

Existing Chesapeake Bay Watershed Statutes and Regulations Affecting Submerged Aquatic Vegetation



Photo by Will Parson/Chesapeake Bay Program



501 Sixth Street, Annapolis, MD 21403 • (410) 216-9441 • www.chesapeakelegal.org

Introduction

Submerged aquatic vegetation (SAV) is underwater grass, vital to the ecosystems of the Chesapeake Bay and its tidal tributaries. SAV not only provides habitat for countless aquatic species, but it also reduces shoreline erosion, improves water clarity, reduces carbon dioxide through photosynthesis, and oxygenates the waters in which it lives.¹ Recognizing SAV as a vital resource in restoring and protecting the health of the Bay, the Chesapeake Bay Program and its SAV Workgroup have created goals for the management and increase of the Bay's SAV populations. The Bay Program's long-term goal is to grow and sustain 185,000 acres of SAV Bay-wide.² The Bay Program hopes to achieve 130,000 acres of SAV toward that goal by 2025.³

This report identifies current statutes, regulations, and policies that protect and affect Chesapeake Bay's SAV and that of its tidal tributaries.⁴ By understanding what currently exists, readers may draw comparisons and better understand the different laws, regulations, and policies that affect SAV, as well as how those laws, regulations, and policies might be changed to better help the Bay Program meet its SAV-related goals. This report includes federal law, statutes and regulations from Maryland, Virginia, Delaware, and Washington D.C., as well as an overview of

¹ Chesapeake Bay Program, Submerged Aquatic Vegetation Outcome; Management Strategy 2015-2025, v.2, 1. https://www.chesapeakebay.net/documents/22042/2018-2019_sav_management_strategy.pdf.

² *Id.* at 2. In legal citations “*id.*” indicates the information can be found in the immediately preceding source.

³ *Id.*

⁴ A statute is passed by a legislative body and is usually broad in scope. *The Basics of the Regulatory Process*, Env'tl. Prot. Agency, <https://www.epa.gov/laws-regulations/basics-regulatory-process> (last visited Mar. 21, 2019). A regulation is created by a state or federal agency, is usually specific, and needs an enabling statute. *Id.* An agency cannot simply decide to create a regulation, the agency must be able to identify a statute that gives them authority to create a regulation. *Id.* A policy is the internal procedure that an agency follows—it can either be formal or informal. Internal agency policies should comport with relevant statutes and regulations. *Policy & Guidance*, Env'tl. Prot. Agency, <https://www.epa.gov/laws-regulations/policy-guidance> (last visited Mar. 21, 2019). When possible, the statutes and regulations cited in these footnotes are linked to Appendix B, which lists each statute and regulation by jurisdiction and topic, and provides a brief description of each. If you are reading this document on a computer, please hover your mouse over the citation you wish to know more about – it will provide you with directions to press “control” and click on the link to take you to the relevant section of Appendix B.

SAV-related laws from Florida for a comparison of how a jurisdiction outside of the Bay Watershed handles the resource.

For the purposes of keeping this report relevant, Chesapeake Legal Alliance and/or its partners may update it to reflect changes in law and/or policy. The last time this report was updated was on July 24, 2019.

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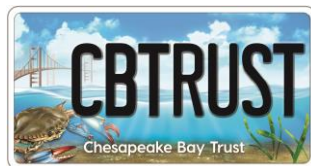


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I. Submerged Aquatic Vegetation Defined

In order to understand how SAV is protected and/or affected by current statutes and regulations, it is first necessary to know how each Bay jurisdiction defines SAV. Maryland, Virginia, Delaware, and Washington D.C. all have at least one definition for the term “submerged aquatic vegetation,” and those definitions influence the breadth and effect of all the statutes and regulations that will be discussed in this paper.⁵ In most cases, the broader a jurisdiction’s definition of SAV is, the broader the range of SAV any applicable statute or regulation will protect.

Maryland statutes and regulations define SAV in three different ways; the most scientific definition calls SAV a vascular hydrophyte that lies entirely beneath the water with specific species examples.⁶ Another, less scientific regulation defines SAV as rooted vascular plants that grow beneath the water’s surface.⁷ Finally, the last definition is broad, defining SAV as vascular or nonvascular, rooted or unrooted, and lying beneath the surface, except for some flowering species.⁸

Virginia regulations also contain multiple definitions of SAV. The first defines SAV as underwater plants found in shoal areas, while providing numerous examples.⁹ The second definition is similar to Maryland’s less scientific definition, defining SAV as rooted vascular plants, while also providing multiple examples of SAV species.¹⁰ This type of list helps clarify what counts as SAV, but is not exhaustive. The Virginia Marine Resources Commission has also

⁵ D.C. Mun. Regs. tit. 21, § 1499 (1994) ; 7 DEL. ADMIN. CODE § 7501-3.0 (2014); 7 DEL. ADMIN. CODE § 3801-2.0 (2014); MD. CODE REGS. 26.24.01.02 (2019) (reflecting the currentness date, not the last amended date); MD. CODE REGS. 26.08.01.01 (2018); 4 VA. ADMIN. CODE § 20-337-10 (2000); 4 VA. ADMIN. CODE § 20-1130-20 (2007).

⁶ MD. CODE REGS. 26.24.01.02 (2019). This reflects the currentness date, not the last amended date.

⁷ MD. CODE REGS. 26.08.01.01(2018).

⁸ MD. CODE ANN., NAT. RES. § 4-213 (2000).

⁹ 4 VA. ADMIN. CODE § 20-337-10 (2000).

¹⁰ 4 VA. ADMIN. CODE § 20-1130-20 (2007).

developed guidelines to define SAV beds and potential restoration areas.¹¹ Pursuant to these guidelines, SAV beds shall include all those areas of SAV identified and annually mapped by the Virginia Institute of Marine Science (VIMS) during at least 1 of the previous 5 years.¹² Such beds will be considered a “stand of SAV.”¹³ Potential areas for SAV restoration shall include all those areas of SAV identified and annually mapped by VIMS during at least 1 of the previous 10 years, and areas shall include any area specifically set aside for SAV restoration or protection by the Commission.¹⁴

Washington D.C. defines SAV as a vascular or nonvascular hydrophyte, rooted in hydrosol and lying beneath the surface, except for some flowering species,¹⁵ while Delaware’s regulations contain two definitions of SAV: the first is simply any rooted, vascular, submerged plant.¹⁶ The second is more specific, defining SAV as vascular plants rooted in sediment and growing on or below the water surface.¹⁷ This definition also explicitly excludes emergent wetland species.¹⁸

Recommendations: While there are certainly times when narrow, specific definitions for SAV are necessary, narrow and/or multiple definitions can lead to confusion and/or regulations and policies (or sections and subsections of the same) that work against each other, both within a single state, as well as in transjurisdictional regulatory schemes. A uniformed and broad definition of SAV encourages clarity in the enactment of legislation, public policy, and natural

¹¹ VA. CODE ANN. § 28.2-1204.1 (1999).

¹² VA. MARINE RES. COMM’N, SUBMERGED AQUATIC VEGETATION GUIDANCE: CRITERIA DEFINING SAV BEDS AND DELINEATING AREAS WHERE THERE IS POTENTIAL FOR SAV RESTORATION 2, http://www.mrc.state.va.us/regulations/Guidance_for_SAV_beds_and_restoration_final_approved_by_Commission_7-22-17.pdf.

¹³ *Id.*

¹⁴ *Id.*

¹⁵ D.C. Mun. Regs. tit. 21, § 1499 (1994).

¹⁶ 7 DEL. ADMIN. CODE § 3801-2.0 (2014).

¹⁷ 7 DEL. ADMIN. CODE § 7501-3.0 (2014).

¹⁸ *Id.*

resource management. Therefore, broad, uniform definitions for SAV should be encouraged and implemented when appropriate.

II. Removal

Removal of SAV is exactly what it sounds like—taking existing SAV out of the water. Well-regulated removal of SAV minimizes the negative environmental impact on SAV beds, while simultaneously allowing for the growth and expansion of the underwater grasses.

In Maryland, the Department of Natural Resources (DNR) requires an individual who wishes to remove SAV to submit a permit application describing why the removal is necessary, the proposed method of removal, a site plan, and the extent of SAV to be removed.¹⁹ The statute excludes individuals harvesting fish, shellfish, or crabs from those requirements, as well as individuals, organizations, and government agencies involved in the construction, operation, or maintenance of agricultural drainage channels.²⁰ Furthermore, the statute permits individuals to remove a 60-foot strip of SAV for navigation/boating access purposes, and a public utility company to remove a 60-foot wide strip in order to maintain utility crossings without prior DNR approval.²¹

Similarly, Virginia mandates obtaining a permit from the Virginia Marine Resources Commission (VMRC) to remove (or plant) SAV. VMRC considers the following factors in the permit approval process: location, type of soil, currents, and likelihood of success.²² Virginia's statute contains strong language regarding the purpose of these considerations:

¹⁹ MD. CODE ANN., NAT. RES. § 4-213 (2000). This section of code specifies that the authorization required under it “*is in addition* to any other permit or license required by law.” *Id.* § 4-213(h). Therefore, any removal of SAV that is the result of other regulated activities, such as dredging, would be subject to further federal and state requirements.

²⁰ *Id.*

²¹ *Id.* A public utility company is not limited to 60 feet in the case of emergency investigations or repair work. *Id.*

²² 4 VA. ADMIN. CODE § 20-337-30 (2000).

A. Submerged aquatic vegetation (SAV) is an important natural resource that provides a variety of ecological functions, including stabilizing sediments, physically baffling wave energy, reducing water column turbidity, recycling water column nutrients, and providing high levels of primary and secondary production. SAV is considered to be of extremely high habitat value to commercially and recreationally important species of fish and shellfish, and is considered to be the primary settling habitat for young blue crabs in the Chesapeake Bay. SAV is estimated to have historically covered approximately 600,000 acres of the entire Bay. However, severe declines were noted in the 1960s and 1970s, likely due to increasing nutrient and sediment inputs from development within the watershed. Natural revegetation has occurred in some areas, yet many areas remain either completely unvegetated, sparsely vegetated, or contain lower diversity of species than what occurred historically. As of 1998, SAV covered only about 63,000 acres of the Bay.

B. The commission's Subaqueous Guidelines, in effect since 1976, stress the need to avoid impacts to SAV when permitting projects over state-owned bottom. In addition, since 1987, various governmental agencies around the Bay have adopted policies and laws to help protect and restore SAV from further loss. In an effort to mitigate the unavoidable impacts of permitted projects on SAV and assist interested parties in designing SAV restoration projects, the Virginia Institute of Marine Science (VIMS) has developed general and specific criteria for transplantation activities designed to enhance or restore the Bay's SAV resources. These guidelines are designed to ensure that any such proposed activities have the highest likelihood of success while minimizing the potential for adversely impacting this sensitive and valuable marine resource.²³

This strong and thorough “Background,” or purpose section of the statute serves to emphasize the importance of SAV to Virginia’s waters, while leaving no doubt as to the intent behind the permit approval process.

Lastly, in Washington D.C., the Department of Consumer and Regulatory Affairs Director is responsible for SAV permit removal approval.²⁴ Similar to Maryland, there is an exception to fish, shellfish, and crab harvesting.²⁵ Proposed SAV removal plans must include a

²³ 4 VA. ADMIN. CODE § 20-337-20 (2000).

²⁴ D.C. Mun. Regs. tit. 21, § 1401 (1994).

²⁵ D.C. Mun. Regs. tit. 21, § 1402 (1994). There is also an exception for certain discharges that are regulated under different permits, as well as for recreational activities that might incidentally affect SAV. *Id.*

location, purpose of removal, and maps identifying areas of SAV.²⁶ The Director may approve the plan only if the project is necessary to: (1) provide reasonable access to navigable waters; (2) provide reasonable opportunities for water-based recreational activities; and (3) manage the living aquatic resources of D.C. waters.²⁷ Moreover, the Director must consider the duration of the project and its consistency with acceptable natural resource management policies.²⁸ Other considerations for approval may include: the purpose, timing, and extent of removal; potential impacts to other living aquatic resources; the method and location of disposal; the overall benefit of the project; and the opinions of affected property owners.²⁹

Recommendations: One way to increase the effectiveness of the above statutes and regulations is to include a strongly worded purpose section in Maryland's and D.C.'s relevant statutes and regulations. Compare Virginia's extensive "Background" section, quoted above, to Washington D.C.'s, whose removal regulation states that the purpose is "to provide for the management of submerged aquatic vegetation."³⁰ Maryland's removal statute, for further comparison, does not contain a purpose section at all.

Virginia's long and strongly worded section provides historical, environmental, and scientific context as well as clear intent. Regulatory agencies and courts can look to this section to discern legislative intent, which can help guide policy development and implementation, as well as statutory and regulatory interpretation, all in ways that help the proliferation and health of SAV.

²⁶ D.C. Mun. Regs. tit. 21, § 1403 (1994).

²⁷ D.C. Mun. Regs. tit. 21, § 1404 (1994).

²⁸ *Id.* Whether or not a proposed project is consistent with acceptable natural resource management practices is as determined by the Director. *Id.*

²⁹ *Id.*

³⁰ D.C. Mun. Regs. tit. 21, § 1400 (1994).

III. Dredging and Filling

Like removal, dredging and filling may harm existing SAV beds and prevent the growth of SAV in the Bay and its tributaries. Dredging is “the removal of sediments and debris from the bottom of lakes, rivers, harbors, and other water bodies.”³¹ As sand and silt (sedimentation) wash downstream, settling on the bottom of rivers and channels, dredging may be necessary to ensure safe passage of boats or to remove toxic sediments from the bottom of a waterbody.³² Filling, on the other hand, is the processes of depositing sediment into water bodies, usually for construction purposes.³³ While both activities may prove detrimental to the growth and spread of SAV, both are heavily regulated at the federal and state level. The federal laws discussed below apply as a base level of regulation - state legislatures may add additional, or stricter regulations to dredging and filling, but state-specific laws cannot exempt activities from *at least* meeting federal requirements.

A. Federal Law

At the federal level, both the Clean Water Act and the Rivers and Harbors Act govern dredging and filling of wetlands and navigable waters in the United States.

1. The Clean Water Act

The Clean Water Act (“CWA”) is a federal law that regulates the discharge of pollutants into the nation’s waterways.³⁴ The objective of the CWA is to restore and maintain the United States’ waterways’ chemical, physical and biological integrity by preventing and reducing water pollution through wastewater treatment, maintaining wetland integrity, and regulating pollution

³¹ *What is Dredging?*, NAT’L OCEANIC & ATMOSPHERIC ADMIN., <https://oceanservice.noaa.gov/facts/dredging.html> (last visited Mar. 22, 2019).

³² *Id.*

³³ 33 C.F.R. § 323.2(f) (2008).

³⁴ 33 U.S.C. §1251 et seq. (1972). This date reflects when Congress enacted the Clean Water Act.

permits.³⁵ In order to meet this objective, the CWA establishes water quality criteria that water bodies, including those that make up the Chesapeake Bay and its rivers and tributaries, must meet.³⁶ CWA Sections 404 and 401 regulate dredging and filling nationwide. In order to understand how those sections affect SAV in the Chesapeake Bay and its tributaries, it is first important to understand what waters the CWA has jurisdiction over. If a waterbody or wetland falls outside of the definition of “waters of the United States,” none of the regulations or policies contained in the CWA will apply to it.³⁷ Unfortunately, what is and is not a “water of the United States” is not an easy or clear analysis.

a. Waters of the United States

The text of the CWA states that its regulations encompass “waters of the United States,” (WOTUS) but the Act fails to define this term.³⁸ The Environmental Protection Agency (EPA) has promulgated regulations to clarify this term, but the lack of definition within the CWA has led to much discussion and litigation over what waters fall under CWA authority.

In 1986, the EPA issued a rule attempting to clarify the scope of “waters of the United States” (“1986 Rule”).³⁹ Two Supreme Court cases then attempted to interpret the 1986 Rule, *SWANCC v. Army Corps of Engineers*, and *Rapanos v. United States*.⁴⁰ *Rapanos* created the most commonly used test of a “significant nexus.”⁴¹ Under this test, a waterbody may be a

³⁵ 33 U.S.C. § 1251(a) (1987).

³⁶ See 33 U.S.C. § 1313 (2000) (explaining how states create water quality criteria).

³⁷ See 33 U.S.C. § 1251(a)(1) (1987) (“[I]t is the national goal that the discharge of pollutants into *navigable waters* be eliminated by 1985.”) (emphasis added); 33 U.S.C. § 1362(7) (2019) (“The term ‘navigable waters’ means the waters of the United States, including the territorial seas.”).

³⁸ 33 U.S.C. § 1251(a)(1) (1987). See also 33 U.S.C. § 1362 (2019) (defining navigable waters as waters of the United States, but not defining waters of the United States).

³⁹ *Waters of the United States (WOTUS) Rulemaking*, ENVTL. PROT. AGENCY, <https://www.epa.gov/wotus-rule/about-waters-united-states> (last visited Mar. 22, 2019).

⁴⁰ See generally *Solid Waste Agency of N. Cook Cty. v. U.S. Army Corps. of Eng’rs*, 531 U.S. 159 (2001); *Rapanos v. U.S.*, 547 U.S. 715 (2006).

⁴¹ *Rapanos*, 547 U.S. at 742.

“water of the United States” if it has a “significant nexus” to traditionally navigable water.⁴² *Rapanos* was complicated, however, because the Justices were unable to agree on a majority opinion and instead issued a 4-1-4 decision.⁴³ Because the Court’s decision was split and two different tests were discussed, some lower courts have used the test outlined in Justice Scalia’s opinion which uses the “continuous surface connection” test.⁴⁴ Under this second test, seasonal streams and some isolated wetlands may be excluded from CWA jurisdiction, leading to less federal regulation.

To attempt to remedy this confusion, EPA finalized a new WOTUS rule in 2015 (“2015 Rule”). This rule created three categories of water: (1) not a water of the US; (2) jurisdictional by rule; and (3) jurisdictional if a significant nexus exists.⁴⁵ A water is jurisdictional by rule if it is located within 1500 feet of the high tide line or the Ordinary High Water Mark (OHWM) of the Great Lakes (adjacent waters), a river, stream, tributary, interstate water, wetland, or territorial sea.⁴⁶ Jurisdictional by rule waters also include five types of isolated wetlands: prairie potholes, Carolina and Delmarva Bays, Pocosins, western vernal pools, and Texas coastal prairie wetlands.⁴⁷ The waters that are jurisdictional by significant nexus, on the other hand, are determined case by case.⁴⁸ The 2015 Rule favors a scientific and legal analysis, eliminating all references to water that have an effect on interstate commerce (goes to *SWANCC* and *Rapanos*),

⁴² *Id.*

⁴³ *See generally id.* (containing multiple opinions, none of which five justices agreed on).

⁴⁴ *Id.* at 717.

⁴⁵ “WATERS OF THE UNITED STATES” WOTUS: CURRENT STATUS OF THE 2015 CLEAN WATER RULE, CONG. RESEARCH SERV. 2–3 (Dec. 2018), https://www.everycrsreport.com/files/20181212_R45424_0e40d77c4246e4ca5760991d8a7a1fac88d7be85.pdf.

⁴⁶ *Id.*

⁴⁷ *Id.* at 3.

⁴⁸ *Id.*

and leaving less room for different interpretations.⁴⁹ It also provides for broader federal regulation than the 1986 Rule.

To make things even more complicated, however, there is also a new rule proposed by EPA that would now narrow the scope of what is considered “navigable water” and, therefore, the types of waterways that the CWA applies to. In June 2017, EPA and the Army Corps of Engineers released a pre-publication proposed rule to repeal the 2015 Clean Water Rule regulation.⁵⁰ This action came after President Trump signed an Executive Order in February 2017 ordering the agencies to review the regulation and consider interpreting the scope of jurisdiction the agencies have over waterways.⁵¹ Trump’s Executive Order is consistent with the opinion of Justice Antonin Scalia in *Rapanos v. United States*.⁵² These actions would reduce the scope of authority the agencies have over waterways throughout the country.⁵³ The EPA and the Army Corps of Engineers are currently in the rulemaking process to implement Trump’s Executive Order.

On December 11, 2018, EPA and the Army Corps of Engineers proposed this revised definition of “waters of the united states.” The proposed rule was published in the Federal Register on February 14, 2019 and will be open for public comment until April 15, 2019.⁵⁴ This rulemaking process will take at least a year to complete and the results will likely be highly litigated, leaving the definition of “waters of the United States” in continued question.

⁴⁹ *Id.* at 4.

⁵⁰ *Waters of the United States (WOTUS) Rulemaking: Step Two – Revise*, ENVTL. PROT. AGENCY, <https://www.epa.gov/wotus-rule/step-two-revise> (last visited Mar. 22, 2019).

⁵¹ Exec. Order No. 13778, 82 Fed. Reg. 12,497 (Feb. 28, 2017).

⁵² *Id.*

⁵³ *Rapanos v. U.S.*, 547 U.S. 715 (2006).

⁵⁴ To learn more about how to submit comments on the proposed WOTUS Rule, visit EPA’s website here: <https://www.epa.gov/wotus-rule/step-two-revise>. (Last visited March 22, 2019). You may also contact CLA to learn more about options for drafting comments and/or signing on to other organization’s comment letters.

While the new WOTUS Rule works its way through the rulemaking process, the 2015 Rule remains in effect in 22 states (including NY, PA, MD, DE, D.C., and VA) and U.S. territories. In all other jurisdictions (including WV), state agencies will go back to enforcing a guidance document from 2008, which creates a complicated analysis when deciding whether a waterway is subject to federal oversight for pollution control purposes.⁵⁵ This leads to uncertainty about what would be considered a water of the U.S. that the 2015 Rule’s scientific analysis works to avoid.

b. Clean Water Act Section 404

Section 404 of the Clean Water Act (“CWA”) creates laws for the dredging and filling of wetlands and other United States’ water bodies. The Army Corps of Engineers administers the permitting program, with some EPA oversight. Pursuant to Sections 404(g) and (h) of the CWA, states have the ability to take over the permitting program if the state program is found by EPA to meet the requirements of the federal program;⁵⁶ only Michigan and New Jersey have 404 permit programs. The federal government operates the CWA permitting in every other state and D.C. Most states, including the Bay jurisdictions, have their own additional requirements applicable to SAV protection, including protection from possible adverse effects from dredging - those laws are discussed below.

⁵⁵ CLEAN WATER ACT JURISDICTION FOLLOWING THE UNITED STATES SUPREME COURT’S DECISION IN RAPANOS VAUNTED STATES & CARABELL VAUNTED STATES, ENVTL. PROT. AGENCY 1 (Dec. 2008), https://www.epa.gov/sites/production/files/2016-02/documents/cwa_jurisdiction_following_rapanos120208.pdf. The guidance states that agencies should assert jurisdiction over traditionally navigable waters, wetlands adjacent to traditional navigable waters, non-navigable tributaries of navigable waters that are relatively permanent, and wetlands that directly abut such tributaries. *Id.* The agencies decide using a fact based analysis whether to assert jurisdiction over non-navigable tributaries that are not relatively permanent, wetlands adjacent to non-navigable tributaries that are not relatively permanent, and wetlands adjacent to but do not directly abut a relatively permanent non-navigable tributary. *Id.* Under this guidance, agencies will not exert control over swales, erosional features, or ditches. *Id.* Finally, the document defines the significant nexus analysis as assessing flow characteristics and functions of the tributary and functions of adjacent wetlands to determine if they significantly affect the chemical, physical, and biological integrity of downstream traditional navigable waters. *Id.*

⁵⁶ 33 U.S.C. § 1344 (1987).

First, Section 404 creates a permit program, which makes it illegal to remove material (often soil) from a wetland or waterway or fill/dump material (often soil) into a wetland or waterway without a permit.⁵⁷ This program protects SAV by preventing individuals from removing SAV roots while dredging or filling. SAV may still be negatively impacted by dredging and filling, but the permitting process helps to minimize harm by regulating when, how, and why it is done. The Army Corps of Engineers has authority to approve or deny permits, and looks at several factors including economic impact on navigation, public interests,⁵⁸ water quality concerns and wetlands impacts.⁵⁹ SAV preservation may be factored into water quality, wetlands impacts, and public interest concerns.⁶⁰ More specifically, EPA has designated “vegetated shallows”⁶¹ as “special aquatic sites,” to which impacts need to be considered under the 404 permitting scheme, because of their important role in the marine ecosystem for nesting, spawning, nursery cover, and forage areas for fish and wildlife.⁶²

There are some exceptions under which someone does not need a federal, or state if applicable,⁶³ permit to dredge or fill.⁶⁴ Some of these exceptions include normal farming,

⁵⁷ *Id.*

⁵⁸ 33 C.F.R. § 323.6 (2011).

⁵⁹ 33 C.F.R. § 336.1 (2011).

⁶⁰ *See* 33 C.F.R. § 336.1(b)(5) (2011) (stating that the EPA Administrator can prohibit or restrict an area as a discharge site, if after the notice and comment process and consulting with the Secretary of the Army that discharging the materials would have an unacceptable adverse impact on shellfish beds, fishery areas, wildlife, or recreation areas); § 336.1(b)(8) (requiring the Army Corp of Engineers to get a State Water Quality Certification, where the Corps must ensure the discharge complies with state water quality standards); § 336.1(c)(2) (listing water quality as an evaluation factor, requiring the district engineer to consider the water quality impacts of the project); § 336.1(c)(4) (establishing wetlands as an evaluation factor because “[m]ost wetland areas constitute a productive and valuable public resource, the unnecessary alteration or destruction of which should be discouraged as contrary to the public interest”); § 336.1(c)(8) (creating a fish and wildlife evaluation factor when the Fish and Wildlife Coordination Act applies).

⁶¹ EPA defines vegetated shallows as “permanently inundated areas that under normal circumstances support communities of rooted aquatic vegetation, such as turtle grass and eelgrass in estuarine or marine systems as well as a number of freshwater species in rivers and lakes.” 40 C.F.R. § 230.43(a) (2019). This date reflects a currentness date, not the last updated date.

⁶² 33 C.F.R. § 336.1(b)(5) (2011); § 336.1(b)(8); § 336.1(c)(2); § 336.1(c)(4); § 336.1(c)(8).

⁶³ As mentioned above, only Michigan and New Jersey have a federal authorized state permitting program under § 404 of the CWA.

silviculture (tree growing), and ranching activities, as well as those resulting in incidental or *de minimis* materials.⁶⁵ This means farming and logging activities do not need a permit.⁶⁶ Furthermore, if an activity fills a wetland with “incidental fallback,” or very small amounts of fill material (soil), then that activity does not need a permit.⁶⁷

Recommendations: Section 404 of the Clean Water Act also creates factors for ocean disposal of dredged materials.⁶⁸ A similar regulation might prove protective of Bay SAV if applied to non-ocean fill (fill disposed in non-ocean waters). One evaluation factor under the ocean disposal section considers the environmental impact of the dredged materials.⁶⁹ If applied to non-ocean fill, this may help protect SAV, as dredged materials may “unreasonably endanger” the marine environment and ecological systems,⁷⁰ which practically includes SAV. However, in order for this to happen, Congress would likely need to either pass a new law or amend the CWA to include language that applied these factors outside of ocean dumping.

c. Clean Water Act Section 401

Section 401 of the CWA applies to “discharges” into waters of the United States.⁷¹ It requires that any applicant for a federal license that may result in a discharge submit a certification by the state where the discharge will occur that the discharge will comply with the

⁶⁴ 33 C.F.R. § 323.4 (2012).

⁶⁵ *Id.*

⁶⁶ *Id.*

⁶⁷ *Id.*

⁶⁸ 33 C.F.R. § 336.2 (2011).

⁶⁹ 33 C.F.R. § 336.2(d)(1) (“In addition to the . . . factors of § 336.1(c), activities involving the transportation of dredged material for the purpose of disposal in ocean waters will be evaluated by the Corps to determine whether the proposed disposal will unreasonably degrade or endanger . . . the marine environment, ecological systems or economic potentialities.”).

⁷⁰ *Id.*

⁷¹ 33 U.S.C. § 1362(12) (2019) (defining a “discharge of a pollutant” as “any addition of any pollutant to navigable waters from any point source,” or “any addition of any pollutant to the waters of the contiguous zone or the ocean from any point source other than a vessel or other floating craft”).

applicable provisions of the CWA, including water quality standards.⁷² The certification may include conditions and requirements, including monitoring and reporting, deemed necessary to ensure compliance. The certification becomes part of the federal license or permit, and the licensing agency may not change it.

In addition to ensuring compliance with the statutorily enumerated provisions of the CWA (§§ 1311, 1312, 1313, 1316, and 1317), states must certify compliance with “any other appropriate requirement of State law.”⁷³ Courts have interpreted this provision to mean that all state water quality standards must be satisfied.⁷⁴ In addition, courts have upheld states’ certification decisions based on non-quantitative standards such as the protection of aquatic life and shellfish habitat.⁷⁵ The 401 certification process can therefore be a powerful tool for states to help protect SAV.

A recent example of the intersection of SAV and Section 401 is the Conowingo Dam case. The Dam is an Exelon project across the Susquehanna River in Maryland just below the Pennsylvania border, including a hydroelectric power plant. Exelon is seeking a renewal of its operating license from FERC under the Federal Power Act. On April 27, 2018, the MDE issued a CWA 401 certification for the project. Several environmental groups have joined the administrative appeal process, and have argued, *inter alia*, that the certification does not properly account for effects of sediment and nutrients on SAV. The resolution of the case could have precedential value for the extent to which states use CWA 401 to protect SAV.

Recommendations: The flexibility of 401 certification allows for innovative approaches tailored to specific geographic regions. It may be worth reviewing whether all local states are

⁷² 33 U.S.C. § 1341 (1977).

⁷³ *Id.* § 1341(d).

⁷⁴ *See, e.g.*, PUD No. 1 of Jefferson Co. v. Washington Dep’t of Ecology, 511 U.S. 700 (1994).

⁷⁵ *See, e.g.*, AES Sparrows Point LNG v. Wilson, 589 F.3d 721, 733 (4th Cir. 2009); Islander E. Pipeline Co., LLC v. McCarthy, 525 F.3d 141 (2d Cir. 2008).

appropriately using the 401 certification process as a tool for protecting SAV. There may be opportunities to more broadly integrate review under 401 to include impacts to SAV.

2. Rivers and Harbors Act

The Rivers and Harbors Act is older than the Clean Water Act, and environmentalists used this act prior to the CWA to help prevent water pollution. The Act creates a permitting system that requires a person to obtain a permit before building anything that may limit navigation, adding materials to a waterway, or removing (dredging) materials from a waterway.⁷⁶ The Act also prevents anyone from putting any solid into a navigable waterway, from land or a boat, without a permit.⁷⁷

The Rivers and Harbors Act regulations state that the permitting also applies to federal agencies, meaning a federal agency must get a permit if the act requires a permit for the activity.⁷⁸ The regulations contain a “Special Policies” section that outlines in detail the different factors the Corps should weigh when approving and denying permits for different activities in different situations.⁷⁹ These include permits for: non-federal dredging (considerations include public interest, changes in turbidity and water quality), structures for small boats (considerations include preventing obstructing navigation), canals and other artificial waterways (considerations include if it will alter existing navigable waters), and power transmission lines (considerations include clearance over the navigable channel).⁸⁰

⁷⁶ 33 U.S.C. § 403 (1899).

⁷⁷ 33 U.S.C. § 407 (1899). There is one older provision in the Act specific to Maryland and New York, allowing dredging on US owned water bottom (most of the Chesapeake) as long as the Chief of Engineers believed it would improve navigation. *See* 33 U.S.C. § 465 (1930).

⁷⁸ 33 C.F.R. § 322.3 (2011).

⁷⁹ *Id.*

⁸⁰ *Id.*

3. Permitting under Federal Law

It is important to note that both the Clean Water Act and the Rivers and Harbors Act require that all applicable permits be issued in compliance with other federal statutes and regulations. One such statute is the Magnuson-Stevens Fishery Conservation and Management Act, which requires federal agencies to consult with the National Marine Fishery Services (NMFS) on projects that may adversely affect essential fish habitat (EFH).⁸¹ This process is guided by the requirements of a federal EFH regulation which mandates the preparation of EFH assessments and generally outlines each agency's obligations in this consultation procedure.⁸² For example, in areas of the Chesapeake Bay where EFH is designated for summer flounder, SAV is designated as a habitat area of particular concern (HAPC) for summer flounder.⁸³ HAPCs are subsets of EFH identified based on one or more of the following considerations: (1) the importance of the ecological function, (2) the extent to which the habitat is sensitive to human-induced degradation, 3) whether and to what extent, development activities are stressing the habitat type, or 4) rarity of habitat type.⁸⁴

⁸¹ 16 U.S.C. § 1855 (2000); 50 C.F.R. § 600.905 (2019). This date reflects a currentness date, not the last updated date.

⁸² 50 C.F.R. § 600.905 (2019). This date reflects a currentness date, not the last updated date.

⁸³ *See id.* *See also* CHESAPEAKE BAY PROGRAM, CHESAPEAKE BAY SUMMER FLOUNDER FISHERY MANAGEMENT PLAN (1991), <https://nepis.epa.gov/Exe/ZyNET.exe/50000N6A.TXT?ZyActionD=ZyDocument&Client=EPA&Index=1991+Thru+1994&Docs=&Query=&Time=&EndTime=&SearchMethod=1&TocRestrict=n&Toc=&TocEntry=&QField=&QFieldYear=&QFieldMonth=&QFieldDay=&IntQFieldOp=0&ExtQFieldOp=0&XmlQuery=&File=D%3A%5Czyfiles%5CIndex%20Data%5C91thru94%5CTxt%5C00000005%5C50000N6A.txt&User=ANONYMOUS&Password=anonymous&SortMethod=h%7C-&MaximumDocuments=1&FuzzyDegree=0&ImageQuality=r75g8/r75g8/x150y150g16/i425&Display=hpfr&DefSeekPage=x&SearchBack=ZyActionL&Back=ZyActionS&BackDesc=Results%20page&MaximumPages=1&ZyEntry=1&SeekPage=x&ZyPURL#> (including SAV as an important habitat area for summer flounder).

⁸⁴ 50 CFR 600.815(a)(8)

B. State Laws

In addition to the federal overlay described above, Delaware, Maryland, and Virginia also have laws and regulations for projects that impact wetlands and waterways, including dredging and filling.

1. Delaware

Delaware prohibits dredging if it will have a significant or lasting impact on a biologically productive area.⁸⁵ The regulation specifies “submerged aquatic vegetation” as part of a biologically productive area.⁸⁶ Overall, in Delaware a person cannot dredge, or obtain a permit to dredge,⁸⁷ if it will harm SAV.

2. Maryland

Maryland has regulations for dredging that consider SAV protection in the maintenance or new dredging of existing navigation channels, canals, or boat basins.⁸⁸ A proposed dredging project should be designed to first avoid impacts to SAV and, if the impacts are unavoidable, they must be minimized.⁸⁹ As part of the project proposal, an application submitted to MDE must depict the alignment of the project as well as current SAV populations within and surrounding the project area.⁹⁰ Disposal of the dredged material in open water must avoid and minimize adverse impacts to SAV.⁹¹

⁸⁵ 7 DEL. ADMIN. CODE § 7504-4.0 (2014).

⁸⁶ *Id.*

⁸⁷ *Id.* (“The following types of dredging projects are prohibited.”); *id.* (“Dredging of biologically productive areas, such as nursery areas, shellfish beds, and submerged aquatic vegetation, if such dredging will have a significant or lasting impact on the biological productivity of the area.”).

⁸⁸ MD. CODE REGS. 26.24.03.01 (2019); MD. CODE REGS. 26.24.03.02 (2019). These dates reflect the currentness date, not the last updated date.

⁸⁹ MD. CODE REGS. 26.24.03.02 (2019). This date reflects the currentness date, not the last updated date.

⁹⁰ *Id.*

⁹¹ MD. CODE REGS. 26.24.03.05 (2019). This date reflects the currentness date, not the last updated date.

Further, MDE considers impacts to SAV in its tidal wetland license and permitting process. A tidal wetland permit is required for anyone in Maryland who is constructing or reconstructing a structure, or dredging, within a tidal wetland.⁹² If the wetland is a State owned wetland, the applicant must acquire a State Tidal Wetlands License.⁹³ The license allows someone to undertake broader wetlands work, allowing someone to fill a shallow water area, manage shoreline control structures, dredge for maintenance, build a boat ramp, and other common construction associated with shorelines.⁹⁴ If the wetland is privately owned, the applicant must acquire a Private Tidal Wetlands Permit.⁹⁵ The SAV-related evaluation criteria for both are the same.⁹⁶ However, the conditions for the issuance of each vary.⁹⁷

The regulation states that MDE cannot issue a license for piers, decks, walkways, or related structures if it would adversely affect SAV or if the structure would be located over SAV.⁹⁸ However, the department could simply decide that the impact to SAV is not adverse, and issue the permit.⁹⁹ Further, non-water dependent structures cannot be located on an area of SAV.¹⁰⁰ For example, if a developer wished to build a shopping mall, typically a non-water dependent project, in a wetland, then the mall could not be located on an area of existing SAV. The State will not grant the permit to fill the wetland or SAV occupied area.

⁹² MD. CODE REGS. 26.24.02.01 (2019). This date reflects the currentness date, not the last updated date.

⁹³ MD. CODE REGS. 26.24.02.04 (2019). This date reflects the currentness date, not the last updated date.

⁹⁴ MD. CODE REGS. 26.24.02.01 (2019). This date reflects the currentness date, not the last updated date.

⁹⁵ MD. CODE REGS. 26.24.02.04 (2019). This date reflects the currentness date, not the last updated date.

⁹⁶ See MD. CODE REGS. 26.24.02.03 (2019). This date reflects the currentness date, not the last updated date.

⁹⁷ MD. CODE REGS. 26.24.02.06 (2019). This date reflects the currentness date, not the last updated date.

⁹⁸ MD. CODE REGS. 26.24.04.02 (2019). This date reflects the currentness date, not the last updated date.

⁹⁹ *Id.*

¹⁰⁰ MD. CODE ANN., ENVIR. § 16-104 (2013).

For both a tidal wetland permit or license, MDE evaluates how allowing construction or dredging would impact potential SAV growth in the area.¹⁰¹ Specifically in regards to dredging, MDE considers how a proposed dredging project would adversely impact existing SAV populations located within or adjacent to the project during the review process. Under any authorization issued by MDE for dredging, there may be a number of special conditions that limit or restrict the project - such as prohibiting dredging to occur during a particular calendar period (April 15 to October 15) or occurring within 500 yards of an SAV bed.¹⁰²

Furthermore, if MDE determines that it is “necessary to preserve and protect State wetlands and to serve the public interest,” it can recommend that certain construction projects and activities only happen during certain times of the year to help protect SAV.¹⁰³ Other restrictions or prohibitions may be placed on the authorization after coordinating with other State and federal agencies entrusted to protect SAV populations such as Maryland DNR or NMFS.¹⁰⁴ In short, an applicant for dredging must avoid and minimize impacts to SAV prior to issuance of the State authorization.¹⁰⁵ If those impacts to existing SAV are unavoidable but can be authorized, MDE may require mitigation as a condition of approval and execution of the authorization.¹⁰⁶

¹⁰¹ MD. CODE REGS. 26.24.02.03 (2019). This date reflects the currentness date, not the last updated date.

¹⁰² MD. CODE REGS. 26.24.02.06(H) (2019). This date reflects the currentness date, not the last updated date.

¹⁰³ See, e.g., MD. CODE REGS. 23.02.04.14(H) (2019) (“Time of Year Restriction. The Department may recommend and the Board may require that a licensed structure be constructed or activity be performed only during certain time periods to assure protection of fish spawning and nursery habitat, shellfish habitat, or submerged aquatic vegetation, or to avoid public recreational conflicts.”); MD. CODE REGS. 26.24.02.06 (2019) (allowing MDE to prohibit dredging at certain times throughout the year). These dates reflect the currentness dates, not the last updated dates.

¹⁰⁴ See, e.g., Md. Code Regs. 26.24.02.02(H) (2019). This date reflects the currentness date, not the last updated date. See also *Maryland Environmental Regulations*, MD. DEP’T ENV’T, <https://mde.maryland.gov/programs/Regulations/Pages/index.aspx> (last visited Mar. 22, 2019) (“MDE’s regulatory function occurs through a coordinated effort....The review process helps to ensure participation from within MDE as well as from our stakeholders, other agencies, the general public, and other units affected by our regulations. Areas of involvement may include regional public meetings, public hearings, media publications, etc.”).

¹⁰⁵ MD. CODE REGS. 26.24.03.02 (2019). This date reflects the currentness date, not the last updated date.

¹⁰⁶ MD. CODE REGS. 26.24.05.01 (2019). This date reflects the currentness date, not the last updated date.

In other words, the regulations allow an applicant to dredge or fill tidal wetlands as long as avoidance and minimization and a project purpose and need has been achieved and the applicant adheres to a specific set of conditions. While dredging can be prohibited if certain requirements are not met, when authorized, dredging can occur with the adherence to specific time of year work prohibitions that limit any potential adverse effects on aquatic resources such as fish, birds, or adjacent wetlands and SAV. The presence of SAV within the area to be dredged may not result in a prohibition; it may be authorized with the applicant mitigating for the loss or adverse impacts to SAV.

It is worth noting that pursuant to current MDE policy, this requirement is only implemented when the applicant is seeking to dredge an area containing SAV that has no previous history of dredging. If an applicant is seeking to dredge an area with SAV that was previously dredged, and MDE has a record of “maintenance dredging”¹⁰⁷ in that area, it is current state policy to not require mitigation for any SAV removal resulting from further dredging.¹⁰⁸

3. Virginia

Virginia also has a number of different regulations affecting dredging and SAV. Virginia Code section 28.2-1205 requires that the presence of SAV be considered as a factor for any permit issued for use of State-owned submerged lands.¹⁰⁹ First, if someone is disposing of sandy dredged material, that person should choose a disposal location that has the least environmental

¹⁰⁷ “Maintenance Dredging” means the removal or displacement by any means of soil, sand, gravel, shells, or other material, whether or not of intrinsic value, from any State or private tidal wetlands, that restores a navigation channel, marina, or mooring basin to depths confirmed after 1972. MD. CODE REGS. 26.24.01.02(B)(28) (2019). This date reflects the currentness date, not the last updated date.

¹⁰⁸ This is agency policy only and is not found in statute or regulation.

¹⁰⁹ VA. CODE ANN. § 28.2-1205(A)(6) (2005).

impact.¹¹⁰ Part of that consideration includes the project’s potential impacts on existing natural resources and habitats, including submerged aquatic vegetation.¹¹¹ Next, if there is a permit application for special mining activities, the State Water Control Board will not grant the permit if the activities would harm SAV.¹¹² This regulation does not allow the Board to grant a permit under certain conditions; it forbids granting the permit if the activities would harm SAV.¹¹³ Additionally, the State Water Control Board will not grant a permit for a linear transportation project¹¹⁴ if the project would occur in a SAV bed.¹¹⁵ Here again, the Board cannot grant a permit in certain circumstances – the Board must deny a permit if there is dredging in SAV areas.¹¹⁶ Virginia also regulates where someone can place fill sand under a Living Shoreline permit, forbidding placing the fill material on SAV.¹¹⁷ Finally, Virginia prohibits dredging in any area of SAV or within 200 meters of SAV in the Chincoteague Bay and Assateague Channel and Bay.¹¹⁸

Recommendations: Virginia’s prohibition of dredging in certain areas of the Chincoteague and Assateague Bays could serve as model language if applied to areas of the Chesapeake Bay. Any prohibition on dredging in particularly sensitive areas of the Bay serves to encourage the growth of and protect existing SAV.

¹¹⁰ 4 VA. ADMIN. CODE § 20-400-50 (2018).

¹¹¹ *Id.*

¹¹² 9 VA. ADMIN. CODE § 25-690-40 (2018) (“Coverage under this VWP general permit shall not be granted for . . . [d]redging of shellfish areas, submerged aquatic vegetation beds, or other highly productive areas.”).

¹¹³ *Id.*

¹¹⁴ A linear transportation project is “a project for the construction, expansion, modification or improvement of...but not limited to, roadways, railways, trails, bicycle and pedestrian paths, and airport runways and taxiways.... Nonlinear features commonly associated with transportation projects...[include] vehicle maintenance or storage buildings, parking lots, train stations, or aircraft hangars are not included in this definition.” 9 VA. ADMIN. CODE § 25-680-10 (2016).

¹¹⁵ 9 VA. ADMIN. CODE § 25-680-40 (2016).

¹¹⁶ *Id.* (“Coverage under this VWP general permit shall not be granted for . . . [d]redging of shellfish areas, submerged aquatic vegetation beds, or other highly productive areas.”).

¹¹⁷ 4 VA. ADMIN. CODE § 20-1330-40 (2017).

¹¹⁸ 4 VA. ADMIN. CODE § 20-1000-30 (2018).

4. State Laws Specific to Marinas, Piers, Boathouses, and Other Structures

Virginia, Delaware, and Maryland have laws regarding new and existing marinas. As seen in the preceding sections, these laws impact SAV by preventing certain marina activities and expansions. First, a Virginia regulation creates a siting checklist for new marinas; the state is more likely to approve a new marina if no SAV is present at the proposed location.¹¹⁹

A Delaware regulation also has several factors the Department of Natural Resources and Environmental Control considers before approving a new marina.¹²⁰ The regulation lists SAV as a prominent factor because of its value as a habitat and ability to filter pollutants; marina applicants must demonstrate that they are avoiding short and long term impacts to SAV, that they have minimized unavoidable impacts to SAV, and that the piers will avoid shading SAV. Furthermore, compensation to offset impacts to SAV may apply.¹²¹

A Maryland regulation states that if the presence of a new marina or marina expansion would adversely impact SAV, the marina cannot be located there.¹²² A separate Maryland regulation specifically prohibits the expansion of a working marina (for seafood) if it will adversely impact SAV.¹²³ Laws and regulations regarding piers and other structures constructed within tidal wetlands are written to allow for their placement over areas of SAV while minimizing the potential for adverse impacts such as limiting the pier width to six feet.¹²⁴ However, MDE regulations cannot issue an authorization for a platform to be constructed over SAV and new boathouses are prohibited from being constructed entirely; repair and maintenance

¹¹⁹ 4 VA. ADMIN. CODE § 20-360-90 (1988).

¹²⁰ 7 DEL. ADMIN. CODE § 7501-11.0 (2014).

¹²¹ *Id.*

¹²² MD. CODE REGS. 26.24.04.03 (2019). This date reflects the currentness date, not the last updated date.

¹²³ MD. CODE ANN., ENVIR. § 16-107 (2011).

¹²⁴ MD. CODE REGS. 26.24.04.02 (2019). This date reflects the currentness date, not the last updated date.

of existing, functional boathouses is allowed.¹²⁵ Relocating an existing boathouse out of SAV or shallow water habitat known to support SAV is encouraged over dredging. Non-water dependent structures, defined in MD regulations, are prohibited from being constructed unless the local jurisdiction’s zoning, subdivision, and other ordinances have first been amended and are consistent or more restrictive than MD law and involve a commercial activity.¹²⁶ When allowed, the non-water dependent structure may not be located over SAV.

Moreover, Maryland also may require mitigation for dredging in some circumstances. MDE may recommend, and the Board of Public Works “may require mitigation for unavoidable adverse environmental effects or loss of State wetlands caused by a licensed structure or activity.”¹²⁷ As previously noted, applicants seeking to dredge a new boat channel or marina with SAV present may be required to mitigate for the lost resource; currently no mitigation is required for areas impacting SAV with a record of “maintenance dredging.” Most often, the form of mitigation utilized is a fee based on the square footage of SAV impacted, multiplied by \$75,000/acre.¹²⁸

Recommendations: One way to better protect SAV in Maryland under the above statutes, regulations, and policies, is to change internal MDE policy that only requires a person to apply for a license to dredge an area (and therefore meet all the licensing requirements regarding SAV) if the area has never been dredged before. This policy establishes a loophole in which those wishing to dredge an area that has a record of maintenance dredging may do so without concern to the SAV in the area. Changing this policy to require a license for every dredging operation,

¹²⁵ *Id.*

¹²⁶ MD. CODE ANN., ENVIR. § 16-104 (2013); MD. CODE REGS. 26.24.01.02(B)(37) (2019). The date in MD. CODE REGS. 26.24.01.02 reflects the currentness date, not the last updated date.

¹²⁷ MD. CODE REGS. 23.02.04.14(D)(1) (2019). This date reflects the currentness date, not the last updated date.

¹²⁸ The current \$75,000 per acre fee for mitigation is not from Statute or Regulation; it is an MDE policy.

including those with records of maintenance dredging, would close that loophole, requiring the applicant to minimize and avoid impacts to SAV, and/or mitigate any loss of SAV in the process.

IV. Marine/Estuarine Resources

A. Aquaculture

The National Oceanic and Atmospheric Administration (NOAA) defines aquaculture as “the breeding, rearing, and harvesting of fish, shellfish, plants, algae, and other organisms in all types of water environments.”¹²⁹ Aquaculture is essentially farming, but in the water. Some existing aquaculture laws also directly or indirectly protect SAV, and most of these laws focus on shellfish aquaculture.

Commercial shellfish aquaculture occurring in navigable waters of the United States (and therefore subject to federal jurisdiction under the Clean Water Act as explained above in Section III.A.) requires a Clean Water Act permit from the Army Corps of Engineers.¹³⁰ These federal permits have specific conditions to minimize impacts to SAV. For instance, the Nationwide Permit 48, which applies to Maryland and Delaware, specifically does not authorize activities that directly affect more than ½ acre of SAV in areas that have not been used for commercial aquaculture during the past 100 years.¹³¹ These federal permits also require coordination with the National Marine Fisheries Service (NMFS) under the Magnuson-Stevens Act for review and comment on impacts to essential fish habitat (EFH) and habitat areas of particular concern (HAPC).

¹²⁹ *What is Aquaculture?*, NAT’L OCEANIC & ATMOSPHERIC ADMIN, <https://oceanservice.noaa.gov/facts/aquaculture.html> (last visited Mar. 22, 2019).

¹³⁰ Bay jurisdictions use either the Corps’ Nationwide Permit 48, Commercial Shellfish Aquaculture Activities, Issued Marcy 19, 2017 (Maryland & Delaware), or a Regional General Permit (Virginia).

¹³¹ Nationwide Permit 48, Commercial Shellfish Aquaculture Activities, March 19, 2017 (NWP Final Notice, 82 FR 4).

In Delaware, before someone can lease river bottom for aquaculture, that person must include in the lease application to the Delaware Department of Natural Resources and Environmental Control a description of any nearby SAV or SAV within the potential lease area.¹³² However, this law currently applies only to Delaware's inland Bays, and not any waters in the Chesapeake Bay watershed.

Virginia has one relevant statute on aquaculture and SAV that states that leaseholders under the general permit to grow shellfish on leased grounds cannot place enclosures for aquaculture on SAV.¹³³ Virginia also has several relevant aquaculture regulations. The first states that no one can place temporary aquaculture structures on SAV.¹³⁴ The second prohibits anyone from placing new structures on SAV in leased bottom aquaculture.¹³⁵ Also, noncommercial riparian shellfish growers may not impact SAV.¹³⁶ Together, these regulations prevent an aquaculture business from placing any temporary structures on SAV, and if the aquaculture business is leasing the land from the state, it may not place temporary or permanent structures on SAV. Virginia's regulation on Noncommercial Shellfish Growing states that growers should not place any equipment or structures in a way that would impact SAV.¹³⁷

Maryland has several applicable statutes and regulations, creating Aquaculture Enterprise Zones. Generally, the zone cannot be within 50 feet of a shoreline or pier without permission of the riparian owner, within 150 feet of an oyster reserve, within 150 feet of a federal navigational

¹³² 7 DEL. ADMIN. CODE § 3801-5.0 (2014). It is unclear whether a lessee needs to hire a consultant to provide the description of nearby SAV. *Id.* However, the statute does require more technical application requirements such as a nautical map of the area, so practically a lessee may hire a consultant to assist with that part of the application.

¹³³ VA. CODE ANN. § 28.2-603.1 (2014).

¹³⁴ 4 VA. ADMIN. CODE § 20-1130-50 (2018).

¹³⁵ 4 VA. ADMIN. CODE § 20-335-30 (2018).

¹³⁶ 4 VA. ADMIN. CODE § 20-336-30 (2018).

¹³⁷ *Id.*

channel, or in an SAV Protection Zone.¹³⁸ An SAV Protection Zone is an area of SAV mapped by the VIMS, and, depending on the definition,¹³⁹ needs to be (1) present in one or more of the five preceding years, or (2) have a density greater than ten percent and present in one or more of the three preceding years.¹⁴⁰

Several Maryland statutes establish what types of leases are appropriate in certain areas. In general, no one can lease submerged land for aquaculture if it is part of an SAV Protection Zone.¹⁴¹ Additionally, no one can lease the water column to use for aquaculture if it lies above an SAV Protection Zone.¹⁴² Finally, leases for educational purposes, to high schools and educational institutions, cannot be in an SAV Protection Zone.¹⁴³

Maryland law also governs what a leaseholder can and cannot do to the leased area. First, a Maryland statute states that someone with an aquaculture lease growing oysters can generally harvest them as the person sees fit, except in Atlantic Coastal Bays where hydraulic escalator dredging is not allowed.¹⁴⁴ While this does not apply to the Bay, it is existing law in Maryland and may provide guidance for effective applicable statutory language. Another regulation sets the rules that leaseholders must follow; notably, a leaseholder cannot add any fill or sediment,

¹³⁸ MD. CODE ANN., NAT. RES. § 4-11A-05(2011).

¹³⁹ Currently, Maryland law defines SAV Protection Zone in two different ways. *Compare* MD. CODE ANN., NAT. RES. §4-11A-01 (2011) (“SAV Protection Zone’ means an area of submerged aquatic vegetation as mapped in aerial surveys by the Virginia Institute of Marine Sciences in 1 or more of the 5 years preceding the designation of an Aquaculture Enterprise Zone or an application for a lease under this subtitle.”) *with* MD. CODE REGS. 08.02.23.02 (2019) (“SAV Protection Zone’ means an area of submerged aquatic vegetation with a density greater than 10 percent as mapped in aerial surveys by the Virginia Institute of Marine Sciences in 1 or more of the 3 years preceding the designation of an Aquaculture Enterprise Zone, or an application for an aquaculture, submerged land, or demonstration lease.”).

¹⁴⁰ MD. CODE ANN., NAT. RES. §4-11A-01 (2011); MD. CODE REGS. 08.02.23.02 (2019). DNR currently has some housekeeping changes proposed that would change the definition in 08.02.23.02 to match what is in 4-11A-01: “SAV Protection Zone’ means an area of submerged aquatic vegetation as mapped in aerial surveys by the Virginia Institute of Marine Sciences in 1 or more of the 5 years preceding the designation of an Aquaculture Enterprise Zone or an application for a lease under this subtitle.”

¹⁴¹ MD. CODE ANN., NAT. RES. §4-11A-06 (2013).

¹⁴² MD. CODE ANN., NAT. RES. §4-11A-07 (2016).

¹⁴³ MD. CODE ANN., NAT. RES. §4-11A-11 (2012).

¹⁴⁴ MD. CODE ANN., NAT. RES. §4-11A-14 (2011).

other than shell, to the leased area without DNR's written consent.¹⁴⁵ Another states that a leaseholder may not place shellfish bags, nets, or structures on SAV.¹⁴⁶ Overall, the aquaculture laws generally prevent alterations to the bottom or prevent aquaculture structures from being placed where they may harm SAV.

B. Finfish and Shellfish Fishing Equipment

Virginia has several statutes and regulations regarding fishing equipment that indirectly protect SAV. First, many Virginia laws limit the types of nets a fisherman can use, as well as some of the methods of fishing: one statute bans pound nets and mullet gill nets under 200 yards; bans haul seines over 1,000 yards and creates guidelines for the size of the mesh; bans mullet gills deeper than 40 meshes; and states a fisherman cannot put a pound net or fixed fishing device in an established haul seine area.¹⁴⁷ Another statute forbids fixed nets that are longer than 1,200 feet and mandates that the fixed structures need to be at least 200 yards apart.¹⁴⁸ Additionally, Virginia statutes forbid using a haul seine within 100 yards of the mean low water mark or in any water less than three feet deep.¹⁴⁹ Also, an existing regulation bans the use of patent tongs¹⁵⁰ in some areas while allowing their use in other areas, identifying most areas by coordinates for fishers harvesting wild oysters.¹⁵¹ Finally, one Virginia statute prohibits using explosives, drugs, or poisons in the water to catch fish.¹⁵² While none of these statutes directly applies to SAV, each prohibits or limits activities that could cause it damage.

¹⁴⁵ MD. CODE REGS. 08.02.23.03 (2019).

¹⁴⁶ MD. CODE ANN., NAT. RES. §4-11A-10 (2012).

¹⁴⁷ VA. CODE ANN. § 28.2-305 (2012).

¹⁴⁸ VA. CODE ANN. § 28.2-307 (2014).

¹⁴⁹ VA. CODE ANN. § 28.2-312 (2014).

¹⁵⁰ Patent tongs are large, hydraulic tongs. *Gear Types*, MD.GOV, <https://seafood.maryland.gov/gear-types/> (last visited Mar. 22, 2019). They are much larger than a hand tong, and the hydraulics make it easier for watermen to use the tongs. One use of hydraulic tongs can catch about half of an oyster bar. *Id.*

¹⁵¹ MD. CODE REGS. 08.02.04.01 (2019). This date reflects the currentness date, not the last updated date.

¹⁵² VA. CODE ANN. § 28.2-313 (2014).

Virginia also has two regulations governing fishing nets. First, before approving a pound net location, the Marine Resources Commission considers any SAV in the proposed location.¹⁵³ Second, Virginia regulates when a person can use a haul seine.¹⁵⁴ Haul seines cannot be longer than 1,000 feet, a person cannot tie together or set two or more haul seines with a combined length over 1,000 feet, two or more vessels cannot drag one haul seine so that it acts as a long haul seine, and a person cannot remove fish from waters less than three feet deep unless the area has no SAV.¹⁵⁵ Again, while these regulations do not directly address SAV, they regulate activities that may cause harm to it.

Maryland also limits fishing equipment for oyster and clam harvest, in part by creating SAV protection zones, discussed above in Part V.A. DNR re-evaluates and re-designates SAV Protection Zones every three years.¹⁵⁶ When updating delineations, DNR must look to aerial mapping and include areas where SAV was present for at least one of the three years.¹⁵⁷ Also, pursuant to code, DNR should clearly mark SAV protection zones with buoys or known landmarks.¹⁵⁸ Additionally, under Maryland law, some fishing gear is banned completely, including hydraulic clam dredges, traditional bottom dredges, and Shinnecock rakes.¹⁵⁹ Some Maryland regulations specify coordinates of SAV zones where watermen cannot use the hydraulic clam dredges, traditional bottom dredges, and Shinnecock rakes.¹⁶⁰ The laws have specific setbacks that vary by county.¹⁶¹

¹⁵³ 4 VA. ADMIN. CODE § 20-25-30 (2004).

¹⁵⁴ 4 VA. ADMIN. CODE § 20-1070-30 (2009).

¹⁵⁵ *Id.*

¹⁵⁶ MD. CODE ANN., NAT. RES. § 4-1006.1 (2002).

¹⁵⁷ *Id.*

¹⁵⁸ *Id.*

¹⁵⁹ *Id.*

¹⁶⁰ A shinnecock rake is a tool used to catch hard shell clams and oysters. *See, e.g.*, MD. CODE ANN., NAT. RES. § 4-1038 (2010); MD. CODE REGS. 08.02.01.12 (2019) (listing coordinates in Dorchester and Somerset counties where

Further, Maryland regulations under DNR also specify areas using coordinates where dredge boats and hydraulic dredges are prohibited.¹⁶² This section does not mention SAV specifically, but would, in effect, protect SAV from the detriments of dredge boats in those areas.¹⁶³ Another section of the regulations generally prohibits dredge boats propelled by an auxiliary yawl boat in certain areas, but also allows the dredge boats powered by yawl boats for two days each harvesting season.¹⁶⁴ These areas are less specific, using the names of a waterway and landmarks, instead of precise coordinates of where an area begins and ends.¹⁶⁵ Finally, a section of the regulations authorizes power dredging in certain areas, establishing the areas through coordinates.¹⁶⁶

C. Blue Crabs

For blue crabs, Bay jurisdictions are regulated by a number of guidance documents, and one Virginia statute, which requires the Marine Resources Commission to create a blue crab fishery management plan.¹⁶⁷ The Virginia statute directs the Commission to create a plan that

the law prohibits this specific gear). The date in MD. CODE REGS. 08.02.01.12 reflects the currentness date, not the last updated date.

¹⁶¹ MD. CODE ANN., NAT. RES. § 4-1038 (2010); MD. CODE REGS. 08.02.01.12 (2019). The date in MD. CODE REGS. 08.02.01.12 reflects the currentness date, not the last updated date. The setbacks can be found in Md. Code Ann., Nat. Res. § 4-1038 and Md. Code Regs. 08.02.01.12. MD. CODE ANN., NAT. RES. § 4-1038 can be found at <https://codes.findlaw.com/md/natural-resources/md-code-nat-res-sect-4-1038.html>. MD. CODE REGS. 08.02.01.12 can be found at <http://mdrules.elaws.us/comar/08.02.01.12>.

¹⁶² MD. CODE REGS. 08.02.04.08 (2019). This date reflects the currentness date, not the last updated date.

¹⁶³ *See id.*

¹⁶⁴ MD. CODE REGS. 08.02.04.10 (2019). This date reflects the currentness date, not the last updated date.

¹⁶⁵ *Id.*

¹⁶⁶ MD. CODE REGS. 08.02.04.12 (2019). This date reflects the currentness date, not the last updated date. The areas appear to be in Southern Maryland counties, but it is not clear from the regulations why these areas allow power dredging. *Id.*

¹⁶⁷ VA. CODE ANN. § 28.2-203.1 (2014).

focuses on SAV, a common habitat of blue crabs.¹⁶⁸ This plan focuses on SAV's benefits towards the blue crab population, as the grasses are essential to their growth and survival.¹⁶⁹

Additionally, there are other existing habitat management plans that Bay jurisdictions utilize. The Chesapeake Bay Program published a 1997 management plan, which sets guidelines for habitat and other concerns about SAV.¹⁷⁰ Maryland has adopted this plan into its laws "by reference."¹⁷¹ This means that the plans listed in the regulation hold the same authority as a statute or regulation in Maryland.¹⁷² In 2003, Maryland adopted an update to the plan, which contained a commitment to restore 185,000 acres of SAV by 2010.¹⁷³ In 2012, there was another Maryland update to the guidance, but it contained no additional information or plans for SAV.¹⁷⁴ In 2015, Maryland created a report separate from the management plan; it also serves as an update to the plan.¹⁷⁵ This document includes updates on SAV restoration, the goals from 2010, and a plan to create SAV sanctuaries.¹⁷⁶

Recommendations: Focusing on the habitats of aquatic species that people throughout the Bay watershed associate with jobs, economic welfare, cultural significance, and/or delicious meals is an indirect, yet effective way to approach SAV conservation. Those who know nothing about aquatic vegetation may connect better with causes aimed at protecting crabs and oysters,

¹⁶⁸ *Id.*

¹⁶⁹ See, e.g., *The 2017 Virginia Blue Crab Management Plan*, VA. MARINE RES. COMM'N 14 (2017), <https://rga.lis.virginia.gov/Published/2017/RD519/PDF>.

¹⁷⁰ Available at: http://dnr.maryland.gov/fisheries/Documents/bluecrabfmp_lowerres.pdf.

¹⁷¹ MD. CODE REGS. 08.02.01.01 (2019) (listing existing fishery management plans and incorporating them by reference into existing law). This date reflects the currentness date, not the last updated date.

¹⁷² *Id.* However, in the other Bay States this is merely a non-binding guidance document.

¹⁷³ Available at:

http://dnr.maryland.gov/fisheries/Documents/Amendment_I_to_1997_Blue_Crab_Management_Plan_Oct_2003.pdf.

¹⁷⁴ Available at: http://dnr.maryland.gov/fisheries/Documents/BCFMPAmend2_v11_may%2031_20121.pdf.

¹⁷⁵ Available at: http://dnr.maryland.gov/fisheries/Documents/Section_7_Blue_Crab.pdf.

¹⁷⁶ *Id.*

rather than underwater grasses. This indirect approach may therefore prove an easier way to effect change in statutes, regulations, and policies that are beneficial to SAV growth.

V. Designated Uses, Water Quality Criteria, & Preservation Areas

As explained above, the Clean Water Act establishes water quality standards as one of the fundamental tools for restoring and protecting water quality and dependent uses.¹⁷⁷ Water quality standards consist of the designated uses or goals for a given water body, water quality criteria to help ensure that designated uses are supported, and antidegradation policies for maintaining water quality that has already been achieved.¹⁷⁸ Many states have assumed responsibility for establishing water quality standards for their state, with EPA retaining final approval authority; states, territories, and authorized tribes adopt such water quality standards into regulations so as to best describe and protect the uses of their unique water bodies.¹⁷⁹ Water quality standards are then implemented through a variety of programs including water quality assessments, Total Maximum Daily Loads (TMDL), National Pollution Discharge Elimination System (NPDES) permits, Water Quality Certifications, voluntary and/or incentive-based water quality improvement projects, and a variety of conservation practices.¹⁸⁰ A designated use states what the water should be used for (primary contact recreation, secondary contact recreation, supporting specific species, etc.).¹⁸¹ Water quality criteria are the numeric or narrative limits that help ensure a water body meets its designated use.¹⁸²

¹⁷⁷ 33 U.S.C. §1313 (2000).

¹⁷⁸ *Id.*

¹⁷⁹ *NPDES State Program Information*, ENVTL. PROT. AGENCY, <https://www.epa.gov/npdes/npdes-state-program-information> (last visited Mar. 1, 2019).

¹⁸⁰ 40 C.F.R. § 122 (2007); 40 C.F.R. §130.7 (2003).

¹⁸¹ 40 C.F.R. § 131.10 (2015).

¹⁸² *Numeric Nutrient Water Quality Criteria*, ENVTL. PROT. AGENCY, <https://www.epa.gov/nutrient-policy-data/numeric-nutrient-water-quality-criteria> (last visited Mar. 1, 2019).

Of the surveyed Chesapeake Bay jurisdictions, Maryland and Virginia have laws that specifically mention SAV within their designated uses and water quality criteria.¹⁸³ The presence of SAV in shallow water often indicates good water clarity because SAV, like most plants, needs access to sunlight to grow successfully - the clearer the water, the more sunlight SAV will be exposed to. In Maryland, these regulations create standards for shallow waters, and these shallow waters need to meet an SAV requirement.¹⁸⁴ For such segments, regulations provide specific SAV acreage criteria which are used to assess water clarity attainment.¹⁸⁵ Virginia has similar regulations – first, the state determines which rivers and streams support the survival and growth of SAV, and then it uses that determination to help establish designated uses for its waterbodies.¹⁸⁶

Delaware, Maryland, and Virginia also all have water quality criteria addressing clarity—which serves to benefit and promote SAV growth. Without mentioning SAV directly, Delaware has a relevant state-specific water quality regulation that serves to benefit SAV growth. Pursuant to Delaware Surface Water Quality Standards, between April 1 and October 31, certain river segments need to have an average Secchi¹⁸⁷ depth of one meter.¹⁸⁸ This directly benefits SAV because it means that sunlight is reaching a depth of least one meter. Therefore, any SAV in water less than a meter in these areas should be getting some sunlight to grow. (Maryland also has a state regulation on water clarity, establishing a Secchi depth of .4 meters to 1.9 meters,

¹⁸³ MD. CODE REGS. 26.08.02.03-3 (2018); 9 VA. ADMIN. CODE § 25-260-185 (2018).

¹⁸⁴ *Id.*

¹⁸⁵ *Id.*

¹⁸⁶ 9 VA. ADMIN. CODE § 25-260-10 (2018).

¹⁸⁷ A Secchi disk is “an opaque, white or black-and-white disk used to measure the cloudiness or turbidity of [water] by the point at which it is no longer visible from the surface.” *Secchi Disk*, DICTIONARY.COM, <https://www.dictionary.com/browse/secchi-disk> (last visited Nov. 2, 2018).

¹⁸⁸ 7 DEL. ADMIN. CODE § 7401.4.0 (2014).

depending on the type of water, from April 1 to October 1.¹⁸⁹ The Virginia regulations are the same as the Maryland regulations and require depths of .4 meters to 1.9 meters, depending on the type of water, from April 1 to October 1.¹⁹⁰)

VI. Penalties

Penalties associated with the violation of the laws and regulations discussed above are one of the most powerful tools that the federal government and Bay jurisdictions have to promote the growth and survival of SAV.

The most serious penalty for violating any of the laws and regulations above is found in the Clean Water Act. Section 404 violations open a violator up to an enforcement suit from the Department of Justice, and there is a fine of \$25,000 per violation per day.¹⁹¹ The Rivers and Harbors Act sets a penalty of a fine between \$250 and \$2,500 and between 30 days and one year in jail for placing any solid refuse in any traditionally navigable water.¹⁹² Additionally, placing something in the water that obstructs navigation subjects the violator to a \$5,000 fine and less than a year in jail.¹⁹³

Maryland provides numerous penalties for any violation of a Department of Natural Resources Law.¹⁹⁴ For example, for violating Md. Code, Nat. Res. § 4-1006.1 (using a hydraulic clam dredge, bottom dredge, or shinnecock rake in a SAV protection zone), the violator must appear in court and for a first violation may face a fine up to \$1000 while a second violation may

¹⁸⁹ MD. CODE REGS. 26.08.02.03-3 (2018).

¹⁹⁰ *Id.*

¹⁹¹ 33 U.S.C. § 1344 (1987).

¹⁹² 33 U.S.C. § 441 (1958).

¹⁹³ 33 U.S.C. § 403a (1911).

¹⁹⁴ See Natural Resources Fine Schedule (Oct. 1, 2018), <https://www.courts.state.md.us/sites/default/files/court-forms/dnr.pdf> (listing every penalty for violating a Department of Natural Resources law).

yield a \$2,000 fine and/or a year in jail.¹⁹⁵ This seems to be a standard penalty, as violating Md. Code Regs. 08.02.23.08 (violating a shellfish nursery permit by placing structures on SAV), Md. Code Ann., Nat. Res. §4-11A-14 (removing shellfish from leased land with a dredge where prohibited), Md. Code Ann., Nat. Res. §4-11A-16 (illegally harvesting oysters from leased land, presumably someone else's leased land), Md. Code Regs. 08.02.23.03 (failing to follow commercial lease procedures), Md. Code Regs. 08.02.04.01 (using patent tongs in prohibited areas) Md. Code Regs. 08.02.04.08 (using a dredge boat or hydraulic dredge in a prohibited area), Md. Code Regs. 08.02.04.10 (using a dredge boat in a prohibited area), Md. Code Regs. 08.02.04.12 (using a power dredge outside of an authorized area), 08.02.01.12 (using dredges in an SAV protection zone), and Md. Code Ann., Nat. Res. § 4-1038 (using a hydraulic clam dredge in a prohibited area) also result in the \$1,000 for a first offense and \$2,000 and/or a year in jail for a second offense penalty. The guidance document notes that for some offenses, such as using improper harvesting methods, a defendant must appear, but for many other violations there is a prepayable fine amount, often less than the \$1000 maximum fine for a first offense.

Violating any Maryland Wetland law in § 16 of the Environment Code could result in a criminal penalty and civil liability.¹⁹⁶ The first time someone violates § 16, they are guilty of a misdemeanor, resulting in a fine not exceeding \$10,000.¹⁹⁷ A second and all subsequent violations of § 16 can result in a fine up to \$25,000 and/or imprisonment not exceeding one year.¹⁹⁸ Additionally, violating § 16 can create civil liability up to \$10,000.¹⁹⁹ Violating a tidal wetland permit, which falls under § 16, may also result in a suspension or revocation of the

¹⁹⁵ *Id.*

¹⁹⁶ MD. CODE, ENVIR. § 16-501 (2004); MD. CODE, ENVIR. § 16-502 (2004).

¹⁹⁷ MD. CODE, ENVIR. § 16-501 (2004).

¹⁹⁸ *Id.*

¹⁹⁹ MD. CODE, ENVIR. § 16-502 (2004).

permit.²⁰⁰ These penalties cover most of the Maryland laws regarding SAV. The Environmental Code of Maryland also creates a fine for § 9 violations, which concerns water pollution control.²⁰¹ The law creates a civil penalty, collectable by MDE in a civil lawsuit, of up to \$10,000 per violation, not to exceed \$100,000 total.²⁰² Additionally, each day counts as a separate violation.²⁰³

Virginia also has penalties for violations of other laws mentioned above. If a person uses an illegal net, it is a class 3 misdemeanor,²⁰⁴ which carries a fine of up to \$500.²⁰⁵ Using explosives, drugs, or poisons to kill fish is also a class 3 misdemeanor.²⁰⁶ Finally, illegally dredging in the Chincoteague or Assateague Bays is a class 3 misdemeanor that may result in a \$500 fine, and if someone is convicted twice in a 12-month period, it is a class 1 misdemeanor that may result in jail time and/or a \$2500 fine.²⁰⁷

In Delaware, violating a wetlands regulation (any section beginning with 7500, including 7501 and 7504) results in a fine, with the penalty varying based on several factors.²⁰⁸ An intentional or knowing violation²⁰⁹ results in a minimum fine of \$500 and a maximum fine of \$10,000 per violation.²¹⁰ For a violation without intent or knowing, the fine is a minimum of \$50

²⁰⁰ MD. CODE REGS. 26.24.01.06 (2019). This date reflects the currentness date, not the last updated date. This law applies to any Maryland Code of Regulations that begins with “26.”

²⁰¹ MD. CODE, ENVIR. § 9-342 (2014). This penalty applies to any Maryland laws in this report starting Md. Code, Envir. § 9-xxx.

²⁰² *Id.*

²⁰³ *Id.*

²⁰⁴ VA. CODE ANN. § 28.2-305 (2012); VA. CODE ANN. § 28.2-307 (2009); VA. CODE ANN. § 28.2-312 (2018).

²⁰⁵ VA. CODE ANN. § 18.2-11 (2018).

²⁰⁶ VA. CODE ANN. § 28.2-313 (2018).

²⁰⁷ 4 VA. ADMIN. CODE § 20-1000-40 (2018).

²⁰⁸ 7 DEL. ADMIN. CODE § 7502-13.0 (2014).

²⁰⁹ These are often legal standards that vary by state and criminal code.

²¹⁰ 7 DEL. ADMIN. CODE § 7502-13.0 (2014).

and a maximum of \$500 per violation.²¹¹ Additionally, any violations regardless of knowing or intent are subject to civil liability not less than \$1,000 and not more than \$10,000.²¹²

Delaware shellfish penalties, excluding shellfish aquaculture in Delaware's Inland Bays, are governed by statute and anyone who violates these laws are guilty of a Class D environmental violation:²¹³ any person convicted of a class D environmental violation shall be fined not less than \$50, nor more than \$100, plus the costs of prosecution and court costs.²¹⁴ Any person convicted of a class D environmental violation within 5 years of a prior conviction for a class D or greater environmental violation shall be fined not less than \$100, nor more than \$500, plus the costs of prosecution and court costs.²¹⁵ Any person convicted of violating any of these rules or regulations may, upon the recommendation to the Secretary buy the majority of the Council on Shellfishers and/or at the discretion of the Secretary, any licenses or permits issued to the person revoked for a term to be determined by the Department.²¹⁶ For Delaware, only 7 Del. Admin. Code § 7401.4.0 does not have a penalty associated with it, but that section simply sets water quality standards under the Clean Water Act that the state needs to achieve.²¹⁷

Finally, Washington D.C. also assesses some penalties for violating SAV laws. D.C. laws assign fines to Department of Environment violations, classifying harvesting, removing, cutting, eradicating, or applying pesticides to SAV without approval as a class one infraction.²¹⁸ A class one infraction is a \$2,000 fine for a first offense, \$4,000 fine for the second offense, \$8,000 fine

²¹¹ *Id.*

²¹² *Id.*

²¹³ 7 DEL. ADMIN. CODE 3801-23.0 (2014) (referring to Del. Code Ann. tit. 7, § 2012 for penalties). These penalties cover all of section 3800, including section 3801.

²¹⁴ DEL. CODE ANN. tit. 7, § 2012 (2013).

²¹⁵ DEL. CODE ANN. tit. 7, § 1304 (2016).

²¹⁶ DEL. CODE ANN. tit. 7, § 1902 (2013).

²¹⁷ 7 DEL. ADMIN. CODE § 7401.4.0 (2014).

²¹⁸ D.C. Mun. Regs. tit. 16, § 4009 (2014).

for the third offense, and a \$16,000 fine for fourth and subsequent offenses.²¹⁹ These fines apply for offenses such as D.C. Mun. Regs. tit. 21, § 1401.1, harvesting, cutting, removing, or eradicating SAV without a plan approval.²²⁰

Recommendations: While the penalties discussed above can be effectively utilized to mitigate behaviors and practices that may prove harmful to SAV, they are ineffective without proper enforcement. It is therefore necessary that state agencies have the funding available to hire qualified individuals into enforcement positions, as well as policies that encourage and promote enforcement of the statutes and regulations discussed above.

VII. Comparative Study to Florida Laws

Various states outside of the Chesapeake Bay Watershed also have statutes and regulations affecting SAV in their various waterways and coastlines. These states can serve as a comparison to what is implemented in the Bay Watershed, and serve as examples for what is and is not effective policy to promote SAV growth. Florida is one such example.

Florida has numerous SAV-related laws, mostly focusing on the State's vast seagrass populations.²²¹ Florida law defines seagrass, often by listing the various species.²²² One statute (and other laws use the same definition by referencing that statute) defines seagrass as: "Seagrass means Cuban shoal grass (*Halodule wrightii*), turtle grass (*Thalassia testudinum*), manatee grass (*Syringodium filiforme*), star grass (*Halophila engelmannii*), paddle grass (*Halophila decipiens*), Johnson's seagrass (*Halophila johnsonii*), or widgeon grass (*Ruppia maritima*)."²²³ Although one

²¹⁹ D.C. Mun. Regs. tit. 16, § 3201 (2017).

²²⁰ D.C. Mun. Regs. tit. 16, § 4009 (2014).

²²¹ For the purposes of this paper, we are considering seagrasses to be the general equivalent of SAV.

²²² See, e.g., FLA. STAT. § 253.04 (2009).

²²³ *Id.* See also FLA. STAT. § 327.46 (2017) (adopting this language by reference); FLA. ADMIN. CODE ANN. r. 68D-24.004 (2018) (defining "seagrass" using this definition).

regulation uses the species specific definition,²²⁴ another regulation is more vague, defining seagrass as “rooted, vascular plants” in the Potamogetonaceae, Hydrocharitaceae and Cymodoceae families.²²⁵

As opposed to Chesapeake Bay jurisdictions, which impose none, Florida seagrass regulations impose several boating restrictions. First, the law prohibits “seagrass scarring,” which is when a motorized vessel (boat) destroys seagrass roots, shoots, or stems often causing propeller scars.²²⁶ Another statute allows the state to establish boating-restricted areas to protect seagrass on privately owned land.²²⁷ That statute also allows owners of privately submerged lands to petition the state to create boating restrictions to solely protect seagrass and prevent seagrass scarring.²²⁸ Further, a Florida regulation allows private submerged land owners within, partially within, or bordering an Outstanding Florida Water or aquatic preserve to apply to establish boating restricted areas on their lands to protect seagrass.²²⁹ However, under this regulation, the submerged land must be submerged less than six feet of the mean low water line, which tends to protect submerged lands in shallower waters.²³⁰

Violating the boating laws, for example by scarring seagrass, constitutes a uniform boating citation.²³¹ These violations often result in small fines.²³² Further, fines from these

²²⁴ FLA. ADMIN. CODE ANN. r. 68D-24.004 (2018).

²²⁵ FLA. ADMIN. CODE ANN. R. 62-330.411 (2015).

²²⁶ FLA. STAT. § 253.04 (2009). Only Virginia has a similar law, which requires someone transplanting SAV to ensure the new location minimizes secondary effects of removal, such as propeller scarring. 4 VA. ADMIN. CODE 20-337-30 (2000).

²²⁷ FLA. STAT. § 327.46 (2017).

²²⁸ *Id.*

²²⁹ FLA. ADMIN. CODE ANN. r. 68D-24.004 (2018).

²³⁰ *Id.*

²³¹ FLA. STAT. § 253.04 (2009).

²³² *Id.*

violations become liens on the real and personal property of the violator, creating an alternative enforcement method if a violator is not paying the fine.²³³

Florida law also discusses dredging and seagrass. When dredging for channel and canal infrastructure, seagrass in a proposed dredging area needs to be relocated to the maximum extent possible.²³⁴ Further, dredging for channels and canal infrastructure should to the maximum extent possible avoid and minimize impacts to seagrass communities.²³⁵ This includes minimizing the potential for erosion to nearby seagrass communities when sloughing channel side slopes.²³⁶ Dredging for navigation in specific counties also should minimize impacts to seagrass. For example, in Sarasota and Manatee counties, any potential dredging areas should not contain any live seagrass beds.²³⁷ However, this regulation does allow for incidental dredging, meaning if the species is less than one percent coverage in the dredged area, the area can still be dredged.²³⁸ Finally, Florida grants a Dredge Special Activity License to commercial shellfish harvesters wishing to harvest in areas open to the public.²³⁹ Under this license, dredges cannot be used in seagrass bed areas or in waters that are less than 16 feet deep.²⁴⁰

Piers and marinas in Florida must also follow laws to protect seagrass. Piers designed to dock boats and water crafts must demonstrate that adequate depths are present to prevent damage to seagrass from the coming and going of boats and other crafts.²⁴¹ Additionally, boat mooring sites cannot be over a seagrass bed if the water is less than five feet from the mean low water

²³³ *Id.*

²³⁴ FLA. ADMIN. CODE ANN. r. 62-330.412 (2013).

²³⁵ *Id.*

²³⁶ *Id.*

²³⁷ FLA. ADMIN. CODE ANN. r. 62-330.410 (2013).

²³⁸ *Id.*

²³⁹ FLA. ADMIN. CODE ANN. r. 68B-8.015 (2004).

²⁴⁰ *Id.*

²⁴¹ FLA. ADMIN CODE ANN. r. 62-312.420 (1995).

line.²⁴² Any other piers or overwater structures not meant for docking water craft need to show that construction techniques will protect the viability of any seagrass bed communities.²⁴³ Marinas must also show that proposed construction techniques protect seagrass bed viability, and marinas cannot place mooring sites over seagrass beds regardless of water depth.²⁴⁴

Finally, like some Bay States, Florida protects seagrass through focus on other marine life. Florida has the Florida Manatee Sanctuary Act, which states that the purpose of the Act includes protecting manatee habitat, such as seagrass beds.²⁴⁵ A different section of the Act requires permitting authorities to consider features “essential to the survival” of manatees, or that are known to “attract” manatees, such as seagrasses.²⁴⁶ This law underscores the importance of seagrass to manatee communities, much like the importance of SAV to marine life in the Chesapeake, such as blue crabs.

²⁴² *Id.*

²⁴³ *Id.*

²⁴⁴ FLA. ADMIN. CODE ANN. r. 62-312.430 (1995).

²⁴⁵ FLA. ADMIN. CODE ANN. r. 68C-22.001 (2005).

²⁴⁶ FLA. ADMIN. CODE ANN. r. 68C-22.003 (1998).

Appendix A – Acronyms

CWA – Clean Water Act

DNR – Department of Natural Resources

EPA – Environmental Protection Agency

HAPC – Habitat Areas of Particular Concern

MDE – Maryland Department of the Environment

NMFS – National Marine Fisheries Service

NOAA – National Oceanic and Atmospheric Administration

OHWM – Ordinary High Water Mark

SAV – Submerged Aquatic Vegetation

VIMS – Virginia Institute of Marine Science

VMRC – Virginia Marine Resources Commission

WOTUS – Waters of the United States

Appendix B – Statutes and Regulations

State	Type of Law	Keyword	Citation	Agency	Title	Summary
Maryland	Statute	removal	Md. Code, Nat. Res. § 4-213.	Department of Natural Resources	Activities involving submerged aquatic vegetation	This section defines SAV, gives the Department of Natural Resources authority to oversee SAV removal, and lists some situations where this statute does not apply.
Maryland	Statute	SAV protection zone; dredging	Md. Code, Nat. Res. § 4-1006.1.	Department of Natural Resources	SAV protection zones, hydraulic clam dredge restrictions	This section discusses SAV protection zones, areas where SAV cannot be harmed, including how the zones are created and what is allowed in a zone.
Maryland	Statute	marina expansion	Md. Code, Envir. § 16-107.	Department of Environment	Expansion of marina used to support aquaculture or seafood operations	A working marina for seafood cannot expand if it will harm SAV, with a few exceptions.
Maryland	Statute	lease	Md. Code, Nat. Res. § 4-11A-10.	Department of Natural Resources	Duties of a leaseholder; renewal or termination of leases	Someone leasing river/stream bottom cannot place shellfish, bags, nets, or other structures on SAV.
Maryland	Regulation	definition	Md. Code Regs. 26.24.01.02.	Department of Environment	Definitions	This defines SAV as an underwater plant.
Maryland	Regulation	Dredging	Md. Code Regs. 26.24.03.02.	Department of Environment	Dredging-General.	Dredging activities need to avoid harming SAV.

State	Type of Law	Keyword	Citation	Agency	Title	Summary
Maryland	Regulation	dredging	Md. Code Regs. 26.24.03.01.	Department of Environment	Maintenance Dredging	Before MDE will allow someone to dredge for maintenance, that person needs to submit a map of SAV in the area.
Maryland	Regulation	permit	Md. Code Regs. 26.24.02.03.	Department of Environment	Criteria for evaluating tidal wetlands license or permit applications	Before MDE will grant a tidal wetlands permit, MDE considers whether the area could grow and support SAV.
Maryland	Regulation	dredging	Md. Code Regs. 26.24.03.05.	Department of Environment	Placement of Dredged Material in Open Water.	If you are getting rid of dredged material (dirt), you should consider whether it may harm SAV.
Maryland	Regulation	marina	Md. Code Regs. 26.24.04.03.	Department of Environment	Marinas	New marinas cannot harm SAV.
Maryland	Regulation	permit	Md. Code Regs. 26.24.02.01.	Department of Environment	General Requirements for a State Tidal Wetlands License or Private Tidal Wetlands Permit	You can harvest SAV without a permit if you are not pulling up the roots.
Maryland	Regulation	permit	Md. Code Regs. 08.02.23.08.	Department of Natural Resources	Shellfish Nursery Permits	A shellfish nursery cannot build anything within an SAV protection area.
Maryland	Regulation	definition	Md. Code Regs. 08.02.23.02	Department of Natural Resources	Definitions	An SAV protection zone is an area with dense SAV or an area that historically has SAV.

State	Type of Law	Keyword	Citation	Agency	Title	Summary
Maryland	Regulation	water quality criteria	Md. Code Regs. 26.08.02.03-3.	Department of Environment	Water Quality Criteria Specific to Designated Uses	This sets the specific numbers that rivers and streams need to meet.
Maryland	Regulation	definition	Md. Code Regs.26.08.01.01	Department of Environment	Definitions	This defines SAV as an underwater plant, but this definition also says the plant can grow tall enough to reach the surface.
Virginia	Regulation	removal	4 Va. Admin. Code § 20-337-30.	Marine Resources Commission	Permitting	You need to get approval before you remove or plant SAV.
Virginia	Regulation	definition	4 Va. Admin. Code § 20-337-10.	Marine Resources Commission	Definitions	This section defines SAV as underwater plants, but also defines some related terms.
Virginia	Regulation	purpose	4 Va. Admin. Code § 20-337-20.	Marine Resources Commission	Background	This discusses the benefits of SAV such as providing habitat.
Virginia	Regulation	aquaculture	4 Va. Admin. Code § 20-1130-50.	Marine Resources Commission	Special Conditions	An aquaculture farmer cannot place anything on SAVs.
Virginia	Regulation	definition	4 Va. Admin. Code § 20-1130-20.	Marine Resources Commission	Definitions	This defines SAV as an underwater plant.
Virginia	Regulation	designated uses	9 Va. Admin. Code § 25-260-10.	State Water Control Board	Designation of Uses	The state determines some streams and rivers need to be pollution free enough to support SAVs.
Virginia	Regulation	fill material	4 Va. Admin. Code § 20-400-50.	Marine Resources Commission	Specific Criteria	If you are getting rid of sandy dredged material (sand), you should consider whether it may harm SAV.

State	Type of Law	Keyword	Citation	Agency	Title	Summary
Virginia	Regulation	marina	4 Va. Admin. Code § 20-360-90.	Marine Resources Commission	Siting Criteria Checklist	A new/potential marina is more likely to get a permit if there is no SAV at the site.
Virginia	Regulation	noncommercial shellfish growing	4 Va. Admin. Code § 20-336-30.	Marine Resources Commission	Procedures	These operations should not place anything on SAV.
Virginia	Regulation	pound net	4 Va. Admin. Code § 20-25-30.	Marine Resources Commission	Public comment and commission review	The Commission considers any SAV before approving a pound net location.
Virginia	Regulation	aquaculture	4 Va. Admin. Code § 20-335-30.	Marine Resources Commission	Requirements and Conditions	Aquaculture farmers should not place anything on SAV.
Virginia	Regulation	energy	9 Va. Admin. Code § 15-40-70.	Department of Environmental Quality	Site plan and context map requirements	Proposed wind turbines need to include a map of nearby SAV with the permit application.
Virginia	Regulation	mining activities, dredge	9 Va. Admin. Code § 25-690-40.	State Water Control Board	Exceptions to coverage	Special mining activities cannot harm SAV.
Virginia	Regulation	transportation projects, dredge	9 Va. Admin. Code § 25-680-40.	State Water Control Board	Exceptions to coverage	Some transportation projects cannot dredge in SAV areas.
Virginia	Regulation	fill material	4 Va. Admin. Code § 20-1330-40.	Marine Resources Commission	Specific criteria	Don't place fill material on SAVs in the context of living shorelines.
Virginia	Statute	permit	Va. Code Ann. § 28.2-1205.	Marine Resources Commission	Permits for the use of state-owned bottomlands	Before someone can lease a stream/river bottom, the Commission decides if it would harm SAV.

State	Type of Law	Keyword	Citation	Agency	Title	Summary
Virginia	Statute	purpose	Va. Code Ann. § 28.2-1204.1.	Marine Resources Commission	Submerged Aquatic Vegetation	The Commission works with VIMS to determine existing SAV beds and identify potential SAV areas.
Virginia	Statute	oyster restoration	Va. Code Ann. § 28.2-826.	Marine Resources Commission	Crassostrea ariakensis	You cannot place oysters on SAV.
Virginia	Statute	aquaculture	Va. Code Ann. § 28.2-603.1.	Marine Resources Commission	Temporary enclosures on leased ground	When leasing land for aquaculture, a leaseholder cannot place enclosures on SAV.
Virginia	Regulation	water quality criteria	9 Va. Admin. Code § 25-260-185.	State Water Control Board	Criteria to protect designated uses from the impacts of nutrients and suspended sediment in the Chesapeake Bay and its tidal tributaries	This sets the specific numbers that rivers and streams need to meet.
Virginia	Statute	fishing, penalty	Va. Code Ann. § 28.2-305.	Marine Resources Commission	Size of Mesh and Length and Depth of Certain Nets; Penalty	Limits the type of net a fisher can use, and it establishes that a violation is a misdemeanor.
Virginia	Statute	fishing, penalty	Va. Code Ann. § 28.2-307.	Marine Resources Commission	Length of Fixed Fishing Device; Gill Nets; Penalty	Limits the length of net a fisher can use, and it establishes that a violation is a misdemeanor.

State	Type of Law	Keyword	Citation	Agency	Title	Summary
Virginia	Statute	fishing, penalty	Va. Code Ann. § 28.2-313.	Marine Resources Commission	Killing Fish by Means of Explosives, Drugs, or Poisons; Possession; Penalties	Cannot use explosives drugs or poisons in waters, and it is a misdemeanor to do so.
Virginia	Statute	fishing, penalty	Va. Code Ann. § 28.2-312.	Marine Resources Commission	Rappahannock River and Certain of its Tributaries; Penalty.	Cannot use a haul seine net near the shoreline or where the water is less than three feet deep in the Rappahannock River.
Virginia	Regulation	fishing	4 Va. Admin. Code § 20-1070-30.	Marine Resources Commission	Gear Restrictions; Exemptions; Application Process.	This limits when you can use a haul seine net.
Virginia	Statute	blue crab	Va. Code Ann. § 28.2-203.1.	Marine Resources Commission	Blue Crab Fishery Management Plan	This requires the Marine Resources Commission to create a blue crab fishery management plan, and one requirement is that the plan focus on SAV (often blue crab habitat).
Virginia	Regulation	dredging	4 Va. Admin. Code § 20-1000-30.	Marine Resources Commission	Dredges Prohibited	This prohibits dredging where there is SAV, but applies to the Chincoteague and Assateague Bays.
Virginia	Regulation	penalty	4 Va. Admin. Code § 20-1000-40.	Marine Resources Commission	Penalty	If dredging in the Chincoteague or Assateague Bays, it is a misdemeanor that may result in a \$500 fine. If convicted 2x in 12-months, may result in jail time and/or a \$2500 fine.

State	Type of Law	Keyword	Citation	Agency	Title	Summary
Virginia	Regulation	penalty	4 Va. Admin. Code § 20-1070-50.	Marine Resources Commission	Penalty	This says a violation is a misdemeanor punishable by a fine the first time, but if you are convicted a second time in one year you may face jail time of no more than 12 months and a \$2500 fine.
Virginia	Statute	Penalty	Va. Code Ann. § 18.2-11.		Punishment for Conviction of a Misdemeanor	The punishment for breaking a fishing law is a fine up to \$500.
Washington, D.C.	Regulation	definition	D.C. Mun. Regs. tit. 21, § 1499.	Department of Consumer and Regulatory Affairs	Definitions	Defines SAV as an underwater plant.
Washington, D.C.	Regulation	removal	D.C. Mun. Regs. tit. 21, § 1404.	Department of Consumer and Regulatory Affairs	Criteria for approval	This says when SAV can be removed and requires a removal plan.
Washington, D.C.	Regulation	removal	D.C. Mun. Regs. tit. 21, § 1401.	Department of Consumer and Regulatory Affairs	Harvesting plan approval	You need approval to harvest or remove SAV.
Washington, D.C.	Regulation	herbicide	D.C. Mun. Regs. tit. 21, § 1407.	Department of Consumer and Regulatory Affairs	Herbicides	You cannot use an herbicide on SAV without approval.
Washington, D.C.	Regulation	removal	D.C. Mun. Regs. tit. 21, § 1405.	Department of Consumer and Regulatory Affairs	Conditions and Limitations	The Department of Consumer and Regulatory Affairs can forbid SAV removal or place conditions on SAV removal.

State	Type of Law	Keyword	Citation	Agency	Title	Summary
Washington, D.C.	Regulation	removal	D.C. Mun. Regs. tit. 21, § 1403.	Department of Consumer and Regulatory Affairs	Application, letter of notification and plan contents	This lists the requirements of SAV removal plans.
Washington, D.C.	Regulation	purpose	D.C. Mun. Regs. tit. 21, § 1400.	Department of Consumer and Regulatory Affairs	Purpose and scope	The purpose of these regulations is to protect SAV.
Washington, D.C.	Regulation	exemptions	D.C. Mun. Regs. tit. 21, § 1402.	Department of Consumer and Regulatory Affairs	Exemptions	You do not need approval for recreational boating or fishing that may accidentally harm SAV.
Washington, D.C.	Regulation	plan	D.C. Mun. Regs. tit. 21, § 1408.	Department of Consumer and Regulatory Affairs	Violations	The Director of the Department of Consumer and Regulatory Affairs can revoke a plan if it violates any other part of the regulation.
Washington, D.C.	Regulation	plan	D.C. Mun. Regs. tit. 21, § 1406.	Dept. of Consumer/Regulatory Affairs	Timeframe for approvals and the review process	This lays out the step by step process of applying for a SAV removal/harvesting plan.
Washington, D.C.	Regulation	infractions, penalty	D.C. Mun. Regs. tit. 16, § 4009.	DOE	Water quality infractions	This is the penalty for harvesting/removing SAV without a plan.
Delaware	Regulation	definition	7 Del. Admin. Code § 7501-3.0.	Natural Resources and Environmental Control	Definitions	Defines SAV as an underwater plant, but notes it may also grow on the water's surface.
Delaware	Regulation	marina	7 Del. Admin. Code § 7501-11.0.	Natural Resources	Requirements for Citing and Designing New Marinas	These are the factors the Department considers for new marinas.

State	Type of Law	Keyword	Citation	Agency	Title	Summary
Delaware	Regulation	dredging	7 Del. Admin. Code § 7504-4.0.	Natural Resources and Environmental Control	Criteria of Permits Leases and Letters of Authorization	You cannot dredge in an SAV area if it will harm the SAV.
Delaware	Regulation	definition	7 Del. Admin. Code § 3801-2.0.	Natural Resources and Environmental Control	Definitions	Defines SAV as an underwater plant.
Delaware	Regulation	aquaculture	7 Del. Admin. Code § 3801-5.0.	Natural Resources and Environmental Control	Non-SADA Subaqueous Land Lease Application	People hoping to lease stream/river bottom for aquaculture need to include a description of nearby SAV.
Delaware	Regulation	water quality criteria	7 Del. Admin. Code § 7401.4.0.	Natural Resources and Environmental Control	Criteria to Protect Designated Uses	This sets the specific numbers that rivers and streams need to meet.
Chesapeake Bay Program	Guidance	blue crab	Chesapeake Bay Program, 1997 Chesapeake Bay Blue Crab Fishery Management Plan (May 1997).	Environmental Protection Agency	1997 Chesapeake Bay Blue Crab Fishery Management Plan	This is the fishery management plan, which sets guidelines for things such as habitat requirements and concerns about SAV.
Bay States	Guidance	blue crab			Amendment #1 1997 Chesapeake Bay Blue Crab Fishery Management Plan October 2003	This is an update, but it contains a commitment to restore 185,000 acres of SAV by 2010.

State	Type of Law	Keyword	Citation	Agency	Title	Summary
Bay States	Guidance	blue crab			Amendment #2 1997 Chesapeake Bay Blue Crab Fishery Management Plan May 31, 2012	This is an update, but it contains no information on SAVs or habitat.
Maryland	Guidance	blue crab		Department of Natural Resources	2015 Maryland FMP Report (July 2016) Section 7. Blue Crab	This is an update on Maryland's progress on the Blue Crab Fishery Plan. It includes goals for SAV restoration, and it has a plan to create SAV sanctuaries.
Federal	Statute	dredging	33 U.S.C. § 1344.	Army Corps of Engineers	Permits for Dredged or Fill Material	This creates a permit program for removing material (often soil) from a wetland/waterway and filling material (adding the soil, etc. to) to a wetland/waterway. Without a permit, filling a wetland is illegal. This protects SAV by preventing unpermitted dredge and fill. This also sets a penalty of a potential civil suit and/or a fine of \$25,000 per violation per day.
Federal	Regulation	dredging	33 C.F.R. § 323.3.	Army Corps of Engineers	Discharges Requiring Permits	You need a permit to place pilings in water if the pilings are closely spaced or would replace the bottom. You do not need a permit for pilings for elevated walkways, bridges, or power line structures.

State	Type of Law	Keyword	Citation	Agency	Title	Summary
Federal	Regulation	dredging	33 C.F.R. § 323.4.	Army Corps of Engineers	Discharges Not Requiring Permits	This section creates the exceptions when a party does not need a permit, and it defines those exceptions so that it is clear.
Federal	Regulation	dredging	33 C.F.R. § 323.5.	Army Corps of Engineers	Program Transfer to States	Allows states to take over control from the federal government for this program.
Federal	Regulation	dredging	33 C.F.R. § 323.6.	Army Corps of Engineers	Special Policies and Procedures	This section gives the Chief of Engineers authority to approve and deny permits along with some guidelines to consider.
Federal	Regulation	dredging	33 C.F.R. § 336.1.	Army Corps of Engineers	Discharges of dredged or fill material into waters of the U.S.	This provides some more factors for the Army Corps of Engineers to consider when someone wants to discharge dredged materials (soil).
Federal	Regulation	dredging	33 C.F.R. § 336.2.	Army Corps of Engineers	Transportation of dredged materials for the purpose of disposal into ocean waters	This contains the factors the Army Corps of Engineers uses to assess ocean disposal of dredged materials.
Federal	Regulation	dredging	33 C.F.R. § 338.2.	Army Corps of Engineers	Activities involving discharge of dredged or fill materials into WOTUS	This asks the Army Corps of Engineers to look at water quality before approving filling in a Civil Works project.
Federal	Statute	water quality	33 U.S.C. § 1313.	Environmental Protection Agency	Water quality standards and implementation plans	This tells the state and federal government (where there is no state program) to establish water quality standards under the Clean Water Act.

State	Type of Law	Keyword	Citation	Agency	Title	Summary
Federal	Regulation	water quality	40 C.F.R. § 131.12.	Environmental Protection Agency	Antidegradation policy and implementation methods	Generally, a State cannot set a standard that would decrease the current cleanliness of the water, unless there is a valid economic reason. A State cannot lower an existing standard unless the first examine alternatives.
Federal	Regulation	water quality	40 C.F.R. §131.5.	Environmental Protection Agency	EPA Authority	A State creates its water cleanliness standards, but then the EPA reviews the standards and either approves or denies them.
Federal	Regulation	water quality	40 C.F.R. § 130.7.	Environmental Protection Agency	Total maximum daily loads (TMDL) and individual water quality-based effluent limitations.	Chesapeake Bay Preservation Areas need to meet these requirements.
Federal	Statute	water quality	40 C.F.R. § 131.6.	Environmental Protection Agency	Minimum requirements for water quality standards submission	This tells a state what it must submit to EPA.
Federal	Statute	dredging	33 U.S.C. § 403.	Army Corps of Engineers	Obstruction of navigable waters generally; wharves; piers, etc.; excavations and filling in	You need a permit to build anything that may limit navigation, and you cannot remove or add materials (like soil) to a waterway without a permit.
Federal	Statute	penalty	33 U.S.C. § 403a.	Army Corps of Engineers	Creation or continuance of obstruction of navigable waters	This discusses the penalty for placing something in the water that impacts navigation without a permit.

State	Type of Law	Keyword	Citation	Agency	Title	Summary
Federal	Statute	construction	33 U.S.C. § 401.	multiple	Construction of bridges, causeways, dams or dikes generally; exemptions	It is illegal to build a dam, etc. in navigable water without a permit.
Federal	Statute	fill	33 U.S.C. § 407.	multiple	Deposit of refuse in navigable waters generally	It is illegal to put anything into a waterway without a permit.
Federal	Statute	penalty	33 U.S.C. § 441.	n/a	Deposit of refuse prohibited; penalty	This I the penalty for putting something into a waterway without a permit.
Federal	Statute	dredging	33 U.S.C. § 465.	n/a	Authority to dredge; riparian rights of United States	This authorized dredging on US owned river bottom in Maryland, provided the Chief of Engineers (Army Corps of Engineers) believed it would improve navigation.
Federal	Regulation	definition	33 C.F.R. § 322.2.	Army Corps of Engineers	Definitions	This defines "navigable waters," which is used often in the Rivers and Harbors Act and its regulations.
Federal	Regulation	dredging	33 C.F.R. § 322.3.	Army Corps of Engineers	Activities requiring permits	Federal agencies must follow these regulations as well. This also says what activities require permits by referencing other regulations.
Federal	Regulation	dredging	33 C.F.R. § 322.5	Army Corps of Engineers	Special Policies	This section summarizes a lot of information on permitting in specific situations. One category discusses permitting for anyone who is not the federal government.

State	Type of Law	Keyword	Citation	Agency	Title	Summary
Virginia	Statute	purpose	Va. Code Ann. § 62.1-44.15:67.	Department of Environmental Quality	Cooperative state-local program	This states the purpose of the Chesapeake Bay Preservation Act, and it states that local governments should implement this statute while the state provides support and oversight.
Virginia	Statute	definition	Va. Code Ann. § 62.1-44.15:68.	Department of Environmental Quality	Definitions	This section defines some terms in the statute. When the statute uses one of these terms, this is the definition of that term.
Virginia	Statute	water quality, local government	Va. Code Ann. § 62.1-44.15:69.	Department of Environmental Quality	Powers and duties of the Board	This section establishes what the State Water Control Board needs to do for the Chesapeake Bay Preservation Act.
Virginia	Statute	compliance	Va. Code Ann. § 62.1-44.15:70.	Department of Environmental Quality	Exclusive authority of the board to initiate legal actions	The Board is the only party that can sue a local government using this law.
Virginia	Statute	compliance	Va. Code Ann. § 62.1-44.15:71.	Department of Environmental Quality	Program compliance	The Board creates a compliance plan for any local government not properly implementing the Act.
Virginia	Statute	criteria	Va. Code Ann. § 62.1-44.15:72.	Department of Environmental Quality	Board to develop criteria	The Board will write regulations and create the standards for local governments under the Chesapeake Bay Conservation Act.
Virginia	Statute	local government	Va. Code Ann. § 62.1-44.15:73.	Department of Environmental Quality	Local government authority	The local governments retain their authority to use zoning to protect the Bay.

State	Type of Law	Keyword	Citation	Agency	Title	Summary
Virginia	Statute	local government; penalty	Va. Code Ann. § 62.1-44.15:74.	Department of Environmental Quality	Local governments to designate Chesapeake Bay Preservation Areas; incorporate into local plans and ordinances; impose civil penalties	Local governments have to create standards and measures to make water cleaner and preserve certain areas. This also creates a penalty for violating a law the local government makes for this Act.
Virginia	Statute	local government	VA Code Ann. § 62.1-44.15:75.	Department of Environmental Quality	Local governments outside of Tidewater Virginia may adopt provisions	Local governments outside of Tidewater Virginia may adopt these provisions, even though they are not required to.
Virginia	Statute	local government	VA Code Ann. § 62.1-44.15:76.	Department of Environmental Quality	Local government requirements for water quality protection	Local governments need to actually implement these laws so that they work.
Virginia	Statute	local government	VA Code Ann. § 62.1-44.15:77.	Department of Environmental Quality	Effect on other governmental authority	This section just establishes that the authority given to local government only applies here and does not take away authority from the State Water Control Board.
Virginia	Statute	state agencies	VA Code Ann. § 62.1-44.15:78.	Department of Environmental Quality	State agency consistency	State agencies should not create regulations that are inconsistent with this law.
Virginia	Statute	landowner	VA Code Ann. § 62.1-44.15:79.	Department of Environmental Quality	Vested rights protected	This law does not interfere with any current rights of landowners.

State	Type of Law	Keyword	Citation	Agency	Title	Summary
Virginia	Regulation	jurisdiction	9 Va. Admin. Code § 25-830-10.	State Water Control Board	Application	These regulations only apply to Tidewater Virginia, but other areas of Virginia can voluntarily follow them.
Virginia	Regulation	purpose	9 Va. Admin. Code § 25-830-30.	State Water Control Board	Purpose	These regulations are designed to improve the health of the Bay.
Virginia	Regulation	definition	9 Va. Admin. Code § 25-830-40.	State Water Control Board	Definitions	Anytime one of these words appears in the regulations, this is the meaning they have.
Virginia	Regulation	local government	9 Va. Admin. Code § 25-830-50.	State Water Control Board	Local Program Development	This provides some factors for local governments when creating measures to implement this law.
Virginia	Regulation	preservation plan	9 Va. Admin. Code § 25-830-60.	State Water Control Board	Elements of Program	Local programs need to have a map of preservation areas, a plan to protect conservation areas and keep water clean, any zoning changes, any other plans to help preserve areas, and any other criteria to help implement the law.
Virginia	Regulation	protection area	9 Va. Admin. Code § 25-830-80.	State Water Control Board	Resource Protection Areas	Resource Protection Areas need to include streams, even if they are only seasonal, if these streams may make larger streams that lead into the Chesapeake Bay dirty. The areas also should include wetlands and a buffer area.

State	Type of Law	Keyword	Citation	Agency	Title	Summary
Virginia	Regulation	management area	9 Va. Admin. Code § 25-830-90.	State Water Control Board	Resource Management Areas	This plan protects areas that can lead to poor water quality if improperly used. This also specifies the types of land that should be included in the areas.
Virginia	Regulation	developed areas	9 Va. Admin. Code § 25-830-100.	State Water Control Board	Intensely Developed Areas	This allows local government to exclude certain areas that would be included in a protection area if they are already developed.
Virginia	Regulation	local government	9 Va. Admin. Code § 25-830-110.	State Water Control Board	Site-Specific Refinement of Chesapeake Bay Preservation Area Boundaries.	Local governments need to continue evaluating waters and areas, adjusting any areas as necessary.
Virginia	Regulation	purpose	9 Va. Admin. Code § 25-830-120.	State Water Control Board	Purpose	This sets forth the purposes, which is overall to reduce pollution.
Virginia	Regulation	preservation area	9 Va. Admin. Code § 25-830-130.	State Water Control Board	General Performance Criteria	Chesapeake Bay Preservation Areas need to meet these requirements.
Virginia	Regulation	protection area	9 Va. Admin. Code § 25-830-140.	State Water Control Board	Development Criteria for Resource Protection Areas.	Resource Protection Areas need to meet these requirements.
Virginia	Regulation	local government	9 Va. Admin. Code § 25-830-150.	State Water Control Board	Nonconformities, Exemptions, and Exceptions.	Allows an existing business within an area that would not be able to begin operating in the area after this law to continue operating, but not expand. This section also contains factors a local government can consider when granting or denying an exception.

State	Type of Law	Keyword	Citation	Agency	Title	Summary
Virginia	Regulation	comprehensive plan	9 Va. Admin. Code § 25-830-170.	State Water Control Board	Comprehensive Plans	This section states the minimum requirements for comprehensive plans.
Virginia	Regulation	local government	9 Va. Admin. Code § 25-830-190.	State Water Control Board	Land Development Ordinances, Regulations, and Procedures.	Local governments need to review the existing laws, and revise as necessary, to make sure they comply with the Act.
Virginia	Regulation	local government	9 Va. Admin. Code § 25-830-210.	State Water Control Board	Local Assistance Guidance.	The Department of Environmental Quality will create some documents to aid the local governments in following the Act.
Virginia	Regulation	local government	9 Va. Admin. Code § 25-830-220.	State Water Control Board	Board to Establish Liaison.	The State Water Control Board will pick someone to help local governments follow the Act.
Virginia	Regulation	local government	9 Va. Admin. Code § 25-830-240.	State Water Control Board	Preparation and Submission of Management Program.	This details the different steps the local government must take to comply with the Act.
Virginia	Regulation	local government	9 Va. Admin. Code § 25-830-260.	State Water Control Board	Administrative Proceedings.	This section states there will be a uniform process to review any local governments that do not develop adequate plans that follow the Act.
Virginia	regulation	penalty	9 Va. Admin. Code § 25-830-270.	State Water Control Board	Legal Proceedings.	The board gives a local government a 15-day notice while deciding whether to punish the government for not following the Act.

State	Type of Law	Keyword	Citation	Agency	Title	Summary
Maryland	Statute	definition	Md. Code Ann., Nat. Res. §4-11A-01.	Department of Natural Resources	Definitions	This defines some commonly used terms in the statute.
Maryland	Statute	aquaculture	Md. Code Ann., Nat. Res. §4-11A-03.1.	Department of Natural Resources	Aquaculture Review Board	This creates the board and states its purpose is to help with aquaculture permit applications.
Maryland	Statute	aquaculture	Md. Code Ann., Nat. Res. §4-11A-03.2.	Department of Natural Resources	Aquaculture Coordinating Council	This sets the membership and duties of the council. The council reviews and proposes aquaculture based regulations, among other duties.
Maryland	Statute	aquaculture	Md. Code Ann., Nat. Res. §4-11A-05.	Department of Natural Resources	Aquaculture Enterprise Zones in Chesapeake Bay	An aquaculture enterprise zone cannot be in a SAV protection zone.
Maryland	Statute	aquaculture	Md. Code Ann., Nat. Res. §4-11A-06.	Department of Natural Resources	Submerged Land Leases in Chesapeake Bay	No one can rent submerged land if it is part of an SAV protection zone.
Maryland	Statute	aquaculture	Md. Code Ann., Nat. Res. §4-11A-07.	Department of Natural Resources	Water Column Leases	No one can rent the water column of an SAV protection zone.
Maryland	Statute	aquaculture	Md. Code Ann., Nat. Res. §4-11A-11.	Department of Natural Resources	Demonstration Leases	Leases for educational purposes cannot be in an SAV protection zone.
Maryland	Statute	aquaculture	Md. Code Ann., Nat. Res. §4-11A-14.	Department of Natural Resources	Manner of cultivation or removal of oysters, recordkeeping requirements	Someone with an aquaculture lease can remove oysters as they see fit, except in the Atlantic Coastal Bays where hydraulic escalator dredging is not allowed.

State	Type of Law	Keyword	Citation	Agency	Title	Summary
Maryland	Statute	aquaculture; penalty	Md. Code Ann., Nat. Res. §4-11A-16.	Department of Natural Resources	Prohibited activities related to oysters, leased oyster bottoms	May lose your fishing license if you illegally harvest oysters from leased land.
Maryland	Statute	aquaculture; penalty	Md. Code Ann., Nat. Res. §4-11A-16.1.	Department of Natural Resources	Willful, negligent, reckless, wrongful, or malicious entering of leased shell fishing area for certain reasons prohibited	There is also a monetary penalty for illegally removing oysters from leased land.
Maryland	Regulation	aquaculture	Md. Code Regs. 08.02.23.03.	Department of Natural Resources	Commercial Lease Procedures.	This sets the rules a leaseholder legally has to follow, and a leaseholder cannot add any shells or other fill material to the water bottom they are leasing.
Maryland	Regulation	aquaculture	Md. Code Regs. 08.02.04.01.	Department of Natural Resources	Patent Tong Areas	This prohibits using patent tongs in some areas, and allows using them in others.
Maryland	Regulation	dredging	Md. Code Regs. 08.02.04.08.	Department of Natural Resources	Dredge Boat Areas	Dredge boats and hydraulic dredges are prohibited in these areas.
Maryland	Regulation	dredging	Md. Code Regs. 08.02.04.10.	Department of Natural Resources	Dredging with an Auxiliary Yawl Boat.	This prohibits dredge boats in certain areas, but allows them for 2 days each harvesting season not in those areas.
Maryland	Regulation	dredging	Md. Code Regs. 08.02.04.12.	Department of Natural Resources	Power Dredging	This authorizes power dredging in these areas.

State	Type of Law	Keyword	Citation	Agency	Title	Summary
Maryland	Regulation	tidal wetlands	Md. Code Regs. 26.24.02.04.	Department of Environment	General Tidal Wetlands License	This creates a general license people can apply to. If licensed, anyone using this license can undertake the projects this license covers, like filling in shallow water.
Maryland	Regulation	tidal wetlands	Md. Code Regs. 26.24.02.05.	Department of Environment	General Tidal Wetlands Permit	This creates a general permit that people can apply for coverage under if they want to install underground utilities, conserve wetland areas, or improve wildlife habitat in wetlands.
Maryland	Regulation	tidal wetlands; dredging	Md. Code Regs. 26.24.02.06.	Department of Environment	Conditions of a License or Permit	This section provides conditions that anyone under the general license must follow. The conditions state that MDE may prohibit dredging at certain times.
Maryland	Regulation	fishing; gear; SAV protection zone	Md. Code Regs. 08.02.01.12.	Department of Natural Resources	Submerged Aquatic Vegetation (SAV) Protection Zones	This forbids certain gear in SAV protection zones and specifies what those zones in Somerset and Dorchester counties are by coordinates.
Maryland	Statute	fishing; gear; dredge	Md. Code Ann., Nat. Res. § 4-1038.	Department of Natural Resources	Hydraulic clam dredge restrictions	This specifies areas in Anne Arundel, Queen Anne, Somerset, and Talbot counties where a one cannot use a hydraulic clam dredge.
Maryland	Regulation	tidal wetlands; license	Md. Code Regs. 23.02.04.14.	Department of Environment	Special Conditions	MDE can impose any time of year restriction on licenses to protect SAV.

State	Type of Law	Keyword	Citation	Agency	Title	Summary
Maryland	Regulation	guidance; fishery management plans	Md. Code Regs. 08.02.01.01.	Department of Natural Resources	Fishery Management Plans	This lists the existing fishery management plans and "incorporates them by reference." This means that these plans carry the same authority as a statute or regulation in Maryland.
Maryland	Statute	penalty	Md. Code, Envir. § 16-501.	Department of Environment	Penalties and Fines	Violating any law in §16 of the environmental statutes can lead to significant fines and the loss of a permit or license.
Maryland	Statute	penalty	Md. Code, Envir. § 16-502.	Department of Environment	Civil penalty	In addition to a criminal fine, any person who violates § 16 of the environmental statutes may be liable for \$10,000 in civil penalties.
Maryland	Regulation	penalty	Md. Code Regs. 26.24.01.06.	Department of Environment	Violations of Statutory, Regulatory, License, or Permit Requirements.	Violating a tidal wetlands permit can also lead to a suspension or revocation of that permit.
Delaware	Regulation	penalty	7 Del. Admin. Code § 7502-13.0.	Natural Resources and Environmental Control	Penalties as Enacted in Title 7 Del.C. Section 6617.	This sets the penalty for violating any Delaware regulation beginning with 7500, setting fines based on intent of the violator.
Delaware	Statute	penalty	Del. Code Ann. tit. 7, § 2012.		Penalties	This establishes the penalty for any aquaculture or shellfish violations, covering any Delaware regulations in section 3800, including 3801.

State	Type of Law	Keyword	Citation	Agency	Title	Summary
Washington, D.C.	Regulation	infractions, penalty	D.C. Mun. Regs. tit. 16, § 3201.		Fine Amounts	This provides for the civil fine someone in DC is liable for, based on the level of infraction they committed.