LOUISIANA RESTORATION AREA TRUSTEE IMPLEMENTATION GROUP
of the
DEEPWATER HORIZON TRUSTEE COUNCIL

In re: Oil Spill by the Oil Rig "Deepwater Horizon" in the Gulf of Mexico
on April 20, 2010,
Civil Action Nos. 10-4536; 10-04182; 10-03059; 13-4677; 13-158; 13-00123 (ED. La.)
MDL No. 2179

Resolution # LA-2017-007

In accordance with the Oil Pollution Act of 1990, the National Environmental Policy Act, the Consent Decree, and the *Final Programmatic Damage Assessment Restoration Plan and Final Programmatic Environmental Impact Statement*, the undersigned representatives of the Louisiana Trustee Implementation Group (LA TIG) hereby intend to implement project modifications to the 2012 Louisiana Oyster Cultch Project (ER Oyster Project or Project) as outlined and recommended in the Louisiana Department of Wildlife and Fisheries' (LDWF) attached August 21, 2017 Early Restoration Project Modification Proposal (Proposal) by: (1) placing additional cultch material onto the existing Lake Fortuna cultch plant, which was constructed in 2012 using Early Restoration funds, and (2) performing additional monitoring techniques to evaluate the success of the additional cultch plant, and approves the release of $2,740,000 in oyster restoration funds as set forth below for the implementation of the project modifications.

Project Background

On April 18, 2012, the *Deepwater Horizon* (DWH) Natural Resource Damage Assessment (NRDA) Trustees selected the ER Oyster Project as part of the "*Deepwater Horizon* Phase I Early Restoration Plan and Environment Assessment" (Phase I ERP/EA). The ER Oyster Project involved: (1) the placement of oyster cultch onto public oyster seed grounds throughout six areas in coastal Louisiana (3-Mile Bay, Drum Bay, Lake Fortuna, South Black Bay, Hackberry Bay and Sister Lake), and (2) the construction of an oyster hatchery facility on Grand Isle, Louisiana. The State of Louisiana was allocated $14,874,300 to implement this Project.[1]

As of August, 2015, the State of Louisiana successfully implemented both increments of the ER Oyster Cultch Project. According to monitoring conducted and documented in monitoring reports by the LDWF between January 2013 and May 2015, the 6 locations of the oyster cultch placement component of the Project in totality satisfied the performance criteria necessary to

[1] In the Phase I ERP/EA, the estimated cost for the ER Oyster Project was $15,582,600, which included potential contingency funds that were not needed for this Project. The State of Louisiana was ultimately allocated actual Project cost of $14,874,300 for the implementation of this Project.

certify that all activities under this component were completed. While the oyster cultch placement as a whole was successful in that it met the established performance criteria, the 2012 Lake Fortuna cultch plant did not individually meet the success criteria. For the oyster hatchery component, construction of the building was completed and the facility was operational as of August 2015. With that, all activities required under this Project have been completed. Thus, the Project has satisfied the stated goals of increasing production of seed-sized and sack-sized oysters on public oyster seed grounds, and hatchery-produced oysters will be used to augment natural production on the State's existing and future public seed grounds.

To date, $12,134,300 of the $14,874,300 allocated to the ER Oyster Project has been expended with no further outstanding costs or expenses, leaving a balance of $2,740,000.

Project Modification

Since the 2012 Lake Fortuna cultch plant did not individually meet the success criteria, with these remaining funds, the LA TIG hereby intends to implement project modifications to the Project as outlined and recommended in the LDWF attached August 21, 2017 Proposal by: (1) placing additional cultch material onto the existing Lake Fortuna cultch plant as recommended by the LDWF Proposal, which was constructed in 2012 using Early Restoration funds, and (2) performing additional monitoring techniques to evaluate the success of the additional cultch plant, and approves the release of $2,740,000 in oyster restoration funds as set forth below for the implementation of the project modifications.

The LA TIG has reviewed LDWF's attached August 21, 2017 Early Restoration Project Modification Proposal and determined (1) the proposed changes to the ER Oyster Project are consistent with the environmental review in the Phase I ERP/EA; (2) there are no significant new circumstances or information relevant to environmental concerns that were not addressed in the Phase I ERP/EA; and (3) the proposed project changes do not affect the restoration project selection pursuant to OPA.

Through this Resolution, the Louisiana TIG approves the modification of the ER Oyster Project as outlined in LDWF's attached August 21, 2017 Early Restoration Project Modification Proposal the disbursement of oyster restoration funds in the amount of $2,740,000 from the Louisiana Natural Resources Restoration Trust Fund (LNRRT Fund) for the following activities:

1. For LDWF to place additional cultch material onto the existing Lake Fortuna cultch plant and to perform monitoring to evaluate the success of the cultch plant, in the total amount of $2,740,000.

The $2,740,000 million in Early Restoration oyster funds remain in the LNRRT Fund. These funds will be administered to LDWF as authorized by this Resolution and may only be used for the activities authorized by this Resolution. Any other use of the funds disbursed pursuant to this Resolution is prohibited. Any non-authorized use of disbursed funds must be reported to the full Louisiana TIG immediately upon discovery of unauthorized use.

It is resolved that having reviewed these restoration planning activities, the duly authorized officials for the Louisiana TIG authorized the commitment and release of these funds. This Resolution may be authorized in counterparts.

RESTORATION IN LOUISIANA TRUSTEE IMPLEMENTATION GROUP

JOHNNY B. BRADBERRY
Representative for Louisiana

CHRISTOPHER D. DOLEY
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KEVIN D. REYNOLDS
Deepwater Horizon NRDAR Case Manager, Department of the Interior

LA-2017-007

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HOMER L. WILKES
Primary Representative, U.S. Department of Agriculture

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MARY KAY LYNCH
Alternate to Principal Representative, U.S. Environmental Protection Agency

DATE OF LAST SIGNATURE: August 31, 2017

Deepwater Horizon
Early Restoration Project Modification Proposal

Project Proposal Title:
2017 Lake Fortuna Cultch Plant

Date Submitted: August 21, 2017
Lead Implementation Trustee: Louisiana Department of Wildlife and Fisheries (LDWF)

Project Manager: Steve Beck (Oyster Program Manager, LDWF)
2000 Quail Drive, Baton Rouge LA 70808
225-765-2956 sbeck@wlf.la.gov http://www.wlf.louisiana.gov/

Project Location: Lake Fortuna
Project Partners: St. Bernard Parish
Project Focus Category: Resource

Brief Description of Project Modification:

The objective of this Project modification is to utilize remaining funds from the Early Restoration Oyster Project to create a productive oyster reef on public oyster seed grounds to offset impacts to oyster areas resulting from any exposure to Deepwater Horizon oil, dispersant, and response activities.

The Department will work with St. Bernard Parish to place additional cultch material onto the existing Lake Fortuna cultch plant, which was constructed in 2012 using Early Restoration funds. The placement of cultch material is an oyster restoration technique recommended in the *Deepwater Horizon Programmatic Damage and Assessment Restoration Plan* (PDARP). The activities to be undertaken are consistent in approach and location with the activities evaluated in the 2012 Phase I Early Restoration Plan and Environmental Assessment (ERP/EA). The location of the cultch placement is wholly within the footprint considered in the 2012 Phase I ERP/EA. The Project modification will have no significant new circumstances or information relevant to environmental concerns not addressed in the 2012 Phase I ERP/EA. Impacts associated with the Project have been fully evaluated in the 2012 Phase I ERP/EA and no additional Oil Pollution Act (OPA) or National Environmental Policy Act (NEPA) review is required pursuant to 40 CFR 1502.9 or 15 CFR Part 990. All required permits will be updated, extended, or renewed as needed prior to on-the-ground activities.

Cultch material will consist of fossil oyster shell that, when placed in oyster spawning areas, provides a substrate for free floating oyster larvae to attach and grow into oysters. The cultch in this Project will prepare a firm foundation upon which oyster spat-on-shell will be placed through a second phase of this Project, which will utilize a separate funding source. The Department will contract with St. Bernard Parish to place fossil oyster shell cultch material on approximately 100 acres of public oyster seed grounds in the Lake Fortuna area, but the actual size of this cultch plant is dependent on available funds. Select local oyster harvesters will be hired to assist with cultch material deployment.

This Project employs approaches used by LDWF since 1917. LDWF has placed over 1.5 million cubic yards of cultch material on nearly 30,000 acres over 100 years. Positive results (20 seed oysters per square meter) are usually seen in as little as 17 months after cultch placement. The cultch materials would be placed at a planting density of 226 tons/acre, which is a typical placement ratio in Louisiana for successful cultch projects. While more expensive than other cultch materials, fossil oyster shell is expected to perform better than alternative materials, as this material is lighter weight which should decrease subsidence, has more vertical relief, and several studies have shown increased spatfall on oyster shell compared to other substrates.

Preliminary Estimated Project Financial Information (actual amounts below may vary depending on available funds)

Project Planning Cost Estimate:	$30,000	
Project Implementation/Construction Cost Estimate:	$2,600,000	(~100 acre cultch plant)
Project Management:	$30,000	
Preliminary Project Construction Cost Estimate:	$2,660,000	
Preliminary Project Monitoring Cost Estimate:	$80,000	
Preliminary Project Construction and Monitoring Cost:	$2,740,000	

Restoration Benefits

This Project uses oyster cultch placement to increase the production of seed-sized oysters on public oyster seed grounds in Louisiana coastal waters.

While the Early Restoration (ER) Oyster Project was successful in that it met the performance criteria established by the Trustees, the 2012 Lake Fortuna cultch plant did not individually meet the success criteria of 20 seed oysters per square meter, which likely resulted from poor recruitment and possible environmental stressors; however this is a high priority oyster restoration area. This area currently exhibits adequate hydrology for oyster survival throughout the year, low densities of oysters, and low levels of recruitment. The results of the 2012 cultch plant indicate the Lake Fortuna area would likely benefit from spawning stock enhancement through the deployment of hatchery produced spat-on-shell, which is another oyster restoration technique discussed in the PDARP. The addition of cultch material to increase reef height prior to spat-on-shell deployment will maximize the chances of successful enhancement by increasing vertical relief and minimizing the chances of sedimentation- and hypoxia-induced mortality.

Oyster populations further south have experienced the largest decline in Louisiana, and as such this larger area is the highest priority for oyster restoration in Louisiana. An oyster transplant has been conducted in Black Bay and is currently being monitored to explore the viability of large-scale oyster restoration in this area. Multiple studies indicate Lake Fortuna exhibits a hydrologic regime distinct from areas further south and represents a boundary area where oyster population restoration is still feasible and should be considered prior to attempting projects further south. Using optimal cultch material, increasing cultch plant reef height, and supplementing this cultch plant with hatchery produced spat-on-shell will increase the likelihood of successful reef development.

The cultch plant will be closed to harvest for a minimum of two years. After year two, this cultch plant will be considered to be opened to harvest if performance criteria are met (bimodal population size distribution and average second generation oyster density at or above 20 seed oysters per square meter). If performance criteria are still not met after year four, LDWF will consider opening this cultch plant to harvest.

Potential short-term benefits for this cultch plant include creating new substrate (cultch) on which oysters can settle and grow before being harvested. Potential short-term benefits of the (separately funded by means other than DWH NRDA funds) spat-on-shell deployment include directly increasing oyster abundance and improving the reproductive potential for oysters in the area. Potential long-term benefits include increasing oyster production and associated ecosystem services resulting from high oyster abundance, and improved oyster population connectivity, resilience, and stability. Both the short-term and long-term potential benefits of this Project are largely dependent on future hydrologic conditions of the area.

The proposed cultch plant is one component of a larger oyster restoration plan for this area (statewide plan under development). Potential projects that would interact with this cultch plant are a spawning stock reef constructed "up-estuary" in Lake Machais, and another constructed "down-estuary" south of Mozambique Point. Establishing a network of spawning reef reserves is another oyster restoration technique discussed in the PDARP. These spawning stock reefs will be 10-acre reefs closed to harvest; ultimately serving as a larval source for surrounding harvestable areas, including the proposed cultch plant. These reefs, and existing living shoreline reefs in the area, will be sites for future spawning stock enhancement projects including deployment of hatchery products and/or oyster transplants. This multi-faceted approach, which incorporates all PDARP oyster restoration techniques, offers the greatest chances of success to increase oyster abundance and improve oyster population connectivity, resilience, and stability in the area.

Project Implementation:

Timeline for commencement and completion:
The Project modification will commence within 3 months of notice to proceed and will be completed within 2 years of commencement.

Permits or Environmental Compliance needed (e.g., ESA Section 7, CWA 404 permit, state permits, NEPA – CatEx, EA, EIS):

U.S. Army Corps of Engineers Authorization (CWA 404, covered under existing LDWF general permit; status: under review), State of Louisiana Consistency Determination (status: approved)

Additional Public notice, process, and/or participation associated with the Project:

None scheduled at this time, but it is anticipated that discussions with the Louisiana Oyster Task Force will occur at a minimum. Public comments will also be sought, as required, for this Project.

Performance Criteria, Monitoring, and Maintenance:

Existing oyster resource monitoring protocols adequately characterize pre-project conditions and thus pre-project monitoring is not expected to incur any additional cost. Post-project monitoring will utilize

DWH NRDA oyster restoration funds. Post-project monitoring will be conducted for two years post cultch deployment, or until performance criteria are met (bimodal population size distribution and average second generation oyster density at or above 20 seed oysters per square meter). Monitoring will consist of an annual quadrat (SCUBA) sampling event in summer, one dredge sampling event in the fall, and one dredge sampling event in early spring, described below. At least one sampling event will be scheduled post cultch plant construction, pre spat-on-shell deployment. In addition, three, 1-acre spat-on-shell exclusion plots will be established on the cultch plant in order to measure wild recruitment on the cultch plant and compare to areas supplemented with spat-on-shell. A sonar survey of the area will also be conducted pre- and post- cultch plant in order to assess reef acreage and vertical relief. Finally, a continuous water quality recorder will also be deployed in proximity to the cultch plant collect data on salinity, temperature, and dissolved oxygen.

For each quadrat/dredge sampling event, the cultch plant will be divided into equally sized, consecutively numbered grid squares and 20 grids will be randomly selected for sampling in addition to the 3 spat-on-shell exclusion plots. Within each randomly selected grid or spat-on-shell exclusion plot, field crews will either toss one 0.25-square-meter polyvinyl chloride (PVC) pipe quadrat off of the sampling vessel onto the cultch plant (summer), or deploy a 24-inch wide standard sampling dredge and tow for 3-minutes (fall/spring). Divers will collect all oysters, surficial shell/cultch, and associated reef organisms from the quadrat area for enumeration and analysis. Field crews will count and measure all live and recently dead oysters within each sample before returning them to the water. Crew members will also record observations of cultch condition. Dredge samples will be evaluated in a manner similar to the quadrats: all oysters within each sample will be measured and counted prior to returning all organisms to the water. However, oyster-density estimates will not be derived from dredge samples, because dredges do not sample a defined area consistently. Even without density data, the dredge sampling data will provide important information on oyster recruitment, mortality, growth, and the presence or absence of reef-associated animals.

Long-term maintenance activities have not been determined and are not anticipated, but may be identified at a later date and are likely to include additional deployments of spat-on-shell over the 100-acre plot.

Short-term maintenance activities have not been determined and are not anticipated but may be identified at a later date.

Evaluation Criteria:

This Project modification would meet the evaluation criteria established by OPA. The Project modification would restore and enhance habitat, providing support for the oyster population (15 C.F.R. §990.54 (a)(5)). These benefits would help to restore adverse impacts to oyster populations along the Louisiana coastline resulting from the DWH oil spill and related response actions. Accordingly, the nexus to resources injured by the oil spill is clear (15 C.F.R. § 990.54(a)(2)). In addition, the Project modification is technically feasible and would utilize proven techniques (cultch planting) with established methods and documented results. Similar projects have been successfully implemented throughout the region, although the addition of the spat-on-shell component will be new for Louisiana at the scale proposed. For these reasons, the Project modification would have a high likelihood of success. (15 C.F.R. § 990.54(a)(3)). The LA TIG's intent is to minimize and avoid collateral injury during Project construction. Best management practices and measures would be implemented to do so. (15 C.F.R. § 990.54(a)(4)). All efforts would be undertaken to ensure that the Project would not adversely affect public health and safety. (15 C.F.R. § 990.54 (a)(6)).

Likelihood of Success:

Natural and anthropogenic environmental challenges are the largest potential risk to Project success. Rates of oyster production vary over time and in different locations. However, utilizing preferred cultch materials and augmenting with hatchery-raised oyster spat will increase the likelihood of success.

Photos/Maps/Depictions:

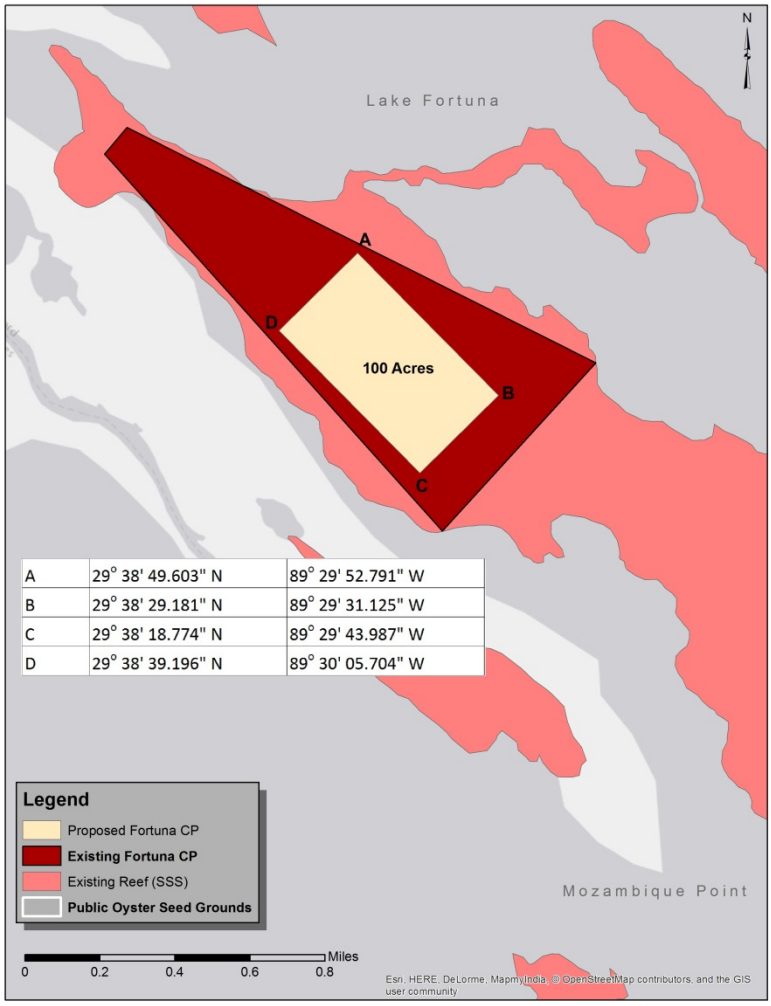

Figure 1: The proposed 100-acre cultch plant will be placed within the same boundary as the existing 2012 cultch plant.

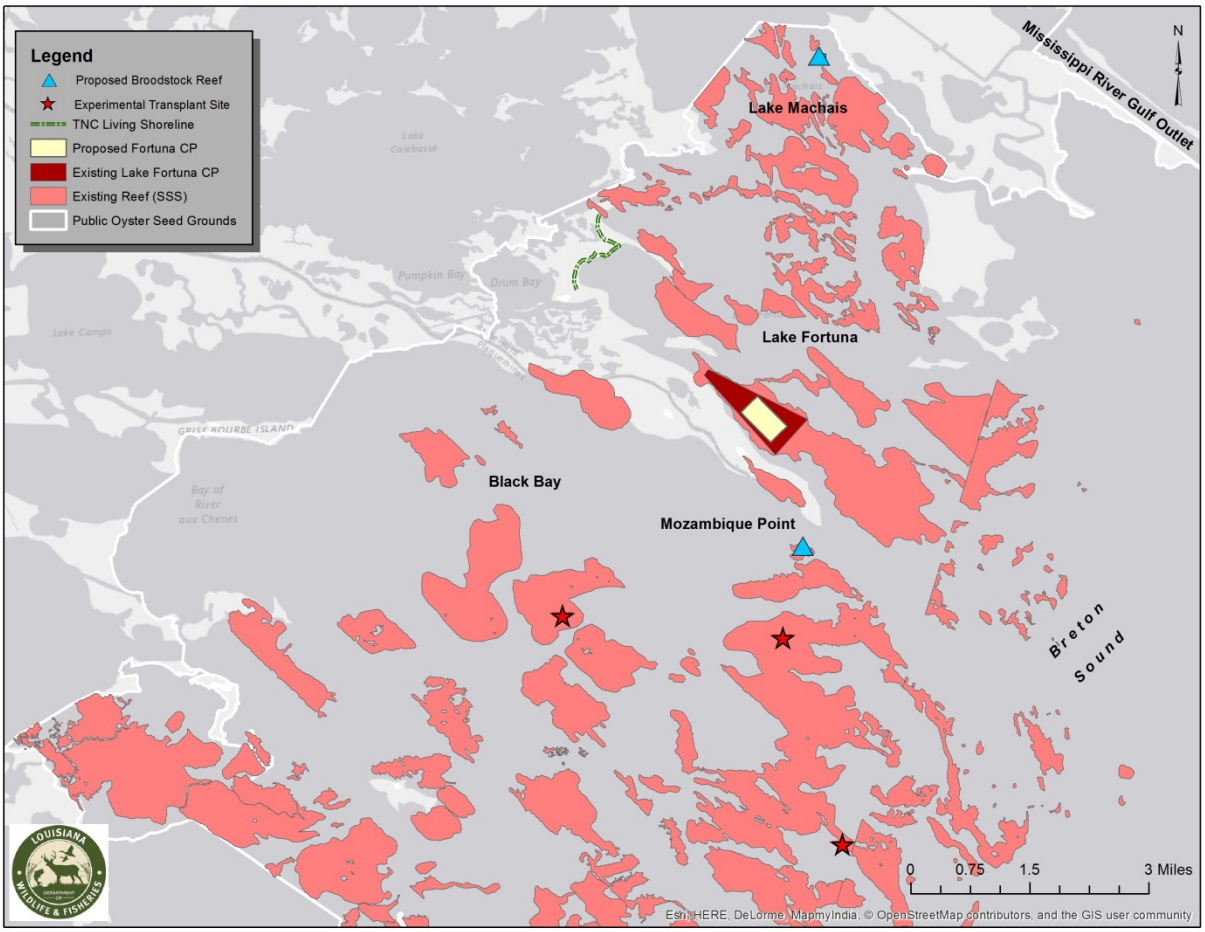

Figure 2: Ongoing and potential oyster projects in vicinity to the proposed cultch plant.

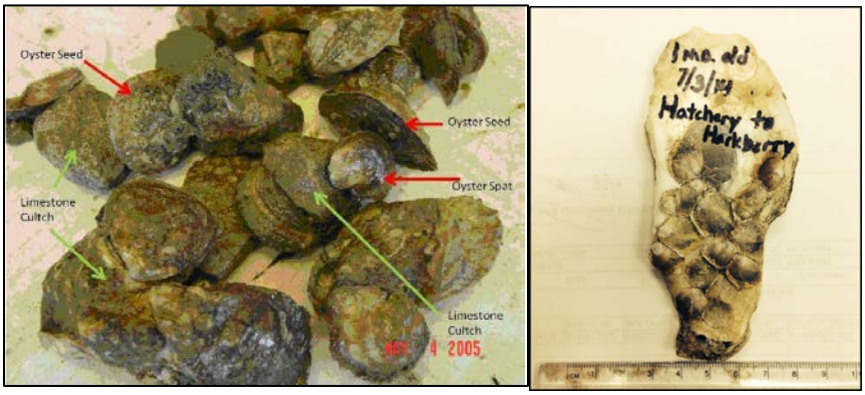

Figure 3: Oysters Growing on Cultch (left), Spat-on-Shell (right).