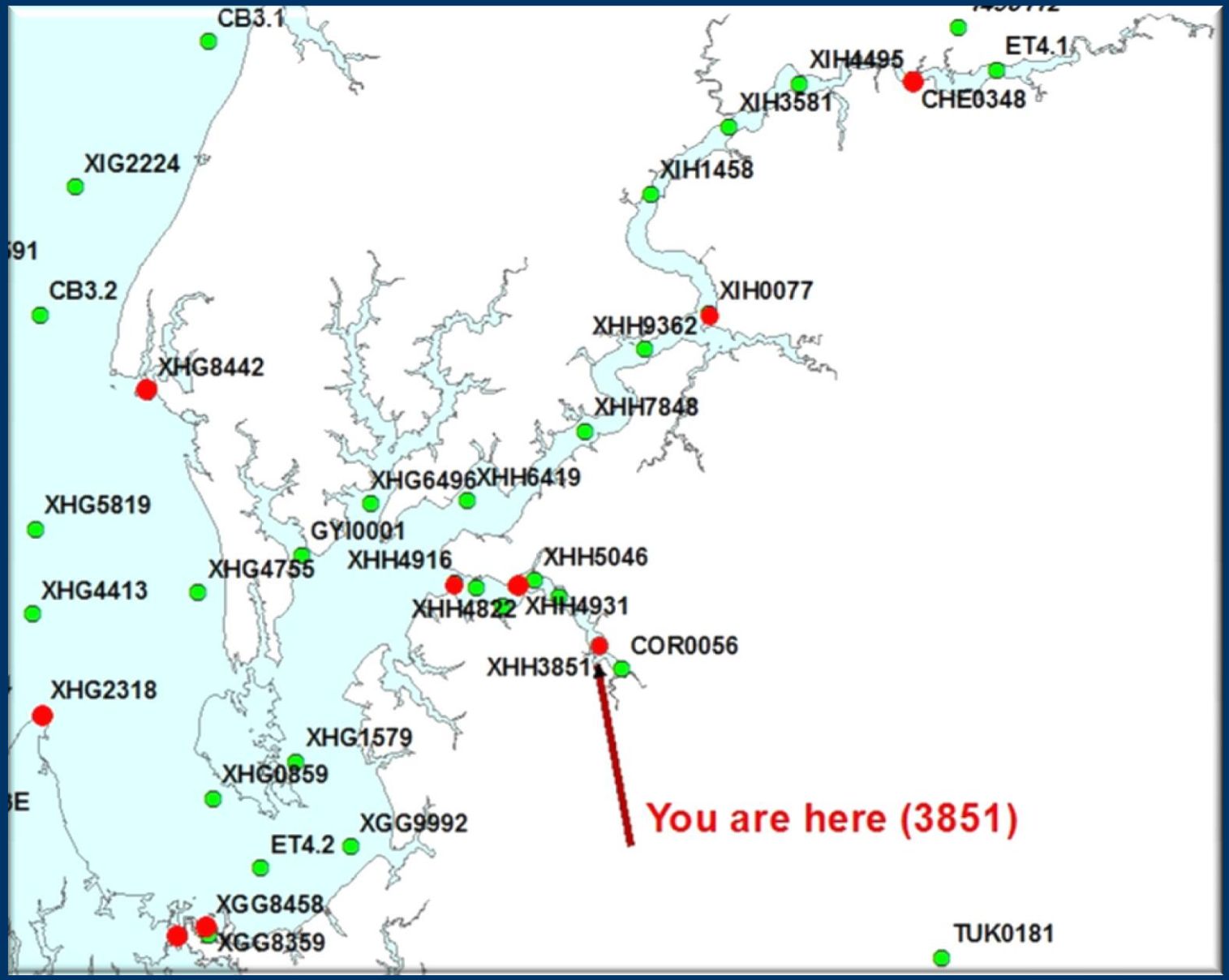
Progress in Shallow-Water Modeling Application in Chester River

Richard Tian & Modeling Team

Chesapeake Bay Program Office

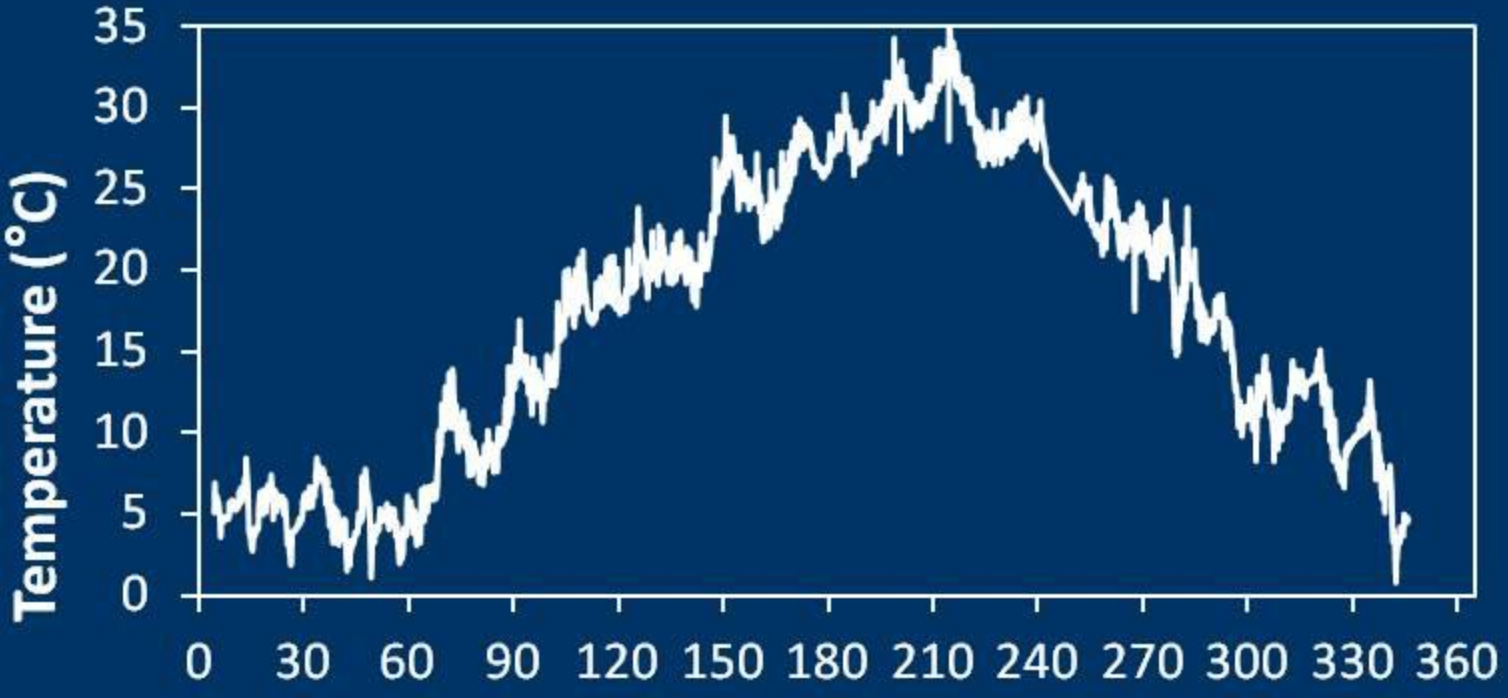
Modeling Quarterly Review
July 22-23, 2014
Annapolis

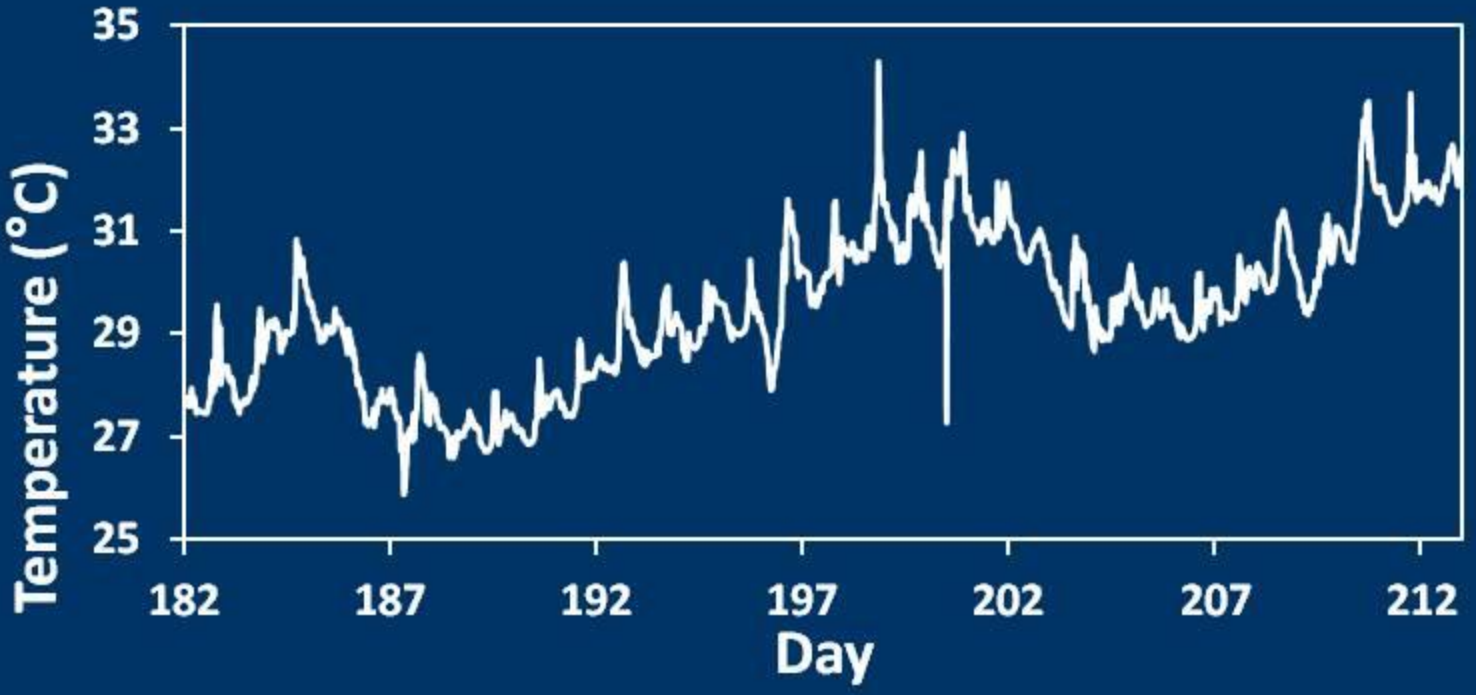
Chester River Shallow Water Monitoring Stations



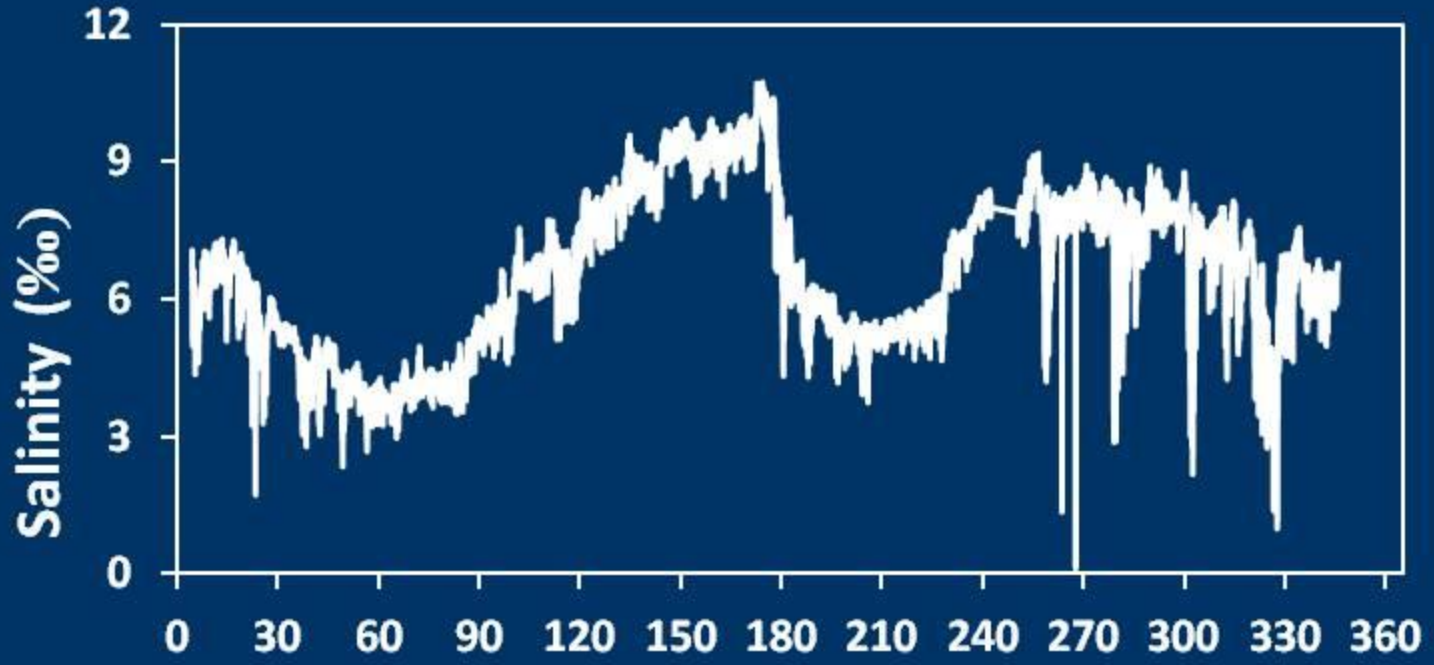
DNR

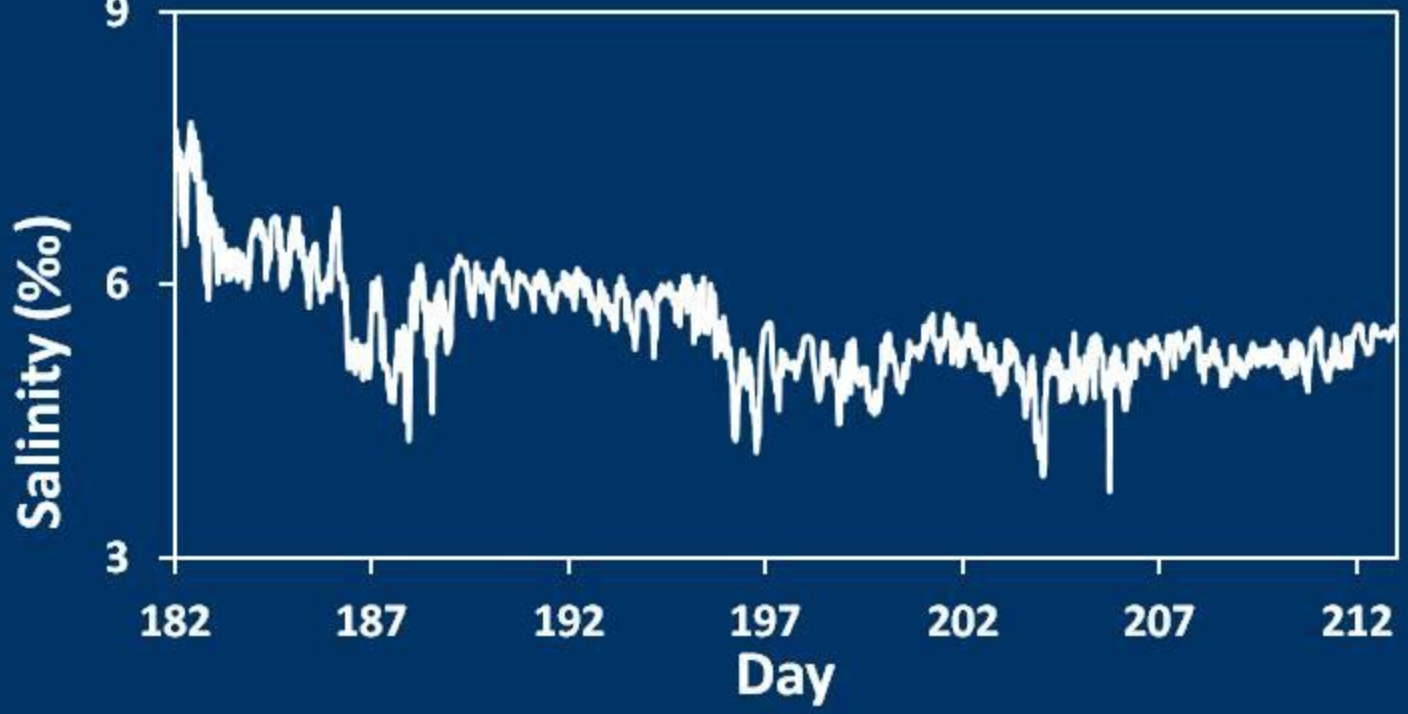
Surface Temp at Station XHH 3851 in 2006



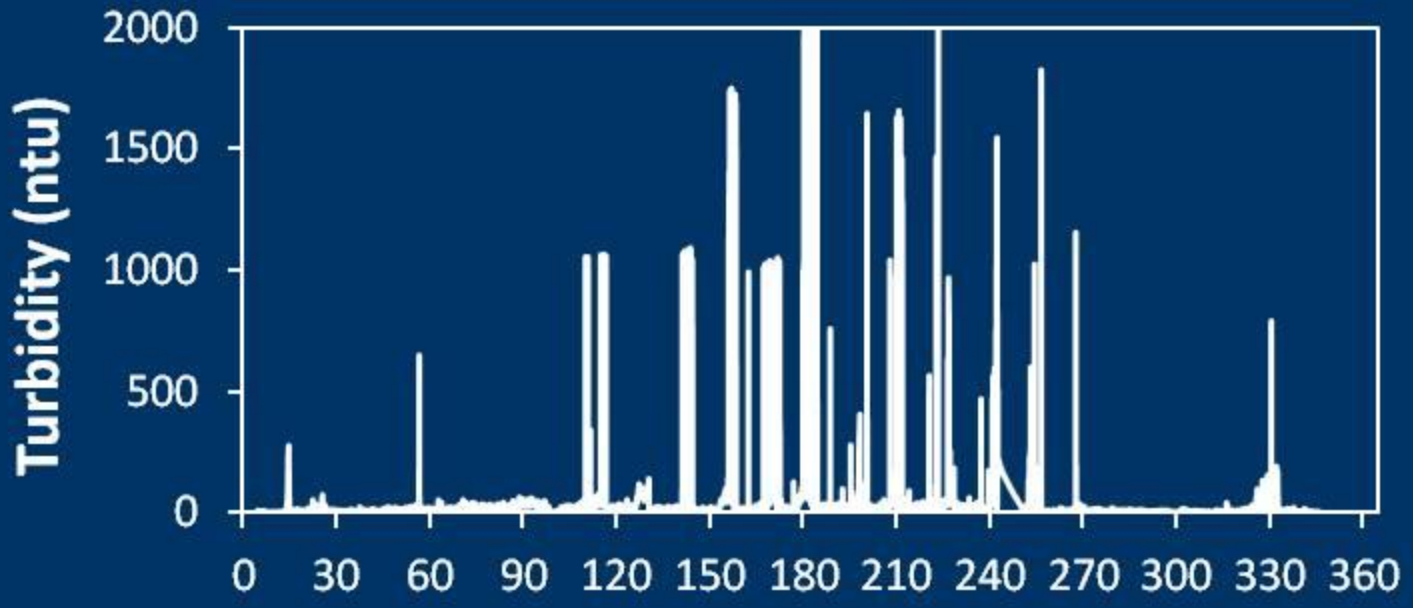


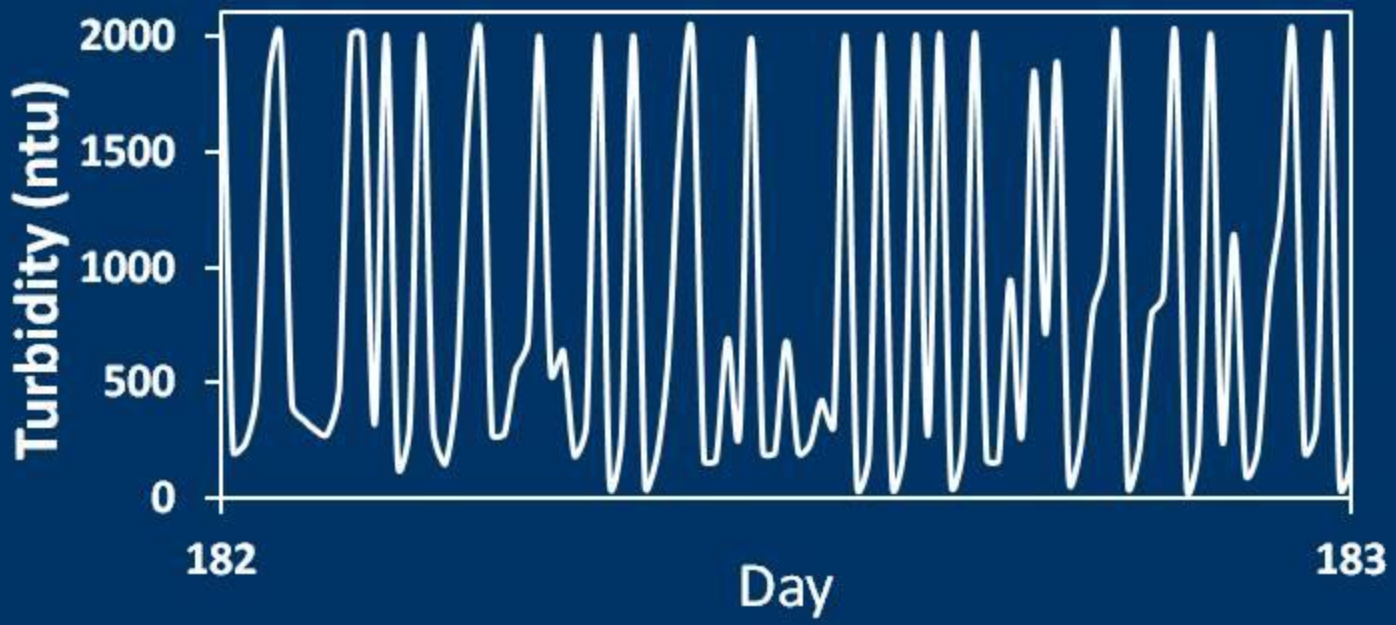
Surface Salinity at Station XHH 3851 in 2006



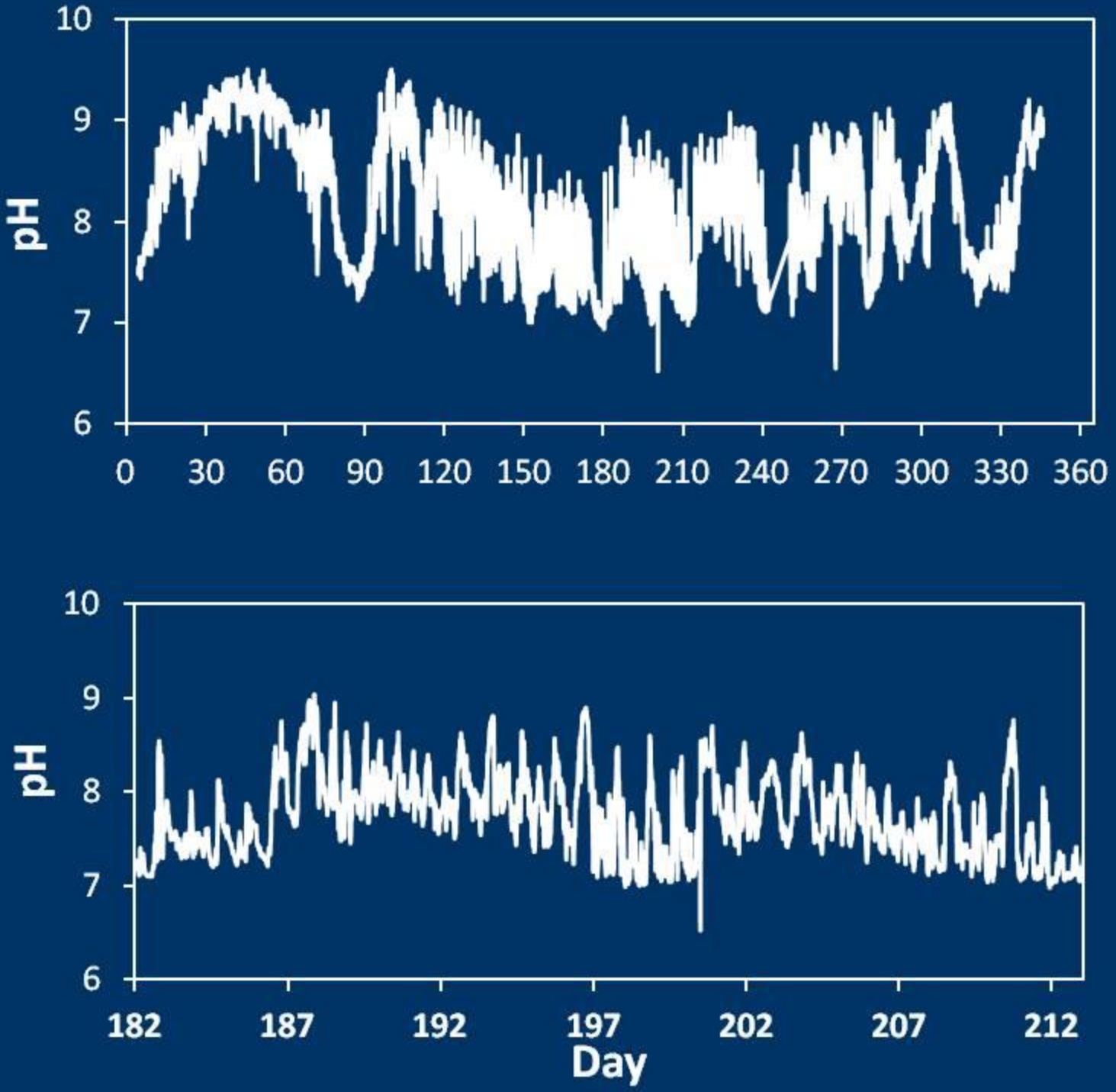


Surface Turbidity at Station XHH 3851 in 2006

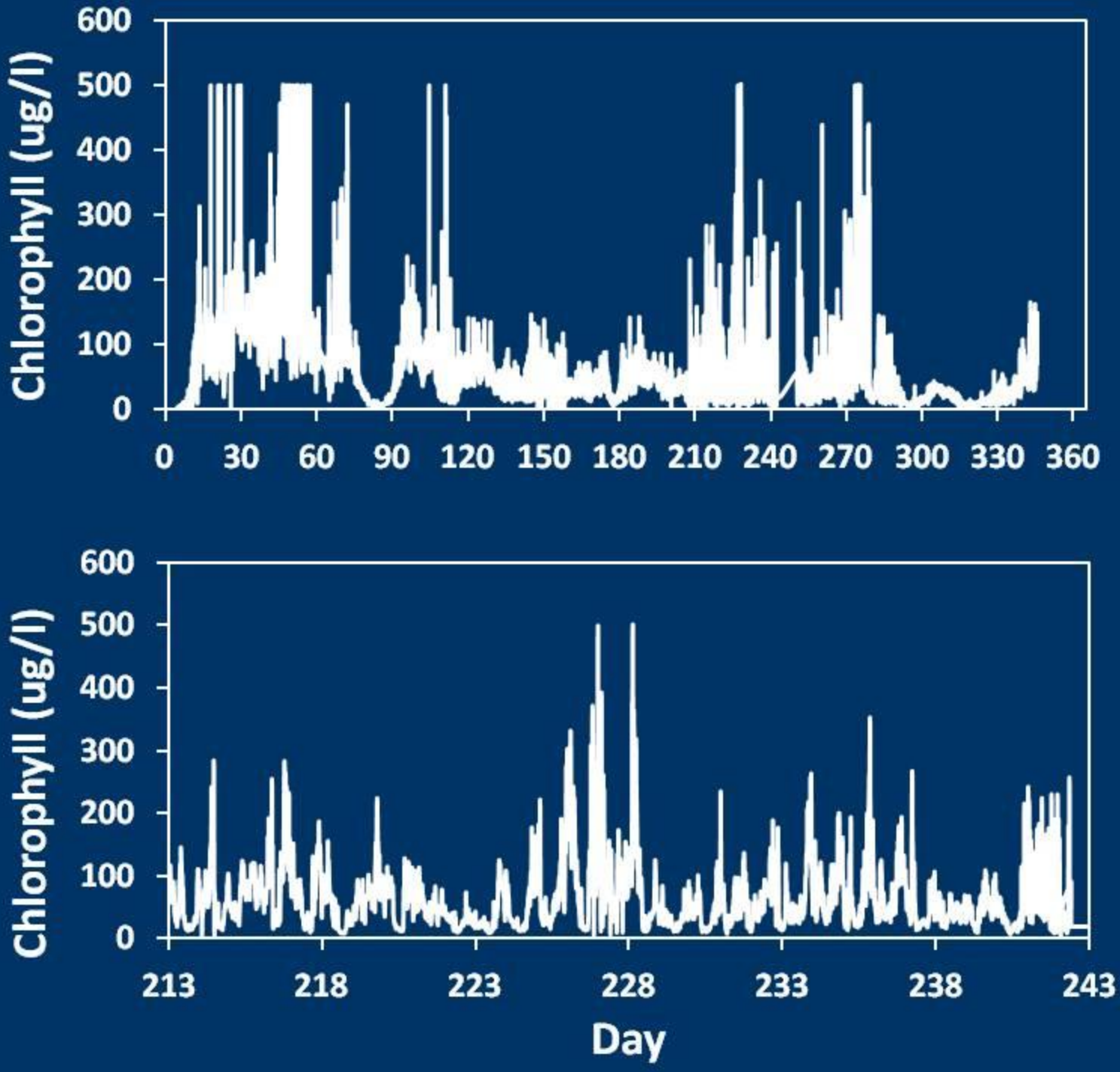




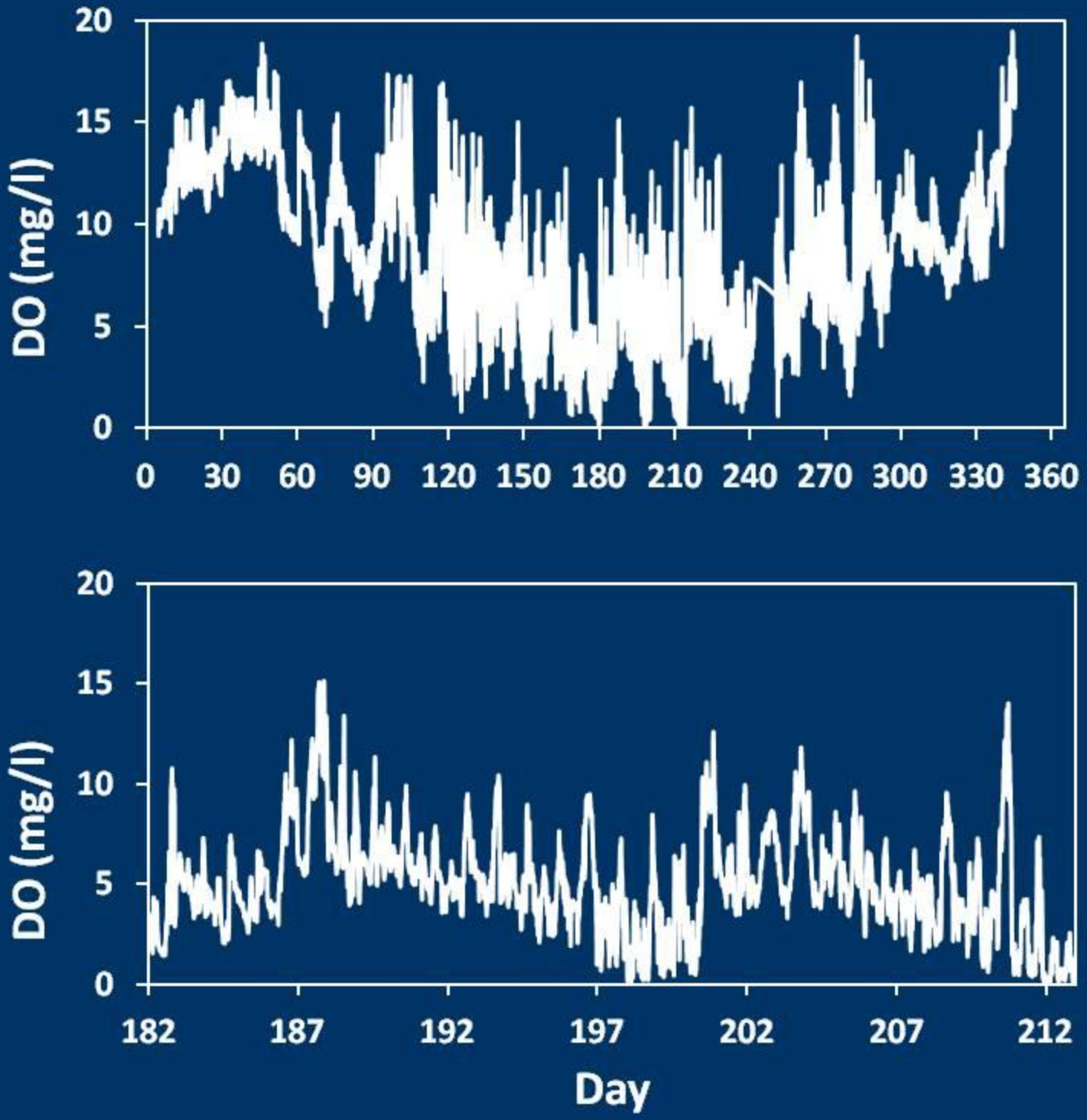
Surface pH at Station XHH 3851 in 2006



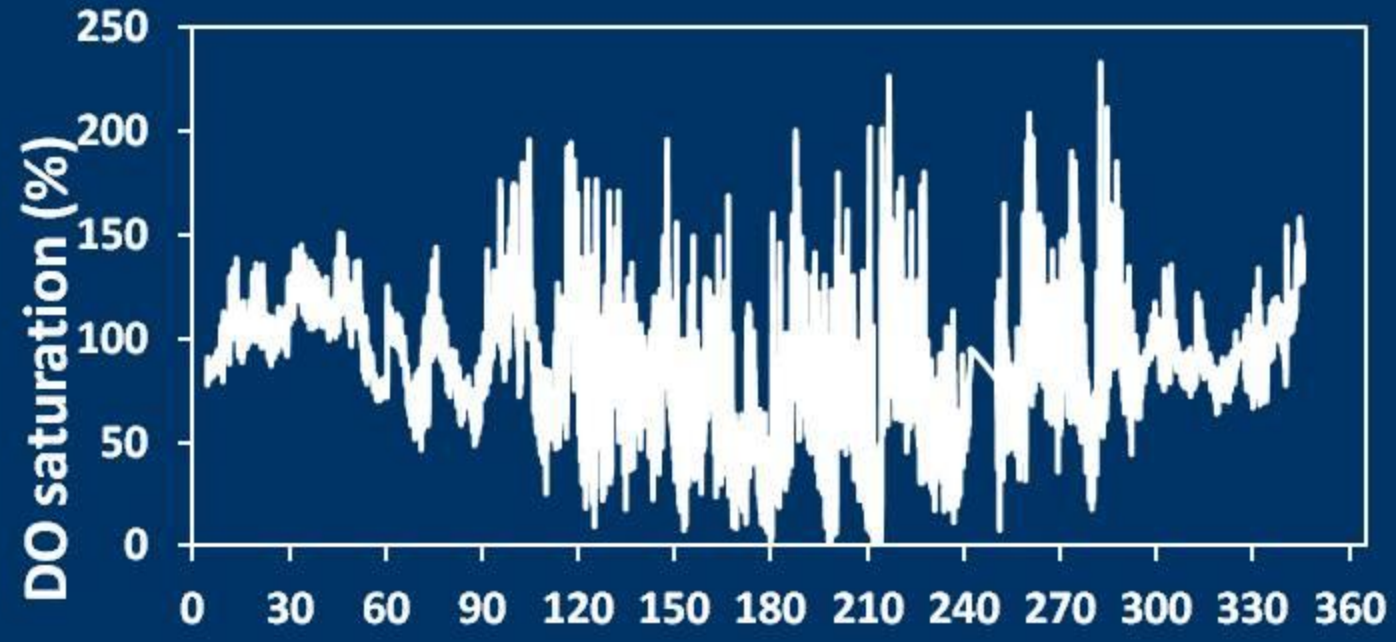
Surface Chl at Station XHH 3851 in 2006

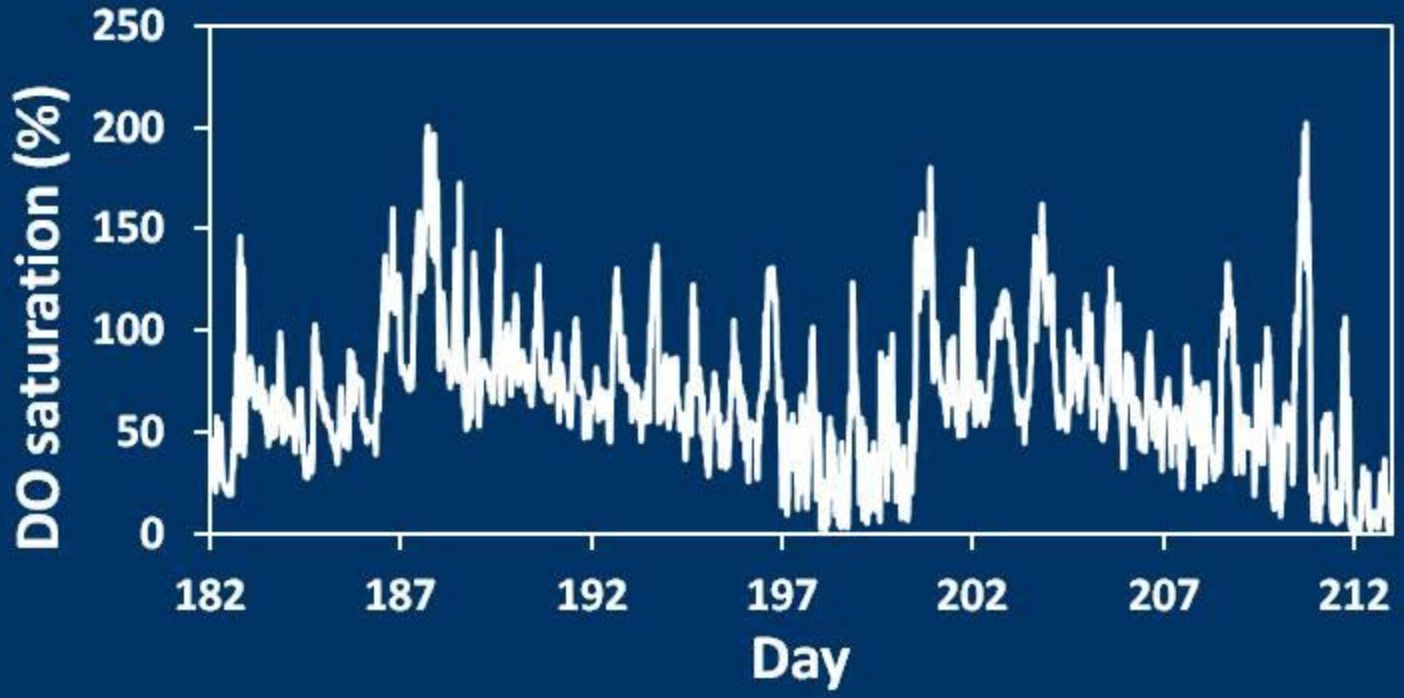


Surface DO at Station XHH 3851 in 2006

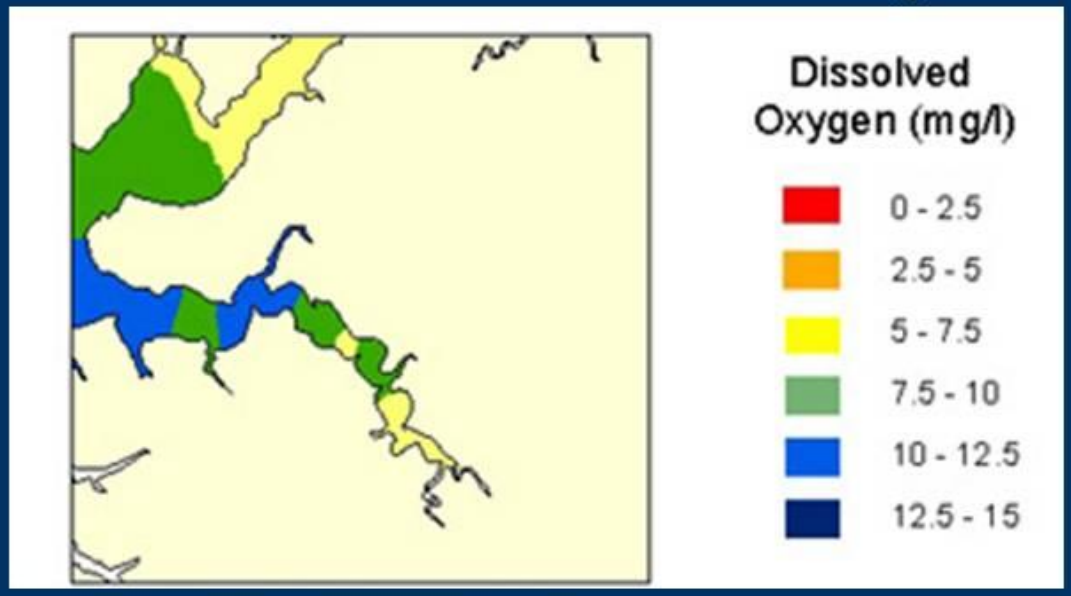


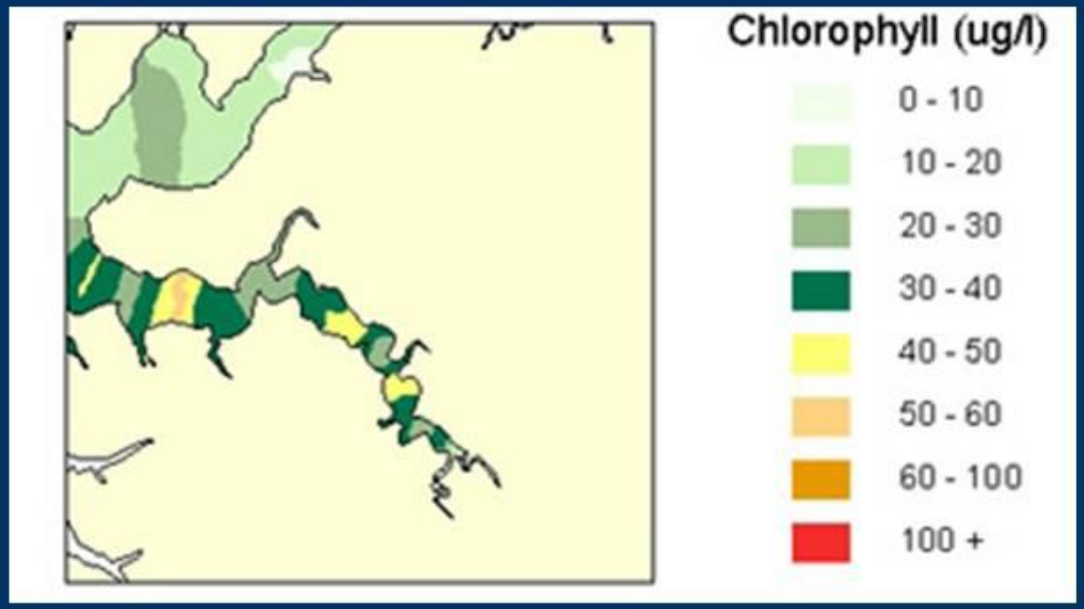
Surface DO% at Station XHH 3851 in 2006





Spatial distribution in May, 2013)





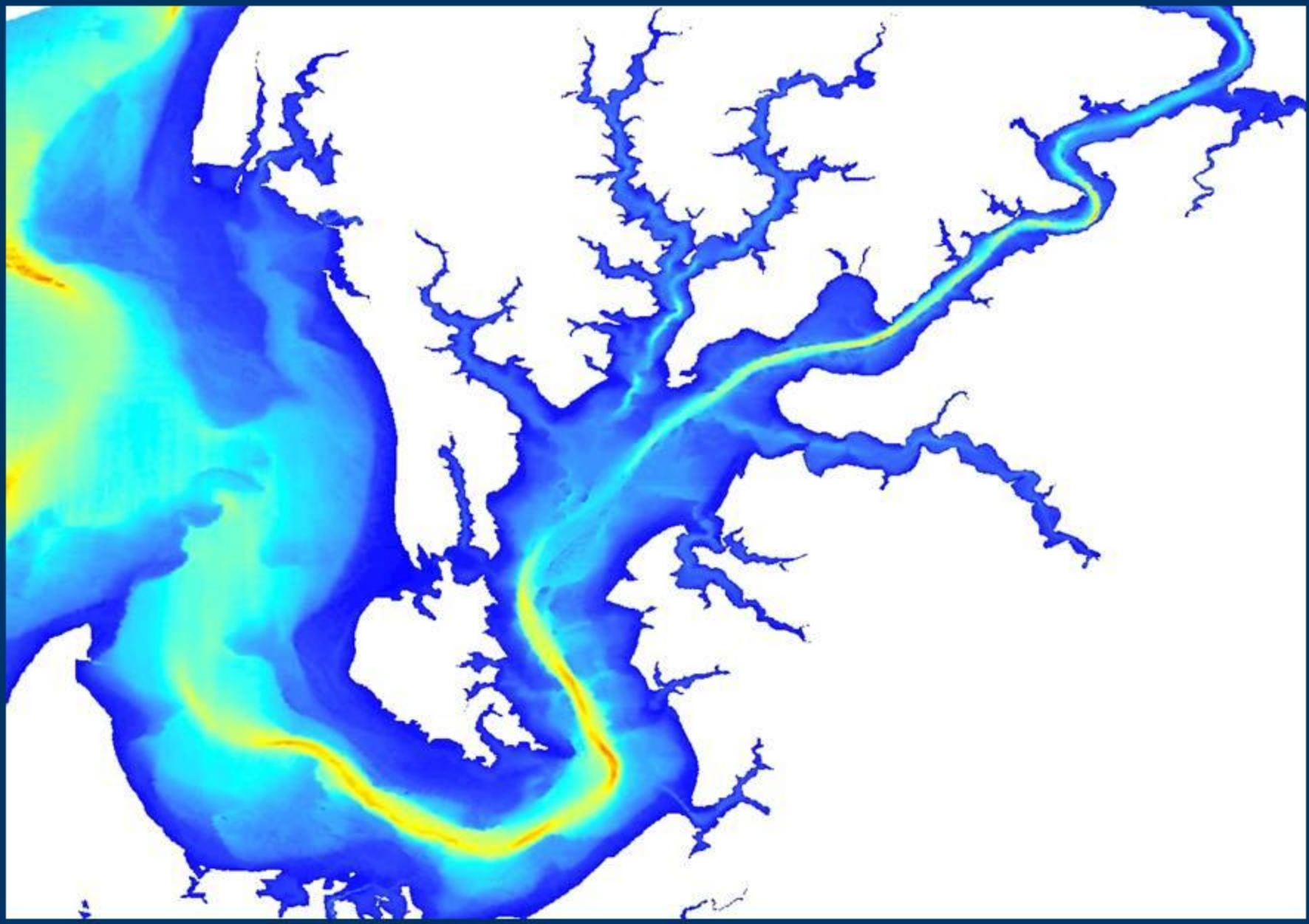
DNR

FVCOM grid in the Chester

(100m at coast, 400m interior, ~1km open boundary, 8265 nodes, 13475 cells)

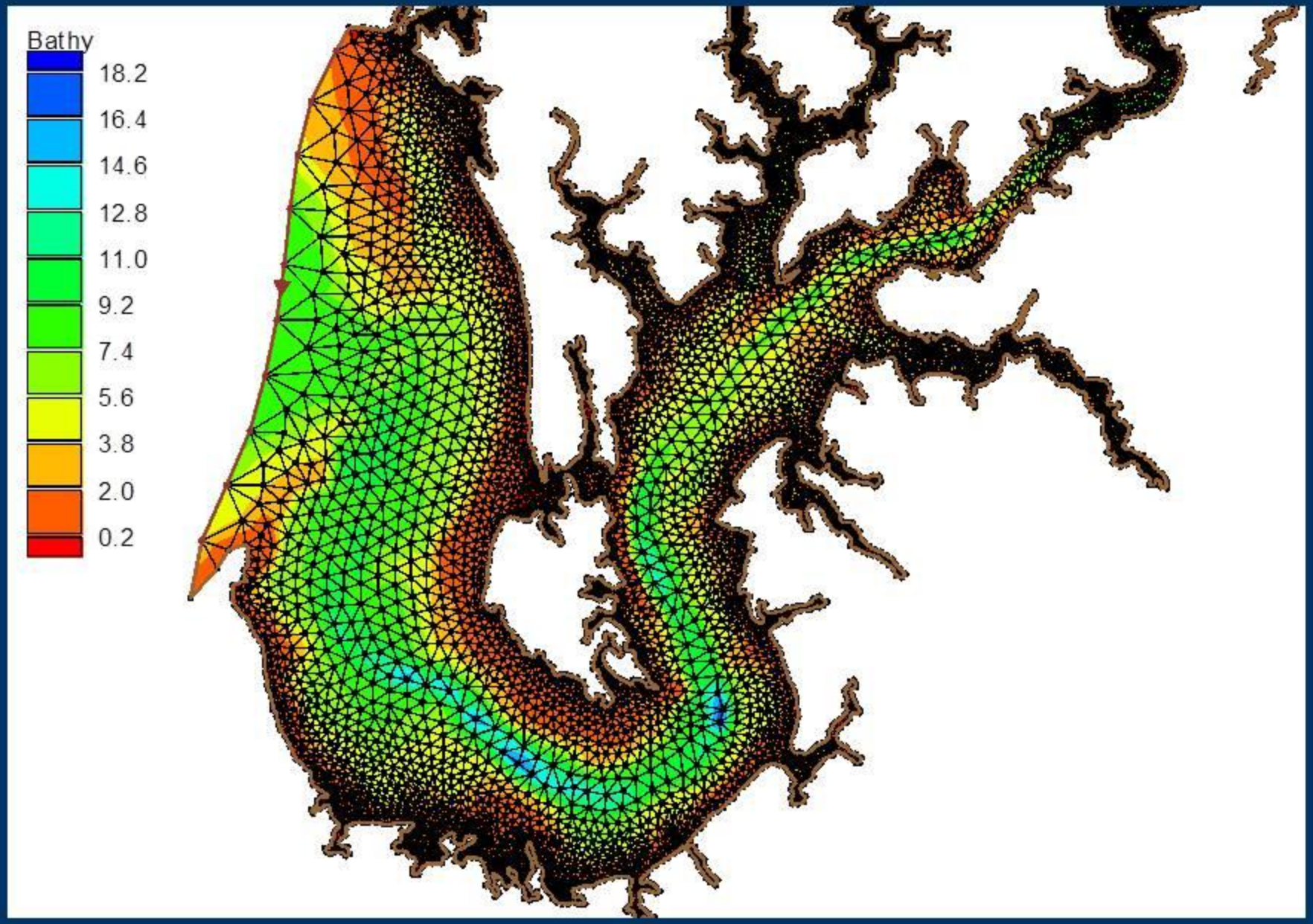
Bathymetry in the Chester

(10 m horizontal resolution, 10 cm in the vertical)



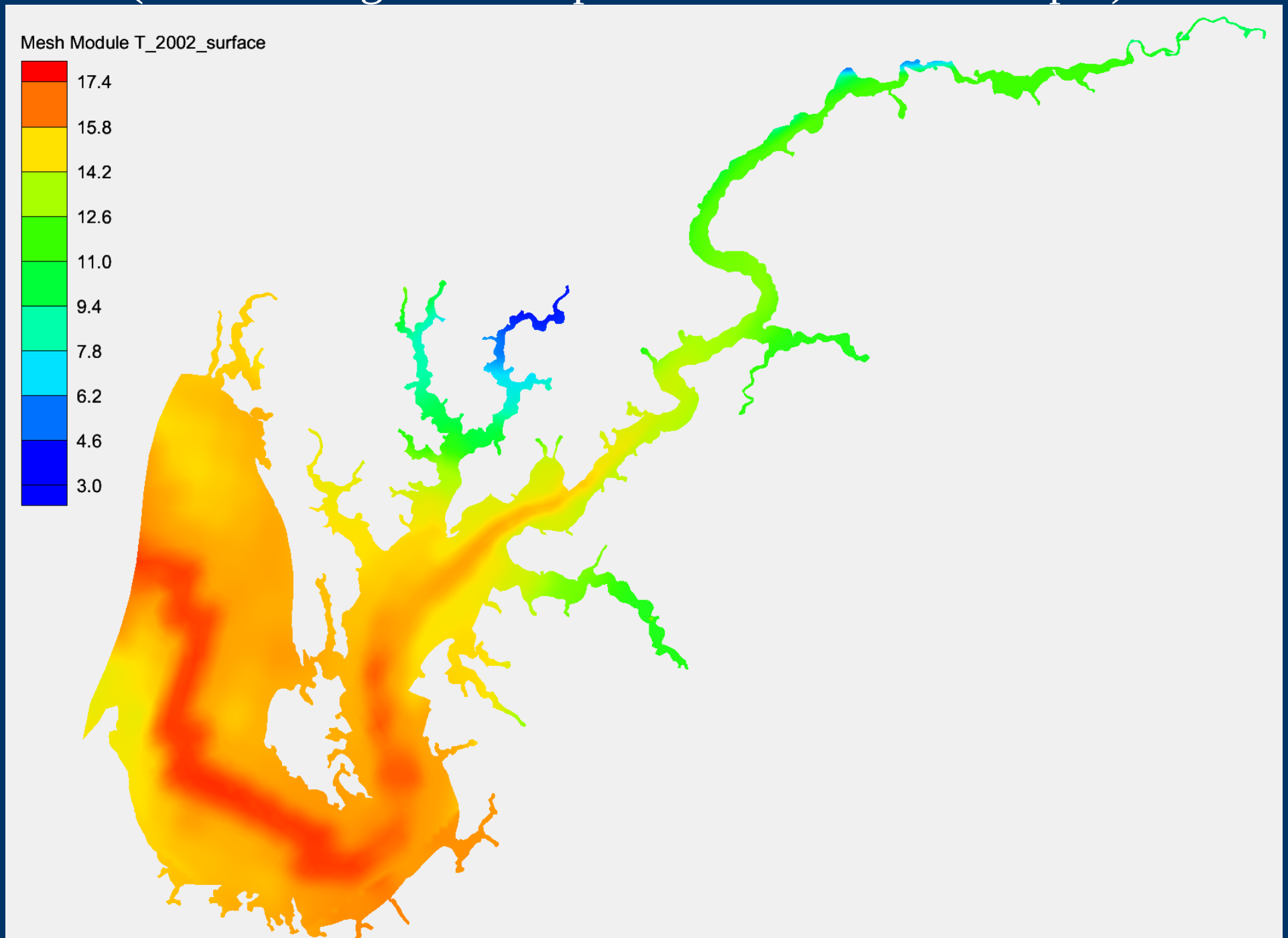
Bathymetry interpolated on grid

(Natural neighbor interpolation)



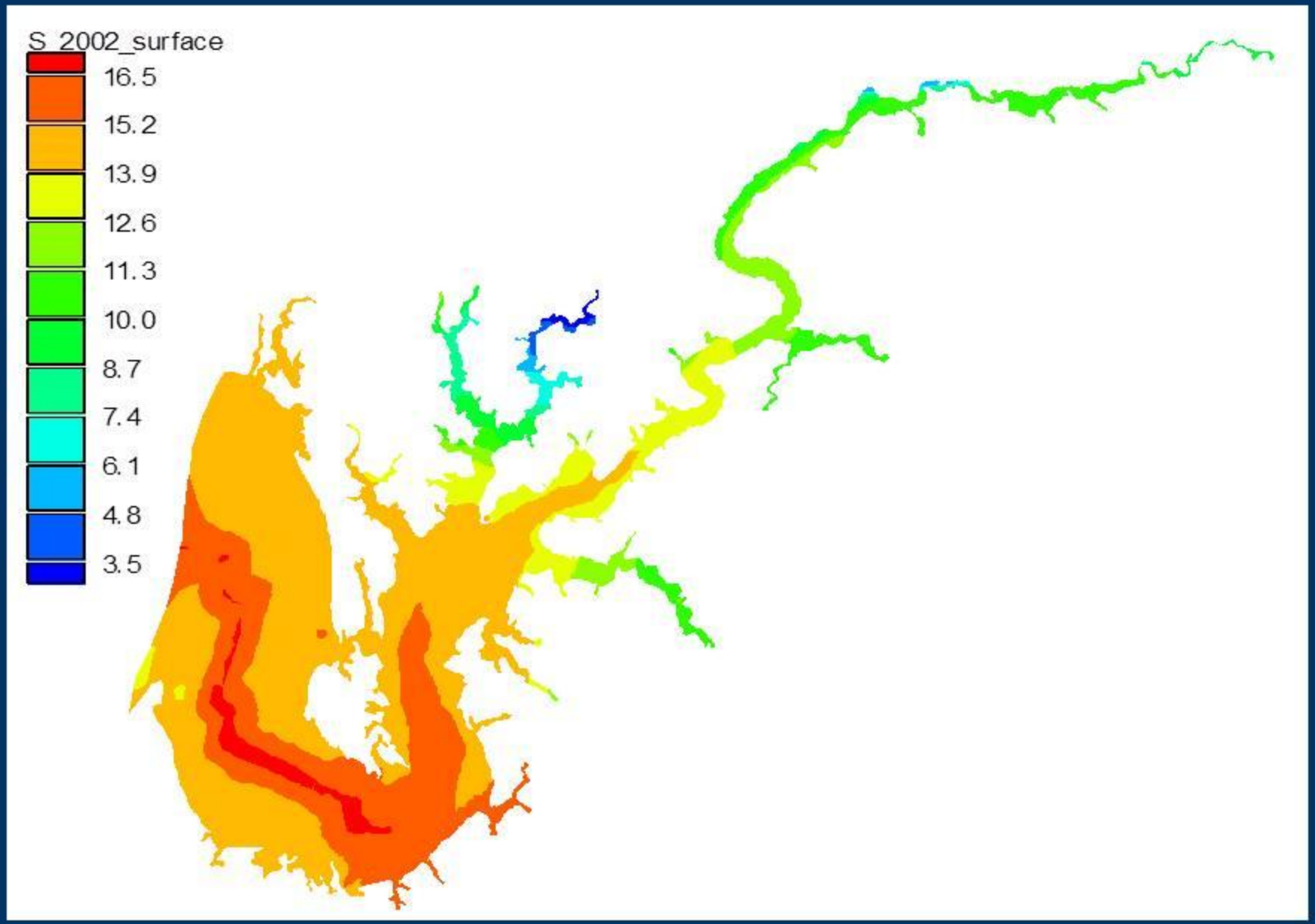
Surface temperature initial condition

(Natural neighbor interpolation from CH3D output)

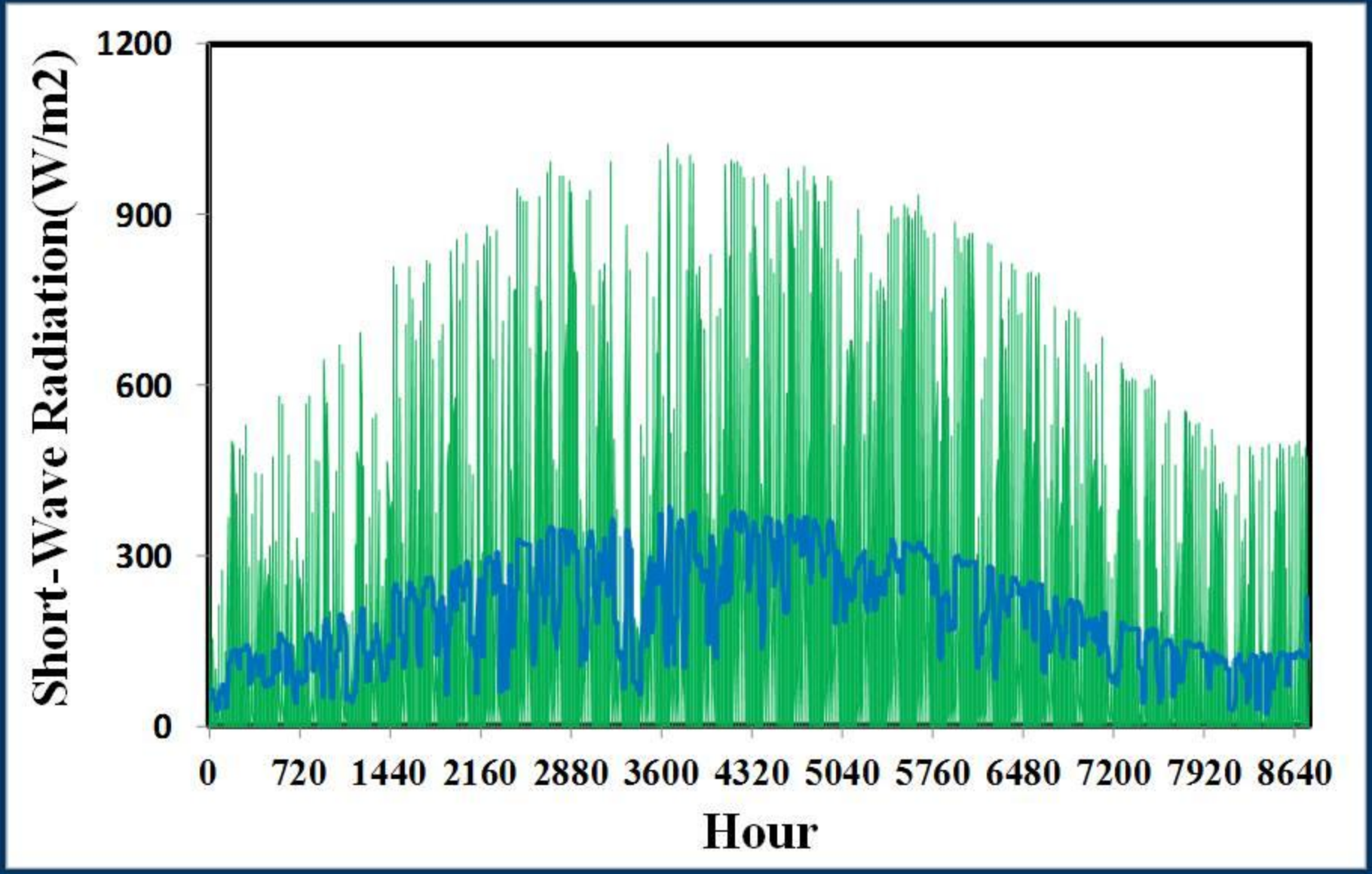


Surface salinity initial condition

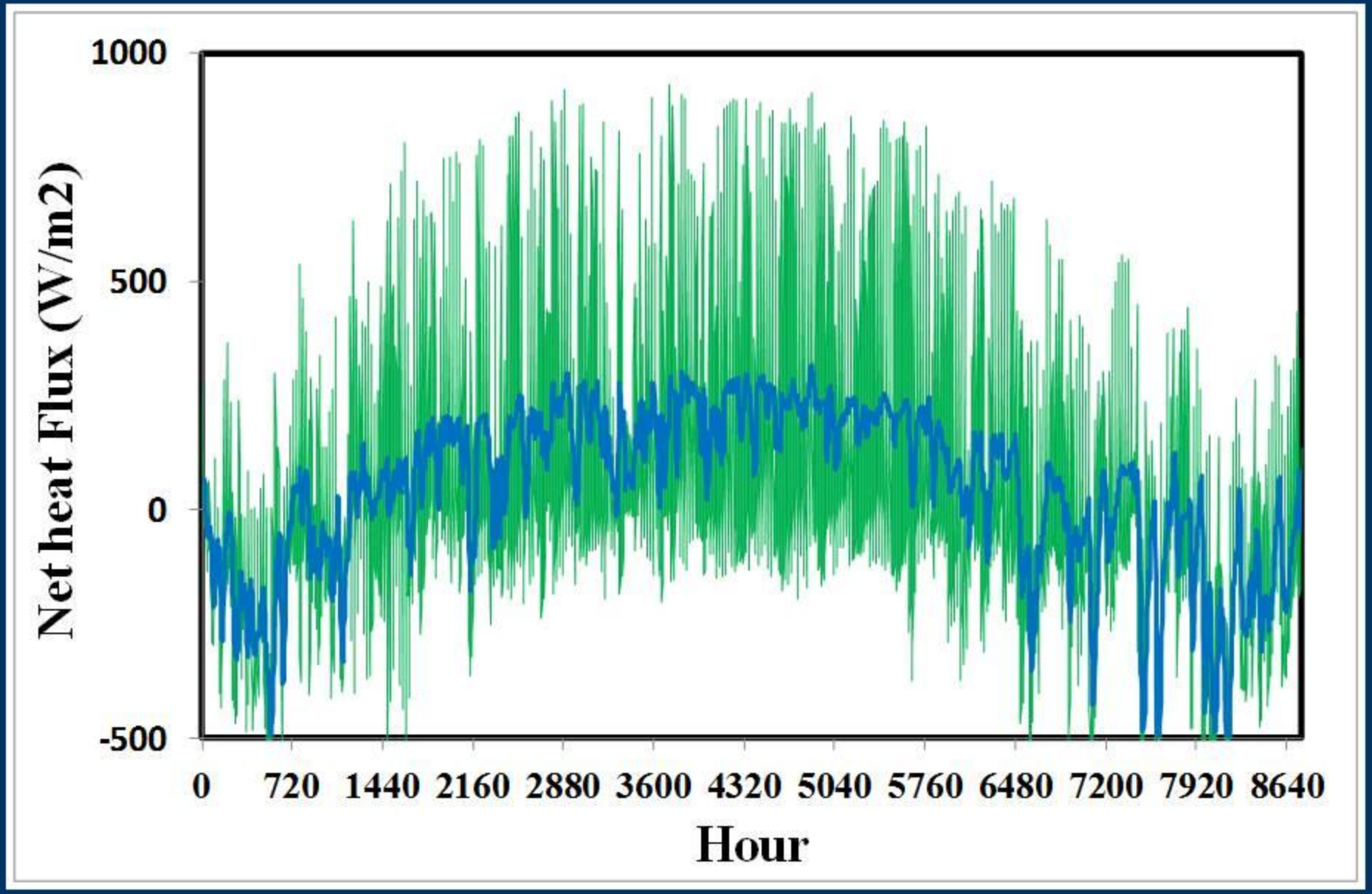
(Natural neighbor interpolation from CH3D output)



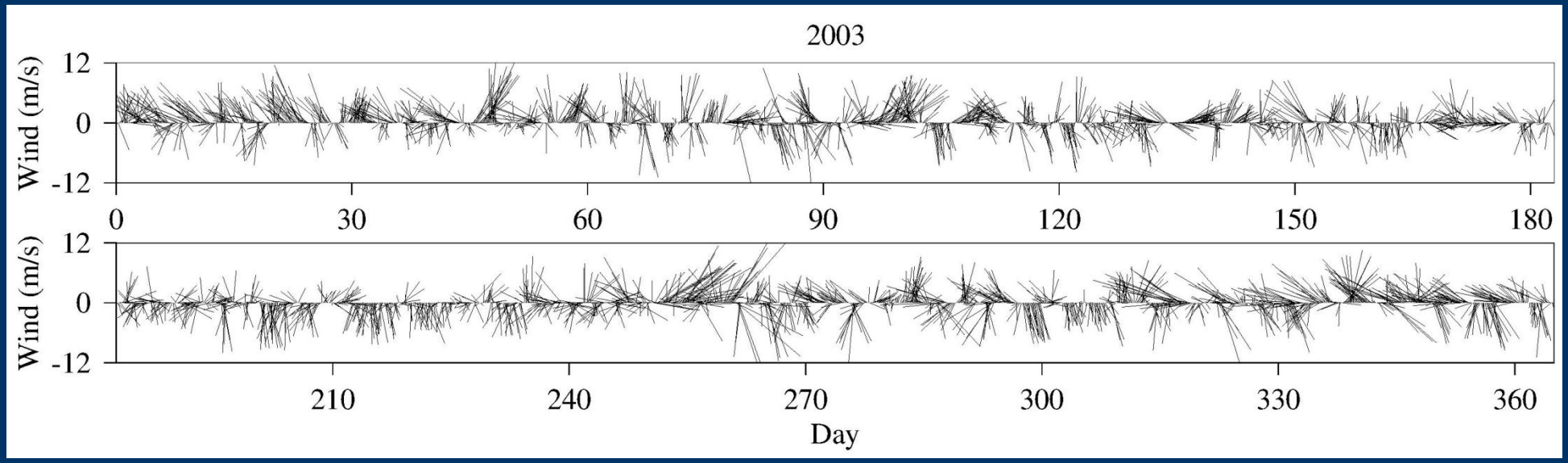
NARR Shortwave Radiation(2003)

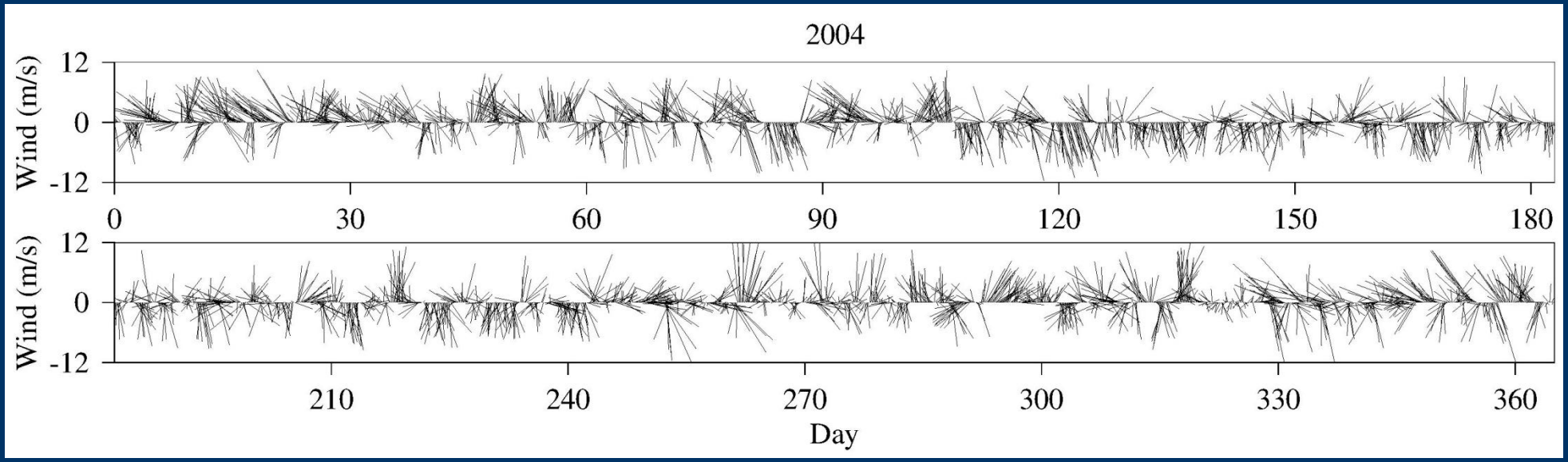


NARR Net Heat Flux

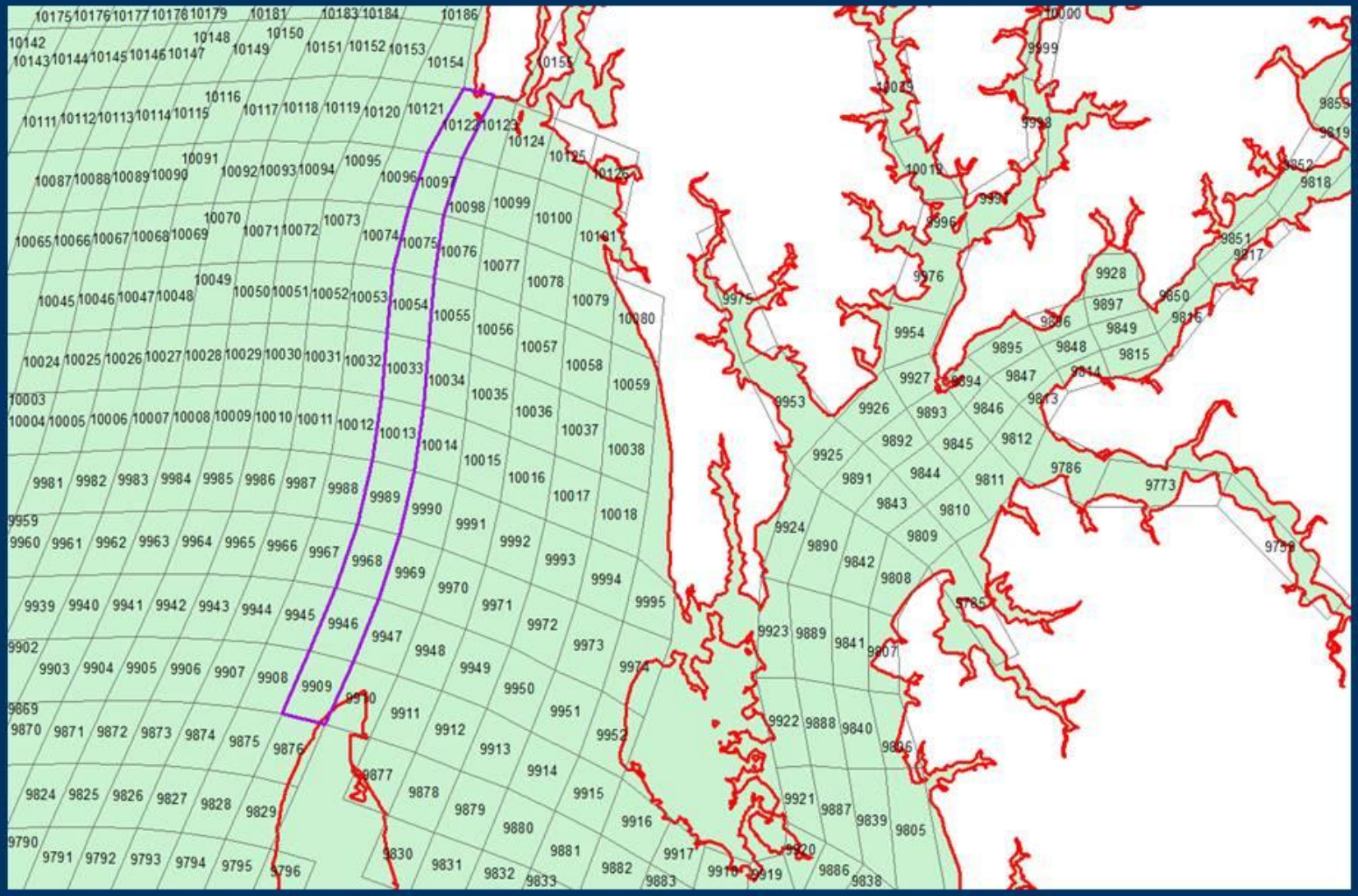


Wind forcing from THOMAS POINT

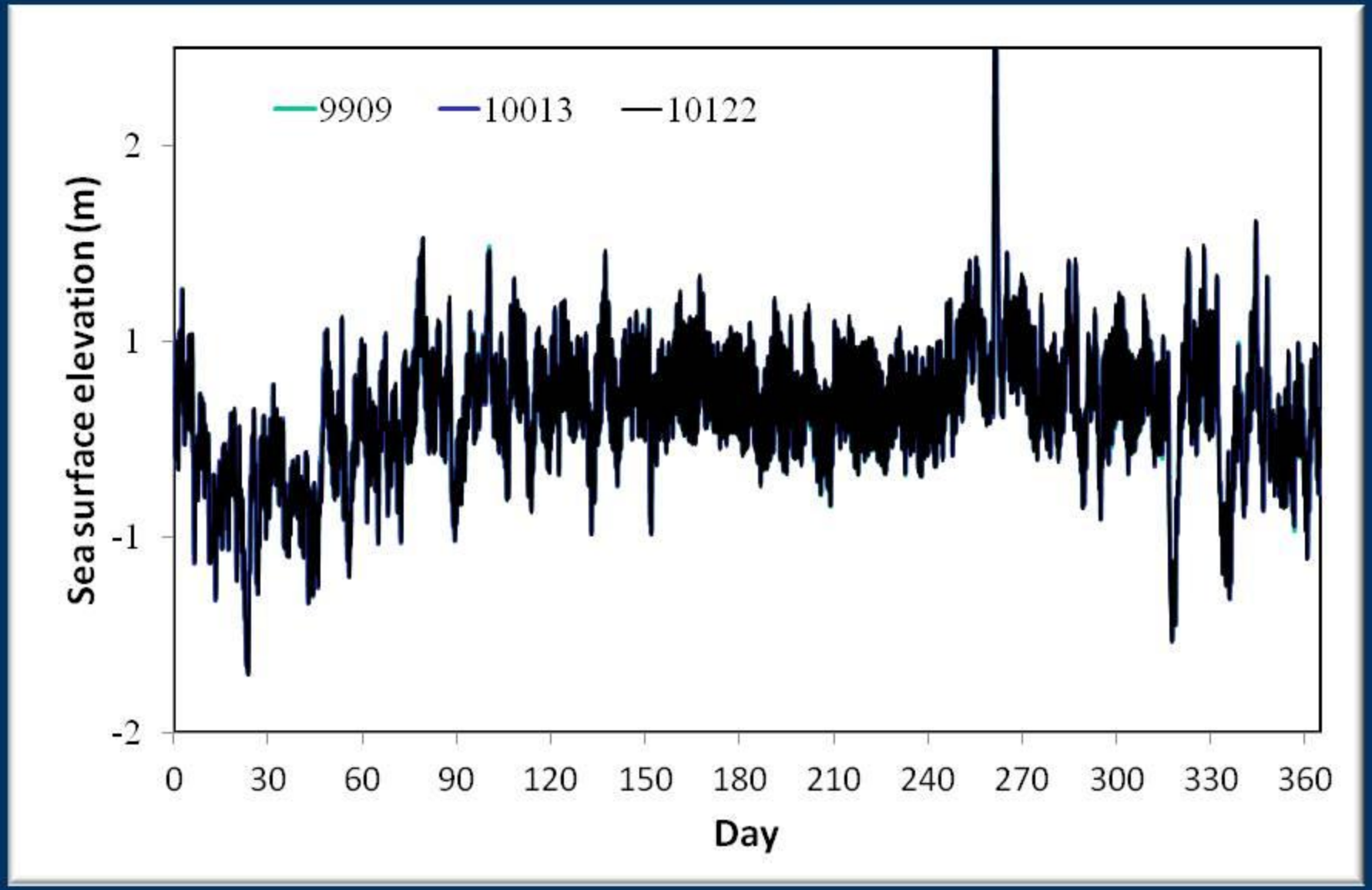




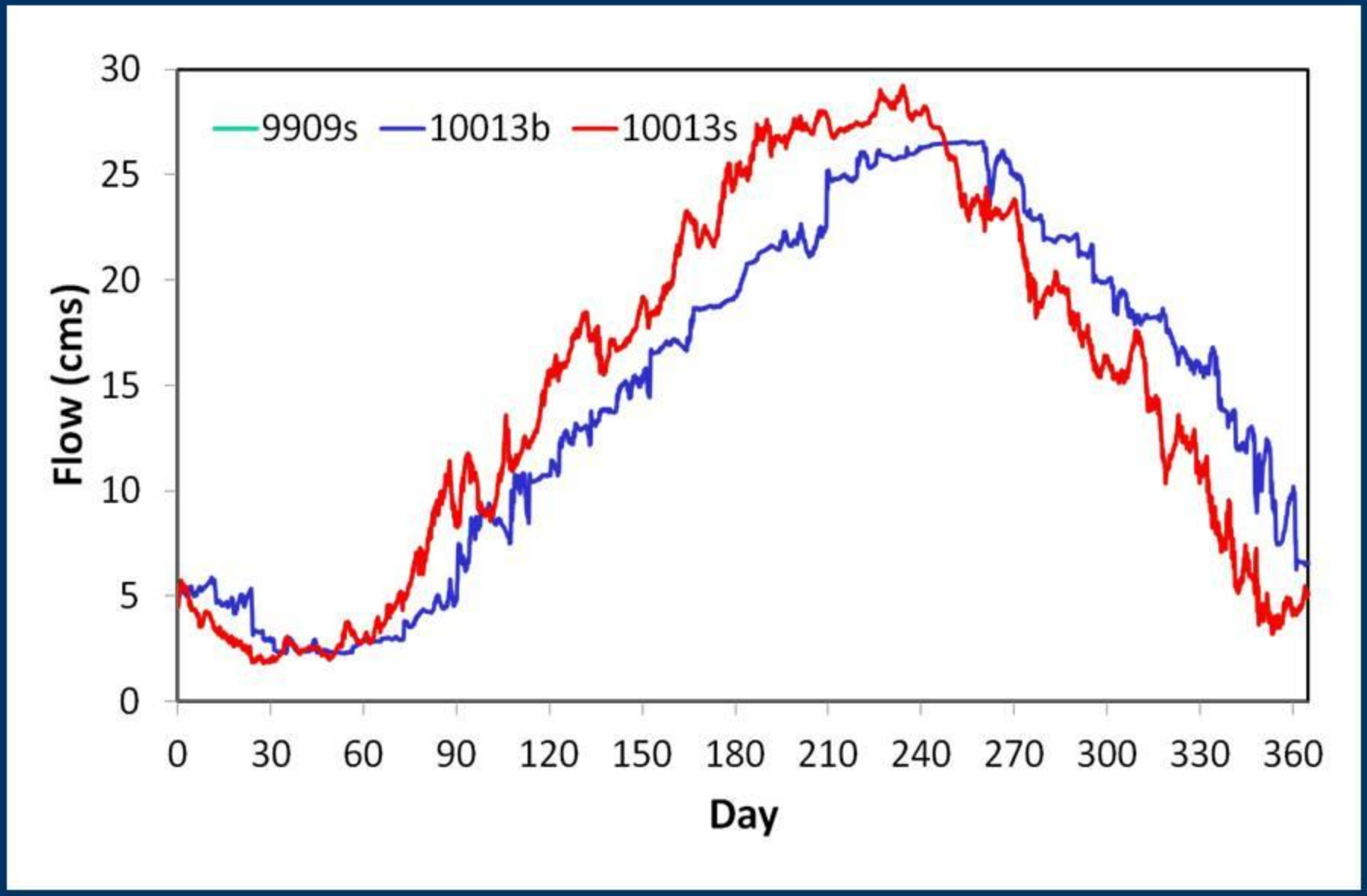
CH3D cells for open boundary



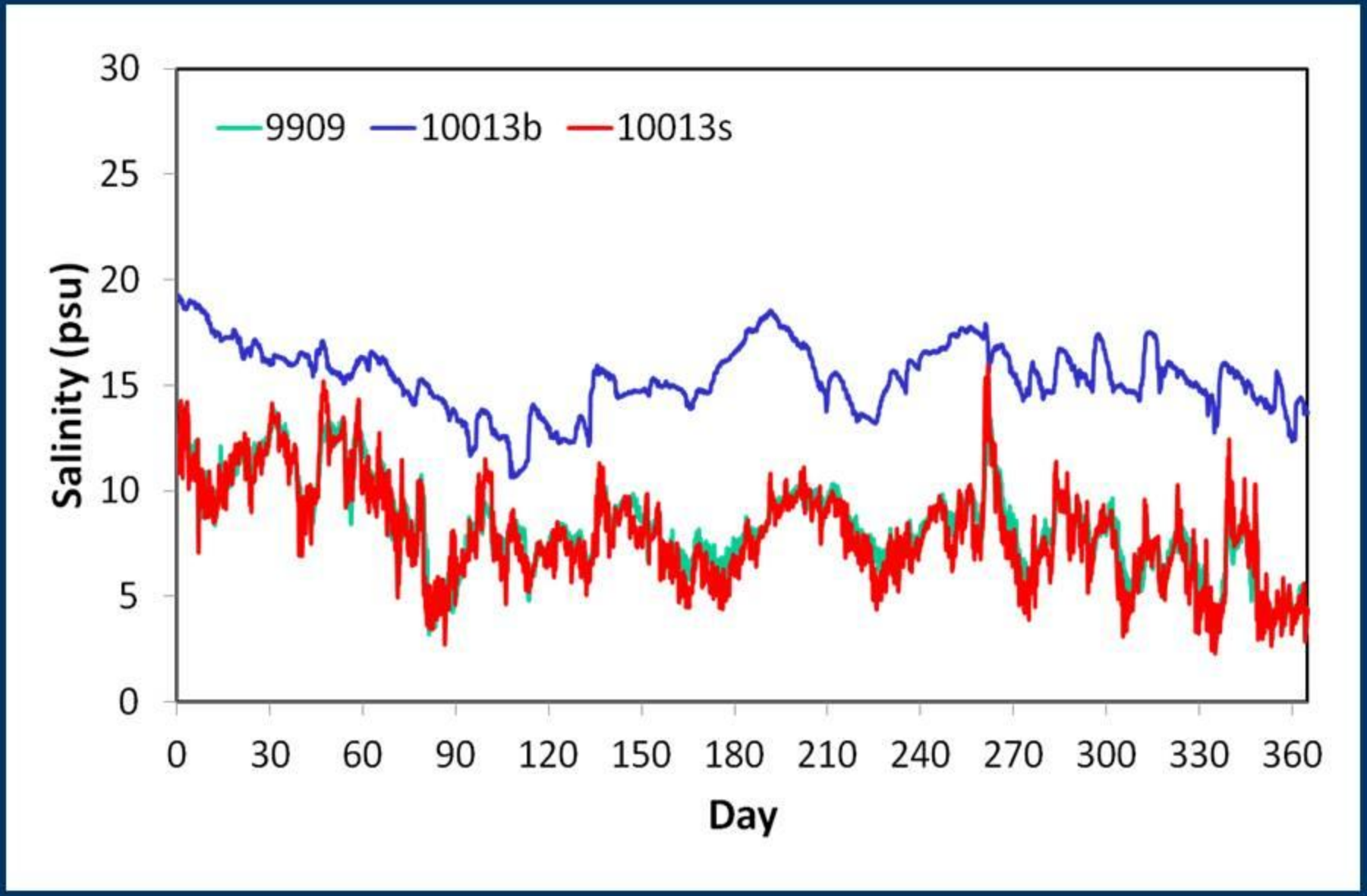
Sea surface elevation at open boundary in 2003



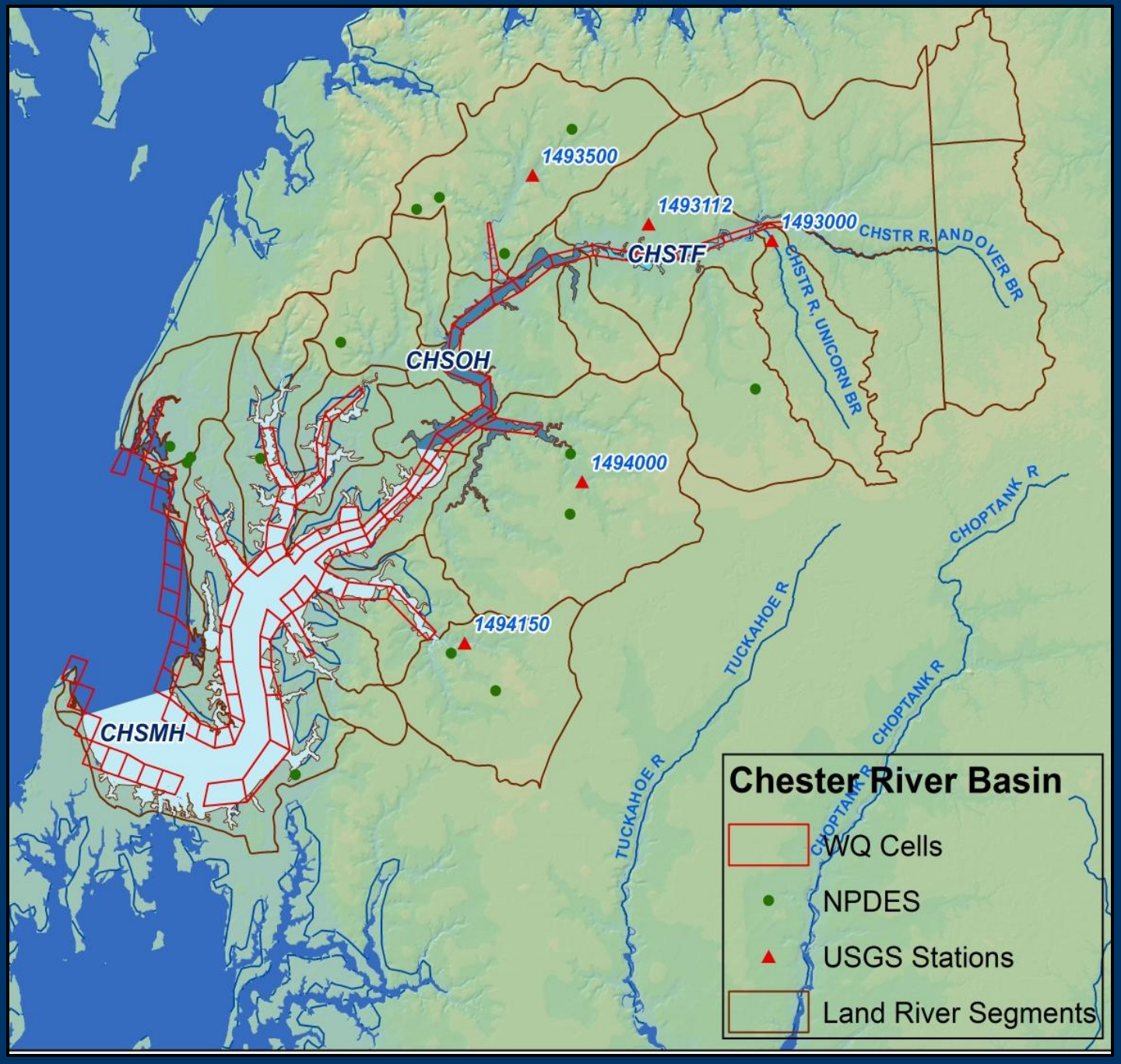
Temperature at open boundary in 2003



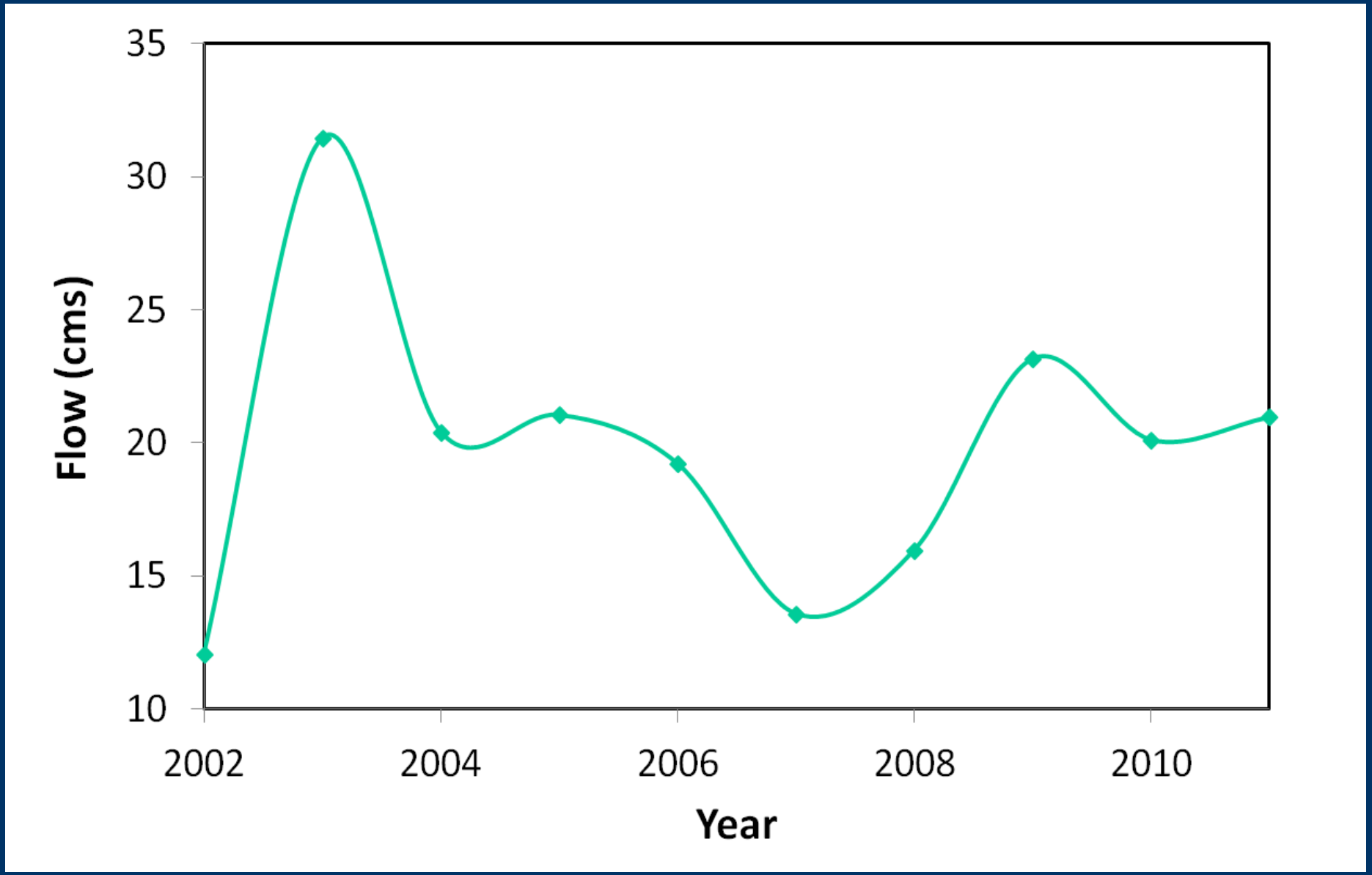
Salinity at open boundary in 2003



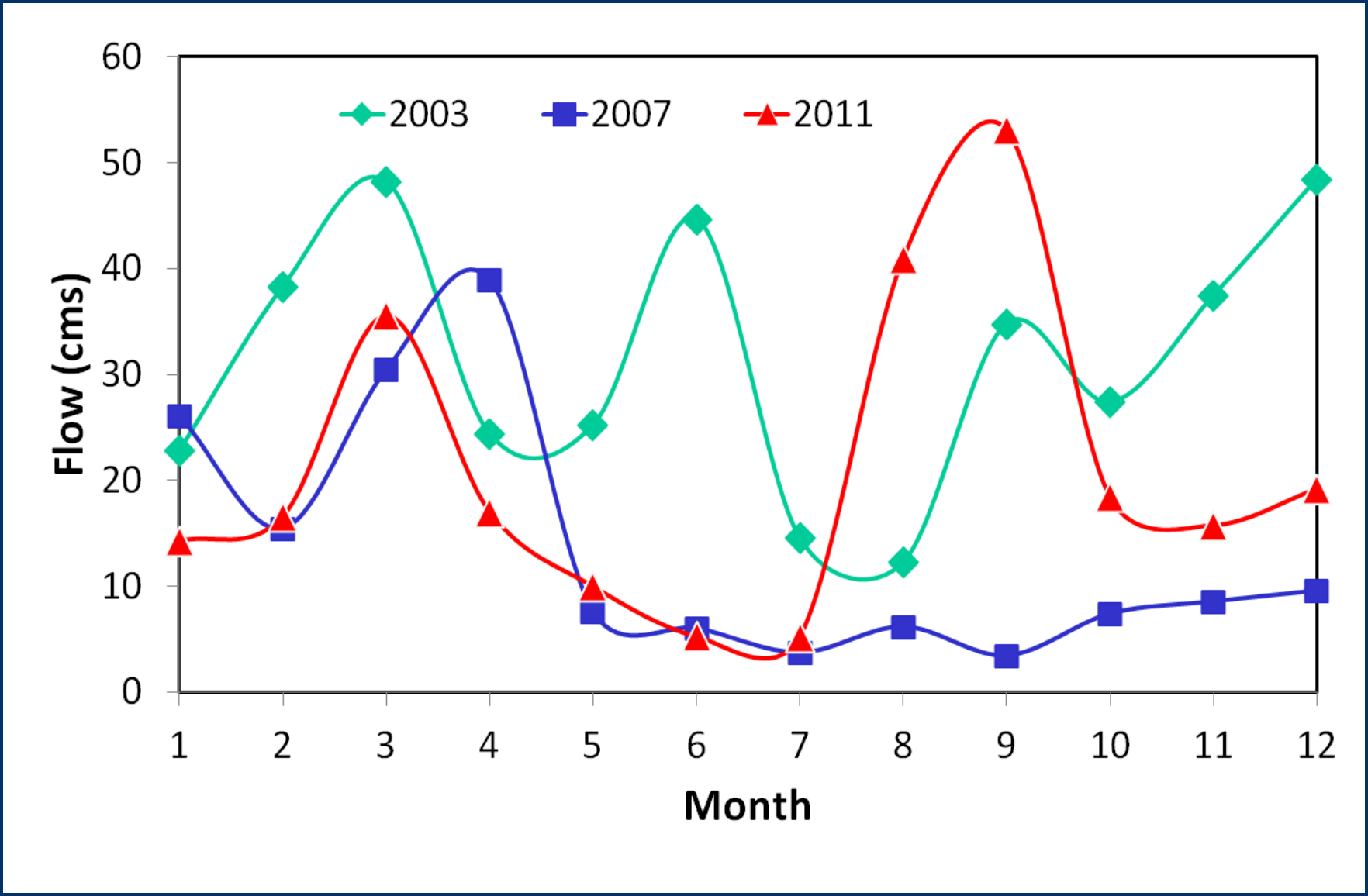
Fall-line forcing from HSPF



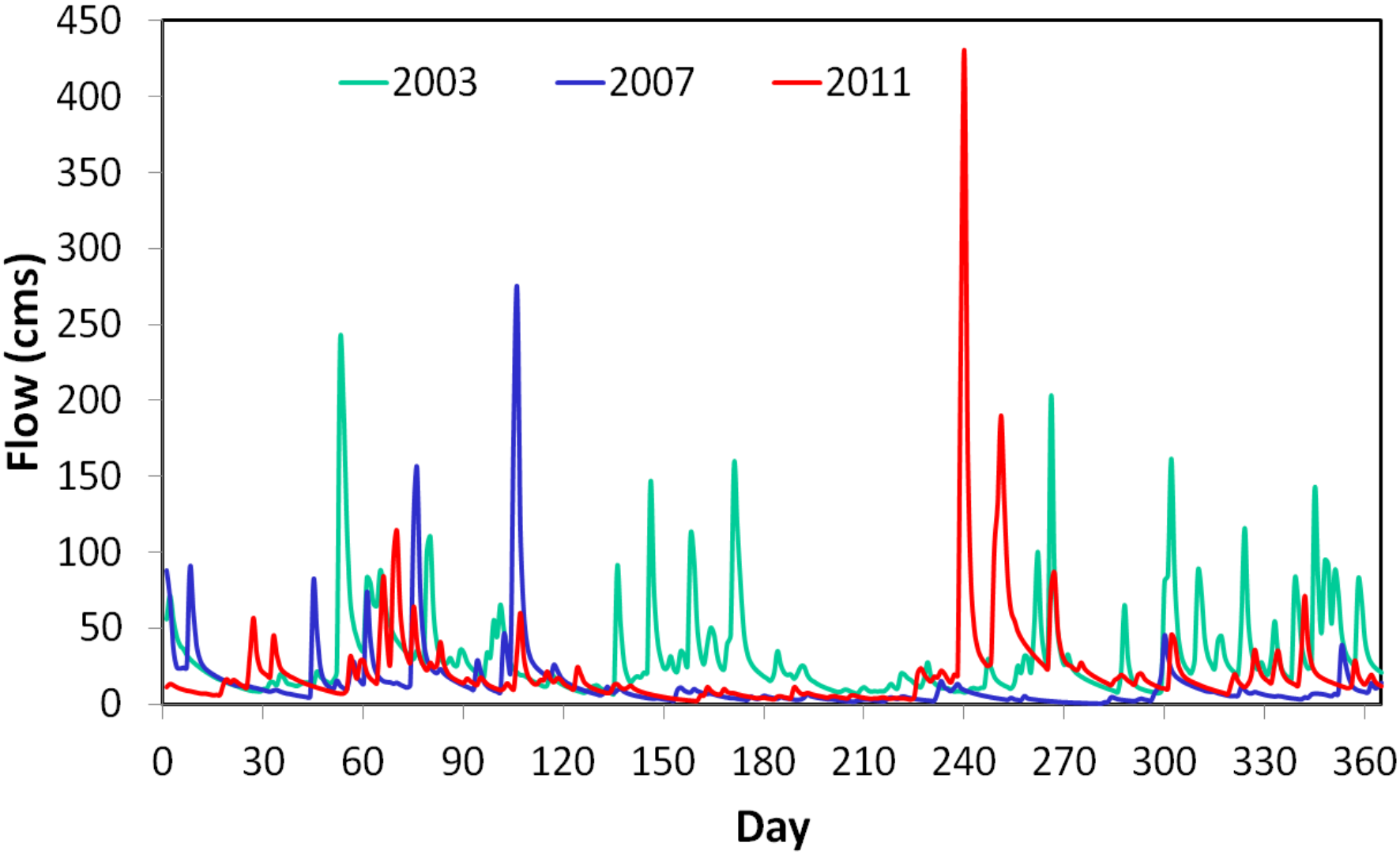
Total annual average flow to the Chester



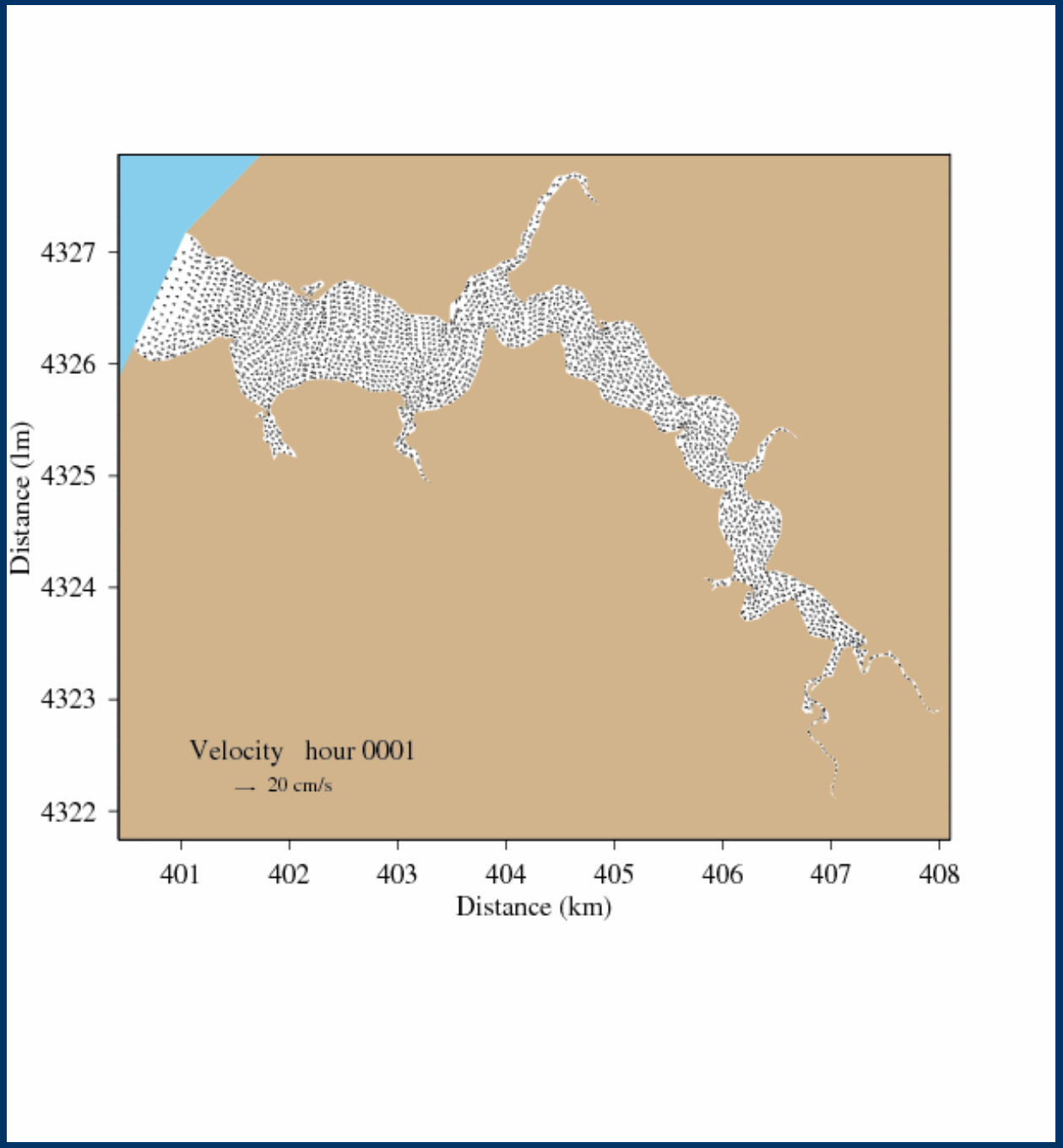
Total monthly average flow to the Chester



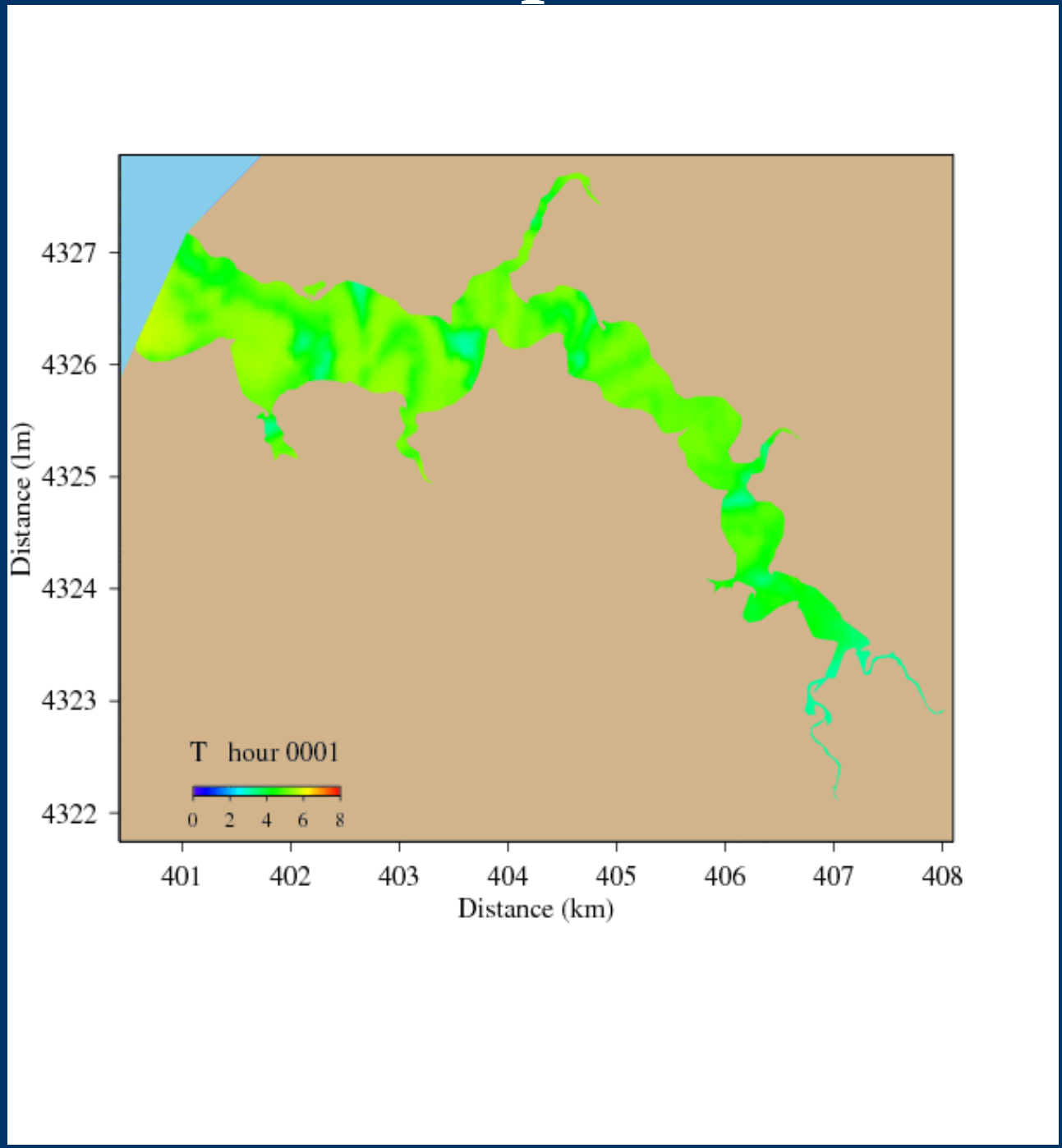
Total daily average flow to the Chester



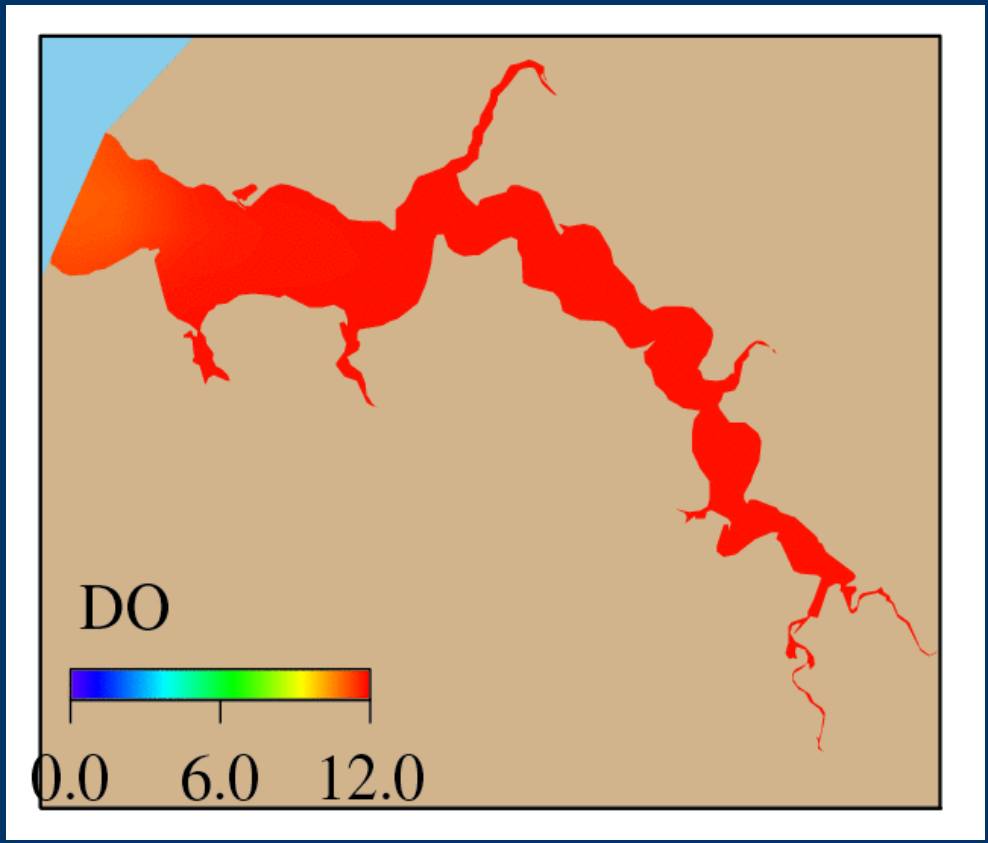
Simulated surface velocity in Corsica River

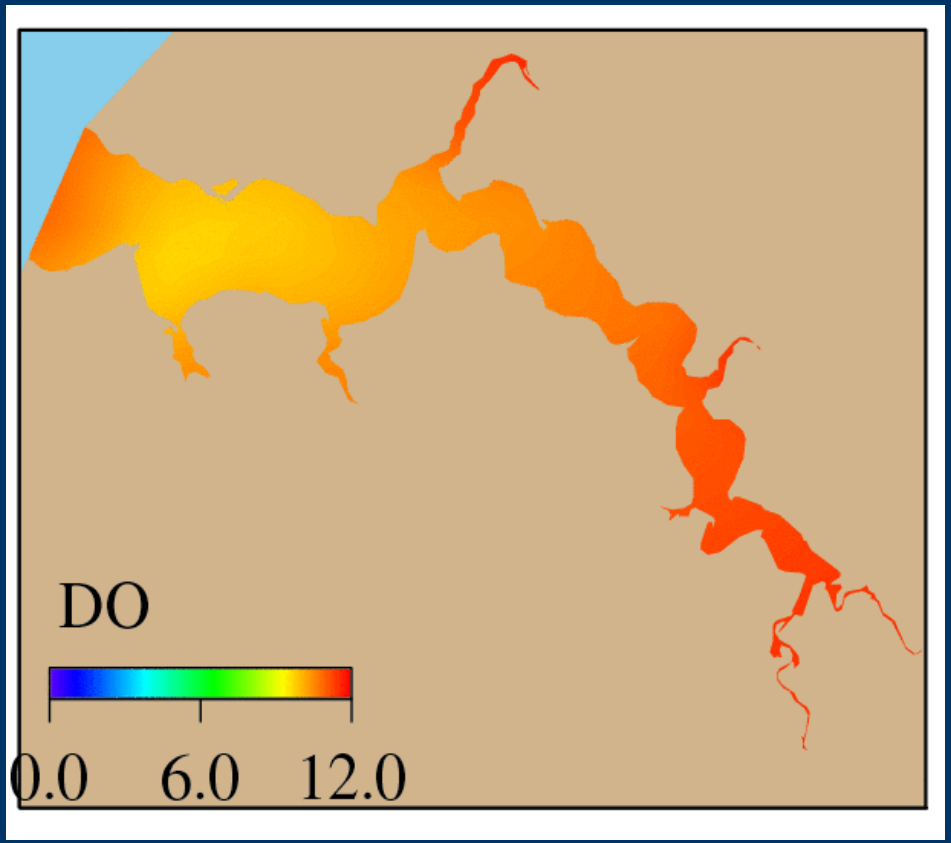


Simulated surface temperature Corsica River



Surface (left) and bottom DO on Mar. 1





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