Paynes Prairie Sheetflow Restoration Project Abstract

The proposed Sweetwater Branch/Paynes Prairie Sheetflow Restoration project provides a unique and innovative approach to achieving total maximum daily load (TMDL) requirements, while achieving multiple additional environmental benefits. A TMDL has been established for Alachua Sink, a small lake located within Paynes Prairie Preserve State Park (PPPSP) which drains to an active sinkhole.

The PPPSP is a 21,000 acre natural and historical landmark situated in Alachua County at the southern tip of Gainesville, Florida. Paynes Prairie is considered an Outstanding Florida Water and is a valuable resource that has been enjoyed by surrounding communities long before its inauguration as Florida's first State Preserve in 1971.

The proposed Paynes Prairie Sheetflow Restoration project will restore over 1,300 ac of formerly impacted wetlands in PPPSP, achieve regulatory TMDL requirements for the City of Gainesville, provide protection of the Floridan aquifer, and offer outstanding wildlife habitat and opportunities for public recreation and wildlife viewing.

The concept of re-establishing sheetflow on PPPSP includes upgrades to the Main Street Wastewater Reclamation Facility to optimize nitrogen removal, and addition of chemical phosphorus removal. A 125 acre constructed enhancement wetland will polish flow before it is discharged to a mile long sheetflow distribution channel. Two miles of agricultural drainage canals will be removed so that wetland hydrology can be resorted.

The Paynes Prairie Sheetflow Restoration project represents the culmination of focused efforts from a partnership of organizations including the Florida Department of Environmental Protection, St. Johns River Water Management District, City of Gainesville, Alachua County and Florida Department of Transportation.

Keywords
TMDL
Constructed Enhancement Wetland
Habitat Restoration

Challenge(s)
Population growth and land use change impacts to water resource sustainability
Public health, wildlife health, ecosystem health and water resource sustainability

Issue
Nutrient enrichment of surface, ground and coastal waters