CALIFORNIA COASTAL COMMISSION
NORTH COAST AREA
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F 8d

Filed:	October 9, 1996
49th Day:	November 27, 1996
180th Day:	Waived
Staff:	Robert Merrill
Staff Report:	May 23, 1997
Hearing Date:	June 13, 1997
Commission Action:	

REVISED STAFF REPORT: REGULAR CALENDAR

APPLICATION NO.: **1-96-69**

APPLICANTS: **COAST SEAFOODS COMPANY**

PROJECT LOCATION: Within Humboldt Bay, approximately 3/4 of a mile north of the Samoa Bridge along the west side of the channel, in Humboldt County.

PROJECT DESCRIPTION: Develop a permanent clam seed nursery by permanently anchoring (1) a series of 10 approximately 12-foot-wide by 20-foot-long wooden rafts with styrofoam floats for use in holding clam seed nursery trays; and (2) a 20-foot-wide by 27-foot-long floating work platform for washing, sorting, counting seed, and related activities.

LOCAL APPROVALS RECEIVED: Humboldt Bay Harbor Recreation & Conservation District: (1) Lease, most recently amended on June 22, 1995; (2) Permit No. 1995-7 effective December 21, 1995.

OTHER APPROVALS RECEIVED: (1) U.S. Army Corps of Engineers Nationwide Permit No. 4 pursuant to Section 10 of the Rivers and Harbors Act of 1899 (33 U.S. Code 403)

SUBSTANTIVE FILE DOCUMENTS: (1) Humboldt County Local Coastal Program

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STAFF NOTES

1. Revised Staff Report.

The application was previously scheduled for Commission consideration at the February, 1997 Commission meeting in Carmel, and the original staff report was

habitat values. The clam seed nursery is located above an area of the Bay with a sandy bottom that does not support eel grass or other vegetation with high habitat values. Although the Manila clams to be raised at the nursery are not native to Humboldt Bay, the Manila clam was introduced long ago without significant impact to native species and the biodiversity of the estuary, and the applicant has amended its project description to include measures designed to prevent the project from introducing additional clams into the Bay habitat. The project will be visually compatible with the character of the area as the proposed rafts have a low profile and are similar to other aquaculture apparatus in the Bay. Finally, the proposed project will have no adverse affect on public access. Therefore, staff believes the proposed project, as conditioned, is consistent with the Coastal Act.

STAFF RECOMMENDATION:

The staff recommends that the Commission adopt the following resolution:

I. Approval with Conditions.

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

II. Standard Conditions: See attached

III. Special Conditions:

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

WITHIN SIX MONTHS OF COMMISSION APPROVAL, the applicants shall submit to the Executive Director evidence that the U.S. Army Corps of Engineers has granted permission for the project authorized herein.

2. Removal of Rafts Upon Abandonment of Clam Seed Nursery.

Within 90 days of abandonment of the clam seed nursery, the applicant or assignees shall submit a complete application and subsequently secure a coastal development permit to remove the rafts and their anchoring system from the project site.

3. Permit Amendment.

Any deviation in the development and operation of the proposed clam seed nursery from the application project description, as modified by the

The applicant indicates that the non-native Manila clams were introduced to Humboldt Bay long ago with minimal impact, and have not displaced native clams. Nonetheless, the applicant has amended its project description to include measures to minimize such impacts. The amended application states the following:

> "1) These clams have long been established in the bay and their impact has been minimal. Coast will make every effort to minimize further introductions of live clams into the bay through diligent management practices during grading and handling to prevent spillage.
>
> 2) During washdown of seed or equipment, screens will be used to contain all clams regardless of size and any culls will be discarded in onshore trash containers.
>
> 3) All clam seed will be removed from the clam raft system and shipped back to Washington for planting by Coast, or sold to other shellfish customers prior to reaching 12mm shell size, at which size they are not sexually mature."

The rafts float in several feet of water above the bay bottom. A survey of site conditions conducted prior to the initial mooring of the rafts in 1996 indicated that the bottom habitat underneath the rafts consists of hard packed sand with occasional areas of a sand-mud mix. This habitat supports a variety of benthic organisms, but the survey indicated the site contains no eel grass beds.

The Humboldt Bay Harbor Recreation and Conservation District administers the tide and submerged lands in this area pursuant to a legislative grant. The District has granted a long term lease as well as a Harbor District permit to the applicant for the clam seed nursery.

The rafts are anchored outside of the navigable channels of Humboldt Bay. The U.S. Coast Guard reviewed the initial anchoring of the rafts and determined that the rafts need not be lighted and the anchoring required no special Coast Guard approval at that location.

2. Fill in Coastal Waters and Protection of Marine Resources.

The Coastal Act defines fill as including "earth or any other substance or material ... placed in a submerged area." The proposed project includes the authorization of permanent fill in coastal waters in the form of the floating rafts, and the anchoring system. The rafts cover a total of approximately 3,000 square feet of Bay surface area and the anchors cover a relatively small amount of bottom area.

Sections 30230, 30231, and 30233 of the Coastal Act address the protection of the marine environment from the placement of fill, including fill for aquaculture operations. Section 30230 of the Coastal Act provides as follows, in applicable part:

(7) Restoration purposes.

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

...

(c) In addition to the other provisions of this section, diking, filling, or dredging in existing estuaries and wetlands shall maintain or enhance the functional capacity of the wetland or estuary....

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

a. that the purpose of the fill is for one of eight uses allowed under Section 30233;

b. that the project has no feasible less environmentally damaging alternative;

c. that feasible mitigation measures to minimize the adverse impacts of the proposed project on habitat values have been provided; and

d. that the biological productivity and functional capacity of the habitat shall be maintained and enhanced where feasible.

A. Permissible Use for Fill

The first test set forth above is that any proposed fill must be for an allowable purpose. The use of the fill, aquaculture, is a resource dependent use that depends on the resources of the bay's waters to function at all. Fill is permissible for such uses under Section 30233(a)(8).

B. Alternatives

The second test set forth by the Commission's fill policies is that the proposed fill project must have no feasible less environmentally damaging alternative.

The no project alternative would involve removing the nursery which has only been authorized to date as a temporary facility. However, the no project alternative would not accomplish the project objectives of growing clam seed for Humboldt Bay aquaculture activities and thus is not a feasible alternative.

A clam seed nursery must provide an environment where the clam's are immersed in sea water that is similar in terms of salinity, temperature, nutrient content, etc. to the sea water found where clam's grow naturally. As shown in Exhibit 4, the applicant's nursery suspends trays of clam seed into the water in stacks from underneath the nursery rafts. The nursery provides for a

organisms. The minor loss of soft bottom habitat area displaced by the anchors is not proposed to be offset by the removal of other material. In previous permit actions, the Commission has often determined that piles, anchors, and similar small structures often provide new habitat of their own that offsets the detriment to habitat values caused by the loss of soft bottom habitat from the installation of these structures. The hard surfaces of the structures provide new habitat for such invertebrates as barnacles and mussels, and for isopods, algae, soft bodied worms and insect larvae. In such cases, where the amount of new hard habitat created is commensurate with the amount of soft bottom habitat area lost, the Commission has often not required mitigation for loss of soft bottom habitat. The Commission similarly finds in this case that the creation of new hard habitat, which is relatively limited within Humboldt Bay, will offset the relative minor loss of soft bottom habitat area, and no additional mitigation for loss of soft-bottom habitat is necessary.

ii. Apparatus Hazards. The rafts of the clam seed nursery could create a hazard to boaters and habitat areas should the nursery ever be abandoned and the rafts left in place in an unmaintained state. Deterioration, storms, and currents could eventually dislodge or break apart the rafts, and the debris could float to other parts of the Bay where it could adversely affect boaters and habitat areas. To prevent such an impact from occurring, the Commission attaches Special Condition No. 2 which requires the applicant or its assignees to apply for a coastal development permit for removal of the rafts and the anchoring system should the clam seed nursery ever be abandoned. In its review of such an application, the Commission could impose conditions to ensure that the apparatus is removed in a manner that will not adversely affect boater safety and habitat values.

iii. Displacement of Native Species.

In his letter of March 8, 1997 (see Exhibit 5) Chad Roberts of the Redwood Region Audobon Society raises the concern that growing the Manila clam species in the nursery could lead to the introduction of this non-native clam species into Humboldt Bay, to the detriment of native clam species and other native organisms that might be out competed by the Manila clam and eventually eliminated. Such a result would reduce the biological diversity of the Humboldt Bay estuary, and thereby threaten the long-term sustainability of the internationally important Humboldt Bay estuary ecosystem. Mr. Roberts suggest several specific measures that should be taken by the applicant to minimize this potential impact.

In response to Mr. Robert's letter, the applicant has submitted information demonstrating that Tapes philippinarum was first introduced into Humboldt Bay many years ago and which suggests that the impact of the introduction of the clams has been minimal (See Exhibit 7). Among the documents submitted by the applicant is an excerpt from Department of Fish and Game Fish Bulletin No. 90 published in 1953, entitled, "Common Marine Bivalves of California," which indicates that the Japanese littleneck was first introduced on the west coast

2. During washdown of seed or equipment, screeens will be used to contain all clams regardless of size and any culls will be discarded in onshore trash containers.

3) All clam seed will be removed from the clam raft system and shipped back to Washington for planting by Coast, or sold to other shellfish customers prior to reaching 12mm shell size, at which size they are not sexually mature."

The use of management practices to avoid spillage of clam seed into the Bay during grading and handling, using screens during washing operations and disposing of any collected clams in onshore trash containers, and shipping of all of the clams grown in the nursery back to Washington before they reach sexual maturity are feasible mitigation measures that will greatly minimize the number of Manila clams that could be introduced into Humboldt Bay via the clam seed nursery project. Given that the Manila clam population that already exist in the estuary has not had a significant impact on native species and biodiversity, and given that the numbers of addition Manila clams that would be introduced by the proposed project will be minimized by the mitigation measures proposed by the applicant, the Commission finds that the proposed project will not result in a significant impact on native species and biodiversity. Therefore, the Commission finds that feasible mitigation measures to minimize the adverse impact of displacing native species and reducing biodiversity will be provided by the project.

To ensure that the nursery is developed and operated in the manner proposed, the Commission attaches Special Condition No. 3 which states that any deviation in the development and operation of the proposed clam seed nursery from the what the applicant has proposed shall require an amendment of Coastal Development Permit 1-96-69. The condition will ensure that the Commission will have the opportunity to review any deviation from the measures proposed to minimize impacts on native species and biodiversity for conformance with the Coastal Act.

The Commission finds, that as conditioned, the proposed project is consistent with the fourth test set forth by Sections 30230, 30231, and 30233 of the Coastal Act for approvable fill projects in that adequate mitigation for the adverse environmental effects of the proposed project will be provided.

D. Maintenance and Enhancement of Estuarine Habitat Values.

The fourth general limitation set by Sections 30230, 30231, and 30233 for fill projects is that any proposed fill project shall maintain and enhance the biological productivity and functional capacity of the habitat, where feasible.

As stated by Chad Roberts in his letter to Commission staff dated March 8, 1997, "Humboldt Bay is documented (The ecology of Humboldt Bay, California: an estuarine profile; Barnhart and others 1992: U.S. Fish & Wildlife Service Biological Report) as the most biologically diverse estuary along the west

Therefore, the Commission finds that the proposed development is consistent with Section 30251 of the Coastal Act as the clam seed nursery is visually compatible with the character of its setting and will avoid significant adverse impacts on visual resources.

4. Public Access.

Coastal Act Section 30210 requires that maximum public access opportunities be provided when consistent with public safety, private property rights, and natural resource protection. Coastal Act Section 30211 requires that development not interfere with the public's right of access to the sea where acquired through use. Coastal Act Section 30212 requires that public access from the nearest public roadway to the shoreline and along the coast be provided in new development projects, except in certain instances, as when adequate access exists nearby. In applying Sections 30210, 30211, and 30212, the Commission is limited by the need to show that any denial of a permit application based on those sections, or any decision to grant a permit subject to special conditions requiring public access, is necessary to avoid or offset a project's adverse impact on existing or potential public access.

The proposed project does not have any significant adverse impact on public access. As the rafts are anchored approximately half a mile offshore and the applicant uses existing boat docking facilities to access the nursery by boat, the clam seed nursery has no affect on shoreline public access. In addition, the nursery will not adversely affect boat access on Humboldt Bay. The nursery is anchored outside of any channel within Humboldt Bay that is navigable by large vessels. Given the small size of the nursery relative to the expanse of Humboldt Bay, the nursery also does not appreciably diminish the water surface area of the Bay available for sea kayakers and other shallow draft small craft. Furthermore, the proposed project will not increase the burden on existing public access facilities as it will not increase the density of development around Humboldt Bay and thereby increase the number of people seeking use of public access facilities.

Therefore, as no significant adverse impacts of the proposed development on public access have been identified, the Commission finds that it is not appropriate to require public access through a special condition of this permit and finds that the project as proposed is consistent with Sections 30210, 30211, and 30212 of the Coastal Act.

5. U.S. Army Corps of Engineers Approval.

The project requires review and approval by the U.S. Army Corps of Engineers. Pursuant to the Federal Coastal Zone Management Act, any permit issued by a federal agency for activities that affect the coastal zone must be consistent with the coastal zone management program for that state. Under agreements between the Coastal Commission and the U.S. Army Corps of Engineers, the Corps will not issue a permit until the Coastal Commission approves a federal consistency certification for the project or approves a permit. To ensure

7. California Environmental Quality Act (CEQA).

Section 13096 of the Commission's administrative regulations requires Commission approval of Coastal Development Permit applications to be supported by a finding showing the application, as modified by any conditions of approval, to be consistent with any applicable requirements of the California Environmental Quality Act (CEQA). Section 21080.5(d)(2)(i) of CEQA prohibits a proposed development from being approved 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.

As discussed above, the project has been mitigated to avoid significant impacts on the estuarine environment of Humboldt Bay. As conditioned, the proposed development with the proposed amendment will not have a significant adverse effect on the environment, within the meaning of CEQA.

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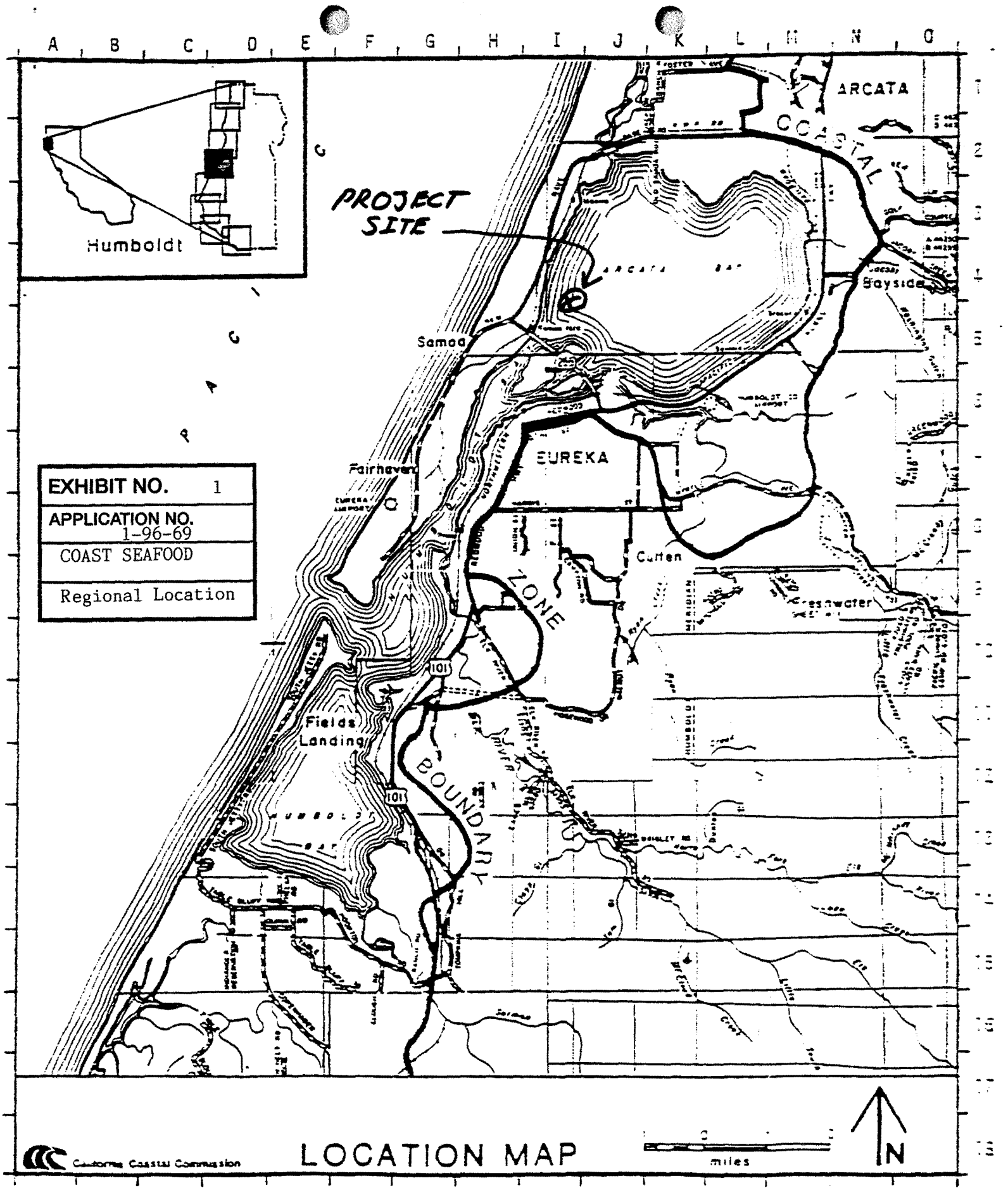
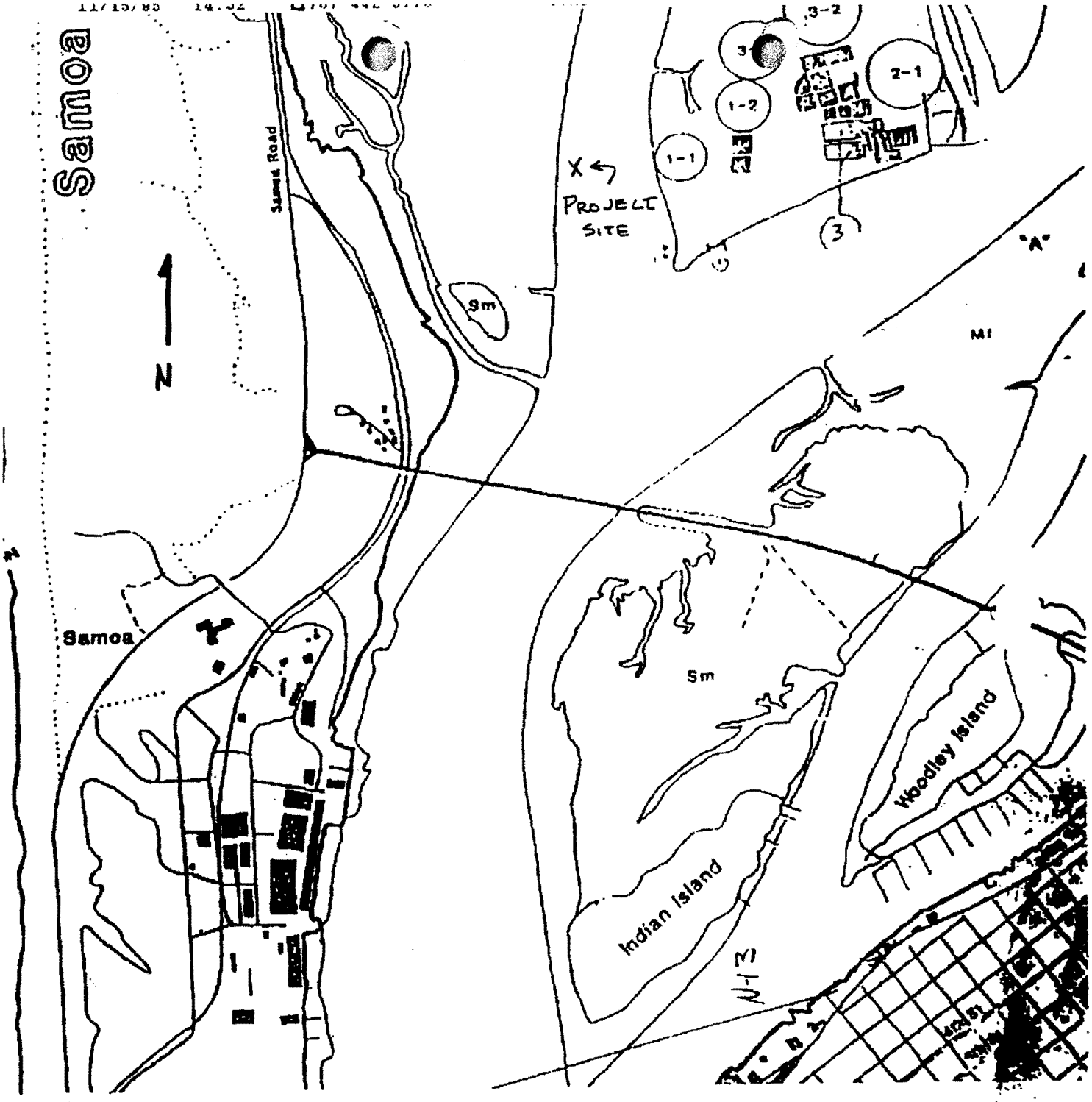


County of Humboldt

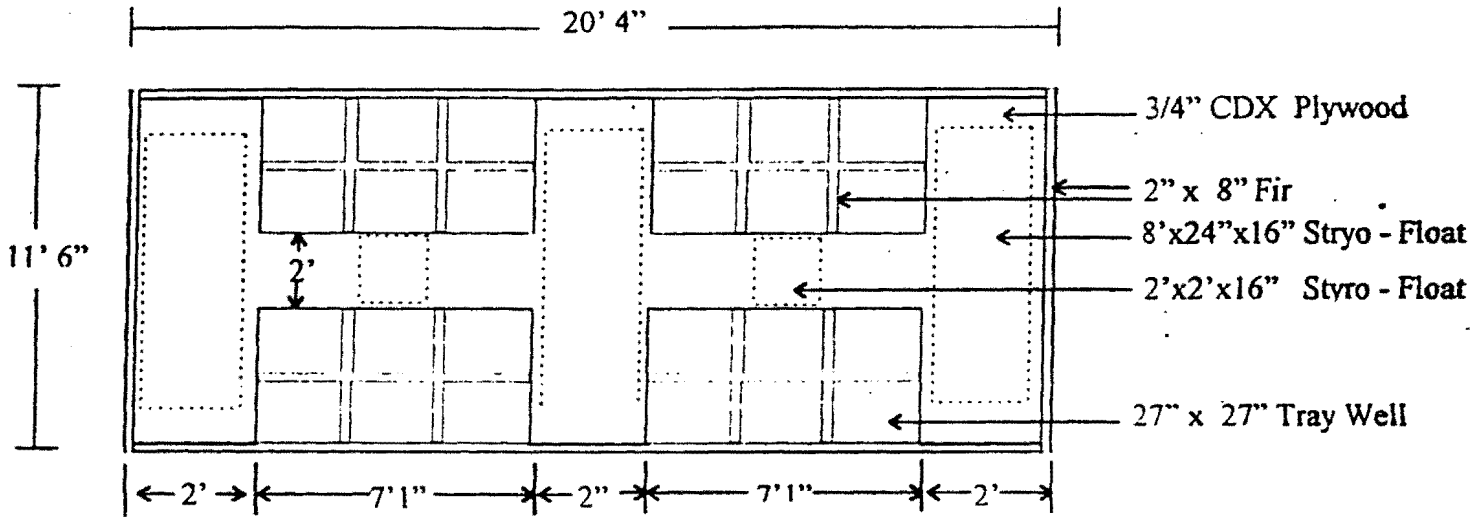
Sheet 4 of 8



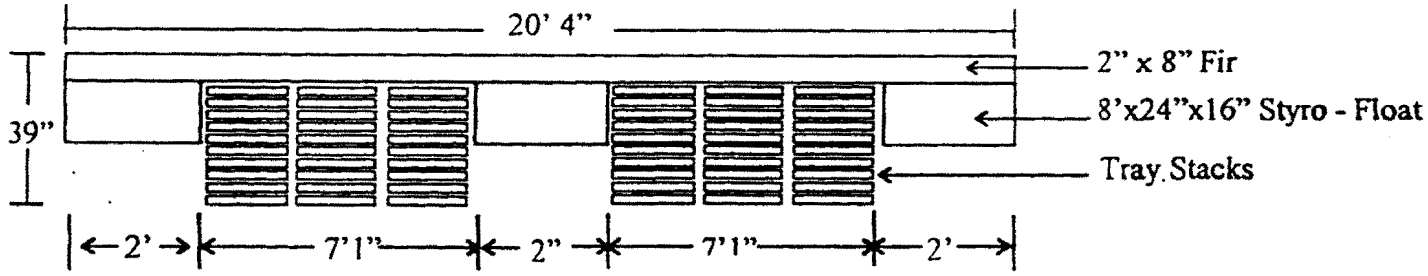
COAST SEAFOODS COMPANY CLAM FLOATS

EXHIBIT NO. 2
APPLICATION NO. 1-96-69
COAST SEAFOOD
Vicinity Maps (2 of 2)

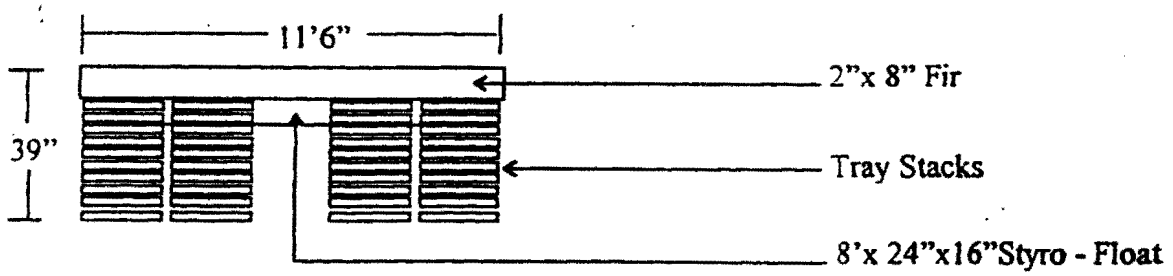
Coast Seafoods Company
Clam Seed Nursery Raft Design



Clam Seed Raft - Top View



Clam Seed Raft - Side View



Clam Seed Raft - End View

EXHIBIT NO. 4
APPLICATION NO. 1-96-69
COAST SEAFOOD
Raft Design

EXHIBIT NO. 5
APPLICATION NO.
1-96-69 COAST SEAFOOD
CHAD ROBERTS LETTER (1 OF 2)

REDWOOD REGION AUDUBON SOCIETY

P.O. BOX 1054, EUREKA, CALIFORNIA 95502

Bob Merrill
North Coast District
California Coastal Commission
45 Fremont Street Suite 2000
San Francisco CA 94105-2219

8 March 1997

Subject: Coast Seafood Clam Nursery, Application No. 1-96-69

Dear Mr. Merrill:

Thank you for notifying us of this pending application. It raises an important concern which we believe the Commission needs to address in carrying out its public trust responsibility under provisions of the Coastal Act. In particular, the contents of sections 30230 and 30231 establish a requirement for maintaining "healthy populations of all species of marine organisms adequate for long-term ... scientific and educational purposes," and for maintaining "biological productivity." A primary biological aspect of maintaining these resources is maintaining biological diversity, especially the natural diversity present in California's coastal waters and estuaries. Experience in the preceding decades with estuarine biodiversity erosion (such as has been well documented in San Francisco Bay) because of introduced or exotic marine invertebrates clearly indicates a need for guaranteeing that activities the Commission proposes to approve will not contribute to this problem.

Humboldt Bay is documented (*The ecology of Humboldt Bay, California: an estuarine profile*; Barnhart and others 1992; U.S. Fish & Wildlife Service *Biological Report* 1) as the most biologically diverse estuary along the west coast of North America at the present time (largely because of the effective destruction of what was likely to have been the more diverse estuarine ecosystem in San Francisco Bay). We have, in conjunction with the efforts of other conservation interests and with the agreement of the shipping industry and the Humboldt Bay Harbor, Recreation and Conservation District, been successful in establishing a policy for Humboldt Bay of ballast water exchanges outside of the Bay, expressly in order to avoid introducing exotic invertebrates and plants into the Bay. It is necessary that the Commission acknowledge this concern with respect to the proposed clam nursery project, by including conditions which will avoid the potential for establishing the exotic Manila clam in Humboldt Bay sediments.

While the applicant may feel confident that the clams would not establish themselves locally even if clams were inadvertently released, that confidence cannot be shared either by the Commission or by those of us with a knowledge of the possible impacts of establishing exotic species in west coast estuaries. The clam aquaculture project has a clear potential for introducing viable clams into the waters of the Bay. To avoid such an occurrence, the application needs to be conditioned in a manner which makes the release or escape of these organisms less likely.

EXHIBIT NO. 6
APPLICATION NO. 1-96-69
COAST SEAFOOD
TIM McKAY LETTER (1 OF 10)

the Northcoast Environmental Center

707/822-6918 fax 822-0827 or nec@igc.apc.org

11 March 1997

RE: Coast Seafoods: App. # 1-96-69 (TH 16B)

The California Coastal Commission
45 Fremont Street, Suite 2000
San Francisco CA 94105-2219

FAX: 415-904-5400
Attn: Lita Castillo

Gentlepersons:

We only learned yesterday, through an article in the local paper, that Coast Seafoods Company is applying for a permanent permit to operate clam seed nursery rafts in Humboldt Bay.

We object to your granting this application (referenced above) at this time because this is part of a larger operation operated by Coast Seafoods in Humboldt Bay. This operation has never undergone California Environmental Quality Act (CEQA) review and is, to the best of our knowledge, in violation of U.S. Army Corps. of Engineers (USACE) Clean Water Act 404 permit regulations and various California Department of Fish and Game code sections pertaining to the execution of Coast Seafoods' 1974 depredation permit and the disturbance of eel grass beds in the operation of its oyster ground culture on some 500 acres of Humboldt Bay bottom.

We have pursued this issue before the California Fish and Game Commission (see attached exhibits), although people concerned locally have not been able to elicit a clear response from the Commission about what actions it took more than a month after the February 6 Monterey meeting. There apparently are no available staff reports and very little open procedure that lets the public into the Commission's process.

It seems more than ironic that pro-development interests have put activities on wildlife refuges through the "environmental process ringer" while Coast Seafoods has been able to routinely and heavily manipulate the ecology of Humboldt Bay with virtually no public oversight. It is rumored that John Petrie, the owner of Coast Seafoods, who lives in Washington State, is a friend of U.S.

EXHIBIT NO. 6
APPLICATION NO. 1-96-69
COAST SEAFOOD
TIM McKAY LETTER (3 OF 10)

The Northcoast Environmental Center
879 9th Street
Arcata CA 95521
707/822-6918 FAX 822-082

For Immediate Release
December 4, 1996

Contact: Tim McKay

Sports Fishers and Conservation Groups Call for A Halt to Depredation Fishing

A coalition of local sports fishers and conservation groups, including the Northcoast Environmental Center and Redwood Region Audubon Society, will ask the California Fish and Game Commission to revoke a depredation permit issued for the ground culture oyster fishery in Humboldt Bay in 1974, when the body meets in Eureka on December 5.

Until recently the biological effects of many activities on the bay were largely unknown to the wider public. This summer, in the fishing column of one paper and on the front page of another local paper, it was reported that some local sports fishers were outraged over the observed incidental take of numerous California halibut in the bat ray trawl of the Coast Seafood Company.

There is disagreement as to how those halibut were disposed of, and there is disagreement as to how many other fish species have been taken in the bat ray trawl that is conducted under a depredation permit issued by the California Department of Fish and Game.

There is no disagreement, however, that under this 1974 depredation permit ten-of-thousands of bat rays (***Myliobatis californica***) and millions of rock crabs (***Cancer productus & C. antennarius***) have been destroyed. That this major destruction of biomass from Humboldt Bay has taken place for 20 years without any significant environmental study as to its impact on either the species involved, incidental species or the over-all ecology of Humboldt Bay is astounding!

The "ground culture" methods employed by Coast Seafood in raising oysters over several hundred acres of the north Humboldt Bay tidelands also have caused a decline in the density of the eelgrass beds there. Eelgrass (***Zostera marina***) is a unique keystone species of plant life that forms meadows in the bays and estuaries of northern shorelines around the world. The term keystone species is used to stress that this plant is a basic building block for a marine food chain that includes many organisms, species of fish and waterfowl. Although eelgrass occurs in esturaries from Baja California to Point Clarence, Alaska, Humboldt Bay supports is one of the three largest concentrations of eelgrass meadows on the West Coast. The productivity of eelgrass, in terms of its growthn rivals cultivated tropical agriculture.

Humboldt Bay has been long recognized as an important West Coast estuary, both for its contribution to the commerce and livelihoods of the people around Humboldt Bay; and because of its importance as a biological incubator for hundreds of fish and wildlife species.

Because these attributes are being diminished due to neglect NEC is asking the to five things to assure protection of the Bay:

The Northcoast Environmental Center
879 9th Street
Arcata CA 95521
707/822-6918 FAX 822-0827
5 December 1996

EXHIBIT NO. 6
APPLICATION NO. 1-96-69
COAST SEAFOOD
TIM McKAY LETTER (5 OF 10)

The California Fish and Game Commission
C/O Robert R. Treanor, Executive Director
POB 944209
Sacramento CA 94244-2090 FAX 916/653-1856

RE: Coast Seafood Company, depredation permit, related aquaculture activities and commercial fisheries in Humboldt Bay.

From: Tim McKay, Executive Director, Northcoast Environmental Center

Greetings and Welcome to the Humboldt Bay Area:

Humboldt Bay has been long recognized as an important West Coast estuary, both for its contribution to the commerce and livelihoods of the people around Humboldt Bay; and because of its importance as a biological incubator for hundreds of fish and wildlife species.

Until recently the biological effects of many activities on the bay were largely unknown to the wider public. This summer, in the fishing column of one paper and on the front page of another local newspaper, it was written that some local sports fishers were outraged over the observed incidental take of numerous California halibut in the bat ray trawl of the Coast Seafood Company.

There is disagreement as to how those halibut were disposed of, and there is disagreement as to how many other fish species have been taken in the bat ray trawl that is conducted under a depredation permit issued by the California Department of Fish and Game in 1974.

There is no disagreement that under this 1974 depredation permit ten-of-thousands of bat rays (***Myllobatis californica***) and millions of rock crabs (***Cancer productus & C. antennarius***) have been destroyed. That this major destruction of biomass from Humboldt Bay has taken place for 20 years without any significant environmental study as to its impact on either the species involved, incidental species or the over-all ecology of Humboldt Bay is astounding!

The "ground culture" methods employed by Coast Seafood in raising oysters over several hundred acres of the north Humboldt Bay tidelands also have caused a decline in the density of the eelgrass beds there. Eelgrass (***Zostera marina***) occurs on the Pacific Coast from Baja California to Point Clarence, Alaska, but its three largest West Coast concentrations are Padilla Bay in northern Washington, Willapa Bay and Grays Harbor in southwestern Washington and Humboldt Bay, here in Northern

scoter, red-breasted merganser, great blue heron, kildeer, plover, whimbrel, dunlin, sandpipers, dowitchers, turnstones, yellowlegs, phalaropes, gulls, terns, pigeon guillemots and many other species. As many as 125,000 ducks and 35,000 brant are known to winter in Humboldt Bay, while the number of shore birds may exceed one-million.

As many as 70,000 or more brant have utilized Humboldt Bay decades ago and many efforts are being made to restore and enhance this species' population. Brown pelican is another environmentally sensitive species that uses Humboldt Bay, and I have personally observed Hundreds of pelicans inside the Bay feeding on "baitfish".

The wanton waste of eelgrass must have a collateral effect on many many species of Humboldt Bay wildlife.

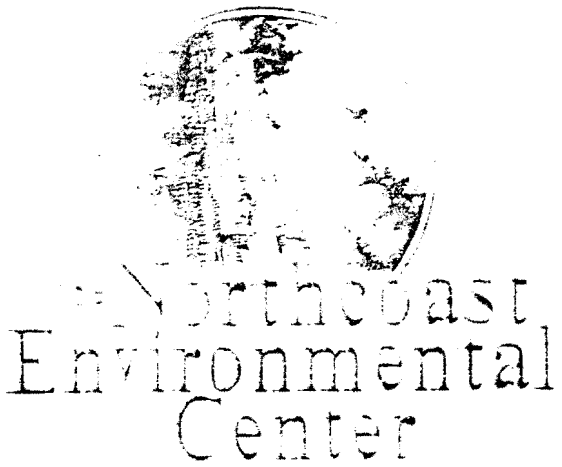
We understand that Coast Seafood believes that its activities, and its depredation permit in particular, are not subject to review under the California Environmental Quality Act (CEQA) because it came into being prior to the passage of CEQA. There is some disagreement on this issue. We request that the Fish and Game Commission direct its counsel to provide an opinion on whether Coast Seafood is subject to the terms and provisions of CEQA.

We believe that the depredation permit issued by the Department of fish and Game for Coast Seafood has been abused and has resulted in the incidental take and wanton waste of many fish species, including the green sturgeon (***Acipenser medirostris***). Green sturgeon has declined significantly in California, and in the Klamath River system in particular where green sturgeon fishing is prohibited. We recommend that the Fish and Game Commission close Humboldt Bay to green sturgeon fishing and begin a process of placing the green sturgeon on the state's list the threatened and endangered species.

In many parts of the world sharks and rays are in significant decline. This is due in part to the bad image of sharks as human killing predators, and the passe' notion of the worthlessness of rays as a commercially viable fishery. Sharks and rays do have a place in the larger marine and estuarine ecosystem. That these species, and many others, come into Humboldt Bay with great regularity is an indicator of the over all productivity of the bay. Humboldt Bay is apparently the only major estuary on the West Coast that still has a largely native assemblage of estuarine species. San Francisco Bay is greatly affected by populations of exotic marine organisms from around the world. We recommend that the Fish and Game Commission develop an action plan for preserving the natural biodiversity of Humboldt Bay. Section 1755 of the Fish and Game Code spells out that it is state policy to, in effect, maintain populations of all species of plants and animals at optimum levels and to perpetuate these species for their intrinsic and ecological values. Further, sections 2051 and 2052 of the Fish and Game Code states that "The adverse modification of habitat is a significant threat leading to the listing of species," and that "It is the policy of the state to protect, conserve, enhance and restore endangered species and their habitats."

The activities of Coast Seafood, through their "ground culture" and through exercising their depredation permit have an adverse effect on optimum levels of native

EXHIBIT NO. 6
APPLICATION NO. 1-96-69
COAST SEAFOOD
TIM McKAY LETTER



FOR RELEASE
February 3, 1997

Contact: Tim McKay
707/822-6918

ENVIRONMENTAL GROUPS CALL FOR AN END TO BAT RAY SLAUGHTER

Sports fishers and environmentalists will travel to Monterey on February 6 to urge the California Fish and Game Commission to end a 22 year old permit that allows the Coast Seafoods Company (Coast) to kill bat rays and rock crabs. The Commission heard the request at its December 5 meeting in Eureka but failed to take action at that time seeking more time to study the matter.

A coalition of local sports fishers and conservation groups, including the Northcoast Environmental Center (NEC) and Redwood Region Audubon Society want the Commission to revoke a depredation permit issued for the ground culture oyster fishery in Humboldt Bay in 1974.

Until recently the biological effects of many activities on the bay were largely unknown to the wider public. The trawl for bat rays had been conducted at night, but this past summer local sports fishers observed a rare daytime trawl and were outraged by the incidental take of numerous California halibut.

Tim McKay, director of the Northcoast Environmental Center, says that "The incidental take of California halibut is only the 'tip of the iceberg,' many other species have been killed in the bat ray trawl, including the green sturgeon that is now so rare that it is likely to be listed under the Endangered Species Act (ESA) in the foreseeable future.

"We've requested records of incidental take in the trawl from the Department of Fish and Game, but the department was not able to respond to our request. The permit issued to Coast requires that they keep records of how many target animals they kill as well as the incidental species taken, and they are required to report those results to Fish and Game annually.

"There may be disagreement over how many other species have been killed, but there is no disagreement that under this 1974 depredation permit tens-of-thousands of bat rays (Myliobatis californica) and millions of rock crabs (Cancer productus and C. antennarius) have been destroyed. That this major destruction of biomass from Humboldt Bay has taken place for more than 20 years without any significant environmental study as to its impact on either the species involved, incidental species or the over-all ecology of Humboldt Bay is astounding.

"The "ground culture" methods employed by Coast Seafood in raising oysters over several hundred acres of the north Humboldt Bay tidelands, also have caused a decline in the density of the eelgrass beds there. Eelgrass (Zostera marina) is a unique keystone species of plant life that forms meadows in the bays and estuaries of northern shorelines around the world. The term keystone species is used to stress that this plant is a basic building block for a marine food chain that includes many organisms, species of fish, and waterfowl. Although eelgrass occurs in estuaries from Baja California to Point Clarence, Alaska, Humboldt Bay supports one of the three largest

MORE

F. ROBERT STUDDERT
ATTORNEY AT LAW

May 23, 1997

REPLY TO SAN RAFAEL

Robert S. Merrill
California Coastal Commission
45 Fremont Street, Suite 2000
San Francisco, CA 94105-2219

Re: Revised # 1-96-069
Coast Seafoods Company

Dear Bob:

This will further confirm our telephone conversation of May 22, 1997 wherein I advised that Coast Seafoods Company wishes to amend its application in the captioned project to include the three measures set forth in Mr. Jim Donaldson's letter of May 16, 1997 as part of the project description. A copy of the letter is attached hereto for ease of reference. It is our further understanding that the revised Staff Report, presently being prepared, will reflect this amendment to the application. Mr. Donaldson and I will be present at the June meeting in San Rafael.

Thank you for your assistance and cooperation in preparing this matter.

Very truly yours,

F. Robert Studdert

Encl.

cc: A. John Petrie - w/o encl.
Coast Seafoods Company - Bellevue Office

Jim Donaldson - w/o encl.
Coast Seafoods Company - Quilcene Office

Greg Dale - w/o encl.
Coast Seafoods Company - Eureka Office

FRS:sjs
CSC 12/57

EXHIBIT NO. 7
APPLICATION NO. 1-96-69
COAST SEAFOOD
APPLICANT'S RESPONSE (1 OF 30)

3) All clam seed will be removed from the clam raft system and shipped back to Washington for planting by Coast, or sold to other shellfish customers prior to reaching 12mm shell size, at which size they are not sexually mature.

Thank you for the opportunity to summarize questions relating to the introduction of Manila clams into Humboldt Bay and to some concerns that have been raised by others.

Sincerely,

Jim Donaldson
Hatchery Manager

cc:Robert Studdert -attorney
John Petrie -pres. Coast Seafoods

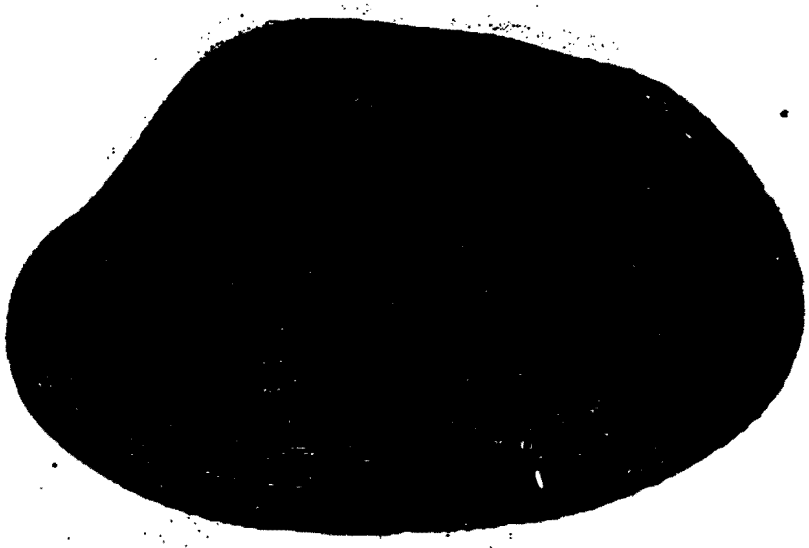


FIGURE 23

JAPANESE LITTLENECK
Tapes semidecussata Reeve 1864

Description: Elongate, oval valves ornamented by well defined, radiating ribs and less prominent, concentric ridges. Radiating ribs particularly heavy and conspicuous at posterior end. Inside ventral margins of shell smooth. Pallial sinus extending less than half-way to anterior muscle scar. Hinge ligament external, prominent. Color highly variable, mostly yellowish or buff with geometric patterns of wavy brown or black lines and blotches on sides. Attains a length of three inches. Differs from other littlenecks by short pallial sinus, extending less than half way to anterior muscle scar, and from chiones in the very prominent radiating ribs and rounded pallial sinus. There are many differences of opinion among systematists on the proper genus in which to place this clam. It has been called *Tapes*, *Venerupis*, *Paphis* and *Protothaca* but seems best fitted to *Tapes*.

Range: British Columbia to Elkhorn Slough, California.

Habits: Mostly found in coarse, sandy mud of bays, sloughs and estuaries seldom more than an inch or two beneath the surface. This clam is not native to California but was accidentally introduced into San Francisco Bay around 1930. Whether it came in with seed of the giant Pacific oyster or was purposely brought in by a Japanese is not known. It is a welcome addition to our fauna and it is hoped it can be introduced into Southern California bays at a future date.

Use: Highly esteemed for food and much sought in San Francisco Bay where it is extremely common. Due to pollution in San Francisco Bay extreme care should be taken to cleanse these clams properly before eating.

Other name: Japanese cockle.

Distribution and Abundance of Fishes and Invertebrates in West Coast Estuaries, Volume I: Data Summaries

Project Team

Mark E. Monaco* **and David M. Nelson**
Strategic Assessment Branch
Ocean Assessments Division
Office of Oceanography and Marine Assessment
National Ocean Service
Rockville, MD 20852

Robert L. Emmett and Susan A. Hinton
Point Adams Biological Field Station
Coastal Zone and Estuarine Studies Division
Northwest Fisheries Center
National Marine Fisheries Service
Hammond, OR 97121

ELMR Report Number 4

March 1990

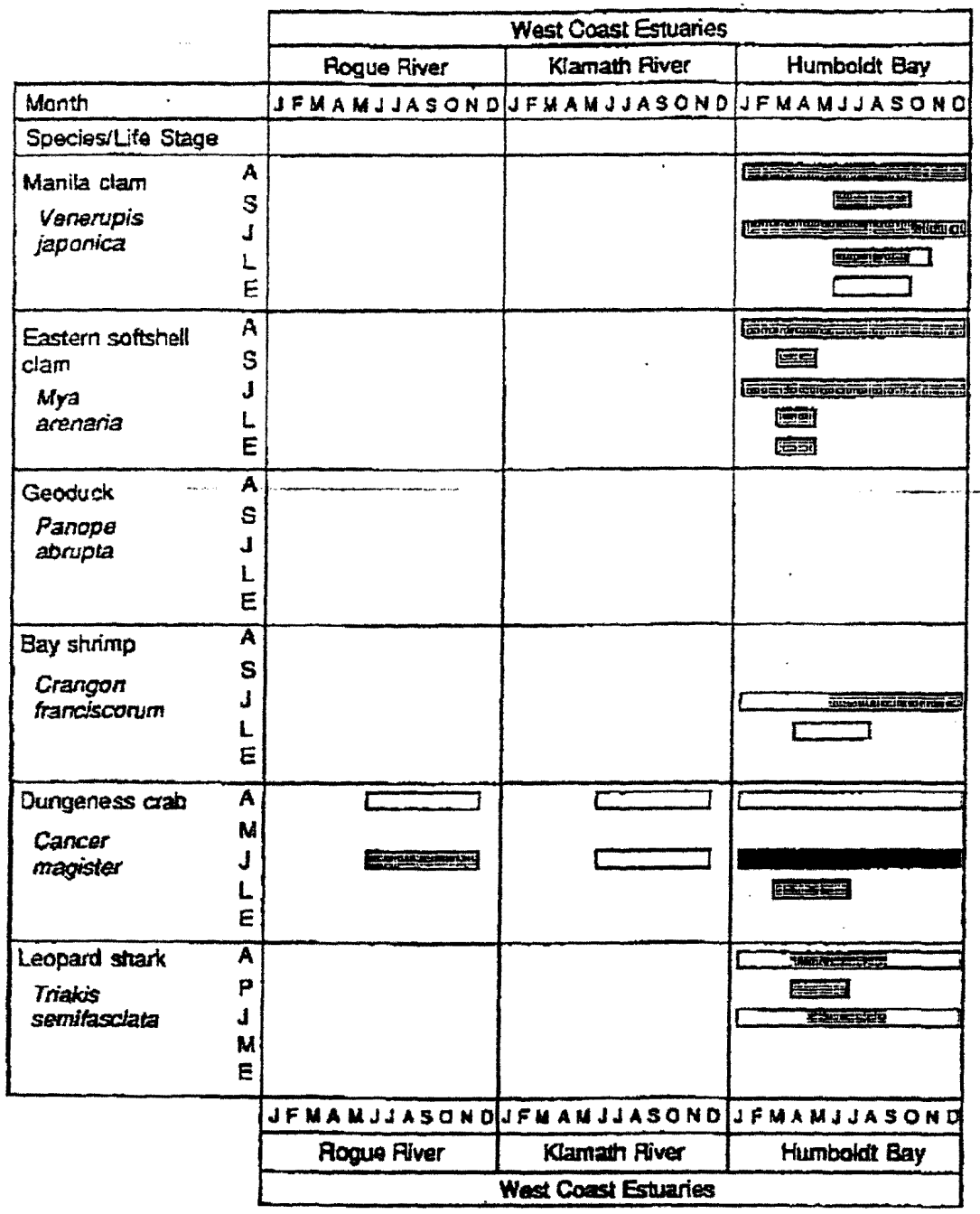
* Contact for copies of this report.

Acknowledgments
The authors thank those individuals who provided information and reviewed the data in this report, and the many other scientists and managers who provided contacts and references. They also thank Susan E. Holliday for her assistance in preparing the data summaries.

This report should be cited as:
Monaco, M. E., et al. 1990. Distribution and Abundance of Fishes and Invertebrates in West Coast Estuaries, Volume I: Data Summaries. ELMR Rpt. No. 4. Strategic Assessment Branch, NOS/NOAA, Rockville, MD. 240 p.

Data Summary Table: Temporal Distribution

Table 3 (continued).



Relative Abundance

- Highly Abundant
- Abundant
- Common
- Blank — Not present, Rare, or No Data Available

Life Stage

- A - Adults
- S - Spawning
- J - Juveniles
- L - Larvae
- E - Eggs
- P - Parturition
- M - Mating

Table 5 (continued). Presence/absence of 47 species in west coast estuaries.

Species		Klamath River T	Klamath River M	Klamath River S	Humboldt Bay T	Humboldt Bay M	Humboldt Bay S	Eel River T	Eel River M	Eel River S	Tomales Bay T	Tomales Bay M	Tomales Bay S	Cent. S. Fran/ San Pablo/ Suisun Bays T	Cent. S. Fran/ San Pablo/ Suisun Bays M	Cent. S. Fran/ San Pablo/ Suisun Bays S	South San Francisco Bay *	South San Francisco Bay M	South San Francisco Bay S	Elkhorn Slough *	Elkhorn Slough *	Elkhorn Slough S	Morro Bay *	Morro Bay *	Morro Bay S
Blue mussel	A					√	√			√					√	√		√	√			√			√
Mytilus	J					√	√			√					√	√		√	√			√			√
edulis	L					√	√			√					√	√		√	√			√			√
Pacific oyster	A					√	√					√				√			√			√			√
Crassostrea	J					√	√					√				√			√			√			√
gigas	L																								
Horseneck clam	A					√	√								√	√		√	√			√			√
Tresus	J					√	√								√	√		√	√			√			√
capax	L					√	√								√	√		√	√			√			√
Pacific gaper	A					√	√					√			√	√		√	√		√	√			√
Tresus	J					√	√					√			√	√		√	√		√	√			√
nuttali	L					√	√					√			√	√		√	√		√	√			√
California jackknife clam	A					√	√					√			√	√		√	√		√	√			√
Tagelus	J					√	√					√			√	√		√	√		√	√			√
californianus	L					√	√					√			√	√		√	√		√	√			√
Pacific littleneck clam	A					√	√					√			√	√		√	√		√	√			√
Protothaca	J					√	√					√			√	√		√	√		√	√			√
staminea	L					√	√					√			√	√		√	√		√	√			√
Manila (Japanese) clam	A					√	√					√			√	√		√	√		√	√			
Venerupis	J					√	√					√			√	√		√	√		√	√			
japonica	L					√	√					√			√	√		√	√		√	√			
Softshell clam	A					√	√		√			√			√	√		√	√		√	√			√
Mya	J					√	√		√			√			√	√		√	√		√	√			√
arenaria	L					√	√		√			√			√	√		√	√		√	√			√
Geoduck	A						√																		√
Panope	J						√																		√
abrupta	L						√																		√
Bay shrimp	A					√	√		√	√		√		√	√			√	√						
Crangon	J					√	√	√	√	√		√		√	√			√	√						
franciscorum	L					√	√		√	√		√			√			√	√						
Dungeness crab	A	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√		√	√		√	√
Cancer	J	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√		√	√		√	√
magister	L				√	√	√			√															
Leopard shark	A					√	√					√			√	√		√	√		√	√			√
Triakis	J					√	√					√			√	√		√	√		√	√			√
semifasciata	P																								√
Green sturgeon	A	√	√	√		√	√	√	√	√				√	√	√		√	√						
Acipenser	J	√	√	√		√	√	√	√	√				√	√	√		√	√						
medirostris	L													√											
White sturgeon	A			√										√	√	√		√	√						
Acipenser	J	√	√	√		√			√					√	√	√		√	√						
transmontanus	L													√											
American shad	A	√	√	√				√	√	√				√	√	√									
Alosa	J	√	√	√		√		√	√	√				√	√	√									
sapidissima	L																								
Pacific herring	A			√		√	√		√	√		√			√	√		√	√			√			√
Clupea	J		√	√		√	√		√	√		√			√	√		√	√			√			√
pallasi	L					√	√		√	√		√			√	√		√	√			√			√
Deepbody anchovy	A																								
Anchoa	J																								
compressa	L																								
Slough anchovy	A																								
Anchoa	J																								
delicatissima	L																								
Northern anchovy	A	√	√	√		√	√		√	√		√			√	√		√	√			√			√
Engraulis	J	√	√	√		√	√		√	√		√			√	√		√	√			√			√
mordax	L		√	√		√	√		√	√		√			√	√		√	√			√			√
		T	M	S	T	M	S	T	M	S	T	M	S	T	M	S	*	M	S	*	*	S	*	*	S
		Klamath River			Humboldt Bay			Eel River			Tomales Bay			Cent. S. Fran/ San Pablo/ Suisun Bays			South San Francisco Bay			Elkhorn Slough			Morro Bay		

Legend:
T = Tidal fresh zone
M = Mixing zone
S = Seawater zone
* = Salinity zone is not present

A = Adults
J = Juveniles
L = Larvae

√ = Species / lifestage is present
Blank = Species / lifestage is not present

PACIFIC COAST

By Bayard H. McConnaughey and Evelyn McConnaughey

Birds
Miklos D. F. Udvardy, Professor of Biological Sciences, California State University, Sacramento

Fishes, Whales, and Dolphins
Daniel W. Gotshall, Senior Marine Biologist, California Department of Fish and Game; and David K. Caldwell and Melba C. Caldwell, Research Scientists, University of Florida

Mammals
John O. Whitaker, Jr., Professor of Life Sciences, Indiana State University

Seashells
Harald A. Rehder, Zoologist Emeritus, Smithsonian Institution

Seashore Creatures
Norman A. Meinkoth, Professor Emeritus of Zoology, Swarthmore College

Wildflowers
Richard Spellenberg, Professor of Biology, New Mexico State University

Alfred A. Knopf, New York

7–14 cm) high. Large, obliquely and broadly
y inflated; umbones large; ligament strong.
ish white, covered with a thin, brownish
; with many narrow, slightly flattened ribs; ribs
-quarters of shell have small, pointed, triangular
d side; ribs on front quarter have spines on front
white; margin strongly grooved and scalloped.

y mud, in bays and quiet waters 35–450' (10.7–

, California, to S. Baja California.

: Coast this species is often called the Spiny
used locally for food. Although it is large it can
foot to leap out of the sand. Young shells are
transversely oval.

14 cm) long. Large, broadly ovate to almost
rately inflated; umbones curved forward, in
e; ligament long. Exterior grayish, covered
own to yellowish-brown, thin but rough
with occasional dark concentric bands;
ened ribs present, with transversely elongated
absent on narrower ribs at hind end. Interior
white; margin strongly scalloped.

l, intertidally to water 180' (55 m) deep.

ian Diego, California.

de is also known on the Pacific Coast as the
or Heart Cockle; it was once called *C. corbis*. It
fished in Puget Sound and British Columbia
kers and restaurants. Older shells become
e oblique. Alternating broad and narrow
eflect the tidal cycle. The broad bands are
period of high spring tides, when the animals
can feed for longer periods, and the narrow
ed during neap tides, when they are exposed
e. The related Fucan Cockle (*C. fraserum*) is
hat less inflated, and with ribs that are
d, and fewer in number. It occurs from Sitka,
terey, California.

.8 cm) long. Almost round, usually longer
erately compressed, with hind end slightly
gin angled by small umbones that are close,
row, pointed, sunken ligament area. Exterior

white, chalky, sometimes with small, brown zigzag marking
and covered with a brown, feltlike periostracum, which is
often worn and usually found only along margin; broad, low
flattened ribs with narrow interspaces present, ribs usually
worn. Interior white, flushed with yellow in center, often
grayish brown near finely toothed margin; hinge line curved,
broad, with many small teeth; small middle teeth absent in
large specimens.

Habitat
In sand or gravel, from low-tide line to water 300' (91 m)
deep.

Range
Alaska to S. California.

Comments
This species appears to be most abundant between southern
British Columbia and Oregon.

Common Pacific Littleneck
Protothaca staminea
35

1½–2⅝" (3.8–7 cm) long. Broadly and ovately oblong,
moderately inflated, thick-shelled; hind end broad; umbones
near front end; lunule obscure. Exterior yellowish white or
brownish, sometimes with large, brownish splotches or zigzag
markings and spots; with many axial riblets that are broadest
on hind slope; on front half, riblets are beaded by concentric
ridges, which are crowded near margin; on hind half, riblets
are crossed by irregular growth lines. Interior white; pallial
sinus deep, narrow, pointed; side teeth absent; margin finely
toothed.

Habitat
In coarse, sandy mud, in bays or on open coast near rocks and
rubble, in lower half of intertidal zone.

Range
Aleutian Islands, Alaska, to S. Baja California.

Comments
This species is much sought after by both commercial and
sport fishermen as a delicacy. In southern British Columbia
this clam grows to legal size, 1¼" (3 cm) long, in 3 years,
while in Alaska it takes 8 years. Hybrids between this species
and others seem to occur. The species name is a Latin adjective
meaning "full of threads," and refers to the fine, crowded
riblets. The related Toughsided Littleneck (*P. laciniata*),
sometimes listed as a subspecies or variety of the Common
Pacific Littleneck, is larger, reaching 3½" (8.9 cm) in length;
it is thicker, with stronger, fluted concentric ridges, and
occurs from Monterey Bay, California, to northern Baja
California.

Japanese Littleneck
Tapes japonica
36

1½–2½" (3.8–6.4 cm) long. Ovately oblong, inflated, thick-
shelled; lunule shallow, bordered by incised line. Exterior
grayish or brownish white, often with brown and whitish

010583

State of California
The Resources Agency
DEPARTMENT OF FISH AND GAME
1416 Ninth Street
Sacramento, California 95814
(916) 653-8262

LONG-TERM PERMIT TO IMPORT LIVE AQUATIC ANIMALS INTO CALIFORNIA

Authority and Reference: Section 236, Title 14, California Code of Regulations.

Name of Importer Coast Seafoods Phone (707) 442 2947

Mailing Address 25 Waterfront Drive
Street

Eureka Ca! 95501
City State Zip Code

Species to be Imported Tapes philippinarum (manila clams)

Source Coast Seafoods Quilcene Hatchery Phone (360) 765-3345
Name

P.O. Box 327
Street

Quilcene Wa. 98376
City State Zip Code

Destination and Use Humboldt Bay grow-out beds or Humboldt Bay floating nursery

Applicant's signature James Donaldson

Approved by Jack Hedrick for Debbie Issued by R.G. Collins
Chief, Wildlife Protection

Date issued 3/6/96 Title Sr. Biologist

FG 786 (Revised 1/92)

TOTAL P.02

SHELLFISH HEALTH CERTIFICATION

March 25, 1997

Reference No.: AQ97-10

Business address:

Coast Seafoods Company
Linger Longer Road
PO Box 327

Quilcene, WA 98376-0327 USA

Certificate specifications:

Sample Collection Date: February 10, 1997
Company code reference: P97-9
Species/stage examined: *Tapes philippinarum*, Manila clam larvae.

HISTORY: Clam larvae (13 day old) collected for certification from Quilcene, Washington hatchery facility.

EXAMINATION: Histological examination performed on 60 clams. Presumed 95% confidence of 5% detection level.

RESULTS: No significant known or certifiable infectious diseases of shellfish were found using histological methods. No histological evidence of the following diseases was observed:

Perkinsus spp. including *P. marinus and P atlanticus.*
Bonamia spp.
Marteilia spp.
Haplosporidum spp. plasmodia and spores.
Intracytoplasmic inclusion bodies and lesions consistent with bivalve iridovirus infections including hemocyte viruses (HIVD), gill viruses (GNVD) or OVVD.

Examination performed by and certified by:

Ralph Elston, PhD
Fish Pathologist
Certification No. 5,
Fish Health Section,
American Fisheries Society

PO Box 687, Carlsborg, WA 98324 USA
Tel: 360-683-2376 Fax: 360-683-2550 email: relston@olympus.net

March 25, 1997
date

Battelle
Pacific Northwest Division

Marine Sciences Laboratory
1529 West Sequim Bay Road
Sequim, Washington 98382-9099
Telephone (206) 683-4151
Facsimile (206) 681-3699

April 22, 1994

Mr. Jim Donaldson
Coast Seafoods Company
PO Box 327
Quilcene, WA 98376

Dear Mr. Donaldson:

I am writing in reference to manila clam (*Tapes philippinarum*) larvae which you submitted to the laboratory for pathological examination on April 14, 1994 (our reference number CMDC-94-6). I examined 100 of these clams using histological methods. I did not detect any evidence of significant infectious diseases of manila clam larvae.

Sincerely,

Ralph Elston
Senior Research Scientist
Fish Pathologist
Certification No. 5,
Fish Health Section
American Fisheries Society

Battelle
Pacific Northwest Division
Marine Sciences Laboratory
439 West Sequim Bay Road
Sequim, Washington 98382
(206) 683-4151

March 19, 1992

Mr. Jim Donaldson
Coast Oyster Company
PO Box 327
Quilcene, WA 98376

Dear Mr. Donaldson:

I am writing in reference to manila clam (*Tapes philippinarum*) larvae, which you submitted to the laboratory for pathological examination on March 4, 1992 (our reference number CMDC-92-2). I examined 100 of these clams using histological methods. About 20 percent of the individuals I examined had some degree of velar degeneration. I could not find any evidence of specific infectious agents associated with this condition using histological methods. Several such individuals had signs of bacterial infections, common in bivalve larvae. I did not detect any evidence of significant infectious diseases of this clam.

Sincerely,

Ralph Elston
Senior Research Scientist
Fish Pathologist
Certification No. 5,
Fish Health Section
American Fisheries Society

SHELLFISH HEALTH CERTIFICATION

February 18, 1997

Reference No.: AQ97-3

Business address:

Coast Seafoods Company
Linger Longer Road
PO Box 327

Quilcene, WA 98376-0327 USA

Certificate specifications:

Sample Collection Date: January 8, 1997
Company code reference: P97-1
Species/stage examined: *Tapes philippinarum*, Manila clam seed stock.

HISTORY: Seed clams (2 mm shell length) collected for certification from Quilcene, WA facility.

EXAMINATION: Histological examination performed on 60 clams. Presumed 95% confidence of 5% detection level.

RESULTS: No significant known or certifiable infectious diseases of shellfish were found using histological methods. No histological evidence of the following diseases was observed:

Perkinsus spp. including *P. marinus and P atlanticus.*
Bonamia spp.
Marteilia spp.
Haplosporidum spp. plasmodia and spores.
Intracytoplasmic inclusion bodies and lesions consistent with bivalve iridovirus infections including hemocyte viruses (HIVD), gill viruses (GNVD) or OVVD.

Examination performed by and certified by:

Ralph Elston, PhD
Fish Pathologist
Certification No. 5,
Fish Health Section,
American Fisheries Society

105 Waldo Road, Sequim WA 98382 USA
Tel: 360-683-2376 Fax: 360-683-2550 email: relston@olympus.net

February 18, 1997
date

SHELLFISH HEALTH CERTIFICATION

February 23, 1996

Reference No.: AQ96-3

Business address:

Coast Seafoods Company
Linger Longer Road
(PO Box 327)

Quilcene, WA 98376-0327 USA

Certificate specifications:

Sample Collection Date: February 7, 1996
Company code reference: P96-2
Species/stage examined: *Tapes philippinarum*, Manila clam seed.

HISTORY: Seed clams collected for certification from Quilcene, WA facility.

EXAMINATION: Histological examination performed on 60 seed clams. Presumed > 95% confidence of 2% detection level.

RESULTS: No significant known or certifiable infectious diseases of shellfish were found using histological methods. No histological evidence of the following diseases was observed:

Perkinsus spp. including *P. marinus and P atlanticus.*
Bonamia spp.
Marteilia spp.
Haplosporidium spp. plasmodia and spores.
Intracytoplasmic inclusion bodies and lesions consistent with bivalve iridovirus infections including hemocyte viruses (HIVD), gill viruses (GNVD) or OVVD.

Examination performed by and certified by:

Ralph Elston, PhD
Fish Pathologist
Certification No. 5,
Fish Health Section,
American Fisheries Society

February 23, 1996
date

105 Waldo Road, Sequim WA 98382 USA
Tel: 360-683-2376 Fax: 360-683-2550 email: relston@olympus.net

Battelle
Pacific Northwest Division
Marine Research Laboratory
439 West Sequim Bay Road
Sequim, Washington 98382
(206) 683-4151

July 13, 1989

Mr Tom Bettinger
Coast Oyster Co.
P.O. Box 327
Quilcene, WA 98376

Dear Mr. Bettinger:

I am writing to report the results of a sample of bivalve molluscs you have submitted to the laboratory for pathological examination. The results are as follows:

Reference number CMDC-89-20, Tapes philipinarum, juvenile seed clams, received 5-4-89 from Nahcotta nursery. 118 clams examined histologically. No evidence of infectious diseases was found.

Sincerely,

Ralph Elston
Senior Research Scientist