

# Shellfish Management Advisory Committee Meeting





# Shell & Seed Operations Overview

Program Summary & Key Performance Indicators

TOTAL EXPENDITURE

**\$884,830**

Full Program Investment

TOTAL VOLUME PLACED

**149,324**

Bushels of Cultch & Seed

AVERAGE UNIT COST

**\$5.93**

Per Bushel (Program Wide)

PRIMARY CATEGORY

**SSES Plant**

54,134 Bu (\$306,947)

## Key Operations Insights

- ✓ **SSES Shell Plant** led in operational volume, planting 54,134 bushels across Pungoteague Creek and Pocomoke Sound (\$306,947 total).
- ✓ **House Shell Deployment** represented the single largest location investment at \$284,618.75 (46,675 bushels in Rappahannock/York/Blackberry).
- ✓ **SSES Shell Stockpile** achieved the highest cost efficiency at **\$3.50/bushel** (\$105,105 for 30,030 bushels).
- ✓ **James River Seed** focused on premium seed stock replenishment averaging \$10.18/bushel for maximum setting density.



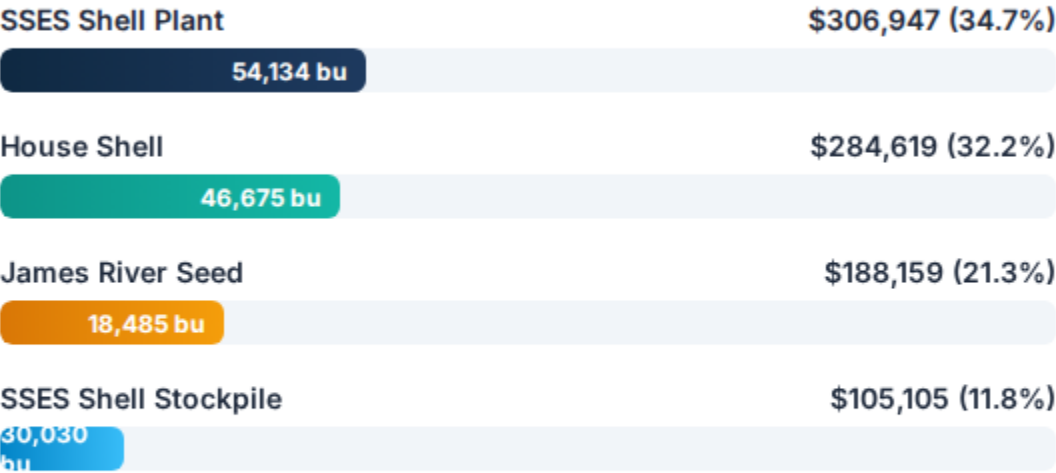
# Shell & Seed Operations Breakdown

| Category / Location                                                                                       | Volume  | Unit    | Amount Paid  | Cost / Bu |
|-----------------------------------------------------------------------------------------------------------|---------|---------|--------------|-----------|
|  1. SSES Shell Stockpile |         |         |              |           |
| Sand Shoal Inlet                                                                                          | 30,030  | Bushels | \$105,105.00 | \$3.50    |
|  2. SSES Shell Plant     |         |         |              |           |
| Pungoteague Creek                                                                                         | 35,714  | Bushels | \$196,427.00 | \$5.50    |
| Pocomoke Sound                                                                                            | 18,420  | Bushels | \$110,520.00 | \$6.00    |
|  3. James River Seed     |         |         |              |           |
| Coan River (HT)                                                                                           | 5,831   | Bushels | \$89,837.75  | \$15.41   |
| Upper Rappahannock / York River                                                                           | 12,654  | Bushels | \$98,321.58  | \$7.77    |
|  4. House Shell        |         |         |              |           |
| Blackberry Hangs / Rappahannock / York River                                                              | 46,675  | Bushels | \$284,618.75 | \$6.10    |
| TOTAL SHELL & SEED PROGRAM                                                                                | 149,324 | Bushels | \$884,830.08 | \$5.93    |

# Spending & Volume Distribution

Category-Level Comparative Analysis

## Financial Investment by Category



SSES Shell Plant and House Shell together comprise 66.9% (\$591.5K) of the total replenishment budget.

## COST EFFICIENCY COMPARISON

### Unit Cost Efficiency (\$ / Bushel)

#### LOWEST UNIT COST

\$3.50

SSES Shell Stockpile  
Sand Shoal Inlet

#### PLANT AVERAGE

\$5.67

SSES Shell Plant  
Pungoteague & Pocomoke

#### HOUSE SHELL COST

\$6.10

House Shell  
Rappahannock / York

#### SEED PREMIUM

\$10.18

James River Seed  
Coan, York & Rappahannock

# Substrate Allocation & Expenditure Summary

Detailed breakdown of crushed granite deployment and financial commitments by location

| Deployment Location         | Substrate Tonnage (Tons) | Total Cost (\$) | Unit Price (\$/Ton) | Tonnage Share (%) |
|-----------------------------|--------------------------|-----------------|---------------------|-------------------|
| Mobjack Bay Sanctuary       | 10,003.65 tons           | \$780,102.70    | \$78.00             | 76.36%            |
| Rappahannock River (Site 1) | 2,601.88 tons            | \$202,946.64    | \$78.00             | 19.86%            |
| Rappahannock River (Site 2) | 495.34 tons              | \$36,655.16     | \$74.00             | 3.78%             |
| TOTAL SUBSTRATE PROGRAM     | 13,100.87 tons           | \$1,019,704.50  | \$77.83 (Avg)       | 100.00%           |

# Long Term Replenishment Overview

Cumulative Data (1993 – 2024)

TOTAL BUSHELS PLANTED

**23.97 M**

VMRC Replenishment (1994–2024)

TOTAL HARVEST VOLUME

**9.68 M**

Public &amp; Private (1993–2024)

AVG ANNUAL PLANTING

**773,115**

Bushels / Year

AVG PUBLIC HARVEST

**117,984**

Bushels / Season

## Key Program Takeaways



**Heavy Investment in Shell Replenishment:** VMRC has planted a total of **23,966,573 bushels** of cultch & seed over 31 years (averaging 773,115 bu/year).



**Total Harvest Yield:** 9,680,465 bushels were harvested from 1993–2024, combining both public grounds and private leases.



**Private Ground Dominance:** Private grounds produced **5.67M bushels (58.6%)** compared to **4.01M bushels (41.4%)** on public grounds.



**Net Replenishment Multiplier:** VMRC plants approximately **6.0x more bushels** on public grounds than the annual public harvest volume.

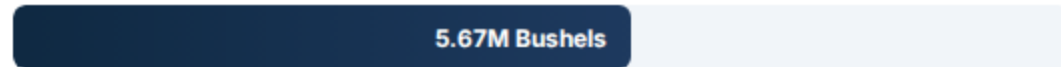


# Total Harvest Breakdown (1993 – 2024)

Public Grounds vs. Private Leases

## Cumulative Harvest Share

Private Grounds Harvest 5,669,008.83 Bu (58.6%)



Public Grounds Harvest 4,011,456.42 Bu (41.4%)



### TOTAL HARVEST CUMULATIVE

**9,680,465.25** Bushels

## PUBLIC GROUND PERFORMANCE

**117,984 Bu / Season**

Average annual commercial harvest harvested directly from public oyster grounds across the 32-season monitoring period.

## PRIVATE GROUND PRODUCTIVITY

**177,156 Bu / Year (Est.)**

Private lease grounds account for the majority (58.6%) of total Virginia oyster harvest, showcasing vital commercial aquaculture contribution.



# VMRC Planting Impact (1993 – 2024)



## Total Bushels Planted

23,966,573

Total volume of shell cultch, spat-on-shell, and seed planted across Virginia waters by VMRC over 32 years.



## Annual Planting Rate

773,115

Average annual replenishment volume deployed annually to sustain public reefs and build future oyster biomass.



## Replenishment Ratio

6.55 : 1

For every 1 bushel harvested on public grounds, VMRC plants 6.55 bushels of replenishment shell/seed.



Program Efficiency: Over three decades, VMRC's active shell planting program (23.97M bu) has significantly outpaced public harvest (4.01M bu), building resilient reef habitat and supporting long-term commercial sustainability.

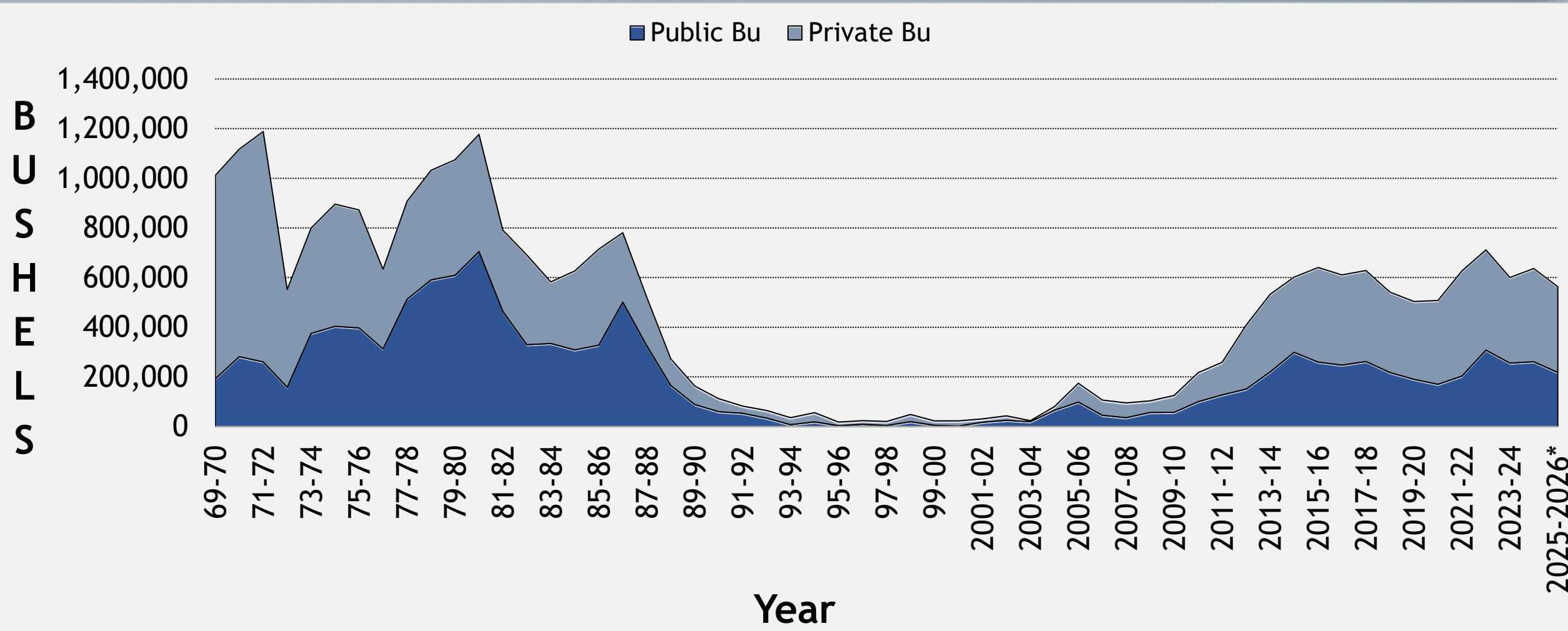


# OVERVIEW OF PROPOSED CHANGES TO SHELLFISH TAGGING REGULATIONS CHAPTER 1250



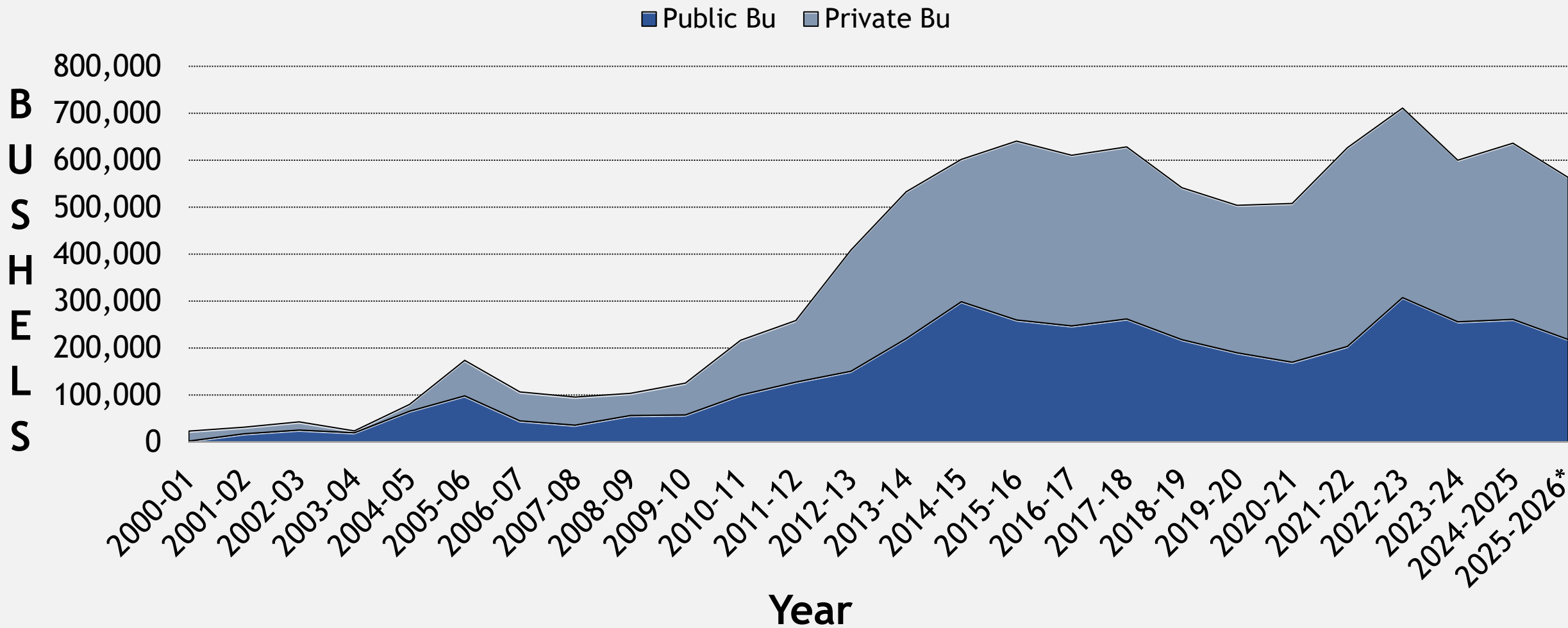
- Going to one tag, combining bulk and harvester, still can use dealer tag or green tags (restricted use shell stock)
- Updated to include VDH growing areas, rather than water bodies
- Updated language and definitions
- Only requires changes to the tags that go on harvested shell stock, no change to other packaging requirements.
- Delay implementation to July 2027

# PUBLIC AND PRIVATE OYSTER HARVEST

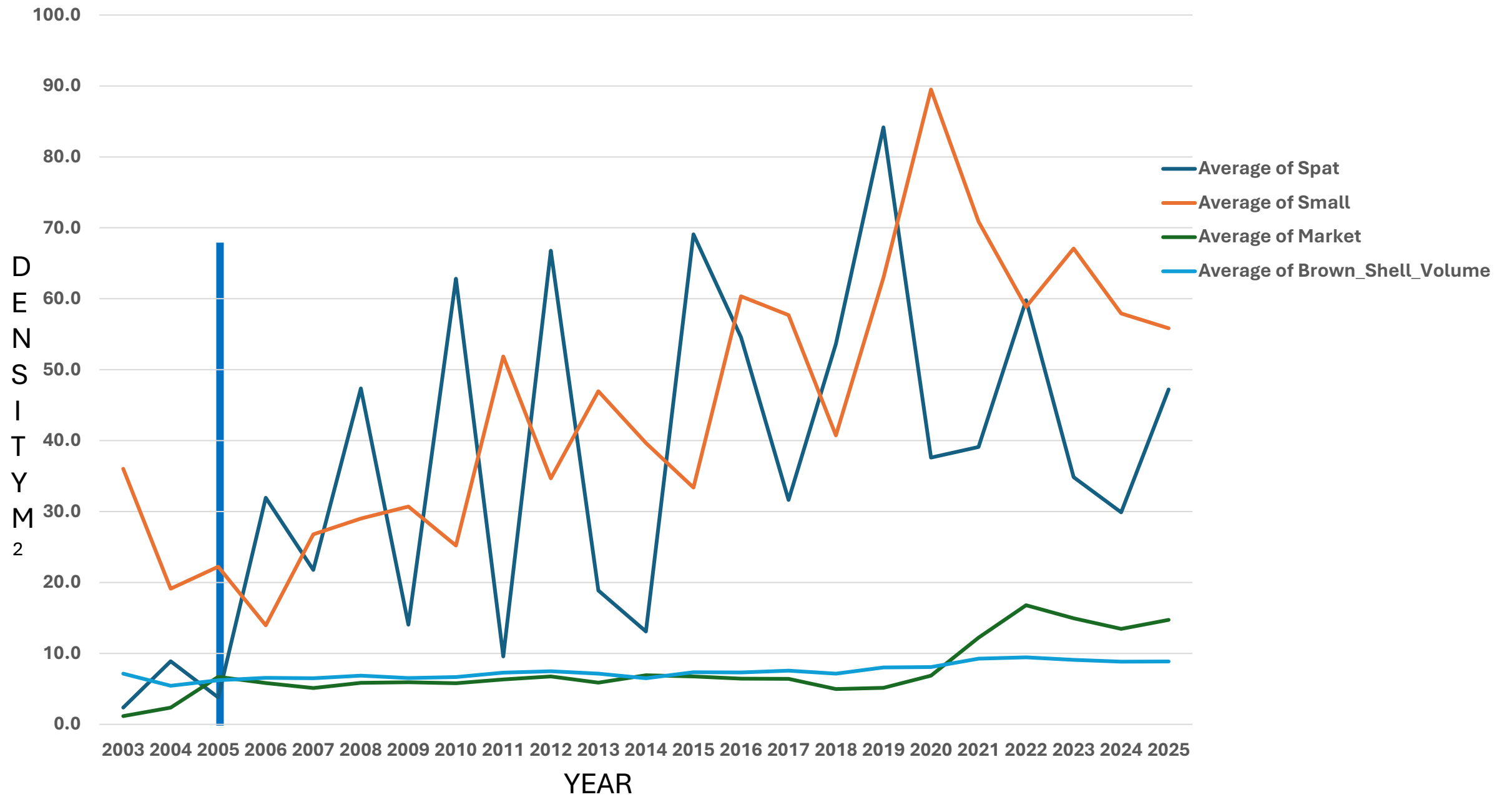


\*Data is preliminary

# PUBLIC AND PRIVATE OYSTER HARVEST



\*Data is preliminary





<https://experience.arcgis.com/experience/bfe5fc08e27b43ef9c63fb271d7b3044/page/Home->

| Approved 2020 - 2021 Public Oyster Harvest Season                                                 |             |         |         |         |                                                                                                                    |         |         |     |
|---------------------------------------------------------------------------------------------------|-------------|---------|---------|---------|--------------------------------------------------------------------------------------------------------------------|---------|---------|-----|
| Area                                                                                              | Oct         | Nov     | Dec     | Jan     | Feb                                                                                                                | Mar     | Apr     | May |
| James                                                                                             |             |         |         |         |                                                                                                                    |         |         |     |
| Clean Cull                                                                                        | HT          | HT      | HT      | HT      | HT                                                                                                                 | HT      | HT      |     |
| Area 1,3                                                                                          | HT          | HS*     | HS      | HS      | HT                                                                                                                 |         |         |     |
| Area 2                                                                                            | HT          | HS*     | HS      | HS      | HT                                                                                                                 |         |         |     |
| Seed Oysters                                                                                      | HT          | HT      | HT      | HT      | HT                                                                                                                 | HT      | HT      | HT  |
| York HTA                                                                                          |             |         | HT      | HT      | HT                                                                                                                 |         |         |     |
| York Area 1                                                                                       | HT          | HT      |         |         | HS*                                                                                                                |         |         |     |
| Milford Haven                                                                                     |             |         | HT      | HT      | HT                                                                                                                 |         |         |     |
| Deep Rk                                                                                           |             |         | PT      | PT      | PT                                                                                                                 |         |         |     |
| Rappahannock                                                                                      |             |         |         |         |                                                                                                                    |         |         |     |
| Area 1                                                                                            |             | PT      |         |         | PT                                                                                                                 | PT**    |         |     |
| Area 6                                                                                            |             | HS*     |         | HS      |                                                                                                                    |         |         |     |
| Area 7                                                                                            |             |         | HS      |         | HS*                                                                                                                |         |         |     |
| Area 9                                                                                            | HT          | HT      | HT      |         |                                                                                                                    |         |         |     |
| Corrotoman HTA                                                                                    | HT          | HT      | HT      |         |                                                                                                                    |         |         |     |
| Great Wicomico 2                                                                                  |             |         | HS      | HS      |                                                                                                                    |         |         |     |
| Blackberry Hangs                                                                                  | PT          |         |         |         | HS*                                                                                                                |         |         |     |
| Little Wicomico                                                                                   | HT          | HT      | HT      |         |                                                                                                                    |         |         |     |
| Coan                                                                                              | HT          | HT      | HT      |         |                                                                                                                    |         |         |     |
| Yeocomico                                                                                         |             |         |         |         |                                                                                                                    |         |         |     |
| PG 8, 100, 107, 112                                                                               | HT          | HT      | HT      |         |                                                                                                                    |         |         |     |
| Tangier-Pocomoke                                                                                  |             |         |         |         |                                                                                                                    |         |         |     |
| Poco Area 2                                                                                       |             |         | DR      | DR      | DR*                                                                                                                |         |         |     |
| Tangier Area 2                                                                                    |             |         | DR      | DR      | DR*                                                                                                                |         |         |     |
| Poco. Sound 9, 10                                                                                 |             |         | HT      | HT      | HS*                                                                                                                |         |         |     |
| Seaside ES                                                                                        |             | By Hand | By Hand | By Hand | By Hand                                                                                                            | By Hand |         |     |
|                                                                                                   |             | HT      | HT      | HT      | HT                                                                                                                 | HT      |         |     |
| HT                                                                                                | HS          |         | DR      |         | PT                                                                                                                 |         | By Hand |     |
| Hand Tong                                                                                         | Hand Scrape |         | Dredge  |         | Patent Tong                                                                                                        |         |         |     |
| * harvest ends at noon                                                                            |             |         |         |         | <b>Online Mandatory Reporting Codes</b><br><br>HT = OT<br>HS = OSCR<br>DR = OYDRD<br>PT = PTOYS<br>BY HAND = OYHND |         |         |     |
| PT** 1st. 2 weeks of month                                                                        |             |         |         |         |                                                                                                                    |         |         |     |
| Bushel Limits                                                                                     |             |         |         |         |                                                                                                                    |         |         |     |
| 8 bushel limit HS/DR/PT - 16 BU. Vessel limit                                                     |             |         |         |         |                                                                                                                    |         |         |     |
| 14 bushel limit HT/By Hand - 28 BU. Vessel limit                                                  |             |         |         |         |                                                                                                                    |         |         |     |
| <a href="https://webapps.mrc.virginia.gov/harvest/">https://webapps.mrc.virginia.gov/harvest/</a> |             |         |         |         |                                                                                                                    |         |         |     |



Virginia Marine Resources Commission

| Emergency Approved 2025 - 2026 Public Oyster Harvest Season                                       |             |         |         |         |                                  |         |         |     |
|---------------------------------------------------------------------------------------------------|-------------|---------|---------|---------|----------------------------------|---------|---------|-----|
| PLEASE CONSULT VMRC REGULATION 4VAC 20-720 PRIOR TO HARVESTING                                    |             |         |         |         |                                  |         |         |     |
| Area                                                                                              | Oct         | Nov     | Dec     | Jan     | Feb                              | Mar     | Apr     | May |
| James                                                                                             |             |         |         |         |                                  |         |         |     |
| Clean Cull                                                                                        | HT*         | HT      | HT      | HT      | HT                               | HT      | HT      | HT  |
| Area 1,2,3                                                                                        | HT*         | HS*     | HS*     | HS*     | HS*                              | HS*     | HT      | HT  |
| White Shoal                                                                                       | HT*         | HS*     | HS*     | HS*     | HS*                              | HT      | HT      | HT  |
| Seed Oysters                                                                                      | HT*         | HT      | HT      | HT      | HT                               | HT      | HT      | HT  |
| York HTA                                                                                          | HT*         | HT      | HT      | HT      | HT                               | HT      |         |     |
| York 1 and 2                                                                                      | HT*         | HT      | HT      | HT      | HT                               | HT      |         |     |
| Mobjack/Piankatank                                                                                | HT*         | HT      | HT      | HT      | HS*                              | HS*     |         |     |
| Milford Haven                                                                                     |             |         | HT      | HT      | HT                               |         |         |     |
| CBPT Area                                                                                         |             | PT*     | PT*     | PT*     | PT*                              | PT*     |         |     |
| Deep Rk                                                                                           |             | PT*     | PT*     | PT*     | PT*                              | PT*     |         |     |
| Rappahannock                                                                                      |             |         |         |         |                                  |         |         |     |
| Area 2                                                                                            |             |         |         |         | HS*                              | HS*     |         |     |
| Area 4                                                                                            | HS*         | HS*     |         |         |                                  |         |         |     |
| Area 7                                                                                            |             |         | HS*     |         |                                  |         |         |     |
| Area 8                                                                                            |             |         |         | HS*     |                                  | HS*     |         |     |
| Area 9                                                                                            | HT*         | HT      | HT      | HT      | HT                               | HT      |         |     |
| Corrotoman HTA                                                                                    | HT*         | HT      | HT      | HT      | HT                               | HT      |         |     |
| Great Wicomico 1                                                                                  |             |         | HS*     |         |                                  |         |         |     |
| Great Wicomico 2                                                                                  |             |         |         | HS*     |                                  |         |         |     |
| Blackberry Hangs                                                                                  |             |         |         |         | HS*                              | HS*     |         |     |
| Little Wicomico                                                                                   | HT*         | HT      | HT      |         |                                  |         |         |     |
| Nomini River                                                                                      | HT*         | HT      | HT      |         |                                  |         |         |     |
| Indian Creek                                                                                      | HT*         | HT      | HT      | HT      | HT                               | HT      |         |     |
| Poco Area 1                                                                                       |             |         | DR*     | DR*     | DR*                              | DR*     |         |     |
| Tangier Area 1                                                                                    |             |         | DR*     | DR*     | DR*                              | DR*     |         |     |
| Tangier Thorofare                                                                                 |             | DR*     |         |         |                                  |         |         |     |
| Poco Area 10                                                                                      | HT*         | HT      | HT      | HT      | HT                               | HS*     | HT      |     |
| Poco Sound HTAs                                                                                   | HT*         | HT      | HT      | HT      | HT                               | HT      | HT      |     |
| Seaside ES                                                                                        |             | By Hand | By Hand | By Hand | By Hand                          | By Hand |         |     |
|                                                                                                   |             | HT      | HT      | HT      | HT                               | HT      |         |     |
| HT                                                                                                | HS          |         | DR      |         | PT                               |         | By Hand |     |
| Hand Tong                                                                                         | Hand Scrape |         | Dredge  |         | Patent Tong                      |         |         |     |
| * harvest ends at noon/ 11am in October                                                           |             |         |         |         | Online Mandatory Reporting Codes |         |         |     |
| Bushel Limits                                                                                     |             |         |         |         | HT = OT                          |         |         |     |
| 8 bushel limit HS/DR/PT - 16 BU. Vessel limit                                                     |             |         |         |         | HS = OSCR                        |         |         |     |
| 14 bushel limit HT/By Hand - 28 BU. Vessel limit                                                  |             |         |         |         | DR = OYDRD                       |         |         |     |
|                                                                                                   |             |         |         |         | PT = PTOYS                       |         |         |     |
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Approved by the Commission on February 24, 2026

| Draft 2026 - 2027 Public Oyster Harvest Season                                                    |             |         |         |         |                                  |         |         |         |
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| James                                                                                             |             |         |         |         |                                  |         |         |         |
| Clean Cull                                                                                        | HT          | HT      | HT      | HT      | HT                               | HT      | HT      | HT      |
| Area 1,2,3                                                                                        | HT HS*      | HS*     | HS*     | HS*     | HS*                              | HT      | HT      | HT      |
| White Shoal                                                                                       | HT          | HT*     | HT*     | HT*     | HT*                              | HT      | HT      | HT      |
| Seed Oysters                                                                                      | HT          | HT      | HT      | HT      | HT                               | HT      | HT      | HT      |
| York HTA                                                                                          | HT          | HT      | HT      | HT      | HT                               | HT      | HT      | HT      |
| York 1 and 2                                                                                      | HT          | HT      | HT      | HT      | HT                               | HT      | HT      | HT      |
| Mobiack/Piankatank                                                                                | HT          | HT      | HT      | HT      | HT                               | HT      | HT      | HT      |
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| CBPT Area                                                                                         |             | PT*     | PT*     | PT*     | PT*                              |         |         |         |
| Deep Rk                                                                                           |             | PT*     | PT*     | PT*     | PT*                              |         |         |         |
| Rappahannock                                                                                      |             |         |         |         |                                  |         |         |         |
| Area 1                                                                                            |             |         | PT*     | PT*     | PT*                              | HS*     |         |         |
| Area 6                                                                                            | PT*         | HS*     |         |         | HS*                              |         |         |         |
| Area 7                                                                                            | HT          | PT*     | HS*     |         | HS*                              | HT      | HT      | HT      |
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| Great Wicomico 1                                                                                  |             |         | HS*     | HS*     |                                  |         |         |         |
| Great Wicomico 2                                                                                  |             |         | HS*     | HS*     |                                  |         |         |         |
| Blackberry Hangs                                                                                  |             |         |         | HS*     | HS*                              |         |         |         |
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| Nomini River                                                                                      | HT          | HT      | HT      | HT      | HT                               | HT      | HT      | HT      |
| Indian Creek                                                                                      | HT          | HT      | HT      | HT      | HT                               | HT      | HT      | HT      |
| Poco Area 2                                                                                       |             |         | HS*     | HS*     | HS*                              |         |         |         |
| Tangier Area 2                                                                                    |             |         | DR*     | DR*     | DR*                              |         |         |         |
| Tangier Thoroughfare                                                                              |             |         |         |         |                                  |         |         |         |
| Poco Area 11                                                                                      | HT          | HT      | HT      | HT      | HT HS*                           | HT      | HT      | HT      |
| Poco Sound HTAs                                                                                   | HT          | HT      | HT      | HT      | HT                               | HT      | HT      | HT      |
| Seaside ES                                                                                        |             | By Hand | By Hand | By Hand | By Hand                          | By Hand | By Hand | By Hand |
| HT                                                                                                | HS          |         | DR      |         | PT                               |         |         |         |
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|                                                                                                   |             |         |         |         | BY HAND = OYHND                  |         |         |         |



