

## **EVERGLADES STORMWATER TREATMENT AREAS: THE WORLD'S LARGEST CONSTRUCTED TREATMENT WETLAND PROJECT**

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The Everglades Stormwater Treatment Areas (STAs) comprise the largest constructed treatment wetland project in the world with a current treatment area of over 62,000 acres. The STAs are designed to remove phosphorus (P) from agricultural and urban stormwater runoff, and when there is available capacity, they can also treat water from Lake Okeechobee. STA-treated water is sent south to support restoration of the ecologically sensitive Everglades. Operation of the STAs is governed by permits and consent orders issued to the South Florida Water Management District (SFWMD) by the Florida Department of Environmental Protection. The permits and consent orders set forth a stringent water quality-based effluent limit (WQBEL) of 13 µg P/L annual average that must be met by each STA upon completion of all the projects in the Restoration Strategies Regional Water Quality Plan. These projects include flow equalization basins (FEBs), expanded STA treatment areas, and canal conveyance improvements. FEBs built upstream of the STAs assist in moderating high flows to the STAs during the wet season and providing water in the dry season to maintain minimum stages. Flow attenuation helps to reduce the duration that STA treatment cells are above target stage, reducing vegetation stress and improving P removal performance. The FEBs provide water quality improvement as well, reducing P loading to the STAs. In addition to the Restoration Strategies projects, SFWMD has conducted extensive research on treatment wetland function and P dynamics at low P concentrations to help inform management approaches to assist the STAs in meeting the WQBEL for discharges to the Everglades.

PRESENTER BIO: Tracey Piccone is a licensed Civil Engineer with over 30 years of experience in water resources engineering. As Chief Consulting Engineer, she is a key participant in investigating factors that influence phosphorus reduction in the STAs and management approaches to ensure the STAs achieve the mandated discharge phosphorus concentrations.