

ECOLOGICAL SUCCESSION, HYDROLOGY, AND WATER QUALITY OF RESTORED URBAN WETLANDS IN SOUTH FLORIDA

Li Zhang, and William J. Mitsch

Everglades Wetland Research Park, Florida Gulf Coast University, Naples, FL, USA

Succession patterns were investigated for a restored brackish marsh and a restored freshwater marsh in South Florida. Both sites were dominated by *Melaleuca quinquenervia* and *Schinus terebinthifolia* (Brazilian pepper-tree) before restorations. The freshwater marsh located on Florida Gulf Coast University Campus was restored in 1995 and the brackish marsh located at the Naples Botanical Garden was restored in 2007. The freshwater marsh is currently dominated by *Cyperus* spp., *Utricularia vulgaris*, *Nymphaea tetragona*, and *Eleocharis palustris* with water level fluctuations of 20-120 cm caused by alternating wet/dry seasons. The brackish marsh is dominated by sand cordgrass *Spartina bakeri*, with other herbaceous species such as *Spartina patens*, *Cladium jamaicense*, *Acrostichum danaeifolium* and *Eleocharis cellulose* with some red and black mangrove trees beginning to appear (*Rhizophora mangle* and *Avicennia germinans*). A real-time monitoring system for water level and water quality (water temperature, pH, salinity, and dissolved oxygen) has been in place at both sites since 2012. Water level changes significantly between dry and wet seasons. Salinity is largely affected by seasonal freshwater inflows and its coastal location. It is suggested that hydrology and salinity dominant ecological succession for urban wetlands.

PRESENTER BIO: Dr. Zhang is Assistant Director of Everglades Wetland Research Park at Florida Gulf Coast University with more than 20 years of experience planning and implementing wetlands construction projects. She has extensive experience with wetland and river restoration, and has also experience with watershed hydrology and GIS modelling.