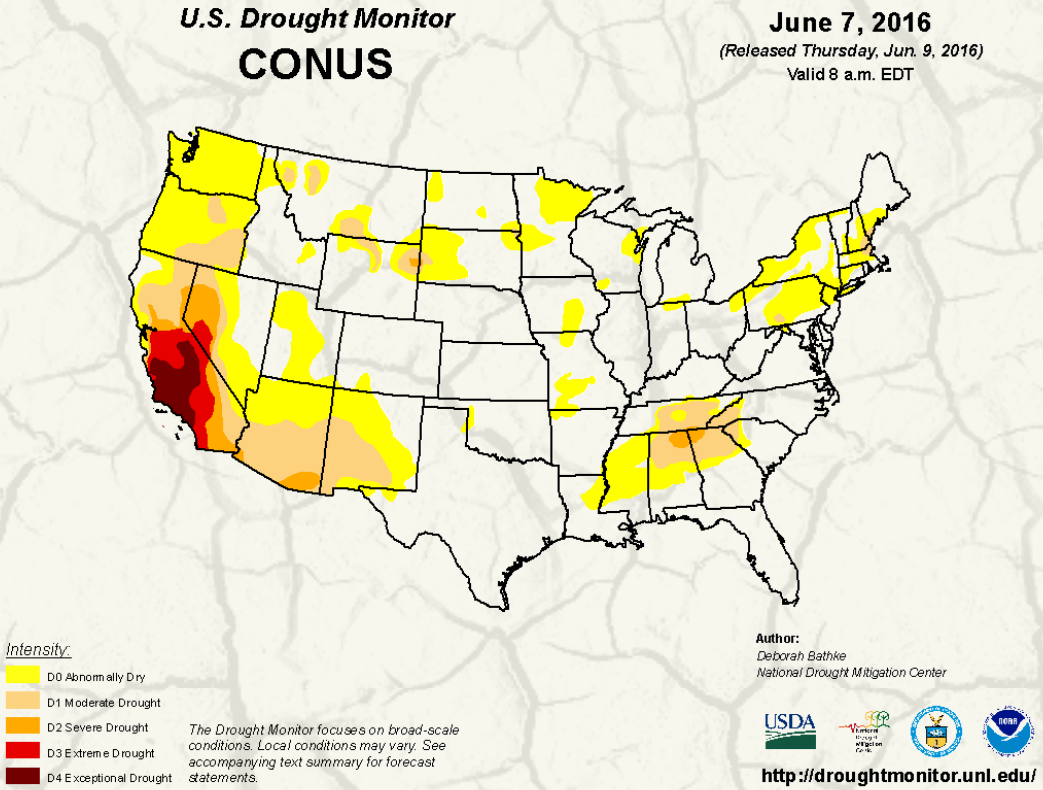
GIS Applications Used in Making the U.S. Drought Monitor



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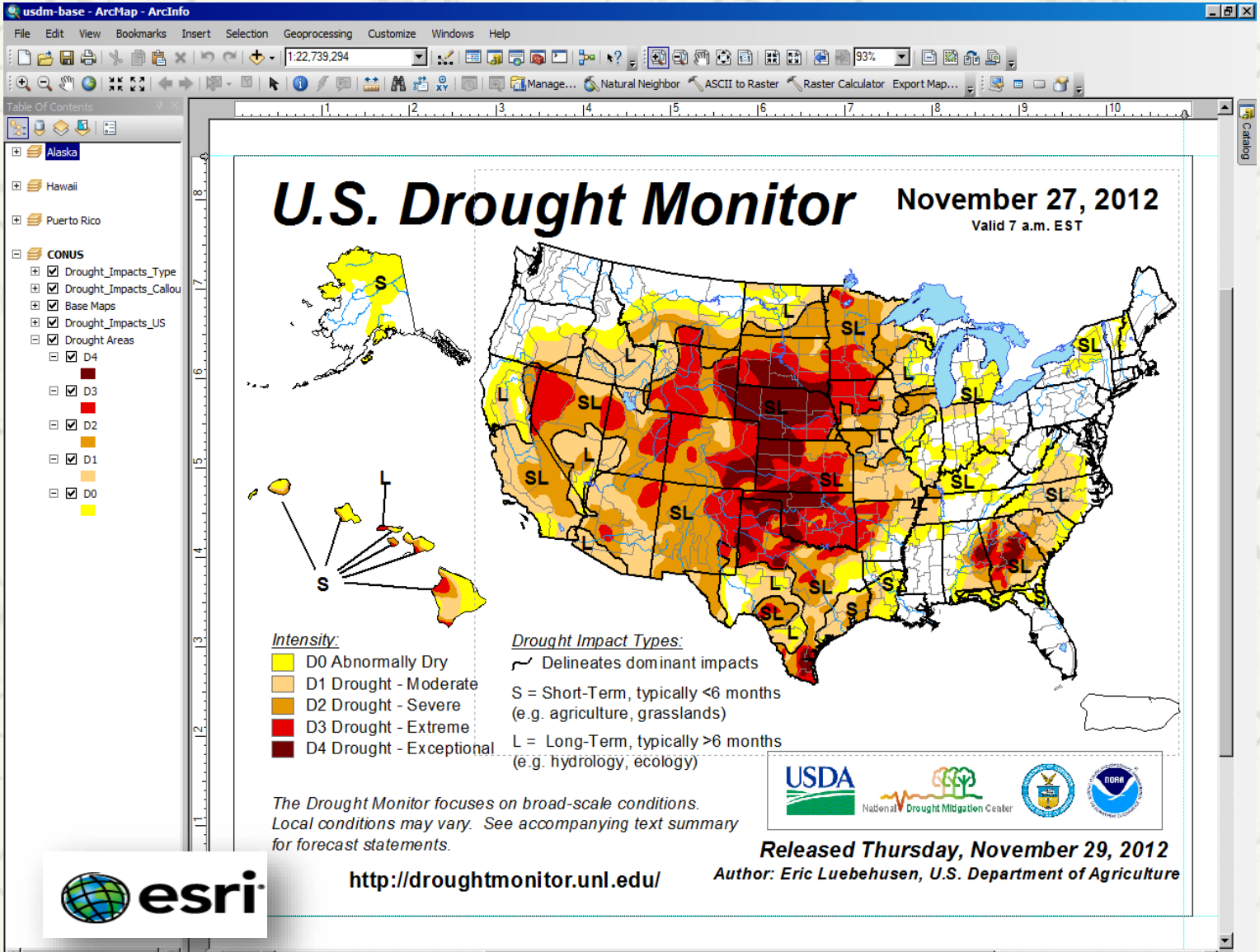
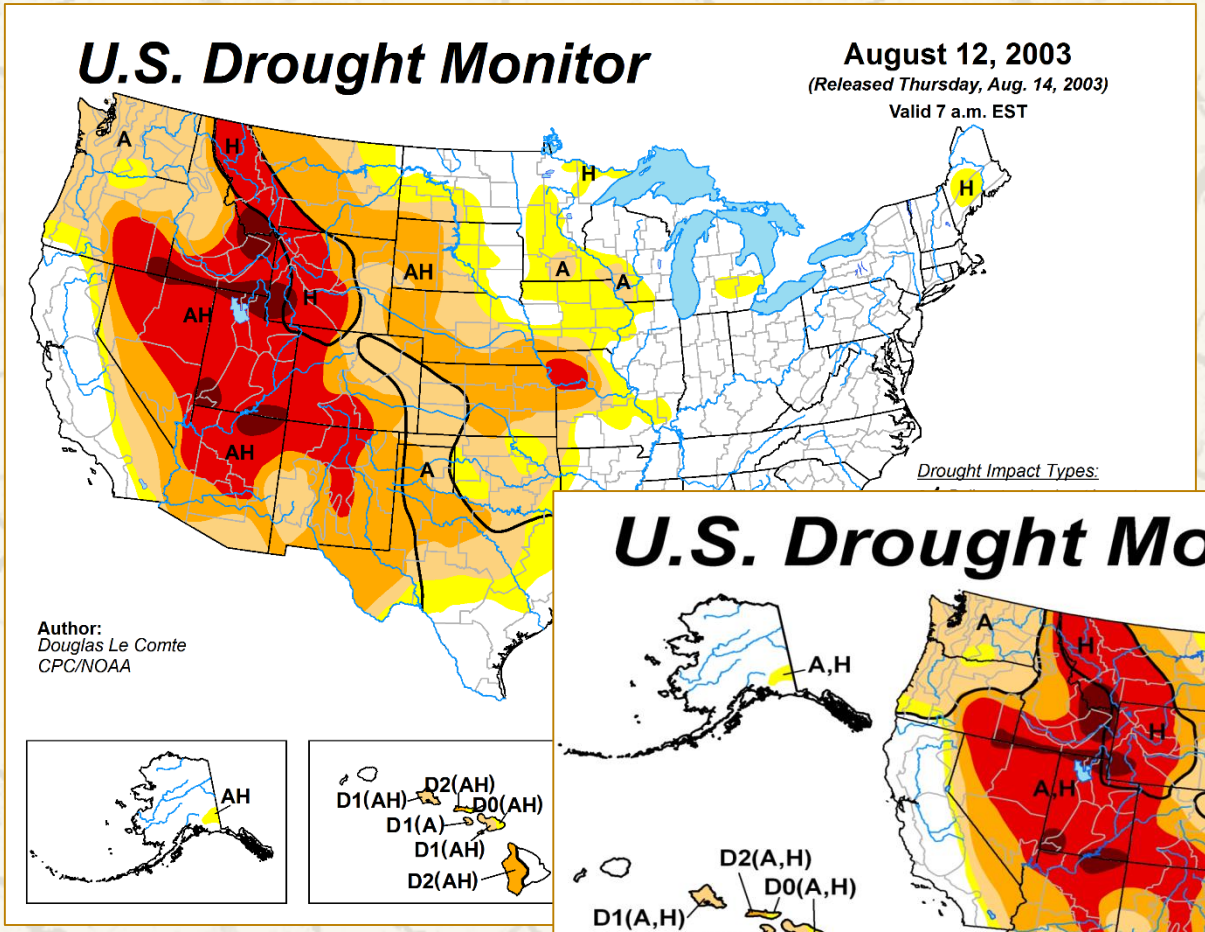
NOAA's Drought Risk Management Research Center
University of Nebraska-Lincoln

10th Biennial U.S. Drought Monitor Forum
Keystone, SD
April 3, 2017

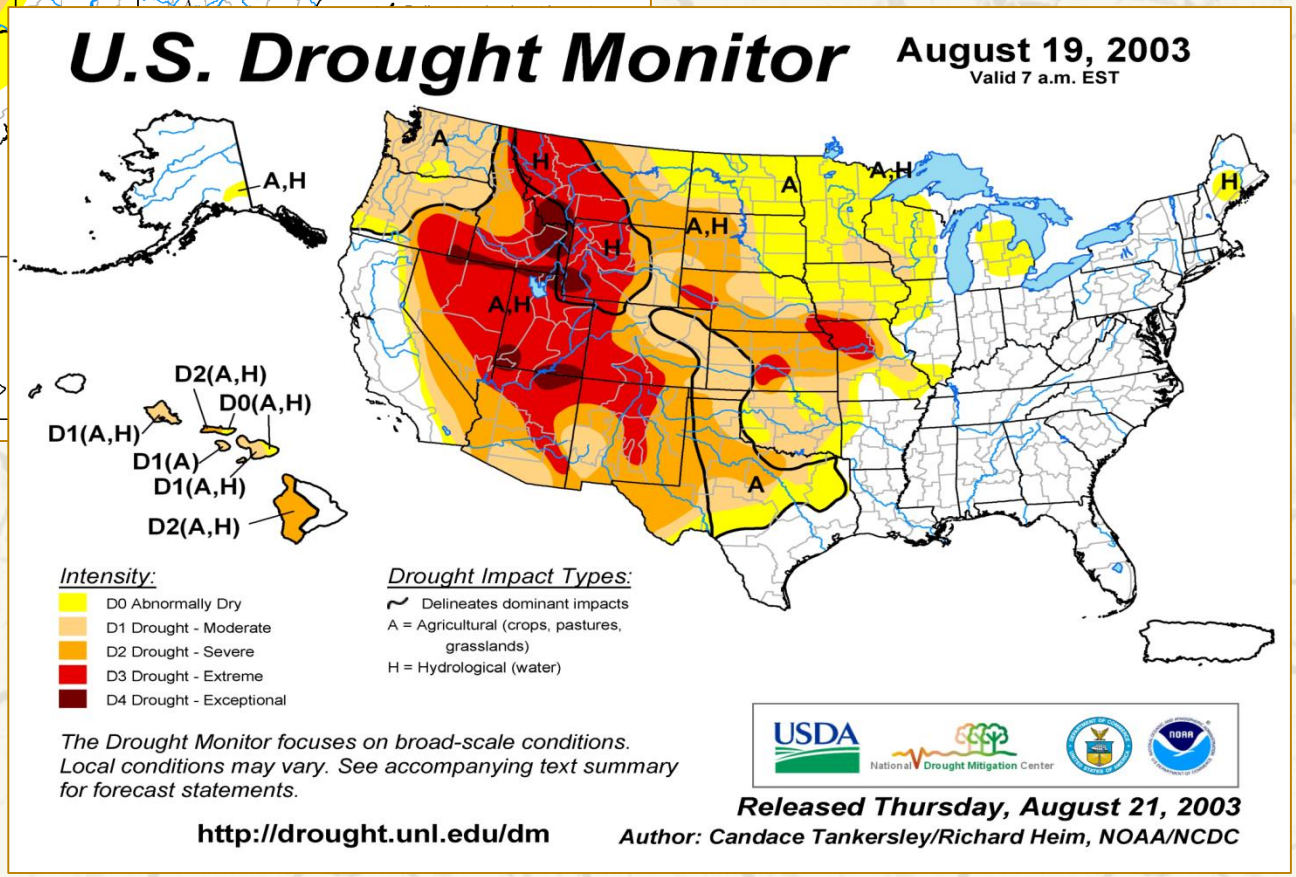
Slides courtesy of Eric Luebehusen

Created & edited in GIS Software

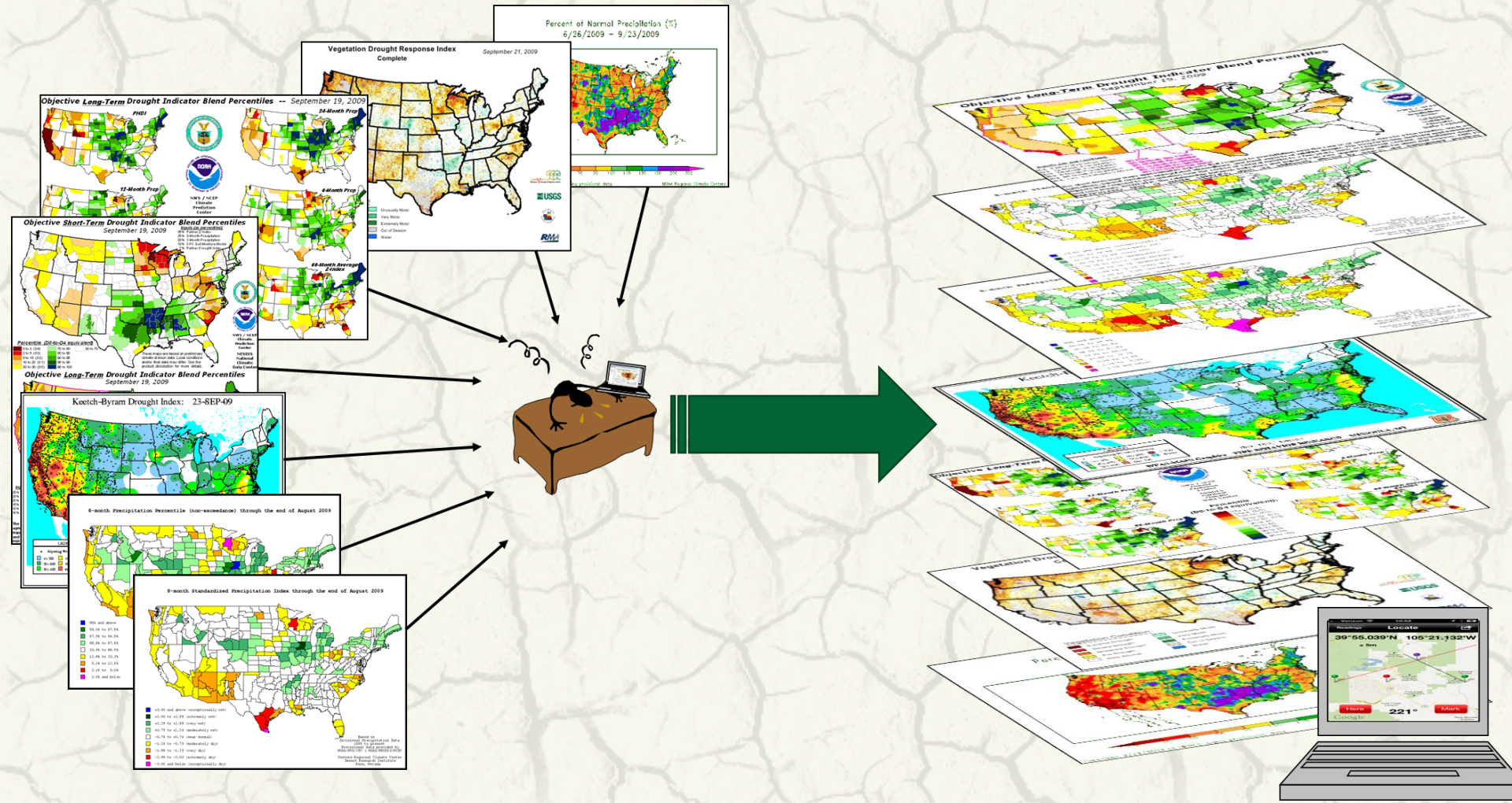


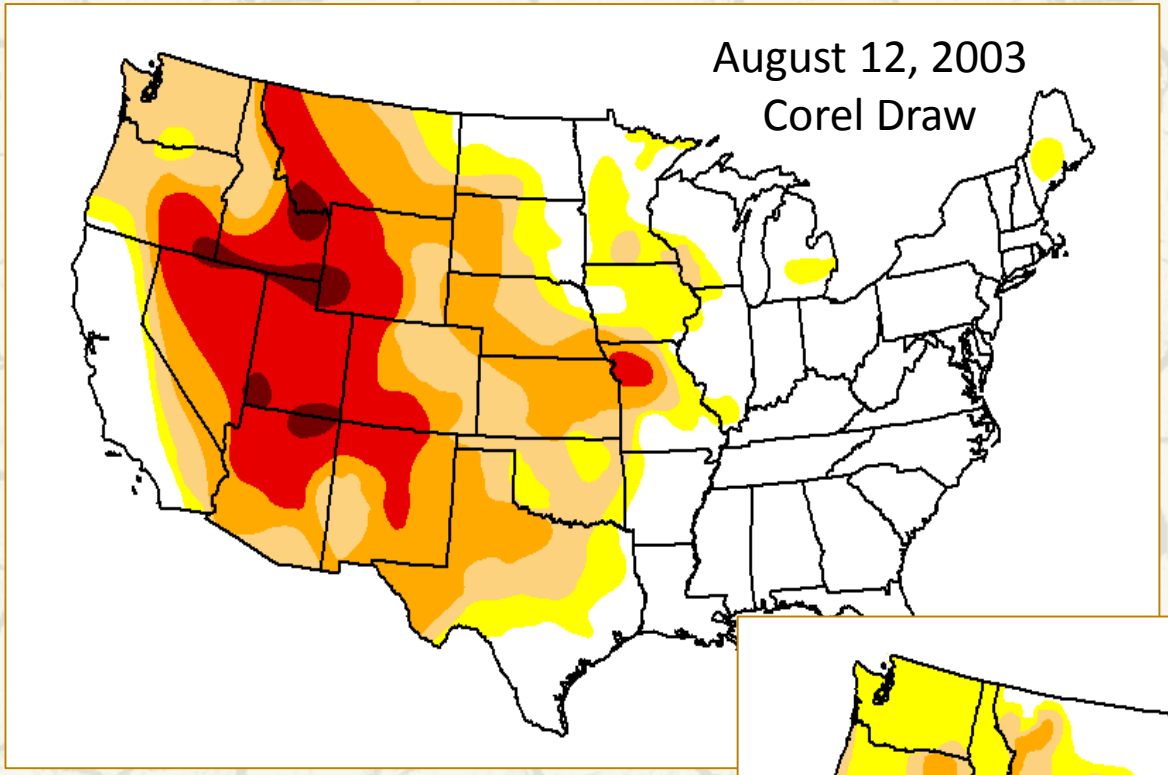


Transitioned from Corel Draw to ArcMAP (GIS) in August, 2003.

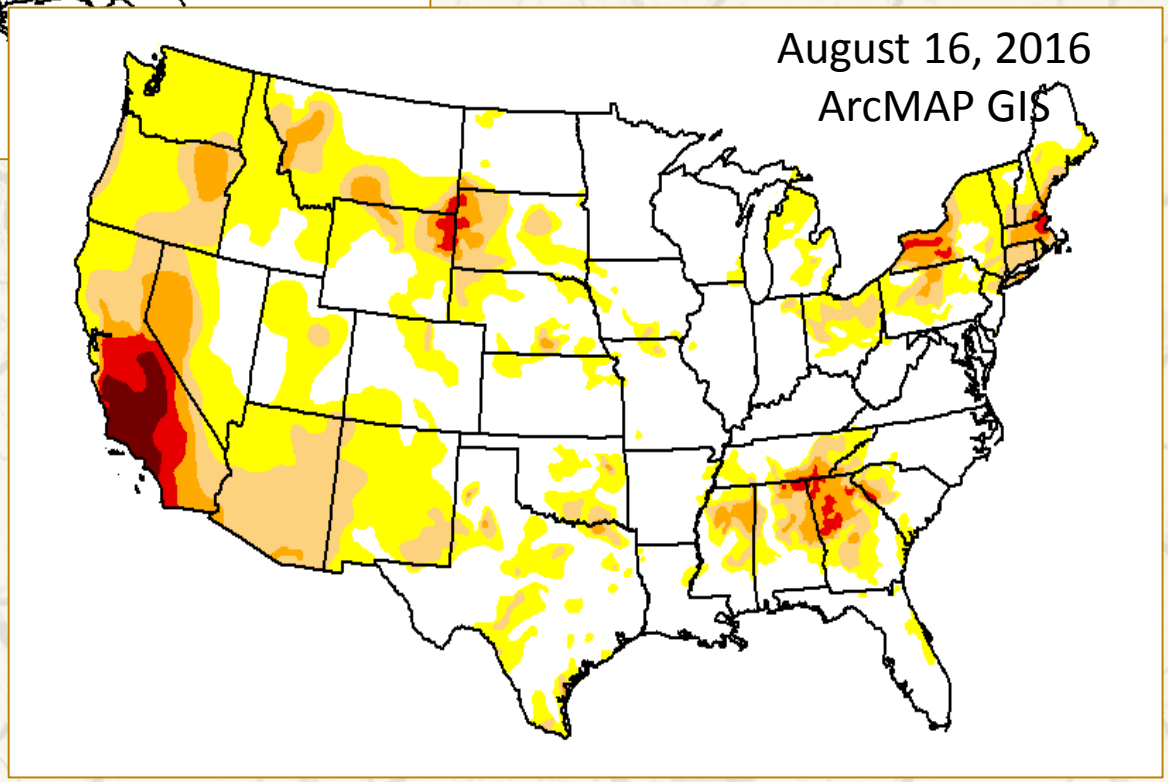


GIS allowed for a new way of assessing drought information…

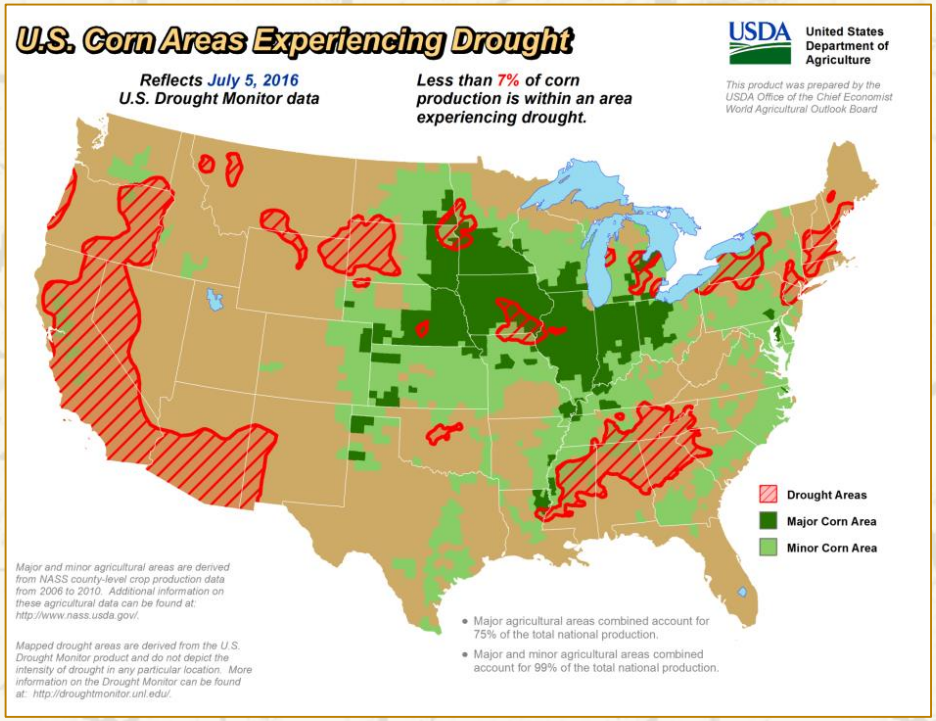


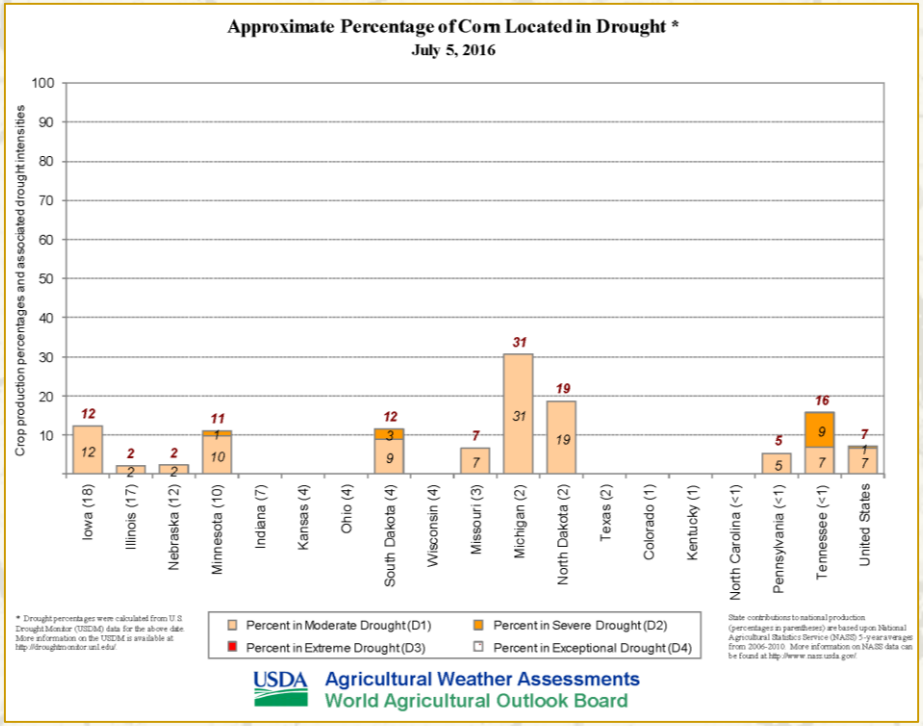


Increased detail in drought depiction

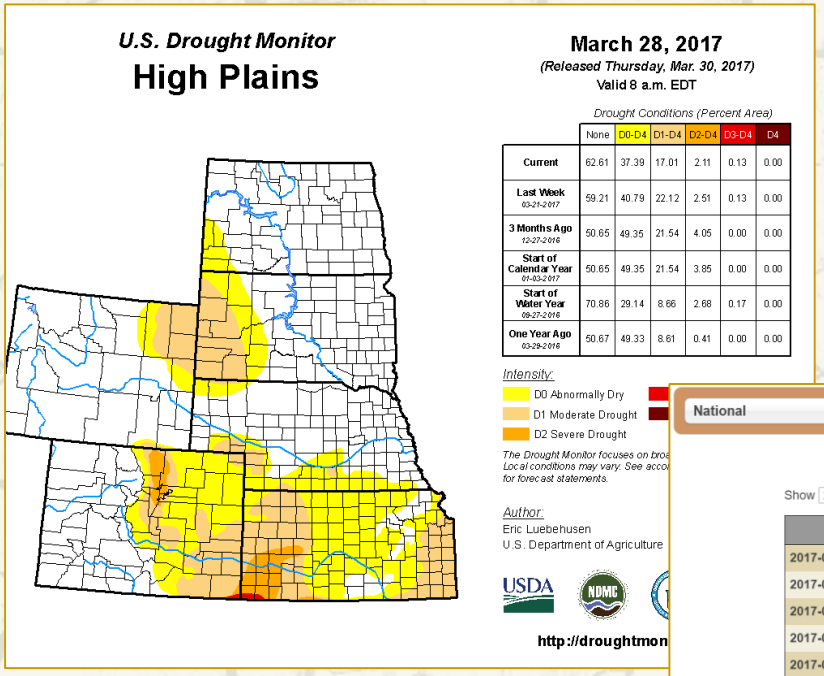


Agricultural-specific statistical assessments





Extract data by different boundaries

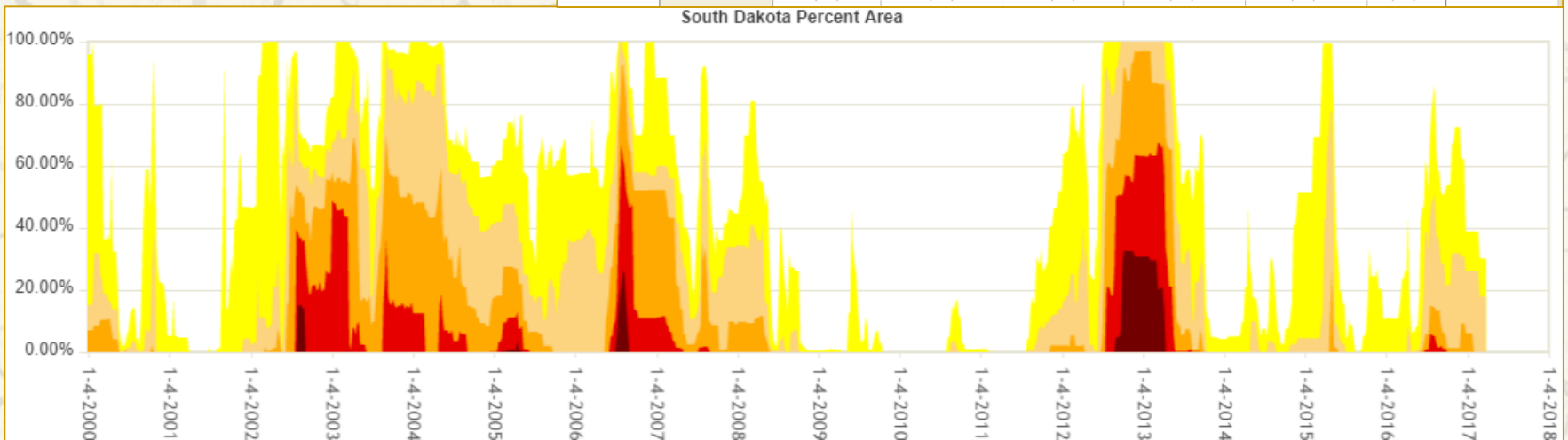


National | CONUS | Statistics type: Traditional Population | Legend

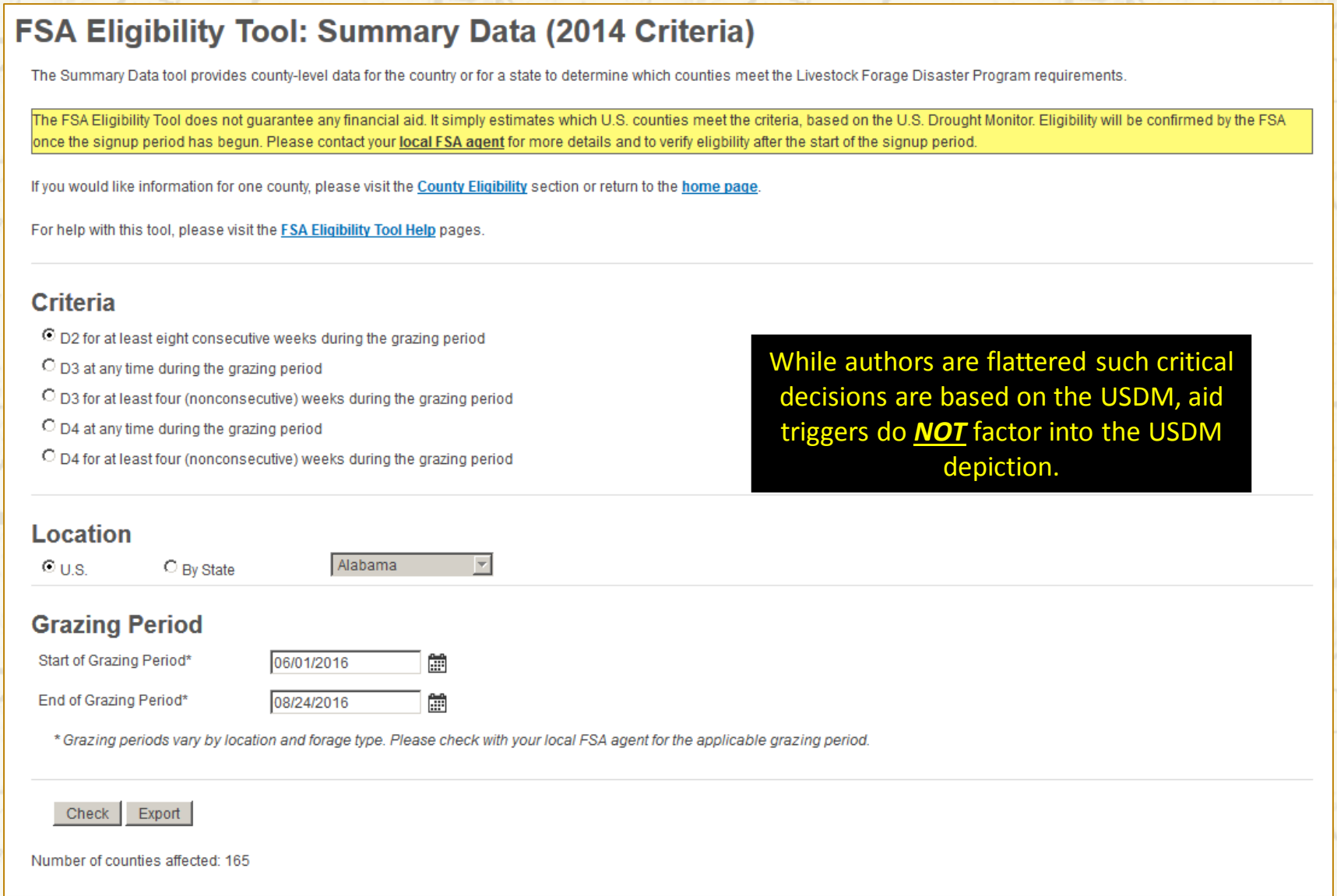
Total Population in U.S. Drought Monitor Categories

Show 25 entries Search:

Week	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
2017-03-28	154,788,853	150,608,602	77,653,985	16,001,627	457,331	0
2017-03-21	153,649,941	151,747,513	78,903,777	17,850,352	1,464,225	0
2017-03-14	150,711,269	154,686,186	89,870,737	24,871,154	1,611,812	0
2017-03-07	141,676,862	163,720,593	90,125,259	24,123,715	1,930,504	0
2017-02-28	138,231,703	167,165,751	87,534,655	25,550,785	2,834,137	0
2017-02-21	153,352,654	152,044,801	86,800,273	19,983,104	2,296,669	0
2017-02-14	152,068,379	153,329,076	90,015,434	22,094,656	1,961,650	0
2017-02-07	157,016,261	148,381,194	88,799,092	23,214,200	2,049,605	0
2017-01-31	159,170,732	146,226,722	88,997,879	35,531,232	5,092,920	0
2017-01-24	158,161,975	147,235,480	91,391,891	37,066,491	5,515,863	0
2017-01-17	134,533,885	170,863,570	107,745,451	55,670,381	26,924,848	2,822,291
2017-01-10	128,471,572	176,925,883	113,259,540	58,360,246	27,524,942	2,822,291
2017-01-03	122,365,162	183,032,292	119,291,508	63,675,502	29,070,972	9,231,253
2016-12-27	105,894,105	199,503,350	126,614,948	68,432,545	36,698,993	13,086,968



Use of the USDM as a tool for triggering aid to producers



FSA Eligibility Tool: Summary Data (2014 Criteria)

The Summary Data tool provides county-level data for the country or for a state to determine which counties meet the Livestock Forage Disaster Program requirements.

The FSA Eligibility Tool does not guarantee any financial aid. It simply estimates which U.S. counties meet the criteria, based on the U.S. Drought Monitor. Eligibility will be confirmed by the FSA once the signup period has begun. Please contact your **local FSA agent** for more details and to verify eligbility after the start of the signup period.

If you would like information for one county, please visit the County Eligibility section or return to the home page.

For help with this tool, please visit the FSA Eligibility Tool Help pages.

Criteria

- (•) D2 for at least eight consecutive weeks during the grazing period
- ( ) D3 at any time during the grazing period
- ( ) D3 for at least four (nonconsecutive) weeks during the grazing period
- ( ) D4 at any time during the grazing period
- ( ) D4 for at least four (nonconsecutive) weeks during the grazing period

While authors are flattered such critical decisions are based on the USDM, aid triggers do ***NOT*** factor into the USDM depiction.

Location

(•) U.S. ( ) By State Alabama

Grazing Period

Start of Grazing Period* 06/01/2016

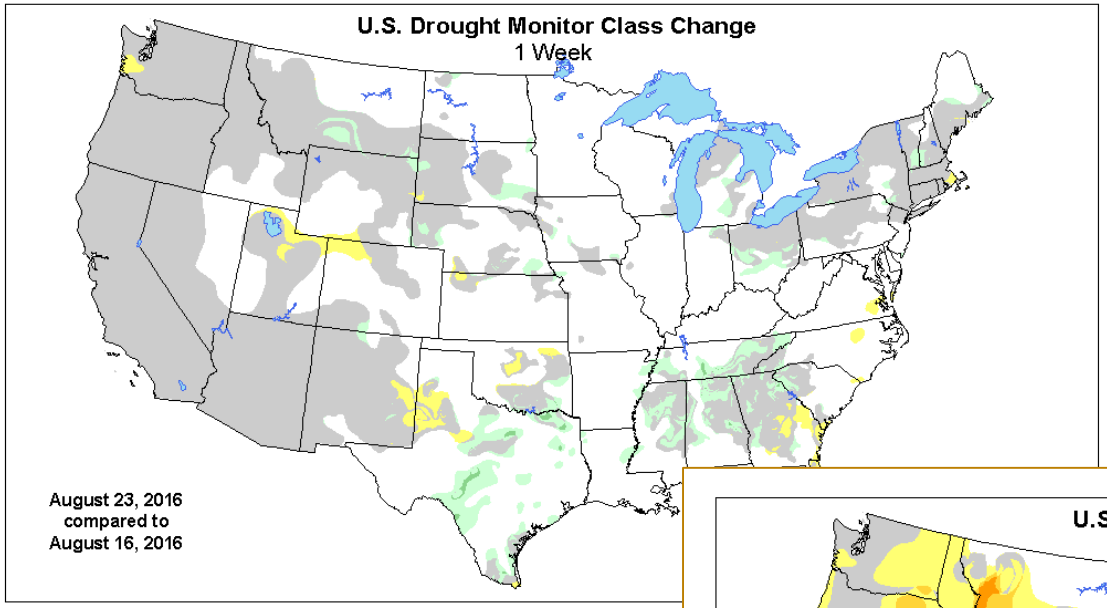
End of Grazing Period* 08/24/2016

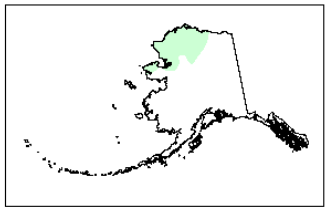
** Grazing periods vary by location and forage type. Please check with your local FSA agent for the applicable grazing period.*

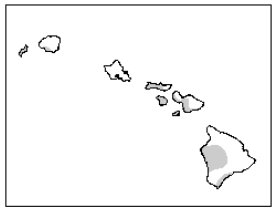
Check Export

Number of counties affected: 165

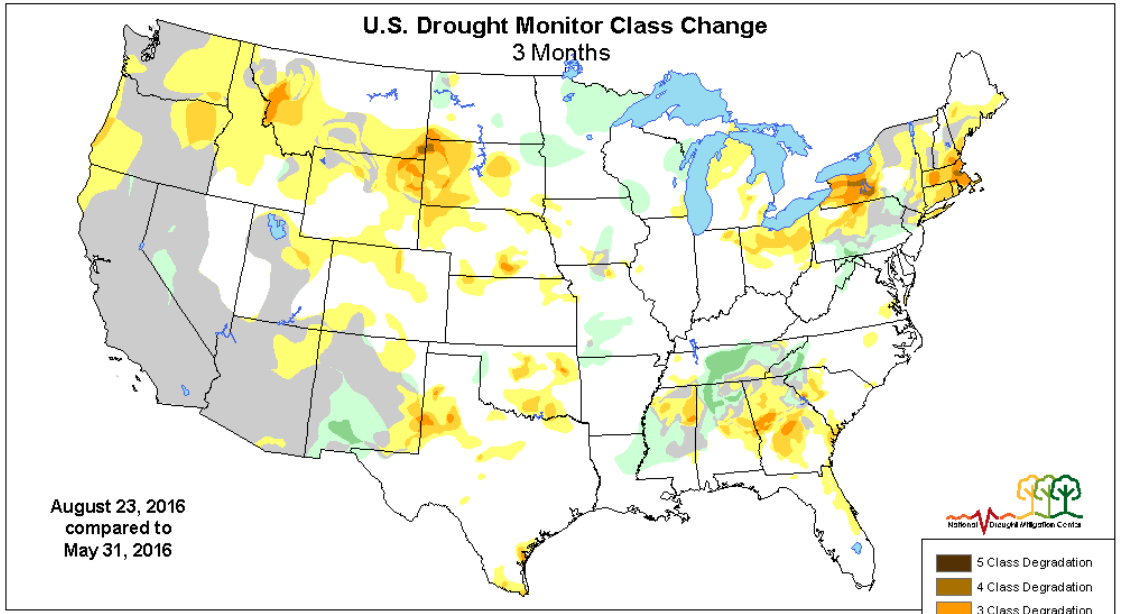
Change maps

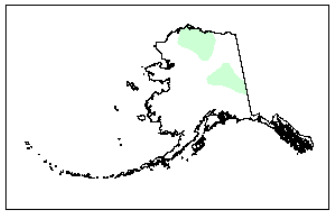


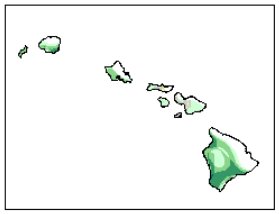


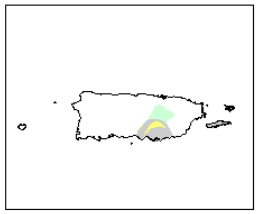


http://droughtmonitor.unl.edu



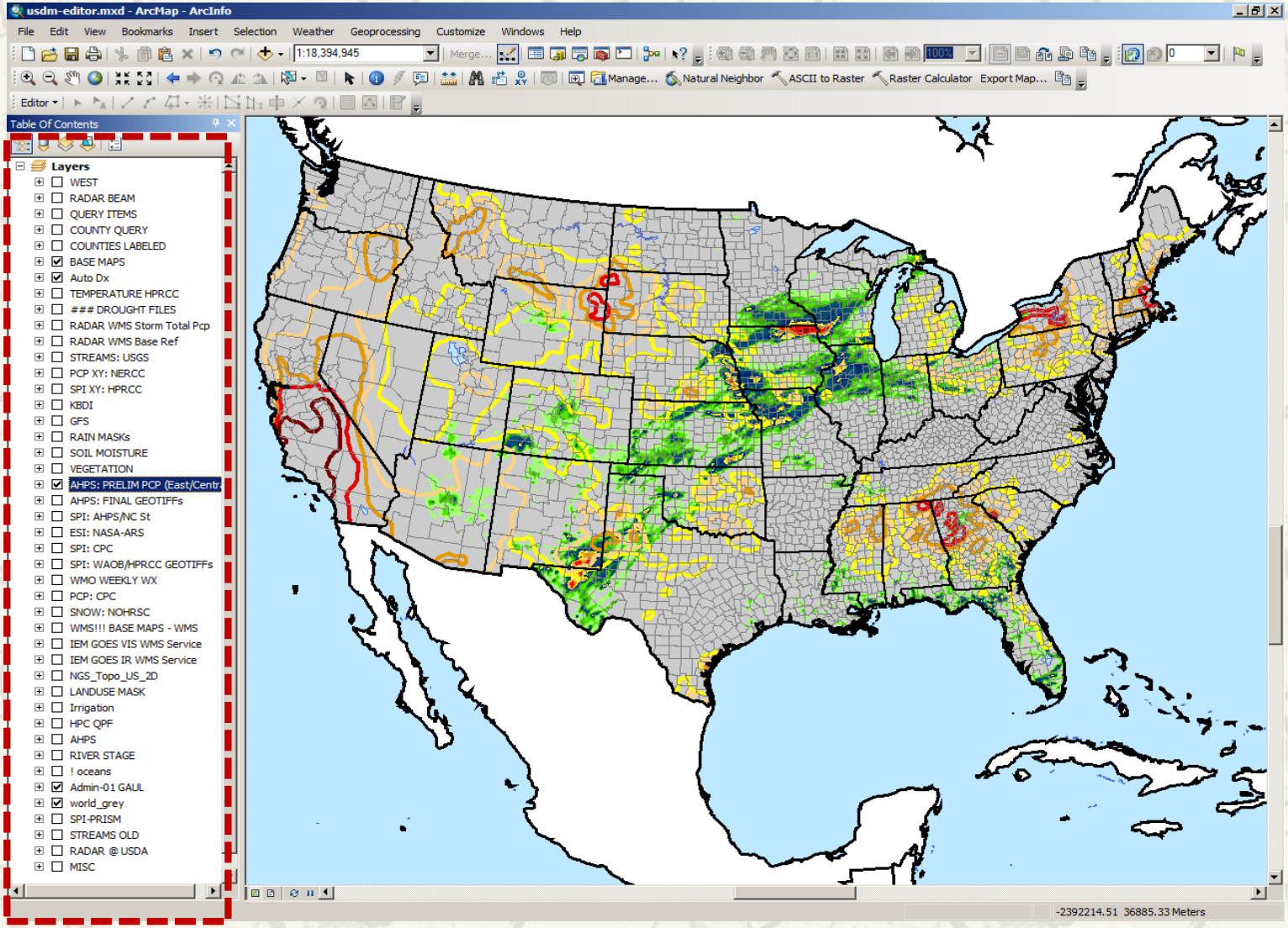




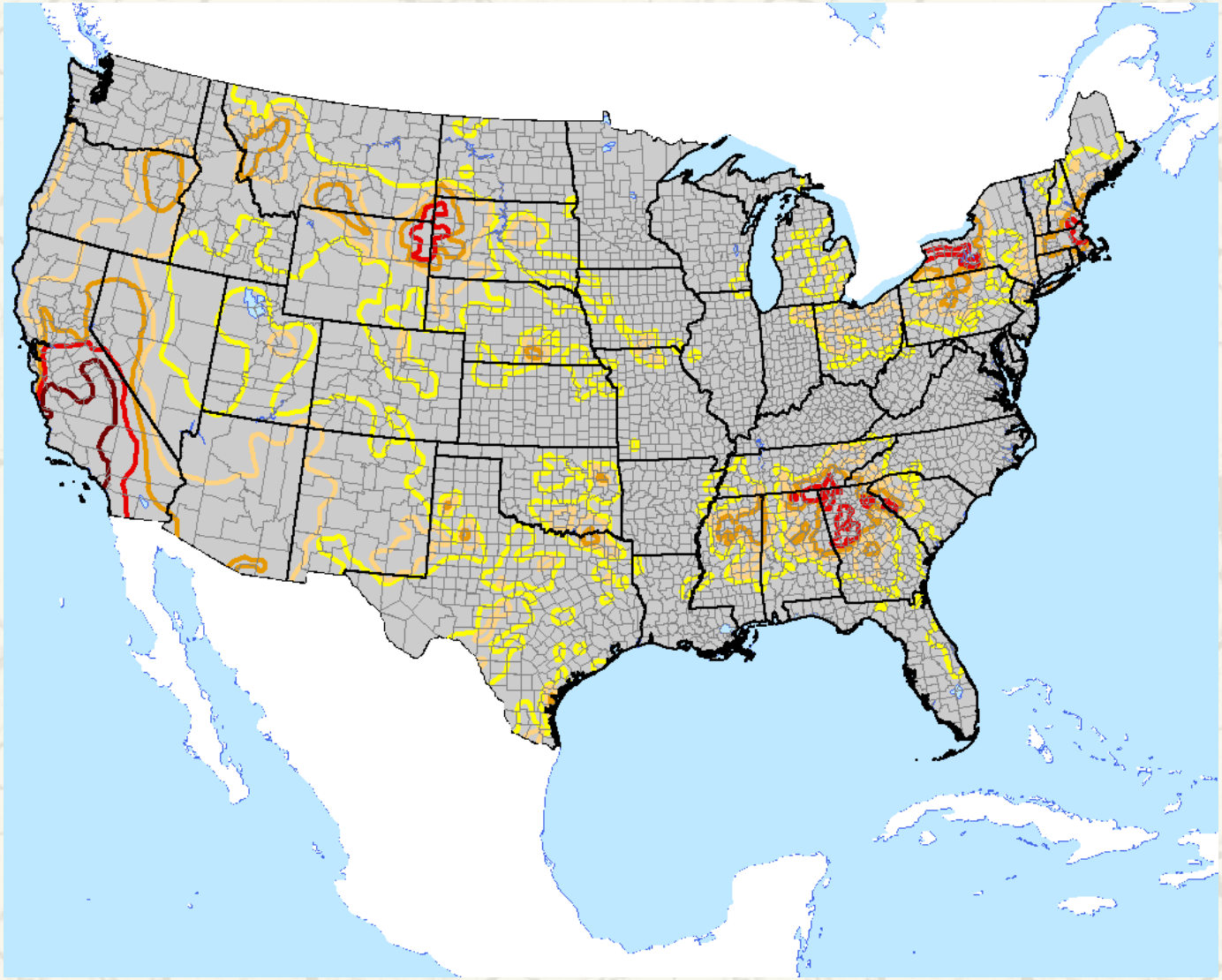


http://droughtmonitor.unl.edu

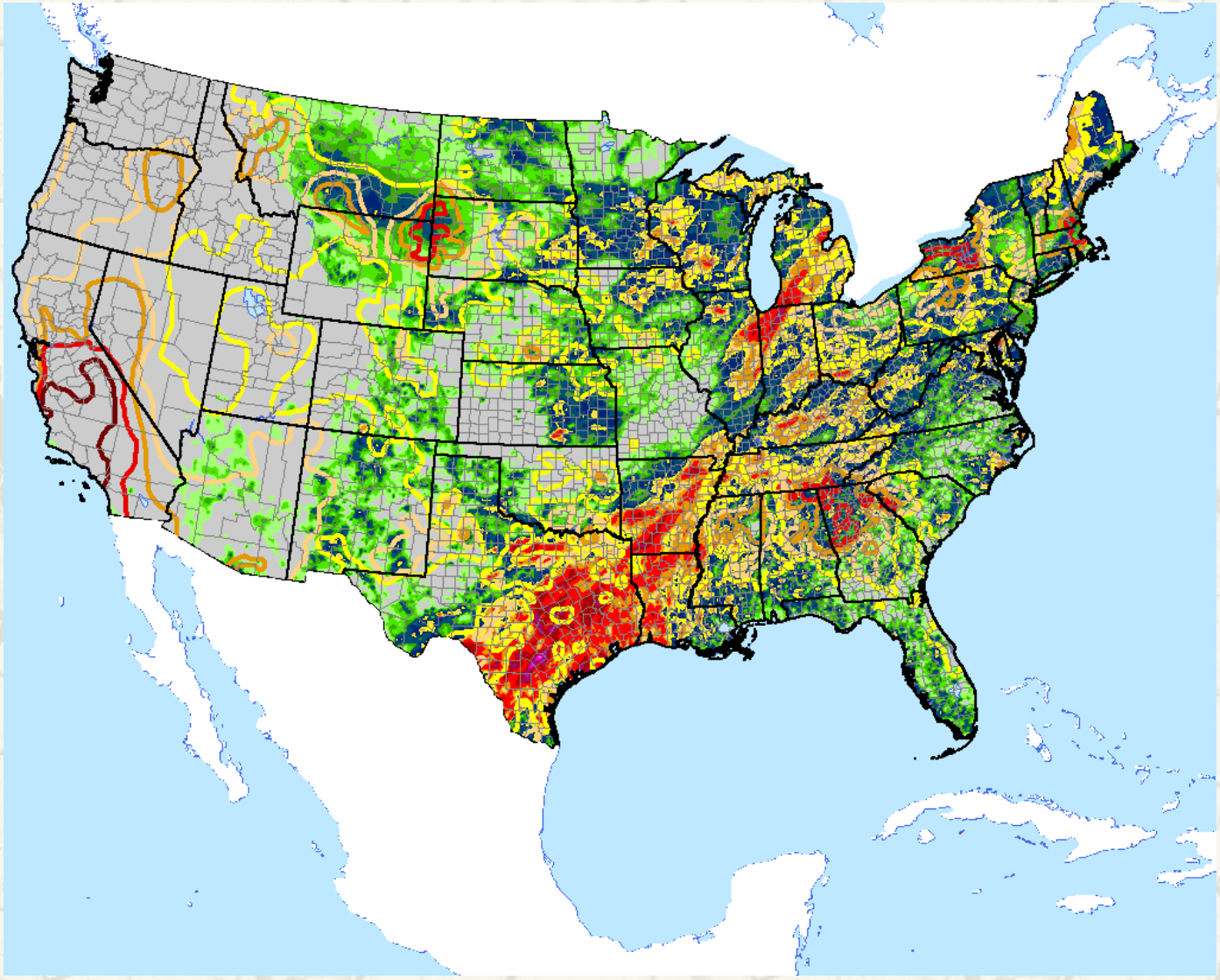
Wealth of GIS data that allows authors to depict different types of drought on one map

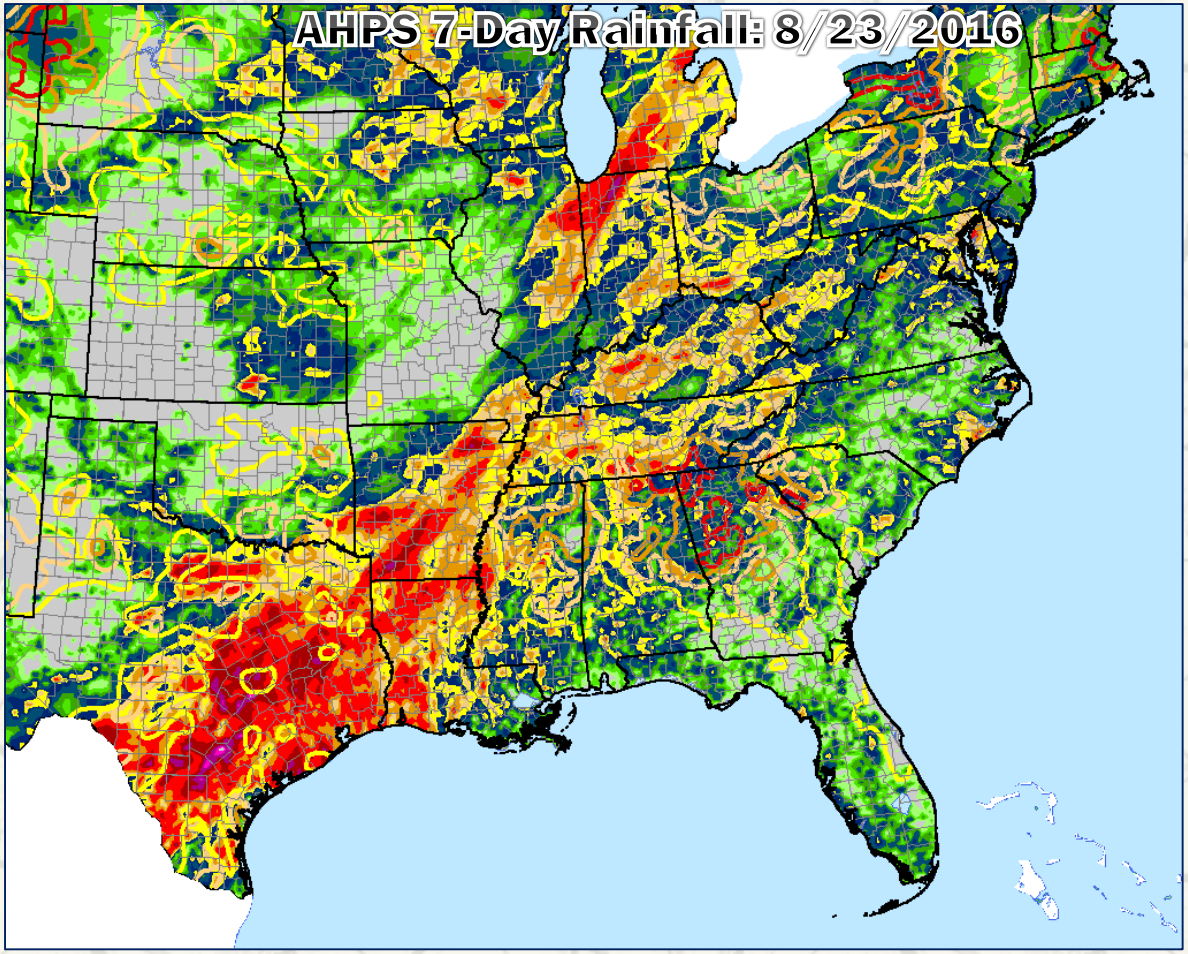


GIS allows us to turn layers on & off



Allows us to overlay drought areas with hydroclimate data

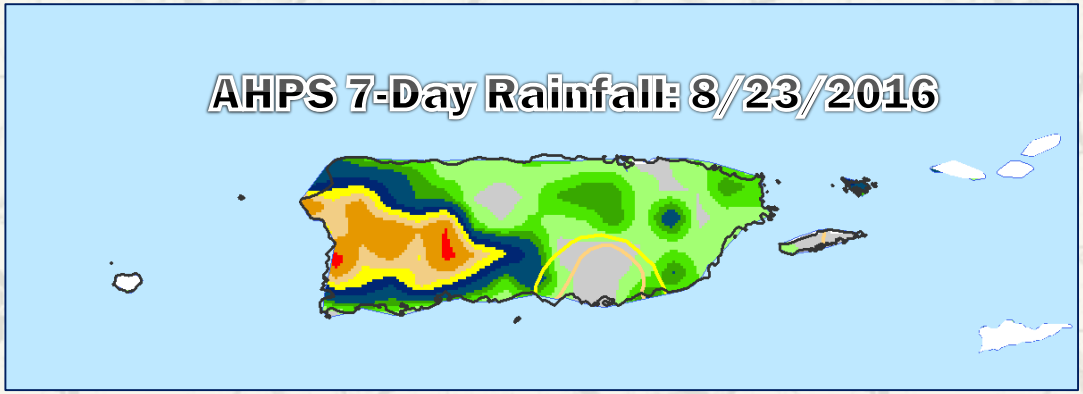




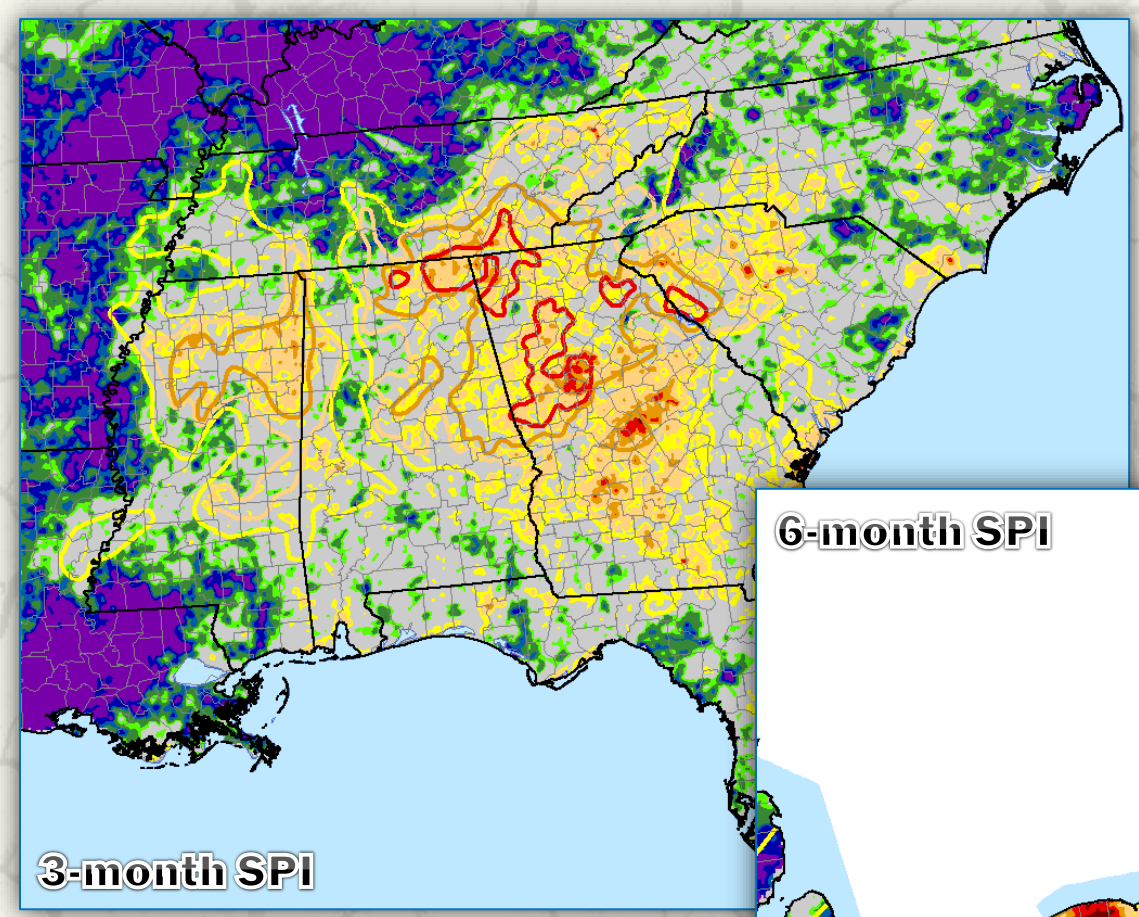
AHPS Gridded Precipitation

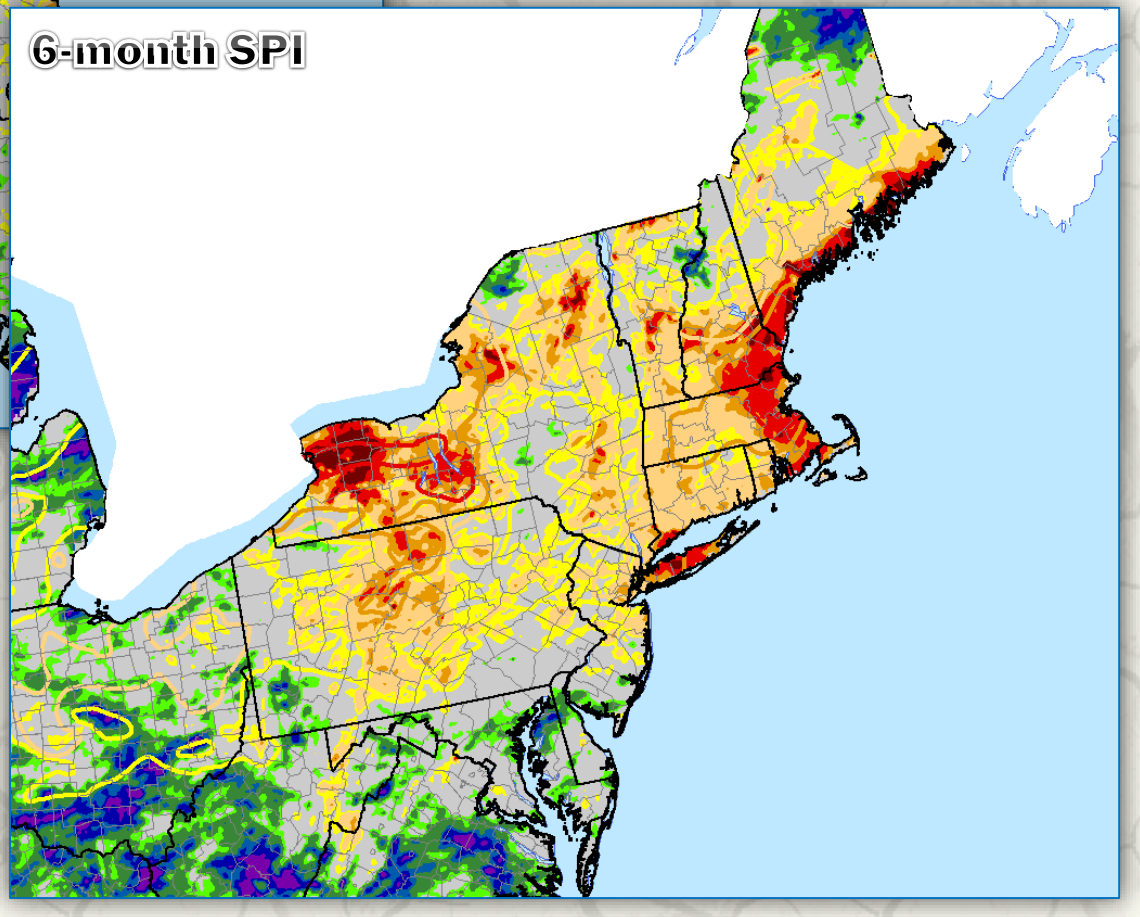
Using PRISM Data

- Departure from Normal
- Percent of Normal

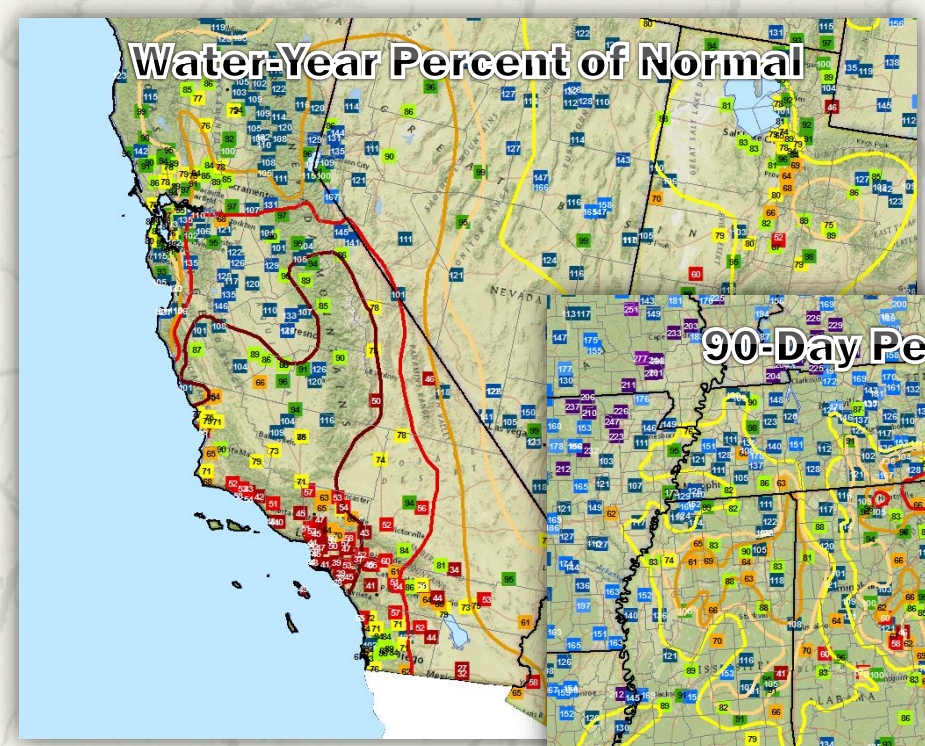


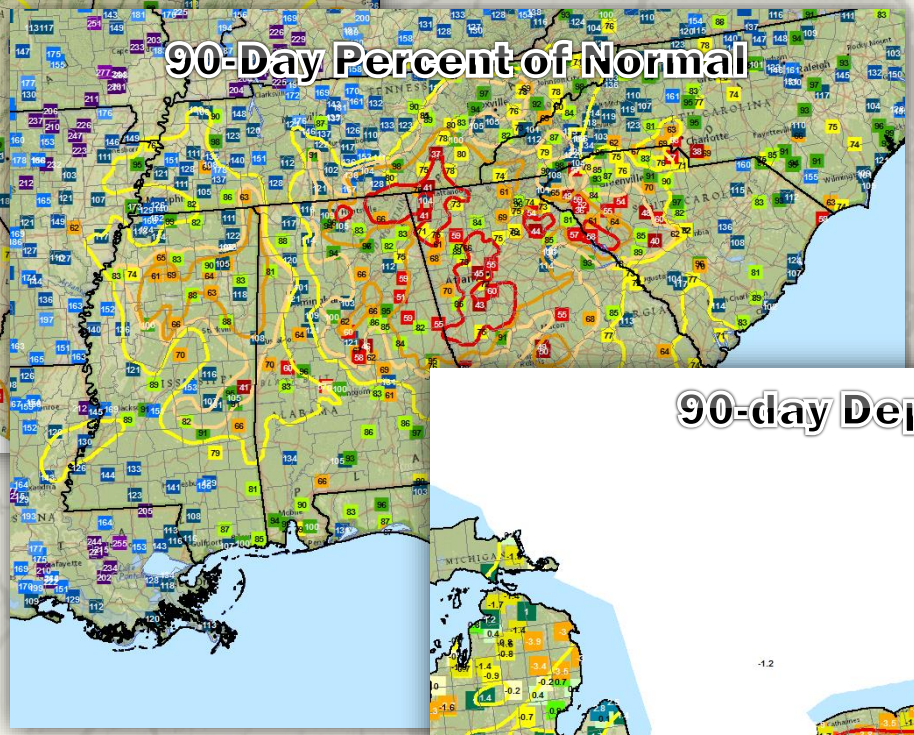
AHPS/NC State Gridded Standardized Precipitation Index (SPI)

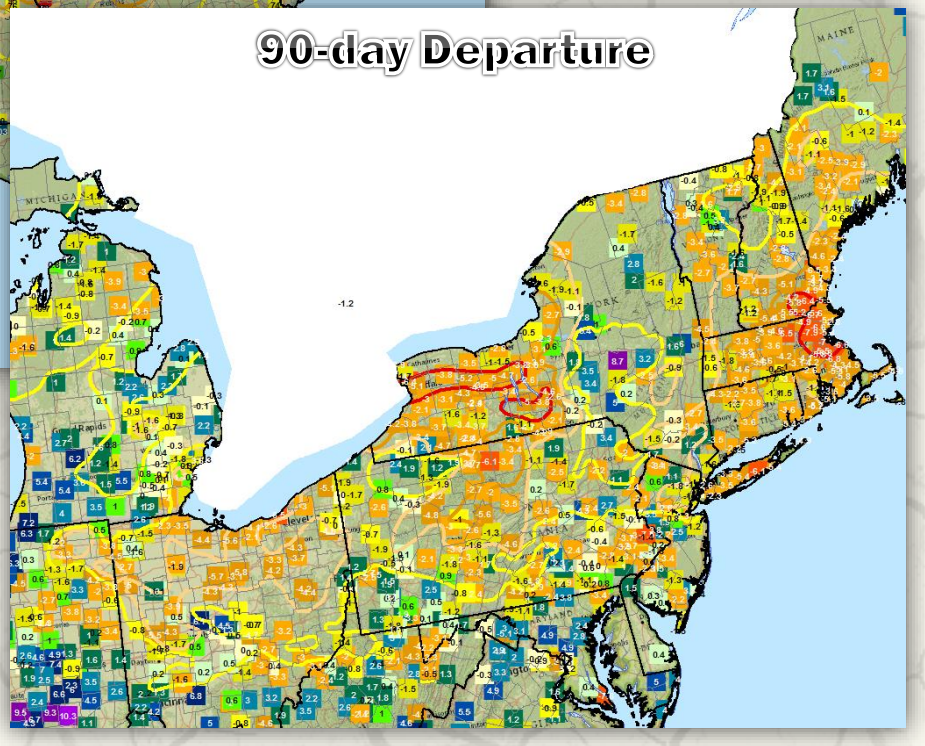




Station Precipitation Data

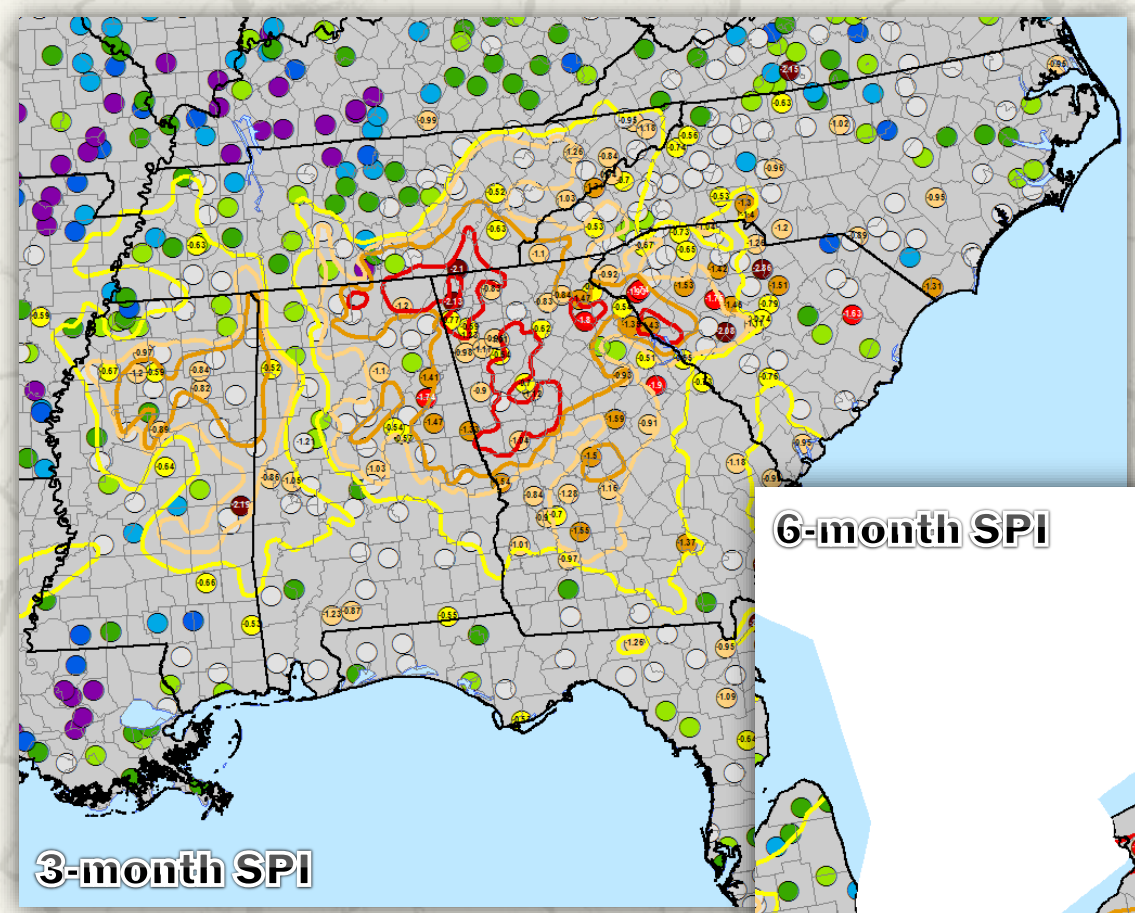


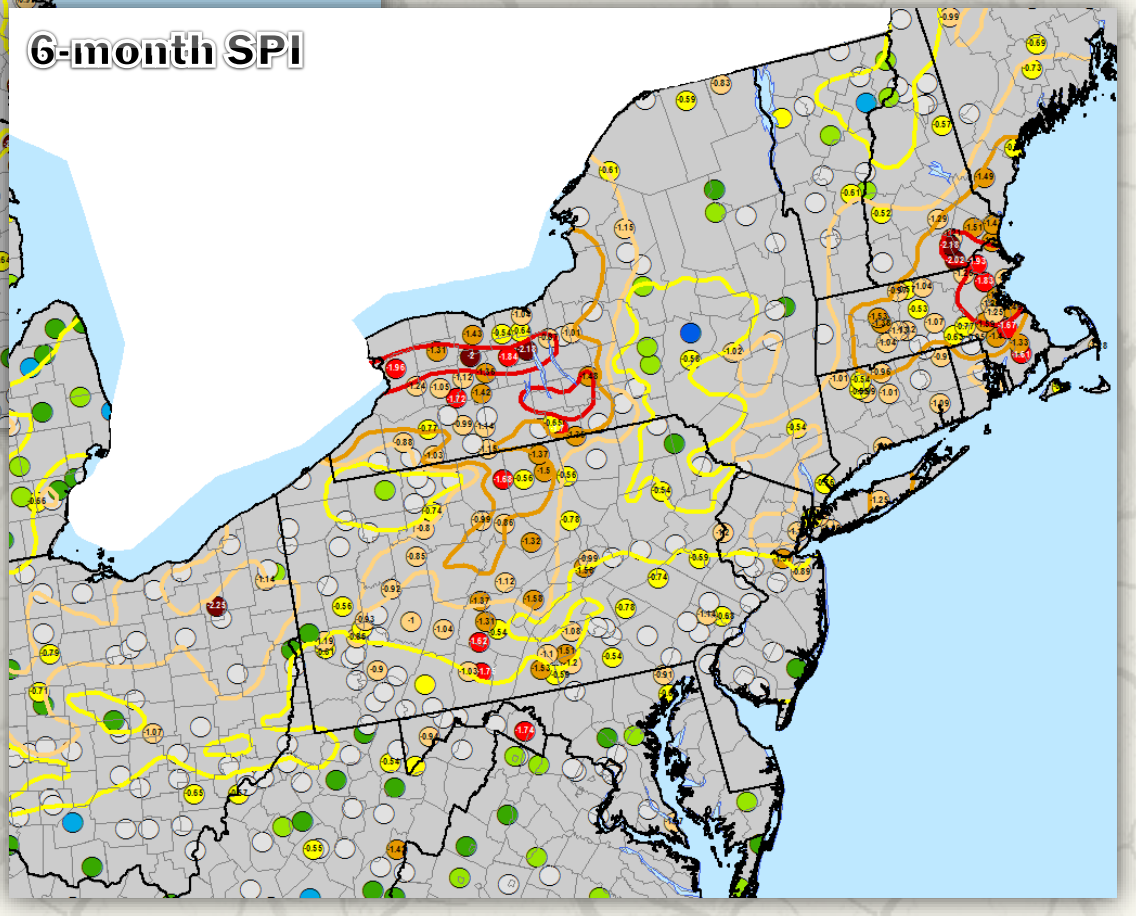




Northeast Regional Climate Center

Station-based Standardized Precipitation Index (SPI)





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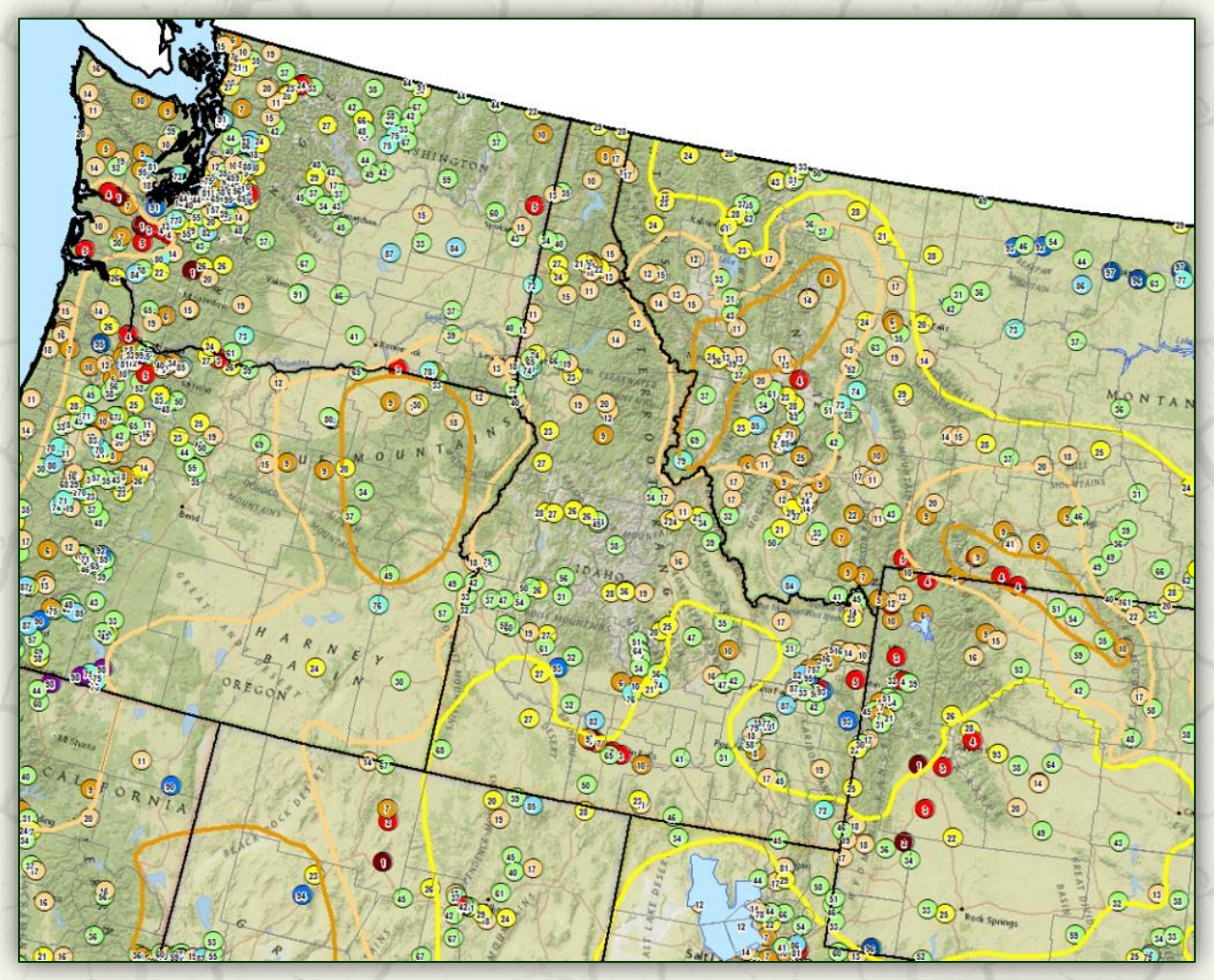
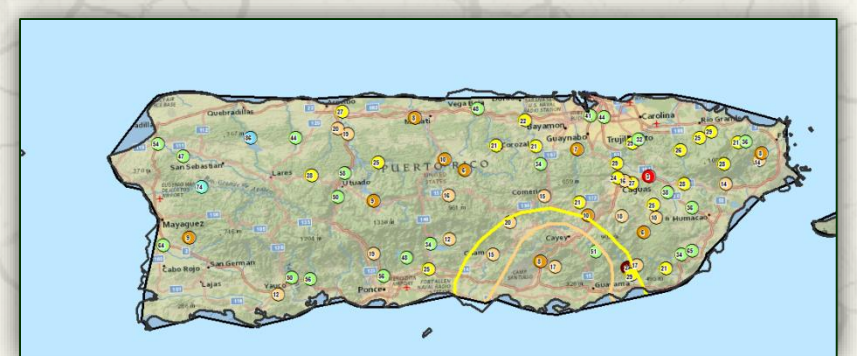


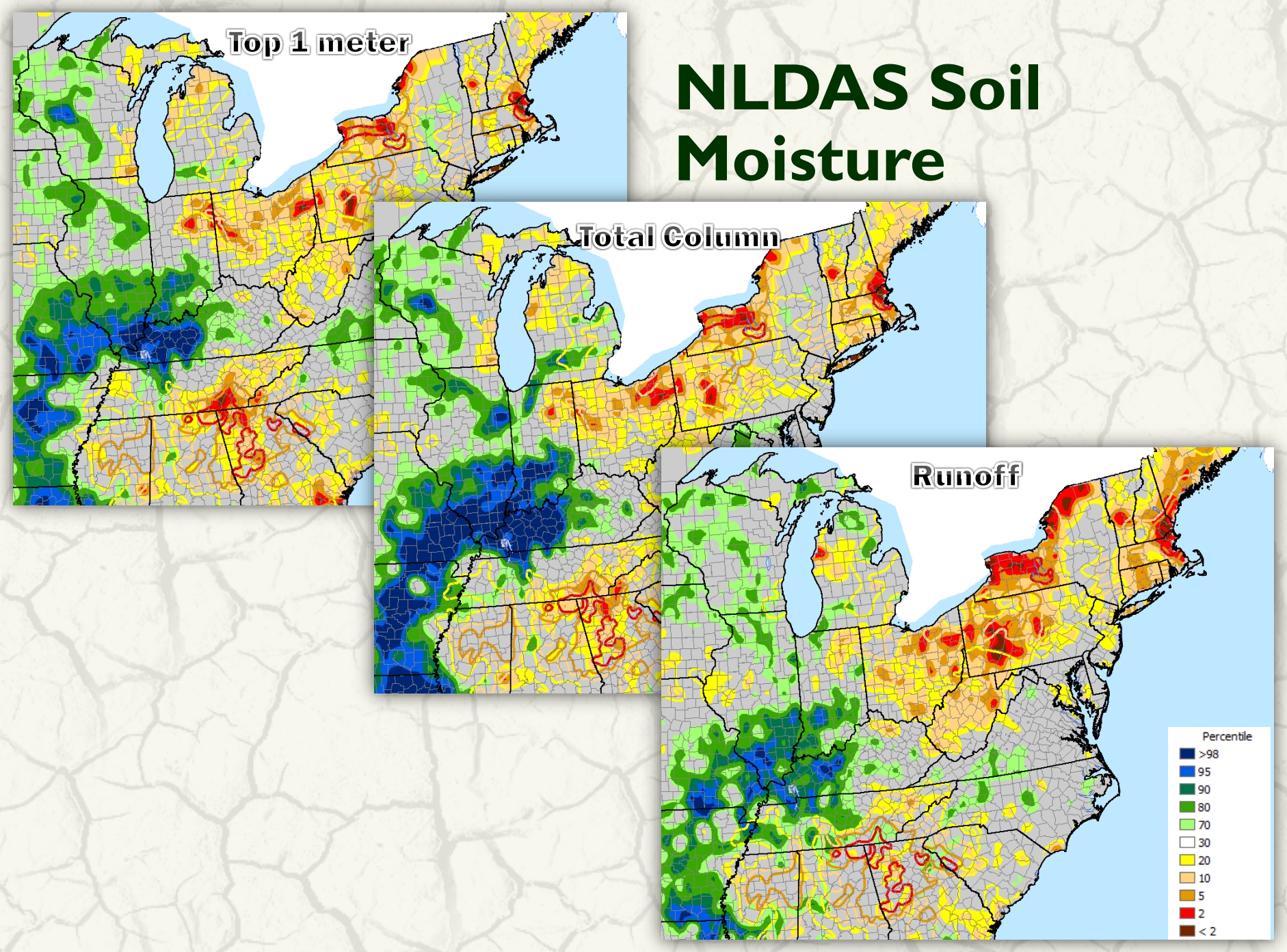
USGS Streamflow

- Real-time
- 7-day
- 14-day
- 28 day

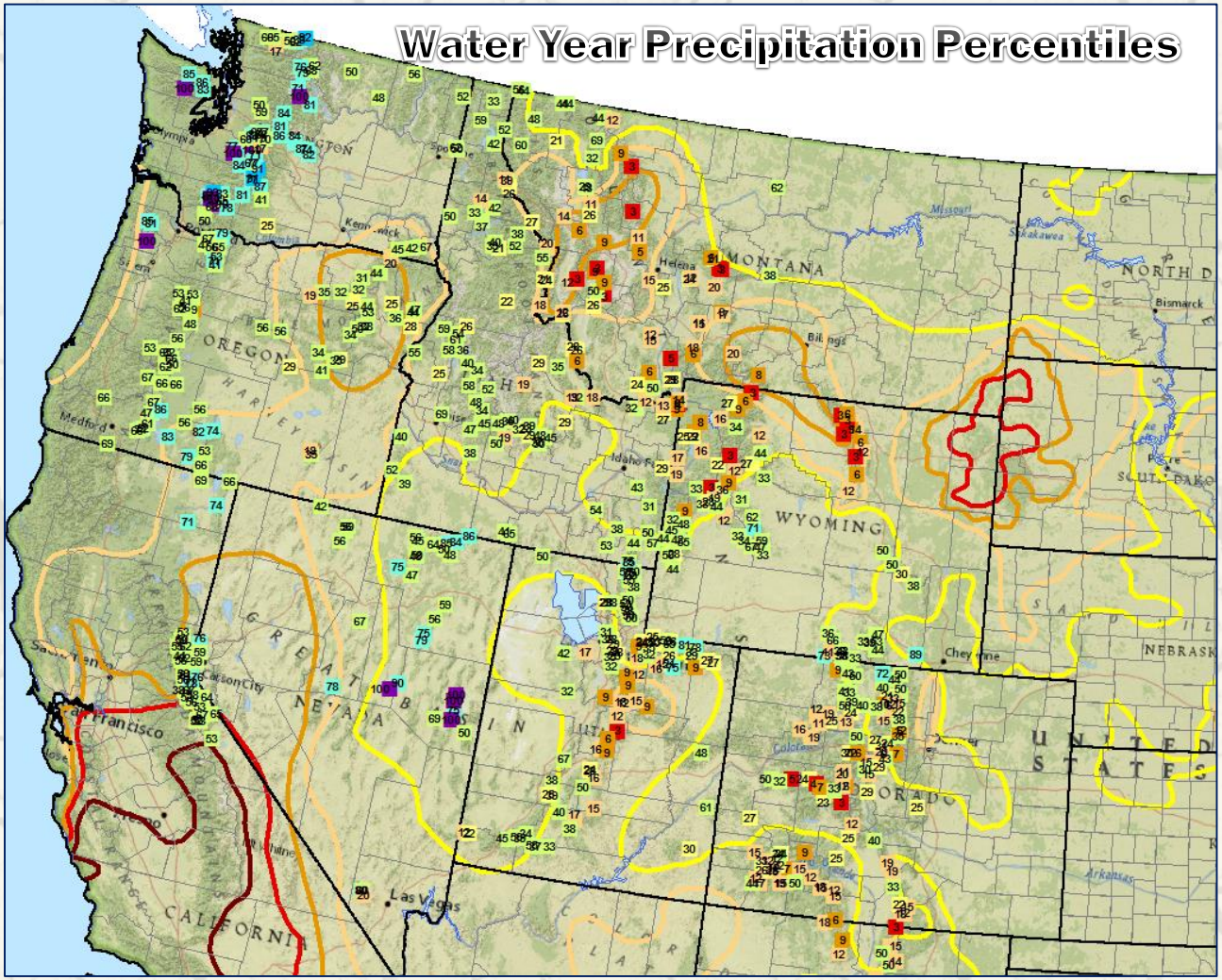
USGS
science for a changing world



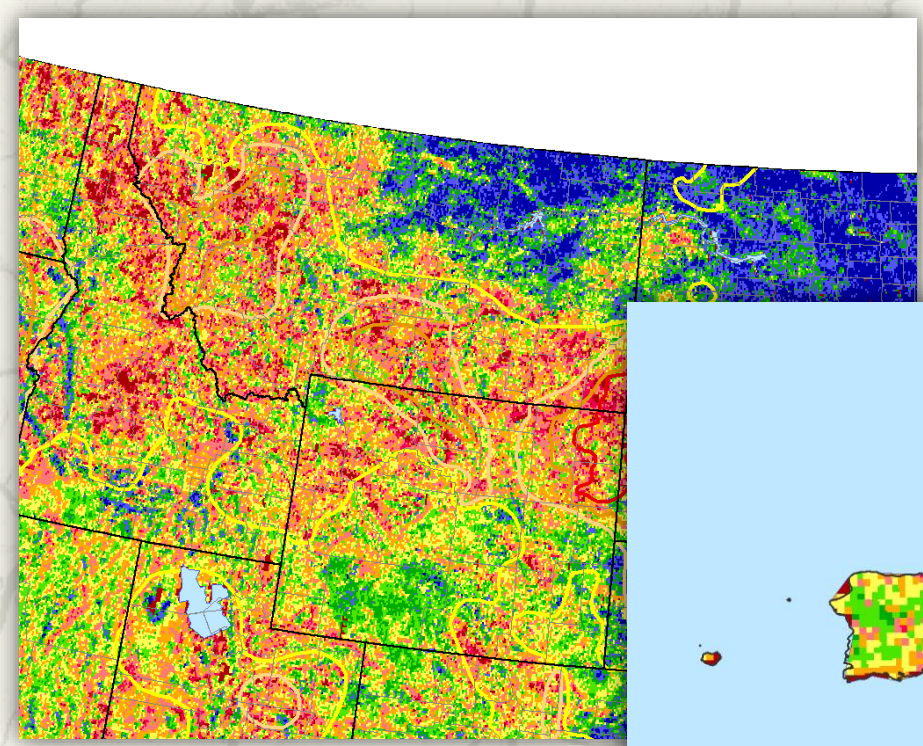
NLDAS Soil Moisture

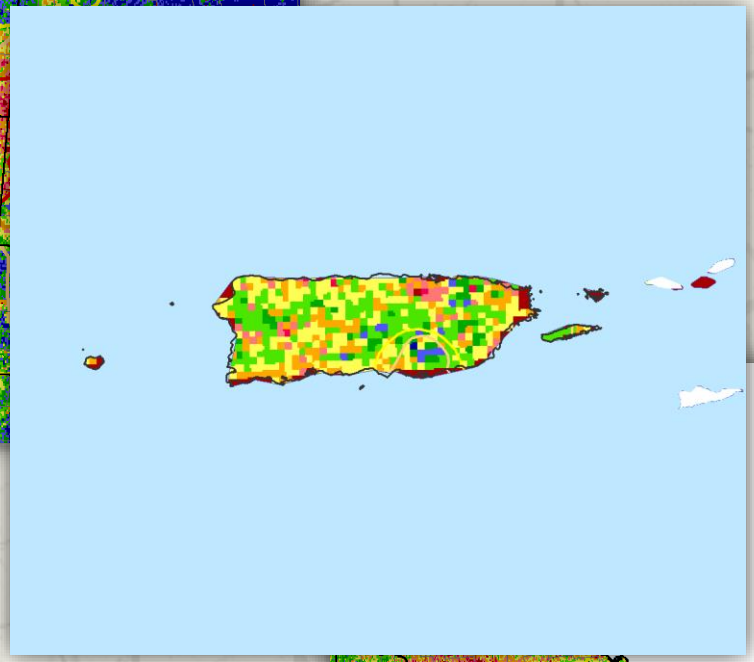


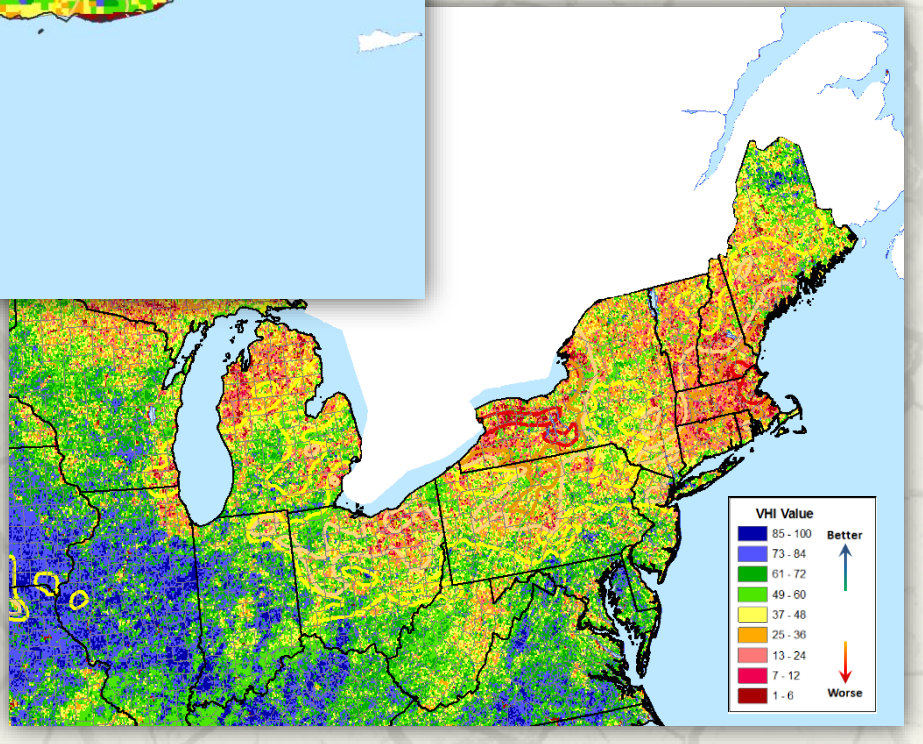
USDA/NRCS SNOTEL

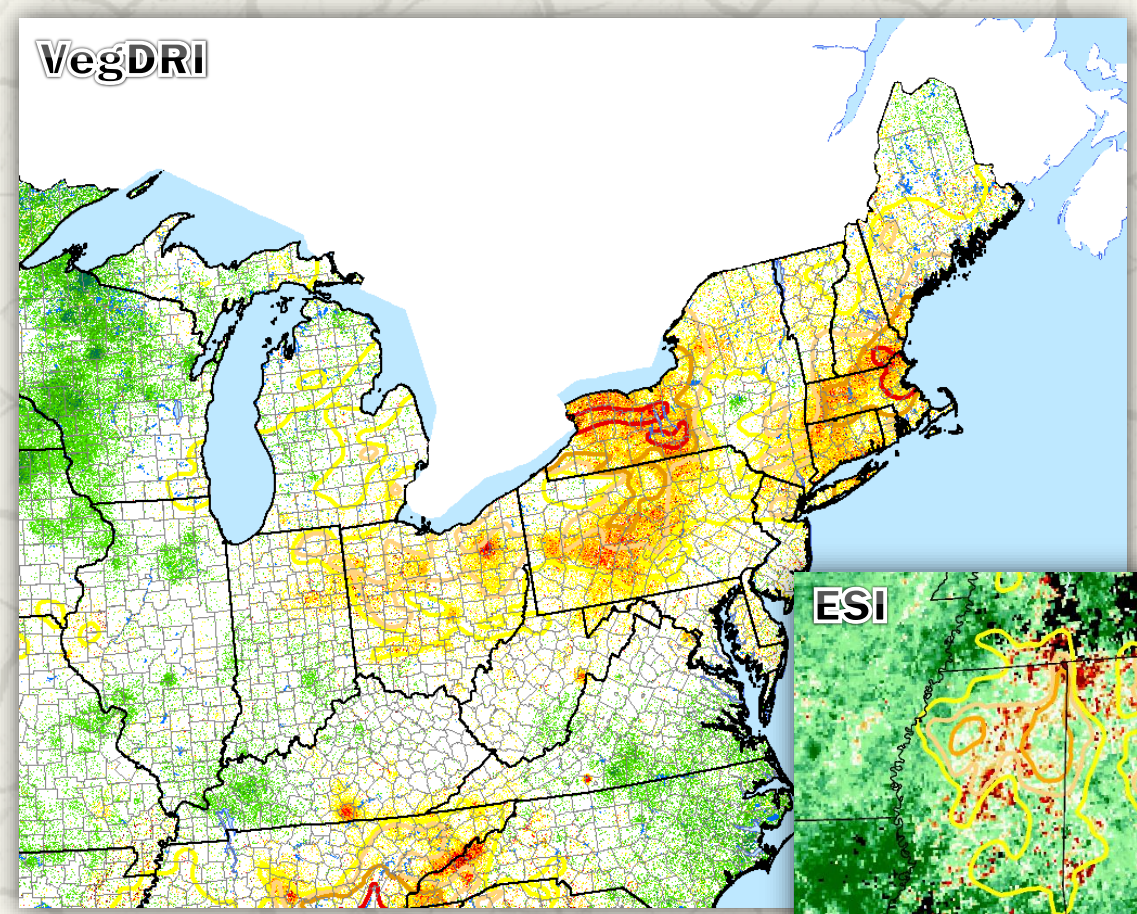


NESDIS Vegation Health Index

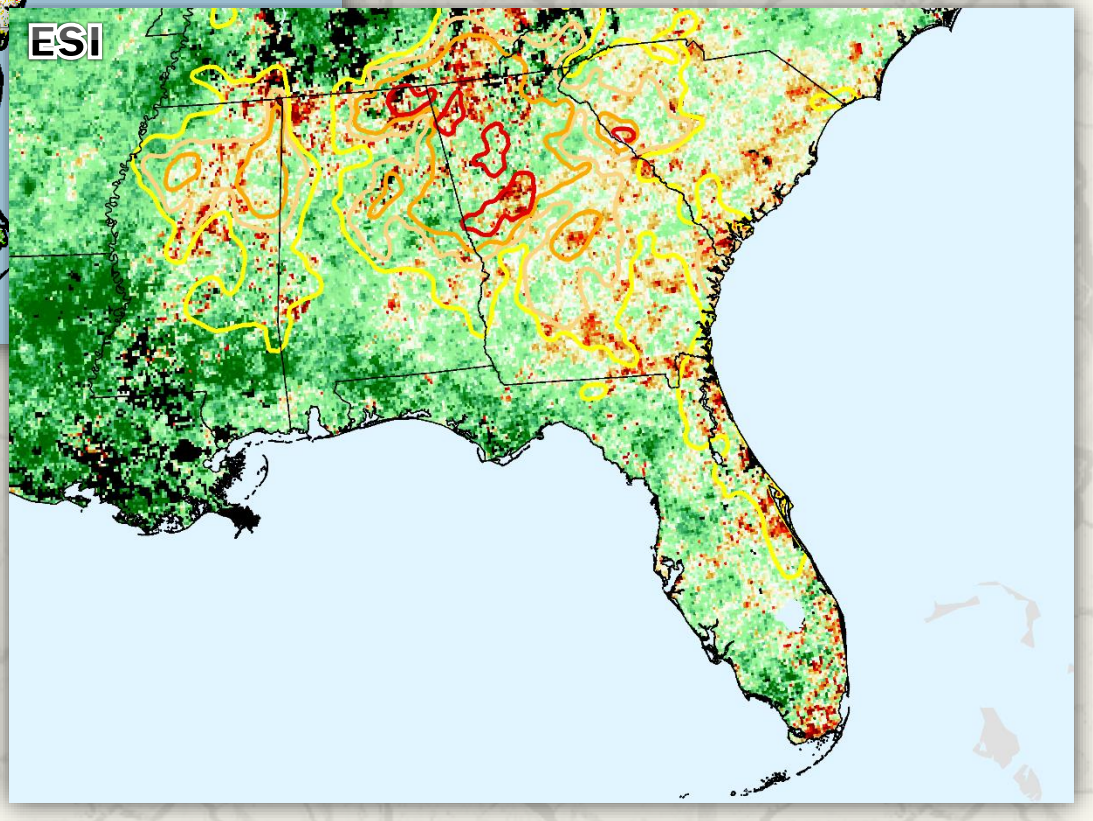






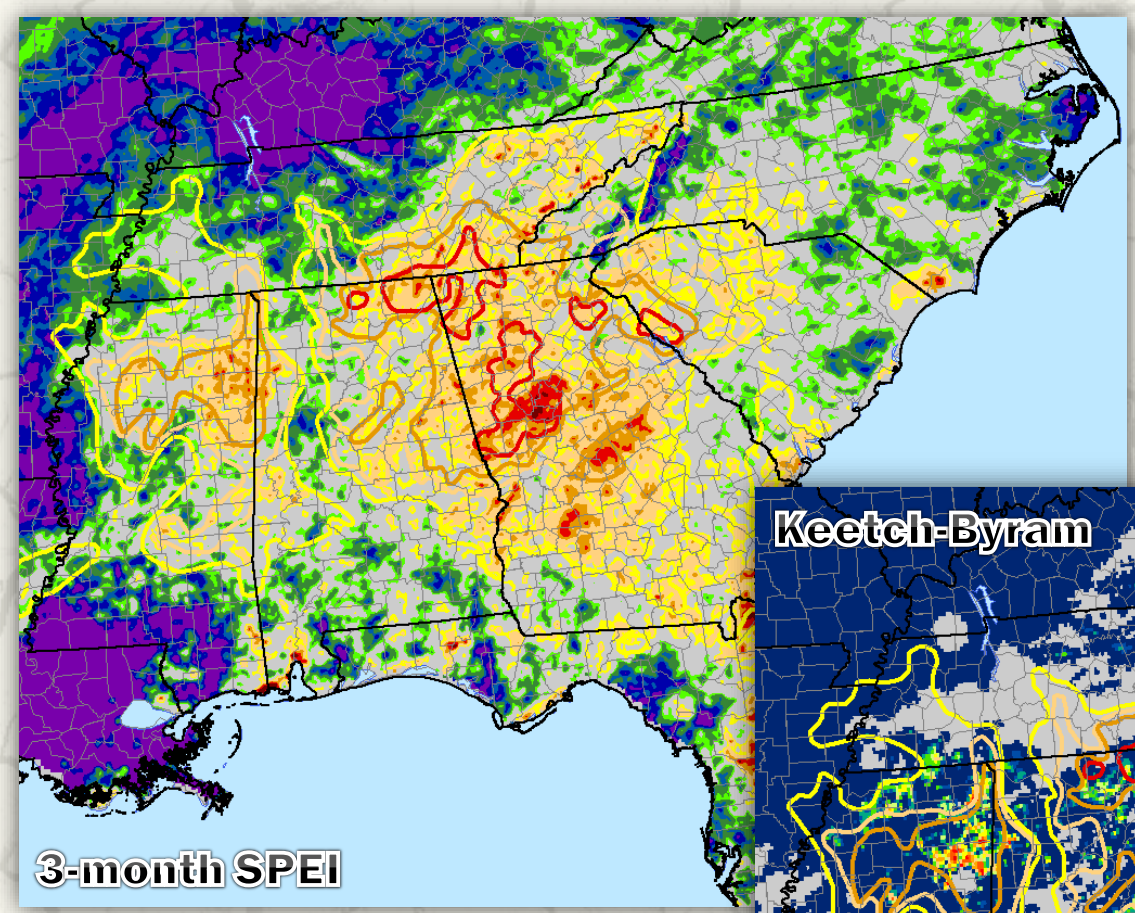


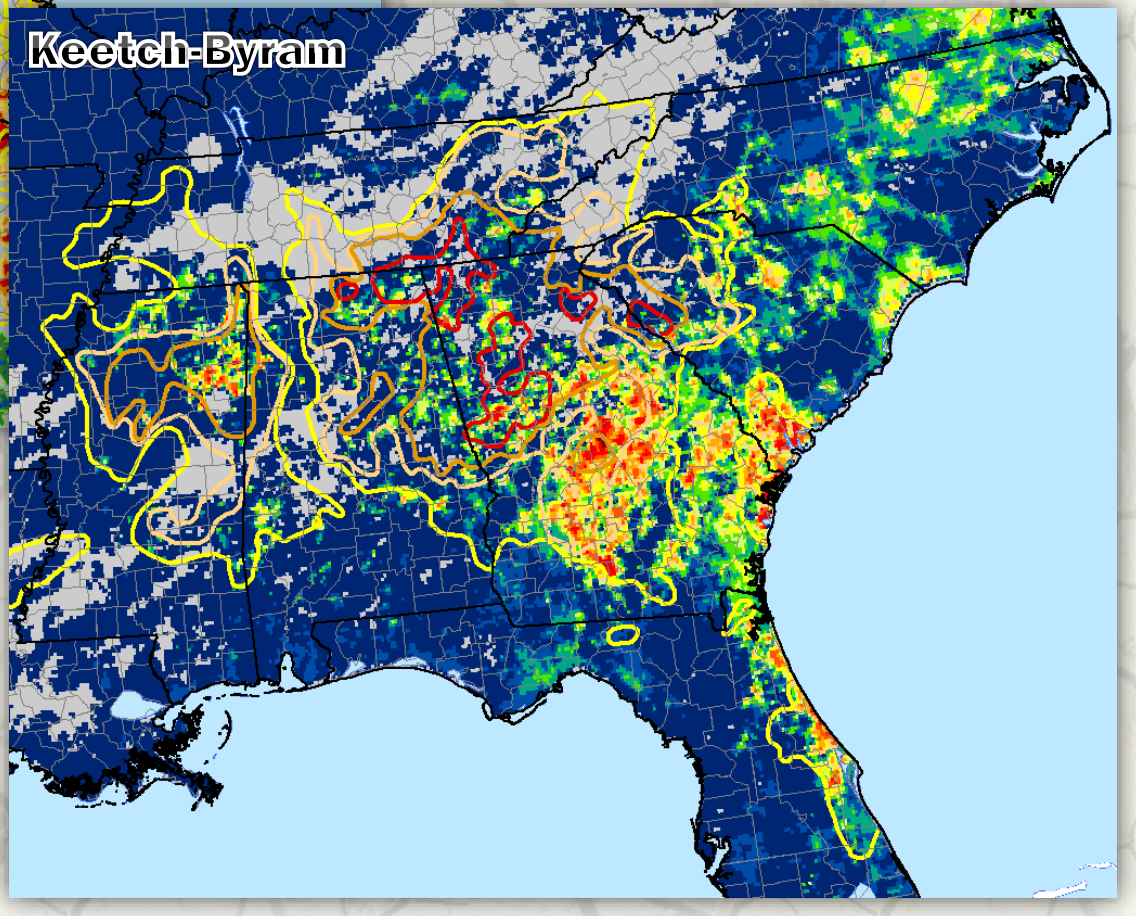
VegDRI & Evaporative Stress Index (ESI)



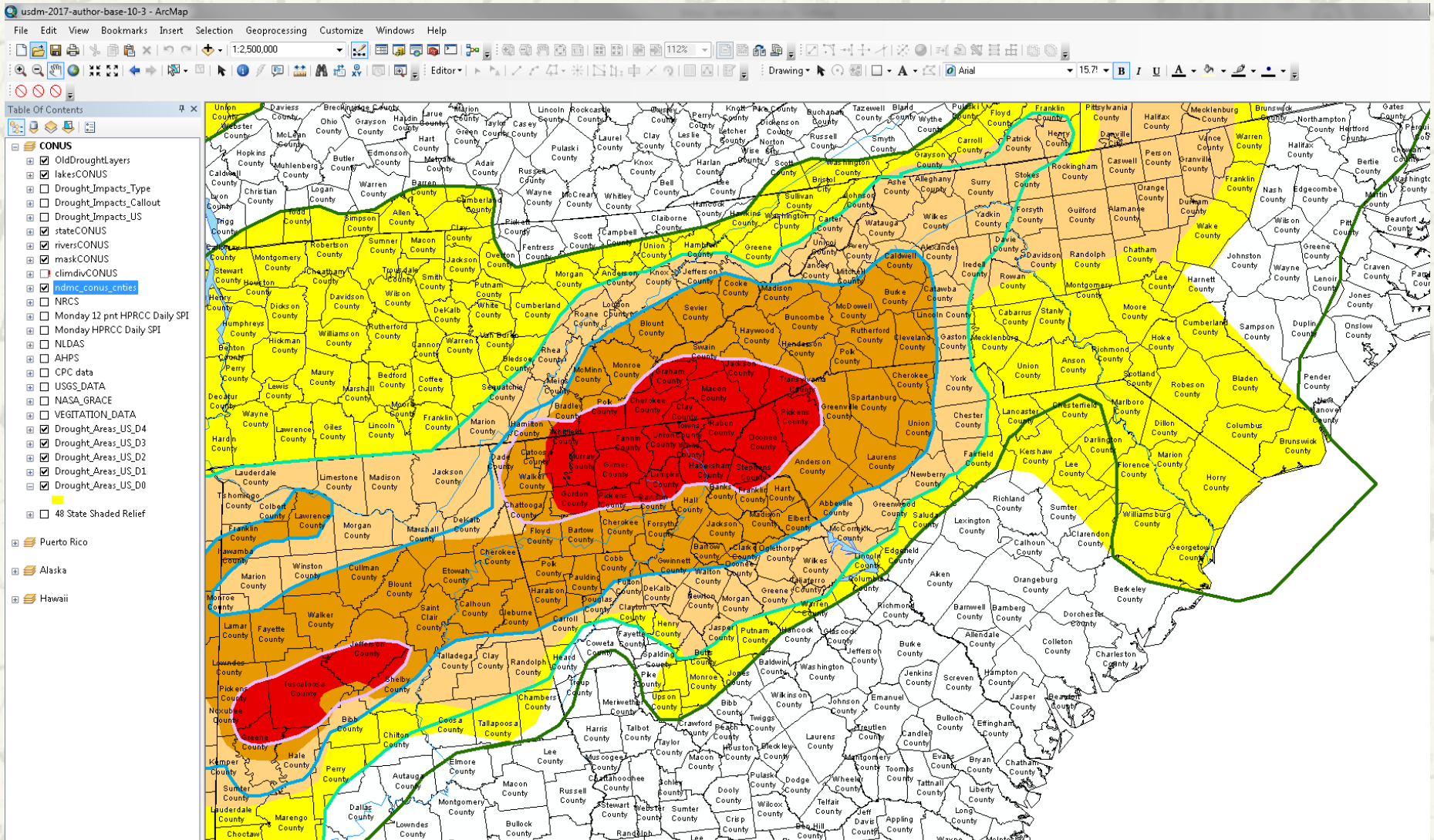
AHPS/NC
State

SPEI & KBDI

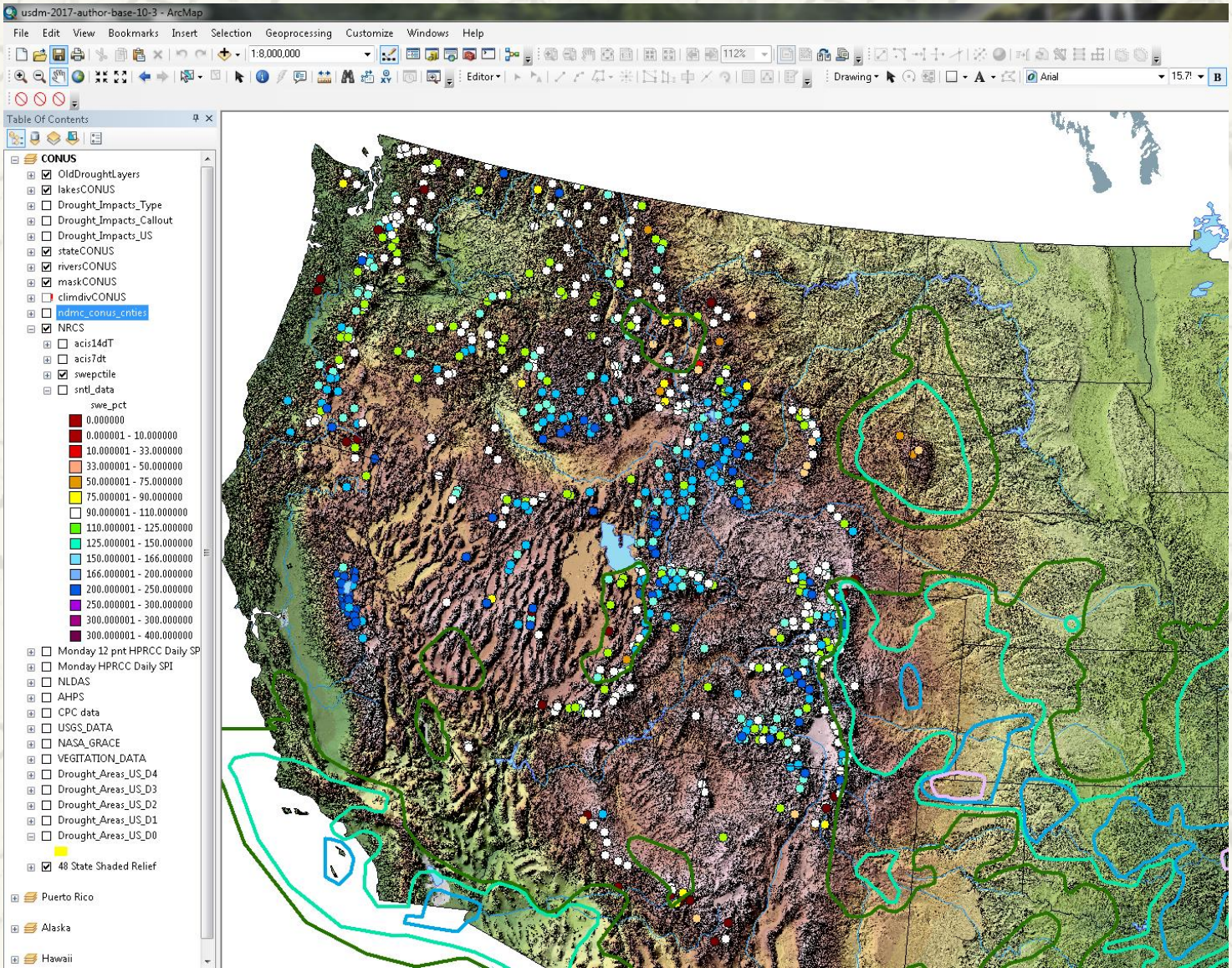


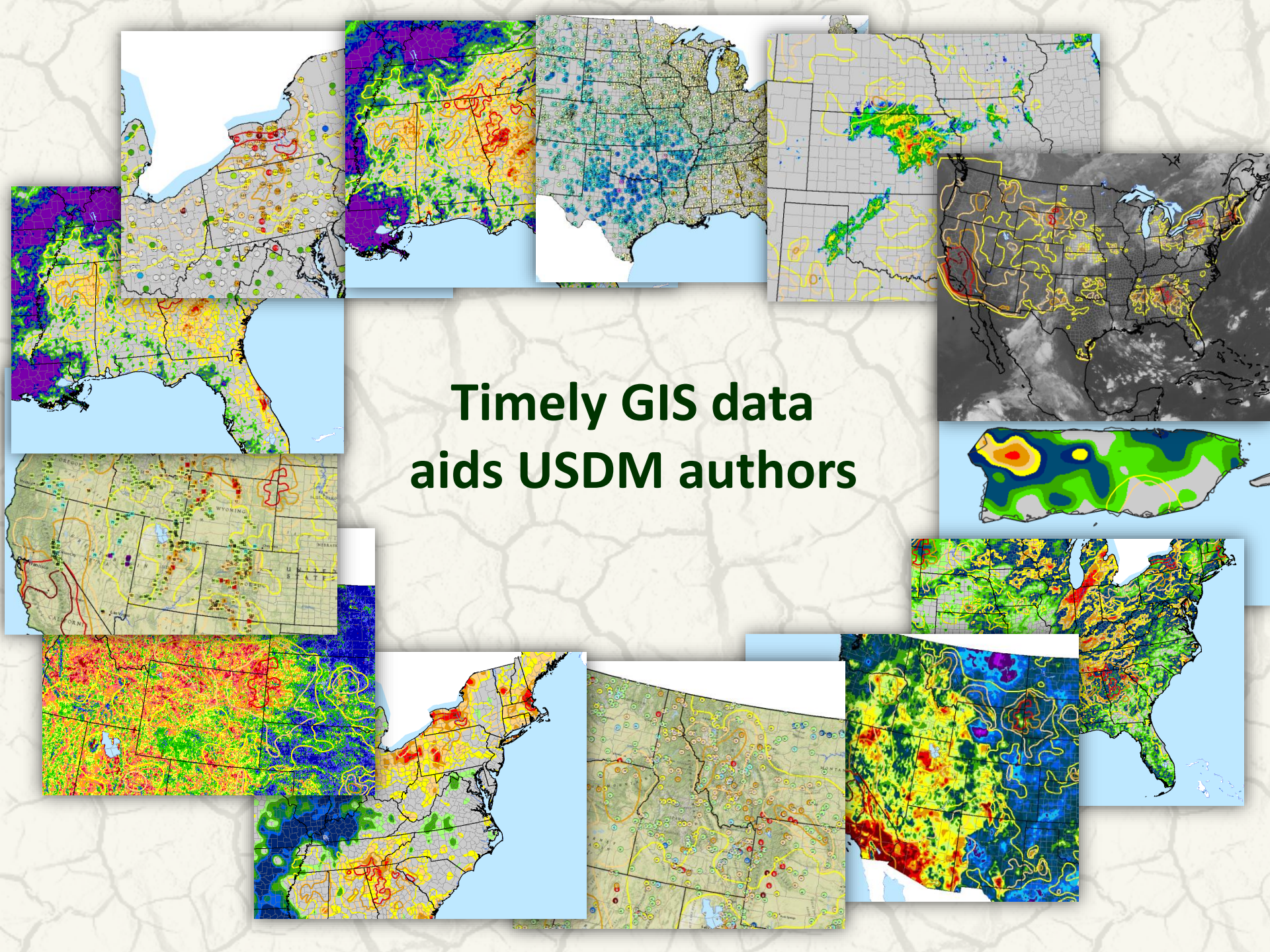


Previous week's drought layers



Topographic Data





Timely GIS data aids USDM authors

Questions?

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402-472-6199


There's no crying
during a
USDM shift