

Contextualizing Impacting Weather and Climate Information via GIS

Jack Settelmaier

NOAA/National Weather
Service/SRHQ/Digital Techniques
Meteorologist

Fort Worth, TX

AMS Annual Conference, Jan 2016, New Orleans, LA

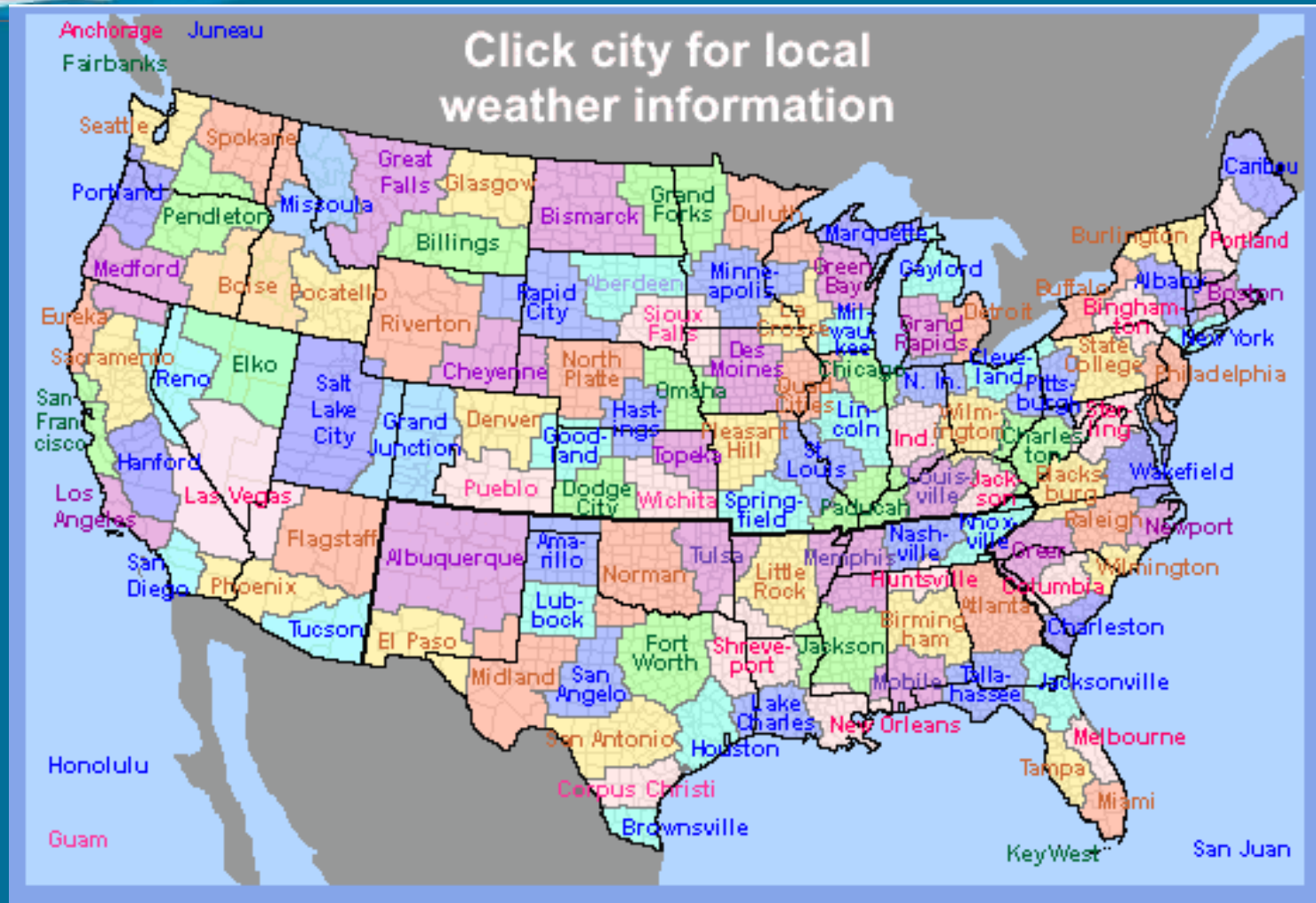
Outline

- **NWS Mission tie (lessen life/property losses, enable efficient commerce)**
- **Contextualizing vs Conveying Impacts**
- **Visual Context Examples (Past→Present→Future)**
- **Methodology (How)**

NWS—Our (common) Mission

- **Protect life and property from losses**
- **Facilitate efficient and productive commerce**
- **Through Impact-based Decision Support Services (IDSS) for a Weather-Ready Nation (WRN)**

NOAA/National Weather Service



NOAA/National Weather Service



NATIONAL WEATHER SERVICE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION



- HOME
- FORECAST
- PAST WEATHER
- WEATHER SAFETY
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Local forecast by "City, St" or ZIP code

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Severe weather possible for parts of north-central Plains & Upper Midwest, Ohio Valley

The NWS Storm Prediction Center is forecasting a risk of severe thunderstorms Friday afternoon and evening across parts of the north-central Plains & Upper Midwest, from eastern Wyo. across northern Neb., southern & eastern S.D. and southeastern N.D. and into western Minn. and northwestern Iowa. Severe thunderstorms are also possible across parts of the Ohio Valley, mainly across central IN & OH.

[Read More...](#)

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Weather.gov

Enter Your City, ST or ZIP Code

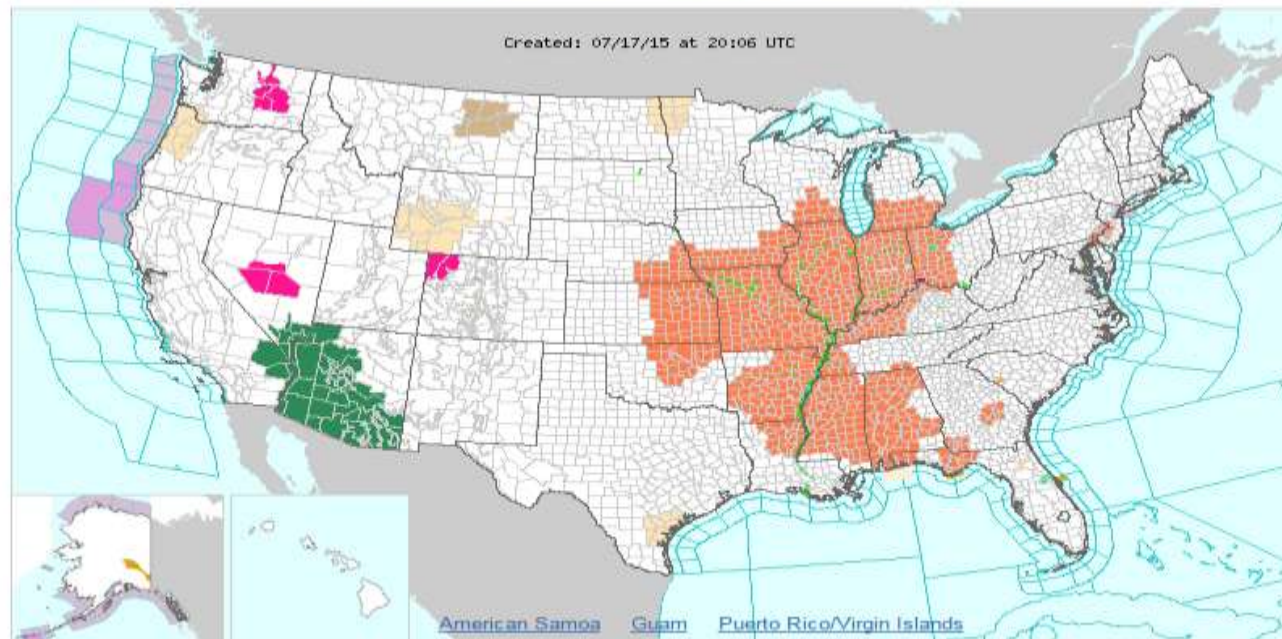
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Photo Contest
Winners
Announced



- ACTIVE ALERTS
- FORECAST MAPS
- RADAR
- RIVERS, LAKES, RAINFALL
- AIR QUALITY
- SATELLITE
- PAST WEATHER



Click on the map above for detailed alerts or [Warnings By State](#) [Public Alerts in XML/CAP v1.1 and ATOM Formats](#)

Convey vs Contextualize

Convey: (verb) To communicate or make known; impart (e.g. a message/information)

Contextualize: (verb)
to state the social, grammatical, or other context of

Word Cloud

Perceive, Communicate, Sensory Analysis, Concepts, Impacts,
Connote (CONAN), socialize

Impacts, Risks, Threat--Personal

**NWS: Impact-based Decision Support Services (IDSS),
Weather-Ready Nation (WRN)**

Examples

GFS MOS MEX Bulletin

GFSX MOS FORECASTS

KDFW	GFSX		MOS			GUIDANCE			7/02/2015 1200 UTC									
FHR	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192			
	FRI	03	SAT	04	SUN	05	MON	06	TUE	07	WED	08	THU	09	FRI	CLIMO		
N/X	76	91	75	92	75	93	75	95	76	93	75	94	77	97	77	73	94	
TMP	77	87	76	88	76	89	76	92	77	89	76	91	78	93	78			
DPT	69	68	71	67	71	69	72	67	73	68	69	68	72	66	71			
CLD	OV	OV	OV	PC	PC	PC	PC	PC	CL	PC	CL	CL	CL	CL	CL			
WND	16	14	10	9	13	16	16	18	17	17	17	16	15	15	15			
P12	34	22	30	23	25	8	16	5	8	12	9	6	9	9	8	12	12	
P24		36		50		25		16		12		11		11			19	
Q12	0	0	0	0	0	0	0	0	0	0	0	0						
Q24		0		2		0		0		0		0						
T12	27	27	34	43	23	23	16	17	10	24	9	18	8	20	13			
T24			53		50		27		24		24		24		25			

GFS MOS MEX Bulletin

GFSX MOS FORECASTS

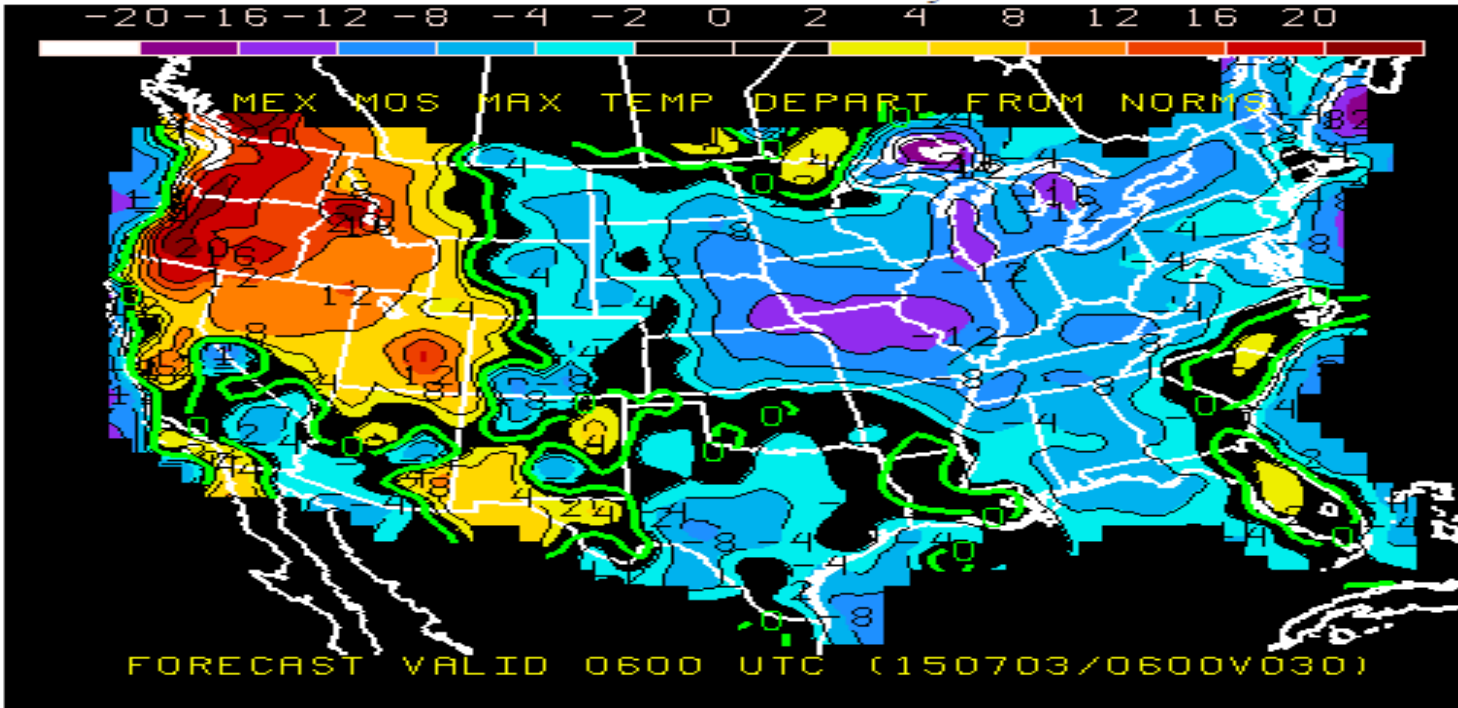
KDFW	GFSX		MOS			GUIDANCE			7/02/2015 1200 UTC								
	FRI	SAT	SUN	MON	TUE	WED	THU	FRI	SAT	SUN	MON	TUE	WED	THU	FRI	CLIMO	CLIMO
FHR	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192		
N/X	76	91	75	92	75	93	75	95	76	93	75	94	77	97	77	73	94
TMP	77	87	76	88	76	89	76	92	77	89	76	91	78	93	78		
DPT	69	68	71	67	71	69	72	67	73	68	69	68	72	66	71		
CLD	OV	OV	OV	PC	PC	PC	PC	PC	CL	PC	CL	CL	CL	CL	CL		
WND	16	14	10	9	13	16	16	18	17	17	17	16	15	15	15		
P12	34	22	30	23	25	8	16	5	8	12	9	6	9	9	8	12	12
P24		36		50		25		16		12		11		11			19
Q12	0	0	0	0	0	0	0	0	0	0	0	0					
Q24		0		2		0		0		0		0					
T12	27	27	34	43	23	23	16	17	10	24	9	18	8	20	13		
T24			53		50		27		24		24		24		25		

Early MOS Display

MEX MOS DEPARTURE FROM NORMAL MAXIMUM (F)

Valid 0600 UTC Friday

-20 -16 -12 -8 -4 -2 0 2 4 8 12 16 20



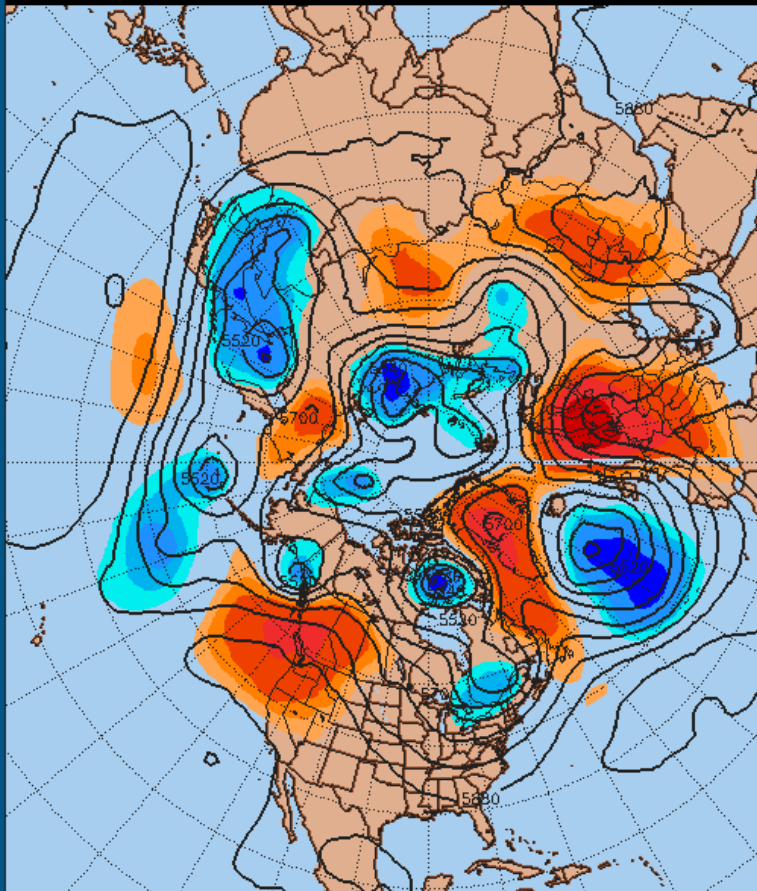
Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday
06	06	06	06	06	06	06	06

DEPARTURE FROM NORMAL MAXIMUM: The difference, in degrees Fahrenheit, between the forecast daytime maximum temperature and the normal daytime maximum temperature.

PSU 500mb Height SA Table

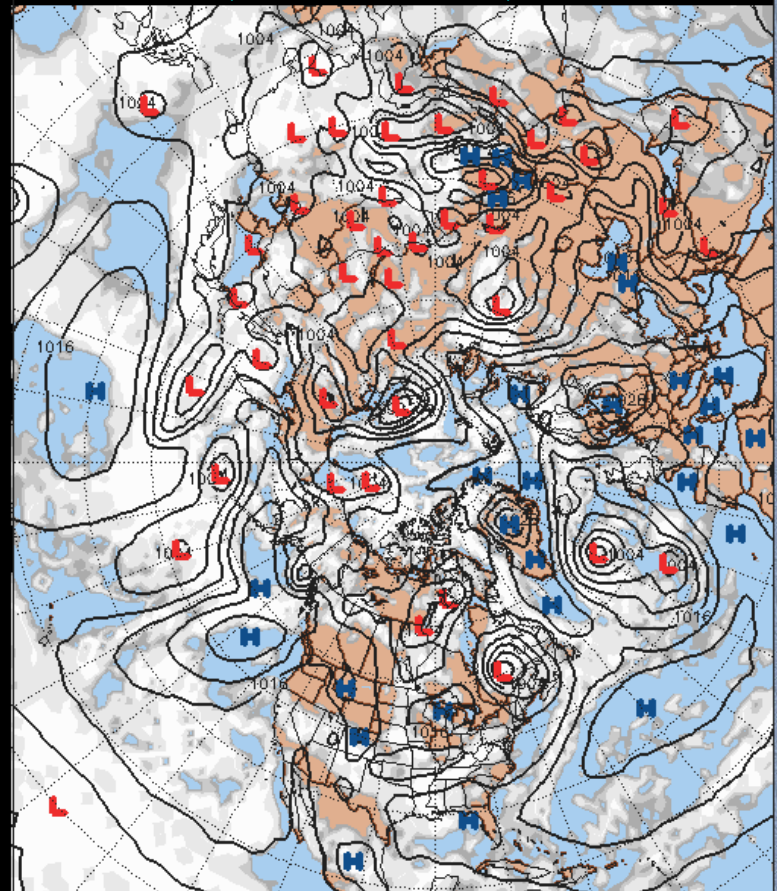
2-DAY HEMISPHERIC LOOP

E-WALL HOME



CLICK TO ANIMATE

MSL PRESSURE/MODEL CLOUD COVER THU 150702/1200V000



NWS Western Region SA Table



ENSEMBLE SITUATIONAL AWARENESS TABLE
NOAA / NATIONAL WEATHER SERVICE

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Model Run: Jul 1, 2015 00Z | Table Region: Continental U.S. | Plot Region: Continental U.S. | Output: NAEFS Standardized Anomaly | [View Table](#)

WFO Continental U.S. Table Jul 1, 2015 00Z Run		Z	I	U	V	WSP	SLP	Q	PW	MT	
0	Wed	00Z	-4.3	3.9	3.9	3.7	3.5	1.9	4.9	3.6	5.0
6	1st	06Z	-4.3	3.8	3.2	3.3	3.0	-2.0	4.3	3.6	4.2
12		12Z	-4.2	2.9	3.3	3.0	3.5	-2.0	3.8	3.6	3.7
18		18Z	-3.9	3.0	3.2	3.2	3.4	-2.2	4.2	4.0	4.0
24		00Z	-3.5	4.0	3.4	2.8	3.2	-2.3	4.7	4.0	2.9
30	2nd	06Z	2.8	3.5	3.4	3.1	3.5	-2.3	4.8	4.2	3.5
36		12Z	2.7	2.9	3.3	3.1	2.9	-2.3	4.6	3.9	3.1
42		18Z	2.6	3.0	3.6	2.9	3.1	-2.2	4.7	3.9	3.0
48		00Z	2.4	3.9	3.7	2.4	3.4	-1.9	5.5	4.2	3.4
54	3rd	06Z	2.4	3.5	3.6	2.3	3.3	-1.9	4.9	4.5	3.0
60		12Z	2.3	2.9	3.2	2.3	3.3	-2.1	4.4	4.2	3.5
66		18Z	2.4	3.0	3.1	2.5	3.4	-1.7	4.6	4.2	3.8
72		00Z	2.4	3.0	3.1	3.0	3.5	-1.9	5.0	4.5	3.7
78	4th	06Z	2.5	3.1	2.9	2.7	3.4	-2.0	4.6	4.8	3.2
84		12Z	2.6	3.3	2.8	2.8	3.2	-2.0	4.0	4.2	3.1
90		18Z	2.5	3.1	2.8	2.5	3.1	-2.2	4.7	4.0	3.0
96		00Z	2.6	4.1	2.8	2.4	2.8	-2.4	4.7	4.0	2.6
102	5th	06Z	2.6	5.2	2.7	2.4	2.5	-2.2	4.0	3.9	2.2
108		12Z	2.7	5.7	2.5	2.2	2.4	-2.1	3.6	3.6	2.2
114		18Z	2.8	5.3	2.5	2.1	2.5	-2.1	4.0	3.3	2.3
120		00Z	2.6	5.4	2.4	2.0	2.2	-2.2	3.9	3.1	2.5
126	6th	06Z	2.5	5.2	2.4	2.0	2.5	-1.8	3.4	3.0	2.2
132		12Z	2.5	4.6	2.2	1.9	1.9	-1.5	2.9	2.7	2.0
138		18Z	2.3	4.5	2.2	2.1	2.4	-1.4	3.1	2.5	2.7
144		00Z	2.3	3.7	2.2	1.8	1.9	1.5	3.4	2.3	2.3
150	7th	06Z	2.2	3.7	2.3	1.9	2.0	1.5	2.6	2.2	2.1

How to navigate:

On the main table: Click a field (e.g., 'Z') to switch to a sub-table with data for each vertical level
Click a value (e.g., '2.8') to plot a multi-panel image for that time and field at all levels

On a sub-table: Click a value (e.g., '2.8') to plot an image for that hour, field and level
Click a level (e.g., '500') to loop images for that field and level at all forecast hours

For a different table: Select the desired Model Run, Table/Plot Region, and Output Type from the drop-down menus above, and click View Table

The NAEFS Ensemble: A 42-member ensemble consisting of 21 GEFS ensemble members and 21 Canadian (GEPS) members. Each set of 21 members includes a control run and 20 initial condition perturbations. Although the GEFS and GEPS are run at native resolutions of 55 and 66 km, respectively, the NAEFS is distributed on a 1x1-degree grid.

NAEFS Standardized Anomaly: How different is the model forecast from the climatological mean? Compares the NAEFS ensemble mean forecast to a 3-week running mean and standard deviation derived from the 1979-2009 Climate Forecast System Reanalysis. Standardized anomaly = (NAEFS_forecast - CFSR_climatology_mean) / (CFSR_climatology_standard_deviation)

NAEFS Percentile (Recommended): Where would the model forecast fall with respect to climatology? Example: MAX at 00Z indicates that values in the current NAEFS forecast are greater than all 00Z values in the CFSR climatology for a 3-week period centered on the valid day. Forecasters are encouraged to focus on "MAX" and "MIN" values, indicating that the ensemble is forecasting an event that would fall outside the 1979-2009 climatology for this time of year

NAEFS Return Interval: How often do these forecast values show up in the climatology? Specifically, how often were the CFSR values (in a 3-week period centered on the valid time) more extreme than values in the NAEFS forecast. Example: a return interval of 5 on Feb 15th means that roughly every 5 years, there is a day in mid-February when values in the current forecast were met or exceeded. Another example: "outside CFSR climate" for temperature means that none of the mid-February reanalyses were this warm between 1979 and 2009.

Variables---->>>>

T
I
M
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V

Model Run: Jul 2, 2015 00Z Table Region: Continental U.S. Plot Region: Continental

WFO Continental U.S. Table			Jul 2, 2015 00Z Run								
			Z	T	U	V	WSP	SLP	Q	PW	IVT
0	Thu 2nd	00Z	-3.5	-3.7	-4.5	3.9	5.1	-2.3	4.7	5.0	3.9
6		06Z	-2.7	4.2	-3.9	-3.5	4.2	-2.5	4.8	4.0	4.7
12		12Z	2.7	3.4	-3.6	-3.5	3.4	-2.6	4.6	4.0	3.5
18		18Z	2.7	3.5	-3.5	-3.3	3.6	-2.3	4.4	4.1	3.5
24	Fri 3rd	00Z	2.5	4.3	-3.8	-2.5	4.1	-2.0	4.9	4.3	3.9
30		06Z	2.4	4.0	-3.9	-2.3	4.0	-1.9	4.6	4.8	3.4
36		12Z	2.3	2.8	3.4	-2.7	3.7	-1.9	4.5	4.7	3.6
42		18Z	2.3	2.9	-3.2	-2.8	3.3	-1.6	4.3	4.6	3.3
48	Sat 4th	00Z	2.4	3.0	-3.1	-3.0	3.3	-1.8	4.9	4.4	3.4
54		06Z	2.6	3.3	3.0	-2.6	3.2	-1.9	4.7	3.8	3.0
60		12Z	2.5	3.2	2.8	-2.7	3.1	-2.1	4.2	3.5	2.8
66		18Z	2.5	3.3	-2.7	-2.5	3.1	-2.0	4.5	3.5	2.7
72	Sun 5th	00Z	2.5	3.8	-2.7	-2.4	2.9	-2.3	4.5	3.5	2.5
78		06Z	2.6	5.1	-2.7	-2.5	2.7	-2.2	4.2	3.8	2.1
84		12Z	2.8	5.7	-2.6	-2.5	2.4	-2.0	3.5	3.5	1.9

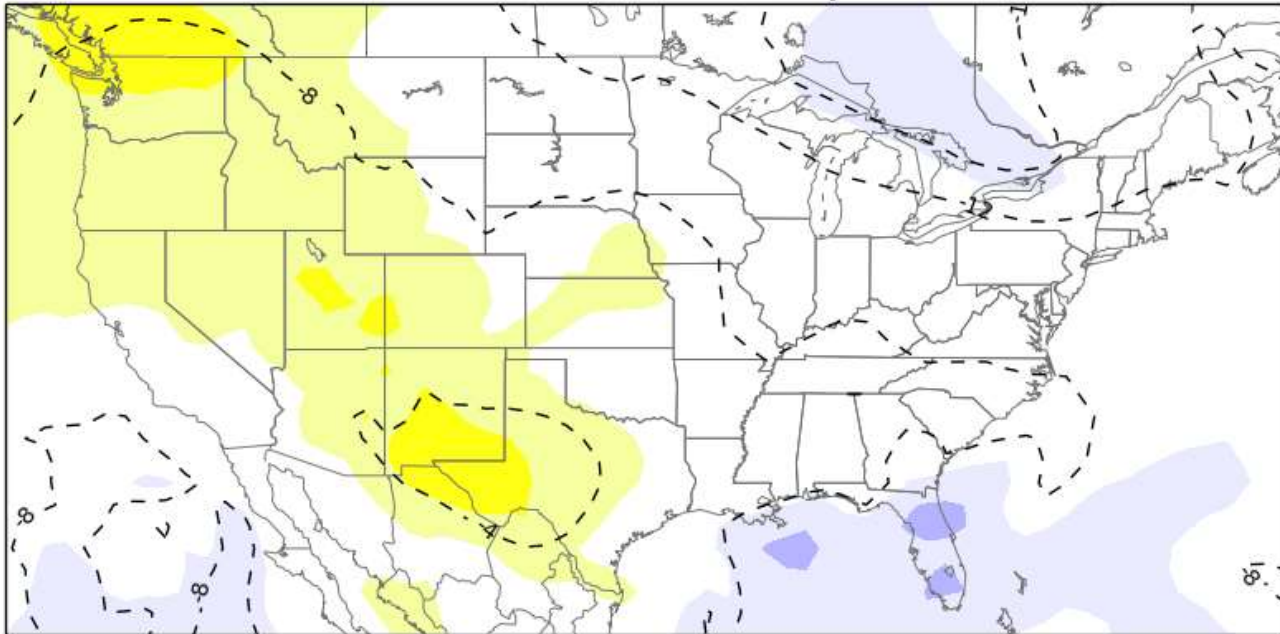
Variable Per Atmos Level

Model Run:	Table Region:	Plot Region:
Jul 2, 2015 00Z ▼	Continental U.S. ▼	Continental U.S.

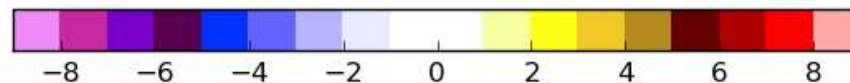
WFO Continental U.S. Table		Jul 2, 2015 00Z Run					
Back		T	200	500	700	850	1000
0	Thu 2nd	00Z	2.3	2.9	2.6	3.0	-3.7
6		06Z	-2.0	2.4	2.6	2.7	4.2
12		12Z	2.3	2.3	2.6	2.8	3.4
18		18Z	2.1	2.4	2.7	3.0	3.5
24	Fri 3rd	00Z	2.0	2.4	2.8	2.8	4.3
30		06Z	2.2	2.3	2.6	2.8	4.0
36		12Z	2.1	2.2	2.6	2.8	2.7
42		18Z	1.7	2.2	2.6	2.9	2.9
48	Sat 4th	00Z	1.9	2.2	2.9	3.0	2.7

NWS Western Region SA Table

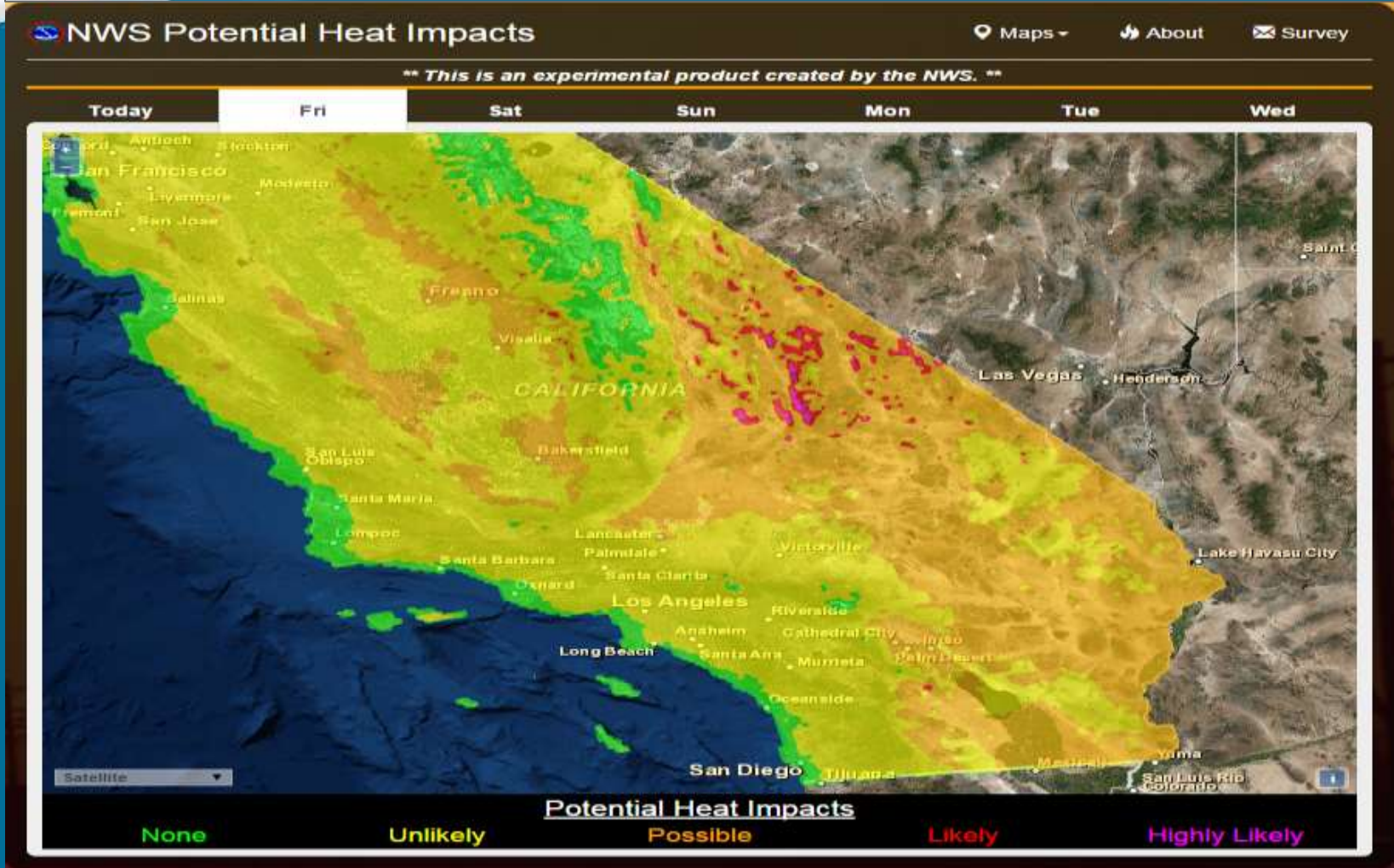
NAEFS Mean 500-hPa Temperature (C) and Standardized Anomaly
HOUR 000 - VALID 00:00 UTC Thu Jul 02 2015



Relative to the 21-Jun to 12-Jul 1979-2009 CFSR climatology



Conveying/Contextualizing Heat Impacts



USDM: June—2013 vs 2015

U.S. Drought Monitor Weekly Comparison

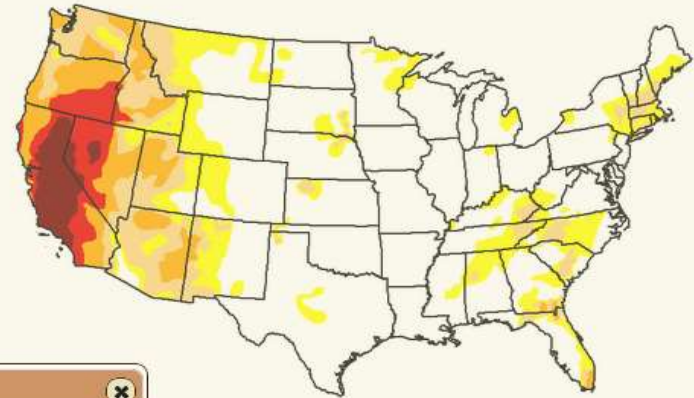
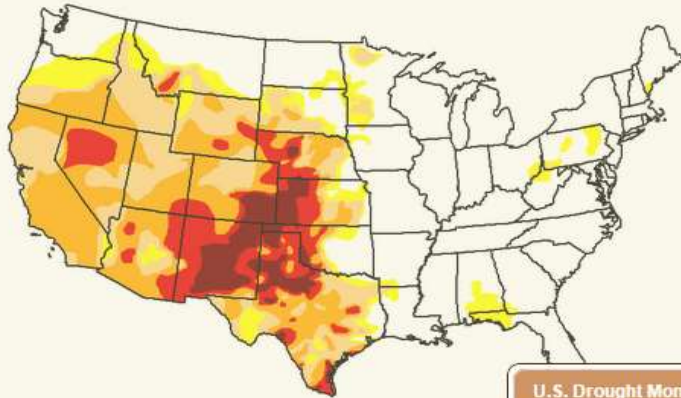
National

CONUS

Statistics type:

Traditional Percent Area

Legend



U.S. Drought Monitor Legend

Drought Severity

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



June 18, 2013

June 23, 2015

Statistics Comparison

NOAA-wide ESRI Enterprise License Agreement (ELA)

- Software
- Training
- ArcGIS Online (AGOL) for Orgs
- EEAP (extra exploration, IDP build-out)



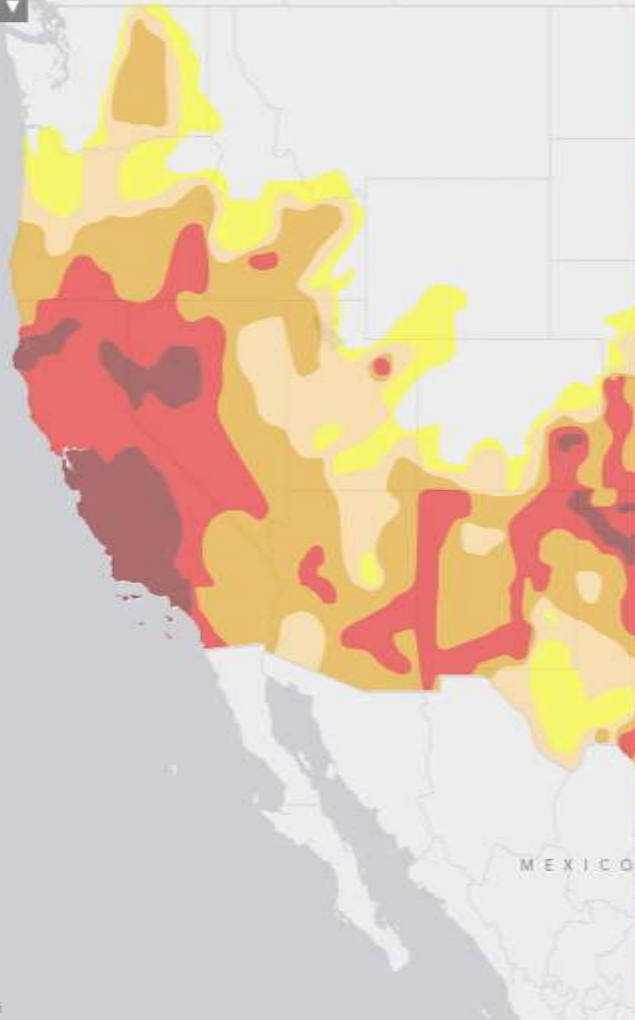
Drought/Rainfall Compare (From 2014?)

Drought Status/Forecast Rainfall

Compare current drought status and Rainfall forecasts to see where it may improve or worsen

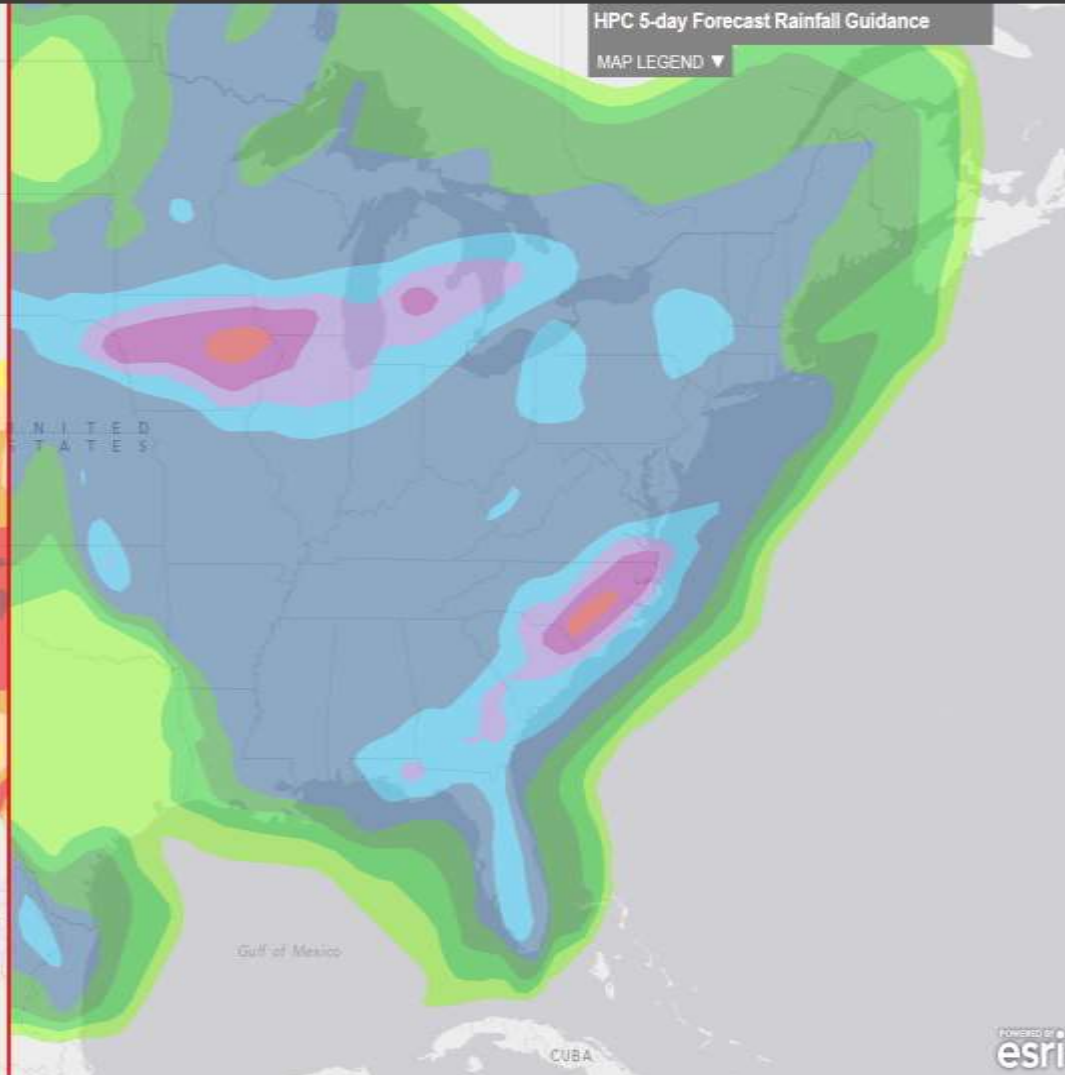
United States Drought Monitor

MAP LEGEND ▼

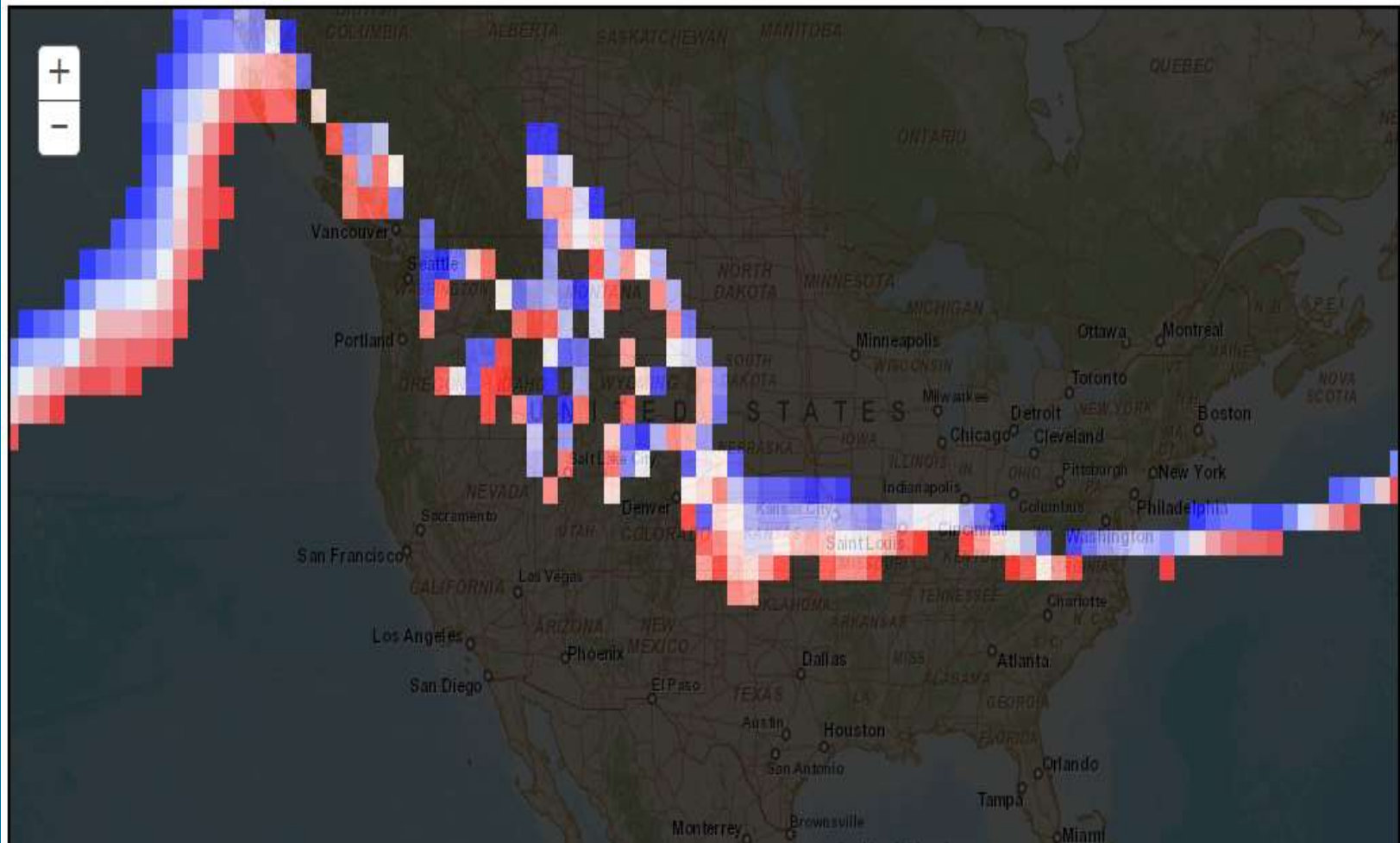


HPC 5-day Forecast Rainfall Guidance

MAP LEGEND ▼



850mb Temp 0 degC “line”



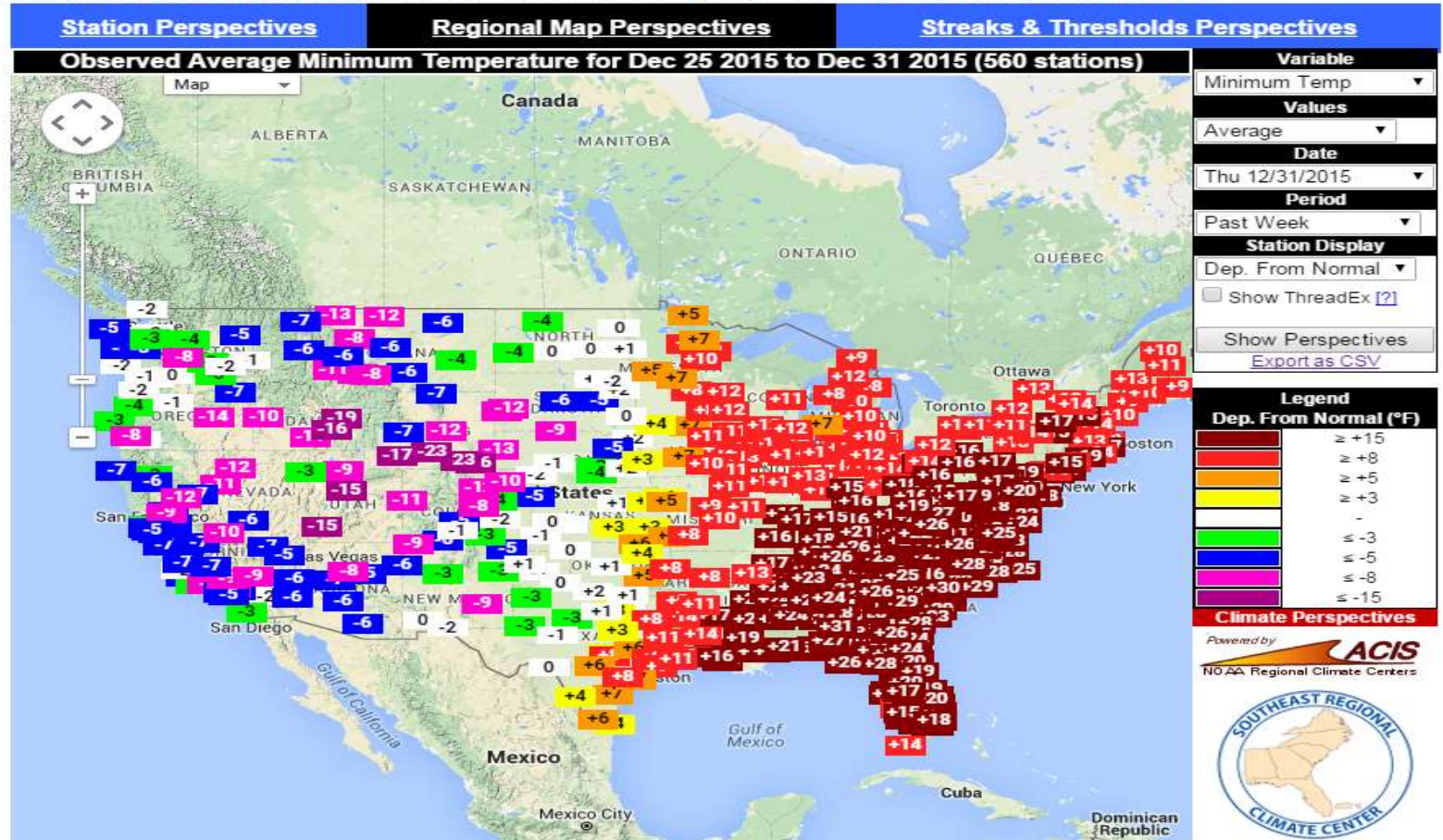
Impetus

SE RCC Perspectives—Dec 25-31 2015 MinT

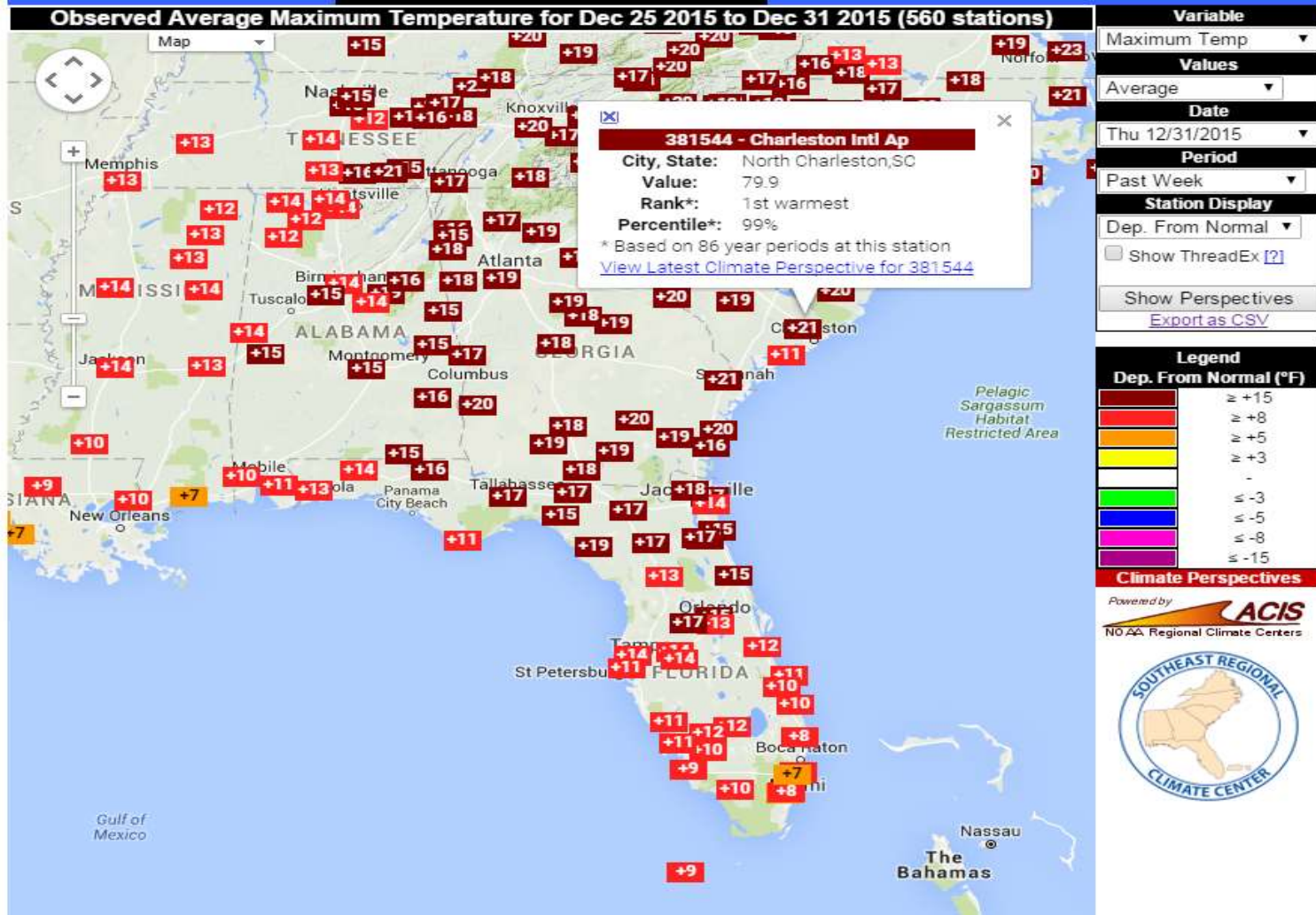
Southeast Climate Perspectives Map

For any problems, comments or suggestions, please drop us a line.

This tool places recent conditions in both a historical and geographical perspective. About This Product & Video Tutorial



SE RCC Perspectives—Pop-Up



Methodology

SE RCC Perspectives—CSV

```
Station_ID,Station_Name,Station_Lat_N,Station_Lon_E,City,State,Start_Date,End_Date,Year_Count,Variable,  
Value_F,DFN_Station_ID,DFN_Value_F,Abs_Rank_Type,Abs_Rank,Abs_Rank_Tied,Abs_Percentile,Rel_Rank_Type,Rel_Rank,Rel_Rank_Tied,Rel_Percentile  
457473,Seattle Tacoma Ap,47.44444,-122.31389,Seattle,WA,2-Jul-15,2-Jul-15,68,maxt,  
93.0,457473,19.7,warmest,1,False,99,warmest,1,False,99
```

[http://www.sercc.com/climper/climpermap_csv.php?validdate=2015-07-07&var=maxt&thresh=climper
&period=1_DAY&map_display=value&showthrdx=true&accessed=2015070814&domain=srcc](http://www.sercc.com/climper/climpermap_csv.php?validdate=2015-07-07&var=maxt&thresh=climper&period=1_DAY&map_display=value&showthrdx=true&accessed=2015070814&domain=srcc)

Observed Jul 2, 2015 MaxT



Jul 2, 2015 Record MaxT Anomalies



Jul 2, 2015 Record MaxT Pop-Up

Station_ID	SEAthr
Station_Name	Seattle Area
Station_Lat_N	47.44
Station_Lon_E	-122.31
City	Seattle
State	WA
Start_Date	2-Jul-15
End_Date	2-Jul-15
Year_Count	68
Variable	maxt
Value_F	93.00
DFN_Station_ID	457473
DFN_Value_F	19.70
Abs_Rank_Type	warmest
Abs_Rank	1
Abs_Rank_Tied	False
Abs_Percentile	99
Rel_Rank_Type	warmest
Rel_Rank	1
Rel_Rank_Tied	False
Rel_Percentile	99

Applied Climate Information System (ACIS)

ACIS Web Services

Introduction

The [Applied Climate Information System \(ACIS\) Web Services](#) consists of five types of calls - StnMeta, StnData, MultiStnData, GrdData and General. Each of these calls is documented below. Each call has certain parameters that are required and optional parameters that let you further refine your request.

Web service calls can be made in several ways. Basic calls can be made via http requests from a web browser with the complete call specified in the url. More advanced calls require a [JSON](#) object to adequately specify the request. Such requests can be submitted to the ACIS server from most programming languages by specifying the server address and a JSON "params" object. In this document, some of the examples will take the form of a simple url, while others will provide just the "params" object. For each example, a link to a [jsFiddle](#) is provided to submit the request and display the results. [jsFiddle](#) allows you to experiment with changing the parameters and seeing how this affects the results.

The [ACIS Query Builder](#) is a useful tool for learning how the ACIS Web Services calls are constructed and how the returned results are formatted.

I. StnMeta

The **StnMeta** web services call returns metadata for a station or stations meeting the specified criteria.

1. Required parameters

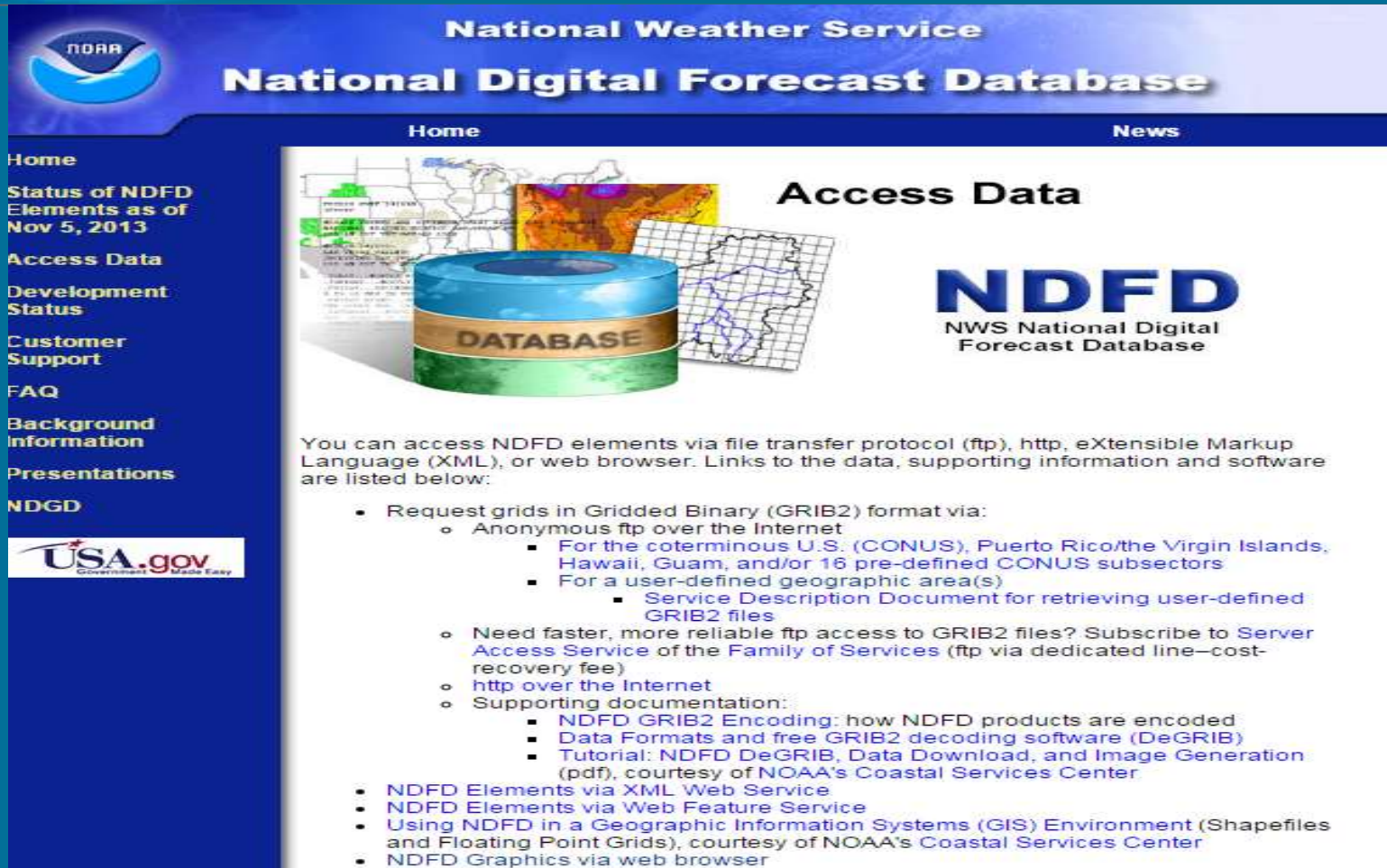
One or more of the following keys must be specified:

Key	Description
sids	Station identifier(s) and optional id types codes. Can be any of the id types in Table 1 . Ambiguous identifiers require the station id type code be appended to the identifier, separated by a space (e.g. BUFthr 9). The value associated with this key can be either a single id or an array of ids. This key cannot be combined with any of the other keys in this table.
county	County (FIPS) id. Made up of a 2-digit state and 3-digit county id. List of FIPS codes .
climdiv	NCDC Climate Division. Consists of a 2-letter state abbreviation and 2-digit climate division id (e.g. FL01). Map of climate divisions .
cwa	NWS County Warning Area. Three-letter forecast office identifiers .
basin	River basin id. Eight-digit (subbasin) USGS Hydrologic Unit Codes .
state	State postal abbreviation. Two-letter abbreviations. A Wikipedia map or list is available for reference. The 50 states plus territories (AS; GU, MP, PR, VI), freely associated states (FM, MH, PW), and federal district (DC) are available. Note that using DC may be somewhat unreliable because many stations are

- I. StnMeta
 - Required parameters
 - [Table 1. Station Id Type Codes](#)
 - Optional parameters
 - [Table 2. Meta Codes](#)
 - [Table 3. Element Codes](#)
 - Results
 - Examples
- II. StnData
 - Required parameters
 - Elems objects
 - [Table 4. Duration Codes](#)
 - [Table 5. Reduce Codes](#)
 - [Table 6. Reduce/Smry Add Codes](#)
 - [Table 7. Add Codes](#)
 - [Table 8. Smry Codes](#)
 - Optional parameters
 - Results
 - Examples
- III. MultiStnData
 - Required parameters
 - Optional parameters
 - Results
 - Examples
- IV. GrdData
 - Required parameters
 - Elems objects
 - [Table 9. Grid Codes](#)
 - [Table 10. Area Reduction Codes](#)
 - [Table 11. Element Codes for Monthly/Yearly PRISM Data](#)
 - Optional parameters
 - Image object
 - Results
 - Examples
- V. General
 - Required parameters
 - [Table 11. Area Information](#)
 - Optional parameters
 - Results
 - Examples
- VI. Programming Examples
 - [StnMeta Example 1 \(Basic\)](#)

Big Data!!


NDFD or other model data



National Weather Service
National Digital Forecast Database

Home News

Home
Status of NDFD Elements as of Nov 5, 2013
Access Data
Development Status
Customer Support
FAQ
Background Information
Presentations
NDGD



Access Data

NDFD
NWS National Digital Forecast Database

You can access NDFD elements via file transfer protocol (ftp), http, eXtensible Markup Language (XML), or web browser. Links to the data, supporting information and software are listed below:

- Request grids in Gridded Binary (GRIB2) format via:
 - Anonymous ftp over the Internet
 - For the coterminous U.S. (CONUS), Puerto Rico/the Virgin Islands, Hawaii, Guam, and/or 16 pre-defined CONUS subsectors
 - For a user-defined geographic area(s)
 - Service Description Document for retrieving user-defined GRIB2 files
 - Need faster, more reliable ftp access to GRIB2 files? Subscribe to [Server Access Service](#) of the Family of Services (ftp via dedicated line—cost-recovery fee)
 - [http over the Internet](#)
 - Supporting documentation:
 - [NDFD GRIB2 Encoding](#): how NDFD products are encoded
 - [Data Formats and free GRIB2 decoding software \(DeGRIB\)](#)
 - [Tutorial: NDFD DeGRIB, Data Download, and Image Generation](#) (pdf), courtesy of NOAA's Coastal Services Center
- [NDFD Elements via XML Web Service](#)
- [NDFD Elements via Web Feature Service](#)
- [Using NDFD in a Geographic Information Systems \(GIS\) Environment](#) (Shapefiles and Floating Point Grids), courtesy of NOAA's Coastal Services Center
- [NDFD Graphics via web browser](#)

NOAA's Weather and Climate Toolkit (Data)

Raw data files on disk or remote location (URL, THREDDS, OPeNDAP, etc...)

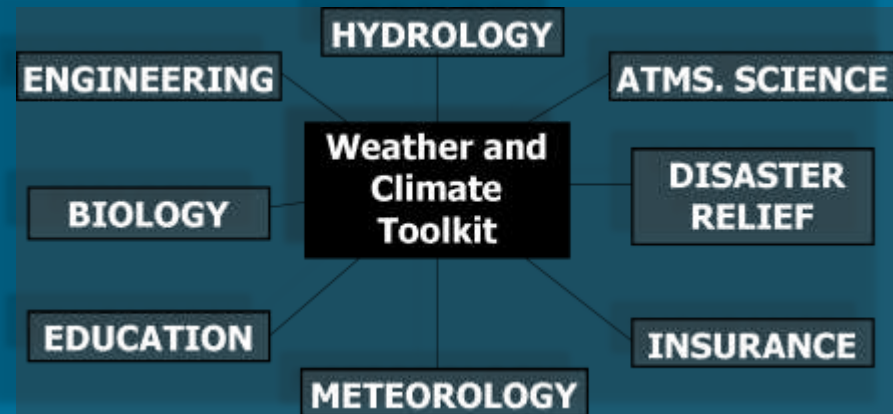
NetCDF, GRIB, GINI, HDF and more via Unidata Common Data Model (CDM):

- Feature types of Grid, Swath, Radial (Time Series, Point, coming soon)

Supports:

- NEXRAD, GOES, Model Data, and much more.

Data Export



“Bridge” between raw Weather and Climate data and multiple scientific user communities

Export Data to:

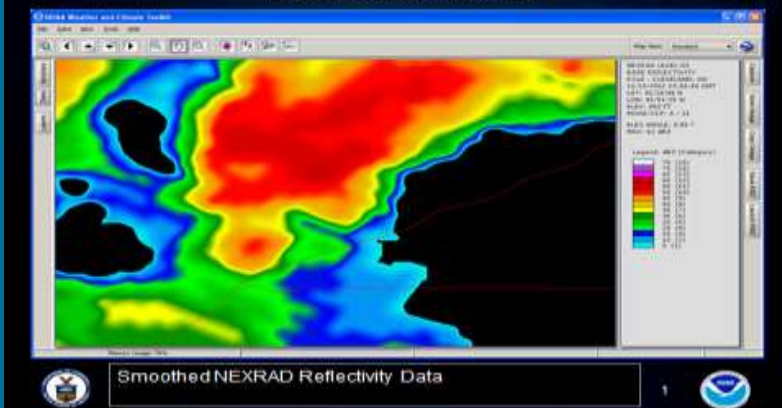
Shapefile, Well-Known Text, Arc/Info ASCII GRID, Gridded and Raw NetCDF, GeoTIFF and KMZ (Google Earth)

NOAA's W&C VISUALIZATION

Visualization



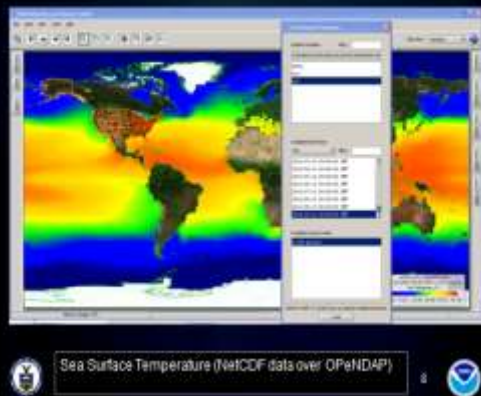
Visualization



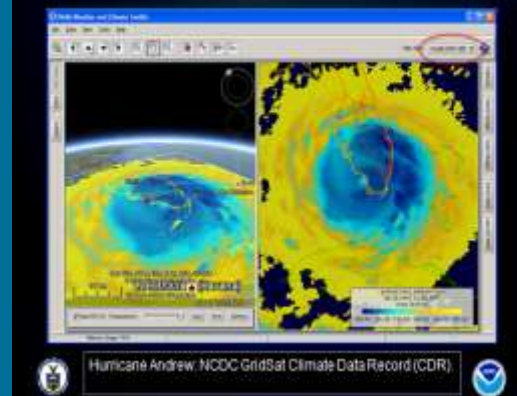
Visualization



Visualization



Visualization



Verification/Comparison--Forecast vs Observed



StoryMaps

- Storymap Templates
- ...Numerous Options
- ...To Convey
- ...Impact Context
- ...About Weather and Climate Events



Map Gallery Poster



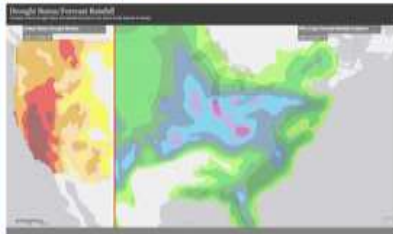
Visual Interpretation of Impacting Weather and Climate Events

Jack Settelmaier (jack.settelmaier@noaa.gov), Meteorologist
NOAA, National Weather Service Southern Region HQ, Fort Worth, Texas



Drought/Climate Impacts

Comparing Latest Drought Conditions with Next 5 Days of Forecast Rainfall



A

Comparing CA's Peak Drought (Oct 2014) to TX's Peak Drought (Oct 2011)



B

2015 Year to Date Rainfall Totals

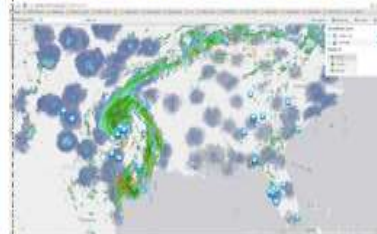


C



Tropical Storm Bill, June 16-19, 2015

Highlighting Social Media Mentions as TS Bill Moves Inland



D

3-day Heavy Rainfall Forecast to Fall on Saturated Soils



E

Observed 24-hr Rainfall ending 7am CDT June 19, 2015



F



HOW ESRI's ArcGIS ONLINE TOOLS ENHANCE NOAA AND NWS SERVICES

Enable Real-Time Forecast Operations

- Synthesize multiple streams of information
- Rapidly visualize real-time potential impacts
- Consumable by diverse audiences via multiple media platforms
- Convey and increase understanding of weather, water, and climate impacts

Post-Event Analysis

- Extend desktop geospatial analysis tools
- Build increased understanding of extremes via analysis and historic reviews

Optimize Mission Delivery

- Facilitate early warning and more responsive decision-making
- Grow Weather-Ready communities for a more resilient nation

MORE NATIONAL WEATHER SERVICE STORY/WEBMAP SAMPLES



1

Time-enabled Hi-Resolution Rapid Refresh (HRRR) model, Current Radar, and Storm Info



2

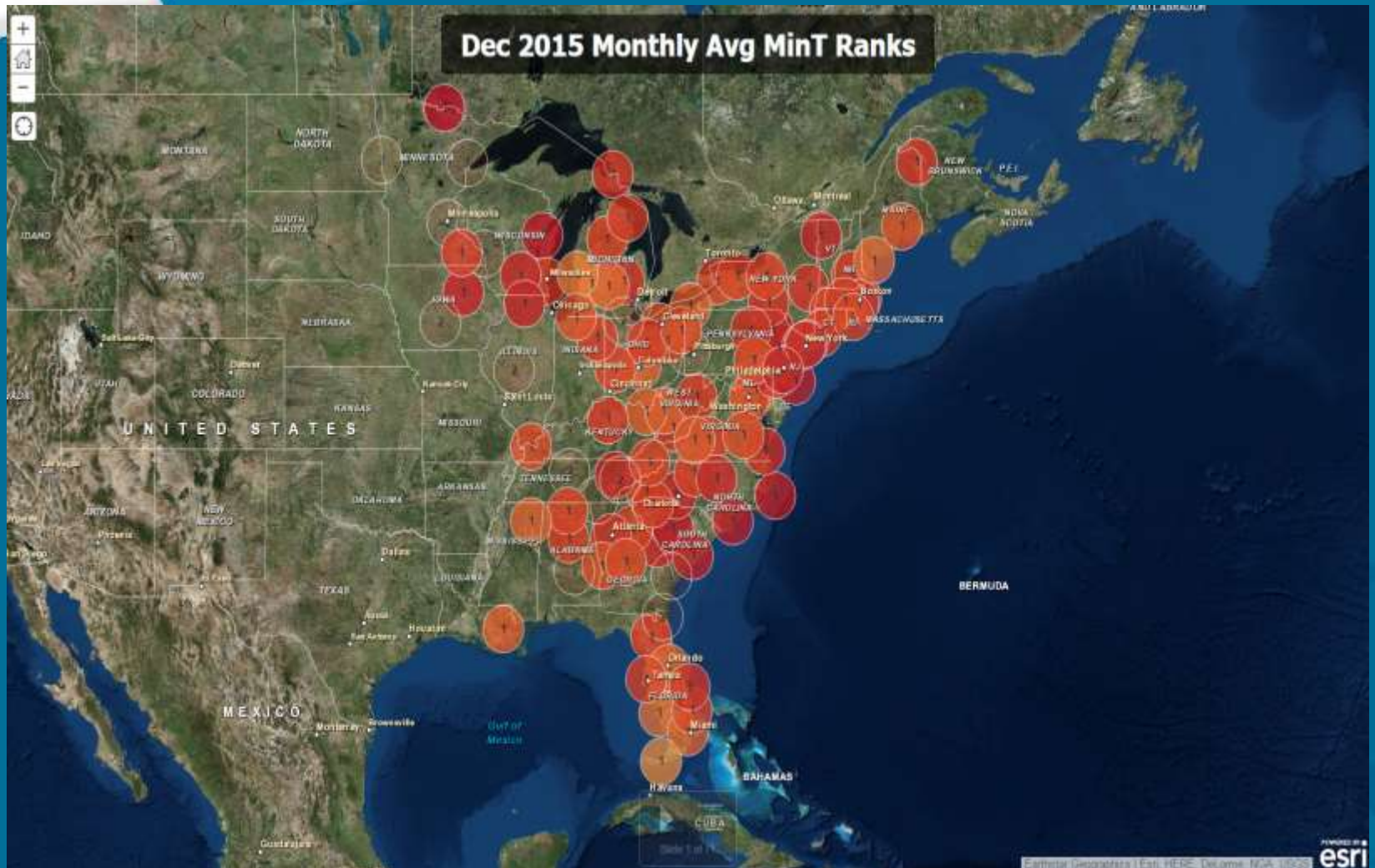
National Weather Service (NWS) Web/Story Map Gallery



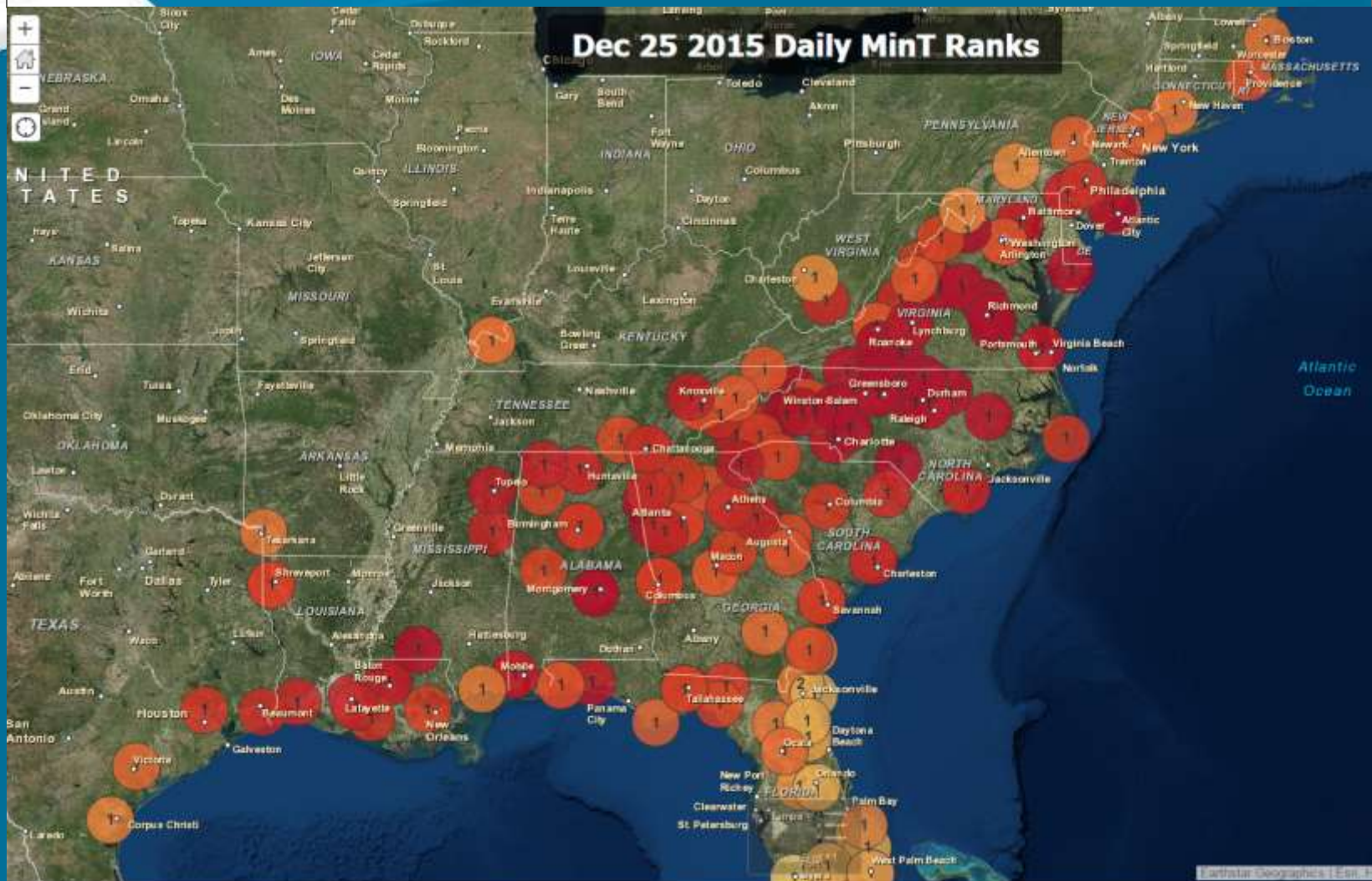
3



Webmap Presentation View—Anomalous Dec Warmth

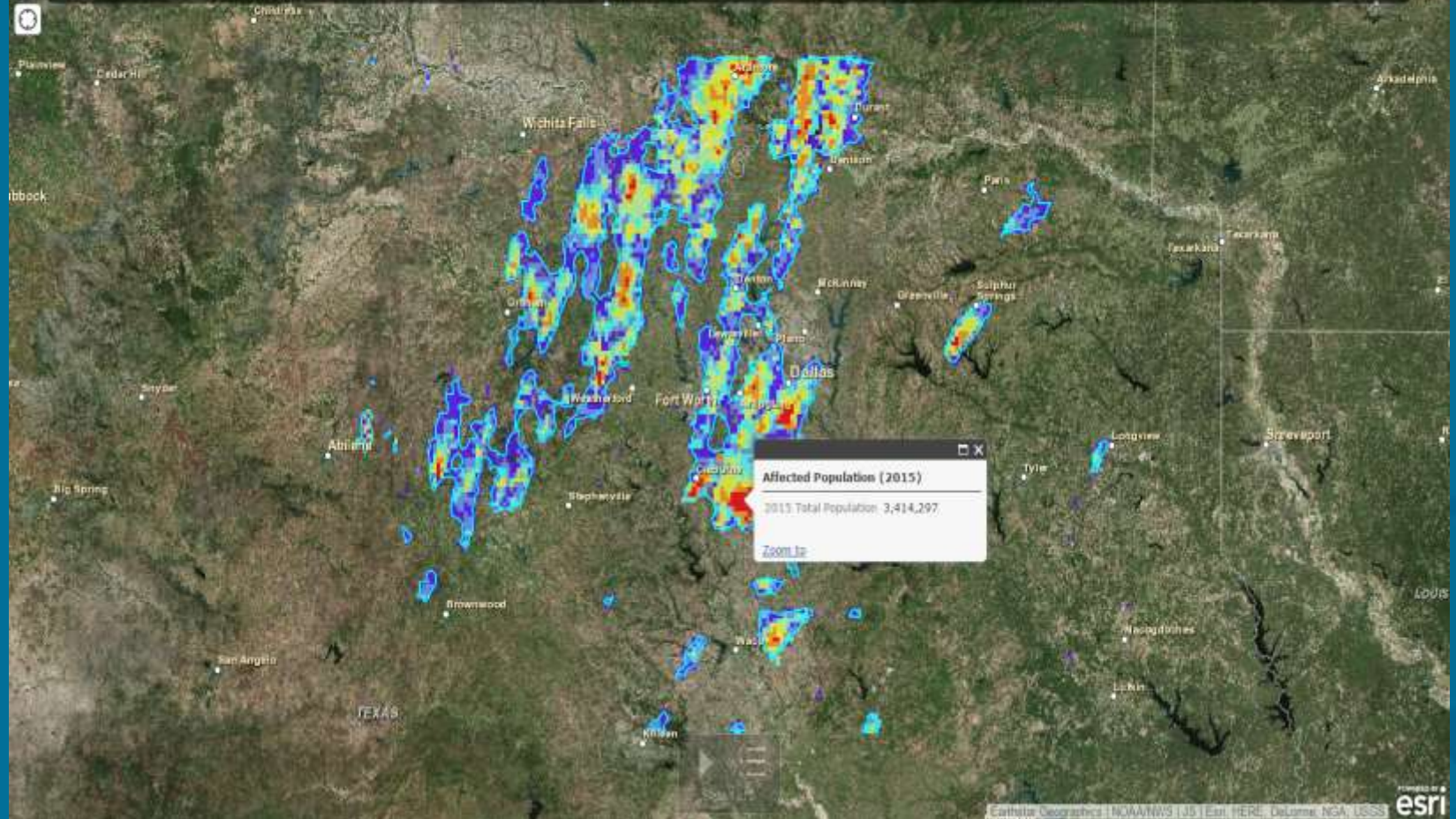


Record Morning Low Temperatures—Christmas 2015

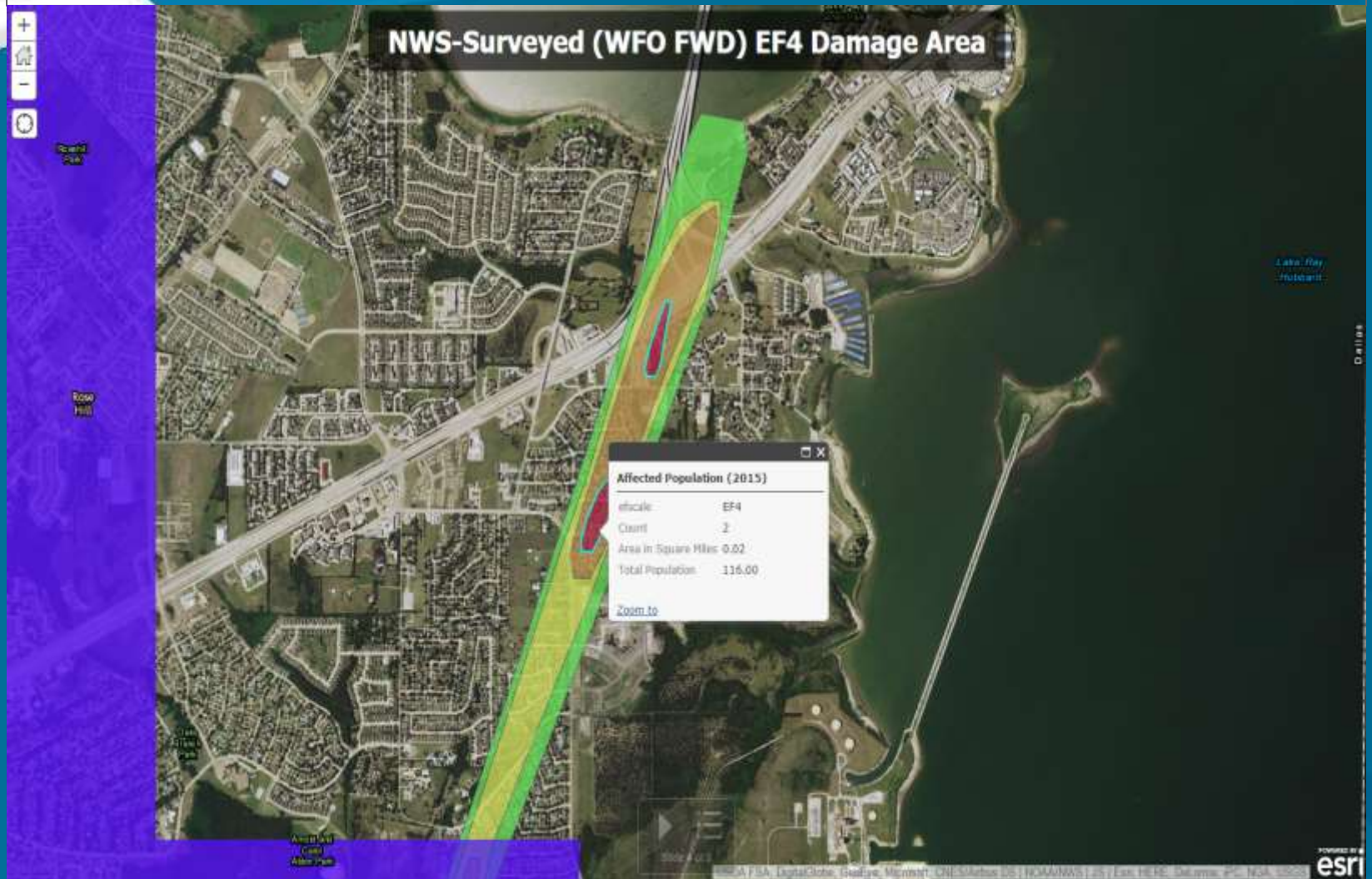


Webmap Presentation View—Event Review

Very active weather pattern in North Texas the day after Christmas 2015, with over 3.4 million folks affected by storms in the multi-county area.

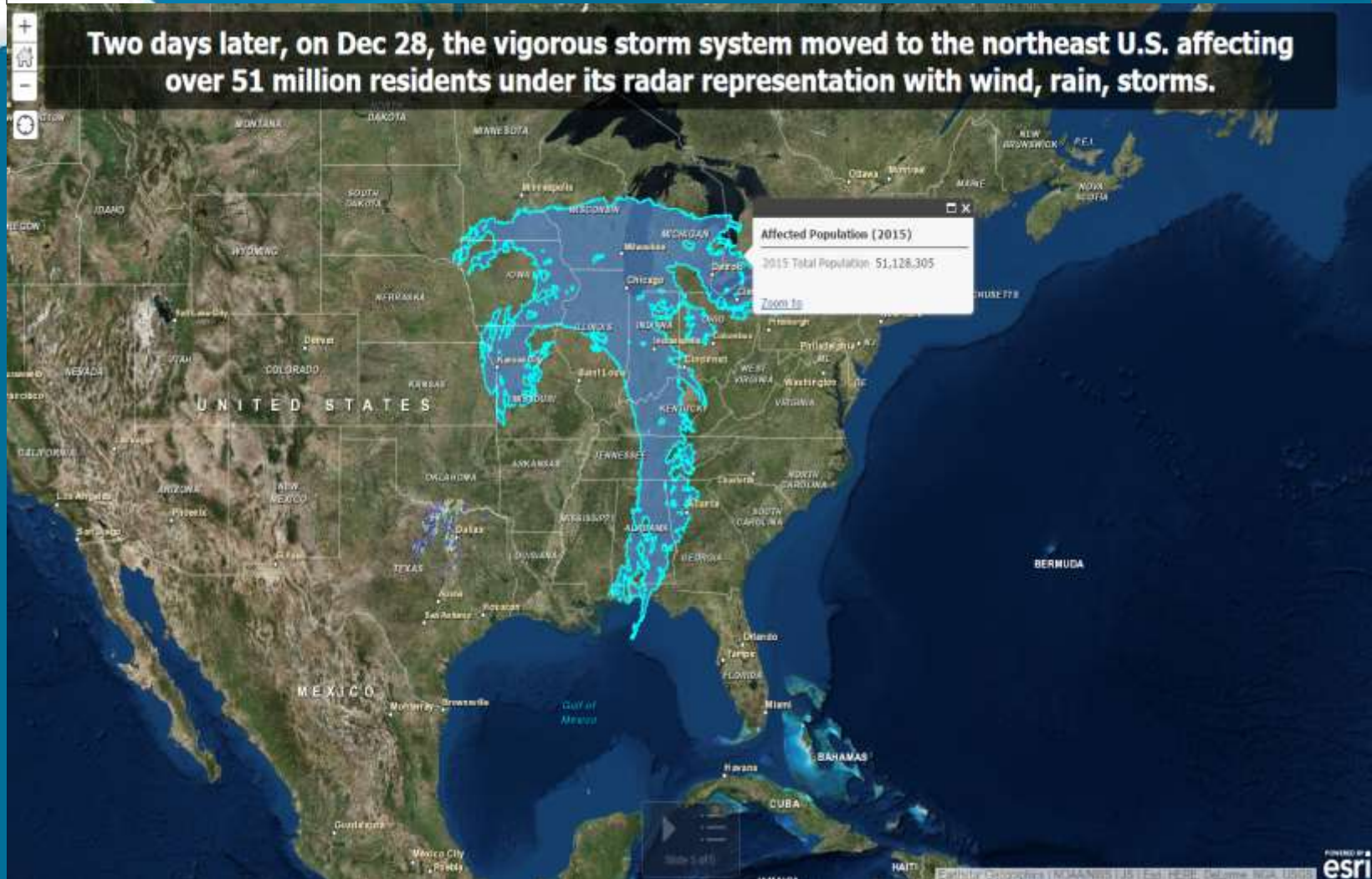


Tornado Damage Path



Impacted Population under Large Storm System

Two days later, on Dec 28, the vigorous storm system moved to the northeast U.S. affecting over 51 million residents under its radar representation with wind, rain, storms.



Webmap—Water Year To Date (Rainfall Anomaly Since Oct 1, 2015)

Home ▾ 20152016WaterYearToDate

Details Add ▾ Basemap Analysis

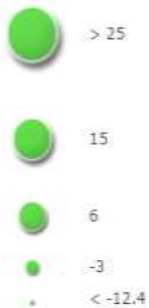
Save ▾ Share Print Directions Measure Bookmarks Find address

About Content Legend

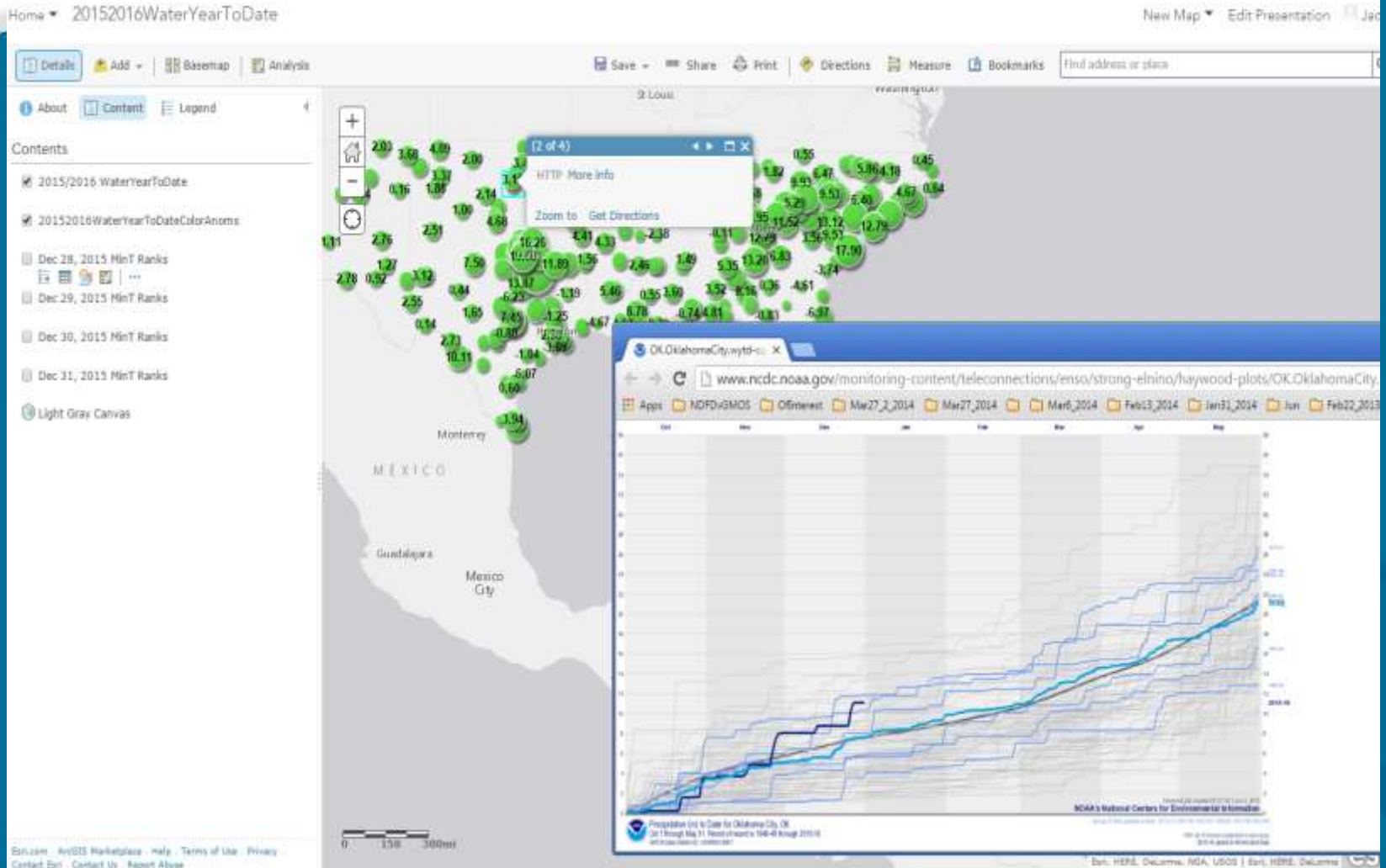
Legend

2015/2016 WaterYearToDate

Departure from Normal (inches)



Water Year To Date (since 10/1/15) (El Nino Watch)



Map Journal Template

National Weather Service (NWS) Map Discussion

This interface walks a user through examples of how NWS weather and climate information can be displayed using ESRI StoryMap technology

File Issues in your story Edit National Weather Service

Month To Date (MTD) Mean Daily Temperature Anomalies Record Warm Min/T/Anom Ranks Record Warm Min/T/Anom Ranks 2 Water Year To Date

CF6-based Month To Date (MTD) Mean Daily Temperature Anomalies (been a REAL warm December over MUCH of the CONUS)

The NWS CF6 product is a preliminary climate product recording daily weather information per site. Details can be read [here](#).

The .csv data used to create this map is created by smartly summarizing the CF6 data from all the sites across the country. The link is [here](#) and updates hourly, though the underlying data is really only updated ~10am local time per each office with the prior day's/night's information.

LEGEND

current

Mean Daily Temperature Anomaly for current month

- > 15 to 25
- > 10 to 15
- > 5 to 10
- > 2 to 5
- 0 to 0 to 2
- > -2 to 0
- > -5 to -2
- > -10 to -5
- > -15 to -10
- 25 to -15

ESRI

NWS Journal

NWS Entry

No issues detected

JS

JS

Facebook Twitter Email

California El Nino StoryMap

California El Nino StoryMap

Florida El Nino Impacts StoryMap

Florida El Nino Impacts StoryMap

6. Presentation

Presentation Made in a Webmap

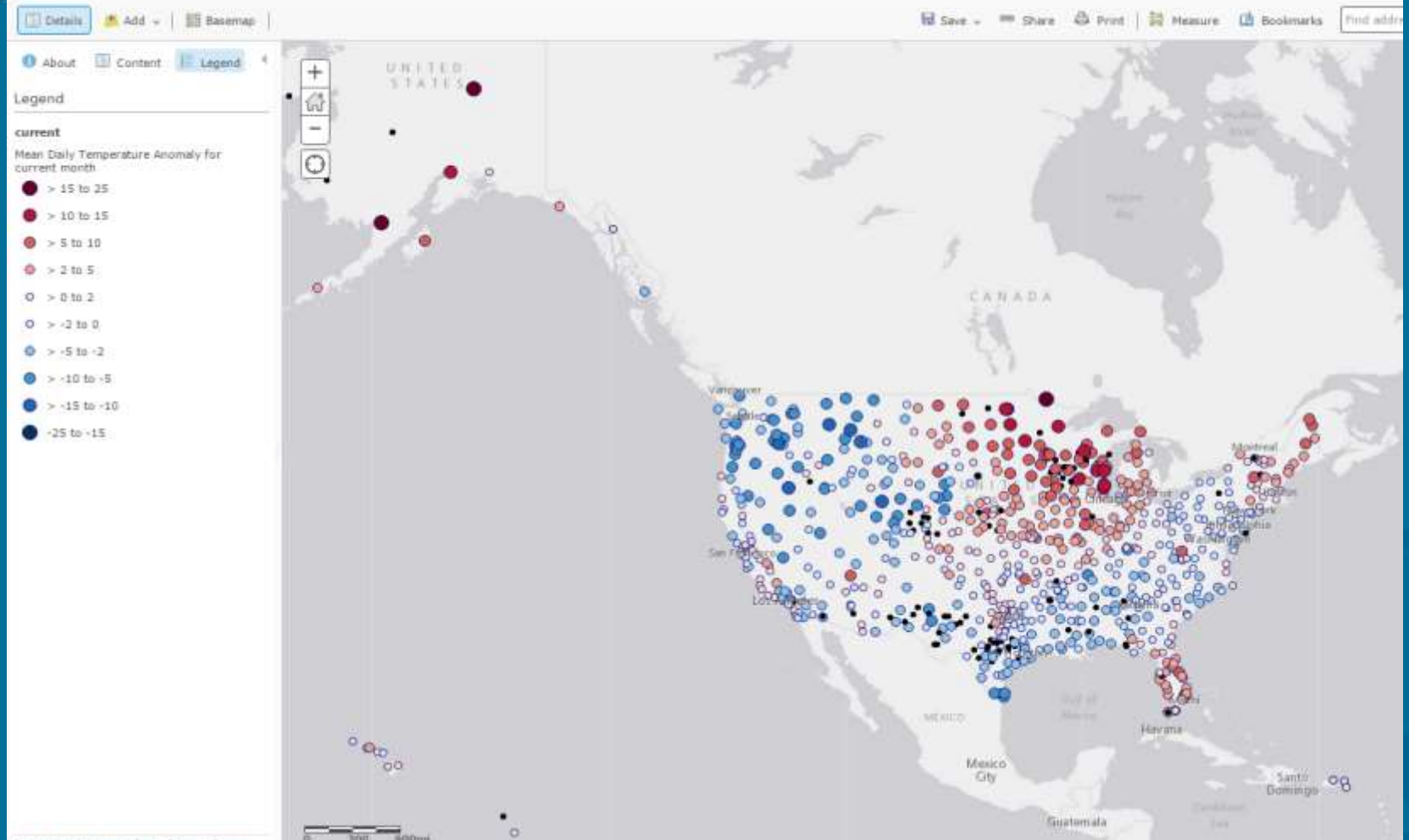
FEMA

FEMA


JL

Current Month to Date Mean Daily Temperature Anomaly

ArcGIS ▾ Current Month Daily Mean Temperature Anomalies (TANOM), pulled from National Weather Service (NWS) office's CF6 products



Southern CA Impacts from El Niño—Jayme Laber (WFO LOX)



National Weather Service

What El Niño Means for Southern California

When the forecast calls for an El Niño, how does that impact Southern California?

How much rain can we expect with these events?

How often do they occur?

Are all El Niño's the same?

What can we do to be better prepared?

This story map will try to answer these difficult questions for Southern California while providing a brief background of El Niño.

Scroll down to see more.

Photo Credit for the image displayed to the right: Mel Makon (Los Angeles Times)

What is an El Niño?

NWS Journal

NWS Entry

- California El Niño StoryMap
- California El Niño StoryMap
- Florida El Niño Impacts StoryMap
- Honda El Niño Impacts StoryMap

6. Presentation

Presentation Mode of a Webmap

FEMA

FEMA

JL

II

Rainfall Watch Swipe

Tab 1: Swapping between anticyclonic prior 72 hr outlook CPE (with model) and the 72 hr forecast outlook for 72-105 days out

ADD SECTION ORGANIZE

Florida Impacts from El Niño—Marcus Austin (WFO Tampa)

The screenshot displays a mobile application interface for a story map. The top navigation bar includes the National Weather Service Tampa logo and social media icons. The main content area is split into two columns. The left column features a dark background with white text, including the title 'El Niño Impacts on Florida' and introductory paragraphs. The right column has a white background and lists various sections: 'NWS Entry', 'Florida El Niño Impacts StoryMap', '6. Presentation', 'FEMA', and 'Rainfall Watch Swipe'. A large satellite-style image of Earth with a red/orange band across the equator is visible in the center. At the bottom, there are two buttons: 'ADD SECTION' and 'ORGANIZE'.

National Weather Service Tampa ...

El Niño Impacts on Florida

We've been saying it for a while now, El Niño is here, and we can expect to feel its mighty punch this winter, but what exactly is El Niño? How does it form? How long will it stick around? And what does it *really* mean for folks who live in Florida?

In this short map presentation, will try to answer many of those questions. So sit down, relax, and scroll on down to learn more about this climate feature.

El Niño Explained

What is an El Niño?
El Niño is a pool of above normal ocean temperatures across the central to eastern equatorial Pacific Ocean. Surface winds that normally push the warmest waters to the western Pacific Ocean weaken or reverse

NWS Journal
NWS Entry

Florida El Niño Impacts StoryMap

Florida El Niño Impacts StoryMap

6. Presentation

Presentation Mode of a StoryMap

FEMA

FEMA

JL

JL

Rainfall Watch Swipe

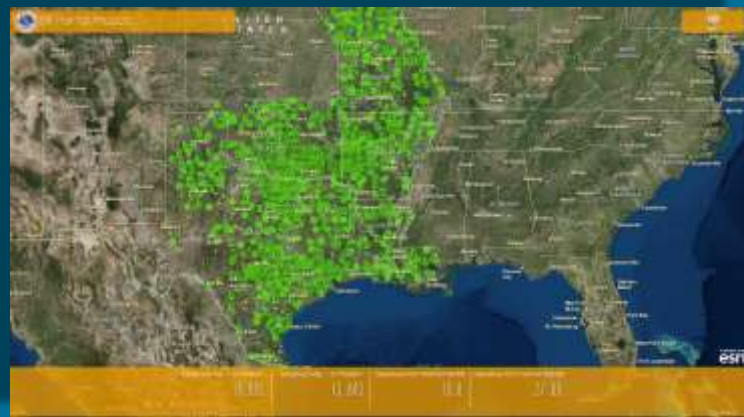
Tab 1: Sliding between antecedent prior 72-hr rainfall QPE (red zero) and 72-hr Forecast Rainfall (WRF2) to see where flash flooding may be more likely. If an NCEP-WPC-issued Day 1 Enhances Rainfall Outlook (ERF) has been issued, it will show (H).

Tab 2: FEMA Region 4 area zoom.

ADD SECTION ORGANIZE

Summary

- GIS Enables....
- ...Numerous Options
- ...To Convey
- ...Impact Context
- ...About Weather and Climate Events



More Info---Examples

- NOAA/NWS Booth (Exhibit Hall—5pm)
- **Email:** NWS_GIS_Info@noaa.gov
 - Jack.settelmaier@noaa.gov
- **Website:** <http://www.nws.noaa.gov/gis/>



Questions??

Comments??