CPC's Week-2 Hazards: Rapid Onset Drought Risk & Probabilistic Drought Outlook

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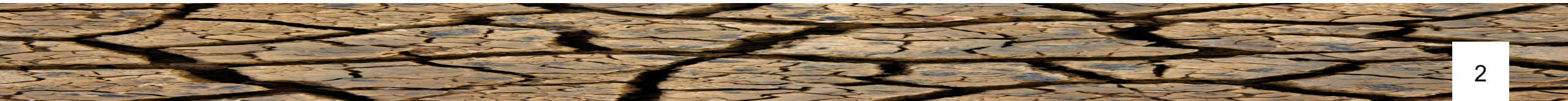
Southeast Drought Early Warning System
August 9, 2022

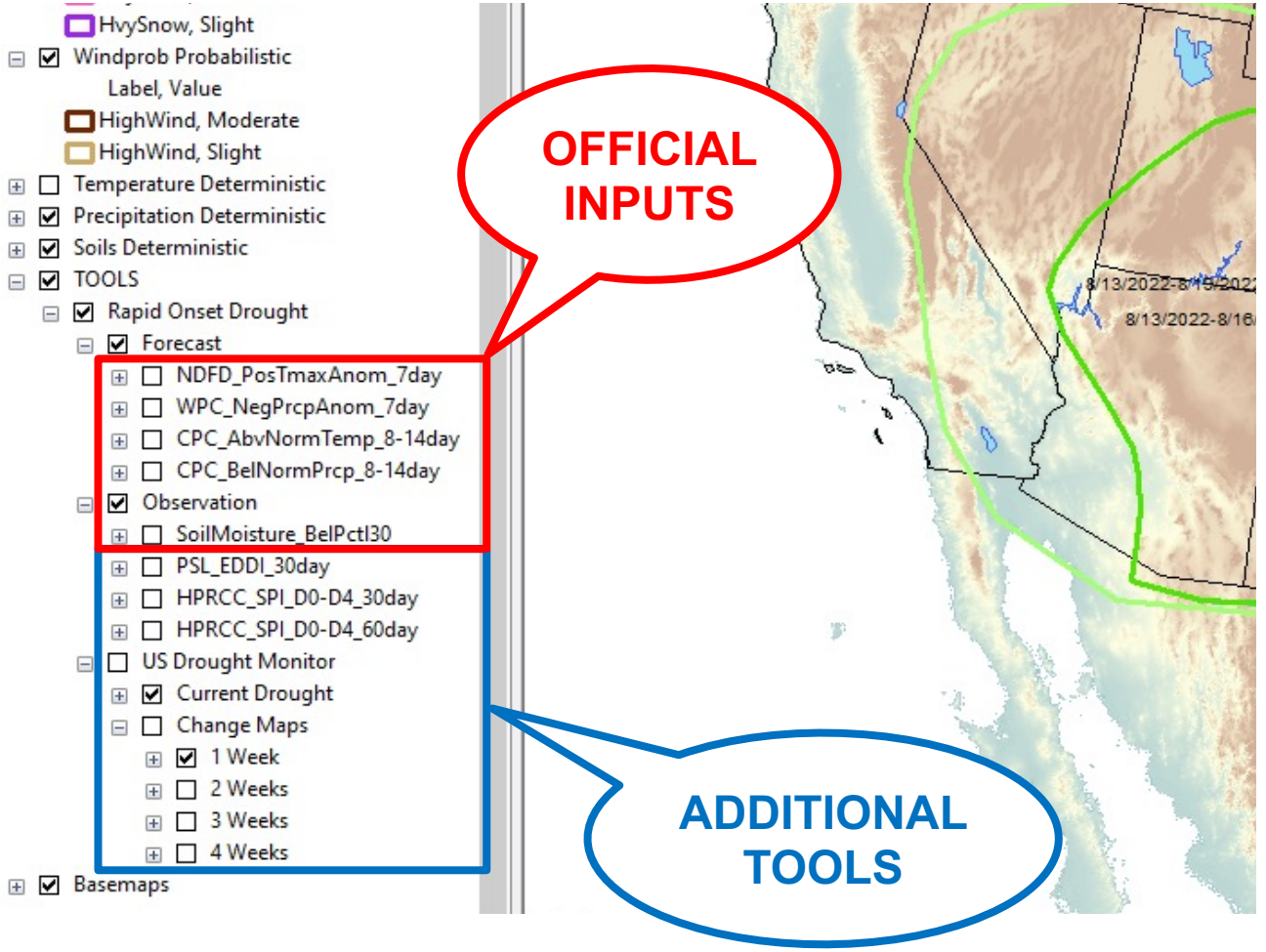
Motivation for Rapid Onset Drought Risk: CPC's Week-2 Hazards

- Feedback from stakeholders
- Apply tools and methodology used for the Monthly Drought Outlook to implement the ability of a rapid onset drought forecast to the Week-2 hazards, when conditions warrant
- Improve communication of the risk throughout the month
- CPC's major role in Decisions Support Services (DSS): Week-2 hazards (Daily briefing, HQ briefing, and Email to Regions when necessary)



Inputs to Rapid Onset Drought Risk Tool

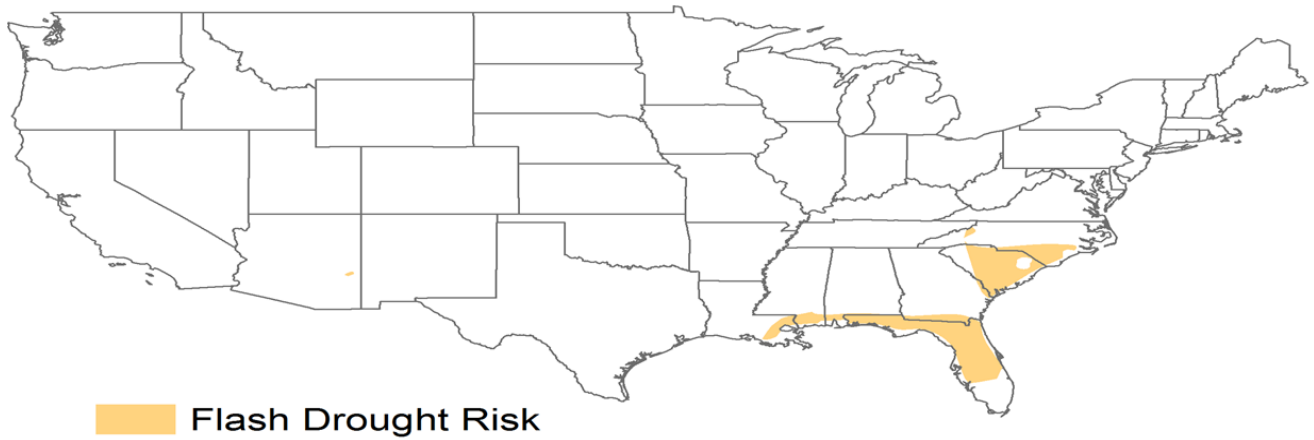
- Initial conditions: soil moisture and also consider two to four week precipitation deficits, EDDI, etc
- Week-1: NDFD positive temperature anomalies and 7-day Weather Prediction Center (WPC) negative precipitation anomalies
- Week-2: CPC's 8-14 day temperature (elevated probabilities of above) and precipitation (elevated probabilities of below) outlook



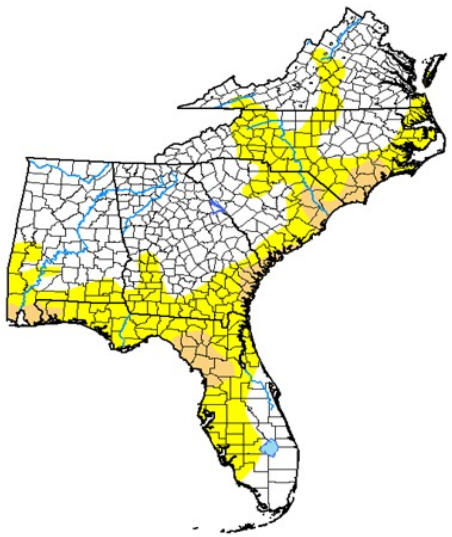
Experimental

Flash Drought Risk

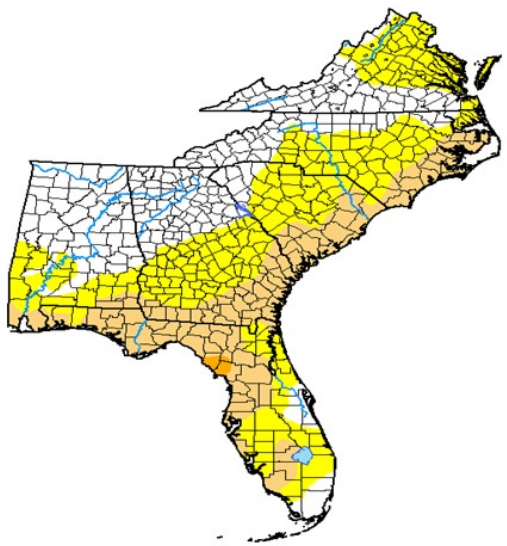
Released: February 23, 2022
Valid: March 3 - 9, 2022



February 22, 2022

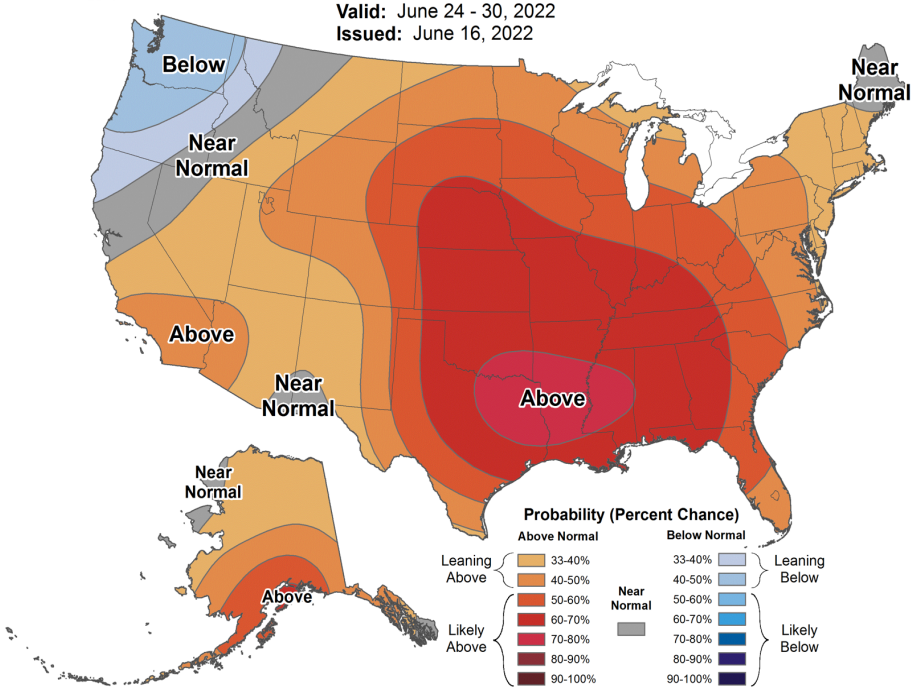


March 8, 2022



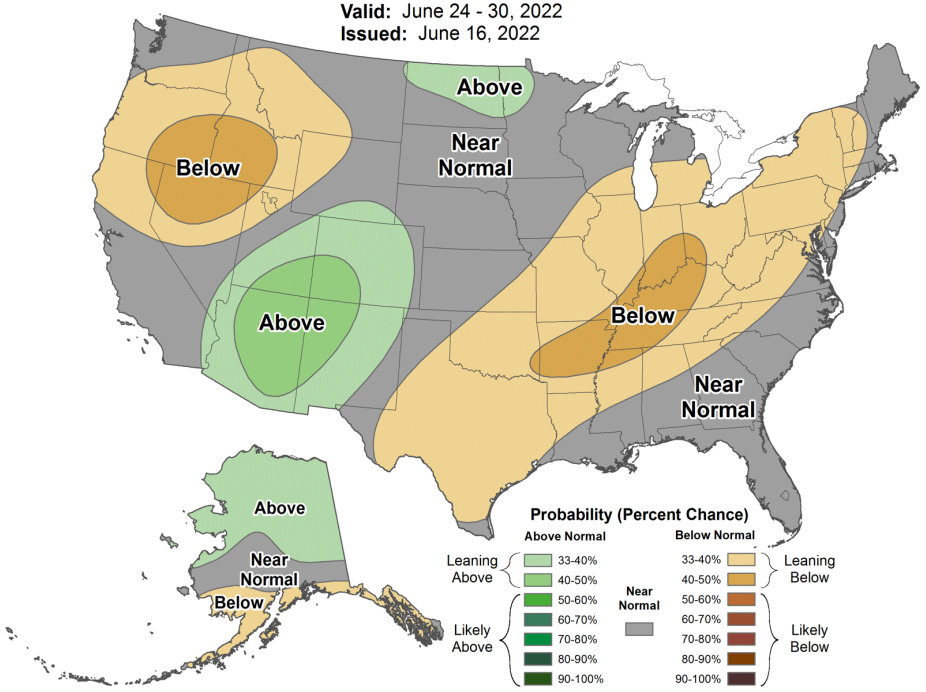
8-14 Day Temperature Outlook

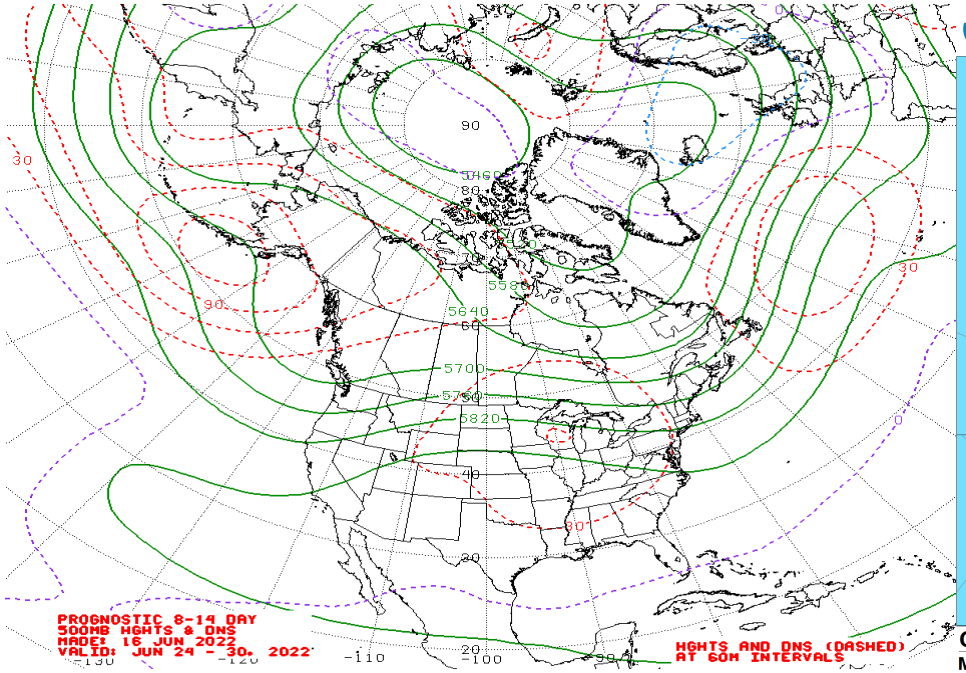
Valid: June 24 - 30, 2022
Issued: June 16, 2022



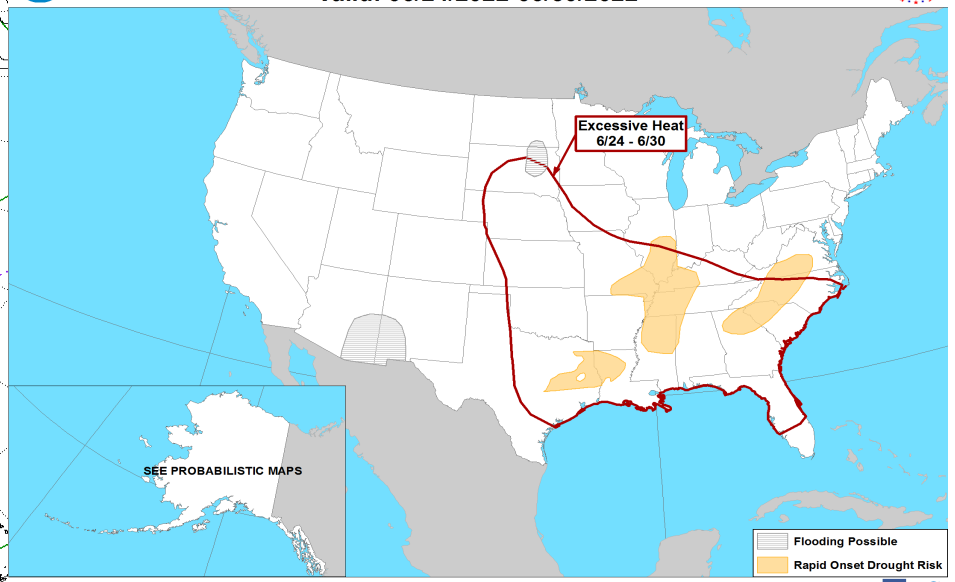
8-14 Day Precipitation Outlook

Valid: June 24 - 30, 2022
Issued: June 16, 2022





Day 8-14 U.S. Hazards Outlook
Valid: 06/24/2022-06/30/2022



Climate Prediction Center
Made: 06/16/2022 3PM EDT

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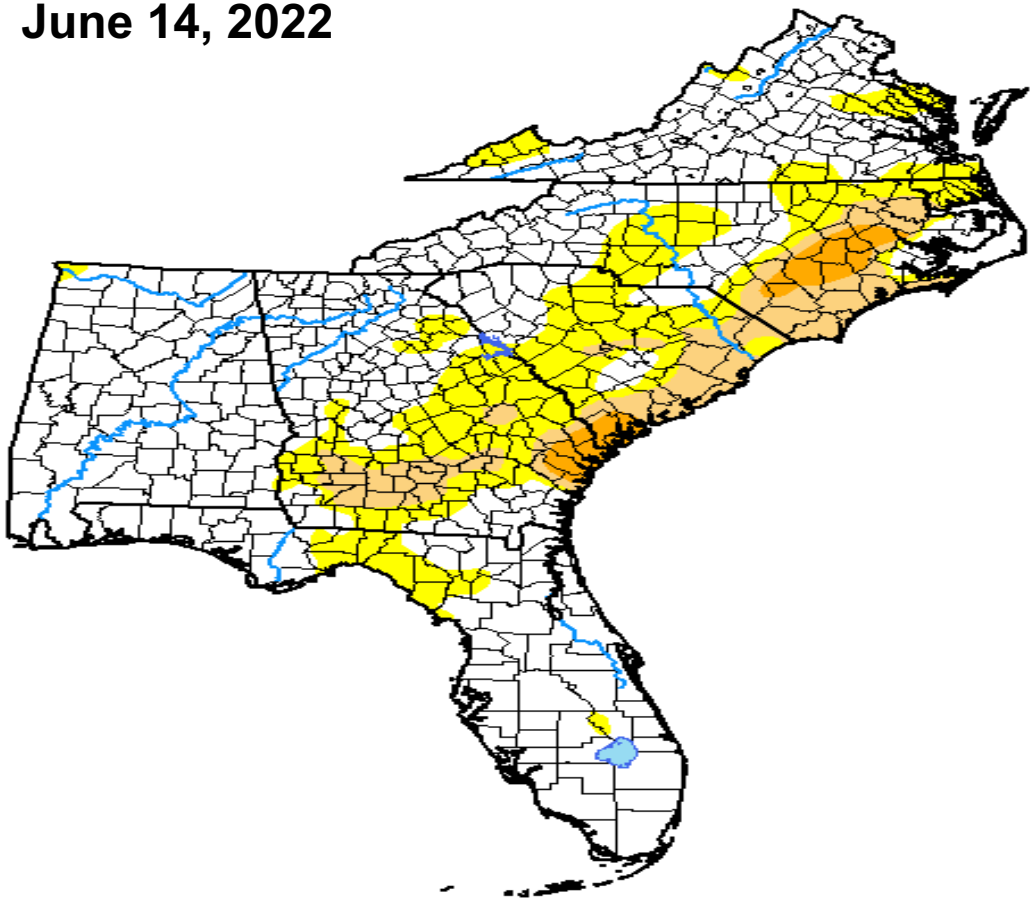
USDM: June 14 to July 5, 2022

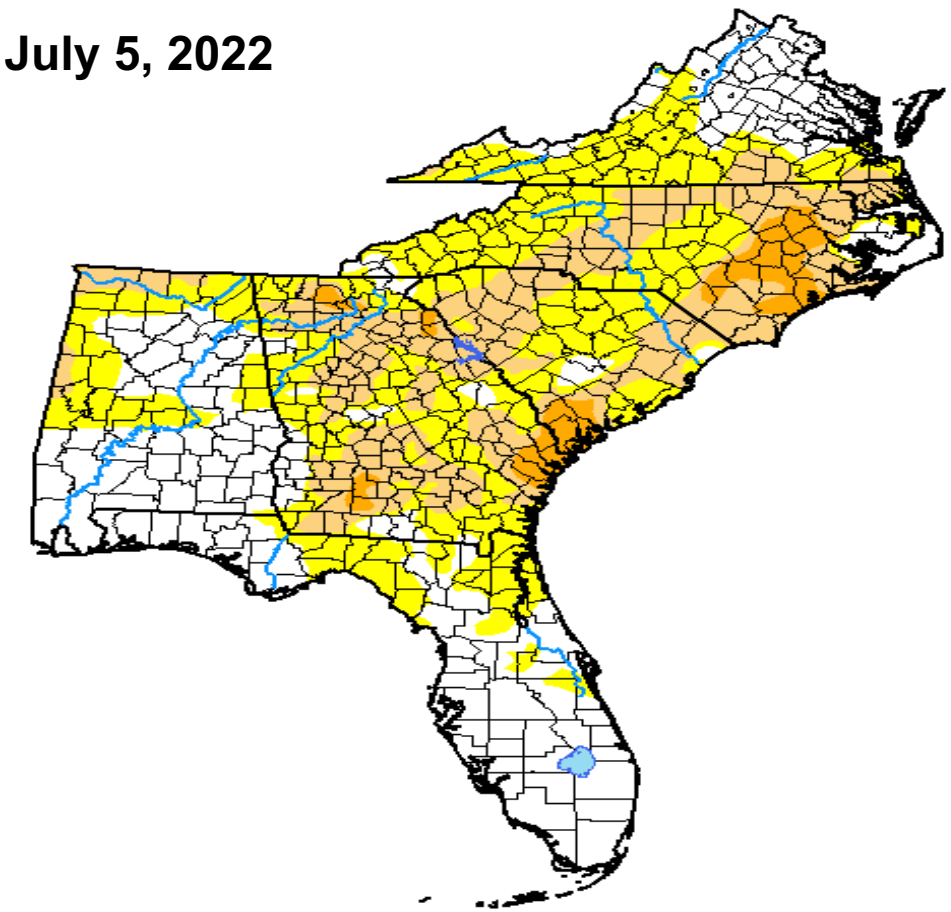
U.S. Drought Monitor
Southeast

June 14, 2022



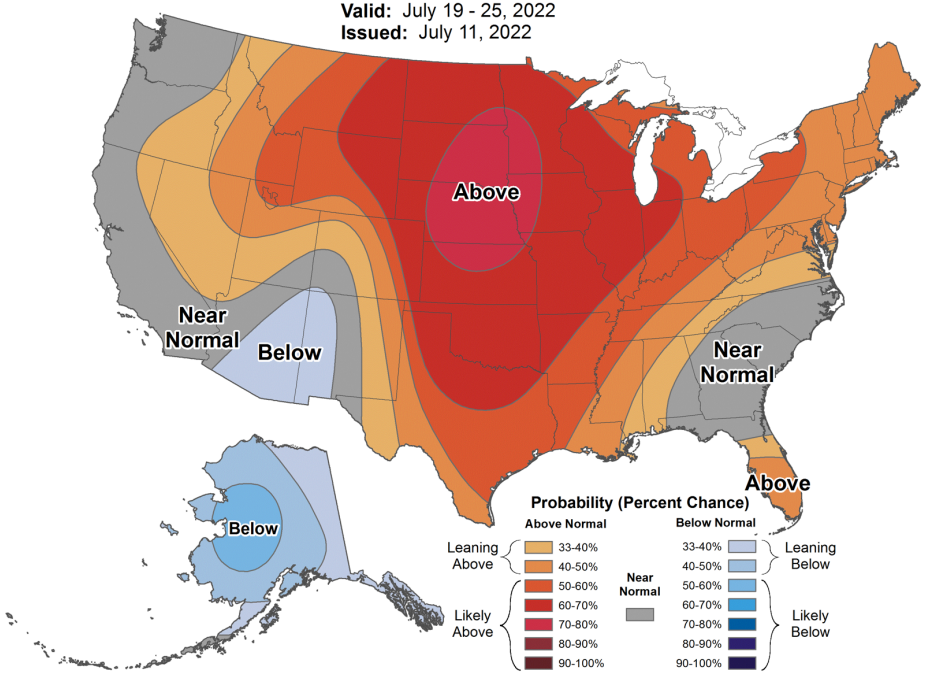
U.S. Drought Monitor
Southeast

July 5, 2022



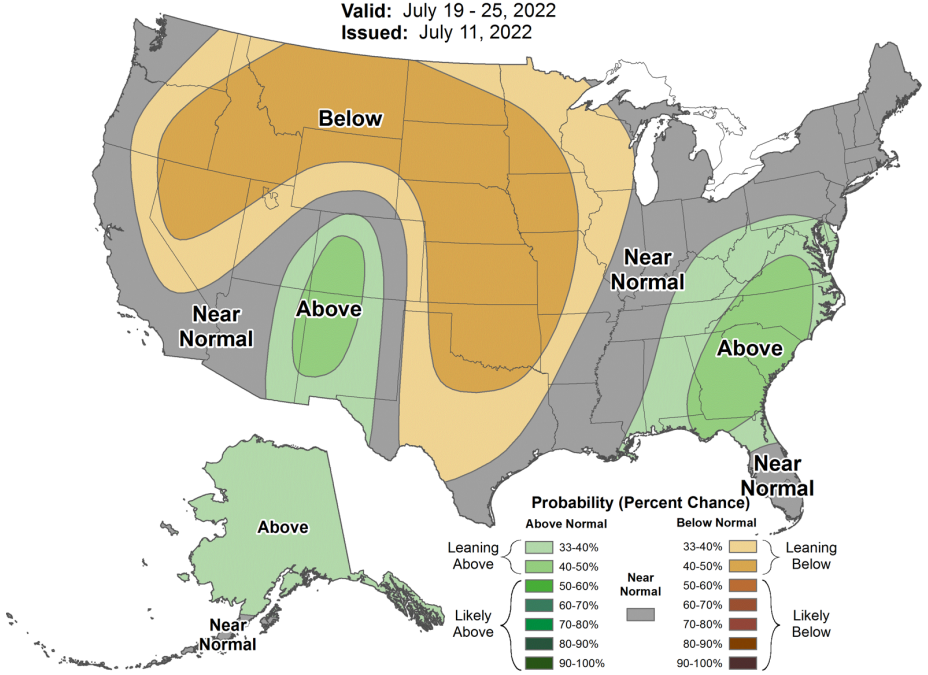
8-14 Day Temperature Outlook

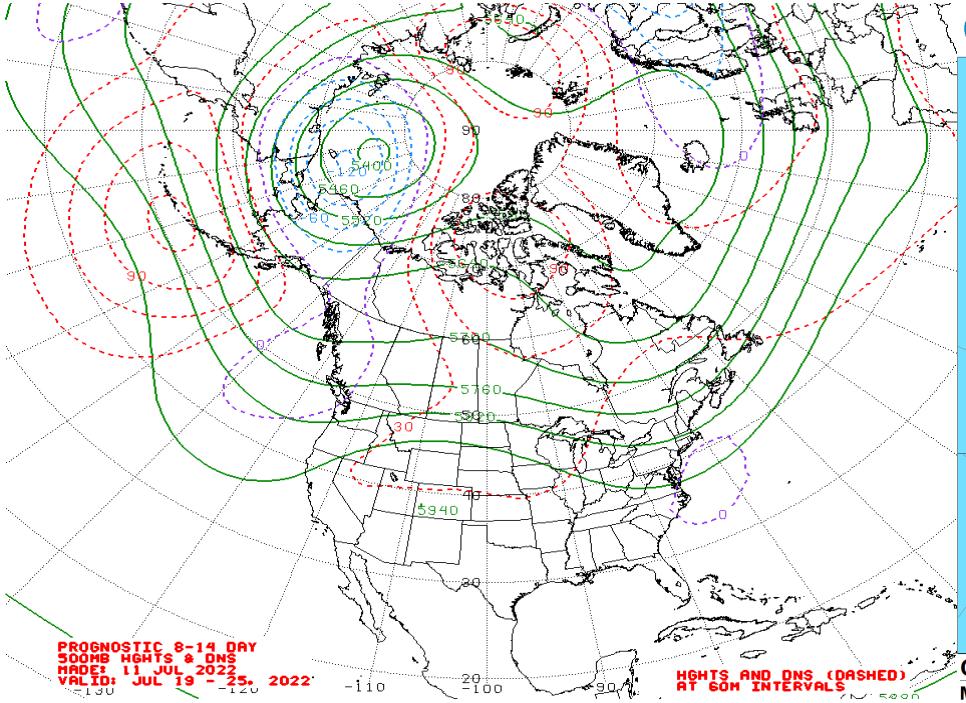
Valid: July 19 - 25, 2022
Issued: July 11, 2022



8-14 Day Precipitation Outlook

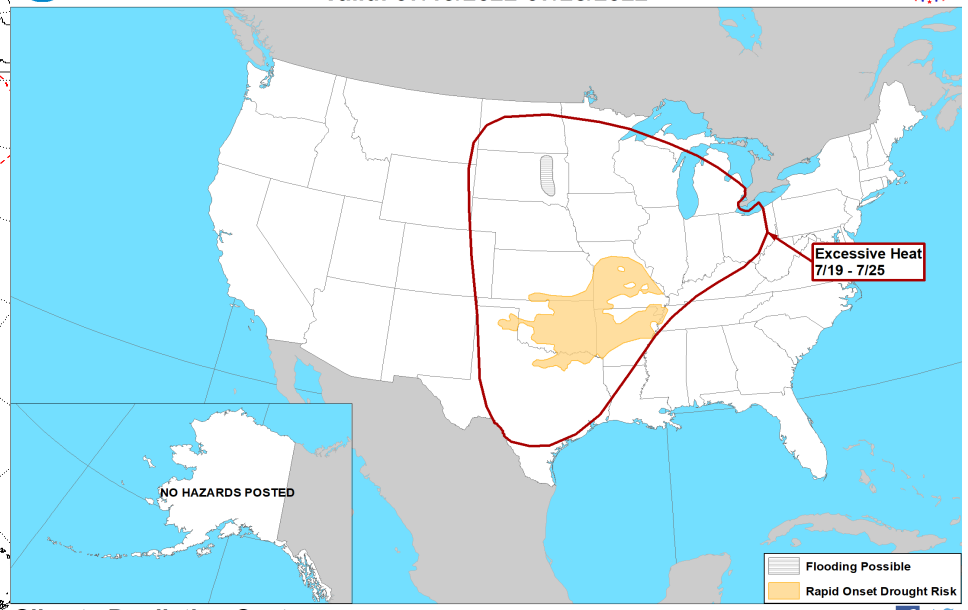
Valid: July 19 - 25, 2022
Issued: July 11, 2022





Day 8-14 U.S. Hazards Outlook

Valid: 07/19/2022-07/25/2022



Climate Prediction Center
Made: 07/11/2022 3PM EDT

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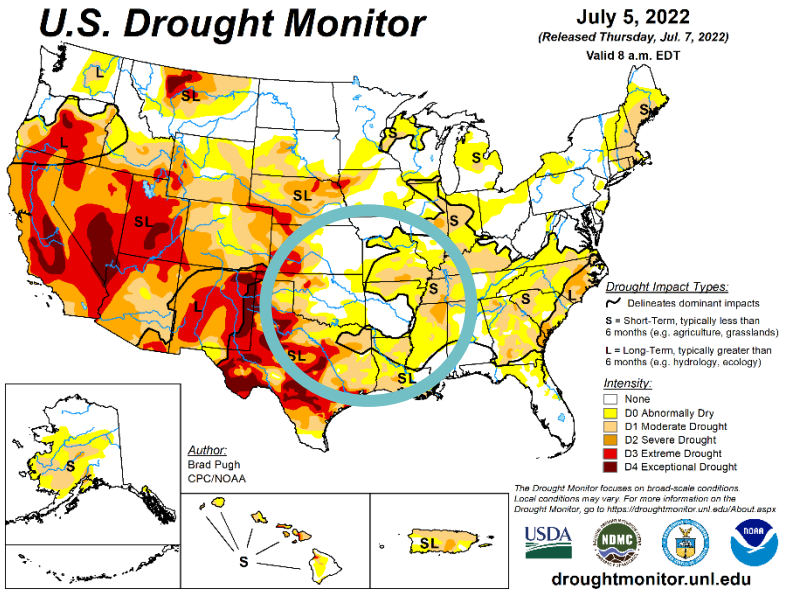
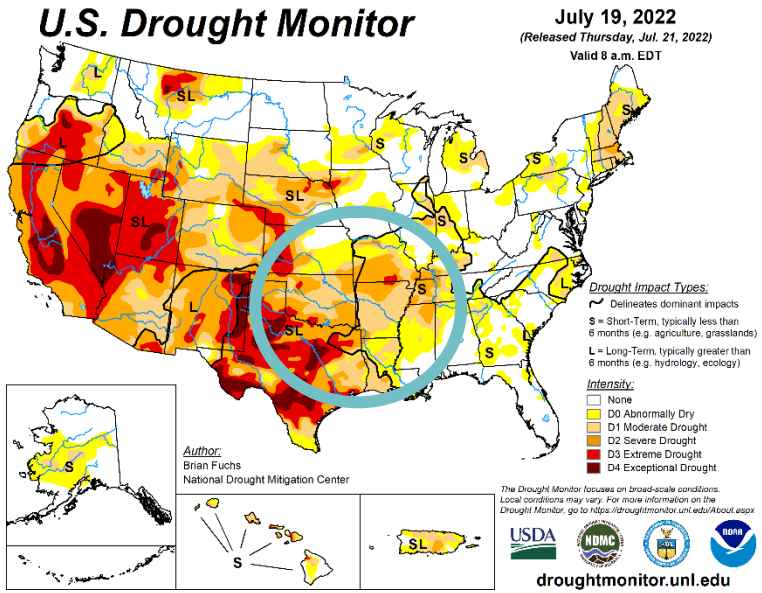
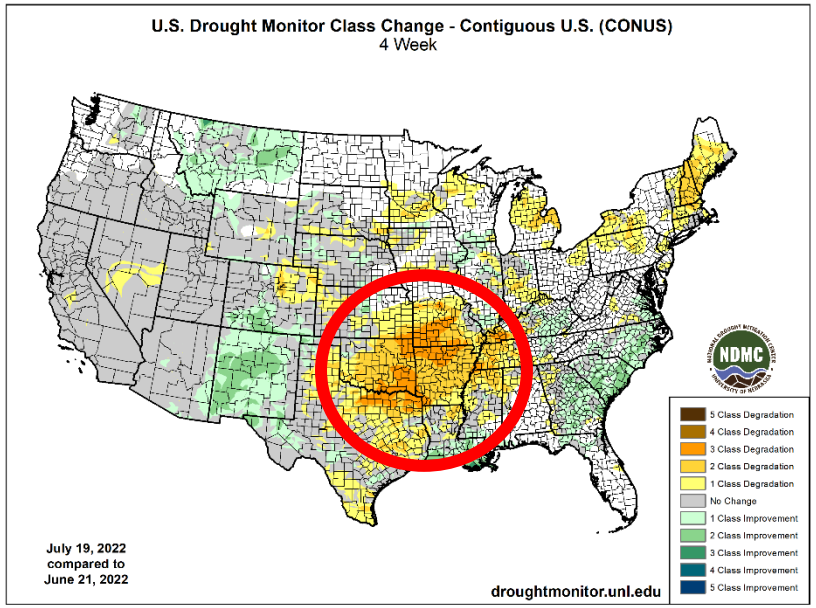
Forecaster:
Tom Collow

High Impact Rapid Onset Drought: Southern Plains and Ozarks Region



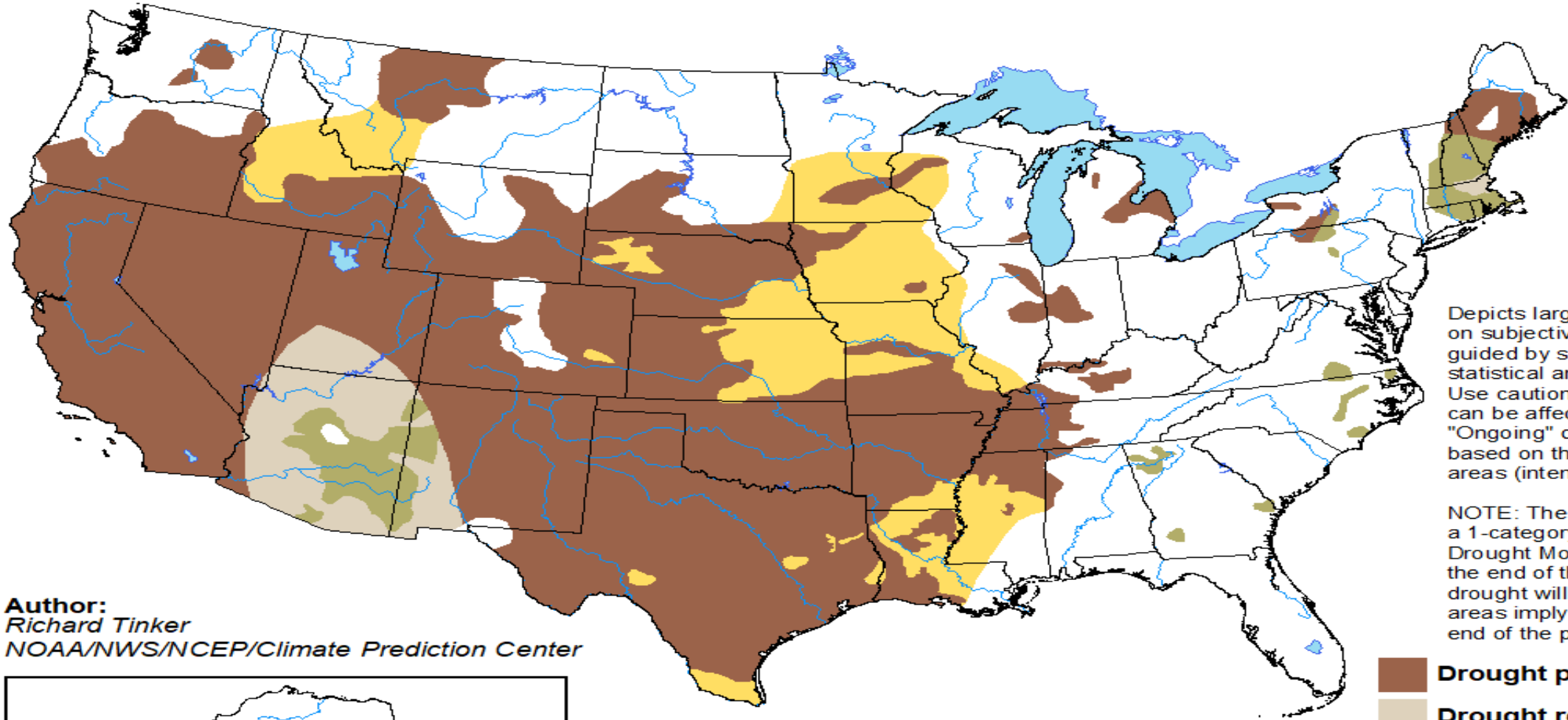




U.S. Seasonal Drought Outlook

Drought Tendency During the Valid Period

Valid for July 21 - October 31, 2022
Released July 21



Depicts large-scale trends based on subjectively derived probabilities guided by short- and long-range statistical and dynamical forecasts. Use caution for applications that can be affected by short lived events. "Ongoing" drought areas are based on the U.S. Drought Monitor areas (intensities of D1 to D4).

NOTE: The tan areas imply at least a 1-category improvement in the Drought Monitor intensity levels by the end of the period, although drought will remain. The green areas imply drought removal by the end of the period (D0 or none).

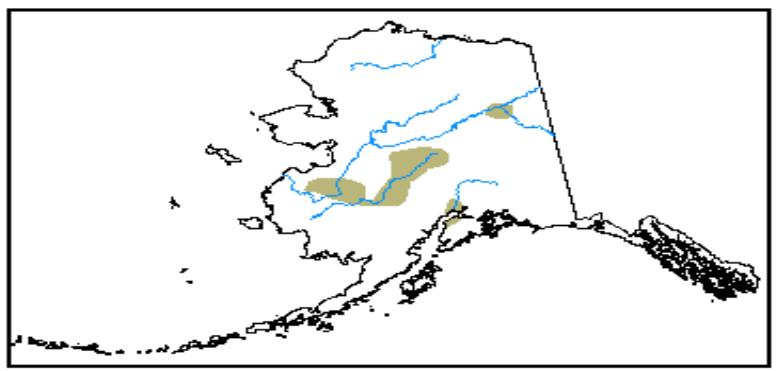
Drought persists

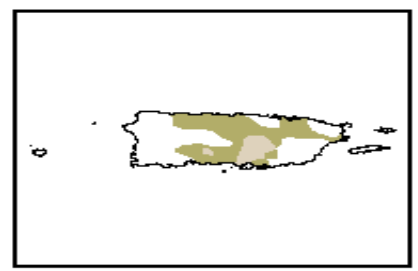
Drought remains but improves

Drought removal likely

Drought development likely

Author:
Richard Tinker
NOAA/NWS/NCEP/Climate Prediction Center

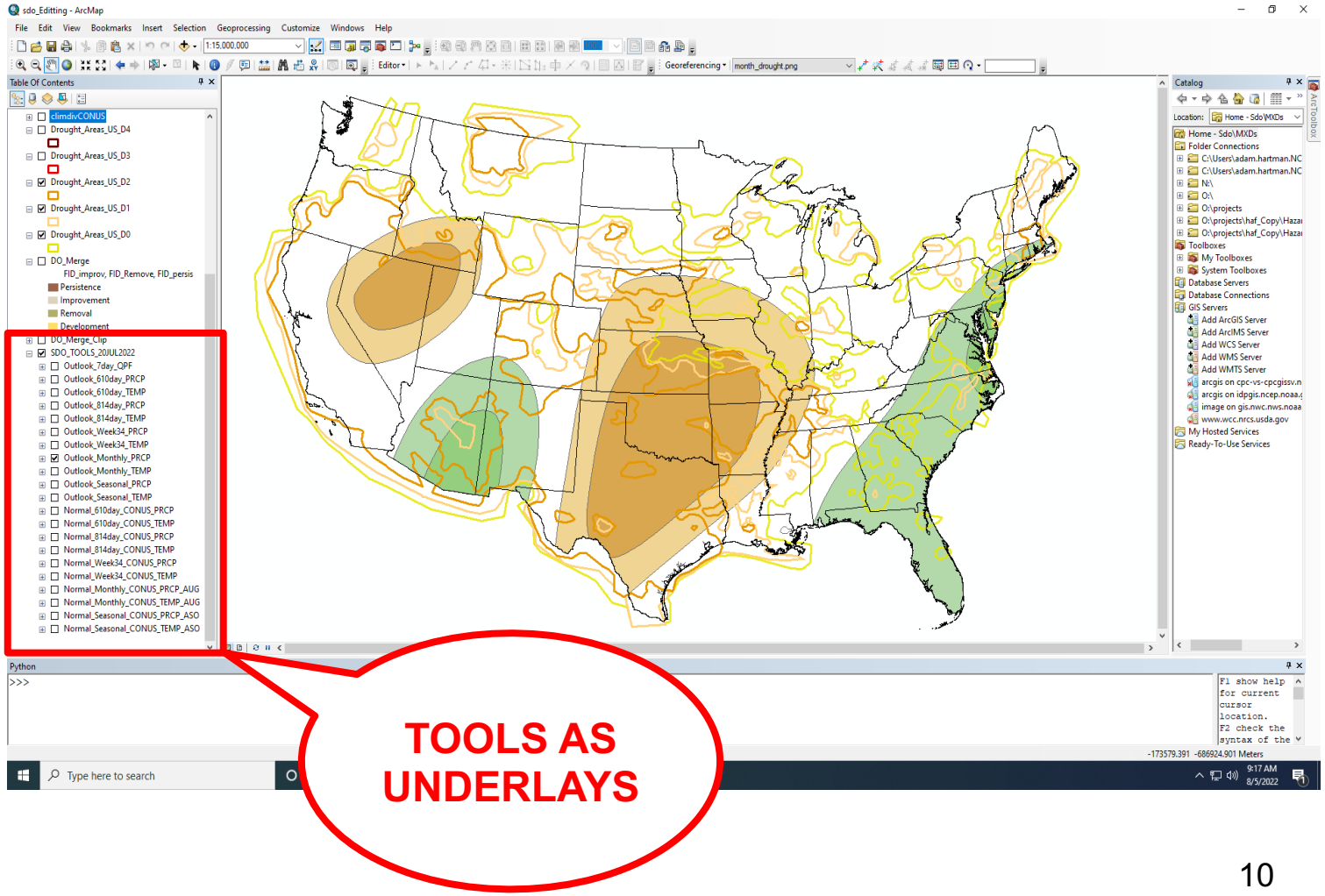




http://go.usa.gov/3eZ73

Seasonal Drought Outlook: Tools

- Climatology (dry/wet season: more applicable for Great Plains and West)
- ENSO Composites
- Weeks 1 and 2 temperature and precipitation
- Weeks 3-4 outlooks
- Monthly and Seasonal temperature and precipitation



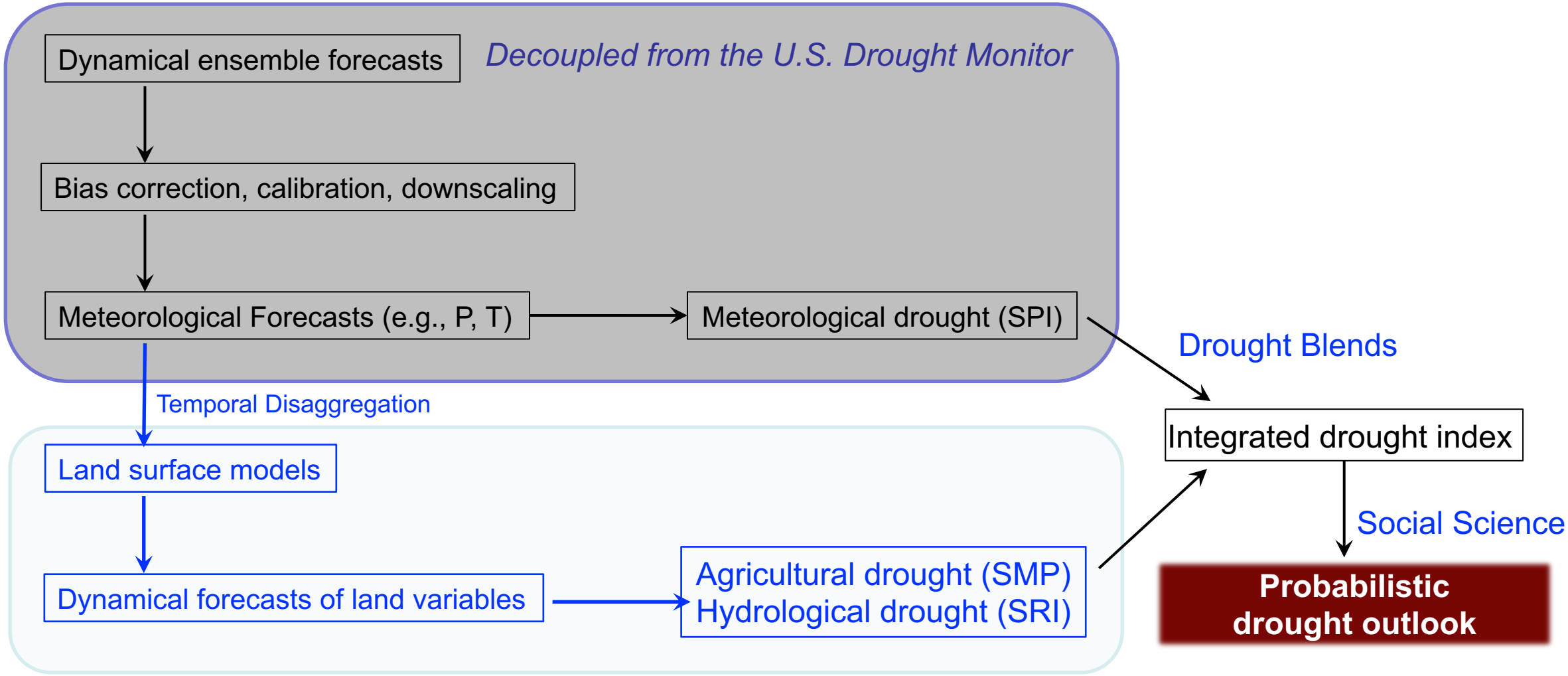
CPC-NIDIS Project: Developing *Probabilistic* Drought Outlooks (DOs)

- DO Products: Flash drought DO, monthly DO and seasonal DOs

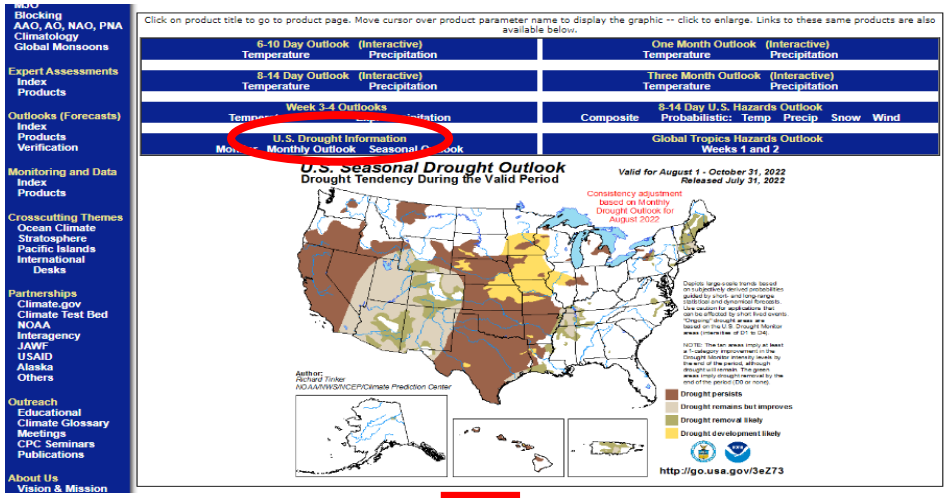
	Flash drought	Monthly DO	Seasonal DOs
Lead time	2-5 weeks	1 month	2-6 months
Production frequency	weekly	weekly/monthly	monthly
Input dynamical forecasts	Subseasonal (e.g., GEFSv12, ECMWF, CFSv2)		Seasonal (e.g., NMME)
Forecast drought anomalies	Flash drought only	Short-term drought, long-term drought, all drought conditions	

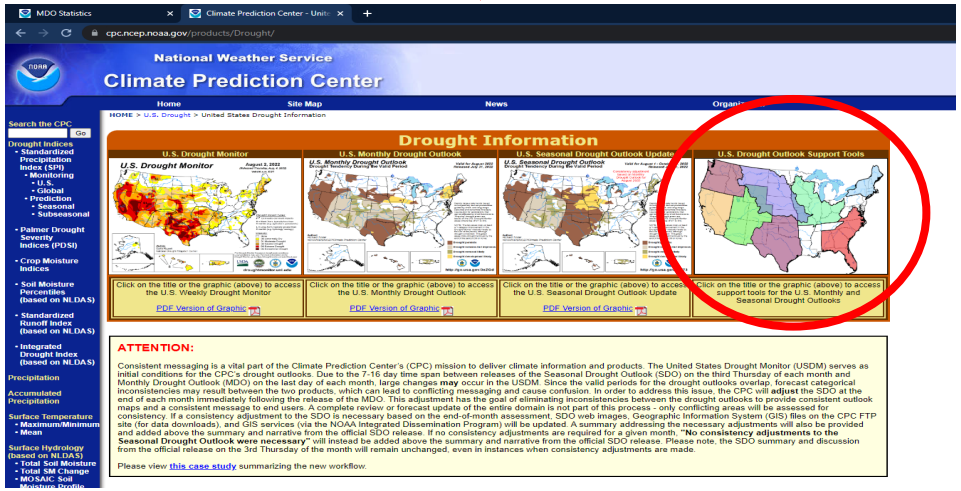
- Timeline
  - ***Years 1-2***: Seasonal DOs
  - ***Years 3-5***: Flash drought DO, monthly DO

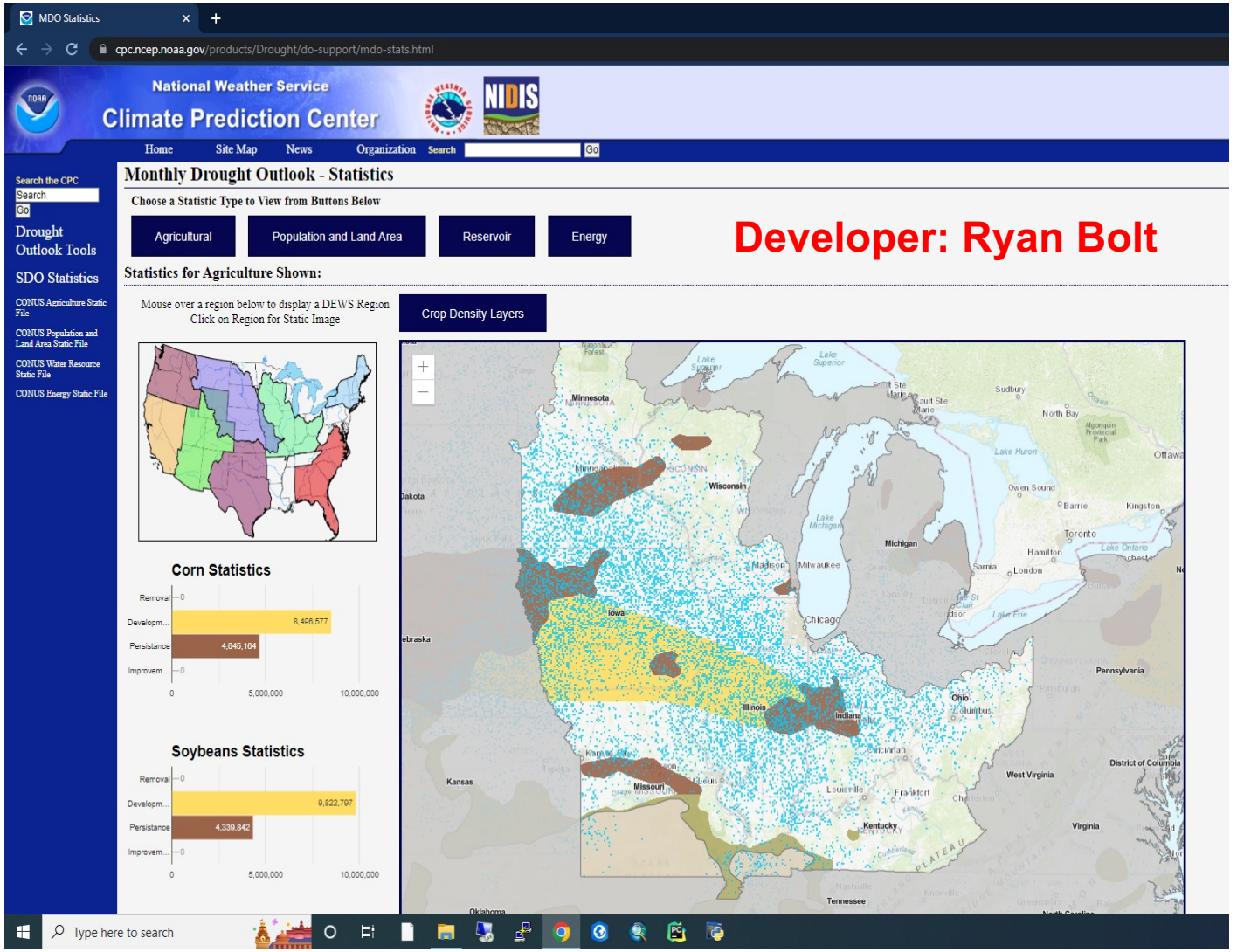
A Schematic for Probabilistic DO Production



Impact-based Decision Support Services (IDSS)







CPC Contacts

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Thank You!

Any Questions?