

## **The Argonne National Laboratory Subsurface Biogeochemical Research Program SFA: Wetland Hydrobiogeochemistry**

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**BER Program:** ESS

**Project:** Argonne Wetland Hydrobiogeochemistry SFA

**Project Website:** [https://doesbr.org/documents/ANL\\_SFA\\_flyer.pdf](https://doesbr.org/documents/ANL_SFA_flyer.pdf)  
<https://www.anl.gov/bio/project/subsurface-biogeochemical-research>

**Project Abstract:** Within wetlands, movement of water and biogeochemically catalyzed transformations of its constituents determine the mobility of nutrients and contaminants, emission of greenhouse gasses into the atmosphere, carbon (C) cycling, and the quality of water itself. The long-term objective of the Argonne *Wetland Hydrobiogeochemistry* Scientific Focus Area (SFA) is the *development of a mechanistic understanding and ability to model the coupled hydrological, geochemical, and biological processes controlling water quality in wetlands and the implications of these processes for watersheds commonly found in humid regions of the United States*. The Argonne *Wetland Hydrobiogeochemistry* SFA focuses research on a riparian wetland within Tims Branch at the Savannah River Site. Tims Branch contains riparian wetlands representative of those commonly found in humid regions of the Southeast that have C-rich soils and high Fe content. However, it is unique in that parts of the watershed received large amounts of contaminant metals and uranium as a result of previous industrial-scale manufacturing of nuclear fuel and target assemblies. Understanding the function of wetlands in relation to hydrologic exchange, including the concentration of nutrients and contaminants within the soluble and particulate components of groundwater and surface waters addresses the goal of the ESS Program to *advance a robust, predictive understanding of watershed function*.