

Chesapeake Bay Oyster Population Estimation

Monitoring Program: BASINS

State: VIRGINIA

Year: 2007

Basins in Virginia

For convenience and ease of data presentation, the Chesapeake Bay tributaries in Virginia waters have been grouped into “Basins”. The Basins used for Virginia in this project include: Potomac tributaries (includes Nomini Creek, Coan River, Yeocomico River), Great/Little Wicomico, Rappahannock (includes Corrotoman River), Piankatank, York/Mobjack Bay (includes East, North, Severn, Ware, and Perrin Rivers), Poquoson/Back, James (includes Elizabeth, Lafayette, and Nansemond Rivers), Lynnhaven, and Eastern Shore/Tangier (includes Tangier and Pocomoke Sounds as well as all tributaries on the Bay side of Virginia’s Eastern Shore.)

Data Types and Notes

Note that bushels are reported as VIRGINIA bushels. A Virginia bushel is 3003.9 cubic inches and thus differs from a US bushel (2150.4 cubic inches) or a Maryland bushel (2800.7 cubic inches).

A. **Fishery Independent data:** These data are primarily from the patent tong survey conducted jointly by the Virginia Marine Resources Commission and the Virginia Institute of Marine Science. A hydraulic patent tong deployed from the R/V *J.B.Baylor* collects a 1 m² sample of oysters and bottom material at each sampling location. No survey data are available for the Lynnhaven basin in 2007.

B. **Fishery Dependent data**

NOTE: The data presented for Fishery Dependent Data are the total numbers available as of 2/3/2009. These data are NOT the final totals for 2007. These data will be updated again after the total numbers for 2007 are available.

B1. **Public/Commercial effort** - The total number of bushels of oysters landed within the state of Virginia during 2007 as reported by commercial fishermen is estimated. These data were obtained from the Virginia Marine Resources Commission on 2/3/09. One bushel of oysters was assumed to contain 500 market oysters. A market oyster is 3 inches or 76 mm from its beak to its hinge (shell length).

B2. **Private effort** - The total number of bushels of oysters landed within the state of Virginia during 2007 as reported by private leaseholders is presented. These data were obtained from the Virginia Marine Resources Commission on 2/3/2009. One bushel of oysters was assumed to contain 500 market oysters. A market oyster is 3 inches or 76 mm from its beak to its hinge (shell length).

C. **Restoration Efforts**

C1. **Reefs - unexploited sanctuaries** - These data are from annual dive surveys conducted on constructed oyster reefs by the Virginia Marine Resources Commission. For biomass (g dry tissue) calculations, shell lengths of 30, 50, and 76 mm were assigned to oyster spat, small oysters, and market oysters, respectively.

C2. **Replenishment - exploited shell plants and three dimensional structures** - These data are from the annual replenishment reports produced by the Virginia Marine Resources Commission Shellfish Replenishment program. Each year, the number of seed oysters per bushel is estimated by using the average number of oysters per bushel at the seed sources as determined by the VMRC annual dredge survey in that year. Seed oysters are assumed to have shell lengths of 40 mm.

D. **Oyster Aquaculture**

D1. **Oyster gardening/planting** - Data on oyster planting activities by the Chesapeake Bay Foundation are provided courtesy of Mr. Tommy Leggett and the Chesapeake Bay Foundation and detail oyster planting by citizens, agencies, and the Chesapeake Bay Foundation on constructed reefs in Virginia waters. Biomass (g dry tissue) calculations assumed shell lengths between 15 and 60 mm depending upon the oyster source.

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	Potomac	Great/Little Wicomico	Rappahannock	Piankatank	York/Mobjack Bay	Poquoson/Back	James	Lynnhaven	Eastern Shore/Tangier		
A. Fishery Independent survey											
Average number of oysters/m2		144.4	17.1	41.5			67.2		40.6		
Average oyster biomass/m2		39.7	7	8.4			24.2		8.1		
Number of reefs surveyed		18	53	9			24		18		
Acres surveyed		80	703.4	180.3			5956		180		
Number of samples		133	308	100			477		144	1.79E +09	6.37E+08
B. Fishery Dependent survey											
B1. Public/Commercial effort											
Public VA landings (bushels x 1000)	35									1.75E+04	1.49E+04
B2. Private effort											
Private VA landings (bushels x 1000)	15									7.50E+03	6.39E+03
C. Restoration efforts											
C1. Reefs/unexploited sanctuaries											
Average number of oysters/m2	182	948	387	810	444	63	4878	937	1185		
Average oyster biomass/m2	96.6	246.5	96.5	247.9	184.2	23.7	184.2	383.4	299		
Number of reefs surveyed	7	2	14	4	4	1	10	8	9		
Acres surveyed	3.5	3	14	5	2.5	1	10	7.5	8.5	3.24 E+08	8.71E+07
C2. Replenishment/exploited ground											
Average number of oysters/m2	75.1	0.1	56				0.1		0.1		
Average oyster biomass/m2	23	0	17.2				0		0		
Number of reefs surveyed	5	3	6				1		1		
Acres surveyed	13	8.6	33.4				1.3		1.4	1.15 E+07	3.53E+06
D. Oyster Aquaculture											
D1. Oyster gardening/planting											
Total number of oysters/m2	0.2	2.7	3.4	374	30.6	2.4	11.4	14.9	1.5		
Total oyster biomass/m2	0.1	1.5	1.9	204	17	1.3	6.2	8.1	0.8		
Number of reefs surveyed	1	1	2	1	1	1	3	4	1		
Acres surveyed	0.5	2	2	1	0.5	1	1.5	4	2	1.96E+06	1.07E+06
Grand total number of oysters										2.13E+09	
Grand total oyster biomass										7.29E+08	

Numbers highlighted in yellow are DRAFT values and will be updated when final data are available.