Edge Effects on Diatom Community Succession Trajectory within a Mitigation Wetland

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• Blanca Hinojosa inspired the current study

• Blanca and Leah Mulkey have been team leaders

• Leah is also presenting her poster at this conference
  - Diatom Anomaly at the Green Bayou Wetlands Mitigation Bank.
• Greens Bayou Wetland Mitigation Bank (GBWMB) Study

• Succession trajectory

• Disturbances
  • Hurricane Ike
  • Recent drought
  • Changes in land use

• Current Study
  • Edge effects
  • Ecological modeling

Background
GBWMB Study
Study Area
- Greens Bayou Wetland Mitigation Bank
- Little Cypress Creek mitigation project
- White Oak Bayou mitigation project
- Sheldon Lake
- Carpenter’s Bayou
- San Jacinto River
- Anahuac National Wildlife Refuge
  - Shoveler Pond
  - Big Marsh
  - Marsh Pond
  - East Bay
  - Smith Point
- Trinity River
  - Trinity River swamp
  - Fort Anahuac
- Other bayous and streams
  - Armand Bayou
  - Brays Bayou
  - Buffalo Bayou
  - Cypress Creek
  - Spring Creek
Ecological Edge Effects
Hurricane Ike
Drought
Construction
Modeling
Expected Trends

- Local flooding by rivers and streams
- Diversion of water by construction projects
- Long-range transport by storms
- Environmental homogeneity/heterogeneity
- Biogeochemistry
Future Work

• Complete survey of Trinity River watershed

• Compare mitigation areas to past projects and natural waterways

• Model edge effects using Hubbell’s model

• Analyze trends in succession trajectory for mitigation wetlands

• Provide model for future mitigation project success