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Steven Markstrom
USGS, markstro@usgs.gov

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CONUS-scale Stream Temperature Modeling Utilizing the USGS National Hydrologic Model

Steven L. Markstrom[a]
[a]*U.S. Geological Survey (markstro@usgs.gov)*

Abstract: Stream temperature is a fundamentally important parameter in the natural development of freshwater riverine ecosystems. The interactions of flora and fauna with chemical constituents, dissolved oxygen and other water quality factors are influenced by temperature of the water in the stream. Computer models can be used to simulate stream temperature at stream segment resolution (e.g., a network with stream segments between 1 and 100 kilometers long), which in turn can facilitate decision making by ecologists and resource managers. A daily mean stream temperature modeling application, based on the hydrologic simulations of the U.S. Geological Survey's National Hydrologic Model, has been developed. Preliminary results from this application are presented.

Keywords: daily mean stream temperature; National Hydrologic Model