Chesapeake Bay Program
Science. Restoration. Partnership.

SCIENCE PRIORITIES

OF THE

GOAL IMPLEMENTATION TEAMS AND WORKGROUPS

STAC Meeting

December 9, 2015

Scientific, Technical Assessment and Reporting Team

Presenters: Scott Phillips & Mindy Ehrich

OUTLINE

- Interacting with Goal Team on Science Needs of New Bay Agreement
- Status of Indicators & Monitoring for Outcomes
- High Priority Science Needs
- Next Steps and Discussion

CHESAPEAKE SCIENCE SUPPORT

GOAL IMPLEMENTATION TEAMS: SCIENCE NEEDS

FISHERIES | HABITAT | WATER QUALITY | HEALTHY WATERSHEDS | STEWARDSHIP | LEADERSHIP

STAC: Science Advisors

- GUIDANCE
- REVIEW
- ADVICE ON PROVIDERS

STAR: Science Coordination

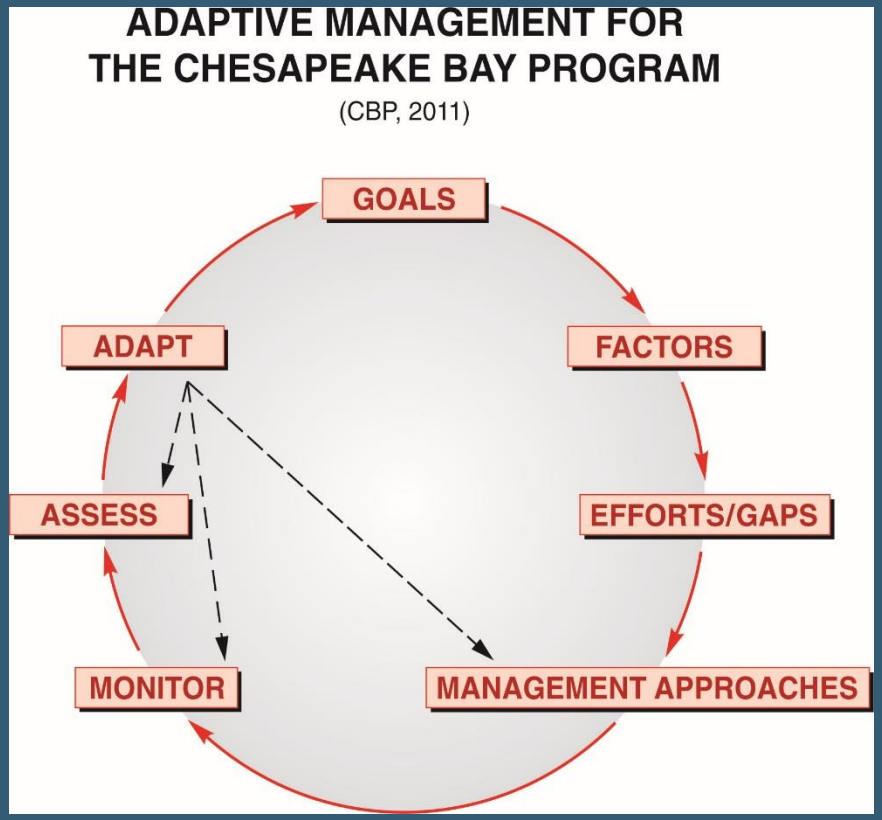
- MONITORING
- DATA INTEGRITY
- STATUS AND TRENDS
- EXPLAIN AND PREDICT CHANGE
- MODELING
- CLIMATE CHANGE
- INFORMATION AND GIS SUPPORT
- SYNTHESIZE AND INFORM

Science Providers

CBP OFFICE | FEDERAL | STATE | LOCAL | ACADEMIC | NGOs

SCIENCE NEEDS GATHERED

- DECISION FRAMEWORK
- NEEDS & GAPS Identified
- GITs PRIORITIZED
- MANY UNMET SCIENCE NEEDS
- STAC and STAR Discussion:
  - Ways to prioritize needs
  - Applying existing resources
  - Expanding science capacity



Note: Climate Workgroup needs are NOT incorporated.

OVERVIEW: OUTCOMES WITH ESTABLISHED INDICATORS & MONITORING PROGRAMS

Resources:

- Blue Crab Abundance and Blue Crab Management
- Fish Passage
- Submerged Aquatic Vegetation (SAV)
- Protected Lands
- 2017 and 2025 Watershed Implementation Plans (WIPs)
- Water Quality Standards Attainment and Monitoring

Outreach:

- Public Access

Science Needs Still Exist

OVERVIEW: OUTCOMES WITH INDICATORS & MONITORING PLANS UNDER DEVELOPMENT

Resources:

- Oyster
- Forage Fish
- Brook Trout
- Stream Health
- Wetlands
- Black Duck
- Forest Buffer
- Tree Canopy
- Healthy Watersheds
- Toxic Contaminants Policy and Prevention

Outreach:

- Citizen Stewardship
- Student
- Sustainable Schools
- Environmental Literacy

Status of Indicator Development or Monitoring Plans Vary
→ Assistance Needed Varies

OVERVIEW: OUTCOMES WITHOUT INDICATORS

Resources:

- Fish Habitat

Outreach:

- Local Leadership
- Diversity

No Indicators of Progress Currently

The Others:

- Land Use Methods and Metrics Development
- Land Use Options Evaluation
- Climate Monitoring and Assessment
- Climate Adaptation
- Toxic Contaminants Research

"Plans for Plans"

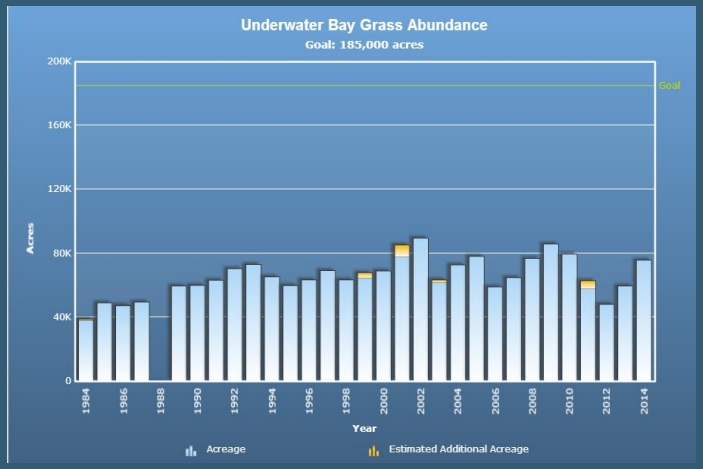
HIGH PRIORITY NEEDS

Types of Needs

Indicator Support - Technical Guidance

Monitoring Support - Getting Additional Data

Research - Improved Understanding



INDICATOR SUPPORT: FISHERIES

Oysters

Identify an interim indicator before tributaries considered restored.

Fish Habitat

INDICATOR that captures sub-tidal, nearshore, intertidal, non-tidal warm, cold and upstream waters, and tidal areas .

INDICATOR SUPPORT: HABITAT

Brook Trout

Translation of sampling data into an indicator depicting progress toward the 8% increase in occupied patch area.

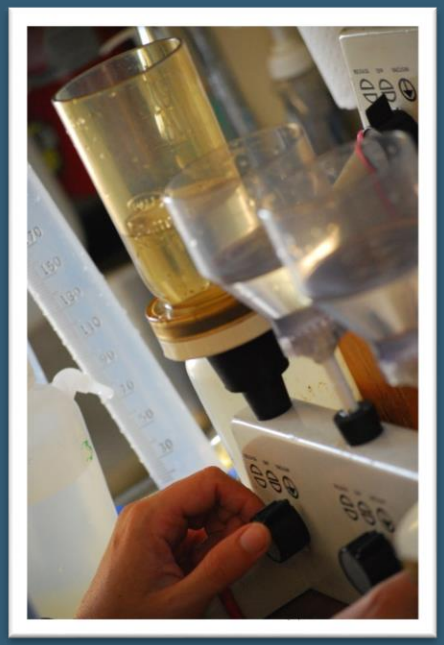
Stream Health

1. Besides the Chessie BIBI, what stream qualities should be a part of the indicator and how so?
2. Support to gather data and determine the Chessie BIBI scores to report progress in future years

Black Duck

Guidance with using the habitat prioritization map (to be refined by Spring 2016) to develop a habitat-based indicator.

INDICATOR SUPPORT: WATER QUALITY



Water Quality

Identification of main indicators of for TMDL and water-quality standards (numerous metrics exist currently).

Toxic Contaminants

More expertise needed for the following:

PCB Strategy

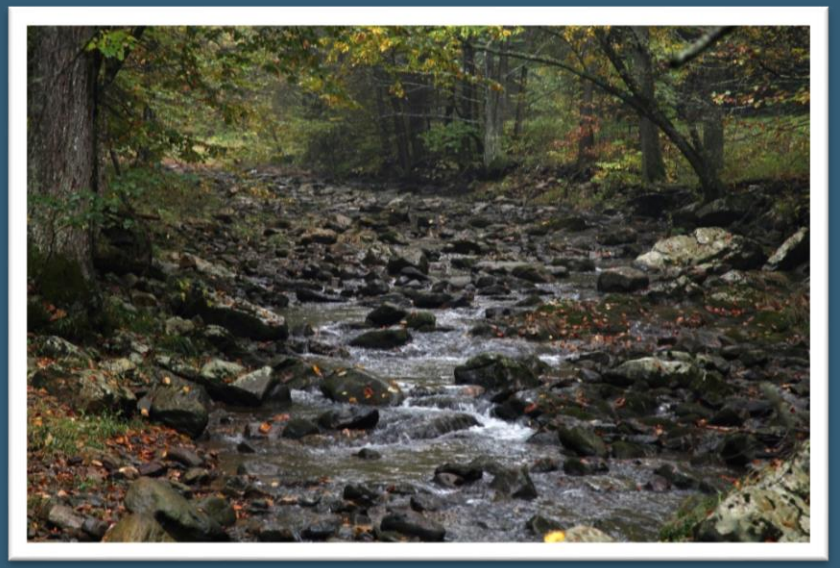
1. Map of impaired areas for PCBs, TMDL locations, where TMDLs are being developed
2. Fish tissue concentrations Bay-wide
3. Fish advisory mapping
4. Sources and loading calculations

Research Strategy

INDICATOR SUPPORT: HEALTHY WATERSHEDS

Formation of a cross-GIT tracking workgroup to track health of the state-identified healthy watersheds in future.

1. What metrics should be evaluated ?
2. How do we determine watershed status?
3. Assessment of watershed protection priorities.
4. Determine a way to track "marginally" healthy waters and watersheds.



INDICATOR SUPPORT: STEWARDSHIP AND LOCAL LEADERSHIP

Environmental Literacy

1. Continued analysis of the ELIT survey results (Medium).
2. Identification of the metrics and indicators to use from the survey.
3. Mapping and visualization of the results.

Potential Continuation of TetraTech Funding

Local Leadership Baseline

Best way to use funding to establish a baseline.

MONITORING: FISHERIES

Oysters

Monitoring or funding to monitor restoration sites post-construction.

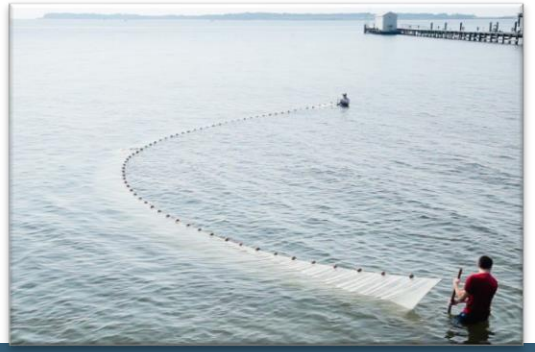
Fisheries: Blue Crab / Forage Fish / Fish Habitat

Shallow water fish surveying.

Blue Crab

1. Funding for stock assessment.
2. Funding to continue gear efficiency study between MD and VA surveys.

MONITORING: FISHERIES



Forage Fish

1. Increased sampling and monitoring of forage fish in all their habitats.
2. Zooplankton & phytoplankton monitoring.

Fish Habitat

Measuring fish in actual habitat areas, especially the identified species of interest in the 5 habitat classifications and understanding how they interact and depend on these environments.

MONITORING: HABITAT

Wetlands

Funding to improve mapping of tidal and non-tidal wetlands. There is a pending proposal from PA to work with Upper Susquehanna Coalition to conduct a Derived Supplement to NWI for PA by September 2016.

SAV

Continued funding for aerial surveys.

Brook Trout

Continued funding for brook trout monitoring (summer of 2016 and beyond).

MONITORING: STEWARDSHIP

Citizen Stewardship

OpinionWorks assisting with developing a stewardship index baseline with a survey

but….funding needed for…

1. Increased Baseline Monitoring -> Additional funds for full baseline measurement with statistical significance for each jurisdiction.

2. Future Assessment -> Funding for repeat surveying in the future (every few years).

RESEARCH NEEDS

Blue Crabs

1. Better characterize recreational harvest or funding to continue.
2. Integrating summer trawl data into population assessment and understanding the life of a crab from the winter dredge survey to full grown (account for losses and changes between surveys).

Fish Habitat

Understand habitat requirements of fish and how habitat conditions affect productivity, health, and function.

RESEARCH NEEDS

Land Use Methods and Metrics

Need: Approaches for IMPACT of conversion on water quality, healthy watersheds and communities.

Land Use Options

1. Review/study to determine the range of policy options and tools
2. Create an online repository of the study results

Toxic Contaminants

How can we integrate toxic contaminant reductions through multi-benefits of BMPs for TMDL?

Water Quality: MPA (enhance models and explain trends)

CHALLENGES AND DISCUSSION

Challenges

- Science needs greatly exceed existing capacity
- Current CBPO resources have water-quality focus
- Limited ability to address other GIT priorities

Discussion

- Evolution of STAR and STAC
- Strategically prioritize science needs
- Better coordinate existing activities
- Ways to expand science capacity of CBP

STAR

Information Management & GIS Support and Synthesis

Integrated Monitoring Networks Workgroup

Data Integrity Workgroup

Status and Trends Team

Explain Ecosystem Condition and Change Teams

Modeling Workgroup

Climate Change Workgroup

SOME IDEAS AND NEXT STEPS

Short-term:

- STAC workshops on:
  - Aligning resources
  - Expanding monitoring needs
- Existing efforts
- Approach to set priorities
- Expand STAR WG capacity

Longer-term:

- Collaborate with new partners
- Future STAC workshops to address needs
- Incentives and funding to build science capacity

Contact Mindy at mehrich@chesapeakebay.net with specific GIT need questions