

A Changing Narragansett Bay

Exploring Changes to Eutrophication and Finfish Communities
with a focus on Mount Hope Bay

September 28, 2021 @ 1:00pm
On Zoom

[Register Here](#)

Dan Codiga
URI

A changing Narragansett Bay: Synthesis of bay-wide eutrophication-related conditions and influences using multiple datasets and metrics

Corinne Truesdale
and
Jane Sawyers
RIDEM

Examining the effects of the Brayton Point Power Station on Mt. Hope Bay's finfish community and Integrated Reporting implications

Please see reverse side for more information

Questions? Contact
Courtney.Schmidt@nbep.org

NARRAGANSETT BAY
ESTUARY PROGRAM

**A changing Narragansett Bay:
Synthesis of bay-wide eutrophication-related conditions and influences
using multiple datasets and metrics**

Managed long-term declines in nitrogen load and the response of bay-wide conditions are synthesized through 2019. Since 2013 when load declines were substantially complete, there has been a notable decline, over at least several years, in excess chlorophyll and a decline in hypoxia at least as substantial. There are clear relationships of both inter-annual variability and long-term declines among nitrogen load, chlorophyll, and hypoxia. Variability of both nitrogen load and stratification closely follows that of river flow, the most important driver of inter-annual changes. Stratification is more tightly correlated to river flow than nitrogen load, due to the long-term decline in the latter, which better explains the long-term chlorophyll and hypoxia trends; other physical influences (salinity, winds, tidal range, non-tidal sea level gradients) have minor roles.

Dan Codiga REALLY wants you to read and send him comments on the most recent report he prepared about eutrophication for NBEP, especially the “synthesis” section—and better yet, to download and make use of the documented data files and analysis code he [provided](#) . His research focus is processes controlling water quality in coastal and estuarine systems, including Massachusetts Bay and Long Island Sound as well as Narragansett Bay. He is a University Affiliate at the Graduate School of Oceanography, University of Rhode Island, and a Marine Information Analyst at the Massachusetts Water Resources Authority.

**Examining the effects of the Brayton Point Power Station
on Mt. Hope Bay’s finfish community and Integrated Reporting implications**

Open-cycle cooling and thermal discharge at the Brayton Point Power Station was implicated in the rapid decline of the Mt. Hope Bay finfish community in the mid-1980s. As a result, the four assessment units in the Rhode Island portion of Mt. Hope Bay were listed as impaired for aquatic life based on fish bioassessments in 1996. Statistical analyses were conducted to characterize changes in finfish abundance and species composition with focus on detecting recovery of the Mt. Hope Bay finfish community since cooling towers were commissioned in 2011 and 2012. Corrine and Jane will review the regulatory framework for monitoring compliance with Clean Water Act requirements, and the analyses conducted to assess Mt. Hope Bay’s compliance with these standards. The data and analysis presented document that the Rhode Island waters of Mt. Hope Bay comply with Rhode Island’s Water Quality Standards after the removal of the anthropogenic stressor causing the artificial increased water temperature that was linked to reductions in finfish.

Corinne Truesdale is a principal biologist with the Rhode Island Department of Environmental Management’s Division of Marine Fisheries, where she manages the state’s ventless trap lobster survey and conducts analyses to support environmental and fisheries management objectives. She has worked in fisheries science in the Pacific Northwest and New England, and is particularly interested in collaborative research and management, marine fisheries ecology, and data-poor fisheries assessment methods.

Jane Sawyers is a Supervising Environmental Scientist with the Rhode Island Department of Environmental Management’s Office of Water Resources, where she supervises the Monitoring, Assessment, Standards, and TMDLs group. She has spent most of her career working on water quality issues in Rhode Island after studying and working through the Midwest, and is particularly interested in nutrients, phytoplankton, and biological interactions.