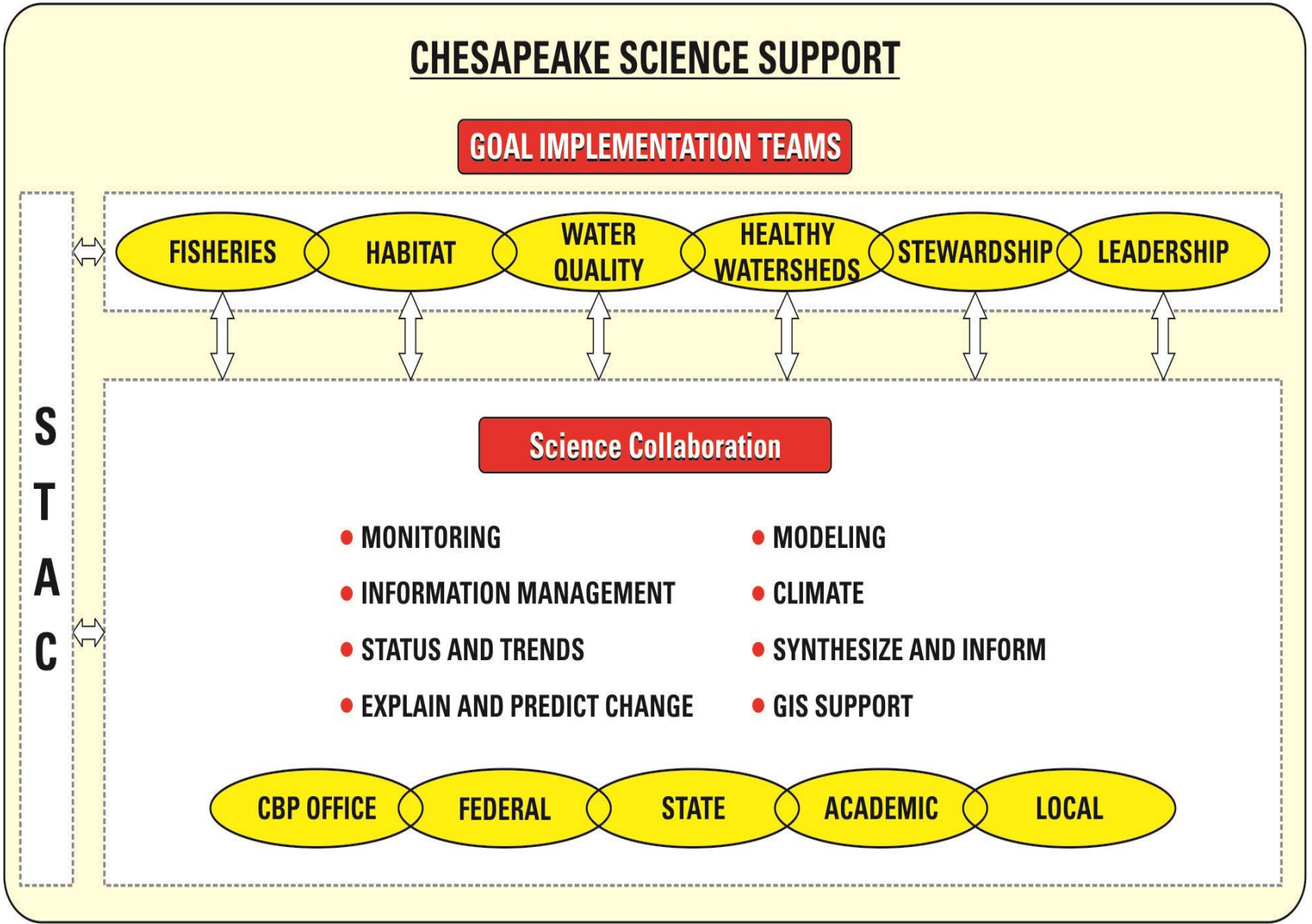
STAR Meeting:
Water-Quality GIT Science Needs and Resources

June 25, 2015

STAR and Goal Teams



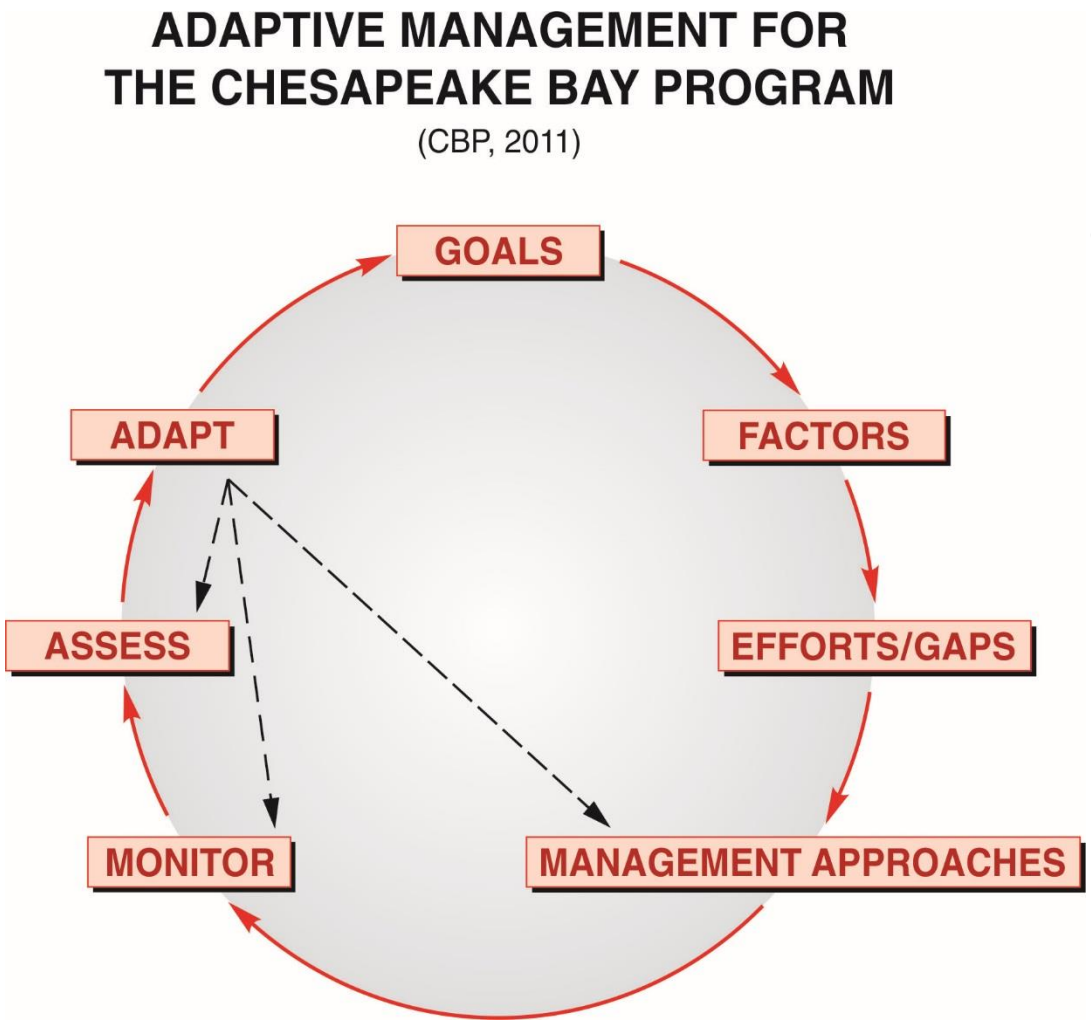
Purpose of Meetings

- Work with Goal Teams to discuss science activities needed to carry out Management Strategies and Work Plans
  - Modeling and decision tools
  - Monitoring/indicators
  - Analysis and reporting
- Discuss current resources (CBPO or other partners) available to address science needs (and be reflected in work plans)
  - Identify responsible science providers
- Determine remaining science gaps
  - Suggest potential new partners/efforts
- STAC & STAR are working together to help Goal Team, each with different responsibilities

Management Strategies

STAR

Providers



STAC

Guidance and Review

Roles of STAC and STAR

STAC

- Adaptive management process
- Link to the scientific community
- Provide guidance and review

STAR

- Collaborate with GITs to address STAC guidance
- Work with GITs to identify additional science providers
- Address cross-cutting issues and needs

WQ GIT Outcomes to Discuss

Forest Buffer Outcome

Tree Canopy Outcome

Toxic Contaminants Research Outcome
Toxic Contaminants Policy and Prevention Outcome

SAV Outcome

2017 WIP Outcome
2025 WIP Outcome
Water Quality Standards Attainment and Monitoring Outcome

Forestry

Current Metrics:

- Chesapeake Bay Forest Cover
- Forest Buffer Planting
  - Can this be used as part of the Forest Buffer Indicator (interim)?

Modified/Additional for Outcomes:

- Tree Canopy Acres
- Net Forest Buffer Miles

Current Support:

- GIS

Support Needed:

- Will the high-rez imagery provide the acreages & miles needed?
  - April 2015 STAR Meeting Topic
  - Verification Needed
- GIS calculation methods confirmed
  - Do we have methods for dealing with expanding boundaries?

Toxic Contaminants

Chemical Contaminants Indicator (all toxics)

- Current indicator
- Need: Expansion to entire watershed
- Current Support: GIS

Toxic Contaminants Research Progress (new indicator?)

- Do we need an indicator of research progress?

Toxic Contaminants Reduction (possible new indicator, first focus on PCBs)

Possibilities:

- Time series of concentration changes in fish tissue
- Fish Advisories change

<u>Support Requested</u>:

-Map of impaired areas for PCBs, TMDL locations, locations where TMDLs are in the works

-Expansion of chemical contaminants indicator to all of watershed

-Sources and Loading calculations

-Concentration (fish tissue) trend analysis

-Fish advisory mapping

SAV

Current Metrics:

- SAV Abundance (Baywide and by zone)
  - Indicator for outcome
- SAV Density

Well established monitoring program

Current Support:

- GIS
- Trend Analysis by Segment & Visualization at Segment Level (in works)

Is any other support needed?

Examples:

-higher frequency surveys?

-species identification?

Water Quality: Midpoint Assessment

STAR Support for MPA

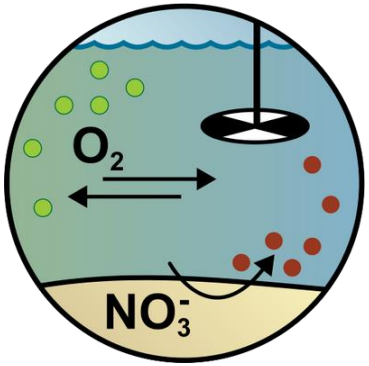
- Reporting trends
- Explaining trends and relation to BMPs
- Enhance models
- Synthesize and communication

- Modeling WG: Phase 6 development
- Indicator Refinement

Water-Quality Outcomes

Question: Which metrics could be the reported indicators?

- Water Quality Standards Achievement
  - Dependent on:
    - Turbidity/Secchi Disk/Water Clarity
    - Dissolved Oxygen
    - Chlorophyll-a
    - SAV Abundance



- Total Phosphorus & Total Dissolved Phosphorus
- Total Nitrogen & Total Dissolved Nitrogen
- Total Suspended Solids
  - What is the best way to report?
    - Currently: Long term flow-adjusted, short-term flow adjusted, loads and river flow, & yields

Water-Quality Outcomes

Additional Big Picture Metrics:

- Reducing Nitrogen Pollution (summary; by source; by jurisdiction)
- Reducing Sediment Pollution (summary; by source; by jurisdiction)
- Reducing Phosphorus Pollution (summary; by source; by jurisdiction)
- WIP Implementation (Load Reductions)
- WIP Implementation (Practices)
- BMP implementation for annual progress

Potential Cross-Cutting Outcomes

- Benthic Index of Biotic Integrity (segments and stations)
  - Stream Health Indicator component?
- Population
  - Factor affecting?
- Federal Lands
- Protected Lands (# of acres conserved, measured every other year)
  - Cross-GIT and to be discussed in future
- Tidal Wetlands Abundance
  - Cross-GIT and to be discussed in future
- Phytoplankton Index of Biotic Integrity (segments and stations)