Seagrass Recruitment 15 Months After Removal of the *Lake Surprise Causeway*

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Introduction

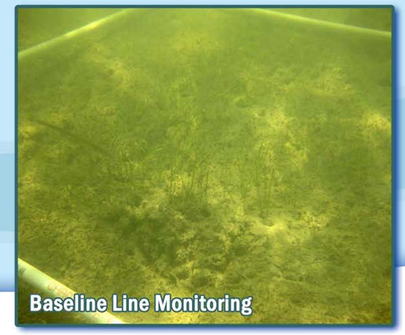
As a component of the mitigation plan for the US-1 South 2-Lane Safety Project, 4.60 acres of seagrass habitat were restored when portions of the "Lake Surprise Causeway" were removed. Approximately, 52,220 cubic yards of material were excavated to an elevation of -2.0 feet NGVD. The upper foot of peat material was replaced with a layer of heavy sand to stabilize sediments and create suitable substrate conducive to natural recruitment of adjacent seagrasses. The Florida Department of Transportation is conducting a five (5) year monitoring program to document seagrass coverage through recolonization within the restoration area.


Lake Surprise Causeway Removal


Post-Construction

Results

Coverage of *Halodule wrightii* ranged between 15 and 50 percent cover throughout stations after 15 months. Areas with no seagrass coverage contained a dense coverage of macroalgae. Less than five percent cover of the total area was by other seagrasses including: *Ruppia maritime*, *Thalassia testudinum*, and *Halophila engelmanni*. *Halophila engelmanni* and macroalgae were observed along the western edge of the new bridge where submerged aquatic vegetation is not directly impacted by shading.


Baseline Line Monitoring


First-Annual Monitoring Event

Methodology

Project Location Map

Transect Stations

Fixed transects have been established perpendicular to the causeway at approximately 1,000 foot intervals along the restored area. The presence of seagrass species within one square meter (m^2) quadrats are assessed using the Braun-Blanquet Cover-Abundance scale (BBCA) at 30 foot intervals along each transect. Photo documentation is collected at each quadrat.


Halophila engelmanni along the western edge of the bridge


Thalassia testudinum and *Halodule wrightii* adjacent to restoration

Discussion

Lake Suprise contains dense beds of *Thalassia testudinum* and *Halodule wrightii* in areas adjacent to the restoration. Restored sediments and elevations are suitable for rapid recolonization of *Halodule wrightii*, a colonizing species. Species composition and coverage are anticipated to increase with continued stabilization of sediments and succession. It is anticipated that the mitigation project will meet the permit success criteria of 80 percent coverage at the current recruiment rate.