

Data

---

4-2018

## Associated dataset: The competing impacts of climate change and nutrient reductions on dissolved oxygen in Chesapeake Bay

Isaac D. Irby

*Virginia Institute of Marine Science, iirby@vims.edu*

Marjorie A.M. Friedrichs

*Virginia Institute of Marine Science, marjy@vims.edu*

Follow this and additional works at: <https://scholarworks.wm.edu/data>



Part of the [Environmental Sciences Commons](#)

---

### Recommended Citation

Irby, Isaac D. and Friedrichs, Marjorie A.M., "Associated dataset: The competing impacts of climate change and nutrient reductions on dissolved oxygen in Chesapeake Bay" (2018).

<https://doi.org/10.21220/V5G74N>

This Data is brought to you for free and open access by W&M ScholarWorks. It has been accepted for inclusion in Data by an authorized administrator of W&M ScholarWorks. For more information, please contact [scholarworks@wm.edu](mailto:scholarworks@wm.edu).

**Associated dataset: The competing impacts of climate change and nutrient reductions on dissolved oxygen in Chesapeake Bay**

**Complete dataset is [available here](#)**

**Authors:**

Isaac Irby<sup>1</sup> and Marjorie Friedrichs<sup>1</sup>

<sup>1</sup>Virginia Institute of Marine Science, College of William & Mary, Gloucester Point, VA, USA

**Publication Date:**

April 2018

**Description:**

Model output contained here (all in netCDF format) includes the ChesROMS-ECB output files used to generate the figures and results shown in Irby et al., Biogeosciences, 2018. Please see journal article for details.

**Abstract:**

This research uses an estuarine-watershed hydrodynamic–biogeochemical modeling system along with projected mid-21st-century changes in temperature, freshwater flow, and sea level rise to explore the impact climate change may have on future Chesapeake Bay dissolved-oxygen (DO) concentrations and the potential success of nutrient reductions in attaining mandated estuarine water quality improvements.

**DOI:**

<https://doi.org/10.21220/V5G74N>

**Keywords:**

Hypoxia, dead zone, low oxygen, global warming, Chesapeake Bay, TMDL, biogeochemical model

**Funding:**

This paper is the result of research funded in part by NOAA's National Centers for Coastal Ocean Science under award NA16NOS4780207 to the Virginia Institute of Marine Science (VIMS) and by NOAA's US

Integrated Ocean Observing System Program Office as a subcontract to VIMS under award NA13NOS0120139 to the Southeastern University Research Association. Funding for early stages of model development was also provided by the NASA Interdisciplinary Science program (grant no. NNX14AF93G). This work used the Extreme Science and Engineering Discovery Environment (XSEDE), which is supported by National Science Foundation grant number ACI-1548562 as well as computing facilities at the College of William and Mary, which were provided by contributions from the National Science Foundation, the Commonwealth of Virginia Equipment Trust Fund, and the Office of Naval Research.

**ORCID:**

Marjorie A. M. Friedrichs: 0000-0003-2828-7595

**Files are included inside the following folders, all of which are located in:**

/ches/data10/iirby/Chapter3/Climate\_Change\_Final\_Output\_For\_HV\_Analysis

<b>Folder</b>	<b>Experiment name</b>
out_std	Base+noCC
out_sce	TMDL+noCC
out_sce_river	TMDL+riverCC
out_sce_temp	TMDL+tempCC
out_sce_slr	TMDL+slrCC
out_sce_all	TMDL+allCC
out_std_all	Base+allCC