Effects of new water delivery pattern from extended C100 spur canal on hammock vegetation in the Deering Estate

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Goals

1. Investigate the temporal and spatial response and variability of surface water levels, as well as understand the flow and solute transport mechanisms resulting from scheduled water deliveries in the Deering Estate (Figure 1), located downstream of the created wetland.
2. Determine the combined effect of water delivery from the canal and tides on surface water levels.
3. Inspect vegetation trends using remote sensing techniques in the Deering Estate prior to and after water deliveries started.

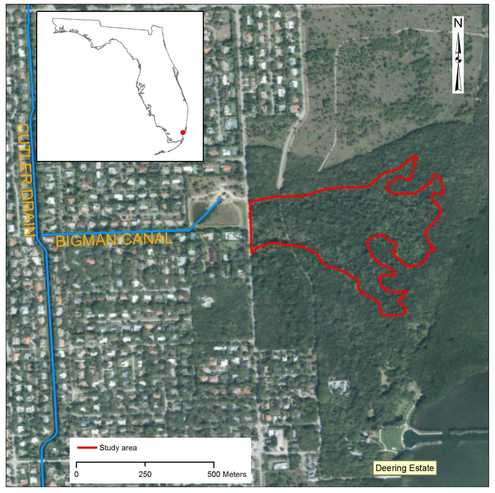

Figure 1. Map of study area

Research Methodology

- Install water level loggers at 19 sites for long-term surface water level monitoring (Figure 2).
- Periodically monitor and record observations on vegetation along 3 transects
- Analyze surface water level measurements
- Vegetation stress/change detection using remote sensing

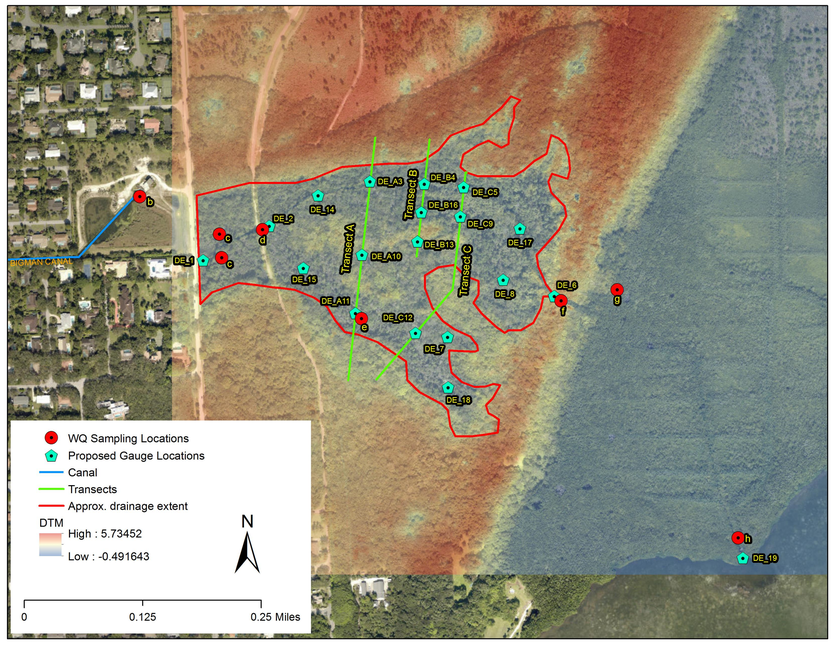

Figure 2. Proposed gauge locations to monitor the surface water level

Expected Results

- The surface water levels are expected to increase post new water delivery system compared to prior levels.
- Tree mortality and vegetation stress is expected in areas with higher surface water level (Figure 3).

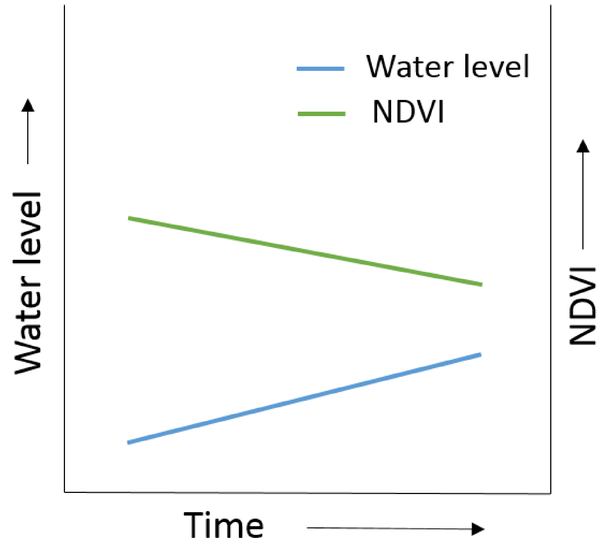

Figure 3. Normalized Difference Vegetation Index (NDVI) is expected to decrease with increase in surface water level indicating stress in vegetation or mortality.

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