Marsh Vegetation Changes Occurring in the Rincon Bayou Delta: 2005-2016

Image Acquisition and Ground Truthing
Sponsors: TWDB and CBBEP

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Imagery Acquisition

- Performed by Quantum Spatial, Inc.
- 82 raw images collected on November 15, 2016 from FL100
- Shot with Z/I Digital Mapping Camera
- Orthorectified using camera calibration, airborne GPS/IMU and LiDAR
- Color IR GeoTIFFs delivered March, 2017
- Resolution of 1 foot (0.3 m) ground sample distance
- 12-bit pixel depth in R, G, B, and NIR bands
- 179 GB of images
Flight Path and Footprints
Mosaic of 82 Images: November 2016
309 Ground Truth Sites Visited
Over 2000 Geotagged Photos
Common Marsh Plant Species

- *Borrichia frutescens*
- *Monanthocloe littoralis*
- *Spartina alterniflora*
- *Batis maritima*
- *Distichlis spicata*
- *Salicornia virginica*
Next Steps

• Classify image following Rasser, 2009
  • Use ERDAS IMAGINE software
  • Produce GIS layer depicting areal distribution of common marsh plant species, non-vegetated land, and water areas

• Evaluate using ArcGIS for image classification
  • Image processing capabilities in GIS are now well developed
  • ArcGIS is more ubiquitous than IMAGINE and would be a practical choice for similar future studies

• Compare 1997-2005 coastlines
  • Map coastal erosion as per Rasser’s CBBEP report: “Analysis of Coastal Erosion of the Nueces Delta Shoreline”
Questions????