

MCCC 2020 Blue Carbon Activities

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Science and Technical Work Group

Presented at the June 23, 2020 STWG meeting

Outline

1. What is Blue Carbon?
2. The importance of Blue Carbon to Maryland
3. Example Projects
4. Upcoming Events 2020-21

Blue Carbon

Blue Carbon is defined as the carbon accumulating in vegetated, tidally influenced ecosystems such as tidal forests, tidal marshes and intertidal to subtidal seagrass meadows (*International Blue Carbon Working Group, 2015*).

Blue Carbon Ecosystems (BCEs) are defined as coastal wetland ecosystems with manageable and atmospherically significant carbon stocks and fluxes (*Windham-Myers et al., 2019*).



Building Blue Carbon Experience [Crooks, Silvestrum, 2019]



Blue Carbon: Multiple Benefits

Benefits include:

Carbon sequestration [MCCC & MDE: carbon inventory]

Coastal resilience

- *risk reduction to homes and infrastructure*
- *wetland and ecosystem function*
- *adaptation [time]*

Water quality

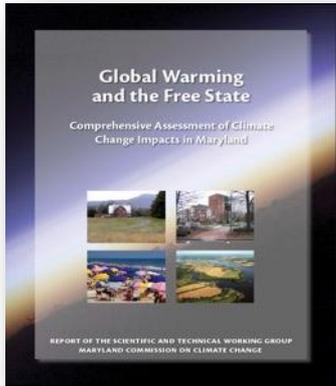
Recreation

Aesthetics – living shorelines

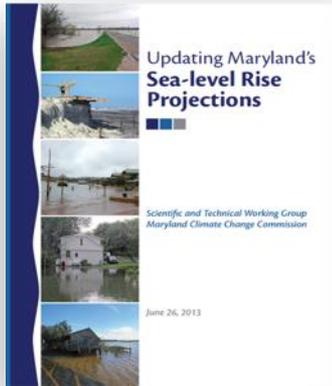
Agriculture

Multiple benefits = multiple funding sources

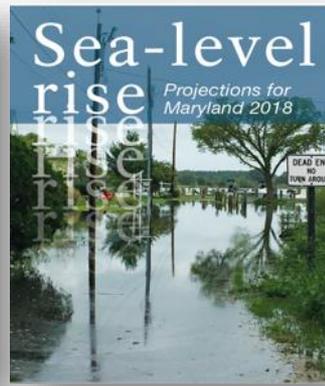
Sea Level Rise in Chesapeake Bay



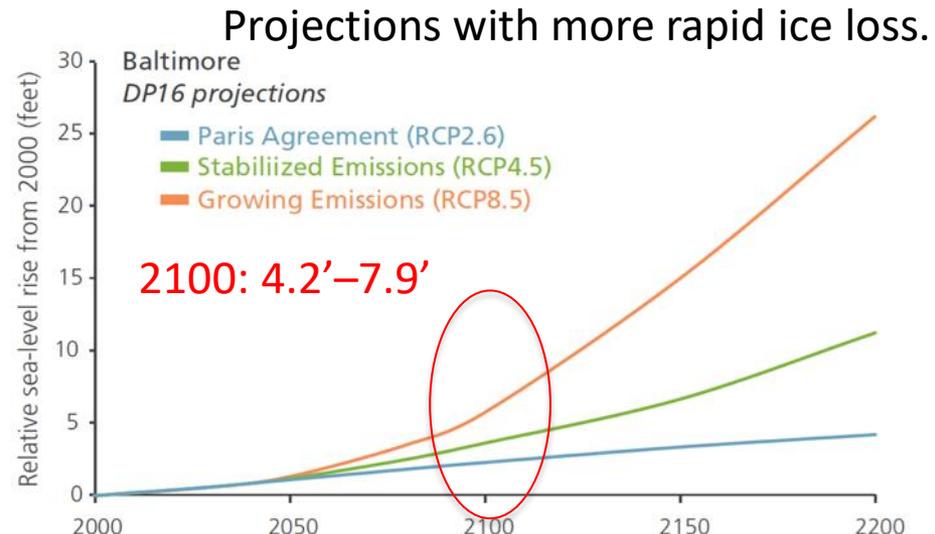
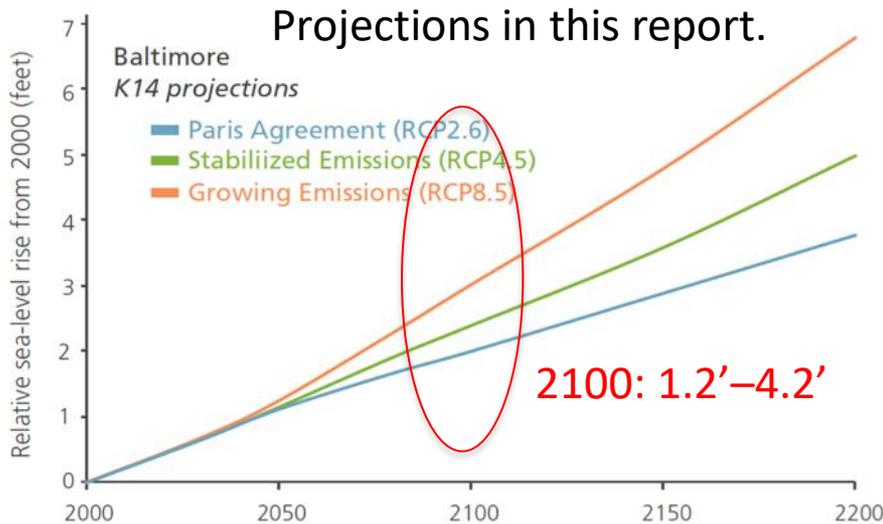
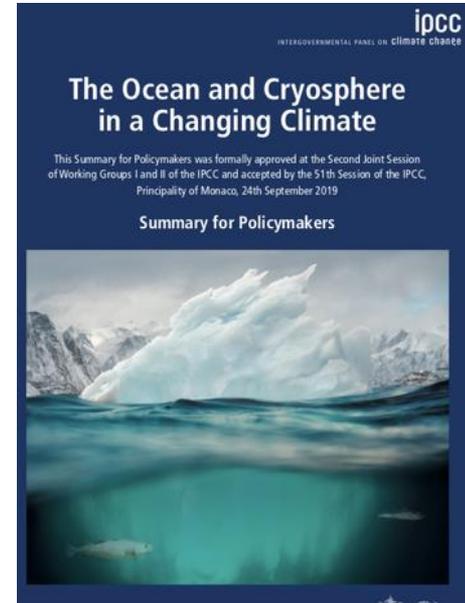
2008



2013



2018





High Tide in Dorchester documentary

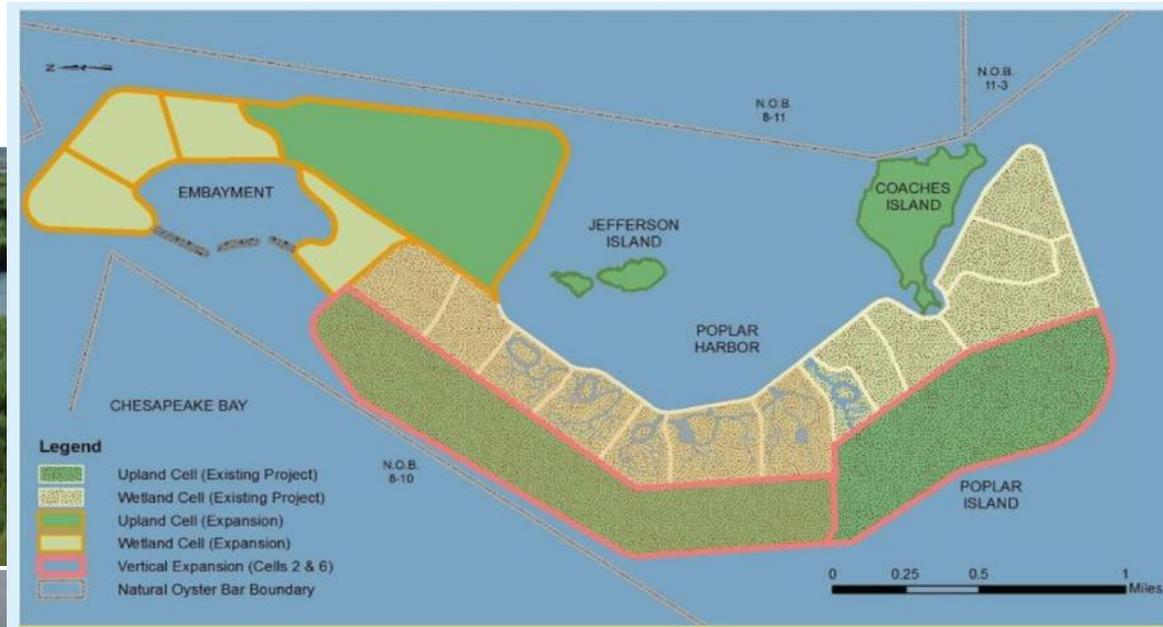
Source:
Hightidedorchester.org

Poplar Island

Dredge Material Management Program



Poplar Island Expansion



Regional Partnerships

CoastSmart Council

Maryland Department of Planning
Saltwater Intrusion Plan

Maryland Climate Academy

Critical role of NGO and local government

Oxford Causeway : Bioretention and wetland enhancement



Eastern Shore Climate Adaptation Partnership



Jim Bass, ESLC Coastal Resilience Program Manager



2020-21 Blue Carbon Activities

1. **Virtual Workshop: Calculating the Capture and Potential of Blue Carbon**

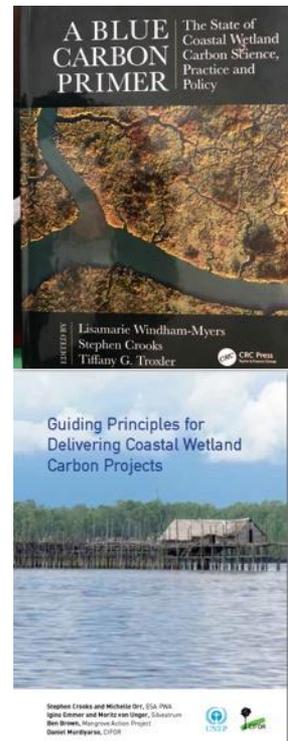
2. **Virtual Workshop: Innovative Financing for Implementing Blue Carbon Projects**

3. **Restore America's Estuaries' Webinars**

4. **Science in Action Roundtable:**

Exploring the Future of Blue Carbon

with Maryland Department of Environment, Department of Natural Resources, MDOT Dredge Material Management Program, University of Maryland Center for Environmental Science, University of Maryland College Park, Smithsonian Environmental Research Center, NOAA, USGS, US Army Corps of Engineers and many others



At times of change, the learners will be the ones who will inherit the world, while the knowers will be beautifully prepared for a world that no longer exists.

-Alastair Smith

Further Information:

Compass.

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A Brief Summary of Scientific Developments

June 15, 2020

Example: Britain

- 2010** 40% Energy from coal-fired power plants
3% wind and solar
- 2020** 0% coal-fired energy since April 9.
37% renewables (largest wind industry in world)

<https://www.bbc.com/news/science-environment-52973089>

Could coronavirus crisis spur a green recovery?

<https://www.bbc.com/news/science-environment-52488134>

June 8-10, 2020. Virtual Conference

Chesapeake Community Research Symposium 2020

Chesapeake Bay Research and Management: Progress and Future Challenges

Example Papers

Saltwater intrusion affects nitrogen, phosphorus and iron transformations under aerobic and anaerobic conditions: an incubation experiment. Weissman et al. UMCP.

The potential effects of sea level rise on release of nutrients into the Bay.

Drivers of warming in the Chesapeake Bay: a 35-year retrospective analysis. Hinson et al.; VIMS, PSU

How climate change has driven temperature increases over the past 35 years primarily through direct atmospheric warming and how these future rising temperatures will impact hypoxia primarily through impacts on the the solubility of oxygen.