

Proposed Man-O-War Shoal Shell Dredging
Maryland Department of Natural Resources (MDNR)
January 2016

The proposed project calls for collecting baseline environmental data in Year 1. In Year 2, two million bushels of shell will be dredged. In Years 3 and 4, post-dredging environmental data will be collected in the dredge cuts and in undisturbed reference areas. In Year 5, if environmental studies of dredging show no significant adverse effects, an additional 3 million bushels of shell will be dredged and a new application for the dredging of up to a maximum of 30 million bushels of shell will be submitted.

Five Year Proposed Project: Dredging and monitoring timeline to assess potential impacts from Man-O-War shoal dredging				
Year	Event	Location	Season	Monitoring Type
1	Pre-Dredging Monitoring	1 Treatment Site on Man-O-War & 2 nearby Control Sites	Spring	Water quality, oyster, fish, benthic, and sediment
			Summer	Water quality, oyster, fish, benthic, and sediment
			Fall	Water quality, oyster, fish, benthic, and sediment
2	Dredging 2 Million Bushels of Shell	Man-O-War Shoal	Early Spring	Water quality sampling one week prior to dredging, during dredging, the day after dredging activities cease, a week after dredging activity ceases, and one month after dredging activities cease.
	During-Dredging Monitoring	1 Treatment Site on Man-O-War & 2 nearby Control Sites	Spring	Water quality, oyster, fish, benthic, and sediment
			Summer	Water quality, oyster, fish, benthic, and sediment
			Fall	Water quality, oyster, fish, benthic, and sediment
3	Post-Dredging Monitoring	1 Treatment Site on Man-O-War & 2 nearby Control Sites	Spring	Water quality, oyster, fish, benthic, and sediment
			Summer	Water quality, oyster, fish, benthic, and sediment
			Fall	Water quality, oyster, fish, benthic, and sediment
4	Post-Dredging Monitoring and Reporting	Dredge Cuts	Spring	Acoustic sonar surveys of dredge cuts
			Summer	Report of findings during past 3 years
			Fall	
5	Dredging 3 Million Bushels of Shell	Man-O-War Shoal	Early Spring	If no significant negative impacts were found, then dredging can occur
After Year 5	Dredging (under different permit) 30 Million Bushels of Shell	Man-O-War Shoal		If no significant negative impacts were found and more shell if wanted, then DNR could apply for another permit to dredge more shells

Spring = March, April, May. Summer = June, July, August. Fall = September, October, November.

Man-O-War Shoal Dredged Shell Allocation Options

MDNR intends to use the shell dredged from Man-O-War shoal on oyster sanctuaries (i.e. areas that are off-limits to commercial harvesting for ecological restoration), on managed public harvest areas, and for aquaculture. This includes all natural and historic oyster bars (Attachment 2 and 3). Planting of shell will be consistent with the guidelines provided in the Chesapeake Bay Program’s 2004 Oyster Management Plan, the Army Corps’ Native Oyster Restoration Master Plan, and Maryland’s Oyster Restoration and Aquaculture Development Plan. The shell planted on managed harvest areas will be directed by MDNR in consultation with Maryland’s County Oyster Committees.

There are three options for the allocation of shell among sanctuary areas, managed public harvest areas, and aquaculture. These three options include:

- 90% of the dredged shell planted on sanctuary areas and 10% planted on managed public harvest or aquaculture areas,
- 50% of the dredged shell planted on sanctuary areas and 50% planted on managed public harvest or aquaculture areas, or
- 25% of the dredged shell planted on sanctuary areas and 75% planted on managed public harvest or aquaculture areas

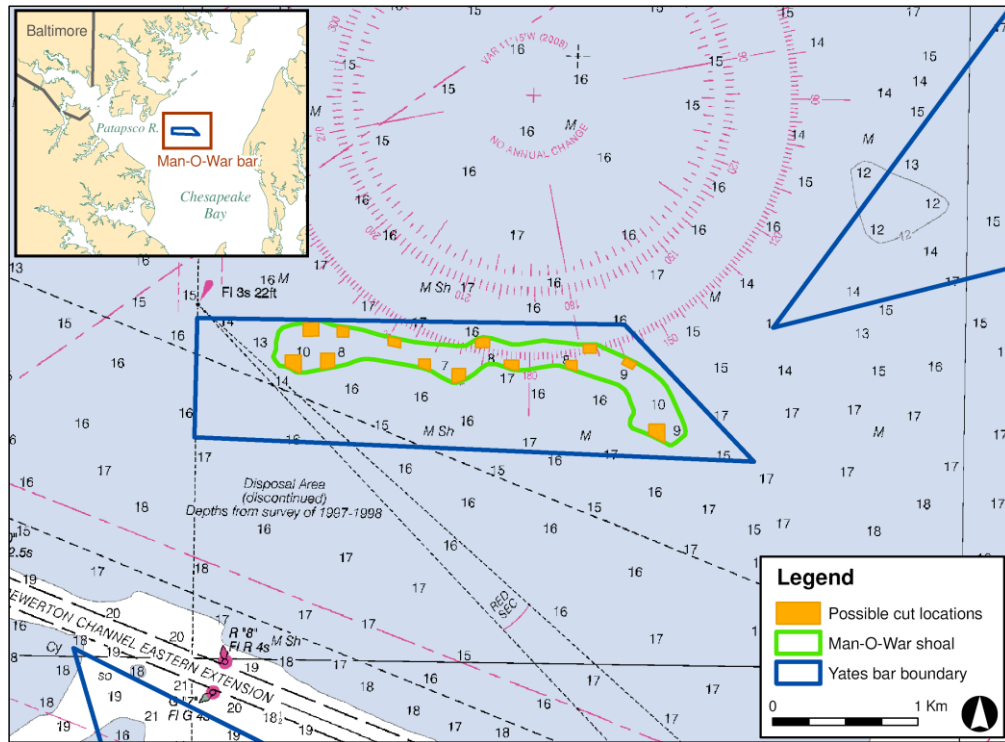
to determine the final shell allocation MDNR will utilize public comment received during the permit application review process, and may conduct additional public outreach with all stakeholder groups

The number of acres able to be planted with dredged shell from Man-O-War shoals given the three different allocation options and thickness of planted shell. Planting thickness will be six inches on sanctuaries and between one to three inches on open harvest areas depending on the bottom habitat of the open harvest area to be planted.

Option	Planted Area	Planting Thickness	Year Two	Year Five	Total	After Year Five (Under New Permit)
			2 million bushels of dredged shell	3 million bushels of dredged shell	5 million bushels of dredged shell	30 million bushels of dredged shell
Option 1 (90% Sanctuary : 10% Managed Public Harvest or Aquaculture)	Sanctuary	6 inch	134	201	335	2,009
	Managed Public Harvest or Aquaculture	1 inch	89	134	223	1,340
		3 inch	30	45	74	447
Option 2 (50% Sanctuary : 50% Managed Public Harvest or Aquaculture)	Sanctuary	6 inch	74	112	186	1,116
	Managed Public Harvest or Aquaculture	1 inch	447	670	1,116	6,698
		3 inch	149	223	372	2,233
Option 3 (25% Sanctuary : 75% Managed Public Harvest or Aquaculture)	Sanctuary	6 inch	37	93	130	558
	Managed Public Harvest or Aquaculture	1 inch	670	1,005	1,675	10,047
		3 inch	223	335	558	3,349

Proposed Man-O-War Shoal Shell Dredging Location

The below map shows the location and general shape of Man-O-War shoal. Blue lines indicate the boundaries of oyster bars mapped by Yates (1911). Yellow rectangles within the outline of the shoal illustrate the types of potential cuts anticipated where shell could be removed by dredging along the perimeter. The historic Yates bar delineation of Man-O-War Shoal is 729 acres, and the estimated area were shell may be obtained is 445 acres (Cuthbertson 1988). Currently, some of Man-O-War Shoal is an oyster sanctuary closed to oyster harvest.



Since 2000, four areas have received hatchery spat-on-shell planting as directed by the Maryland County Oyster Committees as denoted by the light pink and green areas in the map below. If the Man-O-War Shoal Shell Dredging permit is granted and, through the public hearing process the majority would like to see the project proceed, MDNR will not make dredge cuts on these previously planted areas. It is estimated that there will need to be 9 dredge cuts to obtain 5 million bushels of shell.

