

# Chesapeake Bay Oyster Population Estimation

**Monitoring Program:** SENTINEL SITES

**State:** VIRGINIA

**Year:** 2009

## 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 are reported as average numbers of oysters per bushel<sup>1</sup> and average oyster biomass (g dry tissue) per bushel<sup>1</sup>. A smaller number of sentinel sites are sampled by VMRCSR scientists alone using a single dredge sample. Monitoring data for these stations are reported as number of oysters per bushel<sup>1</sup> and oyster biomass (g dry tissue) per bushel<sup>1</sup>.

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 2004). 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 related restoration and replenishment efforts is available from [www.vims.edu/mollusc/cbope/vasendes.htm](http://www.vims.edu/mollusc/cbope/vasendes.htm).

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

<sup>1</sup> 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).

## Chesapeake Bay Oyster Population Estimation: Sentinel Sites

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Basin	Water Body	Area	No. of samples	Average number of oysters/bushel <sup>1</sup>	Average oyster biomass/bushel <sup>1</sup>
Eastern Shore	Pocomoke Sound	Lumps	0		
Eastern Shore	Tangier Sound	7H-5	0		
Great Wicomico	Great Wicomico River	Harcum Flats	1	448	162.4
Great Wicomico	Great Wicomico River	Haynie Bar	4	280	113.8
Great Wicomico	Great Wicomico River	Whaley's Flat	4	289	109.5
James	James River	Brown Shoal	1	118	38.6
James	James River	Deep Water Shoal	4	586	225.1
James	James River	Horsehead	4	892	325.6
James	James River	Mulberry Point	4	701	252.5
James	James River	Nansemond Ridge	4	18	6.5
James	James River	Point of Shoals	4	618	252.3
James	James River	Swash	4	590	209.6
James	James River	V-Rock	1	1018	362.7
James	James River	Wreck Shoal	4	155	69.6
James	James River	Wreck Shoal (offshore)	1	64	29.8
Piankatank	Piankatank River	Bland Point	1	490	177.8
Piankatank	Piankatank River	Burton Point	4	97	41.1
Piankatank	Piankatank River	Deep Rock	1	144	68.4
Piankatank	Piankatank River	Ginney Point	4	300	124.4
Potomac	Coan River	Honest Point	1	210	156.4
Potomac	Nomini River	Nomini Cut	1	258	154.4
Potomac	Yeocomico River	Shannon/Crows Bar	1	60	39.0
Potomac	Yeocomico River	Tom Jones	1	74	45.3
Rappahannock	Corrotoman River	Middle Ground	4	195	82.7
Rappahannock	Rappahannock River	Bowler's Light	4	66	51.3
Rappahannock	Rappahannock River	Broad Creek	4	87	44.8
Rappahannock	Rappahannock River	Drumming Ground	4	268	127.8
Rappahannock	Rappahannock River	Morattico Bar	4	42	30.4
Rappahannock	Rappahannock River	Parrot's Rock	4	115	54.2
Rappahannock	Rappahannock River	Ross' Rock	4	102	56.5
York	Mobjack Bay	Pultz's Bar	4	298	143.9
York	Mobjack Bay	Tow Stake	4	253	99.3
York	York River	Bell Rock	4	75	36.6
York	York River	Page's Rock	1	36	12.8
York	York River	Timberneck Rock	1	38	16.9

\* 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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