



# AGFC Fisheries Division Large Scale Habitat Projects

Cody Wyatt - AGFC Fisheries Habitat Biologist





# Cody Wyatt

## Arkansas Game and Fish Fisheries Habitat Biologist

- Arkansas Tech University
- 11 years with AGFC
- Grew up in North-Central AR
- Hobbies
  - Hunt and Fish
  - Spend time in outdoors with my family





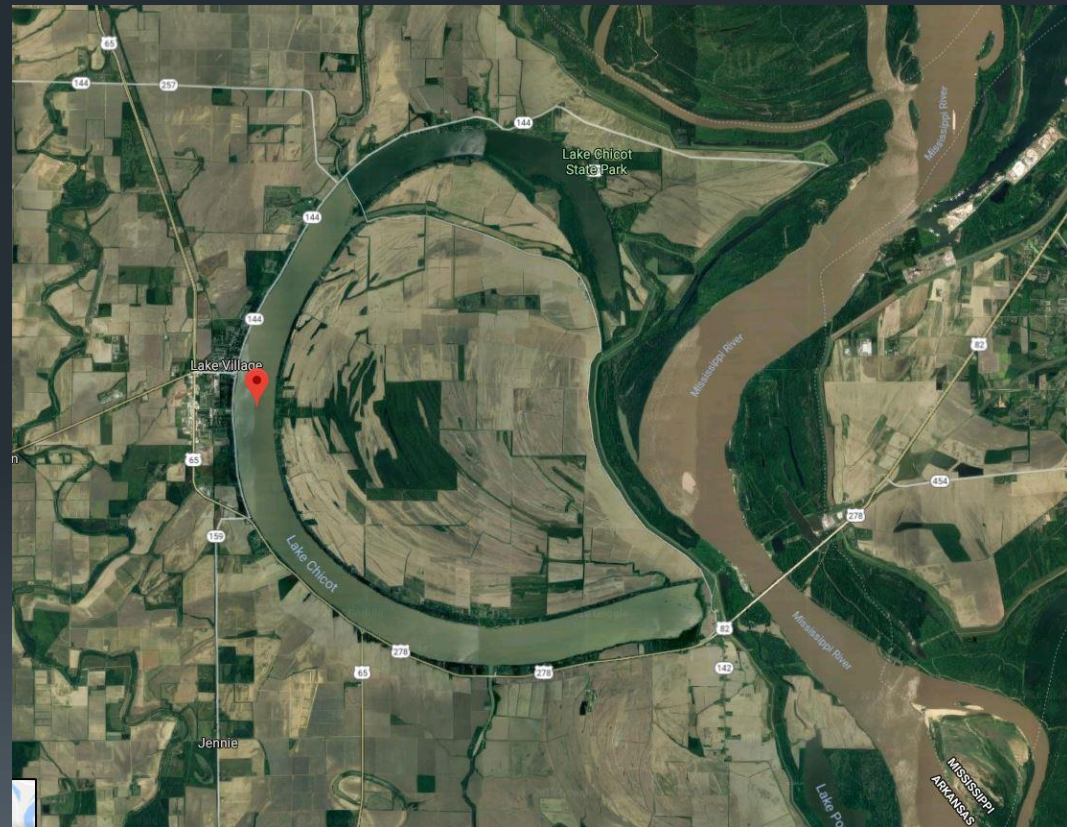
# Timeline

- Fisheries Strategic Plan – 2016
- Greers Ferry Project – Sept/Oct 2016
- Lake Chicot Project – May/June 2017
- Bull Shoals Lake Project – Nov/Dec 2017
- Lake DeGray Project – June 2018
- Lake Monticello Project – September 2018
- Norfolk Lake – Scheduled for Nov/Dec 2018



# Lake Chicot

- Oxbow Lake of the Mississippi River
- ~ 5,000 Acres
- Very South-East corner of AR
- Chicot County, Lake Village





# Project Planning

- Hurriedly Planned after Bull Shoals Project Cancelled
- Needed to be Artificial
- Decided on Standing PVC “Trees”
- Project Leaders
  - Week 1 – Cody Wyatt
  - Week 2 – Mike Sundberg
  - Week 3 – Diana Andrews
- Short timeframe to gather and order supplies





# Construction

- Each Structure:
  - 1 – 10' x 4" Sewer Pipe
  - 9 – 10' x 3/4" Pipe
  - 1 – 10' x 1" Pipe
  - 1 – Concrete Block
  - Screws





# Construction

- All pipes cut with chop saws
- Exhausting amount of drilling





# Construction/Deployment

- Fabricated in the Work Yard
- Constructed on the Bank
- Loaded onto Barge and Deployed







# Project Scope

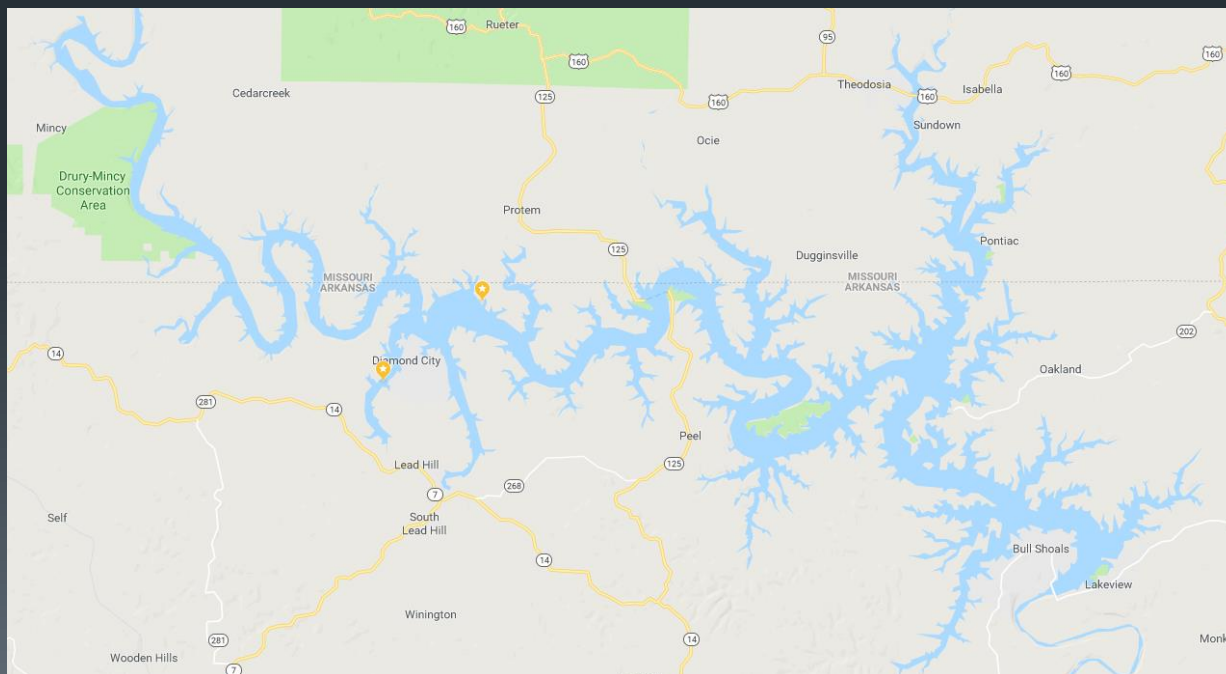
- 3 Work Weeks (15 Days of Effort)
- 492 Structures Built and Placed
- Placed in 26 Locations
  - Original Habitat Sites (15 sites)
  - New Habitat Sites (7 sites)
  - Fishing Piers (4 sites)
- Project Cost (Estimated)
  - \$42,527 Total
    - \$18,927 Supplies
    - \$7,600 Travel
    - \$16,000 Salaries
  - \$86.44 per structure





# Bull Shoals Lake

- 48,165 Acres (27% in MO)
- North-Central AR
- Corps of Engineers Owned
- Mostly in Boone and Marion Counties
- Harrison – Mountain Home





# Project Planning

- MOU updated with the USACOE
- Use trees cut from bank
- Sites were scouted for feasibility
- Use concrete blocks and wire for anchors
  - Trout Habitat Program handled block logistics
- Need chainsaw safety certification
- Postponed due to high water
- Decided to roll the dice for Fall 2017



# Sinking Trees

- Trees cut from shore
  - Cedar, Oak, Sycamore, Ash, Hickory, Persimmon





# Sinking Trees

- Rope attached and tree(s) pulled to waters edge





# Sinking Trees

- Blocks tied to tree and dragged out to desired depth





# Project Scope

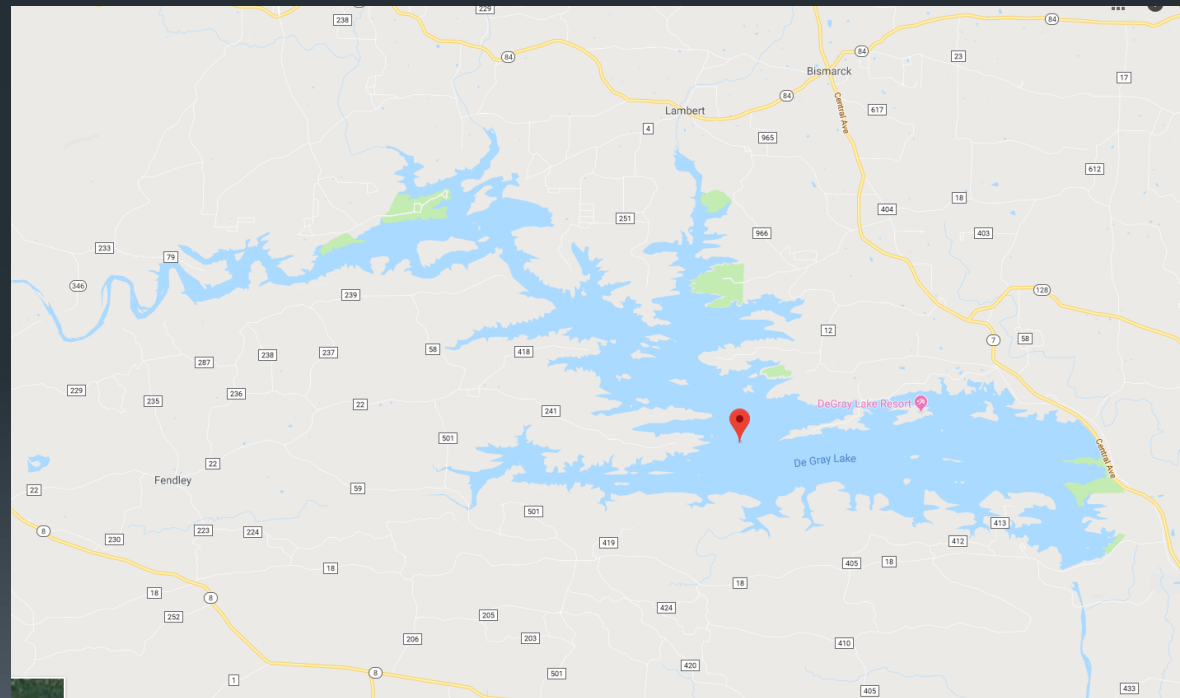
- Lower Section of Lake
- 125 Sites Replenished/Created
- 650 Trees Sank
- Project Cost
  - \$60,528
    - Salaries - \$46,608
    - Travel - \$8,041
    - Supplies - \$5,879
  - \$93 per structure





# DeGray Lake

- 13,800 Acres
- CORPS Reservoir
- Hydro-Electric and Water Supply Lake
- Hot Springs - Arkadelphia
- Clark - Hot Springs Counties







# Project Planning

- Georgia Cube Design
- CORPS Approval
- Material Purchase
- Mid-Lake Section
- State Park Pavilion chosen for assembly and deployment





# Construction

- Georgia Cube
  - 1.5" PVC (12 – 3.5' sections)
  - 8 – Corner couplers
  - 50' of 4" Drain pipe
- Holes drilled to prevent buoyancy
- Concrete block attached to hold down





# Construction

- All PVC cut into 3.5' sections
  - 2,880 pieces
- Drain pipe cut into 50' sections
- Cubes assembled with PVC glue
- ½" holes drilled throughout cube





# Construction

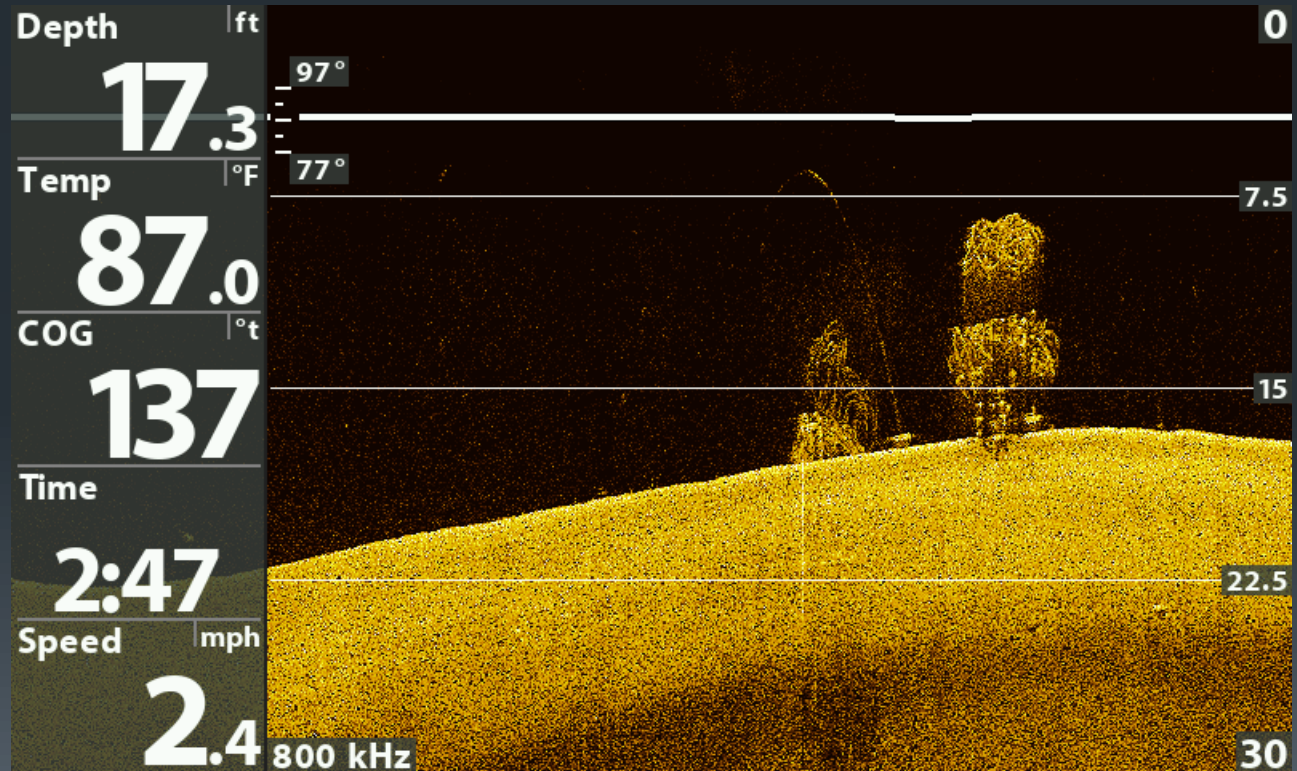
- Cubes are then wrapped in drain pipe
- Use zip-ties
- Random weave





# Deployment

- Loaded onto barges
- Sank using a concrete block
- Placed in 10 cubes per site
- Placed in 10'-25' water depths





# Project Scope

- 240 cubes placed
- Placed on 24 sites
- Placed in mid-lake section
- All done in 1 day!
- Cost =  
~\$70/structure





# Lake Monticello

- 1520 Acres
- SE Arkansas
  - Drew County
- Water Supply
- Owned by City of Monticello





# Lake Monticello

- Trees removed from bank using large equipment
- Placed in windrows 75 – 100 feet long
- 3-7 feet water depth







# Lake Monticello

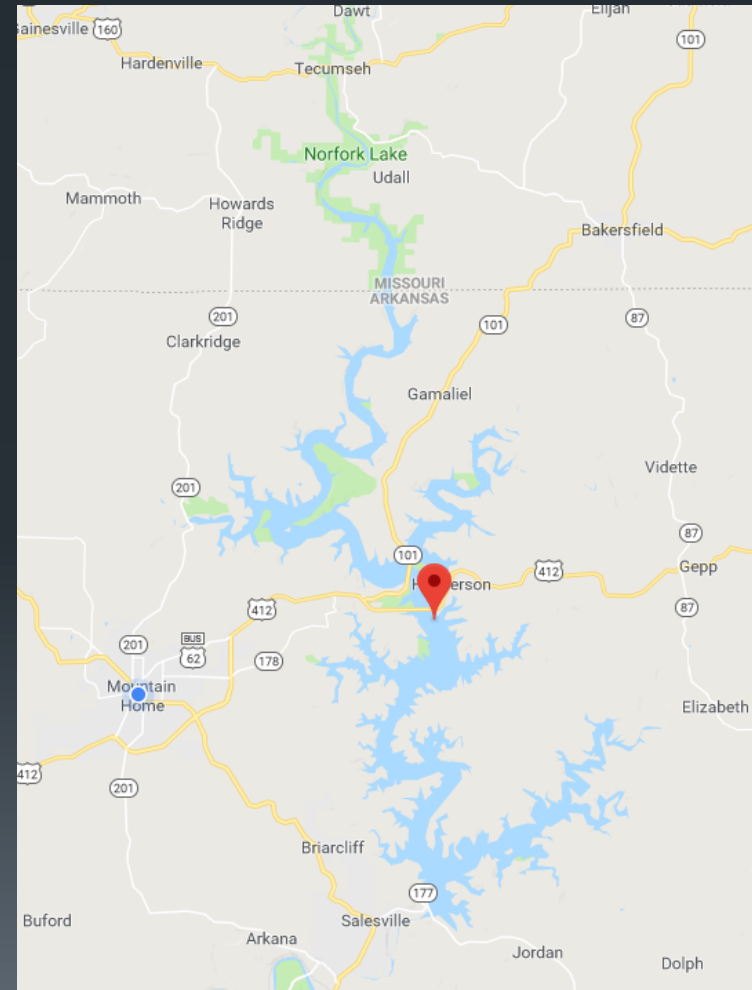
- Windrows anchored using cable and duckbills
- 32 windrows completed
- 2 3-person crews to anchor
- Project Cost
  - \$125/hr for contractor
  - \$300 per windrow





# Next Up

- Norfolk Lake – Mountain Home, AR
- Scheduled for two weeks after Thanksgiving
- Same project design as Bull Shoals Project





# Summary

- Important to get word out
- Anglers react positively
- More evaluation both biological/sociological
- AGFC Fisheries Division has proven capable



# Questions?

