Four Years In:

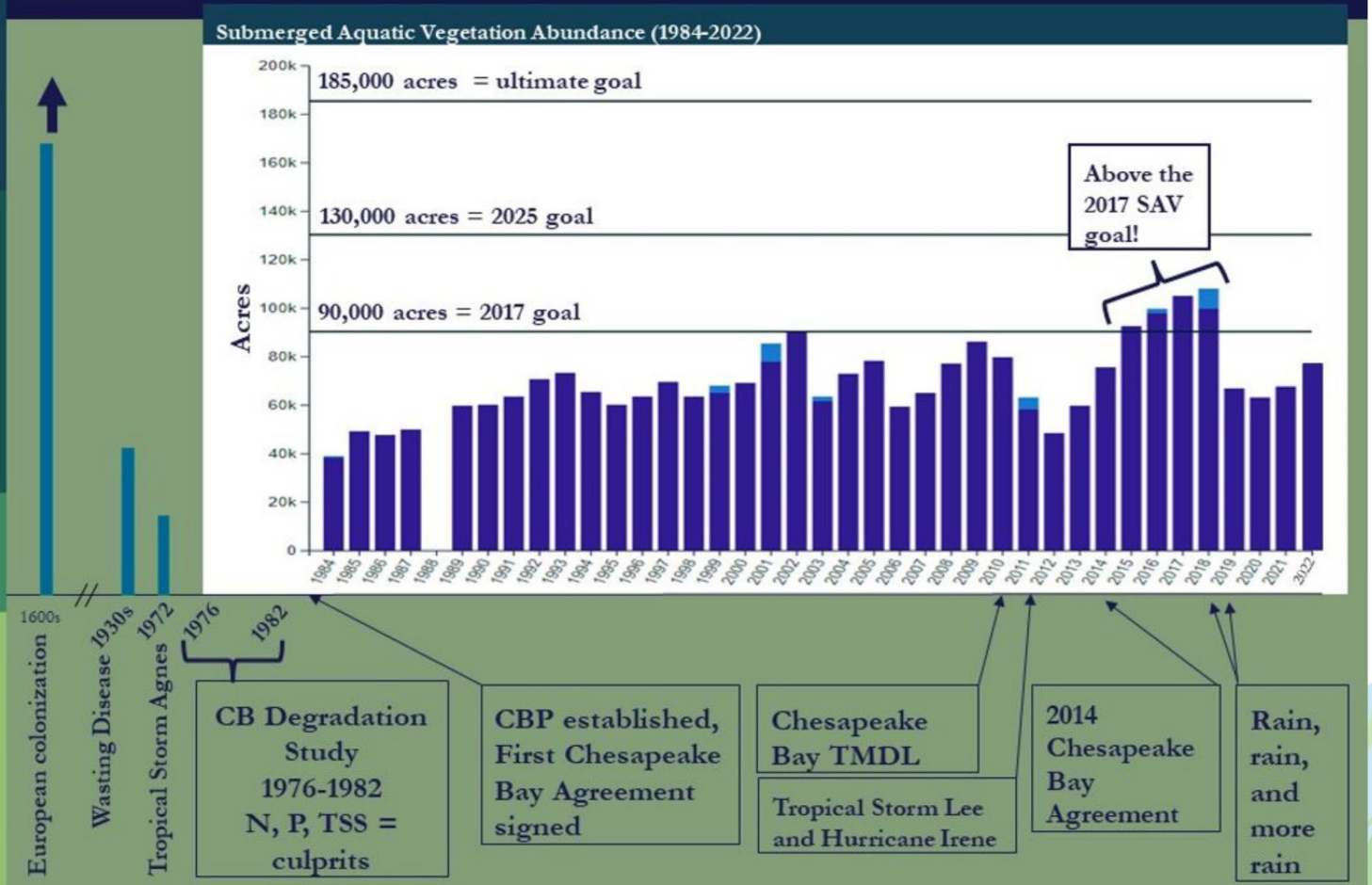
An Update On the Chesapeake Bay SAV Watchers Volunteer Monitoring Program

Kaitlin E. Scowen
Maryland Department of Natural Resources
kaitlin.scowen@maryland.gov

2014 Chesapeake Bay Agreement

SAV Outcome: Sustain and increase the habitat benefits of SAV 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 outcome will be measured against a target of 90,000 acres by 2017 and 130,000 acres by 2025.

Progress towards the Bay-wide SAV goal



SAV Monitoring Programs

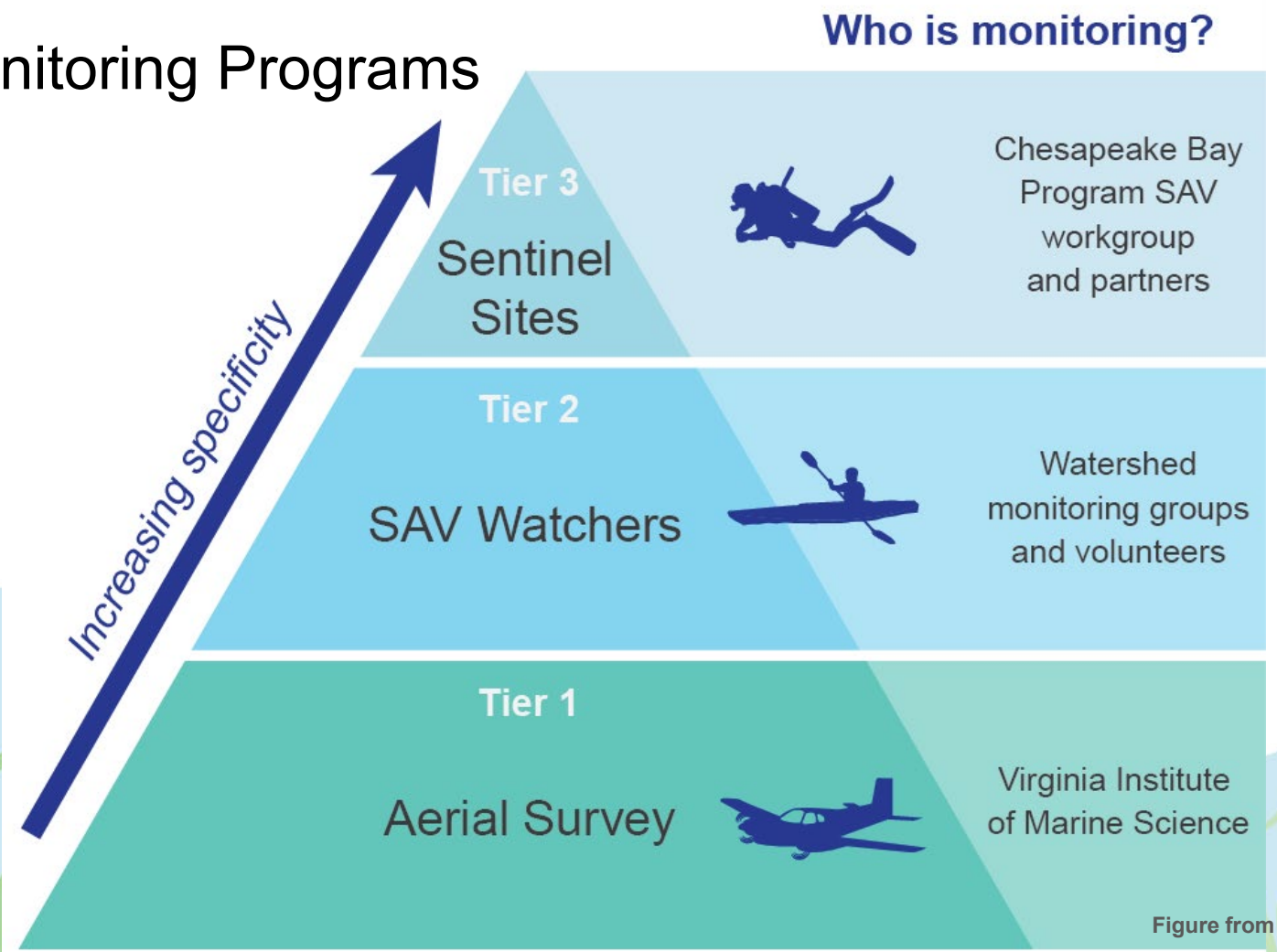
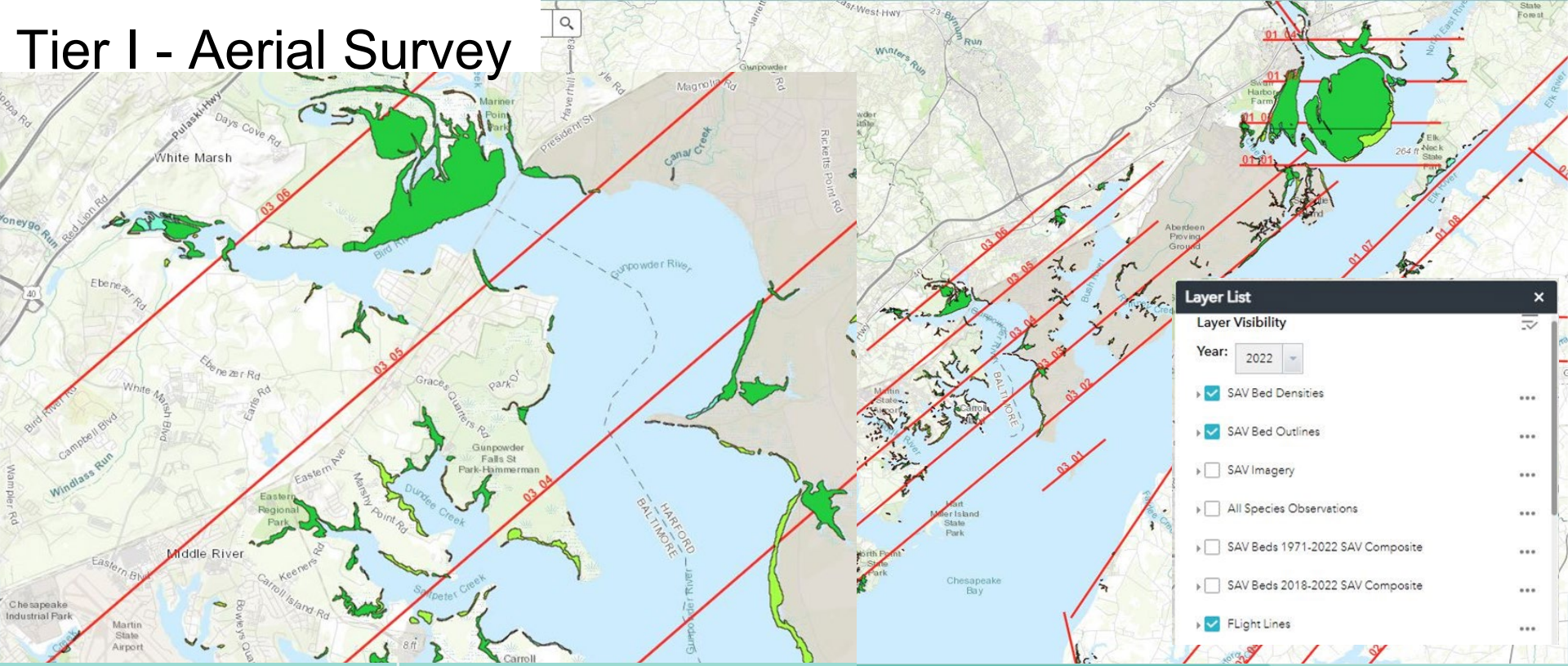


Figure from Webster et al. 2021

Tier I - Aerial Survey



Tracking progress towards SAV restoration goals

SAV acreage and density

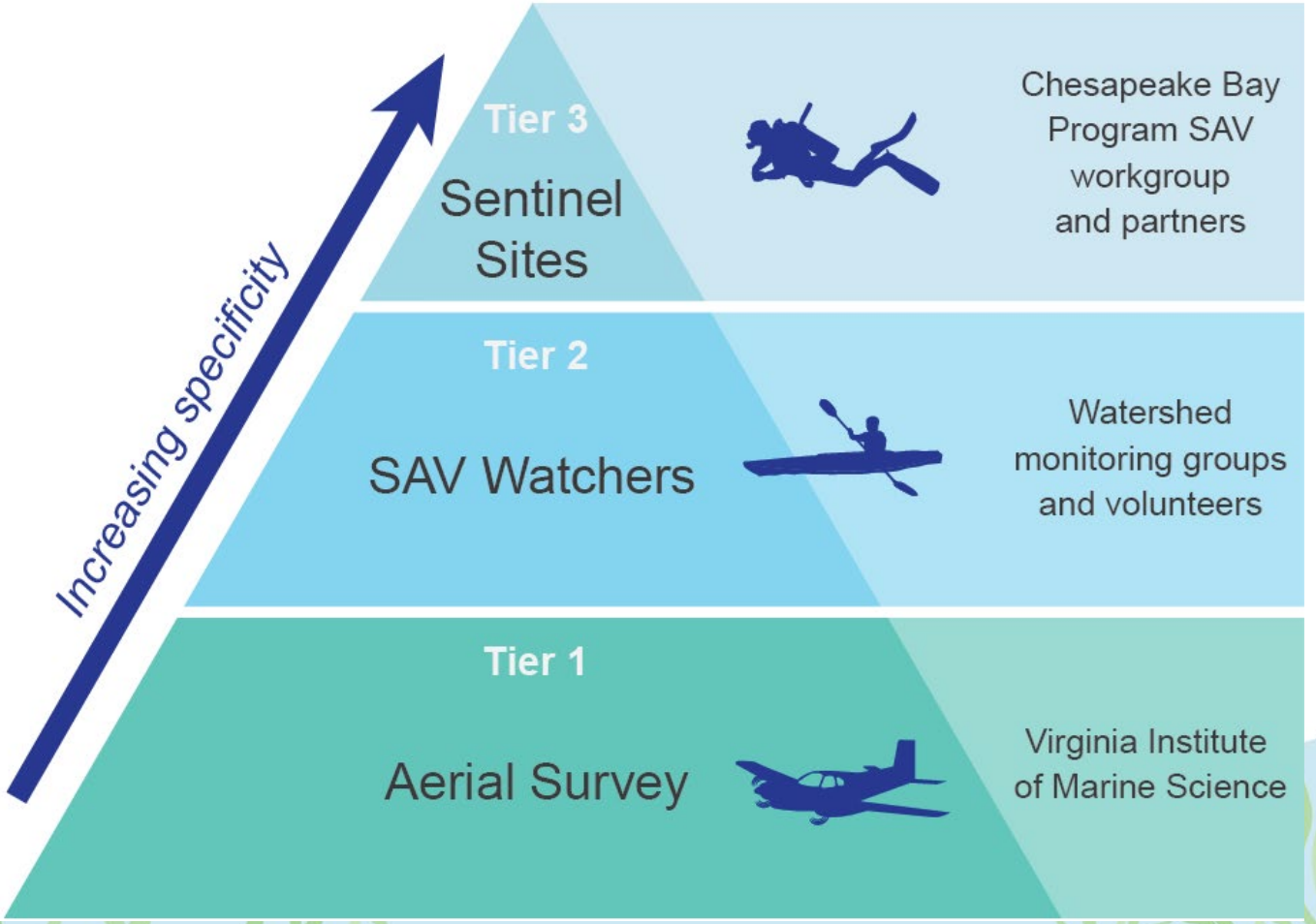
Tier 1

Aerial Survey

Virginia Institute of Marine Science

Figure from Webster et al. 2021

Who is monitoring?



Tier III - SAV Sentinel Sites

Identifying causal relationships by intensively monitoring ecological processes, drivers of change, and ecosystem responses

Parameters measured in Tier 2, plus cover of each SAV species, canopy height, epiphyte loading, shoot density, biomass, indications of herbivory, disease, or lesions, temperature, pH, salinity, chlorophyll a, turbidity, and dissolved oxygen concentration

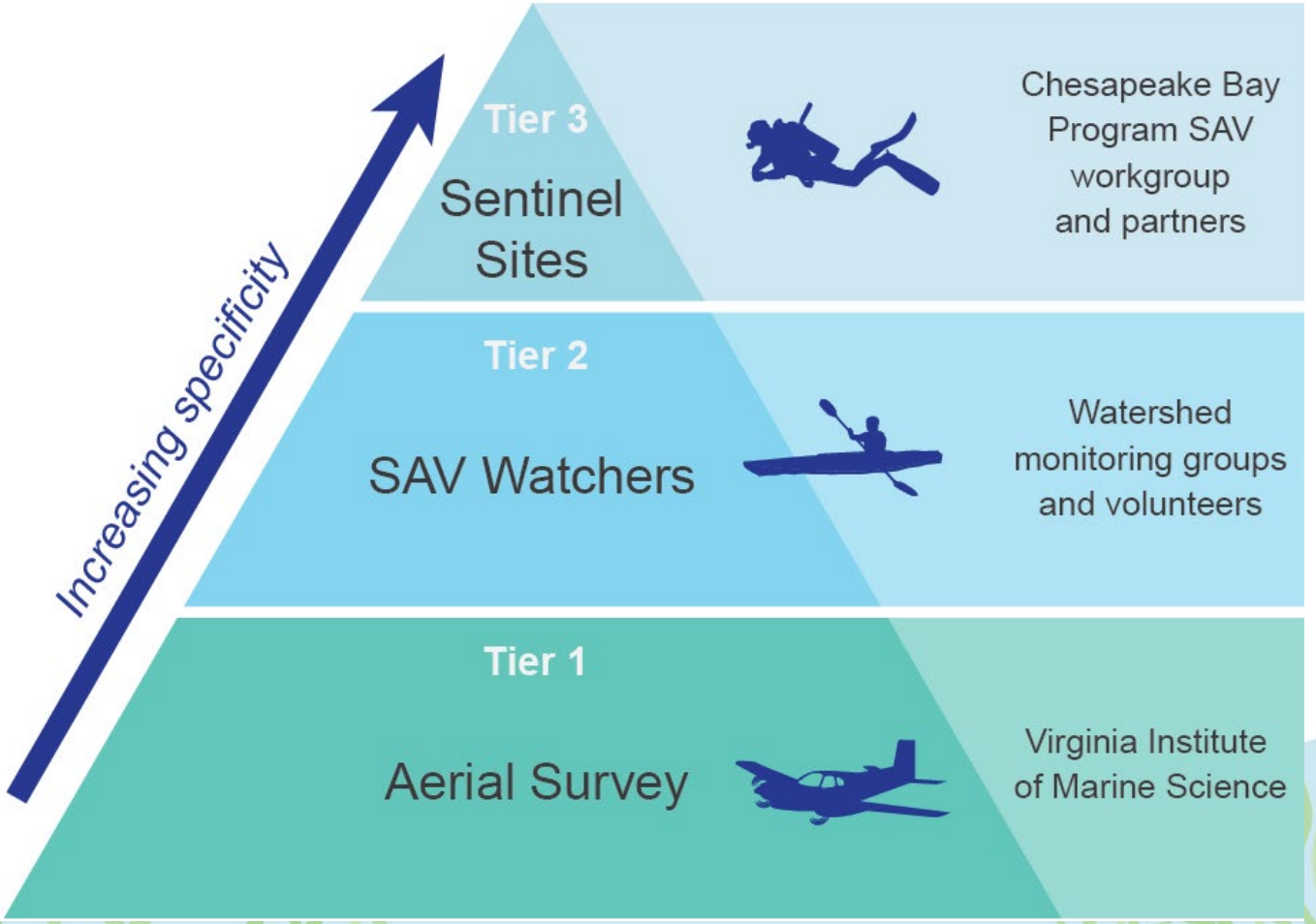
Tier 3

Sentinel Sites

Chesapeake Bay Program SAV workgroup and partners

Figure from Webster et al. 2021

Who is monitoring?



Tier II - Chesapeake Bay SAV Watchers

Water stargrass Hd

Heteranthera dubia

Ground-truthing aerial survey data, broad-scale condition assessments, and identifying and quantifying driver-response relationships

SAV species composition and total density, presence/absence of seeds, flowers, epiphytes, and filamentous macroalgae, indications of human impacts, water column and Secchi depth, sediment type, and shoreline type

Tier 2

SAV Watchers

Watershed monitoring groups and volunteers

Figure from Webster et al. 2021

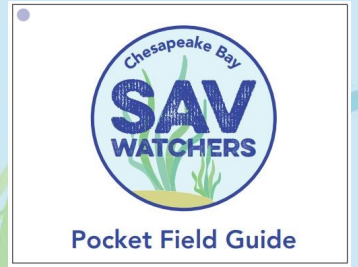
Importance of the Chesapeake Bay SAV Watchers

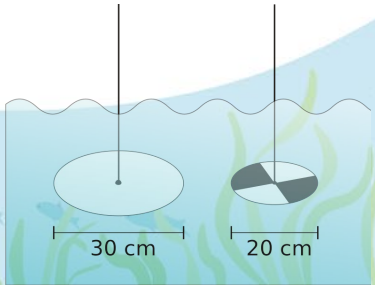
SAV Watchers are taught:

- **ID Chesapeake Bay SAV species**
- Evaluate SAV bed density and characteristics
- How to utilize a GPS device to obtain site coordinates
- Measure water clarity and depth using a Secchi disk
- Determine sediment/shoreline types

How this data can be used:

- **Inform new, targeted restoration efforts and management decisions**
- **Educate and engage with volunteers**
- **Ground truth aerial surveys and support current research**
- Understand environmental factors influence on habitat health





Progress So Far...

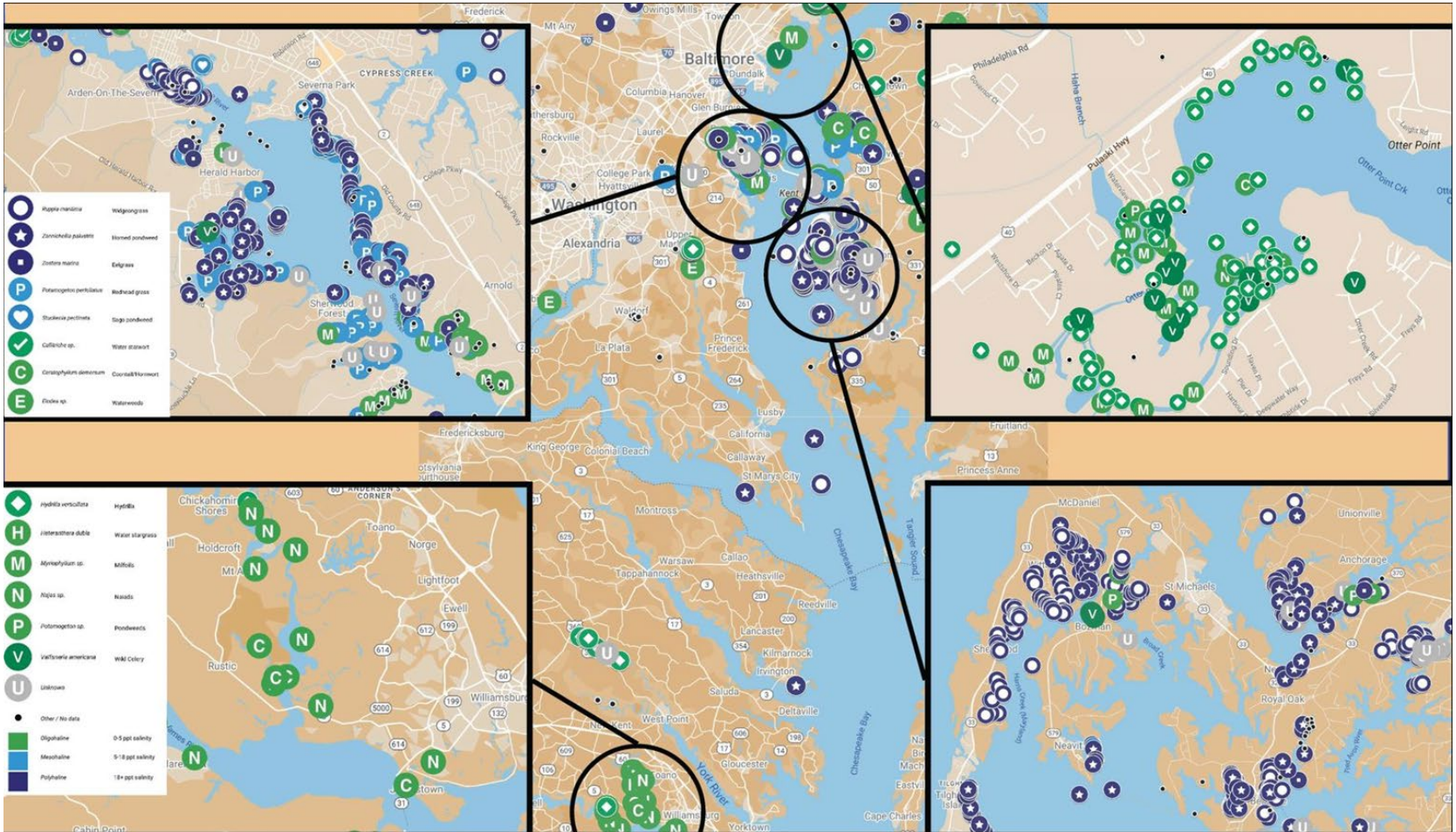
To gauge the program's effectiveness, we conducted a comprehensive review of SAV Watcher data collected to date.

This analysis encompassed various metrics, including:

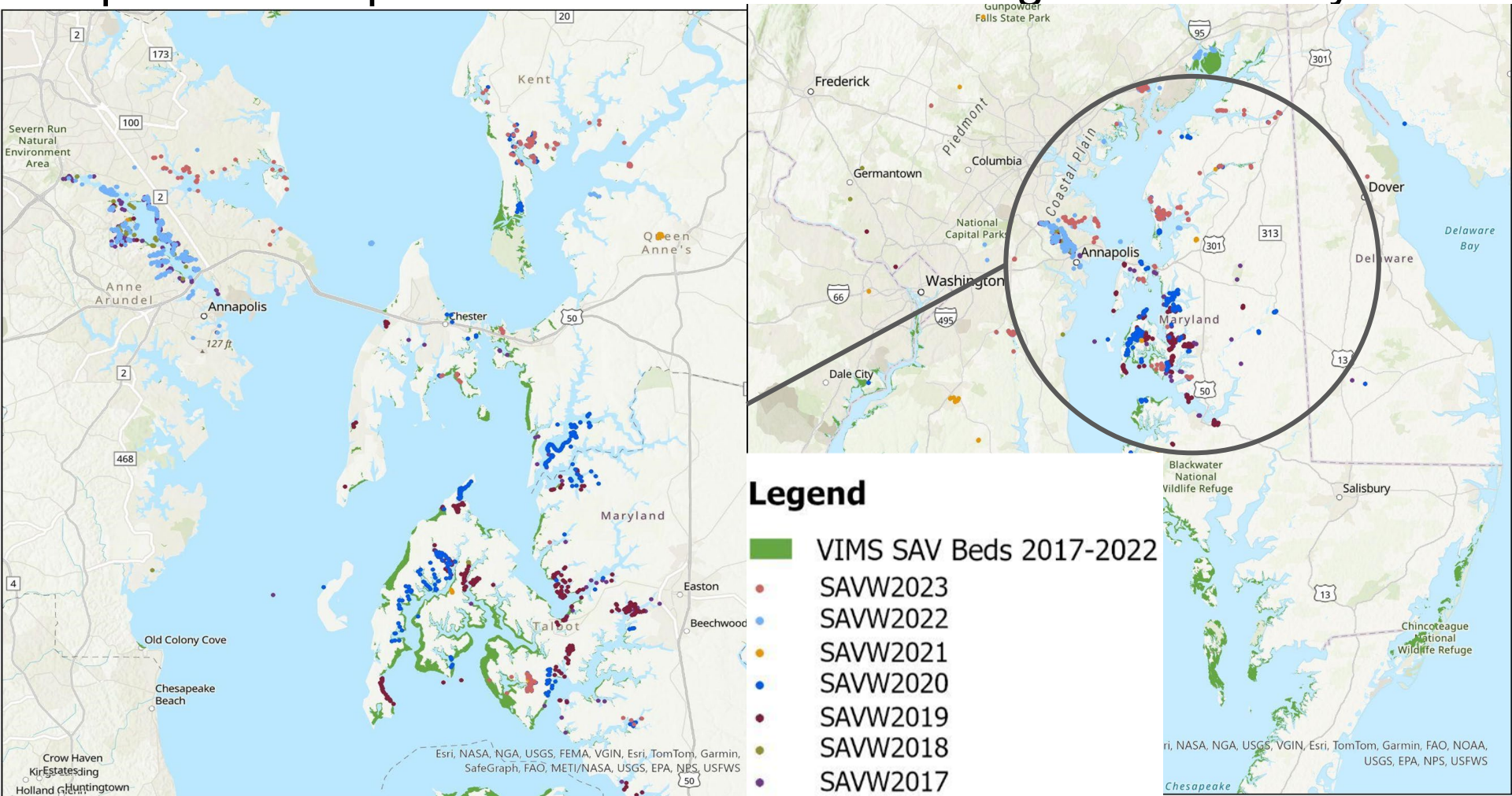
- Total count of participating organizations
- Certified trainers
- **Length of volunteer engagement**
- Annual intake of new volunteers
- Website interaction
- Quantity of data points amassed
- **Volunteer demographics**
- **Personal testimonies**
- **Program strengths and areas for improvement**

Interactive Map and Storyboard

CB SAV Watchers maintains a substantial database of **2,445 data points**.



Species Composition Added to SAV Acreage and Density



Results based on Data Collection

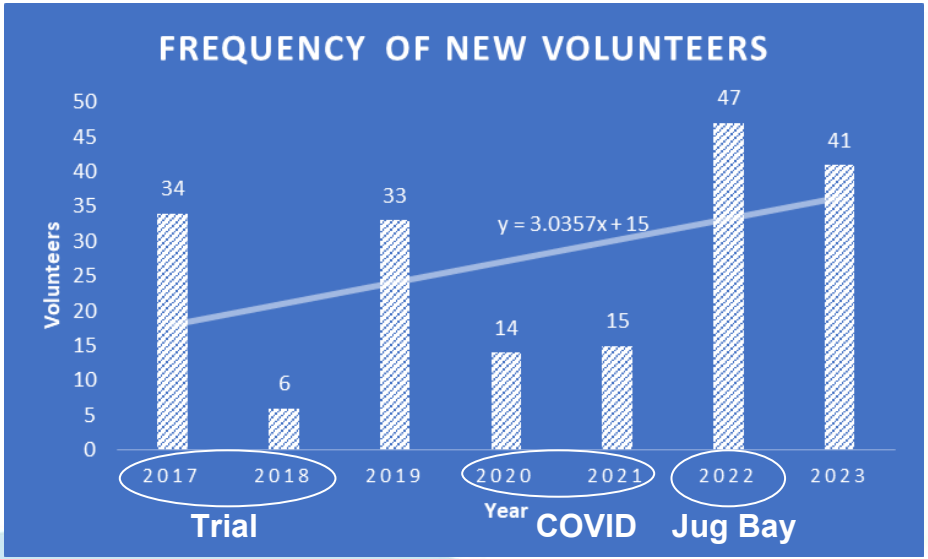


Figure 1. There is an upward trend in new volunteers over the last 6 years. The most joined in 2022 and least joined in 2018 during the program's trial run.

Table 1. There are 190 volunteers who submitted data, as well as 48 Trainers.

Year Joined	Number of Volunteers
2017	34
2018	6
2019	33
2020	14
2021	15
2022	47
2023	41
Total	**190**

Table 2. Total of 1,903 SAV Watcher Datasheet data points from 8 different organizations, and 542 Water Reporter app data points with a grand total of 2,445 data points.

Organization	Total Datapoints
CBNERR Jug Bay	74
Havre de Grace MMEC	21
Individual	6
Magothy River Association	40
Marshy Point Nature Center	5
Otter Point Creek	153
SAV Navy	420
ShoreRivers	1184
Water Reporter App	542
Total Datapoints	**2445**

Table 3. Notable mentions of devoted volunteers/trainers (those who volunteered for 3 or more seasons).

Volunteer	Organization	# of Seasons Involved
T. D.	Water Reporter	5
B. B.	ShoreRivers	5
F. S.	Water Reporter	4
B. W.	Nanticoke Watershed Alliance	4
S. F.	ShoreRivers	4
J. R.	ShoreRivers	3
C. T.	ShoreRivers	3
M. B.	ShoreRivers	3

Participant Survey

Chesapeake Bay SAV Watchers Participant Feedback Survey 2023

Figure 2. Age demographics of volunteers.

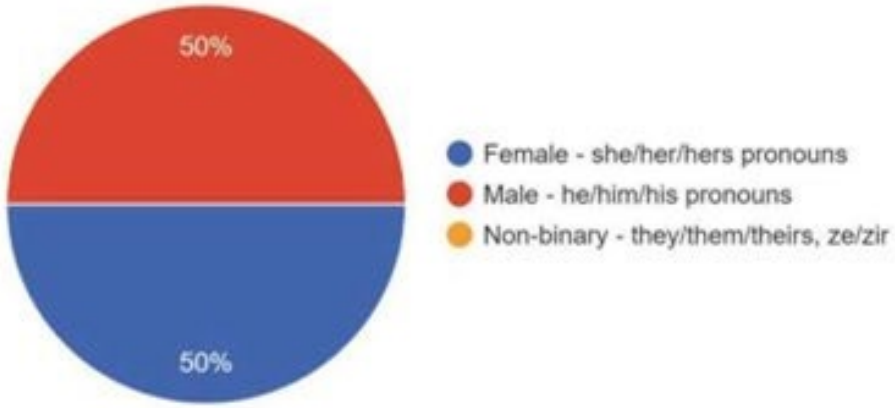


Figure 6. Gender demographics of volunteers.

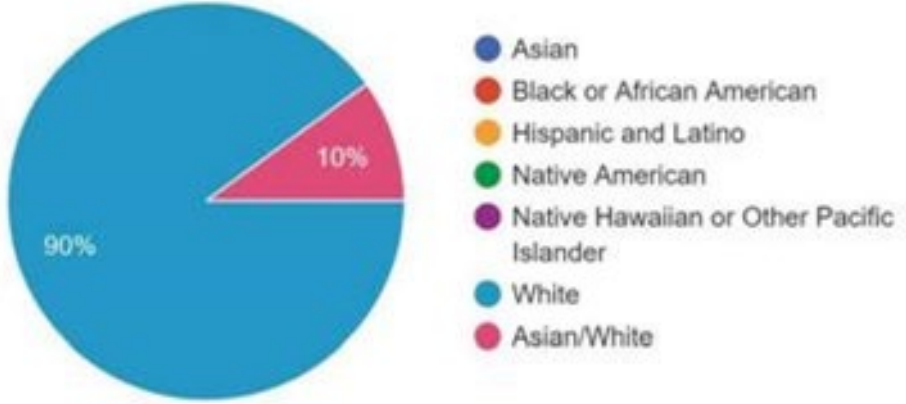


Figure 4. Race demographics of volunteers.

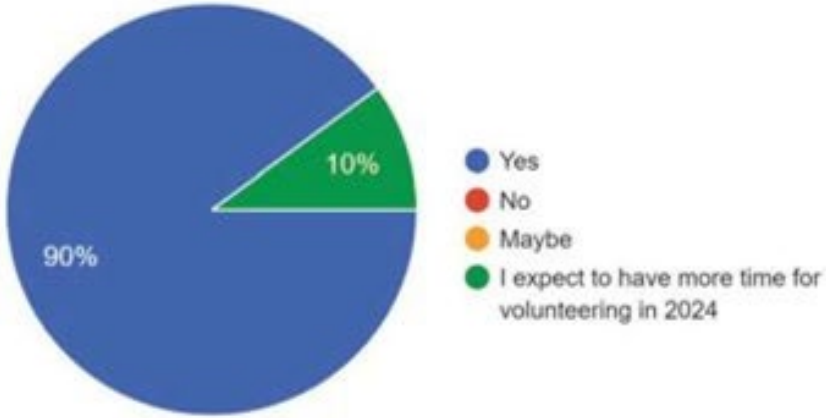


Figure 8. Opinions on returning to the program in 2024.

Figure 3. Type of involvement in the program for participants.

Figure 5. Preferred methods of data entry.

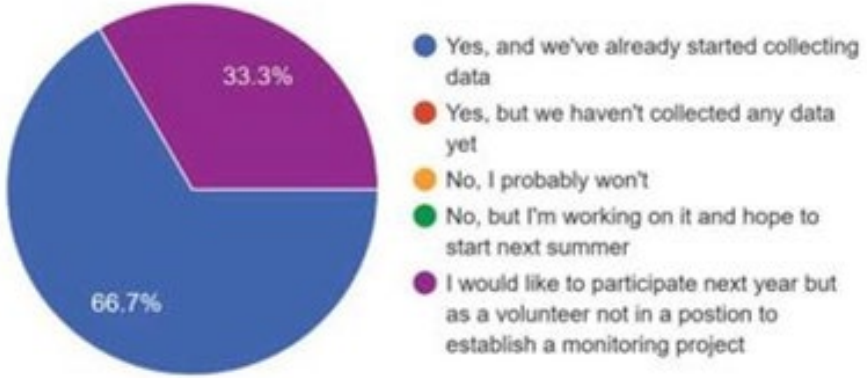


Figure 7. Opinions on program retention.

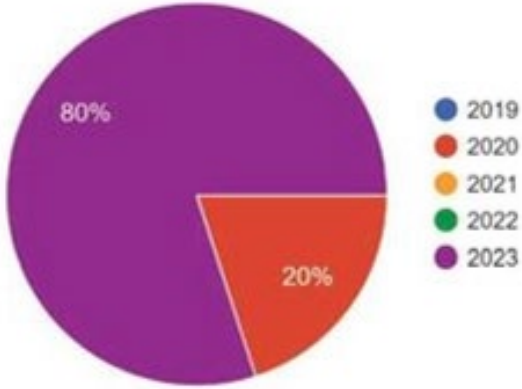


Figure 9. Year of involvement with the program.

Personal Testimonies

What do you enjoy most about the program?

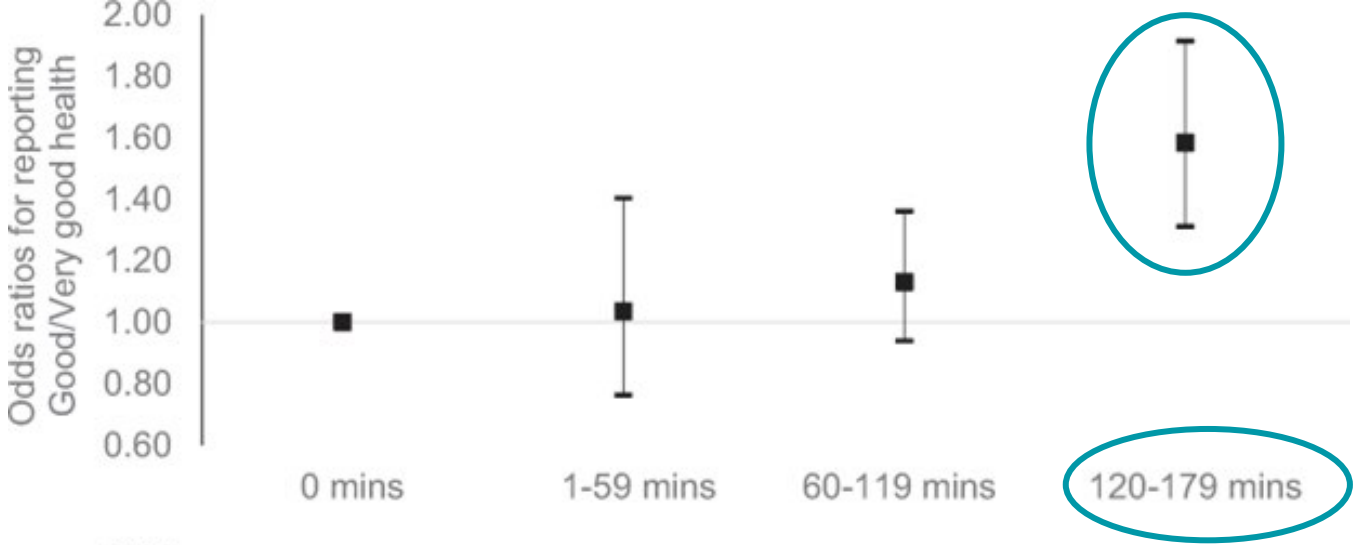
"Collaboration and growth in the program"

"Helping to support a healthy ecosystem and creating data to affect change"

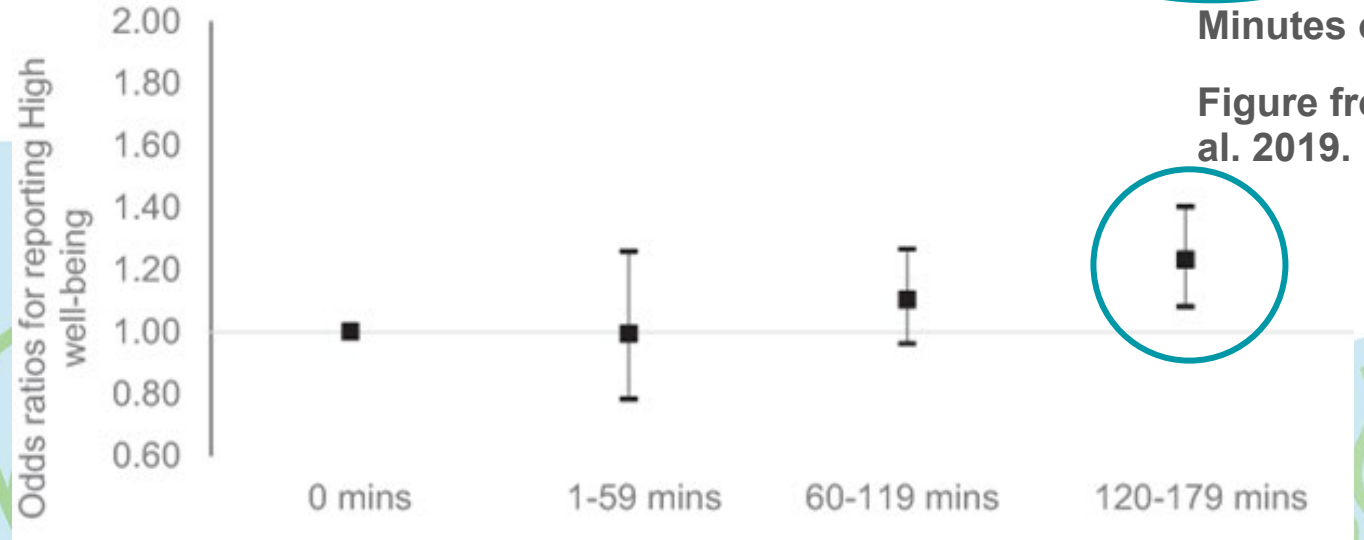
"The opportunity to educate and engage the public around a habitat that is so important and beneficial"

"Being on the water and spending time outside learning about the environment"

Health



Well-being



Minutes over 7 days

Figure from White et al. 2019.

Personal Testimonies

What is something about the program that needs more attention?

"Additional hands-on taxonomy training in the field may help the reliability of data."

"The SAV booklets are wonderful. There's a lot of info though, it might be nice to have a one page sheet with the most common SAV for the area if possible since most of us are inexperienced."

"Mainstreaming data collection and dashboards for stakeholders and organizations."

"Report format"

Discussion

Successes

- The Chesapeake Bay SAV Watchers program **consistently attract new volunteers** each year, indicating broad appeal across age groups.
- Survey results reveal a desire among **volunteers to return**, despite the need for improved retention rates, with 2023 volunteers expressing intent to participate again.
- **Volunteers find fulfillment** and satisfaction in outdoor activities, community involvement, and environmental education, **leading to increased dedication to protecting SAV** and the Chesapeake Bay ecosystem.
- Over four years, Chesapeake Bay SAV Watchers have **accumulated valuable data**, strengthening the program's future prospects.

Discussion

Lessons Learned

- Program awareness primarily spreads through word of mouth, the Chesapeake Monitoring Cooperative website, Riverkeeper and watershed recruitment, but **faces challenges in advertising and volunteer retention.**

- The program currently **lacks diversity**, primarily attracting a white audience, although this conclusion is based on limited demographic data.

- The program's website serves as a general information source but **lacks event details**.

- To address these challenges, **a newsletter and social media presence have been launched** to share program updates, event notifications, and celebrate volunteers' achievements, as well as reach a broader audience.

- Prioritizing data entry training is essential, as some volunteers have found the current excel **template challenging** to use.

Take Home Messages

The Chesapeake Bay SAV Watchers program has seen **consistent annual growth in volunteers**, with the largest increase of **47 new volunteers in 2022**. It now maintains a substantial database of **2,445 data points**. Volunteers are motivated by their love for nature, community engagement, and a dedication to environmental education.

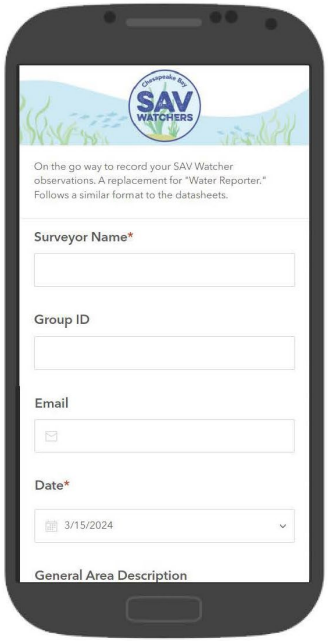
On average, volunteers remain engaged for **1.26 SAV "seasons."** In order to ensure the continued commitment of volunteers, the program should focus on developing strategies for retention, improving data entry methods, increasing expressions of gratitude towards volunteers, and implementing effective social marketing for the program.

Data Entry and Management Solution - ArcGIS Survey123

Upload observations while in the field or afterwards.

Photo required (if present)

ArcGIS Survey123



Social Media Presence and Newsletters

QUARTERLY NEWSLETTER

April 2024

CHESAPEAKE BAY SAV WATCHERS

UPCOMING TRAINER CERTIFICATION EVENTS

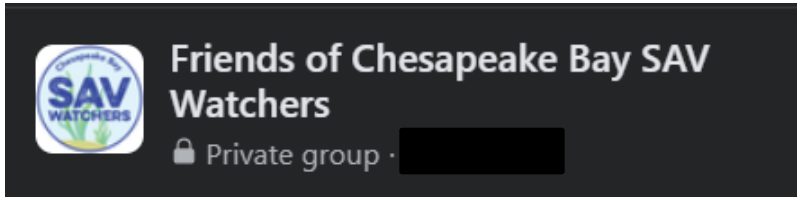
If you or someone you know is interested in becoming a certified SAV Watcher Trainer, RSVP to one of our events coming up! There are three summer training events happening this year at the following locations:

Accokeek Foundation, Potomac River - June 11th - sign up **HERE**

Marshy Point, Middle River - July 12th - sign up **HERE**

Havre de Grace Maritime Museum - July 23rd - sign up **HERE**

SPRING 2024 UPDATES



Join the SAV Watchers!

Newsletter Email List

Questions?

Kaitlin.Scowen@Maryland.gov

ChesapeakeBaySAVWatchers.com