



December 9, 2011

By U.S. Postal Service Priority Delivery

Point Reyes National Seashore
Attn: Superintendent
DBOC SUP DEIS
1 Bear Valley Road
Point Reyes Station, CA 94956

Re: Comments on Draft Environmental Impact Statement for Drakes Bay Oyster Company Special Use Permit

Dear Superintendent Muldoon:

The National Wildlife Federation appreciates the opportunity to submit these comments on the Draft Environmental Impact Statement Drakes Bay Oyster Company Special Use Permit, September 2011 (the "Draft EIS"). NWF strongly supports Alternative A, No New Special Use Permit—Conversion to Wilderness, and urges the Park Service to adopt Alternative A as the recommended alternative in the final EIS.

The National Wildlife Federation (NWF) is the nation's largest conservation education and advocacy organization. NWF has more than 4 million members and supporters, including 120,000 members in California, and conservation affiliate organizations in forty-eight states and territories. NWF has a long history of working to protect the nation's coastal and inland waters and the fish and wildlife that depend on those vital resources.

Introduction

On behalf of its more than 4 million members and supports, NWF strongly supports Alternative A, No New Special Use Permit—Conversion to Wilderness (No-action). Alternative A is clearly the best alternative for the environment and is the only alternative that complies with federal law and policy. All three Action Alternatives, on the other hand, would have significant long-term adverse impacts to Drakes Estero and the many species that rely on it.

NWF urges the Park Service to adopt Alternative A and ensure that Drakes Estero converts to full wilderness as long promised to the American people. Alternative A also ensures that the

Park Service can manage Drakes Estero as Congress intended – for the maximum protection, restoration, and preservation of the natural environment.

Full wilderness protection will provide the highest possible level of protection to the ecological treasure that is Drakes Estero. Drakes Estero has long been recognized as the ecological heart of Point Reyes National Seashore and is designated as an Area of Special Biological Significance by the State of California, a site of regional importance by the Western Hemisphere Shorebird Reserve Network, and Essential Fish Habitat and a Habitat Area of Particular Concern under the Magnuson-Stevens Fishery Conservation and Management Act.

Drakes Estero is home to 20 percent of the mainland breeding population of harbor seals in California, is a primary seal puping site, and is used by at least 18 at-risk wildlife species. Thousands of shorebirds and waterfowl are regularly present in the Estero with those numbers skyrocketing in the winter to 20,000 individuals. More than 100 species of birds have been identified at Drakes Estero during winter surveys, including several listed species or species of special concern such as Osprey, White Pelican, Brown Pelican, Snowy Plover, Peregrine Falcon, Black Brant, and Marbled Murrelet. The estuary is extremely important to wintering Black Brant, which only migrate to a few places along the Pacific Flyway.

Drakes Estero also supports at least seven percent of the State of California's eelgrass habitat, which provides important habitat for fish and other species. Thirty-five species of fish have been observed within eelgrass beds in either Drakes Estero or in nearby Estero de Limantour. Eelgrass provides important nursery habitat and foraging habitat for many species of birds, including Black Brant. Eelgrass also plays an important role in stabilizing the substrate and in nutrient cycling.

The National Wildlife Federation strongly supports the reversion of Drakes Estero to full wilderness in 2012 when the current DBOC Special Use Permit and Reservation of Use end. NWF urges the Park Service to make final wilderness designation, and the vital protections that such designation provides for the multitude of species that rely on the Estero, the top priority in its final decision-making process. Protection of this ecological treasure must trump the desire of one company to use – and at times abuse – the resources of Point Reyes National Seashore for private gain.

Detailed Comments

I. Alternative “A” is the Only Alternative that Complies with Federal Law and Policy and Protects the Ecological Heart of Point Reyes National Seashore

The National Wildlife Federation strongly supports Alternative A – the “no action” alternative, which allows the DBOC lease to expire in 2012 and establishes full wilderness protection to Drakes Estero and urges the Park Service to adopt Alternative A as its recommended alternative. Alternative A is clearly the best alternative for the environment and for managing the park in conformance with law and policy.

A. Alternative “A” is the Only Alternative that Complies with Law and Policy

As demonstrated by the Draft EIS and the laws and policies discussed below, Alternative A is the only alternative that complies with federal law and policy, and the only alternative that will fulfill the promise made to the public 35 years ago – that Drakes Estero would receive full wilderness protection in 2012 when the current reservation of use for oyster operations expires.

Federal law and policy require full wilderness protection for Drakes Estero in 2012 and prohibit the Park Service from issuing a new special use permit to DBOC. The FY 2010 Interior appropriations bill rider that prompted the current review allows, but does not require, a new special use permit for the oyster operation.¹

Point Reyes National Seashore was created “to save and preserve, for the purposes of public recreation, benefit, and inspiration” a portion of the nation’s diminishing seashore.² The Seashore’s 1962 authorizing legislation requires the Park Service to administer the Seashore “without impairment of its natural values” and in a manner that is “supportive of the **maximum** protection, restoration, and preservation of the natural environment.”³

The Wilderness Act of 1964 recognizes and defines wilderness as “an area where the earth and its community of life are untrammelled by man, where man himself is a visitor who does not remain.”⁴ Wilderness is further defined as an area of “Federal land retaining its primeval character and influence, without permanent improvements or human habitation, which is protected and managed so as to preserve its natural conditions.”⁵

The 1976 Point Reyes Wilderness Act reaffirms the 1962 and 1964 laws and added language to the Seashore’s authorizing legislation which “underscores the intention that the Seashore is to be managed for the protection of its natural environment and values.”⁶ The Point Reyes Wilderness Act designates the waters of Drakes Estero and the adjoining intertidal land as “potential wilderness” and requires that lands designated as wilderness under the Act be managed in accordance with the 1964 Wilderness Act.

The term “potential wilderness” is defined in the legislative history of the 1976 Point Reyes Wilderness Act as “a category of lands which are essentially of wilderness character, but retain sufficient non-conforming structures, activities, uses or private rights so as to preclude immediate wilderness classification.”⁷ The legislative history provides an explicit statement of Congressional intent regarding the importance of removing all non-conforming uses – including the oyster operation in Drakes Estero – from areas designated as “potential wilderness”:

¹ Public Law 111-88, Section 124.

² 16 U.S.C. § 459c.

³ 16 U.S.C. § 459c-6 (emphasis added).

⁴ 16 U.S.C. § 1131(c).

⁵ 16 U.S.C. § 1131(c).

⁶ House Report No. 94-1680 (1976).

⁷ Senate Report No. 94-1357 (1976) at 3.

“As is well established, it is the intention that those lands and waters designated as potential wilderness additions will be essentially managed as wilderness, to the extent possible, with efforts to steadily continue to remove all obstacles to the eventual conversion of these lands and waters to wilderness status.”⁸

Congress chose to designate Drakes Estero as potential wilderness with full knowledge of the presence of the oyster company and its non-conforming use in the Estero.⁹ This knowing designation and the contemporaneous legislative history make it clear that Congress intended that the non-conforming use must end when the current reservation of use expires.¹⁰

While a recent letter to the Secretary of the Interior from former Congressman John L. Burton and others proposes a contrary statement of Congressional intent, that letter is both directly contrary to the contemporaneous legislative history – including contemporaneous testimony from Congressman Burton – and carries no legal weight.¹¹

During a 1976 Congressional hearing on the Point Reyes Wilderness Act, then Representative John L. Burton wrote that the “potential wilderness” designation would allow Drakes Estero to “be classified as wilderness upon the removal of certain presently existing temporary conditions, without the need to come back to Congress again.”¹² Congressman Burton recognized that Drakes Estero was one of “three particularly fragile areas” in urgent need of protection:

“Drakes and Limantour Esteros are refuges for harbor seals, leopard sharks, egrets, herons, migratory fowl, rare species of clams, cockles, and snails. They are also native Indian sites. Their **permanent protection is urgently needed**, at the very least by ‘potential (or reserve) wilderness.’”¹³

⁸ House Report No. 94-1680 (1976); *see also* Senate Rep. No. 94-1357 at 7 (1976) (potential wilderness “will automatically gain wilderness status” when nonconforming uses are eliminated).

⁹ *See, generally*, Hearing Before The Subcommittee on Parks and Recreation of the Committee on Interior and Insular Affairs, February 5 and 9, Mar. 2 (1976).

¹⁰ It is also important to recognize that because the designation of Drakes Estero as potential wilderness occurred **after** the reservation of use was issued to Johnson’s Oyster Company in 1972, that designation extinguished any potential for extending the reservation of use. This is because the possibility of an extension of the reservation of use was predicated on any extension being in compliance with the laws and policies in place at the time the reservation of use expired. It should also be noted that the reservation of use clearly grants a right to use that is in fact “terminable.”

¹¹ Letter to Secretary Kenneth Salazar from John Burton, William Bagley, and Paul McCloskey (August 11, 2011). Neither Mr. Bagley nor Mr. McCloskey participated in the legislative debate on the Point Reyes Wilderness Act. This letter proposes a completely new and different interpretation of the legislative intent behind creation of the Seashore and designation of Drakes Estero as “potential wilderness” by claiming that Congress intended that oyster operations could continue regardless of the potential wilderness designation.

¹² Statement of the Honorable John L. Burton, Democrat, 5th District, California, Before the Subcommittee on National Parks and Recreation of the House Interior Committee in H.R. 8002, September 9, 1976 (emphasis added).

¹³ *Id.*

Congressman Burton also testified that potential wilderness designation was critical to ensure that these areas would not be “destroyed by incursions of speedboats and motor-type boats.”¹⁴

In 2002, Congressman Burton also told the media that there was no intent for the oyster lease to continue. According to the Marin Independent Journal, Congressman Burton:

“recalled that he focused his attention on making sure that the dairy ranches were protected ‘in perpetuity.’ Burton said he doesn’t remember exactly why the oyster farm had a shorter lease.

The shorter lease, he said, meant the oyster farm could continue, but not forever. But, Burton said, ‘You can always revisit something.’”¹⁵

As a matter of law, a legislator’s post-hoc interpretations of legislation carry no special weight; only statements made contemporaneous with passage of legislation are to be considered. *Sullivan v. Finkelstein*, 496 U.S. 617, 632 (1990) (“views of a legislator concerning a statute already enacted are entitled to no more weight than the views of a judge concerning a statute not yet passed”).

There is no statutory language or legislative history that supports continuing private, commercial mariculture operations in Drakes Estero wilderness after expiration of the current reservation of use in 2012. To the contrary the law clearly requires the Park Service to adopt Alternative A and ensure that Drakes Estero receives full wilderness protection in 2012.

The National Park Service Management Policies also require the Park Service to adopt Alternative A and provide full wilderness protection to Drakes Estero in 2012. These management policies prioritize management of natural resources for maximum protection and restoration and require conservation and resource protection in the face of scientific uncertainty or conflicts between conservation and use.¹⁶ The Park Service is also **required to** manage wilderness, including potential wilderness, “for the preservation of the physical wilderness resources” and “planning for these areas must ensure that the wilderness character is likewise preserved.” This policy further states that potential wilderness shall “be managed as wilderness to the extent that existing nonconforming conditions allow” and the Park Service shall determine “the most appropriate means of removing the temporary, nonconforming conditions that preclude wilderness designation from potential wilderness.”¹⁷ The zoning for Drakes Estero under the

¹⁴ Oral Testimony of the Honorable John L. Burton, Democrat, 5th District, California, Before the Subcommittee on National Parks and Recreation of the House Interior Committee in H.R. 8002, September 9, 1976.

¹⁵ Marin Independent Journal, *All About Marin: Oyster lease fight splits local environmental Leaders* (July 14, 2009), available at http://www.marinij.com/ci_12837892?IADID=Search-www.marinij.com-www.marinij.com.

¹⁶ National Park Service Management Policies 2006 §§ 1.5. 4.1, 6.2.2.1, 6.3.1, 6.3.4.3, 6.3.5; Point Reyes General Management Plan (1980).

¹⁷ National Park Service Management Policies 2006 § 6.3.1. In evaluating the environmental impacts of proposals that may impact wilderness resources, the Park Service “will take into account (1) wilderness

Point Reyes General Management Plan also calls for the Estero's conversion to wilderness where no mechanized equipment or development is to occur.¹⁸

In 2004, the Department of the Interior Solicitor's Office advised the Park Service that it is "mandated by the Wilderness Act, the Point Reyes Wilderness Act and its Management Policies to convert potential wilderness, *i.e.*, the Johnson Oyster Company tract [now the Drakes Bay Oyster Company tract] and the adjoining Estero, to wilderness status as soon as the non-conforming use can be eliminated."¹⁹ Indeed, the Park Service is "required to actively seek to remove from potential wilderness the temporary, non-conforming conditions that preclude wilderness designation."²⁰ The DBOC operation is the only remaining obstacle to full wilderness protection.

As noted above, the FY 2010 Interior appropriations bill rider that prompted the current review allows, but does not require, a new special use permit for the oyster operation.²¹ By granting the Secretary the discretion to decide whether or not to authorize a new permit, the rider in no way allows the Secretary to disregard all otherwise applicable laws and policies. Although the rider includes the phrase "notwithstanding any other provision of law," such language typically serves to supersede only conflicting statutes. That is because there is a presumption against one statute repealing another statute by implication.

As recently reiterated by the Ninth Circuit Court of Appeals, it is a cardinal rule that repeals of law by implication are not favored:

"In *Tennessee Valley Authority v. Hill* the Supreme Court held that without express action of Congress appropriations for a multi-million dollar dam did not repeal the protection of an animal's "critical habitat" under the Endangered Species Act. In reaching this decision, the Court reiterated the " 'cardinal rule ... that repeals by implication are not favored.' " Rather, " '[t]he intention of the legislature to repeal must be clear and manifest,' " and "[i]n the absence of some affirmative showing of an intention to repeal, the *only* permissible justification for a repeal by implication is when the earlier and later statutes are irreconcilable". **This doctrine of disfavoring repeals by implication "applies with full vigor when ... the subsequent legislation is an appropriations measure."**²²

characteristics and values, including the primeval character and influence of the wilderness; (2) the preservation of natural conditions (including the lack of man-made noise); and (3) assurances that there will be outstanding opportunities for solitude, that the public will be provided with a primitive and unconfined type of recreational experience, and that wilderness will be preserved and used in an unimpaired condition." *Id.* § 6.3.4.3 (Wilderness Resource Management, Environmental Compliance).

¹⁸ Point Reyes General Management Plan (1980).

¹⁹ Memorandum Opinion from the Department of the Interior Office of the Solicitor to the Superintendent of Point Reyes National Seashore, February 26, 2004.

²⁰ *Id.* (citing 6.3.1 Wilderness Management, General Policy).

²¹ Public Law 111-88, Section 124.

²² *Firebaugh Canal Co. v. U.S. Dep't of Interior*, 203 F.3d 568, 575 (9th Cir. 2000) (emphasis added, internal citations omitted) (holding that the appropriations proviso in question did not provide an affirmative showing of an intention to repeal the drainage requirements at issue and did not conflict with those requirements because the proviso did not compel the Secretary to stop construction of the drainage

The Supreme Court has also made it clear that:

“when legislators vote on appropriations measures, they ‘are entitled to operate under the assumption that the funds will be devoted to purposes which are lawful and not for any purpose forbidden. Without such an assurance, every appropriations measure would be pregnant with prospects of altering substantive legislation, repealing by implication any prior statute which might prohibit the expenditure.’”²³

The language of the rider clearly does not expressly repeal the laws applicable to Drakes Estero or the Secretary’s exercise of discretion – these include the Wilderness Act, the Point Reyes Wilderness Act, the National Park Service Organic Act, the Point Reyes National Seashore authorizing legislation, the National Environmental Policy Act, and the Endangered Species Act – but instead merely grants the Secretary the authority to issue a new special use permit in the exercise of his discretion.

The language of the rider also does not irreconcilably conflict with the laws and policies applicable to the Park Service, the Seashore, or wilderness. To the contrary these are precisely the laws that the Secretary should be following to determine whether or not he can properly exercise the discretion granted to him in the rider. Indeed, failure to evaluate these laws would make any decision of the Secretary arbitrary and capricious and not in accordance with law, in violation of the Administrative Procedure Act.

As a result, the rider also does not repeal “by implication” any of the laws and policies that prohibit the issuance of a new special use permit to DBOC. Accordingly, the rider must be read in harmony with existing law to the maximum extent possible. As discussed above, this body of law overwhelmingly requires full wilderness protection for Drakes Estero in 2012 as provided for in Alternative A.

It is also important to recognize that despite language in the rider that seeks to prevent its use as a precedent for future changes to wilderness designations, as a practical matter issuance of a new special use permit for DBOC will do just that. Such a decision would clearly establish a highly destructive precedent that a single, commercial interest or an individual lawmaker can easily override and/or undermine longstanding wilderness designations and protections. Once this precedent is set, it cannot be undone and the Department of the Interior and the public will be forced to fight over and over again to retain wilderness protection our nation’s most precious lands.

Alternative A is the only alternative that complies with the Wilderness Act, the Point Reyes Wilderness Act and its legislative history, the Point Reyes National Park authorizing legislation,

project; instead the proviso merely placed a condition on the determination regarding the final point of drainage). A copy of this case is attached to these comments.

²³ *Firebaugh Canal*, 203 F.3d at 575 n.3 (quoting *Tennessee Valley Authority*, 437 U.S. 153, 190 (1978)).

and the management policies of the Park Service. None of the action alternatives comply with these longstanding laws and policies.²⁴

B. Alternative “A” is Clearly the Most Environmentally Sound Alternative and the Only Alternative That Will Likely Increase Resiliency to Climate Change

As clearly demonstrated in the Draft EIS, Alternative A is unquestionably the best alternative for the environment. Indeed, there can be no question that providing Drakes Estero with full wilderness protection in 2012 will ensure that the Estero receives the highest possible protection as quickly as possible.

As the Park Service has recognized, the practical effect of the Wilderness Act has been to **unambiguously place an additional layer of protection on wilderness areas** within the National Park System.²⁵ As a result, national park wilderness areas carry the highest resource protection status that Congress can grant to federal lands or waters.

By removing all stressors created by the commercial oyster operations from Drakes Estero, Alternative A will also likely increase the resiliency of Drakes Estero and the species that rely on it to climate change impacts. By allowing these stressors to continue and increase, none of the action alternatives will achieve this critical goal. As discussed in detail below, the impacts of climate change are happening now and are likely to be significant over the 10 year planning horizon of the Draft EIS. We cannot wait another decade to begin to implement climate change adaptation strategies.

The Park Service has explicitly recognized the importance of increasing resiliency to climate change in its Climate Change Response Strategy. Implementing “adaptation strategies that promote ecosystem resilience and enhance restoration, conservation, and preservation of park resources” is a key goal of the Park Services’ Climate Change Response Strategy.²⁶

That strategy also recognizes that:

Many best-management practices for conventional ecosystem stressors also reduce the tendency of these stressors to intensify climate change effects. Therefore, one approach

²⁴ Each of the action alternatives also fail to comply with the federal policy on aquaculture. This policy only supports aquaculture that is environmentally sound, fully consistent with applicable laws and Administration policy, and properly sited to minimize adverse impacts. U.S. Department of Commerce, Aquaculture Policy, available at http://aquaculture.noaa.gov/pdf/18_docaqpolicy.pdf. As the only designated marine wilderness area on the West Coast, Drakes Estero is not an appropriate site for mariculture activities. As demonstrated in the Draft EIS, each of the action alternatives would have long-term adverse environmental impacts on Drakes Estero that “would be clearly detectable and could appreciably affect individuals or groups of species, communities, or natural processes”. Moreover, as discussed below, DBOC has a long and consistent history of violating permitting requirements and permit conditions. Indeed, there has been *no time* during DBOCs ownership when it has been in full compliance with its permit conditions or permitting requirements. For all these reasons, it is clear that continuation of mariculture operations in Drakes Estero would not comply with the federal aquaculture policy.

²⁵ NPS 1999 Ref. Manual 41, p.8.

²⁶ *National Park Service Climate Change Response Strategy* (September 2010) at 14- 15.

to adaptation is to reduce the risk of adverse outcomes by increasing the resilience of systems and supporting the ability of natural systems and species to adapt to change.”²⁷

Accordingly, the strategy requires the Park Service to “incorporate climate change considerations and responses in all levels of NPS planning” and “**implement adaptation strategies that promote ecosystem resilience and enhance restoration, conservation, and preservation of park resources.**”²⁸

The U.S. Fish and Wildlife Service also recognizes the importance of enhancing ecosystem resiliency as a tool for adapting to climate change, and highlights the vital role that wilderness areas will play in achieving that goal:

“Wilderness will be a key part of our understanding of climate-mitigated changes. Large, unfragmented wilderness areas will support ecosystem resiliency and species adaptation, and be a source of valuable baseline data as the climate changes. . . . Strategies that will enhance ecological resilience and provide opportunities for fish, wildlife and plants to adapt to climate change include maintaining or restoring the ecological integrity of existing refuges and other protected areas, enhancing linkages and connectivity among protected areas, buffering core protected areas, such as wilderness, with conservation efforts on private working landscapes, identifying and protecting climate refugia, and ensuring adequate representation, size and redundancy of ecological communities in the collective conservation estate.”²⁹

By providing full wilderness protection immediately upon expiration of the current lease – as required by law and policy – Alternative A provides Drakes Estero with the highest possible environmental protection as quickly as possible, and likely increases the resiliency of Drakes Estero and the species that rely on it to climate change.

II. Each of the Three Action Alternatives Would Cause Long Term Adverse Environmental Impacts and Significant Impairment to Park Resources

As the Draft EIS makes clear, each of the action alternatives would cause long-term adverse environmental impacts on Drakes Estero that “would be clearly detectable and could appreciably affect individuals or groups of species, communities, or natural processes,”³⁰ including to:

- **Wilderness** due to the readily apparent, widespread, impact on wilderness character from non-native shellfish cultivation; maintenance of human-made infrastructure (including 5 miles of racks); motorboat travel 8 hours per day for 6 days a week; and human-caused noise;

²⁷ *Id.* at 15.

²⁸ *Id.* at 14–15 (emphasis added).

²⁹ U.S. Fish and Wildlife Service, *Conserving the Future: Wildlife Refuges and the Next Generation*, October 2011 at 36-37.

³⁰ National Park Service, Draft Environmental Impact Statement Drakes Bay Oyster Company Special Use Permit (September 2011) (Draft EIS) at 120, 250, 252, Chapter 4.

- **Harbor seals** due to the potential for human disturbance and resulting displacement from multiple motor boat trips and bottom bag cultivation on sandbars and mudflats adjacent to harbor seal protection areas;
- **Shorebirds** due to flushing from motor boats which causes avoidance of normal foraging and resting; inability to access food in the five miles of inter-tidal area occupied by oyster bags; and impacts to the Black Brant sea goose which eats only eelgrass as it migrates from Alaska to Mexico;
- **Eelgrass** habitat due to boat propeller scaring; boat wake erosion; the invasive tunicate (*Didemnum vexillum*) that is attaching to and smothering eelgrass; and continued introductions of non-native species;
- **Wetlands** and wetland functions due to placement of bottom bags in wetland habitat;
- **Soundscapes** due to the use of heavy machinery and repeated use of motor boats;
- **Native fish** due to displacement of habitat and continued attraction of fish communities that would not naturally be found due to perpetuation of non-native habitats; and
- **Benthic fauna** due to non-native oysters competitively excluding native species; introduction of diseases; and introduction of other harmful non-native species.

The Marine Mammal Commission recently validated the science used by the National Park Service in the Draft EIS to evaluate impacts to harbor seals. That report, which was released to the public in late November, concludes that “the information examined during the course of this review is sufficient to conclude that, from time to time, mariculture activities in the estuary do disturb harbor seals. The Commission also believes that the data provide reasonable evidence of a correlation between mariculture activity and seal haulout use, but that evidence is not sufficient to conclude causation.”³¹

Hypothesis-driven natural science is about establishing correlation, on a scale of weak to strong. Causation is an extremely difficult phenomenon to capture for any scientific study. The Park Service does not have to meet such a strong burden of proof. The likelihood of impacts to harbor seals from DBOC is enough evidence to support discontinuation of oyster cultivation, based on Park Service policies and federal law. This is particularly true in light of Park Service laws and policies which require the Park Service to prioritize the “maximum protection” of wildlife.

Notably, the Marine Mammal Commission stressed that the Wilderness decision is “a matter of policy,” adding, “[s]cience, however, has a role in informing the Secretary about the potential consequences of his decision for resources within the estuary.”³²

³¹ Marine Mammal Commission, *Mariculture and Harbor Seals in Drakes Estero, California* (Nov. 22 2011) at 56.

³² *Id.* at i.

The Marine Mammal Commission Report is the latest and the strongest validation of the science used by the Park Service to evaluate impacts to harbor seals. After sorting through the scientific data and a host of conflicting claims made by DBOC, the Commission came to the simple conclusion that DBOC operations impact harbor seals in Drakes Estero.

Furthermore, the peer-reviewed science cited in the Draft EIS illustrates adverse impacts to harbor seals and other species, and supports the Park Service following the precautionary principle and putting an end to mariculture activities once and for all in Drakes Estero. If, as it should, the Draft EIS evaluates the impacts to harbor seals in light of the regional significance of Drakes Estero to the harbor seal population – the Estero is home to 20% of California’s mainland breeding populations – the adverse impacts to harbor seals from continuing oyster operations would likely be even more significant than indicated in the Draft EIS.

The Marine Mammal Commission goes to conclude that if the Secretary does decide to allow oyster operations to continue that the Park Service should be required to “to implement an adaptive management approach that, if done well, should address the various weaknesses and gaps in the available data.”³³ To be successful, an adaptive management approach would have to be well conceived, adequately supported, and responsibly implemented by all parties involved. It would certainly utilize additional Park Service resources and require full cooperation by DBOC.

In addition, as discussed in more detail below, information not considered in the Draft EIS makes clear that the impacts from any of the action alternatives would be even more harmful to the environment than outlined in the Draft EIS. The Final EIS must include this additional information.

III. The Draft EIS Understates the Adverse Impacts of the Action Alternatives

The Draft EIS clearly demonstrates that significant adverse impacts that will accrue from any of the action alternatives. However, it is also clear that the Draft EIS has understated these adverse impacts for at least the reasons discussed below. The Final EIS must address the issues identified below which will give further weight to the importance of selecting the no action alternative, Alternative A.

A. The Draft EIS Understates the Adverse Impacts of the Action Alternatives by Failing to Properly Evaluate Climate Change Impacts

The Draft EIS understates the adverse impacts of the action alternatives because it fails to consider the impacts of climate change on Drakes Estero and the species that utilize the Estero. The Draft EIS also understates the adverse impacts of the action alternatives by failing to evaluate the extent to which they would render Drakes Estero and the species that rely on the Estero less resilient to climate change.

The impacts of climate change must be evaluated in the EIS along with the extent to which the alternatives will increase or decrease the resiliency of the Estero and the rich array of wildlife

³³ *Id.* at iii.

that rely on the Estero.

1. The Impacts of Climate Change Are Likely to Be Significant Over the 10 Year Planning Horizon and Must be Evaluated in the EIS

The Draft EIS fails to address the impacts, including the cumulative impacts, of climate change because it summarily concludes³⁴ that “the effects of climate change on park resources over the 10-year planning horizon for this EIS are likely to be negligible.” Draft EIS at 30. This conclusion, however, is directly contradicted by findings in the Draft EIS, by peer-reviewed science demonstrating the ongoing and rapid effects of climate change on ocean and coastal resources; and by conclusions reached by federal agencies and the U.S. Supreme Court.

- (a) Recent peer reviewed science shows that climate change impacts are likely to be significant over the ten year planning horizon

Recent peer reviewed studies make clear that climate change induced impacts are already effecting marine species, will continue to effect marine species, and can produce significant changes to the marine environment over a 10 year timeline. Climate change induced impacts to ocean species include changes to both geographical range and seasonal phenology (timing of migration, flowering, spawning, and larval recruitment) at levels that far exceed the rate of such changes for land species. Climate change also facilitates the spread of highly invasive marine species.

For example, a 2011 study published in *Science*, concludes that average geographical range shifts for marine communities due to climate change over the past 50 years are from 1.4 to 28 km per decade—or 0.9 to 17.4 miles per decade.³⁵ Shifts in seasonal timing for marine species are advancing an average of 4.3 days per decade in the oceans.³⁶ Moreover, while terrestrial species typically have the option of moving to a higher altitude to track thermal conditions, depth changes have been reported for only a few marine organisms. “For species that cannot adjust their depth, range shifts may be limited by the availability of suitable habitat.”³⁷ This study also concludes that range shifts in the ocean are from 1.5 to 5 times faster than range shifts on land, likely due to the more homogeneous nature of surface water temperature changes in the ocean than on land, and shifts in the timing of spring temperatures were 30 to 40% faster in the ocean than on land (from 1960–2009).³⁸

This study goes on to conclude that:

³⁴ While the Draft EIS states that climate change impacts are discussed in Chapter 3 (Affected Environment) and Chapter 4 (Environmental Consequences), there is no discussion of climate change in the impacts analyses contained in Chapter 4. There are only two references to climate change in Chapter 3. See Draft EIS at 30.

³⁵ Michael T. Burrows, Schoeman D.S., Buckley L.B., et al, The Pace of Shifting Climate in Marine and Terrestrial Ecosystems. *Science*, Vol 334: 652-55 (Nov. 4, 2011). A copy of this study is attached to these comments.

³⁶ *Id.*

³⁷ *Id.*

³⁸ *Id.*

“The global distribution of the velocity and seasonal shift of climate change over the past 50 years can be used to generate predictions for comparison with observed biological changes. Despite slower ocean warming, the velocity of climate change and seasonal shift in the ocean are as high as on land and often deviate from simple expectations of poleward migration and earlier springs/late falls. Direct effects of climate warming are therefore likely to be as great in the oceans as on land at comparable latitudes and greater around the equator. Maps of the velocity of climate change and seasonal shift show the areas where the threat to biodiversity from organisms’ need to rapidly track thermal conditions by shifting distributions and retiming seasonal thermal events may be greatest; these areas may coincide with high biodiversity, especially in the oceans.”³⁹

A 2010 study published in *Global Ecology and Biogeography* concludes that:

“Although marine range shifts are likely to proceed more slowly than marine introductions [introduction of non-native species], the community-level effects could be as great, and in the same direction, as those of introduced species. Because it is well established that introduced species are a primary threat to global biodiversity, it follows that, just like introductions, range shifts have the potential to seriously affect biological systems. In addition, given that ranges shift faster in marine than terrestrial environments, marine communities might be affected faster than terrestrial ones as species shift with climate change.”⁴⁰

This is particularly troubling as “[i]ntroduced species are recognized as one of the main anthropogenic threats to biological systems (Sala *et al.*, 2000).”⁴¹

This study:

“identified 129 marine species that have shifted their ranges, as documented in 55 separate studies.” (Table 1, Appendix S5). These include 31 primary producers (phytoplankton, macroalgae and higher plants), 24 molluscs, 36 fishes, 15 crustaceans, 10 birds, 5 cnidarians, 4 sponges and 1 species each of protist, echinoderm, annelid and insect. Most species documented as shifting were coastal; open ocean species were underrepresented in range shift studies (although further analysis of large data sets, such as the Continuous Plankton Records, would be likely to yield additional oceanic species; Barnard *et al.*, 2004; Hays *et al.*, 2005). Of studies found in the database search, climate change was considered in the primary reference to be the cause of over 70% of the range

³⁹ *Id.*

⁴⁰ Cascade J. B. Sorte, S.L. Williams and J.T Carlton, *Marine range shifts and species introductions: comparative spread rates and community impacts*, *Global Ecology and Biogeography* (2010) 19, 303–316. The study defines range shifts “as any changes in the distributions of native species that are not directly human mediated.” The study also concludes that “[r]ange shifts of native species and introductions of non-native species are analogous in that both are fundamentally biological invasions, involving the movement of individuals from a donor community into a recipient community.” A copy of this study is attached to these comments.

⁴¹ *Id.*

shifts, and 75% of the shifts were in the poleward direction (Table 1). Marine range shifts occurred at an average rate of 19.0 km year . . . This rate is over an order of magnitude faster than terrestrial range shifts . . .

Range shifts occurred much faster in marine systems than terrestrial systems (see also Mieszkowska *et al.*, 2005). This result is congruous with the common assumption that marine populations are more open than terrestrial populations (Caley *et al.*, 1996). However, the majority of the species considered in our analysis disperse quite locally (e.g. many of the seaweeds; see Gaylord *et al.*, 2002, and Kinlan & Gaines, 2003), but they still spread more rapidly than the primarily mobile species shifting in terrestrial systems (Parmesan & Yohe, 2003).⁴²

A 2009 study published in *Fish and Fisheries*, projected a climate-change induced range shift for marine fish and invertebrates of “45–59 km per decade”—or 28 to 37 miles per decade. (Cheung *et al.* 2009).⁴³ This study looked at 1066 exploited marine fish (836 species) and invertebrate species (230 species) considered to be relatively abundant.

A 2004 study published in *Ecology* demonstrates that significant community-wide changes can occur over a ten year period from increased seawater temperatures:

”Our study used an 18-year sampling program in intertidal and subtidal habitats and before–after, control–impact analyses. We show that a 3.58C rise in seawater temperature, induced by the thermal outfall of a power-generating station, over 10 years along 2 km of rocky coastline in California resulted in significant community-wide changes in 150 species of algae and invertebrates relative to adjacent control areas experiencing natural temperatures. Contrary to predictions based on current biogeographic models, there was no trend toward warmer-water species with southern geographic affinities replacing colderwater species with northern affinities. Instead, the communities were greatly altered in apparently cascading responses to changes in abundance of several key taxa, particularly habitat-forming subtidal kelps and intertidal foliose red algae. Many temperature-sensitive algae decreased greatly in abundance, whereas many invertebrate grazers increased. The responses of these benthic communities to ocean warming were mostly unpredicted and strongly coupled to direct effects of temperature on key taxa and indirect effects operating through ecological interactions.”⁴⁴

⁴² *Id.*

⁴³ William W.L. Cheung, V.W.Y. Lam, J.L. Sarmiento, K. Kearney, R. Watson and D. Pauly, *Projecting global marine biodiversity impacts under climate change scenarios*, *Fish and Fisheries*, 10, 235–251. A copy of this study is attached to these comments.

⁴⁴ David R. Schiel, Steinbeck J.R., Foster M.S., Ten Years of Induced Ocean Warming Causes Comprehensive Changes in Marine Benthic Communities, *Ecology*, 85(7), 2004, pp. 1833–1839. A copy of this study is attached to these comments.

Each of these studies demonstrates the potential for very significant climate change induced impacts over the 10 year planning horizon for the EIS. As a result, the final EIS must examine the impact of climate change.

- (b) Findings in the Draft EIS show that climate change impacts are likely to be significant over the ten year planning horizon

The Draft EIS states that:

The wetlands within the project area, which are located within the coastal zone, are exposed to the effects of sea-level rise due to climatic changes. Based on the recent California Climate Change Center report (Heberger et al. 2009), and as described in the “Impact Topic: Floodplains” section of this chapter, the California coastal zone may experience an increase in mean sea level of approximately 3 to 4.5 feet by 2100. **At this rate, sea-level rise, on average, could reach approximately 5.9 inches within the next 10 years. Under such changes, much of the wetland area described above would be under water for the duration of the tidal cycle, effectively changing the character of the wetland and shifting the prevailing hydrologic regime inland.** In terms of land area, the potential effect of such changes is unknown; however, for most of the California coast, thousands of wetland acres are expected to experience dynamic changes in hydrology and ecosystem function over the time trajectory described above (Heberger et al. 2009).”

Draft EIS at 170 (emphasis added). If this prediction holds true, the climate change induced impacts to the Estero’s wetlands and the cumulative losses of other California coastal wetlands would also have a cascading effect on the species that utilize the Estero. We note, however, that sea level rise typically does not follow a straight linear pattern. However, the current rate of sea level rise in this region has been about 2mm/yr, which is a slightly higher than the average rate for the 20th century. The additive and magnifying effects of these impacts on the direct and indirect impacts of the action alternatives must be evaluated in the EIS.

The Draft EIS also recognizes that, in addition to contributing to climate change, the higher atmospheric concentration of CO₂ in the earth’s atmosphere is also likely playing a role in increasing acidification of the ocean:

“Recent data suggest that the California coast **is undergoing** sea-level rise from climate change (Heberger et al. 2009). In addition to changes in sea level, climatic warming has also been linked to changes in ocean circulation patterns and water chemistry. **Scientists have recently documented changes in ocean pH levels, indicating that ocean acidification is a process that is currently occurring and can be measured in coastal marine and estuarine habitats** (Kerr 2010; Feely et al. 2008). Ocean acidification (a condition in which seawater becomes more acidic) can have adverse effects on organisms that build shells or skeletons from calcium carbonate, such as marine bivalves (Kerr 2010). The more acidic conditions can cause reduced rates of calcification (effectively lowering shell-building potential), and eventually can begin to dissolve shell material (Feely et al. 2008; Kerr 2010).”

Draft EIS Ch. 3 at 176. Ocean acidification is a significant problem that likely will become more problematic during the 10 year planning horizon of the Draft EIS.

The Draft EIS also recognizes that the Seashore is currently experiencing significant erosion of low-lying coastal resources, including erosion near the mouth of Drakes Estero which has directly affected snowy plover nesting. “In recent years, erosion along the southern portion of Great Beach has diminished the upper beach area such that the entire beach can be washed by waves.” Draft EIS at 192. As a result, snowy plover nesting, which occurred along the entire Great Beach including near the mouth of Drakes Estero and Limantour Spit during the 1980’s, is now limited to only the northern part of the Great Beach. *Id.*

While erosion clearly occurs in the absence of climate change, increased erosion of low-lying coastal resources has been identified as a particularly significant climate change threat to the Seashore due to increased sea levels and associated increases in wave strength and exposure to high water for longer periods of time.⁴⁵ While sea level rise may not be a direct concern during the 10 year planning horizon, erosion clearly will remain a significant issue for the Seashore during that time period.

Climate change is expected to produce significantly increased erosion along low lying coastal areas due to increased sea level rise and storms:

“Climate change is likely to raise mean sea levels, which would lead to inundation of some low-lying areas and adversely affect coastal aquifers. However, some of the most serious impacts would result from the extreme sea levels associated with tides, winter storms, and other episodic events that would be superimposed upon the higher baseline sea level. Extreme high water levels (measured by any fixed threshold) will occur with increasing frequency (i.e., with shorter return period) as a result of higher mean sea level. Many California coastal areas are at risk from sea level extremes, especially in combination with winter storms (Flick 1998). During the 1997–1998 El Niño, very high seas and storm surge caused hundreds of millions of dollars in storm and flood damage in the San Francisco Bay area. Highways were flooded as six-foot waves splashed over waterfront bulkheads, and valuable coastal real estate was destroyed (Ryan et al. 2000). The frequency of high sea level extremes also may be increased if storms become more frequent or severe as a result of climate change. Increases in the duration of high storm-forced sea levels increases the likelihood that they will occur during high tides. The combination of severe winter storms with SLR and high tides would result in extreme sea levels that could expose the coast to severe flooding and erosion, damage to coastal structures and real estate, and salinity intrusion into delta areas and coastal aquifers.”⁴⁶

⁴⁵ Sarah O. Hameed, Baty J.H., Holzer K.A., Doer A.N., Climate Change Vulnerability Assessment: Point Reyes National Seashore (2011) at 36, available at http://www.sfnpa.org/climate/PORE_vulnerability_assessment (citing Cayan et al 2008).

⁴⁶ Cayan D.R, P.D. Bromirski, K. Hayhoe, M. Tyree, M.D. Dettinger, and R.E. Flick. 2008. Climate change projections of sea level extremes along the California coast. *Climatic Change* 87(Suppl 1): S57-S73, available at http://tenaya.ucsd.edu/~dettinge/cccc08_slr.pdf.

If the almost 6 inch increase in sea level rise predicted in the Draft EIS does occur in the next 10 years it could have a significant impact on increasing erosion of the Seashore's fragile low-lying coastal resources. Since erosion is already a significant issue in the Seashore, it is important to evaluate the additive and magnifying effects of climate change induced increased erosion to the stress placed on the Estero and the species that utilize the Estero under any of the action alternatives. Moreover, because erosion, whether climate change induced or not, is already occurring at a significant rate in the Seashore and is affecting habitat for at risk species, the cumulative impacts of erosion on habitat and species at risk should also be evaluated in the Draft EIS.

The limited discussions of climate change in the Draft EIS demonstrate the potential for very significant climate change induced impacts over the 10 year planning horizon for the EIS. As a result, the final EIS must examine the direct, indirect, and cumulative impact of climate change.

- (c) The federal government and the U.S. Supreme Court have concluded that climate impacts are happening now and that such impacts are significant

Numerous federal agencies, including the Park Service, have concluded that climate change impacts are happening now and that those impacts are significant. For example, the Park Service has concluded that: "The current science confirms the planet is warming and the effects are here and now."⁴⁷ The Park Service also acknowledges that climate change is already affecting the Nation's ocean and coastal parks:

"Climate change and variability **are affecting** the National Park Service's 84 ocean and coastal parks and over 12,000 miles of shoreline. More parks in the coastal zone will be vulnerable as sea levels rise. Additional coastal change effects include lowering water levels in the Great Lakes, changing storm patterns, increasing ocean acidity and melting permafrost. These processes and other coastal hazards are threatening parks' resources, infrastructure, and public recreational opportunities."⁴⁸

The U.S. Fish and Wildlife Service has similarly concluded that climate change is happening now and causing significant impacts:

"The Earth's climate is changing at an accelerating rate that has the potential to cause abrupt changes in ecosystems and increase the risk of species extinction. Climate change transcends the Service and the National Wildlife Refuge System and poses one of the largest conservation threats of the 21st century.

Climate change has very likely increased the size and number of wildfires, insect outbreaks, pathogens, disease outbreaks and tree mortality in the interior West, the Southwest and Alaska. In the aquatic environment, evidence is growing that higher water temperatures resulting from climate change are negatively impacting cold- and

⁴⁷ National Park Service, Climate Change Response Strategy (September 2010) at 1.

⁴⁸ National Park Service, Climate Change Response Program, Coastal Adaptation Brief (emphasis added), available at <http://www.nps.gov/climatechange/docs/CoastalAdaptationBrief.pdf>.

coolwater-adapted populations across the country. Rising sea levels have begun to affect fish and wildlife habitats, including those used by shorebirds and sea turtles that nest on coastal national wildlife refuges. Ocean acidification and coral bleaching represent major threats to marine life in more than 50 million acres of refuge waters and beyond. We acknowledge climate change is a crosscutting theme as we continue to work with the conservation community to develop and implement conservation strategies. We also recognize that a changing climate interacts with other ongoing environmental threats and stressors such as destructive fires, water shortages, invasive species and disease transmission.”⁴⁹

The U.S. Environmental Protection Agency has issued a formal finding that climate change poses serious adverse impacts to “both the public health and the public welfare of current and future generations.”⁵⁰ This endangerment finding defines “current generations” as “**a near-term time frame of approximately the next 10 to 20 years**” and “future generations” as “a longer-term time frame extending beyond that.”⁵¹ The endangerment finding further states:

“The Administrator reached her determination by considering both **observed** and projected effects of greenhouse gases in the atmosphere, their effect on climate, and the public health and welfare risks and impacts associated with such climate change.

* * *

Overall, the evidence on risk of adverse impacts for coastal areas provides clear support for a finding that greenhouse gas air pollution endangers the welfare of **current** and future generations. The most serious potential adverse effects are the increased risk of storm surge and flooding in coastal areas from sea level rise and more intense storms. Observed sea level rise is already increasing the risk of storm surge and flooding in some coastal areas. The conclusion in the assessment literature that there is the potential for hurricanes to become more intense (and even some evidence that Atlantic hurricanes have already become more intense) reinforces the judgment that coastal communities are now endangered by human-induced climate change, and may face substantially greater risk in the future.”⁵²

This endangerment finding also found both near-term and long term impacts of greenhouse gas emissions and in this context notes that the phrase “near term” generally “refers to the current time period from and the next few decades.”⁵³

In 2007, the U.S. Supreme Court recognized that climate change impacts are occurring now and have already caused significant harm. In *Massachusetts v. Environmental Protection Agency*,⁵⁴

⁴⁹ U.S. Fish and Wildlife Service, *Conserving the Future: Wildlife Refuges and the Next Generation*, October 2011 at 36-37.

⁵⁰ 74 Fed. Reg. 66495-66546 (Dec. 15, 2009) (finding that “six greenhouse gases taken in combination endanger both the public health and the public welfare of current and future generations.”)

⁵¹ *Id.* (emphasis added).

⁵² *Id.* (emphasis added).

⁵³ *Id.*

the Court acknowledged the reality of global climate change, the “enormity of the potential consequences associated with manmade climate change,” and the fact that climate change impacts have already occurred:

“The harms associated with climate change are serious and well recognized. Indeed, [the National Research Council report relied on as objective and independent by the Environmental Protection Agency] identifies a number of environmental changes that **have already inflicted significant harms**, including ‘the global retreat of mountain glaciers, reduction in snow-cover extent, the earlier spring melting of ice on rivers and lakes, [and] the accelerated rate of rise of sea levels during the 20th century relative to the past few thousand years’”⁵⁵

These findings demonstrate the potential for very significant climate change induced impacts over the 10 year planning horizon for the EIS. As a result, the final EIS must examine the impact of climate change.

2. Each of the Action Alternatives Is Likely to Make Drakes Estero and the Species that Rely on the Estero Less Resilient to Climate Change

As discussed above, the Park Service has explicitly recognized the importance of increasing resiliency to climate change in its Climate Change Response Strategy. Implementing “adaptation strategies that promote ecosystem resilience and enhance restoration, conservation, and preservation of park resources” is a key goal of the Park Services’ Climate Change Response Strategy.⁵⁶

That strategy also recognizes that:

Many best-management practices for conventional ecosystem stressors also reduce the tendency of these stressors to intensify climate change effects. Therefore, one approach to adaptation is to reduce the risk of adverse outcomes by increasing the resilience of systems and supporting the ability of natural systems and species to adapt to change.”⁵⁷

Accordingly, the strategy requires the Park Service to “**incorporate climate change considerations and responses in all levels of NPS planning**” and “**implement adaptation strategies that promote ecosystem resilience and enhance restoration, conservation, and preservation of park resources.**”⁵⁸

⁵⁴ The Supreme Court held that EPA has the authority to regulate greenhouse gas emissions from new motor vehicles if EPA forms a “judgment” that such emissions contribute to climate change.

⁵⁵ *Massachusetts v. Environmental Protection Agency*, 549 U.S. 497, 525, 591 (2007) (emphasis added) (quoting National Research Council Report, *Climate Change Science: An Analysis of Some Key Questions* (2001) at 16).

⁵⁶ *National Park Service Climate Change Response Strategy* (September 2010) at 14- 15.

⁵⁷ *Id.* at 15.

⁵⁸ *Id.* at 14–15 (emphasis added).

The U.S. Fish and Wildlife Service also recognizes the importance of enhancing ecosystem resiliency as a tool for adapting to climate change, and highlights the vital role that wilderness areas will play in achieving that goal:

“Wilderness will be a key part of our understanding of climate-mitigated changes. Large, unfragmented wilderness areas will support ecosystem resiliency and species adaptation, and be a source of valuable baseline data as the climate changes. . . . Strategies that will enhance ecological resilience and provide opportunities for fish, wildlife and plants to adapt to climate change include maintaining or restoring the ecological integrity of existing refuges and other protected areas, enhancing linkages and connectivity among protected areas, buffering core protected areas, such as wilderness, with conservation efforts on private working landscapes, identifying and protecting climate refugia, and ensuring adequate representation, size and redundancy of ecological communities in the collective conservation estate.”⁵⁹

By delaying implementation of full wilderness protection by at least 10 years and by continuing and/or increasing commercial oyster operations and the stress they impose on the Estero and the species that rely on it, each of the action alternatives will likely reduce the resiliency of Drakes Estero and the species that rely on it to climate change. The Draft EIS should evaluate this potentially significant adverse impact.

3. The Final EIS Must Evaluate the Cumulative Impacts of Climate Change

CEQ recently advised all Federal agencies that the magnifying and additive effects of global warming must be evaluated when examining the direct, indirect, and cumulative impacts of a proposed action:⁶⁰

“Climate change can increase the vulnerability of a resource, ecosystem, or human community, causing a proposed action to result in consequences that are more damaging than prior experience with environmental impacts analysis might indicate . . . [and] climate change can magnify the damaging strength of certain effects of a proposed action.”

* * *

“Agencies should consider the specific effects of the proposed action (including the proposed action’s effect on the vulnerability of affected ecosystems), the nexus of those effects with projected climate change effects on the same aspects

⁵⁹ U.S. Fish and Wildlife Service, *Conserving the Future: Wildlife Refuges and the Next Generation*, October 2011 at 36-37.

⁶⁰ The CEQ guidance makes it clear that analyzing the impacts of climate change is not restricted to evaluating whether a project could itself exacerbate global warming. The magnifying and additive effects of global warming also must be evaluated. Council on Environmental Quality, *Draft NEPA Guidance on Consideration of the Effects of Climate Change and Greenhouse Gas Emissions* (February 18, 2010).

of our environment, and the implications for the environment to adapt to the projected effects of climate change.”⁶¹

The effects of global warming on Drakes Estero *and* the many species that rely on the Estero are potentially quite significant, and the EIS must carefully consider whether the impacts of climate change could exacerbate the impacts of issuing a new Special Use Permit to DBOC.⁶²

As a shallow tidal habitat, Drakes Estero — and the many species that rely on it — are on the front lines of sea level rise and other climate change induced impacts. As discussed at length above, sea level rise, increased storms, increased erosion, and temperature changes can cause significant adverse impacts to the Estero in a short period of time.

Climate change may cause even greater adverse impacts for the many migratory species that utilize Drakes Estero, and these impacts must be considered particularly in the context of the cumulative impact analysis. As recognized by the United Nations Environment Program and the Convention on the Conservation of Migratory Species of Wild Animals:

“As a group, migratory wildlife appears to be particularly vulnerable to the impacts of Climate Change because it uses multiple habitats and sites and use a wide range of resources at different points of their migratory cycle. They are also subject to a wide range of physical conditions and often rely on predictable weather patterns, such as winds and ocean currents, which might change under the influence of Climate Change. Finally, they face a wide range of biological influences, such as predators, competitors and diseases that could be affected by Climate Change. While some of this is also true for more sedentary species, migrants have the potential to be affected by Climate Change not only on their breeding and non-breeding grounds but also while on migration.”

“Apart from such direct impacts, factors that affect the migratory journey itself may affect other parts of a species’ life cycle. Changes in the timing of migration may affect breeding or hibernation, for example if a species has to take longer than normal on migration, due to changes in conditions *en route*, then it may arrive late, obtain poorer quality breeding resources (such as territory) and be less

⁶¹ Council on Environmental Quality, *Draft NEPA Guidance on Consideration of the Effects of Climate Change and Greenhouse Gas Emissions* (February 18, 2010).

⁶² See *Center for Biological Diversity v. Nat’l Hwy Traffic Safety Administration*, 538 F.3d 1172, 1217 (9th Cir. 2008) (holding that analyzing the impacts of climate change is “precisely the kind of cumulative impacts analysis that NEPA requires agencies to conduct” and that NEPA requires analysis of the cumulative impact of greenhouse gas emissions when deciding not to set certain CAFE standards); *Center for Biological Diversity v. Kempthorne*, 588 F.3d 701, 711 (9th Cir. 2009) (NEPA analysis properly included analysis of the effects of climate change on polar bears, including “increased use of coastal environments, increased bear/human encounters, changes in polar bear body condition, decline in cub survival, and increased potential for stress and mortality, and energetic needs in hunting for seals, as well as traveling and swimming to denning sites and feeding areas.”).

productive as a result. If migration consumes more resources than normal, then individuals may have fewer resources to put into breeding”

* * *

“Key factors that are likely to affect all species, regardless of migratory tendency, are changes in prey distributions and changes or loss of habitat. Changes in prey may occur in terms of their distributions or in timing. The latter may occur through differential changes in developmental rates and can lead to a mismatch in timing between predators and prey (“phenological disjunction”). Changes in habitat quality (leading ultimately to habitat loss) may be important for migratory species that need a coherent network of sites to facilitate their migratory journeys. Habitat quality is especially important on staging or stop-over sites, as individuals need to consume large amounts of resource rapidly to continue their onward journey. Such high quality sites may [be] crucial to allow migrants to cross large ecological barriers, such as oceans or deserts.”⁶³

Migratory seals and birds are at particular risk from climate change. The climate change impacts on seal populations include changes in the distribution, abundance, and community composition of their food supply; impacts of warmer waters on reproduction; and “loss of undisturbed haul-out sites, due to sea-level rise, which are used for breeding, nurseries and resting.”⁶⁴ Migratory birds are affected by changes in water regime, mismatches with food supply, sea level rise, and habitat shifts, changes in prey range, and increased storm frequency.⁶⁵

Peer reviewed science also links climate change to the facilitation of the spread of invasive species. A 2002 study published in the Proceedings of the National Academy of Sciences concludes that “the greatest effects of climate change on biotic communities may be” to “facilitate a shift of dominance by nonnative species, accelerating the homogenization of the global biota.”⁶⁶ This study looked exclusively at invasive marine species:

“The spread of exotic species and climate change are among the most serious global environmental threats. Each independently causes considerable ecological damage, yet few data are available to assess whether changing climate might facilitate invasions by favoring introduced over native species. Here, we compare our long-term record of weekly sessile marine invertebrate recruitment with interannual variation in water temperature to assess the likely effect of climate change on the success and spread of introduced species. For the three most abundant introduced species of ascidian (sea

⁶³ UNEP/CMS Secretariat, Bonn, Germany, *Migratory Species and Climate Change: Impacts of a Changing Environment on Wild Animals* (2006) at 40-41 (available at http://www.cms.int/publications/pdf/CMS_CimateChange.pdf).

⁶⁴ *Id.* at 42.

⁶⁵ *Id.* at 42-43.

⁶⁶ John J. Stachowicz, Terwins J.R., Whitlatch R.B., Osman R.W., *Linking climate change and biological invasions: Ocean warming facilitates nonindigenous species invasions*, Proceedings of the National Academy of Sciences (PNAS) Vol. 99, No 24: 15497–15500 (November 26, 2002) available at www.pnas.org/cgi/doi/10.1073/pnas.242437499. A copy of this study is attached to these comments.

squirt), the timing of the initiation of recruitment was strongly negatively correlated with winter water temperature, indicating that invaders arrived earlier in the season in years with warmer winters. Total recruitment of introduced species during the following summer also was positively correlated with winter water temperature. In contrast, the magnitude of native ascidian recruitment was negatively correlated with winter temperature (more recruitment in colder years) and the timing of native recruitment was unaffected. In manipulative laboratory experiments, two introduced compound ascidians grew faster than a native species, but only at temperatures near the maximum observed in summer. These data suggest that the greatest effects of climate change on biotic communities may be due to changing maximum and minimum temperatures rather than annual means. By giving introduced species an earlier start, and increasing the magnitude of their growth and recruitment relative to natives, global warming may facilitate a shift to dominance by nonnative species, accelerating the homogenization of the global biota. These data suggest that the greatest effects of climate change on biotic communities may be due to changing maximum and minimum temperatures rather than annual means. By giving introduced species an earlier start, and increasing the magnitude of their growth and recruitment relative to natives, global warming may facilitate a shift to dominance by nonnative species, accelerating the homogenization of the global biota.”⁶⁷

As the Draft EIS makes clear, that the highly invasive and destructive tunicate (*Didemnum vexillum*) “has already been observed in association with DBOC’s offshore infrastructure.” Draft EIS at 279. This highly invasive sea squirt is already creating very real adverse impacts to the Estero and its critical eelgrass habitat. Climate change induced acceleration of the spread of this and other invasive species in the Estero could have devastating impacts to the Estero and the species that rely on it.

As discussed above, the Draft EIS also recognizes that sea level rise could create significant changes to wetland habitat and hydrology in the Estero and that significant erosion is already occurring in the Seashore, including near the mouth of Drakes Estero. Acceleration of erosion due to climate change could have significant adverse impacts to the Estero and the species that rely on it.

The Final EIS should carefully examine the additive and magnifying effects of climate change induced impacts on the stress to the Estero and species that rely on the Estero created by the action alternatives. These climate change induced impacts include:

- Climate change induced sea level rise;
- Climate change induced losses of regional and local eelgrass and wetland habitat, including but not limited to impacts for species at particular risk of such losses like the Black Brant;
- Climate change induced spread of invasive species;
- Climate change induced impacts to geographic range and phenology for species that utilize the Estero, including for migratory species;

⁶⁷ *Id.*

- Climate change induced increased erosion; and
- Climate change induced changes in water temperature and chemistry (ocean acidification).

Please see section III.C. below for an additional discussion of issues that must be included in a meaningful cumulative impacts analysis for this project.

B. The Draft EIS Understates the Adverse Impacts of the Action Alternatives by Failing to Assess the Significant Risk and Impacts of Non-Compliance with Permitting Requirements and Permit Conditions

The Draft EIS improperly ignores DBOC’s abysmal record of complying with permit conditions and requirements when analyzing impacts of continued operations. There has been *no time* during DBOC’s ownership when it has been in compliance with its permit conditions or permitting requirements. DBOC’s predecessor, the Johnson Oyster Company, had a similarly long history of environmentally destructive violations. These violations have caused – and continue to cause – significant harm to the environment. There is nothing to suggest that these problems will be rectified if DBOC is granted a new special use permit.

This history of constant non-compliance must be evaluated and considered in assessing the potential impacts of any of the action alternatives. Ignoring this long history produces an inaccurate and unrealistically positive assessment of adverse impacts. In reality, the adverse impacts of continuing operations under any of the three action alternatives are likely to be far worse than identified in the Draft EIS.

Since its purchase of Johnson’s Oyster Company, DBOC has operated in knowing violation of California Coastal Commission, National Park Service, and U.S. Army Corps of Engineers permit conditions and requirements. DBOC was most recently cited for violations of its California Coastal Commission permit in September 2011. For example:

- December 2004: DBOC purchases the remaining seven years of the existing mariculture lease, knowing that it will expire in 2012, and assumes responsibility for complying with the cease and desist order issued to the prior owner, the Johnson Cease and Desist Order No CCC-03-CD-12.⁶⁸
- May 2005: The California Coastal Commission advises DBOC that it still is not in compliance with the Johnson Cease and Desist Order and that it must obtain a coastal development permit.⁶⁹
- March 2006: The California Coastal Commission again advises DBOC that it is not in compliance with the Johnson Cease and Desist Order, that it is in violation of the Coastal

⁶⁸ Consent Cease and Desist Order CCC-03-CD-12; November 29, 2007 Staff Report and Findings for Cease and Desist Order; Draft EIS Ch. 1 at 19.

⁶⁹ May 11, 2005 Letter from the California Coastal Commission to DBOC.

Act, and that it must obtain a coastal development permit for additional new and unpermitted development.⁷⁰

- June 2007: The California Coastal Commission again advises DBOC that it is not in compliance with the Johnson Cease and Desist Order and that it is also may require a coastal development permit and permits from the U.S. Army Corps of Engineers and the Park Service.⁷¹
- October 2007: The California Coastal Commission advises DBOC that it intends to commence Cease and Desist Order Proceedings due to DBOC's continued unpermitted offshore and onshore operations and facilities.⁷²
- December 2007: The California Coastal Commission issues a Consent Cease and Desist Order to DBOC regarding unpermitted activities carried out in connection with DBOC oyster operations in Drakes Estero. The related November 2007 staff report states that DBOC is not in compliance with the Johnson Cease and Desist Order and that DBOC has constructed additional development and engaged in unauthorized uses without the required permits (e.g., refrigerated storage units installed, second leach field constructed, parking area paved, boat transit outside established channels).⁷³
- February 2009: DBOC begins harvesting Manila clams without a Park Service permit and 10 months prior to review and approval by the California Fish and Game Commission. DBOC declines to provide information on cultivation to assist the Park Service in evaluating this expansion of species cultivation. Manila clam cultivation has never been approved by the Park Service.⁷⁴
- September 2009: The California Coastal Commission advises DBOC of numerous ongoing violations of the 2007 Cease and Desist and Consent Order, including provisions developed to protect the Estero from invasive species, to impose appropriate restrictions on new construction, and to protect water quality.⁷⁵
- December 2009: The California Coastal Commission fines DBOC \$61,500 for numerous ongoing violations of five separate provisions of the Cease and Desist and Consent Order issued to DBOC in 2007 and advises DBOC that the fines will continue to accrue until DBOC comes into compliance. Violations include operating in areas of Drakes Estero that are off limits during the crucial harbor seal pupping and rearing season.⁷⁶

⁷⁰ March 21, 2006 Letter from the California Coastal Commission to DBOC.

⁷¹ June 5, 2007 Letter from the California Coastal Commission to DBOC.

⁷² October 3, 2007 Letter from the California Coastal Commission to DBOC.

⁷³ Consent Cease and Desist Order CCC-07-CD-11, December 12, 2007; November 29, 2007 Staff Report and Findings for Cease and Desist Order; Draft EIS, Ch. 1 at 19.

⁷⁴ Draft EIS, Ch. 1 at 20.

⁷⁵ September 16, 2009 Letter to DBOC from the Coastal Commission.

⁷⁶ December 7, 2009 Letter to DBOC from the Coastal Commission.

- November 2010: The U.S. Army Corps of Engineers advises the Park Service that the DBOC aquaculture activities require a Corps permit but that the Corps does not have either a current permit application or permit on file.⁷⁷
- September 2011: The California Coastal Commission advises DBOC to “aggressively and comprehensively” address significant amounts of plastic and other marine debris from DBOC operations that pose “a hazard to the marine environment and natural resources of Drakes Estero” and address “adverse impacts from the boats and DBOC personnel on the sensitive harbor seals and their habitat during the breeding and pupping season.”⁷⁸

Individually, each of DBOC’s violations of permit conditions and permitting requirements is cause for concern. Cumulatively, they significantly undermine the ability of the Park Service, the California Coastal Commission, and the U.S. Army Corps of Engineers to administer the activities of DBOC in accordance with federal and state law and policy and in a manner that will protect and enhance the Seashore’s natural resources.

Issuance of a new Special Use Permit to DBOC includes a significant risk that DBOC will continue to violate conditions attached to the new permit and other applicable regulations designed to protect the environment. While the Draft EIS summarizes DBOC’s history of non-compliance it goes on to assume that DBOC will comply fully with all permitting conditions and requirements if a new Special Use Permit is issued pursuant to any of the three action alternatives. Given the long history of non-compliance with permit conditions and terms, the assumption that the conditions attached to a new Special Use Permit and other permitting conditions would be strictly complied with presents a false picture of the impacts of issuing a new Special Use Permit.

The EIS must consider the impacts of the likely failure of DBOC to comply with permit conditions and requirements on the ecological health of Drakes Estero and the many sensitive species that utilize the Estero. These impacts extend to all the impacts evaluated in the Draft EIS, including the impacts to Park Service operations.

C. The Draft EIS Understates the Adverse Impacts of the Action Alternatives by Failing to Assess the Cumulative Impacts of Past Actions and Climate Change

Understanding historic losses and impacts, both locally and regionally, is essential for accurately determining the cumulative impact of additional losses. Without this understanding, an impacts evaluation will take place in a vacuum and cannot meaningfully evaluate the cumulative impacts – i.e., the additive and magnifying effects of the action alternatives on existing impacts. To prevent this from happening, the NEPA regulations explicitly require an assessment of “past actions” as part of the cumulative impacts analysis.

⁷⁷ Draft EIS, Ch. 2 at 130, Table 2-6; November 16, 2010 Letter to the Park Service from the Corps of Engineers.

⁷⁸ September 29, 2011 Letter to DBOC from the Coastal Commission.

While the Draft EIS evaluates the cumulative impacts of certain reasonably foreseeable future actions, it does not conduct any type of meaningful examination of the incremental impact of any of the alternatives when added to “other past ... actions.” Indeed, the past actions identified in the Draft EIS cumulative impacts analysis do not even recognize the adverse impacts caused by either DBOC or Johnson Oyster Company operations over the life of the existing special use permit. As a result, the Draft EIS cannot meaningfully evaluate the additive and magnifying effects of the action alternatives on those impacts. In the absence of an analysis of past actions, the Draft EIS almost certainly is **understating** the cumulative impacts of the action alternatives.

Cumulative impacts are defined as:

“the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.”⁷⁹

An analysis of these cumulative impacts ensures that the agency will not “treat the identified environmental concern in a vacuum.”⁸⁰

“Cumulative effects occur through the accumulation of effects over varying periods of time. For this reason, an understanding of the historical context of effects is critical to assessing the direct, indirect, and cumulative effects of proposed actions.” This assists in evaluating the significance of the effects relative to historical degradation.⁸¹

“Generally, agencies can conduct an adequate cumulative effects analysis by focusing on the current aggregate effects of past actions without delving into the historical details of individual past actions.”⁸² However, the cumulative effects analysis also must analyze the effects of individual past actions if that information “is necessary to describe the cumulative effect of all past actions combined.”⁸³

Under no circumstances, however, can the cumulative effects analysis ignore the impacts of past actions. To the contrary, understanding the historical context of impacts is an essential component of the cumulative impacts analysis:

“The analyst’s primary goal is to determine the magnitude and significance of the environmental consequences of the proposed action in the context of the cumulative effects of other past, present, and future actions. Much of the environment has been greatly modified by human activities, and most resources, ecosystems, and human

⁷⁹ 40 C.F.R. § 1508.7.

⁸⁰ *Grand Canyon Trust v. FAA*, 290 F.3d 339, 346 (D.C. Cir. 2002).

⁸¹ Council on Environmental Quality, *Considering Cumulative Effects Under the National Environmental Policy Act* (January 1997) at 31.

⁸² CEQ Memorandum to Heads of Federal Agencies, *Guidance on the Consideration of Past Actions in Cumulative Effects Analysis* (June 24, 2005).

⁸³ *Marsh v. Oregon Natural Resources Council*, 490 U.S. 360, 376-77 (1989).

communities are in the process of change as a result of cumulative effects. The analyst must determine the realistic potential for the resource to sustain itself in the future and whether the proposed action will affect this potential; therefore, the baseline condition of the resource of concern should include a description of how conditions have changed over time and how they are likely to change in the future without the proposed action. The potential for a resource, ecosystem, and human community to sustain its structure and function depends on its resistance to stress and its ability to recover (i.e., its resilience). Determining whether the condition of the resource is within the range of natural variability or is vulnerable to rapid degradation is frequently problematic. Ideally, the analyst can identify a threshold beyond which change in the resource condition is detrimental. More often, the analyst must review the history of that resource and evaluate whether past degradation may place it near such a threshold. For example, the loss of 50% of historical wetlands within a watershed may indicate that further losses would significantly affect the capacity of the watershed to withstand floods. It is often the case that when a large proportion of a resource is lost, the system nears collapse as the surviving portion is pressed into service to perform more functions.”⁸⁴

The Final EIS must provide “quantified or detailed information” on the cumulative impacts (and on the direct and indirect impacts), so that the courts and the public can be assured that the agency has taken the mandated hard look at the environmental consequences of the Project.⁸⁵ If information that is essential for making a reasoned choice among alternatives is not available, the Park Service must obtain that information unless the costs of doing so would be “exorbitant.”⁸⁶ The Park Service should utilize the best available, peer reviewed science in evaluating the impacts of issuing a new Special Use Permit.

The cumulative impact analysis must include an analysis of:

- The long term impacts of past DBOC and Johnson Oyster Company operations in Drakes Estero. Understanding the changes wrought by past oyster activities is critical for understanding (i) the full extent of the same and/or similar activities and (ii) the additive or magnifying effect of the same and/or similar activities that would occur under any of the action alternatives.
- The historic local and regional losses of wetlands and eelgrass, the significant degradation of regional coastal estuaries, and the significant infestation of invasive species in nearby and regional estuaries. Understanding these impacts is critical for understanding the true import of the habitat degradation that would occur under any of the action alternatives. For example, knowing that Drakes Estero is one of only a few sites still supporting significant eelgrass beds in California, the loss or degradation of eelgrass in Drakes Estero should lead to a finding that loss of eelgrass in Drakes Estero would have a greater cumulative impact than if eelgrass was abundant throughout the

⁸⁴ Council on Environmental Quality, *Considering Cumulative Effects Under the National Environmental Policy Act* (January 1997) at 41.

⁸⁵ *Neighbors of Cuddy Mountain v. U. S. Forest Service*, 137 F.3d 1372, 1379 (9th Cir. 1998); *Natural Resources Defense Council v. Callaway*, 524 F.2d 79, 87 (2d Cir. 1975).

⁸⁶ 40 C.F.R. § 1502.22.

California coast. To properly reach this conclusion it is important to know the historic losses to eelgrass both locally and regionally.

- The impacts of climate change. As discussed in detail above, the cumulative impact analysis must examine the impacts of climate change and evaluate whether the action alternatives would add to and magnify the climate change induced stresses on the Estero and the species that rely on it. The Final EIS should also evaluate whether the action alternatives would increase or decrease resiliency to climate change.
- The extent to which any of the action alternatives could undermine or otherwise affect completed, ongoing, or reasonably foreseeable future restoration projects in the Seashore and the resulting net impacts to the environment.

Without this information, the Park Service is almost certainly understating the cumulative impacts of the action alternatives.

D. The Draft EIS Understates the Adverse Impacts of the Action Alternatives by Failing to Fully Assess the Impacts to Resources of Concern

The Draft EIS fails to fully assess the impacts to a number of resources of concern. The Final EIS should evaluate at least the additional information discussed below in its analysis of direct, indirect, and cumulative impacts to ensure the most robust analysis of impacts possible. Without addressing this information, the Park Service is almost certainly understating the impacts of the action alternatives.

The Final EIS should also assess the relative degree of impacts (i.e., major, moderate, minor) in full recognition of the special importance of Drakes Estero and the knowledge that the two greatest threats to biodiversity are habitat loss and invasive species.⁸⁷

1. Invasive Species

While the Draft EIS acknowledges significant problems caused by invasive species (*see* Draft EIS at 279, 281) it does not adequately acknowledge the threat that continued oyster operations, both alone and in combination with the facilitation of the spread of invasive species from climate change, will lead to a significant proliferation and further introduction of invasive species in Drakes Estero. It also does not acknowledge the potential for a catastrophic infestation of invasive species and the impacts that would have on the Estero and the species that rely on it.

Invasive species and habitat destruction are the top two causes of the decline of global biodiversity.⁸⁸ The impacts from invasive species in Drakes Estero are already highly noticeable. It is of the utmost importance and urgency to stop the further spread of invasive species in the Estero and to begin efforts to remove the existing infestations as quickly as possible, as required by Park Service policies.

⁸⁷ Higgins et al. 1999, *Conservation Biology* 13: 303-313.

⁸⁸ *Id.*

Invasive marine fouling organisms that presently exist in the Estero include the noxious tunicate, viruses, algae, the Manila clam, and the Pacific oyster. Of particular concern is the spread of *Didemnum vexillum* from mariculture gear and shellfish to eelgrass. The Draft EIS establishes very clearly that both this invasive non-native tunicate as well as epiphytic algae are attaching onto the leaves of eelgrass. This disrupts photosynthesis, prevents black brant sea geese from eating their only food source, and potentially disrupts the entire marine food chain, given how critical eelgrass beds are for so many different native species.

Under any of the action alternatives, the oyster operations that are facilitating these impacts will continue and expand for at least 10 more years. During this time, *Didemnum vexillum*, Manila clams and other potentially invasive species will increase causing significant – and possibly irreversibly disastrous – impacts to the Estero.

The Final EIS must examine the full potential for continued oyster operations to speed and expand the introduction of invasive species, the role of climate change in facilitating this expansion, the extent of invasive species invasions locally and regionally, the extreme difficulty associated with attempting to eradicate invasive species, and the potential for catastrophic invasions. The Final EIS must also measure the degree of impacts with a full understanding of the disastrous consequences of a broad scale infestation of invasive species in the Estero. The Final EIS should establish a stand-alone analysis of invasive species and classify the adverse impacts from the action alternatives on invasive species (including under the “Benthic Fauna” and “Eelgrass” sections) to “major adverse”.

2. Eelgrass

While the Draft EIS recognizes the importance of eelgrass in Drakes Estero (*see* Draft EIS at 170-173), it does not adequately acknowledge the significance of the adverse impacts to this vital resource. It also does not analyze the significance of the impacts in light of the scarcity of eelgrass in California or in light of the heightened scrutiny eelgrass should receive given its status as a special aquatic site under the Clean Water Act.

Eelgrass beds provide critically important habitat and food source for many species, including spawning and larval fish, over-wintering black brant, and invertebrates; and are recognized as special aquatic sites under the Clean Water Act. Draft EIS at 170-173. Critically, eelgrass also forms the base of the food web in Drakes Estero. Draft EIS at 170. Importantly, Drakes Estero is also “one of only a few sites with significant eelgrass beds in California and these beds represent approximately 7% of all eelgrass in California, and at 750 acres, comprise one of the most expansive contiguous eelgrass sites in the state.”⁸⁹

The adverse impacts to eelgrass are significant. They include: extensive scarring by motorboat propellers, erosion and displacement from turbidity (caused by the boats) and by racks and bags, smothering by the invasive tunicate and epiphytic algae, and the cascading impacts that would have on the organisms that depend upon eelgrass, including federally threatened steelhead and their prey species.

⁸⁹ California Coastal Commission Letter to DBOC dated June 5, 2007. While various acreage figures for eelgrass have been presented, the scarcity of eelgrass in California has not been challenged in any way.

The Final EIS must fully analyze at least the following:

- The fact that the current damage to eelgrass is likely understated and does not account for the areal extent of the losses. The Draft EIS refers to 8.5 linear miles of boat scars, 5 linear miles of racks, and 84 acres of oyster bags. However, it does not evaluate the areal extent of these impacts nor does it account for the fact that oyster bag locations are not static. The areal extent of these losses should be calculated.
- The extent to which continued oyster operations will facilitate the spread of *Didemnum* and algae to eelgrass and the cumulative impact of climate change on that facilitation.
- The significant likelihood that eelgrass beds decrease as oyster production increases.
- The historic losses of eelgrass in Drakes Estero, and the scarcity of eelgrass resources in California.

Under any of the action alternatives, the oyster operations that are facilitating these impacts will continue and expand for at least 10 more years. Given the vital importance of this eelgrass resource, the Final EIS must give special scrutiny to the analysis of adverse impacts to eelgrass in Drakes Estero. Those impacts also must be evaluated in light of both the significant importance of the resource and the relative scarcity of the resource in California. The impacts also must be considered in light of the significant potential for increased spread of invasive species and algae on the eelgrass resource. The Final ES should reclassify the adverse impacts on eelgrass from the action alternatives to "*major* adverse".

3. Wetlands

California has already lost 91% of its historic wetlands — more than any other state.⁹⁰ In this context, every acre of wetland lost must be deemed to be a major impact. The extensive impacts to wetlands (including impacts to *at least* 84 acres of mudflats) under any of the action alternatives certainly qualify as major adverse impacts.

Moreover, the true extent of adverse impacts to special aquatic sites under the Clean Water Act⁹¹ includes impacts to wetlands, mudflats, eelgrass, and sanctuaries or refuges (defined as “areas designed under State and Federal laws . . . to be managed principal for the preservation and use of fish and wildlife resources.”⁹² Special aquatic sites “are generally recognized as significantly influencing or positively contributing to the general overall environmental health or vitality of the entire ecosystem of a region.”⁹³

⁹⁰ U.S. Fish and wildlife Service, Wetland Status and Trends in the Conterminous United States Mid-1970’s to Mid-1980’s; & Conservation, A Hypertext Book by Dr. Peter J. Byant (UC Irvine School of Biological Sciences), available at [http://darwin.bio.uci.edu/~sustain/bio65/lec18/b65lec18.htm#California Wetlands](http://darwin.bio.uci.edu/~sustain/bio65/lec18/b65lec18.htm#California%20Wetlands).

⁹¹ 40 C.F.R. § 230.3; 40 C.F.R.Part 230, Subpart E.

⁹² 40 C.F.R. § 230.40.

⁹³ 40 C.F.R. § 230.3(q-1).

The Final EIS should quantify the full extent of adverse impacts to all special aquatic sites (in addition to identifying impacts specifically to eelgrass and wetlands) to provide a full picture of the extent of harm to this vital class of resources. The Final EIS also must more carefully evaluate the impacts to wetlands of continued onshore activities under the action alternatives, and evaluate the potential for additional significant climate change induced impacts that could alter the character of existing wetlands and shift the prevailing hydrologic regime as described in the Draft EIS at 170.

The Final EIS should classify the adverse impacts of the action alternatives to wetlands and all special aquatic sites as “*major* adverse.”

4. Birds

While the Draft EIS discusses numerous and significant impacts to birds from each of the action alternatives, it appears to understate the severity of those adverse impacts. These impacts include: decrease in diversity from sensitivity to noise; sound confusion leading to vulnerability to predators and altering of normal behavior; flushing by motorboats; destruction of the eelgrass beds; placement of oyster bags displacing intertidal feeding habitat; and the consequent avoidance and deprivation of rest and foraging habitat as well as reduced fitness and increased fatigue. The volume of these impacts and the citations that support the analysis is sufficient to designate impacts from the commercial, industrial oyster operation to birds as being long-term *major* adverse.

In addition, the Draft EIS omits policy considerations and specific species information that indicate major adverse impacts for certain species (Brant and Pelicans), all species in certain areas (waters, intertidal area, and shores of Schooner Bay), and many species at certain times (Spring migration, staging, feeding and resting). Each of the action alternatives would allow oyster operations to be conducted during the spring migration, leading to potentially major adverse impacts during this critical period.

Furthermore, the Draft EIS does not fully acknowledge the importance to NPS of regional planning to protect species at risk. Failure to protect Drakes Estero for 10 years adds to long term cumulative major adverse impacts on water and shorebird species in the Pacific Coast region. The Draft EIS also omits discussion of the impact of plastic marine debris from ongoing oyster operations on birds. Plastic debris can create major adverse impacts to numerous bird species. The Draft EIS also appears to understate the level of motorboat trips from the action alternatives in its analysis of bird impacts.

The Final EIS must analyze these impacts, and account for the impacts in the context of the critical importance of Drakes Estero to bird species. The Final EIS should classify adverse impacts to birds from the action alternatives as “*major* adverse.”

5. Marine Debris

The Draft EIS does not adequately assess the impacts from the plastic generated by DBOC’s operations. The California Coastal Commission recently reprimanded DBOC for the thousands

of pieces of plastic it has dumped into coastal waters in violation of its permits and Cease and Desist Order.⁹⁴

Adverse impacts to marine animals from plastic marine debris are well documented.⁹⁵ Despite the concrete evidence of the widespread dissemination of harmful plastic material, the Draft EIS mentions the word “plastic” only three times, each time in very brief association with water quality. Impacts from DBOC plastic debris are not analyzed at all in connection with adverse impacts to birds, harbor seals, eelgrass, wetlands, or even wilderness.

The Final EIS should fully analyze the adverse impacts to all resources of concern from plastic debris, and the potential for such impacts continuing and/or increasing under the action alternatives.

6. NPS Operations

In light of DBOC’s continuous history of non-compliance with its permit conditions and permitting requirements, it would appear that more than one staff position would be required to oversee and ensure full compliance with the permit terms and requirements associated with any of the action alternatives. Moreover, it is unclear why it would take approximately 1-2 FTE to monitor and enforce closure periods under Alternative A, but only one staff person to oversee the ongoing operations under the three action alternatives. *See* Draft EIS at iix.

The Final EIS should reevaluate the impacts of the action alternatives on NPS Operations in light of DBOC’s continuous history of non-compliance with its permit conditions and permitting requirements, and the extent of staff time and park resources that will be needed to ensure full compliance. In addition, the Final EIS should reevaluate the impacts of the NPS Operations in light of the Marine Mammal Commission’s strong recommendation that the Park Service should adopt an adaptive management approach and undertake long term monitoring of impacts to harbor seals if it issues a new special use permit for continued oyster operations.

IV. Formal Consultation Is Required for ESA Listed Species and Critical Habitat That May Be Affected by the Action Alternatives and Those Consultations Should Carefully Reassess the Conclusions in the Draft EIS

The Draft EIS properly concludes that the Park Service must complete its consultation on ESA listed species and critical habitat before releasing the Final EIS. Draft EIS at 138, 314. As the Park Service knows, its obligations under the ESA are separate and distinct from its obligations

⁹⁴ September 29, 2011 Letter to DBOC from the Coastal Commission.

⁹⁵ Numerous government and marine organization reports with many peer-reviewed references, which document impacts to marine animals, include:

http://calost.org/pdf/science-initiatives/marine%20debris/Plastic%20Report_10-4-11.pdf

<http://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=34124>

http://www.unep.org/regionalseas/marinelitter/.../plastic_ocean_report.pdf

<http://marinedebris.noaa.gov/projects/pdfs/Microplastics.pdf>

http://calost.org/pdf/science-initiatives/marine%20debris/Highlights_Plastic%20Debris%20Report_FINAL.doc.pdf

under NEPA – and both must be complied with.

Since the Draft EIS concludes that each of the action alternatives will impact a number of listed species and critical habitat, the Park Service will have to complete formal ESA consultation with the Fish and Wildlife Service and/or NOAA before it could authorize any of the action alternatives. Formal consultation is required where the required biological assessment, the federal agency, or the Secretary concludes that the action is likely to adversely affect one or more listed species and/or designated critical habitat areas.⁹⁶

In connection with these numerous formal consultations, NWF urges the Park Service and the Fish and Wildlife Service and /or NOAA to carefully reconsider the Draft EIS Special Status Species analyses, particularly the analyses that suggest that the action alternatives would cause a change in only a relatively small proportion of designated critical habitat.

For example, in 2007, the California Coastal Commission advised DBOC that “[a]s much as 96% of DBOC’s oyster racks are located in the Estero’s eelgrass beds and the eelgrass beds in these areas appear to have been significantly affected by the oyster racks, with approximately eight acres of eelgrass directly lost due to shading of the oyster racks, and an additional 50 acres potentially suffering secondary impacts from propeller cuts.”⁹⁷ These 58 acres account for 7.7% of the Estero’s 750 acres of eelgrass. This damage is already significant (not minor as suggested in the Draft EIS) and does not account for the full extent of propeller damage or the damage to eelgrass being caused by the invasive tunicate (*Didemnum*) which is now attaching to, and damaging, the eelgrass in Drakes Estero.

Continued and increased operations for at least 10 more years, in combination with potential climate change induced facilitation of the spread of invasive species and changes to the Estero’s hydrology, will certainly increase this damage and the impacts to this critical habitat and the species that rely on it.

In addition, the Park Service should reassess the potential for adverse impacts to listed species not already addressed in the Draft EIS, including the potential for adverse impacts from the ingestion of plastic marine debris generated by DBOC.⁹⁸

It will be essential to complete a full and careful assessment of the impacts to all listed species and designated critical habitat that may be impacted if the Park Service is considering recommending adoption of any of the action alternatives.

⁹⁶ 16 U.S.C. §1536(a)(2); 50 CFR 402.12(k)(1), 402.14(a).

⁹⁷ California Coastal Commission Letter to DBOC, dated June 5, 2007 (Exhibit 11 to DBOC CCC-07-DC-11).

⁹⁸ See, Arthur, C., J. Baker and H. Bamford (eds). 2009. Proceedings of the International Research Workshop on the Occurrence, Effects and Fate of Microplastic Marine Debris. Sept 9-11, 2008. NOAA Technical Memorandum NOS-OR&R-30, and, Plastic Debris in the California Marine Ecosystem: A Summary of Current Research, Solution Strategies and Data Gaps. 2011. C. Stevenson, University of Southern California Sea Grant. Synthetic Report. California Ocean Science Trust, Oakland, CA.

Conclusion

Law, policy, and best available science call for full Wilderness Protection for Drakes Estero in 2012. The issuance of a new 10-year special use permit under any of the three action alternatives would roll back wilderness protection to benefit a single business at the expense of the public trust and the ecological heart of Point Reyes National Seashore. It is time to return Drakes Estero all Americans as the West Coast's only marine wilderness. The National Wildlife Federation urges the Park Service to select Alternative A.

Thank you for the opportunity to provide these comments. Please do not hesitate to me at 415-762-8264 or sametm@nwf.org if I can provide any additional information.

Sincerely,



Melissa Samet
Senior Water Resources Counsel

Attachments