



Categorical Exclusion Form

Project: Restoration of Drakes Estero
PEPC Project Number: 58844
Description of Action (Project Description):

This project will remove and dispose of abandoned infrastructure and aquacultural debris from Drakes Estero. There are 95 oyster racks that comprise approximately 7.07 acres of area. Approximately 2,230 vertical bent structures made of 2"x4" and 2"x6" lumber are sunk about 5 feet into the bed of Drakes Estero. The material to be removed is between 200,000 and 250,000 total board feet of lumber. Overall the project will remove more than 5 miles of racks and 500 tons of aquaculture and marine debris.

Approximately 30% of the area beneath the oyster racks have moderate to heavy accumulation of oyster shell and debris. Within that area, there are locations totaling 1 acre where debris including plastic tubes, oyster strings, wire and mesh bags full of oysters will be removed. The area of heaviest shell accumulation under the racks will be treated in-place to improve habitat for eel grass. Mechanically mixing shell down into the soil will allow more area for fine sediment and eelgrass growing habitat.

In addition, the project will remove oyster mats, escaped manila clam, anchors lines and buoys from some sand bar areas formerly used as growing beds. Approximately 15 sections of 12 foot wide plastic mat, covering approximately 16,900 SF will be removed.

It is assumed that multiple crews would be working using multiple debris transport barges. Nearly all of the proposed work would occur below Mean High Water within Drakes Estero. Following the removal of equipment from the Estero, a long-term restoration and monitoring plan would be put in place. In response to a request from the California Coastal Commission, the NPS has developed a monitoring plan consistent with the California Eelgrass Management Policy Implementing Guidelines.

Project Locations:

Location

County:	Marin	State:	CA
District:	CA02	Section:	

Mitigation(s):

- 1 Post Construction Report. A post construction report shall be submitted 45 days after the conclusion of construction activities. The report shall document construction activities and contain as-built drawings (if different from drawings submitted with application) and include before and after photos.
- 2 Approval of Project Modifications. Any change in the project design, materials or construction methods, must be approved by the Corps of Engineers in writing.
- 3 Minimization of Impacts to Eelgrass from Turbidity.
 - A. To avoid and minimize potential turbidity-related impacts to eelgrass:
 - Where practical, actions should be located as far as possible from existing eelgrass; and
 - In-water work should occur as quickly as possible such that the duration of impacts is minimized.

B. Where proposed turbidity generating activities must occur in proximity to eelgrass and increased turbidity will occur at a magnitude and duration that may affect eelgrass habitat, measures to control turbidity levels should be employed when practical considering physical and biological constraints and impacts. Measures may include:

- Use of turbidity curtains where appropriate and feasible;
 - Use of low impact equipment and methods (e.g., environmental buckets, or a hydraulic suction dredge instead of clamshell or hopper dredge, provided the discharge may be located away from the eelgrass habitat and appropriate turbidity controls can be provided at the discharge point);
 - Limiting activities by tide or day-night windows to limit light degradation within eelgrass habitat;
 - Utilizing 24-hour dredging to reduce the overall duration of work and to take advantage of dredging during dark periods when photosynthesis is not occurring; or
 - Other measures that an action party may propose and be able to employ to minimize potential for adverse turbidity effects to eelgrass.
- C. In consultation with NMFS, if operations in the field exceed 5 hours at a single bent, operations must be modified to increase operational efficiency. Source: NOAA's California Eelgrass Mitigation Policy and Implementing Guidelines (October 2014) P. 12 The NPS shall complete the "Drakes Estero Eelgrass Monitoring and Mitigation Plan."

C. Any reports generated as a result of the plan shall be submitted to the Corps. Changes to the Plan shall be sent to the Corps for review and approval.

4 Water Quality. To avoid impacts to water quality and the marine ecosystem, the NPS will maintain a spill response plan for Drakes Estero that follows the following format (Adapted from California Marina and Yacht Club Spill Response Communication Packet: http://www.asmbyc.org/wp-content/uploads/2014/06/Final_Packet_May_2014.pdf).

- A. Assess magnitude of spill
- B. Identify Material spilled
- C. Identify Source
- D. Stop Source if able. Do not use soap or dispersing agents.
- E. Contain spill using containment boom or absorbent pads. Use adequate PPE.
- F. When incident is secured, complete an incident report and contact NPS and USCG.

The NPS contract will require that the contractor submit a spill prevention/response plan to be reviewed and approved prior to issuing the notice to proceed. The NPS will review the contractor spill plan to ensure that the following topics are addressed adequately:

- Each vessel carrying fuel or hydraulics will carry absorbent boom and pads on board at all times for immediate deployment. Additional boom will be immediately available onshore if additional boom is needed.
- Contractors must be trained in spill prevention and response prior to commencement of work.
- All spills will be immediately reported to NPS and USCG.
- Boats and hydraulic equipment must be inspected prior to work each day for leaks or potential spill hazards. Any issues must be corrected and approved by the site supervisor prior to work commencement.
- Bilges will not be pumped into the estero.
- Cleaners, solvents, paints, soaps or caustics will not be used on the water.

All Best Management Practices shall be implemented to prevent the movement of sediment downstream. No debris, soil, silt, sand, bark, slash, sawdust, cement, concrete, washings, petroleum products, or other organic or earthen material shall be allowed to enter into or be placed where it may be washed by rainfall or runoff into the waterways.

5 Anchor Damage to Eelgrass. Anchors may damage eelgrass if placed in eelgrass beds, especially if anchors have a leading chain that repeatedly scrapes back and forth across eelgrass. A specific anchoring plan will be developed prior to work by consulting with the contractor. However, the plan will have these general requirements

- A. No use of anchors with chains in eelgrass.

- B. Anchors should be deployed only where the bottom can be sighted to ensure anchors are not placed in eelgrass.
- C. Long, narrow poles that can be placed into the sediment may be used to stabilize barges without impacting eelgrass.
- D. Anchoring may occur within the footprint of existing oyster racks.
- E. In the event of an emergency where there is risk to human safety, running aground on an eelgrass bed, or a fuel spill, anchors may be temporarily deployed in eelgrass. Any such events will be reported to NPS.
Source: NPS letter to NMFS 05/22/2015

- 6 Harbor Seals. To minimize disturbance to harbor seals, a species protected by the federal Marine Mammal Protection Act, during project implementation, all contract and NPS staff shall:
- A. Keep a distance of >100 yards from seals at all times.
 - B. If seals are hauled out (beached) on or near a potential work area, work in another area that is at least 100 yards away until the seals have left. NPS Observers will also notify work leaders if there are seals to be avoided.
 - C. Do not attempt to flush or scare the seals. This is a violation of federal law.
 - D. Only use the far west end of the "Lateral Channel" adjacent to Beds 15 and 17 (Maps to be provided). Do not use the eastern 75% of this channel. This is important seal haul out habitat.
 - E. Work will be limited to outside the breeding/pupping season.
 - F. Vessel speed will not exceed 10 knot/hour.
 - G. Construction crews will be briefed on avoidance measures.
 - H. Boats and hydraulic equipment must be inspected prior to work each day for leaks or potential spill hazards. Any issues must be corrected and approved by the site supervisor prior to work commencement.
 - I. Bilges will not be pumped into the estero.
 - J. Cleaners, solvents, paints, soaps or caustics will not be used on the water.
Source: Project Description Appendix D and NPS Letter to NMFS 05/22/2015
- 7 Eelgrass. PRIOR TO COMMENCEMENT OF OFFSHORE OPERATIONS, NPS shall submit for review and approval by the Executive Director of the Coastal Commission (Executive Director) an Eelgrass Monitoring and Mitigation Plan that, consistent with the protocols established in the California Eelgrass Management Policy and Implementing Guidelines (CEMP), provides for a quantitative accounting of project impacts to eelgrass, monitors recovery and colonization of eelgrass, and establishes contingency measures to be implemented if all project impacts to eelgrass have not been mitigated by a ratio of at least 1.2:1 (restoration area:impact area) within one year and maintained for at least one additional year. No offshore project operations shall commence until the Executive Director has approved the Eelgrass Monitoring and Mitigation Plan.
- 8 Because the most significant environmental spill potential is from a broken hydraulic line, only food grade vegetable oil shall be used as the hydraulic fluid in all hydraulic equipment used on the Estero.
- 9 The NPS will have an onsite inspector to oversee operations during the Drakes Estero Restoration Project with the ability to identify and cease work as necessary to minimize impacts.
- 10 The NPS will continue its long-term harbor seal monitoring program in Drakes Estero through project implementation to document and track any changes in the breeding season harbor seal population pre and post-restoration.
- 11 Drakes Estero normally has no motorized vehicles.
- Use engines sparingly and minimize noise as much as practicable.
 - The public may be in the area kayaking. Please use caution and respect when operating near the public.
Source: Project Description Appendix D

- 12 To minimize disturbance to eelgrass during project implementation:

- Do not anchor, trample, cut (with boat props), or destroy eelgrass.
- If items to be removed are in eelgrass, carefully remove them to minimize any damage to eelgrass.
- Do not allow barges or boats to settle on eelgrass.
- If a boat becomes stuck in an eelgrass bed, move the boat out via walking, paddling, poling, or waiting for the incoming tide until the engine can be used without damaging eelgrass or the estero floor.
- When departing from the launch site, navigate just to the East of the line of poles. The channel is approximately 15 feet wide.
- Use Established Boat Travel Routes as best routes between oyster beds and racks. These are shown in Figure 1 in the CCC Consistency Determination.
- If boats or barges become stuck, do not allow motors to cut estero floor or eelgrass. Use other methods to move the vessel.

Source: Project Description Appendix D

- 13 To minimize disturbance and the chance of fragmentation to Dvex colonies on aquaculture debris, posts, and shell, the following BMPs will be employed:
- 1. Do not scrape the oysters, strings or bags against the racks or boats. Lift them carefully to avoid rubbing off the fouling organisms.
 - 2. No scraping or rubbing of lumber or debris so that tunicates are removed whole and no fragments are released into the water.
 - 3. No unnecessary agitation of tunicates (e.g. avoid grabbing posts where tunicates are present)
 - 4. Remove wood, debris, strings of oysters and bags carefully to avoid knocking off fouling organisms.
 - 5. Many invasive species occupy the oyster shells and bags. Avoid knocking these species off when removing them.
 - 6. Any fouling organisms that fall on barges, should not be swept off into the water, they should be contained and disposed of on land.

Source: Project Description Appendix D

- 14 Federal regulations require minimal noise and vessel use to accomplish this oyster removal. Normally Drakes Estero has no motorized vehicles. 1. Use engines sparingly and minimize noise as much as practicable. 2. The public may be in the area kayaking. Please use caution and respect when operating near the public. Source: Project Description Appendix D

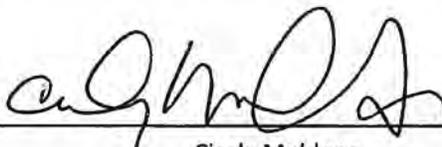
- 15 To avoid impacts to water quality and the marine ecosystem, the NPS will maintain a spill response plan for Drakes Estero that follows the following format (Adapted from California Marina and Yacht Club Spill Response Communication Packet: http://www.asmbyc.org/wp-content/uploads/2014/06/Final_Packet_May_2014.pdf). A. Assess magnitude of spill B. Identify Material spilled C. Identify Source D. Stop Source if able. Do not use soap or dispersing agents. E. Contain spill using containment boom or absorbent pads. Use adequate PPE. F. When incident is secured, complete an incident report and contact NPS and USCG.

CE Citation: E.4 Removal of non-historic materials and structures in order to restore natural conditions.

Decision: I find that the action fits within the categorical exclusion above. Therefore, I am categorically excluding the described project from further NEPA analysis. No extraordinary circumstances apply.

Signature

Superintendent:



Cicely Muldoon

Date:

2/29/2016



ASSESSMENT OF ACTIONS HAVING AN EFFECT ON HISTORIC PROPERTIES

A. DESCRIPTION OF UNDERTAKING

1. Park: Point Reyes National Seashore

2. Project Description:

Project Name: Restoration of Drakes Estero

Prepared by: Paul Engel **Date Prepared:** 02/12/2016 **Telephone:** 415 464-5287

PEPC Project Number: 58844

Locations:

Describe project:

This project will remove and dispose of abandoned infrastructure and aquacultural debris from Drakes Estero. There are 95 oyster racks that comprise approximately 7.07 acres of area. Approximately 2,230 vertical bent structures made of 2"x4" and 2"x6" lumber are sunk about 5 feet into the bed of Drakes Estero. The material to be removed is between 200,000 and 250,000 total board feet of lumber. Overall the project will remove more than 5 miles of racks and 500 tons of aquaculture and marine debris.

Approximately 30% of the area beneath the oyster racks have moderate to heavy accumulation of oyster shell and debris. Within that area, there are locations totaling 1 acre where debris including plastic tubes, oyster strings, wire and mesh bags full of oysters will be removed. The area of heaviest shell accumulation under the racks will be treated in-place to improve habitat for eel grass. Mechanically mixing shell down into the soil will allow more area for fine sediment and eelgrass growing habitat.

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It is assumed that multiple crews would be working using multiple debris transport barges. Nearly all of the proposed work would occur below Mean High Water within Drakes Estero. Following the removal of equipment from the Estero, a long-term restoration and monitoring plan would be put in place. In response to a request from the California Coastal Commission, the NPS has developed a monitoring plan consistent with the California Eelgrass Management Policy Implementing Guidelines.

Area of potential effects (as defined in 36 CFR 800.16[d])

The APE for this project is based on the project's direct physical effects and covers the 7.07 acres of oyster racks that are to be removed and the locations of sandbars formerly used as growing beds where oyster mats, escaped manila clams, anchor lines and buoys will also be removed by the project.

3. Has the area of potential effects been surveyed to identify historic properties?

No
 Yes

4. Potentially Affected Resource(s):

Archeological Resources Notes: No archaeological resources are known to be present within the extent of the APE. The APE covers portions of the submerged lands of Drakes Estero making archaeological survey impractical. The project has very low potential to impact archaeological resources.

Historical Structures/Resources Notes: The oyster racks that are to be removed by the proposed project were evaluated for the NRHP along with the onshore infrastructure associated with Johnson Oyster Company (Jensen's Oysters, Drakes Bay Oyster Company) and determined not to be eligible for the National Register of Historic Places. No historic structures/ resources therefore occur within the APE.

Cultural Landscapes Notes: No cultural landscape are present within the extent of the APE. As mentioned above, the Johnson Oyster Company was determined not to be eligible for listing in the National Register of Historic Places.

Ethnographic Resources Affected Notes: No resources of this type are known to be present within the extent of the APE.

5. The proposed action will: (check as many as apply)

- No** Destroy, remove, or alter features/elements from a historic structure
- No** Replace historic features/elements in kind
- No** Add non-historic features/elements to a historic structure
- No** Alter or remove features/elements of a historic setting or environment (inc. terrain)
 Add non-historic features/elements (inc. visual, audible, or atmospheric) to a historic setting or
- No** cultural landscape
- No** Disturb, destroy, or make archeological resources inaccessible
- No** Disturb, destroy, or make ethnographic resources inaccessible
- Yes** Potentially affect presently unidentified cultural resources
 Begin or contribute to deterioration of historic features, terrain, setting, landscape elements, or
- No** archeological or ethnographic resources
- No** Involve a real property transaction (exchange, sale, or lease of land or structures)
- Other (please specify):** _____

6. Supporting Study Data:

(Attach if feasible; if action is in a plan, EA or EIS, give name and project or page number.)

B. REVIEWS BY CULTURAL RESOURCE SPECIALISTS

The park 106 coordinator requested review by the park's cultural resource specialist/advisors as indicated by check-off boxes or as follows:

No Reviews From: Curator, Archeologist, Historical Architect, Historian, 106 Advisor, Other Advisor, Anthropologist, Historical Landscape Architect

C. PARK SECTION 106 COORDINATOR'S REVIEW AND RECOMMENDATIONS

Assessment of Effect Form - Restoration of Drakes Estero - PEPC ID: 58844

1. Assessment of Effect:

- No Potential to Cause Effects
- No Historic Properties Affected
- No Adverse Effect
- Adverse Effect

2. Documentation Method:

A. STANDARD 36 CFR PART 800 CONSULTATION
Further consultation under 36 CFR Part 800 is needed.

B. STREAMLINED REVIEW UNDER THE 2008 SERVICEWIDE PROGRAMMATIC AGREEMENT (PA)

The above action meets all conditions for a streamlined review under section III of the 2008 Servicewide PA for Section 106 compliance.

APPLICABLE STREAMLINED REVIEW Criteria
(Specify 1-16 of the list of streamlined review criteria.)

C. PLAN-RELATED UNDERTAKING

Consultation and review of the proposed undertaking were completed in the context of a plan review process, in accordance with the 2008 Servicewide PA and 36 CFR Part 800.

Specify plan/EA/EIS:

D. UNDERTAKING RELATED TO ANOTHER AGREEMENT

The proposed undertaking is covered for Section 106 purposes under another document such as a statewide agreement established in accord with 36 CFR 800.7 or counterpart regulations.

E. COMBINED NEPA/NHPA Document

Documentation is required for the preparation of an EA/FONSI or an EIS/ROD has been developed and used so as also to meet the requirements of 36 CFR 800.3 through 800.6

G. Memo to SHPO/THPO

H. Memo to ACHP

SHPO/THPO Notes:

3. Additional Consulting Parties Information:

Additional Consulting Parties: Yes

Additional Consulting Parties Notes: The Federated Indians of Graton Rancheria were also consulted in concurrence with the CA SHPO.

4. Stipulations and Conditions:

Following are listed any stipulations or conditions necessary to ensure that the assessment of effect above is consistent with 36 CFR Part 800 criteria of effect or to avoid or reduce potential adverse effects.

In the unlikely event that possible human remains, Native American artifacts, or concentrations of historic artifacts likely over 50 years of age are discovered, work in the immediate area must cease and the Park's Cultural Resources Division must be notified for an evaluation of the discovery.

5. Mitigations/Treatment Measures:

Measures to prevent or minimize loss or impairment of historic/prehistoric properties:
(Remember that setting, location, and use may be relevant.)

No Assessment of Effect mitigations identified.

D. RECOMMENDED BY PARK SECTION 106 COORDINATOR:

Compliance Specialist:

NHPA Specialist

Paul Engel



Date:

2/25/2016

E. SUPERINTENDENT'S APPROVAL

The proposed work conforms to the NPS *Management Policies* and *Cultural Resource Management Guideline*, and I have reviewed and approve the recommendations, stipulations, or conditions noted in Section C of this form.

Superintendent:



Signature

Cicely Muldoon

Date:

2/29/16



ENVIRONMENTAL SCREENING FORM (ESF)

Updated Sept 2015 per NPS NEPA Handbook

A. PROJECT INFORMATION

Project Title: Restoration of Drakes Estero
PEPC Project Number: 58844
PMIS Number: 213161
Project Type: Restoration (REST)
Project Location:
County, State: Marin, California **District, Section:** CA02,
Project Leader: Ben Becker

B. PROJECT DESCRIPTION

This project will remove and dispose of abandoned infrastructure and aquaculture-related debris from Drakes Estero. There are 95 oyster racks that comprise approximately 7.07 acres of area. Approximately 2,230 vertical bent structures made of 2"x4" and 2"x6" lumber are sunk about 5 feet into the bed of Drakes Estero. The material to be removed is between 200,000 and 250,000 total board feet of lumber. Overall the project will remove more than 5 miles of racks and 500 tons of aquaculture and marine debris.

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C. RESOURCE IMPACTS TO CONSIDER:

Resource	Potential for Impact	Potential Issues & Impacts
Air Air Quality <i>Class 1 Airshed</i>	Potential	Issue: Short term emissions from 2-3 mini-excavators and several small craft boats for an estimated 100 to 146 days. Impact: Short-term effects to local air quality from emissions from vehicles, vessels and equipment operating on barges. Emissions would normally be readily dispersed by the prevailing offshore winds on most days during operation.
Biological Nonnative or Exotic Species <i>Non-native invasive tunicate Dvex</i>	Potential	Issue: The primary concern with non-natives in this project is the inadvertent spread of <i>Didemnum vexillum</i> (Dvex), a colonial tunicate that has invaded much of the east and west coasts of North America over the past 15 years. Dvex was first noted in Drakes Estero by Elliot-Fisk et al. (2005) growing on oysters, oyster racks, and experimental settlement plates. In 2010, Dvex was also noted growing on eelgrass in Drakes Estero (Grosholz 2010). Impact: See ESF Attachment 58844.doc uploaded to PEPC
Biological Species of Special Concern or Their Habitat <i>Eelgrass (CA State species of concern)</i>	Potential	Issue: The Restoration Project will have short-term impacts on eelgrass and seabed habitats. Impact: See ESF Attachment 58844.doc uploaded to PEPC
Biological Vegetation	None	
Biological Wildlife and/or Wildlife Habitat including terrestrial and aquatic species <i>Harbor Seal Colony</i>	Potential	Issue: Project actions could disrupt harbor seal breeding, pupping, and hauling out. Seals could be injured by motorized boats operating in the Estero. Impact: See ESF Attachment 58844.doc uploaded to PEPC
Cultural Archeological Resources	None	
Cultural Cultural Landscapes	None	
Cultural Ethnographic Resources	None	
Cultural Museum Collections	None	
Cultural Prehistoric/historic structures	None	
Geological Geologic Features	None	

Resource	Potential for Impact	Potential Issues & Impacts
Geological Geologic Processes	None	
Lightscares Lightscares	None	
Other Human Health and Safety <i>Visitor safety - kayakers</i>	Potential	Issue: Project implement could pose hazards to the visiting public on the Estero in kayaks. Impact: The project work area will have a relatively small closure footprint that could be easily avoided by kayakers. Closures of the launching area are not anticipated. If, for an unforeseen reason, closure of the launch area is necessary, the park would send notice to the public by press release and social media and the park website.
Socioeconomic Land Use	None	
Socioeconomic Minority and low-income populations, size, migration patterns, etc.	None	
Socioeconomics Socioeconomics	None	
Soundscapes Soundscapes <i>Wilderness Soundscape</i>	Potential	Issue: See discussion of Soundscape and Wilderness Character Impact: See ESF Attachment 58844.doc uploaded to PEPC
Visitor Use and Experience Recreation Resources <i>Recreational Boating</i>	Potential	Issue: Project implementation could periodically limit visitor access to portions of the waters of the Estero. Impact: The project work area will have a relatively small closure footprint that could be easily avoided by kayakers. Closures of the launching area are not anticipated. If, for an unforeseen reason, closure of the launch area is necessary, the park would send notice to the public by press release and social media and the park website with dates and duration of any closures.
Visitor Use and Experience Visitor Use and Experience <i>Visitor use and experience at Drakes Estero and the Estero vicinity</i>	Potential	Issue: Project implementation could be visually intrusive to visitors seeking natural soundscape and viewshed in and around the Estero. Impact: Public notification of the project activities and project duration would be provided through press releases and social media. Oyster racks and debris from the oyster operation are now readily visible to visitors on the Estuary. Removal of the infrastructure and debris would result in long-term benefit to visitor experience within the Estero.
Water Floodplains	None	
Water Marine or Estuarine Resources <i>Drakes Estero Estuarine Ecosystem</i>	Potential	Issue: Project implementation could impact eelgrass habitat, water quality and marine mammals in Drakes Estero. Impact: See ESF Attachment 58844.doc uploaded to PEPC for discussions of eelgrass, water quality and wildlife impacts.

Resource	Potential for Impact	Potential Issues & Impacts
Water Water Quality or Quantity <i>Water Quality</i>	Potential	Issue: Short term sediment plumes and petroleum product spill potential for the duration of the project. Impact: See ESF Attachment 58844.doc uploaded to PEPC
Water Wetlands	Potential	
Wilderness Wilderness <i>Wilderness Character</i>	Potential	Issue: Noise and visual intrusion of vessels and heavy equipment operating during project implementation would intrude on Wilderness character and recreation. Impact: See ESF Attachment 58844.doc uploaded to PEPC

D. ESF ADDENDUM QUESTIONS:

Question	Answer	Notes
Would the proposed action affect park operations or infrastructure?	No	

IDT Team Members and Reviewers:

- Ben Becker** - Project Leader
- Ben Becker** - Science Advisor
- David Brouillette** - Chief of Maintenance
- John Dell'Osso** - Chief of Interpretation
- Paul Engel** - NHPA Specialist
- Brannon Ketcham** - Natural Resource Specialist
- Kevin McKay** - SUP/Concessions Coordinator
- Wendy Poinot** - NEPA Specialist
- David Schifsky** - Chief Ranger
- Gordon White** - Chief of Cultural Resources

Species of Special Concern or Their Habitat	
Specific Resource	Eelgrass (CA State species of concern)
Reviewer	Ben Becker, Brannon Ketcham
Issue	The Drakes Estero Restoration Project requires removal of oyster aquaculture infrastructure and associated debris from the seabed which will disrupt areas of eelgrass and seabed habitat.
Potential Impact	To estimate potential impacts to eelgrass and seabed habitat (and for project planning), NPS staff collated and collected pre-disturbance data on rack locations and conditions, aerial imagery, sediment mapping, eelgrass mapping, high definition underwater video, site visits to sandbars at low tide, and visual snorkel surveys or racks and rack footprints. This information was used to determine the extent and density of eelgrass, the area and condition of rack posts and bottom cross-members (deadmen) in eelgrass and the area and density of coverage of debris (shell, plastic, etc.) on the seafloor that could

be a candidate for removal or treatment. Staff also calculated areas on sandbars where aquaculture equipment and shellfish may be removed. The survey methods and results are detailed in Appendix A to the NPS Project Description uploaded to PEPC 58844

The primary approach for the Drakes Estero restoration project is to maximize removal of the existing infrastructure and shell debris while minimizing impacts to existing eelgrass beds. The NPS intends to treat as much unnatural hard structure as feasible to improve the area for eelgrass expansion while minimizing potential habitat for the non-native invasive tunicate *Didemnum vexillum* (Dvex). Surveys found little to no eelgrass beneath the racks due to shading of both the racks and the former hanging shellfish. However, roughly 40% of the posts and deadman are adjacent to and could affect eelgrass habitat during removal. During project implementation, each area would be disturbed for a minimal amount of time as the contractor would move quickly along the linear layout. This coupled with the tidal dynamics and hydrologic turnover of the estuary would minimize the duration of the impacts to the approximately 0.59 acres of eelgrass in the impact area. Increase in turbidity (few minutes) in each area would be too brief to affect eelgrass photosynthesis.

The proximity of eelgrass in and around the racks and the hydrodynamics of the estuary (high tidal flushing) would encourage eelgrass expansion within the entire roughly 8-acre project footprint, a long term benefit to the site. It is anticipated that removal of the oyster racks will create approximately 1.8 acres of eelgrass habitat and removal of aquaculture debris will enhance an additional 1 acre of habitat. The NPS is evaluating the potential impacts and benefits of proposed in-situ treatments on approximately 0.5 acres and to conduct experimental monitoring to determine effectiveness of this type of treatment. The NPS calculates that the Drakes Estero Restoration Project, including complete removal of oyster racks and accumulated aquaculture debris (tubes, strings, and bags), would provide a 4.5:1 eelgrass benefit.

Little is known about the tolerable levels of shell debris allowable in sediment mix to allow eelgrass growth. Therefore, as part of project implementation, the NPS proposes to perform several in-situ ("mix-in") treatments of both heavy and moderate oyster shell debris coverage with underlying sediment and then monitor the treatments and controls to assess eelgrass growth. Treatments and controls will be in areas where eelgrass already grows adjacent to the treatment plots, providing an opportunity for vegetative growth. Test plots will be monitored by divers using HD video to calculate the percent cover of shell, debris, eelgrass, bare sediment and Dvex. Surveys will be conducted for additional years if mitigation requirements are not noted after the first year.

The CDFW is conducting a parallel monitoring project assessing eelgrass growth under racks throughout the Estero before and after rack removal. This non-manipulative monitoring (other than pre and post oyster rack removal) will provide information on trends in growth of eelgrass in areas of heavy, moderate, light and zero shell cover. The monitoring programs may provide information the effect of varying amounts of shell debris on eelgrass regrowth and information on how much eelgrass spreads by seed versus vegetatively. (Project Description Appendix B uploaded to PEPC 58844 provides more background on the proposed monitoring program).

Though the project would disrupt approximately 0.59 acres of eelgrass over a short-term period, over 700 acres of near-pristine eelgrass habitat is available in Drake's Estero suggesting that revegetation would be likely and the disruption and loss would be temporary in nature.

Specific Operational Guidelines were developed for contractors working on boats and barges in the Estero during project implementation to minimize potential project impacts including measures to reduce impacts to eelgrass. These are included in PEPC 58844 as mitigation measures for impacts to eelgrass.

The California Coastal Commission, in their review of the proposed restoration project, require the NPS to "submit for review and approval by the Executive Director of the Coastal Commission

	(Executive Director) an Eelgrass Monitoring and Mitigation Plan that, consistent with the protocols established in the California Eelgrass Management Policy and Implementing Guidelines (CEMP), provides for a quantitative accounting of project impacts to eelgrass, monitors recovery and colonization of eelgrass, and establishes contingency measures to be implemented if all project impacts to eelgrass have not been mitigated by a ratio of at least 1.2:1 (restoration area:impact area) within one year and maintained for at least one additional year. No offshore project operations shall commence until the Executive Director has approved the Eelgrass Monitoring and Mitigation Plan. (CCC Concurrence Determination, 5/14/2015).
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Non-native or Exotic Species	
Specific Resource	Non-native invasive tunicate <i>Didemnum vexillum</i> (Dvex)
Reviewer	Ben Becker, Brannon Ketcham
Issue	The primary concern with non-natives in this project is the inadvertent spread of <i>Didemnum vexillum</i> (Dvex), a colonial tunicate that has invaded much of the east and west coasts of North America over the past 15 years. Dvex was first noted in Drakes Estero by Elliot-Fisk et al. (2005) growing on oysters, oyster racks, and experimental settlement plates. In 2010, Dvex was also noted growing on eelgrass in Drakes Estero (Grosholz 2010)
Potential Impact	<p>There is no information on whether leaving shell caps in place or treating them with a mix-in activity would promote eelgrass growth and minimize habitat for Dvex. However, removing hard structure (shell) as available habitat should reasonably reduce potential non-native growth.</p> <p>NPS proposes the removal of the majority of the preferred hard substrate and Dvex on those substrates as a viable initial approach to Dvex control in the estuary. In-situ treatments would be limited in extent only to the heaviest shell accumulation areas which are devoid of eelgrass as documented by NPS videos. The NPS anticipates that the removal treatment would be limited to approximately 0.5 acres (rather than the entire 2.4 acre area of heavy/moderate debris).</p> <p>A key motivation for the removal of the oyster racks, oyster shell and marine debris is that it serves as the key substrate for Dvex. Much of the marine debris will be covered with Dvex and the scooping method or hand picking proposed would simply scoop up debris and place it into the debris boxes. This movement would agitate some of the tunicate and possibly induce release of larvae. However, these larvae would have eventually been released into the water if the tunicates were left in place, so while the removal effort, though it may cause some release of larvae, the sum released overall would be lower than if the Dvex were allowed to remain in place. Thus, by removing the habitat, the Dvex population should be reduced, although the apparent increasing use of eelgrass as substrate is worrying and the short and long-term impacts on eelgrass are currently unknown.</p>

Water Quality	
Specific Resource	Drakes Estero Water Quality
Reviewer	Ben Becker, Brannon Ketcham
Issue	Potential for contamination from equipment on the Estero. Short term sediment plumes for the duration of the project.
Potential Impact	There would be short-term localized effects to turbidity from the removal of the infrastructure, shells and debris from the seabed. During the method testing for rack removal, turbidity dissipated within a matter of 5 min. or less. Turbidity from shell removal would be greater but still a short-term localized effect that would benefit conditions for eelgrass in the long-term. The potential for the mobilization of chemicals used in pressure treatment of the lumber in oyster rack would be limited. The lumber used

	for the oyster rack posts is assumed to be No. 2 Douglas fir-larch 2"x6" lumber. The posts have been in the water a minimum of 10 years. The NPS ran the leaching model developed by the NMFS for pressure treated lumber in salt water which showed that any chemicals would have leached out of the wood in less than 1 year. The use of hydraulic equipment increases the presence of petroleum products on the Estero during demolition activities. Because the most significant environment spill potential would be from a broken hydraulic line, food grade vegetable oil would be recommended as the hydraulic fluid in all hydraulic equipment used on the Estero. In addition, spill response plans and containment protocols in the event of a fuel or oil spill are required by the NPS.
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Wildlife	
Specific Resource	Harbor Seal Colony
reviewer	Ben Becker, Brannon Ketcham
Issue	Project actions could disrupt harbor seal breeding, pupping, and hauling out. Seals could be injured by motorized boats operating in the Estero.
Potential Impact	<p>Since 1997, the NPS has conducted a long-term harbor seal monitoring program at Point Reyes National Seashore, including Drakes Estero. Monitoring will continue during project implementation to document and track any changes in the breeding season harbor seal population pre- and post-project.</p> <p>The operations in the Estero during project implementation include the transport of debris by barge and operation of barges to remove the aquaculture infrastructure, debris and the mix-in shell/sediment activity. Barges operate at low speeds and would result in impacts with harbor seals. The crew vessels will be used to bring workers out to the work barges and would likely operate at higher speeds, but still generally less than 10 knots. The NPS would brief contractors prior to work on scanning for seals, and to slow down to 5 knots if a seal is sighted within 100 yards of the vessel. For the duration of the restoration, the NPS will supplement this guidance by placing observers on shore during low tides (<2.5 ft.) to monitor the upper sandbar near Bed 7 during rack removal operations. If seals are hauled out, the observer would communicate this to work crew leaders to alter operations to another location until the tide has risen. For restoration work at near beds 15 and 17, observers would monitor the area for hauled out seals and contact work crew leaders to alter operations to another location until the tide has risen and seals have left. To minimize impacts to seals, all proposed restoration work would be conducted outside the harbor seal breeding and pupping season (March 1 – June 30). Therefore, seal occupancy on sandbars would be expected to be low, and the NPS anticipates the impacts to seals would be avoided.</p>

Wilderness	
Specific Resource	Wilderness Character and Visitor Experience
reviewer	Ben Becker, Brannon Ketcham
Issue	Noise and visual intrusion of vessels and heavy equipment operating during project implementation would intrude on Wilderness character and recreation.
Potential Impact	If all factors such as winds and tides work in favor of project implementation, the project could be finished in as few as 109 work days. Allowing for winds and tide delays could extend the project to 146 work days from the July 1st start date to the end of November 2016. For contracting purposes it is assumed that the full project would allow approximately 204 calendar days for the work (July 1, 2016 to January 20, 2017). During project implementation, visitors to Drakes Estero would experience perceptible impacts to visual character and soundscape and may come into closer proximity to the operation while hiking or kayaking. This short-term impact to wilderness recreation would be short-term in nature over the duration of the project. The project would result in long-term significant

	<p>beneficial improvements to the Wilderness character of Drakes Estero and to wilderness recreation at Drakes Estero through the removal of man-made infrastructure within and adjacent to the Wilderness portion of the Estero. The wilderness designation and cessation of mechanized boating operations associated with the former aquaculture operation and with the restoration work (with the exception of very limited administrative use for monitoring and patrol), would eliminate potential prop damage to eelgrass resulting in expansive long-term benefits to eelgrass.</p>
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Soundscape	
Specific Resource	Soundscape and Wilderness Character
reviewer	Ben Becker, Brannon Ketcham
Issue	Noise and visual intrusion of vessels and heavy equipment operating during project implementation would intrude on soundscape and Wilderness character.
Potential Impact	<p>If all factors such as winds and tides work in favor of project implementation, the project could be finished in as few as 109 work days. Allowing for winds and tide delays could extend the project to 146 work days from the July 1st start date to the end of November 2016. Operation of multiple crews would reduce the overall duration of the project, and thus duration of impact to soundscape. During project implementation, visitors to Drakes Estero would experience perceptible impacts to visual character and soundscape and may come into closer proximity to the operation while hiking or kayaking. This impact would be short-term in nature during operational periods. The project would result in long-term significant beneficial improvements to the soundscape and wilderness character through cessation of mechanized boating operations associated with the former aquaculture operation and with the restoration work (with the exception of very limited administrative use for monitoring and patrol), would eliminate potential prop damage to eelgrass resulting in expansive long-term benefits to eelgrass.</p>



Ketcham, Brannon <brannon_ketcham@nps.gov>

RE: NOI for Drakes Estero Restoration Project

1 message

Fernandez, Xavier@Waterboards <Xavier.Fernandez@waterboards.ca.gov> Wed, May 6, 2015 at 10:14 AM
To: "Ketcham, Brannon" <brannon_ketcham@nps.gov>
Cc: Cicely Muldoon <cicely_muldoon@nps.gov>, Benjamin Becker <ben_becker@nps.gov>, "Aelion, Victor@Waterboards" <Victor.Aelion@waterboards.ca.gov>

Please also refer to Place ID 815070 on all submittals for this project.

Thanks,

Xavier

From: Fernandez, Xavier@Waterboards
Sent: Wednesday, May 06, 2015 10:06 AM
To: 'Ketcham, Brannon'
Cc: Cicely Muldoon; Benjamin Becker; Aelion, Victor@Waterboards
Subject: RE: NOI for Drakes Estero Restoration Project

Brannon,

We have reviewed the Notice of Intent (NOI) and do not have questions. We received the NOI on May 1, 2015, so on May 31, 2015, you will automatically be enrolled for coverage under the General 401 Water Quality Certification for Small Habitat Restoration Projects (Order No. SB12006GN).

Regards,

Xavier Fernandez

Environmental Scientist

SF Bay Regional Water Quality Control Board

510-622-5685

xavier.fernandez@waterboards.ca.gov

From: Ketcham, Brannon [mailto:brannon_ketcham@nps.gov]
Sent: Friday, May 01, 2015 2:41 PM
To: Fernandez, Xavier@Waterboards; Hetzel, Fred@Waterboards
Cc: Cicely Muldoon; Benjamin Becker
Subject: NOI for Drakes Estero Restoration Project

Xavier and Fred

Attached is our submittal package for the NOI for the Drakes Estero Restoration Project. A hard copy of this package is in today's outgoing mail.

The project description and NWP 27 request was submitted to the USACE on April 20, 2015. The Coastal Consistency Determination for this project is also scheduled for hearing in front of the California Coastal Commission on May 14.

Please feel free to contact me, or Ben Becker at 415-464-5187 if there are any questions regarding this project.

Many thanks.

Brannon

—

Brannon Ketcham
Management Assistant
Point Reyes National Seashore
Phone (415) 464-5192
Mobile (415) 408-1494
nps.gov/pore



Centennial Goal: Connect with and create the next generation of park visitors, supporters, and advocates.

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Memorandum

To: File

From: Brannon Ketcham, Management Assistant *BK* JUN 12 2015

Through: Cicely Muldoon, Superintendent *CM*

Re: Drakes Estero Restoration Project - No Effect to USFWS-managed T&E Species

The National Park Service (NPS) has initiated planning for the restoration of Drakes Estero in 2015. The project will remove more than 5 miles of abandoned and collapsed oyster racks, and 1.5 acres of aquaculture debris, including oyster tubes, bags, strings, mats, anchors and lines from subtidal habitat within Drakes Estero. This artificial, introduced debris precludes the expansion of eelgrass, supports invasive marine fouling organisms, poses an ongoing hazard to marine wildlife susceptible to ingestion or entanglement, and replaces the natural soft substrate benthic habitat with hard debris. The marine resources of Drakes Estero will be significantly enhanced through the removal of this infrastructure and debris. Furthermore, removal of this nonconforming infrastructure will restore natural conditions and improve wilderness character within the marine waters of Drakes Estero.

The location of the proposed project is within the main body of Drakes Estero, within Point Reyes National Seashore, Marin County, CA. Drakes Estero is part of the Phillip Burton Wilderness, and represents the only marine wilderness area on the Pacific coast south of Alaska. This project will remove the remaining non-historic and non-essential facilities including more than 5 miles of oyster racks (approximately 7 acres) and aquacultural debris associated with the Johnson Oyster Company and Drakes Bay Oyster Company (DBOC) from the subtidal lands of Drakes Estero.

Species known to or with potential to occur in the Project Area

The NPS evaluated what special status species could occur within the 1,200 acre project planning area (including the onshore areas where previous permitting is already complete) as well as the offshore project area as part of the Environmental Impact Study for the Drakes Bay Oyster Company Special Use Permit (EIS). Pursuant to Section 7 of the ESA, the NPS requested a species list from USFWS to determine whether federally listed threatened or endangered species occur within the project area. USFWS Sacramento Fish and Wildlife Office provided a list of threatened and endangered species for the Drakes Bay U.S. Geological Survey 7.5 Minute Quadrangle Map dated 1976 (USFWS 2010). NOAA's NMFS Southwest Regional Office provided additional comments and recommendations regarding marine resources in Drakes Estero as part of comments on the draft EIS. In addition, NPS reviewed agency consultations (NMFS 2009; USFWS 2004, 2008) for recent NPS projects that address relevant natural resources and are located near Drakes Estero.

Wilderness Minimum Requirement Analysis Worksheet

Point Reyes National Seashore

Project Title: **Assessment and removal of Aquaculture Infrastructure and Marine Debris in Drakes Estero and associated research.**

Project Lead Name and Contact: **NPS: Ben Becker, 415-464-5187**

Proposed Start and End Dates: **May 1, 2016 – March 1, 2017**

None of the following actions may occur in PORE Wilderness unless this form has been completed and approved by the Superintendent:

- creation of a temporary road,
- use of motor vehicles,
- use of motorized equipment¹,
- use of motorboats,
- landing of aircraft,
- use of mechanical transport ,
- construction or placement of a structure or installation (includes signage and scientific instrumentation)

If you are proposing one of these actions in Wilderness, you must complete Minimum Requirements Analysis by answering the questions below. Use additional sheets if more space is needed. Attach maps to show project location(s). This MRA Worksheet will be reviewed by the PORE Wilderness Workgroup and the Superintendent and must be approved by the Superintendent before implementation of any proposed actions. Detail is encouraged.

¹ Motorized equipment is defined as any machine activated by a motor, engine, or other non-living power source. This includes chain saws, power drills, generators, windmills and snow blowers. "Motorized equipment" does not include shavers, wrist watches, clocks, flashlights, cameras, camping stoves, solar panels, batteries, explosives, Geiger counters, cellular telephones, radio, receivers or transmitters, GPS units, or other similar small, battery powered hand-carried personal camping equipment (DO-41)

- 1. Describe the situation that may prompt action and describe why it is a problem or issue (e.g. hauling materials, clearing brush, installing resource monitoring equipment, etc).**
 - a. NPS intends to remove aquaculture infrastructure and marine debris from the marine Wilderness in Drakes Estero, with work beginning in summer 2016 and extending into early 2017. NPS needs to (i) assess the condition and amount of aquaculture material that will need to be removed, (ii) allow contractors to enter the site to assess the racks and the ease of deconstruction, (iii) monitor site and environmental conditions pre and post restoration, (iv) and remove racks and marine debris from rack and growing bed areas as determined necessary prior to the 2017 harbor seal pupping season. (Regarding rack and debris removal, the RFP and design documents are also exhibit to this aspect of the work)
 - b. The California Department of Fish and Wildlife (DFW) has established approximately fifteen, 30-m long transects to assess the status of marine invertebrates, aquatic vegetation, and marine debris. Some of these transects in deeper waters will need to be surveyed using scuba which requires a motorboat for deployment and safety.
 - c. San Francisco State University is assessing phytoplankton community dynamics and is collecting water samples from Drakes Estero and Estero de Limantour. Some of these collections need to be via powerboat.

- 2. Provide a range of alternatives of how the action/project may be conducted (i.e. non-prohibited use, prohibited use, combination). For each, describe what methods or techniques will be used, when and where the action will take place, and what mitigation measures are necessary. (e.g. 5 pack stock trips in June and 5 in December; 3 helicopter landings per year on 6/11/12, 7/14/22 and 12/25/12; motorized wheelbarrow use on 4 weekdays per month for 6 months from June through November 2012, backpacking materials in etc.) Are any of these alternatives feasible, even if a delay or increased costs would result? Explain why or why not. Use the maps in Appendices A, B, C and D to illustrate the proposed action area(s):**
 - a. A contractor will access the estuary via boats and barges (likely with a small mini-excavator) between July 2016 and February 2017 (before the seal pupping season) to remove oyster racks and bottom debris from Drakes Estero. All state and federal permits have been secured (PEPC project 58844 on file with park Supt Office.). As part of the contract documents, the NPS has required that the contractor identify and use equipment that minimizes noise output while meeting the cleanup and removal requirements. NPS staff will supervise this activity to ensure no damage to resources. Contract documents also require submittal of vessel transit plan, anchor plan and spill prevention plans that will minimize impacts on the estuary, which will be reviewed and approved prior to implementation.
 - b. NPS boats will support site monitoring, as well as demolition oversight during preliminary survey and survey work.

- c. Seal haul out sites and closure areas established by the California Coastal Commission (CCC) will be avoided with a 100m buffer. However, if we need to enter any of these areas for data collection or sand bar cleanup, we have conferred with the CCC and they confirmed that these closed areas are only applicable to mariculture operations, and not research or other uses (in this case debris removal). CCC has indicated that the precautions of tides >4 feet and working outside of pupping and molting season are appropriate to minimize potential disturbance to seals².
- d. Boat pilots must not travel along established/documented routes wherever feasible to avoid cutting eelgrass with boat propellers. Boat pilots should also avoid disturbance to rafting waterbirds.
- e. Boats will not visit sites if seals are hauled out and will remain > 100 m away (per MMPA guidelines).
- f. DFW and SFSU boats supporting scuba transects and water sampling will follow the same requirements as NPS boats to not disturb eelgrass, seals, or waterbirds.

3. Does this action support: a) Visitor Enjoyment and Recreation, b) Resource Protection, or c) Resource Management and Research? How?

Actions would support a, b, and c by restoring and monitoring a wilderness area.

4. Why can't this action be conducted outside of Wilderness?

Sampling and restoration is done to specifically restore Drakes Estero.

5. If this action is not taken what would be the effects to the wilderness resource?

- a. Abandoned marine debris will further deteriorate and spread throughout the estuary, making removal more difficult or in some instances impossible.
- b. We would not know the effects of rack removal on eelgrass and invasive species communities.

6. If this action is not taken what would be the specific effect on visitor use and enjoyment?

If any kayakers were in the estuary, they would see/hear motorboats.

7. Which of the 4 qualities of wilderness character might be at risk as a result of this action?

- **Untrammelled - unhindered and free from modern human control or manipulation**
- **Natural - ecological systems substantially free from the effects of modern civilization**

² E-Mail from C. Tuefel, California Coastal Commission on 08/27/2014

- **Undeveloped - essentially without permanent improvements or modern human occupation**
- **Outstanding opportunities for solitude or a primitive and unconfined type of recreation**

Describe how these qualities might be at risk.

“Outstanding opportunities for solitude or a primitive and unconfined type of recreation “would be temporarily impacted for a few hours while boat is in operation on the estero. No long-lasting impacts.

“Natural - ecological systems substantially free from the effects of modern civilization” could be impacted by short-term bird or seal disturbance.

- 8. What other mitigation actions, intended to protect wilderness character and resources, are being included in the proposed project? Were any mitigations considered and rejected? Explain.**

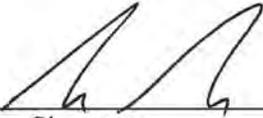
Avoid harbor seals, avoid eelgrass, avoid kayakers, if present. If seals are hauled out at a site, those sites will not be visited and given at least a 100m buffer.

- 9. Identify the selected alternative including the rationale and any monitoring and reporting requirements.**

Any seal disturbance would be reported and is allowable for research under Sarah Allen’s NMFS incidental harassment permit. Dr. Allen submits a report each year.

Submitted by (Project lead)

Ben Becker



05/09/2016

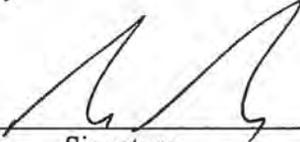
Printed name

Signature

Date

Recommended by (Division Chief):

Ben Becker



05/09/2016

Printed name

Signature

Date

Approved by (Superintendent):



5/9/2016

Signature

Date

NOTE: Upon receiving all above signatures, route original to Superintendent's Assistant for administrative record and forward a copy to the PORE Wilderness Workgroup for entry into the PORE Wilderness Actions database.

Figure 1: Numbered oyster growing areas in Drakes Estero to be visited.

