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Humboldt Bay  
Harbor, Recreation and Conservation District  
(707)443-0801  
P.O. Box 1030  
Eureka, California 95502-1030



**STAFF REPORT**  
**HARBOR DISTRICT MEETING**  
**July 8, 2021**

**TO:** Honorable Board President and Harbor District Board Members

**FROM:** Larry Oetker, Executive Director

**DATE:** July 1, 2021

**TITLE:** Consider Approving Resolution 2021-10 Adopting an Initial Study / Mitigated Negative Declaration, a Mitigation Monitoring and Reporting Program, and Establishing Findings and Approve Permit 2020-02 for the Hog Island Oyster Company Shellfish Farm.

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**STAFF RECOMMENDATION:** It is recommended that the Board:

- Approve Resolution No. 2021-10 adopting an Initial Study / Mitigated Negative Declaration, adopting a Mitigation Monitoring and Reporting Program, and establishing findings relative to the permit application for the Hog Island Oyster Company Shellfish Farm project.
- Approve Permit 2012-02 for the Hog Island Oyster Company Shellfish Farm project.

**SUMMARY:**

Hog Island Oyster Company submitted a permit application to the Humboldt Bay Harbor District for a proposed 30-acre oyster farm in Arcata Bay, California. For California Environmental Quality Act (CEQA) documentation, an Initial Study / Mitigated Negative Declaration has been prepared. The Harbor District Board of Commissioners will consider certifying the CEQA document and approving the Harbor District permit for the proposed project.

**DISCUSSION:**

Hog Island Oyster Company submitted a permit application to the Humboldt Bay Harbor District for a proposed 30-acre oyster farm in Arcata Bay, California. For California Environmental Quality Act (CEQA) documentation, an Initial Study / Mitigated Negative Declaration (IS/MND) has been prepared. The Harbor District Board of Commissioners will consider adopting the CEQA document and approving the Harbor District permit for the proposed project. Following is a description of the proposed project and key considerations.

*Proposed Project*

Hog Island Oyster Company proposes to culture Olympia oysters (*Ostrea lurida*), Pacific oysters (*Crassostrea gigas*) and Kumamoto oysters (*C. sikamea*) within a maximum area of 30 acres adjacent to Mad River Slough Channel in northwest Humboldt Bay (Figure 1). Olympia oysters are native to Humboldt Bay. Pacific oysters and Kumamoto oysters are non-native but have been

cultured in the bay for decades. Two off-bottom culture methods would be used: rack-and-bag and longline.

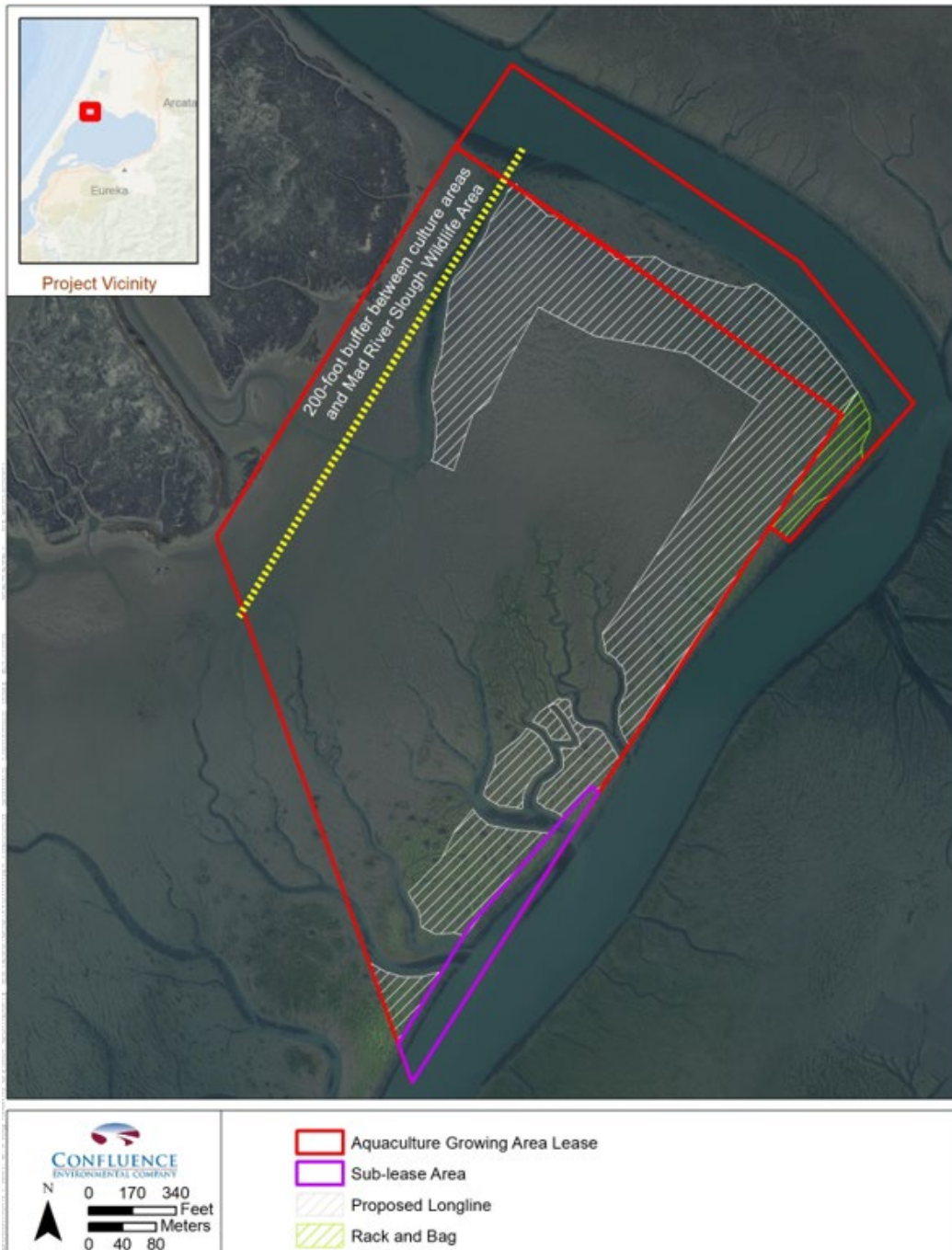


Figure 1. Proposed culture area and methods.

The proposed project will incorporate the following mitigation measures and best management practices:

#	Topic	Mitigation Measure or Best Management Practice
<b>Mitigation Measures</b>		
<b>Mit-1</b>	Marine Debris	HIOC will implement a marine debris management plan (Appendix A). At the time of harvest of each cultivation area, HIOC will carry out a thorough inspection to locate and remove any loose, abandoned or out of use equipment and tools. All floating bags and baskets will be marked or branded with the HIOC's name and phone number.
<b>Mit-2</b>	Eelgrass ( <i>Zostera marina</i> ) Protection	HIOC will install racks, intertidal longline systems, and other aquaculture gear at least 5 horizontal meters from native eelgrass ( <i>Zostera marina</i> ) cover. This will not prevent continued cultivation in areas where eelgrass moves into the project site.  HIOC is expected to install gear incrementally. Before gear is installed in new areas, eelgrass will be mapped in culture areas using unmanned aerial vehicles (UAV) and/or verified using ground surveys to identify eelgrass cover and establish 5 meter horizontal buffers. Eelgrass surveys will be conducted annually during the eelgrass growing season (May to September) prior to gear installation until gear is fully installed at the site.
<b>Mit-3</b>	Vessel Anchors	HIOC will anchor vessels outside of areas containing eelgrass.
<b>Mit-4</b>	Vessel Routes	HIOC will establish a vessel route to access its leases that avoids known native eelgrass ( <i>Z. marina</i> ) cover, and maintain a no wake zone within a 1,000-foot buffer north of Tuluwat Island to avoid black brant ( <i>Branta bernicla</i> ) gritting sites in the winter (December 15-April 30).
<b>Mit-5</b>	Channel Buffers	HIOC will establish a 10-foot buffer from the top of bank of channels. Culture equipment will not be installed in the buffer areas.
<b>Mit-6</b>	Pacific Herring ( <i>Clupea pallasii</i> ) Avoidance	In any cultivation beds within or adjacent to eelgrass cover (in the event that eelgrass moves into the project site), HIOC will conduct visual surveys for Pacific herring spawn prior to conducting activities during the herring spawning season (October to April). If herring spawn is present, HIOC will suspend activities in the areas where spawning has occurred until the eggs have hatched and spawn is no longer present (typically 2 weeks).
<b>Mit-7</b>	Cultural Resources	HIOC will comply with the Harbor District Protocol agreed upon between the Harbor District and the Blue Lake Rancheria, Bear River Band of Rohnerville Rancheria, and Wiyot Tribes regarding the inadvertent discovery of archaeological resources, cultural resources, or human remains or grave goods (Appendix B).
<b>Best Management Practices</b>		
<b>BMP-1</b>	Vessel Maintenance and Fueling	HIOC will maintain all vessels used in culture activities to limit the likelihood of release of fuels, lubricants, or other potentially toxic materials associated with vessels due to accident, upset, or other unplanned events.  HIOC will use marine grade fuel cans that are refilled on land, and HIOC carries oil spill absorption pads and seals wash decks or isolates fuel areas prior to fueling to prevent contaminants from entering the water.
<b>BMP-2</b>	Vessel Motors	HIOC will use highly efficient 4-stroke outboard motors. All motors will be muffled to reduce noise.
<b>BMP-3</b>	Fish and Wildlife	During vessel transit, harvest, maintenance, inspection, and planting operations, HIOC will avoid approaching, chasing, flushing, or directly disturbing shorebirds, waterfowl, seabirds, or marine mammals.
<b>BMP-4</b>	Bed Marking	HIOC culture beds will be marked with a long PVC pole to provide information to boaters of the location of shellfish aquaculture gear.

#	Topic	Mitigation Measure or Best Management Practice
<b>BMP-5</b>	Bed Mapping	HIOC will provide a map of the culture bed locations and post the maps at the closest boat launch and adjacent wildlife area and on the District's website.
<b>BMP-6</b>	Wetland Buffer	HIOC has adopted a minimum of a 200-foot buffer between the wetlands associated with the Mad River Slough Wildlife Area and the proposed culture area. Culture equipment will not be installed in the buffer areas.
<b>BMP-7</b>	Bed Access	Vessels may cross areas with eelgrass when the predicted tidal height is +4 feet MLLW or greater by putting the engine in neutral and drifting across areas where eelgrass is present. This type of approach will be used when weather and tidal elevations permit.

### *Key Considerations*

The project's Draft IS/MND was circulated for public review from March 13, 2021 – April 12, 2021. Comments were received from four public agencies, two non-profit agencies and eight individuals. The Final IS/MND was modified in response to comments and is included as an attachment to this staff report with comment responses. Staff has identified two key topics to highlight:

1. Commenters recommended a larger buffer between native eelgrass and culture equipment than proposed in the IS/MND. However, information has not been provided that indicates a larger buffer is necessary to reduce environmental impacts to less than significant. Eelgrass and culture equipment co-exist in Humboldt Bay and elsewhere. As described throughout the IS/MND, there are complex ecological interactions between eelgrass, culture equipment and native species. District staff maintains that the proposed 5-meter buffer is adequate to reduce any potential significant impacts to less than significant.
2. Commenters recommended that Hog Island Oyster Company launch and retrieve their vessels at the Mad River Slough public access point to reduce disturbance to birds that could occur from vessels travelling between the farm site and Hog Island Oyster Company's shellfish processing facility near the bay entrance. However, the access point does not have the infrastructure that is required by Hog Island Oyster Company, such as cranes and adequate parking. Additionally, use of this access point by Hog Island Oyster Company would impact recreational users. As described in the IS/MND, use of the currently proposed vessel route would not result in significant environmental impacts. District staff maintains that use of the Mad River Slough public access point is not practical and not necessary to reduce environmental impacts to less than significant.

### **ATTACHMENTS**

- A** Permit 2020-02 for the Hog Island Oyster Company Shellfish Farm
- B** Resolution 2021-10 pertaining to certification of the Hog Island Oyster Company Shellfish Farm Initial Study / Mitigated Negative Declaration
- C** Hog Island Oyster Company Shellfish Farm Mitigation Monitoring and Reporting Program

### **AVAILABLE AT WWW.HUMBOLDBAY.ORG**

- Hog Island Oyster Company Shellfish Farm Initial Study / Mitigated Negative Declaration and Response to Comments

## **ATTACHMENT A**

**Permit 2020-02 for the Hog Island Oyster Company  
Shellfish Farm**

**HUMBOLDT BAY HARBOR, RECREATION  
AND CONSERVATION DISTRICT**

**PERMIT**

**Permit No. 2020-02**

**601 Startare Drive  
Woodley Island Marina  
P.O. Box 1030  
Eureka, CA 95502-1030**

**Permittee:**

**Hog Island Oyster Company  
Attn: John Finger  
20215 Shoreline Hwy  
Marshall, CA 94940**

The Board of Commissioners of the **Humboldt Bay Harbor, Recreation and Conservation District** hereinafter referred to as “**District**”, having considered the Application herein, number 2020-02, filed by Hog Island Oyster Company, hereinafter referred to as “**Permittee**”, and the **Humboldt Bay Harbor, Recreation and Conservation District (HBHRCD)** as the lead agency, pursuant to the California Environmental Quality Act of 1970, as amended, having made a determination certifying the Mitigated Negative Declaration (SCH#2021020128) and the Board of Commissioners of the **District** having on July 8, 2021, passed Resolution No. 2021-10 establishing findings relative to the Application by **Permittee** for the Hog Island Oyster Company Shellfish Farm as provided for in this Permit, the **Permittee** is hereby authorized to perform the work as more particularly described in the Application filed with the **District** and the mitigated negative declaration referred to above.

You are hereby authorized to conduct that activity described in the Permit Application of **Permittee** consisting of:

Culture of Kumamoto oysters (*Crassostrea sikimea*), Pacific oysters (*C. gigas*) and Olympia oysters (*Ostrea lurida*) on a maximum of 30 acres using off-bottom culture methods in Arcata Bay, California.

**SUBJECT TO THE FOLLOWING TERMS AND CONDITIONS:**

1. If the **Permittee** materially changes the activity plan and scope, it will be necessary to request a permit revision.
2. That all work authorized by this Permit shall further be subject to the approval of the following public agencies as applicable:
  - A. United States Army Corps of Engineers
  - B. North Coast Regional Water Quality Control Board

### C. California Coastal Commission

and **Permittee** shall fully comply with all regulations and conditions affecting such work as imposed by the above agencies.

3. That the mitigation measures described in the Initial Study / Mitigated Negative Declaration for the Hog Island Oyster Company Shellfish Farm (SCH#2021020128) are made conditions of this permit by reference.
4. All debris shall be removed from the site and disposed of only at an authorized disposal site. Placement of any such material within Humboldt Bay or any wetland area is prohibited.
5. That there shall be no unreasonable interference with navigation by the work herein authorized.
6. That no attempt shall be made by the **Permittee** to interfere or forbid the full and free use by the public of all navigable waters at or adjacent to the work.
7. That the **District**, its Commissioners, or any officer or employee of the **District** shall in no case be liable for any damages or injury of the work herein authorized which may be caused by or result from future operations undertaken by the **District** for the conservation or improvement of navigation, or for other purposes, and no claim or right to compensation shall accrue from any such damage.
8. That neither the **District**, nor its Board of Commissioners, nor any officer of the **District** shall be liable to any extent for any such injury or damage to any person or property or for the death of any person arising out of or connected with the work authorized by this Permit.
9. That the Board of Commissioners of the **District** may revoke this Permit at any time upon a finding by the **District** of a violation by the **Permittee** of any condition of this Permit.
10. That the **Permittee** shall comply with any regulations, conditions, or instructions affecting the work hereby authorized if and when issued by the Federal Water Pollution Control Administration and/or the State of California Water Resources Control Agency having jurisdiction to abate or prevent water pollution. Such regulations, conditions, or instruction in effect or prescribed by Federal or State Agencies are hereby made a condition of this Permit.
11. That as a condition to the issuance of this Permit, **Permittee** agrees to indemnify and hold harmless **District** from and against any and all liability, loss, or damage **District** may suffer from claims and demands for attorneys' fees, costs of suit, and costs of administrative records made against **District**

by any and all third parties as a result of third party environmental actions against **District** arising out of the subject matter of this Permit, including, but not limited to attorneys' fees, costs of suit, and costs of administrative records pursuant to the California Code of Civil Procedure §1021.5 or any other applicable local, state or federal laws, whether such attorneys' fees, costs of suit, and costs of administrative records are direct or indirect, or incurred in the compromise, attempted compromise, trial appeal or arbitration of claims for attorneys' fees, costs of suit, and costs of administrative records in connection with the subject matter of this Permit.

12. That this Permit is valid as of July 8, 2021 and is made subject to the **Permittee** approving and agreeing to the conditions above set forth and executing said approval as hereinafter provided.

EXECUTED on this 8<sup>th</sup> day of July 2021, by authority of the Board of Commissioners of the **Humboldt Bay Harbor, Recreation and Conservation District**.

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**STEPHEN KULLMANN, Chair**  
**Board of Commissioners**  
**Humboldt Bay Harbor, Recreation and**  
**Conservation District**

Hog Island Oyster Company, **Permittee**, in the above Permit, hereby accepts and agrees to all of the conditions hereinabove set forth. **Permittee** shall indemnify and hold harmless the **District**, its Board of Commissioners, officers and employees from any and all claims of any nature arising from the performance of and work of improvement contained in the Application for injury, death or damage to any person or property.

Hog Island Oyster Company, **Permittee**, in the above Permit, agrees to indemnify and hold harmless **District**, its Board of Commissioners, officers and employees from and against any and all liability, loss or damage **District** may suffer from claims and demands from attorneys' fees; costs of suit and costs of administrative records made against **District** by any and all third parties as a result of third party environmental actions against **District** arising out of the subject matter of this Permit including, but not limited to, attorneys' fees, costs of suit and costs of administrative records pursuant to the California Code of Civil Procedure §1021.5 or any other applicable local, state or federal laws, whether such attorney's fees, costs of suit and costs of administrative records are direct or indirect, or incurred in the compromise, attempted compromise, trial, appeal or arbitration of claims for attorneys' fees, costs of suit and costs of administrative records in connection with the subject matter of this Permit.



Dated: \_\_\_\_\_

\_\_\_\_\_  
Hog Island Oyster Company

**ATTACHMENT B**

**Resolution 2021-10 for the Hog Island Oyster Company  
Shellfish Farm**

**HUMBOLDT BAY HARBOR, RECREATION  
AND CONSERVATION DISTRICT**

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**RESOLUTION NO. 2021-10**

**A RESOLUTION ADOPTING AN INITIAL STUDY/ MITIGATED NEGATIVE DECLARATION,  
ADOPTING A MITIGATION MONITORING AND REPORTING PROGRAM, AND  
ESTABLISHING FINDINGS RELATIVE TO THE PERMIT APPLICATION FOR THE HOG  
ISLAND OYSTER COMPANY SHELLFISH FARM**

**WHEREAS**, the Board of Commissioners of the Humboldt Bay Harbor, Recreation, and Conservation District is empowered by Appendix II of the Harbors and Navigation Code, and its own ordinances and resolutions, to grant permits, leases, rights, and privileges; and,

**WHEREAS**, no permits, rights, leases, and privileges may be granted without first having considered certain potential impacts and without first having made findings relative to said impacts; and,

**WHEREAS**, Hog Island Oyster Company has applied to the Humboldt Bay Harbor, Recreation, and Conservation District for the Hog Island Oyster Company Shellfish Farm "Project"; and

**WHEREAS**, the Project was subject of an Initial Study/ Mitigated Negative Declaration (SCH#2021020128) prepared for the Humboldt Bay Harbor, Recreation and Conservation District as the lead agency under CEQA and circulated pursuant to CEQA Guidelines; and

**WHEREAS**, a notice of intent to adopt a mitigated negative declaration was circulated for a 30-day public comment period commencing on March 13, 2021; and

**WHEREAS**, at their July 8, 2021 meeting, the Board of Commissioners for the Humboldt Bay Harbor, Recreation and Conservation District heard public comment on the Initial Study/Mitigated Negative Declaration; and

**WHEREAS**, on July 8, 2021, the Board of Commissioners for the Humboldt Bay Harbor, Recreation and Conservation District, after due consideration of all evidence and reports offered for review, does find and determine the following:

The Board of Commissioners for the Humboldt Bay Harbor, Recreation and Conservation District has considered the proposed Mitigated Negative Declaration together with any comments received during the public review process, and finds, on the basis of the whole record before it, that:

- (1) There is no substantial evidence the project will have a significant effect on the environment, and
- (2) The negative declaration reflects the lead agency's independent judgment and analysis; and

**WHEREAS**, the documents and materials on which this decision is based are on file at the office of the Humboldt Bay Harbor, Recreation and Conservation District at 601 Startare Drive, Eureka, CA.

**NOW, THEREFORE, BE IT RESOLVED** by the Board of Commissioners of the Humboldt Bay Harbor, Recreation and Conservation District as follows:

That after careful consideration of maps, facts, exhibits, correspondence, public and agency comments and testimony, and other evidence submitted in this matter, and, in consideration of the findings, the Board of Commissioners for the Humboldt Bay Harbor, Recreation and Conservation District hereby adopts the Initial Study / Mitigated Negative Declaration and adopts the Mitigation Monitoring and Reporting Program for the Hog Island Oyster Company Shellfish Farm Project.

**BE IT FURTHER RESOLVED** that the Board of Commissioners of the Humboldt Bay Harbor, Recreation and Conservation District has found the following to be true and adopts the following findings with respect to the proposed activities contemplated by Hog Island Oyster Company in the Permit (2020-02) application for the Hog Island Oyster Company Shellfish Farm project:

1. The proposed use is necessary to promote public safety, health, comfort, and convenience;
2. The proposed use is required by the public convenience and necessity;
3. The proposed use, as conditioned by the adopted Mitigated Negative Declaration is consistent with CEQA and there is no substantial evidence the project will have a significant effect on the environment; and
4. The proposed use is consistent with the Humboldt Bay Management Plan; and
5. The proposed use is reasonably required to promote growth, and to meet area demands, and does not adversely affect the environment or ecology of the area to any substantial degree; and,
6. The proposed use will not produce an unreasonable burden on the natural resources and aesthetics of the area, on the public health and safety, and air and water quality in the vicinity of Humboldt Bay, or on the parks, recreation and scenic area, historic sites and buildings, or archeological sites in the area.

**PASSED AND ADOPTED** by the Humboldt Bay Harbor, Recreation and Conservation District Board of Commissioners at a duly called meeting held on the 8<sup>th</sup> day of July 2021 by the following polled vote:

**AYES:**

**NOES:**

**ABSENT:**

\_\_\_\_\_  
**STEPHEN KULLMANN, Chair**  
**Board of Commissioners**

**ATTEST:**

\_\_\_\_\_  
**PATRICK HIGGINS, Secretary**  
**Board of Commissioners**

## **CERTIFICATE OF SECRETARY**

The undersigned, duly qualified and acting Secretary of the HUMBOLDT BAY HARBOR, RECREATION AND CONSERVATION DISTRICT, does hereby certify that the attached Resolution is a true and correct copy of RESOLUTION NO. 2021-10 entitled,

**A RESOLUTION ADOPTING AN INITIAL STUDY/ MITIGATED NEGATIVE DECLARATION,  
ADOPTING A MITIGATION MONITORING AND REPORTING PROGRAM, AND  
ESTABLISHING FINDINGS RELATIVE TO THE PERMIT APPLICATION FOR THE HOG  
ISLAND OYSTER COMPANY SHELLFISH FARM PROJECT**

as regularly adopted at a legally convened meeting of the Board of Commissioners of the HUMBOLDT BAY HARBOR, RECREATION AND CONSERVATION DISTRICT, duly held on the 8<sup>th</sup> day of July 2021; and further, that such Resolution has been fully recorded in the Journal of Proceedings in my office, and is in full force and effect.

IN WITNESS WHEREOF, I have hereunto set my hand this 8<sup>th</sup> day of July 2021.

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Patrick Higgins, Secretary  
Board of Commissioners

## **ATTACHMENT C**

### **Hog Island Oyster Company Shellfish Farm Mitigation Monitoring and Reporting Program**



# Mitigation Monitoring / Reporting Program (MMRP)

## HUMBOLDT BAY HARBOR, RECREATION AND CONSERVATION DISTRICT

This Mitigation Monitoring/Reporting Program (MMRP) has been prepared for the project described below in conformance with California Environmental Quality Act (CEQA) Section 21081.6 and CEQA Guidelines Section 15097, which require adoption of a MMRP for projects in which the lead agency has adopted mitigation to avoid environmental effects.

Best management practices (BMPs) are also noted below. BMPs may also be applied to improve or provide a beneficial impact even where no significant impact has been identified. While BMPs have been made a part of the project, they do not constitute mitigation measures by definition, as they are not required to reduce potentially significant impacts to less than significant levels (see CEQA Guidelines § 15071(e)).

**PROJECT TITLE:** Hog Island Oyster Company (HIOC) Shellfish Farm in Arcata Bay

**STATE CLEARINGHOUSE NUMBER:** 2021020128

**LEAD AGENCY:** Humboldt Bay Harbor, Recreation and Conservation District (HBHRCD), 601 Startare Drive, Eureka, CA, 95501

**PROJECT LOCATION:** Humboldt Bay (Arcata Bay), California

**COUNTY GENERAL PLAN LAND USE DESIGNATIONS:** Natural Resource

**ZONING:** Natural Resources/Water

**PROJECT DESCRIPTION:** HIOC has a total lease area of 110 acres. Within this area, HIOC seeks permitting to cultivate up to 30 acres within a 34-acre area available for shellfish aquaculture on leased, intertidal areas in northwest Arcata Bay. The project objectives are as follows:

- Produce premium oysters to meet demand from HIOC's restaurants as well as provide sustainable seafood for local markets.
- Develop a shellfish farm to complement HIOC's existing shellfish Hatchery Facility located near Samoa.
- Create additional job opportunities and sustainable economic development for Humboldt Bay and local jurisdictions.
- Locate oyster beds in areas with optimal growing conditions to maximize efficiency and limit the spatial footprint of the farm.

An Initial Study/Mitigated Negative Declaration (IS/MND) was prepared to address the potential environmental impacts of the project actions. Where appropriate, the IS/MND includes recommended mitigation measures and BMPs adopted in connection with the approval of the project and the methods of monitoring and reporting on such actions. All environmental impacts were found to be less than significant or result in significant impacts that could be mitigated to a less than significant level.

**CONTACT PERSON:** Larry Oetker, Executive Director, Humboldt Bay Harbor District, *phone:* (707) 443-0801; *e-mail:* loetker@humboltdbay.org

**INTRODUCTION:** The purpose of this MMRP is to ensure that the mitigation measures and BMPs adopted in connection with project approval are effectively implemented. The MMRP describes the procedures the project applicant will use to implement the mitigation measures adopted in connection with the approval of the project, and the methods of monitoring and reporting on such actions. A MMRP is necessary only for impacts which would be significant if not mitigated. Additionally, best management practices were incorporated into the project to ensure that the project maintains a high standard that is environmentally responsible. Best management practices may also be applied to improve or provide a beneficial impact even where no significant impact has been identified. These best management practices are also included in the MMRP.

**ENFORCEMENT:** In accordance with CEQA, the primary responsibility for making a determination with respect to potential environmental effects rests with HBHRCD as the lead agency. As such, HBHRCD is identified as the primary enforcement agency for this MMRP.

**PROGRAM MODIFICATION:** After adoption of this MMRP, minor changes to this MMRP are permitted but can only be made by the project applicant or its successor subject to the approval of the HBHRCD. The Harbor District Planner, after consultation with affected Departments or Agencies, may make minor modifications to this MMRP. If, for any reason, any mitigation measure or BMP specified in this MMRP cannot be implemented due to factors beyond the control of HBHRCD, at a noticed public hearing before the HBHRCD Board of Commissioners substitution of another mitigation measure may be approved. In no case shall deviations from this MMRP be permitted unless this MMRP continues to satisfy the requirements of CEQA Section 21081.6, as determined by HBHRCD.

**MMRP IMPLEMENTATION TABLE:** To assure that this MMRP is effectively implemented the table on the following pages establishes the framework that HBHRCD and others will use to implement the adopted mitigation measures, BMPs, and the monitoring and/or reporting of such implementation.



Mitigation Measures/Best Management Practices (BMPs)	Responsibility for Implementation	Timing of Implementation	Responsibility for Confirming Completion
<b>Mitigation Measures</b>			
<p><b>Mit-1 Marine Debris:</b> HIOC will implement a marine debris management plan. At the time of harvest of each cultivation area, HIOC will carry out a thorough inspection to locate and remove any loose, abandoned or out of use equipment and tools. All floating bags and baskets will be marked or branded with the HIOC’s name and phone number.</p>	HIOC	Duration of project	HBHRCD
<p><b>Mit-2 Eelgrass (<i>Zostera marina</i>) Protection:</b> HIOC will install racks, intertidal longline systems, and other aquaculture gear at least 5 horizontal meters from native eelgrass (<i>Zostera marina</i>) cover. This will not prevent continued cultivation in areas where eelgrass moves into the project site.</p> <p>HIOC is expected to install gear incrementally. Before gear is installed in new areas, eelgrass will be mapped in culture areas using unmanned aerial vehicles (UAV) and/or verified using ground surveys to identify eelgrass cover and establish 5 meter horizontal buffers. Eelgrass surveys will be conducted annually during the eelgrass growing season (May to September) prior to gear installation until gear is fully installed at the site.</p>	HIOC	Duration of project until all aquaculture gear is installed	HBHRCD
<p><b>Mit-3 Vessel Anchors:</b> HIOC will anchor vessels outside of areas containing eelgrass.</p>	HIOC	Duration of project	HBHRCD
<p><b>Mit-4 Vessel Routes:</b> HIOC will establish a vessel route to access its leases that avoids known native eelgrass (<i>Z. marina</i>) cover, and maintain a no wake zone within a 1,000-foot buffer north of Tuluwat Island to avoid black brant (<i>Branta bernicla</i>) gritting sites in the winter (December 15-April 30).</p>	HIOC	Duration of project	HBHRCD
<p><b>Mit-5 Channel Buffers:</b> HIOC will establish a 10-foot buffer from the top of bank of channels. Culture equipment will not be installed in the buffer areas.</p>	HIOC	Duration of project	HBHRCD
<p><b>Mit-6 Pacific Herring (<i>Clupea pallasii</i>) Avoidance:</b> In any cultivation beds within or adjacent to eelgrass cover (in the event that eelgrass moves into the project site), HIOC will conduct visual surveys for Pacific herring spawn prior to conducting activities during the herring spawning season (October to April). If herring spawn is present, HIOC will suspend activities in the areas where spawning has occurred until the eggs have hatched and spawn is no longer present (typically 2 weeks).</p>	HIOC	Duration of project	HBHRCD

Mitigation Measures/Best Management Practices (BMPs)	Responsibility for Implementation	Timing of Implementation	Responsibility for Confirming Completion
<p><b>Mit-7 Cultural Resources:</b> HIOC will comply with the Harbor District Protocol agreed upon between the Harbor District and the Blue Lake Rancheria, Bear River Band of Rohnerville Rancheria, and Wiyot Tribes regarding the inadvertent discovery of archaeological resources, cultural resources, or human remains or grave goods.</p>	HIOC	Duration of project	HBHRCD
<b>Best Management Practices (BMPs)</b>			
<p><b>BMP-1 Vessel Maintenance and Fueling:</b> HIOC will maintain all vessels used in culture activities to limit the likelihood of release of fuels, lubricants, or other potentially toxic materials associated with vessels due to accident, upset, or other unplanned events.</p> <p>HIOC will use marine grade fuel cans that are refilled on land, and HIOC carries oil spill absorption pads and seals wash decks or isolates fuel areas prior to fueling to prevent contaminants from entering the water.</p>	HIOC	Duration of project	HBHRCD
<p><b>BMP-2 Vessel Motors:</b> HIOC will use highly efficient 4-stroke outboard motors. All motors will be muffled to reduce noise.</p>	HIOC	Duration of project	HBHRCD
<p><b>BMP-3 Fish and Wildlife:</b> During vessel transit, harvest, maintenance, inspection, and planting operations, HIOC will avoid approaching, chasing, flushing, or directly disturbing shorebirds, waterfowl, seabirds, or marine mammals.</p>	HIOC	Duration of project	HBHRCD
<p><b>BMP-4 Bed Marking:</b> HIOC culture beds will be marked with a long PVC pole to provide information to boaters of the location of shellfish aquaculture gear.</p>	HIOC	Duration of project	HBHRCD
<p><b>BMP-5 Bed Mapping:</b> HIOC will provide a map of the culture bed locations and post the maps at the closest boat launch and adjacent wildlife area and on the District's website.</p>	HIOC	Duration of project	HBHRCD
<p><b>BMP-6 Wetland Buffer:</b> HIOC has adopted a minimum of a 200-foot buffer between the wetlands associated with the Mad River Slough Wildlife Area and the proposed culture area. Culture equipment will not be installed in the buffer areas.</p>	HIOC	Duration of project	HBHRCD
<p><b>BMP-7 Bed Access:</b> Vessels may cross areas with eelgrass when the predicted tidal height is +4 feet MLLW or greater by putting the engine in neutral and drifting across areas where eelgrass is present. This type of approach will be used when weather and tidal elevations permit.</p>	HIOC	Duration of project	HBHRCD