Monitoring the Picayune Strand Restoration Project: Macroinvertebrate, Anuran, and Fish Communities

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The Picayune Strand Restoration Project (PSRP), part of the Comprehensive Everglades Restoration Project (CERP), is intended to restore hydrology and habitat to the former Southern Golden Gate Estates (SGGE), Collier County, Florida. The SGGE was a residential development, which began by digging canals, establishing a network of roads, and selling lots for homes. The PSRP is now an on-going 55,000-acre restoration project initiated in 2004. It includes the removal of the roads, plugging of the four large canals, and construction of three pumping stations to prevent inland flooding to the Golden Gate Estates community. Baseline bioindicator surveys were conducted between 2005 and 2007 at impacted (drained) wetlands in PSRP and reference wetlands in Fakahatchee Strand Preserve State Park and Florida Panther National Wildlife Refuge. The monitoring program has evolved to include unrestored/drained, hydrologically restored, and reference sites for comparison. Monitored habitats include graminoid (wet prairie), cypress-graminoid, and cypress. We report on the results of the on-going monitoring program that includes aquatic macroinvertebrates, anurans, and fish. Compared with baseline surveys, subsequent monitoring events indicate change in community structure of the restored sites toward reference conditions but significant differences between restored and reference wetlands remain. The invasion of exotic Cuban treefrogs (*Osteopilus septentrionalis*) and exotic fish, particularly the African jewelfish (*Hemichromis letourneuxi*), has limited the ability to use methods employed during baseline sampling events to evaluate restoration success for anurans and fish. It is not yet clear if this is an artifact of sampling method bias or species competition/displacement. Macroinvertebrate communities remain reliable indicators of restoration success using the same sampling methods. The monitoring program is a creative collaboration among a non-profit organization, private industry, a public university, and graduate student research projects to efficiently explore the restoration progress.

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