Satellite Remote Sensing of Vegetation Conditions and Dust Storms in the Current Drought

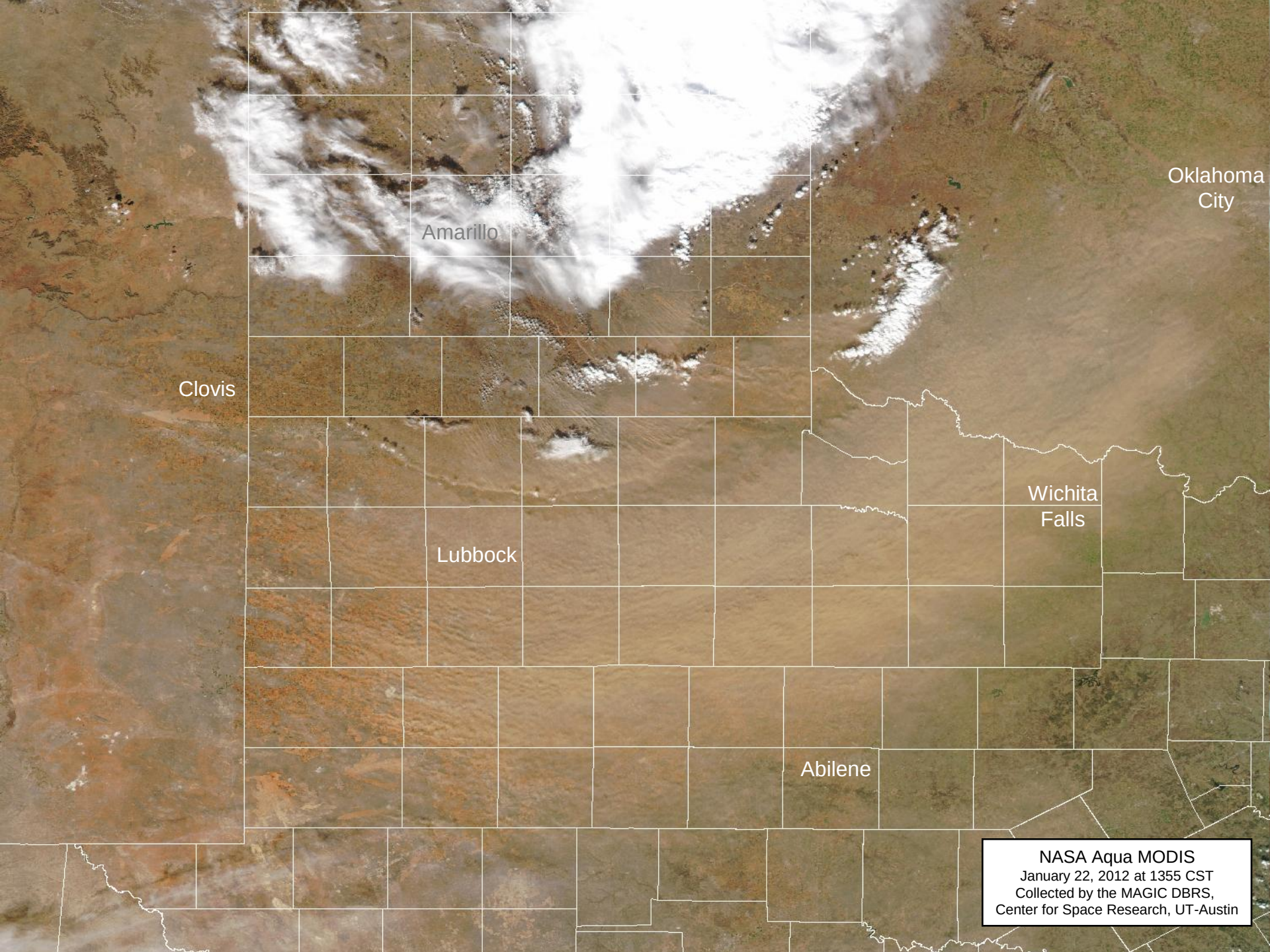
Gordon Wells

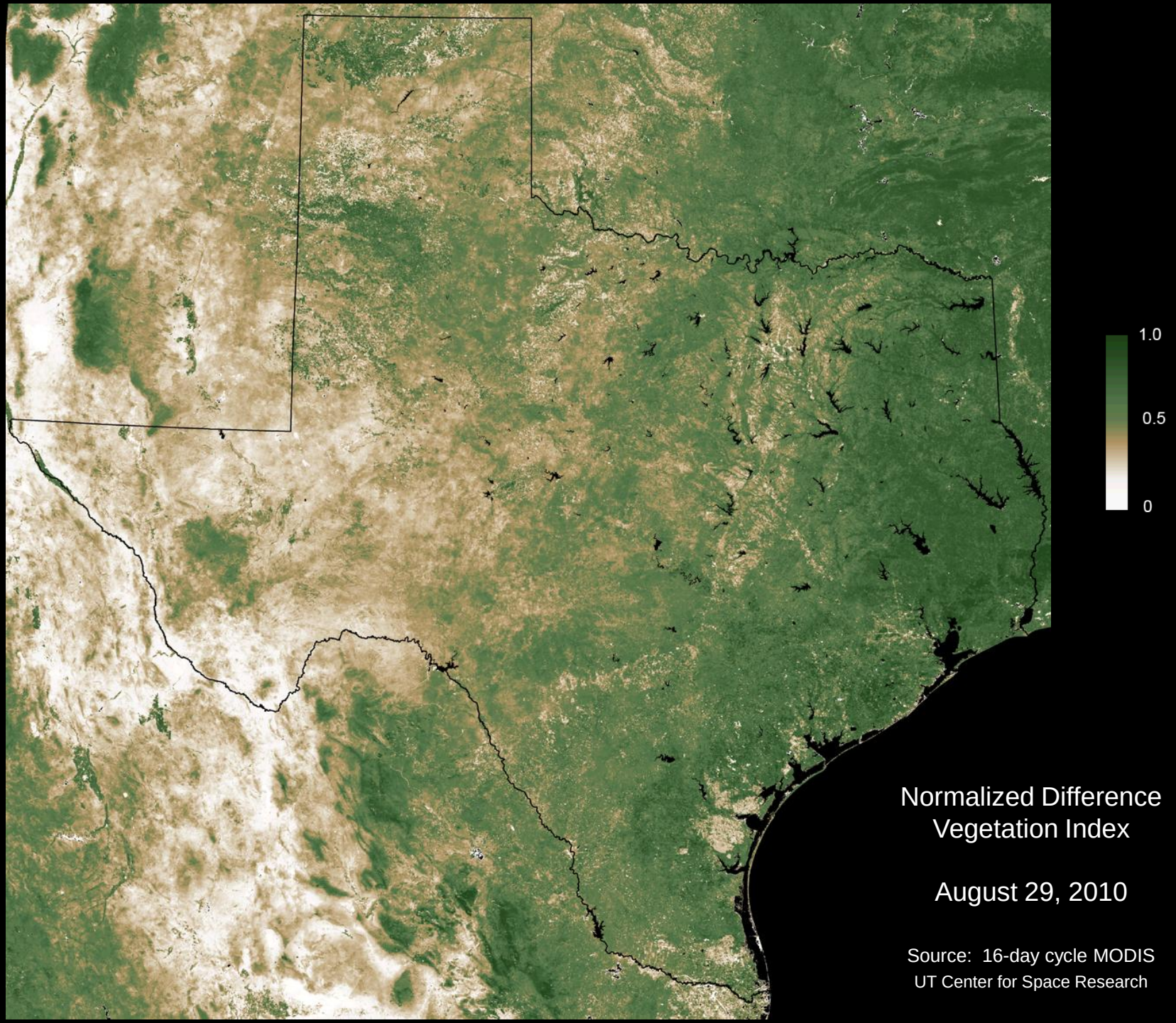
Center for Space Research
The University of Texas at Austin

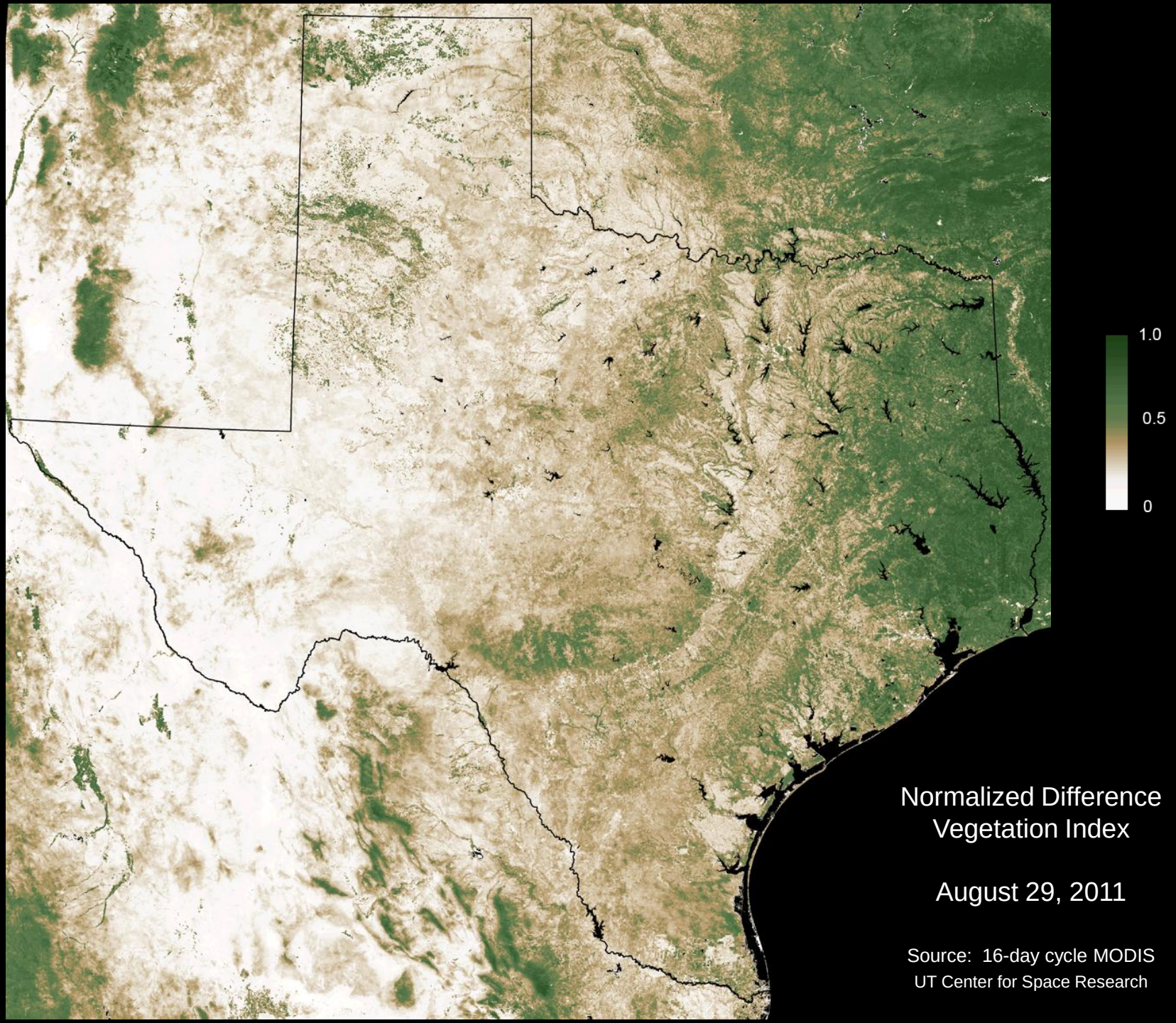
First Water Forum: "Texas Drought 2012, Are We Prepared?"

Center for Integrated Earth System Science, The University of Texas at Austin

February 13, 2012


Amarillo
Oklahoma City
Clovis
Wichita Falls
Lubbock
Abilene
NASA Aqua MODIS
January 22, 2012 at 1355 CST
Collected by the MAGIC DBRS,
Center for Space Research, UT-Austin


1.0
0.5
0
Normalized Difference
Vegetation Index
August 29, 2010
Source: 16-day cycle MODIS
UT Center for Space Research


1.0
0.5
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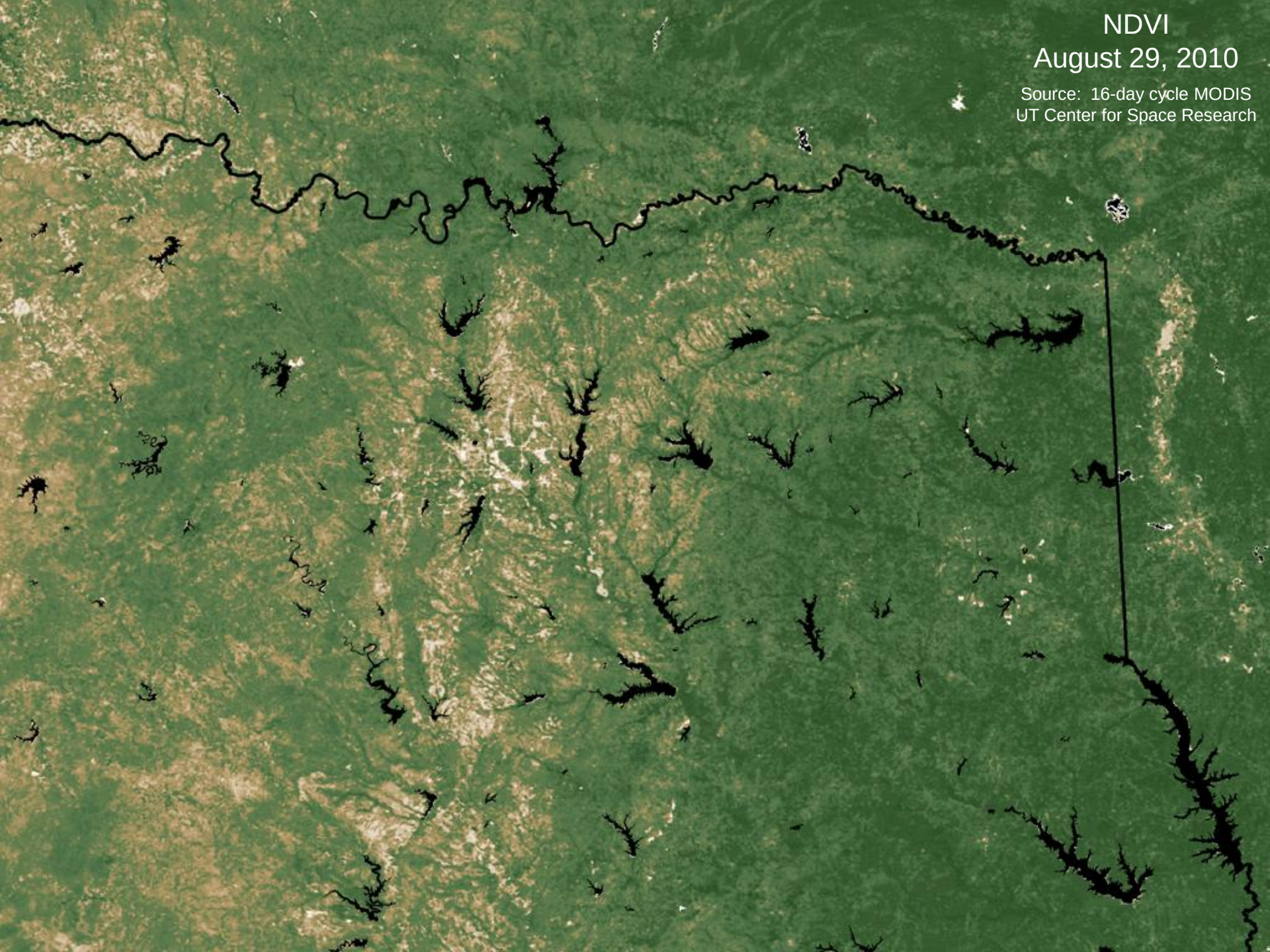
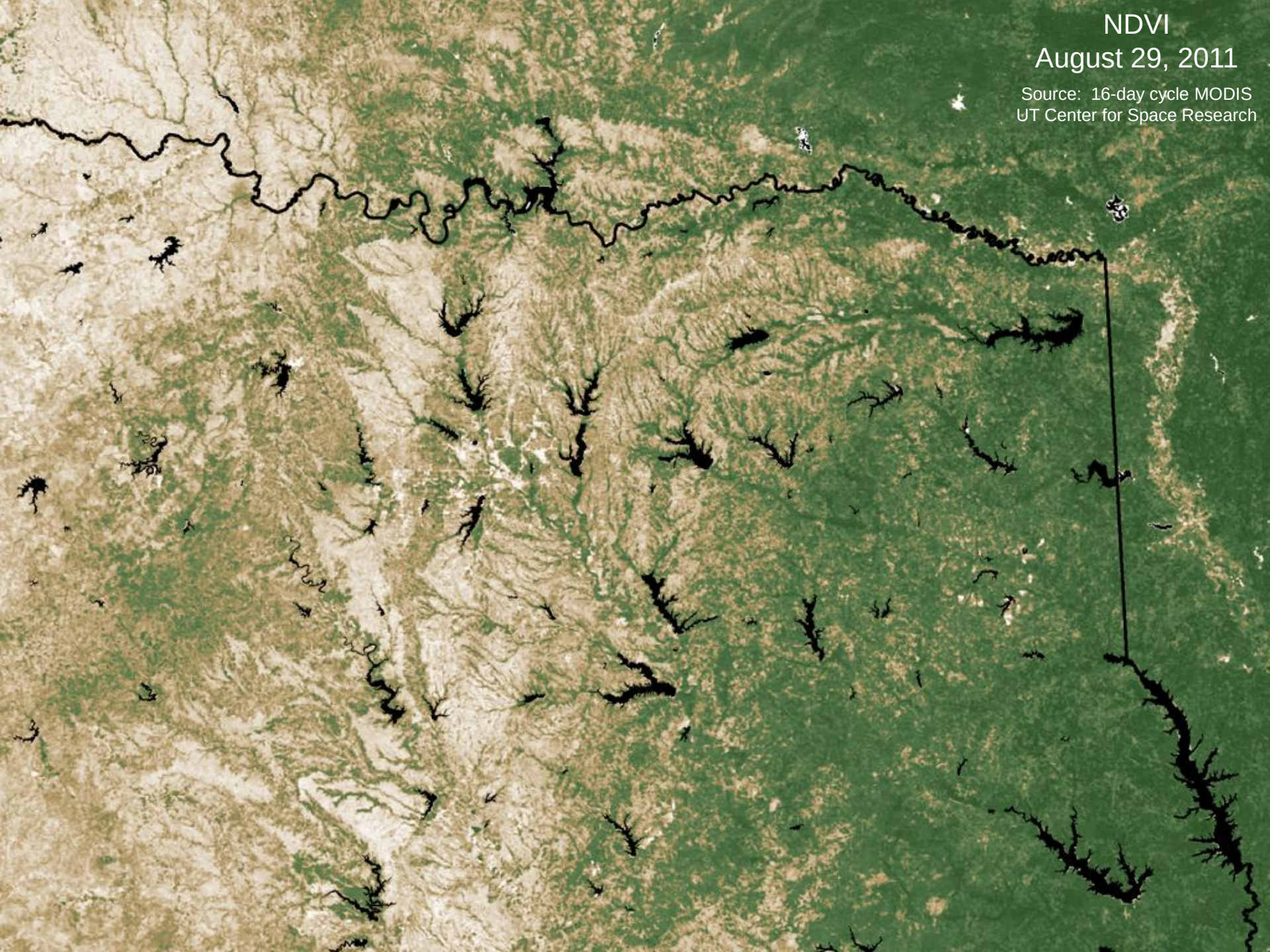
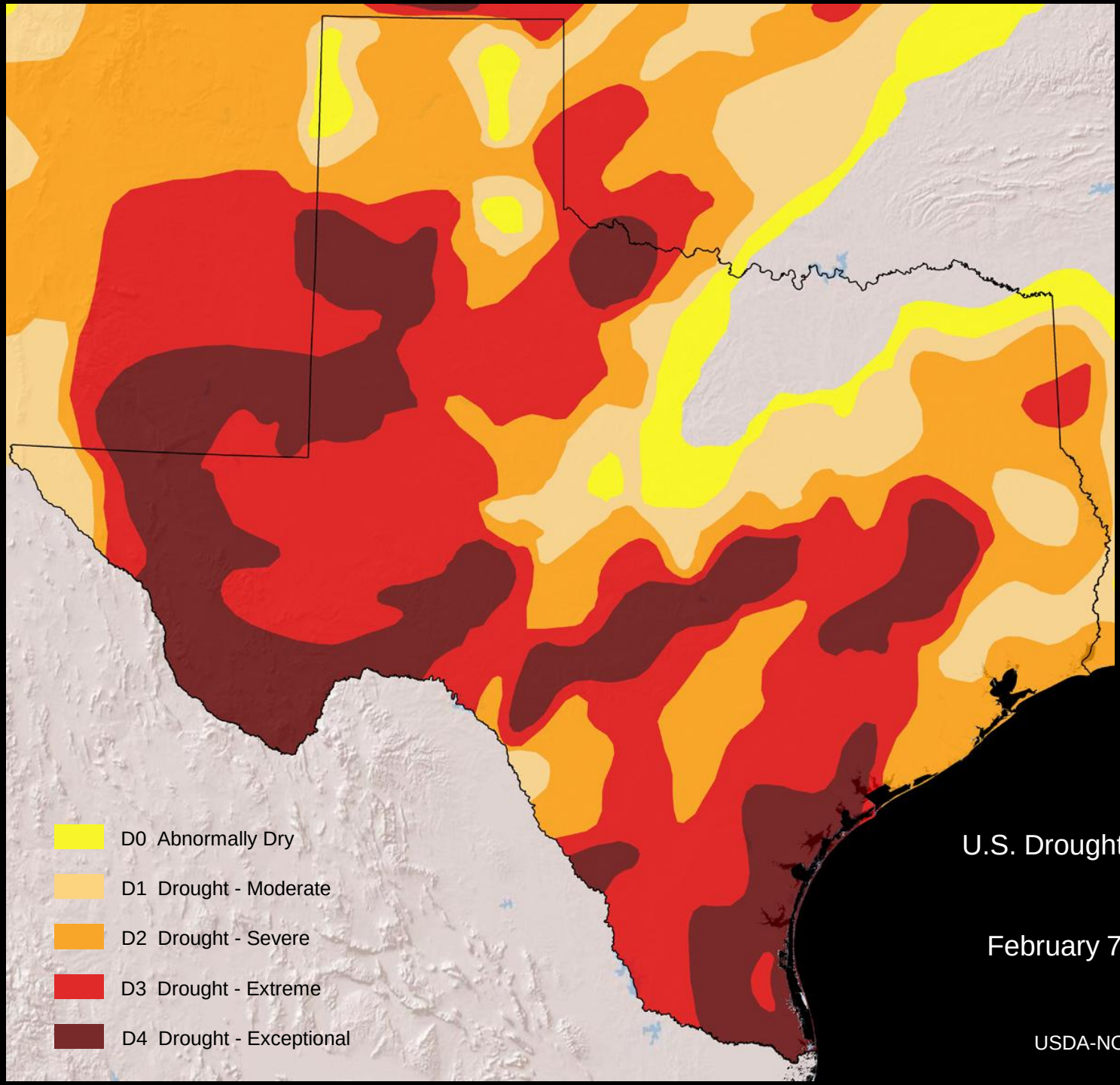
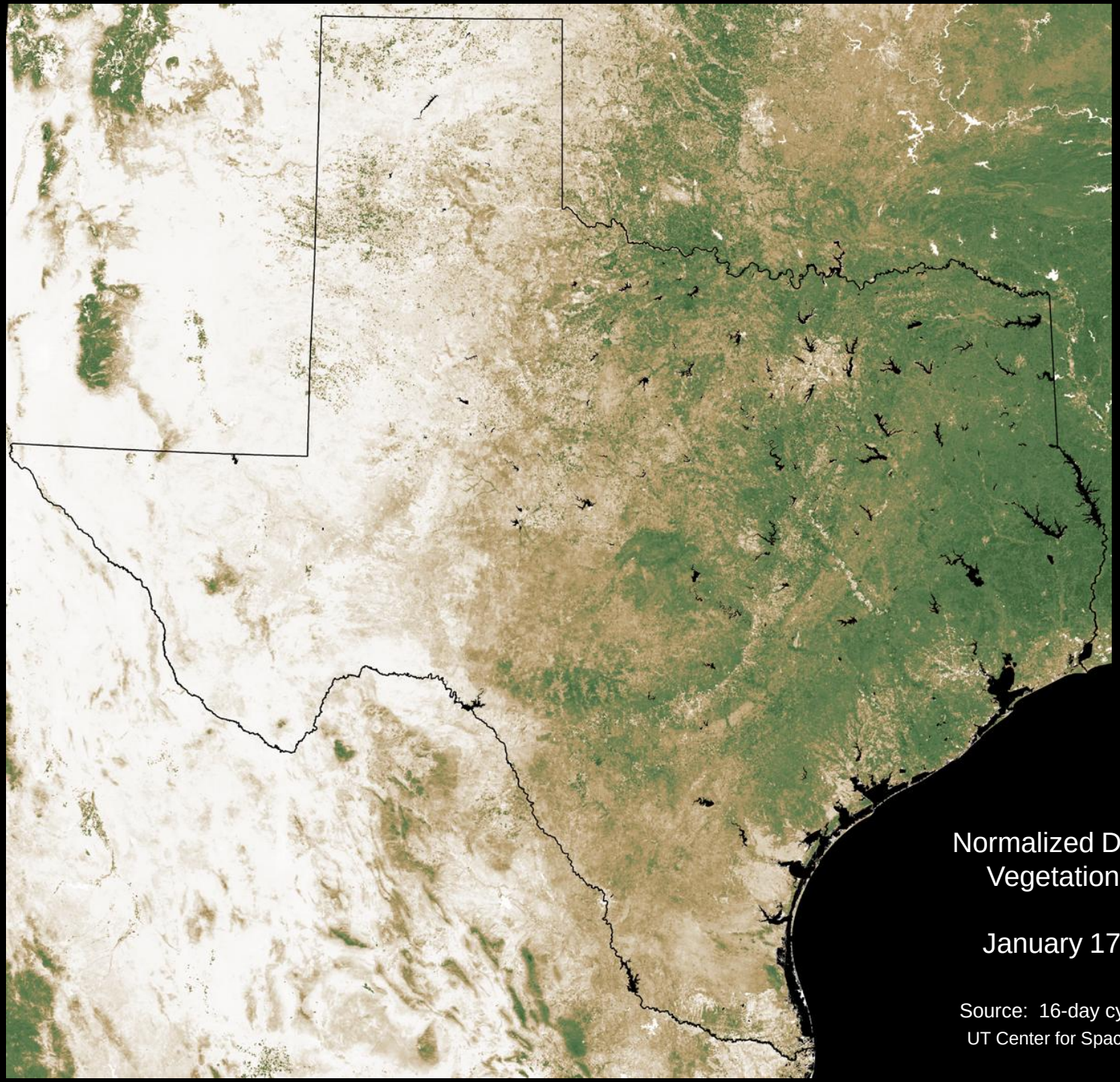
Normalized Difference
Vegetation Index
August 29, 2011
Source: 16-day cycle MODIS
UT Center for Space Research


NDVI
August 29, 2010
Source: 16-day cycle MODIS
UT Center for Space Research


NDVI
August 29, 2011
Source: 16-day cycle MODIS
UT Center for Space Research

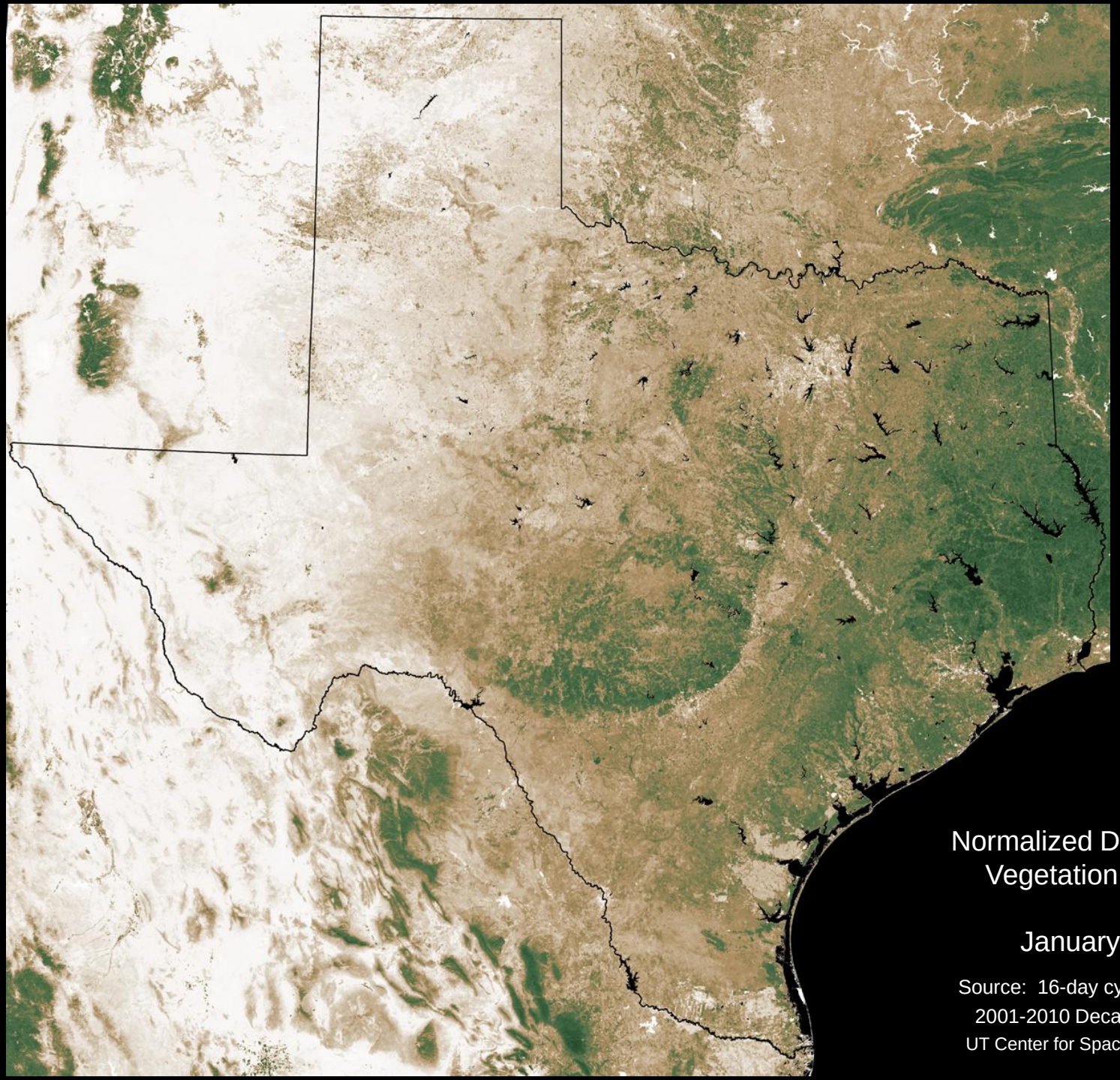

D0 Abnormally Dry
D1 Drought - Moderate
D2 Drought - Severe
D3 Drought - Extreme
D4 Drought - Exceptional
U.S. Drought Monitor
February 7, 2012
USDA-NOAA

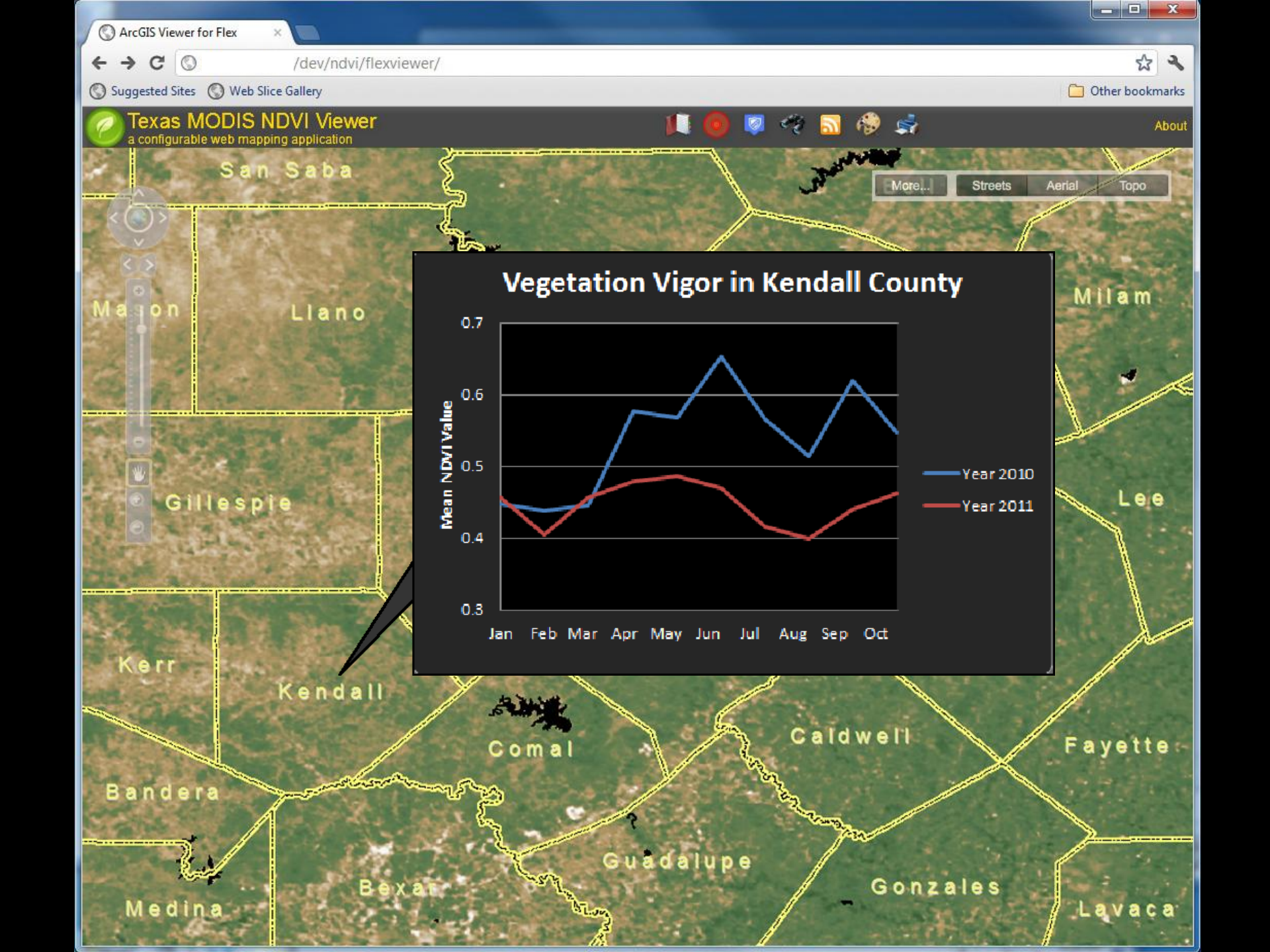


Normalized Difference
Vegetation Index

January 17, 2012

Source: 16-day cycle MODIS
UT Center for Space Research


1.0
0.5
0
Normalized Difference
Vegetation Index
January 17
Source: 16-day cycle MODIS
2001-2010 Decadal Mean
UT Center for Space Research


ArcGIS Viewer for Flex
/dev/ndvi/flexviewer/
Suggested Sites
Web Slice Gallery
Other bookmarks
Texas MODIS NDVI Viewer
a configurable web mapping application
About
More...
Streets
Aerial
Topo
San Saba
Llano
Milam
Gillespie
Lee
Kerr
Kendall
Comal
Caldwell
Fayette
Bandera
Guadalupe
Bexar
Gonzales
Medina
Lavaca
Vegetation Vigor in Kendall County
Mean NDVI Value
0.7
0.6
0.5
0.4
0.3
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Year 2010
Year 2011

Online Access to Texas Vegetation Indices
Plans & Challenges

- Publish a web mapping service for access to current county-level NDVI patterns and to time series charts of recent NDVI values vs. decadal (2001-2010) mean NDVI values.
- Create an improved water mask to screen reservoirs and coastal features.
- Determine if irrigated cropland and areas dominated by rowcrop agriculture need to be filtered when representing aggregate statistics.
- Investigate whether the inclusion of certain urban areas affects the results of aggregate statistics.
- Develop an appropriate data query logic that enables interannual comparisons, current vs. decadal mean comparisons, etc.

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