

Chesapeake Bay Oyster Population Estimation

Monitoring Program: SENTINEL SITES

State: VIRGINIA

Year: 1994

Sentinel Sites in Virginia

Sentinel sites have been established in Virginia Tributaries of the Chesapeake Bay to facilitate monitoring of oyster populations at specific locations over time. The term “sentinel site” is used to describe a monitoring station for which long-term monitoring data are available. Monitoring at sentinel sites is being performed by the Virginia Institute of Marine Science (VIMS) in collaboration with the Virginia Marine Resources Commission Shellfish Replenishment Program (VMRCSR) in accordance with a ten year monitoring plan. The monitoring plan has been established to track progress at sentinel sites toward bay -wide oyster population restoration goals. Replenishment and restoration activities are in progress at or near many of the existing sentinel sites and, in most cases, have been deliberately paired with long term monitoring stations to help evaluate the impacts of existing restoration and replenishment efforts at a local scale.

Monitoring Data Notes

Oyster populations at sentinel sites are evaluated using annual dredge survey data. A majority of sentinel site locations are sampled annually as a joint effort between VIMS and VMRCSR scientists. Four dredge samples are collected each year at the jointly sampled stations. Monitoring data for these stations is reported as average numbers of oysters per bushel¹ and average oyster biomass (g dry tissue) per bushel¹. A smaller number of sentinel sites are sampled by VMRCSR scientists alone using a single dredge sample. Monitoring data for these stations is reported as number of oysters per bushel¹ and oyster biomass (g dry tissue) per bushel¹.

Weather conditions, personnel constraints, and/or equipment failure may result in the absence of a sample for a site in a given year. As restoration and replenishment activities continue in the Virginia waters of the Chesapeake, sentinel sites are continually added to the existing list (35 stations in June of 2003). The absence of data for a particular site in a particular year may also be because the site was not yet established. This scenario is particularly relevant for sentinel sites that have been established to monitor oyster population development post replenishment and/or complete restoration. A table describing Virginia’s sentinel sites including information on establishment date, restoration activities, and subsequent replenishment efforts is available from www.vims.edu/mollusc/cbope/vasendes.htm.

This summary sheet was assembled at the Virginia Institute of Marine Science by Drs. Roger Mann and Juliana M. Harding using data provided by the agencies and institutions listed above.

¹ 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).

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Basin	Water Body	Area	No. of samples	Average number of oysters/bushel ¹	Average oyster biomass/bushel ¹
Eastern Shore	Pocomoke Sound	Lumps	0		
Eastern Shore	Tangier Sound	7H-5	0		
Great Wicomico	Great Wicomico River	Harcum Flats	0		
Great Wicomico	Great Wicomico River	Haynie Bar	5	167	61.9
Great Wicomico	Great Wicomico River	Whaley's Flat	4	107	40.7
James	James River	Brown Shoal	1	200	50.7
James	James River	Deep Water Shoal	1	530	232.7
James	James River	Horsehead	5	1063	364.8
James	James River	Mulberry Point	1	420	169.3
James	James River	Nansemond Ridge	3	101	19.7
James	James River	Point of Shoals	4	687	298.2
James	James River	Swash	1	380	169.2
James	James River	V-Rock	1	1030	317.3
James	James River	Wreck Shoal	4	530	135.3
James	James River	Wreck Shoal (offshore)	1	636	192.3
Piankatank	Piankatank River	Bland Point	1	365	130.9
Piankatank	Piankatank River	Burton Point	4	212	73.6
Piankatank	Piankatank River	Deep Rock	1	190	70.6
Piankatank	Piankatank River	Ginney Point	4	80	30.0
Potomac	Coan River	Honest Point	0		
Potomac	Nomini River	Nomini Cut	0		
Potomac	Yeocomico River	Shannon/Crows Bar	0		
Potomac	Yeocomico River	Tom Jones	0		
Rappahannock	Corrotoman River	Middle Ground	4	26	9.6
Rappahannock	Rappahannock River	Bowler's Light	5	57	35.1
Rappahannock	Rappahannock River	Broad Creek	4	211	100.0
Rappahannock	Rappahannock River	Drumming Ground	3	23	7.3
Rappahannock	Rappahannock River	Morattico Bar	4	8	5.4
Rappahannock	Rappahannock River	Parrot's Rock	3	59	20.1
Rappahannock	Rappahannock River	Ross' Rock	4	19	7.2
York	Mobjack Bay	Pultz's Bar	4	1	0.6
York	Mobjack Bay	Tow Stake	4	1	0.1
York	York River	Bell Rock	3	12	3.2
York	York River	Page's Rock	1	0	0.0
York	York River	Timberneck Rock	1	15	4.6

* Averages are reported only for sites with more than one sample. The actual counts/values are reported for sites where only one sample was collected.

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