

Title: (all CAPS)

MICROBIAL ENZYME ACTIVITIES OF WETLAND SOILS AS INDICATORS OF
NUTRIENT CONDITION: A TEST IN WETLANDS OF GULF OF MEXICO COASTAL
WATERSHEDS

Abstract text: 204 words (250 word limit)

Microbial enzyme activities measured from wetland soils are being tested as indicators of wetland nutrient function and human disturbance. This is part of an assessment of condition of wetlands being conducted by the U.S. EPA Gulf Ecology Division in coastal watersheds along the Gulf of Mexico that includes four wetland types (estuarine intertidal emergent, estuarine intertidal scrub/shrub, palustrine emergent, and palustrine forested or scrub/shrub). Microbial enzyme assays have been performed on soil samples from over 60 wetlands with 12 substrates testing for activity of various aminopeptidases, esterases (for S and P substrates) and glycosidases. Phosphatase and most carbon substrate enzyme activities were found significantly correlated to total organic carbon and total carbon. N-acetylglucosaminidase activity correlated to total nitrogen, total carbon, and total organic carbon. Means of enzyme activities among the four wetland classes were not significantly different and variance was high within each class. Enzyme activities in soils show potential to be more related to condition of the wetlands, nutrient composition and ratios (indicating nutrient availability and nutrient limitations), and will be tested for links to land uses in the watersheds. Utility and implications of these biogeochemical measures as indicators in monitoring assessments for wetland water quality and function is promising. (This abstract does not necessarily reflect U.S. EPA policy.)

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Keywords (max 3) microbial enzymes, wetland assessment, nutrients

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Submitted for.....

Symposium Session: "Wetland Biogeochemistry: Connecting Microbes to Ecosystems"

Subtopic: ~~"Biogeochemical Indicators for Assessment"~~

Society of Wetland Scientists Annual Meeting, "Wetland Connections", being held in Madison, WI, June 21-26, 2009