

Brooker Creek Wetlands Augmentation Study

Over the past 10 years, Pinellas County has been involved in the process of re-hydrating wetlands that were de-watered due to their close proximity to an active wellfield. The purpose was to see if wetlands that had been significantly degraded could be biotically restored with groundwater re-hydration. In conjunction with this re-hydration, we evaluated the response of the flora and fauna to this hydrological restoration in order to determine if surficially isolated wetlands could be effectively restored biotically. More specifically, we compared three sites augmented with ground water to two control wetlands outside the influence of groundwater withdrawal. We did this by evaluating:

- Hydrology - Monthly water levels were collected in all of the augmented and control wetlands.
- Vegetation - We quantitatively surveyed vegetation using point-count intercepts and quadrats extending from the edge of each of the augmented and control wetlands to their centers.
- Herpetofauna - We positioned several survey stations around each of the augmented sites and the control wetlands. Each survey station included:
 - A drift fence with pit fall traps and funnel traps to collect, mark, and recapture reptiles and amphibians.
 - Two widths of pvc positioned vertically. These are used as refuge by treefrogs. All treefrogs were marked.
 - Traps were opened for four 8-day survey periods centered around the growing season.
- Birds - Bi-monthly timed surveys were conducted at each of the study sites (the augmented sites) and the reference sites (the control sites).



As we have begun the process of evaluating the data, several encouraging changes are noted. First, as water levels rise, vegetation has succeeded from a community dominated by upland transitional species to a community dominated by wetland species. We observed that wetland "obligate" birds, such as herons and their allies, were the first to re-colonize the sites. Their return was timed with the presence of standing water - visible aerially. Wetland herpetofauna returned with the presence of standing water coupled with the sheet flows that accompany summer storms.

Stay tuned to our website for more information as we prepare to publish our results.