Climate Change Projections for the Chesapeake Bay

Sustainable Fisheries GIT Meeting
January 8, 2020

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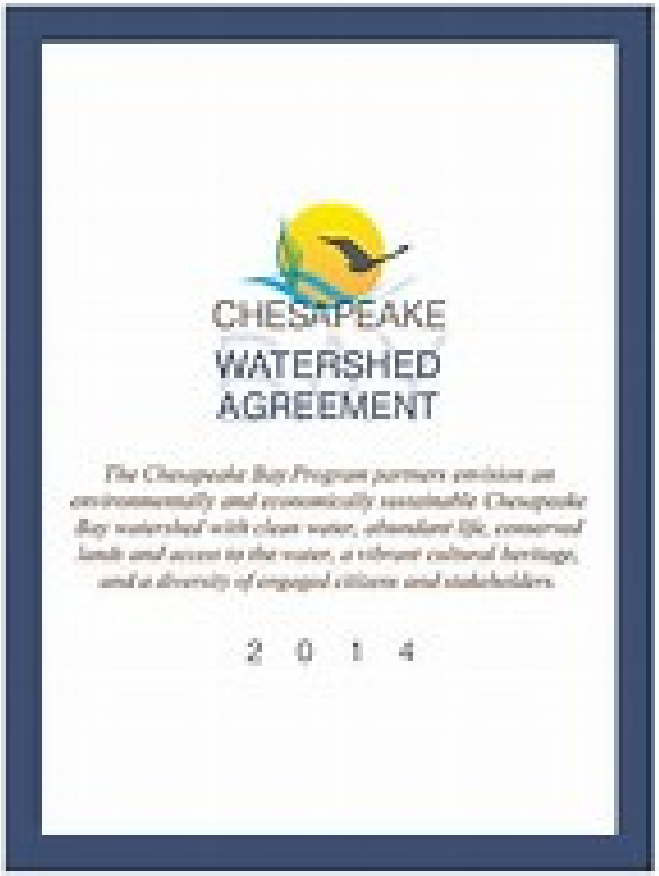
Chesapeake Bay Program Climate Resiliency Workgroup

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.

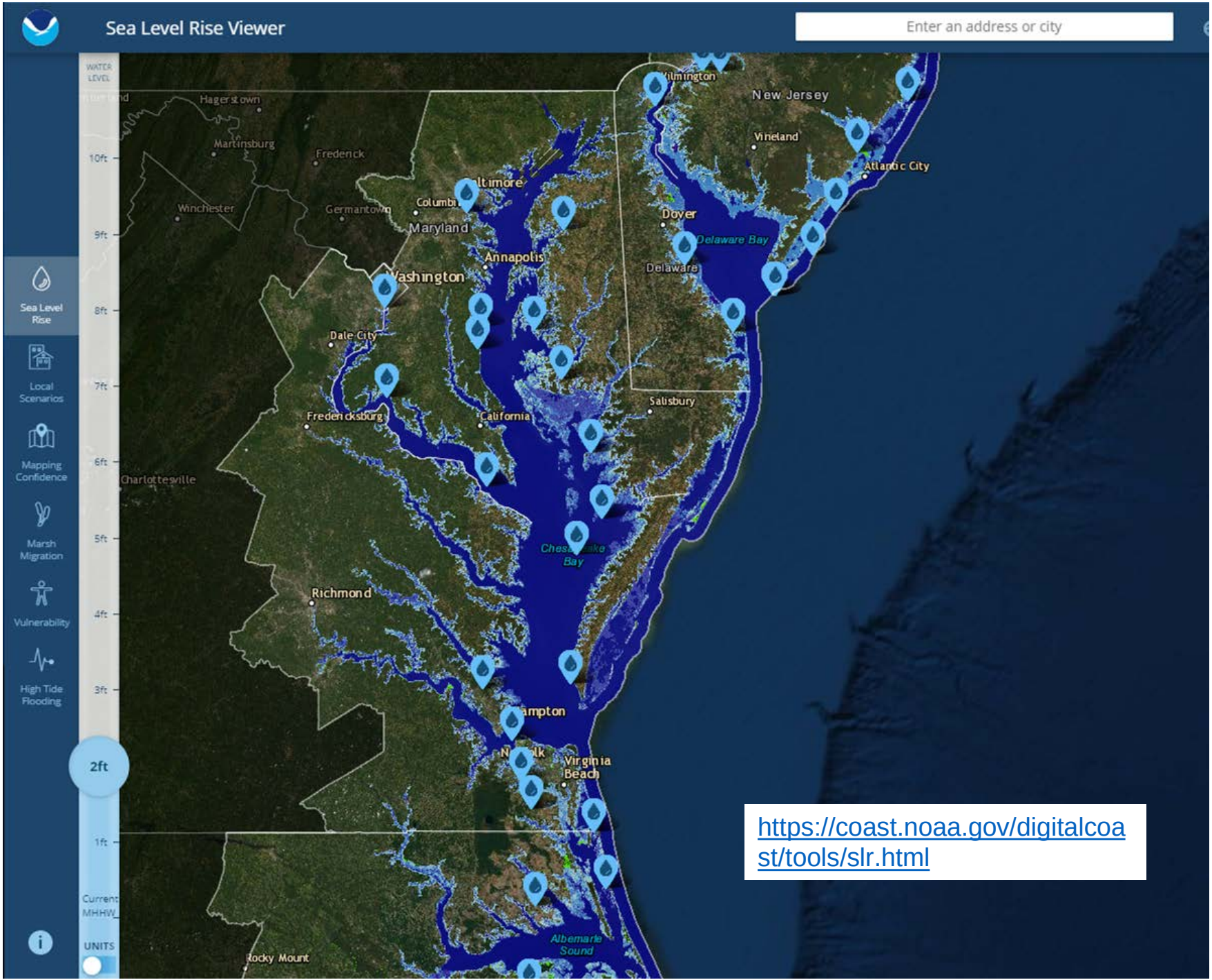


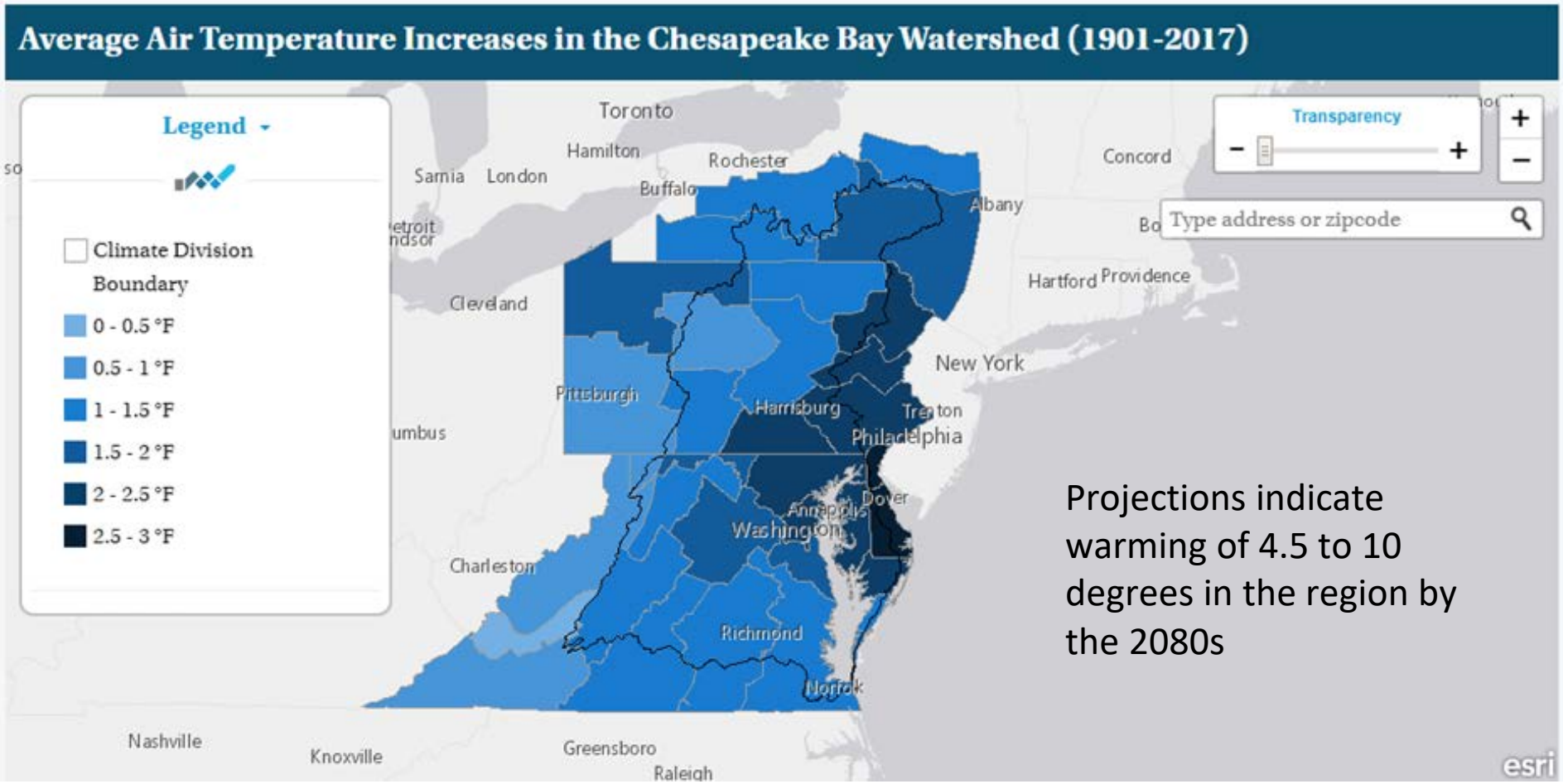
Monitoring and Assessment outcome:
Continually monitor and assess the trends and likely impacts of changing climatic and sea level conditions on the Chesapeake Bay ecosystem, including the effectiveness of restoration and protection policies, programs and projects.

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

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

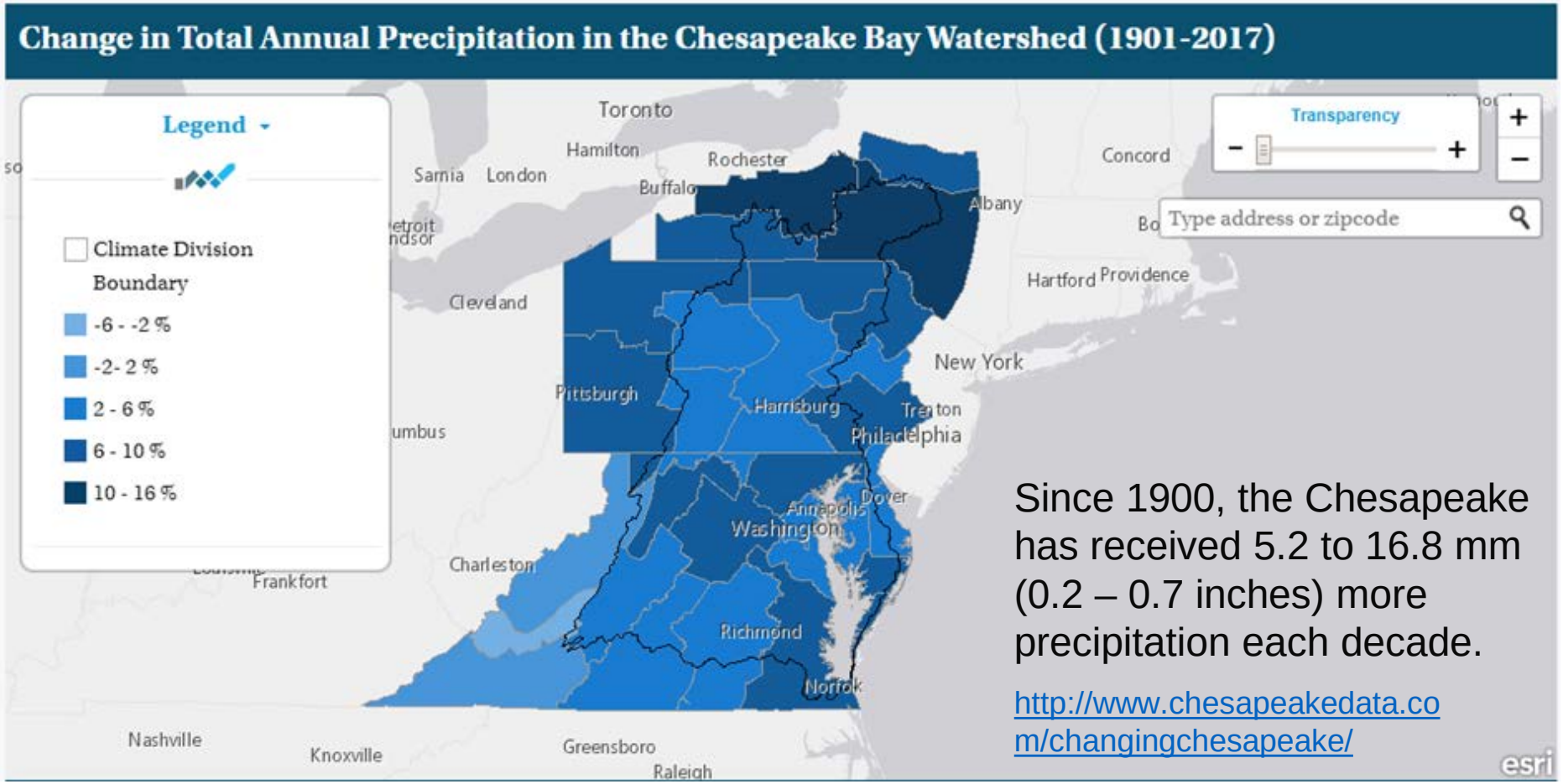

Sea Level Rise Viewer
Enter an address or city
WATER LEVEL
10ft
9ft
8ft
7ft
6ft
5ft
4ft
3ft
2ft
1ft
Current MHHW
UNITS
Sea Level Rise
Local Scenarios
Mapping Confidence
Marsh Migration
Vulnerability
High Tide Flooding
Hagerstown
Martinsburg
Frederick
Winchester
Germantown
Maryland
Annapolis
Washington
Dale City
Fredericksburg
California
Charlottesville
Richmond
Chesapeake Bay
Delaware Bay
Delaware
Dover
Salisbury
New Jersey
Vineland
Atlantic City
Virginia Beach
Albemarle Sound
Rocky Mount
https://coast.noaa.gov/digitalcoast/tools/slr.html



Projections indicate warming of 4.5 to 10 degrees in the region by the 2080s

Baseline 1901-2000

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



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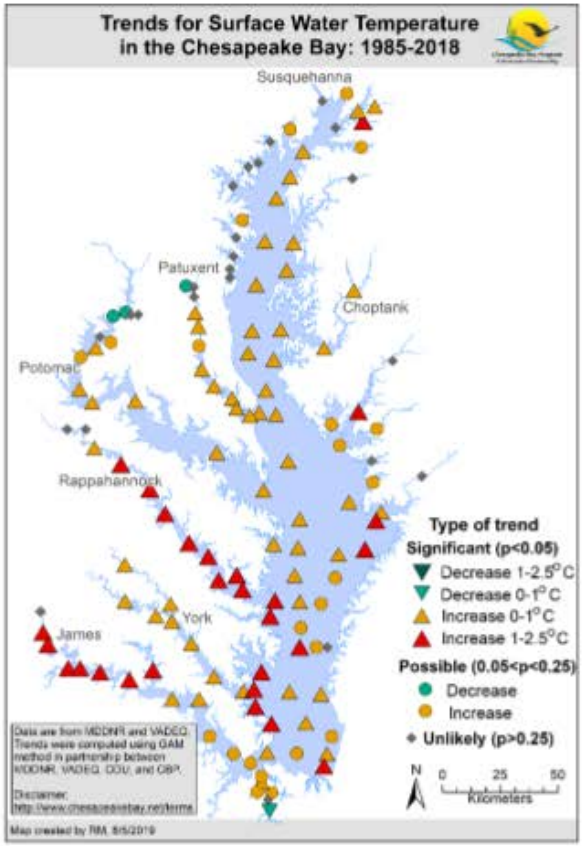
Sea Surface Water Temperature and Salinity Trends (1985-2018)

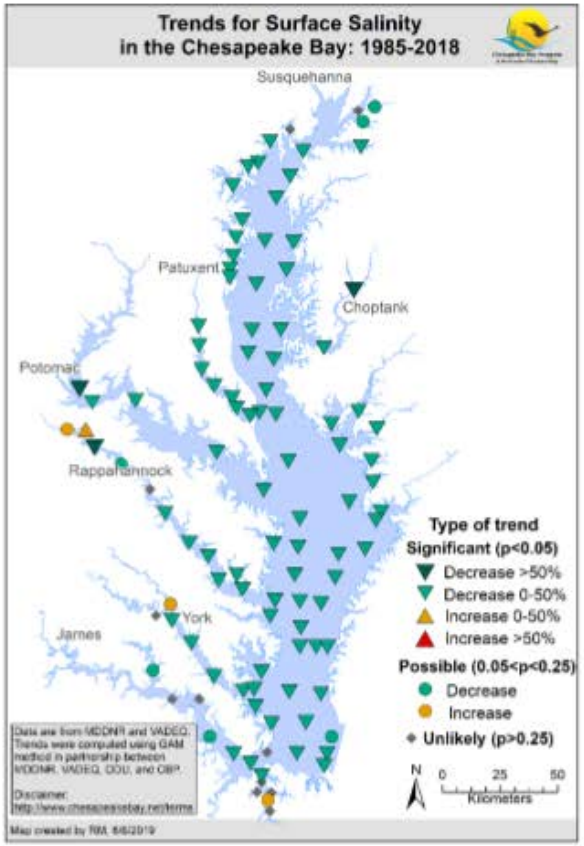
Preliminary Information-Subject to Revision. Not for Citation or Distribution

Physical Estuarine Factors: A Changing Environment

At the majority of stations throughout Chesapeake Bay:

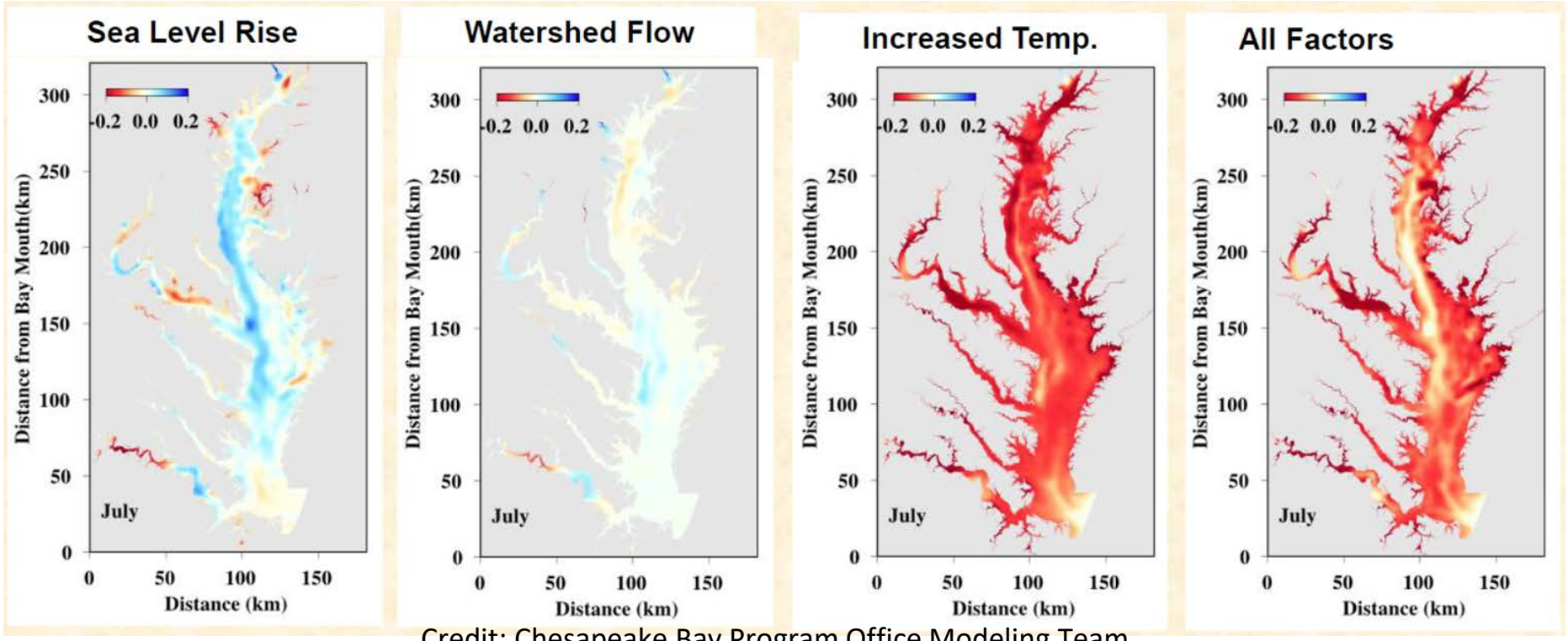
- Mean annual surface water temperature has increased since 1985.
- Mean annual surface salinity has declined since 1985.





Credit: Dr. Rebecca Murphy, UMCES-CBPO

Bottom Dissolved Oxygen Change (1995-2025)



Credit: Chesapeake Bay Program Office Modeling Team

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 >>

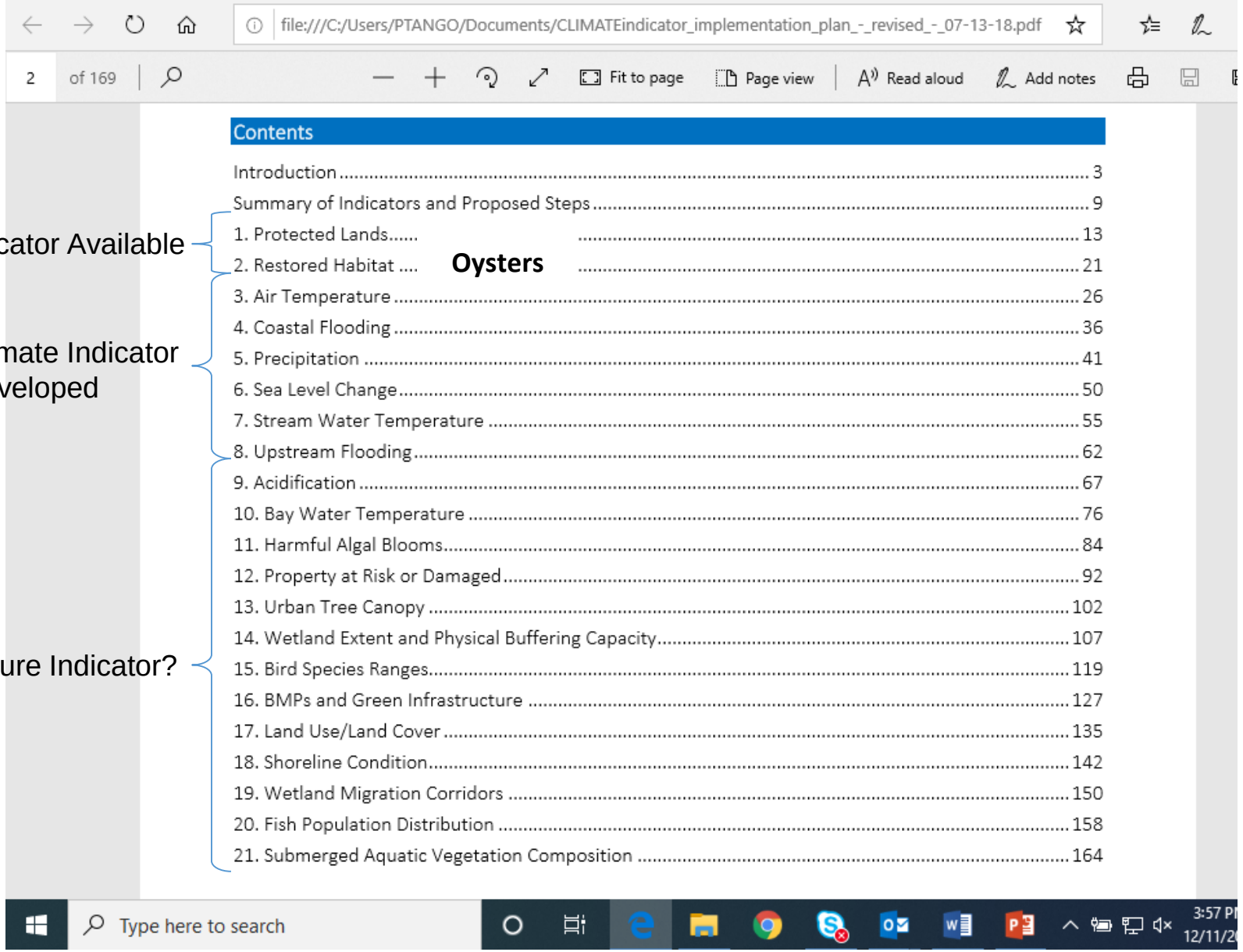
March 16, 2020
1:30 pm - 3:30 pm

Climate Resiliency Workgroup (CRWG) March 2020 Meeting

Export this Event >>

Climate Change Indicators – Tracking Resiliency

Climate Indicator Report



Indicator Available

Climate Indicator Developed

Future Indicator?

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

Photo Credit: Chesapeake Bay Foundation