Satellite Monitoring of Changing Vegetation Conditions in 2011 and 2012

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Second Water Forum: “Texas Drought and Beyond”
Center for Integrated Earth System Science, The University of Texas at Austin
October 22, 2012
Decadal Mean Normalized Difference Vegetation Index

February 1, 2001-10

Source: 16-day cycle MODIS
UT Center for Space Research
Decadal Mean
Normalized Difference Vegetation Index
February 17, 2001

Source: 16-day cycle MODIS
UT Center for Space Research
Decadal Mean Normalized Difference Vegetation Index

March 5, 2001-10

Source: 16-day cycle MODIS
UT Center for Space Research
Decadal Mean
Normalized Difference
Vegetation Index

March 21, 2001

Source: 16-day cycle MODIS
UT Center for Space Research
Decadal Mean Normalized Difference Vegetation Index

April 6, 2001-10

Source: 16-day cycle MODIS
UT Center for Space Research
Decadal Mean
Normalized Difference
Vegetation Index

April 22, 2001

Source: 16-day cycle MODIS
UT Center for Space Research
Decadal Mean Normalized Difference Vegetation Index

May 8, 2001-10

Source: 16-day cycle MODIS
UT Center for Space Research
Decadal Mean Normalized Difference Vegetation Index

June 9, 2001-10

Source: 16-day cycle MODIS
UT Center for Space Research
Decadal Mean Normalized Difference Vegetation Index

June 25, 2001-10

Source: 16-day cycle MODIS
UT Center for Space Research
Decadal Mean Normalized Difference Vegetation Index

July 11, 2001-10

Source: 16-day cycle MODIS
UT Center for Space Research
Decadal Mean Normalized Difference Vegetation Index

August 12, 2001-10

Source: 16-day cycle MODIS
UT Center for Space Research
Decadal Mean Normalized Difference Vegetation Index

September 13, 2001-10

Source: 16-day cycle MODIS UT Center for Space Research
Decadal Mean Normalized Difference Vegetation Index

September 29, 2001-10

Source: 16-day cycle MODIS
UT Center for Space Research
Decadal Mean Normalized Difference Vegetation Index

October 15, 2001-10

Source: 16-day cycle MODIS
UT Center for Space Research
Decadal Mean Normalized Difference Vegetation Index

October 31, 2001-10

Source: 16-day cycle MODIS
UT Center for Space Research
Decadal Mean Normalized Difference Vegetation Index

November 16, 2001-10

Source: 16-day cycle MODIS
UT Center for Space Research
Decadal Mean Normalized Difference Vegetation Index

December 2, 2001-10

Source: 16-day cycle MODIS
UT Center for Space Research
Decadal Mean
Normalized Difference
Vegetation Index

December 18, 2001

Source: 16-day cycle MODIS
UT Center for Space Research
Normalized Difference Vegetation Index

January 16, 2011

Source: 16-day cycle MODIS
UT Center for Space Research
Decadal Mean Normalized Difference Vegetation Index

February 1, 2011

Source: 16-day cycle MODIS
UT Center for Space Research
Decadal Mean Normalized Difference Vegetation Index

February 17, 2011

Source: 16-day cycle MODIS
UT Center for Space Research
Decadal Mean
Normalized Difference Vegetation Index
March 21, 2011
Source: 16-day cycle MODIS
UT Center for Space Research
Decadal Mean
Normalized Difference Vegetation Index

April 6, 2011

Source: 16-day cycle MODIS
UT Center for Space Research
Decadal Mean Normalized Difference Vegetation Index

April 22, 2011

Source: 16-day cycle MODIS
UT Center for Space Research
Decadal Mean Normalized Difference Vegetation Index

May 8, 2011

Source: 16-day cycle MODIS
UT Center for Space Research
Decadal Mean
Normalized Difference Vegetation Index
June 25, 2011
Source: 16-day cycle MODIS
UT Center for Space Research
Decadal Mean Normalized Difference Vegetation Index

July 27, 2011

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

Normalized Difference Vegetation Index

August 12, 2011

Source: 16-day cycle MODIS
UT Center for Space Research
Normalized Difference
Vegetation Index

August 28, 2011

Source: 16-day cycle MODIS
UT Center for Space Research
Normalized Difference Vegetation Index

September 13, 2011

Source: 16-day cycle MODIS
UT Center for Space Research
Decadal Mean Normalized Difference Vegetation Index

September 29, 2011

Source: 16-day cycle MODIS
UT Center for Space Research
Decadal Mean
Normalized Difference Vegetation Index

October 15, 2011
Source: 16-day cycle MODIS
UT Center for Space Research
Decadal Mean Normalized Difference Vegetation Index

October 31, 2011

Source: 16-day cycle MODIS 
UT Center for Space Research
Decadal Mean Normalized Difference Vegetation Index

December 18, 2011

Source: 16-day cycle MODIS
UT Center for Space Research
Decadal Mean Normalized Difference Vegetation Index December 31, 2011

Source: 16-day cycle MODIS UT Center for Space Research
Decadal Mean Normalized Difference Vegetation Index

January 16, 2012

Source: 16-day cycle MODIS
UT Center for Space Research
Decadal Mean
Normalized Difference
Vegetation Index
February 1, 2012
Source: 16-day cycle MODIS
UT Center for Space Research
Normalized Difference Vegetation Index

February 17, 2012

Source: 16-day cycle MODIS
UT Center for Space Research
Decadal Mean Normalized Difference Vegetation Index

March 4, 2012

Source: 16-day cycle MODIS
UT Center for Space Research
Decadal Mean
Normatized Difference Vegetation Index
March 20, 2012
Source: 16-day cycle MODIS
UT Center for Space Research
May 7, 2012

Source: 16-day cycle MODIS
UT Center for Space Research
Decadal Mean Normalized Difference Vegetation Index

May 23, 2012

Source: 16-day cycle MODIS
UT Center for Space Research
Decadal Mean Normalized Difference Vegetation Index

August 11, 2012

Source: 16-day cycle MODIS
UT Center for Space Research
Decadal Mean Normalized Difference Vegetation Index

August 27, 2012

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

Normalized Difference Vegetation Index

August 27, 2012

Source: 16-day cycle MODIS
UT Center for Space Research
Decadal Mean Normalized Difference Vegetation Index

September 12, 2012

Source: 16-day cycle MODIS
UT Center for Space Research
Normalized Difference Vegetation Index

September 28, 2012

Source: 16-day cycle MODIS
UT Center for Space Research
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Interannual Comparisons
Decadal Mean
Normalized Difference Vegetation Index

October 6, 2012

Source: 16-day cycle MODIS
UT Center for Space Research
Decadal Mean Normalized Difference Vegetation Index

October 7, 2011

Source: 16-day cycle MODIS
UT Center for Space Research
>5 Percent Change
Normalized Difference
Vegetation Index


Source: 16-day cycle MODIS
UT Center for Space Research
Decadal Mean Normalized Difference Vegetation Index October 6, 2012
Source: 16-day cycle MODIS UT Center for Space Research
Decadal Mean

Normalized Difference

Vegetation Index

October 7, 2001

Source: 16-day cycle MODIS
UT Center for Space Research
>5 Percent Change
Normalized Difference
Vegetation Index

Oct. 6, 2012 / Oct. 7, 2001-10

Source: 16-day cycle MODIS
UT Center for Space Research
State NDVI Statistics
Mean NDVI Probability Distribution for Hale County
Jan 2001 - Jul 2012

The graph shows the probability distribution of mean NDVI (Normalized Difference Vegetation Index) for Hale County from January 2001 to July 2012. The distribution is centered around a mean NDVI value, with a peak probability occurring at this central value. The x-axis represents the mean NDVI values, while the y-axis represents the probability distribution. The graph is a probability density function, indicating the likelihood of different mean NDVI values occurring within the study period.
County NDVI Statistics
Vegetation Vigor in Travis County

Water Year 2010

Mean NDVI Value

Oct-1  Nov-1  Dec-1  Jan-1  Feb-1  Mar-1  Apr-1  May-1  Jun-1  Jul-1  Aug-1  Sep-1
Vegetation Vigor in Travis County

- Water Year 2010
- Water Year 2011
- Water Year 2012

Mean NDVI Value

Oct-1 Nov-1 Dec-1 Jan-1 Feb-1 Mar-1 Apr-1 May-1 Jun-1 Jul-1 Aug-1 Sep-1
http://magic.csr.utexas.edu/ndvi/flexviewer/
Questions

• What emphasis should be placed on vegetation indices as a measure of local, regional and statewide drought conditions?

• What comparative data sets should be added to the Texas MODIS NDVI Viewer?
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