

# **Forest management and extreme drought: Lessons learned from a Texas disaster**

## **Introduction**

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# The Entire State Of Texas Has Been Declared A Natural Disaster



Robert Johnson



Jun. 30, 2011, 7:15 AM

24,689

CNN Money

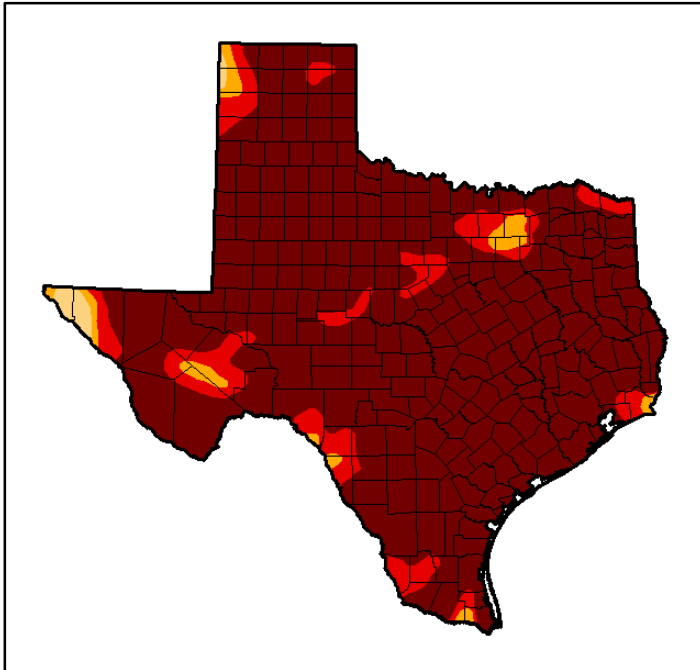
Companies

Markets

Tech

Media

October 4, 2011 - Peak



U.S. Drought Monitor, State of Texas

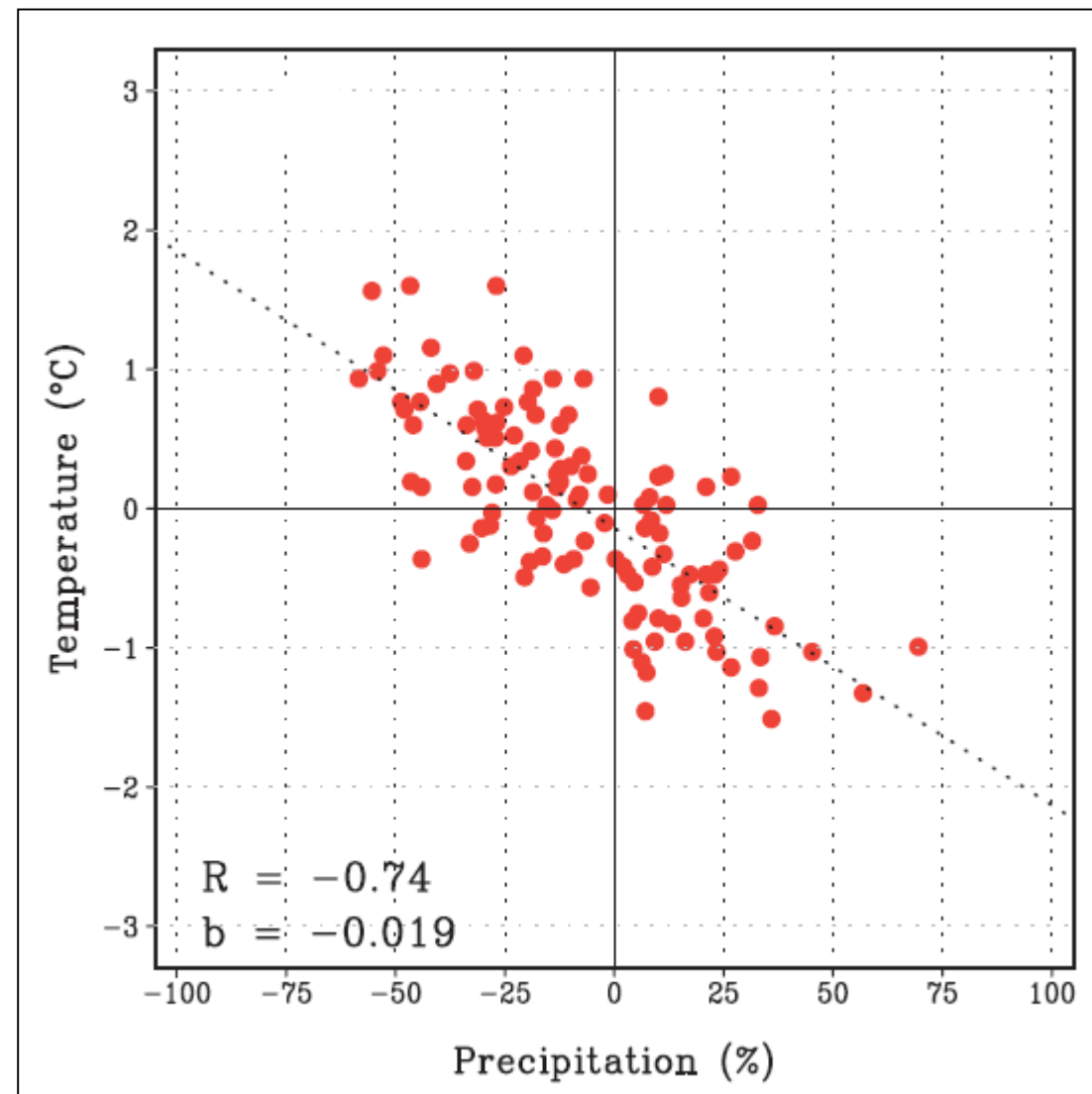
## Wildfires and drought cost Texas billions

By Aaron Smith @CNNMoney September 8, 2011: 1:44 PM ET

### 2011 was Texas' driest year on record

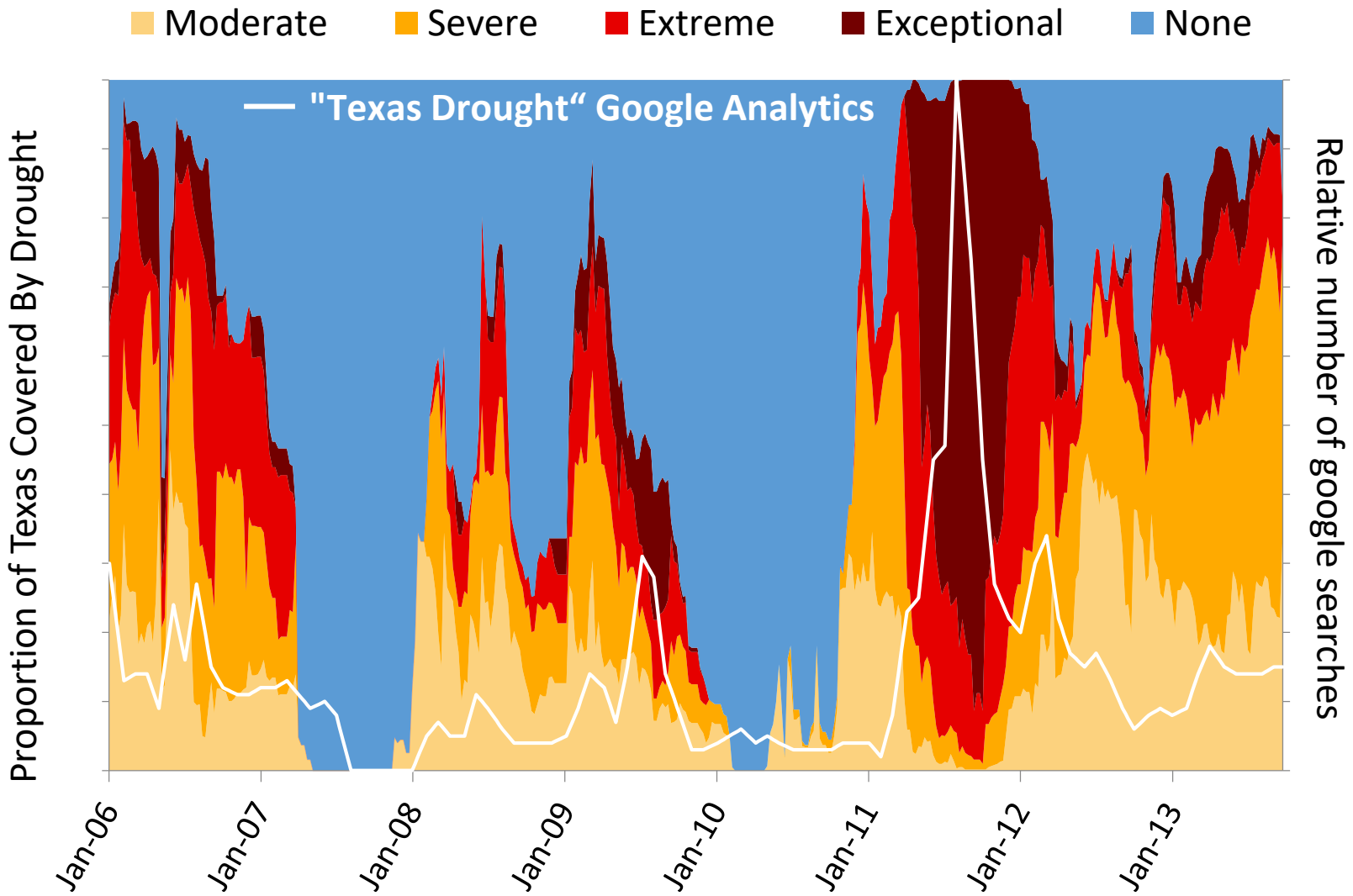


# Texas summer temp and precipitation deviations 1895-2011

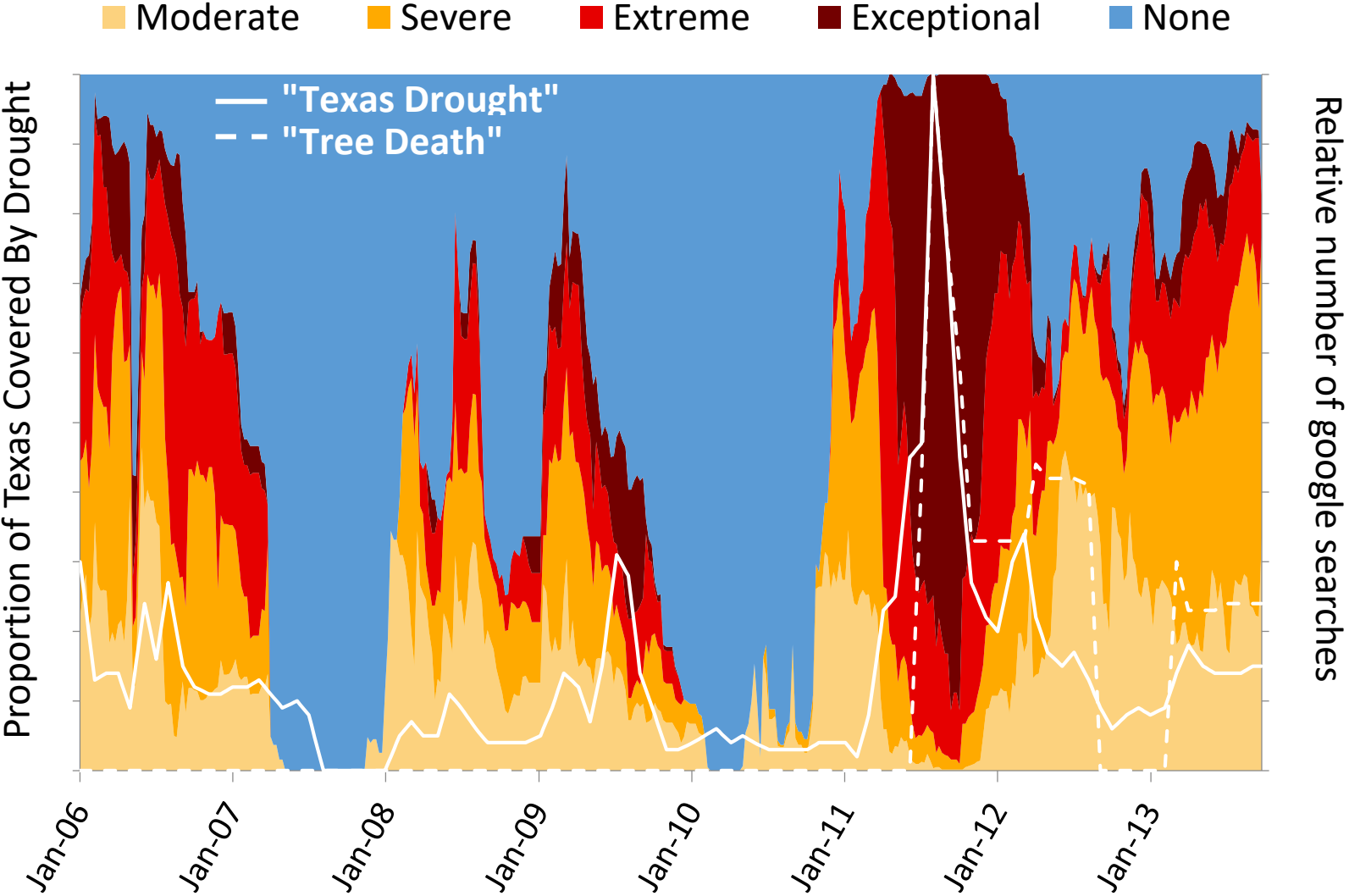


Hoerling et al. (2013)

# A public threshold in perceiving drought effects



# A public threshold in perceiving drought effects on trees



# Extensive Tree Survey

- Texas A&M Forest Service asked to estimate numbers of dead trees. Installed 599 plots in 8 months of 2012. Identified mortality to genus.
- We estimated 301 million trees died in the drought (Moore et al. 2016).

Forest Coverage in Texas

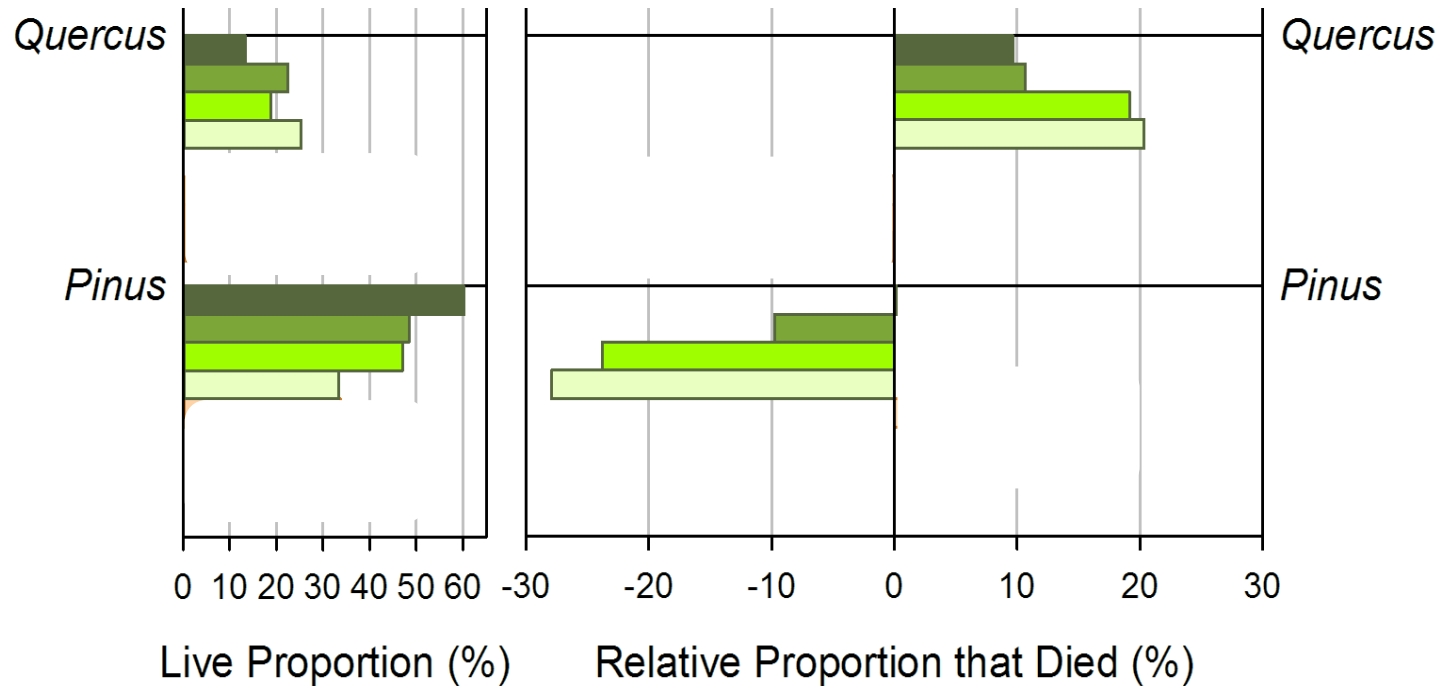


# Drought Effects By Genus: Oak and Pine in East Texas

USFS Forest Inventory Analysis  
 Genera Proportion on Landscape

<  
 than  
 expected  
 mortality

>  
 than  
 expected  
 mortality



Regions of east Texas

- NW East
- NE East
- SW East
- SE East

# 'Drought' research at the University of Florida

- **Restored pine flatwoods:** Forest growth and water cycling
- **Longleaf pine:** Inter-tree competition and individual tree growth
- **Loblolly pine:** Intensive management approaches and drought sensitivity

