



**Final Report: Oyster Restoration in the Chesapeake Bay for Environmental Benefits
Maryland Grain Producers Utilization Board (MGPUB) Grant Proposal #2017299**

Grantee: Oyster Recovery Partnership

Grant Amount: \$10,000

1. Overview of Project Accomplished with 2017 MGPUB Funds

In 2017, funding from Maryland Grain Producers Utilization Board (MGPUB) allowed Oyster Recovery Partnership (ORP) to deploy oysters onto one site in the Little Choptank River, a tributary on Maryland’s Eastern Shore. As a result of high-density oyster larval production from University of Maryland Center for Environmental Science (UMCES), ORP deployed 17.18 million juvenile oysters onto the site (Figure 1). To date, Oyster Recovery Partnership has deployed 68.4 million juvenile oysters onto 35.3 acres with MGPUB funds.

ORP continues to promote MGPUB as a partner organization on its social media channels and on signage used at events. Additionally, ORP hosted representatives from the U.S. Wheat Association, who were guests of MGPUB for a tour of ORP’s operations and UMCES’s oyster hatchery in July 2017.

2. Timeline and Budget

Project expenses are provided (Table 1), and are also available in ORP’s grant proposal to MGPUB (#2017299). The project was completed on time, and within a modified budget (Table 2). Grant funds were used for the costs associated with the deployment of spat on shell, including fuel and contracting the restoration vessel the *Robert Lee*, and also for salaries of operational staff.

Cost category	Cost description	MGPUB Funds Received	Matching funds	Total funds
Travel	Mileage to and from Cambridge, MD; Shell collection	0	\$360	\$360
Supplies and Equipment	Servicing ORP water quality equipment and computers; oyster production supplies	0	\$1,200	\$1,200
Contractual fees	Oyster planting costs (Precision Planting Associates)	\$4,815	\$0	\$4,815
	Production of 10 tanks of juvenile oysters (larvae)(UMCES)	\$0	\$7,000	\$7,000
Salaries	ORP staff to support shell collection and processing, oyster production, support, and deployment staff, including fringe benefits (30% of salary costs)	\$5,185	\$800	\$5,985
Other direct costs	Other direct costs associated with production and planting of oysters	0	\$1,200	\$1,200
Totals		\$10,000	\$10,560	\$20,560

Table 1. ORP’s 2017 MGPUB grant usage.

3. Restoration on site SO_16B in the Little Choptank River

The *Robert Lee* deployed juvenile oysters onto site SO_16B in the Little Choptank River on 7/10/17. Funding from MGPUB allowed for one planting on this site, and data from the time of planting are below.

Site Number:		SO_16B
Deployment Date:		7/10/2017
Bottom Type:		Spat on shell only
Depth:		2.52 meters
Water Quality	Temp (C°)	Salinity (ppt)
Surface:	27.78	12.06
Bottom:	27.75	12.04
Area Planted:	3.29 acres	
Amt. Planted:	17.18 million	
Coordinates of site:		
38.5355546	76.2681123	
38.53573136	-76.2698017	
38.53636257	76.2693421	
38.53635981	-76.2681163	
38.53572654	-76.2675638	
38.5355546	-76.2681123	

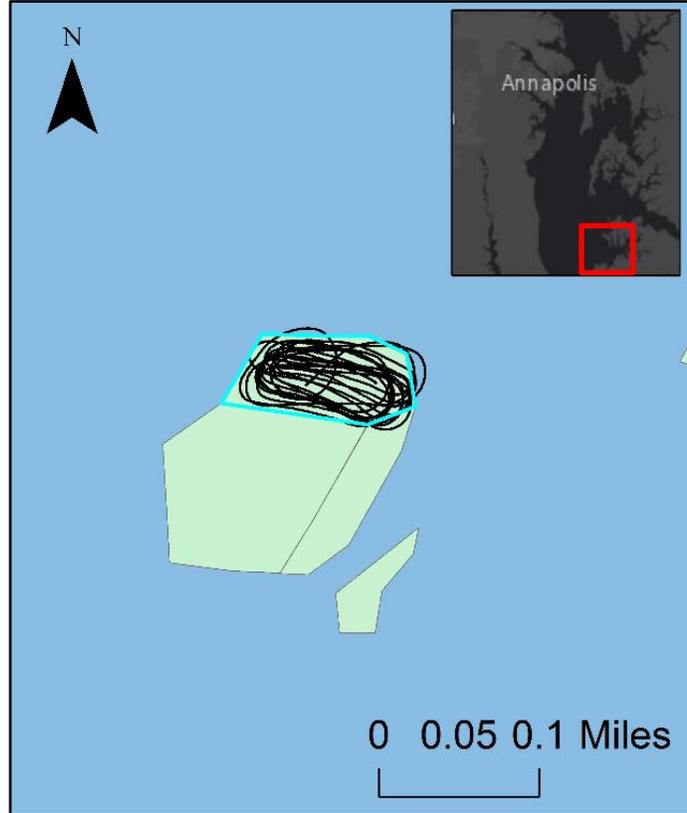


Figure 1. Blue line shows SO_16B boundaries, black line is restoration vessel tracklines.

Table 2. Excerpt from electronic data sheet collected by ORP, includes water quality and coordinates for site SO_16.

4. Impact of Oyster Restoration and Little Choptank River Progress

Oyster Recovery Partnership (ORP) works with several federal and state agencies to plan and implement large-scale oyster restoration, including National Oceanic and Atmospheric Administration (NOAA), Army Corps of Engineers, and Maryland Department of Natural Resources. Since 2012, ORP's involvement in oyster restoration in sanctuaries has been concentrated in the Little Choptank River, Harris Creek, and the Tred Avon River, all Maryland tributaries on the Eastern Shore. Restoration in these areas is part of the 10 Tributaries by 2025 program, an initiative that arose from the 2014 Chesapeake Bay Agreement, which called for restoration in five tributaries each in Maryland and Virginia. Harris Creek was the first tributary in which initial restoration was completed, and stakeholders project that the initial restoration phase in Little Choptank will be completed in 2018.

Comprehensive monitoring begins 3 years after a site receives juvenile oysters, and SO_16B, the site restored in 2017 using MGPUB funds, will be monitored in 2019, and results will be available in a NOAA report in 2020. These yearly monitoring efforts are called '3 Year Check-Ins' and two have occurred thus far, in 2015 and 2016, for reefs created in 2012 and 2013. The results have been positive; of over 50 reefs monitored, only one did not pass the success metrics, which are 15-50 oysters per square meter, and 15-50 grams of oyster tissue per square meter (NOAA 2016, 2017).

Finally, by supporting oyster reef restoration for the program 10 Tributaries by 2025 over the past several years, MGPUB is indirectly supporting ongoing research in Little Choptank, Harris Creek and Tred Avon. The Best Management Practice panel ORP coordinates, mentioned in the grant proposal 2017299, is currently evaluating the ability of oysters to enhance excess nutrient removal, which may eventually be a compliment to land-based Best Management Practices. The panel has approved estimates for nutrient removal via oyster tissue for aquaculture practices (Reichert et al. 2016) and is currently writing a report that will include decisions about the impact of oyster restoration on excess nitrogen removal.

5. Project Summary for Promotional Purposes

The Maryland Grain Producers Utilization Board partnered with Oyster Recovery Partnership (ORP) during the 2017 calendar year to fund deployment of juvenile oysters onto one reef in the Little Choptank River. Oyster restoration enhances the Chesapeake Bay's oyster population, which provides vital water column filtering as well as habitat for reef-associated fishes, crabs, mussels, and other marine life. The Little Choptank River is one of the tributaries included in the 10 Tributaries by 2025 program, which stems from an oyster goal in the 2014 Chesapeake Bay Watershed Agreement. For more information, visit <http://www.oysterrecovery.org> or contact Emily French at efrench@oysterrecovery.org.

6. References

2016 Oyster Reef Monitoring Report. 2017. National Oceanographic and Atmospheric Administration, Chesapeake Bay Office, Annapolis, MD.

Analysis of Monitoring Data from Harris Creek Sanctuary Oyster Reefs. 2016. National Oceanographic and Atmospheric Administration, Chesapeake Bay Office, Annapolis, MD.

Reichert, J., French, E., Slacum, H., Cornwell, J., Bricker, S., Fegley, L., Hudson, K., Kellogg, L., Lacatell, A., Luckenbach, M., Moore, C., Parker, M., Paynter, K., Rose, J., Sanford, L., Woninski, B. 2016. Panel Recommendations on the Oyster BMP and Suspended Sediment Reduction Effectiveness Determination Decision Framework and Nitrogen and Phosphorus Assimilation in Oyster Tissue Reduction Effectiveness for Oyster Aquaculture Practices. Oyster Recovery Partnership, Annapolis, MD.