

Southeastern Section - 57th Annual Meeting (10–11 April 2008)

Paper No. 31-13

Presentation Time: 1:30 PM-5:30 PM

QUANTIFYING HYDROLOGIC FLUXES TO A SMALL IMPOUNDED PIEDMONT LAKE, GREENVILLE, SOUTH CAROLINA

MOORE, Cameron, DRIPPS, Weston R., and TRIERWEILER, Annette, Earth and Environmental Sciences, Furman University, 3300 Poinsett Highway, Greenville, SC 29613, cameron.moore@furman.edu

Effective lake management and restoration requires a quantitative understanding of the magnitude and spatial and temporal variability of hydrologic fluxes within a lake's water budget. Knowledge of these fluxes allows for sustainable management of a lake as well as prompt and precise remedial action in response to any developing threats to a lake's ecosystem, including drought and excess nutrient loading. In this study, a monthly water budget for July 2007 through January 2008 was developed for Furman Lake, a small, twenty-eight acre impounded lake located on Furman University's campus in Greenville, South Carolina. The various inputs (precipitation, direct runoff to the lake, ground water influx, and surface water inflow from two streams entering the lake), outputs (evaporation, withdrawals for irrigation, ground water loss, and surface water outflow from the sole outlet stream), and changes in storage (lake volume) were measured and/or modeled based on field measurements and watershed characteristics. The results of this research have not only allowed for a better quantitative understanding of the magnitude and significance of various hydrologic fluxes to and from Furman lake, but have also highlighted the temporal and spatial variability of these components, particularly with regards to the ground water – lake interactions. Furthermore, this study has provided accurate estimates of the lake's residence time and has been utilized for quantifying nutrient fluxes to and from the lake, both essential for the continued management and ongoing ecological lake restoration work that is currently underway.

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[General Information for this Meeting](#)

Session No. 31--Booth# 24

[Undergraduate Research Session \(Posters\) II](#)

Hilton Charlotte University Place: University Lake Ballroom Suites A, B, C
1:30 PM-5:30 PM, Friday, 11 April 2008

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