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Assembly WPW Committee
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State of California - The Resources Agency

ARNOLD SCHWARZENEGGER, Governor



DEPARTMENT OF FISH AND GAME
OFFICE OF THE GENERAL COUNSEL

1416 Ninth Street
Sacramento, CA 95814
<http://www.dfg.ca.gov>
(916) 654-3821



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March 25, 2008

The Honorable Jared Huffman
Assemblymember, Sixth District
Post Office Box 942849
State Capitol Building
Sacramento, California 94249-0006

Re: Drakes Bay Oyster Farm

Dear Assemblymember Huffman:

The purpose of this letter is to explain the position of the Department of Fish and Game (Department) regarding the ongoing issues between the Drakes Bay Oyster Farm and the Point Reyes National Seashore (PRNS). The Department Office of the General Counsel has provided the following discussion.

By way of review, in 1966 the Legislature granted to the United States certain tide and submerged lands in Drakes Estero for the PRNS. This grant contains a reservation of "the public right to fish" on the granted lands, consistent with article 1, section 25 of the California Constitution, and includes the area used by the oyster farm under two state water bottom leases. In November 1972, the prior owner of the oyster farm conveyed his property to the United States, subject to a reservation of occupancy and use in the grant deed.¹ By its terms, the reservation expected the state water bottom leases to continue until the 30-year term expired in 2012, after which the oyster farm would operate under a special use permit from PRNS that would run concurrently for remainder of the leases. Since the leases were subject to a maximum term of 25 years, the agreement anticipated that the leases could and would be renewed, and this in fact was done by the Fish and Game Commission (Commission) in 1979. The leases were renewed again in 2004, but made contingent upon compliance with the 1972 reservation and, after its expiration, with any PRNS special use permit. In 1976, the Point Reyes Wilderness Act designated over 25,000 acres as wilderness, and another 8003 acres as "potential wilderness." The oyster farm lies within this latter area.

In 2006, the PRNS questioned how "the public right to fish" reservation in the 1966 tidelands grant affected the status of the state water bottom leases.² In

¹The State of California was not a party to this transaction; it is unknown whether it was legally reviewed by the United States Department of the Interior, Office of the Solicitor.

²Much has been made of correspondence in 1965 and 1966 by then-Department Director W.T. Shannon, stating that the oyster farm is covered by "the right to fish" reservation. The two

Conserving California's Wildlife Since 1870

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May 2007, the Department concluded that since fishing was distinct from aquaculture, it was not subject to this tidelands grant reservation. Since both the 1972 grant reservation and the 2004 state water bottom lease renewal require compliance with all rules and regulations of the National Park Service, the Department concluded that "primary management authority" for the oyster farm lies with the PRNS. However, given the context of the original question, this conclusion properly refers only to primary management authority over the state water bottoms that are the subject of the leases and not to any other aspect of the aquaculture operation. The 1965 legislative grant did not create an area of exclusive federal jurisdiction, and the oyster farm continues to be subject to ongoing Department management, oversight, and enforcement.³

Three considerations are evident here. First, the Fish and Game Code expressly designates aquaculture as a form of agriculture⁴ and distinguishes it from commercial fishing.⁵ Such a distinction is apparent in statutes pre-dating the 1965 grant.⁶ Further, aquaculture involves the culture and harvesting of animals that are private property while fishing involves the permitted take of fish that are part of the public trust.⁷ A corollary to this second consideration is that "the right

letters are brief, general, and conclusory. However, while the link between the reservation and ongoing state authority is legally incorrect, the letters correctly assert concurrent jurisdiction over the oyster farm. This is consistent with the Department's May 2007 conclusion that the PRNS has "primary management authority" over the state water bottoms that are the subject of the leases, as well as the conclusions in this letter. See also footnote 3, below.

³This includes the payment of taxes and fees, facility registration, regulation of aquaculture products, facility inspections, stocking of aquatic organisms, brook stock acquisition, disease control, and importation of aquatic plants and animals.

⁴Fish and Game Code § 17. This 1982 provision codifies the long-standing concepts of common law (*Hagenburger v. City of Los Angeles* (1942) 51 Cal.App.2d 161 [a farm is a tract of land devoted to agricultural purposes]); ordinary dictionary meaning (*to farm* is "to grow or cultivate in quantity <shellfish>" (Webster's New Collegiate Dictionary 450 (9th ed. 1991))); a farm is "a tract of water reserved for the artificial cultivation of some aquatic food; as an oyster farm" [emphasis added] (Webster's Third New International Dictionary 824 (1961)); and usage of trade (California Aquaculture Association at: <http://www.californiaaquacultureassociation.org> [mission statement objective is to "assure the recognition of aquaculture as agriculture"]).

⁵Fish and Game Code § 15000(a). The commercial tax on oysters is also separate from the commercial fishing tax on mollusks. See Fish and Game Code §§ 8051, 15406.7.

⁶See e.g. Fish and Game Code of 1933 §§ 815, 820 (distinguishing cultivation of oyster beds from fishing).

⁷Fish and Game Code § 15001. See also Fish and Game Code §§ 45 [defining fish], 68 [defining take]; see also § 15 [defining angling]. These provisions derive from Fish and Game Code of 1933, § 2. This analysis is consistent with that in *Pazolt v. Director of Division of Marine Fisheries* (1994) 831 N.E.2d 547, 572-573 where the court stated that aquaculture is "a contemporary method of farming shellfish" and "is not fishing, nor can it legitimately be considered a 'natural derivative' of the public's right to fish."

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March 25, 2008
Page 3

to fish" over tidelands is a *public right* and cannot be exclusive.⁸ By contrast, a state water bottom lease confers on a person the *private right* to exclusively cultivate and harvest aquatic organisms in the leased area.⁹ While the Fish and Game Code guarantees the right of public access over the leased areas for reasonable public trust uses, including fishing,¹⁰ we do not believe aquaculturists would agree that "the right to fish" authorizes the public to take their cultivated products.¹¹ Finally, while "the right to fish" secures public access to state lands that are compatible with fishing, *it does not authorize fishing on those lands*¹² and confers on the public no right they did not already have.¹³ The provision is properly read in connection with (now) article 4, section 20 of the California Constitution, which allows the Legislature to delegate to the Commission such powers relating to the protection and propagation of fish and game as it sees fit.¹⁴ It is this provision, not "the public right to fish," which authorizes the leasing of state water bottoms for aquaculture. The irrelevancy of "the public right to fish" to the future of the oyster farm is underscored by two additional factual considerations. First, the existing state water bottom leases are contingent upon the 30-year reservation of use and occupancy which, after it expires, requires a special use permit. If the oyster farm does not receive a special use permit to operate beyond 2012, a material condition of the lease renewals will not have been met. *This situation would be the same even if the underlying tidelands had never been granted to the United States.* Second, it cannot be contested that the 1965 legislative grant and "the public right to fish" only applies to the tidelands, not the adjacent terrestrial areas upon which the oyster farm is physically dependent, and which are part of the potential wilderness designation.

In July 2007, the Department attended a meeting with United States Senator Diane Feinstein and representatives of the oyster farm, the NPS, and the Coastal Commission. The NPS agreed to work with the oyster farm for a special use permit to continue operations through 2012, and all participants recognized that the future of the oyster farm after 2012 depends on the outcome of the wilderness area designation. The Department stands ready to work with all stakeholders in providing the requisite biological and program expertise on any proposed action

⁸Pacific Steam Whaling Co. v. Alaska Packers' Association (1903) 138 Cal. 632, 636.

⁹Fish and Game Code §15402; see also Fish and Game Code of 1933 § 815.

¹⁰Fish and Game Code §15411.

¹¹In fact, the taking of such organisms without lawful entitlement constitutes theft. See Fish and Game Code § 15002; see also Fish and Game Code of 1933 § 821 [requiring consent or permission of owner/occupier of the land].

¹²In re Quinn (1973) 35 Cal.App.3d 473; State v. San Luis Obispo Sportsman's Association (1978) 22 Cal.3d 440.

¹³Paladini v. Superior Court (1918) 178 Cal. 369, 372; California Gillnetters Association v. Department of Fish and Game (1985) 39 Cal.App.4th 1145, 1154.

¹⁴Ex parte Parra (1914) 24 Cal.App. 339.

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Assembly WPW Committee
ASSEMBLYMEMBER HUFFMAN
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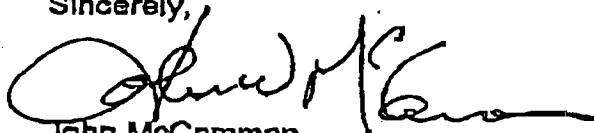
Assemblymember Huffman

March 25, 2008

Page 4

involving the oyster farm to help move this situation to a final resolution. However, for the reasons discussed above, the reservation of "the right to fish" in the 1965 tidelands grant is clearly inapplicable to this situation. We hope this responds to your concerns. Should you or any of your staff require any additional assistance, please contact Senior Staff Counsel Joseph Milton, Office of the General Counsel, at (916) 654-5336 [j.milton@dfg.ca.gov].

Sincerely,



John McCamman
Acting Director



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L425
02-106
May 15, 2007

Mr. Don Neubacher, Superintendent
Point Reyes National Seashore
Point Reyes Station, California 94956

Re: Drake's Bay Oyster Company

Dear Superintendent Neubacher:

The purpose of this letter is to memorialize the position of the Department of Fish and Game (Department) regarding the lease status of the above-referenced mariculture operation at Drakes Estero, within the Point Reyes National Seashore (PRNS). For the reasons discussed below, we conclude that the mariculture operation in question is properly within the primary management authority of the PRNS, not the Department.

By way of review, the leasing of state water bottoms at Drakes Estero dates to at least 1934. In 1965, the California Legislature granted to the United States, subject to certain limitations, "all of the right, title, and interest...to all of the tide and submerged lands or other lands beneath navigable waters" situated within the boundaries of the PRNS (Chapter 983, Statutes of 1965). The tidelands and submerged lands encompassed by this legislative grant include the leased state water bottoms. Consistent with article 1, section 25 of the California Constitution, this conveyance carried a reservation of the right to fish in the waters overlying these lands. Although the right to fish extends to both commercial and sport fishing, it does not extend to aquaculture operations. Regardless of whether its purpose is commercial or recreational, *fishing* involves the take of public trust resources and is therefore distinct from aquaculture, which is an agricultural activity involving the cultivation and harvest of private property (Fish and Game Code §§ 17, 15001, 15002, 15402). In November 1972, the Johnson Oyster Company (Johnson) conveyed its property to the United States, subject to a reservation of occupancy and use in the grant deed, which provided:

"Upon expiration of the reserved term, a special use permit may be issued for the continued occupancy of the property...provided, however, that such permit will run concurrently with and will terminate upon the expiration of State water bottom allotments assigned to the Vendor. Any permit for continued use will be issued in accordance with National Park Services regulations in effect at the time the reservation expires."

The reservation specifies a 40-year term and additionally requires, among other things, that Johnson comply with all applicable health and safety laws, and all rules and regulations of the National Park Service. This reservation expires in November 2012.

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DRAKES ESTERO MARICULTURE

After that time, aquaculture operations must continue subject to a special use permit that would run concurrently with, and would terminate upon, the expiration of the assigned State water bottom allotments. Since such allotments are subject to a maximum lease term of 25 years, both the grantor and grantee apparently contemplated that the state water bottom leases then in effect could be renewed, and this was in fact done in 1979. In June 2004, the Fish and Game Commission (Commission) renewed the state water bottom lease for an additional twenty-five years, contingent on this reservation, and also required Johnson to comply "with all rules and regulations now or hereinafter promulgated by any governmental agency having authority by law..." In March 2005, the Commission authorized the assignment of the state water bottom lease to Johnson's successor, Drakes Bay Oyster Company.

The 2004 lease renewal is expressly contingent upon the aquaculture facility's compliance with the 1972 grant reservation and, after its expiration, with any special use permit that PRNS may issue in its discretion. The reservation requires compliance with all applicable health and safety laws and, specifically, with all rules and regulations of the National Park Service. Conversely, the renewal imposes an additional requirement of compliance with all other applicable laws, which reasonably includes those of the National Park Service and of PRNS in particular. For these reasons, we believe the mariculture operation in Drakes Estero is properly within the primary management authority of the PRNS, not the Department.

Should you or any of your staff require any additional assistance, please contact Senior Staff Counsel Joseph Milton, Office of the General Counsel, at (916) 654-5336 or jmilton@dfg.ca.gov.

Sincerely,

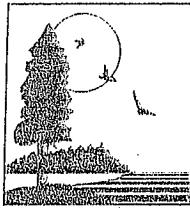
 CDD
for L. RYAN BRODDRICK
Director

cc: Mr. Ralph Mihan, Office of the Solicitor
U.S. Department of the Interior

Mr. Joseph Milton, Senior Staff Counsel
Department of Fish and Game

**CALIFORNIA STATE
LANDS COMMISSION**

JOHN GARAMENDI, *Lieutenant Governor*
JOHN CHIANG, *Controller*
MICHAEL C. GENEST, *Director of Finance*



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July 26, 2007

Mr. Michael Greenberg
Alliance for Local Sustainable Agriculture
P.O. Box 1316
Point Reyes Station, California 94956

Mr. Michael Greenberg

Thank you for taking the time to meet with me and my staff about oyster farming at Drake's Estero. It was a pleasure to meet you, the Lunneys and Mr. Wigert. We understand your concerns that there is a potential for the National Park Service to end oyster farming in Drake's Bay in the near future or in 2012 when Mr. Lunney's occupancy rights terminate under federal legislation creating the National Seashore.

We have reviewed land conveyances made by the Office of the Surveyor General and the Legislature as they pertain to the tide and submerged lands of the Estero and have concluded that they have conveyed out all of the State's real property interest except the mineral estate. This leaves the Commission with no jurisdiction over the bed of the Estero and precludes us from taking any action.

Secondly, we have taken a look at the constitutional "right to fish" reserved in the 1965 legislative grant. It is our belief that this reservation addresses fishing in the sense of taking or capturing fish and that it does not deal with aquaculture which comes under the jurisdiction of the Department of Fish and Game. It also apparent that the right to fish is not an absolute one and that it is susceptible to reasonable regulation.

Unfortunately, then, I do not believe there is anything the State Lands Commission can do to assist you in helping the Lunneys preserve their oyster farming operations. If you believe we can be of assistance in other aspects, please feel free to contact us.

Sincerely,

A handwritten signature in black ink, appearing to read "Paul D. Thayer", written in a cursive style.

PAUL D. THAYER
Executive Officer

CALIFORNIA COASTAL COMMISSION

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SAN FRANCISCO, CA 94105-2219
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January 13, 2011

Donna Wieting, Acting Director
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National Oceanic & Atmospheric Administration
1305 East-West Highway (N/ORM3)
Silver Spring, Maryland 20910

Kevin Lunny
Drakes Bay Oyster Company
17300 Sir Francis Drake Blvd.
Inverness, California 94937

Cicely Muldoon, Superintendent
Point Reyes National Seashore
Point Reyes Station, California 94956

RE: National Park Service Special Use Permit Application by Drakes Bay Oyster Company for Aquaculture Operations in Drakes Estero, Point Reyes National Seashore

Dear Addressees:

This letter responds to the December 1, 2010, letter from Drakes Bay Oyster Company (DBOC) to the National Oceanic and Atmospheric Administration (NOAA) and Office of Ocean and Coastal Resource Management (OCRM) and its supporting attachment from Dr. Corey Goodman dated November 23, 2010. These two documents contain a variety of assertions regarding the legal, procedural, and scientific merits of the California Coastal Commission's (Commission) November 10, 2010 request to obtain permission from OCRM to proceed with federal consistency review of a proposed ten year authorization for commercial shellfish aquaculture operations in the Drakes Estero portion of the Point Reyes National Seashore. While many of these assertions are not relevant to OCRM's consideration of the Commission's request, for the sake of factual accuracy, we have made an effort to respond to each of the points raised in these documents. Several of these responses are included below and the remainders are provided in a supplementary attachment to this letter.

DBOC's letter obscures the only issue before OCRM at this time, which is whether the coastal effects of DBOC's proposed activity are reasonably foreseeable. The CZMA's implementing regulations state that "[t]he sole basis for the Director's approval or disapproval of the State agency's request will relate to whether the proposed activity's coastal effects are reasonably foreseeable." 15 C.F.R. § 930.54(c) (emphasis added). Nothing in PL 111-88 changes or supersedes this requirement. Public Law 111-88 is aimed solely at clarifying the scope of the Secretary of Interior's (Secretary) authority and does not address OCRM's authority under the CZMA. Even if DBOC is correct that PL 111-88 would allow the Secretary to issue an SUP

over an objection to DBOC's consistency certification, that is an issue for the Secretary, Commission and DBOC to address if such a circumstance arises. At least two things would need to happen for this to even be an issue: the Commission would need to object to DBOC's consistency certification, and the Secretary would need to exercise his discretion to issue an SUP. It is pure speculation at this time whether either of these events would occur, and the potential for such an outcome is not a sufficient basis on which to ignore the regulatory language laying out the sole basis for OCRM's decision regarding the Commission's request.

With regard to the substance of OCRM's review, as discussed in more detail below, the evidence clearly shows that DBOC's current operations have coastal effects,¹ so it is reasonably foreseeable that new authorization for DBOC to engage in ten years of commercial shellfish mariculture operations will have coastal effects. Even the primary report on which DBOC relies, *Shellfish Mariculture in Drake's Estero, Point Reyes National Seashore, California*, acknowledges these effects. It states: "[o]yster mariculture necessarily has ecological consequences in Drake's Estero."² (emphasis added). This report, and others discussed below and in the attachment, show that DBOC's activities currently have coastal effects. Thus, under the relevant federal regulations, NOAA should approve the Commission's request to perform federal consistency review in this case because coastal effects from the new proposed ten year authorization are reasonably foreseeable.

Scientific Basis for Commission Request

As noted in both the Commission and DBOC letters, the standard of review for OCRM's consideration of the Commission's request and the foundation upon which the Commission's request is based, relates to "whether the proposed activity's coastal effects are reasonably foreseeable."³ In this case, the proposed activity is a new authorization for shellfish mariculture in Drakes Estero for ten years, beginning on November 30, 2012. As noted repeatedly by the DBOC letter and Goodman attachment, the report titled *Shellfish Mariculture in Drakes Estero, Point Reyes National Seashore, California*, produced by the National Research Council's Committee on Best Practices for Shellfish Mariculture and the Effects of Commercial Activities in Drakes Estero, provides a wealth of information regarding the current DBOC commercial mariculture operation. Commission staff did not reference or cite this report in our November 10, 2010, request letter because we made an effort to base that letter on peer-reviewed, primary source materials as much as possible. With the exception of a few references to more general reports and memoranda that provide a summary of some relevant papers and studies, the 50+ citations included in our previous letter are predominately to direct scientific research and journal publications. We readily acknowledge that the National Research Council (NRC) report contains pertinent discussions that OCRM may wish to draw upon in its consideration of the

¹ The California Coastal Management Program, most notably, the enforceable policies of Chapter Three of the California Coastal Act, establishes a standard for the determination of coastal effects. Several of these policies require protection of marine resources, habitat, and water quality. Pub. Res. Code §§ 30230 and 30231.

² National Research Council, 2009. *Shellfish Mariculture in Drakes Estero, Point Reyes National Seashore, California*. National Academies of Science, 139 pp. Page 2.

³ 15 C.F.R. § 930.54(c).

Commission's request. We have therefore attached to this letter the 70 initial pages of this report that were omitted from the excerpt included with DBOC's letter.⁴ These initial sections of the report provide a much more detailed and thorough discussion of the ecological implications of shellfish mariculture in Drakes Estero than the selective summary included with DBOC's recent letter, and in many cases, the complete discussion more appropriately describes the current, potential, and foreseeable coastal effects resulting from DBOC's operation. Although we have concerns regarding some of the assumptions underlying portions of the NRC report's analysis and conclusions, as discussed further below and in the attachment to this letter, we fully support many of the report's findings and have provided in the body of this letter a discussion of the NRC report as it relates to the Commission's request.

One of the more relevant findings to the question of whether coastal effects are reasonably foreseeable from a new, ten year authorization of DBOC's operation is included in a primary opening statement of the NRC report:

*Oyster mariculture necessarily has ecological consequences in Drakes Estero as in other lagoons and estuaries, the magnitude and significance of which vary with the intensity of the culturing operation. These effects derive from two different sources: the presence of and biological activity of the oysters, and the activities of the culturists.*⁵

This concept is described further in another more recent report published by the National Academy of Sciences (NAS) in 2010, titled, *Ecosystem Concepts for Sustainable Bivalve Mariculture*, which states in its introduction that "[c]ulturing of suspension-feeding bivalves has effects on the plants, animals, biogeochemical processes, food webs, and habitats of estuarine and coastal ocean ecosystems."⁶ This 2010 NAS report also includes a table listing the potential problems and resulting impacts associated with bivalve mariculture, most of which are noted and discussed in the Commission's November 10, 2010, request letter to OCRM. An excerpt of this table is included below:

| <u>Potential Problem</u> | <u>Impact</u> |
|--|--|
| <i>Excessive localized organic loading to sediments via biodeposits from bivalve mariculture</i> | <i>Low oxygen (hypoxia) in sediments and loss of benthic biota</i> |
| <i>Decreased planktonic biomass by overstocking</i> | <i>Shift planktonic composition; reduce turbidity allowing greater light penetration</i> |

⁴ The entire report may be found online: http://www.mmc.gov/drakes_estero/pdfs/nas_shellfish_mariculutre.pdf

⁵ National Research Council, 2009. *Shellfish Mariculture in Drakes Estero, Point Reyes National Seashore, California*. National Academies of Science, 139 pp. Page 2.

⁶ Committee on Best Practices for Shellfish Mariculture and the Effects of Commercial Activities in Drakes Estero, Pt. Reyes National Seashore, California. 2010. *Ecosystem Concepts for Sustainable Bivalve Mariculture*, National Academies of Science. 180 pp. Page 4

| | |
|---|--|
| ... | <i>and hence more benthic plant production; deprive native suspension feeders of food</i> |
| <i>Introduction and transmission of disease organisms</i> | ... |
| | <i>Large losses of cultured bivalves; transmission of disease to native species with possible biodiversity losses and reduction in wild stocks of bivalves</i> |
| <i>Establishment of breeding populations of nonnative bivalves introduced through culture</i> | <i>Loss of native biodiversity resulting from competition, predation, and habitat modification</i> |
| <i>Spread of nonnative species associated with mariculture</i> | <i>Loss of native biodiversity resulting from competition, predation, and habitat modification</i> |
| <i>Overfishing, depleted stocks, and habitat degradation and loss</i> | <i>Reduction in seafood supply Food web changes and biodiversity loss</i> |
| <i>Displacement of native species and/or Predation on cultured stock</i> | <i>Disturbance of birds, marine mammals, and marine turtles</i> |
| ... | ... |

In other words, the commercial shellfish mariculture operation in Drakes Estero, by its very nature, currently has actual and potential coastal effects. It is therefore clear that these effects would be “reasonably foreseeable” if a new ten year Special Use Permit were issued to DBOC, as proposed.

Harbor Seals

As noted in the NRC report, “[t]he activities of the oyster culturists can disturb wildlife such as harbor seals, which are of particular concern because they use the estero for resting, mating, pupping, suckling, molting, foraging, and sheltering from oceanic predators.”⁸ This statement closely matches the conclusion reached by Commission staff in the Commission request letter to OCRM, which states: “Human activities associated with shellfish aquaculture within Drakes Estero have the potential to cause disturbances to the resident harbor seal population.” In this letter, Commission staff also notes that:

For example, the operation of motorized watercraft and the placement, maintenance, and retrieval of bottom culture shellfish bags, if carried out in close proximity to harbor seal

⁷ Ibid. Pages 6-8.

⁸ National Research Council, 2009. *Shellfish Mariculture in Drakes Estero, Point Reyes National Seashore, California*. National Academies of Science, 139 pp. Page 3.

*haul-out sites and intertidal sandbars, may cause seals in these areas to alter their behavior, flush towards the water, and/or flush into the water.*⁹

The detailed discussion on page 49 of the NRC report also closely matches this conclusion reached by Commission staff. It states, in part:

*Some oyster rack and oyster bag areas within Drakes Estero are located within 500 m of sand flats used by harbor seals as haul-out sites. Based upon the findings in the studies outlined above and the informal observations of biologists who study seals, visits to these areas by oyster farm workers can be expected to lead to the short-term disturbance of any seals using these haul-out areas at the time. Depending on visibility and wind conditions, disturbance may also occur at greater distances. Furthermore, the work by Brasseur and Reijnders (2001) suggests that seals could be disturbed before they come ashore if boats pass through haul-out areas at high tide. (emphasis added)*¹⁰

The Goodman attachment specifically questioned these exact conclusions made by Commission staff, despite their support in the NRC report. Goodman used these conclusions as examples to support his allegations of “false claims against DBOC” and “false science” that is being spread by the Commission. Clearly, these allegations are unwarranted and inappropriate, as the conclusions drawn by Commission staff are the same as those in the report on which Goodman relies. Goodman also went on to call into question the Commission staff’s reference to Becker et al. (2009), alleging that “Becker et al., 2009, your citation #49, is seriously flawed.”¹¹ Commission staff notes that Becker et al. (2009) has undergone both an internal and external peer review process as well as an extensive evaluation in the NRC report, none of which has suggested that this scientific publication is seriously flawed. Further, similar to the discussion included in our supplementary attachment to this letter regarding the NPS report, *Drakes Estero: A Sheltered Wilderness Estuary*, though aspects of Becker et al. (2009) have been debated, none of this debate has focused on the aspect of this publication that is relevant to its citation by Commission staff, namely, the potential for human activities in close proximity to hauled-out marine mammals to result in disturbances to these animals.

Eelgrass

In our request letter to OCRM of November 10, 2010, Commission staff details many of the ecological functions of eelgrass meadows as a means of demonstrating the importance of this coastal resource. Our letter also describes several ways in which the current shellfish mariculture operation appears to be affecting eelgrass in Drakes Estero. The Commission has long considered the potential or actual loss, disturbance, removal, and/or degradation of eelgrass

⁹ Becker, B.H., D.T. Press, S.G. Allen. 2009. Modeling the effects of El Nino, density dependence, and disturbance on harbor seals (*Phoca vitulina*) counts in Drakes Estero population, California: 1997-2007. *Marine Mammal Science*, 25(1): 1-18. 19 pp.

¹⁰ National Research Council, 2009. *Shellfish Mariculture in Drakes Estero, Point Reyes National Seashore, California*. National Academies of Science, 139 pp. Page 49.

¹¹ Goodman, C. Letter to Executive Director of the California Coastal Commission, November 23, 2010. Page 6.

and eelgrass habitat to be coastal effects. As noted in our letter, coastal effects to eelgrass appear to be resulting from the current DBOC operation, and a variety of first-hand observations, photographic documentation, and scientific research supports this conclusion. These effects appear to have resulted from three main factors: (1) the operation of outboard motor driven vessels in eelgrass meadows; (2) shading from oyster racks and hanging culture; and (3) habitat loss and displacement resulting from the presence of mariculture structures, equipment, and debris in eelgrass habitat. Because a new ten year authorization of commercial shellfish mariculture activities in Drakes Estero would involve the continuation of all three of these factors, Commission staff finds coastal effects to eelgrass to be reasonably foreseeable from the proposed activity.

Contrary to Dr. Goodman's allegations that Commission staff's eelgrass discussion (summarized above) represents "false science" that was "refuted by the [NRC] report in 2009,"¹² we find the actual observations and conclusions of the NRC report to completely support the analysis included in our letter. For example, with regard to the disturbance and loss of eelgrass from motorized vessels, the NRC report notes:

A secondary impact to eelgrass arises from damage by boat propellers; scars or disturbance tracks are visually documented in aerial photos of Drakes Estero (total area with scars loosely quantified to be about 50 acres; NPS GIS Map, July 27, 2007). The committee infers that these scars were caused by DBOC boats because the scars are located near the site of rack deployment and are aligned in the direction that leads from or to those racks. In addition, all other motorboats were excluded from Drakes Estero upon passage of the Point Reyes Wilderness Act of 1976. This photograph was thus taken in 2007 and is therefore indicative of current impacts of mariculture boating activities.¹³

In other words, the NRC report found that in 2007, the DBOC mariculture operation disturbed roughly 50 acres of eelgrass and that this disturbance is "indicative of current impact of mariculture boating activities."¹⁴ This is clearly evidence of a current coastal effect of the current DBOC operation.

With regard to shading effects of the mariculture equipment on eelgrass habitat, the NRC report again supports Commission staff's discussion:

Perhaps the most relevant to off-bottom rack-and-line culture—the dominant form of oyster culture in Drakes Estero—is work conducted by Everett et al. (1995) in Coos Bay, Oregon. This study demonstrated complete absence of eelgrass directly under oyster racks and lines, presumably due to shading and sediment erosion (10–15 cm at the base of the structure). The absence of eelgrass immediately beneath racks in Drakes Estero (as

¹² Goodman, C. Letter to Executive Director of the California Coastal Commission, November 23, 2010. Page 4.

¹³ National Research Council, 2009. *Shellfish Mariculture in Drakes Estero, Point Reyes National Seashore, California*. National Academies of Science, 139 pp. Page 33.

¹⁴ Ibid. Page 33.

reported by Harbin-Ireland [2004] and Wechsler [2004]) can therefore be reasonably attributed to mariculture.¹⁵

Finally, with regard to habitat loss and displacement due to the presence of oyster mariculture structures, equipment, and debris, the opening phrase of the NRC report's eelgrass discussion appears to be especially relevant: "Shellfish mariculture and eelgrass compete directly for space..."¹⁶ The NRC report also summarizes recent research carried out on a similar mariculture operation in Washington where "all culture methods were shown to result in decreased production of eelgrass" and notes that "In Drakes Estero, the mariculture footprint is roughly 8 acres for racks predominately in areas of eelgrass..."¹⁷

Overall, as concluded in the NRC report, it appears that the 2007 level of mariculture operation resulted in the degradation, disturbance, and/or loss of approximately 58 acres of eelgrass habitat in Drakes Estero. Because the activities that resulted in these coastal effects would be carried out if a ten year authorization were provided to DBOC in 2012, as proposed, Commission staff believes that the proposed activity's coastal effects are reasonably foreseeable.

While the NRC notes that 58 acres of eelgrass represent less than 8% of the total coverage of eelgrass in the estero, we do not believe that a secondary evaluation of an impact's magnitude in proportion to a potentially greater level of impact is relevant to our conclusion regarding the reasonable foreseeability of coastal effects that would result from the proposed activity.

Invasive Species

Neither the DBOC letter nor the Goodman attachment appear to dispute the reasonable foreseeability of coastal effects resulting from the presence and spread of invasive species in Drakes Estero. It is well established that invasive species and non-native species with the potential to become invasive currently exist in Drakes Estero and are associated with the current mariculture operation. The NRC report notes that "[t]he introduction of nonnative species can result in dramatic environmental and economic impacts (Parker et al., 1999; Ruiz et al., 1999)" and provides a thorough discussion on pages 50-56 that identifies a series of important questions that need to be further studied to better inform the scope of current and future exotic species related effects on Drakes Estero. The NRC report also describes the widespread presence of an invasive tunicate, *Didemnum vexillum*, on mariculture equipment in Drakes Estero and notes that "[*D. vexillum*]'s rapid growth and competitive over-topping abilities make it an ecological threat to many native and nonnative invertebrate taxa..."¹⁸

Recently published research on *D. vexillum* provides further support for the likelihood that a ten year authorization of shellfish mariculture activities in Drakes Estero would result in coastal

¹⁵ Ibid..Page 32.

¹⁶ Ibid. Page 31.

¹⁷ Ibid. Pages 32-33.

¹⁸ Ibid. Page 56.

effects. Specifically, surveys of a *D. vexillum* invaded marine system in the north eastern U.S. with similar characteristics to Drakes Estero suggest that this tunicate is able to successfully colonize eelgrass meadows.¹⁹ This phenomenon has been observed several miles away in Tomales Bay, as noted by the NRC report, and the New England case suggests that when space is limited on artificial hard surfaces, eelgrass may provide suitable substrate for supporting *D. vexillum*. As noted by Carman and Grunden, this is likely to result in adverse effects on eelgrass:

*Attached tunicates probably block photosynthesis, release of seed, and natural defoliation. Eelgrass serves as a juvenile shellfish and fish habitat and threats to it are of concern by coastal managers and the fishing industry. The effect of D. vexillum overgrowth of eelgrass, and the community dependent upon eelgrass, should be assessed further because D. vexillum can negatively impact habitat such as is occurring on Georges Bank (Valentine et al. 2007b). The use of eelgrass as a mechanism of transport for D. vexillum may be contributing to its spread. The results of our study demonstrate that D. vexillum is continuing to spread, occupying substrate not typically used, and posing a threat to the protected species Z. marina.*²⁰

The abundance of *D. vexillum* observed by Commission staff to be growing on DBOC's mariculture equipment, infrastructure, and cultured shellfish suggests that the mariculture operation may be the primary habitat for *D. vexillum* in Drakes Estero and thus a key reason for its continued presence in this system. As the infestation of *D. vexillum* continues and additional space for further *D. vexillum* expansion on these materials becomes scarcer, however, the invasive tunicate may potentially begin to colonize other available substrate – namely eelgrass – as suggested by the New England case and recent evidence in nearby Tomales Bay. DBOC may also be further promoting the spread of *D. vexillum* through other aspects of its mariculture operation as well. Currently, some initial washing and shucking activities occur on a dock located both above the estero's waters and along its shoreline. During these operations *D. vexillum* and other epibiotic organisms are frequently collected and deposited into the estero where they may be transported by currents and tides to eelgrass meadows and other locations. In these ways, it is reasonably foreseeable that a new ten year authorization for DBOC's mariculture operation would facilitate the persistence and spread of *D. vexillum* in Drakes Estero, a situation with the potential to also adversely affect eelgrass and thereby cause coastal effects.

Birds

The NRC report also provides a discussion of the potential effects of the current mariculture operation on birds. Although little research on this topic is available and uncertainty exists concerning specific effects on some species, as noted in the NRC report, "Oyster culture bags placed on intertidal flats in Drakes Estero clearly prevent access by probing shorebirds to the sediments beneath them, thereby removing typical foraging habitat for many species."²¹ The

¹⁹ Carman, M.R. and D.W. Grunden. 2010. First occurrence of the invasive tunicate *Didemnum vexillum* in eelgrass habitat. *Aquatic Invasions* 5(1): 23-29.

²⁰ Ibid.

²¹ National Research Council, 2009. *Shellfish Mariculture in Drakes Estero, Point Reyes National Seashore, California*. National Academies of Science, 139 pp. Page 58.

report also provides support for this conclusion by referencing research carried out in nearby Tomales Bay where “two of the most abundant shorebirds, dunlin and western sandpipers, demonstrated significant avoidance of mariculture plots.”²² These conclusions closely mirror the discussion of this issue included in our November 10, 2010, request letter to OCRM. Overall, because the proposed ten year authorization of shellfish mariculture activities in Drakes Estero would result in the placement of shellfish cultivation bags in intertidal flats (totaling approximately 140 acres according to DBOC), Commission staff believes coastal effects, including the loss of 140 acres of shorebird foraging habitat, are reasonably foreseeable.

Legal and Procedural Issues

Section 124 of Public Law 111-88 Does Not Supersede the CZMA

As explained at the beginning of this letter, because OCRM should be simply evaluating whether it is reasonably foreseeable that a new ten year authorization for commercial shellfish mariculture in Drakes Estero will cause coastal effects, it is not necessary for OCRM to determine the scope of the “notwithstanding” clause found in PL 111-88 when considering the Commission’s request. A determination of PL 111-88’s scope, if necessary at all, would only need to occur if the Commission objected to DBOC’s consistency certification and the Secretary determined that he intended to exercise his discretion to issue an SUP. With that said, even if this circumstance were to arise, PL 111-88 would not remove the Commission’s authority under the CZMA.

PL 111-88 provides that “notwithstanding any other provision of law, the Secretary of the Interior is authorized to issue a special use permit [to Drake’s Bay Oyster Company].” Pub. L. 111-88, § 124, 2009 H.R. 2996. DBOC argues that this language prevents the Commission from even undertaking federal consistency review.²³ Such a broad interpretation of this phrase, however, is not warranted in this context. Courts have held that the phrase “notwithstanding any other provision of law” must be construed by considering the statutory context within which it is found, rather than construing it literally. *Consejo de Desarrollo Economico de Mexicali v. United States*, 482 F.3d 1157, 1168 (9th Cir. 2006); *Miccosukee Tribe of Indians v. U.S. Army Corps*, 619 F.3d 1289, 1298 (11th Cir. 2010). Moreover, courts limit the effect of such language to that which is the “minimum” necessary to effect the “clear and manifest demonstration of legislative intent.” *Northwest Forest Resource Council v. Pilchuck Audubon Society*, 97 F.3d 1161, 1166-67 (9th Cir. 1996) (citing *E.P. Paup Co. v. Director*, 999 F.2d 1341, 1348 (9th Cir. 1993)).

Here, as DBOC acknowledges, the purpose of PL 111-88 was to address the National Park Service’s concern that it was legally prohibited from issuing a new Special Use Permit (SUP) to DBOC.²⁴ This is explained further on pages 2 and 3 of the attached NPS document, *National Park Service Clarification of Law, Policy, and Science on Drakes Estero*, which notes that in 1976, Congress designated certain parts of Point Reyes National Seashore as wilderness and

²² Ibid. page 59 referencing Kelly et al. (1996).

²³ Drakes Bay Oyster Company. Letter to NOAA and OCRM dated December 1, 2010.

²⁴ Ibid. Page 2.

potential wilderness (PL 94-544 Oct. 18, 1976), including Drakes Estero, and the Congressional report accompanying this legislation established that these lands would be “essentially managed as wilderness” and that efforts would be made to “remove all obstacles to the eventual conversion of these lands and waters to wilderness status.”²⁵ Because the mariculture operation in Drakes Estero is the primary obstacle to the conversion of this area to wilderness status, NPS interpreted this and other NPS and Point Reyes National Seashore laws and management policies as a limit to their ability to authorize a new SUP. These were the concerns that gave rise to the enactment of section 124 of PL 111-88. Given that the CZMA process had not even commenced, much less concluded in a manner affecting issuance of an SUP, NPS’s position in 2009 that it could not issue an SUP was not based on a concern that application of the CZMA would prevent it from issuing an SUP. The intent of PL 111-88 was to authorize the Secretary to exercise his own authority to issue an SUP, regardless of the laws that NPS had already identified that would prevent issuance of such a permit. In this context, the language of PL 111-88 should not be read so broadly as to repeal unrelated federal laws, such as the CZMA.

Even ignoring the context in which PL 111-88 was passed, the language in PL 111-88 shows no intent to supersede the CZMA. One context in which courts have interpreted “notwithstanding” clauses to have a broader reach is when they are drafted in connection with language mandating an agency take immediate action. For example, in *Consejo*, the plaintiffs had sued the Department of Interior and Bureau of Land Management for, among other allegations, failing to comply with the National Environmental Protection Act, the Endangered Species Act, the Migratory Bird Treaty and the Settlement Act when the BLM pursued a project to line the All American Canal. *Consejo*, 482 F.3d at 1168. Defendants claimed that those causes of action were moot due to passage of the Tax Relief and Health Care Act of 2006 (2006 Act) stating: “[n]otwithstanding any other provision of law, upon the date of enactment of this Act, the Secretary shall, without delay, carry out the All American Canal Lining Project” *Id.* at 1167. This language mandated certain action to take place “without delay.” The court found that this language requiring immediate action, coupled with the “notwithstanding any other provisions of law” language, showed Congress’s intent that the project proceed without compliance with the “usual course of administrative proceedings.” *Id.* at 1169. It held that the 2006 Act rendered the challenges under the cited environmental statutes moot, as compliance with the environmental statutes would delay commencement of the project, which was what was specifically prohibited in the 2006 Act.

Unlike *Consejo*, the plain language of PL 111-88 does not mandate any specific action be taken nor does it require action by the Secretary within a given timeframe. It simply allows the Secretary to take action and does not limit the information that the Secretary may consider when deciding whether to take that action. It in no way prohibits normal regulatory review procedures, including federal consistency review under the CZMA, from occurring. PL 111-88, therefore, does not alter the legal standard for OCRM in reviewing the Commission’s request to conduct consistency review of DBOC’s application for the SUP.

²⁵ National Park Service. 2007. *National Park Service Clarification of Law, Policy, and Science on Drakes Estero*, 18 pp. Page 3 quoting House Report No. 94-1680.

CZMA Procedures Should Still Apply, Even if PL 111-88 Overrides a Portion of the CZMA

Even if a court were to determine that the Secretary could exercise his discretion to issue an SUP to DBOC over the Commission's objection, it would not render the Commission's review under the CZMA moot. Thus, PL 111-88 does not conflict with and does not prevent application of the procedures found in the CZMA, even if the ultimate outcome of the Commission's review could be ignored. The text of PL 111-88 deliberately does not direct or require the Secretary to take any specific action; the original version of the bill would have required the Secretary to issue an SUP, but the final version simply provides him with the authority to do so. It therefore merely allows him to exercise his discretion to issue an SUP. Pub. L. 111-88, § 124. Under the CZMA, the Commission is obligated to analyze a proposed activity's consistency with California's Coastal Management Plan (CCMP). 16 U.S.C. § 1456(c)(3)(A). After completing such an analysis, the Commission could concur or object to DBOC's certification of consistency with the CCMP. Under either of these scenarios, the Commission's conclusion regarding CCMP consistency could inform the Secretary's exercise of his discretion under PL 111-88. If the Commission were to object to DBOC's consistency certification, such an objection would still provide the Secretary with valuable insight into California's assessment of the proposed activity and its consistency with the CCMP. Thus, even if PL 111-88 would allow the Secretary to issue an SUP over the Commission's objection, the Commission's analysis of the proposed project would not in itself be inconsistent with the language of PL 111-88. This aspect of the CZMA is therefore not superseded by PL 111-88.

The Timing of the Commission's Review Is Not Inconsistent with PL 111-88

DBOC also argues that there is a possibility that the Commission's review of DBOC's consistency certification could delay the Secretary's ability to issue the SUP. First, the argument that the Commission's review would not be completed prior to November 30, 2012, is highly speculative, as evidenced by the very language used in DBOC's letter. It notes that it is "entirely possible" that the Commission's review could go beyond November 30, 2012, and that this "could cause" a conflict with PL 111-88.²⁶ Thus, DBOC would like OCRM to refuse to grant the Commission's request because there is a possibility that the Commission might not have fulfilled its obligations under the CZMA prior to November 30, 2012. Moreover, since the CZMA requires the Commission to act within 6 months of submittal of a consistency certification, there is no reason to assume the Commission will not act in a timely manner.

Second, and more importantly, the language of PL 111-88 does not support the conclusion DBOC urges OCRM to adopt. PL 111-88 does not require any action of the Secretary, much less action by a certain date. It authorizes issuance of an SUP prior to November 30, 2012, but it does not require action before that date. Pub. L. 111-88, § 124. Congress has included temporal requirements in similar provisions, but it did not do so here. *See, e.g.*, Tax Relief and Health Care Act of 2006 Pub. Law No. 109-432, § 385(a), 120 Stat. 2922, ("[n]otwithstanding any other provision of law, upon the date of enactment of this Act, the Secretary shall, without delay, carry out the All American Canal Lining Project"); 1995 Supplemental Appropriations for Disaster Assistance and Rescissions Act. Pub. L. No. 104-19, § 2001(k), 109 Stat. 194, 240-47 (requiring agency action with 45 days); and Omnibus Appropriations Act 2009, Pub. L. No. 111-8, 123 Stat. 524 ("the Army Corps of Engineers ... shall, notwithstanding any other provision of law,

²⁶ Drakes Bay Oyster Company. Letter to NOAA and OCRM dated December 1, 2010. Page 4.

immediately and without further delay construct ... Alternative 3.2.2.a to U.S. Highway 41”). Congress can, and has, required immediate action or action by a certain date, but it did not do so in PL 111-88. Thus, there is nothing in PL 111-88 that would prevent the Commission from undertaking consistency review on the basis that such review might take too long.

Marin County Local Coastal Program

DBOC’s recent letter includes claims that: (1) the Commission’s consistency review request to OCRM contradicts the Marin County Local Coastal Program; (2) the Marin County Local Coastal Program governs the shellfish mariculture operation; and (3) Section 30411(a) of the California Coastal Act provides the California Fish and Game Department with primary authority over mariculture operations under the Coastal Act. These claims are neither accurate nor relevant to the Commission’s federal consistency review request.

The DBOC mariculture operation is located entirely within the federally owned lands and tidelands of Point Reyes National Seashore. As noted in the Marin County Local Coastal Program, “the federal Coastal Zone Management Act of 1972 provides that federal lands be legally excluded from the coastal zone and thus exempt from a state’s coastal planning and regulatory jurisdiction. However, the federal act also provides that federal activities within the coastal zone boundary must be consistent with a state’s coastal zone management program.”²⁷

For all of the California coast, except the San Francisco Bay, the Commission is the state agency responsible for implementing the Coastal Zone Management Act (CZMA). The Commission is responsible for reviewing proposed federal and federally authorized activities to assess their consistency with the enforceable policies of the approved state coastal management program (CCMP). To the extent that it has been incorporated into the CCMP, the Marin County LCP is used solely as guidance. Therefore, Marin County’s LCP is not the standard of review for the Commission’s consideration of whether the proposed activity is consistent with its coastal management program. Any mariculture-related policies included in the Marin County Local Coastal Program are provided for guidance purposes only.

The claim that Section 30411(a) of the California Coastal Act provides the California Fish and Game Department with primary authority over mariculture operations is also misinformed. The Commission has a long history of regulating mariculture activities throughout the state in coordination with the California Department of Fish and Game and numerous other state and federal resource agencies. Section 30411(a) of the Coastal Act specifies that “The Department of Fish and Game and the Fish and Game Commission are the principle state agencies responsible for the establishment and control of wildlife and fisheries management programs...” The proposed continuance of commercial shellfish mariculture operation by DBOC for ten years beginning in 2012 is neither a wildlife nor fishery management program. Section 30411(a) of the Coastal Act therefore does not apply to these proposed activities.

DBOC Production Levels

Commission staff disagrees with the characterization of previous correspondence and the current and maximum production levels described by DBOC in its recent letter. However, we do not

²⁷ Marin County Community Development Agency. 2010. *Marin County Local Coastal Program Unit 2 Land Use Plan*, 295 pp. Page 53 – Federal Parklands.

find this discussion to be pertinent to the decision currently before OCRM or the substance of the Commission's request. We therefore propose to pursue this issue directly with DBOC. If, however, OCRM finds this issue to be relevant or pertinent to its review, we would be happy to provide a more detailed response.

Right to Fish

DBOC's letter appears to suggest that shellfish cultivation is fishing. This assertion contradicts both reason and fact. The relevant state and federal resource agencies are in agreement on this point, as demonstrated by the attached letter from the Director of the California Department of Fish and Game to the Superintendent of Point Reyes National Seashore which clearly states that:

Although the right to fish extends to both commercial and sport fishing, it does not extend to aquaculture operations. Regardless of whether its purpose is commercial or recreational, fishing involves the take of public trust resources and is therefore distinct from aquaculture, which is an agricultural activity involving the cultivation and harvest of private property (Fish and Game Code Sections 17, 15001, 15002, 15402).

This understanding is also reflected in the California Coastal Act which states in Section 30100.2 that " 'Aquaculture' means a form of agriculture as defined in Section 17 of the Fish and Game Code..."

DBOC's Existing National Park Service Authorizations

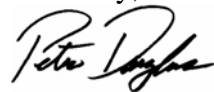
Commission staff also does not find the discussion included in DBOC's letter regarding the specific provisions of DBOC's Reservation of Use and Occupancy to be relevant to the request currently before OCRM. Even if DBOC is correct that continued operation of the oyster farm was contemplated nearly forty years ago, such a lease renewal provision would not preclude the Commission's review of a federal agency's renewal of such a lease.

Conclusion

As described above and in the attachment to this letter, we believe that the legal, procedural and scientific assertions made by DBOC and its supporters do not provide compelling evidence that the coastal effects resulting from the proposed ten year continuance of commercial shellfish mariculture activities in Drakes Estero are not reasonably foreseeable. Commission staff is therefore reiterating our request for permission to review this proposed activity.

Please call Deputy Director Alison Dettmer, at 415/ 904-5205 if you have any questions.

Sincerely,



PETER M. DOUGLAS
Executive Director

Attachments

cc: Dr. Jane Lubchenco, NOAA
David Kaiser, OCRM

Attachment 1

Additional responses to
December 1, 2010 letter from
Drakes Bay Oyster Company and
attachment from Dr. Goodman

Attachment 1: Additional Responses to Goodman and DBOC

Eelgrass

Goodman alleges that “[Commission staff] appear to be using false science to negatively influence the EIS process.”¹ This allegation is baseless and inappropriate. The comment letter submitted by Commission staff to the National Park Service (NPS) in response to the open public comment period on the scoping of an Environmental Impact Statement to evaluate the potential issuance of a Special Use Permit for commercial oyster operations within Drakes Estero includes as its only scientific discussion a general description of the ecological function of eelgrass meadows. All aspects of this discussion are widely accepted as general ecological knowledge that is supported by numerous studies and scientific publications.

Commission staff would also like to address a section of the 2009 National Research Council (NRC) report quoted in the Goodman attachment that relates to eelgrass: “Oysters have the potential to benefit eelgrass because their filtering activity improves local water clarity (and hence light penetration) and because they release biodeposits and ammonium (plant nutrients).”² While oyster mariculture certainly has the potential to benefit aquatic vegetation in this way, Commission staff does not find evidence to suggest that these effects are apparent in Drakes Estero. For example, as noted earlier in the NRC report, a study that included direct sampling of sediment cores and water quality near oyster racks found “no enhancement of sediment organics” and “did not demonstrate elevated levels of nutrients” in the water column beneath and near these racks, indicating that oysters may not be depositing plant nutrients in nearby areas.³

Further, Commission staff is not aware of quantitative research that supports the assumption that water clarity or turbidity is a factor that limits or significantly affects the growth and spread of eelgrass in Drakes Estero. To the contrary, the NRC report somewhat contradicts this idea and notes that “[w]hile bivalves have been shown in other systems to enhance eelgrass production via secondary mechanisms such as water clarification and fertilization of the sediments (Peterson and Heck, 2001; Newell and Koch 2004), the relatively small culture footprint in Drakes Estero suggests that these effects would be localized.”⁴ Moreover, the physical characteristics of Drakes Estero – average depth approximately six feet, few terrestrial sediment inputs and low likelihood of eutrophication – suggest that light penetration through the water column is unlikely to be impaired, whether or not there are significant numbers of bivalves in the Estero.

¹ Goodman, C. Letter to Executive Director of the California Coastal Commission, November 23, 2010. Page 6.

² Ibid. Page 4.

³ National Research Council, 2009. *Shellfish Mariculture in Drakes Estero, Point Reyes National Seashore, California*. National Academies of Science, 139 pp. Page 67.

⁴ Ibid. Page 33.

In addition, if local nutrient and light inputs were indeed augmented near mariculture areas in Drakes Estero as a result of shellfish cultivation, it would also seem likely that the eelgrass habitat in close proximity to the mariculture areas would be more productive. However, due to the presence of wooden oyster racks and the activities of the boats that service them, these habitat areas are often the most adversely affected by the mariculture activities through shading, displacement, and propeller scarring. This situation may make it unlikely for any positive effects of shellfish mariculture on eelgrass to provide an overall net benefit to the habitat.

Commission staff therefore finds it reasonably foreseeable that the proposed continuation of commercial non-native shellfish mariculture in Drakes Estero for ten years past 2012 would affect eelgrass and eelgrass habitat.

Harbor Seals

Goodman alleges that Commission staff is “making false claims that DBOC is disturbing the harbor seals” and that “according to the NPS photographic data, DBOC is not.” As detailed in the accompanying letter, Commission staff is not making false claims regarding the disturbance of harbor seals by DBOC. For the purpose of our request to OCRM, we do not find it necessary to debate the frequency, likelihood, or documentation of past harbor seal disturbances. We have therefore not found it to be an efficient use of resources to examine the voluminous records of archived photographs related to the wildlife monitoring program or the equally voluminous data sheets and survey reports related to the volunteer harbor seal monitoring program. Our understanding of the manner in which this data was collected (i.e. temporal and spatial coverage, collection program design, etc.) suggests that it would be impossible to use this data to definitively demonstrate that the mariculture operation in Drakes Estero has never resulted in the disturbance of harbor seals. In this regard, we find the NRC report’s conclusion on this topic to be appropriate: “The disturbance observations that have been collected as part of the monitoring program serve to demonstrate that there are multiple sources of human and natural disturbances to seals hauled-out on sand bars in Drakes Estero, but they do not permit rigorous determination of which sources of disturbance, if any, have greater population-level consequences.”⁵

Our letter of November 10, 2010, to OCRM carefully and intentionally did not include any allegations of disturbances to harbor seals, or any direct discussion of the affect of current operations on harbor seals, past harbor seal disturbance events, the long-term volunteer harbor seal monitoring program conducted by NPS, the wildlife monitoring program, or the various federal and state resource agency efforts that have been directed at reducing the potential for mariculture activities in Drakes Estero to result in the disturbance of harbor seals. These topics have been a source of division in the local community and Commission staff does not believe it would benefit the current process to focus on these past matters. As outlined in our letter and discussed above, Commission staff has taken the position that harbor seals are sensitive to human presence and activities near haul-out sites. If the proposed mariculture operation involves human

⁵ Ibid. Page 46.

presence and activities near these areas, it is reasonably foreseeable that this will have an effect on coastal resources, which is all that is relevant to this review.

Nonnative Species

Although the NRC report describes the continuing coastal effects associated with the current suite of invasive species present in Drakes Estero as a result of shellfish mariculture, it appears to discount the threat of new introductions of exotic species from future mariculture activities. The report argues that this potential threat is low because of current inspections and controls on the importation of oyster larvae and seed. The NRC report acknowledges, however, that “the protections against nonnative introductions currently in place are not mandated.”⁶ This raises questions about the reliability of these control mechanisms to operate successfully in the future.

In addition, although the NRC report describes “naturalization” as a potential risk,⁷ it appears to not adequately address the fact that both Manila clams and Pacific oysters, DBOC’s most abundantly cultivated species, are both nonnative species with an increasingly well recognized reputation for establishing self-supporting and potentially invasive populations in marine environments similar to Drakes Estero. This may be especially true in the future as climate change induced shifts in water temperatures and current patterns become increasingly significant and widespread. As one example, experimental research in Willapa Bay, Washington recently demonstrated that Pacific oyster were able to not only reproduce, set, and spread naturally, but that they also out-competed native shellfish species and sharply reduced both the survival and growth of these shellfish.⁸ The NRC report describes similar risks of naturalization associated with Manila clams.⁹ The cultivation of these non-native species in Drakes Estero is therefore not only associated with the ongoing ecological effects associated with their feeding and biodeposition mechanisms, it also carries a potential for future effects associated with the establishment of self-sustaining and free living populations in the estero and other areas that are outside of the control of the mariculture operation. The establishment of naturalized populations of Pacific oysters and/or Manila clams in Drakes Estero, the adjoining Estero de Limantour, or other nearby areas has the potential to substantially alter the composition of native communities of marine species in these areas.

Commission staff believes that there is enough credible scientific information, including recent studies and the discussion on this topic included in the NRC report, to suggest that these coastal effects would be a reasonably foreseeable outcome of the proposed activity.

⁶ Ibid. Page 56.

⁷ In particular, the discussion on pages 51-52.

⁸ Trimble, A.C., J.L. Ruesink, and B.R. Dumbauld. 2009. Factors Preventing the Recovery of a Historically Overexploited Shellfish Species, *Ostrea lurida* Carpenter 1864. *Journal of Shellfish Research*, 28(1): 97-106.

⁹ National Research Council, 2009. *Shellfish Mariculture in Drakes Estero, Point Reyes National Seashore, California*. National Academies of Science, 139 pp. Page 67. Page 52.

Drakes Estero: A Sheltered Wilderness Estuary

Much of the discussion related to science included in both the Goodman and DBOC letters is dedicated to the history and background of one of the approximately 50 documents cited in the Commission's November 10, 2010, request letter to OCRM. This document, a report produced by the National Park Service (NPS) titled *Drakes Estero: A Sheltered Wilderness Estuary*, contains a broad description of the cultural and ecological history of Drakes Estero as well as a summary discussion of several sources of potential and observed interactions between the shellfish cultivation operation and the wildlife and coastal resources of Drakes Estero.

Shortly after the initial posting of this document on the Point Reyes National Seashore website in May of 2007, DBOC and Dr. Goodman responded with a variety of allegations regarding the content of the report and the motivation of NPS in releasing it – most of which have reappeared in Goodman's attachment to DBOC's recent letter. These allegations prompted NPS to provide a clarification of the report and the science behind it in a document titled, *National Park Service Clarification of Law, Policy, and Science on Drakes Estero* (attached for your reference). As noted by NPS, this document was developed in collaboration with 11 scientists and experts in the field of marine ecology and relies on "expert opinion from nationally recognized ecologists, peer-reviewed published literature, and National Park Service studies" to respond directly to Goodman's contentions.

In our November 10, 2010 request letter to OCRM, we quoted an aspect of the revised report concerning a rather fundamental and irrefutable process associated with shellfish biology and cultivation. Namely, our letter cited a section of the report that relates to a discussion of: (1) the feeding mechanism of cultured non-native shellfish; (2) the capacity of these animals to remove larval and planktonic organisms from seawater; (3) the ability of cultured filter feeding shellfish to shift carbon from the pelagic food web to the benthic food web; and (4) the potential for one or more of these factors to affect the ecology of Drakes Estero. Although the debate over *Drakes Estero: A Sheltered Wilderness Estuary* has encompassed a wide range of topics, these specific aspects of the NPS report referred to by Commission staff have been neither disproven nor discredited, despite the repeated statements to the contrary that are included in the DBOC letter and Goodman attachment.

In fact, the NRC report, referred to as the National Academy of Sciences' report in the DBOC letter and Goodman attachment, acknowledges both that while specific research in Drakes Estero is lacking, "some shift from pelagic to benthic food webs is a reasonable inference"¹⁰ to make when considering the effects of shellfish cultivation on a discrete system and that "ecological filtering and biodeposition"¹¹ are intrinsic characteristics of cultured filter feeding shellfish such as those planted by DBOC in Drakes Estero. In this respect, the NRC report suggests that the discussion of these issues included in the

¹⁰ Ibid. Page 79.

¹¹ Ibid. Page 79.

Commission staff's letter, and our reference to a similar discussion included in the NPS report, is both credible and reasonable.

While it acknowledges that the removal of plankton from the water column by cultured filter feeding shellfish is likely to result in some effects, the NRC report discounts the potential for these mechanisms to result in significant adverse effects on the ecology of the estero. This conclusion appears to be based on two assumptions. One, that "the scientific literature on the effects of culturing oysters and other suspension-feeding bivalves does not support a broad characterization of degradation of function, especially in physically well flushed estuaries and where stocking densities are relatively low, as in Drakes Estero."¹² (emphasis added). This does not address the potential for local or focused degradation of function. This is important to consider because the magnitude of the coastal effects that may result from the cultivation of several million filter-feeding non-native shellfish in Drakes Estero and whether or not a "broad characterization of degradation of function" is a supportable claim are not questions that are relevant to the Commission's request to OCRM. As noted above, the key consideration is whether the proposed activity's coastal effects are reasonably foreseeable, not whether these effects reach a specific threshold of significance or breadth. The number of non-native filter feeding shellfish cultivated in Drakes Estero and the significant volume of water filtered by these animals strongly indicates that local or focused effects may be occurring at present (and would continue into the future if the cultivation of these animals continued for ten years beyond 2012, as proposed). Among others, these effects include a decrease in the amount of plankton available to wild stocks of native filter feeders in the estero and the removal of native larval organisms and plankton from the water column.

The other, more fundamental, assumption underlying the NRC report's conclusion on the limited significance of culturing millions of non-native filter feeders in the estero is that "The Olympia oyster, *Ostrea lurida*, was a former constituent of Drakes Estero of some appreciable but unquantifiable abundance, as evidenced by the mounds of its shells in the Coast Miwok middens excavated around Drakes Estero (Stewart and Praetzellis, 2003)."¹³ This assumption regarding the historical presence and abundance of native oysters in Drakes Estero forms the basis for the NRC's assessment of the potential ecosystem effects of the current aquaculture operation and its assertion that the current cultivation of non-native shellfish in Drakes Estero "represents re-introduction of ecological filtering and bio-deposition functions that prevailed before the native oysters were overharvested."¹⁴ This claim, however, is not supported by definitive empirical data. The sole citation for this assertion in the NRC report, a 2003 report by Stewart and Praetzellis, actually does not support a conclusion that native oysters were once abundant in Drakes Estero or that they were overharvested and subsequently extirpated. In fact, there is absolutely no mention or discussion of native oysters in Stewart and Praetzellis

¹² Ibid. Pages 78-79.

¹³ Ibid. Page 20.

¹⁴ Ibid. Page 79.

(2003). Furthermore, two subsequent reports¹⁵ that specifically explore the history and archeology of Drakes Estero and its surrounding land strongly refute the assumption made by the NRC report regarding the presence and abundance of native oysters in this ecosystem. Each of these reports has been attached to this document for reference and a section of the Babalis (2009) report is included below:

As the NRC report noted, the Park Service does not accept the claim that oysters (of any species) ever constituted a significant component of the prehistoric natural environment of Drakes Estero, but the authors of the report assert that they once did. The authors also conclude – based on the previous assertion – that the present mariculture industry (Drakes Bay Oyster Company) contributes towards the restoration of natural processes, because the industry has reintroduced oysters to a natural system where, according to the NRC, they were once abundant. The present review, however, finds this conclusion to be improbable and indefensible, because there is little factual evidence to support the assumptions on which it is based. Close examination of the sources cited in the NRC report reveals that the authors failed to research adequately the historical (and archeological) basis of their claims. Instead of consulting primary records, the report’s authors relied on secondary sources which were misleading or otherwise unreliable, though they may have supported the author’s own pre-suppositions. A more thorough-going and critical review of the historic record reveals nearly the opposite of what the NRC claims and suggests that oyster mariculture represents an entirely novel and artificial introduction of oysters to Drakes Estero, originating in the early 1930s at the start of the present mariculture operation.

Overall, Commission staff finds that there is a lack of credible, verifiable, support for the NRC report’s assumption regarding the historical presence and abundance of native oysters in Drakes Estero. Further, recent reports produced by NPS staff with relevant expertise directly contradict the validity of the NRC report in this regard. Although non-native shellfish mariculture has been practiced in Drakes Estero for some time, there is no record that it replaced a failed wild-stock fishery. At best, insufficient information exists to draw definite conclusions regarding the historical ecological condition of Drakes Estero, both in terms of the presence and abundance of native oysters.

It should also be noted that non-native oysters and clams cultured in intertidal bags and on wooden racks (the most common techniques used by DBOC) are not the ecological equivalent of natural beds of native oysters. As discussed in several recent studies and

¹⁵ Babalis, T. 2009. Critical Review: A Historical Perspective on the National Research Council’s Report “Shellfish Mariculture in Drakes Estero.” Unpublished report prepared for Point Reyes National Seashore. Prepared by the National Park Service, Pacific West Region, Cultural Resources Program. 27 pp. and Rudo, M. 2009. Little Archeological Evidence of the Olympia Oyster (*Ostrea lurida*) at Drakes Estero, Point Reyes National Seashore, California. Unpublished report prepared for Point Reyes National Seashore. Prepared by the National Park Service, Pacific West Region, Cultural Resources Program. 8 pp.

reports,¹⁶ native oysters function in an ecosystem in a significantly different way than non-native oysters and in some situations non-native oysters actually serve to suppress native oyster populations and limit their ability to recover from historic overexploitation. In light of both this recent information and the uncertainty surrounding the NRC report's assumption of a historical ecological baseline, we believe it is most prudent to consider the introduction and cultivation of non-native shellfish in Drakes Estero as novel modifications to the natural system.

Even if one were to accept the NRC's assumption on this issue, however, the NRC report acknowledges that oysters, whether native or introduced, have ecological filtering and bio-deposition functions, thereby having an effect on their ecosystem, which is the relevant inquiry here. Thus, especially given the large number of non-native shellfish that would be cultivated in Drakes Estero if the commercial operation were to continue for an additional ten years, as proposed by DBOC, the Commission staff believes coastal effects from this activity to be reasonably foreseeable.

¹⁶ Beck, M.B., R.D. Brumbaugh, L. Airolidi, A. Carranza, L.D. Coen, C. Crawford, O. Defeo, G.J. Edgar, B. Hancock, M. Kay, H. Lenihan, M.W. Luckenbach, C.L. Toropova, G. Zhang. 2009. Shellfish Reefs at Risk: A Global Analysis of Problems and Solutions. The Nature Conservancy, Arlington VA. 52 pp.; Trimble, A.C., J.L. Ruesink, and B.R. Dumbauld. 2009. Factors Preventing the Recovery of a Historically Overexploited Shellfish Species, *Ostrea lurida* Carpenter 1864. Journal of Shellfish Research, 28(1): 97-106.