STAC Activity Products

Follow-up from STAC Effectiveness Retreat

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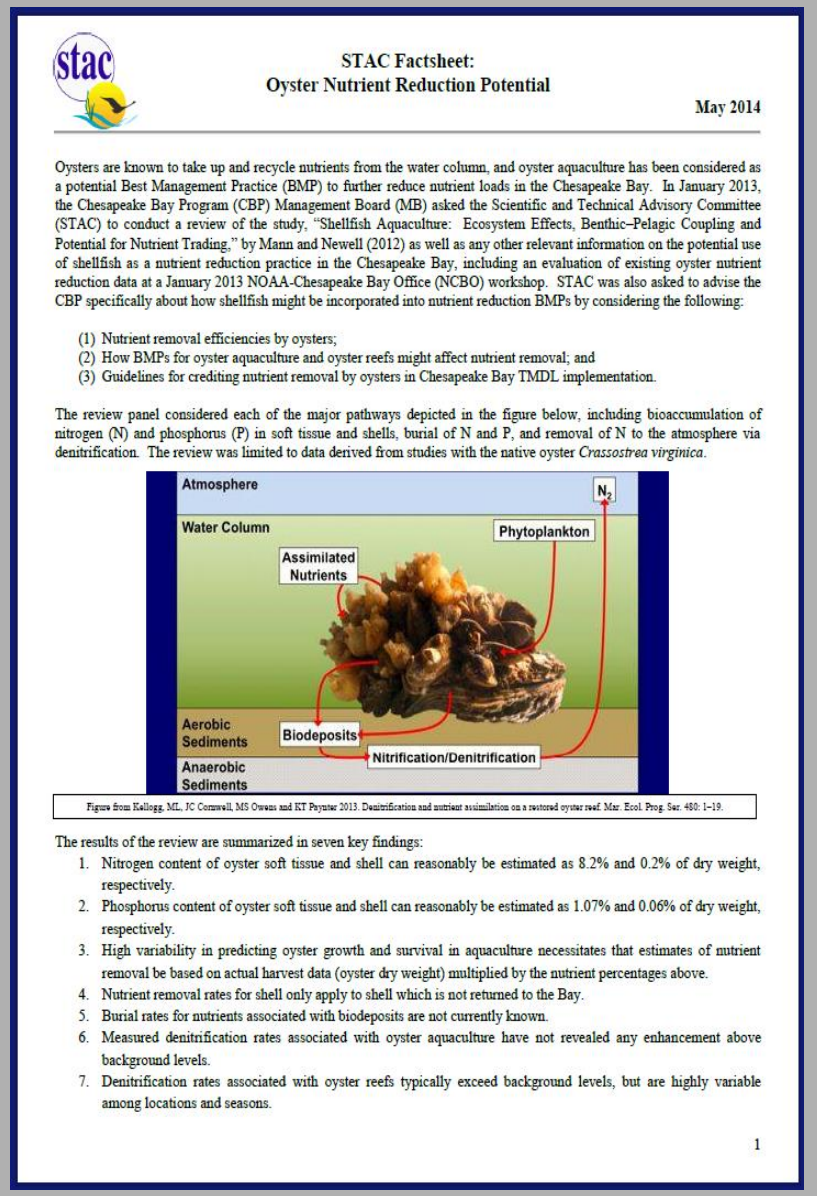
STAC Effectiveness Retreat Follow Up

How can STAC be most effective with our products and how we communicate?

- STAC has a number of tools including workshops, issue or synthesis papers, and peer or independent reviews. What products should be used to ensure STAC is most effective?
- How can we make STAC reports more effective?
- What products could we use for recent/upcoming STAC activities?

Product Examples

- White Papers/Issue Papers/Synthesis
- Research Brief
  - Marcellus one-pager
- Factsheets
- Bring back red sheets
  - Directed towards policy makers
- News and Science Blasts
- “Presence is a product”
  - STAC network is vast – spread knowledge individually
  - Effective placement of members throughout meetings, forums, and calls



STAC Factsheet:
Oyster Nutrient Reduction Potential

May 2014

Oysters are known to take up and recycle nutrients from the water column, and oyster aquaculture has been considered as a potential Best Management Practice (BMP) to further reduce nutrient loads in the Chesapeake Bay. In January 2013, the Chesapeake Bay Program (CBP) Management Board (MB) asked the Scientific and Technical Advisory Committee (STAC) to conduct a review of the study, “Shellfish Aquaculture: Ecosystem Effects, Benthic–Pelagic Coupling and Potential for Nutrient Trading,” by Mann and Newell (2012) as well as any other relevant information on the potential use of shellfish as a nutrient reduction practice in the Chesapeake Bay, including an evaluation of existing oyster nutrient reduction data at a January 2013 NOAA-Chesapeake Bay Office (NCBO) workshop. STAC was also asked to advise the CBP specifically about how shellfish might be incorporated into nutrient reduction BMPs by considering the following:

(1) Nutrient removal efficiencies by oysters;
(2) How BMPs for oyster aquaculture and oyster reefs might affect nutrient removal; and
(3) Guidelines for crediting nutrient removal by oysters in Chesapeake Bay TMDL implementation.

The review panel considered each of the major pathways depicted in the figure below, including bioaccumulation of nitrogen (N) and phosphorus (P) in soft tissue and shells, burial of N and P, and removal of N to the atmosphere via denitrification. The review was limited to data derived from studies with the native oyster *Crassostrea virginica*.

Figure from Kellogg, ML, JC Cornwell, MS Owens and KT Paynter 2013. Denitrification and nutrient assimilation on a restored oyster reef. Mar. Ecol. Prog. Ser. 480: 1–19.

The results of the review are summarized in seven key findings:

1. Nitrogen content of oyster soft tissue and shell can reasonably be estimated as 8.2% and 0.2% of dry weight, respectively.
2. Phosphorus content of oyster soft tissue and shell can reasonably be estimated as 1.07% and 0.06% of dry weight, respectively.
3. High variability in predicting oyster growth and survival in aquaculture necessitates that estimates of nutrient removal be based on actual harvest data (oyster dry weight) multiplied by the nutrient percentages above.
4. Nutrient removal rates for shell only apply to shell which is not returned to the Bay.
5. Burial rates for nutrients associated with biodeposits are not currently known.
6. Measured denitrification rates associated with oyster aquaculture have not revealed any enhancement above background levels.
7. Denitrification rates associated with oyster reefs typically exceed background levels, but are highly variable among locations and seasons.

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Making Reports *More Effective*

- Short (1-2 pg.) executive summary
- Report authors pull out 2-3 main “take-home” points
  - Prioritize points
- Email main points to targeted audiences
  - Include CBP leadership; ensures responsiveness
- Translate main points into a format suitable for general audiences
- Increase collaboration with CBP Communications Workgroup
  - Ex: CBP articles, podcasts, YouTube videos, blogs, TED Talks etc.
- Five minute briefing at Management Board (MB) meetings

Planning/Communication Tools

- Annual planning to guide topics and products of STAC activities?
- End of the year report of activities
  - What has STAC accomplished?
  - What business still needs more attention?
- Collaboration with GITs
  - Kristin Saunders – New Cross-Program Coordinator
- Annual Meeting with LGAC/CAC
  - Help distribute STAC products to appropriate audiences
  - Provide advice for questions left unanswered

Recent STAC activities?

- Conowingo Workshop
- Enhancing Capacity Workshop
- Assessing Uncertainty Workshop
- Optimization Workshop
- Climate Change Workshop
- Criteria Addendum Review
- Microplastics Review

What product(s) would be most effective?