

An aerial photograph of the Chesapeake Bay watershed, showing a complex network of rivers and streams flowing into the bay. The land is a mix of green and brown, indicating forested and developed areas. The water in the bay is a deep blue. The text is overlaid on the upper half of the image.

Climate Change Projections for the Chesapeake Bay

Sustainable Fisheries GIT Meeting
January 8, 2020

Julie Reichert-Nguyen
NOAA Chesapeake Bay Office
Chesapeake Bay Program Climate Resiliency Workgroup

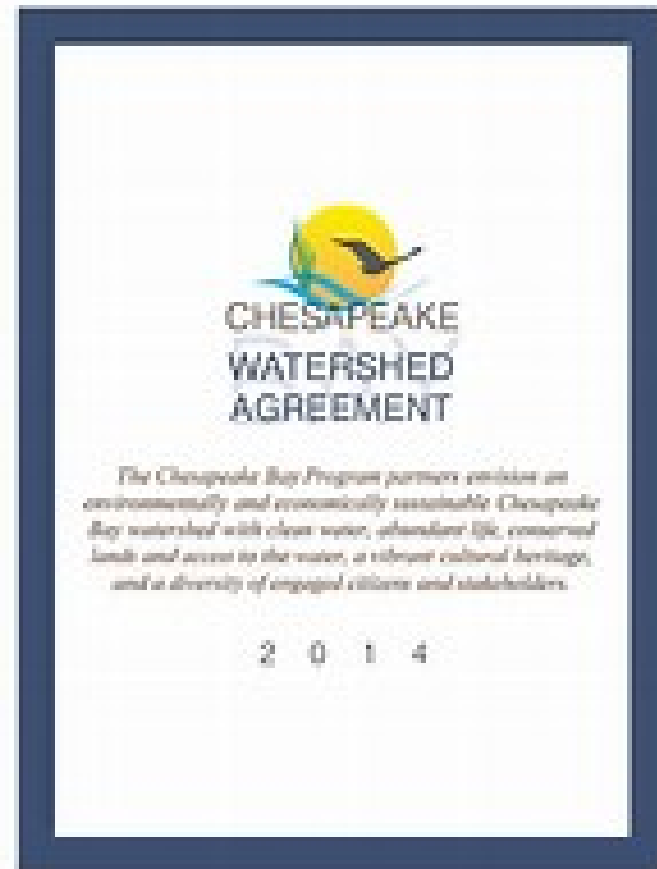
Goal: Increase the resiliency of the Chesapeake Bay watershed, including its living resources, habitats, public infrastructure, and communities, to withstand adverse impacts from changing environmental and climate conditions.

Monitoring and Assessment outcome:




Continually monitor and assess the trends and likely impacts of changing climatic and sea level conditions on the Chesapeake Bay ecosystem, including the effectiveness of restoration and protection policies, programs and projects.

Adaptation outcome:

Continually pursue, design, and construct restoration and protection projects to enhance the resiliency of Bay and aquatic ecosystems from the impacts of coastal erosion, coastal flooding, more intense and more frequent storms and sea-level rise.



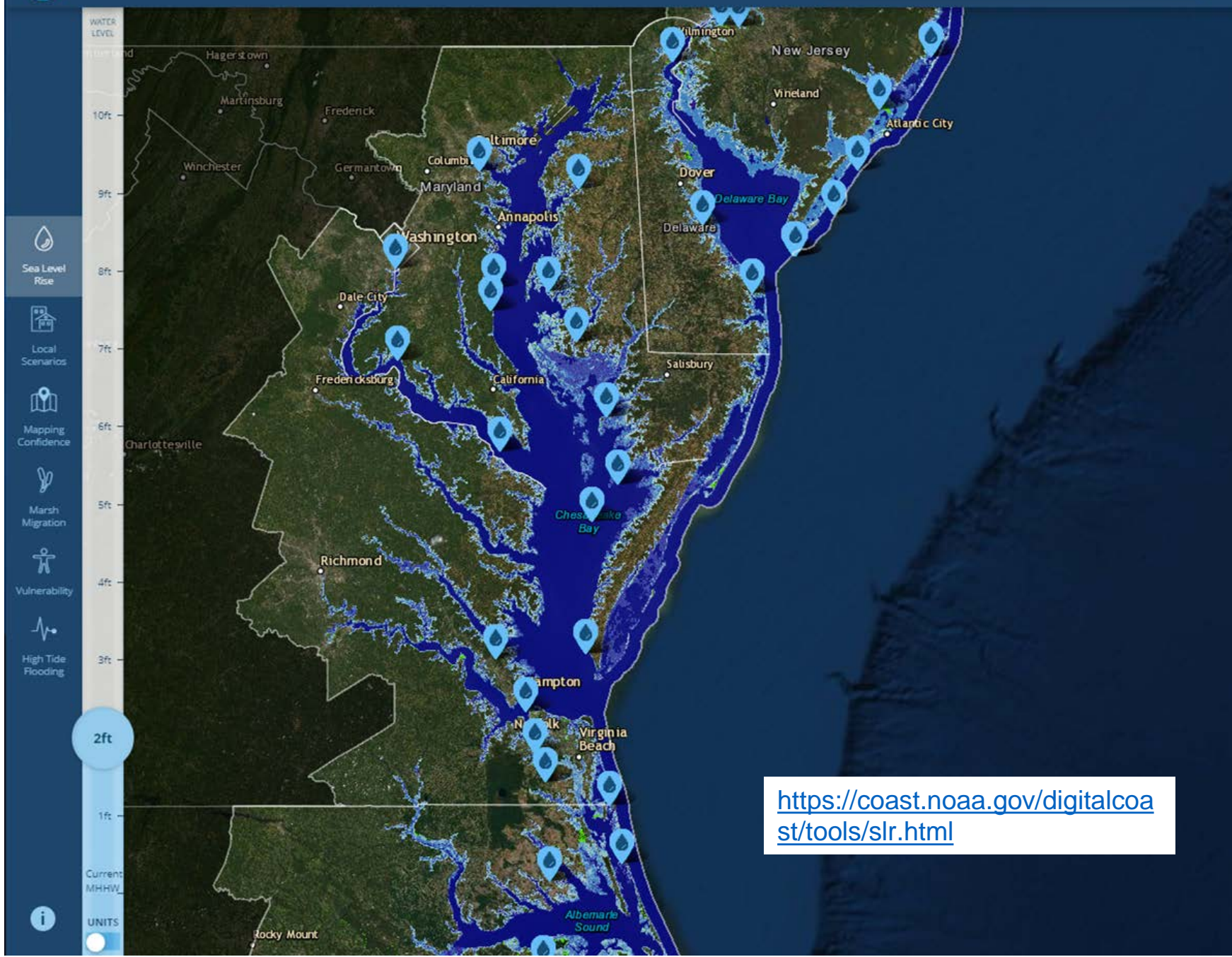
2025 projections for Chesapeake Bay Region

 <p>Relative Sea Level Rise</p>	17 centimeters 0.5 ft	Extrapolation of NOAA observed sea level trends (Swells Point, VA)
 <p>Temperature Increase</p>	1.98° F / 1.1° C Increase	Downscaled climate projections (RCP 4.5)
 <p>Precipitation Change</p>	3.1% Increase	Observed trends in 88-years of annual PRISM ^[1] data



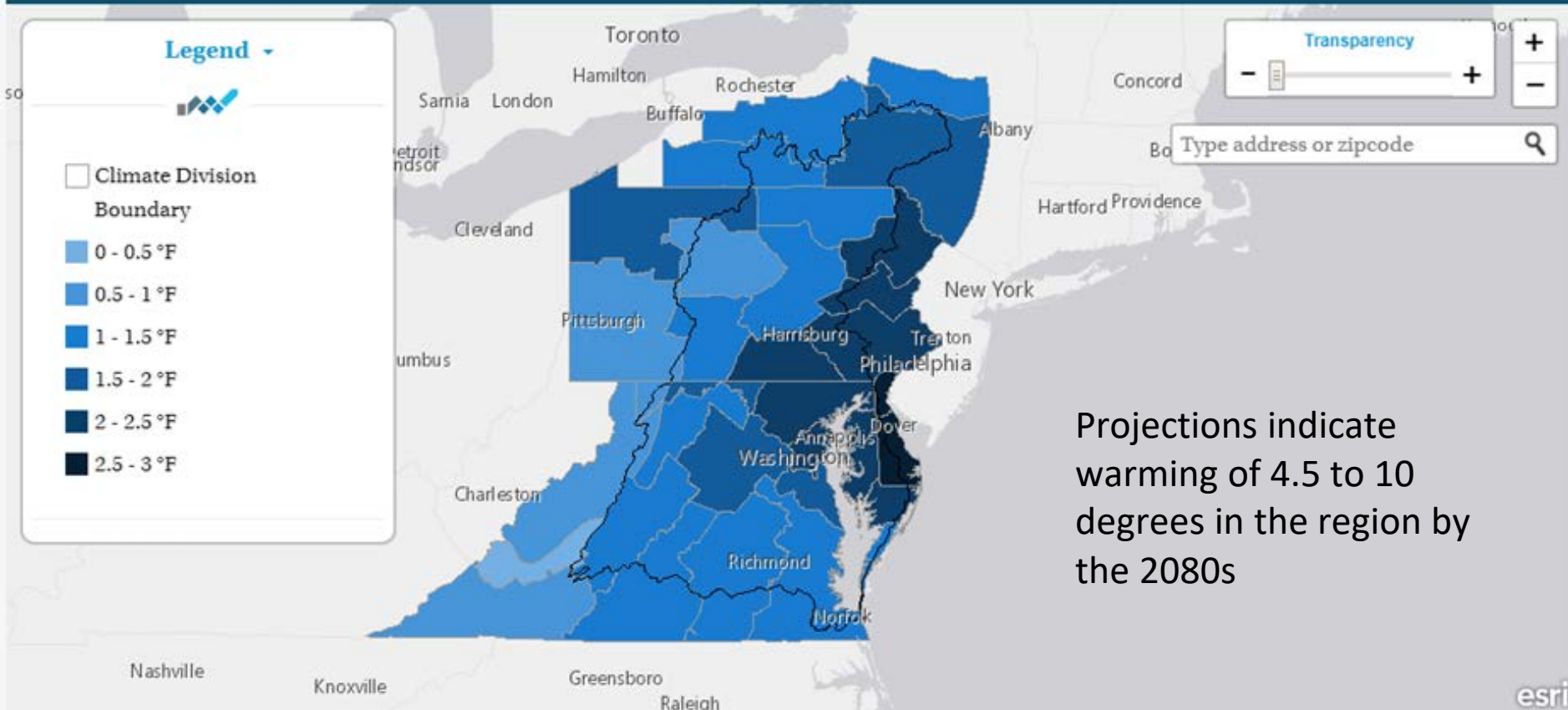
Sea Level Rise Viewer

Enter an address or city



<https://coast.noaa.gov/digitalcoast/tools/slr.html>

Average Air Temperature Increases in the Chesapeake Bay Watershed (1901-2017)



Baseline 1901-2000

<https://www.chesapeakeprogress.com/climate-change/climate-monitoring-and-assessment>

Change in Total Annual Precipitation in the Chesapeake Bay Watershed (1901-2017)

Legend

Climate Division

Boundary

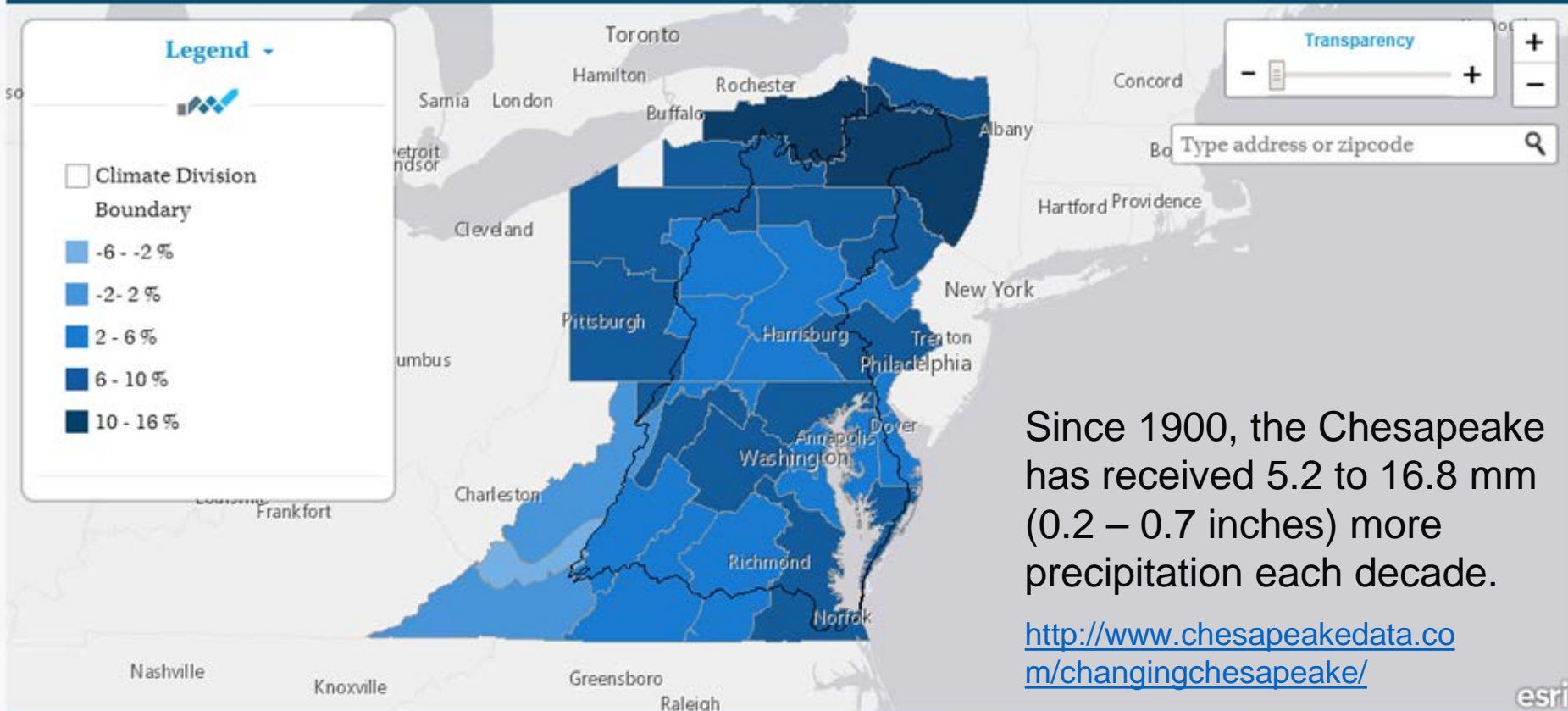
-6 - -2 %

-2 - 2 %

2 - 6 %

6 - 10 %

10 - 16 %



Baseline 1901-2000

<https://www.chesapeakeprogress.com/climate-change/climate-monitoring-and-assessment>

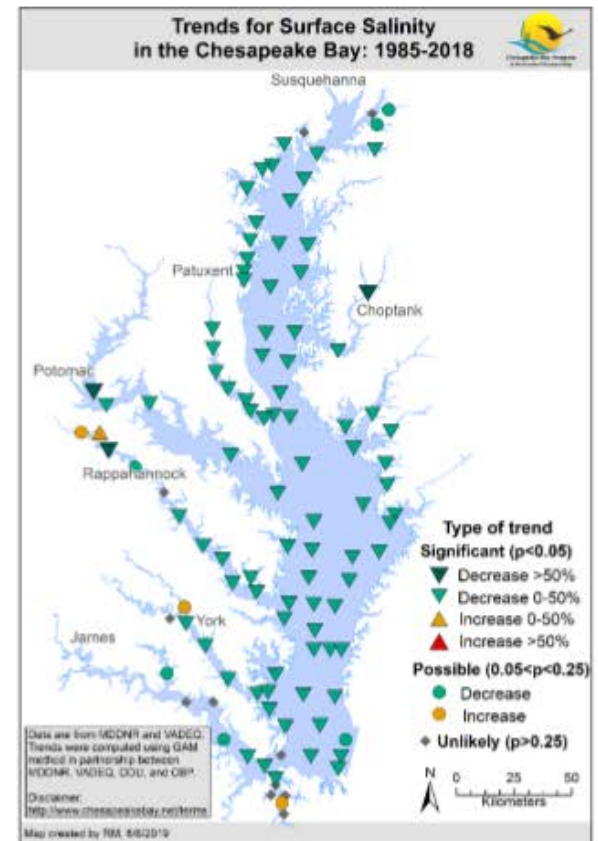
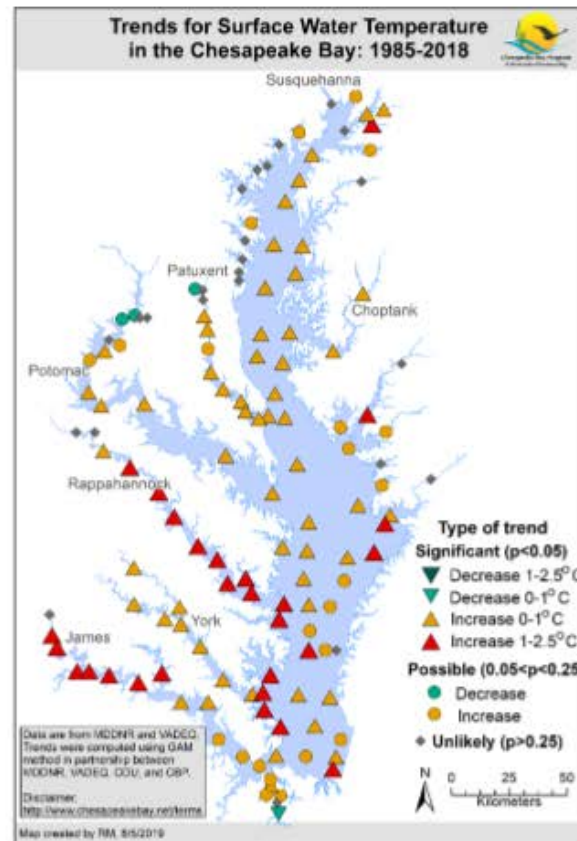
Sea Surface Water Temperature and Salinity Trends (1985-2018)

Preliminary Information-Subject to Revision. Not for Citation or Distribution

Physical Estuarine Factors: A Changing Environment

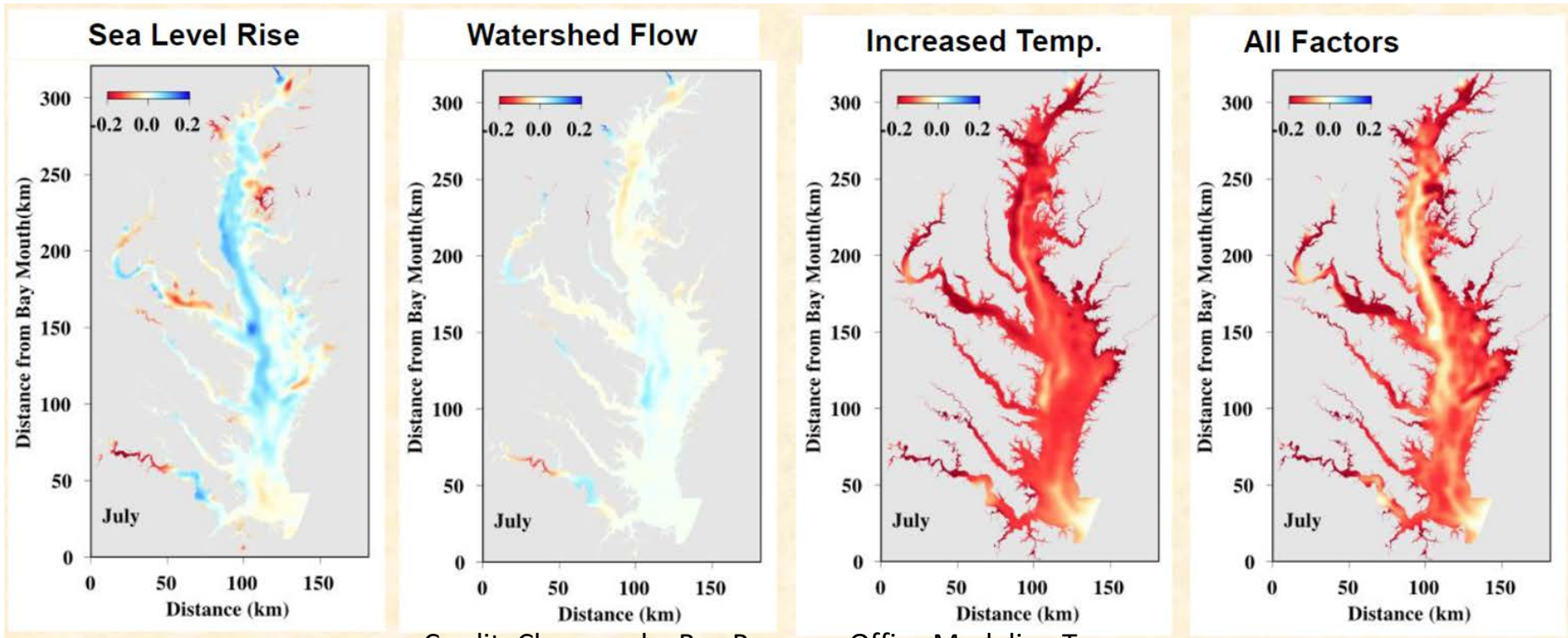
At the majority of stations throughout Chesapeake Bay:

- Mean annual surface water temperature has increased since 1985.
- Mean annual surface salinity has declined since 1985.



Credit: Dr. Rebecca Murphy, UMCES-CBPO

Bottom Dissolved Oxygen Change (1995-2025)



Credit: Chesapeake Bay Program Office Modeling Team





Chesapeake Bay Program

Science. Restoration. Partnership.

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[WHO WE ARE](#) > [HOW WE'RE ORGANIZED](#) > [CLIMATE RESILIENCY WORKGROUP](#)

Climate Resiliency Workgroup



Mark Bennett (Chair), U.S. Geological Survey (USGS) +

Erik Meyers (Chair), The Conservation Fund +

Julie Reichert-Nguyen (Coordinator), NOAA
Chesapeake Bay Office +

Cuiyin Wu (Staffer), Chesapeake Research Consortium +

Breck Sullivan (Staffer), Chesapeake Research
Consortium +

Upcoming Meetings

January 27, 2020
10:00 am - 3:00 pm

Climate Resiliency
Workgroup January 2020 In
Person Meeting

[Export this Event >>](#)

February 18, 2020
1:30 pm - 3:30 pm

Climate Resiliency
Workgroup (CRWG)
February 2020 Meeting

[Export this Event >>](#)

March 16, 2020
1:30 pm - 3:30 pm

Climate Resiliency
Workgroup (CRWG) March
2020 Meeting

[Export this Event >>](#)

Climate Change Indicators – Tracking Resiliency

Climate Indicator Report

file:///C:/Users/PTANGO/Documents/CLIMATEindicator_implementation_plan_-_revised_-_07-13-18.pdf

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Indicator Available

Climate Indicator Developed

Future Indicator?

Type here to search

3:57 PM 12/11/2018

Contact Information

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www.chesapeakebay.net/who/group/climate_change_workgroup

Climate Resiliency Workgroup Meeting

January 27, 2020

10 AM – 3 PM

Annapolis Fish Shack

Climate Indicator Prioritization