The Groves Creek Project: A Multidisciplinary Approach to Understanding Circulation in a Marsh



Marsh Geomorphology:

Multiple methods:

- RTK GPS pedestrian surveys
- Single beam echo sounding
- Multibeam echo sounding
- RTK/single beam 300,000 readings; multibeam about 2,000,000 readings

Purpose:

- Digital elevation model
- Accurate morphology for modeling

Dye:

Release of small quantity of Rhodamine dye on flood tide, sampled with:

- Airborne photography
- Collection of small volumes of water
- Moored optical instruments

Purpose:

- Track inundation into marsh
- Areas of retention
- Retention time

In Water Measurements:

- **OVERTIMATE OF CONTRACT OF CONTRACT.**
- **ADP: Water velocity**
- Wave Gage: Tide height and waves
- Fluorometer: Dye concentration
- Water Samplers: Dye concentration and salinity
- YSI Sondes: Dissolved oxygen, salinity and temperature

Radar \diamond :

- Demonstrate radar returns from grass-covered inundated marsh areas
- Mapping inundation pathways
- Estimate vector velocities therein
- Identify transitions from shallow-water waves to deep water waves to map bathymetry

Model:

A realistic representation of circulation requires:

- Clear definition of marsh geometry where are the highs and lows?
- Accurate rendering of tidal and wind forcing (timing and magnitude)
- Accurate representation of frictional effects
- Reasonable representation of storage capacity



-81.025

-81.030

31°57'54.56" N. 81°01'36.76" W



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Measurement



NORR

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