

**Maryland Department of Natural Resources**  
**2022 Annual Report required by HB 841 (2019) to the Aquaculture Coordinating Council,**  
**Chesapeake Bay Program, and Maryland General Assembly on Submerged Aquatic**  
**Vegetation and Shellfish Leasing – MSAR 12263**

**Introduction**

In accordance with HB 841, Chapter 238 from the 2019 Legislative Session, the Department of Natural Resources (Department) is required to submit an annual report that addresses the following:

- The farm-level and cumulative impacts that placing shellfish, bags, nets, or structures on submerged aquatic vegetation, with prior written approval from the Department, had on submerged aquatic vegetation and leaseholders;
- The number of leases that have submerged aquatic vegetation present in the lease area and the species, density, and aerial extent of submerged aquatic vegetation in those leases; and
- Characteristics of gear types and the nature and frequency of aquaculture practices used on leases where submerged aquatic vegetation is present.

**Maryland Law – Shellfish Aquaculture Leasing and Submerged Aquatic Vegetation**

Natural Resources Article §4-11A-01 prohibits the issuance of a shellfish lease in a Submerged Aquatic Vegetation Protection Zone, defined as an area of submerged aquatic vegetation mapped in aerial surveys by the Virginia Institute of Marine Science in one or more of the five years preceding the application for lease.

In June 2019, Natural Resources Article §4-11A-10(c) was revised to provide that a leaseholder may not “place shellfish, bags, nets, or structures on submerged aquatic vegetation *without prior written approval from the department* [emphasis added]”. Accordingly, a leaseholder may not work in an area of their lease where submerged aquatic vegetation exists unless they receive prior written approval from the Maryland Department of Natural Resources.

This change in law provides the Department the authority and ability to accept and evaluate requests from leaseholders to work within areas of their respective leases where submerged aquatic vegetation exists. Under these circumstances, and in accordance with the law, the Department assesses each request to determine the impact to the leaseholder from restrictions due to submerged aquatic vegetation, the potential impact of the proposed shellfish aquaculture activities on submerged aquatic vegetation, and works with the leaseholder to develop an appropriate work plan when possible. However, effective June 30, 2024 this provision reverts to the previous language

and removes the Department’s authority to authorize any placement of “shellfish, bags, nets, or structures on submerged aquatic vegetation” on a shellfish aquaculture lease.



The 2019 revisions to the law require the Department to provide an annual report to the Aquaculture Coordinating Council, Chesapeake Bay Program, and Maryland General Assembly on the farm-level and cumulative impacts that “placing bags, nets, or structures on submerged aquatic vegetation”, with prior written approval from the Department, had on submerged aquatic vegetation, the number of leases that have submerged aquatic vegetation present, and the characteristics of gear types and frequencies of aquaculture practices used on leases where submerged aquatic vegetation is present.

### ***Authorizing the Placement of Shellfish, Bags, Nets or Structures on Submerged Aquatic Vegetation***

- As outlined in the provisions established in Natural Resources Article §4-11A-10(c), the Department may approve the placement of shellfish, bags, nets or structures on submerged aquatic vegetation within the boundaries of a lease when conditions warrant this activity, and, in doing so, the Department:
  - “May not authorize harvesting by dredge in areas where submerged aquatic vegetation is present.”
  - “Shall authorize for water column leases the placement of shellfish, bags, nets or structures in at least 10% of the area where submerged aquatic vegetation is present.”
  - “Shall authorize harvest by diving in areas on any submerged land lease where submerged aquatic vegetation is present.”

### **Farm-Level and Cumulative Impacts of Submerged Aquatic Vegetation and Shellfish Lease Interactions: 2022**

During calendar year 2022, 46 of 479 total shellfish aquaculture leases were identified as potentially having submerged aquatic vegetation within their footprint based on the 2020 aerial imagery from the Virginia Institute of Marine Science’s annual submerged aquatic vegetation survey<sup>12</sup>. Three of the 46 impacted leases were water column leases with the remaining 43 being

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<sup>1</sup> Patrick, C.J., Wilcox, D.J., Whiting, J.R., Kenne, A.K., and E.R. Smith. 2020 Distribution of Submerged Aquatic Vegetation in Chesapeake Bay and Coastal Bays. December 2021. Virginia Institute of Marine Science, William & Mary, Gloucester Point, VA 23062.

<sup>2</sup> There is typically a two-year lag between availability of imagery data from the Virginia Institute of Marine Science and its use in identifying potential submerged aquatic vegetation-lease conflicts in Maryland state waters due to the quality control and quality assurance protocols used to ensure accurate imagery data. For this reason, the Department uses this imagery data only as a tool to aid in identifying potential conflicts (along with Department-led field surveys and other reports of submerged aquatic vegetation).

submerged land leases. Impacted leases were limited to Dorchester County, St. Mary's County, Talbot County, and Worcester County.

The conflicts from submerged aquatic vegetation varied widely among leases and ranged from 0.004% to 100% of a leased area (mean=25.4%; median=17.3%). In terms of absolute area, this range was 0.0002 to 8.1 acres of conflict (mean=1.4 acres; median=0.85 acres). Overall, submerged aquatic vegetation covered 65.5 acres of the 288.9 acres (22.7%) that make up the 46 impacted leases.

In 2022, the Department conducted field surveys on 38 of the 46 shellfish leases where submerged aquatic vegetation was identified by the Virginia Institute of Marine Science's aerial survey. Eight leases were excluded for a variety of reasons including: adjustments of GIS data, minimal impact of a leased area due to irregular lease polygons, Departmental knowledge of absence of submerged aquatic vegetation based on recent field visits, etc. These surveys were conducted to confirm the presence, extent, and species of submerged aquatic vegetation that may be present in the area defined by these leases. A summary is depicted below and further information can be found in Appendix A:

- 38 leases surveyed;
  - Three water column and 35 submerged land leases;
- Submerged aquatic vegetation confirmed on 34 leases;
  - Three water column leases and 31 submerged land leases;
- Widgeon Grass was the dominant species present;
  - 33 out of 34 leases;
- Eel Grass was found on one (water column) lease;
- Restrictions placed for CY2023; restrictions on usage were all based on time of year.
  - 31 leases were restricted for CY2023;
    - 28 submerged land leases;
      - 24 partial and four full restrictions;
    - Three water column leases;
      - Three partial restrictions; and

In cases where conditions warrant establishing a lease usage restriction, the Department uses field survey data to map the extent of submerged aquatic vegetation within the lease and makes a determination on whether a general, partial, or full-lease restriction is required to protect submerged aquatic vegetation. A full-usage restriction is only established when submerged aquatic vegetation coverage on a lease is so extensive that there are no open areas large enough to effectively work the lease. Partial restrictions require a leaseholder to avoid working in a particular mapped area of submerged aquatic vegetation. General restrictions are put in place when some grass is found but is sporadic enough not to initiate a partial restriction and requires a leaseholder to avoid any operations that may impact grasses, if they find any. In partial and full-lease restrictions, usage restrictions are only in effect during the submerged aquatic vegetation growing season. This provides the leaseholder the opportunity to work their lease at other times. Currently restrictions for the presence of widgeon grass occur April 15 through October 31, and restrictions for eelgrass occur from March 15 through June 15 and from October 1 through December 31.

During these times the only allowable use of the restricted area is harvest by diving and only on submerged land leases.

2022 marks the first year the Department received a request from leaseholders to “place shellfish, bags, nets or structures in areas of submerged aquatic vegetation” that were found to be growing within their leases. This request came from one of three water column leases impacted by submerged aquatic vegetation restrictions. On August 04, 2022, staff from the Department’s Aquaculture and Industry Enhancement Division confirmed the presence of submerged aquatic vegetation (widgeon grass) growing on a portion of Shellfish Aquaculture Lease DO 723 (Choptank River, Dorchester County). As a result, the leaseholder was issued a seasonal usage restriction impacting 1.1 acres of the lease for April 15–October 31, 2023. Additionally, in accordance with Natural Resources Article § 4-11A-10(c-1)(2), the department authorized the leaseholder to deploy no more than 4,792 square feet (10% of the 1.1 acres) of gear in the restricted area during that time frame. The leaseholder was provided the opportunity to request an increase in the authorized usable area of the restricted portion of the lease above the 10% initially authorized in their restriction letter, which they did.



In their request letter, the lease holder indicated they would need to deploy an additional 624 floats in the seasonally restricted area to keep up with demand, which would be 11,232 sq. ft. of gear. Twenty-five percent of the 1.1 acre restricted area is 11,979 sq ft. and would meet their needs. This lease is located just outside of a large persistent widgeon grass bed (see Appendix B) and the grass has advanced into the long-established lease area.

On February 28, 2023, Department staff met with the leaseholder on their farm to discuss the request to increase the authorized usable area of the restricted portion of the lease. During discussion, the leaseholder described light sensors (Appendix C) that will be received and deployed on the lease in the impacted areas as part of a pilot study with contacts at Stony Brook University. Department staff explained that they were interested in obtaining data relevant to submerged aquatic vegetation and aquaculture interactions during this growing season (2023). The limitations of

developing and executing a rigorous formal study given the timeframe of farm operations and logistics of funding such a study make developing a formal study difficult prior to the Department’s authority being removed by statute (per Chapter 238 of 2019), but Department staff are confident valuable and relevant data may still be obtained in the time frame allotted. For these reasons, on March 17, 2023, the Department authorized the leaseholder placing approved

aquaculture gear in up to 25% of the impacted area (Appendix B). At the time of this report, no data have been analyzed regarding the impact of the authorized activity on the impacted area.

## Appendix A

*Table 1: 2022 Submerged Aquatic Vegetation & Lease Interactions*

Lease Number	Lease Type	Water Body	Lease Area (acres)	Acres Impacted (VIMS 2020 Survey)	Field Survey Date	Species Found	2023 Restriction Dates
DO678	SLL	Little Choptank River	6.6	0.54	July 20	None	None
DO680	SLL	Little Choptank River	0.4	0.20	July 20	None	None
DO717	SLL	Little Choptank River	13.5	0.17	July 20	None	None
DO723	WC	Choptank River	4.1	0.10	August 4	Widgeon Grass	April 15–October 31
DO728	WC	Long Cove	6.3	3.29	June 21	Widgeon Grass	April 15–October 31
SM525	SLL	Jutland Creek	3	0.51	June 13	Widgeon Grass	April 15–October 31
SM527	SLL	Smith Creek	5.7	0.83	June 13	Widgeon Grass	April 15–October 31
SM590	SLL	St. Clements Bay	1.3	0.35	June 13	Widgeon Grass	April 15–October 31

<b>Lease Number</b>	<b>Lease Type</b>	<b>Water Body</b>	<b>Lease Area (acres)</b>	<b>Acres Impacted (VIMS 2020 Survey)</b>	<b>Field Survey Date</b>	<b>Species Found</b>	<b>2023 Restriction Dates</b>
SM711	SLL	St. Inigoes Creek	5	1.49	June 13	Widgeon Grass	April 15–October 31
SM719	SLL	St. George Creek	7.1	2.58	June 14	Widgeon Grass	April 15–October 31
SM753	WC	Herring Creek	4.5	0.35	N/A	N/A	N/A
SM792	WC	St. Clements Bay	0.4	0.12	N/A	N/A	N/A
TA506	SLL	Irish Creek	3	1.31	July 14	Widgeon Grass	April 15–October 31
TA508	SLL	Irish Creek	15	8.10	July 14	Widgeon Grass	April 15–October 31
TA510	SLL	Irish Creek	5.8	0.01	N/A	N/A	N/A
TA511	SLL	Haskins Cove	5	0.97	July 14	Widgeon Grass	April 15–October 31
TA520	SLL	Leadenham Creek	2	1.17	June 22	Widgeon Grass	April 15–October 31
TA521	SLL	Leadenham Creek	2	0.17	June 22	Widgeon Grass	None

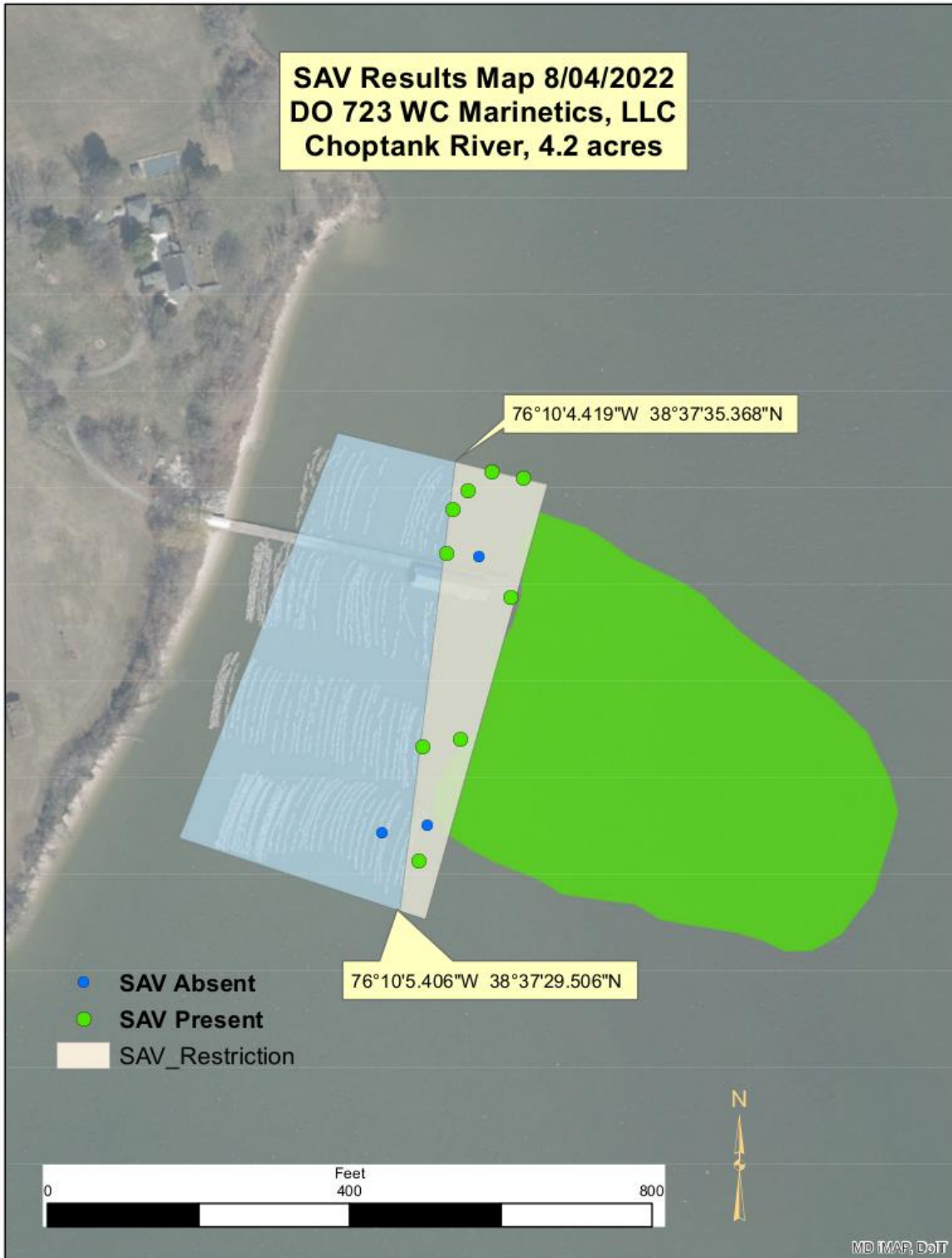
<b>Lease Number</b>	<b>Lease Type</b>	<b>Water Body</b>	<b>Lease Area (acres)</b>	<b>Acres Impacted (VIMS 2020 Survey)</b>	<b>Field Survey Date</b>	<b>Species Found</b>	<b>2023 Restriction Dates</b>
TA523	SLL	Leadenham Creek	3	0.12	July 11	Widgeon Grass	April 15–October 31
TA525	SLL	Tred Avon River	10	0.94	July 28	Widgeon Grass	April 15–October 31
TA535	SLL	Plaindealing Creek	7.5	1.32	July 28	None	None
TA547	SLL	Cummings Creek	3	0.87	June 28	Widgeon Grass	April 15–October 31
TA549	SLL	Harris Creek	5	5.84	June 28	Widgeon Grass	April 15–October 31
TA551	SLL	Harris Creek	17.5	0.27	N/A	N/A	N/A
TA552	SLL	Harris Creek	5	0.57	June 28	Widgeon Grass	April 15–October 31
TA555	SLL	Harris Creek	7.9	0.03	N/A	N/A	N/A
TA558	SLL	Balls Creek	10	0.88	June 22	Widgeon Grass	April 15–October 31
TA559	SLL	Balls Creek	6.2	0.25	July 11	Widgeon Grass	April 15–October 31
TA562	SLL	Broad Creek	8	3.08	July 11	Widgeon Grass	April 15–October 31



<b>Lease Number</b>	<b>Lease Type</b>	<b>Water Body</b>	<b>Lease Area (acres)</b>	<b>Acres Impacted (VIMS 2020 Survey)</b>	<b>Field Survey Date</b>	<b>Species Found</b>	<b>2023 Restriction Dates</b>
TA563	SLL	Broad Creek	3	0.69	June 24	Widgeon Grass	April 15–October 31
TA567	SLL	Broad Creek	6	0.39	July 11	Widgeon Grass	April 15–October 31
TA571	SLL	Broad Creek	4	0.41	June 24	Widgeon Grass	None
TA574	SLL	San Domingo Creek	5	4.53	June 29	Widgeon Grass	April 15–October 31
TA575	SLL	San Domingo Creek	5	1.30	June 29	Widgeon Grass	April 15–October 31
TA578	SLL	San Domingo Creek	5	1.43	June 29	Widgeon Grass	April 15–October 31
TA579	SLL	San Domingo Creek	5	2.35	June 29	Widgeon Grass	April 15–October 31
TA580	SLL	San Domingo Creek	12.5	0.56	June 29	Widgeon Grass	None
TA581	SLL	Edge Creek	5	7.12	July 14	Widgeon Grass	April 15–October 31

<b>Lease Number</b>	<b>Lease Type</b>	<b>Water Body</b>	<b>Lease Area (acres)</b>	<b>Acres Impacted (VIMS 2020 Survey)</b>	<b>Field Survey Date</b>	<b>Species Found</b>	<b>2023 Restriction Dates</b>
TA585	SLL	Trippe Creek	10	4.87	July 28	Widgeon Grass	April 15–October 31
TA586	SLL	Trippe Creek	5	0.41	July 28	Widgeon Grass	April 15–October 31
TA588	SLL	Broad Creek	7	0.93	June 24	Widgeon Grass	April 15–October 31
TA602	SLL	Elberts Cove	18.4	1.71	N/A	N/A	N/A
TA607	SLL	Irish Creek	5.6	0.0002	N/A	N/A	N/A
TA608	SLL	Edge Creek	5.3	1.05	July 14	Widgeon Grass	April 15–October 31
TA622	SLL	Miles River	10.3	0.009	N/A	N/A	N/A
WO576	WC	Martin Bay	3	1.36	May 18	Eel Grass	Mar 15–Jun 15 & Oct 1–Dec 31

Appendix B



Map of DO723 in the Choptank River, Dorchester County, Md. Green area depicts a large area of widgeon grass that has been present for several years.

## Appendix C



PME miniPAR logger leaseholder plans to deploy to SAV-impacted area of shellfish aquaculture lease. The miniPAR logger is a submersible light sensor capable of measuring and recording photosynthetically active radiation in seawater.

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