



Mangrove-Marsh Ecotone Monitoring in Everglades National Park and Big Cypress National Preserve

2021

Importance: Landscape-wide Change in the Parks

The Mangrove-Marsh Ecotone protocol monitors the ecotonal movement of mangroves into upslope freshwater marshes in Everglades National Park and Big Cypress National Preserve. Tracking the position of ecotones can indicate the long-term trajectory of these plant communities. Changes in the ecotone can be indicative of changing environmental drivers (for example, in response to changes in water management, sea-level rise, storms, and fire). Ecotonal movement of vegetation communities across the landscape is indicative of large-scale processes affecting the park and preserve.

Objectives

- Determine the spatial and temporal movement of the mangrove-marsh ecotone at systematically selected segments.
- Document the composition of vegetation communities at field verification locations. Collect vegetation data, e.g., composition, percent cover and canopy height of dominant species within herbaceous, shrub, and forest strata, to document composition of vegetation communities on both the mangrove and marsh sides of the ecotone.

2021 Work

Using the 2019 USDA National Agriculture Imagery Program (NAIP) imagery for Collier, Miami-Dade, and Monroe counties, all 14 segments were digitized and compiled in a geodatabase (Figure 1). To ground truth these ecotonal segments, the South Florida/Caribbean Network visited 54 of the 56 field check points (plus 4 QA/QC points). One segment with a sharp ecotonal edge is shown in Figure 2.

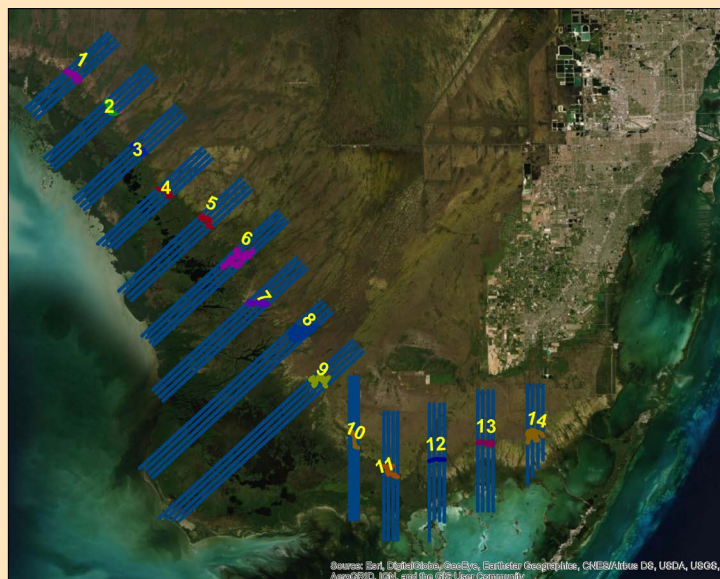


Figure 1. All 14 segments have been digitized.

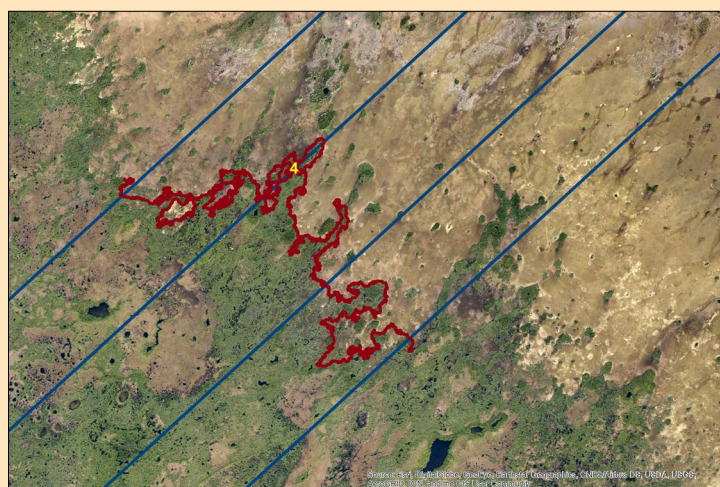


Figure 2. A close-up view of one segment (segment #4) clearly indicating the edge between the mangroves and the graminoid marsh.

