



WATER RESOURCES RESEARCH GRANT PROPOSAL

Project ID: 2002TX61B

Title: Urban Forested Wetland Restoration

Project Type: Research

Focus Categories: Wetlands, Ecology, Hydrology

Keywords: bottomland hardwood forest, wetland restoration, urbanization, hydrology, reference wetland ecosystems, water quality

Start Date: 03/01/2002

End Date: 02/01/2003

Federal Funds: \$5,000

Non-Federal Matching Funds: \$17,975

Congressional District: 3rd

Principal Investigator:

Matthew Simmons

Texas A&M University

Abstract

It has been estimated that, since Texas was settled in the 1800s, roughly 63% of the bottomland hardwood forests, and related wetlands, in the State have been lost. Bottomland hardwoods and nearby wetlands are vital to the maintenance of ecosystems and serve to improve water quality. In urbanized areas, or those likely to be developed in the near future, wetlands can serve to treat runoff pollutants and to lessen erosion. A critical need is to better understand how to create, restore, and maintain wetlands and bottomland hardwoods, especially in urban settings.

In this project, a landfill in the City of Garland Texas [near Dallas] is now being capped and plans call for it to be restored to an upland prairie. Near the landfill is a borrow pit, from which soil is being removed to cap the landfill. The borrow pit is adjacent to Rowlett Creek. A major task of this study is to restore the borrow pit to a bottomland hardwood forest.

Goals of this project are to better assess the structure and function of reference sites to better identify how wetlands and bottomland hardwoods can be restored, to evaluate how flooding regimes affect wetland hydrology, and to assess various combinations of wetland designs and the use of soil amendments, planting mixes, and variations in slope on the function and performance of restored wetlands.

It is anticipated that this project will lead to advances in how wetlands can be restored in urban and developing settings, with an emphasis on how bottomland hardwood systems can be developed that can be sustained over time.