Submerged Aquatic Vegetation in Chesapeake Bay ~Financing Restoration~

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Work presented here is a result of collaboration between Chesapeake Bay Program's Budget and Finance WG and SAV WG

Outline

- Overview of SAV in the Chesapeake Bay
- Presentation of Submerged Aquatic Vegetation Financing Strategy Scoping Project
- Outcomes
- Next Steps

SAV Restoration Goal

Vital Habitats Goal

Restore, enhance and protect a network of land and water habitats to support fish and wildlife, and to afford other public benefits, including water quality, recreational uses and scenic value across the watershed.

Submerged Aquatic Vegetation (SAV) Outcome

Sustain and increase the habitat benefits of SAV (underwater grasses) in the Chesapeake Bay. Achieve and sustain the ultimate outcome of 185,000 acres of SAV Bay-wide necessary for a restored Bay. Progress toward this ultimate outcome will be measured against a target of 90,000 acres by 2017 and 130,000 acres by 2025.

This outcome was derived by the Chesapeake Bay Program's SAV Workgroup and is based on observed historical SAV abundance and distribution throughout the Bay and its rivers.

Bay-wide SAV Restoration Goals

2017 Interim Goal:

90,000 acres

2025 Interim Goal:

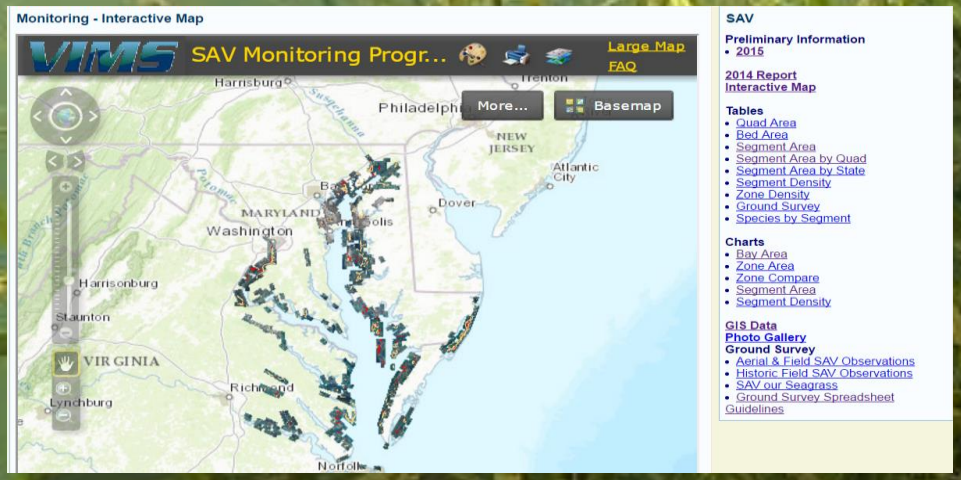
130,000 acres

Ultimate Goal:

185,000 acres

How do we track progress towards the goal?

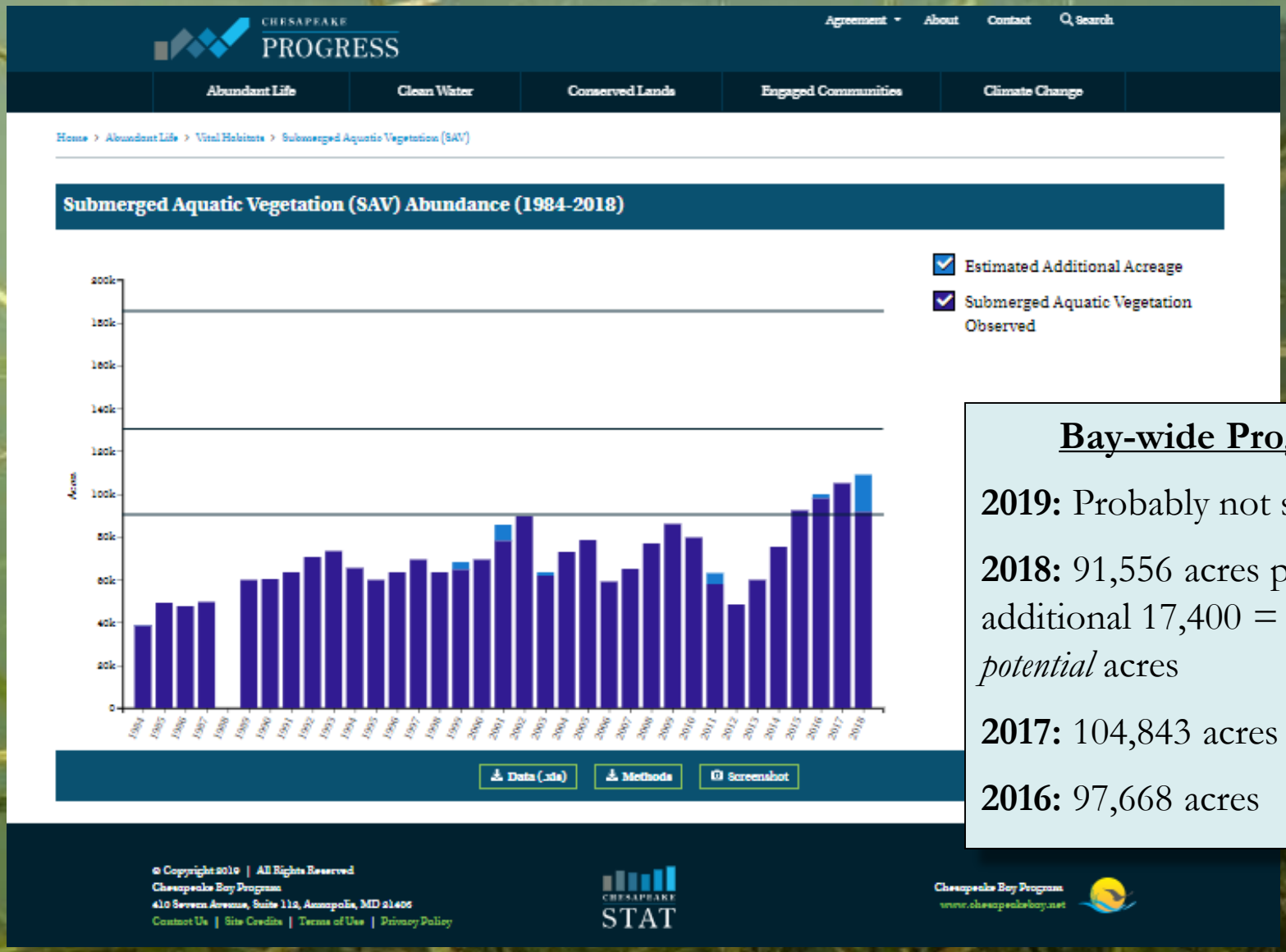
- Bay-wide Aerial Survey, conducted by VIMS annually May-Oct
- 180+ flight lines using Multispectral imagery
- Ongoing since 1984
- Funded by Federal/State partnership



VIMS | William & Mary
Virginia Institute of Marine Science

http://web.vims.edu/bio/sav/

Progress Toward the SAV Goal



Bay-wide Progress

2019: Probably not so good..

2018: 91,556 acres plus an additional 17,400 = ~109,000 *potential* acres

2017: 104,843 acres

2016: 97,668 acres

https://www.chesapeakeprogress.com/chart/submerged-aquatic-vegetation-abundance

Co-Benefits of SAV

SAV meadows form Ecologically and Economically Important Habitat – Form Complex "Keystone Communities"

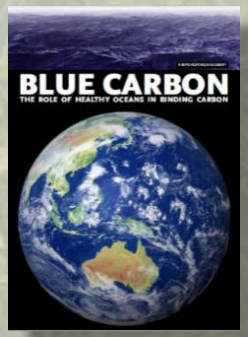
Photo: Jay Flemming

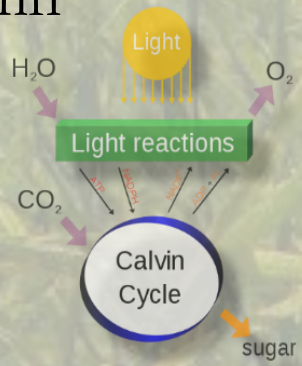
SAV beds absorb and filter nutrients and sediments from the water column, and reduce resuspension of sediments, promoting increased water clarity

SAV beds reduce shoreline erosion

SAV releases oxygen into the water column

SAV sequesters carbon





SAV is a Bay Sentinel

SAV Financing

- **Process begun by GIT 6's Budget and Finance Work Group**

- **Call put out to work groups for interest in addressing financing issues, SAV work group chosen as pilot**
  - ***"Submerged Aquatic Vegetation Financing Strategy Scoping Project"***

- **Series of three meetings**
  - **Meeting 1: brainstorming event with a core group of technical stakeholders, began to discuss financing issues**
  - **Meeting 2: more participation from SAV program management and stakeholders to get input and buy in on a potential financial system**
  - **Meeting 3: involved the financial experts that vetted the financial system.**

SAV Financing

- **Discussion divided into two main issues**
  - **Financing of ecological restoration of SAV in the Bay**
  - **Financing or funding of the annual SAV survey**

- **These issues are linked (need to measure to manage), but would likely have separate financing solutions**

- **Bulk of the discussion focused on the annual survey as this is the more immediate need (~$800,000 annually)**

SAV Restoration Financing Challenges

- **SAV restoration is difficult to predict**
  - **Success dependent on water quality which, while long term trends are positive, is variable year to year**
  - **Traditional methods of restoration (planting seedlings) are expensive with low rates of success compared to other forms of ecological restoration**

- **Financing is reliant on ability to generate revenue and predictability**

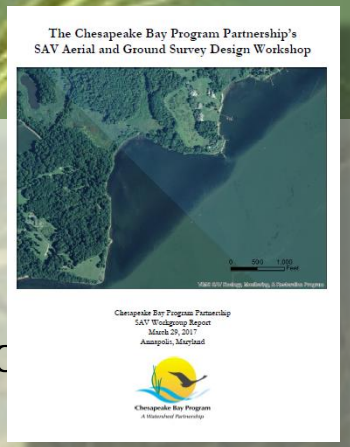
SAV Survey Financing Options

- **User pays, market-based funding program**
- **Support the SAV survey through permit application fees**

Draw back to both of these options is the loss of free public access to a valuable scientific data repository, could possibly add an exemption for research

SAV Survey Funding Options

- Identify cost saving measures for imagery collection and data processing
  - CBP SAV Aerial and Ground Survey Design Worksho
  - VIMS Post-doc to semi-automate data processing
  - STAC Workshop Exploring Satellite Image Integration for the CBP SAV Monitoring Program



- Create dedicated sources of funding for the survey

SAV Restoration Financing Options

- **Require in-kind mitigation for SAV impacts**
  - Currently wetland mitigation or fee in lieu payments can be required when SAV is negatively impacted
  - There is not currently the knowledge or resources for private sector SAV restoration, but states could provide these through technical support and supporting a seed production facility *(GIT funded project currently in review to develop SAV restoration protocol for small-scale projects)*
  - Seedling plug plantings restoration is expensive, but broadcasting seeds is much cheaper with a similar rate of restoration success

Overarching Bay Restoration Recommendation

- **Create an external financing advisory board or task force**
  - Connect local and state-based mitigation efforts to a broader financing system
  - Design and recommend innovative institutional, regulatory, and investment opportunities
  - Could function to enable Bay communities to link SAV mitigation and restoration financing with SAV survey funding

Future Role of Budget and Finance WG

- BFWG has limited staff with finance expertise
- Effort was significant for these staff, SAV WG leadership
- Exercise was potentially useful but probably not feasible to replicate in the future
- GIT project will host Financing Forum, provide opportunities for GITs to work directly with financing experts
- If this effort proves successful could transition into Bay Financing Advisory Board, with mechanism for formal recommendations

Next Steps

- **GIT-funded SAV Restoration Protocol Project:** Development of Technical Guidance Manual and Outreach Materials for Small-scale SAV Restoration in Chesapeake Bay and its tidal tributaries. Will ultimately be part of the SAV restoration financing puzzle.

- **STAC-funded Workshop:** Exploring Satellite Image Integration for the Chesapeake Bay SAV Monitoring Program. Will ultimately reduce costs of image acquisition and processing.

- **Finance Meeting for GITs** in Winter/Spring 2020 to build financing knowledge and provide the opportunity to work with expert consultants