

STA-3/4 Dry Out/Diversion Information for Technical Oversight Committee (9/06/11)

For 28 days in July 2011, the South Florida Water Management District (District) diverted a portion of the STA-3/4 basin runoff away from the STA to help reestablish vegetation in cattail cells and to prevent additional harm to submerged aquatic vegetation (SAV) stemming from the recent dry out.

Based on the rainfall data, the period from October through mid-June was the driest on record for South Florida. By late June, surface and groundwater levels dropped well below normal throughout South Florida. During the months of December through June, the District provided supplemental water to the Everglades Agricultural Area Stormwater Treatment Areas (STAs) in accordance with STA permits, design documents, and operational guidelines. This was done in an attempt to maintain minimum water depths within the STAs to avoid dryout, protect treatment area vegetation, and to minimize the occurrence of post-dry out total phosphorus (TP) spikes.

Despite water conservation efforts and supplemental water deliveries from Lake Okeechobee, nearly all portions of STA-3/4 treatment cells became dry in late June. Low canal stages limited supplemental deliveries, and evapotranspiration and seepage exceeded inflow volumes. Field surveys of STA-3/4 SAV cells indicated that vegetation was adversely impacted by desiccation with most areas showing significant loss of SAV. Based on previous experience and studies, phosphorus flux from drought-impacted STA cells is expected as a result of accelerated soil oxidation and decomposition of accumulated vegetation litter.

Heavy rainfall in the STA-3/4 basin during the last week of June and first week of July produced a rapid rise in STA-3/4 water depths from below ground level to a depth of approximately three feet in some cells. Continued high inflows created unfavorable conditions for the establishment of new emergent vegetation and the recovery of remaining areas of SAV.

In response to the rapidly changing conditions in STA-3/4, and in accordance with Florida Department of Environmental Protection (Department) permit conditions and in coordination with Department personnel, a portion of the basin water flows were diverted around the STA from July 2 through July 29, 2011. The inflow pump stations to STA-3/4 (G-370 & G-372) were operated to avoid exceeding maximum stages for vegetation recovery. The diversion water control structures (G-371 and G-373) and the S-7 and S-8 pump stations were operated to maintain the required flood protection. Frequent monitoring of flows, stages, TP loads and concentrations, as well as vegetation re-establishment, was conducted and served as a basis for weekly operational decisions. The District and Department established weekly teleconferences to discuss the latest information on the status of STA vegetation, stages, flows, and water quality. This information was used to inform decisions regarding modifications to operations and, as of August 30, 2011, vegetation was near fully recovered and STA operations were back to normal.

At the September 14, 2011 TOC meeting, an STA operational status and conditions update, including details regarding STA-3/4 vegetation recovery, will be provided.