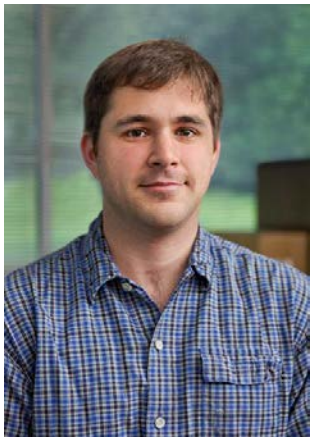
Daniel M. Ricciuto



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Daniel M. Ricciuto is a staff scientist in the Ecosystem Simulation Science group in the Environmental Sciences Division and the Climate Change Science Institute at ORNL. His main research interest is the application of data assimilation techniques that confront terrestrial carbon cycle models with observations to improve model parameterization and predictive skill at spatial scales ranging from site-level to global.

Ricciuto received his PhD in meteorology from Pennsylvania State University in 2006. He then became a postdoctoral associate at ORNL under the supervision of Wilfred M. Post until transitioning to a staff position in the same group in March of 2010. In his postdoctoral research, Ricciuto developed data assimilation algorithms for the Local Terrestrial Ecosystem Carbon (LoTEC) model, demonstrating the value of different types of observations in reducing prediction uncertainty about carbon uptake by forest ecosystems. In 2008, he became involved in the North American Carbon Program site-level interim synthesis model intercomparison, developing a new technique for gap-filling of meteorological driver data used by modeling teams to simulate ecosystem responses at 45 eddy covariance sites. In this continuing project, he has supervised the collection of simulation data from over 20 models and processed these data into a standard format currently being used by 15 analysis teams studying various aspects of this intercomparison.

Ricciuto is collaborating with experts in terrestrial carbon cycle modeling and computer sciences to develop a new data assimilation framework for terrestrial components of the Community Earth System Model that takes maximum advantage of ORNL's high-performance computing resources.

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