

Wetland Restoration as an Act of Stewardship - A Seminole Perspective

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Monitoring the effects of incremental restorative actions can help make restoration successful, especially when supported by a strong sense of stewardship. Rehydration of the Native area in the Seminole Tribe's Big Cypress Reservation, located within Southwestern Florida is currently being planned, along with a supporting monitoring effort. Establishment of the regional canal system created under the Central and Southern Florida Project (C&SF) has dried the area and isolated wetland systems, causing transitions in vegetated habitats from cypress (-17 %) and marsh (-85 %) communities to pine (+192 %) or to oaks and other hardwood tree (+397 %) communities. Preliminary data collected over the last decade show mean total phosphorus and total Kjeldahl nitrogen concentrations of 0.035 ± 0.029 and $1.17 \pm 0.38 \text{ mg L}^{-1}$, indicating partially intact water quality conditions. Regional ecological monitoring efforts, such as the rehydration of Northeast Shark River Slough in Everglades National Park serves as an example of an ecological monitoring plan that documents hydrologic restoration success. In Northeast Shark River Slough, between 2015 and 2021, hydroperiod and mean water depth increased to 344 ± 6 days (+ 18%) and 55 ± 13 cm (+293%), and four prescribed fires affected 51% of the monitoring locations. Biogeochemical changes and vegetation community transitions in the wetland landscape were driven by both hydrology and prescribed fires. Total phosphorus concentrations in the soil decreased, while soil carbon:phosphorus and nitrogen:phosphorus ratios increased at sites further away from water management infrastructure, possibly indicating re-initiation of peat accretion. Abundance of dominant long-hydroperiod species increased. Restoring the Kissimmee Billie Slough in the Native Area of the Big Cypress Seminole Reservation is an important piece of a vision for restoring the regional system. The vision that we wish to nurture and promote includes pinpointing and bringing to a halt pollution sources, balancing the proportionality of land uses, and increasing the amount of land that accumulates peat soils and stores nutrients by increasing the amount of overland sheet flow compared to canal flow. These actions will incrementally restore the native ecosystem and should enhance water quality while simultaneously reducing future management burdens.

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