



Texas Forest Service

# Drought Symposium

February, 8 2012

Conserve Protect Lead

# TEXAS

## The Lone Star State:

- has 171 million acres
- has 25 million residents
- has 254 counties
- has 63 million acres of forest land
- has 95 percent private land
- is one of three natural disaster states in the US



# TEXAS FOREST SERVICE

- Texas Forest Service has 400+ employees
- About half are assigned as firefighters
- Texas Forest Service responds to just 20 percent of all wildfires, but those wildfires burn 80 percent of the land that's charred each year



# TEXAS WILDFIRE SEASON – WHY 2011?



Precipitation  
+  
Drought  
+  
Fuel

= *“the perfect storm”*

# SEASON OF FIRSTS

Driest year in Texas history – to 1895;

Most acres burned;

Most homes lost on a single day – 1639

Largest fire in East Texas history – Bear Creek,  
41,050 acres

Longest duration fire – Rockhouse;

Second-longest Fire Season (started November 15,  
2010)

April 4-6, 2011 - 1700 fires, 1.4 million acres;

# Drought in Texas



# TEXAS WILDFIRE RESPONSE – 2011 +

## 2010 – 2011 - 2012 Fire Season

- 419 days
- 30,501 fires
- 3.8 million acres
- 2908 homes
- 9 fatalities



# What's next

The first big fire event of 2011  
Was on Feb. 27.

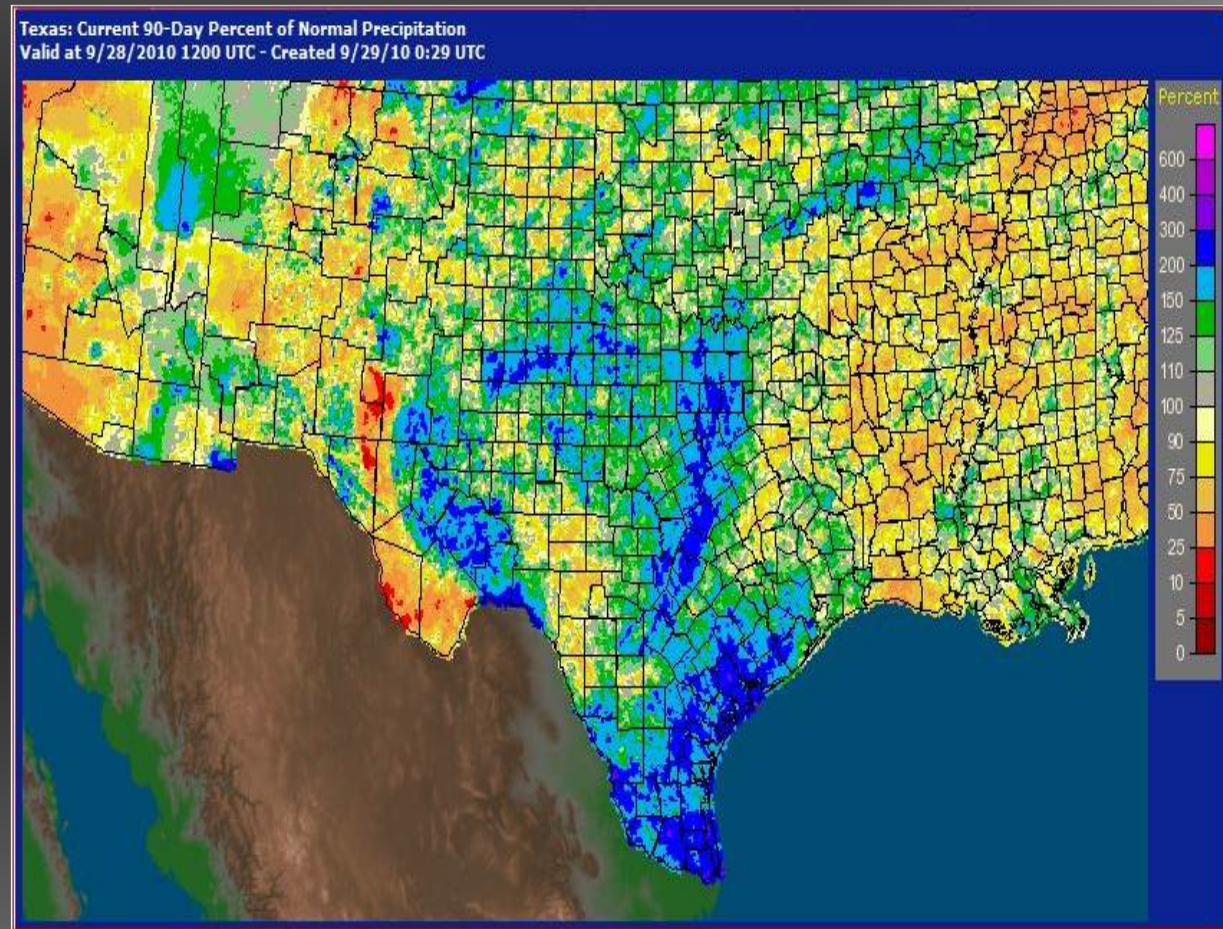
On a single day:  
145 wildfires  
222,233 acres burned  
127 structures destroyed





# Blame it on the rain

Wet first nine months of 2010 caused fuels to “green up,” growing rapidly from the moisture.



# Summer 2011



Hottest summer temperatures ever recorded since 1895.

# Bone Dry



La Nina conditions + no significant tropical moisture in October 2010 - September 2011  
= *driest consecutive 12 month period ever recorded in Texas since 1895.*

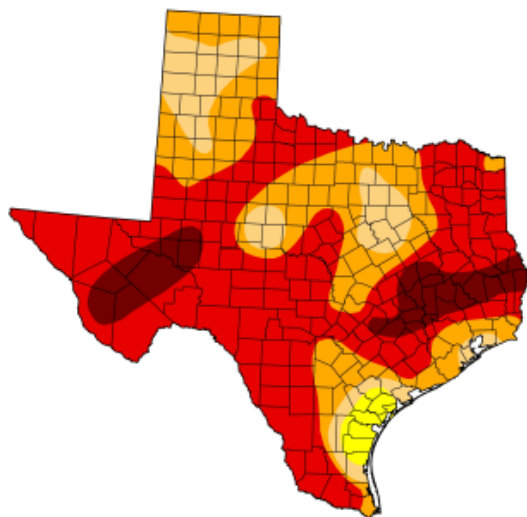
# TEXAS WILDFIRE SEASON - WHY THIS YEAR?

## U.S. Drought Monitor Texas

April 12, 2011  
Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	0.00	100.00	97.94	86.43	60.57	10.03
Last Week (04/05/2011 map)	0.00	100.00	97.99	86.50	60.14	4.81
3 Months Ago (01/11/2011 map)	20.16	79.84	59.13	25.36	9.48	0.00
Start of Calendar Year (12/28/2010 map)	7.89	92.11	69.43	37.46	9.59	0.00
Start of Water Year (09/28/2010 map)	75.57	24.43	2.43	0.99	0.00	0.00
One Year Ago (04/06/2010 map)	95.87	4.13	0.00	0.00	0.00	0.00



Intensity:

- D0 Abnormally Dry
- D1 Drought - Moderate
- D2 Drought - Severe
- D3 Drought - Extreme
- D4 Drought - Exceptional

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

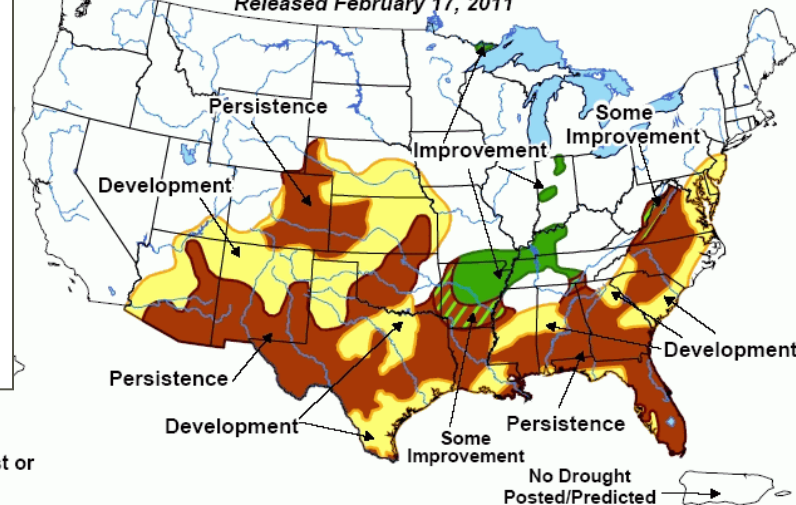
<http://drought.unl.edu/dm>



Released Thursday, April 14, 2011  
Anthony Artusa, NOAA/NWS/NCEP/CPC

Precipitation  
+  
Drought

## U.S. Seasonal Drought Outlook Drought Tendency During the Valid Period Valid Spring (March-May) 2011 Released February 17, 2011



**KEY:**

- Drought to persist or intensify
- Drought ongoing, some improvement
- Drought likely to improve, impacts ease
- Drought development likely

Depicts large-scale trends based on subjectively derived probabilities guided by short- and long-range statistical and dynamical forecasts. Short-term events – such as individual storms – cannot be accurately forecast more than a few days in advance. Use caution for applications – such as crops – that can be affected by such events. "Ongoing" drought areas are approximated from the Drought Monitor (D1 to D4 intensity). For weekly drought updates, see the latest U.S. Drought Monitor. NOTE: the green improvement areas imply at least a 1-category improvement in the Drought Monitor intensity levels, but do not necessarily imply drought elimination.

# TEXAS WILDFIRE SEASON – WHY THIS YEAR?

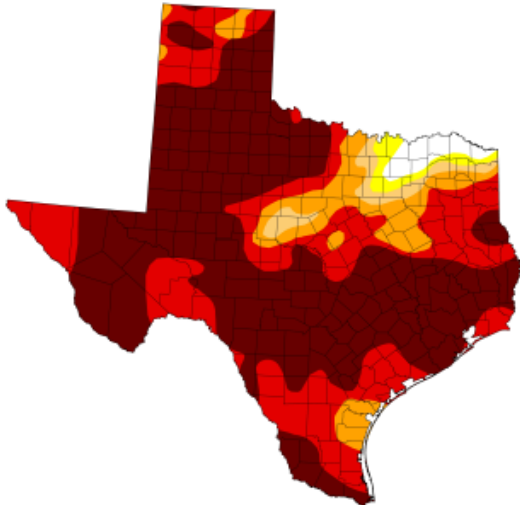
## U.S. Drought Monitor

June 7, 2011  
Valid 7 a.m. EST

Texas

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	1.97	98.03	96.53	94.05	85.41	57.83
Last Week (05/31/2011 map)	2.25	97.75	96.07	91.89	81.09	50.65
3 Months Ago (03/08/2011 map)	8.31	91.69	77.99	53.64	14.16	0.00
Start of Calendar Year (12/28/2010 map)	7.89	92.11	69.43	37.46	9.59	0.00
Start of Water Year (09/28/2010 map)	75.57	24.43	2.43	0.99	0.00	0.00
One Year Ago (06/01/2010 map)	72.71	27.29	9.54	0.00	0.00	0.00



**Intensity:**

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- D2 Drought - Severe
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- D4 Drought - Exceptional

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<http://drought.unl.edu/dm>

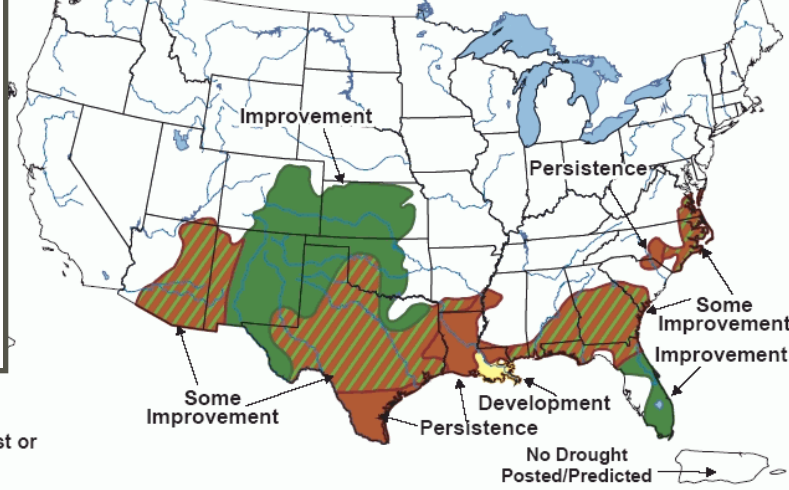


Released Thursday, June 9, 2011  
Matthew Rosencrans, NOAA/NWS/NCEP/CPC

Precipitation  
+  
Drought

## S. Seasonal Drought Outlook Drought Tendency During the Valid Period

Valid May 19, 2011 - August 31, 2011  
Released May 19, 2011



**KEY:**

- Drought to persist or intensify
- Drought ongoing, some improvement
- Drought likely to improve, impacts ease
- Drought development likely

Depicts large-scale trends based on subjectively derived probabilities guided by short- and long-range statistical and dynamical forecasts. Short-term events -- such as individual storms -- cannot be accurately forecast more than a few days in advance. Use caution for applications -- such as crops -- that can be affected by such events. "Ongoing" drought areas are approximated from the Drought Monitor (D1 to D4 intensity). For weekly drought updates, see the latest U.S. Drought Monitor. NOTE: the green improvement areas imply at least a 1-category improvement in the Drought Monitor intensity levels, but do not necessarily imply drought elimination.

# TEXAS WILDFIRE SEASON – WHY THIS YEAR?

## U.S. Drought Monitor

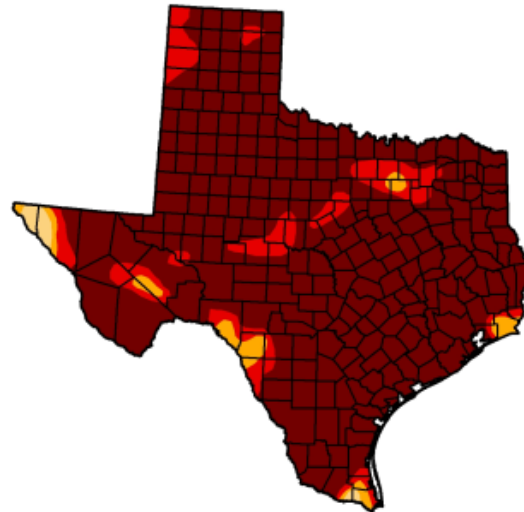
Texas

September 13, 2011

Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	0.00	100.00	100.00	99.17	96.75	87.83
Last Week (09/06/2011 map)	0.00	100.00	99.93	99.01	95.68	81.06
3 Months Ago (06/14/2011 map)	1.97	98.03	96.53	94.77	88.57	64.78
Start of Calendar Year (12/28/2010 map)	7.89	92.11	69.43	37.46	9.59	0.00
Start of Water Year (09/28/2010 map)	75.57	24.43	2.43	0.99	0.00	0.00
One Year Ago (09/07/2010 map)	69.60	30.40	5.25	1.51	0.00	0.00



Intensity:

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- D1 Drought - Moderate
- D2 Drought - Severe
- D3 Drought - Extreme
- D4 Drought - Exceptional

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<http://drought.unl.edu/dm>

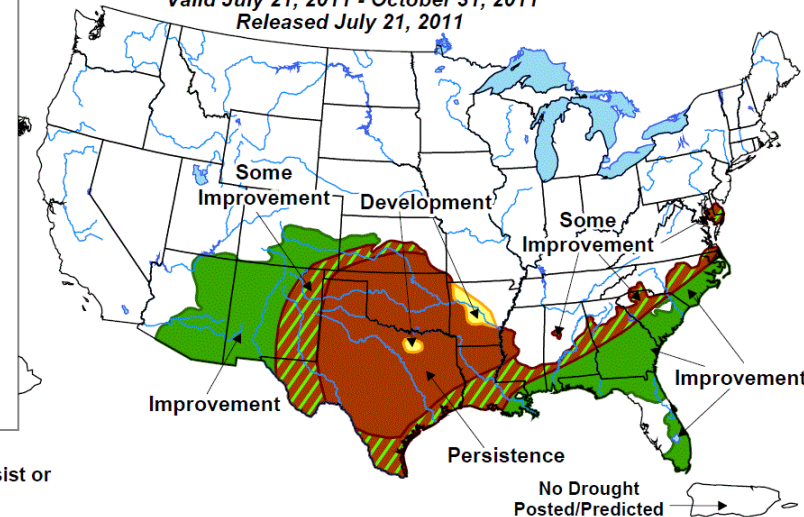


Released Thursday, September 15, 2011  
Mark Svoboda, NDMC

Precipitation  
+  
Drought

## S. Seasonal Drought Outlook

Drought Tendency During the Valid Period  
Valid July 21, 2011 - October 31, 2011  
Released July 21, 2011



**KEY:**

- Drought to persist or intensify
- Drought ongoing, some improvement
- Drought likely to improve, impacts ease
- Drought development likely

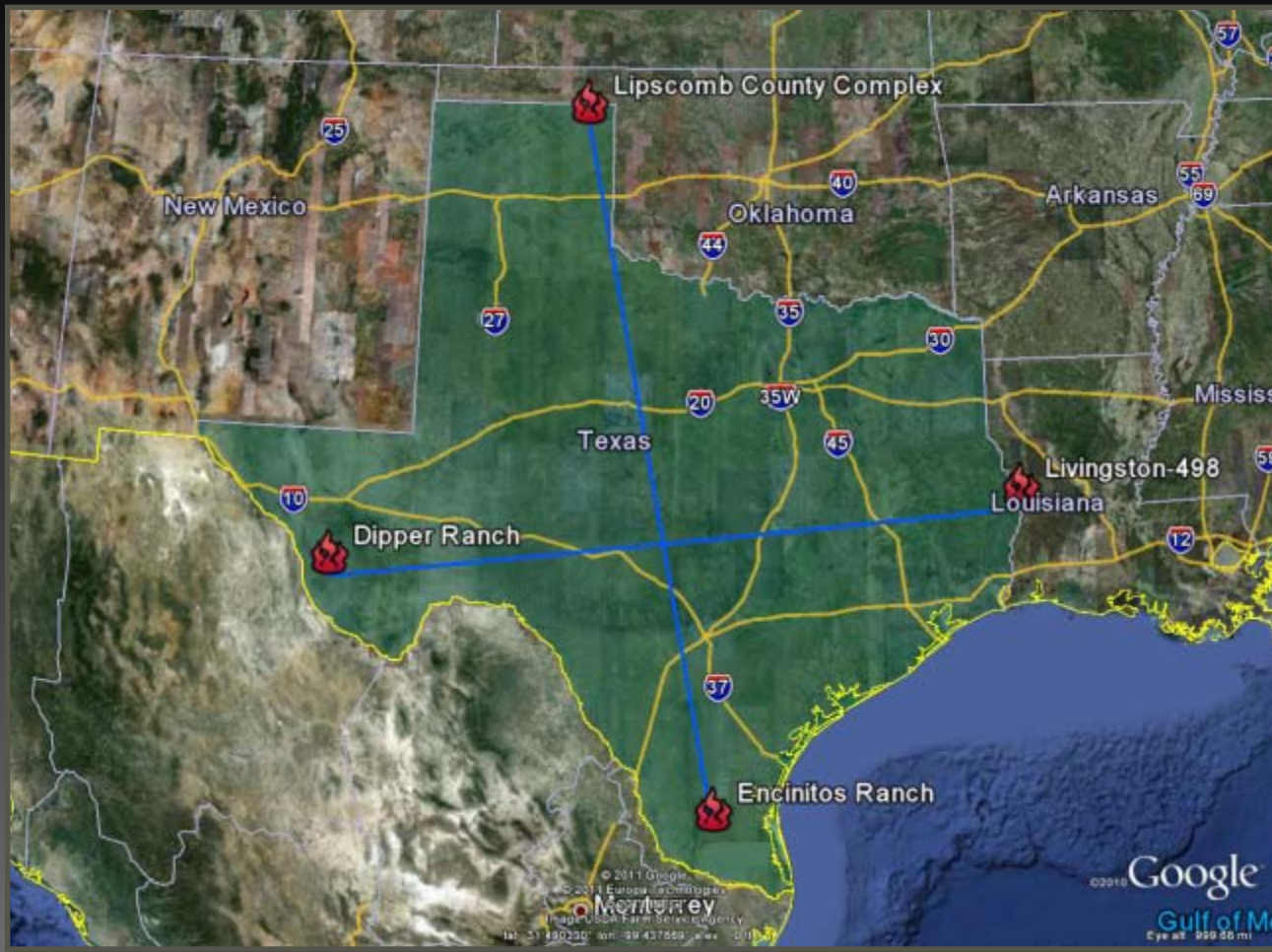
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# Texas Wildfire Response — Overview



Since Nov. 15, 2010	Fires	Acres	Homes Saved	Other Structures Saved	Total Saved	Homes Lost	Other Structures Lost	Total Lost
<b>Total</b>	<b>30,459</b>	<b>3,992,288</b>	<b>39,379</b>	<b>13,019</b>	<b>52,398</b>	<b>3,947</b>	<b>2,791</b>	<b>6,738</b>

# Texas Wildfire Season — Scope of Response



660 Miles North to South  
640 Miles East to West



# RESPONSES APRIL 6 – 30, 2011

- 320 Fires
- 1,517,150 Acres
- 3,314 Homes saved
- 278 Homes lost

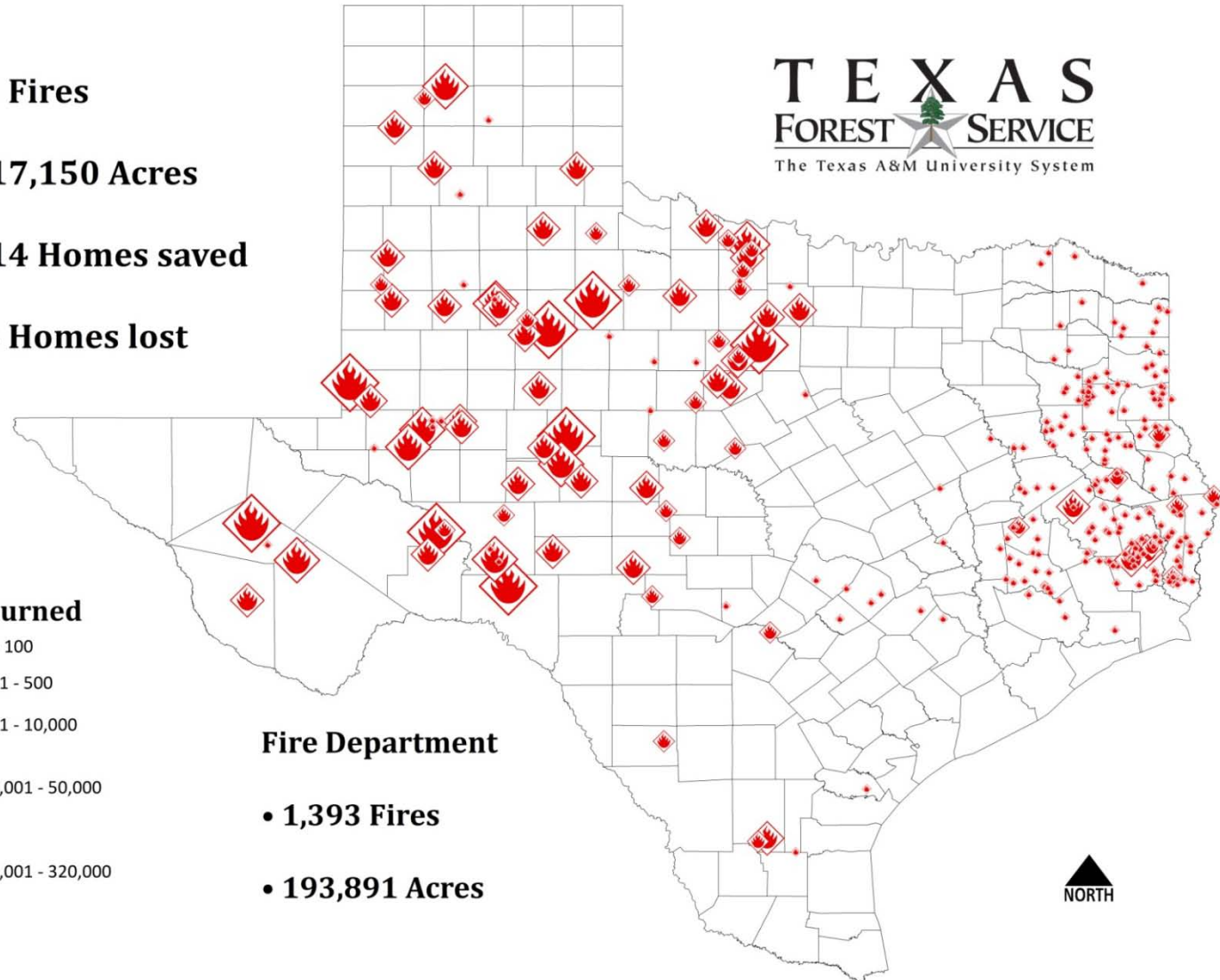
**T E X A S**  
**F O R E S T   F I R E   S E R V I C E**  
The Texas A&M University System

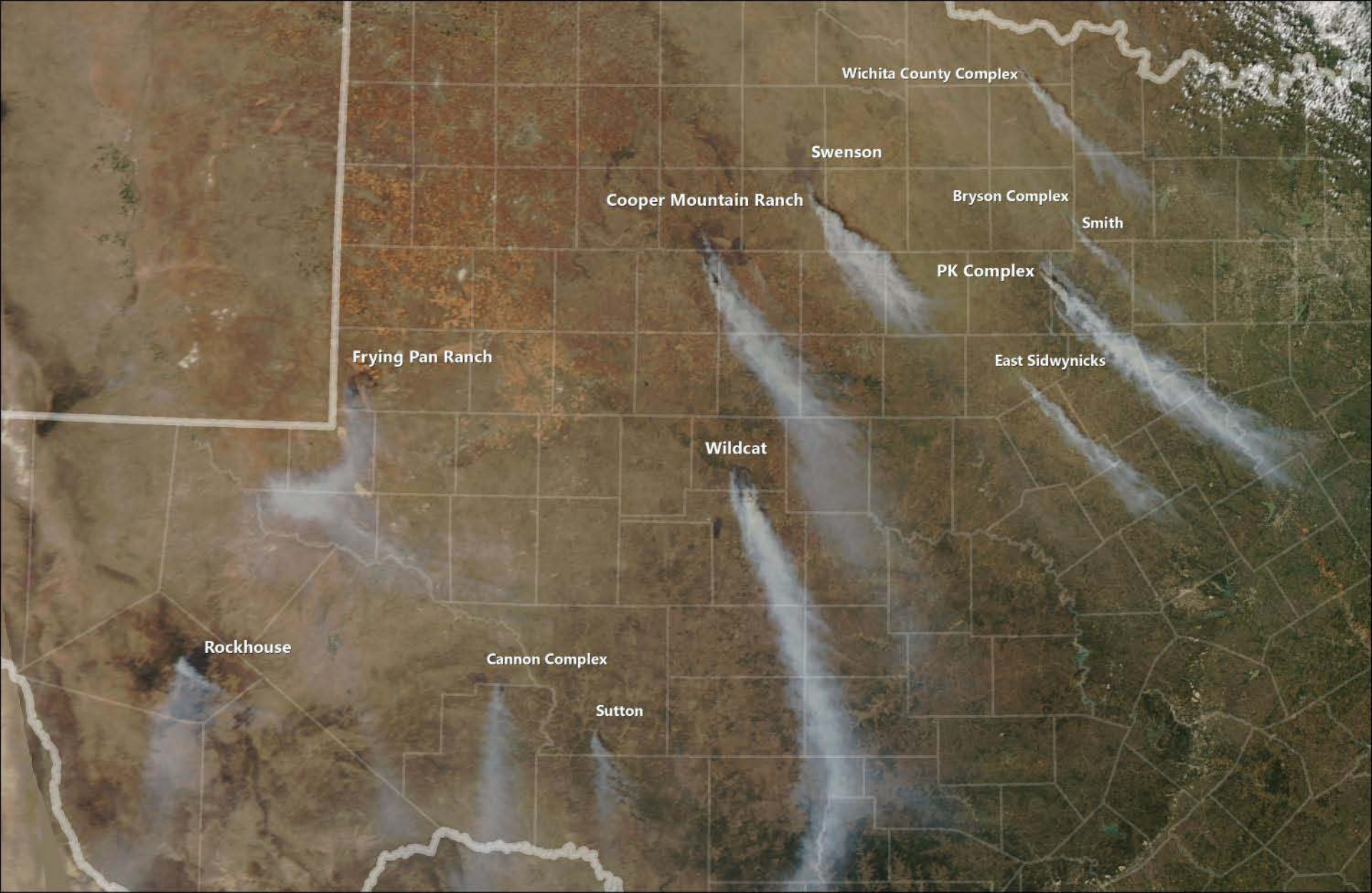
## Acres burned



## Fire Department

- 1,393 Fires
- 193,891 Acres





# West Texas Wildfire Outbreak

April 15, 2011

0 50 Miles



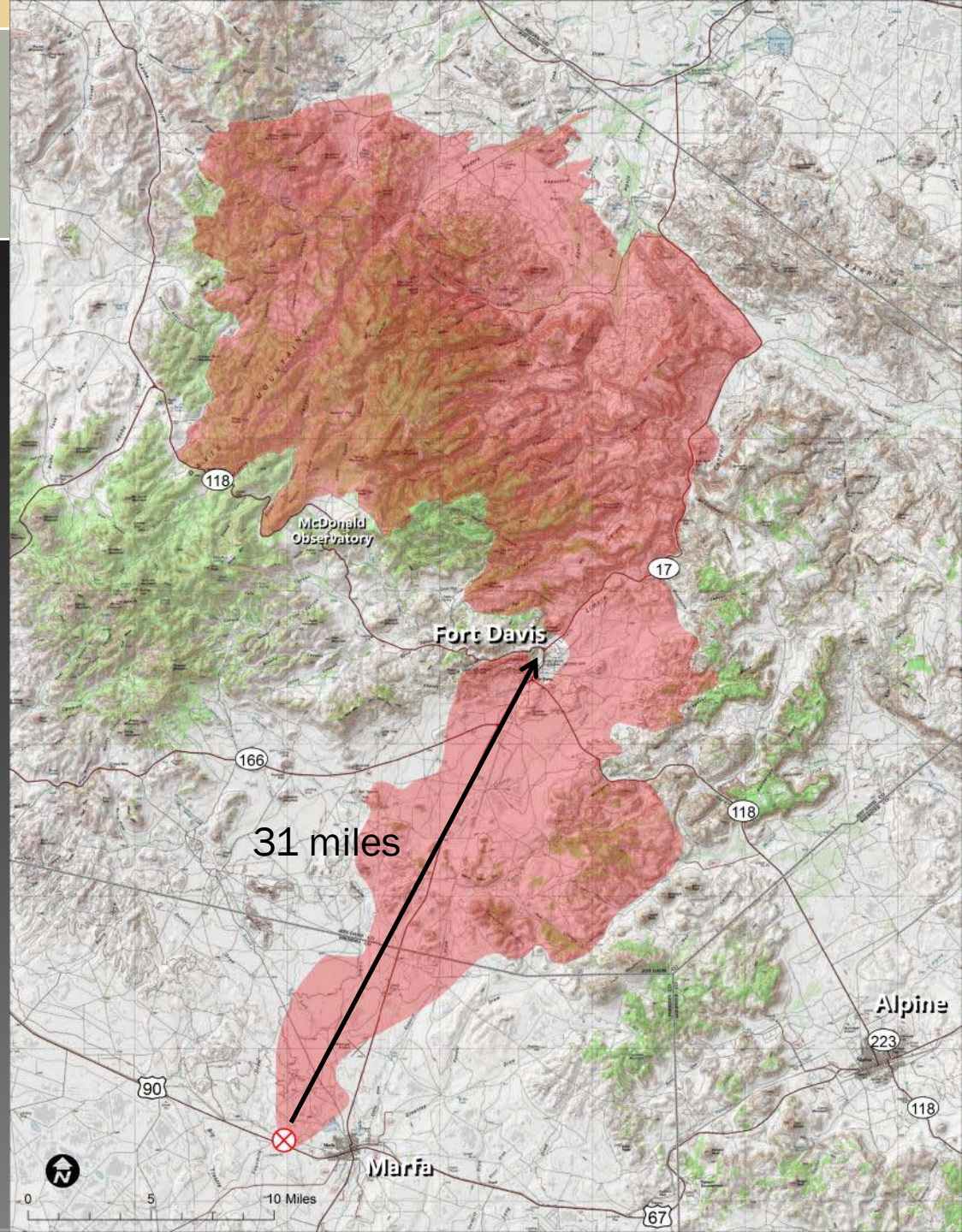
MODIS Aqua  
April 15, 2011  
Resolution: 250 Meter  
Natural Color

# ROCKHOUSE

Start Date: 4-9-2011

Acres Burned:  
314,444

23 homes lost



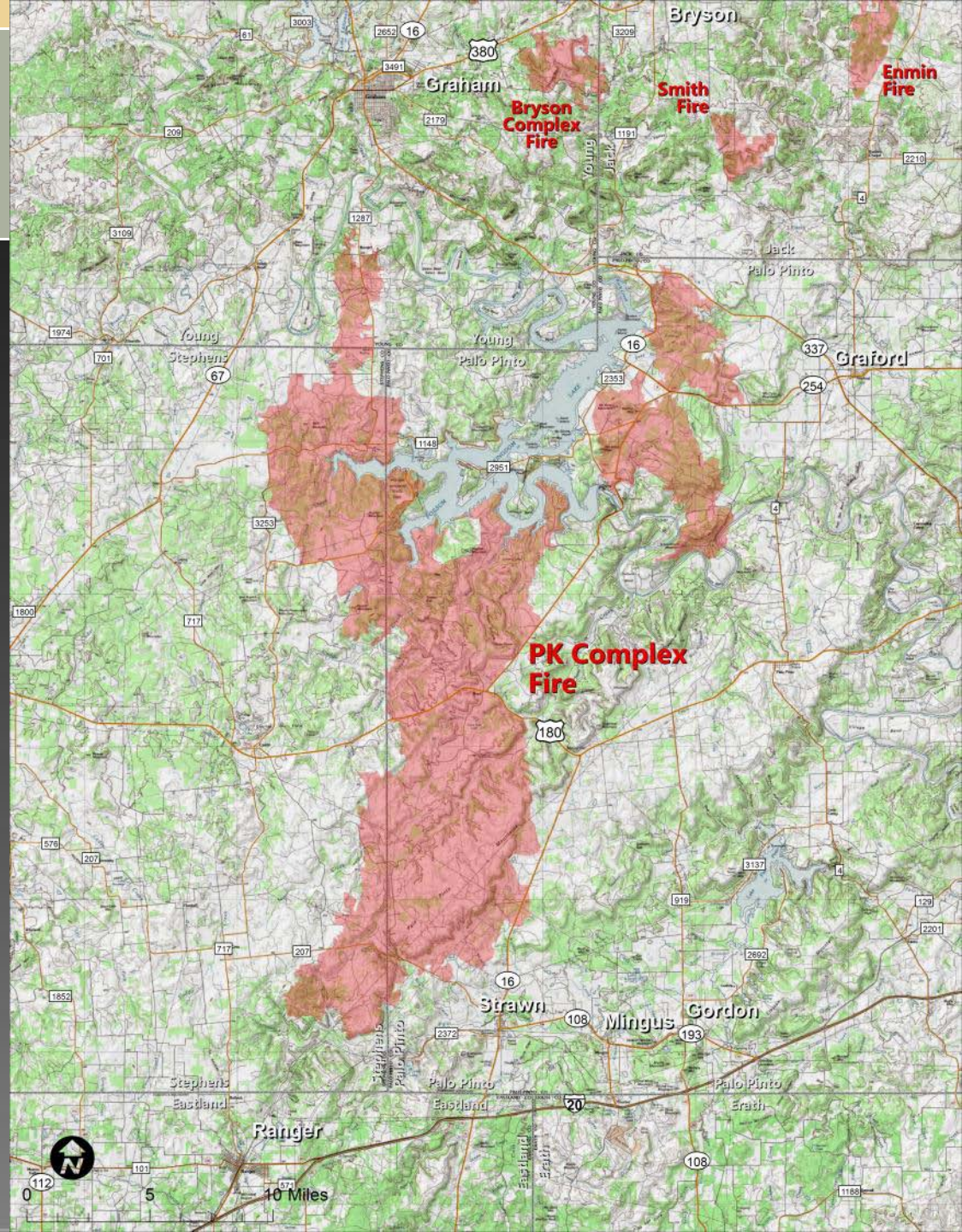


# PK COMPLEX

Start Date: 4-9-2011

Acres Burned:  
126,734

168 homes lost





# PK COMPLEX FIRE — PALO PINTO CO.



# WILDCAT FIRE – TOM GREEN / COKE CO

**Start Date: 4-11-2011**

**Acres Burned:  
145,639 acres**

**425 homes saved**

**Tom Green and Coke  
County**





# WILDCAT FIRE – TOM GREEN /COKE CO. UTILIZATION OF DC-10



# BEARING FIRE

**Start Date: 6-17-2011**

**Acres Burned:**

**18,456 acres**

**Involved Davey Crockett NF**

**2 homes lost**

**Polk and Trinity Co.**



**Midway Fire - Walker County**  
**Jun 30 , 2011**



# 101 RANCH

**Start Date: 8-30-2011**

**Acres Burned:  
6,555 acres**

**39 homes lost**

**Palo Pinto – PK area**

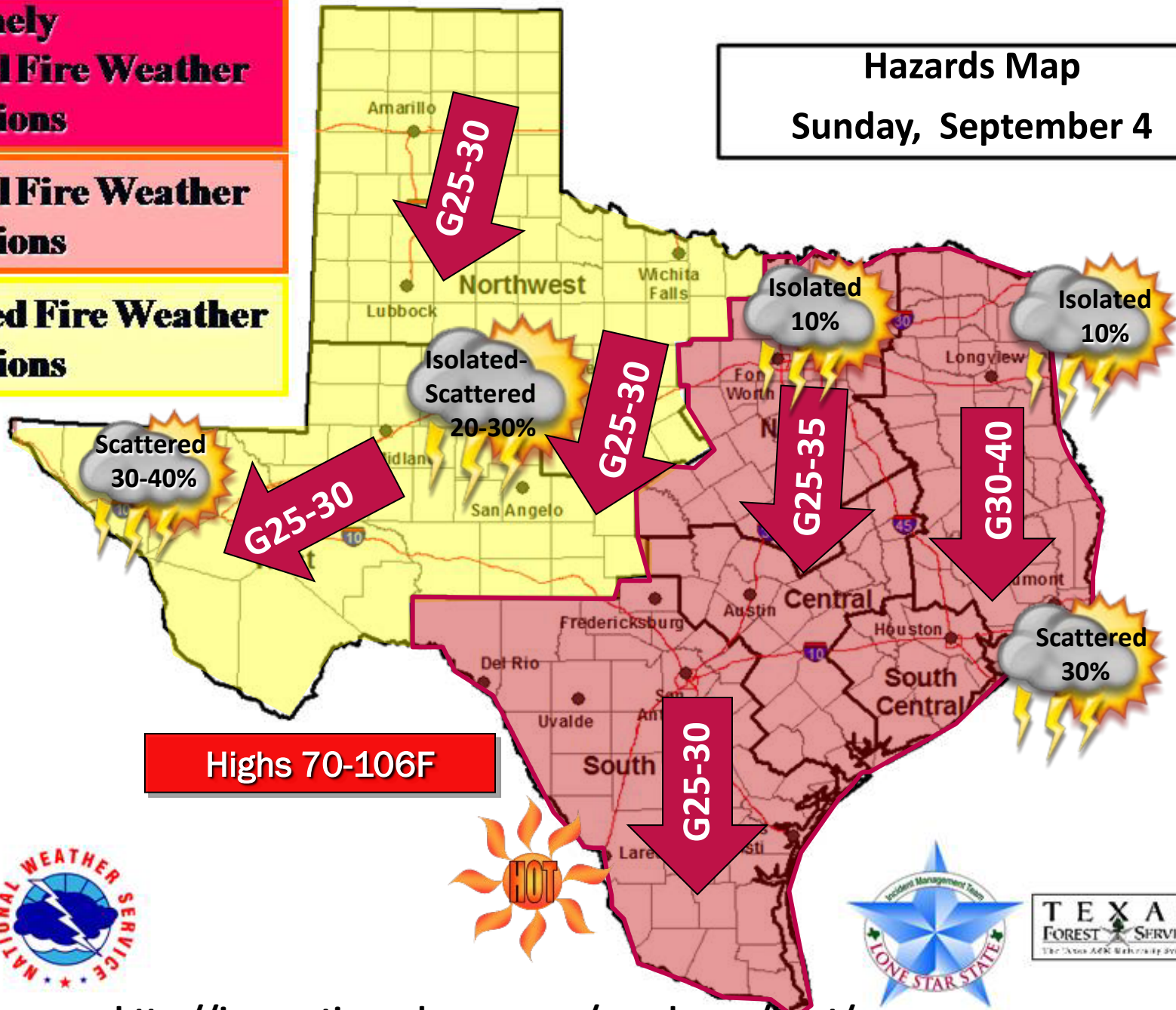


**Extremely  
Critical Fire Weather  
Conditions**

**Critical Fire Weather  
Conditions**

**Elevated Fire Weather  
Conditions**

**Hazards Map  
Sunday, September 4**



**Extremely  
Critical Fire Weather  
Conditions**

**Critical Fire Weather  
Conditions**

**Elevated Fire Weather  
Conditions**

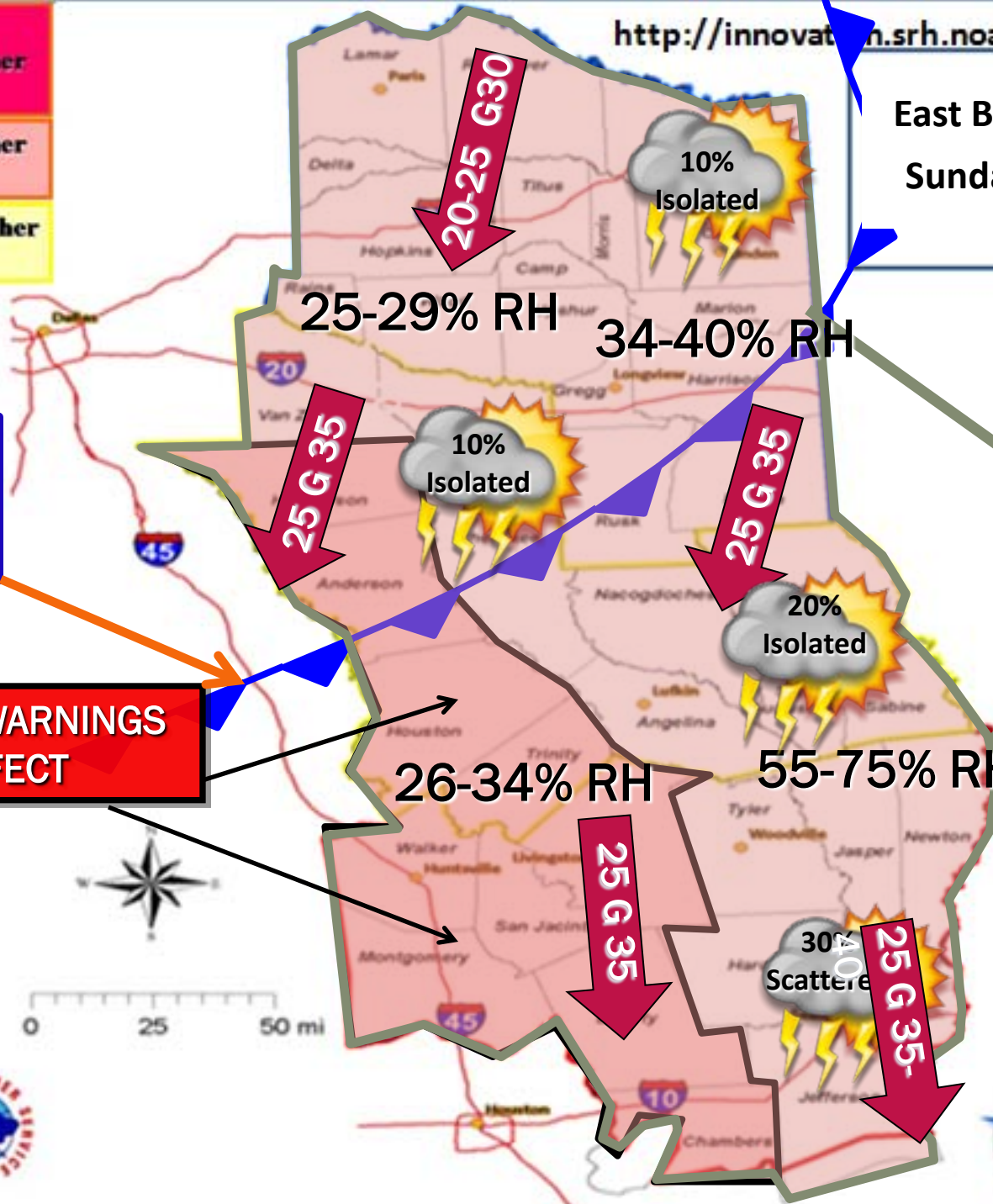
<http://innovations.srh.noaa.gov/wordpress/imet/>

**East Branch Hazards Map  
Sunday, September 4th**

6 PM  
COLD  
FRONT

**RED FLAG WARNINGS  
IN EFFECT**

**CRITICAL FIRE  
CONDITIONS**



**Legend**

- Cities
- East Texas Branch RFC Region
- Huntsville
- Longview
- Nacogdoches



# Today's Significant Fire Potential

Very High



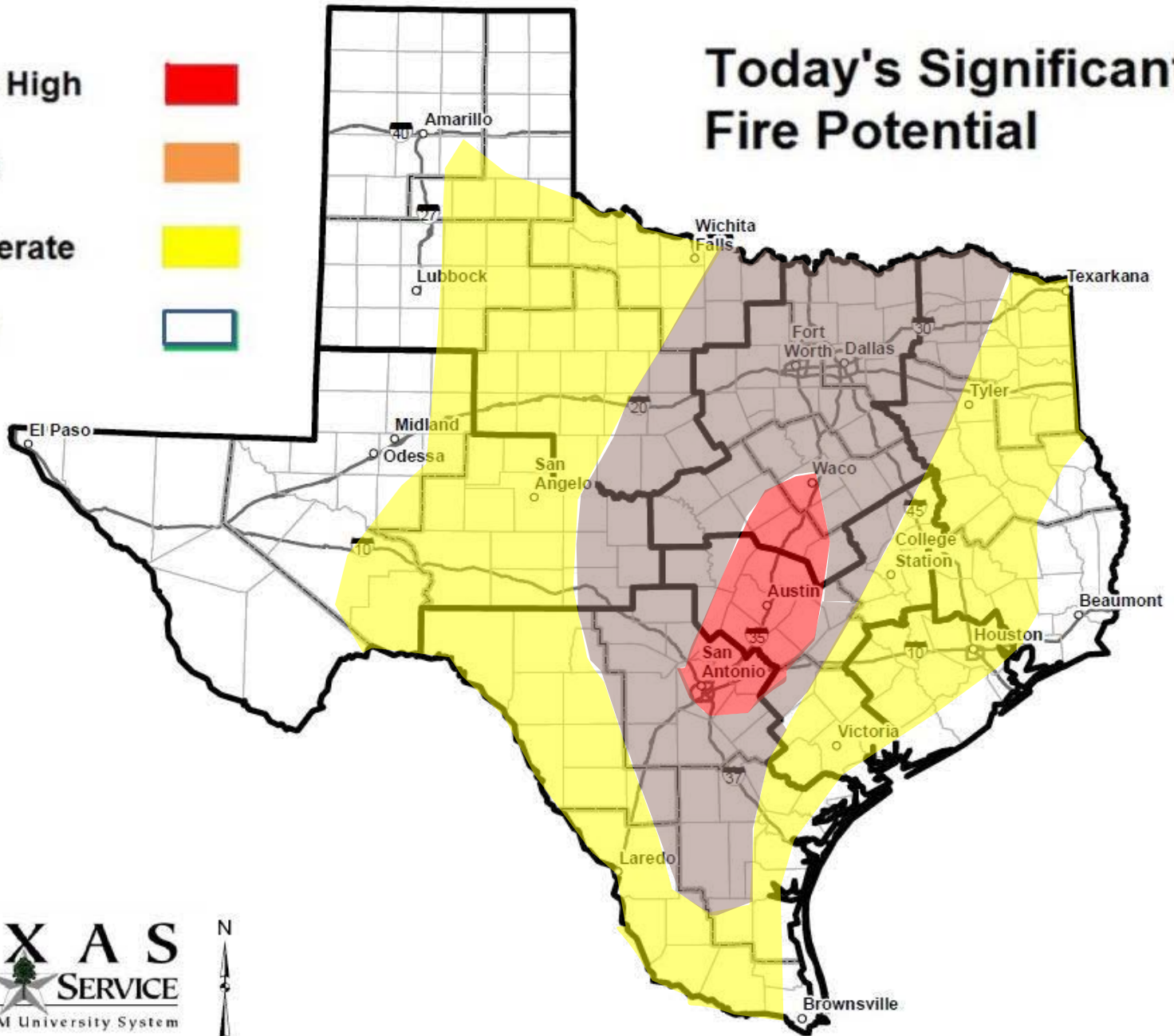
High



Moderate



Low



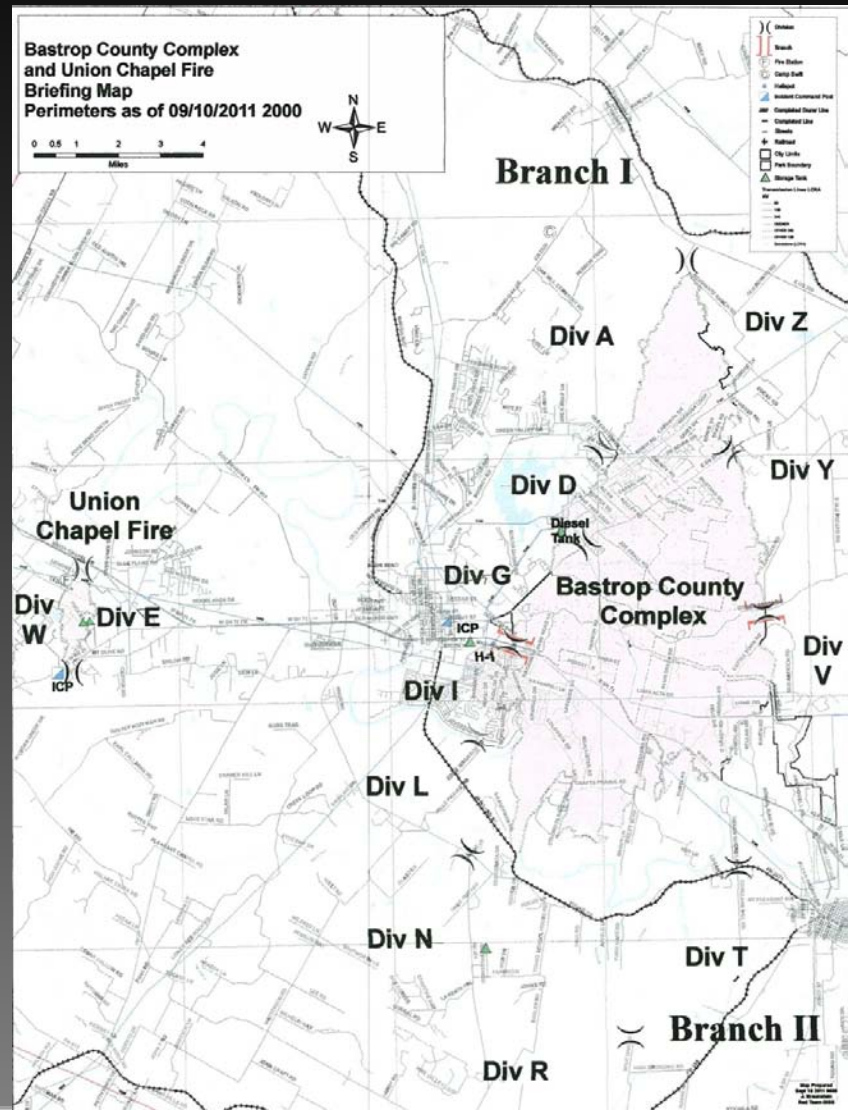
# BASTROP COUNTY COMPLEX

Start Date: 9-4-2011

Acres Burned:  
34,068 acres

1645 homes lost

2 Fatalities



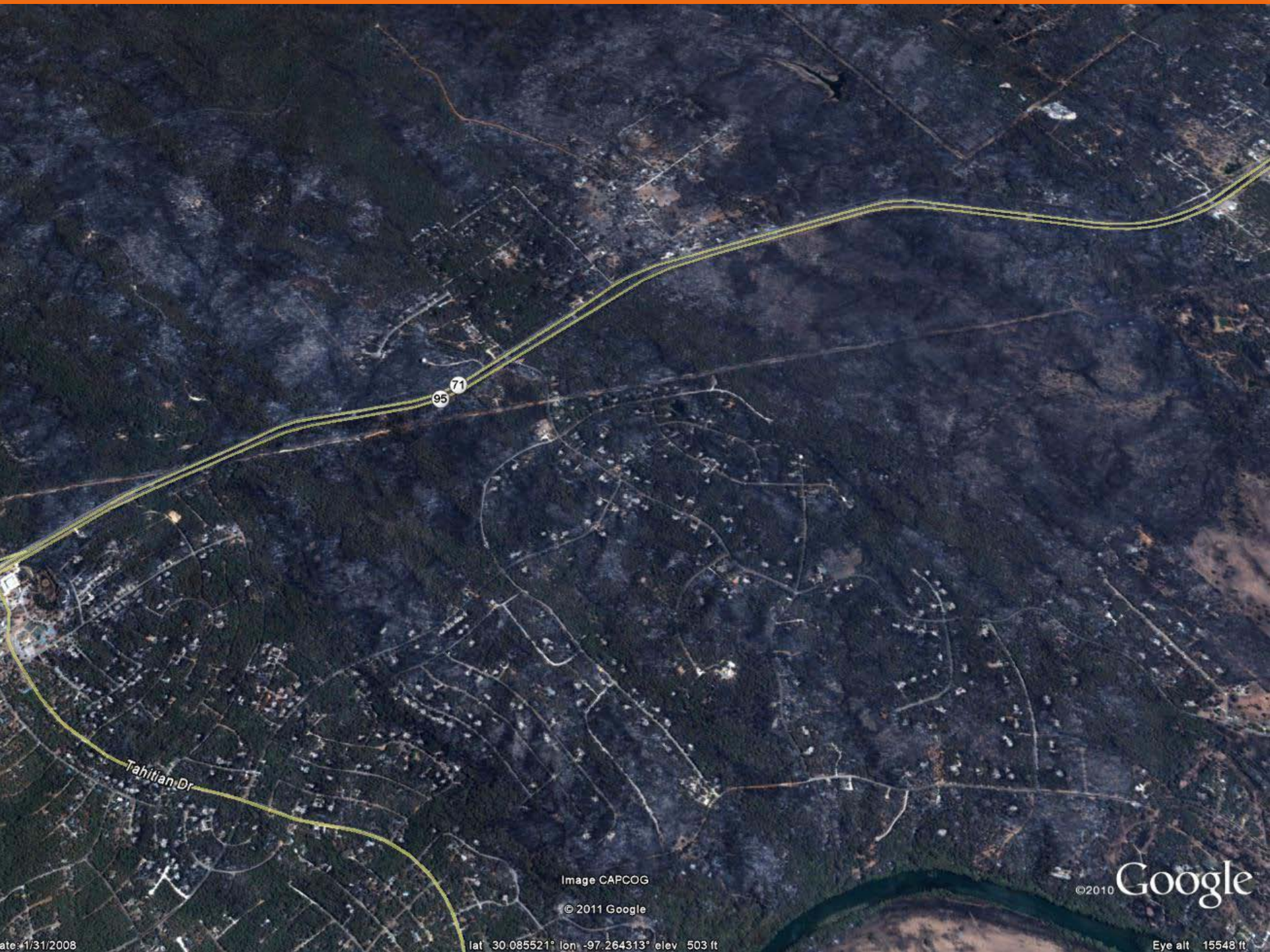


# BASTROP COMPLEX FIRE



# BASTROP COMPLEX FIRE





95

71

Tahitian Dr

Image CAPCOG

© 2011 Google

©2010 Google

# STEINER RANCH



**Start Date: 9-4-2011**

**Acres Burned: 125 acres**

**23 homes lost  
Travis County**

# SPICEWOOD (PEDERNALES BEND)

**Start Date: 9-4-2011**

**Acres Burned:  
6,400 acres**

**34 homes lost**

**Travis County**



# RILEY ROAD FIRE

**Start Date: 9-5-2011**

**Acres Burned:  
19,960 acres**

**73 homes lost**

**Waller, Montgomery  
and Grimes Counties**

Riley Road Fire's  
Control Group, TX  
11 miles southwest of Rockport, TX

30 September 11  
© NVO (TC)



# RILEY ROAD FIRE



# BEAR CREEK FIRE

**Start Date: 9-4-2011**

**Acres Burned:  
41,050 acres**

**66 homes lost**

**Cass & Marion  
County**

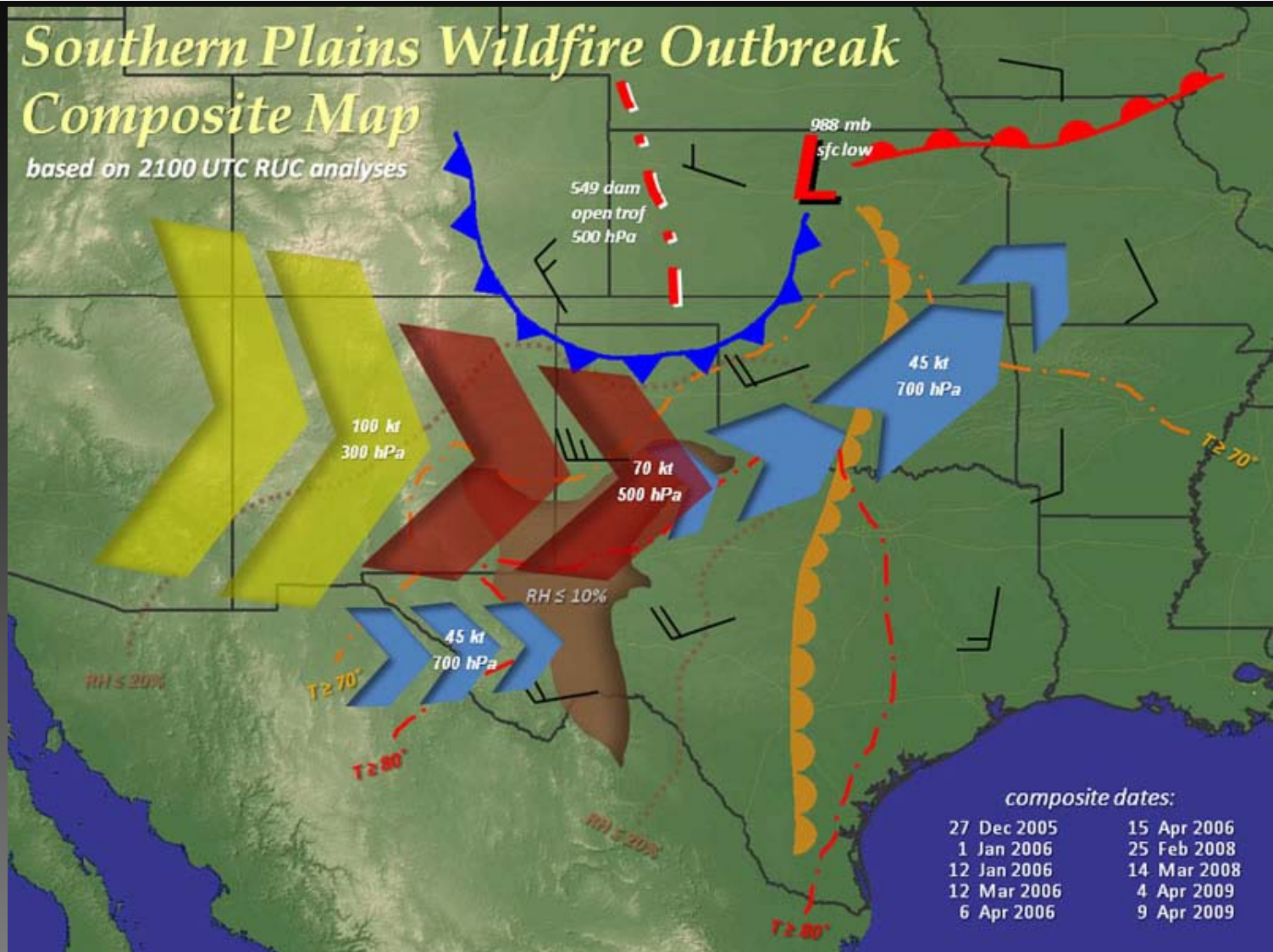




# TEXAS WILDFIRE SEASON – FIRESTORM

## Southern Plains Wildfire Outbreak Composite Map

based on 2100 UTC RUC analyses



# TEXAS WILDFIRE SEASON – FIRESTORM

## Texas Southern Plains Wildfire Outbreaks 2005 - 2009

Event Date	Wildfires	Acres	Fatalities	Structures Destroyed
27 Dec 2005	399	52,636	3	341
1 Jan 2006	472	210,099	0	115
12 Jan 2006	163	7,219	0	48
12 Mar 2006	151	986,869	13	102
6 Apr 2006	110	40,820	0	40
15 Apr 2006	145	6,176	0	9
25 Feb 2008	159	283,838	1	29
14 Mar 2008	158	170,738	0	16
4 Apr 2009	75	31,719	1	8
9 Apr 2009	237	130,090	4	301
<b>10 Days</b>	<b>2,069</b>	<b>1,920,204</b>	<b>22</b>	<b>1,038</b>

# TEXAS WILDFIRE SEASON – FIRESTORM

## Texas Southern Plains Wildfire Outbreaks 2011

Event Date	Wildfires	Acres	Fatalities	Structures Destroyed
27 Feb 2011	145	222,233	0	127
22 Mar 2011	69	4,241	0	2
3 Apr 2011	67	13,672	0	3
9 Apr 2011	83	453,474	1	106
14 Apr 2011	47	83,213	0	3
15 Apr 2011	160	45,829	1	15
26 Apr 2011	45	48,808	0	12
27 May 2011	5	854	0	0
<b>8 Days</b>	<b>616</b>	<b>871,470</b>	<b>2</b>	<b>268</b>

# Largest fires in Texas history

- East Amarillo Complex, March 2006 (907,245 acres, 9 homes destroyed)
- Big Country, March 1998 (366,000 acres)
- Rockhouse, April 2011 (314,444 acres, 41 homes destroyed)
- Glass, February 2008 (22,000 acres)
- Deaton Cole, April 2011 (175,000 acres)
- Cooper Mountain Ranch, April 2011 (162,625 acres, four homes destroyed)
- Wildcat, April 2011 (158,308 acres)
- PK Complex, April 2011 (126,734 acres, 168 homes destroyed)
- Swenson, April 2011 (122,500 acres, two homes destroyed)
- Huckabee, April 2008 (98,168 acres)

# Overview

## 2011 Fire Season Summary

- 30,501 wildfires
- 3,986,755 acres
- 38,057 homes and 12,977 other structures saved
- 2,906 homes and 2,811 other structures destroyed
- Foresters estimate more than 500 million trees were killed by drought.
- Timber damage from three East Texas wildfires was estimated at \$25 million.
- Timber damage on Bastrop County Complex was estimated at \$14 million.
- 33 million gallons of water and retardant dropped
- 16,000 accident-free flight hours

DC-10 wide-body jet air tankers and Modular Airborne Firefighting System C-130s were used this fire season for the first time in Texas history.

# Texas Wildfire Response — Resources



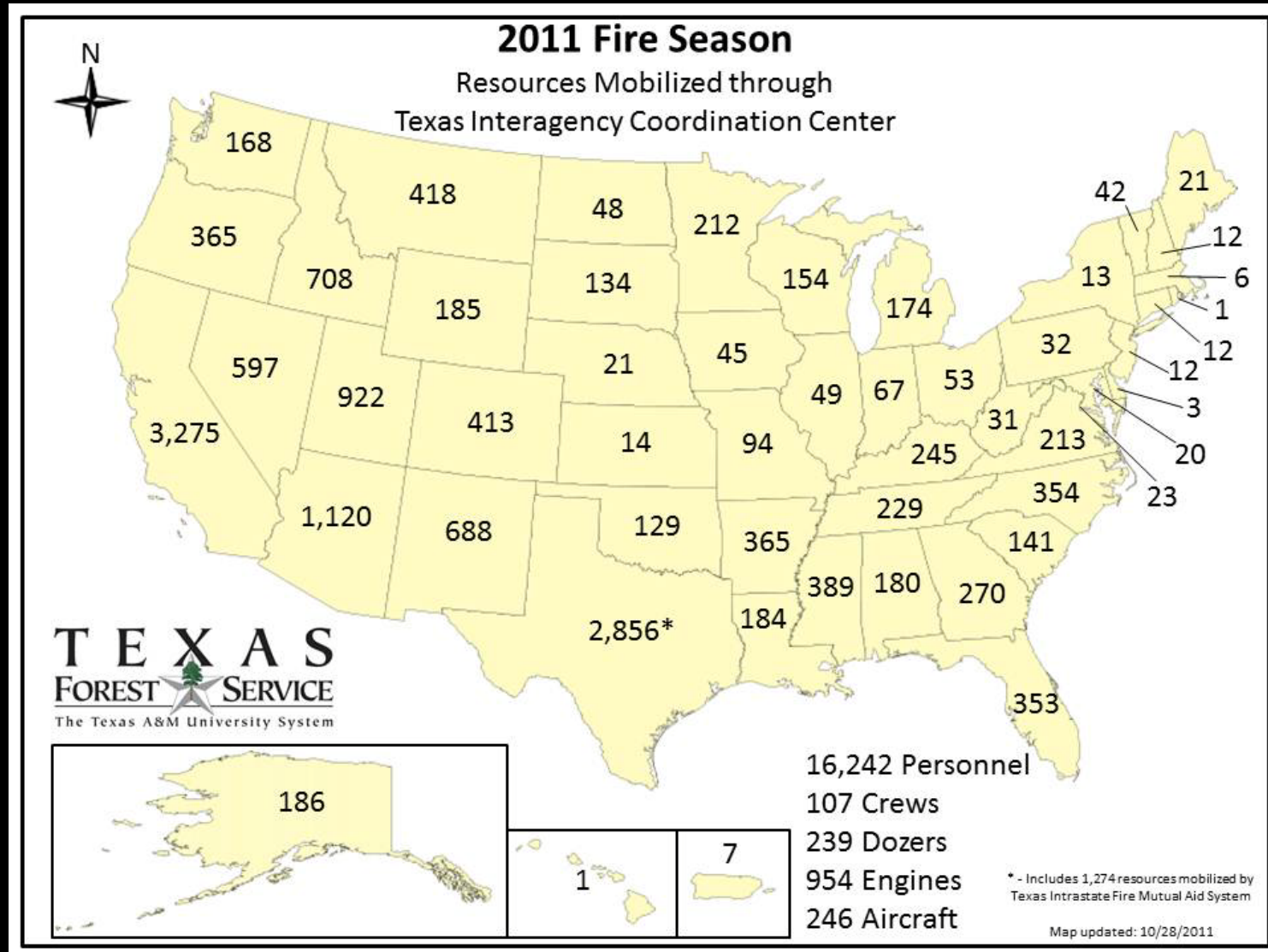
# Texas Wildfire Response - Aviation Resources



- 16,963 accident-free flight hours
- 54,477 drops
- 6,145,610 gallons retardant
- 28,033,106 gallons water
- DC-10 wide-body jet air tankers and Modular Airborne Firefighting System C-130s were used this fire season for the first time in Texas history.



# Texas Wildfire Response — Resources



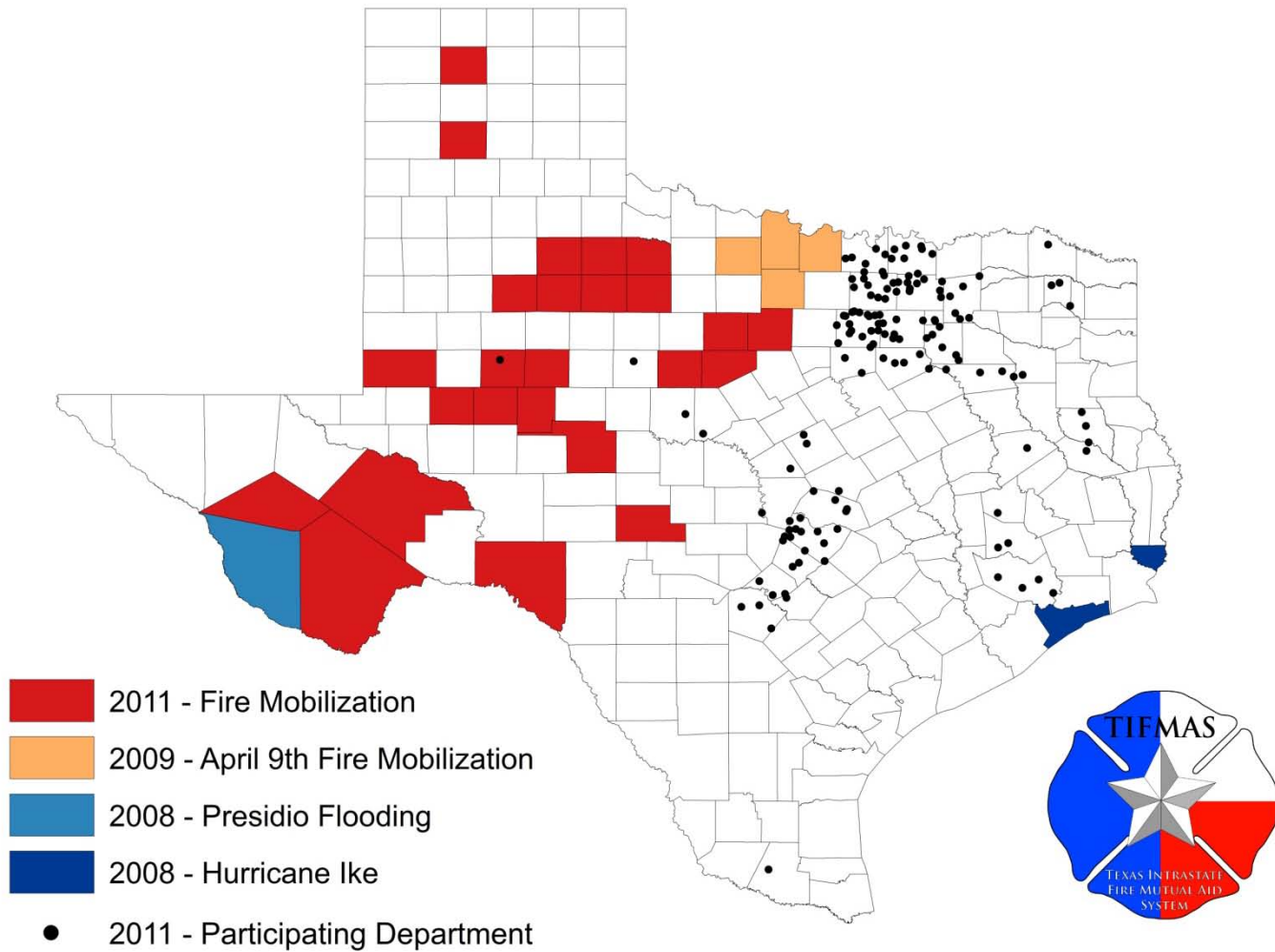


# TIFMAS Mobilizations

- Using Texas resources to respond to Texas wildfires
- Nine mobilizations this year for **329 engines** and **1,274 firefighters** from **204 fire departments**
- Utilized on hurricanes, floods and wildfire response



# TIFMAS Mobilizations



# Regional Incident Management Teams

The incident management agency for Texas

## All-Hazard IMTs:

- Program created under RP-57 and funded through Homeland Security Grants
- Teams made up of trained local and municipal responders (fire, law enforcement, EMS, etc.)
- Currently 15 teams with 630 responders
- This year we have mobilized **40 Type 3 regional responders** and **15 Type 3 teams** - totaling **225 responders**
- Missions include fire management, support of TFS Team in Merkel and support and management of TIFMAS response



# National & State Incident Management Teams

Texas Lone Star State Incident Management Team

3 Southern Area Type 1 Teams

2 Southern Area Type 2 Teams

3 National Incident Management Organization Teams

2 State Type 1 Teams (Northwest and California)

2 State Type 2 Teams (North Carolina and Florida)



# Fire Department Assistance

VFDs respond to 90% of the wildfires in Texas - and they do it with little to no money and a staff made up almost completely of volunteers

Since the RVFD Assistance program's inception in 2002

- 1,187 tankers and brush trucks
- 39,700 student tuitions
- 52,588 sets of protective gear (*structural and wildland*)
- 2,503 grants for fire and rescue equipment



229 apparatus approved during FY 2010

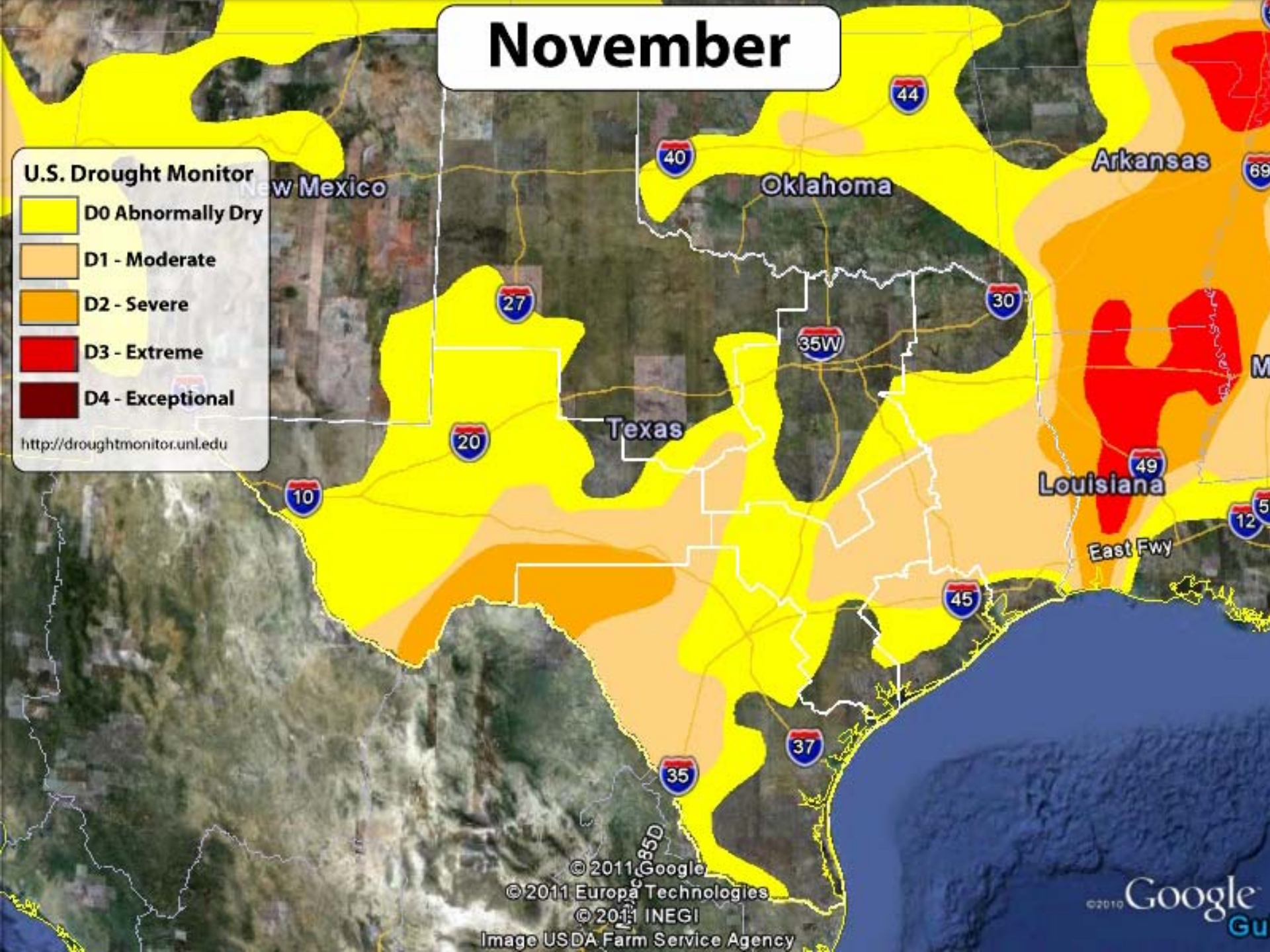


# November

## U.S. Drought Monitor

-  D0 Abnormally Dry
-  D1 - Moderate
-  D2 - Severe
-  D3 - Extreme
-  D4 - Exceptional

<http://droughtmonitor.unl.edu>



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Image USDA Farm Service Agency

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# TEXAS WILDFIRE SEASON – 2012

## U.S. Drought Monitor

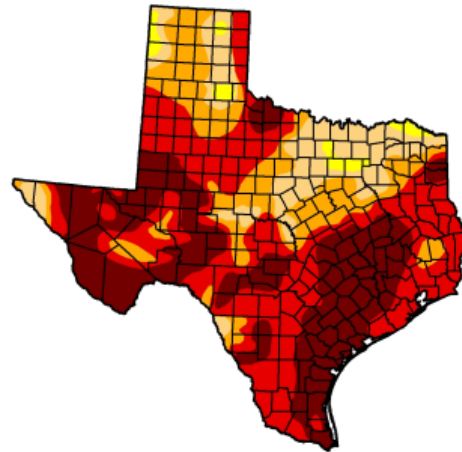
January 3, 2012

Valid 7 a.m. EST

Texas

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	0.01	99.99	97.83	84.81	67.32	32.40
Last Week (12/27/2011 map)	0.01	99.99	97.83	84.81	67.32	32.36
3 Months Ago (10/04/2011 map)	0.00	100.00	100.00	99.16	96.99	87.99
Start of Calendar Year (12/27/2011 map)	0.01	99.99	97.83	84.81	67.32	32.36
Start of Water Year (09/27/2011 map)	0.00	100.00	100.00	99.16	96.65	85.75
One Year Ago (12/28/2010 map)	7.89	92.11	69.43	37.46	9.59	0.00



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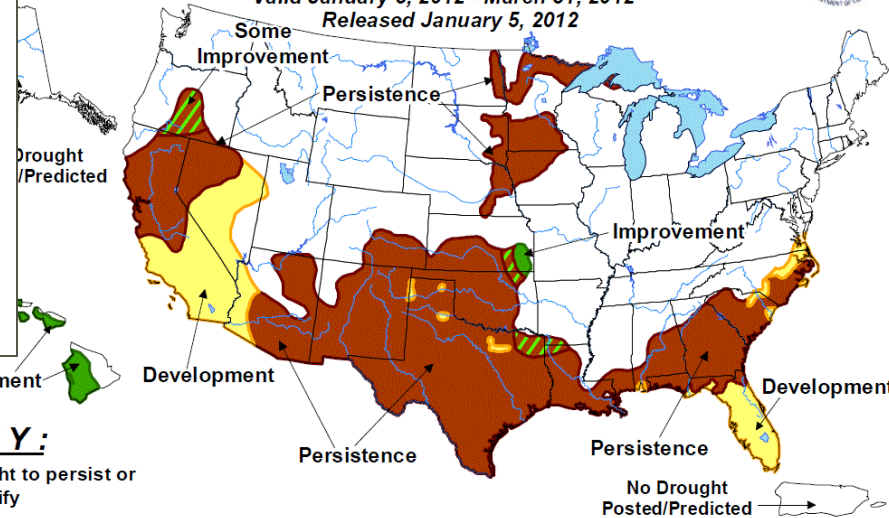
<http://droughtmonitor.unl.edu>



Released Thursday, January 5, 2012  
Brad Rippey, U.S. Department of Agriculture

## U.S. Seasonal Drought Outlook

Drought Tendency During the Valid Period  
Valid January 5, 2012 - March 31, 2012  
Released January 5, 2012



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# Drought outlook 2012



Nearly all parts of the state are experiencing the triple whammy:

- Below-normal precipitation
- Below-normal stream flow
- Below-normal reservoir levels



# What's next

- La Nina conditions have redeveloped
- Below normal precipitation forecast through May 2012  
– although recent rains in December/January have improved drought situation in north Texas



# What's next

Nearly all of Texas remains in extreme to exceptional drought. Reservoir and stream flow shortages are also widespread across the state.

The onset of a second La Nina event means we're likely to continue seeing below-normal precipitation through May 2012.



# What's next

If the likely scenario of only 70 – 90 percent of normal precipitation occurs through May, the state could see harsh impacts from a water supply, fire weather and agriculture perspective going into summer 2012.



# Current drought monitor

Return

The data cutoff for Drought Monitor maps is Tuesday at 7 a.m. Eastern Standard Time. The maps, which are based on analysis of the data, are released each Thursday at 8:30 a.m. Eastern Time.

## U.S. Drought Monitor Texas

April 12, 2011

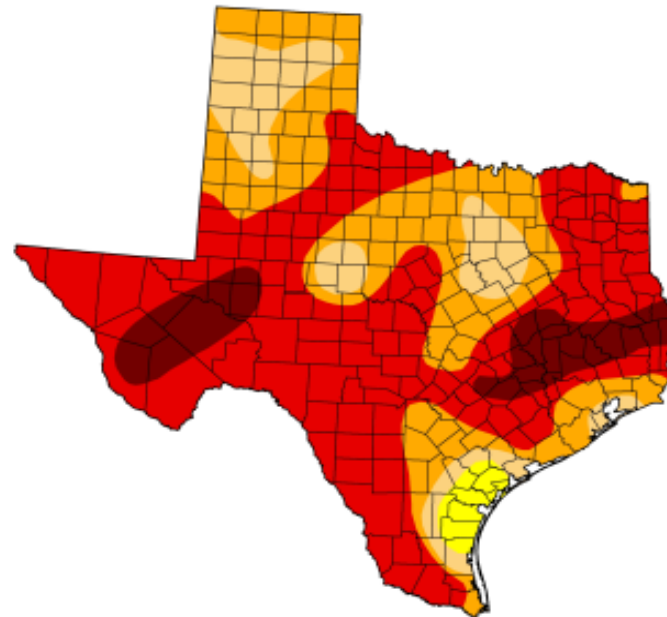
Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	0.00	100.00	97.94	86.43	60.57	10.03
Last Week (04/05/2011 map)	0.00	100.00	97.99	86.50	60.14	4.81
3 Months Ago (01/11/2011 map)	20.16	79.84	59.13	25.36	9.48	0.00
Start of Calendar Year (12/28/2010 map)	7.89	92.11	69.43	37.46	9.59	0.00
Start of Water Year (09/28/2010 map)	75.57	24.43	2.43	0.99	0.00	0.00
One Year Ago (04/06/2010 map)	95.87	4.13	0.00	0.00	0.00	0.00

Intensity:

- D0 Abnormally Dry
- D1 Drought - Moderate
- D2 Drought - Severe
- D3 Drought - Extreme
- D4 Drought - Exceptional



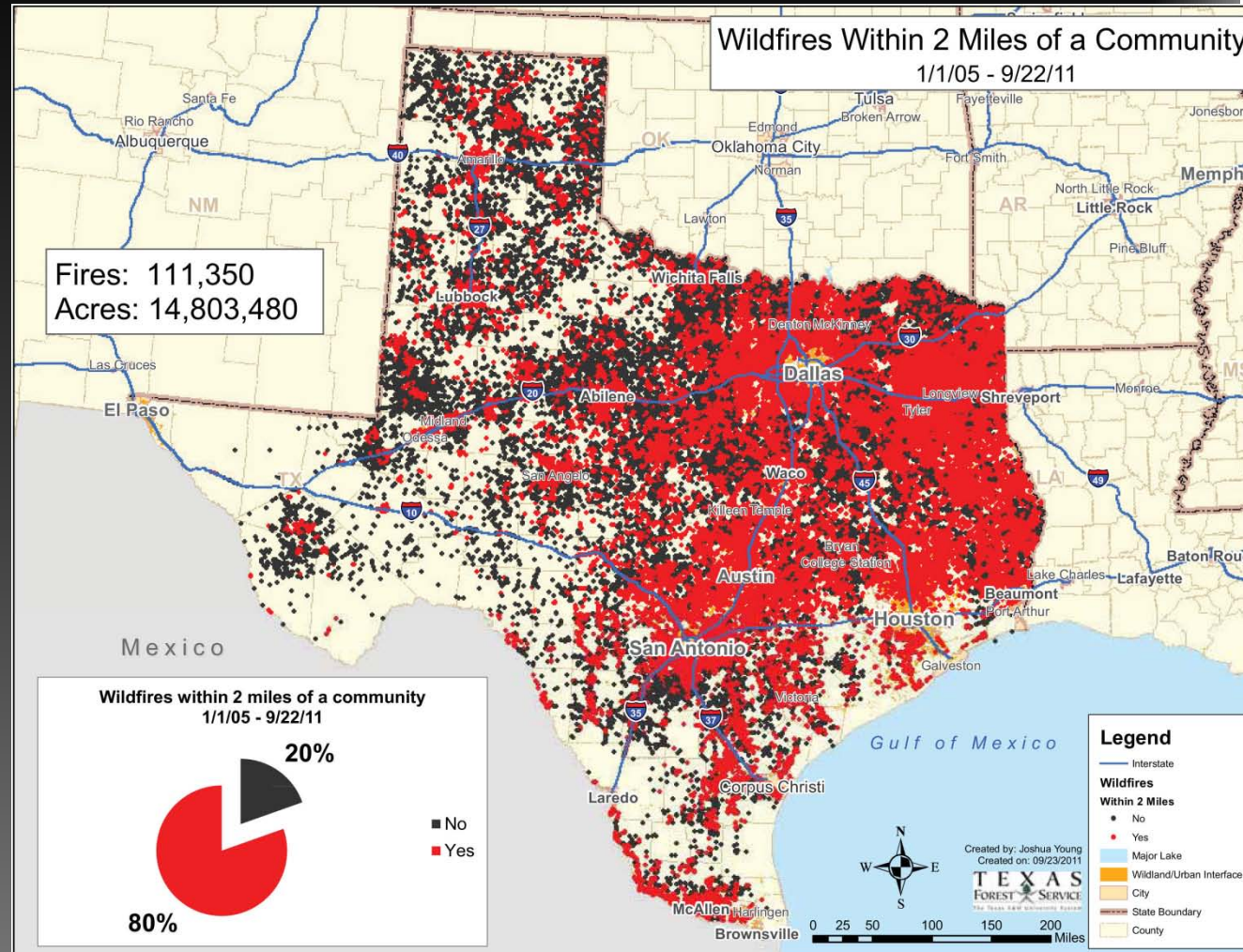
The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.



Released Thursday, April 14, 2011

# THE PROBLEM

- More than 80 percent of Texas wildfires occur within 2 miles of a community, posing a threat to life and property.



# WUI in Texas

- 254 Counties
- 14,506 Communities at Risk
- You do the math

# WHAT ARE WE DOING IN 2012?

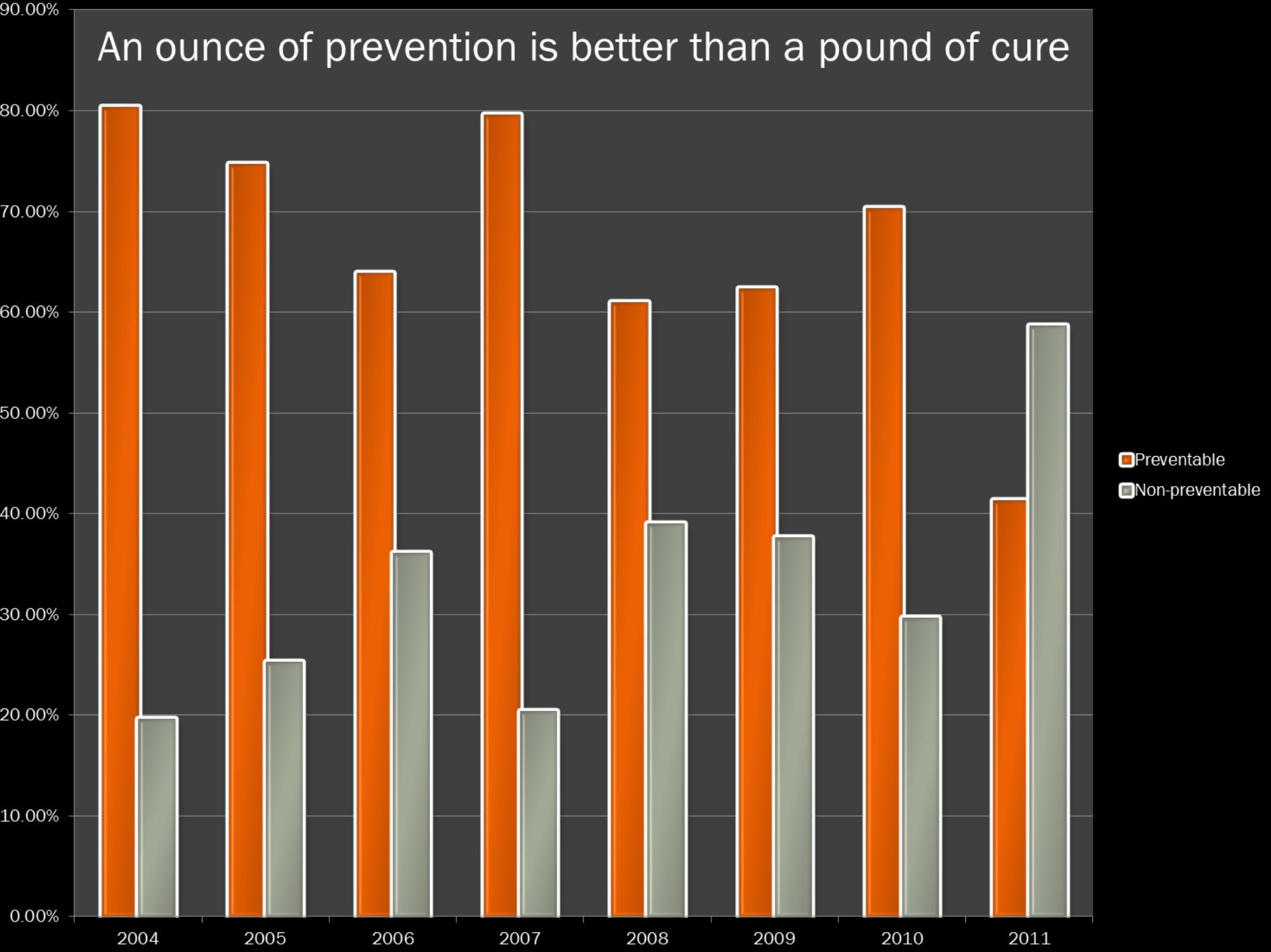
- Incident Management Team
- Predictive Services
- Training
- Public Awareness
- Town Hall Meetings
- Community Preparedness
- Hazardous Fuel Mitigation
- Prevention

# Communities in Action

- CWPP
- Firewise
- Ready Set Go
- Capacity Building
- Fuels Management
- Strategic Prevention

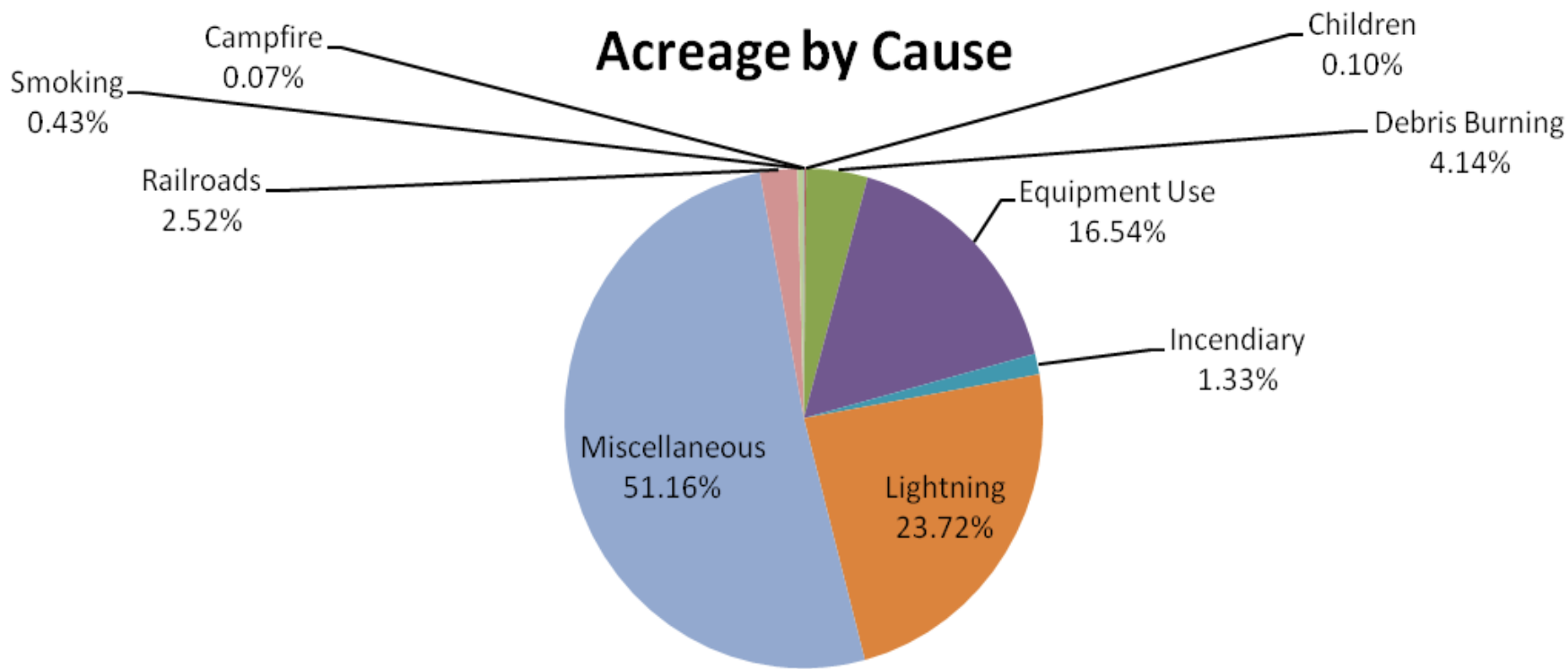


# An ounce of prevention is better than a pound of cure



# Prevention Works

## Acreage by Cause



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