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A Data Repository for Extent and Causes of Chesapeake Bay Warming

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Spatial Information
36.7 to 39.7°N, -77.5 to -75.5°W; Chesapeake Bay, U.S.A.

Data Access
DATA FILES accessible at https://doi.org/10.25773/c774-a366

Abstract:
This data repository is a permanent archive of the results presented in the associated publication (Hinson et al. 2021, Journal of the American Water Resources Association, *IN PRESS*).

Description:
This dataset includes the results from the model simulations described in the associated publication (Hinson et al. 2021, Journal of the American Water Resources Association, IN PRESS).

Data included in the present repository consist of a model atmospheric forcings input dataset, observations matched to the defined model long run used in skill assessment and trend comparisons, as well as model results from each of the six (6) simulations described in the paper. Data are in NetCDF format (extension .nc). All data that were used to create figures and perform calculations summarized in the tables are contained within this archive. More information on the long reference run temperature inputs is provided in the Methods section of the associated manuscript. For additional information on the open-source numerical model used in this study, please visit the ROMS website (www.myroms.org). Any questions regarding future implementations of the ChesROMS modeling system should be directed to Dr. Marjorie A. M. Friedrichs (marjy@vims.edu).

File Description Table:

File Name	Description
README.txt	Overall information and basic descriptions of files.
Atmospheric_Inputs.nc	NetCDF file containing ERA5 Reanalysis data used for ChesROMS forcings.
Model_Skill_Inputs.nc	NetCDF file containing observed data and model estimates of temperature and salinity matched to time and depth at 20 Chesapeake Bay stations over the period 1985-2019.
Temperature_Trend_Inputs.nc	NetCDF file containing observed and modeled temperatures used to calculate long-term temperature trends at particular Bay stations and defined Bay regions.
ChesROMS_Sensitivity_Outputs.nc	NetCDF file containing modeled Chesapeake Bay sensitivity scenario temperatures at both the surface and bottom.
ChesROMS_Scenario_Profiles.nc	NetCDF file containing Chesapeake Bay main stem modeled sensitivity scenario temperatures, extending from the bottom to the surface.

Keywords:
Climate change, temperature, water quality, estuaries, watershed, Chesapeake Bay, ChesROMS-ECB, ROMS

Associated Publication(s):
Hinson, Kyle E., Friedrichs, Marjorie A.M., St-Laurent, Pierre, Da, Fei, and Najjar, Ray G. (2021) Extent and causes of Chesapeake Bay warming. Journal of American Water Resources Association. *IN PRESS*

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