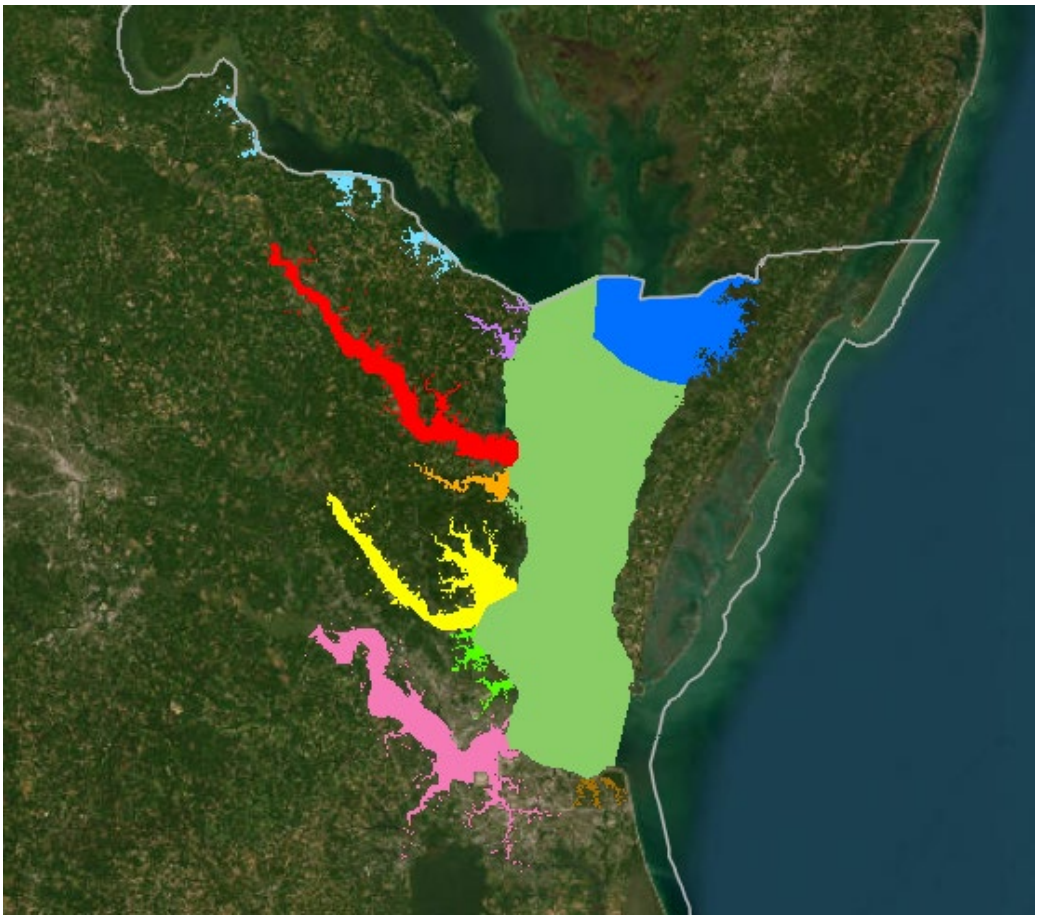
Introduction to VOSARA



To use VOSARA, and to see complete details, go to https://cmap22.vims.edu/VOSARA/

Try it out on different reefs. With some practice, it becomes self-explanatory.

Example results below-

Harvest Table

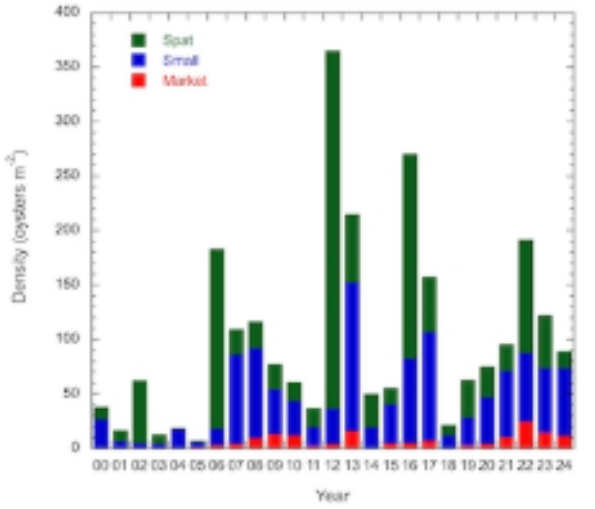
Harvest (C = Closed for all oysters; S (HS) = open for seed harvest with hand scrape; O (HT) open for market harvest with hand tongs

1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
na	na	C	C	C	S (HS)	C	C	C	C

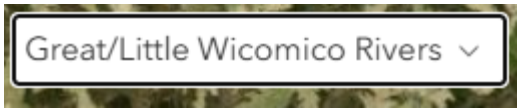
2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
C	C	C	C	S (HS)	S (HS)	S (HS)	S (HS)	C	S (HS)

2018	2019	2020	2021	2022	2023	2024
S (HS)	C	S (HS)	C	C	C	O (HT)

Graphs for Shell Bar



Oyster Graph 1 of 2



Observations- This reef (Shell Bar 17.70 acres in the Great/Little Wicomico R), was closed for harvesting market-size oysters from 2000 through 2023. It opened for market-size oysters in 2024. Those years with “S” were open for seed (spat) harvesting. The density of spat increased dramatically in 2005, followed by an increase in small oysters (<3in.) in 2006. Regardless of the density of spat and small oysters, market size oysters are few. Therefore, in comparison, most oysters died before reaching the market size of about 3 to 4 inches.

This is a quote from Jim Wesson, VMRC Retired, about the Virginia Public Oyster Reefs-

I think 20% reaching market size for most of the bay would be quite optimistic. It depends on what size you start with. If you start with a one inch oyster, possibly you would see 20% survival, but starting from spat it would be much less that 10%. Dermo is still around, and MSX shows up in some higher salinity areas. Low dissolved oxygen is the greatest threat right now, I think. In the rivers, 10-12 ft in depth is the max for surviving, often less than that.

Vic's Takeaway from Jim Wesson's talk, 2-21-2026

- VMRC maintains and monitors public oyster reefs
- VOSARA shows the status and trends of these reefs. This is indicative of all wild oysters in Virginia waters.
- Wild oyster harvests are much larger than those from caged oysters, but still very small compared to the "old days."
- Wild spat set started increasing around 2010+\-. More wild oyster clusters are visible on river banks compared to 1990 to 2010.
- Larger total harvests recently, but only ~10% of wild oyster spat mature to 3 inches (market size).
- Wild oysters do not produce enough shell to provide cultch for the following generation.
- Public reefs produce about the same low percentage of market-size oysters, **regardless of whether or not they are open to harvesting.**
- Some disease resistance is evident.
- Shells are expensive, and shell mining will run out.
- Man-made reefs will not self-propagate after a few years
- Leased grounds not fully used, but requirements to grow oysters on leased grounds are not enforced.
- There is little approved oyster ground space for additional aquaculture.
- Most other countries are happy to have working aquaculture on their shorelines, but sadly, not here.

The **Virginia Oyster Stock Assessment and Replenishment Archive (VOSARA)** data web site is designed to provide graphic summaries of the status of oyster stocks in the Virginia subestuaries of the Chesapeake Bay. Data originates in annual stock assessments performed by a collaboration between the Virginia Institute of Marine

Science (VIMS) and the Virginia Marine Resources Commission (VMRC). Summaries provide data by year and historical reef boundaries within each of the described subestuaries. Oyster populations are described in units of density, oysters per unit area, for each of three size classes: spat are young of the year (≤ 35mm length), small are submarket size (> 35 mm and < 76mm length), and market size (≥ 76mm length) oysters.

For questions or comments about anything on this site please contact: Melissa Southworth (melsouth@vims.edu).

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Help

- Data is currently available for oyster reefs located in Great Wicomico River, James River, Lynnhaven Bay, Piankatank River, Pocomoke and Tangier Sounds, Rappahannock River, York River, and the main stem of the Chesapeake Bay.

Chesapeake Bay Main Stem
Great Wicomico River
James River
Lynnhaven Bay
Piankatank River
Rappahannock River
Tangier & Pocomoke Sounds
York River & Mobjack Bay

CHESAPEAKE BAY MAIN STEM

There are seven public oyster reefs monitored in the Chesapeake Bay mainstem (approximately 100 acres) and one reef (Milford Haven; approximately 1 acre) that is located in the area known as “Hole in the Wall” (an area with Gwynn’s Island to the north and Mathew’s County to the south). GREAT WICOMICO RIVER

GREAT WICOMICO RIVER

There are twenty-four public oyster reefs (approximately 193 acres) monitored in the Great Wicomico River. Seventeen of these reefs are located upriver of Sandy Point in the traditional seed harvest area with the other seven located downriver of Sandy Point in the harvest (market oysters) area.

JAMES RIVER

There are thirty-four public oyster reefs (approximately 6,820 acres) monitored in the James River. Twenty-three of these are located upriver in the traditional seed, hand tong area, with the remaining eleven located downriver in the hand-scrape harvest (market oysters) area.

LYNNHAVEN BAY

There are twelve public oyster reefs (approximately 48 acres) monitored in the Lynnhaven River system. All of these are designated as sanctuary reefs, closed to harvest. There are between eleven and fourteen years of data included, depending on when the particular reef was built and monitoring began.

PIANKATANK RIVER

There are eighteen public oyster reefs (approximately 227 acres) monitored in the Piankatank River. Five of these were traditional seed reefs, but the rest have either never been harvested or for the older reefs have not been harvested for at least twenty years or more.

RAPPAHANNOCK RIVER

There are fifty-nine public oyster reefs (approximately 710 acres) monitored in the Rappahannock River. Seventeen of these are designated as sanctuary reefs with the remaining fourty-two located in the rotational harvest areas (Rappahannock River Rotation Areas 1-6; thirty-two reefs), in Rappahannock River Area 7 (eight reefs), Rappahannock River Area 8 (one reef) or the Corrotoman River Hand Tong Area (one reef).

TANGIER AND POCOMOKE SOUNDS

There are fourteen public oyster reefs monitored in Pocomoke Sound (approximately 472 acres) and thirteen monitored in Tangier Sound (approximately 166 acres). Nine of the reefs in Pocomoke Sound and twelve of the reefs in Tangier Sound are part of the Pocomoke and Tangier Sound Rotational Harvest areas.

YORK RIVER AND MOBJACK BAY

There are seven public oyster reefs monitored in the York River (approximately 257 acres) and five monitored in Mobjack Bay (approximately 129 acres). Three of the five reefs in the York River and three of the reefs in Mobjack Bay are part of the York River and Mobjack Bay rotational harvest areas.