Peconic Estuary Water Quality Monitoring Strategy: Communicating Results

October 10th Peconic Estuary Program Management Committee Meeting

CoastWise PARTNERS

Holly Greening & Rich Batiuk

We'll work for (good) food!

Who we are

Rich Batiuk, retired from Chesapeake Bay Program. Instrumental in designing Chesapeake Bay's extensive cooperative approach to meeting Bay targets.

Holly Greening, retired from Tampa Bay Estuary Program. Facilitated Tampa Bay's successful nutrient management and seagrass recovery strategy.

Gerold Morrison, retired from Environmental Protection Commission of Hillsborough County. Ambient WQ monitoring for Tampa Bay.

Agenda Topics

Communicating water quality monitoring results

- Integrating monitoring information to help ‘tell the story’ of the Peconic Estuaries status, trends and progress towards goals;
- Identifying elements of effective communication for technical and interested public audiences and decision-makers;
- Approving actions and next steps.

‘Telling the Story’:
An example from Tampa Bay

TBEP
TAMPA BAY ESTUARY PROGRAM
PARTNERSHIP FOR A HEALTHY BAY

Use photos to help tell the story: Tampa Bay in the 1970s

"The Kitchen" (Hillsborough Bay near Gibsonton)

Archie Creek

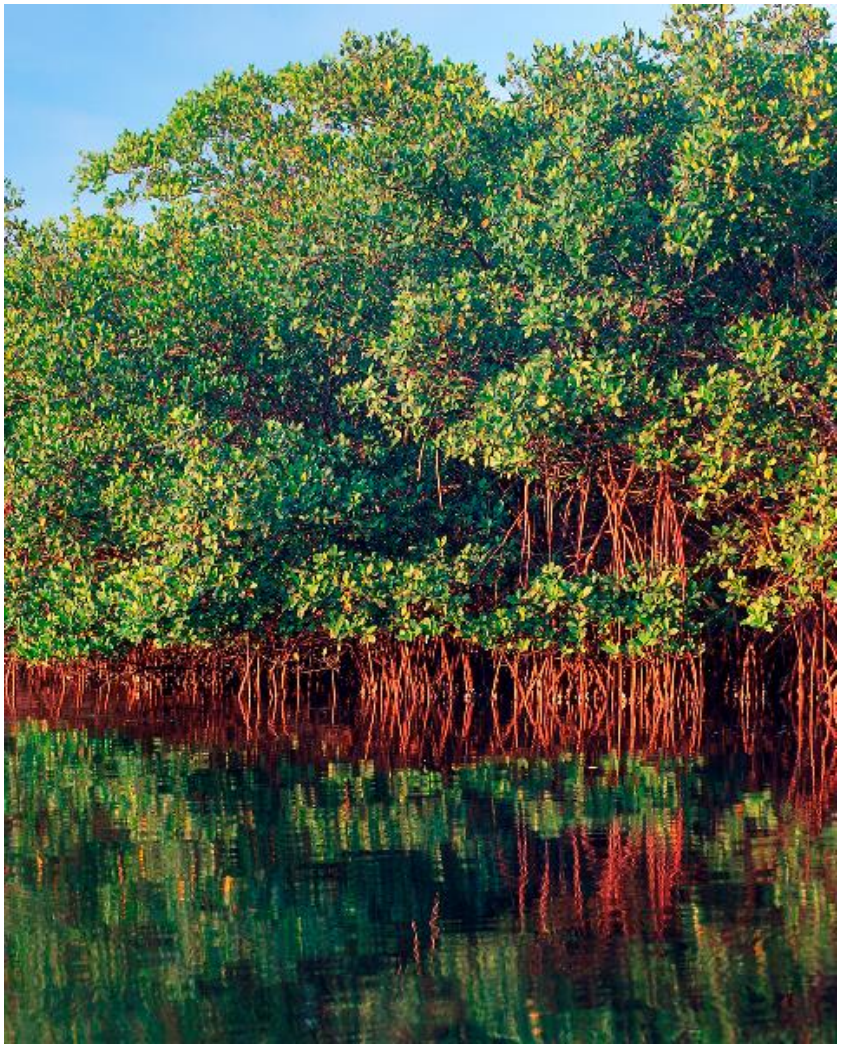
Photo by JOR Johansson

Outline effects

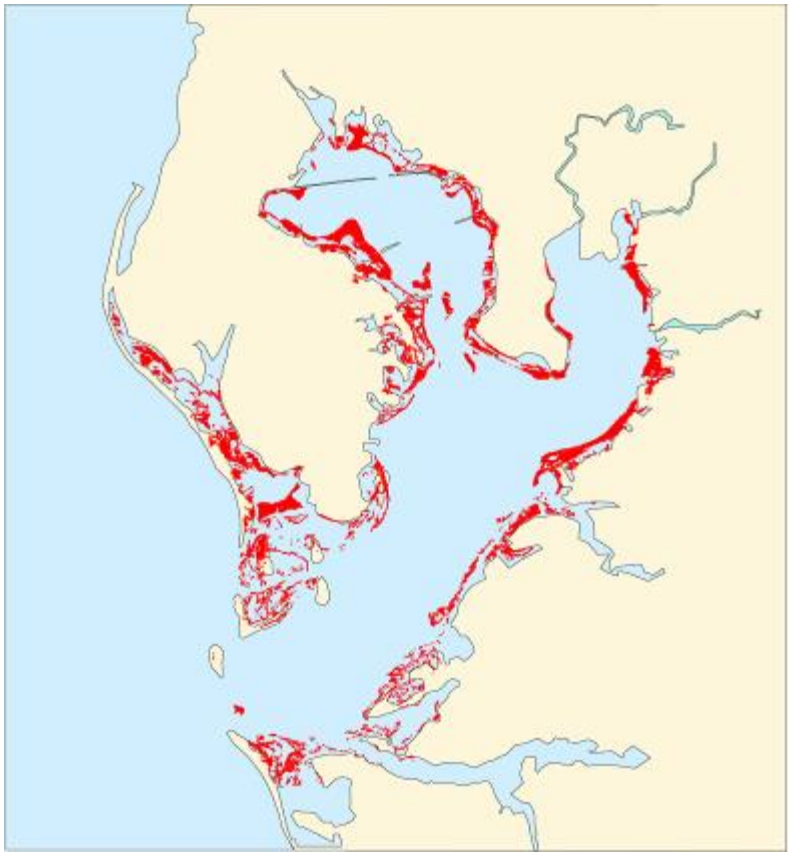
- Half of Tampa Bay seagrasses lost by 1982
- Half of Tampa Bay's natural shoreline altered
- 40% of tidal marshes destroyed
- White ibis populations plummeted by 70%
- Visibility reduced to 2 feet in Hillsborough Bay
- Fish kills common

Highlight types of actions: Restoring Tampa Bay

- Citizen action
- Regulations
  - Wastewater plants
  - Stormwater
- Regional collaboration
  - SWFWMD SWIM
  - Agency on Bay Management
  - TBEP



Adopt long-term goals that are meaningful to the public

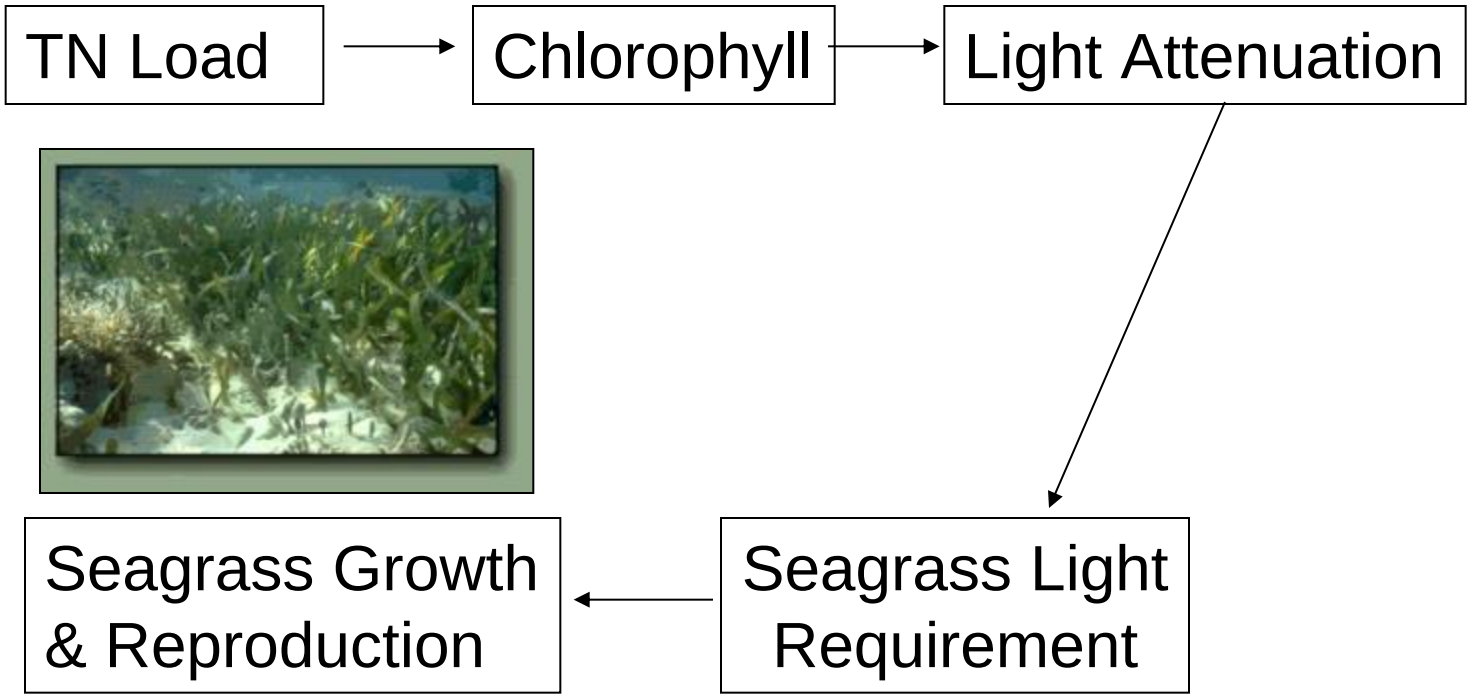


Difference between 1950 and 1990 seagrass cover

Seagrass Restoration Goal:

Restore seagrass acreage to that observed in ~1950.

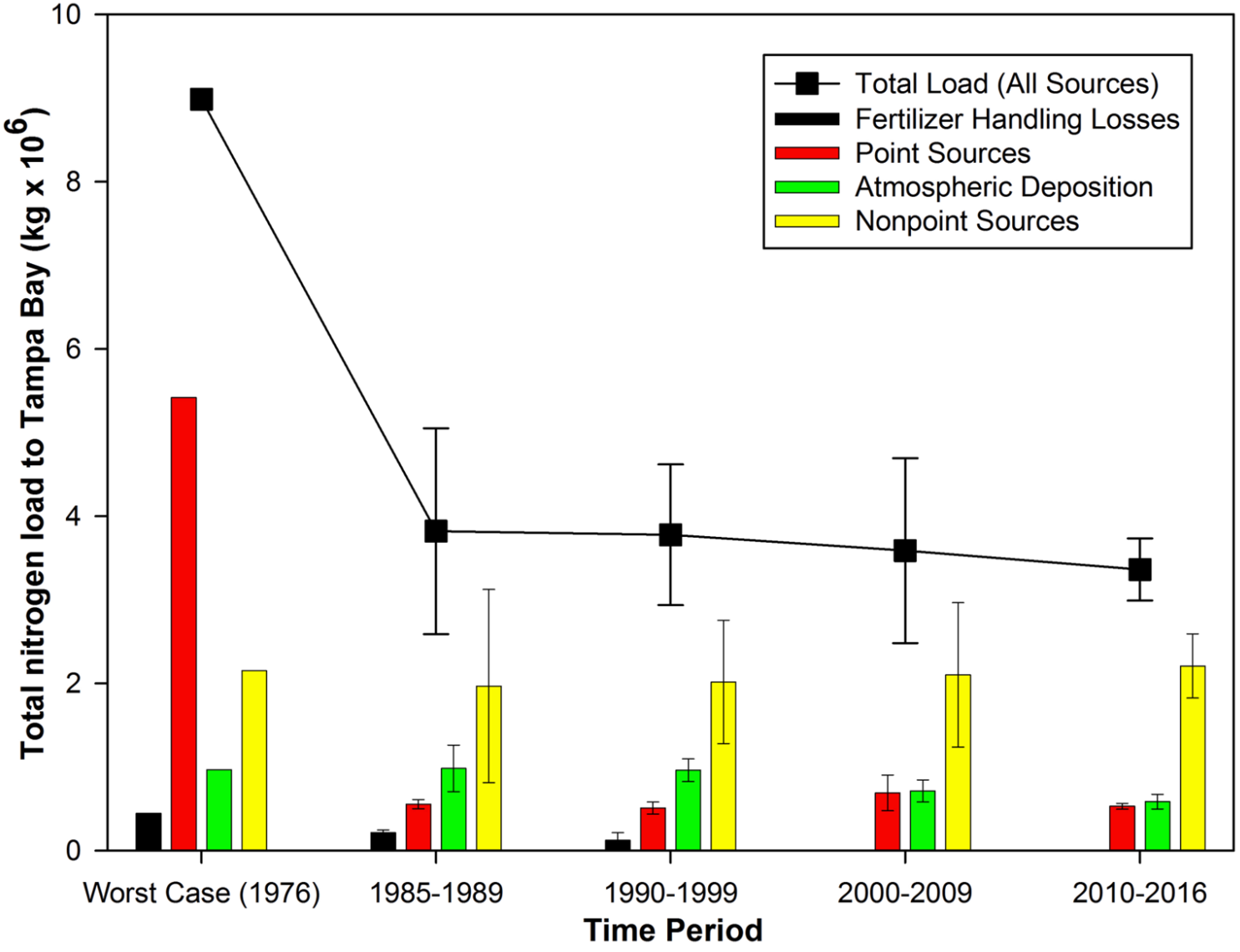
Strong science-based management strategy with measurable targets



Document Projects

- Tampa Bay Nitrogen Management Consortium
- 50+ public and private partners throughout the watershed
- 500 projects and actions
- 400 + tons of Nitrogen precluded from entering Tampa Bay
- Consortium developed and agreed to voluntary ‘caps’ on nitrogen loads at 2003-2007 levels for all sources. Regulatory requirements are being met.

Estimate Results: Nitrogen load has decreased



Water quality has improved

Light availability and chl-a concentration targets needed to support seagrass recovery:

- Red- neither target is met
- Yellow- one target is not met
- Green- both targets are met

Advanced wastewater treatment begins

State stormwater regulations enacted

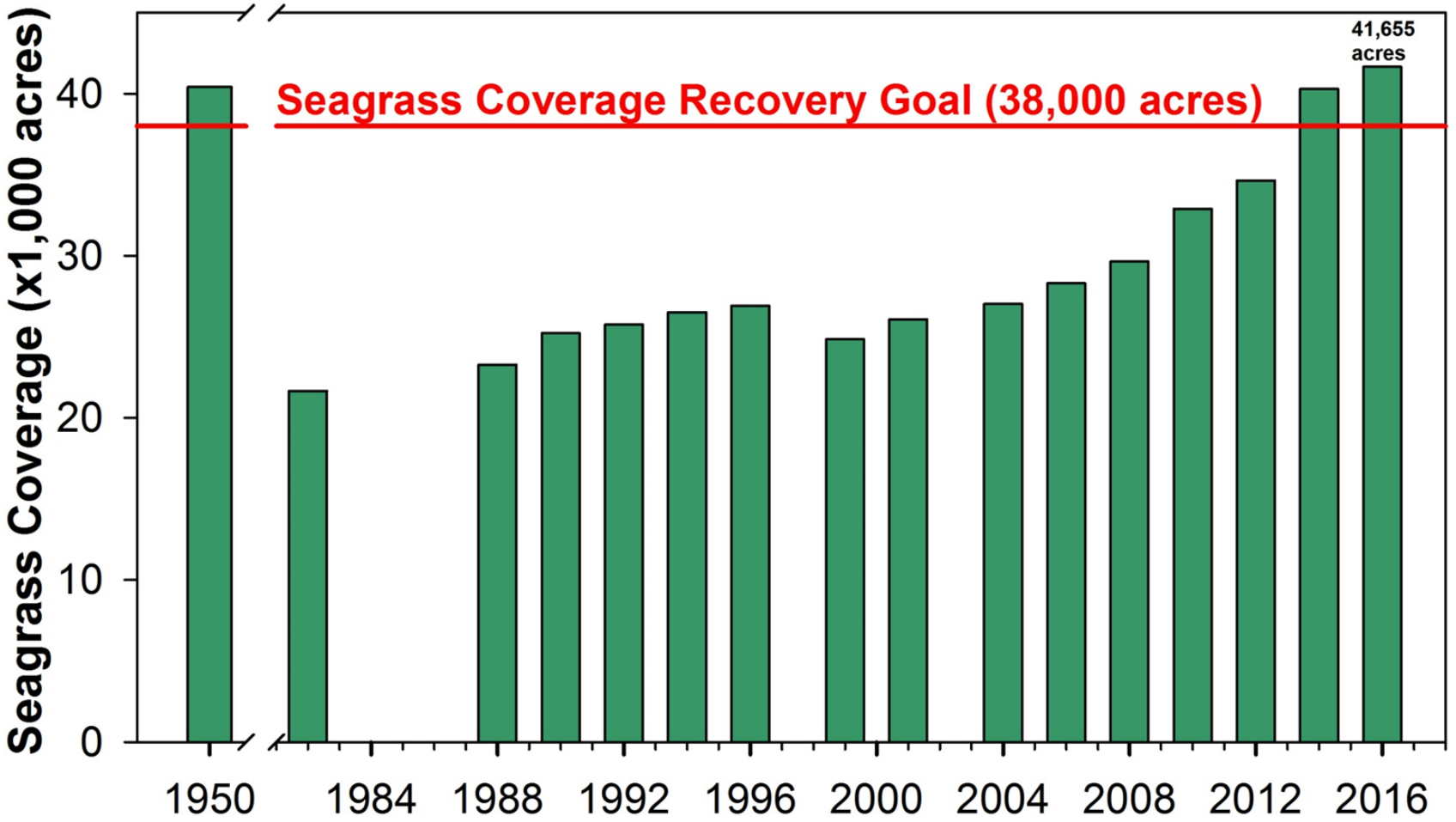
TBEP formed

Nitrogen Management Consortium (NMC) formed

Year	Old Tampa Bay	Hillsbor-ough Bay	Middle Tampa Bay	Lower Tampa Bay
1975	Red	Red	Red	Green
1976	Red	Red	Red	Yellow
1977	Red	Red	Red	Red
1978	Red	Red	Red	Yellow
1979	Red	Red	Red	Red
1980	Red	Red	Red	Red
1981	Red	Red	Red	Red
1982	Red	Red	Red	Red
1983	Red	Yellow	Red	Red
1984	Red	Green	Red	Yellow
1985	Red	Red	Red	Yellow
1986	Red	Yellow	Red	Green
1987	Red	Yellow	Red	Green
1988	Yellow	Green	Yellow	Green
1989	Red	Yellow	Red	Yellow
1990	Red	Green	Red	Yellow
1991	Green	Yellow	Yellow	Yellow
1992	Yellow	Green	Yellow	Yellow
1993	Yellow	Green	Yellow	Yellow
1994	Yellow	Yellow	Red	Red
1995	Red	Yellow	Red	Yellow
1996	Yellow	Green	Yellow	Green
1997	Yellow	Green	Red	Yellow
1998	Red	Red	Red	Red
1999	Yellow	Green	Yellow	Yellow
2000	Green	Green	Yellow	Yellow
2001	Yellow	Green	Yellow	Yellow
2002	Yellow	Green	Green	Green
2003	Red	Yellow	Green	Yellow
2004	Red	Green	Green	Yellow
2005	Green	Green	Yellow	Yellow
2006	Green	Green	Green	Green
2007	Green	Green	Green	Green
2008	Yellow	Green	Green	Yellow
2009	Yellow	Yellow	Green	Green
2010	Green	Green	Green	Green
2011	Red	Green	Yellow	Green
2012	Green	Green	Green	Green
2013	Green	Green	Green	Green
2014	Green	Green	Green	Green
2015	Yellow	Green	Yellow	Green
2016	Yellow	Green	Green	Green
2017	Yellow	Green	Green	Green

Data source: EPCHC

Results: Seagrass Expansion



Data: SWFWMD

COVER STORY

CLEAN WATER MEANS MORE THAN YOU THINK

Despite massive growth, water quality in Tampa Bay has improved dramatically in 20 years

HEALTHY BAY

1 out of every 5 jobs in the TBEP Watershed depend on a healthy bay.

$22B
within all six counties

13%
of economy for all six counties

TBRPC 2014 Economic Valuation Study

Bottom Line:

Healthy Bay → Healthy Economy

Key Elements in Tampa Bay's Collaborative Management Strategy

- Target resources identified by both public and science as "worthy" indicators
- Community willing to work together towards common goals
- Science-based numeric goals and targets
- Multiple tools: Regulation; public/private collaborative actions; citizen actions
- Long-term monitoring
- Convener to track, facilitate, report progress
- Link to economic value of a healthy bay

Peconic's 'story'

- Target resources identified? YES (clear water, eelgrass, shellfish beds, swimming beaches)
- Community buy-in? YES (recognition of importance of water quality); willing to work together on collaborative actions
- Science-based goals and targets? PARTIAL (DO TMDL; some eelgrass-related targets proposed)
- Long-term monitoring? MOSTLY; some gaps
- Convener? MOSTLY; need regular analysis and reporting on progress
- Link to economic value of a healthy bay ??

Reporting Progress Towards Objectives: Considerations

Focus on a limited number of target resources for annual reporting and for 'telling the story'.

- Online Survey: 'Clear water', 'supporting eelgrass recovery' and 'reducing HABs' are strong frontrunners;
- open/closed shellfish beds and swimming beaches are important for user groups. These are adequately monitored and reported.

Actions approved by the TAC

- Recommend Management Committee provide input on conceptual '***Peconic Estuary timeline story***' based on priority resources identified by the Online Survey: clear water adequate to support eelgrass recovery and reduce HABs and macroalgae

- Focus on ***clear water to reduce HABs and macroalgae*** in public outreach

- ***Form TAC workgroup(s) to develop numeric targets*** for:
  - eelgrass suitability (acres);
  - water quality metrics adequate to support eelgrass recovery and other resources; and
  - water quality metrics adequate to reduce HABs

- Continue to evaluate other factors affecting eelgrass recovery (research element)

Additional suggestions from TAC

- Consider ***updating the economic valuation study***, focused on what a healthy Peconic Bay can provide to the regional economy

- For public communication, focus on ***documenting nutrient reduction efforts*** and projects

- Consider initiating a ***shoreline macroalgae citizen monitoring program***- link to WQ

Recommendation:

1. **Charge the Technical Advisory Committee and the Program Office staff to develop a "Peconic Estuary Story"** based on monitoring and other data as part of the identify campaign. The Technical Advisory Committee Chair and Program Office staff will work with the Citizens Advisory Committee and Local Government Committee as initial 'sounding boards' to ensure that the draft "Peconic Estuary Story" is understandable by, and resonates with, the public and local officials prior to presentation for review by the Management Committee and consideration and approval by the Policy Committee.

Additional recommendations for Management Committee consideration

- Approve TAC recommendations to:
  a. Focus on clear water to reduce HABs and macroalgae in public outreach
  b. Form workgroups to develop numeric targets for eelgrass habitat suitability (acres); water quality metrics adequate to support eelgrass recovery and reduce HABs
  c. Continue to evaluate other factors affecting eelgrass recovery (research element)
  d. Consider updating the economic valuation study
  e. Document nutrient reduction efforts and projects
  f. Initiate a shoreline macroalgae citizen monitoring program

Discussion and Decisions

Summary of Recommendations:

1. Charge the TAC and Program Office staff to develop a 'Peconic Estuary Story'
2. Approve TAC recommendations to:
    1. focus on clear water to reduce HABs and macroalgae in public outreach;
    2. form workgroups to develop numeric targets;
    3. continue to evaluate other factors affecting eelgrass recovery;
    4. consider updating the economic valuation study;
    5. document nutrient reduction projects;
    6. initiate a shoreline macroalgae citizen monitoring program.

Discussion:

- Both Tampa Bay and Chesapeake Bay have observed measurable reductions in pollutant loads as well as measurable improvements in water quality and other resource goals in the face of significant human population increases—more than 100% increase in the Tampa Bay watershed and over a 50% increase in the Chesapeake Bay.
- Did your story include the time lag between reduction in source of nutrient pollution and the response in Tampa Bay water quality? Yes, we clearly communicated there was a time lag between our huge reductions in wastewater treatment loads and increases in water clarity and then the return of seagrasses. The same in Chesapeake Bay, where groundwater lags were an important public communication

Discussion and Decisions

Discussion (Continued):

- Does the Tampa Bay story evolve through time? Absolutely, following the findings and analysis of monitoring data, the Tampa Bay story evolved to reflect these new findings and responses of the ecosystem.
- Is the red/yellow/green chart scalable for different parts of Tampa Bay? Yes, the Tampa Bay partners could scale the chart down to individual embayments. In the Chesapeake Bay, there is a system for reporting water quality progress at the Baywide scale or down to the individual tidal tributary scale, 1 of 106 segments which combine to add up to the entire Chesapeake Bay.

Discussion and Decisions

Discussion (Continued):

- In the mid-1990s, we conducted an economic study of the benefits of Peconic Estuary Program and were able to quantify the benefits of clean water down to the individual homeowner. Should we consider updating this study to include the economic findings into our Peconic Estuary story?
- Agreement on the need to update the 1990s economic study and build those updated findings into the Peconic Estuary story.
- The Peconic Estuary Program has a lot of the necessary elements of telling a Peconic Estuary story and work underway for addressing the other missing elements.
- Important to include the geographic scale, scalability of the Peconic Estuary story.

Discussion and Decisions

Summary of Recommendations:

1. Charge the TAC and Program Office staff to develop a 'Peconic Estuary Story'
2. Approve TAC recommendations to:
    1. focus on clear water to reduce HABs and macroalgae in public outreach;
    2. form workgroups to develop numeric targets;
    3. continue to evaluate other factors affecting eelgrass recovery;
    4. consider updating the economic valuation study;
    5. document nutrient reduction projects;
    6. initiate a shoreline macroalgae citizen monitoring program.

Decisions: Agreement to develop a 'Peconic Estuary Story', evaluate draft numeric targets at the December 4th TAC meeting, and update the existing economic valuation study.

Due Date(s): At the December 4th TAC meeting, evaluate methods to report water quality monitoring data and assessing proposed water quality targets from the sub-watershed plans as initial or interim targets. Evaluate data needs for telling the Peconic Estuary Story and their availability. At the December 5th CAC meeting, evaluate the Peconic Estuary Story elements from public understanding perspective.