Ambient *Ex-Situ* Denitrification in Isolated Wetlands of Ohio, North Carolina, and Florida

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Abstract

Isolated wetlands are completely surrounded by uplands and typically do not warrant federal protection under the Clean Water Act. Nevertheless they can be found at high densities in certain parts of the US and Canada (e.g., Prairie Pothole Region, Southern and Middle Atlantic Coastal Plains ecoregions). Understanding the ecosystem services, or benefits received by humans for ecosystem processes, performed in isolated wetlands can provide substantive progress towards reestablishing federal protection for some systems. Nutrient pollution assimilation through denitrification is a known process in wetlands that creates ecosystem services. Wetlands are known to be ecosystems that perform high rates of nitrogen processing due to frequent anaerobic conditions, labile carbon sources, available nitrate-nitrogen, and adaptive microbial communities.