Responding to the PSC Request to Improve the CBP Monitoring Networks

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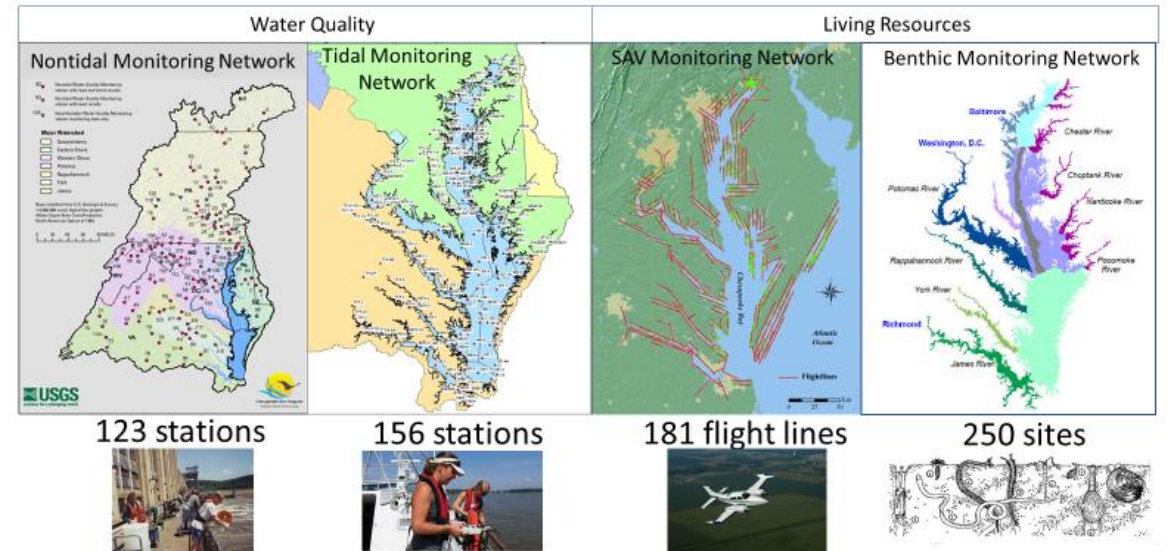
Management Board Meeting

April 8, 2021

# Monitoring Presentation to the Principal Staff Committee

- Lee McDonnell provided monitoring presentation March 2

- Help them better understand CBP budget and funding for monitoring

- CBP networks:
  - Tidal water quality
  - Nontidal nutrients and sediment
  - SAV
  - Benthic organisms
  - Citizen Monitoring

- Current Funding:
  - CBP $5M and partners >$7M

CBP Partnership Monitoring Networks: Annual Monitoring

Water Quality		Living Resources	
Nontidal Monitoring Network	Tidal Monitoring Network	SAV Monitoring Network	Benthic Monitoring Network
123 stations	156 stations	181 flight lines	250 sites

Chesapeake Bay Monitoring Program Capacity Status?

Traditional Monitoring Program Capacity: Good/**Fair**/Poor

Count of Tidal Water-quality Samples
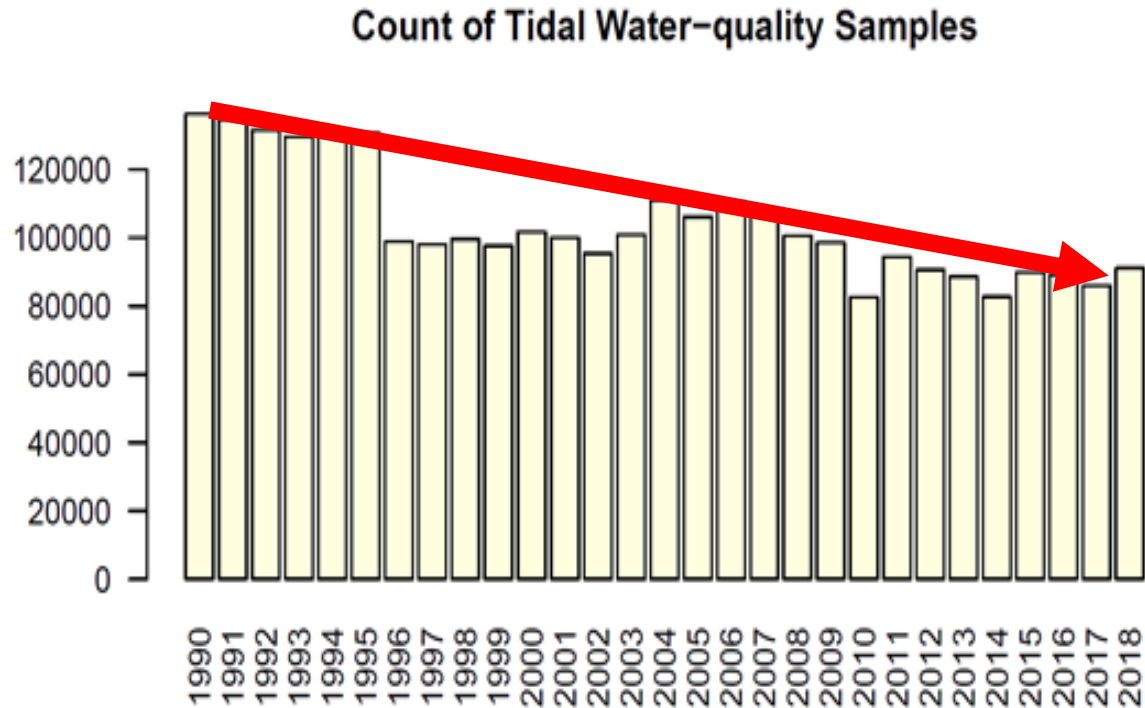
- Traditional capacity is highly stressed and declining

  ~20 years: Tidal data monitoring remains "marginal"

 Nontidal data collection "adequate" for the watershed load estimates, station losses ahead

  Flat funding ignores inflation/COLAs translating to station and data losses.

  Impending SAV program cost increases may challenge program after 2021

Source: P. Tango USGS

Principal Staff Committee Request

- Provide information to improve CBP monitoring networks, including:
  - (1) Current status and threats to the networks,
  - (2) what is needed to improve the monitoring networks.
- STAR will Coordinate Response
  - Deliver by end of 2021
  - Work plan being developed

CBP Organizational Structure and Leadership 09-20-10
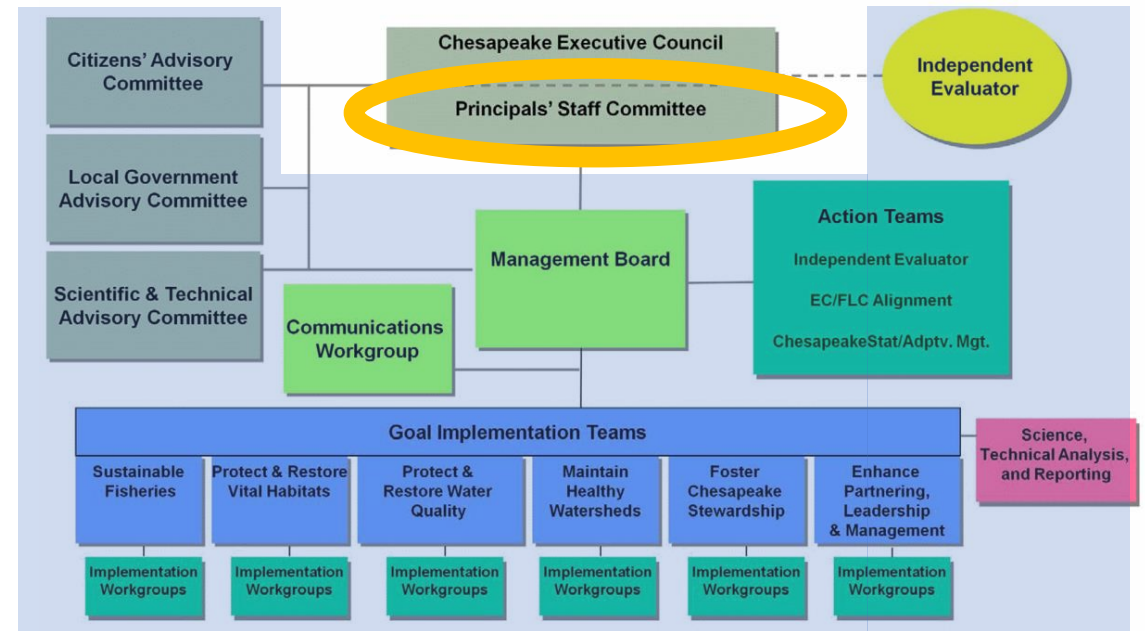
Opportunities and Benefits of PSC request

- Over a decade since last CBP monitoring evaluation

- Address CBP Outcome: Standards Attainment and Monitoring Outcome

- Address selected monitoring needs of other CBP outcomes

- New technologies and innovation

- Identify priority improvements and gaps

Through the 2014 Chesapeake Bay Watershed Agreement, *the Chesapeake Bay Program has committed to…*
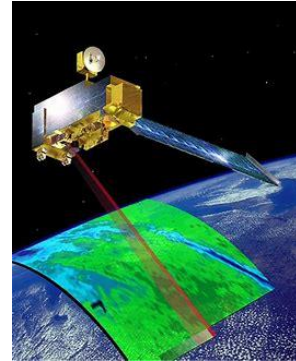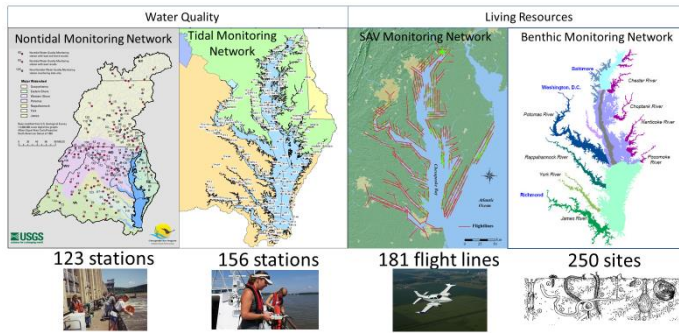
Goal: *Water Quality*

Outcome:

Continually improve the capacity to monitor and assess the effects of management actions being undertaken to implement the Bay TMDL and improve water quality. Use the monitoring results to report annually to the public on progress made in attaining established Bay water-quality standards and trends in reducing nutrients and sediment in the watershed.
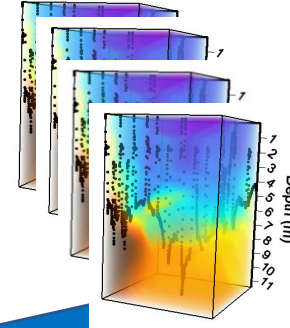
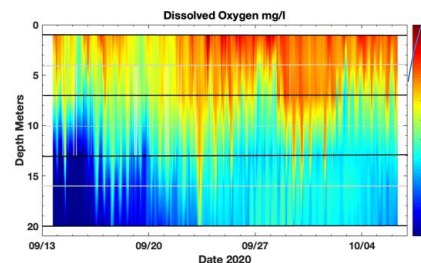# We need to leverage successful research, adopt and adapt to address capacity shortfall

2. Adapt to baywide satellite-based data (SAV, Kd, CHLA)

4. Improve assessment tools (4D water quality estimator)

Traditional networks

CBP Partnership Monitoring Networks: Annual Monitoring

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Expanded capacity

Monitoring and assessment capacity building beyond traditional monitoring

Expanded capacity

1. Apply Citizen-based observations (MOU 2018)

CMC Chesapeake Monitoring Cooperative

Liz Chudoba, Alliance for the Chesapeake Bay
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3. Innovate and adopt new WQ and living resource monitoring at needed data scales (CBT 2020 work, Bever et al. sampling design insights)

Dissolved Oxygen mg/l
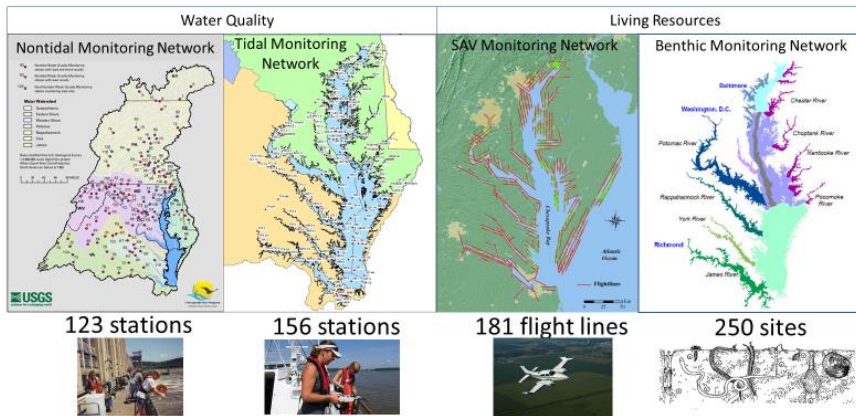
Full Water Quality Standards Attainment Assessment for Chesapeake Bay + CrossGIT Benefits

Standards Attainment will be One Priority

Traditional networks

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- **Water quality standards** – **0 of 92** segments have ever been fully assessed with our existing investments in traditional monitoring and evaluation tools since the publishing of USEPA (2003) Chesapeake Bay criteria on dissolved oxygen, SAV/Water Clarity and Chlorophyll *a.*

- Fish Habitat improvement in resolution over the National Assessment applied to Chesapeake Bay.
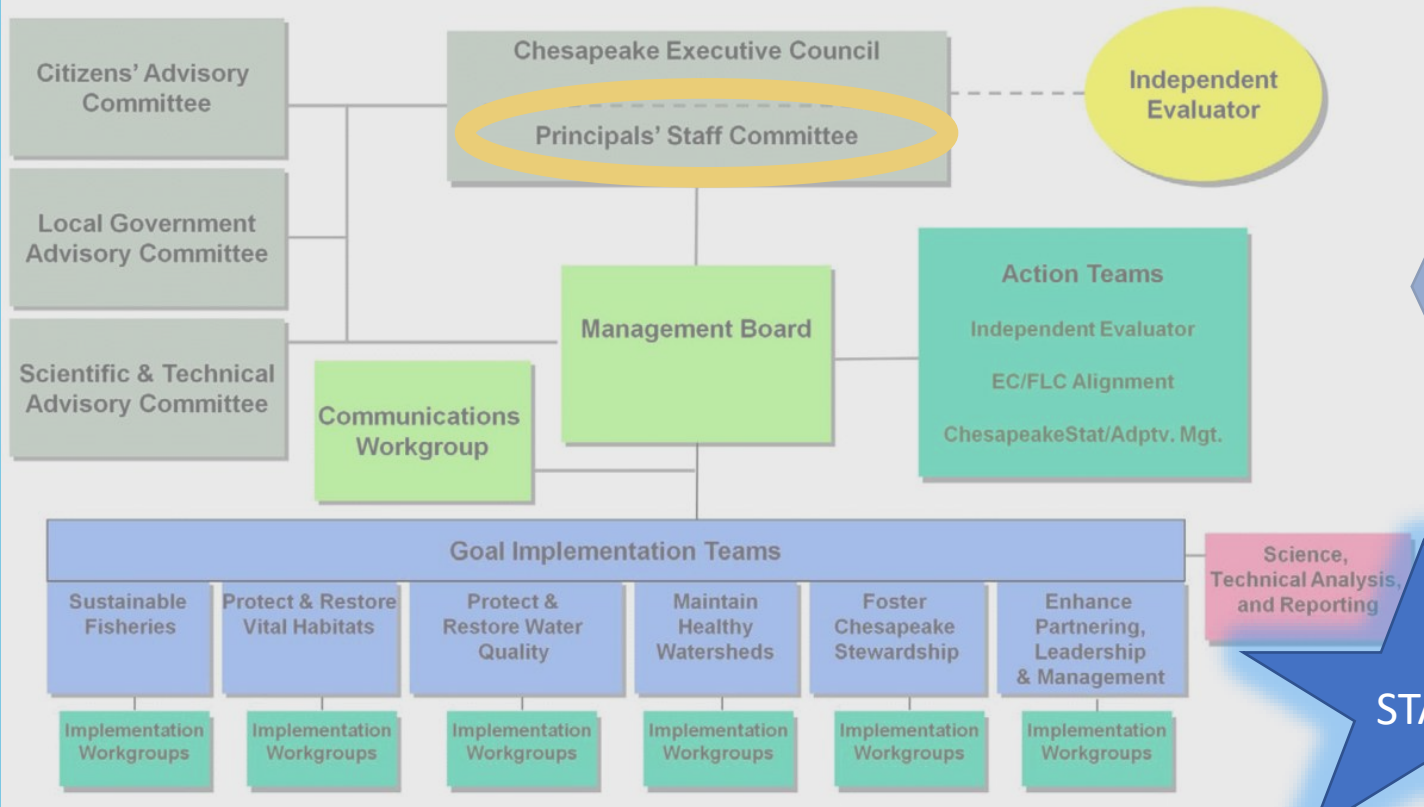
- Downsizing of program elements

- Vulnerabilities within operation

- We need to address capacity.

- We need to adapt our program.

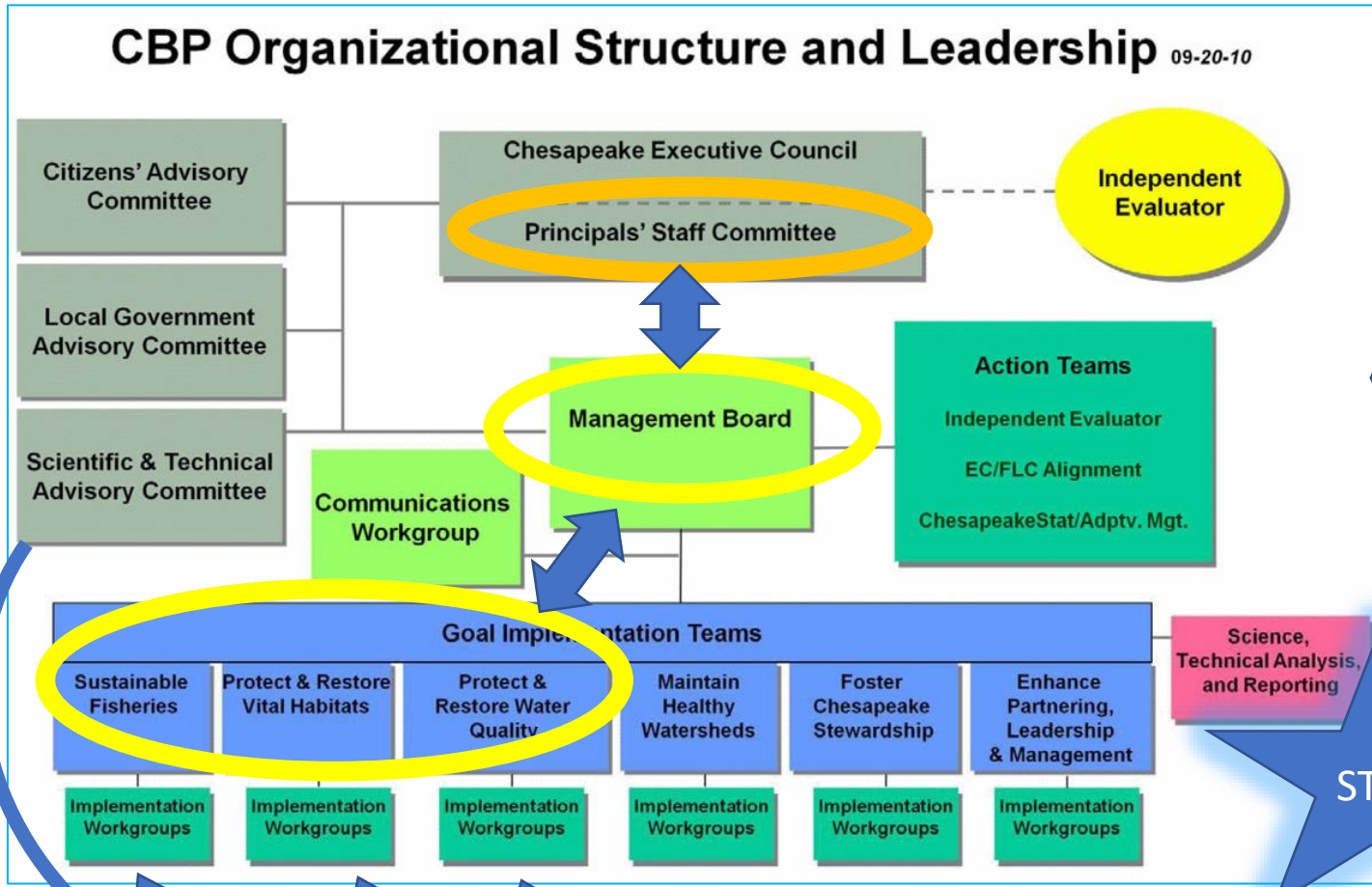# Groups to provide network objectives, status, data needs, solutions on data needs to meet objectives

Addressing other CBP monitoring networks: STAR working with Goal Teams and MB

Integrated Monitoring Networks WG

- **Nontidal Network**
- **4D Interpolator Team (BORG)**
- **Hypoxia Collaborative**
- **Criteria Assessment Protocol WG**
- **Citizen Science Program**
- **Data Integrity WG**

- STAC Workshop (approved 3/2021) – Advanced Monitoring
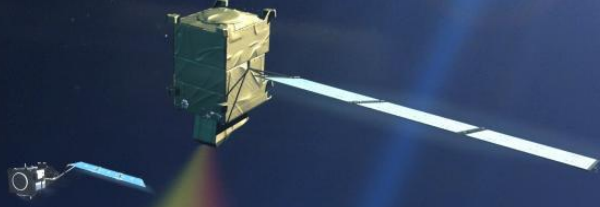- SAV WG, FHT, Forage Team, Modeling WG, more

Next Steps

- Develop a work plan for PSC to endorse at their May 2021 meeting
- Have a different team to address the questions for each network (Spring-Summer)
- STAC workshop (fall, 2021?)
- Complete the effort by the end of 2021.

Thank you and Discussion

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