Southern Plains DEWS Activities 2011-2015

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Multi-Hazard Context
Historical Droughts in Oklahoma

Annual Precipitation History with 5-year Tendencies
Oklahoma Statewide: 1895-2014

Wetter periods
Drier periods
Annual precipitation value

SCIPP
A NOAA RISA TEAM
How We Deal With Drought

We have enough water to last a couple of years.

That’s why we have insurance.

Dry years are always followed by wet years.

GEORGIA: State climatologist fired suddenly amid record drought.
Causes of Drought?

- Stationary high pressure over a wide regional area
  - Ridge set up over the region and sat all summer

- Feedback from Dry Soils
  - Dry soils heated rapidly, increased evaporation

- La Nina during winter & spring
  - Dry winter and spring set stage for soil feedback

- Cool northern Pacific, Warm Atlantic
  - Dry soils

- Widespread drought impacts observed in numerous ecological and economic sectors
2011 Southern Plains Drought Impacts

At least $12B in crop and livestock losses

Lowest cattle inventory in decades

Record low water supply

Most severe wildfires in Texas, New Mexico

History

Infrastructure: cracked pavement, foundations, water main breaks - 700 a day in Houston at peak

100-500 million trees killed (Texas Forest Service estimate)

In Mexico, 2.5M people in 1,500 communities lacked drinking water
Even as Rainfall Returned to Normal, Sub-Surface Water Issues Lingered

Lower Zone Soil Moisture Anomaly
NWS River Forecast Center
Arkansas-Red Basin
Reservoir Monitoring (coming soon!)

http://www.southernclimate.org
All of this combined into a single weekly product.
Drought Monitor Development Process

**Monday (5 Days available)**
- Draft map sent to local experts

**Tuesday (6 Days available)**
- Local expert feedback
- Draft map sent to local experts
- Draft text sent to local experts

**Wednesday (7 Days available; ending 12Z yesterday)**
- Local expert feedback
- Draft map(s) sent to local experts
- Draft text(s) sent to local experts (Outlook)
- Final map and text sent to secured ftp server

**Thursday**
- Final map & text released on NDMC Website

Source: National Drought Mitigation Center
Southern Plains Drought Early Warning System

Partnership with NOAA, RISA, NDMC, NIDIS, AASC

Host forums, workshops, and webinars addressing current regional drought issues

21 webinars and 60 drought briefings, which are available on SCIPP’s website and YouTube
http://www.southernclimate.org

Discuss impacts and management strategies

Promote planning and preparation
Outlook and Assessment Forums

In-person meetings (Austin, Fort Worth, Lubbock, Abilene, Goodwell, Wichita Falls)

Evolution, current conditions & outlooks

Panel discussions of impacts & management strategies

Outcomes:
• Improved communication
• More guidance on product interpretation
• Explanation of causes
Webinar Series

Bi-weekly (now as-needed)

Overview of regional drought conditions and outlook
  • led by the Drought Monitor authors

Discussion Topic
  • Mix of technical and sector-specific information
  • Presenters from multiple states, organizations

Comments & Updates from State Climatologists

Recordings posted on YouTube
Drought Briefings

Needed to manage the workload
• Several days to plan, produce and summarize each webinar
• Difficulty in arranging presenters
• Patience to watch hour-long webinars

…but needed to keep people engaged and updated

Briefings still draw a regular audience
• Fairly low overhead
• Keeps people engaged so can go to them for further information
• Can help recruit participation in other events (workshops, forums, studies)
• Expand into short videos on topics?
Field Photos Weekends

- “Pictures of Drought”
- Understanding comparison between indicators and impacts
- Photos taken nationally at about the same time
- Collaborated with CoCoRaHS, Earth Observations and Modeling Facility
- Conducted 3x annually since 2012
Field Photos Weekends

- Conducted 3x annually since Labor Day 2012
  - Presidents Day (February)
  - Memorial Day (March)
  - Labor Day (September)
- Goal: to collect nearly simultaneous observations across the whole country
  - Both drought and non-drought areas
- Longitudinal analysis if repeat observers
- 3,681 photos collected to-date
What’s Wrong With This Picture?
Thank You!

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