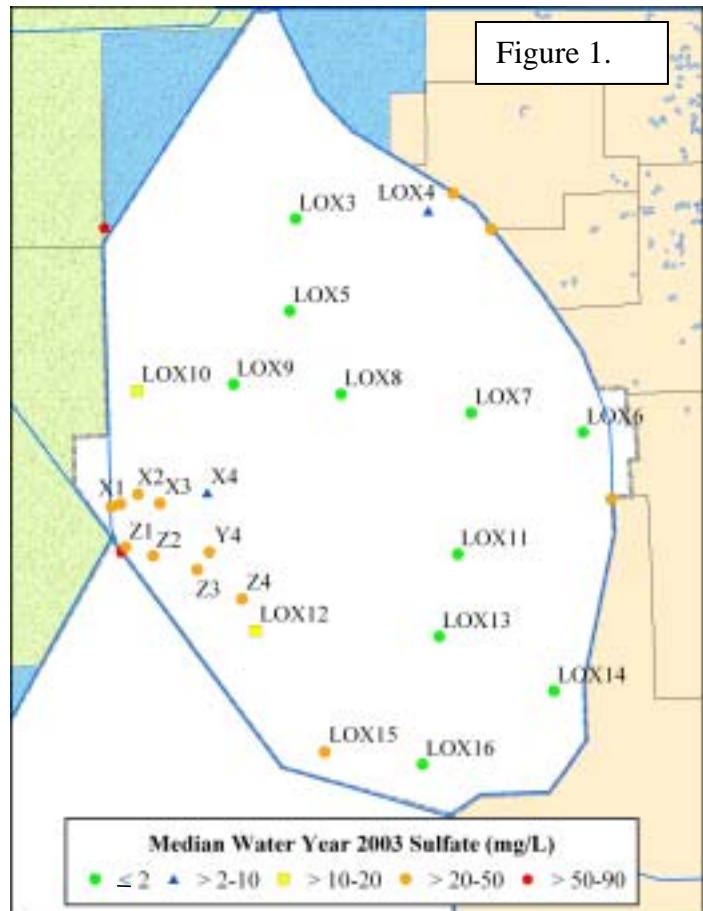


FDEP Comments on Federal Everglades Team Work Plan: Water Quality Monitoring and Modeling for the A.R.M. Loxahatchee National Wildlife Refuge

1. Page 3, 4th Bullet: The elevated WY2003 sulfate concentration in the Refuge interior, noted in the 2004 Consolidated Report, was most likely a single year phenomenon and does not reflect an increasing canal water impingement trend. As stated by Ken Weaver at the Peer Review Workshop (West Palm Beach, September 23, 2003) the aberrant WY2003 results were most probability related to unusually high flows discharged in the western portion of the Refuge through STA-1W; that is, STA-1W was overloaded. In fact stations LOX10, X4, Y4, Z4, LOX12, and LOX15 (Figure 1) on the western side of the Refuge accounted for a majority of the increased sulfate concentrations, suggesting that canal water did impinge further into the Refuge than is typical. It is unlikely that the WY2003 patterns will be repeated in the future since the District has ceased hydrologically overloading STA-1W and will avoid doing so in the future. More recent data should be reviewed to investigate whether typical conditions have been restored.



2. Page 8. Figure 1 only depicts the portion of the Refuge within the levees (i.e., WCA-1). Suggest that the figure be updated to reflect the complete areal extent of the A.R.M. Loxahatchee National Wildlife Refuge.
3. Page 12, Third paragraph. “Recent evidence indicates a trend towards increased intrusion of this [canal] water into the refuge interior with likely impacts of water chemistry on sensitive biota (Childers et al. 2003; Walker and Kadlec 2003; Weaver and Payne 2004).” Weaver and Payne 2004 did not find an increased trend of canal water intrusion into the Refuge. The increases noted in the 2004 ECR were a one year event associated with the hydrologic overloading of STA-1W. Suggest more recent conductivity and sulfate data be reviewed to determine whether levels have changed significantly since WY2004.

4. Page 14, Task 1: Synoptic sampling around STA-1E and STA-1W. We continue to question whether this approach will provide the intended “snapshot”. The proposed sampling will take several days to complete, during which time conditions will change, perhaps significantly. Spatial and temporal patterns will be confused with no means of controlling for the temporal influences. This will also be an issue/weakness of the event based synoptic sampling described under task 2 on page 16. Additionally, these two tasks are primarily focused on events (canal stage greater than marsh). It would be very useful to compare the event conditions to more “typical” conditions. We suggest that the objectives would be better met through the use of additional and more intensive permanent transect sites with continuous Sonde deployment.
5. Page 16-14, Task 3. This portion of the study will likely produce some of the most useful information. The existing X-transect does not extend into background marsh areas; i.e., conductivity, chloride, sulfate, etc., levels at X4 are elevated above background levels. Furthermore, the biological community (e.g., periphyton community) shifts from a hard-water to soft-water assemblage between sites X3 and X4. We suggest that at least two additional sites be added to each transect: one or more beyond X4 within or near background conditions; and an intermediate site (X3.5) positioned to better delineate the transition zone.

The plan envisions servicing Sondes on a monthly or bi-monthly basis. We suggest that you investigate potential calibration and probe fouling issues associated with such an extended deployment. Will the probes maintain the calibration for this period? Will the Sondes require more frequent maintenance? Also, does the Sonde have sufficient memory to log the accumulated data?