

HENRY GRAY HURRICANE LAKE WMA DEADENING

Currently, more than 1,000 acres of bottomland hardwoods within the South GTR at Henry Gray Hurricane Lake WMA have either recently died or are near death from severe stress due to prolonged flooding during the growing season for several consecutive years.

History of Greentree Reservoir (GTR)

- Prior to AGFC ownership, these bottomland hardwoods were intensively managed and harvested as an even-aged forest.
- AGFC began acquiring land for the WMA in the late 1950s and started installing infrastructure to provide wintering waterfowl habitat.
- Select cuts in the 1980s and 1990s have occurred in the GTRs to promote oak saplings that were shaded out.
- Flooding of both GTRs is dependent upon rainfall and elevated river levels within the adjacent White River. Historical water management for these GTRs involved closing all water control structures within the GTRs beginning October 1 each year to artificially hold water for the upcoming waterfowl season.
- Following 1999 and 2007 GTR forest health assessments, GTRs on this WMA

were among the healthiest in the AGFC's holdings.

Problems Arise

- Problems first detected from data gathered in 2014 forest health assessments (following multiple years of prolonged inundation throughout growing seasons):
 - More than 40 percent of all trees in Hurricane Lake GTRs were showing serious water stress at that time.
 - Emergency action was taken to delay infrastructure operation on Hurricane Lake GTRs in 2016 from October 1 until November 15.
 - Public meetings on greentree reservoir management were held throughout east Arkansas in 2016-2017 to explain need for changes on all AGFC GTRs.
 - GTR review completed on Hurricane Lake WMA in 2017
 - Infrastructure changes to improve



drainage and water management identified.

- ° Aerial footage collected in September 2018 indicated that over 200 acres of trees have recently died and another 800 acres of trees are near death. Aerial footage also confirmed similar concerns for forest health within the North GTR.

High water from 2012-2017 on White River degraded forest health

- Ten of the top 25 historical crests of the White River at Augusta have occurred in the last 11 years.
- Water enters the GTRs when the White River reaches roughly 24 feet at the Augusta gauge.
 - ° River levels exceeded this stage for several months during the growing season during the last 6 years.
 - ° 2015 and 2017 saw river levels over 24 feet from March 1 until late summer.

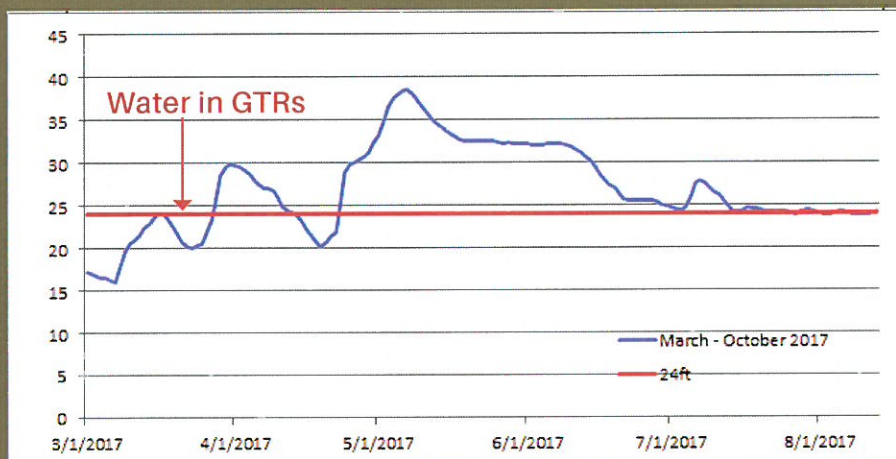
Where to go from here:

- Comprehensive forest health inventory being performed assessing forest health on approximately 8,400 acres (including areas outside the GTRs).
- Collect acorns of desirable oak species from within Hurricane Lake WMA and propagate to establish new generation of desirable forest in areas experiencing significant mortality.
- Obtain additional aerial footage to further investigate current status of forest health conditions within the North GTR.
- Recommend to leave all four water control structures on south GTR open during 2018-19 waterfowl season and into foreseeable future.
- Currently working on engineering/design plans to remove and replace infrastructure to facilitate better drainage to the Little Red River (along the southern border of the South GTR).
- Working on permit applications with the U.S. Army Corps of Engineers to mulch and restore drainages and renovate infrastructure within both GTRs



*Water on green timber on July 12, 2017
(Augusta Gauge at 25.57)*

- Open remaining forest canopy around the damaged areas during summer 2019 to increase sunlight and promote natural oak regeneration. Management actions to include:
 - ° Salvage cut if conditions allow.
 - ° Forest stand improvements such as thinning and injections to undesirable understory species.
- Continue to improve natural flow of water through the GTRs.



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*White River level at Augusta,
March-October, 2017*

AREA OF CONCERN



