

Indiana Water Conditions Webinar

Thursday, August 23, 2012

The purpose of this webinar is to discuss the current water conditions in Indiana

Presenters:

- Drew Daily, IN Dept. Natural Resources
- Al Shipe, National Weather Service
- Jerry Unterreiner, IN Dept. Natural Resources
- Bruno Pigott, IN Dept. Environmental Mgt.
- Sarah Simpson, IN Dept. Agriculture
- Jennifer Richardson, IN Dept. Homeland Security
- Joe Wainscott, IN Dept. Homeland Security

Questions

- If you have any questions, please send us an instant message in the chat box on the GoToWebinar platform.
- If you are participating in this session via phone only, send your question(s) in email to pio@dhs.in.gov.

Drew Daily

State Fire Supervisor

Indiana Department of Natural Resources Fire

Division of Forestry

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Indiana Division of Forestry Fire Control Headquarters



Fire Severity Indices



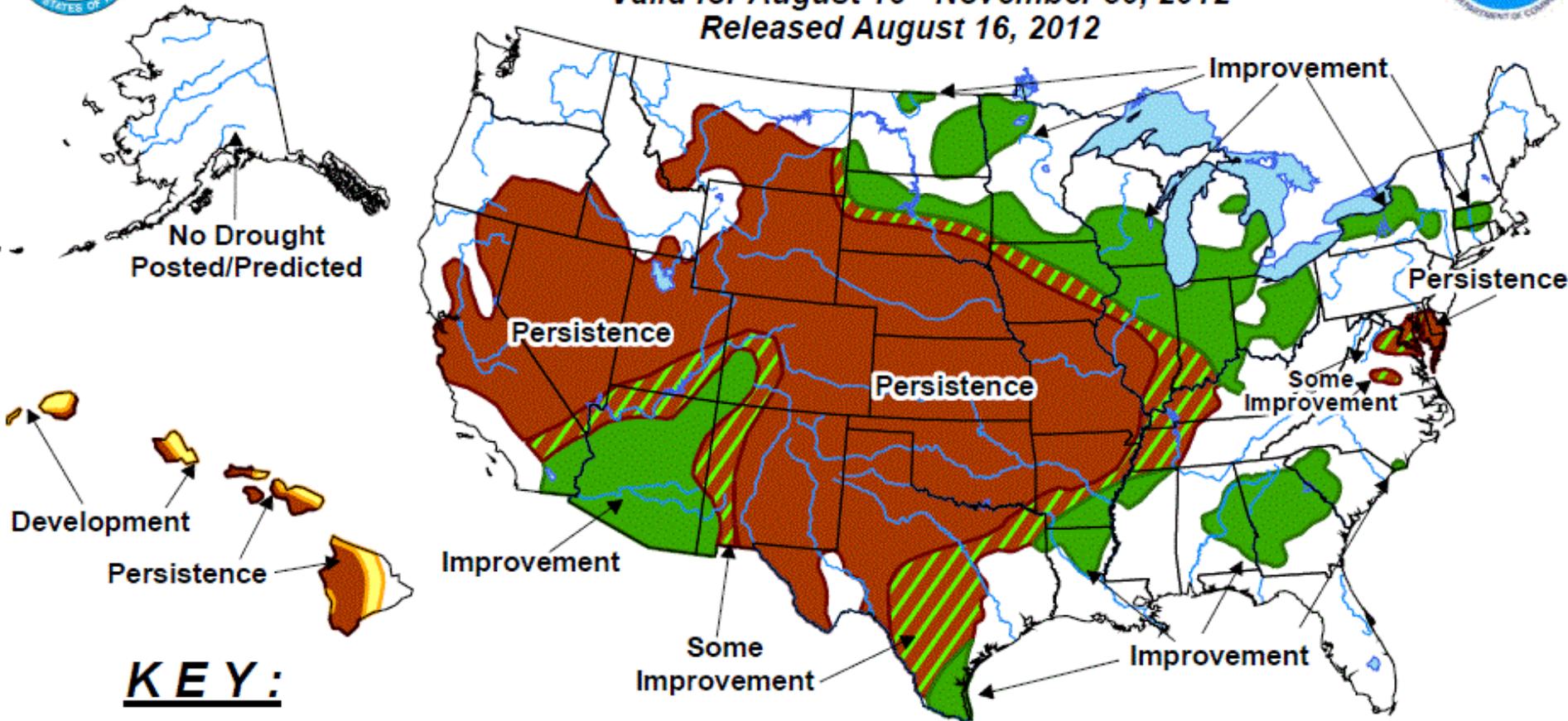
- **Fuel Moisture**
 - Live (Woody & Herbaceous)
 - Dead (1 hr., 10 hr., 100 hr., 1000 hr.)
- **Drought Measure**
 - Drought Monitor
 - Drought Forecast
 - Keetch-Byram Drought Index (KBDI)
 - Palmer Drought Index
- **Energy Release Component**
 - Cumulative
 - Composite Fuel Moistures
 - Considers previous 7 days
- **Burning Index**
 - Indication of the contribution that fire behavior makes to the effort to contain a fire.
- **Experience / Observation**



U.S. Seasonal Drought Outlook

Drought Tendency During the Valid Period

Valid for August 16 - November 30, 2012
Released August 16, 2012



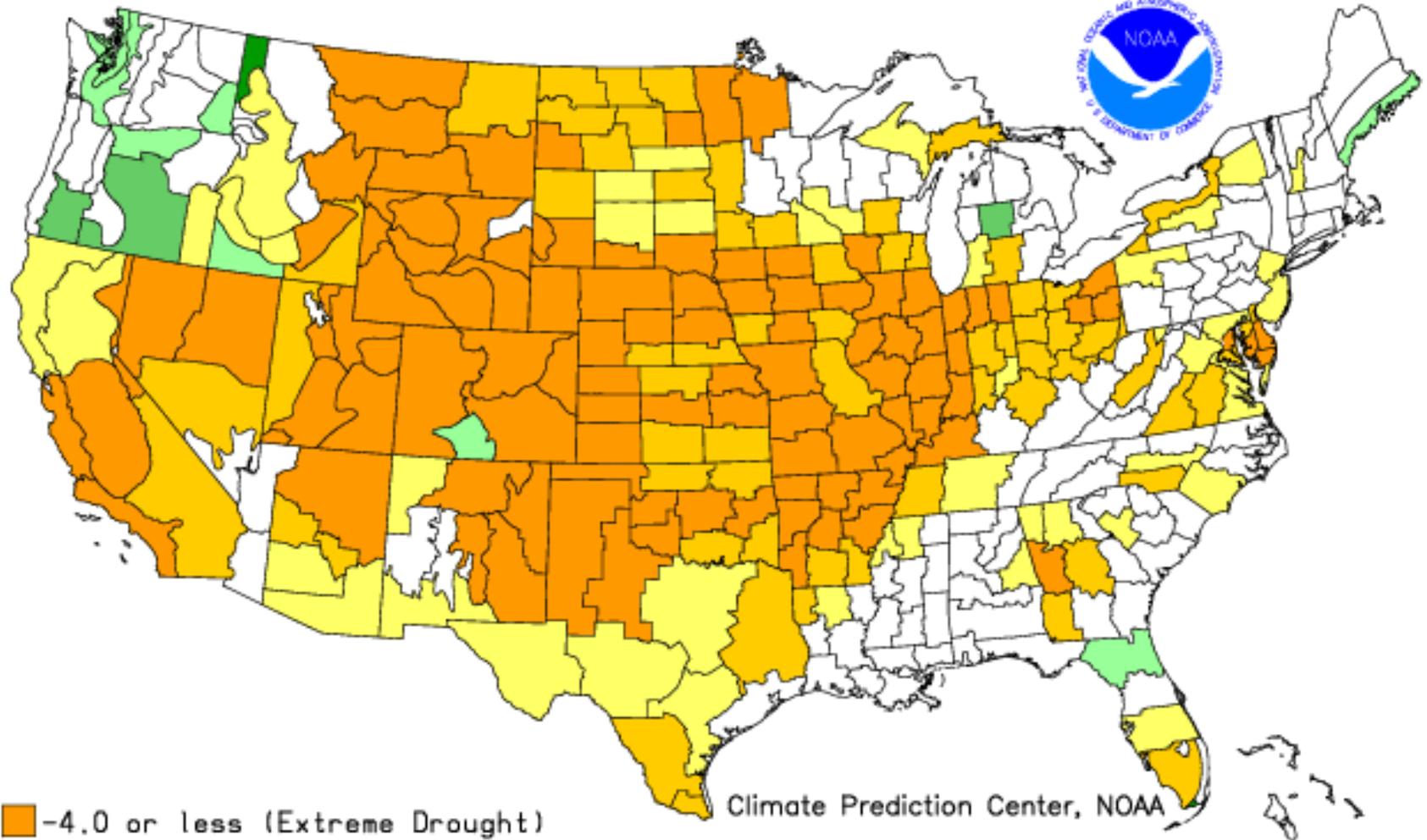
KEY:

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

No Drought Posted/Predicted 

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.

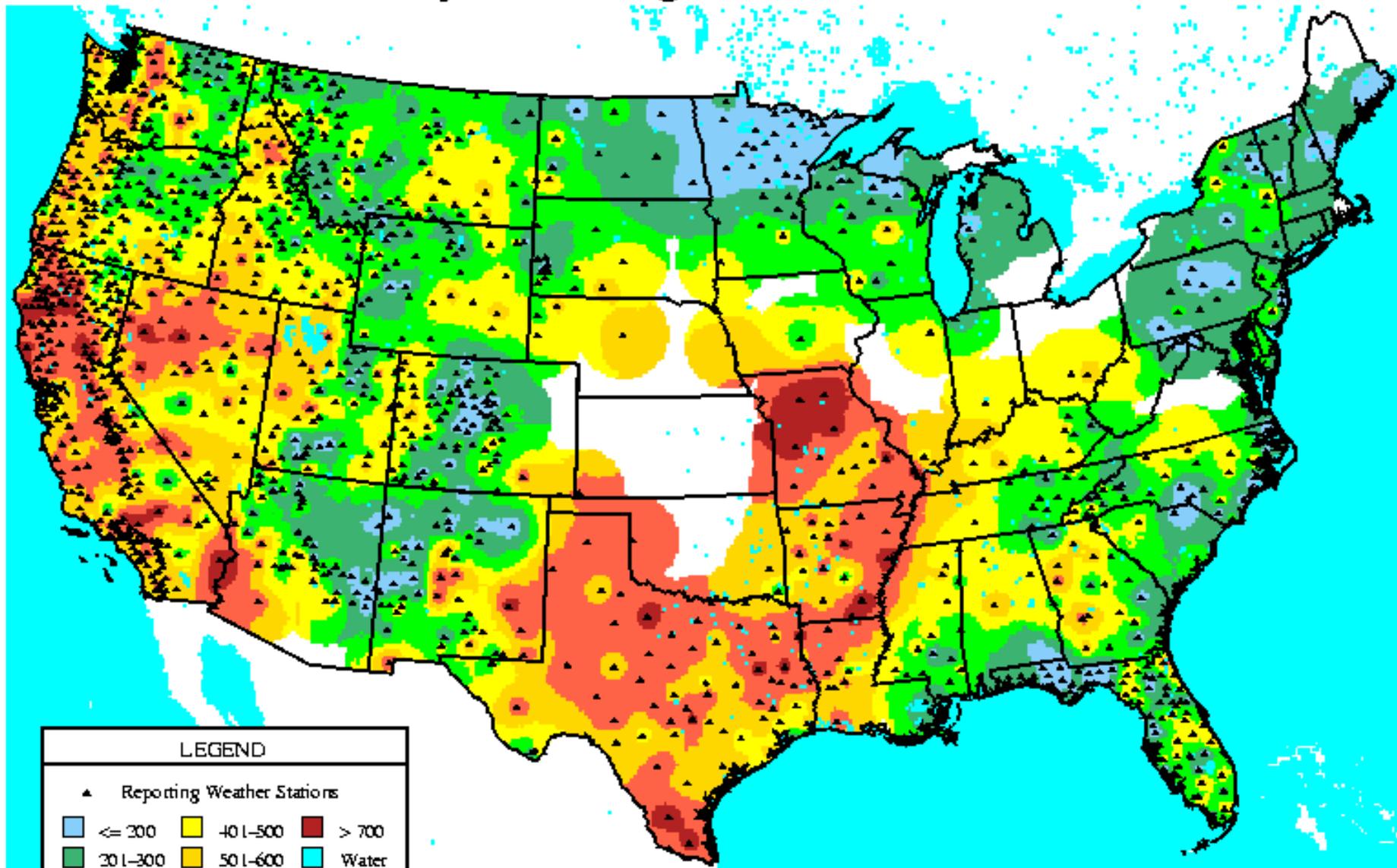
Drought Severity Index by Division
Weekly Value for Period Ending AUG 18, 2012
Long Term Palmer



Climate Prediction Center, NOAA

- | | |
|---|--|
|  -4.0 or less (Extreme Drought) |  +2.0 to +2.9 (Unusual Moist Spell) |
|  -3.0 to -3.9 (Severe Drought) |  +3.0 to +3.9 (Very Moist Spell) |
|  -2.0 to -2.9 (Moderate Drought) |  +4.0 and above (Extremely Moist) |
|  -1.9 to +1.9 (Near Normal) | |

Keetch-Byram Drought Index: 20-AUG-12



LEGEND

▲ Reporting Weather Stations

Blue	≤ 300	Yellow	401-500	Red	> 700
Green	301-300	Orange	501-600	Light Blue	Water
Light Green	301-400	Dark Orange	601-700		

(Inv. Dist.² Interp.)

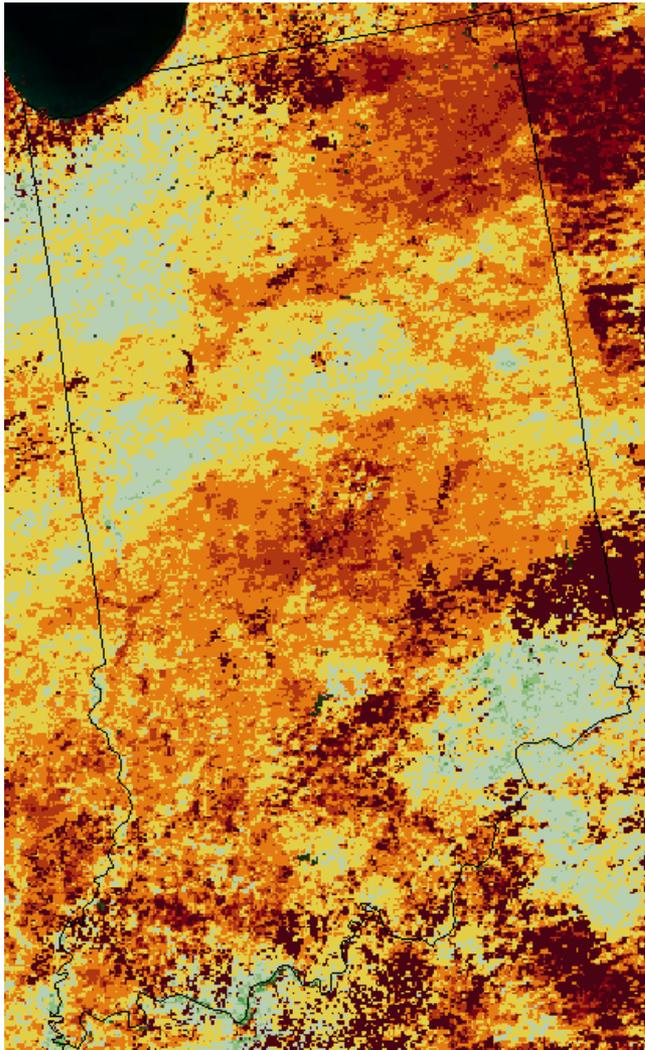


Departure from Average Greenness in %

July 17, 2012

(source: WFAS)

August 20, 2012



Dep from Average:

1-54

55-64

65-74

75-84

85-94

95-105

106-115

116-125

126-135

136-145

146-249

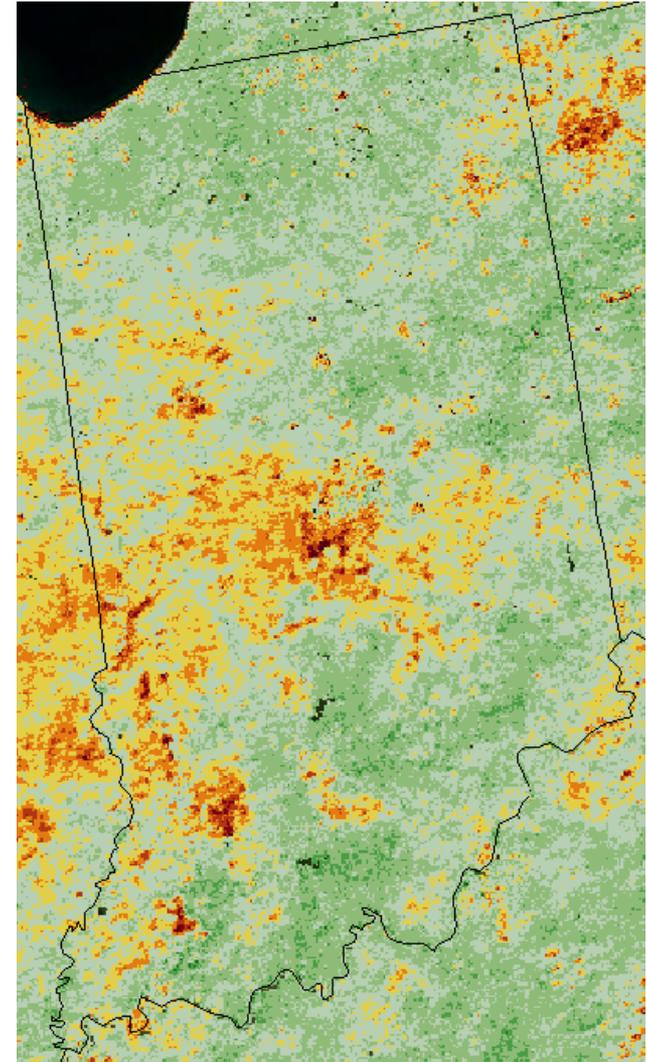
146-249

252-253

State/Provincial Boundaries:

~ outline

Average



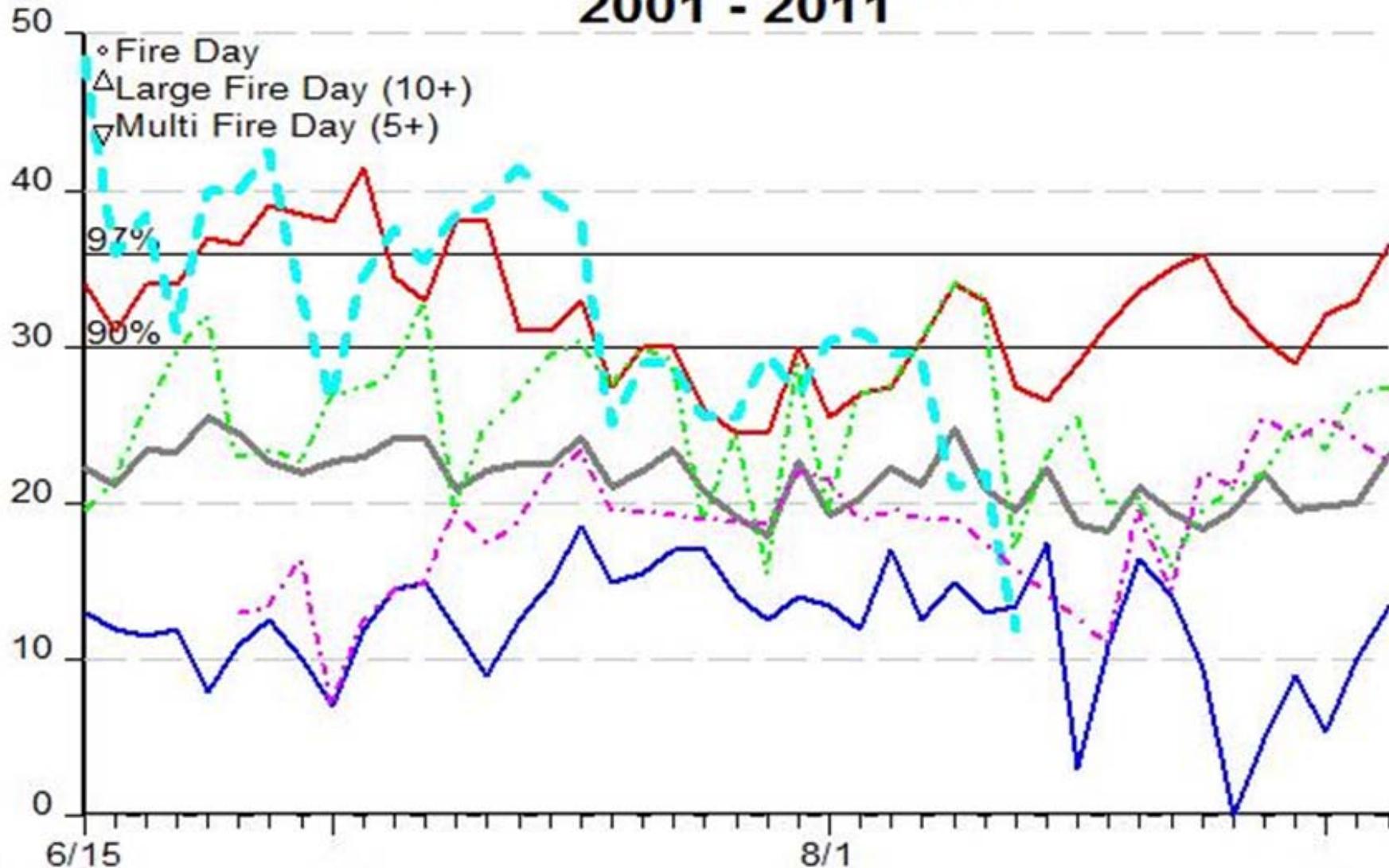
Current Fuels Indices

	1 hr.	10 hr	100 hr.	1000 hr.	Woody	Herb.	KBDI
Bailly <small>(North)</small>	7	9	16	19	148	94	248
Hardin Ridge <small>(S Central)</small>	5	7	14	15	110	64	428
Tipsaw <small>(South)</small>	6	7	11	15	108	59	522
Big Oaks <small>(SE)</small>	6	8	15	16	122	92	452
Normal	9+	11+	16+	20+	175↓	150↓	



120201-BAILY (INDIANA DUNES) 2001 - 2011

Energy Release Component



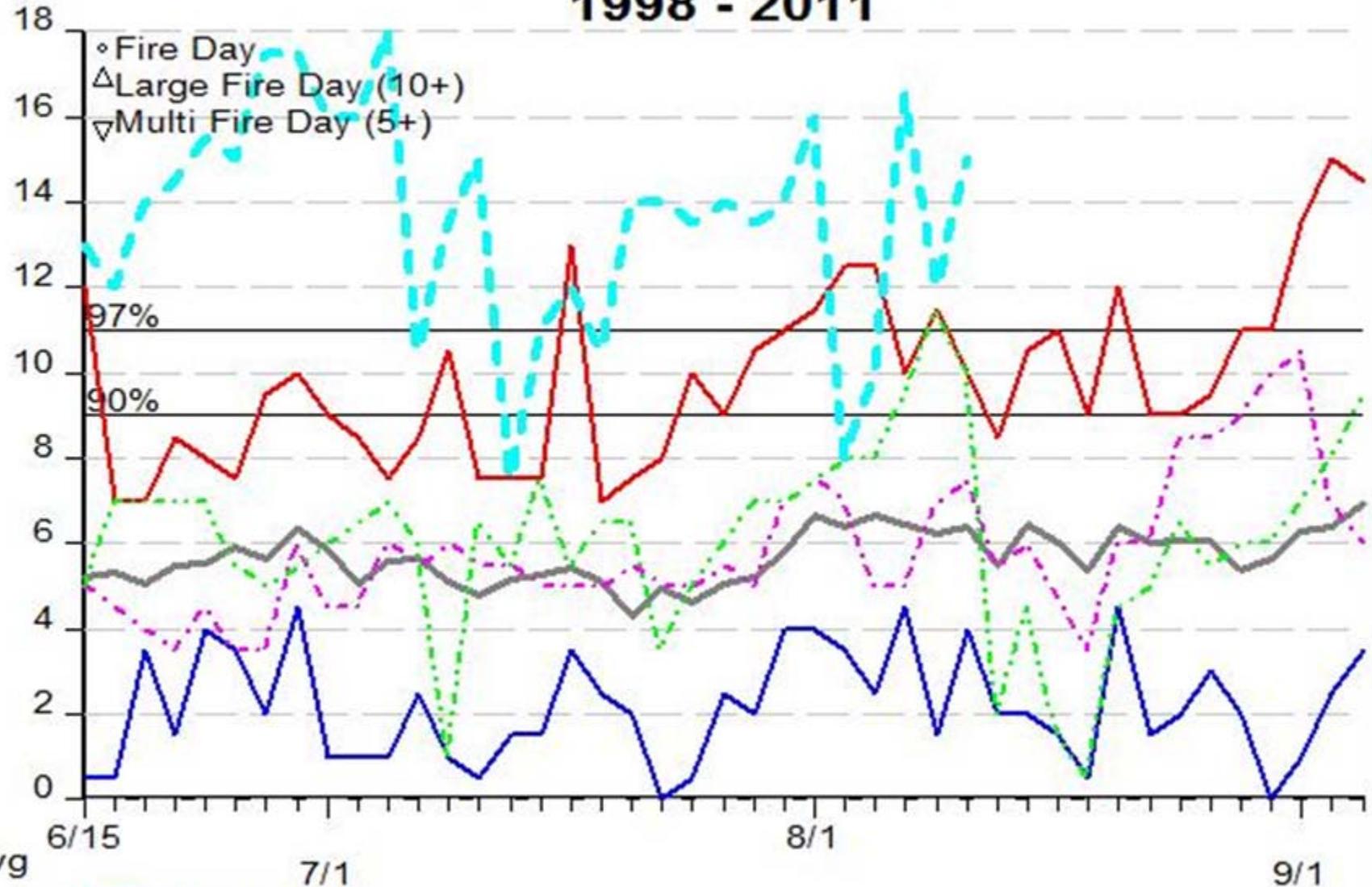
— Avg
 — Max
 — Min
 — 2012 (0/0/0)
 - - - 2011 (0/0/0)
 ··· 2002 (0/0/0)

2 Day Periods

Model: 7G1PE3
 629 Wx Observations
 FF+4.1 Beta 08/14/2012-13:25

125701-HARDIN RIDGE 1998 - 2011

Energy Release Component



— Avg
— Max
— Min

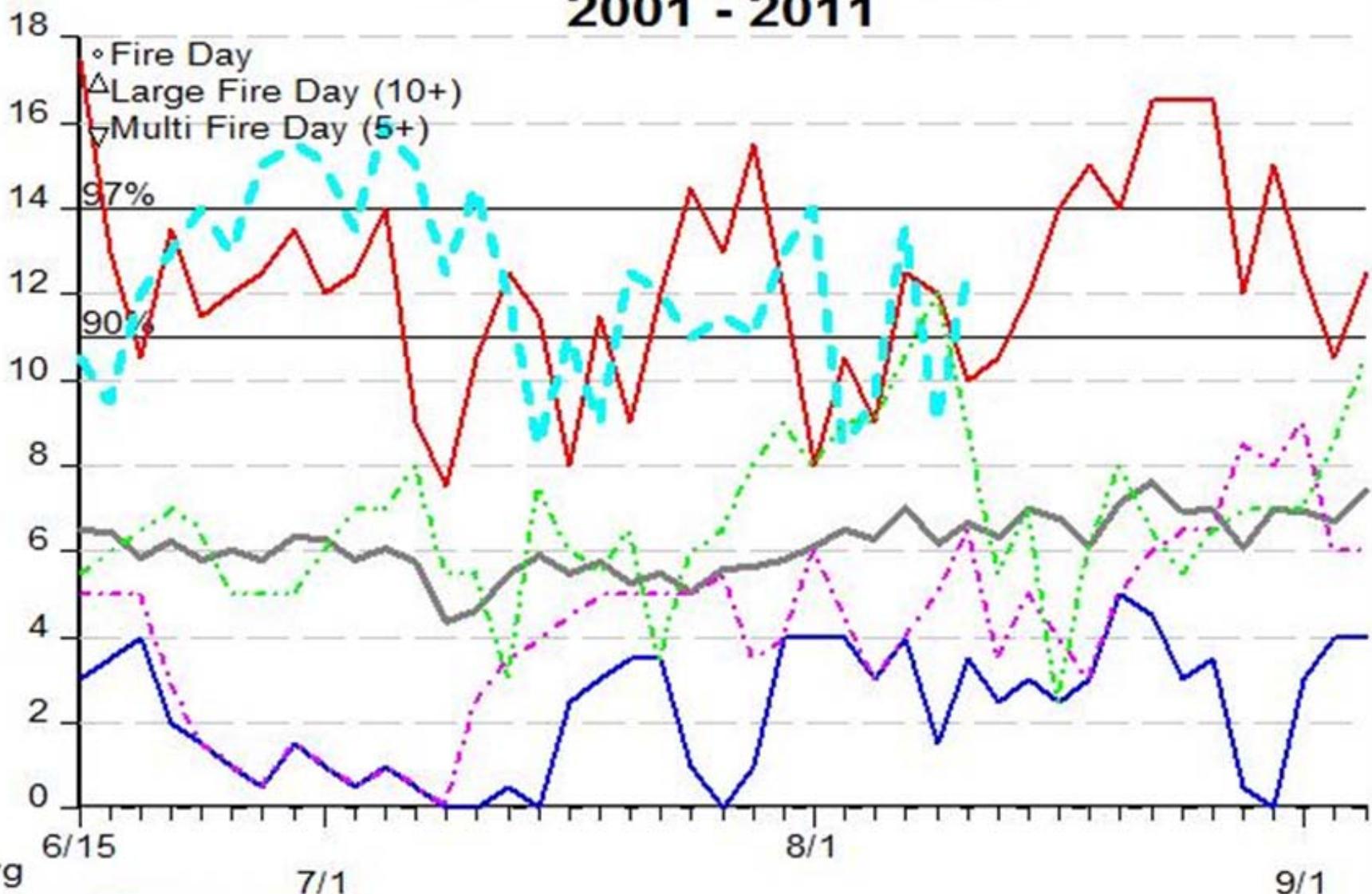
2012 (0/0/0)
2011 (0/0/0)
2002 (0/0/0)

2 Day Periods

Model: 7R2PE3
960 Wx Observations
FF+4.1 Beta 08/14/2012-13:26

128905-TIPSAW LAKE 2001 - 2011

Energy Release Component



- Avg
- Max
- Min
- 2012 (0/0/0)
- 2011 (0/0/0)
- 2002 (0/0/0)

2 Day Periods

Model: 7R2PE3
793 Wx Observations
FF+4.1 Beta 08/14/2012-13:27

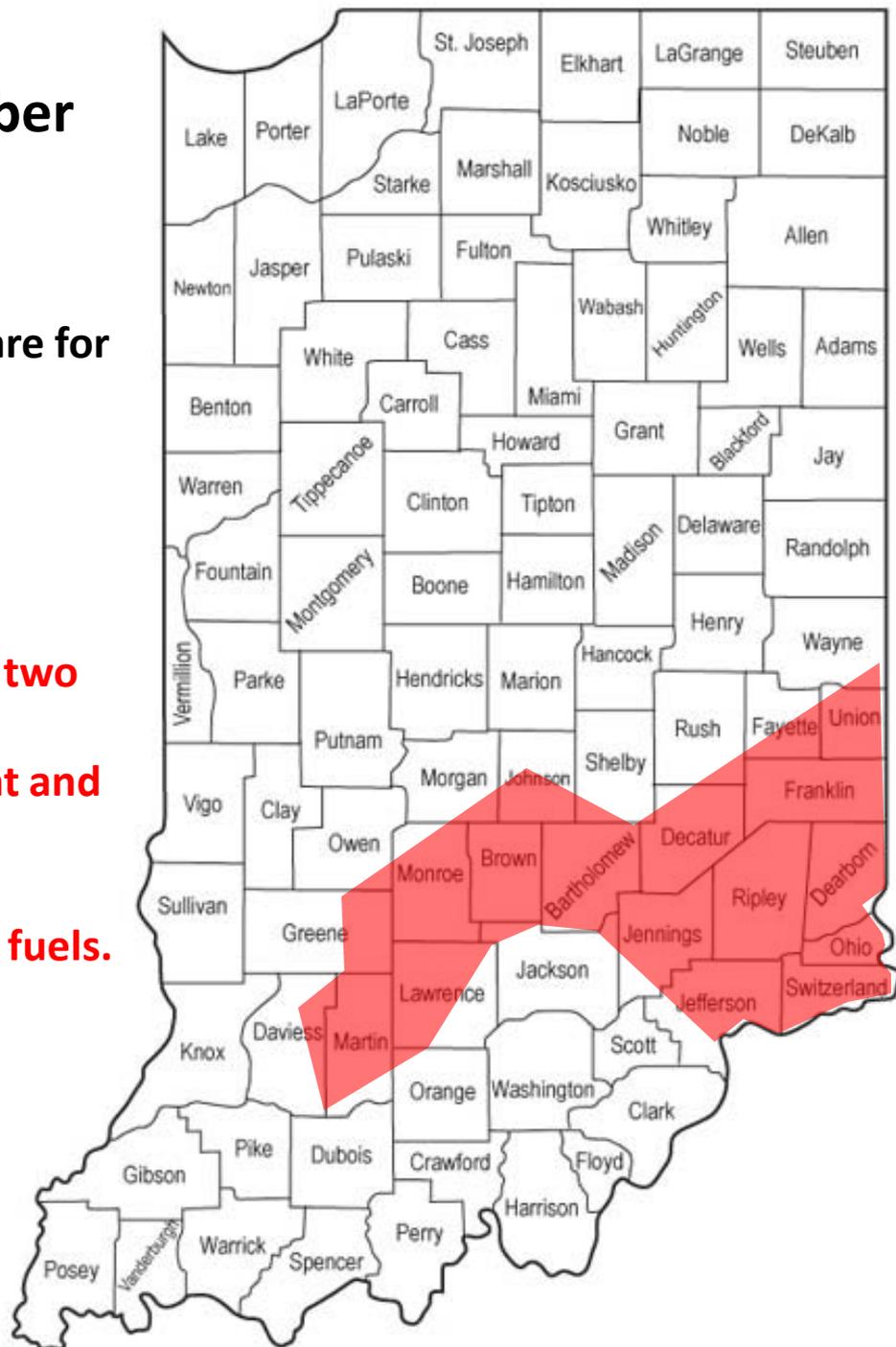
Indiana Wildfire Outlook for Mid-August through Mid-September

Statewide:

- Monitor drought impacted fuels and prepare for elevated fire behavior given two or more consecutive drying days as seasonal drying occurs.

South-Central Indiana:

- Anticipate problematic fire behavior given two or more consecutive drying days
- Expect increased mop-up time requirement and commitment.
- Monitor seasonal drying effects that will compound availability of drought impacted fuels.



Keys to Success for Fire Personnel

- **LCES**
 - Lookouts
 - Communications
 - Escape Routes
 - Safety Zones
- **Establish a Staging Area and Accountability**
- **Implement ICS From Onset**
- **Request the Appropriate Assistance**
 - Equipment and Personnel

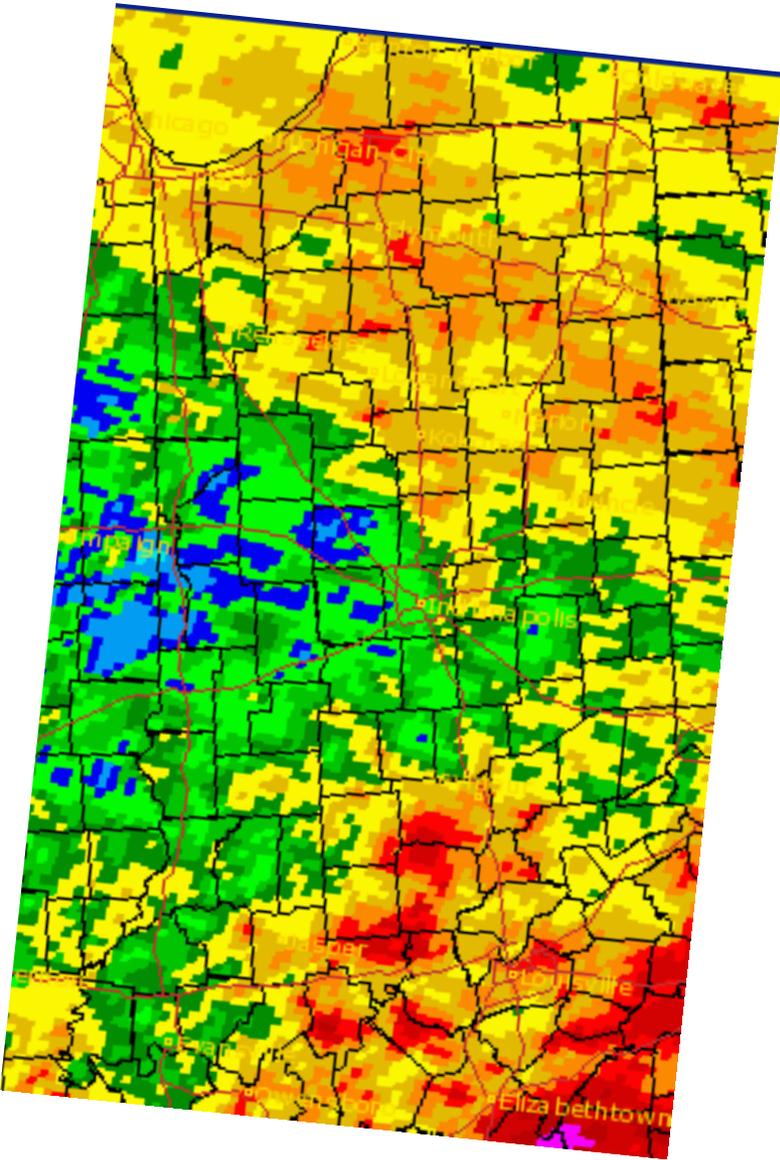


Al Shipe

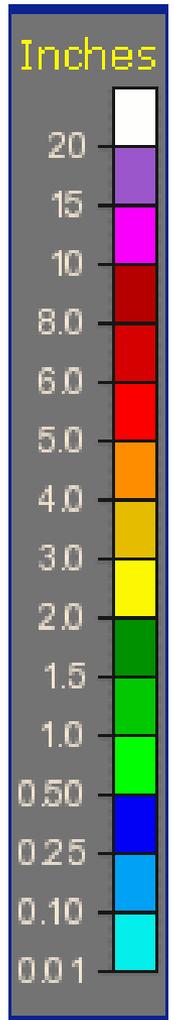
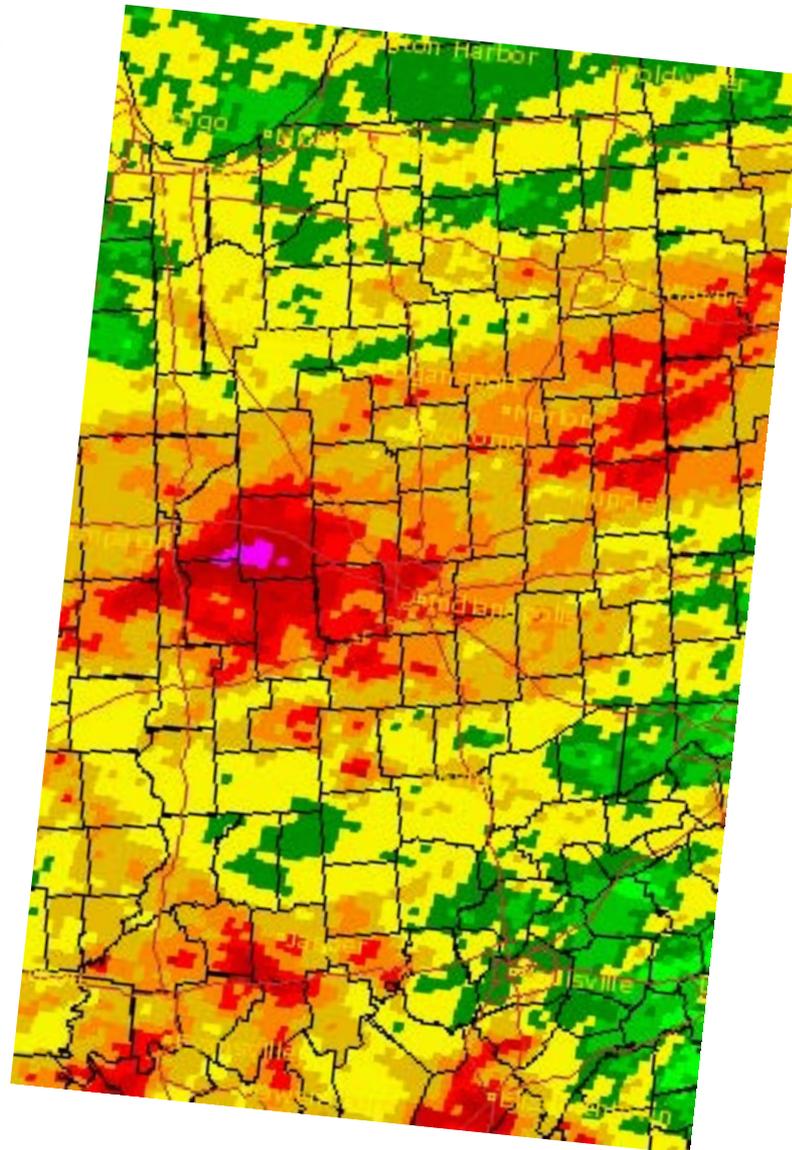
National Weather Service

al.shipe@noaa.gov

July Rainfall

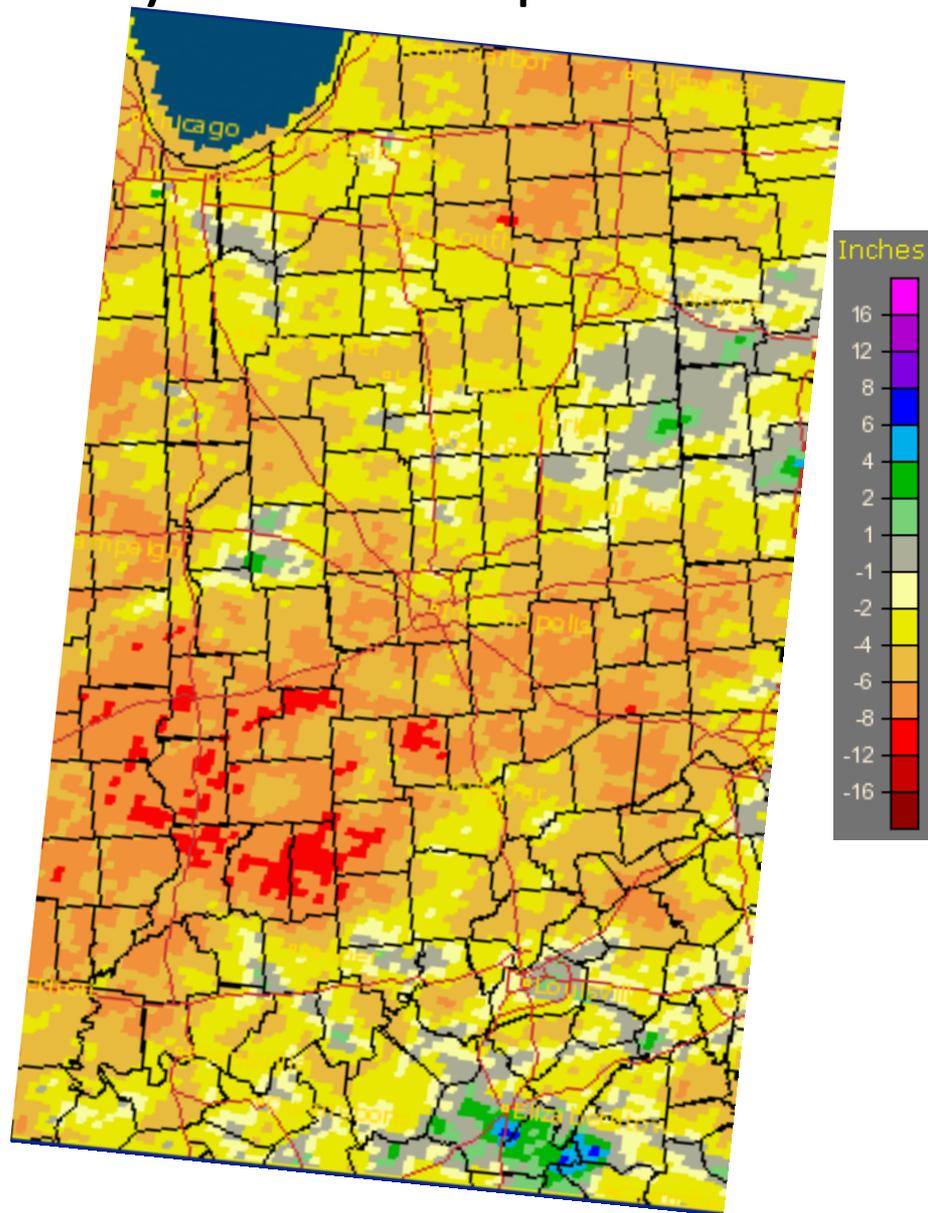
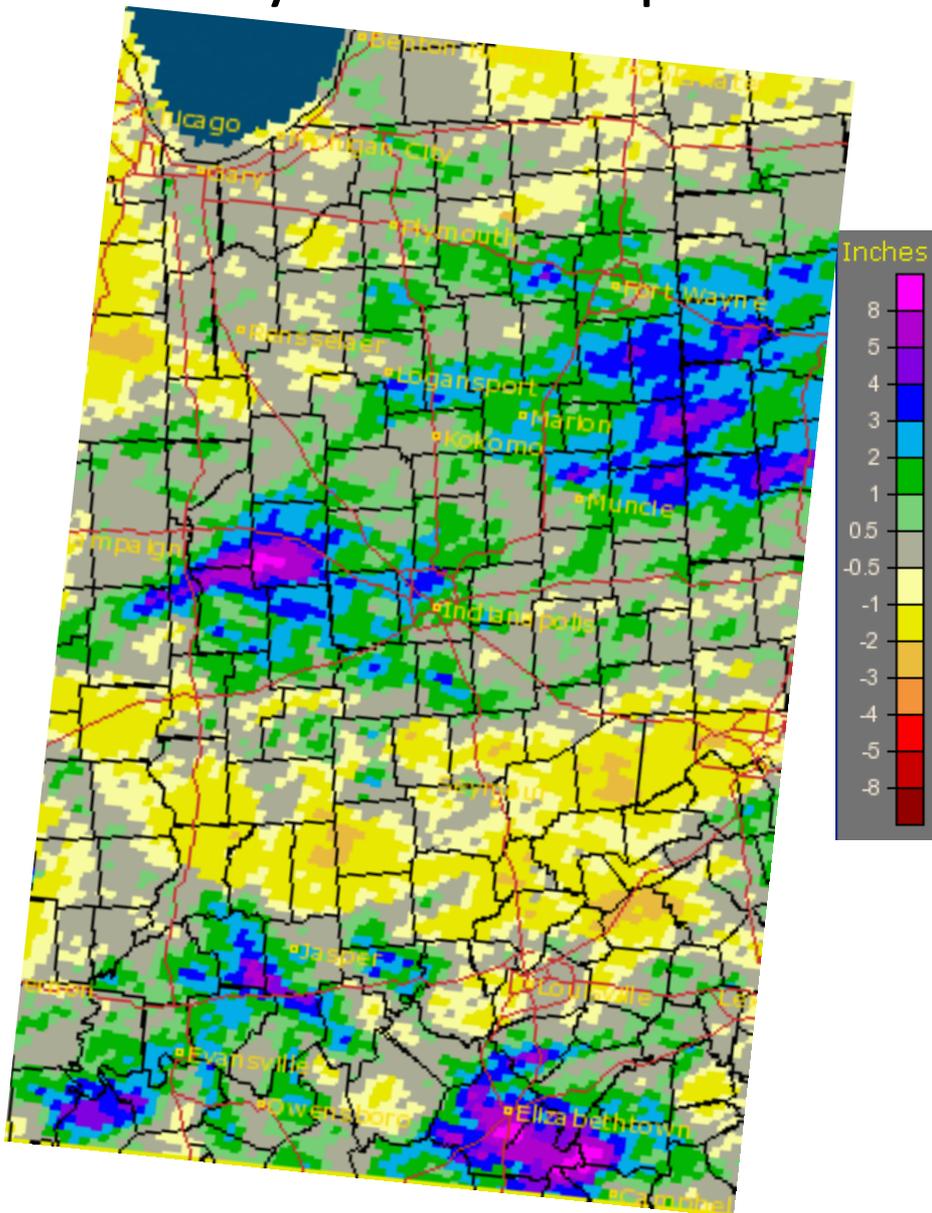


August 1-21 Rainfall



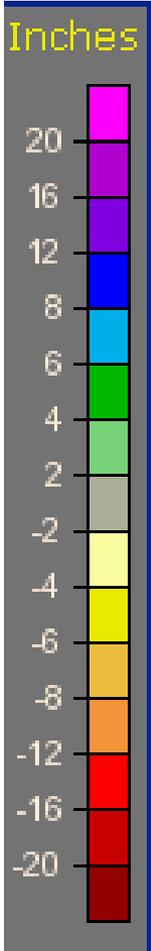
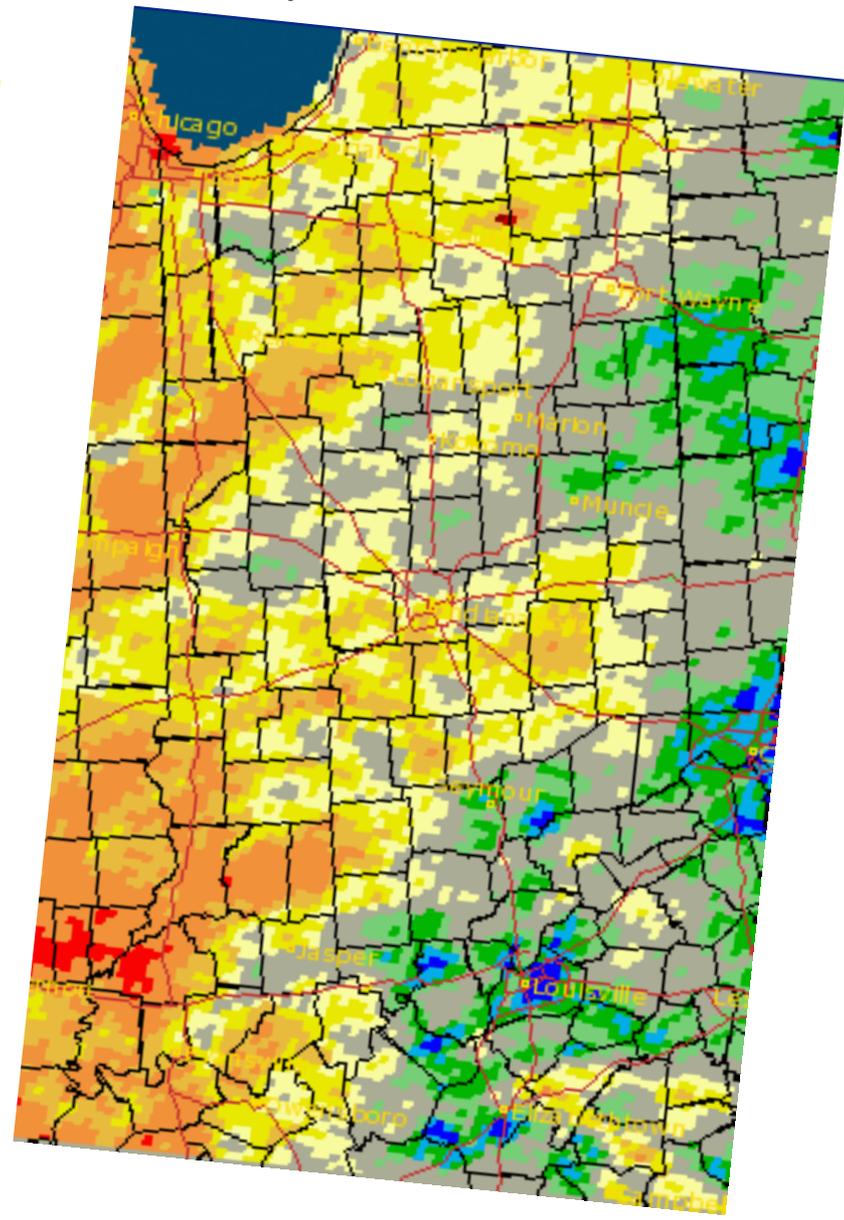
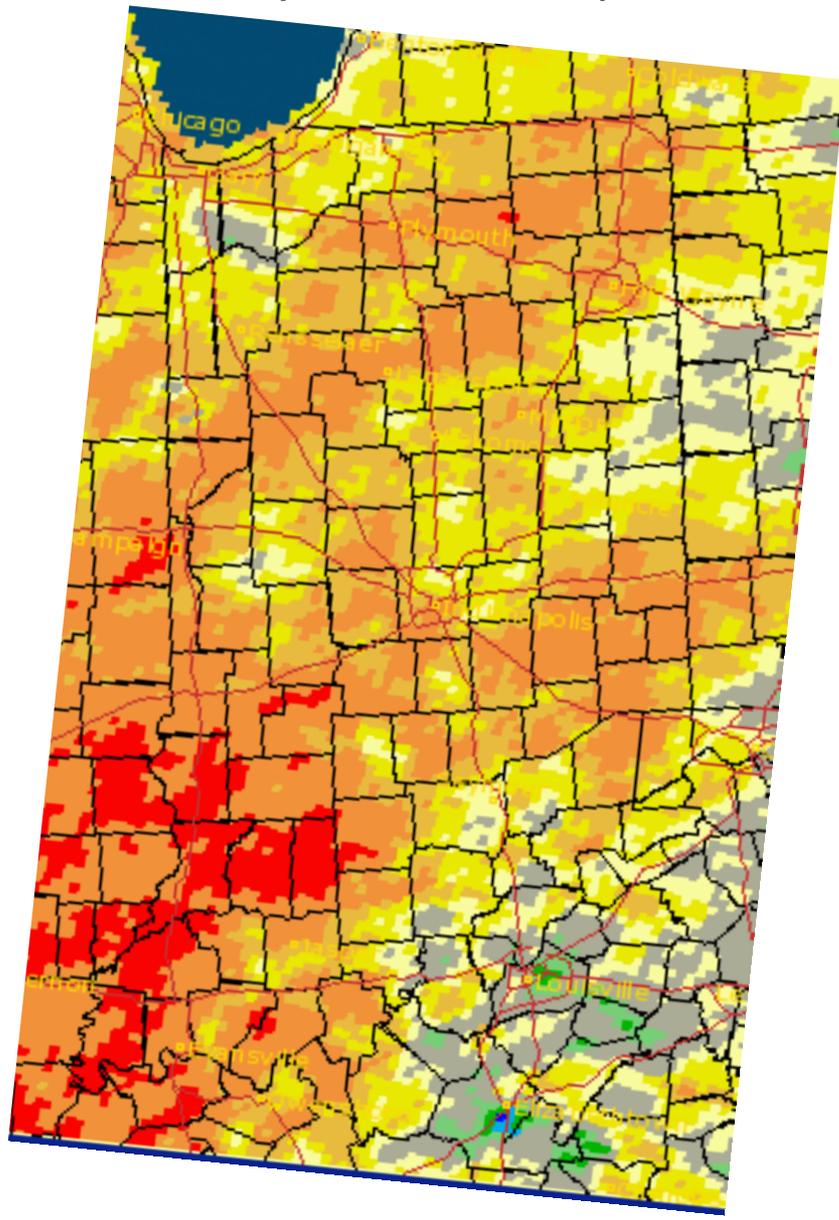
30-Day Rainfall Departure

90-Day Rainfall Departure

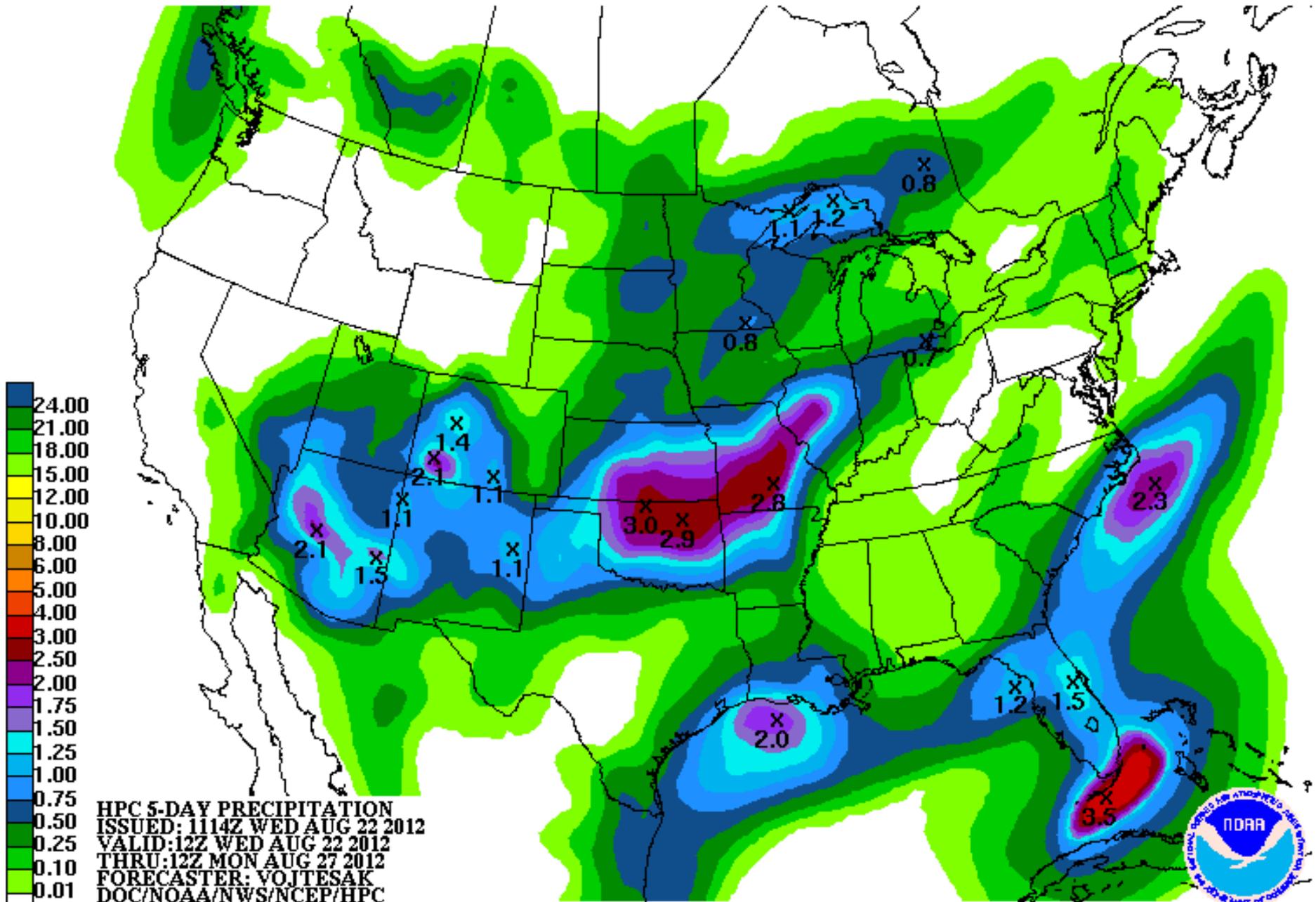


180-Day Rainfall Departure

Rainfall Departure Since October 1



Expected Rainfall the Next 5 Days



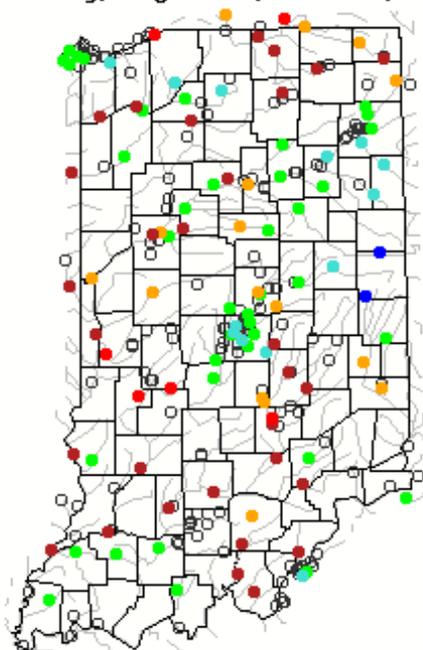
HPC 5-DAY PRECIPITATION
ISSUED: 1114Z WED AUG 22 2012
VALID: 12Z WED AUG 22 2012
THRU: 12Z MON AUG 27 2012
FORECASTER: VOJTESAK
DOC/NOAA/NWS/NCEP/HPC



Daily Streamflow Conditions

Select a site to retrieve data and station information.

Monday, August 06, 2012 07:30ET



Explanation

- High
- > 90th percentile
- 76th - 90th percentile
- 25th - 75th percentile
- 10th - 24th percentile
- < 10th percentile
- Low
- Not ranked

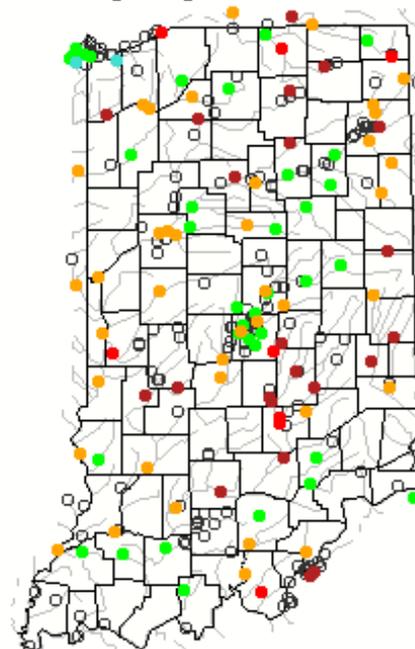
The colored dots on this map depict streamflow conditions as a [percentile](#), which is computed from the period of record for the current day of the year. Only stations with at least 30 years of record are used.

The **gray circles** indicate other stations that were not ranked in percentiles either because they have fewer than 30 years of record or because they report parameters other than streamflow. Some stations, for example, measure stage only.

Daily Streamflow Conditions

Select a site to retrieve data and station information.

Wednesday, August 22, 2012 08:30ET



Explanation

- High
- > 90th percentile
- 76th - 90th percentile
- 25th - 75th percentile
- 10th - 24th percentile
- < 10th percentile
- Low
- Not ranked

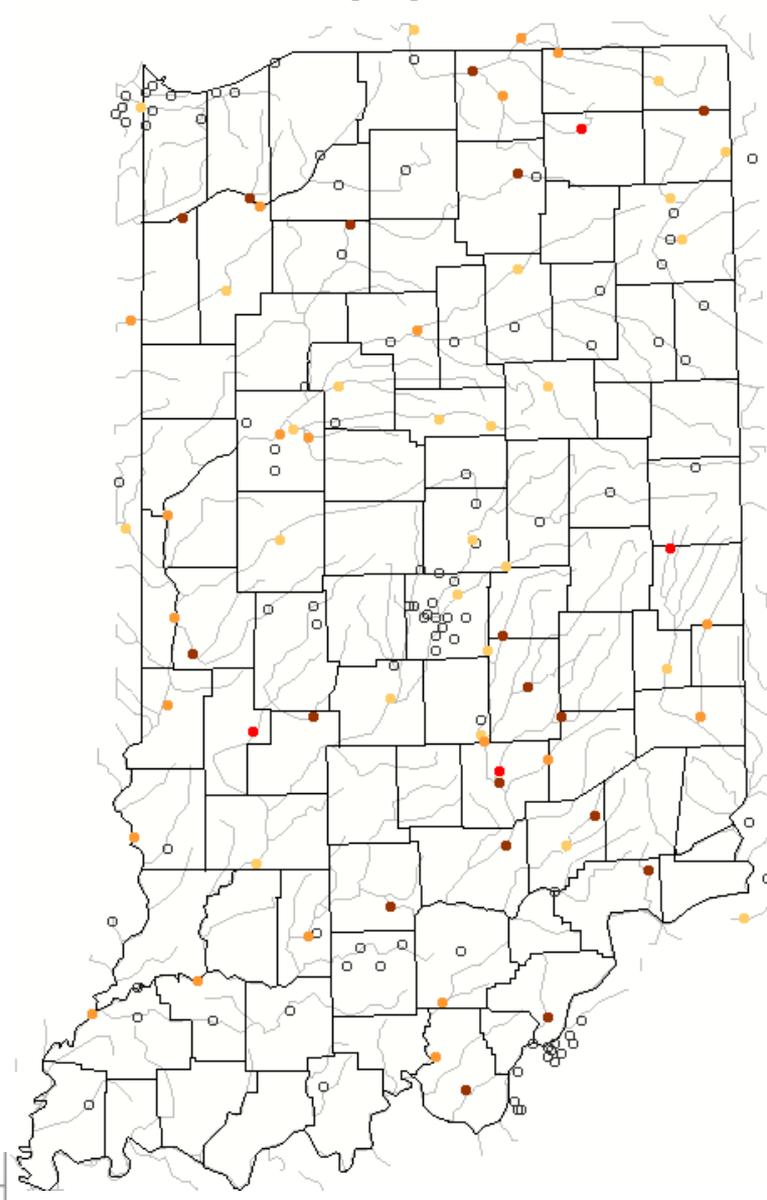
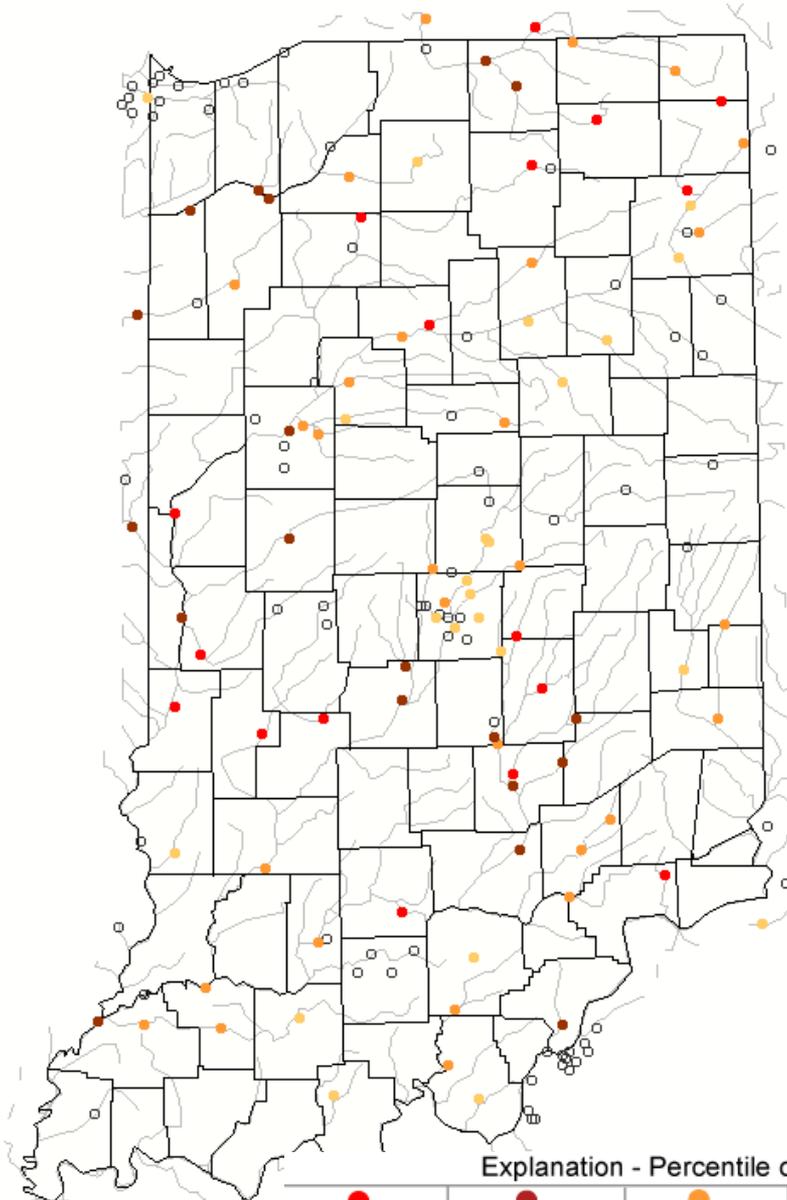
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Map of below normal 28-day average streamflow compared to historical streamflow for the day of year

Monday, August 06, 2012

Tuesday, August 21, 2012



Explanation - Percentile classes

				
New low	≤5	6-9	10-24	Not ranked
Extreme hydrologic drought	Severe hydrologic drought	Moderate hydrologic drought	Below normal	

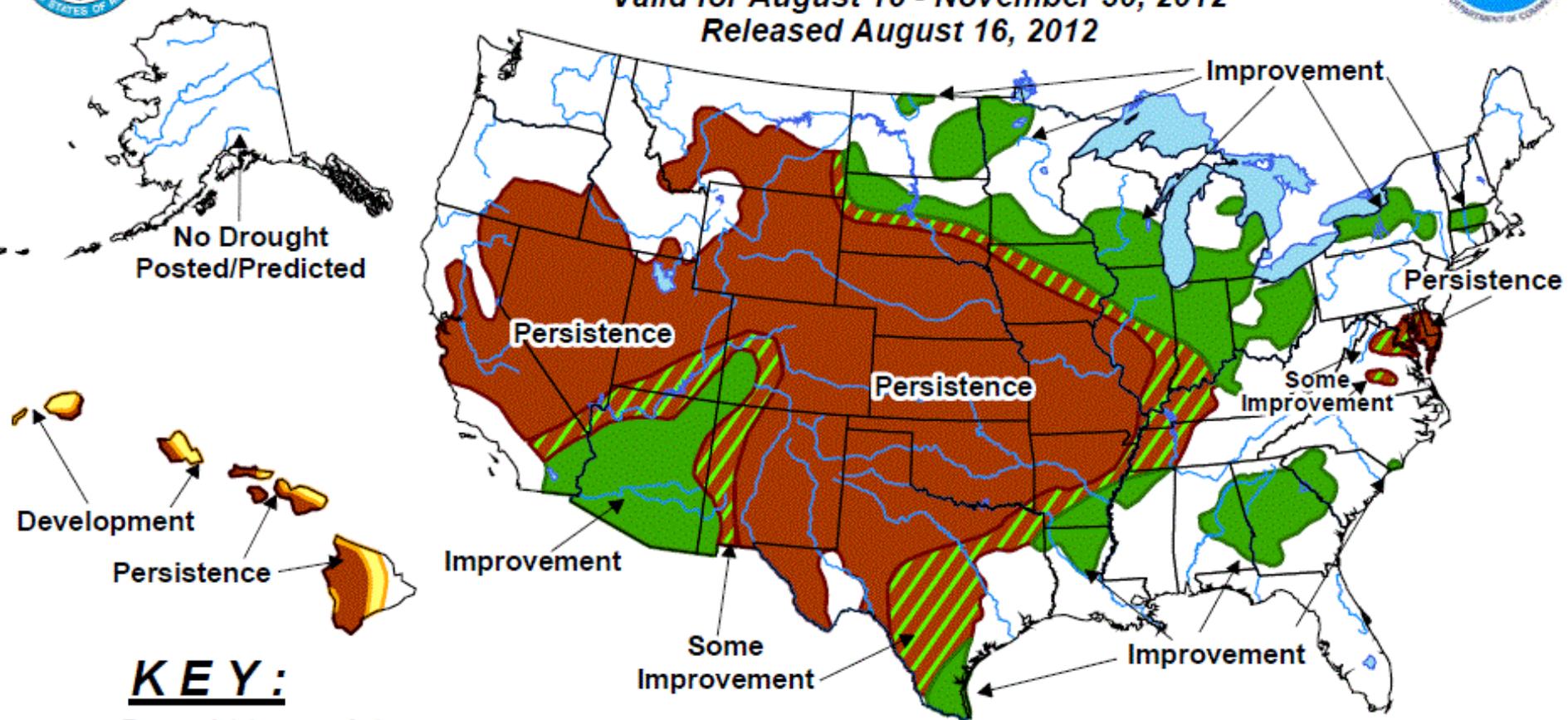


U.S. Seasonal Drought Outlook

Drought Tendency During the Valid Period

Valid for August 16 - November 30, 2012

Released August 16, 2012

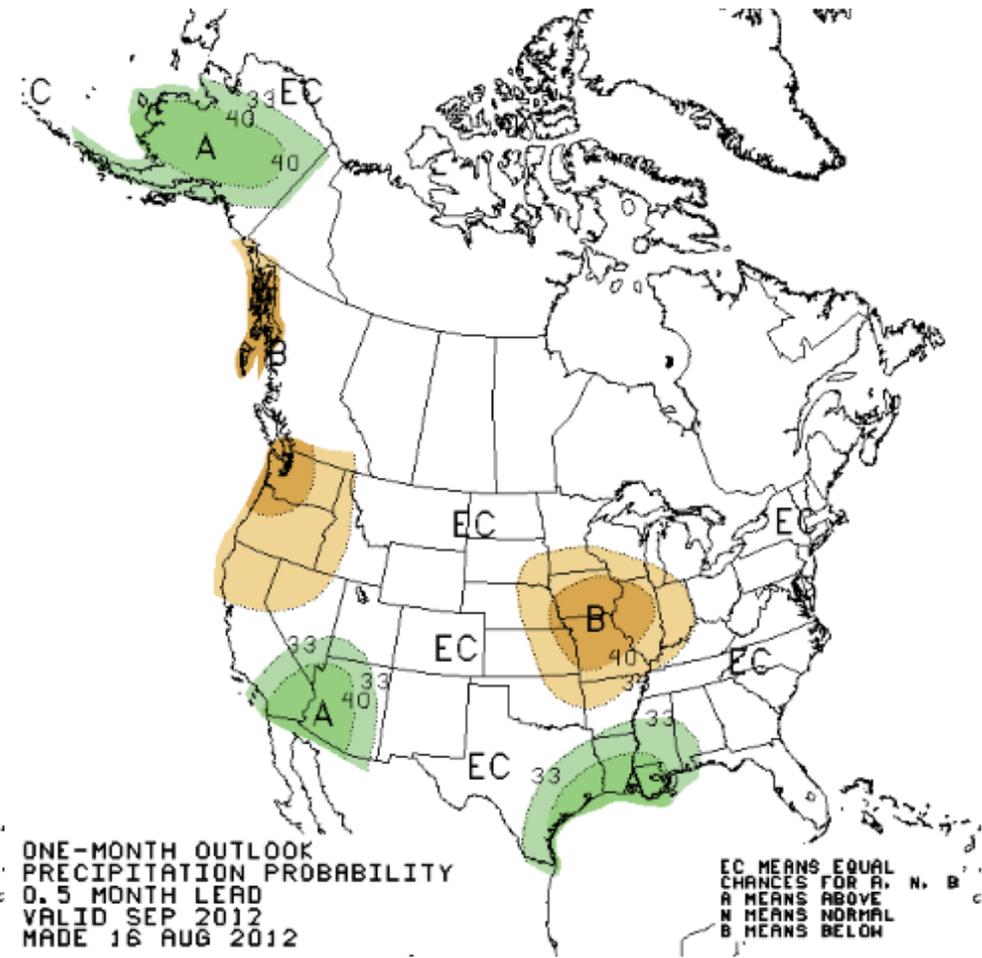
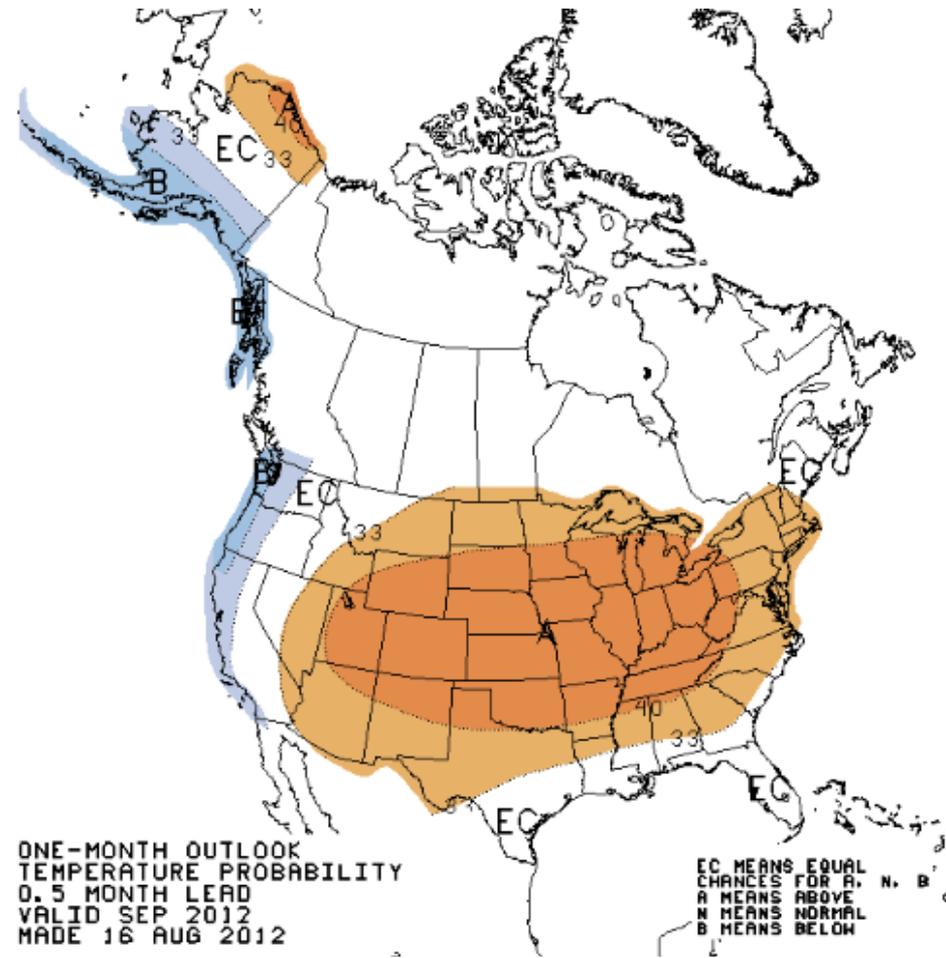


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 -  Drought likely to improve, impacts ease
 -  Drought development likely

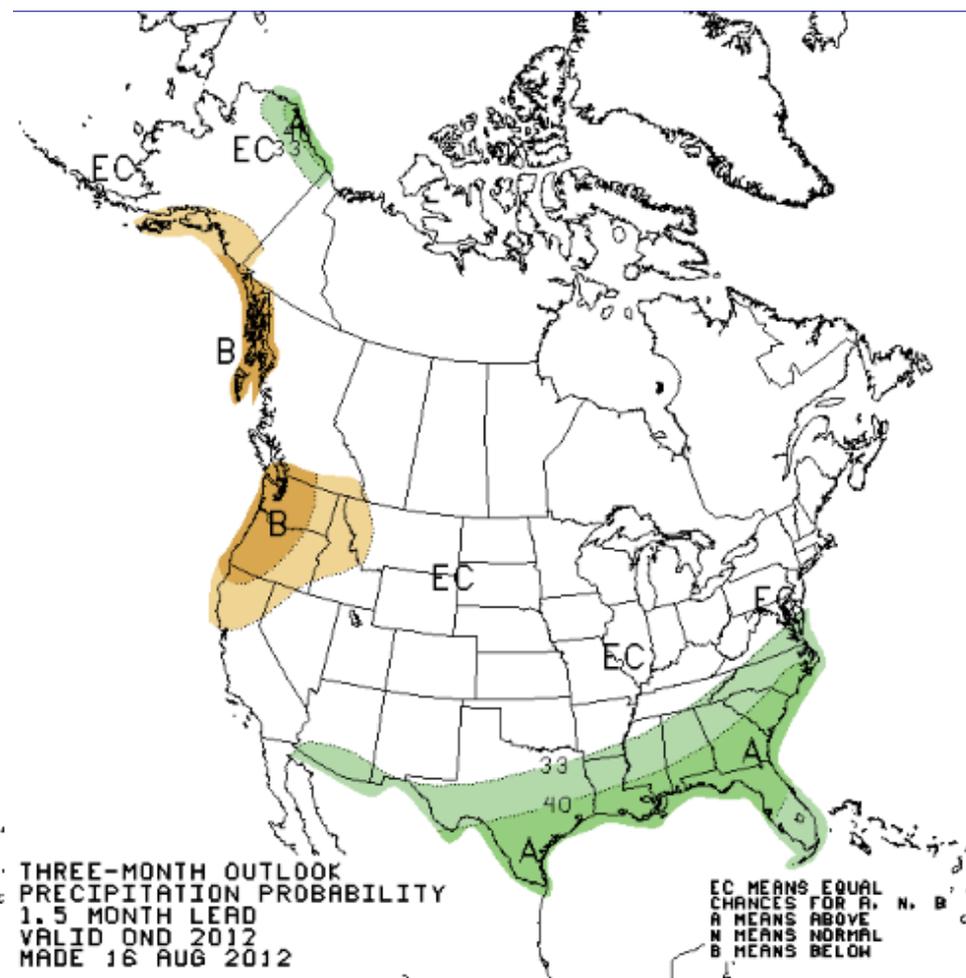
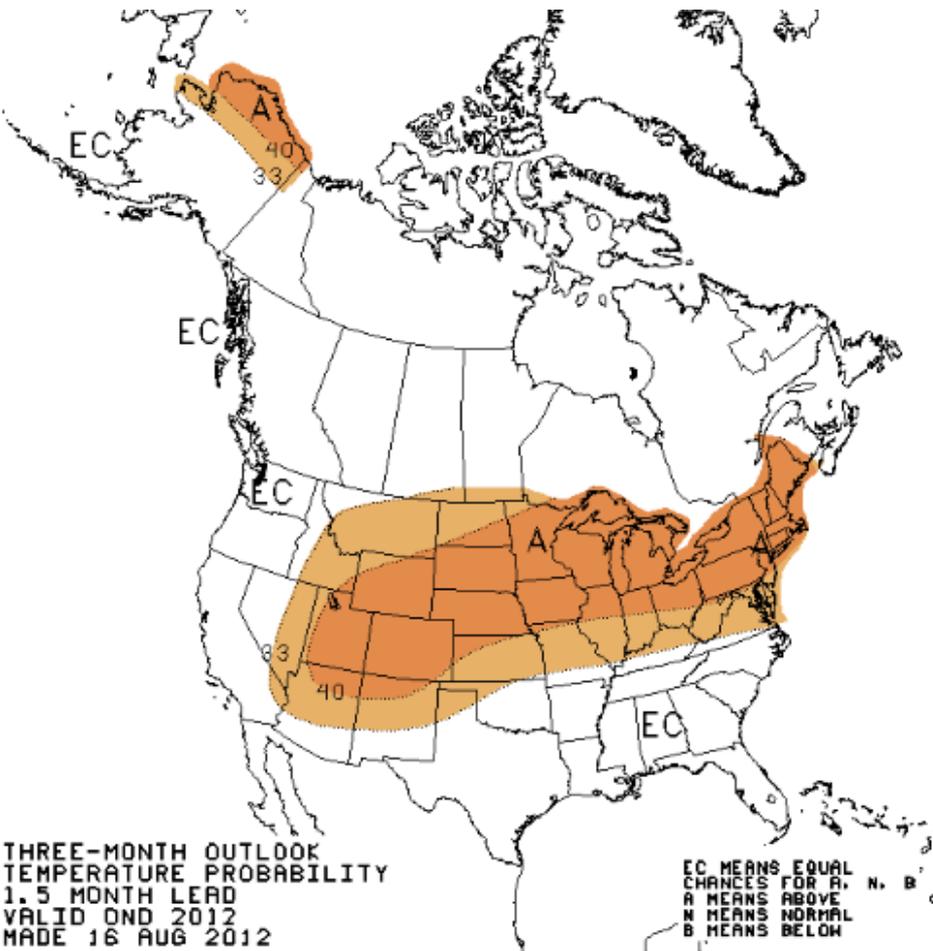
No Drought Posted/Predicted 

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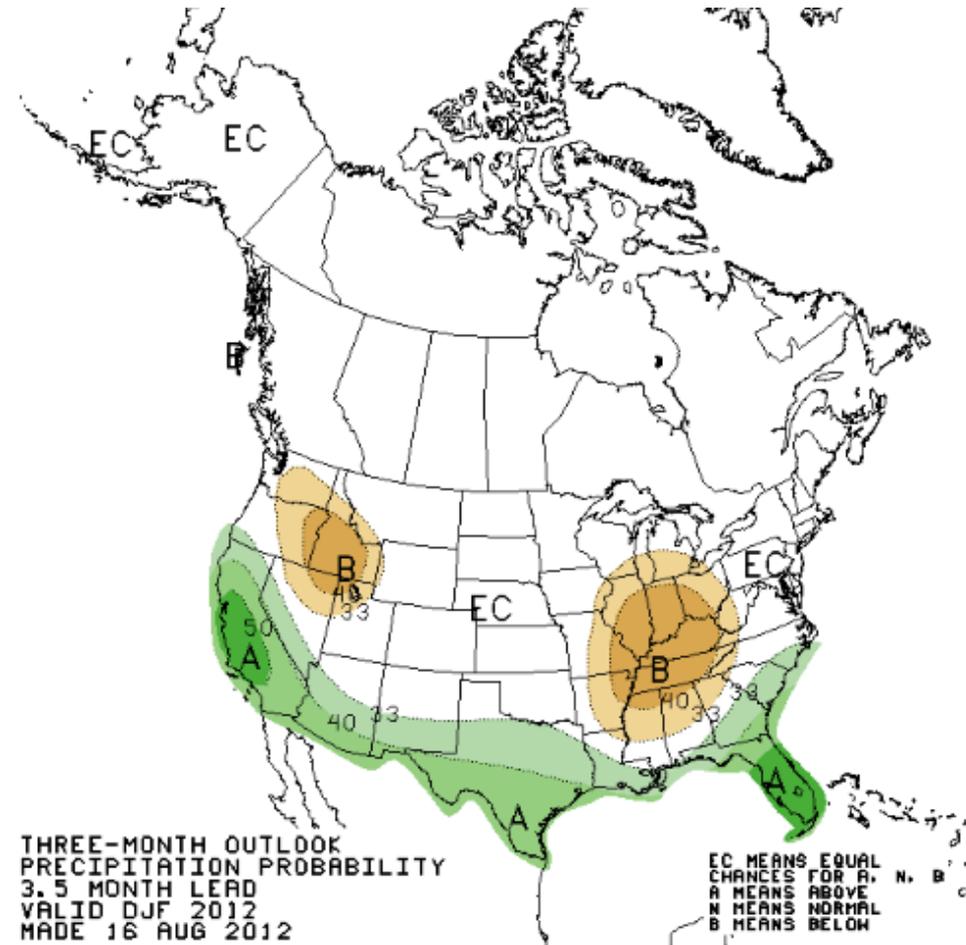
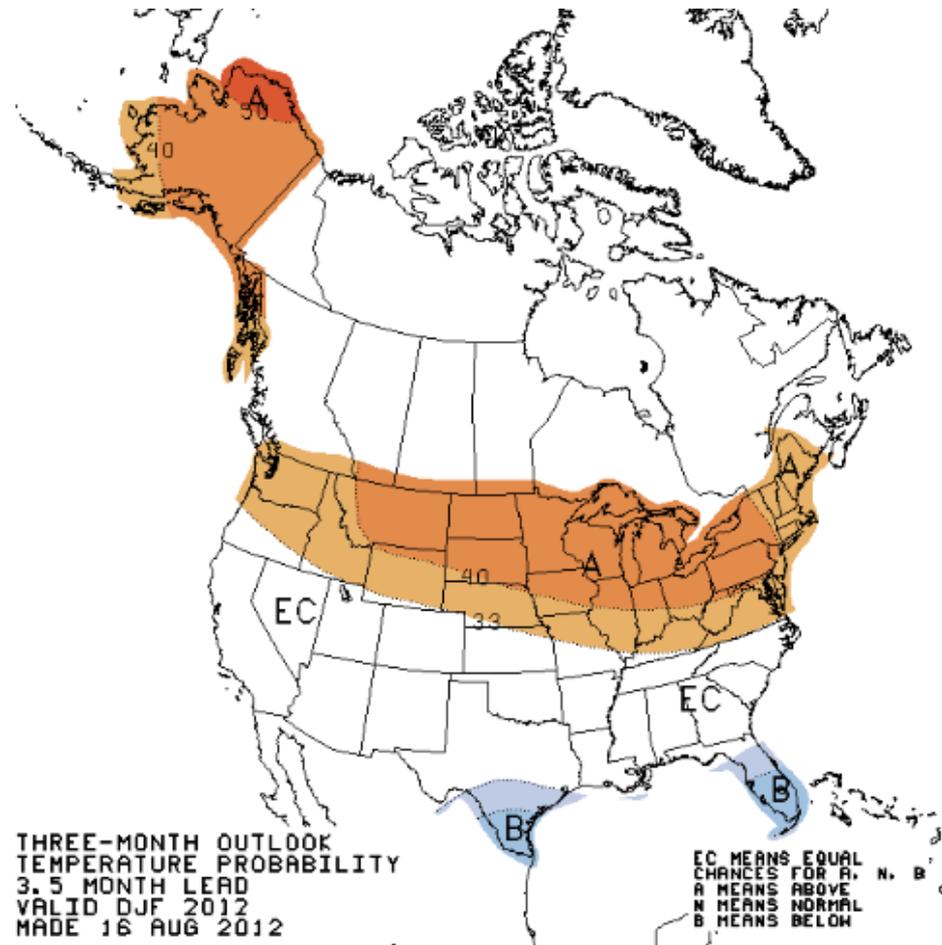
September Outlook



October-December Outlook



December-February Outlook



Jerry Unterreiner

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Bruno Pigott

Assistant Commissioner

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IDEM

Public Water Supplies

- Drought Warning Notices sent to: 3,564 Public Water Supplies
- Letters were sent in two phases consistent with the Drought Warnings issued by the State
- Warnings included information about the drought, steps the system could take to conserve water and a questionnaire about their current and projected water supply

IDEM

Public Water Supplies

- 17 Public Water Systems indicated concerns about their supply
 - 7 systems were interconnected and the problem was the low volume of flow in the Patoka River near Jasper. The problem was addressed by increasing flow from the dam at Patoka Lake.
 - The remaining 10 systems were mainly concerned about high daily demand or were told by a water system that supplied water to them that supplies could be limited. Voluntary and mandatory watering bans along with conservation measures addressed the high daily demand concerns and systems had sufficient supplies for domestic use as a result.

IDEM

Public Water Supplies

- IDEM issued emergency permits for systems to:
 - Install additional capacity
 - Extend water lines to individuals that had private well failures
- IDEM assisted systems with developing and implementing water conservation strategies

Sarah Simpson

Indiana State Department of Agriculture

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U.S. Drought Monitor

August 14, 2012

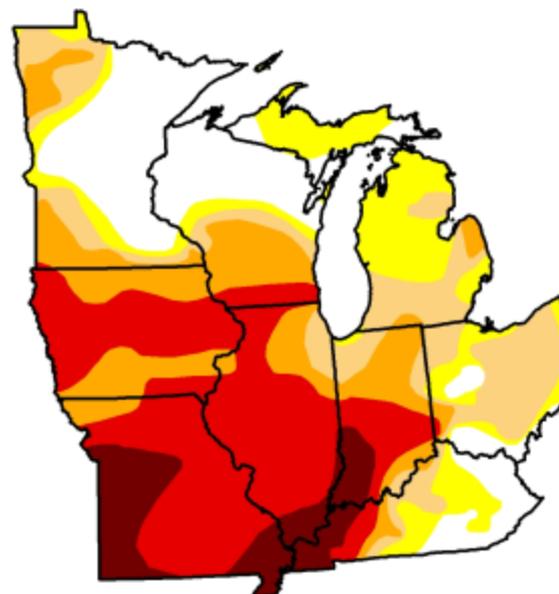
Valid 7 a.m. EST

Midwest

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	19.25	80.75	66.42	51.46	35.43	8.17
Last Week (08/07/2012 map)	18.58	81.42	69.11	55.13	38.19	5.78
3 Months Ago (05/15/2012 map)	67.65	32.35	6.91	0.65	0.00	0.00
Start of Calendar Year (12/27/2011 map)	71.84	28.16	13.42	6.80	0.00	0.00
Start of Water Year (09/27/2011 map)	58.85	41.15	14.01	5.03	0.00	0.00
One Year Ago (08/09/2011 map)	62.00	38.00	10.05	0.52	0.00	0.00

Intensity:



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

<http://droughtmonitor.unl.edu>



Released Thursday, August 16, 2012
Michael Brewer, National Climatic Data Center, NOAA

U.S. Drought Monitor

Indiana

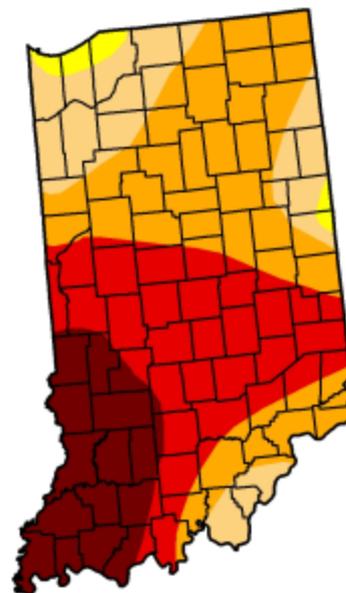
August 14, 2012
Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	0.00	100.00	98.16	81.43	46.30	16.63
Last Week (08/07/2012 map)	0.00	100.00	100.00	89.75	68.56	25.00
3 Months Ago (05/15/2012 map)	78.86	21.14	0.31	0.00	0.00	0.00
Start of Calendar Year (12/27/2011 map)	100.00	0.00	0.00	0.00	0.00	0.00
Start of Water Year (09/27/2011 map)	55.11	44.89	6.08	0.00	0.00	0.00
One Year Ago (08/09/2011 map)	26.94	73.06	30.35	0.00	0.00	0.00

Intensity:

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



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U.S. Drought Monitor

Indiana

August 21, 2012

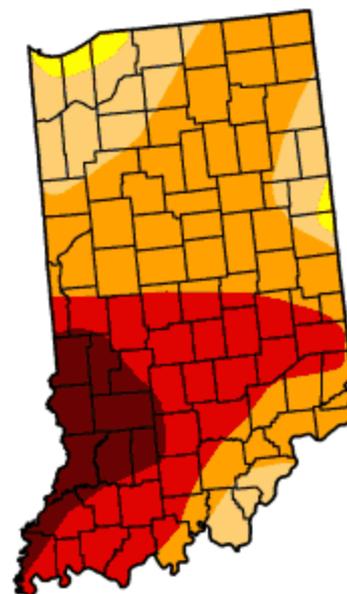
Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	0.00	100.00	98.14	81.48	37.09	10.77
Last Week (08/14/2012 map)	0.00	100.00	98.16	81.43	46.30	16.63
3 Months Ago (05/22/2012 map)	59.34	40.66	0.73	0.00	0.00	0.00
Start of Calendar Year (12/27/2011 map)	100.00	0.00	0.00	0.00	0.00	0.00
Start of Water Year (09/27/2011 map)	55.11	44.89	6.08	0.00	0.00	0.00
One Year Ago (08/16/2011 map)	19.35	80.65	14.57	0.00	0.00	0.00

Intensity:

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



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Location	Year-to-Date Precipitation (through August 14)	Departure from Average
Indianapolis	20.18	- 7.42
Lafayette	13.53 **	-10.05
Muncie	17.73	- 8.36
Terre Haute	13.83 **	-15.27
Bloomington	13.88 **	-17.26
Shelbyville	15.02	-12.34
Indy — Eagle Creek	19.07	- 7.70

Jennifer Richardson

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Indiana Department of Homeland Security

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Joe Wainscott

Executive Director

Indiana Department of Homeland Security

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Continued 10-15% water conservation measures

- Urge local officials to consider more stringent water use restrictions if conditions in their communities warrant.
- Many burn bans have been lifted. Consider reissuing or extending bans based on local conditions.
- Continue to monitor water levels in towers for pressure/fire fighting
- Work with local media to get the word out

SBA Drought Disaster Assistance Available

- 91 of 92 Indiana counties eligible for economic injury disaster loans. (Lake County the only one NOT eligible)
- For agriculture-related small businesses that suffered financial loss as a direct result of the drought.
- Details available at Drought.IN.gov.

For More Information

Questions can be sent to any agency with contact information provided

If you're not sure who to ask, send your questions to pio@dhs.in.gov

Visit Drought.IN.gov for helpful links on drought-related topics.