

SHELLFISH MANAGEMENT DIVISION EVALUATION, 2/27/2024

DISCUSSION:

Request for approval of the 2024 Oyster Replenishment and Restoration Plan (ORP) and the Associated Procurements Procedures.

ISSUES:

The Virginia Marine Resource Commission (VMRC) has been at the forefront of oyster restoration and replenishment efforts since the establishment of its Replenishment program in 1929. The VMRC's oyster management program has focused on restoring oyster populations in the Chesapeake Bay, one of the largest estuaries in the world. Today it is the largest public oyster replenishment program in country and is the lead partner for the world's largest oyster restoration effort. The VMRC's ongoing commitment to oyster restoration and replenishment serves as a model for other states and provides important benefits for both the environment and the local economy of the Commonwealth.

The expenditures from the Replenishment Program are ~\$4-\$10 million annually. Funding is procured from a variety of sources, and includes \$3.5 million in annual General Funds, the remaining funding is a combination of grants, special legislative funds, and user fees collected from the oyster industry. Each year the Commission is asked to review proposed projects, funding and procurement procedures that will be used for the maintenance and expansion of this ecologically, economically, and culturally important resource (Attachment A).

The estimated dockside value of oysters harvested from Virginia is ~\$40 million each year. In addition to public harvest, shellfish aquaculture of hard clams and oysters produced \$94.3 million in sales in 2018 (USDA-NASS, 2018). Virginia continues to lead the nation in hard clam aquaculture production and is first on the U.S. East Coast for Eastern Oyster production. The oyster fishery is the largest economic contributory to a Virginia Seafood Industry, which is valued at over \$1 billion annually.

BACKGROUND:

Although the public oyster resource is currently stable, the recent positive trends are dependent upon consecutive years of good spat set and other natural events as well as consistent restoration and replenishment efforts. Harvest and harvest effort increased by more than 50% from the 2021-22 season to the 2022-23 season and is likely to increase further as a result of recent increases in season length and increased effort in the fishery. In Virginia, the public and private fishery are closely intertwined. An increasing oyster population in any one area, harvest, sanctuary, or private ground, can have benefits to the others.

These co-benefits collectively improve recruitment, water quality, and the development of disease resistance. The record number of market oyster observed during the 2021 and 2022 survey is the likely result of the increased replenishment effort combined with recent high recruitment events (spat sets). Increased replenishment effort has also allowed the increasingly high spat sets to be better captured as there is physically more substrate in more places available for spat to

attach. To sustain current harvest levels continued public investment in replenishment effort is needed.

Current proposed budget language indicates a onetime increase in Non-General Funds for replenishment of \$3 million in FY2025 and a \$500,000 decrease in FY2025 and FY2026. The budget, starting in FY2019, included a change in language in the budget bill. Previously, all the General Funds were for the “replenishment” of public oyster grounds. The new language makes a distinction between funding for “restoration” and funding for “replenishment”. Although in the past, replenishment has been conducted on both harvest and non-harvest areas, it has been determined that, with the new budget language, restoration specific funds should generally be focused on non-harvest areas. This brings the potential available General Funds for this year’s plan to \$3.5 million.

Table 1. Non-Federal Funding Sources and total dollar amounts available for replenishment and restoration in 2024.

NON-FEDERAL FUNDING SOURCES	AMOUNT
General Funds Replenishment (GF)	\$2,000 ,000
General Funds Restoration (GF)	\$1,500,000
Non-General Funds (NGF) Oyster Resource User Fees	\$300,000
Other Non-General Funds	\$3,125,000
Total	\$6,800,000

Table 2. Federal Funding Sources and total dollar amounts available restoration in 2024.

FEDERAL FUNDING SOURCES	AMOUNT
USACE	Up to \$2,000,000
Total	\$2,000,000

Seed Transfer:

James River

The Conservation and Replenishment Department (CRD) has moved a small quantity of seed from the James River to the Potomac tributaries for many years. In addition, seed has been moved from other areas when a very high spat set has occurred on recent shell plants to locations that have had poor or often get poor sets. A rotational harvest strategy has been instituted in the Potomac River tributaries for areas that have recently been planted with seed oysters.

Initially, the majority of the transported seed from the James River was harvested from the Hand Tong Seed Areas. However, the cost of harvesting and then transporting this seed has continued to increase. As a result, the SMD has not received responses to the notices to transport and plant seed at the price that has been offered in recent years. Fortunately, seed of equal quality can be

moved for a significantly lower price from areas that have received consistent and very good spat sets in the lower James River. These areas are then re-shelled and were expanded in 2018, 2019 and 2020. Most have continued to receive good spat sets. As a result of the lower cost, and as a way of increasing productivity in low recruitment areas beyond the Potomac tributaries, staff has transported some of this seed to multiple areas for the last 4 years. The SMD again intends to transport seed taken from these areas of the lower James River to up to three areas that do not consistently receive high spat sets from shell planting alone. The areas recommended for planting are the Potomac River Tributaries, Areas 7 and 8 in the Rappahannock River, and a portion of the Pocomoke Sound several miles from the Maryland Virginia state line. The areas planted with seed may not be opened for immediate harvest. Staff would evaluate the seed plant areas prior to opening them to harvest. The cost for each bushel of seed to be harvested, transported, and planted in these areas will be at least \$6.00/bushel. Funds from Oyster Resource User Fees and replenishment GFs will be used for this project.

A notice to transport seed oysters from hand tong areas will again be put out to solicit persons who may be willing to conduct this work at the price offered. If no positive responses are received this funding will be used to plant additional high recruitment areas with shell that can then be moved later as seed. The cost to harvest transport and plant will be no more than \$15.00/bushel.

Great Wicomico River

The Shellfish Management Advisory Committee (SMAC) requested that staff contract for the movement of seed from the traditional seed areas in the Great Wicomico River. This project would look to move up to 5,000 bushels of seed from these areas to a harvest area in the Chesapeake Bay south of Smith Point known as Black Berry Hangs.

Proposed Project	Up to 20,000 bushels of seed oysters @ ~\$6.00-\$15.00/bu.
Estimated Cost	\$300,000
Funding Sources	NGF and GF (Replenishment)

Shell Planting:

Bay and Tributaries:

Shells on public beds naturally degrade over time and lose their effectiveness as a substrate for oyster larval attachment. In most of the mid-salinity areas in Virginia, the half-life of shells appears to be 3 to 4 years. Additional shell is lost and/or degraded over time by the harvest and removal of market oysters. The density of living oysters and shell volume are determined from the results of the VIMS-VMRC annual hydraulic patent tong survey and this information is used to determine what areas are in the most in need of shell. If the mean volume of shell observed in the fall survey does not fall below 5 liters per square meter, a reasonable degree of productivity can be maintained.

Maintained areas at a mean shell volume closer to 10 liters per square meter is ideal.

Most of the harvest areas in the Chesapeake Bay and tributaries are experiencing a period of relatively consistent and high recruitment. However, there is strong evidence to suggest that extreme weather events, such as those seen in 2018, could become more frequent, resulting in the possibility of localized high oyster mortality and low recruitment. Replenishment should continue in areas that are determined to need additional substrate. This will prevent further substrate degradation of the public ground that is opened to harvest and provide an additional buffer for localized high mortality events and low spat sets should they occur. In addition, should a good spat set occur, more substrate will be available for spat to settle on and the areas will be able to more quickly recover from harvest or unpredictable natural causes.

The majority of the replenishment specific General Funds appropriation for FY2025 will be used for adding new shell to those areas in most need of shell and/or those that have been recently opened to public oyster harvest. Some restoration General Funds will be used to maintain or expand sanctuary areas. Funds for oyster replenishment are not likely to be enough to maintain the public beds at maximum productivity, but will be used to maintain a minimum volume of shell, as observed in the fall survey, above 5 liters per square meter where possible and practical, with a goal of maintaining 10 liters per square meter or more. In Attachment B, there is a list of all of the areas and acreages of oyster beds that staff has determined to be in need of shell in 2024. In total, more than 7,000 acres of oyster beds need shell. The CRD will seek to plant the largest quantity of comparable shells for the lowest area dependent per-unit price. This will likely be a combination of house, reef and dredged shells. There is currently one location permitted for hydraulic shell dredging (reef shells) in the lower James River, the SMD intends to seek permit authorization for a second location in the vicinity of the Craney Island Eastward Expansion. The currently permitted site has an estimated 10-15 years of shell resource remaining at the current rate of use.

Proposed Project	600 – 800 acres of oyster shell restoration @ 1,000 bushels/acre @ \$2.50 - \$5.50/bushel
Estimated Cost	\$2,500,000-\$4,030,000
Funding Sources	NGF and GF

Eastern Shore:

The CRD-SMD and The Nature Conservancy (TNC) have consistently collaborated on Seaside replenishment and restoration efforts. Last year, for the fifth year in a row, TNC funds were used on areas both closed and open to harvest. The SMD will contract for shell planting for a Nature Conservancy project, assist with the site selection, and shell planting monitoring. If funding allows additional locations will be planted using General Funds for restoration.

Up to 30 acres will be planted with shells harvested from local shell deposits or purchased from local sources.

Proposed Project	30 acres @ 10,000 bushels of shells/acre @ ~\$2.50-\$5.50/bushel
Estimated Cost	\$425,000

Funding Sources	NGF-TNC and GF (restoration)
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Alternative Cultch Projects:

The supply of shell for restoration, replenishment, and aquaculture will always be limited as the demand for shells in most years tends to be higher than the supply. Over the last several years, the CRD-SMD and other restoration partners have begun using alternative substrate in certain areas. These areas have been open to harvest recently, and it appears that the size of the alternative substrate shows positive harvest trends. Not all areas are suitable for planting with stone or concrete. The bottom needs to be firmer than areas that can be planted with shell.

The SMD has identified several locations that could have suitable bottom for alternative cultch plantings. These areas tend to have sandier bottoms and low oyster densities. Staff has existing permits (JPAs) for several locations. The locations would be near the Deep Rock Area, two locations in the Lower Rappahannock, the Lower James River near Nansemond Ridge, and the lower Pocomoke Sound adjacent to Onancock Rock. Only a small portion of the permitted areas would be planted at any given time. In the event that issues with acquiring shell arise, these areas could be expanded as needed and as suitable for planting.

In addition to these harvest areas, VMRC in partnership with USACE will implement alternative cultch projects that will primarily focus on the restoration of non-harvest areas. Previously completed “work in kind” is being used as non-federal match. Areas in Great Wicomico will be permitted for alternative substrate. The CRD-SMD will continue to carefully select locations in these areas for alternative substrate planting that will minimize potential user conflict. The intent is to create “new oyster reefs” that will have multiple benefits to adjacent areas, through improved water quality, increased fish habitat, and oyster larval transport to both public and private ground.

Proposed Project	0-100 acres @250 tons/acre @ ~\$50.00-\$80.00/ton Up to 100 acres @ 250-1000 tons/acre
Estimated Cost	\$2,000,000-\$4,627,000
Funding Sources	GF Restoration and Replenishment, Federal, Non- General Fund

SUMMARY:

Table 1. Summary of proposed projects and costs for oyster replenishment and restoration for 2024.

Proposed Project	Estimated Cost	Funding Sources
Seed Oysters - Up to 20,000 bushels @ ~\$6.00-\$15.00/bu.	\$300,000	NGF and GF (Replenishment)
	\$2,000,000	GF Replenishment

Shell Planting - 600 – 800 acres of oyster shell restoration @ 1,000 bushels/acre @ \$2.50 - \$5.50/bushel	\$0-\$1,500,000	GF Restoration
	\$0-3,000,000	NGF
Eastern Shore Shell Planting	\$425,000	GF Restoration and TNC
Alternative Cultch Projects: 0-50 acres @250 tons/acre @ ~\$50.00-\$80.00/ton Up to 100 acres @ 250-1000 tons/acre	\$2-\$4,627,000	GF Restoration and Replenishment and Federal

Attachments:

- A. Procurement Procedures
- B. Table 2 areas in need of shell

APPROVAL OF PROCUREMENT ACTIVITY FOR THE 2024 OYSTER REPLENISHMENT PROGRAM

General:

Certain aspects of the procurement of seed, shell, and replenishment services differ from the Commonwealth's standard procurement procedures, and therefore must be documented and approved by the Commission. The Commission will be exercising this option under Section 28.2-550 of the Code of Virginia.

This section of the Code states that:

“C. The Commission, when it makes a determination in writing that competitive bidding or competitive negotiation is not feasible or fiscally advantageous to the Commonwealth, may authorize other methods of purchasing and contracting for seed oysters, house shells, reef shells, shell bed turning, and other goods and services for oyster ground replenishment, which are in the best interest of the Commonwealth and which are fair and impartial to suppliers. It may establish pricing for its award and purchases; use selection methods by lot; and open, close, and revise its purchases according to changing conditions of the natural resources, markets, and sources of supply.”

For the harvest and movement of wild seed oysters the Commission will set the per bushel price to be paid. For the production of oyster eyed larvae, the Commission will set a price per million larvae. Public notices will be posted, and all interested parties may apply. Selection of contractors will be according to the lottery method.

The Commission may also set the price for the purchase of house shells. The prices for house shell are anticipated to be similar to those described in the 2024 plan. Loading, transporting, and planting costs will be set by the Commission based on handling costs, the type of activity, and the distance for transporting to the activity sites. Letters were sent to all licensed shucking houses inquiring as to the availability of shell. All houses that responded positively may provide shells to the 2024 program until the total dollar limit for this activity is met.. If funding sources do not allow the purchase of the entire shell market, house shell contracts and/or contract amounts will be based on geographical location, mobilization cost, and shell planting locations, which provide the greatest benefit to the oyster industry and to the Commonwealth.

The Commission may also set the price per ton for ground concrete or granite stone that will be used as an alternative cultch material. Loading, transporting, and planting costs for this material will be set by the Commission based on handling costs, the type of activity, and the distance for transporting to the activity sites. Public Notices will be posted and all interested parties may apply. Contractors will be selected by lottery, or allowed to provide the material until the project is completed.

The agency anticipates that all other 2024 oyster replenishment activities will be completed using the Invitation for Bid or Request for Proposal process in accordance with the Virginia Public Procurement Act.

If the condition of the oyster resource changes, or if the Conservation and Replenishment Department Head encounters unanticipated/unscheduled situations with the Oyster Replenishment Program, planned procurement activities may be changed, and one or more of the alternative methods of procurement listed above may be utilized to facilitate the completion of the 2024 Replenishment Program.

APPROVAL, BY THE COMMISSION, OF THE REPLENISHMENT PROGRAM WILL ALSO INCLUDE APPROVAL OF THE PROCUREMENT METHODS MENTIONED ABOVE.

Area	Rock	Spat	Small	Market	Shell Volume (Liters/m ²)	Acreeage
Total in need						7,175
Total most in need						4,599
Pocomoke Tangier Sounds						
	Public Ground #10 H-2	0.3	0.0	0.0	0.0	21
	Public Ground #9 H-1	1.6	1.2	0.8	1.8	21
	PG07 H-4 Thoroughfare	7.7	6.3	1.7	3.7	4
	PG08-H3 California Rock	16.5	9.3	5.8	4.3	7
	PG13 H-5	7.6	4.4	4.8	5.2	31
	Public Ground #10 H-1	7.3	6.0	4.3	5.7	70
	Island Rock	3.1	5.0	3.0	5.8	60
	Public Ground #9 H-2	4.8	12.5	11.3	5.8	33
	Marshalls Rock	15.8	16.3	5.3	6.3	7
	Public Ground 11-1	4.0	7.0	7.2	6.4	37
	PG18 Onancock Rock A	32.8	15.3	3.3	6.5	10
	PG13 H-1	14.1	7.1	6.7	6.6	31
	PG13 H-2	26.6	11.2	8.2	6.6	40
	Byrd Rock	15.2	28.4	3.8	7.0	13
	PG17 Parker's Rock A	34.3	30.8	9.0	7.3	34
	PG13 H-4	26.2	17.3	15.3	8.3	28
	PG05 H-1 Fox Island Rock	44.3	23.0	11.5	8.5	6
	PG08-H4 California Rock	41.5	22.0	12.2	8.7	15
	PG13 H-3	12.2	15.3	17.7	9.3	24
	PG08-H2 California Rock	28.0	19.3	22.0	9.5	9
Rappahannock						
	Bush Park 2018 (Stone)	15.1	8.9	3.9	2.5	6
	Corrotoman sanctuary	18.0	32.0	6.0	3.8	9
	Larson's Upper sanctuary	15.0	18.8	7.3	4.0	4
	Drumming Ground sanctuary 2	22.5	33.8	5.8	4.5	3
	Morattico Bar	23.3	48.3	6.8	4.8	121
	North End S.P. 553	25.5	25.2	7.5	5.5	10
	Mill Creek sanctuary	24.0	48.5	8.8	6.3	4
	Temple Bay sanctuary	16.7	65.7	9.7	6.3	9
	Corrotoman Point C-2	35.0	42.6	4.2	6.4	9
	Bush Park	10.7	16.3	8.7	7.0	4
	Little Wicks A	14.3	36.3	5.7	7.0	6
	Drumming Ground Inshore	33.5	52.0	10.5	7.2	29

ATTACHMENT B

	Butler's Hole East	23.8	17.0	16.3	7.3	6
	Lower Edge Broad Creek East	19.0	37.3	13.4	9.1	18
	Hog House Offshore	35.5	107.0	5.0	9.3	6
	Spike A	26.0	42.0	11.8	9.3	2
	Monaskin Bluff	53.7	81.6	7.6	9.5	161
	Sturgeon Bar West (S.P. 552)	20.6	39.0	14.0	9.6	8
	Mosquito Island	36.0	57.0	23.7	9.8	2
James						
	Upper Jail Island	23.0	27.0	0.6	1.4	612
	Swash Mud Slough	8.1	33.2	0.8	1.7	1,230
	Offshore Swash	7.5	36.1	1.3	2.0	641
	Lower Jail Island	13.2	17.9	2.8	2.1	629
	Offshore Jail Island	9.1	18.7	1.5	2.3	1,017
	Swash	58.4	120.6	4.6	4.1	201
	Days Point	19.9	52.8	5.3	5.4	275
	Wreck Inshore	19.0	29.8	5.5	5.8	585
	Nansemond Ridge	30.3	34.5	6.2	7.4	295
	High Shoal	22.6	31.2	10.2	7.6	44
	Mulberry Point	112.9	254.9	12.7	9.3	48
	Shanty Rock	37.0	75.3	6.8	9.5	3
York/Mobjack						
	Tow Stake West	1.8	2.6	1.0	1.4	3
	Sarah's Creek 2	20.7	16.0	6.2	5.6	14
	Pultz Bar	31.5	25.0	9.0	5.9	14
	Indian Field PG 2	10.7	10.3	7.7	6.0	1
	Aberdeen Rock	12.2	13.9	9.7	6.7	45
	Brown's Bay #2	9.6	6.7	11.0	7.1	22
	Pages Rock	7.6	8.8	7.7	7.3	115
	Tow Stake East	4.8	10.3	7.8	7.8	6
	Timberneck	12.6	6.6	6.8	8.4	48
	Brown's Bay #1	11.1	25.6	20.2	8.5	83
	Cheatham PG 1	25.8	14.3	6.5	9.0	2
Great Wicomico						
	VMRC 12/GW Corps 17	2.7	0.0	0.0	0.1	2.0
	VMRC 15/GW Corps 21	0.0	1.0	0.0	0.2	3.0
	Mill Creek East	1.0	1.0	1.3	0.2	2.0
	VMRC 9/GW Corps 10	10.8	25.3	5.5	3.5	7.0
	Ingram's Bay South	13.0	18.3	5.3	4.3	9.0
	Dameron Marsh East	16.3	36.0	6.7	5.0	12.0
	VMRC 8/GW Corps 9	19.5	31.3	9.0	5.0	14.0
	Rogue Point	50.5	49.8	7.8	5.5	3.0

ATTACHMENT B

	Ingram's Bay North	31.0	49.8	9.0	7.0	22.0
	Harcum Flats	32.8	47.0	6.0	8.3	6.0
	VMRC 10/Gw Corps 12, 13	7.7	26.3	13.3	8.7	5.0
	Cockrell Creek	17.0	89.0	7.3	9.0	4.0
	Sandy Point	36.9	65.3	10.4	9.6	12.0
Chesapeake Bay						
	Deep Rock 4	32.0	21.0	8.0	6.0	8.0
	Beverlys 2	22.6	23.2	13.6	8.6	7
Piankatank						
	Thompsons	0.0	0.0	0.0	0.0	2
	Palace Bar B Also Palace Bar 2	0.0	0.0	0.0	0.0	7.0
	Docs View	0.3	1.7	0.0	0.8	1.0
	Ginney Point NOAA Stone Plant	9.1	19.4	7.9	3.6	11.0
	Fishing Point	6.4	11.3	8.4	5.1	21.0
	Shipleys Edge	12.0	4.0	0.7	5.7	1.0
	Heron Rock	25.3	33.5	10.3	6.0	13.0
	Iron Point Reef - TNC	14.8	25.8	7.7	6.5	4.0
	Cape Tune	18.1	44.2	7.9	6.5	42.0
	Stove Point	46.3	52.0	10.3	7.0	5.0
	Palace Bar NOAA Stone Plant	32.4	58.4	10.9	7.1	51.0
	Bland Point	25.3	47.3	8.5	7.7	25.0
	Stove Point NOAA Stone Plant	49.8	89.1	15.3	7.8	9.0
	Heron Rock NOAA Stone Plant	24.5	37.5	14.3	8.6	16.0