Restoring the Pre-Development Hydrologic Regime in the Picayune Strand Restoration Project Area

Michael Duever
Natural Ecosystems
Ecological Criteria for Picayune Restoration

- Full Range of Wetland Communities Exists Over a 24 in Topographic Gradient

(Wharton et al. 1977)
Ecological Criteria for Picayune Restoration

- Substrates are very porous with 2-5 ft water table drawdowns extending miles from Canal.

2000 Monthly Water Table Profiles - North Transect Wells

Fakahatchee Strand
Hydrologic Restoration

- Sheet flow is Key to Restoration
  - Remove All Unnaturally Elevated Substrates
    - Roads
    - Logging Trams
    - Home Sites
    - Spoil Associated with Roads and Canals
  - Eliminate Wet Season Surface Water Drainage
    - Plug Canals
  - Eliminate Dry Season Groundwater Drainage
    - Fill Most of Length of Canals
Strategy To Restore Sheetflow

- Remove Vegetation from Roads, Logging Trams, and Canals to Expose Elevated Spoil
- Degrade Spoil and Place Excess Above-Natural-Grade Spoil Material in Canals
- Minimal Area Has Been Impacted
Contract Documents

- Develop Specifications That Allow for Realistic Cost Estimates
- Spoil Covered with 40 Years Growth of Vegetation
  - What is Spoil and What is Vegetation
Contract Documents

• Originally Surveyed for Spoil Only 75 ft from Road Centerline

• Subsequently Agreed to *Approximately* 250 ft Width of Clearing, But Clearing Should not Extend Beyond Where the Spoil Ended

• Also, Clearing Was not Necessarily Based on the Road Centerline
Width of Clearing - To Outside Edge of Spoil
Approximately 250 ft

First Contractor – Paid by the Linear Foot of Road
Second Contractor – Paid by the Acre of Cleared Area
Width of Clearing - To Outside Edge of Spoil Approximately 250 ft

First Contractor – Paid by the Linear Foot of Road
Second Contractor – Paid by the Acre of Cleared Area
Contract Documents

• Specified the Roads would be Graded to Between ±3 and ±10 inches along a Straight Line Between Natural Grade on the Two Sides of Cleared Footprint
Surveyed Elevations of Degraded Road and Planned Profile with 3”, 6”, and 10” Deviations.
Landscape Features Requiring Modification of Contract Specifications

Natural Mound

???

Planned Profile

Degraded Profile

Wetland Depression
Landscape Features Requiring Modification of Contract Specifications

- Elevation (ft)
- Planned Profile
- Degraded Profile
- Bedrock Outcrop

Range (feet)
Section "I"
28th Ave SE
Landscape Features Requiring Modification of Contract Specifications

A. Fire Dozer Line Spoil Berm Not Part of Project
B. Wetland Slough Crossing the Road

A

Fire Bulldozer Line

B

Survey Line +3”,6” 10”
Slough 3 ft Deep
1.6 PLUG CANALS

INSTALL CANAL PLUGS ON MERRITT CANAL AT THE FOLLOWING LOCATIONS:

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FILL FOR CANAL PLUGS SHALL BE OBTAINED FROM BERM AND ROAD DEGRADING. SEE CONSTRUCTION DRAWINGS FOR PLUG DETAILS AND ACTUAL GRID LOCATIONS.

CONTRACTOR SHALL DEGRADE ALL SPOIL PILES ALONG CANAL. THIS MATERIAL SHALL BE USED FOR THE CONSTRUCTION OF CANAL PLUGS.
Picayune Logging Trams (~40 Miles)

Found by Contractor

I Located Them

Eliminated by Road or Canal Construction
Knowledgeable Staff

- Know Natural Characteristics and Processes Being Restored
- Understand Project Goals and Design
- Regular and Consistent Involvement in Construction Activities
- Can Handle Working in Remote Areas and Sometimes Very Uncomfortable Conditions
Need to Think Long Term