2:00 – 4:00 pm

CBP STAC 2021-2023

Where to next?

What I can contribute to STAC, and What are my biases?

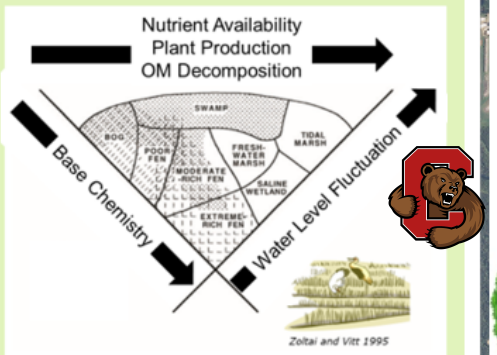
Kathy Boomer, PhD

Foundation for Food Agriculture Research

Integrated Hydrologist/Biogeochemist, Modeler

Water & Food Enthusiast

-Share Core Biogeochemistry Perspective-



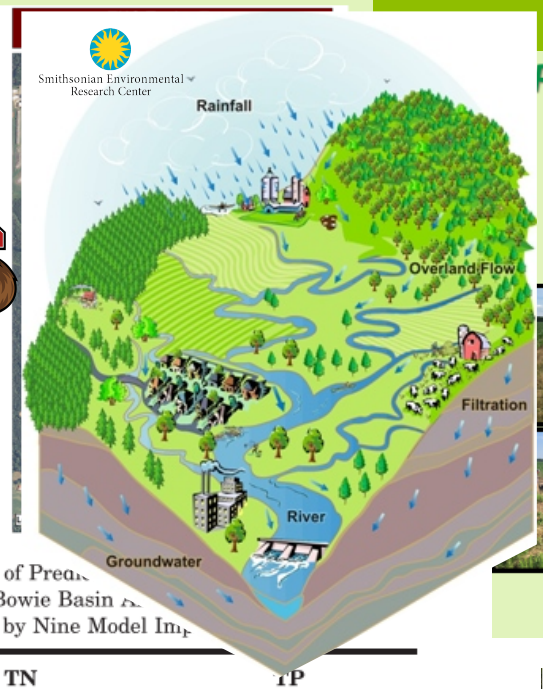
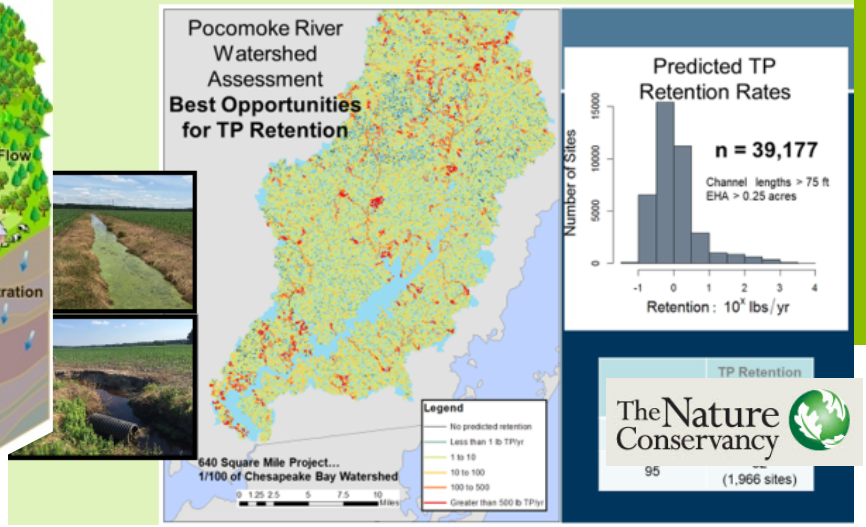


TABLE 16. Percentages of Prea… Discharges from the Bowie Basin … Developed Land by Nine Model Im…

Model	TN Agriculture	TN Developed Land	TP Agriculture	TP Developed Land
MDP90	37	50	51	46
MDP97	31	58	44	54
SPARROW87	63	27	30	37
SPARROW92	56	40	27	55
SPARROW97	71	25	26	52
SERC	49	36	46	44
SERCLM	66	27	50	34
CBP4	25	54	21	52
CBP5	32	50	30	56
Model average	48	41	36	48

-Promote Local Modelling at Regional Scales-

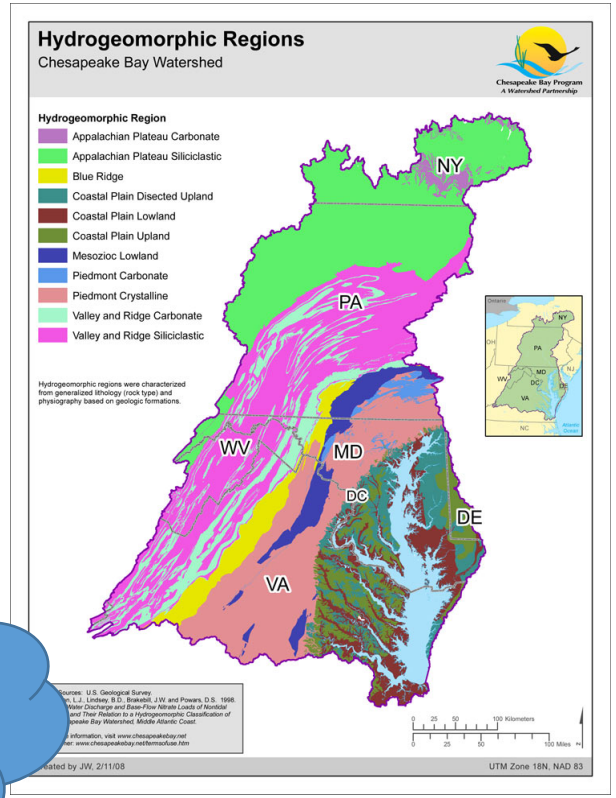


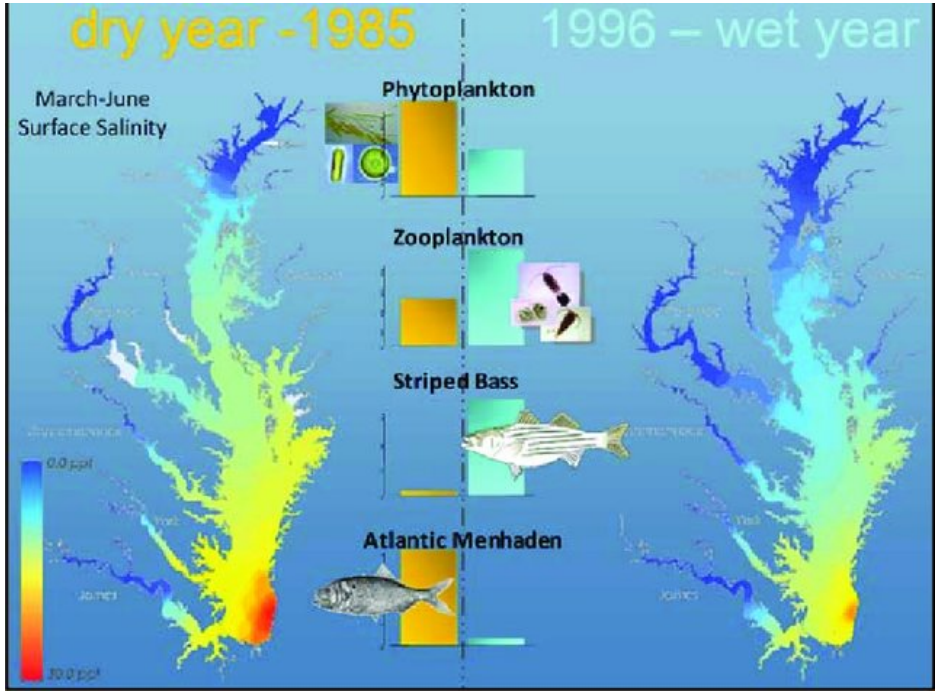
FFAR

Why STAC?

What keeps you up at night?

Other CBP/STAC Leadership Opportunities?





Contents lists available at SciVerse ScienceDirect

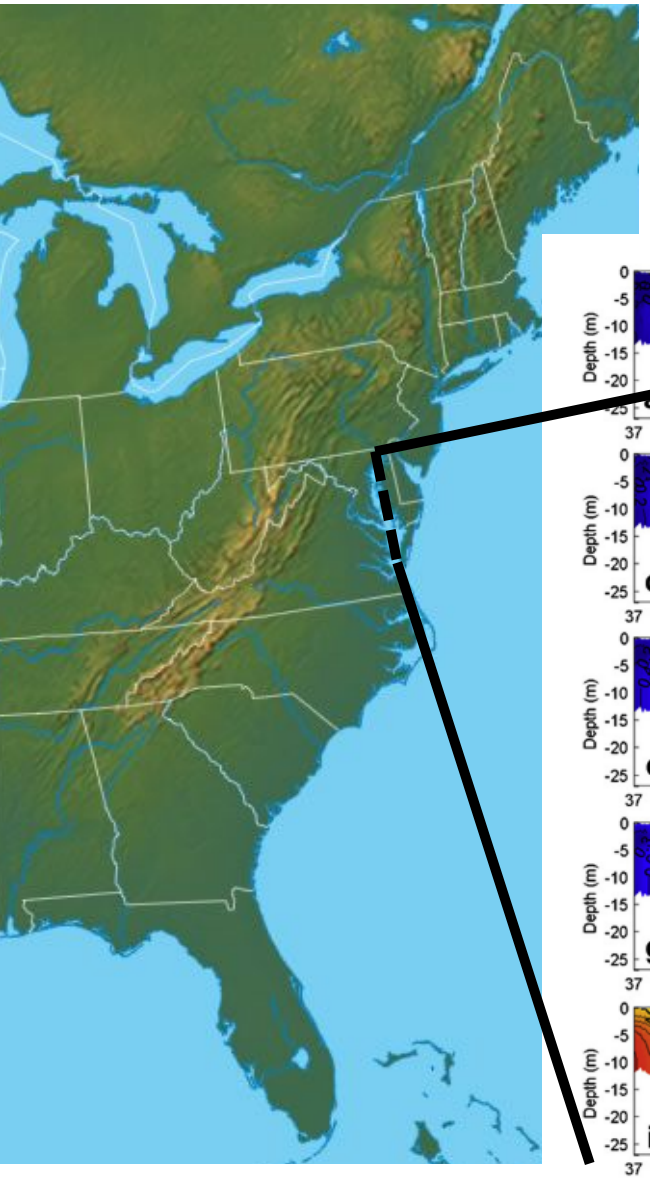
Estuarine, Coastal and Shelf Science

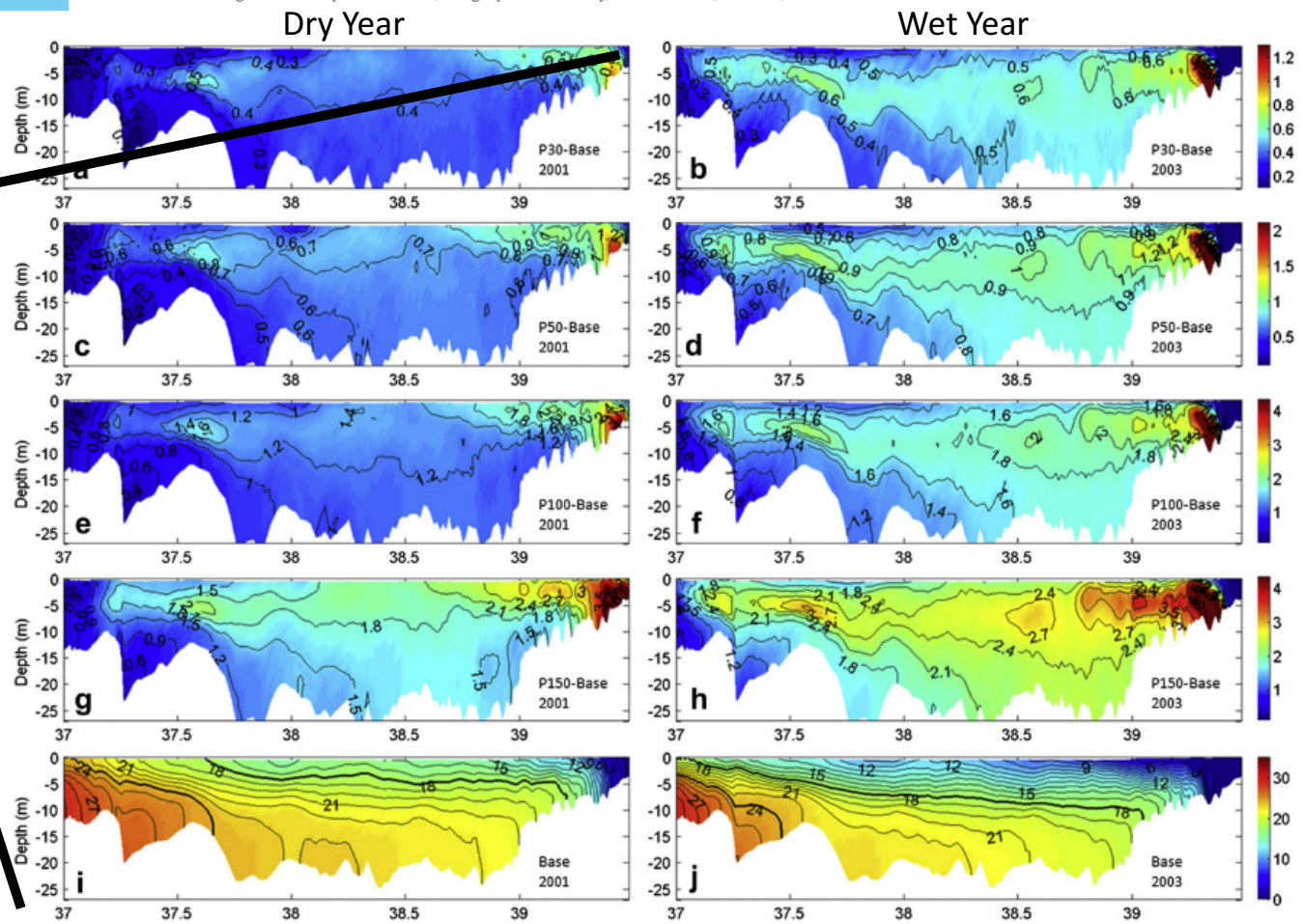
journal homepage: www.elsevier.com/locate/ecss

Responses of estuarine salinity and transport processes to potential future sea-level rise in the Chesapeake Bay

Bo Hong*, Jian Shen

Virginia Institute of Marine Science, College of William & Mary, Gloucester Point, VA 23062, USA





Other CBP/STAC Leadership Opportunities?

Terrestrial-Estuarine Transition Zone

2021-2023 STAC Priorities to Support CBP 2025 Goals

- **Support CBP Management by Advancing Science-Based Decision Making:**
  - Provide peer review support as needed
  - Continue identifying critical information needs (research opportunities) based on stakeholder concerns
  - Strengthen partnerships with GITs, LCAG, CAG, and STAR
  - Help define and develop trade-off frameworks, with consideration to climate change impacts
    - -> Integrate social science into all discussions
    - -> Develop precision guidance, risk analyses relevant to management scale of operations
- **Promote Diversity, Inclusion, Equity, and Belonging (DEIJ-B)**
  - Promote diversity to support CBP initiative and commitment
  - Strengthen and capitalize on diverse perspectives (experiences, expertise, backgrounds) through power of alternative conceptual modeling discussions
  - Support the next generation of scientists by inviting early career PhD Defense and Post-Doc presentations and engaging them in our discussions.
  - Create collaborative opportunities for synthesis research, publications
  - Engage stakeholders
- **Strengthen CBP Science Capacity and Leadership**
  - Increase engagement with CB Management Board and Executive Committee
  - Facilitate information sharing among experts working in the Great Lakes, MS and other basin areas
  - Spark innovative, inter-basin, competitive research collaborations with partnership support
    - Grant collaborations
    - Direct support from states and federal gov't

STAC Business Responsibilities

- Standing Responsibilities:
  - Workshop report reviews
  - Staffer support
  - CBP review requests
  - Project reviews (e.g, LSRWA and CBP6.0 reviews)

- 2021-2023 Focus - Advancing Science-Based Decision-Making:
  - Understand and explicitly define the decision context
  - **Explore and evaluate alternative models of system behavior**
  - **Prioritize information gaps and research needs**
  - Foster applied research collaborations to advance management

Proposed 2021-2023 STAC Agenda

Quarterly Meeting	Proposed Topic (based on stakeholder feedback)
Dec 7-8 (virtual)	Transition: Tying up Loose Ends, Starting a New Journey
Mar 8-9 (virtual)	Living Resources: Oyster, blue crab, SAV management
June 14-15 (in person)	Shallow water & sub-estuary dynamics and coastal management
Sep 13-14 (in person)	Environmental Flows: terrestrial water storage, aquatic habitat, and flood/drought risk management
Dec 6-7 (virtual)	HAB's and urban landscape management
Mar 2023	Living Resources: Cold-Water Fisheries, Black Duck management
June 2023	Soil Health Management – Implications to watershed health and climate resiliency
Sept 2023	STAC Reflections and Next Steps

Proposed 2021-2023 STAC Agenda

Quarterly Meeting	Proposed Topic (based on stakeholder feedback)	Potential STAC Talents to Recruit*
Dec 7-8	Transition: Tying up Loose Ends, Starting a New Journey	EB team STAR, LGAC, CAC, Comm Team
Mar 8-9	Living Resources: Oyster, blue crab, SAV management	Bill, Mark, Kenny, Leonard Sustainable Fisheries, Vital Habitat GITS
June 14-15	Shallow water & sub-estuary dynamics and coastal management	Larry, Deidre, Greg, Brandon, Jeremy WQ, Vital Habitat GITS
Sep 13-14	Environmental Flows: terrestrial water storage, aquatic habitat, and flood/drought risk management	Weixing, Adel, Eric, Jason, Tony, Andy LCAC, Vital Habitats GIT
Dec 6-7	HAB's and urban landscape management	Hamid, Chancee, Lee, Shirley, Erin WQ, Vital Habitats GITs
Mar 2023	Wetlands, Cold-Water Fisheries, Black Duck management	Jay, Denise, Kirk, Ellen, Ben Healthy Watersheds, Vital Habitats GITs
June 2023	Soil Health Management – Implications to watershed health and climate resiliency	Chris, Leon, Craig, Tess, Zach, Leah WQ, Stewardship GITs
Sept 2023	STAC Reflections and Next Steps	Kathy, Larry, Mike, Lara, Tom J. STAR, LGAC, CAC, Comm Team, all GITs

*STAC EB and CRC will support all meeting plans;
Recruitment idea intended to provide all STAC members with opportunity to shape agenda.

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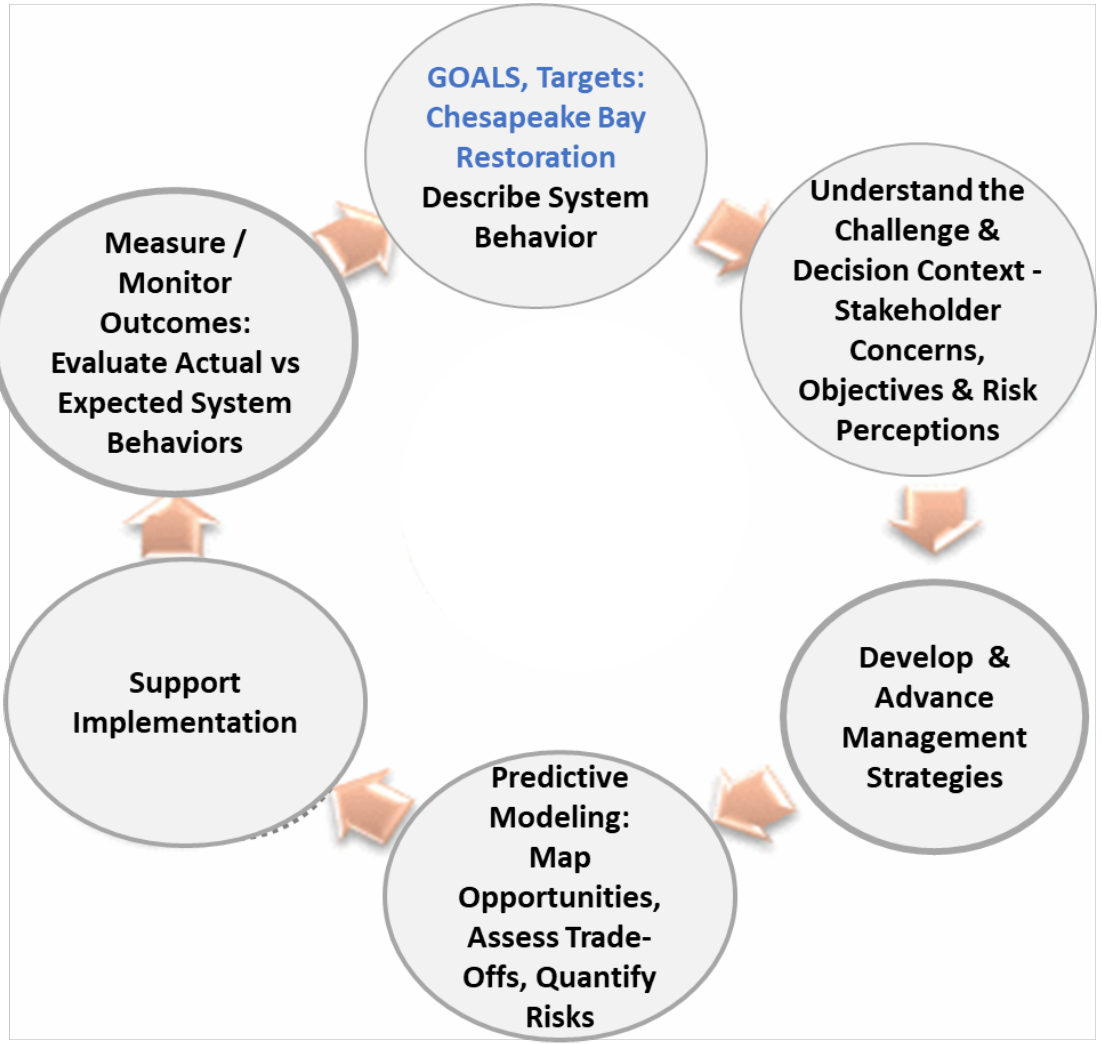
Other themes?
Theme order?
Preferred theme team?
GIT/CBP involvement?

*STAC EB and CRC will s
Recruitment idea intend ers with opportunity to shape agenda.

Suggested (but not required) Meeting Formula:



I. Outline 2025 goals, objectives and targets

II. Report current management guidance and its underlying logic framework

III. Report on implementation and outcomes
   - Evaluate implementation/impacts on diversity of communities throughout the Chesapeake Bay watershed.

IV. Share emerging concerns, risk perceptions, and barriers to advanced management

V. Discuss opportunities to advance management framework (e.g., alternative models/views), emerging information needs, and monitoring needs (from both biophysical and social science perspectives)

VI. Identify and prioritize potential research opportunities
   - model-based biophysical and social science field research
   - Integrated monitoring and research

Other meeting strategies?

STAC Membership-Large Nominee Selection

Selection Criteria:

- **Fulfills needed expertise:** Does the candidate fill one of STAC's listed priority expertise? Do they have expertise under- or not represented on STAC?
- **Relevant research and professional experience:** Does the candidate have experience that is either directly related to Chesapeake Bay issues or would be applicable to Bay issues? Does their background provide new insight or perspective on issues that are a priority to STAC? Does the candidate have a strong network of professional contacts?
- **Expressed interest in STAC**
- **DEIJ:** Does the candidate bring diversity in gender, age, race, background, and/or institution? Does the candidate have expertise or background working with underrepresented communities or environmental justice issues?
- **Capacity:** Does the candidate express they have availability and willingness to commit time to the Committee?

CBP Cited Science Gaps, Potential STAC Foci:

- Shallow waters living resource abundance ~ (estuarine setting, condition, management)
  - also, salinity, temp changes ~f(watershed condition, climate)
- T-zone modeling
  - GW/SW biogeochemical interactions
  - Shallow estuarine modeling
- Environmental flows
  - Flood/Drought susceptibility ~ f(freshwater fluxes) ~f(landscape setting/climate, watershed condition, management)
- Freshwater habitat specialists (e.g., freshwater mussels, cold-water fisheries, black duck)
- BMP Performance multi-objective tradeoff analyses ~ f(location, climate condition, cost)
  - Habitat quality, carbon sequestration, greenhouse gas emissions
- Understanding stakeholder system models and concerns to inform science needs (decision science)

Other criteria?
Additional expertise
needs/recommendations?

Round Robin Topics

RI
- Introductions: What are you excited to contribute to STAC? What keeps you up at night?
- CBP/STAC Leadership Opportunities?

RII
- Additional or alternative STAC priorities, strategies, and roles?
- How can we continuously uphold commitment to DEIB?
- Additional STAC responsibilities, strategies, and opportunities?

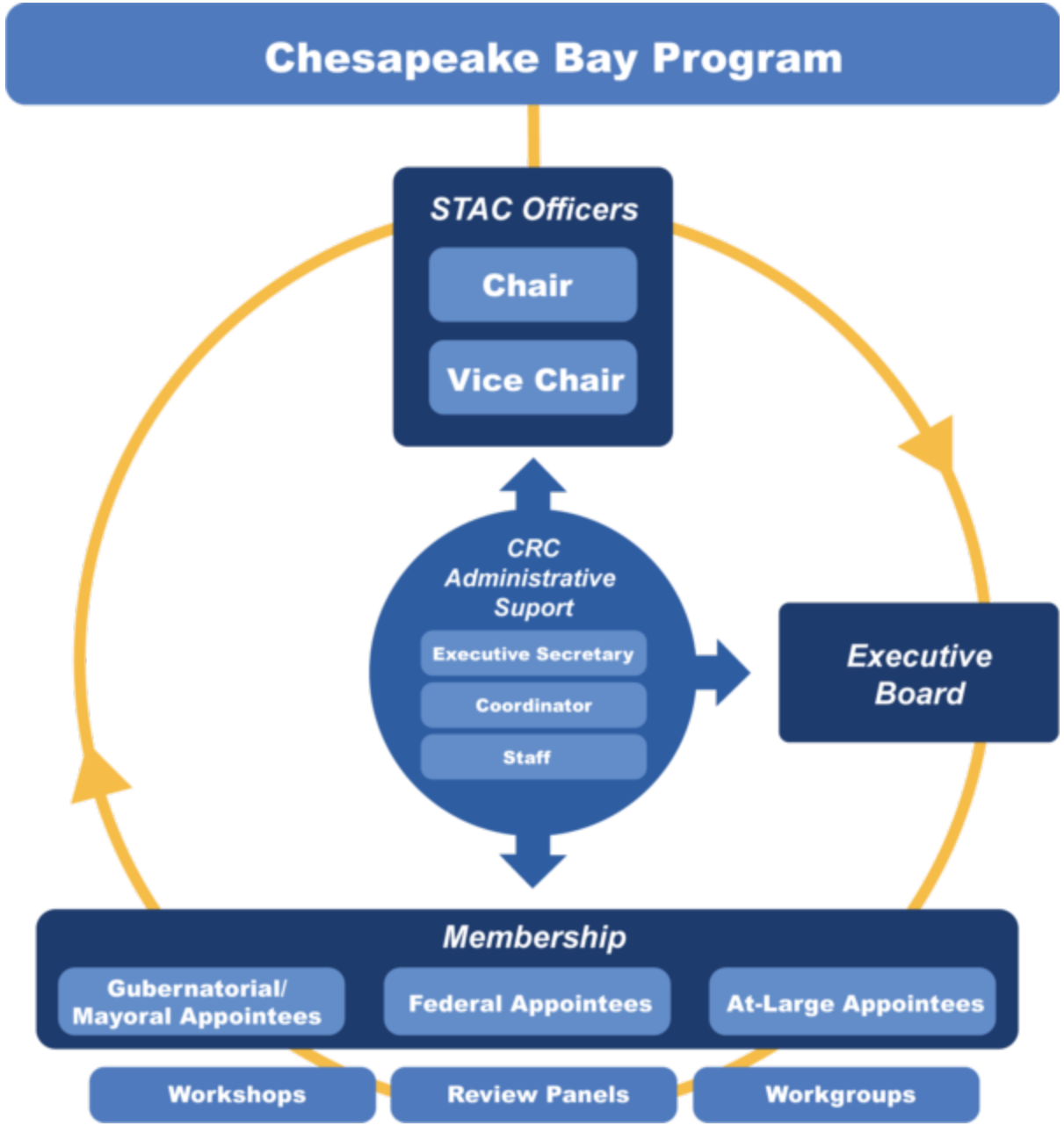
RIII
- Other theme foci? GIT/CBP involvement? Preferred theme team?
- Other meeting strategies?
- Additional expertise needed?

Strategy: Members use Wonder to socialize and discuss ideas and QuestionPro survey to provide short-answer feedback during breakout sessions or by Friday, 12/10.

Three rounds, 35 minutes/round; 5 to 8 members/round

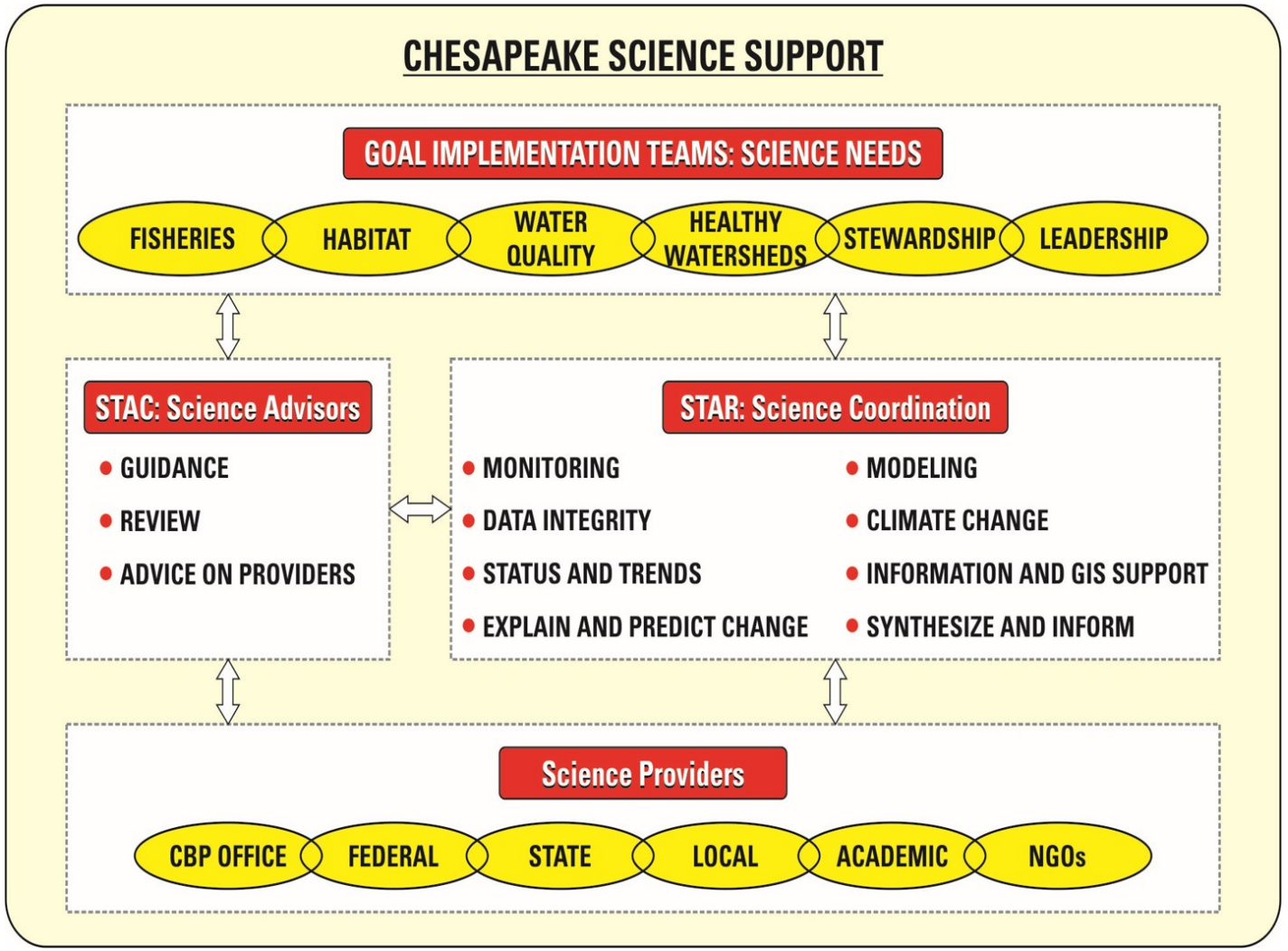
STAC CBP Responsibilities

Since its creation in December 1984, the Chesapeake Bay Program's (CBP) Scientific and Technical Advisory Committee (STAC) has worked to enhance scientific communication and outreach throughout the Chesapeake Bay watershed and beyond**. STAC provides independent scientific and technical advice** in various ways, including (1) technical reports and position papers, (2) discussion groups, (3) assistance in organizing merit reviews of CBP programs and projects, (4) technical workshops, and (5) interaction between STAC members and the CBP. **STAC serves as a liaison between the region's scientific community and the CBP**. Through professional and academic contacts and organizational networks of its members, STAC ensures close cooperation among and between the various research institutions and management agencies represented in the Bay watershed.



https://www.chesapeake.org/stac/who-we-are/

STAC CBP Responsibilities



- The Scientific, Technical Assessment & Reporting (STAR) team works to coordinate the monitoring, modeling and analysis needed to explain and communicate the health of and changes in the Chesapeake Bay ecosystem.
  - Manage CBP-funded monitoring networks and coordinate with additional science providers to utilize expand networks to address the new Chesapeake Bay Watershed Agreement.
  - Ensure information quality, management, and access.
  - Update, and deliver, the status and trends (indicators) of ecosystem conditions.
  - Explain ecosystem condition and change.
  - Expand modeling to better understand and predict ecosystem response.
  - Coordinate climate change activities.
  - Synthesize and communicate results to support the CBP decision framework being used by the Goal Teams to develop and implement management strategies for the New Agreement

https://www.chesapeakebay.net/who/group/scientific_and_technical_analysis_and_reporting

CHESAPEAKE RESEARCH CONSORTIUM

Collaboratively Connecting Science to Management

Vision

A sustainable and regenerative Chesapeake Bay ecosystem that plays a vital role in the health and well-being of the greatest diversity of stakeholders.

Mission

CONVENING

FILLING THE PIPELINE

BUILDING THE BIG STAGE

MEMBER SUPPORT

Johns Hopkins University

Smithsonian

Virginia Tech

Old Dominion University

University of Maryland

PennState

William & Mary VIMS
Virginia Institute of Marine Science
School of Marine Science

-2014 Chesapeake Bay Watershed Agreement-

Abundant Life:

- Sustainable Fisheries Goal: Protect, restore and enhance aquatic living resources.
- Vital Habitats Goal: Enhance a network of habitats to support fish and wildlife and to afford public benefits.

Clean Water:

- Water Quality Goal: Reduce pollutants to support living resources and protect human health.
- Toxic Contaminants Goal: Ensure that the Bay and its rivers are free of effects of toxic contaminants.
- Healthy Watersheds Goal: Sustain healthy waters and watersheds.

Climate Change:

- Climate Resiliency Goal: Increase the resiliency of the Bay system to withstand changing conditions.

Conserved Lands:

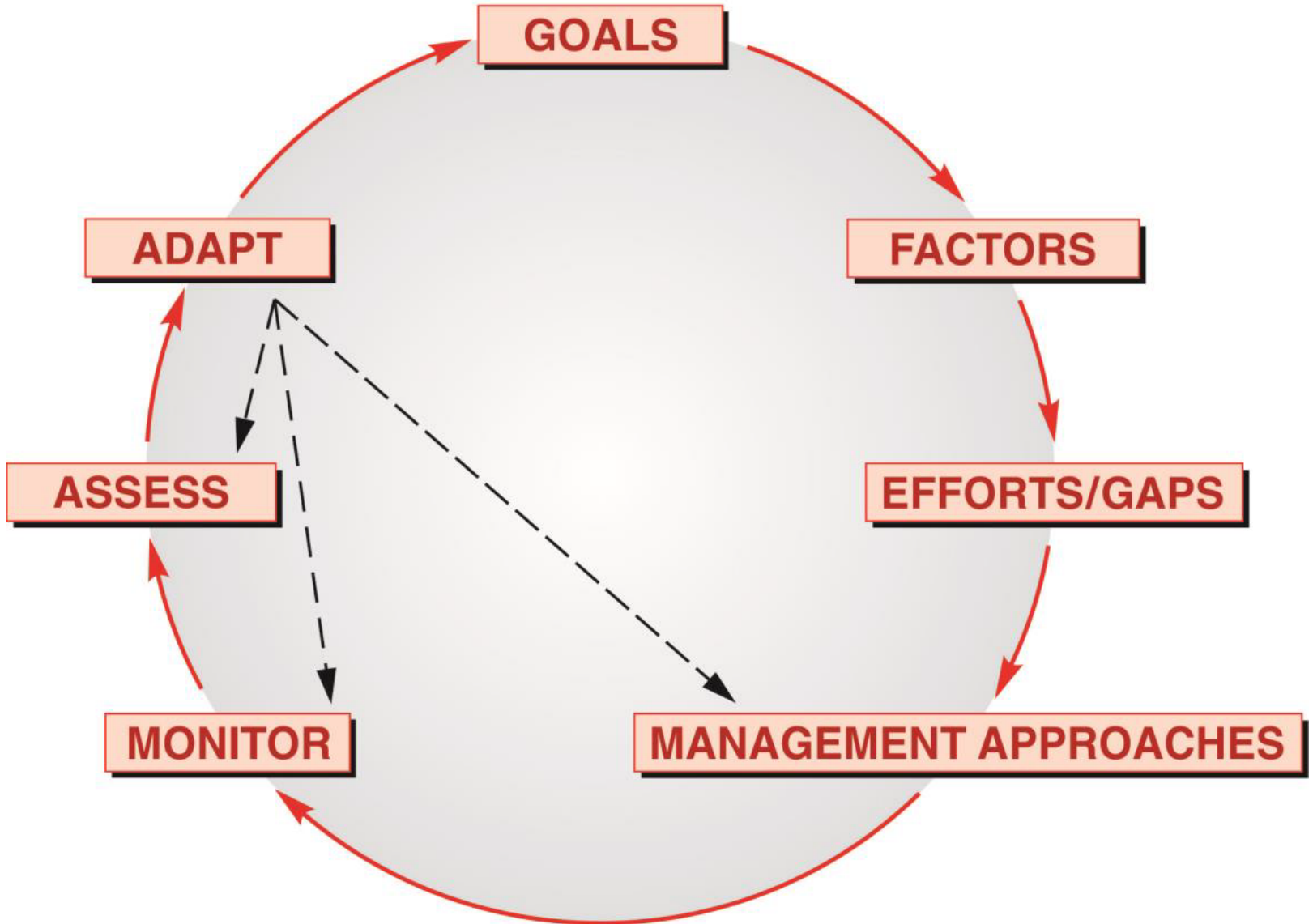
- Land Conservation Goal: Conserve landscapes to maintain water quality and habitat; sustain working forests, farms and maritime communities; and conserve lands of cultural, indigenous and community value.

Engaged Communities:

- Stewardship Goal: Increase the diversity of citizen stewards that carry out conservation activities.
- Public Access Goal: Expand public access to the Bay and its tributaries
- Environmental Literacy Goal: Enable students to graduate with the knowledge to act responsibly.

ADAPTIVE MANAGEMENT FOR THE CHESAPEAKE BAY PROGRAM

(CBP, 2011)




GOALS, Targets: Chesapeake Bay Restoration
Describe System Behavior
Understand the Challenge & Decision Context - Stakeholder Concerns, Objectives & Risk Perceptions
Develop & Advance Management Strategies
Predictive Modeling: Map Opportunities, Assess Trade-Offs, Quantify Risks
Support Implementation
Measure / Monitor Outcomes: Evaluate Actual vs Expected System Behaviors