post-it® Fax Note 7671	Date	# of pages ▶
To Moira	From Bob Hulbrock	
Co./Dept. Coastal Comm	Co. DFG	
Phone #	Phone # 916-653-9583	
Fax # 415 904 5400	Fax # 916-653-4645	

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JUL 15 1998
CALIFORNIA
COASTAL COMMISSION

required terms, active measures to eradicate the worm from your facility, to prevent the spread of the worm from your facility to the wild, and your proposed schedule, or time line, of actions to eradicate the worm.

For shore-based facilities with ocean discharge, active measures <u>must</u> include, but not be limited to, screening of the outfalls to prevent the discharge of potentially infested abalone, other mollusks, shells, and kelp. For cage operations, active measures <u>must</u> include, but not be limited to, a time line that includes rapid removal of all infested abalone and a refuse handling plan that ensures that kelp, other mollusks, and shells will not be introduced into ocean waters. Each farm should have these high priority measures operational by the end of January 1997.

The Department believes that these conditions are necessary to help ensure that abalone aquaculture operations do not have detrimental impacts on adjacent native wildlife. For assistance in meeting the clean-up plan requirement, you may contact any of the Department representatives listed below:

	Telephone	FAX	E-mail
Bob Hulbrock	(916) 653-9583	(916) 653-4645	rhulbroc@hq.dfg.ca.gov
Eric Knaggs	(916) 653-1654	(916) 653-4645	eknaggs@hq.dfg.ca.gov
Carolyn Friedman	(707) 875-2067	(707) 875-2009	csfriedman@ucdavis.edu

Draft cleanup plans should be submitted as soon as possible, and are due no later than December 31, 1996. Send your plan to:

Eric Knaggs
Marine Resources Division
California Department of Fish and Game
1416 Ninth Street, Room 1310
Sacramento, California 95814

The Department continues to be pleased with the cooperation it has received from most members of the aquaculture industry and from university researchers. The sabellid worm is a statewide problem, and only through cooperation will we be able to bring this serious pest under control. The cooperation so far received is what allows an approach that is also intended to avoid unnecessary impact on California's abalone aquaculture industry.

Sincerely,

COPY Original Signed by:
Jacqueline E. Schafer

Jacqueline E. Schafer
Director

FILE: D, ExFile, HULBROCK (Aqua.Coord.), KNAGGS (MRD-HQ), MRD-HQ, CHRON

HULBROCK:lrm

SABELLFU3

SACRAMENTO ADDRESS
STATE CAPITOL
P.O. BOX 942849
SACRAMENTO, CA 94249-0001
(916) 445-8020
FAX (916) 455-0511

DISTRICT ADDRESS
860 EL CAMINO REAL, SUITE 214
MILLBRAE, CA 94030
(415) 866-3940

California Legislature

LOUIS J. PAPAN
ASSEMBLYMEMBER, NINETEENTH DISTRICT

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HOUSING AND COMMUNITY DEVELOPMENT
INSURANCE
UTILITIES AND COMMERCE

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COASTAL COMMISSION

June 25, 1998

Peter Douglas, Executive Director
California Coastal Commission
45 Fremont Street, Suite 2000
San Francisco, California 94105

Dear Mr. Douglas,

I am writing to you to express my great concern for the proposed Pillar Point Abalone Aqua culture Project in Half Moon Bay. It is my understanding that the proposed installation of four private abalone mariculture project rafts will effectively eliminate anchorage opportunities for over forty commercial vessels.

I am bringing this to your attention for I am concerned that the project will have an adverse effect on the commercial fishing industry and severely impact the surrounding environment due to the introduction of parasites, such as the African sabellid worm. The harbor, according to Public Resources Code Section 30234, was designated as a harbor of refuge for commercial and recreational boating and I am concerned that displacing forty boats will create a significant safety risk to transient commercial fisherman. It is my hope that the appropriate steps are taken to ensure that a full Environmental Impact Study is conducted to assure the protection of the harbor and the stability of the local fisheries.

I would appreciate hearing back from you, in correlation with the U. S Army Corps of Engineers, the Water Quality Management Board, and the Harbor Commission, to consider a further investigation of this proposal to determine the feasibility of the project and the security of the harbor and the commercial fishing industry.

Sincerely,

Louis Papan

LOUIS J. PAPAN
California State Assembly, 19th District

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UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
Monterey Bay National Marine Sanctuary
299 Foam Street, Suite D
Monterey, California 93940

June 16, 1998

Loretta Barsamian, Executive Officer
Regional Water Quality Control Board
San Francisco Bay Region
2101 Webster Street, Suite 500
Oakland, California 94612

SUBJECT: **Four NPDES Permits for Abalone Mariculture Facilities in Pillar Point Harbor, San Mateo County, California**

Dear Ms. Barsamian:

The Monterey Bay National Marine Sanctuary (MBNMS) and the Gulf of the Farallones National Marine Sanctuary have reviewed four tentative orders for National Pollutant Discharge Elimination System (NPDES) permits at abalone mariculture facilities in Pillar Point Harbor. We also reviewed June 12, 1998 supplemental sheets for each permit. The permit applicants are: Blue Pacific Abalone (NPDES Permit No. CA0036269), Pacific Offshore Farms (NPDES Permit No. CA0036277), Pearl Abalone (NPDES Permit No. CA0036285), and Princeton Abalone (NPDES Permit No. CA0036251). All four permit applicants intend to grow abalone in surface-supported structures anchored in Pillar Point Harbor. The maximum number of abalone at full buildout is 2.25 million abalone for all four facilities combined. Two of the permittees, Blue Pacific Abalone and Princeton Abalone, also plan to have onshore spawning tanks and holding areas, or abalone seed stock production facilities, respectively. The comments in this letter are made on behalf of both Sanctuaries.

We have been working with the permit applicants, staff at the Regional Water Quality Control Board (RWQCB) and other agencies such as the California Department of Fish and Game (CDFG), the California Coastal Commission, and the San Mateo County Harbor District on this project for more than one year. Many of our concerns have been addressed satisfactorily during our discussions and through draft permit revisions, and we thank you.

Although many of our concerns have been addressed, we are concerned that a complete kelp resource budget has not been produced that describes the needs of the four NPDES permittees. Within the MBNMS, in Monterey County and Santa Cruz County, there are concerns about existing mariculture operations that rely heavily on local kelp harvesting. The RWQCB staff explained to us that the Regional Board is not the principal State agency responsible for regulating kelp harvesting. We understand that management of the kelp resource budget for the abalone facilities will be handled by the CDFG and they will submit their findings for review. Notwithstanding this information, the Sanctuary Program believes that the four proposed NPDES permits should not be approved until all potential impacts – especially impacts to kelp beds in Monterey and Santa Cruz counties and a complete kelp resource budget for the abalone facilities – are resolved.

4. Self-Monitoring Report

a. The Sanctuary Program supports CDFG's June 8, 1998 comments regarding Section III(B) of the Self-Monitoring Plan for appropriate baseline and compliance monitoring. The permittee should draft a complete quality assurance/quality control plan for permit monitoring based on the requirements in the Self-Monitoring Plan. Before the NPDES permit applicants deploy any abalone, the monitoring plan should be approved by the Regional Board based on comments from CDFG and other interested agencies or the public.

b. The Regional Board's proposed change to the Self-Monitoring Program in the June 12, 1998 supplemental sheets is not acceptable to the Sanctuary Program. As discussed at many meetings with Regional Board staff and other agencies, a reference site in the Pacific Ocean is necessary to provide a point for comparison of water quality conditions outside Pillar Point Harbor. Please reinstate the sampling requirements for Station R4.

c. The map included with the Self-Monitoring Report as Figure 1, does not have the monitoring stations correctly labeled. The monitoring stations listed in the Self-Monitoring Program are: R1, R2, R3 and R4. The location of Station R4 is not clear because an arrow is shown next to Station 4 on Figure 1. A map of adequate size should be drawn showing the location of all stations. Please revise the map to show all monitoring stations. The latitude and longitude of the monitoring stations should be included in the permit to completely define the sampling sites.

B. Comments Pertaining to Blue Pacific Abalone's NPDES Permit No. CA0036269 and Princeton Abalone's NPDES Permit No. CA0036251

1. RWQCB Finding 3, page 1; Self Monitoring Report, page 12; Fact Sheet, page 1

a. The shore facilities proposed by Blue Pacific Abalone and Princeton Abalone may require discharge of seawater from the abalone spawning tanks and holding areas. The brief description of the onshore facilities for Blue Pacific Abalone indicates that there will be discharges to Pillar Point Harbor. The description of the onshore facilities for Princeton Abalone indicates that the facilities will be a "closed system." It is not clear whether the onshore facilities for Princeton Abalone will require a discharge to surface waters. The description and location of these facilities, including the discharge points for the effluent, have not been discussed in the NPDES permits. No information on these facilities has ever been provided to the Sanctuary Program. A complete description of the two permittee's onshore facilities, the discharge points, the exact location of the facilities, and the RWQCB's technical rationale for waiving any permit requirements for this facility should be included in the RWQCB's Findings section. Without time for agencies and the public to evaluate these facilities, it may not be prudent to adopt NPDES permits for these permittees at the June 17, 1998 RWQCB hearing.

b. The Sanctuary Program is concerned that the effluent from these facilities must not contain any sabellid worm parasite eggs, larvae or adult animals that could infest local mollusk species. A prohibition on the presence of sabellid worm life stages in the facilities effluent should be stated affirmatively in both NPDES permits in the section which begins with the words: "IT IS HEREBY ORDERED THAT..." The engineering information discussed in this Finding and the footnote for Table 1 in the Self-Monitoring Program (page 12) has not been provided to the Sanctuary Program for review. Please provide this information so we may evaluate the design of the onshore facilities for the two permittees.

c. The concentrations of BOD from this effluent and any debris (abalone feces and food debris) should be factored into the Self-Monitoring Program for both permittees.

National Marine Sanctuary Program Comments
Four NPDES Permits for Abalone Mariculture Facilities
Pillar Point Harbor, San Mateo, California

A. Comments Pertaining to All Four NPDES Permits

1. Staff Summary Report, page 2; RWQCB Finding 9, page 3

The CDFG's draft sabellid worm eradication policy must be finalized before the NPDES permit for each abalone mariculture business is authorized. This will ensure that measures are completely defined to prevent inadvertent introduction of sabellid parasites into the abalone mariculture facilities or wild stocks of mollusks near Pillar Point Harbor. Without this assurance, the Sanctuary Program will object to the issuance of these permits. The Sanctuary Program supports the CDFG's June 8, 1998 comment that prohibition of the introduction of sabellid worms should be included in the body of the NPDES permit under the section beginning with the words: "IT IS HEREBY ORDERED THAT..." If sabellid worms are detected at the permittee's facilities, the permit should define what measures must be taken to eliminate the infestation at the facility and determine whether the infestation has spread to surrounding mollusk species. If other mollusk species are infested, the permit should define measures to eliminate the infestation outside the abalone mariculture facility. Our letter dated May 29, 1998 discusses the Sanctuary Program's concerns about sabellid worm infestations.

2. RWQCB Finding 8, page 2

a. The kelp resources necessary to feed abalones at the four facilities proposed for Pillar Point Harbor have never been described, either by the permittees, the RWQCB or CDFG. The Sanctuary Program has repeatedly asked for an evaluation of the amount of kelp required to feed the abalone proposed at the four facilities and where the kelp will come from. Unfortunately, our requests have been ignored. The Sanctuary Program is concerned that increased harvesting of kelp in Monterey County and Santa Cruz County may seriously affect the kelp beds in the MBNMS and the biological resources that depend on these plants for their existence. The RWQCB, in consultation with CDFG, should require the applicants to completely document how much kelp will be needed to grow the abalone and where the kelp will be obtained so kelp harvesting will not adversely affect kelp bed resources. The Sanctuary Program supports the CDFG's June 8, 1998 comment that compliance with CDFG kelp harvesting regulations should be included in the body of the NPDES permits under the section beginning with the words: "IT IS HEREBY ORDERED THAT..."

b. An evaluation of the debris generated at the abalone facility, including abalone feces and kelp debris, should be included in the Self-Monitoring Program to ensure that a significant deposit of organic debris does not occur under the abalone facility. If significant debris deposits are found during the site monitoring program, the permit should include required measures to reduce the deposits.

3. RWQCB Finding 10, page 3

The discussion about fish monitoring should include a sentence similar to the monitoring reopener sentence in Finding 11 that allows the RWQCB and CDFG to: "reserve the right to further evaluate the significance of (fish monitoring). Should (RWQCB and CDFG) determine at any time within the permit period that potentially significant adverse impacts to (fish populations) could occur as a result of aquaculture operations, the Regional Board will require the dischargers to conduct a (fish) population monitoring program. The general requirements for such a program would be developed by CDFG and the Regional Board."

We understand that the Regional Board's permit will affirmatively prohibit discharge of any water or other matter that may contain eggs, larvae or adult sabellid worms. We further understand that CDFG's criteria for this prohibition have not been finalized. The NPDES permits for the four facilities should not be usable until these criteria are defined and approved by CDFG.

The tentative orders and supplemental sheets for Blue Pacific Abalone's NPDES permit and Princeton Abalone's NPDES permit briefly mention onshore facilities for these two operations. The onshore facilities are new additions to the NPDES permits since drafts were provided in late March 1998. The design and nature of these facilities have not been discussed at any meeting with the permittees or with staff from the Regional Board. We would like to review standard information on the design of these onshore facilities, including: (a) filters, screening or treatment procedures for the effluent; (b) effluent characteristics; (c) effluent discharge volumes in gallons per day; (d) effluent discharge points; and (e) the exact location of the facilities. The Regional Board's detailed technical rationale for waiving any discharge requirements has not been provided in the permit packages or to the Sanctuary Program. This information should be included in the staff report for the Blue Pacific Abalone and Princeton Abalone NPDES permits.

If changes to the NPDES permits are made, as requested in this letter and in the June 8, 1998 letter from CDFG, the Sanctuary Program will not object to the issuance of NPDES permits to Pacific Offshore Farms and Pearl Abalone. However, we request that the Regional Board postpone any action on the NPDES permits which include onshore facilities for Blue Pacific Abalone and Princeton Abalone until the agencies involved in this process have a chance to review the potential impacts from onshore abalone facilities.

Thank you for the opportunity to review these four NPDES permits. The Sanctuary Program's detailed comments are enclosed for inclusion at the Regional Board's June 17, 1998 hearing. If you have any questions, please call me at (415) 561-6622 or your staff may contact Patrick Cotter of the MBNMS at (408) 647-4252.

Yours truly,

For Edward Ueber
Manager
Gulf of the Farallones National Marine Sanctuary
Co-Manager
Monterey Bay National Marine Sanctuary (north)

Enclosure

cc: William Douros, MBNMS
Stephanie Thornton, NOAA MSD
Robert Tasto, CDFG
Tami Grove, CCC
Peter Grenell, SMCHD
Lyle Wagner, Blue Pacific Abalone
Doug Hayes, Pacific Offshore Farms
Christian Zajac, Pearl Abalone
Jon Locke, Princeton Abalone
Keith Mangold

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
OFFICE OF OCEAN AND COASTAL RESOURCE MANAGEMENT

Gulf of the Farallones National Marine Sanctuary
Fort Mason, Building 201
San Francisco, California 94123
Phone 415 561-6622 Fax 415 561-6616

June 10, 1998

Mr. John Schmidt
Executive Director
State of California
Department of Fish & Game
Wildlife Conservation Board
801 "K" Street, Suite 806
Sacramento, California 95814

re: Meeting June 18, 1998 - Discussion Items 6. and 7.

Dear Director Schmidt:

I am the Sanctuary Manager of Cordell Bank National Marine Sanctuary (CBNMS), Gulf of the Farallones National Marine Sanctuary (GFNMS), and co-manager of the northern sector of Monterey Bay National Marine Sanctuary (MBNMS). My responsibilities encompass the coastal area from the Santa Cruz/San Mateo County line to Bodega Head, Sonoma County, a surface area of approximately 2,000,000 acres.

The first statements are general in nature dealing with abalone mariculture, Tomales Bay mariculture, and sabellid worms. Discussion items 6. and 7. are addressed after the general statements.

The four proposed Pillar Point Harbor abalone leases and all current Tomales Bay mariculture leases are within the above sanctuary area. The GFNMS and MBNMS have continually worked with local, state,

and federal agencies and mariculturists including the Regional Water Quality Control Board, California Coastal Commission, National Park Service, and the California Department of Fish and Game (CF&G) on the above issues. The Sanctuary believes that the need for and review of all current mariculture operations in Tomales Bay through an Environmental Impact Review and Environmental Impact Statement (EIR/EIS) be completed prior to any new lease, sublease or permit alterations. Discussion Items 6. and 7., if approved, would

occur prior to that EIR/EIS completion. This would remove the people's right to review through the California Environmental Quality Act, the National Environmental Protection Act and bypass the Commission's EIR directions to CF&G. Granting the lease now would also remove the established procedures that all leases are open to the bidding process.

The Sanctuary is extremely concerned about the naturalization of the South Africa sabellid worm. In the last year CF&G has been vigorously supporting a 100% (0 animals remaining) eradication of this threat to abalone and other host gastropods. We support this effort as well as listing sabellid worm on the agriculture pest list, so responsible mariculturists who destroy abalone may be reimbursed for doing this "right" thing.

Sabellid worms are a risk to California's most valuable shellfish. We feel even a small risk, which can be eliminated, must be eliminated as soon as possible The Sanctuary believes that a date of 30 June 1999 should be established when California's waters and mariculture operations will be sabellid free. After that date, if even one abalone is found in an area (i.e., Tomales Bay, Pillar Point Harbor, etc.) with sabellid worms, all (each and every) abalone in the area must be destroyed.

As I address "Discussion Item 6." it will become clear that the Sanctuary believes that "Discussion Item 7." should not be considered either.

Mr. Chamberland has stated that if he isn't granted this special deep water lease he cannot raise abalone in Tomales Bay. The Sanctuary believes that this special deepwater lease should not be granted. Mr. Chamberland has twice, in 1997 and again in 1998, moved his abalone to this site, although he does not have a legal mariculture lease for abalone nor has he informed the GFNMS, NPS, or CF&G

(joint trustees) until caught (after 37 days in 1998). He has made false and misleading statements to me about his CF&G "sabellid free" certificate, shore side facilities and receiving waters for the shore side discharge. When, at Mr. Chamberland's request, I

inspected his at-sea facilities on 22 May, he was raising abalone outside of M-430-15, with no sublease for M-430-15, no NPDES permit for shore discharge, no Corps of Engineers 404 Permit for stream bed alterations, no legal sublease anywhere on Tomales Bay and had harvested kelp (CF&G statement) without legal authorization.

Mr. Chamberland further told me he would remove two thousand pounds of material at the deep water site by 15 May, 23 May and then 4 June. Each time he did not remove the material, he also failed to notify me until I had found out. He has continually appropriated public resources and space for his personal financial gain without any discussion with, or approval from, the responsible authorities. He has demonstrated a long standing multifaceted disregard for the rules and regulations of the NPS, GFNMS, CF&G Commission, and the Fish and Game Code which have been instituted to protect the public resources and space.

We further believe that the deepwater site is not an appropriate mariculture site for any mariculture activity because it does not meet Marin County's Coastal Act criteria for mariculture. We also believe the use of this site increases the risk to the State and GFNMS resources if abalone are present at this site or in Tomales Bay. We believe deeper water, currently non-leased areas, should be open and available year round for fishing, boating, and the general public.

Please deny "Discussion Items 6. and 7." for it has become very clear that in Bay abalone mariculture is unsuitable for Tomales Bay unless the abalone can be moved to a shore facility when salinities are low. Mr. Chamberland has stated he will not establish a shore facility for this purpose. He has continually treated the CF&G Code, CF&G Commission permits, NPS and GFNMS authority "as only discretionary for him." The current local, state, and federal resource safeguards have been publicly developed and approved. Mr. Chamberland has disregarded these safeguards whenever he felt it was not in his financial interest.

Thank you for your concern on these items and the opportunity for our agency to comment on this issue of mutual importance.

Sincerely yours,

Edward Ueber/pr

Edward Ueber
Manager
Cordell Bank National Marina Sanctuary
Gulf of the Farallones National Marine Sanctuary
Co-Manager
Monterey Bay National Marine Sanctuary (north)

cc:
Don Neubacher
Brian O'Neill
Bob Tasto, Frank Henry, Fred Wendell
William Douros, Patrick Cotter
Stephanie Thornton
Peter Douglas, Tami Grove

State of California

Memorandum

To : Mr. Michael Napolitano
California Regional Water Quality Control Board
San Francisco Bay Region
2101 Webster Street, Suite 500
Oakland, California 94612

Date : June 8, 1998

From : **Department of Fish and Game**

Subject : Tentative Waste Discharge Requirements, Monitoring Plan, and NPDES Permit for Pillar Point Harbor Abalone Grow-out Facilities.

Department of Fish and Game (DFG) personnel have reviewed the Regional Water Quality Control Board's (RWQCB) National Pollution Discharge Elimination System (NPDES) permit, and self-monitoring plan for four abalone grow-out facilities in Pillar Point Harbor, San Mateo County. The monitoring plan will be part of each grower's NPDES permit issued by the RWQCB for a period of five years. The proposed facilities would be located in the northwest corner of Pillar Point Harbor in Half Moon Bay.

The monitoring plan was designed to address concerns and gather technical information about potential impacts which grow-out facilities for up to 2.25 million juvenile red abalone (*Haliotis rufescens*), grown to a weight of 65 grams, might have on the water quality and biological resources of the Harbor. The monitoring plan includes conducting baseline studies for dissolved oxygen (DO), the organic matter content of bottom sediments, and composition of the benthic infaunal communities, as well as sampling schedules for each of these elements. The level of sampling is dependent upon the number of abalone that will be placed in the waters of the harbor with each grower allowed to introduce up to 20% per year of the total number of abalone specified in their NPDES permit. Each element of the plan, in our view, is crucial in addressing issues previously raised by the DFG regarding potential impacts from long-term operation of the facilities, and is information that needs to be provided by the project sponsors.

The DFG is generally supportive of a phased approach to the introduction of abalone into the waters of Pillar Point Harbor provided each grower complies with all conditions of the permit and all aspects of the monitoring plan. The DFG has the following comments and recommended modifications to the NPDES permits for the Pillar Point Harbor abalone grow-out facilities:

- **NPDES Permit/Waste Discharge Requirements** - Under the section entitled DESCRIPTION OF OPERATIONS, item number eight discusses the use of kelp as a food source for abalone grown in the project facilities. It also discusses the DFG's concerns with the utilization of the limited local kelp resources in San Mateo County. While these concerns do exist for local kelp beds, it is important to remember that all kelp beds open to harvest are strictly managed and regulated by the DFG and the Fish and Game Commission, and that the growers are required to adhere to all regulations pertaining to kelp harvest. For this reason, the DFG recommends that additional language regarding compliance with these regulations be placed into the section of the permit ("IT IS HEREBY ORDERED..."), that states the conditions with which the growers must comply.

Item number nine under this same section describes the potential for the "non-intentional introduction of the sabellid worm into the marine environment from out-planting of abalone seed-stock infested with sabellid worm." This section identifies the issue as ecologically significant and describes the DFG as the lead agency responsible for developing policies and procedures for eliminating the potential spread of the sabellid worm to wild abalone stocks. The permit further states under this section that all policies and procedures developed by the DFG regarding the sabellid worm must be adhered to by the abalone growers. It is the DFG's recommendation that the language under item number nine be inserted into the section of the permit ("IT IS HEREBY ORDERED...") that states the conditions with which the growers must comply.

- **NPDES Permit/Receiving Water Limitations** - The DFG is concerned with section B(1)(a) regarding dissolved oxygen. This section states that the discharger shall maintain the water quality standard for DO at 5.0 mg/l minimum. The permit does not discuss, however, what the growers are required to do if the DO drops below 5.0 mg/l. The DFG recommends that contingencies (e.g., abalone stock reduction) are developed to address a decrease in DO below this level and are included as a condition of the NPDES permit.

- **NPDES Permit/Dissolved Sulfides** - Section (B)(1)(e) states that "all waters shall be free from dissolved sulfide concentrations above background levels." This section further states that small amounts of dissolved sulfides (e.g., hundredths of a milligram) can be toxic to aquatic life and cause a noticeable odor. The DFG would like a clarification on the expected source of background level information for dissolved sulfides. We question whether the growers will be responsible for determining background levels for dissolved sulfides or whether the determination will be incorporated into the DO baseline study. Additionally, once background levels are determined, we question how sulfide levels will be monitored, and what are the contingencies for this situation. Often with organic substances, once the odor is detected it has already reached toxic levels.

- **Monitoring Plan** - Section III (B), Benthic Infaunal Sampling, states that the DFG's Aquaculture Team "shall" develop the protocols for sampling, determining sampling areas, sample sizes, identify target species or communities, and level of taxonomic classification. Additionally, this section states that the Aquaculture Team will review the marine benthic invertebrate study done in 1991 by ENTRIX, and determine whether or not the study, in conjunction with other data, can be used to establish a baseline assessment of benthic communities in the harbor. It further states that the Aquaculture Team has agreed to provide all of the above information by August 17, 1998. These statements are incorrect. The DFG staff, including the Aquaculture Team, did not agree to designing the baseline study or the annual sampling for the benthic infaunal portion of the monitoring plan. However, the DFG, in discussions with the RWQCB and the growers, has stated that the baseline study and annual sampling of the benthic infaunal communities would have to be approved by the DFG. We do not believe that the 1991 ENTRIX study, while providing comprehensive data about the benthic communities in Pillar Point Harbor, provides an adequate baseline for conditions in 1998. It was agreed that guidance would be obtained from the academic community as to what level of sampling would need to be done to augment the 1991 ENTRIX study. Therefore, the DFG recommends that the RWQCB continue to collect information regarding an appropriate baseline study and annual sampling methods for benthic infaunal communities to characterize current conditions in the Harbor.

- **Sabellid Worm Reporting** - Section IV (B), Spill Reports, states that any detection of sabellid worm infestations must be reported to the DFG immediately at (650) 688-6361. The appropriate number to use for reporting sabellid worm infestations is (805) 772-1714, or (707) 875-2066.

Thank you for the opportunity to review and comment upon these documents. As always, DFG personnel are available to discuss our concerns and comments in greater detail. To arrange for discussion, please contact Ms. Becky Ota, Associate Marine Biologist, California Department of Fish and Game, Marine Resources Laboratory, 411 Burgess Drive, Menlo Park, California 94025, telephone (650) 688-6361.

COPY Original signed by DeWayne Johnston

DeWayne Johnston
Regional Manager
Marine Region

cc: Ms. Becky Ota
Department of Fish and Game
Menlo Park, California

bc: Ms. Connie Ryan
Department of Fish and Game
Menlo Park, California

Mr. Fred Wendell
Department of Fish and Game
Menlo Park, California

Mr. Robert Tasto
Department of Fish and Game
Menlo Park, California

Mr. Robert Hulbrock
Department of Fish and Game
Sacramento, California

Mr. Edward Ueber
Gulf of the Farallons and Cordell Bank
National Marine Sanctuary
San Francisco, California

Mr. Pat Cotter
Monterey Bay National Marine Sanctuary
Monterey, California

Ms. Joy Chase
California Coastal Commission
Santa Cruz, California

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
OFFICE OF OCEAN AND COASTAL RESOURCE MANAGEMENT

Gulf of the Farallones National Marine Sanctuary
Fort Mason, Building 201
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Phone 415 561-6622 Fax 415 561-6616

May 29, 1998

Mr. Teng-Chung Wu
Chief
South Bay Watershed Management Division
San Francisco Bay Regional Water Quality Control Board
2101 Webster Street, Suite 500
Oakland, California 94612

SUBJECT: File Number(s)
Blue Pacific Abalone: 2179.7162 (MBN)
Pearl Abalone Company 2179.7164 (MBN)
Pacific Offshore Farms 2179.7166 (MBN)
Princeton Abalone 2179.7165 (MBN)

Dear Mr. Wu:

The Monterey Bay National Marine Sanctuary has continually worked with and supported the efforts of your staff. We have been steadfast in our belief that all permits for these projects need to be coordinated and agreements, terms, and monitoring protocols be the same for all applicants and agencies. We further believe and request that all required permits, including San Francisco Regional Water Quality Control Board's, become effective only after agreements on enforcement procedures, consequences of violation, and penalty schedule are clear and written.

An applicant recently failed to adhere to his lease in Marin County. The Marin District Attorney declined to take this aquaculture permit infraction case because he perceived an ambiguity existed in the current permits, leases or contracts. Because of the above we believe a review by the San Mateo District Attorney be solicited and obtained, prior to any permit approval, to determine if a case could be prosecuted if the existing permits, leases or contracts are not adhered to be the applicants.

File Number(s)
Blue Pacific Abalone: 2179.7162 (MBN)
Pearl Abalone Company 2179.7164 (MBN)
Pacific Offshore Farms 2179.7166 (MBN)
Princeton Abalone 2179.7165 (MBN)

I believe that the applicants agree completely that no sabellid worm be allowed. In fact, the applicants have continually stressed that their facilities would be totally (100%) sabellid worm free. All facilities must have zero (none) sabellid worms. This is the appropriate, proper, and necessary criteria for any lease, permit or contract and should be included in each and every lease, permit or contract.

Due to the incredible damage to the state's and sanctuaries' resources if sabellid worms become naturalized, it is prudent that if any are present in any of the abalone facilities, a 100% destruction of all abalone at all facilities in Half Moon Bay must occur.

Thank you for the opportunity to comment on this issue. Pat Cotter and I look forward to working with you on this project.

Yours truly,

Edward Ueber
Manager
Gulf of the Farallones National Marine Sanctuary
Co-Manager
Monterey Bay National Marine Sanctuary (north)

cc: Lyle Wagner, Blue Pacific Abalone
Doug Hayes, Pacific Offshore Farms
Christian Zajac, Pearl Abalone Company
Jon Locke, Princeton Abalone
Bob Tasto and Fred Windell, California Dept. of Fish & Game
Bill Douros and Pat Cotter, Monterey Bay MMS
Peter Grenell, San Mateo County Harbor District
Joy Chase, California Coastal Commission

UNITED S TES DEPARTMENT OF COMMERCE
National C anic and Atmospheric Administration
NATIONAL OCEAN SERVICE
OFFICE OF OCEAN AND COASTAL RESOURCE MANAGEMENT
Gulf of the Farallones NMS
Building 201, Fort Mason
San Francisco, California 94123

April 30, 1998

Loretta Barsamian
Executive Officer
San Francisco Bay Regional Water Quality Control Board
2110 Webster Street, Suite 500
Oakland, California 94612

SUBJECT: Review of Four Revised Draft NPDES Permits
for Abalone Facilities in Pillar Point Harbor, San Mateo County

Dear Ms. Barsamian:

The Monterey Bay National Marine Sanctuary and the Gulf of the Farallones National Marine Sanctuary have reviewed the revised draft National Pollutant Discharge Elimination (NPDES) permits for abalone mariculture facilities at: (1) Blue Pacific Abalone, (2) Pacific Offshore Farms, (3) Pearl Abalone, and (4) Princeton Abalone in Pillar Point Harbor (March 25, 1998). We reviewed the draft revised NPDES permits under our authority defined at 15 C.F.R. Section 922.134 and Section V.E. of the MBNMS Memorandum of Agreement (MOU) on ecosystem-based water quality management (June 1992). The Sanctuary Program appreciated the extension to the comment period on the NPDES permits until May 1, 1998.

The Sanctuary Program has been working closely with the San Francisco Bay Regional Water Quality Control Board (RWQCB), the California Department of Fish and Game (CDFG), the California Coastal Commission (CCC), the U. S. Army Corps of Engineers' San Francisco District (COE) and the San Mateo County Harbor District (SMCHD) on the environmental evaluation of this project and potential effects on coastal resources. The RWQCB has been the lead agency in resolving problems on these proposed facilities and bringing agencies together to discuss expansion of the abalone mariculture facilities.

It is important for the permit applicants and the RWQCB to know that the Sanctuary Program does not object to the permitting of properly designed, environmentally safe, mariculture facilities in Pillar Point Harbor. Our concerns are based on the protection of Sanctuary resources from:

(a) sabellid worm parasite infestations, (b) availability of kelp to feed 1.9 million abalone in addition to the abalone mariculture needs which already exist at facilities along California's central coast, (c) environmental impacts that may occur in the confines of Pillar Point Harbor, and (d) management decisions by other agencies that could affect the viability of the revised draft NPDES permits. Some of these concerns are shared by other agencies that have been involved in the review process for these permits.

Important issues have been incorporated into the revised draft permits, including monitoring requirements and acknowledgment of the impacts of sabellid worm infestations (Item No. 8, page 2) and impacts on local kelp resources from additional harvesting (Item No. 7, page 2). However, until CDFG makes environmental management determinations about sabellid worms and kelp resources, the RWQCB should not issue any NPDES permits that may jeopardize State of California and Sanctuary marine resources. Important comments discussed in the Sanctuary Program's February 23, 1998 letter were not addressed in the revised draft permits. A copy of our February 23 letter is attached. Comments in the February 23 cover letter paragraphs 4 and 5 (page 2) and detailed comments A.1, B.3, B.5 through B.8 should be considered as additional comments to the four draft revised NPDES permits.

The Sanctuary Program continues to have serious concerns about the feasibility of this project (previous letters to the RWQCB dated April 4, 1997, December 3, 1997 and February 23, 1998). Though the number of abalone proposed for full build out has been reduced from 5.2 million to 1.9 million and some revisions to earlier draft permits have been made, the Sanctuary Program has significant remaining concerns about the NPDES permits and the environmental impacts that may be caused by these facilities in Pillar Point Harbor. Based on previous work on this project, we anticipate that our concerns can be addressed through the cooperative efforts from RWQCB, CDFG, CCC and SMCHD. Our comments and concerns defined in the enclosures with this letter need to be addressed for a fair review for the applicants. The Sanctuary prefers this to invoking a halt in the processes under Section VIII in our MOU.

Our detailed comments on the draft revised NPDES permits for the abalone expansion projects are enclosed. We are available to meet with the RWQCB, other agencies and the applicants to discuss our concerns. If you

have any questions on the Sanctuary Program's comments or your wish to schedule a meeting, please contact me at (415) 561-6622 or your staff may contact Patrick Cotter at (408) 647-4252.

Sincerely,

Edward Ueber

Edward Ueber
Co-Manager, Northern Sector Monterey Bay National Marine Sanctuary
Manager, Gulf of the Farallones National Marine Sanctuary

Enclosures (2)

cc: Stephanie Thornton, NOAA SRD
William J. Douros, MBNMS
Michael Weiss, NOAA GC
Teng-Chung Wu, RWQCB
Terry Oda, EPA Region IV
Bob Smith, COE San Francisco District
Tami Grove, CCC
DeWayne Johnston, CDFG
Becky Ota, CDFG
Peter Grenell, SMCHD
Lyle Wagner, Blue Pacific Abalone
Doug Hayes, Pacific Offshore Farms
Christian Zajac, Pearl Abalone Co.
Jon Locke, Princeton Abalone
Keith Mangold

Monterey Bay/Gulf of the Farallones National Marine Sanctuary Comments
Four RWQCB Revised Draft NPDES Permits
Abalone Facilities at Pillar Point Harbor

A. Sabellid Worm Parasites

1. The permit for each abalone facility should contain a prohibition on the discharge of any sabellid worm parasites, either eggs, larvae or adults. Prohibiting such a discharge will protect beneficial uses associated with Pillar Point Harbor and nearby coastal environments. A similar comment was made on the administrative drafts of the four NPDES permits, but the RWQCB did not address our comment. Measures to ensure compliance with this prohibited discharge should be submitted to the CDFG for approval. The RWQCB permit should not be valid until such approval is communicated by CDFG directly to the RWQCB Executive Officer and deemed adequate to protect beneficial uses. If sabellid worms are found at a permittee's facility, the RWQCB should assume that a prohibited discharge has occurred. All of the abalone in the permittee's contaminated facility should be removed from the facility and disposed in a landfill. The permittee should determine whether any nearby molluscan species have been infested with sabellid worm parasites. Any nearby infestation should be removed and disposed at a landfill.

2. The RWQCB should require weekly inspection of each permittee's facilities to determine whether sabellid worm parasites are present. This requirement should be added to the Self Monitoring Program. Mitigation and restoration of nearby infested molluscan species should be considered by the RWQCB.

3. The technical report submitted to the RWQCB Executive Officer by each permittee (Permit Section C.2, page 6) should include information on inspection and eradication measures that were required to prevent contamination of wild molluscan species with sabellid worm parasites. This information will be used

to determine whether the individual permittee may have cause infestation of local wild molluscan species.

B Kelp Resources

1. The four permits state: *...there are legitimate concerns that kelp harvesting for the proposed aquaculture operations could adversely impact local kelp resources* (Item 7, page 2). The CDFG issued comment letters on this significant environmental impact on February 27, 1998 and April 1, 1998. The CDFG February 27, 1998 letter to the Corps of Engineers on Public Notice No. 22808S states: *Given the minimal amount of kelp available in* [kelp beds off the San Mateo coast], *there are legitimate concerns that local kelp resources could be adversely impacted if fully utilized by these proposed facilities. In addition, kelp beds located off of Santa Cruz and in Monterey Bay may not necessarily be viable options to the growers due to concerns expressed by various local interest groups regarding the harvesting of kelp from these beds...We recommend that all issues relating to kelp harvest be resolved before operations of the facilities begin* (page 2). The CDFG April 1, 1998 letter to the Corps of Engineers states: *There is local interest in limiting harvest of some* [kelp] *beds, and natural factors such as the recurring El Niño weather pattern may cause kelp abundance to fluctuate. Even if there is no further reduction of the beds, the DFG is concerned that the local resources may not be adequate to support the grow-out of an additional 5.1 million abalone, nor even a significantly smaller number of abalone* (page 2).

2. Though we have requested information on kelp resources and potential impacts on existing kelp beds along the San Mateo County, Santa Cruz County and Monterey County coastlines, no information has ever been presented to the Sanctuary Program by the permittees, the SMCHD, the RWQCB or CDFG on the volume of kelp needed to feed abalones at the proposed facilities and the potential impact on kelp beds within the Monterey Bay or Gulf of the Farallones

National Marine Sanctuaries. Without this evaluation, the Sanctuary Program cannot assess the potential impacts to its resources and qualities.

3. The technical report submitted to the RWQCB Executive Officer by each permittee (Permit Section C.2, page 6) should contain a table documenting the amount of kelp fed to the permittee's abalone on a weekly basis during the reporting period.

C. **Abalone Numbers**

1. Though the four permits acknowledge that the 1.9 million abalone proposed for final build out is significantly lower than the earlier estimate of about 5.2 million abalone (Item 5, page 2), the NPDES permits should also acknowledge that the final build out number is more than ten times the number of abalone currently are being grown in Pillar Point Harbor by U.S. Abalone. This increase of more than ten fold should be considered significant.

2. Limits on the number of abalone permitted at full build out at the four facilities should be defined in terms of the number of abalone present in Pillar Point Harbor at any time within the permittee's individual facility (Permit Section A, page 5). For example, the limit on abalone permitted for Pacific Offshore Farms should be defined as: *The maximum number of abalone grown by Pacific Offshore Farms at the end of the permit period in May 2003 shall not exceed 500,000 abalone present in the permittee's facilities at any time within the authorized lease area* (emphasis added).

3. Permit Section C.1 Provisions (page 6) contains some unclear references to the number of abalone permitted for growth on an incremental basis. The Sanctuary Program recommends that the RWQCB revised the first sentence and similar sentences to read: *During the first year of operation, the maximum number of*

abalone grown shall not exceed 100,000 abalone present in the permittee's facilities at any time within the authorized lease area. Other sentences describing incremental abalone grow out limitations should be defined in increments of 100,000 abalone until the full 500,000 abalone figure is reached in the fifth year.

D Permit Conditions

1. A map should be included with each NPDES permit showing the location of the permittee's facilities. The latitude and longitude of the facility should be defined. Planview and cross-sectional view drawings of the permittee's facilities should be included in the permit to define the size and shape of each permittee's facility.

2. All four permits should include the following sentence: *In addition to the discharger, <u>three</u> other aquaculture operations are planned within the lease area* (emphasis added) (Item 3, page 1).

3. A table should be included with each permit defining the applicable water quality standards for receiving waters adopted by the Board and the State Water Resources Control Board and the applicable dilution factor for the discharge (Permit Section B.2, page 5). A narrative reference to these standards is not sufficient to clarify what the permit condition means.

B. Self Monitoring Program

1. A map should be included in each NPDES permit showing the location of all sampling stations for the specific permit. Figure 1 (page 10) was not included in the NPDES permits. Latitude and longitude of the sampling stations should be included in each permits.

TEL:408 647 4250 P.10

2. The Sanctuary requests that analysis of benthic infaunal organisms from sediment grab samples be included in the benthic grab sample monitoring program. Benthic infauna should be characterized to determine whether deposition of debris and feces on the bottom are causing significant changes in biological resources of the Harbor, or whether nuisance species are colonizing the area due to significant changes in the benthic environment from debris and fecal deposition or other environmental changes.

3. Weekly standard observations should include <u>any observation of fish or bird kills</u> in the Harbor.

4. A schedule of raft placement and project build out should be defined for each permit. If the permittee cannot follow the build-out schedule, deployment of more than 100,000 abalone in any year should not be authorized. For example, if the permittee cannot add 100,000 more abalone in year two, the permittee should not be able to deploy 200,000 more abalone in year three all at once. Deployment of a large number of abalone at any facility to make up for missed opportunities in previous years may seriously affect the marine habitat within the Harbor.

5. All observations and analyses must be conducted by certified unbiased personnel approved by the RWQCB and CDFG.

6. Components and schedule for a scientifically defensible baseline environmental study should be defined.

7. The term *Water Column Height* (Table 1, page 11) should be changed to *Water Depth calibrated to Mean Lower Low Water.*

8. The meaning of the letter W in Table 1 (page 11) should be changed to: *One day per week, at least once every two hours at each sampling station during a 24-hour period.* (emphasis added).

9. The meaning of the letter Q in Table 1 (page 11) should be changed to: *Sampling shall occur at least once every three months* (emphasis added).

10. The meaning of letter C in Table 1 (page 11) should be changed to: *Continuous monitoring throughout one 28-day lunar cycle should occur in September or October of each year that the permit is valid. Measurement and recording frequency for each monitoring parameter shall be recorded every 15 minutes for each 24-hour period during the 28-day monitoring activity.* Similar changes to Self Monitoring Program Section III.A.3 (page 11) should be made.

11. A requirement to identify benthic infauna from bottom sediment samples should be included with Self Monitoring Program Section III.A.4 (page 11). Evaluation of the benthic infaunal samples should be the same as the criteria listed in Self Monitoring Program Sections III.B.5 and III.B.6 (page 12).

12. Monitoring reports (Self Monitoring Program Section IV.C, page 15) should also be sent to

    Edward Ueber, Manager
    Gulf of the Farallones National Marine Sanctuary
    Fort Mason Building 201
    San Francisco, California 94123

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CALIFORNIA
COASTAL COMMISSION
CENTRAL COAST AREA

(916) 653-6281

April 1, 1998

Lieutenant Colonel Richard G. Thompson
District Engineer, Regulatory Branch
Army Corps of Engineers
333 Market Street
San Francisco, California 94105-2197

Dear Lieutenant Colonel Thompson:

This letter is intended to expand upon the Department of Fish and Game's (DFG) February 27, 1998, recommendations in response to the Army Corps of Engineers (Corps) Public Notice (PN) No. 22808S regarding proposed abalone aquaculture operations at Pillar Point Harbor. In the DFG letter of response, we provided background on concerns that have been raised about use of the limited amount of locally available kelp that has been proposed to support production originally described at up to 5.1 million abalone. In addition to the three specific Corps permit conditions recommended by DFG on other issues, "we also recommended that all issues relating to kelp harvest be resolved before operations of the facilities begin."

It is not the DFG's recommendation that the Corps, or any other permitting agency, condition Pillar Point Harbor abalone project permits with limitations on kelp harvest that go beyond existing requirements established by the Fish and Game Commission (FGC). The DFG, as the principal State agency (along with the FGC) responsible for management of wildlife and fishery (including kelp) resources, contends that kelp harvest is adequately regulated and that the legal harvest of kelp has no significant negative effect on kelp resources or the animals supported by kelp bed environments.

That assertion is supported by a long history of kelp harvesting in California and the recent review of kelp harvest in accord with the California Environmental Quality Act (CEQA). The draft environmental document, "Giant and Bull Kelp Commercial and Sport Fishing Regulation" was prepared, circulated and recirculated by the DFG. Testimony at public meetings and written comments were received, considered, and the document improved where appropriate. The final document was certified and regulations were adopted by the FGC. Those regulations became effective in March 1996. Under those regulations, kelp harvest is managed by limitations on the method of harvest and by designating which kelp beds may be harvested. Kelp beds are designated as available for lease and exclusive harvest by the lessee, as open beds available for harvest by any licensed kelp harvester, or as closed beds that cannot be harvested for environmental reasons. The method of take allows kelp to be cut no deeper than four feet below the ocean surface.

However, the DFG recognizes that local kelp resources in the vicinity of Pillar Point Harbor which are available for legal harvest are limited, and there are existing competing harvesters. There

is local interest in limiting harvest of some beds, and natural factors such as the recurring el Niño weather pattern may cause kelp abundance to fluctuate. Even if there is no further reduction of the beds, the DFG is concerned that the local resource may not be adequate to support the grow-out of an additional 5.1 million abalone, nor even a significantly smaller number of abalone.

DFG recommends that these issues be resolved before operations begin and we believe that the continuing permitting process will provide the opportunity for resolution. Through our original comments to the Corps, and with this letter, it is the DFG's intent to focus on legitimate concerns regarding kelp harvest. It is appropriate that the prospective abalone aquaculturists consider how they intend to respond to a limited local kelp resource, and what alternatives they may employ if the legal harvest of local kelp beds proves to be insufficient to support their operations.

If there are any questions, or if further discussion of the DFG recommendation on this issue is desired, please contact Mr. Rob Collins of my staff at (916) 653-6281.

Sincerely,

COPY ORIGINAL SIGNED BY
ROBSON A. COLLINS
for DeWayne Johnston
Interim Regional Manager
Marine Region

cc Mr. Peter Grenell
San Mateo County Harbor District
El Granada, California

Ms. Joy Chase
California Coastal Commission
Santa Cruz, California

Mr. Michael Napolitano
Regional Water Quality Control Board
Oakland, California

Mr. Edward Ueber
Monterey Bay National Marine Sanctuary
San Francisco, California

Ms. Nadell Gayou
Resources Agency
Sacramento, California

bc: Mr. Lyle Wagner, Blue Pacific Abalone,
Mr. Doug Hayes, Pacific Offshore Farms,
Mr. Jon Locke, Princeton Abalone, Half Moon Bay
Mr. Christian Zajac, Pearl Abalone.
Mr. Bob Hulbrock, DFG Sacramento
✓Mr. Frank Henry, DFG Menlo Park
Mr. Robert Tasto, DFG Menlo Park
Mr. Fred Wendell, DFG Morro Bay
Mr. DeWayne Johnston
Mr. Rob Collins
Ms. Becky Ota
Ms. Connie Ryan

State of California - The Resources Agency
DEPARTMENT OF FISH AND GAME
http://www.dfg.ca.gov
1416 Ninth Street
Sacramento, CA 95814

(916) 653-6281

PETE WILSON, *Governor*

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CALIFORNIA
COASTAL COMMISSION
CENTRAL COAST AREA

February 27, 1998

Lieutenant Colonel Richard G. Thompson
District Engineer, Regulatory Branch
Army Corps of Engineers
333 Market Street
San Francisco, California 94105-2197

Dear Lieutenant Colonel Thompson:

Department of Fish and Game (DFG) personnel have reviewed Public Notice (PN) No. 22808S regarding the Corps of Engineers (Corps) proposal for a regional permit authorizing abalone marine aquaculture facilities at Pillar Point Harbor in Half Moon Bay, San Mateo County. The proposed regional permit would authorize facilities to grow red abalone (*Haliotis rufescens*) in an area 500 yards by 750 yards located in the northwest corner of the Harbor. The San Mateo County Harbor District (SMCHD) has recently issued five licenses for aquaculture in the Harbor to five different applicants to grow red abalone. The abalone growers plan to raise approximately 5 million abalone to a maximum size of 3 inches (65 grams each) over a 5-year period. The abalone would be placed in cages suspended from anchored rafts of various design and fed giant kelp (*Macrocystis pyrifera*) over the duration of the grow-out period.

The DFG believes that the project as currently proposed has the potential to impact water and sediment quality, as well as affect fish and wildlife resources in Pillar Point Harbor. Additionally, the issues of kelp harvest and sabellid worm infestation are important considerations in our evaluation of this permit application. Our comments and recommendations are as follows:

- Water quality (e.g., dissolved oxygen, turbidity, pH, temperature, etc.) is a major concern of the DFG. Essential components of the benthic community, such as demersal fish populations and epibenthic and infaunal invertebrates, may be adversely impacted by degradation of water quality or other activities associated with the proposed facilities. Therefore, the DFG supports the implementation of a comprehensive and long-term monitoring plan to identify any impacts to water quality and the biological resources of the Harbor. The DFG has been working cooperatively with the Regional Water Quality Control Board (RWQCB), the California Coastal Commission, the Monterey Bay National Marine Sanctuary, and others to ensure that a plan is developed which accurately reflects the need for adequate and timely information, and which is

based upon the number and size of abalone which may ultimately be placed in the Harbor by participating growers. The DFG endorses those elements of a monitoring plan which emphasize gathering data by the applicants or their consultants on water quality conditions, demersal fish and invertebrate populations, and benthic infaunal organisms. We believe that sampling for these elements is crucial in identifying any potential impacts due to the operation of the proposed aquaculture facilities.

- The potential introduction of the sabellid worm, an introduced pest species that causes deformation of the abalone shell resulting in slow growth and potential mortality, into the marine environment was not addressed in the PN. While this issue is not necessarily within the jurisdiction of the Corps, it is recognized as a significant ecological issue which is currently under review by the DFG. Policies and procedures for eliminating the potential spread of this nuisance species into wild abalone stocks nearby are currently being developed by the DFG under the guidance of our Aquaculture Team. Due to the serious nature of this issue, these policies and procedures, once formulated and approved, must be adhered to rigorously by the applicants.

- The PN states that the abalone growers propose harvesting giant kelp from local kelp beds, from beds off Santa Cruz and elsewhere in Monterey Bay, or from other coastal locations. However, there are currently only three kelp beds off the San Mateo coast, with two of those beds not subject to lease. Based on a 1989 aerial survey, the amount of kelp in all three beds totals 0.06 square miles. Given the minimal amount of kelp available in these beds, there are legitimate concerns that local kelp resources could be adversely impacted if fully utilized by these proposed facilities. In addition, kelp beds located off of Santa Cruz and in Monterey Bay may not necessarily be viable options to the growers due to concerns expressed by various local interest groups regarding the harvesting of kelp from these beds, e.g., the prime area for kelp harvesting in Monterey Bay is being proposed as an underwater park (no take area). The issues and controversies associated with the use of these beds will be addressed by the appropriate regulatory authorities including the DFG, the California Coastal Commission, and local governmental entities.

As a result of the aforementioned concerns, yet keeping in mind the State's legislative mandate to encourage aquaculture in California, while minimizing impacts to the marine environment, the DFG recommends that any regional permit issued by the Corps contain the following conditions: 1) the permit be limited to five years and reissuance be predicated on demonstrating that there are no significant adverse impacts to marine resources from abalone grow-out operations; 2) all participating growers strictly abide by the stipulations of the self-monitoring plan and reporting structure approved and established by the RWQCB, DFG, California Coastal Commission, and other State and Federal resource and regulatory agencies; 3) all growers adhere to the policies and procedures established by the DFG to ensure the use of sabellid-free abalone stock in the out-planting of these facilities and to prevent the spread of sabellid worms into the environment. We also recommend that all issues relating to kelp harvest be resolved before operations of the facilities begin.

As always, DFG personnel are available to discuss our concerns and comments in greater detail. To arrange for discussion, please contact Ms. Becky Ota, Associate Marine Biologist, California Department of Fish and Game, Marine Resources Laboratory, 411 Burgess Drive, Menlo Park, California 94025, telephone (650) 688-6361.

Sincerely,

COPY ORIGINAL SIGNED BY

DeWayne Johnston
Interim Regional Manager
Marine Region

cc: Ms. Nadell Gayou
Projects Coordinator
Resources Agency
Sacramento, California

Ms. Becky Ota
Department of Fish and Game
Menlo Park, California

bc: Mr. Fred Wendell
Department of Fish and Game
Morro Bay, California

Bob Hulbrock
Department of Fish and Game
Sacramento, California

Connie Ryan
Department of Fish and Game
Menlo Park, California

Mr. Robert Tasto
Department of Fish and Game
Menlo Park, California

Mr. Frank Henry
Department of Fish and Game
Menlo Park, California

Mr. DeWayne Johnston
Department of Fish and Game
Sacramento, California

Mr. Michael Napolitano
Regional Water Quality
Control Board
Oakland, California

Mr. Edward Ueber
Monterey Bay National Marine Sanctuary
San Francisco, California

Ms. Joy Chase
California Coastal Commission
Santa Cruz, California

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
Monterey Bay National Marine Sanctuary
299 Foam Street, Suite D
Monterey, California 93940

February 23, 1998

Teng-Chung Wu, Chief
South Bay Watershed Division
San Francisco Bay Regional Water Quality Control Board
2101 Webster Street, Suite 500
Oakland, California 94612

SUBJECT: **Four Administrative Draft NPDES Permits for Abalone Facilities in Pillar Point Harbor, San Mateo County**

Dear Mr. Wu:

The Monterey Bay National Marine Sanctuary (MBNMS) and the Gulf of the Farallones National Marine Sanctuary (GFNMS) have reviewed administrative draft National Pollutant Discharge Elimination (NPDES) Permits for: (a) Princeton Abalone (January 12, 1998), (b) Blue Pacific Abalone (January 23, 1998), (c) Pacific Offshore Farms (January 23, 1998), and (d) Pearl Abalone (January 23, 1998). We reviewed the four NPDES permits under Section V.E of the MBNMS's Memorandum of Agreement on ecosystem-based water quality management (June 1992). I am the lead for the Sanctuary Program's review of these proposed projects.

The Sanctuary Program has been working closely with the San Francisco Bay Regional Water Quality Control Board (RWQCB), the California Department of Fish and Game (CDFG), the California Coastal Commission (CCC), the U.S. Army Corps of Engineers' San Francisco District (COE) and the San Mateo County Harbor District (SMCHD) on the environmental evaluation of this project and potential effects on California's coastal resources. We appreciate the amount of staff time devoted to this important program. Thank you for convening a meeting with many of these agencies on February 9, 1998. Also, the Sanctuary Program appreciates the RWQCB's extension of the comment period on this Public Notice until February 23, 1998.

Many of the project-specific and cumulative environmental impacts of the proposed project are controversial and have not been addressed adequately in the administrative draft NPDES permits. Our comment letters, dated April 4, 1997 and December 3, 1997, list our concerns and comments on this project. Please consider the comments listed in these letters as additional comments on the proposed abalone expansion project NPDES permits. At the February 9 meeting, discussions about the number of abalone proposed for full build out was substantially less than 5.15 million (about 1.5 million). Ultimately, it will be important for each final draft

permit to define the actual number of abalone proposed for final build out. The number of abalone raised at the sites directly influences the concentrations of dissolved oxygen and ammonia, the volume of kelp required to feed the animals, and the volume of debris and fecal matter generated at each site.

The potential impacts of sabellid worm parasites on biological resources of California, the MBNMS and the GFNMS, and harvesting of large volumes of kelp to feed millions of growing abalone are of particular concern. Unfortunately, no information is presented in the draft NPDES permit regarding the project-specific amount of kelp needed to feed the abalone at each facility, or the cumulative effect of additional kelp harvesting in relation to existing kelp harvesting activities in the MBNMS. Also, project-specific and cumulative effects of sabellid worm parasites and the accumulation of kelp debris and fecal matter on the benthic infauna of the Harbor have not been evaluated. These environmental concerns must be considered by the RWQCB in the preparation of a discharge permit. A requirement for benthic infaunal sampling should be added to the monitoring program along with a scientifically defensible baseline environmental study.

Failure to consider project-specific or cumulative impacts listed above may not protect beneficial uses of enclosed bays in San Mateo County or other coastal areas of central California. We request that the RWQCB postpone any decision on the issuance of NPDES permits for these applicants until significant cumulative environmental effects can be evaluated adequately.

Our detailed comments on the NPDES permits for the abalone expansion project are enclosed with this letter. If you have any questions on the Sanctuary Program's comments, please contact me at (415) 561-6622 or your staff may contact Patrick Cotter at (408) 647-4252.

Sincerely,

Patrick Cotter

for Edward Ueber, Manager
Gulf of the Farallones NMS

Enclosures (3)

See Distribution List

Distribution List

Stephanie Thornton, NOAA SRD
William J. Douros, MBNMS
Michael Weiss, NOAA GC
Janet Hashimoto, EPA Region IX
Bob Smith, COE San Francisco District
Tami Grove, CCC
Bob Tasto, CDFG
Fred Wendell, CDFG
Bob Holbrook, CDFG
Peter Grenell, SMCHD
Thomas Ebert, U.S. Abalone
Jon Locke, Princeton Abalone
Lyle Wagner, Blue Pacific Abalone
Christian Zajac, Pearl Abalone Co.
Doug Hayes, Pacific Offshore Farms
Keith Mangold

Monterey Bay/Gulf of the Farallones National Marine Sanctuary Comments
Four RWQCB Administrative Draft NPDES Permits
Abalone Facilities at Pillar Point Harbor

A map should be included with each NPDES permit showing the location of the permittee's facilities. The latitude and longitude of the facility should be defined. Plan view and cross-sectional view drawings of the permittee's facilities should also be included in the permit to define the size and shape of the facility.

A. Receiving Water Limitations

1. The Sanctuary Program requests that the RWQCB NPDES permits contain a special condition requiring that all abalone mariculture rafts in Pillar Point Harbor be certified free of sabellid worm parasites. If sabellid worm parasites are discovered in any of the abalone mariculture pens, sufficient measures should be taken to prevent the contamination of other pens and the wild stocks of mollusks in Pillar Point Harbor, Half Moon Bay and the Pacific Ocean. Specific removal and disposal requirements for mollusks contaminated with sabellid worm parasites must be developed, reviewed by the agencies concerned with this project, and ultimately, included in the permit. Decontamination requirements need to include extermination of all life stages of sabellid worm parasites – eggs, larvae and adults.

2. The concentration of dissolved sulfide that cannot be exceeded should be defined (section B.1.e).

3. The concentration of ammonia that cannot be exceeded in the harbor should be defined.

B. Self Monitoring Program

1. A map should be included in each NPDES permit showing the location of all sampling stations for the specific permit. Figure 1 (page 10) was not included in the NPDES permits. Latitude and longitude of the sampling stations should be included in each permits.

2. Change the term "toxic gases" to "dissolved gases" (page 11, section III.A.6)

3. Analysis of benthic infaunal organisms should be included in the benthic grab sample monitoring program. Benthic infauna should be characterized to determine whether deposition of debris and feces on the bottom are causing significant changes in biological resources of the Harbor, or whether nuisance species are colonizing the area.

4. Please include a complete description of the bird population census protocols (page 11) in the administrative draft permits.

5. Weekly standard observations should include any observation of fish or bird kills in the Harbor.

6. A schedule of raft placement and project build out should be defined for each permit.

7. All observations and analyses must be conducted by certified unbiased personnel approved by the RWQCB and CDFG.

8. Components and schedule for a scientifically defensible baseline environmental study should be defined.

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
Monterey Bay National Marine Sanctuary
299 Foam Street, Suite D
Monterey, California 93940

February 23, 1998

Lt. Col. Richard G. Thompson
District Engineer
U.S. Army Corps of Engineers
San Francisco District
333 Market Street
San Francisco, CA 94105-2197

SUBJECT: Abalone Grow Out Facilities, Pillar Point Harbor, San Mateo County, Public Notice No. 22808S

Dear Lt. Col. Thompson:

The Monterey Bay National Marine Sanctuary (MBNMS) and the Gulf of the Farallones National Marine Sanctuary (GFNMS) have reviewed the U.S. Army Corps of Engineers San Francisco District's (Corps) Public Notice (No. 22808S) for the expansion of abalone grow out facilities in Pillar Point Harbor. I am the lead for the Sanctuary Program's review of this project. The Sanctuary Program has been working closely with the San Francisco Bay Regional Water Quality Control Board (RWQCB), the California Department of Fish and Game, the California Coastal Commission and the San Mateo County Harbor District (SMCHD) on the environmental evaluation of this project. Corps staff also participated in an initial meeting on this project. We appreciate the Corps' extension of the comment period on this Public Notice until February 23, 1998.

Many of the project-specific and cumulative environmental impacts of the proposed project are controversial and have not been addressed adequately in the Public Notice or the document prepared by Huffman & Associates titled: *Expanded and Revised Initial Studies for Abalone Aquaculture Operations at Pillar Point Harbor, San Mateo County* (June 1996). The Corps' Public Notice acknowledges that the environmental report prepared by Huffman & Associates indicates *...a potential for a detrimental effect on oxygen levels in the Harbor due to the introduction of approximately 5 million abalone at full buildout, and the amount of ammonia excreted by the abalone* (Public Notice page 2, column 2). However, no information is presented in the Public Notice about the project-specific or cumulative impacts to the kelp resources needed to feed the abalone, the impact of sabellid worm parasites or the accumulation of debris and feces on the bottom of the Harbor on benthic organisms or bottom-feeding animals.

The Sanctuary Program considers all of these impacts significant because many of the resources of the MBNMS and/or GFNMS would be detrimentally affected. After a meeting on February 9, 1998 with the applicants, State of California environmental agencies and the SMCHD, we find that the scope of the proposed abalone expansion project, the project-specific and cumulative environmental impacts of the project, baseline determinations, and environmental monitoring have not been addressed satisfactorily.

Because these impacts are significant and the Corps' currently proposed permit would allow such impacts to occur, the Sanctuary Program requests that the Corps require the permit applicant for the Corps' regional permits to prepare an environmental impact statement (EIS), pursuant to the National Environmental Policy Act (NEPA). The EIS should addresses cumulative and project-specific impacts on: (1) biological resources in Pillar Point Harbor and those that may be affected in the MBNMS and GFNMS, (2) kelp resources in the MBNMS, (3) the potential effects of an infestation of sabellid worm parasites on mariculture and wild stocks of mollusks in the vicinity of the proposed abalone mariculture facilities, and (4) a reasonable range of project alternatives. Since the project-specific and cumulative impacts of the proposed abalone expansion project have not been evaluated adequately, we request that the Corps postpone any decision on this project until the EIS process is completed. The Public Interest will not be served until these impacts are evaluated (Public Notice page 4, column 2). Our comments on the proposed permits and the need for an EIS are applicable even if the Corps receives modified permit requests for substantially fewer abalone.

The Sanctuary Program's detailed comments on the Corps' Public Notice and the abalone expansion project are enclosed with this letter. In addition, we have enclosed copies of our April 4, 1997, December 3, 1997 and February 23, 1998 comment letters to the RWQCB documenting our concerns on this project. We look forward to providing comments on a Notice of Intent to Prepare an EIS under NEPA in the near future. If you have any questions on the Sanctuary Program's comments, please contact me at (415) 561-6622 or your staff may contact Patrick Cotter at (408) 647-4252.

Sincerely,

for Edward Ueber, Manager
Gulf of the Farallones NMS

Enclosures (3)

See Distribution List

Distribution List

Stephanie Thornton, NOAA SRD
William J. Douros, MBNMS
Janet Hashimoto, EPA Region IX
Bob Smith, COE San Francisco District
Tami Grove, CCC
Teng-Chung Wu, RWQCB
Bob Tasto, CDFG
Fred Wendell, CDFG
Bob Holbrook, CDFG
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Doug Hayes, Pacific Offshore Farms
Keith Mangold

Monterey Bay /Gulf of the Farallones National Marine Sanctuary Comments
Corps Public Notice 22808S, Abalone Facilities at Pillar Point Harbor

1. Considering information presented at the February 9, 1998 meeting held at the Pillar Point Yacht Club to discuss the abalone mariculture expansion project, it is not clear how many companies are proposing to construct facilities in the Harbor and how many abalone are proposed for final buildout. This information is essential to the evaluation of any potential environmental impacts in Pillar Point Harbor or to resources of the MBNMS or GFNMS from the project. The Corps' Public Notice indicates that five licensees are proposing to have abalone mariculture facilities with a final buildout of 5.15 million abalone. During the February 9 meeting U.S. Abalone was not present and discussions about the actual number of abalone proposed for final build out was substantially less than the 5.15 million (about 1.5 million). Before the Sanctuary Program can comment on a project with 70% less abalone proposed for final build out, a clear statement of the number of abalone proposed for final build out, the space required, and the actual number of facilities must be defined. Even if smaller numbers of abalone are proposed, the 5.15 million reflects what has been proposed for the Corps' permit and should be considered part of the cumulative environmental impact analysis along with other reasonable project alternatives.

2. Please provide scientific information on the dispersal of abalone feces and kelp debris provided by U.S. Abalone (Public Notice page 2, column 1). If fecal matter and debris deposits accumulate more than one-half an inch (Public Notice page 2, column 2), the Corps should discuss how the accumulated material will be measured, removed and disposed. Also, the public notice should discuss: (a) how these deposits will be inspected and measured for possible removal, (b) the animals at risk *in situ*, and (c) the animals at risk during feeding activities near the abalone mariculture facilities.

3. The Huffman & Associates report (page 19) states: *...there may be a significant reduction in the dissolved oxygen levels of the outer harbor area, resulting in a detrimental impact to the existing biota* . The modeling results referred to in the Huffman & Associates report were based on abalone at 65 grams; however, the U.S. Abalone Internet information indicates that abalone often reach 110 grams at a market size. The Sanctuary is concerned that an accurate oxygen consumption model has not been run based on the larger abalone size. Oxygen depletion based on the larger size may significantly impact benthic resources in the Harbor. Other environmental impacts, such as ammonia production, food requirements and accumulation of fecal matter or debris could also change based on larger abalone. The effect of larger abalone must be discussed and documented in the EIS requested for project-specific and cumulative impact evaluations.

The Sanctuary Program does not agree with the statement in the Public Notice that: *...monitoring of actual conditions in the Harbor during implementation of the proposed projects is the best indicator of Harbor capacity* (page 2, column 2). The potential for environmental impacts should be examined initially using acceptable models for oxygen depletion, ammonia generation, feeding requirements, and accumulation of fecal matter and debris. If the model results indicate significant environmental impacts, a reasonable range of alternatives should be evaluated in the EIS to prevent environmental impacts to benthic resources.

4. At the February 9 meeting, many questions were raised about the proposed monitoring program and the requirements for a baseline monitoring program. The *baseline study of dissolved oxygen levels* mentioned in the Public Notice should be defined so the permit applicants know what to monitor when and agencies can comment on the proposed monitoring program. The Public Notice requires quarterly monitoring to determine impacts from the abalone facility, but the threshold limit of 5 mg/L is based on "one week" of observations. The one week observation will not be possible if quarterly monitoring is conducted. The details of a baseline and compliance monitoring program should be discussed in the EIS.

5. The Public Notice fails to mention the potential impact of sabellid worm parasites on mariculture-raised abalone, wild abalone and other mollusks. Extensive wild stocks of abalone and other mollusks exist in the MBNMS and the GFNMS. If sabellid worm parasites infest these organisms, there could be significant economic and environmental impacts from such an outbreak. The scope of these impacts and measures to eliminate such impacts must be fully evaluated in an EIS.

6. The environmental review conducted for this project does not adequately address the project-specific and cumulative impacts on kelp resources that must be harvested to feed millions of abalone in the proposed mariculture facilities. The information regarding where the kelp will be harvested, how much kelp will be needed to feed the abalone, the effect of greater harvesting efforts in kelp beds during high stress periods (i.e., winter months and during El Niño periods), and the methods for harvesting and transporting harvested kelp are not adequately addressed. These impacts must be evaluated with regard to the effects on the kelp bed habitat, MBNMS resources in the kelp beds and the cumulative effect of new kelp harvesting operations in addition to present kelp harvesting activities.

Board of Supervisors

COUNTY OF SAN MATEO

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WEB PAGE ADDRESS:http://www.co.sanmateo.ca.us

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COASTAL COMMISSION
CENTRAL COAST AREA

January 23, 1998

RECEIVED
JAN 2 8 1998
GENERAL MANAGER
S.M.C.H.D.

Lt. Colonel Richard G. Thompson
District Engineer, Regulatory Branch
Army Corps of Engineers
333 Market St.
San Francisco, CA 94105-2197

Subject: Abalone Aquaculture Project, Pillar Point Harbor, Half Moon Bay

Dear Lt. Col. Thompson:

The San Mateo County Board of Supervisors joins with the MidCoast Community Council (MCCC) to request that the Army Corps of Engineers take the appropriate steps to ensure that a full Environmental Impact Study (EIS) is conducted, regarding both the continuation of the existing abalone aquaculture in Pillar Point Harbor, and its proposed expansion.

Some of the factors that need to be considered, include but are not limited to the following:

1. Compatibility of this business with the required Visitor Serving nature of this locale.
2. The introduction of parasites, including the African sabellid worm.
3. The lack of a monitoring agency for this business.
4. The impact of this business on the availability of anchorage within Pillar Point Harbor, a designated "working" harbor.
5. The impact on all existing industry, including restaurants and marine businesses

Thank you for your consideration to our request.

Sincerely,

Supervisor Tom Huening, President
San Mateo County Board of Supervisors

cc: Members, San Mateo County Board of Supervisors
MidCoast Community Council

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
Monterey Bay National Marine Sanctuary
299 Foam Street, Suite D
Monterey, California 93940

December 3, 1997

Loretta Barsamian
Executive Officer
California Regional Water Quality Control Board
San Francisco Bay Region
2101 Webster Street, Suite 500
Oakland, California 94612

SUBJECT: Proposed Expansion of Abalone Mariculture Facilities Pillar Point Harbor, San Mateo County, California

Dear Ms. Barsamian:

The Monterey Bay National Marine Sanctuary has been working closely with the San Francisco Bay Regional Water Quality Control Board (RWQCB), the California Department of Fish and Game, (CDFG), the California Coastal Commission (CCC), and the San Mateo County Harbor District (SMCHD) to evaluate applications for NPDES permits to expand abalone mariculture operations in Pillar Point Harbor. This project could involve up to five NPDES permits and a total of more than 5 million abalones raised in cages suspended from rafts in the northwestern area of Pillar Point Harbor. At this time, the Sanctuary recommends that the RWQCB consider denying NPDES permits to the applicants because there are risks to wild abalone and marine gastropod stocks, and environmental impacts that may result from the proposed permit are not define adequately.

The Sanctuary met with several of the agencies listed above on August 11, 1997 to discuss this project. We were asked to develop a draft monitoring program for benthic invertebrates, benthic fish and birds that could be affected by the abalone expansion project. We coordinated our initial draft of the monitoring program with staff at CDFG in Monterey. A copy of the draft monitoring program is enclosed for your review.

Though we have developed the draft monitoring program, we are concerned that environmental impacts from this project could be significant on resources and qualities of the Sanctuary, especially from the inadvertent infestation of wild stocks of abalone and other gastropods from sabellid worm parasites. These parasites have been introduced to California's ocean waters through the importation of abalone seed stock from South Africa. The sabellid worm infests, weakens and deforms marine gastropod shells. If such an infestation occurred in central California ocean coastal waters, substantial and unacceptable economic and environmental damage could occur. On May 29, 1997, the Sanctuary's Research Activities Panel advised Tami Grove, CCC Deputy Director, that the sabellid worm issue and other environmental impacts are important concerns for the Sanctuary (see enclosure). The Sanctuary's Conservation Working Groups has also expressed similar concerns.

The Sanctuary reviewed the following documents for this project: (1) Draft Responses to Comments on the Expanded Initial Study for Abalone Aquaculture Operations, (2) Revised Expanded Initial Study for Abalone Aquaculture Operations (June 1996), and (3) San Mateo County Harbor District Staff Report on the proposed project (October 1996). On April 4, 1997, we sent the RWQCB a list of questions on the proposed project. The Sanctuary continues to be concerned that the NPDES permit process is moving forward without a consideration of an adequate risk analysis by the RWQCB and the CDFG of the implications of sabellid worm infestation and other environmental impacts. We are also concerned that evaluation of the overall environmental impacts and project alternatives for this project are inadequate to make sound environmental management decisions about the NPDES permits applications.

The Sanctuary requests that the RWQCB work with other State and local agencies to find suitable alternatives to open water abalone mariculture operations where the NPDES permit applicants' operations can be completely controlled to prevent contamination of wild abalone and other marine gastropod stocks from sabellid worm infestations. A rigorous inspection program, jointly administered by the RWQCB and the CDFG, would be an important component of an NPDES permit for any such operation. Any cultured abalone tanks or cages that have sabellid worm infestations should be quickly destroyed. All abalone from such infested tanks or cages should be disposed of in a landfill to prevent contamination of California coastal marine waters. The tanks or cages should be treated to completely eliminate any sabellid worm eggs, larvae or adult animals.

At this time, the Sanctuary requests that the RWQCB consider denying the NPDES permits for the abalone expansion project until the project is defined and completely evaluated. We request that the RWQCB work with CDFG and CCC to inspect the abalone mariculture operations presently established in Pillar Point Harbor to determine whether sabellid worms are present and whether the owners are operating with appropriate State permits. We appreciate the RWQCB work on this important issue. We also commend your staff for protecting central California's coastal ocean and the resources and qualities of the Monterey Bay National Marine Sanctuary. If you have any questions on our concerns, please contact me at (415) 561-6622.

Sincerely,

Ed Ueber
Co-Manager
Northern Area, Monterey Bay NMS

Enclosures (2)

cc: Joanne Flanders, NOAA MBNMS
Debra Malek, NOAA SRD
John Wolfenden, RWQCB
Robert Tasto, CDFG
George Isaac, CDFG
Tami Grove, CCC
Peter Grennell, SMCHD
✓ Pete Cutker MBNMS

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Gulf of Farallones NMS /
Cordell Bank NMS

Ed Cassario
Channel Islands NMS

July 1, 1997

Mr. Cavanaugh
Monterey Bay Abalone Company
160 Wharf #2
Monterey, CA 93940

Dear Mr. Cavanaugh:

On behalf of the Monterey Bay National Marine Sanctuary Advisory Council, I would like to express our appreciation for your June 6, 1997 presentation on the development of a Kelp Harvesting Cooperative.

Your presentation was very informative. We are looking forward to seeing the signed-off Memorandum of Understanding from the Kelp Cooperative at our October meeting.

Again, thank you for speaking with us.

Sincerely,

Karin Strasser Kauffman

Karin Strasser Kauffman, Chair
Monterey Bay National Marine Sanctuary
Advisory Council

The Sanctuary Advisory Council is composed of 30 federally appointed representatives from government agencies, local institutions, and user groups concerned with the resources of the Monterey Bay National Marine Sanctuary. The Council advises the Sanctuary Manager on matters of policy and provides a link between the community and Sanctuary management.

Sanctuary Advisory Council
Research Activity Panel
Monterey Bay National Marine Sanctuary
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(408) 647-4250 Fax

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Moss Landing Marine Labs
Chair

Mr. Rick Starr
CA Sea Grant Extension
Vice Chair

Dr. Andrew DeVogelaere
Monterey Bay NMS
Executive Coordinator

Members

Dr. Giacomo Bernardi
University of California
Santa Cruz

Dr. George Boehlert
Pacific Fisheries Env. Group
NOAA

Dr. Jane Caffrey
CDNARR/ESP

Dr. Mike Field
U.S. Geological Survey

Dr. Chris Harrold
Monterey Bay Aquarium

Dr. James Harvey
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Mr. Terry Jackson
Monterey Bay NMS

Ms. Deborah Johnston
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Dr. Rikki Kojan
California State University
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Dr. Dennis Powers
Hopkins Marine Station

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Dr. James Rote
California State University
Monterey Bay

Dr. Gary Sharp
CIMOS

Mr. Mark Stephenson
CA Dept. of Fish and Game

Mr. Les Strnad
CA Coastal Commission

Dr. Carl Wilson
NOAA/NMFS

May 29, 1997

Ms. Tami Grove
District Office Director
California Coastal Commission
725 Front Street, Suite 300
Santa Cruz, CA 95060

Dear Ms. Grove:

At the April 1997 meeting of the Research Activities Panel (RAP), Les Strnad explained the California Coastal Commission concerns regarding expanding aquaculture facilities in central California. The California Coastal Commission also sent packets of information to Gregor Cailliet, RAP Chair, and Andrew De Vogelaere, RAP Coordinator.

The RAP had a detailed discussion on their role in providing information, the general lack of background scientific information for resource management issues, the related need to fund applied science, and the need for a centralized permitting system/long term vision of coastal California to coordinate and document the cumulative effects of many different projects. Specifically, for the proposed aquaculture facilities in Pillar Point Harbor, the RAP agreed to circulate and comment on a letter from Ed Ueber to John Wolfenden dated April 4, 1997 (provided in an information packet from the Coastal Commission).

The following are comments from RAP members on the letter developed by Ed Ueber and Patrick Cotter. Comments were sent to me by e-mail with the understanding that I would compile and forward them to the Coastal Commission.

- The letter addresses many significant issues that need clarification by the applicants.

- More information and concern was given regarding the introduced polychaete worms. These exotic species were brought in with South African abalone. The worms burrow into shells and may infect wild stock. Dr. Andy Cohen could be contacted for more information at

The Sanctuary Advisory Council's Research Activity Panel is composed of 22 representatives from government agencies, research organizations, and academic institutions concerned with the resources of the Monterey Bay National Marine Sanctuary. The Research Activity Panel advises the Council and Sanctuary Manager on matters of scientific and research related policies and provides a link between the community and sanctuary management.

the San Francisco Estuary Institute, 180 Richmond Field Station, 1325 S. 46th Street, Richmond, CA 94804, acohen@sfei.org.

• It is the understanding of one RAP member that CDFG is currently not allowing outplanting of abalone because of the exotic species concern. This should be confirmed with the Department of Fish and Game.

• As a general problem in aquaculture, there is little concern given to the issue of the genetic composition of the material that is being raised. For example, people might bring in stock that is selected for fast early growth. Let's say, for example, that with abalone, that stock might originate in the far north or far south part of its range, or whatever. It might not be the same as the local genetic makeup, but could do well locally under certain circumstances. Then, when aquacultured animals escape or reproduce, they have negative effects on the locally adapted populations. A few fish references on this topic are listed on the following pages. It should be clear if the abalone are grown to reproductive size, and how often they "escape."

• The Coastal Commission may want to consider additional cumulative impacts relative to kelp harvest: their role in damping storm waves relative to coastal erosion, their role in organic nutrient supplies to the seafloor and canyon areas, the microhabitats associated with kelp, and the aesthetic values of kelp in areas with high visitation.

• The scientific knowledge on kelp communities is reviewed in the MBNMS Site Characterization (http: bonita.mbnms.nos.noaa.gov), and the following pages consist of a list of references that may be pertinent to the abalone farming issue:

Sincerely,

Andrew De Vogelaere, Ph.D.
408-647-4213

cc:
Gregor Cailliet, MLML
Joy Chase, CCC
Patrick Cotter, MBNMS
Terry Jackson, MBNMS

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Gulf of Farallones NMS / Cordell Bank NMS

Ed Cassano
Channel Islands NMS

May 13, 1997

Monterey Kelp Harvesting Cooperative
160 Wharf #2
Monterey, CA 93940
ATTN: Mr. Joe Cavanaugh

Dear Mr. Cavanaugh:

The Monterey Bay National Marine Sanctuary Advisory Council is requesting a progress report on the status of the Kelp Harvesting Cooperative. As was presented to the Council one year ago at the Pt. Montara Lighthouse in Montara, California, local kelp harvesters were to form a Cooperative that would collectively protect the area's kelp resources through sustainable harvest practices. The Advisory Council was told that it would receive regular updates on the group's progress. To date, we have not received any information.

The issue of kelp harvesting remains an important consideration for many Council members. Given the recent attention on the proposed underwater park in Monterey and Pacific Grove, in addition to the overtures from the aquaculture industry to expand its practices in Pillar Point Harbor, the Advisory Council is eager to hear about the status, attitudes, and practices of local harvesters. Questions about the group's success in building a Cooperative; whether or not kelp harvesting practices have been modified to further protect the resources; and, how an expansion of businesses such as aquaculture will affect a Cooperative are issues the Council would like to have answered at its next meeting.

The Advisory Council will meet again on Friday, June 6, 1997, in the Hudson House at the Pt. Lobos State Reserve. A status report on kelp harvesting has been scheduled for a 30-minute discussion from 3:15 PM - 3:45 PM. We request you, or your designee, to attend the meeting and brief the Council on kelp harvesting activities and specific arrangements which have been made.

Sanctuary staff will contact your office in the next couple of days to confirm your participation and answer any questions you may have. In the meanwhile, should you wish to speak with me, I can be reached at (408) 659-2733.

Sincerely,

Karin Strasser Kauffman
Chair, MBNMS Advisory Council

cc: Terry Jackson, Manager, MBNMS
Aaron King, MBNMS Program Specialist

The Sanctuary Advisory Council is composed of 20 federally appointed representatives from government agencies, local institutions, and user groups concerned with the resources of the Monterey Bay National Marine Sanctuary. The Council advises the Sanctuary Manager on matters of policy and provides a link between the community and Sanctuary management.

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE

Monterey Bay National Marine Sanctuary
299 Foam Street, Suite D
Monterey, California 93940

April 4, 1997

John Wolfenden
Senior Water Resources Engineer
California Regional Water Quality Control Board
San Francisco Bay Region
2101 Webster Street, Suite 500
Oakland, California 94612

SUBJECT: Proposed Expansion of Abalone Mariculture Facilities Pillar Point Harbor, San Mateo County, California

Dear Mr. Wolfenden:

On March 4, 1997, The Monterey Bay National Marine Sanctuary participated in a meeting on the Pillar Point Harbor abalone mariculture expansion project at the California Department of Fish and Game (CDFG) office in Menlo Park. At the end of the meeting, a technical subcommittee was established to evaluate information on the proposed expansion project. The subcommittee is chaired by the Regional Water Quality Control Board (RWQCB). The Sanctuary, CDFG and the California Coastal Commission (CCC) are the other members of the technical subcommittee.

In preparation for a conference call to discuss the abalone expansion project, the Sanctuary reviewed the following documents:

- Revised Expanded Initial Study for Abalone Aquaculture Operations, Pillar Point Harbor, San Mateo County (June 1996).
- Draft Responses to Comments on the Expanded Initial Study for Abalone Aquaculture Operations, Pillar Point Harbor, San Mateo County (undated).
- US Abalone's Internet prospectus and facility description (www.usabalone.com).
- Two reports transmitted by the San Mateo County Harbor District (March 4, 1997) (a) Staff Report: Base Line Water Quality Testing (October 2, 1996) and (b) Princeton Abalone water quality measurements (October 1, 1996).

The Sanctuary has developed the enclosed list of comments and questions that we would like to discuss during the telephone conference call scheduled for April 8, 1997 at 11:00 a.m. We agree with the letter from the RWQCB to Lyle Wagner (March 25, 1997) indicating that the RWQCB staff recommends issuance of an NPDES permit for the abalone expansion project. We developed the enclosed comments and questions to assist the RWQCB and other agencies in the permit evaluation process. We look forward to discussing these points with you other members of the technical subcommittee. If you have any questions on the enclosed comments or questions, please contact me at (415) 561-6622.

Sincerely,

for Edward Ueber
Sanctuary Manager
Cordell Bank
and Gulf of the Farallones
National Marine Sanctuaries

Enclosure

cc: Terry Jackson, NOAA MBNMS
Debra Malek, NOAA SRD
Doug Straw, RWQCB
Robert Tasto, CDFG
George Isaac, CDFG
Joy Chase, CCC

Monterey Bay National Marine Sanctuary
Comments and Questions

Revised Expanded Initial Study
for Abalone Aquaculture Operations
Pillar Point Harbor, San Mateo County
June 1996

A. Sanctuary Resources

- The Negative Declaration does not present an adequate evaluation of the annual tonnage of kelp that will be needed to feed the abalone facilities at full build out (page 45). Harvesting kelp in the Monterey Bay National Marine Sanctuary should be discussed in terms of the needs of the Pillar Point Harbor facilities and other kelp harvesters who remove kelp in CDFG kelp beds 209 through 225. Of particular concern are the kelp beds that are already being harvested near Santa Cruz, Monterey and Carmel. What are the volumes of kelp that are harvested from these beds under CDFG permit now? What is the maximum sustainable yield of these kelp beds? What are the cumulative effects of kelp harvesting on kelp forest resources in the Monterey Bay National Marine Sanctuary for the total build out of this project?

- Based on the biomass (65 or 110 grams at harvest time) and the total number of abalone feeding on kelp (estimated at: 33% 0.25 to 1 inches, 33% 1 to 2 inches and 33% 2 to 3.5 inches; and worst case 100% at 3.5 inches), how much kelp is required per year to feed these numbers of abalone, how much will be excreted as feces, how much ammonia waste will be excreted into the water, and how much kelp debris will not be consumed?

- Fish and birds listed in the Negative Declaration are Sanctuary resources because these animals move into the Harbor and back out into the Sanctuary, or they seek the Harbor's calm waters during storm events.

B. Physical and Biological Conditions in the Harbor

- What are the current physical and biological conditions in the 500 x 750 yard area near the outer breakwater? Will the full build out of rafts (surface floats, hanging cages, and anchoring devices) affect the circulation of water in the 500 x 750 yard area? What is the water exchange rate through the breakwater? What will happen to water exchange or currents when the Corps repairs or improves the outside breakwater where it contacts Pillar Point?

- Have any samples been collected underneath the existing abalone rafts to compare sediment characteristics, benthic infauna communities and epifauna invertebrate and fish communities to a reference site in the Harbor?

- The Sanctuary has reviewed two reports provided by the San Mateo County Harbor District on March 4, 1997, with water quality monitoring information. Are the water quality values contained in these reports considered to be normal for Pillar Point Harbor? Have any other water column measurements been taken for dissolved oxygen, pH, ammonia, hydrogen sulfide, nitrogen, phosphorus and turbidity around the existing rafts compared to a reference site in the Harbor?

- Given the questions about the levels of dissolved oxygen, pH, nutrients, turbidity and waste materials, what chemical and physical water and sediment characteristics will be monitored when an NPDES permit is issued? What biological characteristics of the Harbor will be monitored when an NPDES permit is issued?

- Will excreted waste products induce significant benthic algae or phytoplankton growth in the harbor or in the Sanctuary outside the harbor?

- What kind of medications are used on the abalone?

- Will any odors be created by the decomposition of kelp debris and possible generation of hydrogen sulfide on the harbor bottom?

- How far away from the rafts will significant fecal and debris build up occur that may affect benthic communities (page 36)?

- What nuisance species may inhabit the harbor bottom or the rafts? As discussed at the March 4 meeting held by the California Department of Fish and Game, what measures are defined to prevent the spread of parasitic sabellid worms to wild abalone stocks if the parasites are found in mariculture-grown abalones?

- What impacts will occur at the facilities if an oil or diesel spill occurs? Will the abalone be affected by the hydrocarbons? What kind of monitoring is needed to evaluate whether petroleum hydrocarbons have affected the abalone?

C. Modeling

- According to information presented at the March 4 CDFG meeting, about 180,000 abalone are presently growing at mariculture facilities in Pillar Point Harbor (160,000 at US Abalone and 20,000 at Princeton Abalone). The proposed expansion project will have about 5,150,000 abalone at total build-out. The total build-out population is 28.6 times greater than the population of abalone presently raised in Pillar Point Harbor.

- According to information in US Abalone's Internet prospectus (www.usabalone.com), abalone are harvested when they reach about 3.5 inches and 110 grams. The model report shows that modeling assumptions were quite different because the model used abalone that were 2-3 inches in length and 65 grams in biomass. The difference in biomass between the Internet information and the modeling information is 45 grams, which is a 69% difference in biomass of harvest size abalone. This could be a significant increase in the oxygen and excreted waste budgets for the facility and the amount of kelp needed to grow the abalone. The model should be run again using the 3.5 inch/110 gram abalone for the oxygen and excreted waste budgets, the biomass calculations for kelp required to grow the abalone, the kelp debris calculations, and the ammonia and hydrogen sulfide generation budget for waste material under the facility.

- The abalone grow about 1 inch per year. At 0.25 to 0.5 inches the abalone feed on kelp (Negative Declaration, page 4). The model discussion in the Negative Declaration and Attachment 3 only considers 33% of the abalone growing in the facilities (the ones that are 2-3.5 inches that can be harvested). A model of the complete system should be evaluated (Negative Declaration, page 18). This is important because the Negative Declaration states: *In other words, there may be a significant reduction in the dissolved oxygen levels of the outer harbor area* (compared to the entire Harbor area), *resulting in a detrimental impact to the existing biota* (page 19). The modeling results do not consider the entire abalone respiration and kelp budgets, so any exceedence of the oxygen budget should be viewed as a significant negative result (page 20). Model runs should be conducted based on the total number of abalone (33% 0.25 to 1 inches, 33% 1 to 2 inches and 33% 2 to 3.5 inches). An estimate of worst case should also be made using 100% 3.5-inch, 110 gram abalones.

- How much debris and feces will accumulate on the bottom of the harbor annually based on the consumption rates, debris estimates and the flow of water in the harbor at the 500 x 750 yard area? Will any nuisance species, bacteria or pathogens live in deposits? Will nuisance conditions or odors (hydrogen sulfide) be created from these deposits?

- About 2.4 acres of harbor area will be covered (page 5). Does this include the 300-foot buffer areas around the rafts (page 6)? About 22% of the biologically productive habitat in the northwest corner of the Harbor would be affected (page 30). Is this a significant loss of open water habitat for marine birds?

D. Monitoring

- A monitoring program should be established to determine what the conditions are at the US Abalone facility now and projections for what may occur at full build-out in Pillar Point Harbor. Monitoring of sediment characteristics (debris, fecal deposits, grain size, hydrogen sulfide, ammonia, bacteria), water quality (dissolved oxygen, settleable solids, turbidity, bacteria, nitrogen, phosphorus) and benthic infauna communities should be incorporated into permits for this type of facility because it is located in a restricted waterbody. Should other parameters be included in the monitoring program?

- The Negative Declaration states: *Complete water quality data are not available for Pillar Point Harbor* (page 50). This is a significant inadequacy in the Negative Declaration because the regulatory and resource agencies have no idea what the current conditions in the Harbor are with regard to water quality, sediment quality and/or benthic community conditions. How will the regulatory agencies address this issue?

- According to the reference cited by Crosby (1988), what contaminants can be picked up by abalone that may affect the marketability of this resource (page 50)? Do these chemicals occur in significant concentrations in Pillar Point Harbor. What are the CDHS health standards for abalone marketing (page 51)?

- What effect would abalone feces and kelp debris have on the claming and eeling sportfisheries in the vicinity of the breakwater (page 53)?

E. Permits

- What California Coastal Commission (CCC) permits, California Department of Fish and Game (CDFG) permits, State Lands permits, California Department of Health Services (CDHS) and Regional Water Quality Control Board (RWQCB) permits, and San Mateo County permits exist for the US Abalone facility?

- Are there any Corps of Engineers permits and CCC federal consistency determinations regulating the US Abalone facility?

- What permits (Corps, CDFG, CCC, CDHS, RWQCB, State Lands, San Mateo County, SMCHD) will be required for the expansion of the Pillar Point abalone facilities?

- The SMCHD issued a five-year (January 1994-1999) license to US Abalone. How large can this facility be? Now abalone are grown from 36 to 44 rafts (page 5). According to US Abalone's Internet information, they have a 10-year lease (5-years with an option to extend for an additional 5 years) with SMCHD for their raft/cage culture system. Please confirm that the license agreement can be for a total of 10 years with a build out at US Abalone of more than 70 rafts and 900 grow-out cages (US Abalone's Internet information).

F. State and Local Policies on Mariculture Operations

- What are the references to CCC, RWQCB, State Lands and CDFG policies on mariculture facilities? Are there any special exemptions or provisions for mariculture projects?

- The negative declaration uses 5.0 mg/L as a minimum dissolved oxygen concentration (page 17). The Negative Declaration states: *(f)ish will be less active at 4 mg/L and will avoid the area unless attracted by a food source. An oxygen concentration below 4 mg/L will be consider a stressed environment. While most fish can tolerate dissolved oxygen levels of 1 to 2 mg/L for brief periods, death is common if exposure to these levels exceeds a few hours (Stickney, 1994)* (pages 19-20). What levels of oxygen, settleable solids, turbidity and other parameters will be used to determine whether the abalone facilities are complying with the objectives for ocean waters or enclosed bays and estuaries in the RWQCB's Basin Plan?

G. California Environmental Quality Act Comments

- Mitigation measures as outlined in the Negative Declaration, such as monitoring of the completely built facility to see if any impacts are occurring, are not mitigation measures. These measures are monitoring requirements that should be incorporated into permits for the facilities. Proper environmental management of this important marine habitat would be to prevent impacts from occurring in the first place, not build the project and see what happens. Trying to reduce a permitted and built facility after it has been in operation will be very difficult and costly to the permittee if impacts are found. Phased reductions will not be easy and we should plan a project so aquaculture can occur without the threat of environmental impacts.

- Are comparable facilities available for comparison or examination of environmental impacts?

- The Sanctuary neither received a copy the CEQA Negative Declaration (October 20, 1995) prepared by the SMCHD for the abalone aquaculture expansion project, nor were we informed about a public hearing on this project that occurred on January 3, 1996. Please provide the Sanctuary with copies of documents and notifications of hearings on this project when they are published.

H. Land-Based Issues

- Could the proposed abalone aquaculture facilities be located on land? Were any other alternatives, besides the harbor evaluated?

- Could land facilities be located near the Sewage Authority Mid-Coastside so the effluent from the facilities would be discharged through an existing pipeline?

- Will kelp harvested along the central California coast be stored on land? The report states that no facilities will be constructed on land (page 6).

CRAB BOAT OWNERS ASSOCIATION

2907 JONES STREET
SAN FRANCISCO, CA 94133-1115
415-885-1180

RECEIVED
MAR 4 1997
CALIFORNIA
COASTAL COMMISSION
CENTRAL COAST AREA

RECEIVED
MAR 03 1997
CALIFORNIA
COASTAL COMMISSION

February 17, 1997

Ms. Joy Chase
California Coastal Commission
725 Front Street, Suite 300
Santa Cruz, California 95060

Re: Abalone Aquaculture Applications - Pillar Point Harbor

Dear Ms. Chase:

I am writing to you on behalf of the Crab Boat Owners Association of San Francisco, the primary commercial fishermen's organization of the San Francisco Bay Area. The purpose of this letter is to urge in the strongest possible terms that the Coastal Commission **deny** the above captioned applications. I will enumerate our reasons for our adamant opposition in some detail here and I respectfully ask that you arrange for a meeting with you and appropriate staff and me and other representatives of the coastal commercial fishing community so that we can more clearly detail the facts and reasons behind our objections.

As you recall, I talked with you on the phone Friday afternoon and explained that I and the leadership of the other fisherman's associations up and down the coast had only recently learned of the aquaculture proposal, its scope and its impacts on us and our fishing operations. I said that, since learning of the project, we have carefully examined the proposal and have based our judgement on informed facts. We have concluded that the proposed project would be severely detrimental to the coastal commercial fishing fleet, creating a potential for serious danger to the men and women of the fleet. It would cause inconvenience and interference with our fishing operations and significant adverse economic impacts on the fishermen and women as well as the fish processors of Pillar Point Harbor and elsewhere. This is a plan which would create a special business opportunity, which is speculative at best, for a few newcomers to the area at the expense of hundreds of fishermen and women who have heretofore been able to use Pillar Point Harbor as an anchorage and safe harbor and who have done business with the fish processors there.

I want to make it clear that we have no objection to aquaculture or abalone farming, per se. In fact we encourage well conceived projects which do what we do; that is, supply the American and world markets with wholesome seafood products. We believe that the proposal is a ***good idea in the wrong location.***

The record shows that others have made objections, many of which seem quite valid, which tend to be more local in nature. I will focus mainly on problems created by the proposal which are more industry wide with specific adverse impacts on our safety, commerce and financial health.

First: The project would seriously reduce usable anchorage space in the outer harbor.

Seasonal structure of the commercial salmon season has for several years, and will in the foreseeable future, restricted the fishing effort to South of Point San Pedro during the early months of the season. A very large part of the transient salmon fleet headquarters and anchors at Pillar Point, predominantly in the outer harbor. Many sell their catch to local processors.

The proposed new aquaculture rafts and the raft now in place and the buffer areas between and around them take up a large portion of the anchorage area. All of the documents made available by the Harbor Commission staff indicate that only 2.4 acres of the entire anchorage area would be occupied by the project (a mere 4% of the Northwest corner of the outer harbor). The mathematical calculations are not presented and no one could explain them to me. In fact, **the calculations are wrong**. Calculating the area of the rafts plus the 300 foot buffers and the buffer areas from the breakwater and approximately one hundred eighty feet buffer outside the rafts (the minimum safe anchor rode at only 8:1), the project will occupy approximately 22.5 acres or nearly 10 times the area estimated by the proponents and their advocates. Rather than a nominal 4%, they propose displacing nearly 40% of the vital Northwest corner anchorage area. I will be pleased to show you our calculations. The remaining area of the outer harbor also contains approximately 123 fixed (private) moorings which are not available to the transient fleet. Presuming an anchoring ratio of about 2 boats per acre, this proposal will eliminate anchorage for about 40± salmon boats and their crews.

During periods of good weather this loss of anchorage will be a real inconvenience for those fishermen and women on those forty or so boats who find "no room at the inn". When the weather turns ugly, as it often does in the spring, the loss of forty or so anchoring spaces may very well prove to be deadly to some. When the fleet is fishing off the coast of San Mateo County and the weather turns bad we normally head for "safe harbor" at Pillar Point. When we are fishing near the Farallon Islands bad weather often forces us to run for shelter. Often, the only safe direction to travel is downwind to Pillar Point. If the only safe place to anchor is occupied by abalone rafts, where do we go?

The impact on anchorage area could, in fact, be much greater, even to the point of eliminating all of the transient anchorage area. The SMCHD has created a "Set-aside for abalone rearing" , an area of the outer harbor 500 yards by 750 yards (**77.5 acres**) (See SAN MATEO COUNTY HARBOR DISTRICT LEASE AGREEMENT, NEGATIVE DECLARATION & other documents). Although THIS project is represented to be limited to only 2.4 acres of rafts and 5 aquaculture operators, 77.5 acres are actually reserved. There is no prohibition against other projects in the "Set-aside" and, in deed, there are provisions under which the subject proposals may be expanded in the future. Key sections of the LEASE AGREEMENT provide:

1.1.3 *Each of the Exhibits described above and attached hereto may be changed from time to time to reflect changes in Licensed Premises which are negotiated and mutually agreed between Licensee and Licensor.* (underline added)

5.1.1.6 *Licensee shall not expand beyond the licensed area and inventory described and*

permitted in Exhibit A attached hereto, without the express written provision of licensor and without payment of additional fees prescribed in Section 4.1, Minimum Fixed License fFee and Section 4.2, Percentage Lease Fee. (Underline added)

13.1.1 *It is expressly understood and agreed that the rights of the Licensee hereunder are non-exclusive as to the San Mateo County Harbor District, and that Licensor retains the right to license other businesses, or similar businesses or facilities . ...* (Underline added)

It is obvious that the SMCHD is reserving its options to provide for future expansion of abalone aquaculture in the future by setting aside the 77.5 acres and by specifying to itself the right to do so in the License Agreement. The loss of anchorage for 40 boats would be devastating to the commercial fishing fleet. **The loss of 77.5 acres would eliminate Pillar Point Harbor as a harbor of refuge and would seriously imperil the commercial fishing fleet and transient recreational boaters.**

The **safe harbor** anchorage issue was posed to the SMCHD at their meeting of November 6, 1996 by Duncan MacLean, president of the Half Moon Bay Fisherman's Marketing Association.. The arrogant response by Interim General Manager James Stilwell was "If the facts and figures of MacLean are valid then we may be looking at **limiting the number of boats that we could have anchored at any one time in our harbor to maybe 15-20 boats.** We would have to tell the rest of them to **go somewhere else."** (Minutes SMCHD Nov. 6, 1996), Where would he have the fleet go in a storm - 20 miles north to San Francisco Bay or 45 miles south to Santa Cruz Harbor, the nearest ports of Safe Harbor?

In a Memo from Acting Harbor Master Dan Temko to the Board of Harbor Commissioners he points out that "The entire anchorage area is currently used for anchoring of transient vessels and for 123 fixed moorings. The number of transient anchoring vessels varies from a handful to approximately 200 depending on weather, fishing seasons, big recreational holidays and sailing events." It is obvious that displacement of from 20% to 100% of the active boats anchoring at Pillar Point to accommodate a new, untested aquaculture venture is a **significant negative environmental impact which can not be mitigated.**

Second- The project is in direct conflict with several sections of the CALIFORNIA COASTAL ACT OF 1976, as revised.

Section 30224. *Increased recreational boating use of coastal waters shall be encouraged, in accordance with this division, by . . . . . providing harbors of refuge, and by providing for new boating facilities in natural harbors, new protected water areas. . .*

Section 30234. *Facilities serving the commercial fishing and recreational boating industries shall be protected and, where feasible, upgraded. Existing commercial fishing and recreational boating harbor space shall* ***not*** *be reduced unless the demand for those facilities no longer exists or adequate substitute space has been provided.. . . .*(underlining added)

Pillar Point Harbor is a harbor of refuge which would be seriously negatively impacted by

significantly reducing the area of anchorage, contrary to the provisions of both above sections.

Third: The project would have serious adverse economic impacts on the local fish processors, the local fishing fleet and the transient fishing fleet.

Many of the transient salmon fishermen and women who anchor at Pillar Point sell their catch to local processors. Many "headquarter" there during all of the first part of the season. If a portion or all of the fleet must go elsewhere because their historic anchorage has been permanently committed to abalone rafts they most assuredly will sell their catch at the alternate port. We have not yet estimated a dollar amount of loss to local processors due to relocation of part of the fleet but it would obviously be substantial. It should also be noted that local processors get no part of the abalone "action", just the loss.

A second serious potential for severe economic impact is less obvious but should have been recognized in the review process. Many of the members of the local fleet fish for live fish delivery and dungeness crabs, which are also delivered live. After delivery, the processors keep the fish or crabs alive in live-tanks. The water for these tanks is pumped directly from the inner harbor. Not only is the water quality put at risk by the project because of possible reduction of dissolved oxygen levels, which is discussed at some length in the various reports, opinions and Declarations, but it is also put at serious risk due to suspended or dissolved fecal material created by the project and dispersed throughout the waters of the inner and outer bay. There are **no adequate studies** of the tidal effects and currents in the harbors. We know empirically that the water circulation and flushing is poor at best. Most who know the local conditions believe that tidal flushing is far from adequate.

The revised Huffman Study of June 1996 states, "Therefore, no assumptions can be made for the purposes of this analysis that tidal action will alleviate this impact" (Page 19). The same study (same page) reveals that, of the 10,000 kg of kelp used daily as feed for the project, two-thirds **(6,600 kg)** will be discharged back into the water as **"undigested food and feces"**. The proponents contend that there is little or none of this fecal material on the bottom below their existing raft. If it is not being deposited on the bottom, then it is obviously still in the water. Since we can't assume "that tidal action will alleviate this impact" we must presume that there is a distinct probability that much of the fecal material is still in the water of the harbor. The same water that is being pumped into live-tanks in some of the boats and into the live-tanks into which the local processors deposit and hold their live fish or live crabs. Biological studies of the production of feces generated by this project and its effect on the waters of the harbor and the living things in the water are absent. We don't know the effect of abalone feces on crabs and fish, but we do know one thing. When the fish buying public learns, as they surely will, that Pillar Point's live crabs and fish are being bathed in abalone fecal material the local processors won't be able to give the product away. The adverse economic impact to the local fisheries, and perhaps to the entire dungeness crab market could be tragic.

Fourth: The use of a Mitigated Negative Declaration is inadequate and inappropriate for a project of this scope and nature.

The acceptance and certification of the findings of the subject Mitigated Negative Declaration by the Harbor Commissioners is grossly inappropriate. The scope of the project, the presence of negative impacts which cannot be mitigated, such as the loss of critical anchorage, the likelihood of other long-lasting negative economic and other impacts, the many unknowns factors about the project and the area in which it is to be developed demand that a full and complete EIR be done before this venture even be considered for adoption.

The Revised Expanded Initial Study, the Mitigated Negative Declaration and other supporting documents are **obviously flawed** in ways that should have been obvious to the commission. As pointed out earlier, the mathematics re the area impacted is **wrong.** The severe loss of anchorage area, which can't be mitigated, except by a "no project" finding is ignored, as is the body of law pertaining to protection of safe anchorages and harbors of refuge. The obvious negative economic impacts to the fishing fleet and to the local fish processors is ignored. Little attention is given to microbiological contamination of harbor water from abalone feces and rotting kelp, although much attention is paid to dissolved oxygen levels. No studies are cited regarding water currents and flow patterns within the harbor and their effect on the spread of contamination created by this project. The minor or easily mitigated impacts are discussed. Those negative impacts which are difficult or impossible to adequately mitigate are ignored as if the don't exist.

Fifth: The SMCHD has already granted a license to one Licensee (U.S. Abalone) and has permitted them to operate an abalone aquaculture facility since January 1994 without compliance with requirements of the California Environmental Quality Act (CEQA), the California Coastal Act or other appropriate regulatory laws.

To our knowledge, no EIR was conducted in that case, nor was approval granted by the Coastal Commission or other appropriate agencies. The Coastal Commission and those other regulatory agencies should inquire into the Harbor District's apparent loose practice of granting licenses without benefit of compliance with the law. **Has the same "looseness" found its way into the documentation, analysis, review and disclosure of information in the present applications?**

Sincerely,

Robert N. Miller, President

cc: Honorable John Burton
Honorable Ted Lempert
Honorable Lou Papan
Honorable Kevin Shelley
Honorable Byron Sher
Mr. Peter Douglas

San Mateo County Harbor District
California Dept. of Fish & Game
Calif. Regional Water Quality Control Bd.
National Marine Fisheries Service
U.S. Army Corps of Engineers

FYI - Dan Carl - S. Cruz

Lt. Colonel Richard G. Thompson
District Engineer, Regulatory Branch
Army Corps of Engineers
333 Market St.
San Francisco, CA 94105-2197

Subject: Abalone Aquaculture Project, Pillar Point Harbor, Half Moon Bay 1/2/1998

Dear Lt. Col. Thompson,

As a member of the San Mateo Harbor Commission's Ad Hoc Aquaculture Monitoring Committee, I participated in an attempt to develop a monitoring process for the proposed aquaculture expansion. During the course of this exercise it became obvious to me that environmental concerns were being ignored or trivialized in the process. Information contained within the "Expanded Initial Study" used in the Harbor Commission decision to proceed with aquaculture expansion indicates a severe waste problem which, in light of more recent information, appears to have been substantially understated. The aquaculture facility expansion is being proposed with inadequate environmental information. I believe that a review process is required to ensure that the aquaculture activities do not reduce the reproductive or growth potential for fish, crustaceans or bottom dwelling organisms currently found in the harbor. Questions raised since the initial study indicate a requirement for a full Environmental Impact Report prior to the permitting process. The problem areas are as follows:

Biomass

The market weight of an abalone is 110 grams (a "quarter pounder") according to the US Abalone web site. US Abalone also supplied the 65 gram market weight used as the basis for calculations in the "Expanded Initial Study" used in the Harbor Commission decision to proceed with aquaculture expansion. The 110 gram market weight represents a potential 85% increase in kelp requirements, waste products and demand for dissolved oxygen. Since the entire environmental impact is based upon the number and weight of the market abalone, a discrepancy of 85% would seem sufficient to require resizing the numbers of abalone permitted at each phase of the build out. At proposed buildout, the weight of the 1.5 million 3rd year abalone would equal more than 400,000 pounds (the equivalent of 400 1000 pound cattle).

Dissolved Oxygen

The Mitigated Negative Declaration is based upon a study that states that the abalone will consume 10,000 kilograms (11.7 tons) of kelp and produce waste products requiring 60,000 liters of dissolved oxygen per day. According to the report, this figure "slightly exceeds the mass balance of oxygen provided by the water, including tidal exchange and surface exchange. In other words, there <u>will be significant reduction in dissolved oxygen levels of the outer harbor area, resulting in a detrimental impact to existing biota</u>." (Page 19 - Revised Expanded Initial Study for Abalone Aquaculture Operations).

The 85% increase in abalone market weight noted above would increase the oxygen demand by the same percentage. The premise of the proposed expansion is therefore that the facility will use almost two times the oxygen available in the harbor. Adopting a premise that the existing fish and other aquatic species in the public harbor should get at least one half of the available oxygen, the proposed expansion is overstated by a factor of at least four. The EIS study further states that the daily oxygen <u>supplied</u> to the harbor is less than one half of that <u>available</u> on any given day. Thus the supply availability would that an additional factor of two must be deducted from the carrying capacity of the harbor. This computes to a reduction of market weight animals to 50,000 pounds or 200,000 animals at build out. This means 40,000 animals may be added per year if the proposed 5 year grow out plan is observed. Tidal action assumptions, and inner harbor oxygen deficits further reduce the carrying capacity of the area.

In other words, the crabs, clams, shrimp, sand dab, sole, halibut, flounder, skate and other finned fishes will be displaced from the harbor by the waste from aquaculture operations. Each liter of oxygen used in waste reduction will not be used to support the existing population of fish, mollusks and crustaceans. Additionally, there is no substantiation that a 5 milligram /liter standard is sufficient to preserve existing nursery conditions for finned fish and benthic species.

Waste Accumulation

The "Initial Expanded Study" suggests an allowable buildup of up to ½ inch of plant and fecal waste on the harbor bottom. The harbor is a sensitive hatchery and rearing area for a variety of marine organisms. Any buildup of fecal and plant waste will cause anaerobic conditions and a loss of desirable species and must not be condoned.

The aquaculture facility will produce nearly eleven and one half tons of waste per day. This is an inconceivable amount of waste in a harbor. Based upon the best information available, it is anticipated that environment degradation, occurring as a result of aquaculture operations, will result from the water based accumulation these waste products such as unused kelp, ammonia, and fecal material. It is assumed that, in an undegraded environment, the waste products will be distributed and rendered harmless by the natural action of the tides, algae and other beneficial organisms. In an undegraded environment, the waste products will not cause a decrease in the numbers or types of marine and benthic organisms. It is essential to establish a baseline of preexisting conditions to ensure that aquaculture operations do not negatively impact the marine and benthic organisms present before the expansion of aquaculture activities within the harbor. The number of abalone currently in the harbor should be independently audited and factored into the process.

Nitrogen and other waste products from the aquaculture facility will contribute to algae bloom. This bloom increases the probability of a die off of the anchovies and bait fish which are attracted by the algae / phyto plankton food chain.

As stated in the 1996 Huffman & Associates 'Discussion of Environmental Evaluation', page 17, "Abalone, for example, would have a greater tolerance for lower oxygen levels than would fish." Far from being an indicator species of water quality, caged abalone are unable to leave the area and have a low respiration rate which enables them to survive low oxygen conditions sufficient to kill off or drive away finned fish.

Fish and Mollusks

Thousands of people use the harbor rockwall and mud flats for fishing and to a lesser extent, clamming. The harbor is a spawning area for some species of fish and hosts a rich and diverse animal population including Goeduck and Washington clams, scallops, shrimp, crabs, turban snails, anchovies, sardines, rockfish, flounder, halibut, perch, skate and occasionally salmon and striped bass. There is a fear that the waste produced by an expanded aquaculture facility will gradually displace these animals, particularly juveniles and destroy the fishing and recreational opportunities.

Information received from the state of Washington suggests that raft aquaculture facilities have created a virtual dead zone within Penn Cove, where aquaculture waste has caused an anaerobic condition on the sea floor and all desirable species have disappeared, including local smelt and even starfish. A review of this problem is currently being conducted by the Evan Lewis of the Army Corps in Seattle. Groups in Washington have found it very difficult to roll back established facilities, even when widespread environmental damage is obvious.

Kelp

Kelp, besides being a food source, serves as a nursery area to a myriad of fish and other organisms. 1.5 million abalone at a 110 gram market weight (ignoring the 1st and 2nd year juveniles) will require nearly 20 tons of kelp per day. The permit process did not require disclosure of kelp sources to determine if sufficient kelp is available for aquaculture use. California Department of Fish & Game (CDFG) officials have stated that they have no current information on San Mateo kelp supplies. They indicate that there is sufficient kelp between Davenport and Monterey Bay kelp beds to sustain summer harvesting but that winter requirements may be problematic based upon existing demands. Information from Monterey indicates that there may in fact be "kelp wars" over access to existing supplies in the not too distant future.

The potential for the use of an additional 20 tons of kelp per day is a daunting prospect, particularly if there is no winter source for this volume of kelp. There is no local source of kelp which could begin to support the aquaculture facilities. In fact, there is a proposal before the San Mateo Board of Supervisors to petition

CDFG to close local beds to <u>any</u> harvesting. The local populations of kelp are very sparse, particularly since the loss of the bull kelp in Half Moon Bay. The permit process should require provable "reserves" of kelp and specifically prohibit local (San Mateo) harvesting of this scarce resource.

Sabellid

The occurrence of the sabellid worm was documented in the US Abalone Pillar Point Facility in 1994 by the California Department of Fish and Game. This fact was suppressed from the public and the Harbor Commission during the negative declaration process. Since the discovery of the sabellid, CDFG has not conducted a single inspection of the Pillar Point Harbor rockwall or the area below the existing aquaculture rafts despite the fact that the sabellid is known to spread to the wild abalone and other mollusks, such as limpets and snails which are abundant on the rock wall. During the negative declaration process, the current aquaculture facility operator, stated that the sabellid could not reproduce in local waters due to the water temperature. This is untrue according to CDFG staff.

Despite the fact that the sabellid has escaped into the ocean from at least one land based facility, recent CDFG programs to contain and eradicate the sabellid have focused upon waste water filtering for land based aquaculture facilities. No such containment program is possible for open water facilities such as those in Pillar Point. If the wild abalone and the public interest are to be protected, it seems necessary to prohibit any open water facilities until the worm is completely eradicated from all land based facilities, thereby eliminating any potential contamination of abalone and other marine mollusks.

Anecdotal information from a grower suggests that at least one sabellid infestation was due to sabellid being present in a shipment of abalone inspected by CDFG. This suggests that a visual inspection process is not sufficient protection against the worm. Given the microscopic size of the parasite and the numbers of abalone involved in a shipment, it would appear to be virtually impossible to determine that a shipment of abalone is sabellid free. Containment of the sabellid might be achieved by placing any abalone to be transferred into a quarantined environment conducive to sabellid growth for a period long enough to encourage the any existing sabellid population to grow to detectable levels.

An August 20, 1997 letter signed by 87 scientists was sent to Governor Wilson, Secretary Wheeler and Director Schafer of the California Department of Fish and Game. The following excerpt indicates the continuing problems with the sabellid containment program.

> "We are scientists with research experience in marine ecology and/or biological invasions. We write to urge you to take needed action to reduce the risk of introducing non-indigenous parasites, diseases and other organisms into California waters via aquaculture activities. This threat, and the need for a more effective government response, is demonstrated by the ongoing release of the parasitic African sabellid worm into California coastal waters by the commercial abalone farming industry, and by CDFG's tardy and still inadequate response to this problem"...
>
> " Infested abalone were freely transferred between facilities, spreading the African worm to virtually all California abalone farms by 1993, with the resulting infestations bankrupting some growers. In 1994 researchers determined that the problem was caused by a non-indigenous parasite. However, CDFG took no action whatsoever to prevent the release of this parasite into California waters until December 1996, when CDFG notified growers that it would be stopping the direct out-planting of abalone into California waters; requiring screens on pipes that discharge water from on-shore abalone farms into the ocean; requiring growers that rear abalone in cages and barrels in the ocean to stop dumping empty shells, kelp and other debris that may harbor worms into the ocean; and requiring growers to notify CDFG when abalone were being transferred between facilities, so that CDFG could inspect the shipments. CDFG also stated that it would not issue a 1997 aquaculture registration to any grower who did not have an approved plan for eradicating the worm. As of this writing, however, no plans have yet been approved.
>
> More recently, CDFG issued a press release claiming that it is requiring the "complete eradication of sabellid infestations from all aquaculture facilities." However, CDFG has not yet set any deadlines for achieving this goal, while it continues to allow practices that virtually guarantee the ongoing release of the African worm. Growers may continue rearing infested abalone in cages and barrels in

the ocean, which freely releases larval worms into the environment. Screened discharges from on-shore facilities, although greatly minimizing the release of adult worms, may still carry larval worms into the ocean. In addition, some growers are attempting to cleanse their facilities by selling off their infected stock; the worm may then be released into the ocean via unscreened discharges from the holding tanks of live seafood distributors or retailers, or by discarded shells."

As a footnote, in Pillar Point Harbor this fall, an aquaculture raft containing abalone broke loose from its mooring and came to rest on the harbor rock wall. Despite the high risk, this exposure was not reported to the either Harbormaster or CDFG by the facility operator. Additionally, one facility, when informed of sabellid infestation, reportedly moved its stock of contaminated abalone to Albion, thus exposing yet another area to sabellid contamination. Based upon these incidents, self monitoring is clearly not an option.

These problems indicate a drastic need for an independent third party review of the proposed aquaculture expansion. Public interest is clearly the loser if aquaculture wastes despoil the environment, displace fish, release parasites into the wild abalone stock or destroy local kelp beds. The public interest deserves superior protection under the permit process. A full Environmental Impact Report appears to be the legally mandated requirement for ensuring that public and environmental interests are fully defined and protected in cases such as these. Thank you.

Sincerely

Keith Mangold
Box 424
El Granada, CA 94018

Rich Gordon - San Mateo County Board of Supervisors
Peter Grennell - San Mateo County Harbor District
Pat Cotter - Monterey Bay National Marine Sanctuary
Lennie Roberts - Committee for Green Foothills
Julia Bott - Loma Prieta Chapter Sierra Club
Joy Chase - California Coastal Commission
John Wolfenden - Regional Water Quality Control Board
Ed Ueber - Gulf of the Farallones
David Spiselman - Mid Coast Community Council
Bob Tasto - California Department of Fish and Game
Andrew Cohen - San Francisco Estuary Institute

plrpntaq.doc 2/2/98

MOSS LANDING
Commercial Fishermen's Association

P. O. BOX 44
Moss Landing, California 95039

(408) 633-0557

July 7, 1997

RECEIVED

JUL 09 1997

CALIFORNIA
COASTAL COMMISSION
CENTRAL COAST AREA

Ms. Joy Chase
California Coastal Commission
725 Front Street
Santa Cruz, CA 95062

Dear Ms. Chase:

On behalf of the members of the Moss Landing Commercial Fishermen's Association, I am writing to express our concern over the abalone farm proposed to be built in the anchorage area at Pillar Point Harbor.

Our primary concern is that, since our membership uses this anchorage as a safe harbor, the proposed loss of any space in this anchorage is unacceptable to us. A second and equally important concern, however, is that the water quality in the Pillar Point area will be significantly affected, affecting the marine life native to the area. Added to these concerns is the possibility for parasites escaping from the farmed abalone.

In light of the foregoing concerns, we ask the Coastal Commission to reject any applications for any aquaculture projects proposed in the Pillar Point area.

Thank you for your consideration of this letter.

Very truly yours,

MOSS LANDING COMMERCIAL
FISHERMEN'S ASSOCIATION

By Tom McCray
Tom McCray

cc: Half Moon Bay Fishermen's
Marketing Association

F/V REGINA

BARBARA J. STICKEL
PO BX 63
MORRO BAY, CA 93443-0063

RECEIVED
JUN 30 1997
CALIFORNIA
COASTAL COMMISSION
CENTRAL COAST AREA

June 27, 1997

Ms. Joy Chase
California Coastal Commission
725 Front Street
Santa Cruz, CA 95062

Dear Ms. Chase:

I am a California commercial fisher who frequently uses the anchorage area at Pillar Point Harbor for refuge. I understand the Coastal Commission is considering allowing private interests to lease this space for a proposed aquaculture project. As the only safe harbor between Point Reyes and Santa Cruz, Pillar Point is of vital importance to California's salmon trollers, especially since the Pacific Fisheries Management Council continues to restrict our fishing to areas south of Point San Pedro.

Additionally, on-going scientific research shows how potentially dangerous aquaculture projects are proving to the natural areas being utilized, with the high concentrations of waste products and the potential for non-native species to escape and/or contaminate wild species. In light of recent developments in these areas, I believe the Coastal Commission would be negligent in allowing any additional aquaculture projects in California's coastal waters.

In any event, allowing private interests to benefit at the possible cost of loss of lives should be unfathomable to the Coastal Commission.

Very truly yours,

Barbara J. Stickel

Barbara J. Stickel

cc: Duncan MacLean

JC
SM

SEQUOIA AUDUBON SOCIETY INC.
30 W. 39th Avenue #202, San Mateo, CA 94403
(415) 345-3724

June 18, 1997

RECEIVED
JUN 25 1997
CALIFORNIA
COASTAL COMMISSION
CENTRAL COAST AREA

Joy Chase
Coastal Planner
California Coastal Commission
725 Front Street, Suite 300
Santa Cruz, CA 95060

Dear Ms. Chase:

I am not sure you are the correct person to address our concerns, but I was given your name by the receptionist. If you are, please consider the below. If not, please pass this on to the appropriate party/parties. Thank you for your patience.

We are concerned about the red abalone farming that is being considered for Pillar Point Harbor. We understand that the San Mateo Harbor District has passed a mitigated negative declaration allowing the leasing of harbor waters for abalone aquaculture. Apparently, the "mitigation" was based upon the establishment of a baseline number of animals to ensure that no environmental damage would occur as a result of aquaculture operations. Since that time, new information has come to light that negates many of the assumptions upon which the negative declaration was based.

At issue is the impact of the abalone waste products: undigested kelp and fecal matter. Using the 65 gram market weight for abalone supplied by US Abalone, the figures calculated and examined in the Revised and Expanded Initial Study for Abalone Aquaculture Operations, page 19, show that the initial number of abalone will consume 10,000 kg (11.7 tons) of kelp and produce waste products requiring 60,000 liters of dissolved oxygen per day. This is a figure which "slightly exceeds the mass balance of oxygen provided by the water, including tidal exchange and surface exchange. In other words, there may be significant reduction in dissolved oxygen levels of the outer harbor area, resulting in a detrimental impact to existing biota."

This fact alone is sufficient to require a full environmental impact study. However, the market weight for abalone cited on the US Abalone Web site is 110 grams, which is 70% larger than the Revised and Expanded Initial Study. So, if you factor in the additional 70% oxygen deprivation and 70% increase in waste production due to the 70% increase in actual abalone size, the study numbers turn out significantly worse. In fact, at 170% of kelp requirements and 170% waste output, only 406,000 total animals can be sustained and still maintain a viable oxygen level of at least 5% mg/l (which some biologists contend is unviable for certain bay species), or approximately 1/2 the available oxygen for the entire bay. Thus, even the start up number of 500,000 animals is in danger of adversely affecting the health of the bay and its resident species.

Other reasons to reevaluate the presence and scale of the aquaculture operation:

1. The aquaculture will be adjacent to the Pillar Point Marsh, an extremely productive wetland and

habitat for waterfowl. The placement of the aquaculture will impede take-off and landing for waterfowl, while the operation of compressors night and day will disturb all resident animals;

2. The outbreak water is habitat and nursery area for many benthic organisms including clams, crabs, shrimp and finned fish including sand dab, sole, halibut, flounder and skate, which may be at risk by the presence of this operation;
3. The amount of kelp needed to feed the build-out operation is calculated at 11.7 tons/day (not including the additional 70% actually required). The kelp must be harvested within the Monterey Bay Marine Sanctuary. This will be incredibly disruptive to the fish, invertebrates and mammals (sea otters), depriving them of food, shelter and nursery areas. Sources of kelp have not been identified, nor have impacts associated with kelp harvests. Additionally, to protect the local kelp source, the San Mateo Fish and Wildlife Advisory Group is in the process of requesting several kelp beds closed due to low populations (Bed 226, 225, and 224). Resources already appear to be in short supply;
4. The sabellid worm, an abalone parasite, was identified at aquaculture operations at Pillar Point in 1994. The occurrence of this worm in an aquaculture raft could potentially infect the wild population in the event the raft is freed during a storm;
5. The loss of mooring space due to the location and size of the aquaculture will result in serious navigational hazards for commercial and recreational boats seeking refuge in storms; and
6. The six tons of fecal matter produced a day (which exceeds the carrying capacity of the entire harbor) will have a devastating effect on water quality and recreational activities in the area.

For all the above reasons, we feel the harbor district should reexamine the authorization of the mitigated negative declaration. The harbor district should request that regulatory agencies establish a monitoring program to determine the environmental impact of the existing aquaculture levels and halt all expansion of the aquaculture facilities pending a written review by the monitoring program. In light of the significant negative impact of the existing levels of aquaculture suggested by the new data, we urge you to act now in order to safeguard the harbor for its many users and inhabitants.

Thank you for your consideration in this matter.

Sincerely,

Adrienne Waterston

Adrienne Waterston
Conservation Committee

cc: Peter Grinell, General Manger, San Mateo County Harbor District
John Wolfenden, Section Leader, South Bay Watershed Management Division, Regional Water Quality Control Board
George Isaacs, Biologist, California State Department of Fish and Game
Scott Casey, Program Specialist, Monterey Bay National Marine Sanctuary

F/V Rita E
1175 Rousch Avenue
Seaside, CA 93955

Ms. Joy Chase
California Coastal Commission
725 Front Street #300
Santa Cruz, CA 95060

Dear Ms. Chase:

If the rumor I heard is true, someone is trying to put an abalone farm in Pillar Point Harbor and you are involved.

My husband fishes up and down the coast and quite often anchors at Pillar Point. I understand that this is a port of refuge. When there are a lot of salmon in the area there are a LOT of boats anchored there from places like Bodega Bay, Fort Bragg, Eureka, and Crescent City, not to mention out-of-state boats.

Pillar Point Harbor is also important to sailing boats, and in fact is often used as the finish area for sailboat races.

Allowing abalone farming at this popular anchorage would diminish public use in favor of a single private use. I think to turn up to 40% of the space inside the outer breakwater over to an abalone farm would be a poor trade and a bad decision.

Thank you for you time and consideration.

Sincerely,

Val Petro

Val Petro

RECEIVED
APR 22 1997
CALIFORNIA
COASTAL COMMISSION

PACIFIC FISHERY MANAGEMENT COUNCIL

2130 SW Fifth Avenue, Suite 224
Portland, Oregon 97201

Telephone: (503) 326-6352

CHAIRMAN
Robert C. Fletcher

EXECUTIVE DIRECTOR
Lawrence D. Six

RECEIVED
APR 21 1997
Ans'd.....

April 16, 1997

Board of Harbor Commissioners
San Mateo County Harbor District
One Johnson Pier
El Grenada, CA 94018

Re: Abalone Aquaculture Project Proposals

Dear Commissioners:

As you probably know, the Pacific Fishery Management Council (Council) is responsible for setting commercial and recreational fishing seasons for federal waters off the coasts of California, Oregon, and Washington. In recent years, circumstances have dictated that the Council adopt commercial salmon fishing seasons which limit early season fishing opportunity to the area south of San Francisco. For the last several years, Point San Pedro has been the northern boundary of the fishery during May and all or most of June, concentrating the entire commercial fleet below that boundary.

Pillar Point Harbor is the only "safe harbor" between San Francisco Bay and Santa Cruz, and has become a principal port in California for salmon landings. Many of these landings are made by transient vessels, home-ported elsewhere and required by the limitation of regulations to fish off the coast of Half Moon Bay and south. Since Pillar Point Harbor has far too few slips to accommodate these boats, they anchor in the outer harbor.

It has recently been brought to the Council's attention that five private abalone mariculture project rafts have been proposed for installation in the anchorage area of the outer harbor. We have been informed that these installations effectively will reduce the usable vessel anchorage area by over twenty-three acres and will eliminate anchorage opportunity for over fifty vessels.

Since the Council is required by the Magnuson-Stevens Fishery Conservation and Mangement Act to consider vessel safety issues, we are extremely concerned about the adverse effects of the installation of these facilities and the resultant severe reduction in anchorage opportunities for the transient commercial salmon fleet. The project creates a serious safety hazard to the fifty or more boats that may be displaced.

We also note that Pillar Point Harbor was developed under a federal grant, the terms of which require that priority be given to vessel anchorage and mooring. Requirements under the California Coastal Act are similar in their establishment of priority status for commercial and recreational vessels.

We believe that this project, or any other project which would significantly encroach upon necessary anchorage area in a harbor of refuge, poses a serious threat to the safety of the men and women of the commercial and recreational fishing fleets and is ill-advised.

Thank you for your attention to our concerns.

Sincerely,

Robert C. Fletcher
Council Chair

RCF:klr

Enclosure

CRAB BOAT OWNERS ASSOCIATION

2907 JONES STREET
SAN FRANCISCO, CALIFORNIA 94133
415-885-1180

March 5, 1997

To: San Mateo County Board of Harbor Commissioners

From: Robert N. Miller - Crab Boat Owners Association of San Francisaco - President
Pacific Coast Federation of Fisherman's Associations' (PCFFA)
Vessel Safety Committee - Chairman

Re: Abalone Aquaculture Projects Proposals at Pillar Point Harbor

PUBLIC COMMENTS

Members of the Commission

I am appearing here as President of the Crab Boat Owners Association of San Francisco, and at the request of the presidents of a number of other commercial fishing associations up and down the coast of California, and in my capacity as chairman of PCFFA's Vessel Safety Committee and as a resident and tax payer of San Mateo County :

I am here to raise certain important issues and to ask several very important questions pertaining to the aquaculture projects proposals and the appropriateness of some of the procedures that have been followed to date. I ask that we be given specific and detailed answers to the questions posed.

You are aware of the issues raised in my letter of February 17, 1997 to Ms. Joy Chase of the California Coastal Commission, a copy of which was sent to SMCHD. In the interest of brevity I will not reiterate the points made in that letter. You were not copied on my letter to Mr. Darryl Rance of the Enforcement Division of that agency. A copy is submitted herewith..

First: In my letter to Mr. Rance we have requested investigation into the legality (or illegality) of the presently on-going operation of the U.S. Abalone project which has been in full operation for well over a year with the full knowledge and apparent consent of this Board of Harbor Commissioners and harbor staff, including the former Interim General Manager, James Stilwell. We are informed that no permit or other consent has been granted as required by other regulatory agencies having jurisdiction such as the California Coastal Commission, The U.S. Army Corps of Engineers, the California Water Quality Control Board etc. We believe that the ongoing operation is contrary to the law and should be immediately terminated until full and complete review has been completed and permits granted or denied by the appropriate agencies. We further inquire as to why this Board allowed this unpermitted project to operate.

Second: In Mr. Stilwell's memorandum of November 14, 1997 to Commissioner Parravano, he disclosed that the San Mateo County Harbor District had expended nearly $45,000.00 to that date

and that over $34,000.00 in remaining costs were still to be paid by the district. The costs consist of payments for studies needed by the applicants for the five aquaculture projects along with heavy costs to the district in staff labor, services supplied by the district and other items of district overhead necessitated by the projects. We can find nothing in the record that indicates that these district **tax payers' monies** are to be reimbursed to the district by the applicants and we can, therefor only assume that the **tax payers of the county** are subsidizing these projects. It is usual and customary that, where CEQA, the California Coastal Act and other laws require proponents and applicants for private projects (particularly for profit) to provide studies, reports and information to support their application, they are required to pay for or reimburse the agency, district or other jurisdiction for these costs. The same applies to overhead costs incurred and made necessary by the project. I ask that the commission to inform us as to whether or not the district has, in fact, incurred unreimbursed and unreimbursable costs, as described above, to benefit these private for-profit projects, and if so, why should such actions not be considered to be a **"gift of public funds"**, which, I believe, is illegal.

Third: We have been informed that former Interim General Manager Stilwell has represented the applicants for these projects before this Board and/or a committee of and/or employees of this board as a paid consultant. As a very recent employee of this district this seems inappropriate.

Further, the record shows that Mr. Stilwell and other district employees, as well as some members of this board seem to have looked favorably upon these projects from the beginning and seem to have made important concessions to the applicants, which seem not to be in the public interest. There is also little or no information available as to the financial condition of the applicants or disclosure of the names of their investors. I was told, upon inquiry, that such information is confidential and not public record. We believe that it is important for the public to know, and I ask that the District disclose the answers to the following questions.

1. The names of all persons who now have or have previously had any financial interest in any of the proposed aquaculture projects, or who have been promised any future interest?

2. The names of any Harbor District Commissioner or employee, past or present, who have any financial interest in any of the projects, the nature and amount of any such interest and the date any such interest was acquired?

3. Has any Commissioner or employee of the district been compensated by any of the aquaculture applicants or their representatives for any action or consideration pertinent to the subject projects? If so, their names, the type or amount of compensation and the action or consideration performed should be disclosed.

I hope that you will agree with me that full disclosure will be to the benefit of the District, the tax payers of the district and the users of Pillar Point Harbor who will be affected by these proposals.

Thank you for your attention.

Pietro Parravano
President

David Allen
Vice-President

John Greenville
Secretary

Don Sherer
Treasurer

PACIFIC COAST FEDERATION of FISHERMEN'S ASSOCIATIONS

INCORPORATED

PCFFA

RECEIVED
MAR 7 1997
CALIFORNIA
COASTAL COMMISSION
CENTRAL COAST AREA

D.F. "Zeke" Grader, Jr.
Executive Director

Nathaniel S. Bingham
Habitat Director

Glen H. Spain
Northwest Regional Director

Mitch Farro
Director of Enhancement Projects

Please reply to:

Main Office
P.O. Box 989
Sausalito, CA 94966
Tel: (415) 332-5080
Fax: (415) 331-2722

Office of the President
P.O. Box 340
El Granada, CA 94018
Tel: (415) 726-1607
Fax: (415) 726-1607-3*

Habitat Office
P.O. Box 783
Mendocino, CA 95460
Tel: (707) 937-4145
Fax: (707) 937-2617

Northwest Regional Office
P.O. Box 11170
Eugene, OR 97440-3370
Tel: (503) 689-2000
Fax: (503) 689-2500

4 March 1997

RECEIVED
MAR 06 1997
CALIFORNIA
COASTAL COMMISSION

Mr. Peter Douglas, Executive Director
California Coastal Commission
45 Fremont Street, Suite 2000
San Francisco, California 94105-2219

Dear Peter:

I need to bring an enforcement problem to your immediate attention. U.S. Abalone is currently operating an abalone farm within the northwest corner of the outer harbor breakwater at Pillar Point and has been doing so for a few years. The Harbor District licensed this operation for a five year renewable term in 1995. At that time, it also began after-the-fact environmental studies (DFG as co-lead agency) to expand abalone farm operations. Ironically, the studies rely on U.S. Abalone's unpermitted operation for data. My members believe the Harbor has licensed five separate abalone operations and allowed U.S. Abalone to expand. In 1995, the Central Coast Coastal Commission staff advised the Harbor District that abalone operations require coastal permits. Just recently, separate coastal permit applications were submitted compounding the issues of cumulative effects, scope of project and total project buildout.

Member organizations, including among others, the Half Moon Bay Fishermen's Marketing Association, the Crab Boat Owners Association, and other fishing organizations up and down coastal California, believe abalone operations within the confines of the outer harbor may adversely impact harbor water quality and will occupy space needed for recreational boating, safe navigation, and safe harbor temporary anchorage. Pillar Point is a nursery and holding pond for many commercial fish species. High water quality is essential for the harbor to function in these roles. Local attention has focused on the costs of monitoring, but no systematic or background monitoring has been required or undertaken. The Harbor District itself funded much

of the environmental studies and monitoring costs to date. As to navigation, Pillar Point serves as a harbor of refuge to the fishing fleet. The closest harbor north is 20 miles; to the south, the distance is 40 miles. In January, the harbor district signed yet another license with Princeton Abalone. To our knowledge, Princeton Abalone has not yet commenced operations, but their license imposes financial penalties for lack of diligence. We are concerned that they will commence without coastal permits. Because the scope of abalone operations is definitely expanding with adverse effects on recreational and commercial boaters, enforcement action against U.S Abalone is needed now. While we recognize that aquaculture is a coastal activity encouraged by the Dept. of Fish and Game, these expensive operations need to operate with required permits.

Enclosed are photos, letters from member organizations and addresses of the abalone operators.

Yours truly,

W. F. "Zeke" Grader

Attachment 2. Names and Addresses of Enterprises Which Formed the Basis for the Project Description

a) Thomas Ebert
U.S. Abalone
P.O. Box 254
Davenport, CA 95017
(408) 458-2832

b) Jon Locke
Princeton Abalone, Inc.
371 Harvard Avenue
Half Moon Bay, CA 94019
(415) 728-9503

c) Brian J. Price
Deeper Blue Enterprises
124 Reno Way
Santa Cruz, CA 95060
(408) 426-4780

Joel Roberts
Deeper Blue Enterprises
115 Almar Ave.
Santa Cruz, CA 95060
(408) 457-0728

d) Lyle J. Wagner
7745 Texhoma Ave.
Northridge, CA 91325
(818) 344-4236

e) Christian R. Zajac
Pearl Abalone Company
415 7th Avenue
Santa Cruz, CA 95062
(408) 462-6959

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Salmon Trollers Marketing Association

PO Box 137
19292 South Harbor Drive
Fort Bragg Ca. 95437
Mendocino County

Phone 707-964-5500
Fax 707-964-6985

February 26, 1997

Joy Chase
725 Front Street Suite 300
Santa Cruse Ca. 95060

Dear Ms. Chase,

This letter is in *response* to the Abalone Farm that is proposed for Half Moon Bay. The Salmon Trollers Marketing Association respectively request that this application to raise Abalone in a protected anchorage be carefully reconsidered. Although the Salmon Trollers Marketing Association support the raising of Abalone, we believe that fishermen ,and their boats would be at risk and suffer a loss due to this current proposal.

Respectively Yours,

Bill Haas
President
Salmon Trollers Marketing Association

Wayne Scott
Director of Restoration Projects
Salmon Trollers Marketing Association

RECEIVED
MAR 3 1997
CALIFORNIA
COASTAL COMMISSION
CENTRAL COAST AREA

sw

CRAB BOAT OWNERS ASSOCIATION

2907 JONES STREET
SAN FRANCISCO, CALIFORNIA 94133
415-885-1180

February 26, 1997

Mr. Darryl Rance
California Coastal Commission
45 Freemont Street, Suite 2000
San Francisco, Ca 94105-2219

Re: U.S. Abalone Aquaculture Project - Pillar Point Harbor

Dear Mr. Rance:

Thank you for taking the time to discuss the above captioned project with me this afternoon. Pursuant to that conversation I am formally requesting that your office investigate said project to determine whether or not it is now and has been, for a considerable length, of time operating illegally, without the benefit of permit or approval by the Coastal Commission and other appropriate State and Federal agencies. I further request that you determine whether or not the San Mateo Harbor District has acted illegally, by allowing and encouraging U.S. Abalone to operate the above captioned project without benefit of these required permits and approvals.

As promised, I have enclosed a copy of my letter to Ms. Joy Chase of your Santa Cruz Office. This letter raises the above question, but is basically a summary of our other objections to this operation along with the other four proposed projects of a similar nature and in the same general location. The purpose of this letter, however, is to focus on the legality (or illegality) of the existing U.S. Abalone project, based on information I will briefly relate here and upon information that your investigation will disclose.

I would like, first, to tell you why I am interested and where I am coming from. I am president of the Crab Boat Owners Assn. of San Francisco, the primary commercial fisherman's organization of the San Francisco Bay Area. I am also a director of the Pacific Coast Federation of Fisherman's Association and the chairman of its Vessel Safety Committee. Our members, not only from the Bay Area, but from ports up and down the west coast of the United States are, along with recreational boaters of the coastal waters, the primary users of the Pillar Point harbor anchorage where the above project has been installed.

We have been informed and have observed that the above project has been in full operation for long over a year. Indeed, it has been cited as an operating example in several documents submitted with the applications for approval of the other four proposed projects. Its operational status has been referred to frequently in testimony before the Harbor Commission and, perhaps more importantly, by members of the Commission themselves, in comments during regular Commission meetings. There is no question that the U.S. Abalone aquaculture project is in full operation and has been for some time with full knowledge and apparent consent of the majority of the commission and the Harbor District management.

We have further been informed that U.S. Abalone made application to the Coastal Commission and that the project has never been heard by the Commission nor has any permit or consent for the project been granted. Further, we are led to believe that the subject project as never been approved by the Corps of Army Engineers, the California Water Quality control Board or any other agency having jurisdiction or authority.

In view of the above, one can only conclude that, with full knowledge of the legal requirements for operation of any such project, the operators have decided to openly and notoriously operate their business in spite of and in defiance of the law. Even if the project were a good one the operators still should be required to comply with the law.

Of equal or, perhaps, greater importance is the question of the legal propriety of the behavior of the Harbor Commission and its management. I believe that it is their legal duty to see that laws applicable to projects under their jurisdiction are complied with and that no special privilege be granted to any applicant which is contrary to what the law requires.

In view of the above, I respectfully request, on behalf of my self and the fishermen and women whom I represent, that a full and complete investigation be immediately instituted into these very serious matters. I will be happy to supply you with all of the information and documentation in my possession on the case. I have enclosed my business card for your information.

Thank your for your interest in and attention to this matter.

Sincerely,

Robert N. Miller, President

cc: Mr. Peter Douglas, Executive Director
Ms. Joy Chase
Honorable Byron Sher
Honorable Lou Papan

JC

HUMBOLDT FISHERMEN'S MARKETING ASSOCIATION, INC.

216 H Street
Eureka, California 95501

(707) 443-0537 FAX (707) 443-1724

RECEIVED
FEB 26 1997
CALIFORNIA
COASTAL COMMISSION

Feb. 24, 1997

Mr. Steve Monowitz
California Coastal Commission
725 Front Street
Santa Cruz, CA 95060

Dear Mr. Monowitz:

I'm writing on behalf of Northern California commercial salmon fishermen about the proposed abalone culture rafts in the inner harbor of Half Moon Bay.

Our concern is for the potential loss of safe anchorage. The Half Moon Bay inner harbor is currently the only safe anchorage between San Francisco Bay and Ano Nuevo, a distance of about seven hours by salmon troller. It is currently used by 50 or more visiting boats whenever fishing is decent off Half Moon Bay. Most of these boats deliver their fish in Half Moon at trip's end. There is no room to tie up or raft out at the docks. The proposed abalone culturing scheme would deny this anchorage to all but a handful of boats, once moorages were relocated.

Loss of this anchorage would effectively deny us access to about half of the fishing grounds between the Farallon Islands and Santa Cruz, which is a substantial chunk of the grounds which remain open to us after the allocation of 50% of the harvestable Klamath salmon to the tribes on that river. Salmon landings by visiting boats would also be transferred away from the port of Half Moon Bay, which has been the major landing port for the past several years.

In short, we believe this abalone rafting proposal is wrong for Half Moon Bay for both safe harbor and financial reasons. We leave the equally substantial environmental impact and feasibility arguments to our colleagues in Half Moon Bay.

Sincerely,

Dave Bitts

Dave Bitts
Vice President, PCFFA
Secretary, HFMA

February 24, 1997

Ms. Joy Chase
California Coastal Commission
725 Front Street, Suite 300
Santa Cruz, CA 95060

Re: Aquaculture Use Permit

Dear Ms. Chase:

Princeton Abalone has approached me to offer comments on their proposed operations at Pillar Point Harbor. By way of reference I have lived in Half Moon Bay all my life, and, I own several very large commercial fishing vessels which work the coast from Alaska to Baja.

Among their concerns were possible problems with anchorage and navigation due to their proposed operations. After reviewing these issues with them I feel that their aquaculture plan poses no threat to my operations in the harbor. Their offer to move up to six (6) moorings to the buffer zone surrounding their raft speaks for their efforts to minimize inconvenience to any transient vessels.

Overall, Princeton Abalone has a good plan, and I support their efforts to start this enterprise. It will be a benefit to the local community.

Sincerely,

John A. Dooley

John A. Dooley
48 Fairway Place
Half Moon Bay, CA 94019

RECEIVED
MAR 4 1997
CALIFORNIA
COASTAL COMMISSION
CENTRAL COAST AREA

CRAB BOAT OWNERS ASSOCIATION

2907 JONES STREET
SAN FRANCISCO, CA 94133-1115
415-885-1180

February 17, 1997

Ms. Joy Chase
California Coastal Commission
725 Front Street, Suite 300
Santa Cruz, California 95060

Re: Abalone Aquaculture Applications - Pillar Point Harbor

Dear Ms. Chase:

I am writing to you on behalf of the Crab Boat Owners Association of San Francisco, the primary commercial fishermen's organization of the San Francisco Bay Area. The purpose of this letter is to urge in the strongest possible terms that the Coastal Commission **deny** the above captioned applications. I will enumerate our reasons for our adamant opposition in some detail here and I respectfully ask that you arrange for a meeting with you and appropriate staff and me and other representatives of the coastal commercial fishing community so that we can more clearly detail the facts and reasons behind our objections.

As you recall, I talked with you on the phone Friday afternoon and explained that I and the leadership of the other fisherman's associations up and down the coast had only recently learned of the aquaculture proposal, its scope and its impacts on us and our fishing operations. I said that, since learning of the project, we have carefully examined the proposal and have based our judgement on informed facts. We have concluded that the proposed project would be severely detrimental to the coastal commercial fishing fleet, creating a potential for serious danger to the men and women of the fleet. It would cause inconvenience and interference with our fishing operations and significant adverse economic impacts on the fishermen and women as well as the fish processors of Pillar Point Harbor and elsewhere. This is a plan which would create a special business opportunity, which is speculative at best, for a few newcomers to the area at the expense of hundreds of fishermen and women who have heretofore been able to use Pillar Point Harbor as an anchorage and safe harbor and who have done business with the fish processors there.

I want to make it clear that we have no objection to aquaculture or abalone farming, per se. In fact we encourage well conceived projects which do what we do; that is, supply the American and world markets with wholesome seafood products. We believe that the proposal is a ***good idea in the wrong location.***

The record shows that others have made objections, many of which seem quite valid, which tend to be more local in nature. I will focus mainly on problems created by the proposal which are more industry wide with specific adverse impacts on our safety, commerce and financial health.

<u>First:</u> The project would seriously reduce usable anchorage space in the outer harbor.

Seasonal structure of the commercial salmon season has for several years, and will in the foreseeable future, restricted the fishing effort to South of Point San Pedro during the early months of the season. A very large part of the transient salmon fleet headquarters and anchors at Pillar Point, predominantly in the outer harbor. Many sell their catch to local processors.

The proposed new aquaculture rafts and the raft now in place and the buffer areas between and around them take up a large portion of the anchorage area. All of the documents made available by the Harbor Commission staff indicate that only 2.4 acres of the entire anchorage area would be occupied by the project (a mere 4% of the Northwest corner of the outer harbor). The mathematical calculations are not presented and no one could explain them to me. In fact, **the calculations are wrong**. Calculating the area of the rafts plus the 300 foot buffers and the buffer areas from the breakwater and approximately one hundred eighty feet buffer outside the rafts (the minimum safe anchor rode at only 8:1), the project will occupy approximately 22.5 acres or nearly 10 times the area estimated by the proponents and their advocates. Rather than a nominal 4%, they propose displacing nearly 40% of the vital Northwest corner anchorage area. I will be pleased to show you our calculations. The remaining area of the outer harbor also contains approximately 123 fixed (private) moorings which are not available to the transient fleet. Presuming an anchoring ratio of about 2 boats per acre, this proposal will eliminate anchorage for about 40± salmon boats and their crews.

During periods of good weather this loss of anchorage will be a real inconvenience for those fishermen and women on those forty or so boats who find "no room at the inn". When the weather turns ugly, as it often does in the spring, the loss of forty or so anchoring spaces may very well prove to be deadly to some. When the fleet is fishing off the coast of San Mateo County and the weather turns bad we normally head for "safe harbor" at Pillar Point. When we are fishing near the Farallon Islands bad weather often forces us to run for shelter. Often, the only safe direction to travel is downwind to Pillar Point. If the only safe place to anchor is occupied by abalone rafts, where do we go?

→ NO, it's 7.75

The impact on anchorage area could, in fact, be much greater, even to the point of eliminating all of the transient anchorage area. The SMCHD has created a "Set-aside for abalone rearing" , an area of the outer harbor 500 yards by 750 yards **<u>(77.5 acres)</u>** (See SAN MATEO COUNTY HARBOR DISTRICT LEASE AGREEMENT, NEGATIVE DECLARATION & other documents). Although THIS project is represented to be limited to only 2.4 acres of rafts and 5 aquaculture operators, 77.5 acres are actually reserved. There is no prohibition against other projects in the "Set-aside" and, in deed, there are provisions under which the subject proposals may be expanded in the future. Key sections of the LEASE AGREEMENT provide:

1.1.3 *Each of the Exhibits described above and attached hereto may be changed from time to time to reflect changes in <u>Licensed Premises</u> which are negotiated and mutually agreed between Licensee and Licensor.* (underline added)

5.1.1.6 *Licensee shall not expand beyond the licensed area and inventory described and*

permitted in Exhibit A attached hereto, without the express written provision of licensor and without payment of additional fees prescribed in Section 4.1, Minimum Fixed License fFee and Section 4.2, Percentage Lease Fee. (Underline added)

13.1.1 *It is expressly understood and agreed that the rights of the Licensee hereunder are non-exclusive as to the San Mateo County Harbor District, and that Licensor retains the right to license other businesses, or similar businesses or facilities . . .* (Underline added)

It is obvious that the SMCHD is reserving its options to provide for future expansion of abalone aquaculture in the future by setting aside the 77.5 acres and by specifying to itself the right to do so in the License Agreement. The loss of anchorage for 40 boats would be devastating to the commercial fishing fleet. **The loss of 77.5 acres would eliminate Pillar Point Harbor as a harbor of refuge and would seriously imperil the commercial fishing fleet and transient recreational boaters.**

The **safe harbor** anchorage issue was posed to the SMCHD at their meeting of November 6, 1996 by Duncan MacLean, president of the Half Moon Bay Fisherman's Marketing Association.. The arrogant response by Interim General Manager James Stilwell was "If the facts and figures of MacLean are valid then we may be looking at **limiting the number of boats that we could have anchored at any one time in our harbor to maybe 15-20 boats.** We would have to tell the rest of them to **go somewhere else.**" (Minutes SMCHD Nov. 6, 1996), Where would he have the fleet go in a storm - 20 miles north to San Francisco Bay or 45 miles south to Santa Cruz Harbor, the nearest ports of Safe Harbor?

In a Memo from Acting Harbor Master Dan Temko to the Board of Harbor Commissioners he points out that "The entire anchorage area is currently used for anchoring of transient vessels and for 123 fixed moorings. The number of transient anchoring vessels varies from a handful to approximately 200 depending on weather, fishing seasons, big recreational holidays and sailing events." It is obvious that displacement of from 20% to 100% of the active boats anchoring at Pillar Point to accommodate a new, untested aquaculture venture is a **significant negative environmental impact which can not be mitigated.**

Second- The project is in direct conflict with several sections of the CALIFORNIA COASTAL ACT OF 1976, as revised.

Section 30224. *Increased recreational boating use of coastal waters shall be encouraged, in accordance with this division, by . . . . . providing harbors of refuge, and by providing for new boating facilities in natural harbors, new protected water areas. . .*

Section 30234. *Facilities serving the commercial fishing and recreational boating industries shall be protected and, where feasible, upgraded. Existing commercial fishing and recreational boating harbor space shall* ***not*** *be reduced unless the demand for those facilities no longer exists or adequate substitute space has been provided.. . . .*(underlining added)

Pillar Point Harbor is a harbor of refuge which would be seriously negatively impacted by

significantly reducing the area of anchorage, contrary to the provisions of both above sections.

Third: The project would have serious adverse economic impacts on the local fish processors, the local fishing fleet and the transient fishing fleet.

Many of the transient salmon fishermen and women who anchor at Pillar Point sell their catch to local processors. Many "headquarter" there during all of the first part of the season. If a portion or all of the fleet must go elsewhere because their historic anchorage has been permanently committed to abalone rafts they most assuredly will sell their catch at the alternate port. We have not yet estimated a dollar amount of loss to local processors due to relocation of part of the fleet but it would obviously be substantial. It should also be noted that local processors get no part of the abalone "action", just the loss.

A second serious potential for severe economic impact is less obvious but should have been recognized in the review process. Many of the members of the local fleet fish for live fish delivery and dungeness crabs, which are also delivered live. After delivery, the processors keep the fish or crabs alive in live-tanks. The water for these tanks is pumped directly from the inner harbor. Not only is the water quality put at risk by the project because of possible reduction of dissolved oxygen levels, which is discussed at some length in the various reports, opinions and Declarations, but it is also put at serious risk due to suspended or dissolved fecal material created by the project and dispersed throughout the waters of the inner and outer bay. There are **no adequate studies** of the tidal effects and currents in the harbors. We know empirically that the water circulation and flushing is poor at best. Most who know the local conditions believe that tidal flushing is far from adequate.

The revised Huffman Study of June 1996 states, "Therefore, no assumptions can be made for the purposes of this analysis that tidal action will alleviate this impact" (Page 19). The same study (same page) reveals that, of the 10,000 kg of kelp used daily as feed for the project, two-thirds **(6,600 kg)** will be discharged back into the water as "**undigested food and feces**". The proponents contend that there is little or none of this fecal material on the bottom below their existing raft. If it is not being deposited on the bottom, then it is obviously still in the water. Since we can't assume "that tidal action will alleviate this impact" we must presume that there is a distinct probability that much of the fecal material is still in the water of the harbor. The same water that is being pumped into live-tanks in some of the boats and into the live-tanks into which the local processors deposit and hold their live fish or live crabs. Biological studies of the production of feces generated by this project and its effect on the waters of the harbor and the living things in the water are absent. We don't know the effect of abalone feces on crabs and fish, but we do know one thing. When the fish buying public learns, as they surely will, that Pillar Point's live crabs and fish are being bathed in abalone fecal material the local processors won't be able to give the product away. The adverse economic impact to the local fisheries, and perhaps to the entire dungeness crab market could be tragic.

Fourth: The use of a Mitigated Negative Declaration is inadequate and inappropriate for a project of this scope and nature.

The acceptance and certification of the findings of the subject Mitigated Negative Declaration by the Harbor Commissioners is grossly inappropriate. The scope of the project, the presence of negative impacts which cannot be mitigated, such as the loss of critical anchorage, the likelihood of other long-lasting negative economic and other impacts, the many unknowns factors about the project and the area in which it is to be developed demand that a full and complete EIR be done before this venture even be considered for adoption.

The Revised Expanded Initial Study, the Mitigated Negative Declaration and other supporting documents are **obviously flawed** in ways that should have been obvious to the commission. As pointed out earlier, the mathematics re the area impacted is **wrong.** The severe loss of anchorage area, which can't be mitigated, except by a "no project" finding is ignored, as is the body of law pertaining to protection of safe anchorages and harbors of refuge. The obvious negative economic impacts to the fishing fleet and to the local fish processors is ignored. Little attention is given to microbiological contamination of harbor water from abalone feces and rotting kelp, although much attention is paid to dissolved oxygen levels. No studies are cited regarding water currents and flow patterns within the harbor and their effect on the spread of contamination created by this project. The minor or easily mitigated impacts are discussed. Those negative impacts which are difficult or impossible to adequately mitigate are ignored as if the don't exist.

Fifth: The SMCHD has already granted a license to one Licensee (U.S. Abalone) and has permitted them to operate an abalone aquaculture facility since January 1994 without compliance with requirements of the California Environmental Quality Act (CEQA), the California Coastal Act or other appropriate regulatory laws.

To our knowledge, no EIR was conducted in that case, nor was approval granted by the Coastal Commission or other appropriate agencies. The Coastal Commission and those other regulatory agencies should inquire into the Harbor District's apparent loose practice of granting licenses without benefit of compliance with the law. **Has the same "looseness" found its way into the documentation, analysis, review and disclosure of information in the present applications?**

Sincerely,

Robert N. Miller, President

cc: Honorable John Burton
Honorable Ted Lempert
Honorable Lou Papan
Honorable Kevin Shelley
Honorable Byron Sher
Mr. Peter Douglas

San Mateo County Harbor District
Califormia Dept. of Fish & Game
Calif. Regional Water Quality Control Bd.
National Marine Fisheries Service
U.S. Army Corps of Engineers

RECEIVED
MAR 7 1997
CALIFORNIA
COASTAL COMMISSION
CENTRAL COAST AREA

HALF MOON BAY FISHERMAN'S MARKETING ASSOCIATION
P.O. Box 340
El Granada, California 94018
415 726-1607

August 23, 1996

Steve Monowitz
California Coastal Commission
725 Front Street
Santa Cruz, California 95060

Dear Mr. Monowitz;

My name is Duncan MacLean, President, Half Moon Bay Fishermen's Marketing Association. Our Association represents the hard working commercial fishing men and women out of Pillar Point Harbor. The reason for contacting you is to voice our serious concern over the development and expansion of an Aqua-culture abalone farm proposed for our outer harbor. Though this project has been some time in the making, it has been only recently that many of the particulars and a questionable sequence of events that we must express our opposition to this project in it's present form. The reasons behind this decision are:

· The allowance of a "Mitigated Negative Declaration" for a project of this magnitude is unclear to us. The potential impacts to our harbor environment do not seem to command the attention that a harbor in the middle of a sanctuary should. A full environmental impact study should be conducted at the very least. On page 2 of a letter dated December 15, 1995, from Les Strnad to acting General Manager for the harbor, Jim Stilwell, it is clearly stated that the "declaration" should address the commercial and recreational fleet, yet it falls far short of doing an adequate job of it.

· Being that Pillar Point Harbor's disposition on the dumping of it's own dredge spoils is yet unresolved, we are bewildered that the disposal of a projected 6 tons of daily dunnage in the form of fecal waste from this project does not demand an extensive amount of attention. Because this harbor does not have much of a tidal flush, it is difficult to believe the abalone spoils will do anything but settle.

· The impacts we and the public have suffered in other fisheries (salmon in particular) because of the influx of a product which presents itself as a major convenience with availability even at the cost of all the health benefits of wild, take away the market share and jobs that our coastal communities have been developed around, seems not to be of importance to projects such as these. If the foreign markets these creatures are being grown for falters or disappears, where will this product go?

· The amount of Kelp needed to support the "farm" (approximately 11 tons daily) is going to come from where and how? I don't believe it could be produced locally but if it could, how would it affect the natural balance of other things that are also commercially harvested in this same area, such as sea urchins, anchovies in the bay, halibut, etc.?

· Oxygenation in this harbor has been questioned as of late. On June 26, 1996, a Fish and Game vessel came into the harbor to take on fuel while conducting a hooking mortality study in the area. Before their task was complete, the salmon in their circulating tanks had died. The cause, oxygen deprivation. Our ability and the processors ability to keep dungeness crab, rock crab, and rock cod alive, helps command a better market price but are of a considerably lesser value dead. I understand presently they have aerators running on the existing project, but what of the rest of the wildlife in the area? Wanton waste of such products could become a very big issue. (See attachments 1-4)

· We understand that just about every farm developed on this coast has had a problem with a worm infestation or virus that has wiped out the farm stocks. What does this infestation do to indigenous wild stocks? Our local divers for abalone go to great lengths, and at their own expense, to protect this resource and their own futures by re-seeding the area on an ongoing basis. Is it even remotely possible this kind of infestation could spread to those wild stocks? (attachment 5-6)

· In a given year Pillar Point Harbor launches 4,000 to 6,000 recreational boats. In times of inclement weather these boaters/ fishermen will occupy their time trying to catch a halibut, perch,king fish or flounder, to name a few, in the outer harbor rather than risk an accident on a rough sea. Would the abalone farm owners recommend to these people the just go home because of the lack of room available in the outer harbor?

· My last, but certainly not least point and probably the most important to my membership, is loss of available anchoring area. With present fishery management schemes, Pillar Point at times becomes the focus of the entire salmon fleet. The harbor has a waiting list for slips every year so, in rough weather or just when the bite is on, the outer harbor is filled with anchored vessels. The composition of the bottom here is such that a vessel operator needs to maintain a extra margin of space from other vessels in case his anchor should slip on a windy day. Reducing this area by almost 30% will certainly cause problems, congestion or even eliminate this area as a safe harbor consideration for many fishermen, forcing them to battle bad weather to anchor safely elsewhere. The potential for this is great, but the possibility is totally unacceptable.(attachment 7)

As you can see, there are just too many unanswered questions here to proceed with this project as it is presently proposed. We have always

considered the Coastal Commission as the "watchdog" of coastal activities. We believe these concerns should be sufficient to warrant a Commission investigation into these and other issues that may arise. If that be the case, we would be available to you any time should you need more input or feedback from us. Please feel free to contact us at the above address or you can contact me personally at (415) 203-7406.

Thank you for your consideration.

Sincerely

Duncan F. MacLean

Duncan F. MacLean
President, HMBFMA

cc: Jim Stilwell

California Coastal Commission
45 Fremont St. #2000
San Francisco, CA 94105

We oppose the present form the environmental concerns about abalone farming are being addressed.

We request a full environmental impact report. This way all concerns and questions will enjoy exposure, and response.

We oppose privatization of a large part of Pillar Point harbor. A port of refuge, eliminating much anchorage and recreational use.

Paul Weakland
830 ½ Ormond Ct.
Mission Beach
San Diego, CA 92109

cc:

San Mateo County Harbor Commission
Fish and Game Commission

RECEIVED
JUL 3 1 1996
CALIFORNIA
COASTAL COMMISSION
CENTRAL COAST AREA

To:

Department of Fish & Game
California Coastal Commission
SMC Harbor Commission

From:

RECEIVED
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CALIFORNIA
COASTAL COMMISSION
CENTRAL COAST AREA

We believe that the current plan to expand the Abalone Aquaculture should be required to undergo a full EIR due to serious questions as to omissions and misrepresentations contained in the current study.

1. The occurrence of parasites was denied in the report, contrary to DFG documentation.
2. The report denies the harvesting of bull kelp in Half Moon Bay contrary to the reports of more than 15 witnesses.
3. The effects of food waste and abalone feces have been consistently mis represented.

We believe that there is a high probability that the expansion plan may have a negative impact on the marine life in the harbor, water quality and may trigger algae bloom and the resulting die-off of harbor marine life. Given these possibilities we feel that a full EIR should be prepared.

Carlos Hernandez P. O Box 734 El Granada Ca. 94021

Sandy Long PO Box 1175 El Granada CA 94018

ALCASC Louraine EL GRANADA CA. 9401

Joh Fa

Jim C. 94018

Robin

There are a total of 363 signatures.

Carolyn S Jarless Po Box 638 El Granada 9401

James G Bana PO Box 2645 El Granada 9401

John LePine P.O. Box 1021 EL GRANADA 94018

Alexis Abell P.O. Box 1553 El Granada 94018

Tom Fraser P/O BOX 43 EL GRANADA 94018

363

Memorandum

DATE: May 31, 1996

TO: Board of Harbor Commissioners

FROM: Dan Temko, Acting Harbor Master DT

RE: Aqua Culture

CC: Jim Stilwell, Interim General Manager

The proposed aqua culture area (see attachments) will encompass approximately one third of the anchorage area within the outer breakwalls at Pillar Point Harbor. The entire anchorage area is currently used for anchoring of transient vessels and for 123 fixed moorings. The number of transient anchoring vessels varies from a handful to approximately 200 depending on weather, fishing seasons, big recreational holidays, and sailing events. On a recent non holiday weekend I Counted 60 transient vessels anchored at Pillar Point 20 of which were in the proposed aqua culture area. There is additional regular use of the area for fishing , recreational boating, bird watching, kayaking and wind surfing.

The Huffman & Associates report states on Page three ; "The SMCHD has determined , with the aid of the Pillar Point Harbor Master, that an area within the Outer Harbor with the approximate size of 500 yards by 750 yards located in an area adjacent to the outer breakwater in the northwest corner of the Harbor could be set aside for aquaculture without interfering with navigation in the outer Harbor area." On 5/30/96 I spoke with Harbor Master McMahon who stated that He never meant to exclude vessels from the entire area but that the rafts could be placed within those perimeters.

Since the proposed site provides a variety of aquatic uses which are in the publics interest and which would be effected by exclusion from the area, I recommend that the license agreements for use of the area be structured so as to allow sufficient room for vessels to move and moor freely about the area in common with the abalone rafts. And that in particular anchoring vessels seeking shelter continue to be accommodated (possibly by tying to the abalone rafts if the remaining anchorage fills up.)

STATE OF CALIFORNIA—THE RESOURCES AGENCY PETE WILSON, Governor

DEPARTMENT OF FISH AND GAME
1416 NINTH STREET
P.O. BOX 944209
SACRAMENTO, CA 94244-2090
(916) 653-9583

May 20, 1996

To all Registered Abalone Aquaculturists:

Recent information developed by researchers on the sabellid polychaete worm infesting California abalone aquaculture facilities has prompted the Department of Fish and Game (Department) to take additional action to control the spread of this pest. This action may affect operation of your company and the status of your Aquaculture Registration.

Current understanding of the sabellid worm has been developed through a cooperative effort involving the Department, the aquaculture industry, and the University of California at Santa Barbara. A summary of some results of the investigations is attached. Based on evidence from these continuing investigations, the Department has concluded that every abalone aquaculture facility in the State is to be considered positive for presence of the worm unless, and until, inspections by the Department's Fish Health Laboratory (FHL), or other FHL approved inspectors, determine otherwise.

In order to prevent the further introduction and spread of the sabellid worm, the Department is taking several steps. The Department will continue to emphasize the requirement (Fish and Game Code Section 6400) that any abalone to be planted into the wild (including all of those for abalone enhancement projects) must be inspected by the Department prior to planting. The Department will only approve the planting of sabellid-free abalone from sabellid-free broodstock.

As a further consequence of recent findings, the Department is requiring that every facility develop a plan to eradicate the worm. Plan review and an assessment of the risk that each facility may represent to California resources will be done by the FHL. Each farm will then be required to conform to approved cleanup plans. As quickly as facility cleanup plans can be developed, they may be submitted to the Department for approval. The Department will require that every on, near, and off shore facility have an approved cleanup plan in place as a condition for renewal of Aquaculture Registrations for 1997. Facilities that do not implement an approved cleanup plan are at risk of having their operations prohibited under authority of Section 15102 of the Fish and Game Code.

We wish to make it clear that the Department has not established quarantines or holding actions on infested facilities. As previously mentioned, our efforts at this time are directed at outplanting sabellid-free abalone to the wild and facility cleanup plans. However, to aid in the cleanup, the Department strongly recommends that only sabellid-free abalone be transferred between facilities. If necessary, the Department may impose quarantines or holding actions that would restrict abalone shipments in the future.

There has been exceptional cooperation among abalone producers, university researchers, and the Department in management of this problem so far. It is this cooperation that provides the opportunity to bring this introduction under control, using measures intended to provide the least impact possible on the abalone aquaculture industry. Questions about the Department's policy on this issue should be directed to Mr. Bob Hulbrock, the Aquaculture Coordinator. He can be reached at the letterhead address or telephone number (916) 653-9583.

Sincerely,

COPY Original Signed by:
Jacqueline E. Schafer

Jacqueline E. Schafer
Director

Attachment

cc: Mr. Bob Hulbrock
Department of Fish and Game

Dr. Carolyn Friedman
Department of Fish and Game

Dr. Armand Kuris
Marine Science Institute
University of California

COMMENT DOCUMENT M

Dec. 19, 1995

SEQUOIA AUDUBON SOCIETY INC.
30 W. 39th Avenue #202, San Mateo, CA 94403
(415) 345-3724

RECEIVED
DEC 20 1995
GENERAL MANAGER
S.M.C.H.D.

James Stilwell, General Manager
San Mateo County Harbor District
One Johnson Pier
Half Moon Bay, CA 94019

Comments regarding Abalone Aquaculture Operations
Pillar Point Harbor, San Mateo County.

Sequoia Audubon Society has two major concerns regarding adverse impacts to avian species in Pillar Point Harbor if the Abalone Aquaculture Operations project goes forward.

First, the birds that use the harbor to feed and rest (loons, cormorants, scaup, scoters, mergansers, grebes, Brown Pelicans, etc.), do not sleep or rest on land or a hard surface, such as the proposed abalone rafts. Their physical construction is such that their legs are positioned far back on their bodies, leaving them awkward and vulnerable on land. They remain on the water where they can dive or take flight, using land only to nest, though cormorants will use a hard surface to sun themselves occasionaly. M1

Our second concern is that only puddle ducks, (such as mallards, pintails and teals), that feed inshallow water and marshes take direct flight upwards. All the birds that use the harbor require space to taxi for take-off.

The imposition of 2.5 acres of rafts in the harbor comprise a significant negative impact on the birds there, and would be reason enough for them to avoid the harbor altogether. The birds will not be able to continue their activities necessary to a healthy migration and survival if they are pushed eastward out of the harbor, because the main boat channel is there, causing too much disturbance. They also use the harbor as an important protection from storms. Many birds who spend their entire lives at sea, nesting on islands, can be found resting in the harbor during heavy storms.

The increase in human activity and machinery would also contribute to a negative cumulative impact on the birds. M2
The addition of storage structures, some up to ten feet in height would downgrade the aesthetic quality of the harbor and lessen the recreational birding and migration data of birds in the harbor. Pillar Point Harbor is one of the premier birding spots in San Mateo county. M3

SEQUOIA AUDUBON SOCIETY INC.
30 W. 39th Avenue #202, San Mateo, CA 94403
(415) 345-3724

Comments regarding Abalone Aquaculture Operations
Pillar Point Harbor, San Mateo County

One question we have is; what harbor already has a similar project ongoing, and what are the results as far as avian life is concerned? M4

Respectfully submitted,.
Eileen Jennis - Sauppe
Sequoia Audubon Society, San Mateo County
Conservation Chair
(415)726-1081

Eileen Jennis - Sauppe

cc:California Department of Fish and Game