

Chesapeake Bay Oyster Population Estimation

Monitoring Program: SENTINEL SITES

State: VIRGINIA

Year: 1998

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	2	25	14.9
Eastern Shore	Tangier Sound	7H-5	0		
Great Wicomico	Great Wicomico River	Harcum Flats	1	402	161.2
Great Wicomico	Great Wicomico River	Haynie Bar	4	348	137.3
Great Wicomico	Great Wicomico River	Whaley's Flat	4	104	29.5
James	James River	Brown Shoal	1	68	14.7
James	James River	Deep Water Shoal	4	324	100.3
James	James River	Horsehead	4	567	211.2
James	James River	Mulberry Point	4	307	105.2
James	James River	Nansemond Ridge	4	229	40.4
James	James River	Point of Shoals	4	591	207.7
James	James River	Swash	4	336	129.8
James	James River	V-Rock	1	614	214.9
James	James River	Wreck Shoal	4	107	24.4
James	James River	Wreck Shoal (offshore)	1	536	102.9
Piankatank	Piankatank River	Bland Point	2	258	78.1
Piankatank	Piankatank River	Burton Point	4	380	77.6
Piankatank	Piankatank River	Deep Rock	1	388	101.2
Piankatank	Piankatank River	Ginney Point	4	211	53.2
Potomac	Coan River	Honest Point	2	95	56.4
Potomac	Nomini River	Nomini Cut	0		
Potomac	Yeocomico River	Shannon/Crows Bar	1	305	112.5
Potomac	Yeocomico River	Tom Jones	2	400	169.1
Rappahannock	Corrotoman River	Middle Ground	4	240	90.6
Rappahannock	Rappahannock River	Bowler's Light	4	232	108.9
Rappahannock	Rappahannock River	Broad Creek	4	226	101.6
Rappahannock	Rappahannock River	Drumming Ground	4	229	52.9
Rappahannock	Rappahannock River	Morattico Bar	4	10	5.7
Rappahannock	Rappahannock River	Parrot's Rock	4	43	17.2
Rappahannock	Rappahannock River	Ross' Rock	4	16	6.6
York	Mobjack Bay	Pultz's Bar	4	93	33.5
York	Mobjack Bay	Tow Stake	4	110	21.7
York	York River	Bell Rock	4	225	53.5
York	York River	Page's Rock	1	100	28.9
York	York River	Timberneck Rock	1	235	60.3

* 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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