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May 30, 2013

Doris Lowery
NPS Washington Administrative Program Center
Attn: Correspondence Control Unit (CCU)
1201 Eye Street NW
Washington, DC 20005

RE: Complaint about Information Quality – Drakes Bay Oyster Company Environmental Impact Statement

Dear Ms. Lowery:

We have prepared this request on behalf of the Pacific Coast Shellfish Growers Association ("PCSGA"). This request is submitted to the National Park Service ("NPS") pursuant to the October 16, 2002 Director's Order #11B: Ensuring Quality of Information Disseminated by the National Park Service (the "NPS Guidelines").

I. Summary

When evaluating a prior NPS study regarding Drakes Estero pursuant to requested peer review, the National Academy of Sciences ("NAS") concluded that:

> While NPS . . . accurately depicted the ecological significance and conservation value of Drakes Estero, in several instances the agency selectively presented, over-interpreted, or misrepresented the available scientific information on potential impacts of the oyster mariculture operation. Consequently, *Drakes Estero: A Sheltered Wilderness Estuary* did not present a rigorous and balanced synthesis of the mariculture impacts. Overall, the report gave an interpretation of the science that exaggerated the negative and overlooked potentially beneficial effects of the oyster culture operation.[1]

[1] National Academy of Sciences, "Shellfish Mariculture in Drakes Estero, Point Reyes National Seashore, California" (2009) Washington DC: The National Academies Press, attached hereto as Exhibit 1 ("NAS Study"), at 72-73. The EIS is critical of the peer review, claiming that it does not employ objective thresholds and does not consider historical sources concerning the presence of oysters in the 1930s. FEIS at 29. However, these same claims could be made against the EIS itself, which is criticized in the NAS DEIS peer review for not using objective and quantifiable thresholds to measure environmental impacts. FEIS at 30; NAS DEIS Review at 14.

The EIS, which relies on much of the same analysis and scientific data and studies, falls victim to the same criticism. Despite numerous rounds of peer review and public comment that included significant and well-reasoned criticism of the science and analysis used by NPS in evaluating the environmental effects of the Drakes Bay Oyster Company ("DBOC") project, the FEIS fails to address many of the same flaws in its analysis that have been criticized for years by peer reviewers, State legislators, other public agencies, and renowned scientists. In the EIS, NPS selectively chooses certain data and studies to emphasize potential negative impacts associated with shellfish cultivation, while ignoring or downplaying any science establishing the beneficial impacts of shellfish cultivation, despite the fact that numerous comment letters submitted during the DEIS comment period referenced and described such scientific data and studies.

This lack of objectivity and bias is exacerbated by the EIS comparison of alternatives. The EIS evaluates a "no project" alternative that considers the impact of not extending the applicant's lease, which would require removal of the aquaculture operation and designation of Drakes Estero as a wilderness (as opposed to a "potential wilderness"). The EIS also studies three alternatives that would permit continued shellfish operations. However, contrary to the National Environmental Policy Act ("NEPA"), which require an agency to use the existing conditions as the baseline for analysis, the three alternatives are compared to the hypothetical future "no project" alternative. This flawed analysis downplays the benefits provided by the existing shellfish operations and exaggerates the potential negative impacts of continuing oyster operations, while giving no credit for potential mitigation measures or operational changes that could reduce potential impacts. In fundamentally changing the baseline for NEPA analysis to a hypothetical future situation without shellfish activities (which has not been the environmental setting in Drakes Estero for 70 years), NPS concludes that continuing shellfish operations results in major and moderate environmental impacts, as opposed to zero environmental impacts if compared to the real-world existing operations.

The flawed analysis and scientific conclusions stated in the EIS has the potential to be cited in review of other shellfish proposals throughout the country, thereby harming the PCSGA and its members. Therefore, the statements must be corrected and an acknowledgment of mistakes and the corrections must be distributed all persons or organizations that received a copy of the DEIS or FEIS.

II. Identification of Complainant.

This request is submitted on behalf of PCSGA. Because PCSGA is harmed by the disseminated information that is the subject of this request, PCSGA is an "affected person" that may request formal information correction under the NPS Guidelines.

PCSGA's address is:

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120 State Avenue NE #142
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PCSGA requests that further correspondence in this matter be directed to their undersigned representative, as follows:

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III. Authority for Complaint Submittal

This complaint and request for correction of information is submitted under Section 515 of the Treasury and General Government Appropriations Act for Fiscal Year 2001, Pub. L. No. 106-554 § 515, 114 Stat. 2763A-153 to 2673A-154 (2000)(codified as note to 44 U.S.C. § 3516). That Act addresses the requirements for the dissemination of information by federal agencies. The Drakes Bay Oyster Company Special Use Permit Draft and Final Environmental Impact Statements and associated studies referenced and incorporated therein[2] (collectively, the "EIS"), that are the subject of this request are "information" because they are communications of such as facts and data, disseminated to the public by Point Reyes National Seashore ("PRNS") as the lead agency for the project pursuant to NEPA. Publication of the EIS and distribution to the public, the applicant, and other relevant agencies meets the definition of "dissemination" because it is information that NPS has initiated and sponsored. *See* NPS Guidelines, Part VI.F (defining "dissemination").

IV. Description of Information that is the Subject of this Complaint

This complaint and request for correction is submitted with regard to the DEIS circulated for public comment and review by PRNS in September 2011 and the FEIS made available to the public by PRNS in November 2012. The specific material to be corrected within the EIS includes statements identifying oyster farming as causing negative environmental impacts concerning eelgrass habitats; benthic fauna and the spread of nonnative and invasive species; fish; birds; and water quality. Further, the EIS analysis must be corrected to provide an accurate comparison between the stated alternatives, using a consistent baseline for each alternative to provide an objective and accurate comparison of the impacts from each alternative. The statements in the EIS that are the subject of this challenge include, without limitation[3]:

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[2] Available at http://parkplanning.nps.gov/document.cfm?parkID=333&projectID=33043&documentID=43390.

[3] Because much of the analysis is duplicative in the DEIS and FEIS, only citation to the FEIS is provided herein. All comments provided herein should be interpreted to apply equally to any applicable comments in the DEIS. As some statements may be made throughout the EIS, including the Executive Summary and Responses to Public Comments, the citations provided are intended to be representative only and are intended to apply to each instance in the EIS where such statement, or any similar statement, is made, and to any applicable study cited in support of the challenged statement. Similarly, comments that are applicable to statements made concerning Alternative B, regarding maintaining existing operations in Drake Bay, are also generally applicable to statements made concerning Alternatives C and D.

1. Statements that shellfish cultivation in Drakes Bay results in a moderate long-term impact on eelgrass, negatively impacting eelgrass colonization and/or regeneration.[4]

2. Statements that shellfish cultivation results in readily apparent moderate long-term impacts on benthic fauna, including exposing benthic species to additional predators.[5]

3. Statements that cultivation of Pacific oysters and Manila clams in Drakes Bay risks naturalization of nonnative species and increased risk of *Didemnum* spread.[6]

4. Statements that the removal of DBOC's existing operations will result in beneficial impacts for fish species.[7]

5. Statements that oyster racks have a discernible negative impact on fish species.[8]

6. Statements that DBOC operations adversely impact birds and bird habitat through noise disturbances generated by boats and displacement of natural bird habitats.[9]

7. Statements that existing DBOC oysters do not have a significant impact on water quality in Drakes Bay and that the "no project" alternative will have a long-term beneficial impact on water quality in Drakes Bay.[10]

8. Statements that continuing DBOC's existing shellfish operations will result in minor adverse impacts to Drake Bay water quality.[11]

9. Statements identifying Alternative A, the "no project" alternative, as the environmentally superior alternative.[12]

V. Explanation of How PCSGA Is Affected

The EIS addresses the impacts of oyster and clam farming in Drakes Estero and includes analysis and general conclusions regarding the impact of shellfish cultivation on a variety of subjects, including its impact on eelgrass, benthic fauna, fish, birds, water quality, and other ecological features. Because DBOC's operations are similar to other shellfish mariculture operations undertaken nationwide, opponents of any shellfish farm could claim that the general conclusions made in the EIS concerning oyster and clam operations apply to other estuaries where oyster and clam farming occurs. Furthermore, the Army Corps of Engineers ("Corps") in

[4] *See* FEIS at 333-37.
[5] *See* FEIS at 347-48, 351.
[6] *See* FEIS at 348-51.
[7] *See* FEIS at 358-61.
[8] *See* FEIS at 363-65.
[9] *See* FEIS at 389-94.
[10] *See* FEIS at 427-29.
[11] *See* FEIS at 435-36.
[12] *See* FEIS at 153-54.

undergoing a programmatic consultation under the Endangered Species Act for Nationwide Permit 48, which authorizes shellfish culture operations nationally. If relied upon in this programmatic consultation, the EIS and the analysis underlying the EIS could have a damaging effect on the entire shellfish farming community, and negative consequences for all of the nation's shellfish growers. PCSGA is an association whose membership is comprised of shellfish growers in California, Oregon, Washington, Alaska and Hawaii, all of which could be harmed by the EIS analysis and conclusions.

Further, PCSGA's members will be harmed because the EIS gives legitimacy to the flawed methodology, analysis and conclusions challenged herein. Recently, there have been at least two cases where the issues raised in the EIS were used to deny oyster lease applications in Alabama and South Carolina.[13] Studies incorporated in environmental impact studies are also afforded greater deference by agencies and courts, as they are relied upon under the presumption that they have been stringently reviewed and approved by the lead agency consistent with agency and NEPA standards for data quality and substantial evidence.

VI. The EIS Is Not Objective and Presented in an Unbiased Manner, and Is Not Based on Accurate Information

The EIS and associated incorporated studies and reports fail to comply with the basic standards of information quality required under the NPS Guidelines and U.S. Department of Interior Information Quality Guidelines ("DOI Guidelines").[14] The NPS Guidelines require that information released by NPS "will be developed from reliable data sources and will otherwise ensure information quality at each stage of information development . . . based on accepted practices and policies utilizing methods for information collection and verification."[15] The information disseminated must be objective, in that it must be "presented in an accurate, clear, complete and unbiased manner. This involves whether the information is presented in a proper context."[16] The DOI Guidelines, incorporated by reference in the NPS Guidelines, similarly provide that influential information "will be produced with a high degree of transparency about data and methods."[17] The EIS fails to meet these minimum standards for data and information quality.

1. Statements concerning interactions between oyster cultivation and eelgrass lack objectivity, are inaccurate, and exhibit selective bias in presenting and comparing scientific evidence.

The EIS concludes that shellfish cultivation in Drakes Bay results in a moderate long-term impact on eelgrass, negatively impacting eelgrass colonization and/or regeneration, primarily due to shading from overwater structures and scarring from propellers. To support this conclusion, NPS relies on "a few unpublished masters theses and observational data from NPS"

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[13] Cause of Action Investigative Report, "Keeping Entrepreneurship at Bay: How the Department of the Interior Uses Flawed Science to Foreclose the American Dream, March 4, 2013, http://causeofaction.org/wp-content/uploads/2013/03/FINAL-Report.pdf, at 4.

[14] *See* 67 FR 8452.

[15] NPS Guidelines § III.A.

[16] NPS Guidelines § IV.C.

[17] DOI Guidelines § II.

and a 1976 study from Florida considering different species of eelgrass.[18] NPS' use of these studies, and its dismissal of empirical evidence in the Estero, other published studies, and NAS peer review violates its own research guidelines and evidences a lack of objectivity when evaluating the impacts of shellfish cultivation on eelgrass.

A. Statements Regarding Impacts from Boat Scarring

The EIS claims that propellers from oyster boats scar eelgrass, thereby adversely impacting eelgrass productivity and habitat. This ignores the conclusion for the 2009 NAS peer review that "damaged eelgrass blades have rapid regeneration capacity."[19] Regrowth of eelgrass from scarring would take approximately 2-4 weeks to recover to the size of the original biomass.[20] While the EIS states that regrowth can take as long as 2-5 years, this assumes extensive scarring beyond the amount that could be caused by propeller blades, which only reach the tops of eelgrass leaves rather than the base. The propeller would need to cut through several inches of sediment to scar the eelgrass' root rhizome complex, which would cause extensive damage to propellers and boat engines. There is no evidence of any such damage to sediment or the boats themselves. Further, the EIS acknowledges that mitigation is possible, through establishing routes for boats, which would minimize the impact to eelgrass. Therefore, the EIS provides no evidence that the boat scarring results in a long-term significant impact to eelgrass.

The science referenced in the EIS also does not support NPS' claims. The EIS cites a study by Fonseca and Bell (1998) that "Heavily scarred beds may be prone to further damage or destruction by severe storms." However, the only mention of how storms can influence beds was "We did not determine whether acute wind events periodically act to organize seagrass bed formation through extensive reductions in seagrass coverage, although some systems (e.g. Tampa Bay) can experience marked changes in cover after large storm events." There is no mention of scarred beds.

The EIS analysis of eelgrass impacts from propeller wash is similarly mischaracterized. The study cited for evidence that propeller wash may impact eelgrass, Thom et al. (2003), was based on pleasure craft (yachts) and ferryboats, which displace much larger volumes of water and involve far greater erosive forces than skiffs used on oyster operations. While the EIS relies on the high turbidity of the Estero to minimize certain benefits from the existing oyster operations, such as nutrient filtering, it ignores the effect that such background turbidity has on masking and eliminating any effects from turbidity associated with propeller wakes. The NAS review of the DEIR found that:

> At most, the relatively brief pulses of turbidity generated by motorboats may temporarily increase turbidity . . . but . . . turbidity will probably be rapidly dissipated by strong tidal currents and mixing, and at low tide when eelgrass beds

[18] FEIS at 328.
[19] FEIS at 330.
[20] Letter from ENVIRON International Corp. to Point Reyes National Seashore, attached as Exhibit 2 ("Environ Study"), 12/9/2011, at 10.

> are only covered by a thin layer of water, water turbidity will have little effect on light availability for eelgrass growth (Koch and Beer 1996).[21]

Further, NPS has explicitly acknowledged that there is no evidence that propeller wash has an impact on seagrasses.[22] There is simply no evidence that propeller wash is occurring in Drakes Estero. There is no evidence that eelgrass habitat is being moderately impacted relative to oyster boats. Therefore, this impact is negligible and should be characterized as a minor short-term impact in the EIS.

B. Statements Regarding Impacts from Rack and Bag Structures

The EIS also claims that oyster cultivation adversely impacts eelgrass because it shades potential eelgrass habitats and preempts space for eelgrass growth. The EIS exaggerates these concerns while dismissing as negligible the benefits oysters provide to eelgrass habitat development. This benefit was not lost on NAS in its peer review:

> Oysters and other bivalve molluscs feed by extracting particulates from the water column, which can locally increase water clarity, thereby promoting spread of eelgrass, especially to depths where light would otherwise be limiting (Dennison et al., 1993; Peterson and Heck, 2001; Newell and Koch, 2004). Competition for space has been noted, particularly for on-bottom shellfish culture, with an apparent threshold loading function observed in Willapa Bay, Washington, above which eelgrass can "under-yield" or decline by more than the percent cover of oysters present; however, eelgrass can also over-yield or increase at lower levels of oyster cover (Dumbauld et al., 2005, [unpublished data]).[23]

NAS concluded that the benefits provided include improving local water clarity (and hence light penetration) and the release of biodeposits and ammonium (plant nutrients).[24] These benefits are shared by all species within the surrounding area, in addition to the eelgrass. Without any quantification of the benefit to the ecosystem or any study supporting its conclusion, the EIS dismisses this benefit, stating that it would be minimal and "localized" given the high turbidity of the bay. However, NAS took into account the tidal flow and turbidity of the bay, and nevertheless determined that shellfish cultivation had a strong beneficial impact on the ecosystem:

> The relatively small, low-flow watershed and high-energy hydrography of Drakes Estero, dominated by strong tidal flux (Anima, 1991; John Largier, unpublished data), appears to be sufficient to produce low risk of eutrophication in most of Drakes Estero. *Even though these properties endow the estero with excellent water quality, filtration by the cultured oysters could provide additional benefits to eelgrass production by lowering turbidity and adding nutrients because these*

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[21] National Academy of Sciences, "Scientific Review of the Draft Environmental Impact Statement: Drakes Bay Oyster Company Special Use Permit," National Academies Press (2012), attached as Exhibit 3 ("NAS DEIS Review"), at 21.

[22] National Parks Service, "Patterns of Propeller Scarring of Seagrass in Florida Bay" (2008), at 22.

[23] NAS Study at 32.

[24] *Id.* at 68.

> *limit eelgrass distribution and production even in relatively oligotrophic estuaries* (Carroll et al., 2008). *In addition, the oysters in Drakes Estero could add ecosystem resilience in the event of a phytoplankton bloom or a high-turbidity event like sedimentation during run-off of stormwaters* (Jackson et al., 2001). Also, the strong tidal currents and shallow water depths help maintain the oxygenation of sediments even under oyster racks where biodeposition (feces and pseudofeces) is expected to be highest.[25]

In addition, many authors have reported that bottom oyster culture can increase eelgrass growth rates, even if their plants are less dense (Peterson and Heck 2001, Newell 2006, Tallis et al. 2009).

The EIS also misrepresents the scientific data that it claims establishes that shellfish structures have a negative impact on eelgrass. The EIS selectively cites from Jesse Wechsler's 2004 master's thesis. The EIS does not mention Weschler's conclusion regarding eelgrass and oyster racks:

> A major concern in coastal environments is the loss of eelgrass beds that results from encroaching development . . . Eelgrass beds are prevalent throughout the Drakes Estero ecosystem. A qualitative look at the distribution of eelgrass beds in Schooner Bay indicated that its productivity was not affected substantially by oyster mariculture; however eelgrass growth is restricted directly beneath the oyster racks due to light attenuation. Adjusting the spacing between oyster lines would likely restore productivity under the racks, and could allow oysters and eelgrass to be grown in concert.[26]

The NAS DEIS peer review also found that it is unlikely that bag culture has a direct impact on eelgrass.[27]

Further, even if NPS claims were correct, it is unclear how NPS concludes that the project results in a moderate long-term impact on eelgrass. The EIS acknowledges that eelgrass has significantly grown during DBOC operations between 1991 and 2007.[28] At a minimum, this provides circumstantial evidence that shellfish operations do not have a significant impact on eelgrass. Additionally, the maximum area of impact calculated (4.1 acres) represents 0.2% of the total Drakes Estero water area and 0.6% of eelgrass habitat available in the estuary.[29] This is similar to the amount lost in natural seasonal variability in the Estero. The EIS contains no analysis of how the loss of a negligible amount of eelgrass results in a moderate or significant impact to the overall eelgrass habitat and ecosystem in the bay. Rather, it treats any disruption to eelgrass as a significant impact. This is a significant departure from how the EIS considers beneficial impacts from oyster cultivation, where it seeks to quantify the benefit in comparison to

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[25] *Id.* at 27 (emphasis added).
[26] Wechsler, Jesse, "*Assessing the Relationship Between the Ichthyofauna and Oyster Mariculture in a Shallow Coastal Embayment, Drakes Estero, Point Reyes National Seashore*" (2004) at 29-30.
[27] NAS DEIS Review, at 21.
[28] FEIS at 330.
[29] Environ Study at 10.

the overall bay (or entire County) when dismissing its significance.[30] This repeats the mistake of prior NPS studies, which NAS found "failed to place the relatively small effect of the oyster racks on eelgrass coverage in the appropriate context."[31] Given the abundance of eelgrass in the Estero and historical growth of eelgrass in combination with existing shellfish operations, the lack of an objective threshold that evaluates what amount of eelgrass loss would be considered significant prevents scientific evaluation of the impact in the EIS, particularly as compared to the other benefits that such operations provide to eelgrass and the ecosystem as a whole.

The lack of objectivity is revealed when one compares how the EIS considers the impact to eelgrass due to shading (a truly localized impact which impacts 1% of the eelgrass area in the bay) with how the EIS considers the positive benefits to eelgrass from improvements to water quality and nutrient production (which impacts 100% of the bay).[32] A more comprehensive and balanced view of the literature would describe the interrelationship of shellfish cultivation for environmental enhancement and estuarine restoration.

C. Synthesis of Shellfish Cultivation and Eelgrass Habitat

By focusing on the elimination of *any* eelgrass habitat, the EIS fails to account for the positive impacts of the interaction of shellfish operations and eelgrass that may be eliminated if shellfish operations are terminated. It assumes that, because eelgrass is good, more eelgrass in the areas previously occupied by shellfish structures is better. Several studies cited in PCSGA's comment letter challenge this conclusion.[33] The results of numerous studies establish the value of shellfish habitat and oyster culture in terms of their beneficial role in water quality and clarity, physical processes, and nursery and refugia habitat for juvenile fishes, shrimp, crabs, and other invertebrates (Ambrose and Anderson, 1990; Doty, Armstrong and Dumbauld, 1990; Breitburg and Miller, 1998; Dumbauld, Armstrong and McDonald, 1993; Eggleston and Armstrong, 1995; Simenstad and Fresh, 1995; and Dumbauld, 1997). Similarly, numerous studies establish the abundance and diversity of nekton (fish, crab, and shrimp), epibenthic microfauna, and benthic microfauna found in shellfish aquaculture (Simenstad et al. 1991; Clynick et al. 2008; Erbland and Ozbay 2008; Powers et al. 2007). West coast studies establish that species abundance and diversity are comparable in oyster and eelgrass habitats, both of which are higher than mudflat, sand, and several other habitats sampled (Hosack, 2003; Ferraro and Col, 2001, 2002, 2007, 2011).

A study published in *The Journal of Shellfish Research* (Dealteris et al., 2004) investigated the habitat value of shellfish aquaculture gear compared with eelgrass and non-vegetated areas. Abundance of marine organisms and species diversity was used to compare habitat value. The study finds aquaculture gear provides habitat for many species throughout the year as compared to eelgrass. The study also indicates species abundance and richness in habitat consisting of shellfish aquaculture gear is higher during all times of the year; species diversity is also higher but not significantly so in aquaculture as compared to eelgrass. The study concluded

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[30] *See, e.g.*, FEIS at 424-25 (diminishing beneficial water quality impacts as compared to the entire bay); FEIS at 498 (comparing the socioeconomic benefits of the project as compared to all of Marin County).
[31] NAS Study at 74.
[32] NAS DEIS Review, at 14-15 (noting that footprint of shellfish structures would occupy 1% of total eelgrass area).
[33] *See* Letter from Chris Cziesla and Laura C. Kisielius to Point Reyes National Seashore (Dec. 9, 2011), attached as Exhibit 4.

that "shellfish aquaculture gear has substantially greater habitat value than a shallow non-vegetated seabed, and has habitat value at least equal to and possibly superior to submerged aquatic vegetation." Given the high value habitat provided by both eelgrass and aquaculture gear and the year-round presence of aquaculture gear, it stands to reason that the combination of eelgrass and aquaculture provides more robust and resilient habitat value than either would standing alone.

D. Summary

The drastic overstating of oyster impacts on eelgrass and understating and mischaracterizing the beneficial impacts of oysters on eelgrass evidences biased scientific analysis that fails to be objective in accordance with NPS standards.

2. Statements that shellfish cultivation results in readily apparent moderate long-term impacts on benthic fauna, including exposing benthic species to additional predators, lack objectivity.

Citing the Harbin-Ireland study and the NAS study, the EIS claims that the placement of oyster racks causes greater exposure of invertebrates to predators that prey on benthic species living under the substrate and overall result in a moderate adverse impact to benthic fauna. However, the NAS study came to the opposite conclusion, and thoroughly criticized the Harbin-Ireland study:

> Few definitive conclusions can be drawn from the Harbin-Ireland (2004) research described above because of the limited nature of the study. Sampling was done during the winter and fall when invertebrate abundance is typically lower in temperate estuaries. Only eelgrass habitat was sampled and the test involved only oyster rack culture, whereas bottom bag culture on intertidal flats is now also an important part of the oyster operation. Nonetheless, some conclusions can be reached, which are supported by significant parallels to other work (see below) in several U.S. West Coast estuaries and elsewhere. Specifically, the flushing by tidal currents in Drakes Estero is sufficient to induce erosion around the stakes holding the oyster racks in eelgrass beds, but the resulting change in size composition of sediments is minor. These tidal currents also are sufficient to disperse the organic rich oyster bio-deposits sufficiently widely to avoid inducing detectable organic enrichment of the sediments nearby and subsequent mass mortality of benthic macro-invertebrates from sediment anoxia. Any changes in the benthic infaunal communities of the eelgrass habitat induced by flow modifications and biodeposition are subtle.[34]

While citing several other studies finding that shellfish have little impact on benthic fauna (a conclusion that does not support the EIS conclusion that it would result in a moderate impact), the EIS ignores the numerous studies cited by NAS that shellfish cultivation causes a significant positive impact to such species:

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[34] NAS Study at 39. While the EIS notes these benefits in its description of the affected environment, it fails to consider the benefits of benthic-pelagic coupling in its discussion of the project's impacts. FEIS at 212.

> Studies have shown that oyster reefs and oyster mariculture installations can contribute to the transfer of suspended material into the sediments (Mazouni et al., 1996; Nugues et al., 1996). These dense aggregations of oysters also release dissolved nutrients that can support new growth of algae or seagrasses (Asmus and Asmus, 1991; Reusch et al., 1994; reviewed in Dame and Olenin, 2005). To varying degrees, suspension feeders enhance benthic–pelagic coupling, nutrient remineralization, primary productivity, sediment transfer from water column to the bottom, and habitat complexity . . . *Oyster enhancement and oyster reef restoration is a major and expanding component of estuarine restoration throughout the United States* (Coen and Luckenbach, 2000; Lotze et al., 2006), *now widely promoted by several environmental organizations* (M. Beck, The Nature Conservancy, Feb 2009).[35]

The NAS study also reviewed several studies ignored in the EIS that found greater species diversity at both on-bottom and off-bottom oyster cultivation sites as compared to an unstructured mudflat, and either equal or slightly less species diversity as compared to eelgrass habitats (Trianni, 1995; Hosack et al., 2006; Ferraro and Cole, 2007; Pregnall, 1993; and Rumrill and Poulton, 2004).[36] Further, oyster structures may support epibenthic meiofauna, which represent important food items in fish diets (Castel et al., 1989; Simenstad and Fresh, 1995; Hosack et al., 2006).[37] The only study concerning Drakes Estero showed no difference in benthic invertebrates as compared to a neighboring bay without shellfish operations.[38] A study completed by the Western Regional Aquaculture Center (WRAC 2004) similarly found that the "overall similarity of the invertebrate communities among the oyster long line and eelgrass reference sites provides evidence that oyster long line culture activities are not particularly stressful to the benthic infaunal communities of Arcata Bay."[39]

In a candid acknowledgement that NPS is placing policy over science, the EIS refutes this evidence by stating that "this approach [bottom bag cultivation] is not consistent with NPS

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[35] *Id.* at 27-28 (emphasis added).

[36] Several other studies reached the same conclusion. *See* Meyer, D.L., and E.C. Townsend (2000) "Faunal Utilization of Created Intertidal Eastern Oyster (Crassostrea Virginica) Reefs in the Southeastern United States," Estuaries 23: 34-45; DeAlteris, J.T., B.D. Kilpatrick, and R.B. Rheault (2004) "A Comparative Evaluation of the Habitat Value of Shellfish Aquaculture Gear, Submerged Aquatic Vegetation and a Non-Vegetated Seabed," Journal of Shellfish Research 23: 867-874; Pinnix, W.D., T.A. Shaw, K.C. Acker, and N.J. Hetrick (2005) "Fish Communities in Eelgrass, Oyster Culture, and Mudflat Habitat of North Humboldt Bay, California," Final Report, U.S. Fish & Wildlife Service, Arcata Fish & Wildlife Office, Arcata Fisheries Program Technical Report Number TR2005-02; and Powers, M.J., C.H. Peterson, H.C. Summerson, and S.P. Powers (2007) "Macroalgal Growth on Bivalve Aquaculture Netting Enhances Nursery Habitat for Mobile Invertebrates and Juvenile Fishes," Marine Ecology Progress Series 339: 109-122.

[37] NAS Study at 40.

[38] *Id.* at 69; *see also* NAS DEIS Review, at 22 ("There is little reason to expect that any effects from adding structured habitat in the form of racks and bags would extend much beyond the immediate footprint of mariculture, therefore any changes in community structure might be expected to be small").

[39] The FEIS extensively cites a study from Dumbauld et al. (2009) for the proposition that beneficial impacts from shellfish will have little or no impact in areas with high tidal exchange and upwelling. The study does not support the FEIS conclusion that nutrient enrichment from shellfish will have little or no impact; rather the study merely concludes that "water column and sediment nutrient concentrations are generally relatively high and greatly influenced by the proximity to deeper nearshore ocean waters where upwelling controls production during summer months."

Management Policies."[40] This is not a response to the *environmental* impact of the project; it is merely a dismissal of the science as not conforming to NPS' objectives and message.[41]

This selective reporting of scientific reports and dismissal of the beneficial impacts of oyster cultivation on benthic species is not objective reporting and analysis and inevitably biases the EIS analysis, as it disregards any negative impacts to benthic species related to removal of the shellfish racks and bags, and unduly emphasizes any and all potential impacts related to shellfish cultivation, which were dismissed by almost all cited studies (including the NAS study) as negligible.

3. Statements that cultivation of Pacific oysters and Manila clams in Drakes Bay risks naturalization of nonnative species and increased risk of *Didemnum* spread are not objective and inaccurate.

The EIS states that shellfish cultivation risks the naturalization of nonnative species, such as Manila clams and Pacific oysters, which could displace native bivalve species and introduce additional diseases, including *Didemnum*.[42]

A. Statements Regarding Impacts from Naturalization of Nonnative Shellfish

The EIS cites the NAS Study for the proposition that shellfish cultivation could lead to naturalization of nonnative species. In fact, the NAS Study concluded the exact opposite: "the combination of factors such as shellfish culture locations within the Estero, hydrography of the system (short residence time), and the lack of suitable natural habitat for settlement (as opposed to habitat associated with oyster culture) might mitigate against the successful establishment of the Pacific oysters in Drakes Estero."[43] The NAS DEIS peer review is also highly critical of this claim in the DEIS, noting that the citations to impacts of the Pacific oyster in Europe are not applicable to bivalve species, and states that the DEIS conclusion on this topic is highly scientifically uncertain.[44]

B. Statements Regarding Impacts from Invasive Species and Diseases

The EIS also claims that nonnative species of oysters may result in the introduction of invasive species and diseases, again citing the three previous NAS studies. Again, the 2009 NAS Study concluded differently:

> Consequently, the oyster operation is not now likely to be a source for further introductions of nonnative species. The only types of species that now could

[40] FEIS at 347, 54.

[41] Despite Congressional authorization to extend the DBOC permit notwithstanding any other law or policy, NPS uses this logic in considering several impacts in the EIS, including impacts to eelgrass, benthic fauna, birds and special species. *See* FEIS at 337, 352, 394, 409. This essentially predetermines the result of the EIS analysis in favor of Alternative A (the "no project" alternative) and forecloses analysis of any other alternative, in violation of NEPA.

[42] FEIS at 351. This conclusion is particularly confusing, as the EIS analysis in the preceding pages (348-50) states that the risk of these impacts (other than *Didemnum*) may be mitigated through imposition of regulatory controls.

[43] NAS Study at 52.

[44] NAS DEIS Review, at 22-23.

> conceivably be introduced along with importation of oyster larvae are microbes, including notably oyster herpes viruses. None of the NPS review documents describe this change in mariculture methods and the great reduction in risk of new introductions that is achieved by transferring larvae from hatcheries inspected by High Health criteria . . . instead of juvenile oysters on cultch.[45]

Despite frequently citing the NAS Study for the fact that oyster cultivation has historically resulted in the introduction of nonnative species, it ignores the conclusion that it is unlikely to continue to do so in the future due to operational changes and regulatory controls.

C. Statements Regarding Impacts from *Didemnum*

The primary risk of invasive species raised in the EIS is the spread of *Didemnum*, a species which already exists in the bay. The concept that *Didemnum* is "smothering" habitat is inaccurate. The reference associated with this information, Mercer et al. (2009), indicated that *Didemnum vexillum* was able to colonize cobble-pebble substrates and form mats on the seafloor. As a result, there were "subtle shifts" in the benthic community, and the authors state in their conclusion that the "abundance of epifaunal organisms was not significantly affected by presence of the ascidian mats." Further, as noted in the EIS, *Didemnum* is endemic throughout the west and east coasts, including places where shellfish structures are not present.[46] Furthermore, *Didemnum* requires hard substrate for attachment and colonization. Given the soft substrate (e.g. sand, silt, and mud) of Drakes Estero, the risk of large scale colonization in this setting would not be possible.

D. Summary

Citing historical examples that fail to establish the causality between invasive species and shellfish cultivation (and many of which expressly find the lack of causation for future introduction of new species), the EIS fails to objectively evaluate the risk of introduction of nonnative species and diseases, and shows bias in concluding that the project would result in a moderate long-term impact of shellfish cultivation on benthic species and habitats, that are inconsistent with NPS and DOI guidelines for scientific data and analysis.

4. Statements that the removal of DBOC's existing operations will result in beneficial impacts for fish species and that oyster racks have a discernible negative impact on fish lack objectivity and are patently inaccurate.

A. EIS Statements That the "No Project" Alternative Would Result in a Beneficial Impact to Fish Are Not Based on Reliable Scientific Data and Lack Objectivity.

[45] NAS Study at 77, 56 (finding that the risk of introducing additional nonnative species is "low").

[46] The EIS also mentions the possibility of the introduction of a nonnative mud snail. The Byers study cited notes that the "population of *Batillaria* in Drakes, however, remains very restricted – likely a major reason for its apparent absence from previous surveys." As noted in the EIS, the introduction of nonnative oyster seed is highly regulated to ensure that no nonnative species are introduced to the area.

The EIS states that the "no project" alternative that removes existing shellfish structures from the Estero would result in a positive impact for fish, primarily because it would permit eelgrass to regrow in areas previously occupied by shellfish structures. However, the EIS notes that the studies upon which it relies show that eelgrass "has been shown to have different, and sometimes contradictory effects on fish communities."[47] The EIS acknowledges that studies show that shellfish structures have "little effect on fish species abundance or community composition" and may provide a key habitat for kelp surfperch and other fish.[48] Further, the EIS acknowledges that studies have shown that removal of "shellfish operation infrastructure would reduce the availability of prey for structure-oriented fish species, which would likely result in localized decreases in the abundance of these types of fish species."[49] Other studies showing the benefits of a combined shellfish/eelgrass habitat for fish are cited in Section VI.1.C above.

In a drastic departure from how the EIS analyzes harbor seals and benthic species, where any impact on such species was classified as "moderate" or "major," the FEIS concludes that a significant impact on existing fish species in the area would be "beneficial." Disregarding the fact that oyster cultivation has been ongoing in the area for the past 70 years and without any citation to scientific evidence in support of its claim, NPS concludes that the decrease of certain fish species would be positive because it would "allow the Drakes Estero ecosystem to return to a more natural state."[50] This conclusion ignores prior NPS clarifications that "there is inadequate evidence to reach conclusions about whether oyster culturing in Drakes Estero has any impact, positive or negative, on fishes."[51]

B. EIS Statements That Shellfish Operations Result in an Adverse Impact to Fish Are Not Based on Reliable Scientific Data and Lack Objectivity.

The same method of biased analysis is reflected in the EIS consideration of the existing shellfish operation's impact on fish. The EIS concludes that the existing operations have a minor negative impact on fish, without taking into account the positive impacts of shellfish structures acknowledged in the EIS.[52]

The EIS cites Wechsler (2004) for the proposition that damage to eelgrass has the potential to impact fish habitat. However, only five pages earlier, the FEIS acknowledged that "Wechsler (2004) noted that DBOC's offshore infrastructure had little effect on fish species abundance or community composition when compared with other habitats that were sampled."[53] It was also noted that this study "had low statistical detection power" in the NAS reports.[54] This conclusion was also soundly rejected in the NAS peer review:

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[47] FEIS at 360.
[48] FEIS at 359-60.
[49] FEIS at 360.
[50] FEIS at 361.
[51] NAS Study, at 76.
[52] FEIS at 365.
[53] FEIS at 359.
[54] NAS Study, at 36; *see also* NAS DEIS Review, at 25 ("the Wechsler sampling design did not support that inference and there were no statistical tests supporting this hypothesis").

> Studies of mostly off-bottom mariculture operations have shown higher abundances of some fishes and invertebrates in areas with mariculture structures than in nearby areas with eelgrass, unstructured open mudflat, and even nearby oyster reefs and rocky substrates, although eelgrass generally also harbors a few unique species (DeAlteris et al., 2004; Clynick et al., 2008; Erbland and Ozbay, 2008).[55]

This EIS also does not address several studies cited in the PCSGA comment letter regarding fish interaction with eelgrass, such as the Orth et al. (1984) study, which showed that several species of fish are found at higher densities in patchy eelgrass beds than in continuous eelgrass beds.

The NAS peer review was highly critical of the DEIS analysis. It found that, if anything, there was a positive correlation between fish species and oyster structures, finding that such structures may provide certain juvenile fish species protection from predators and that certain fish are attracted to the structures.[56] The report concluded:

> Definitive conclusions about potential impacts of DBOC activities on fish cannot be reached. The only study done of fishes of Drakes Estero was unable to detect significant differences in fish abundance, species diversity, or community composition between eelgrass fishes of Drakes Estero at varying distances from culture racks or between Drakes Estero and the Estero de Limantour, which has no oyster culture operation. There is some indication that the guild of fishes typically associated with hard substrates may be locally enhanced around culture racks, driven largely by response of one species, the kelp surfperch."[57]

The NAS peer review of the DEIS concluded similarly, finding that "the DEIS does not provide data . . . that might suggest an ecological effect consistent with the DEIS conclusion that this is a minor [negative] impact."[58]

C. Summary

The FEIS ignores the NAS conclusions and majority of other studies on the impact of shellfish operations on fish, with no explanation of how it weighs the alleged negative impacts to eelgrass habitat against the acknowledged benefits to fish provided by the existing shellfish structure. This inevitably biases the analysis of the FEIS, which assumes that removing the shellfish structures, and admittedly changing the habitat that has been in place for over 70 years and "returning it to a natural state," would be a beneficial improvement for fish and fish habitat. Therefore, the EIS fails to meet NPS standards for objectivity and provides inaccurate portrayals and analysis of the underlying scientific data.

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[55] *Id.* at 35; *see also* NAS DEIS Review, 25 ("There is a general lack of knowledge about the association between eelgrass landscapes and 'essential fish habitat'").
[56] NAS Study, at 35, 37.
[57] *Id.* at 68.
[58] NAS DEIS Review, at 25.

5. Statements that DBOC operations adversely impact birds and bird habitat through noise disturbances generated by boats and displacement of natural bird habitats lack objectivity.

The EIS states that oyster cultivation will have a moderate adverse impact on birds and bird habitats due to noise from boats and elimination of space for foraging and resting areas. The EIS relies primarily on a study conducted by Kelly et al. (1996) to support the conclusion that shellfish operations alter foraging behaviors. However, the Kelly study explicitly states that "Hypotheses that could explain factors or processes responsible for the observed differences in shorebird abundance between aquaculture and control areas were not tested in this study." The FEIS expands upon the Kelly study, which merely notes that certain birds tend to avoid areas with aquaculture, to state that shellfish operations "degraded shorebird habitat quality and altered foraging behaviors."[59] The Kelly study does not make any such widespread causal connection.[60] Further, there is strong evidence that shellfish forms an important source of food for a wide variety of marine seabirds and raptors (Dankers and Zuidema 1995, Norris et al. 1998, Hilgerloh et al. 2001, Lewis et al. 2007).

Studies have shown either positive impacts through increasing avian species richness and abundance due to increased forage opportunities, or benign impacts, eliciting no significant difference in use from natural beds. Through their foraging habits, migrating marine shorebirds can significantly alter the community structure of wild bivalve populations in soft-bottom intertidal areas (Lewis et al. 2007). At shellfish aquaculture sites, some species of marine shorebirds feed directly on shellfish products themselves (e.g., Dankers and Zuidema 1995), while others feed on the macrofauna and flora that colonize shellfish aquaculture gear (e.g., Hilgerloh et al. 2001). Furthermore, shellfish aquaculture sites influence the abundance of marine shorebirds. For example, Connolly and Colwell (2005) reported that seven of 13 marine shorebirds and three of four wading birds were more abundant on oyster longline plots compared to reference sites. They also reported that shellfish aquaculture in Humboldt Bay did not negatively affect the foraging behavior of most marine shorebirds studied. Although marine shorebirds feed at shellfish aquaculture sites, the aquaculture sites themselves do not necessarily attract larger numbers of birds than non-cultured areas (Hilgerloh et al. 2001). While all of these studies were brought to the attention of NPS based on ENVIRON's DEIS comment letter, there is no discussion of any of the studies in the FEIS.

When NAS reviewed the available data during its peer review (including the Kelly study), it concluded that shellfish cultivation did not have an impact on birds or bird habitats:

> The presence and activity of mariculture workers on plots did not affect the distribution of shorebirds analyzed for many species and no movements in or out of culture plots were associated with culturist activity. These results from such a similar system, involving the same species of shorebirds that use Drakes Estero and the same plastic mesh culture bags, albeit not only placed on the ground but also on elevated racks, are probably directly transferrable to Drakes Estero.

[59] FEIS at 389.
[60] NAS DEIS Review, 29 (finding that FEIS mischaracterizes Kelly study in finding negative impact from shellfish structures).

> Consequently, only the obligate probers are likely to be negatively affected by mariculture on intertidal flats in Drakes Estero, while most species remain unaffected and some that forage visually on surface prey may benefit from invertebrates associated with culture bags and epibiotic growth on the bags and oysters. Feeding shorebirds do not seem prone to being flushed by normal activities of culturists, but insufficient information exists to know how closely culturists can approach the birds without causing retreat by walking or flying.[61]

The EIS relies on scientific data that establishes a loose correlation regarding the number of birds attracted to shellfish aquaculture, but which explicitly declines to hypothesize about any causal relation between shellfish structures and bird patterns. Further, the EIS ignores a significant amount of scientific literature referenced in DEIS comment letters establishing the benefits of shellfish aquaculture for many bird species, including providing food and shelter from predators. This selective analysis of scientific data does not meet NPS standards for objectivity.

6. Statements that existing DBOC oysters do not have a significant positive impact on water quality in Drakes Bay and that the "no project" alternative will have a long-term beneficial impact on water quality in Drakes Bay lack objectivity and are not accurate.

The analytical process that NPS uses to establish that removal of shellfish operations would result in a beneficial impact to water quality, and that continuing existing operations would result in an adverse impact, provides an excellent representation of the effort NPS uses to highlight negative impacts and downplay positive impacts, despite all scientific data supporting the opposite conclusion.

Unlike all other sections of the EIS, the water quality analysis (1) uses a non-localized threshold which measures the benefits of oyster production in water quality as compared to the entire Estero; (2) has an in-depth analysis of oyster size and the amount of time that the oyster cultures spend out-of-water, which would also be relevant to discussions of benthic species, fish, and bird impacts, and yet are not mentioned in any other section; and (3) relies exclusively on the high turbidity or tidal cycle of Drakes Estero in discounting benefits to water quality (while ignoring the effect these same features could have for sedimentation, introduction of invasive species, and the listed concerns about impacts to water quality from spills, bottom scarring, and runoff from onshore facilities).

The EIS states that removal of the shellfish operations that have existed in the Estero for 70 years will have a positive impact on water quality, because it would decrease the potential for spills, eliminate bottom scarring, reduce the effects of pressure treated wood, and would eliminate debris associated with shellfish operations.[62] Notably, the EIS cites to no scientific study or data that establishes that these are issues caused by the existing DBOC operations. Rather, despite (or perhaps because of) existing operations, the EIS describes Drakes Estero as

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[61] NAS Study, at 59-60.

[62] FEIS at 428.

"an exceptional nursery" that is "one of the most pristine estuaries on the west coast . . . [that] has very good water quality."[63]

Similarly, the EIS downplays the impact that shellfish have as filter feeders to improve water quality. Ecosystem modeling and mesocosm studies indicate that restoring shellfish populations to even a modest fraction of their historic abundance could improve water quality and aid in the recovery of seagrasses (Newell and Koch 2004; Ulanowicz and Tuttle 1992; Peterson and Heck 1999). The combined filtering activity of shellfish being grown in the Estero cleans as much as 350,000 m^3 each day. This represents a total of 4% of the volume of water in Drakes Estero.[64] Further, DBOC's operations result in the direct removal of approximately 2,500 kg nitrogen and 750 kg phosphorus annually, improving the water quality and eliminating key sources of hypoxia, habitat loss and biodiversity.[65] That may be one of the primary reasons, in addition to nutrient upwelling, that the Estero has such good water quality. Nitrogen and phosphorus can also result in enhanced phytoplankton production and blooms of both toxic and nontoxic microalgae (Newell et al. 2005).

The NAS DEIS review found that the EIS did not give proper credit to the filtering capacity of shellfish. NAS provided empirical evidence of phytoplankton blooms in parts of the Estero and the drawdown of phytoplankton biomass in the upper parts of the Estero where shellfish were cultivated, evidence of a correlation between shellfish and filtering even in an estuary with high turbidity and tidal flushing.[66] The review concluded that "oyster filtration could be an important process regulating accumulations of organic matter and nutrient recycling within Drakes Estero" and assigned a high level of uncertainty to the EIS conclusions regarding water quality.[67]

The EIS reveals its negative bias in its evaluation of water quality. On one hand, the extent of tidal flushing and exchange is used to downplay the importance of shellfish filtering of the water column by stating that less than 1% of the water in the Estero would be filtered each tidal cycle. Yet at the same time the EIS claims an improvement to water quality in the absence of shellfish aquaculture through the elimination of hydrocarbon spills, bottom scarring, and sediment transfer around racks and bags. Using the same calculations as in the EIS, even if spills, bottom scarring, and sediment transfer were purported to occur every day, the volume of water affected would be a small fraction of the volume being filtered by oysters during the same time period. Using the logic presented in the EIS, the claimed beneficial effects to water quality from the elimination of these sources would be several orders of magnitude less than the beneficial effects generated by oyster filtration.

As recognized in the NAS peer review, the EIS relies on highly uncertain science and analysis in establishing that removing the existing shellfish operations would have a positive impact on water quality, and that continuation of the existing operations would have a minor

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[63] FEIS at 14, 249.
[64] Environ Study, at 21.
[65] *Id.*
[66] NAS DEIS Review, at 36.
[67] *Id.*

negative impact on water quality. The analysis reflects a lack of objectivity and reliance on inaccurate data and assumptions in violation of NPS and DOI standards regarding data quality.

7. Statements that the "no project" alternative is environmentally superior are based on a flawed and biased establishment of multiple baselines to compare the alternatives in violation of NEPA and data quality standards that prevents a fair and accurate analysis of the alternatives.

"The heart of the environmental impact statement" is a description of project alternatives.[68] The EIS must establish a baseline that is used to measure the effects of the proposed project and the alternatives, including a "no project" alternative. The EIS must compare the alternatives against each other to determine which has the least number of significant impacts while achieving the project's objectives.[69] A consistent baseline is vital to conducting a fair and accurate comparison between alternatives.[70] The EIS baseline under NEPA must be the environment as it exists at the time the project is proposed, rather than "the world as it existed 50 years ago."[71]

The FEIS acknowledges the difference between the "no action" alternative and the baseline. "[T]he baseline is essentially a description of the affected environment at a fixed point in time, whereas the no-action alternative assumes that other things will happen to the affected environment even if the proposed action does not occur."[72] Ironically, it ignores its own standards in its analysis. When considering each alternative that includes any amount of continued shellfish operations, the EIS evaluates the project using the "no action" alternative as the baseline rather than existing conditions. Instead of using the existing shellfish operations as the baseline, the EIS uses a hypothetical environment that pretends that shellfish operations have not existed in Drakes Estero for the past 70 years. This overemphasizes the negative impacts of the proposed project and underemphasizes the negative impacts associated with eliminating shellfish operations in Drakes Estero. The NAS DEIS peer review highlighted this problem and requested that the alternatives analysis be revised to have a consistent baseline.[73]

The impact of using this hypothetical baseline is drastic when considering the alternatives analysis throughout the EIS. If the EIS used the proper baseline of the existing conditions, by definition, Alternative B should have no impact, as it merely continues existing operations. However, using the flawed hypothetical baseline as compared to the environment in 1930 before shellfish operations existed in the area, the EIS concludes that Alternative B has several

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[68] 40 C.F.R. § 1502.14.

[69] *Id.*

[70] *Half Moon Bay Fishermans' Marketing Ass'n v. Carlucci*, 857 F.2d 505, 510 (9th Cir. 1988)(without a baseline of existing conditions "there is simply no way to determine what effect the [project] will have on the environment and, consequently, no way to comply with NEPA").

[71] *American Rivers v. Federal Energy Reg. Comm'n*, 201 F.3d 1186, 1198 (9th Cir. 1999).

[72] FEIS at 1 (Executive Summary).

[73] NAS DEIS Review, at 3, 14, 51 (noting that the use of 2 different baselines creates "asymmetry" in the comparison of the alternatives).

moderate and major impacts to the environment, explaining that "certain impacts are not new impacts, rather they are existing impacts that would persist into the future."[74]

This analysis conflates the environmental impacts of the proposed project with potential impacts related to the historic shellfish operations in the bay, including those that were previously approved based on prior NEPA environmental review. The analysis double-counts environmental impacts that occur in the existing environment, assuming that because there have been historical impacts that may be associated with shellfish production, these impacts will apply equally to future operations. The EIS does not analyze the current project; rather it analyzes the historical environmental background *and* the proposed project. In doing so, that eliminates discussion of any benefit or avoidance of such impacts that could be gained through imposition of mitigation measures or regulatory controls on future project operations. Not only does this not comply with proper NEPA standards, it also creates an uncertain environment for applicants if an agency is able and willing to contradict prior environmental and scientific review of prior projects and overturn its prior conclusions without any explanation.

The flawed baseline and alternatives analysis results in a significant understatement of the potential impacts associated with removal of shellfish activities. The appropriate baseline condition includes the structure, biota, and filtering capacity associated with 600,000 pounds of shellfish. This ecosystem has included shellfish aquaculture for over 70 years. The physical processes which interact with both the aquaculture structural components as well as ecosystem services provided by the shellfish create and maintain the Estero in its current pristine condition. As mentioned above, the existing shellfish operations (1) provide a habitat for certain organisms and benthic species; (2) provide water filtration of several millions of gallons of water per day, improving water quality and water clarity which benefits eelgrass and other aquatic species and resources; and (3) may provide habitats and benefits to certain species of birds and fish. The conclusion that the "no action" alternative, which would result in the elimination of these benefits, would be net beneficial to the ecosystem is highly speculative and is not based on any scientific study or analysis. The EIS acknowledges this problem, stating "quantifying any changed environmental conditions across the entire Estero if and when the shellfish operations cease is not possible. The EIS makes no statements or assumptions about whole-ecosystem effects of cultured species on resources."[75] However, this does not prevent the EIS from conclusively stating that the "no action" alternative is environmentally superior in every category to the other alternatives.

Given that the EIS acknowledges that the Drakes Estero is a pristine environment with a thriving ecosystem, has an expanding eelgrass population, and high water quality, the presumption that eliminating existing shellfish operations that have coexisted with the ecosystem for decades would be beneficial, without scientific data to rebut the empirical evidence to the contrary, is simply bad science. It therefore fails to comport with NEPA and NPS data quality requirements.

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[74] FEIS at 295.

[75] FEIS at F-53.

VII. Relief Requested

Because of the clear violations of the NPS and DOI Guidelines and NEPA regulations set forth above, PCSGA respectfully requests the following relief:

1. PCSGA requests specific corrections to all violations of the NPS Guidelines, Interior Guidelines, and NEPA regulations with respect to all the issues raised in this Complaint.

2. PCSGA requests a detailed acknowledgement that the EIS mischaracterizes scientific information and violates NPS Guidelines, DOI Guidelines, NEPA regulations, and the Data Quality Act with respect to the issues raised in this Complaint.

3. PCSGA requests that all federal, state, and local agencies, as well as professional organizations and individuals, who received a copy of any version of the DEIS or FEIS from NPS officials receive a copy of both the detailed acknowledgement of violations and corrections as requested above in 1 and 2.

4. PCSGA requests that the EIS be formally and publicly retracted as out of compliance with NPS Guidelines, DOI Guidelines, and NEPA regulations.

5. Should the EIS be reevaluated and corrected to meet the objectivity requirements identified in this Complaint, PCSGA requests that any new versions of the EIS undergo peer review.

Because of the immediate and significant impact caused by the EIS on PCSGA and its clients, PCSGA respectfully requests that NPS issue its retraction as expeditiously as possible.

VIII. This Complaint Is Not Moot

We note that previous similar complaints concerning DBOC have been denied as moot, most recently the complaint filed by Cause of Action, noting that the Secretary of the Interior decided to not renew DBOC's lease as a matter of discretion based on factors other than those analyzed in the EIS. This complaint is not directly related to the Secretary's decision whether or not to renew the DBOC lease or DBOC's operations in particular; rather it is based on the science and analysis cited in the EIS concerning the environmental impacts of shellfish operations generally. The Secretary's decision actually makes the relief requested herein easier to achieve as, based on the Secretary's decision, the requested relief does not appear to directly affect the final outcome of the DBOC matter.

Even though the Secretary did not rely on the EIS in making his decision, the EIS may still have significant adverse impacts for the shellfish industry and PCSGA members. If relied upon in the Corps' programmatic consultation for Nationwide Permit 48, the EIS and the analysis underlying the EIS will have a damaging effect on the entire West Coast shellfish farming community, and negative consequences for all of the nation's shellfish growers. Further, PCSGA's members will be harmed because the EIS gives legitimacy to the flawed methodology, analysis and conclusions challenged herein. Recently, there have been at least two

cases where the issues raised in the DEIS were used to deny oyster lease applications in Alabama and South Carolina. Studies incorporated in environmental impact studies are also afforded greater deference by agencies and courts, as they are relied upon under the presumption that they have been stringently reviewed and approved by the lead agency consistent with agency and NEPA standards for data quality and substantial evidence. The mischaracterizations and inaccurate and biased analysis in the EIS must be corrected and rescinded to avoid other agencies from relying on such analysis, thereby multiplying the harm of the analysis exponentially.

Thank you for your consideration.

Very truly yours,

Robert M. Smith
Plauché & Carr LLP