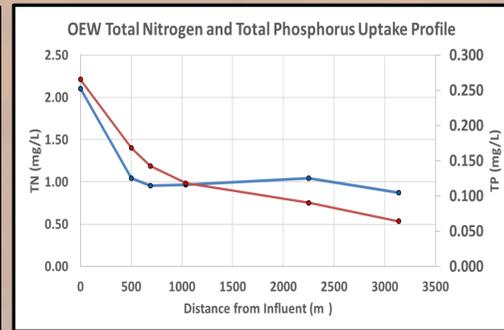
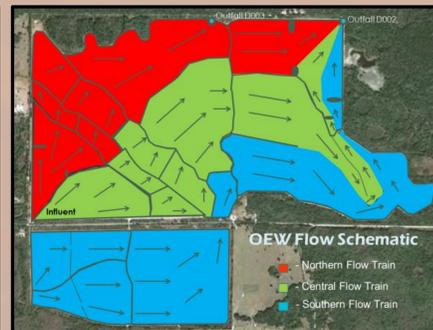
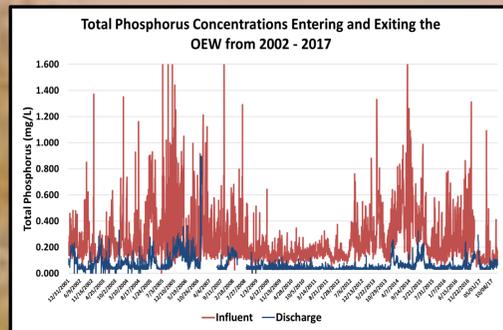


# THE ORLANDO EASTERLY WETLANDS – 30 YEARS OF CONSTRUCTED SUCCESS

Mark D. Sees, Kathryn E. Slayton, Gary L. Foreman  
 City of Orlando – Water Reclamation Division,  
 25155 Wheeler Road, Christmas, Florida 32709

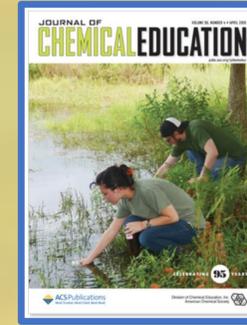
## Background

Constructed in 1987, Orlando Easterly Wetlands (OEW), is a 486 hectare free surface flow constructed wetland. Comprised of 3 different flow pathways, 18 treatment cells and 67 water control structures, the system is permitted to receive up to 132 million L/d. The OEW's primary purpose is to polish excess nutrients from reclaimed water received from the Iron Bridge Regional Water Reclamation Facility. From 1991 through 2017, the system has removed 525,955 kg of nitrogen (N) and 37,307 kg of phosphorus (P). The average N and P concentration discharged from the system are 0.87 mg/L and 0.061 mg/L, respectively. The OEW consistently is below all State and Federal water quality regulations.



## Research and Development Site

The OEW is utilized for scientific research. Currently, the Florida Fish and Wildlife Conservation Commission along with the University of Florida are studying the conditions that affect giant bulrush (*Schoenoplectus californicus*) survivorship in restoration areas. University of Central Florida is researching various topics such as potential impact of uric acid from wildlife on wetlands; how constructed wetlands and nutrient gradients affect greenhouse gas production; and how bacteria species can influence N and P removal.



## Biodiversity

From cypress domes to mixed marshes, the OEW provides diverse wetland habitat. In 1987, over 2.2 million native aquatic plants were installed, representing 60 species. Originally a cattle pasture, the biodiversity has significantly increased from 20 avian species to over 240 species. The recorded count includes both residential and migratory birds that utilize the OEW as a resting point. Over 20 threatened and endangered species call the OEW home.



## Management is the Key to Success

The Orlando Easterly Wetlands system is managed to maximize nutrient uptake capabilities as well as to create various aquatic microhabitats. Herbicide applications, water level manipulations and prescribed burns are routinely employed to help beneficial native vegetation such as cattails (*Typha* spp.). When detritus significantly accumulates, full scale muck removal projects are initiated. Between 2001 and 2017, nearly 316 hectares have been renovated with approximately 1.5 million meters<sup>3</sup> of muck removed.



## Public Amenity

In 1991, the OEW was opened to the public as the Orlando Wetlands Park. Over 40,000 guests visit annually. Popular recreation activities include bird watching, photography, hiking and horseback. Friends of the Wetlands, a volunteer group, provide educational tours, maintain the native plant gardens as well as assist in park operations.

