

# Exploring Satellite Image Integration for the Chesapeake Bay SAV Monitoring Program

~Proposal for a Responsive STAC Workshop~

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Critical Assessment Protocol Workgroup Meeting

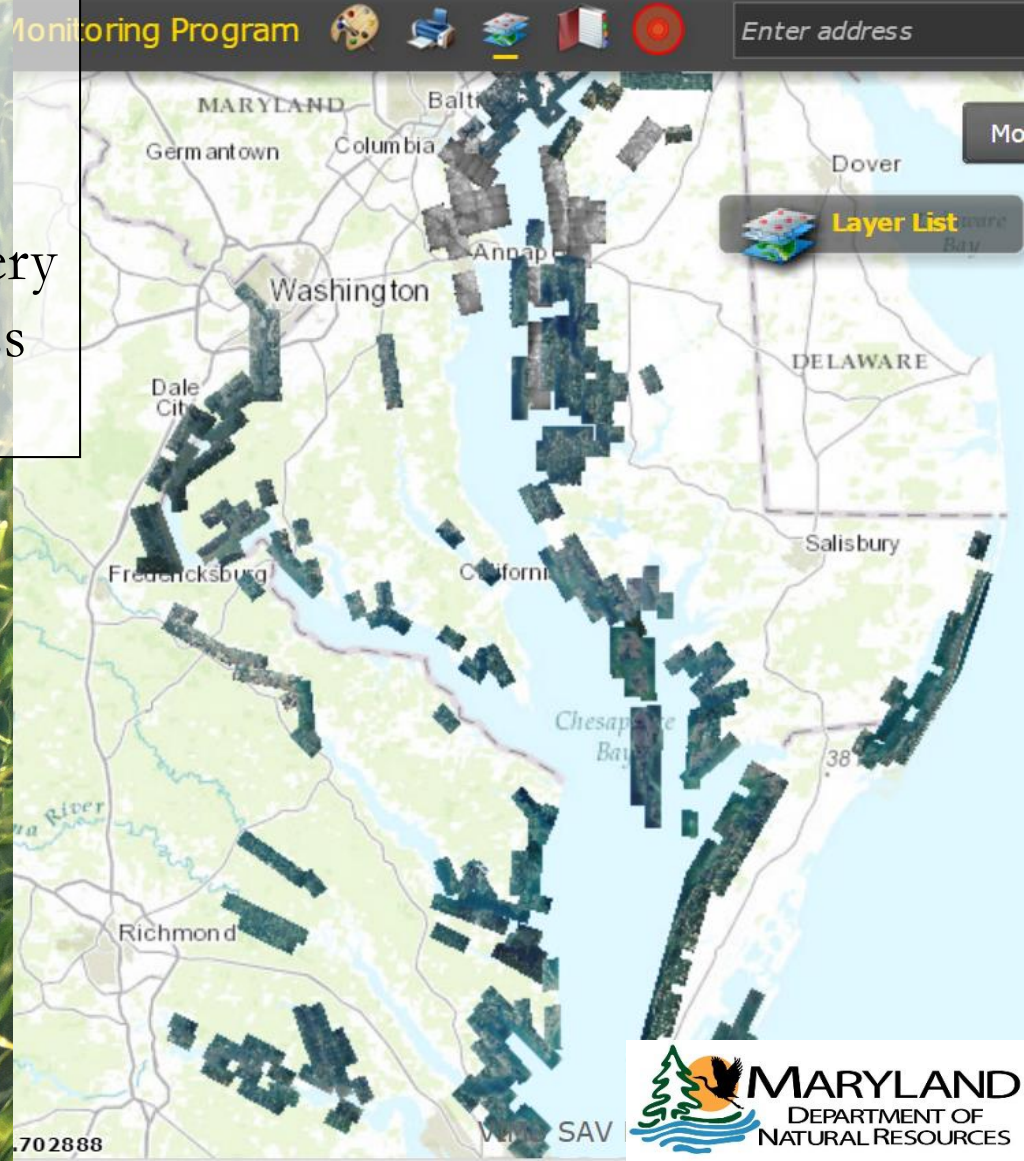
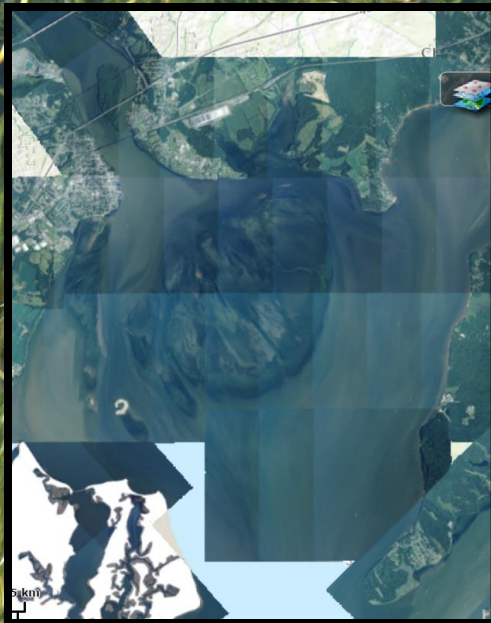
3.8.2019



# VIMS SAV Monitoring Program

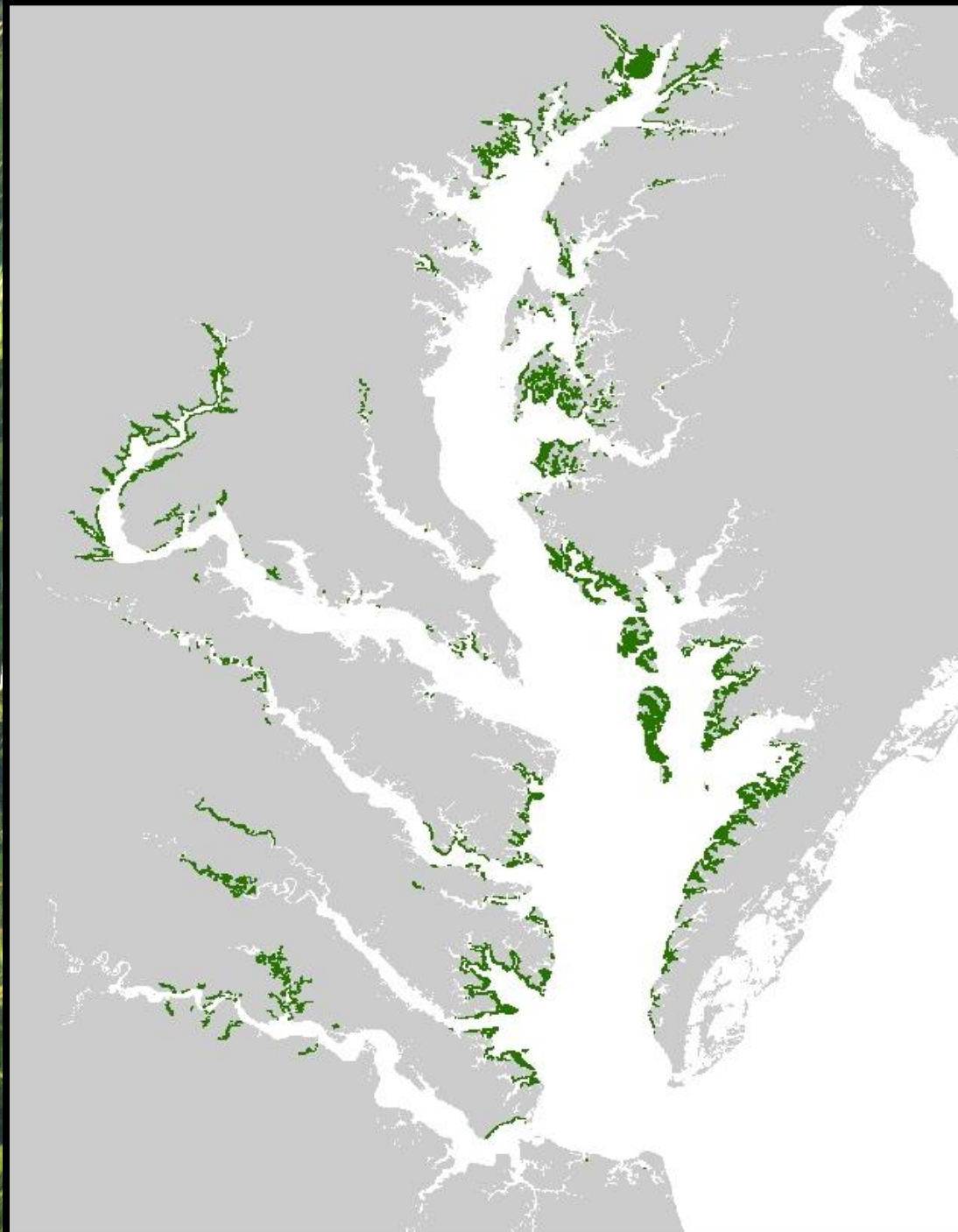
“Most successful large-scale, consistent, long-term SAV monitoring program in the world”

- Bay-wide
- Annual, since 1984
- Aerial and ground survey data
- Uses multispectral digital imagery
- Conducted during peak biomass
- 187 flight lines





From Imagery to  
Maps used for  
Acreage  
Assessment





# Quantifying SAV abundance from space

-Zimmerman Lab at ODU

- Use high resolution satellite imagery instead of aerial imagery
- Potentially use AI/machine learning algorithms to map SAV





# What is the SAV data used for?

- The Chesapeake Bay Watershed Agreement dictates Vital Habitat Goals that include **measurable SAV outcomes** – measurements only possible because of the aerial monitoring program.
- SAV acreage is used as a **water clarity indicator** and measure towards achievement of the Bay Program's **water quality goals**. Those assessment results are used to list or delisted impaired water bodies as well as target the development of **TMDLs**.
- Multiple local, state, and federal agencies use SAV distribution data for **regulatory and permitting** purposes which include identifying:
  - potential conflicts with dredging and filling,
  - pier and shoreline construction conflicts, and
  - Potential conflicts with fishing practices, such as hydraulic clam dredging and shellfish aquaculture
- SAV distribution, abundance, and species data is used to **model and forecast** change in the Bay's resource and habitat in response to a variety of human induced stressors.
- SAV distribution, abundance and species data is used to identify sites where scientists collect data that will **advance our knowledge of SAV** biology and ecology and that will ultimately be used to **influence restoration and management efforts**.