

Regional climate services in response to the Southern Plains drought, 2010-2012



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OVERVIEW



- **Setting the stage**
 - Onset and evolution of the 2011 drought
 - Existing regional climate services capacity
- **Implementation of a coordinated response**
 - Regional outlook and assessment forums
 - Regional drought management webinars
 - Media engagement and outreach
- **What We Have Heard**
- **Benefits, challenges, and questions**

Setting The Stage



- 2011 drought was predicted
 - CPC outlooks picked up on it as early as Nov 2010
- But, rapid intensification and extreme magnitude were not
 - Only partially explained by La Nina – need for further attribution work
- Aggressive and intense nature of the drought left many constituents struggling to prepare for and respond to its impacts
- 2012 recovery (in parts) largely unexpected

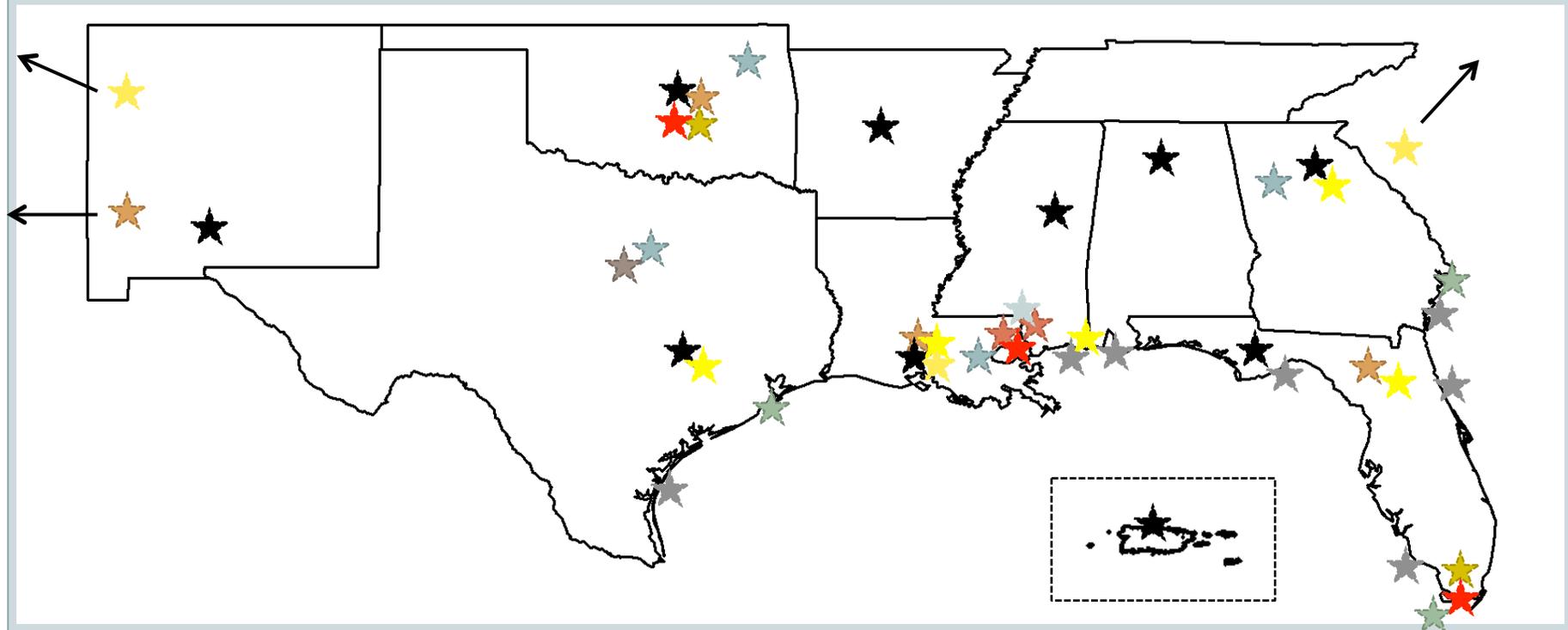
Climate Services Capacity



- Many climate services entities in the region

Climate Services Capacity

- | | | |
|--------------------------|------------------------|----------------------------|
| ★ Data Centers | ★ Marine Sanctuaries | ★ Sea Grant |
| ★ Laboratories | ★ RISAs | ★ Natl. Estuarine Reserves |
| ★ River Forecast Centers | ★ Reg Climate Centers | ★ Cooperative Institutes |
| ★ NWS Regional HQ | ★ State Climatologists | ★ Program Offices |



Examples of NOAA Southern Region climate services activities

Climate Services Capacity



- Many climate services entities in the region
 - NOAA centers/offices: NWS, NCDC, NIDIS, etc.
 - NOAA core partners: RISA, RCC, SC, NDMC
 - Interagency partners: USGS, FWS, USACE, states
- But, historically a lack of coordination in “real-time” response to evolving climate impacts
- The 2011 drought created an opportunity to coordinate a multi-faceted, regional response among multiple climate services partners

The Chasm Between Us



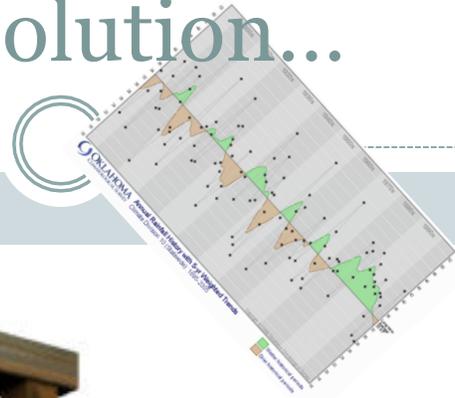
Practitioners



Scientists



One Solution...



...A Better Solution?



A Coordinated Response



- Purpose: identify opportunities for delivery of drought information, products and services, coordinated among regional climate partners
- Ringleaders:
 - National Integrated Drought Information System
 - Southern Regional Climate Services Director
 - Southern Climate Impacts Planning Program
 - Many key supporting players
- Approach: three-tiered effort to meet user needs for information and services

Outlook & Assessment Forums

- Austin (July 2011)
- Fort Worth (November 2011)
- Lubbock (April 2012)



Outlook & Assessment Forums

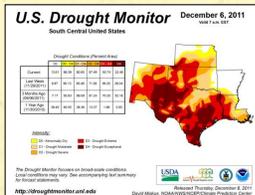


- Morning devoted to drought status and outlook
- Afternoon devoted to panel-based assessments of drought impacts on various sectors
 - Water, Ag, Livestock, Forestry, Wildfire, etc.
- Press conference during lunch for presenters
- Over 80 unique participants from public and private constituencies in TX, OK, NM, LA, KS

Drought Management Webinars

MANAGING DROUGHT IN THE SOUTHERN PLAINS

Webinar Topic: The Cattle Industry
December 8, 2011



Drought Management Webinars



- Designed to build sustained network of users of climate information and products
 - For the 2011 drought, but model can be used for other climate-based management challenges
- Ten webinars from September thru April plus 3 briefings
- Summary of current conditions, state reports from SCs, and topical focus with invited experts
 - Water resources, cattle, La Nina, “flash drought”, etc.
- Over 190 unique participants to date

Media Engagement & Outreach



Media Engagement & Outreach



- Media has somewhat unique requirements for information delivery, format, and timeliness
- Thus, need to engage as a distinct constituency
 - Media-specific webinars (April and May 2011)
 - Press conferences and advisories for outlook forums
 - Participation in NOAA winter outlook teleconference
 - Press releases and op-eds to regional media outlooks
- Several hundred media “contacts” since April
 - NYT, WaPo, USA Today, WSJ, AP, Reuters, Dow Jones, NPR, CBS, ABC, Fox, VoA, Univision, local outlets

What We Have Heard



- Magnitude of the drought and heat was unprecedented
 - Summer temperatures broke previous records by more than 2 degrees
- Temperature-driven aspects (high evaporation rates) caused severe drought in fringe areas
 - Record flooding in Arkansas in spring turned to severe drought by July
 - Underscores importance of *systematic* reporting and temperature-based indicators

What We Have Heard



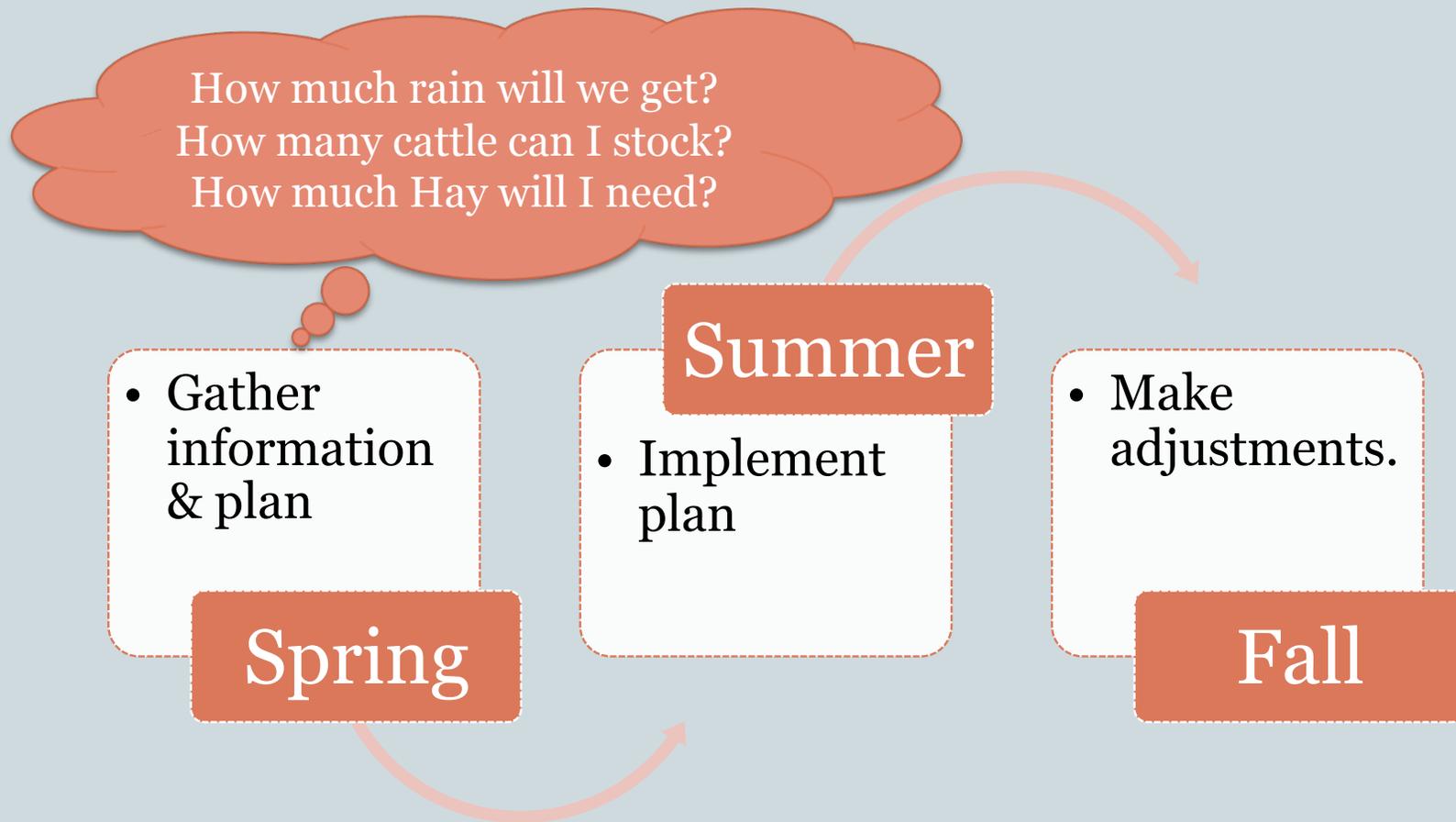
- Record low flows on Rio Grande, Lower Colorado and Brazos Rivers
 - Depleted soil moisture and aquifers make recovery unlikely in Rio Grande this year
 - Curtailment of contracts in Lower Colorado with impacts to rice farming
 - Evaporation rates 13-18% higher than planning criteria
- Low runoff and flow leads to environmental problems
 - Proliferation of blue-green algae
 - Salinity issues

What We Have Heard



- Agricultural losses more than \$9 billion
 - \$2.8 B payouts from USDA Risk Management Agency
- Cattle inventory declined 12-16%
 - Cushioned by higher prices
 - Delayed national plans of increasing inventory
 - Long-term rebuilding efforts face higher costs and shorter supplies of genetics
 - Bright spot: opportunity to improve genetics
- Imported forage = new weeds and grasses
- Dwindling water supplies = higher mineral concentrations

Cattle Decision-Map



Cattle Decision-Map



Should I wean calves early?
Should I supplement feed?
Should I rotate pasture?

Summer

• Gather information & plan

Spring

• Implement plan

• Make adjustments.

Fall



Cattle Decision-Map



Will there be enough water?
Will there be enough feed?
Can I afford it?

- Gather information & plan

Spring

Summer

- Implement plan

- Make adjustments.

Fall



What We Have Heard



- Wildfire forecasts improving
 - 30 to 60 day outlooks for planning
 - Up to 8 days detailed outlooks for positioning resources and staffing
- Juniper mortality and lack of fine fuels wildcards
- Prescribed burning still possible in drought but need to consider pasture recovery process
- Whitetail deer, pronghorn sheep, bobquail white populations affected
- Relocation of shiner and mussels as tributaries dried

Benefits, Challenges, Questions



- **Short-term benefits:**
 - Improved climate services delivery to diverse users
 - “Best practices” for responding to emerging drought
- **Long-term benefits:**
 - “On the ground” implementation of interagency agreements for climate (DOI-NOAA, WGA-NOAA, etc.)
- **Challenges and questions:**
 - How to maintain momentum with users, after drought has ended? Is the model portable to other regions, and for other climate-based management challenges?

Thank You



SCIPP

Southern Climate Impacts Planning Program