



UFZ-Kolloquium



18. Juli 2011, 15.00Uhr

Saal, Brückstr. 3a, Magdeburg

Björn Gücker, Universidade Federal de São João del-Rei, Brasil

spricht zum Thema:

Intern Ecosystem functioning as an indicator of tropical stream health: Detection limits of land use effects

Estimates of ecosystem processes such as primary production, community respiration, and nutrient cycling have recently been proposed as indicators of aquatic ecosystem health and as early warning signals of impending regime shifts. Typically, the estimation of stream ecosystem processes involves modeling approaches based on a multitude of field and lab measurements. Accordingly, estimates of ecosystem processes may be associated with high uncertainties due to the propagation of methodological errors associated with each measured variable. To assess whether ecosystem process estimates can detect land use impacts on Brazilian Cerrado and Atlantic forest streams, uncertainties in process rate estimates were quantified using Monte Carlo simulations, and compared to changes in stream ecosystem process rates due to agricultural and aquaculture impacts. Estimates of ecosystem processes were indeed associated with considerable methodological uncertainties. However, changes in process rates due to land use were sufficiently high to allow for the detection of moderate agricultural and aquaculture impacts. These results suggest that ecosystem process rates may be suitable indicators of stream ecosystem health. Nevertheless, high methodological uncertainties may prevent the detection of subtle land use impacts and thus constrain the use of stream ecosystem process rates as early warning signals.

Falls Sie eine Videoübertragung nach Halle oder Leipzig gewünscht wird, bitte ich um eine E-Mail an hella.nietsch@ufz.de bis spätestens Freitag (15.7.), 12:00Uhr.