



GEORGIA
DEPARTMENT OF NATURAL RESOURCES

ENVIRONMENTAL PROTECTION DIVISION

Meteorological Setup of the 2019 Georgia Drought



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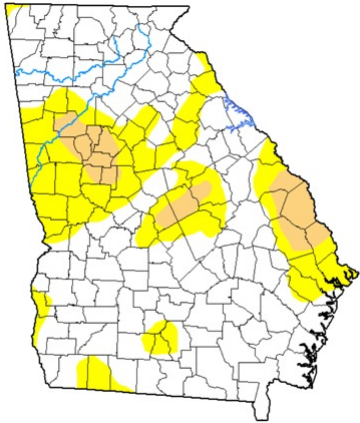


Evolution of the 2019 Drought

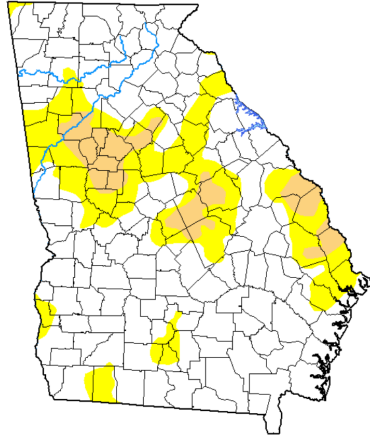
Weekly USDM (August 27 – Oct 1)



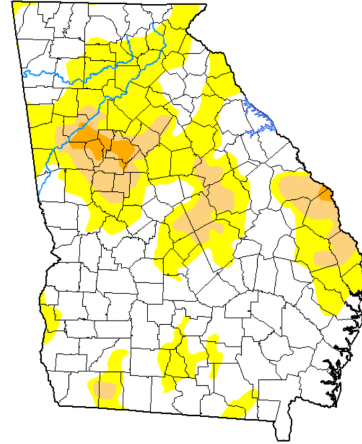
August 27



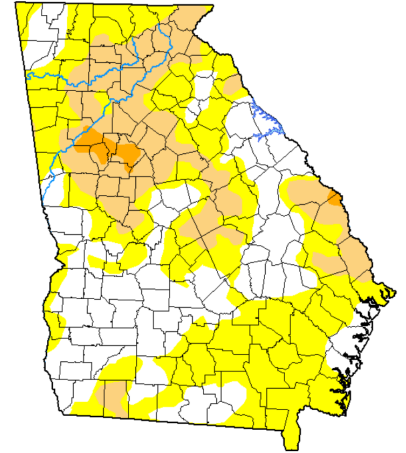
September 3



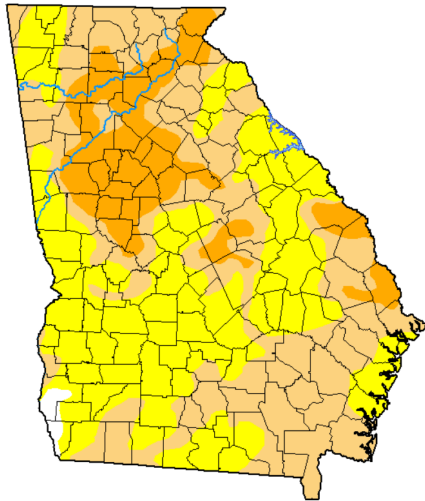
September 10



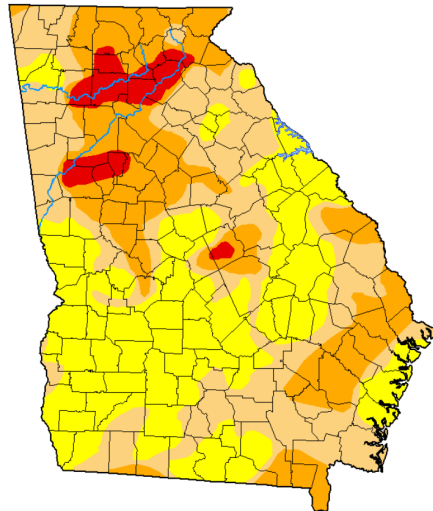
September 17



September 24



October 1



Intensity:

None

D0 Abnormally Dry

D1 Moderate Drought

D2 Severe Drought

D3 Extreme Drought

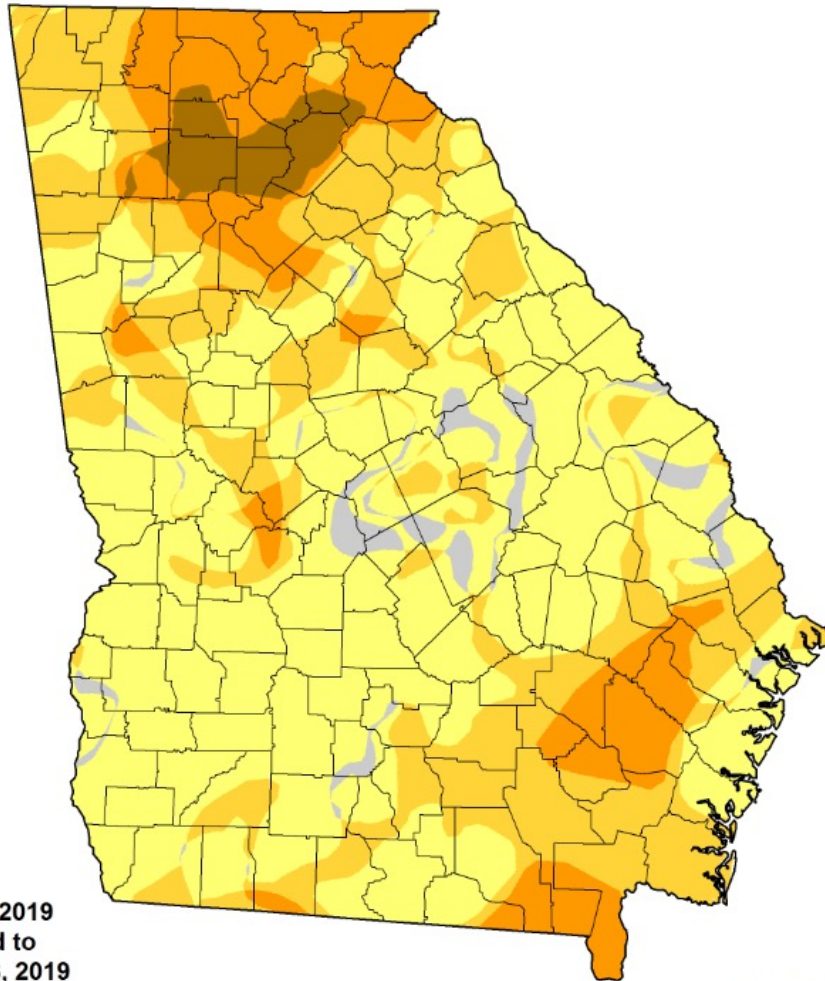
D4 Exceptional Drought



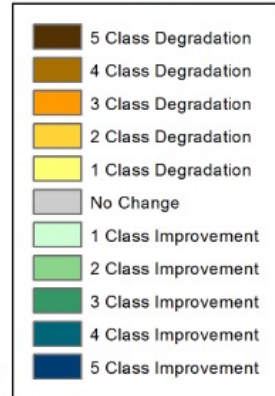
US Drought Monitor 1-month Class Change



U.S. Drought Monitor Class Change - Georgia
1 Month



October 1, 2019
compared to
September 3, 2019



droughtmonitor.unl.edu

Severe Agricultural Impacts



Wilkes County reported severely dry conditions (9/24/2019).

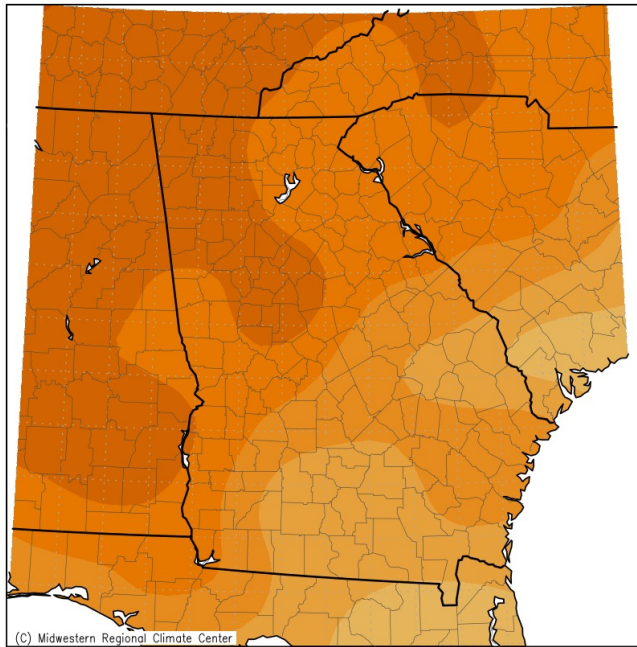


Pike County reported severely dry conditions (9/21/2019).



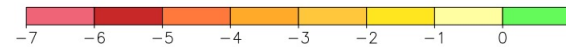
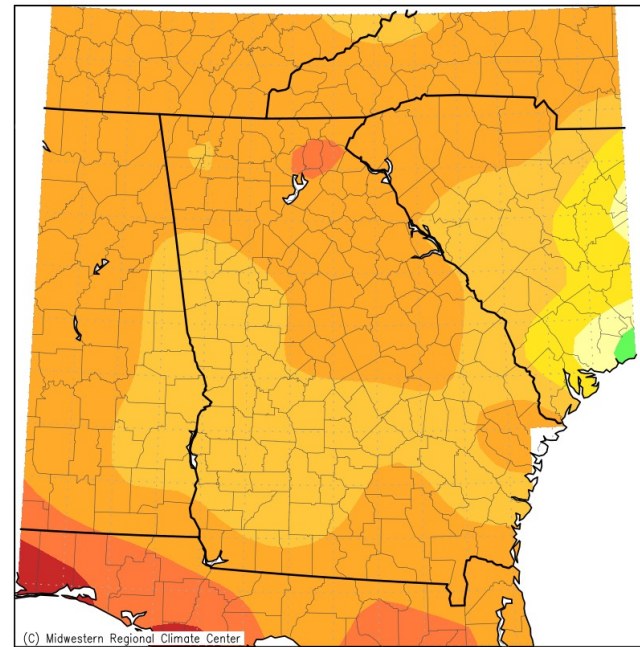
Record-breaking Heat and Dryness in September 2019

Average Temperature (°F): Departure from Mean
September 1, 2019 to September 30, 2019



Midwestern Regional Climate Center
cli-MATE: MRCC Application Tools Environment

Accumulated Precipitation (in): Departure from Mean
September 1, 2019 to September 30, 2019



Midwestern Regional Climate Center
cli-MATE: MRCC Application Tools Environment

5th warmest September: 79.1°F (+4.6°F) Driest September: 0.89" (-3.03")

- ❑ Subsidence from Hurricanes Dorian and Humberto in early September
- ❑ Strong upper-level high pressure system
- ❑ September was warmest for Atlanta in mean max temps
- ❑ Many daily max temperature records were set in September and early October for Atlanta and Macon

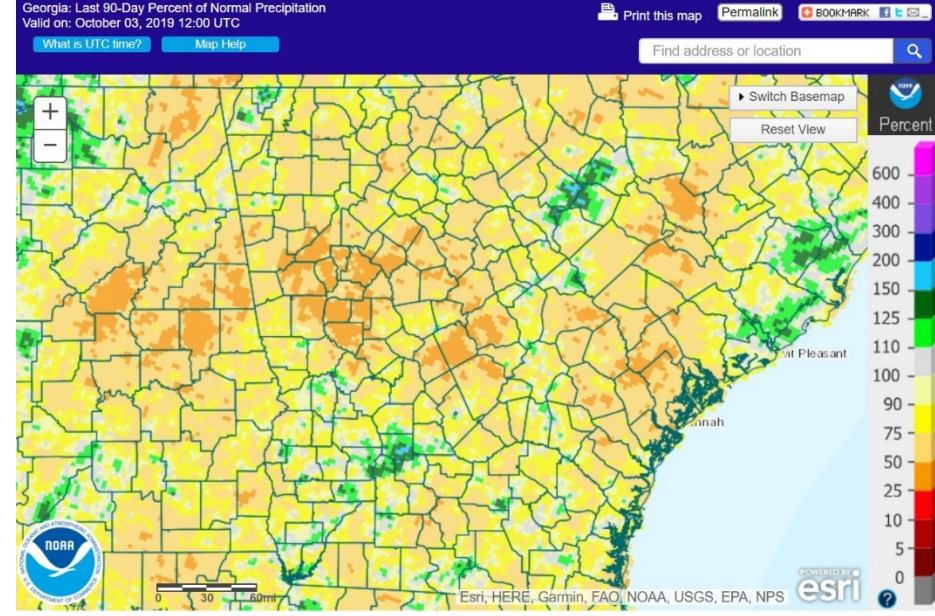
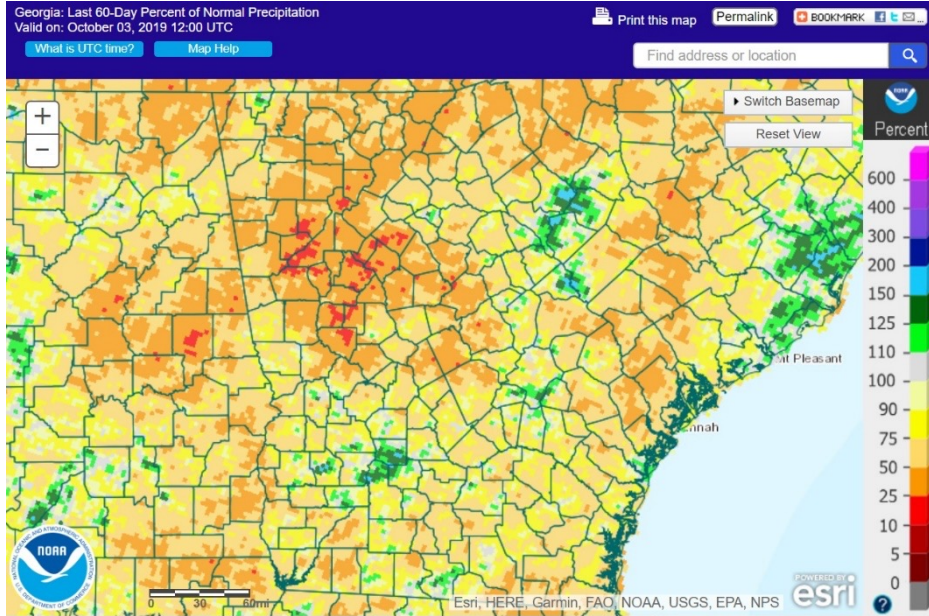


Below-normal Precipitation

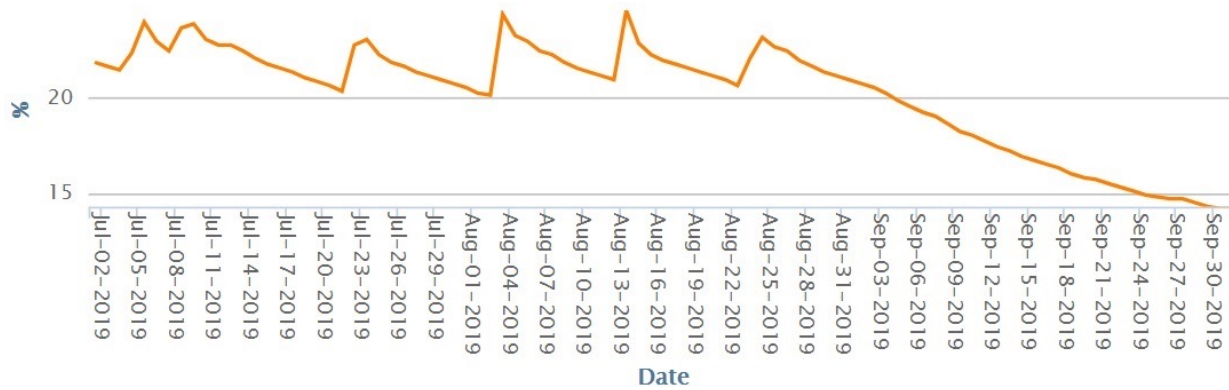


60day Percent of Normal Precipitation

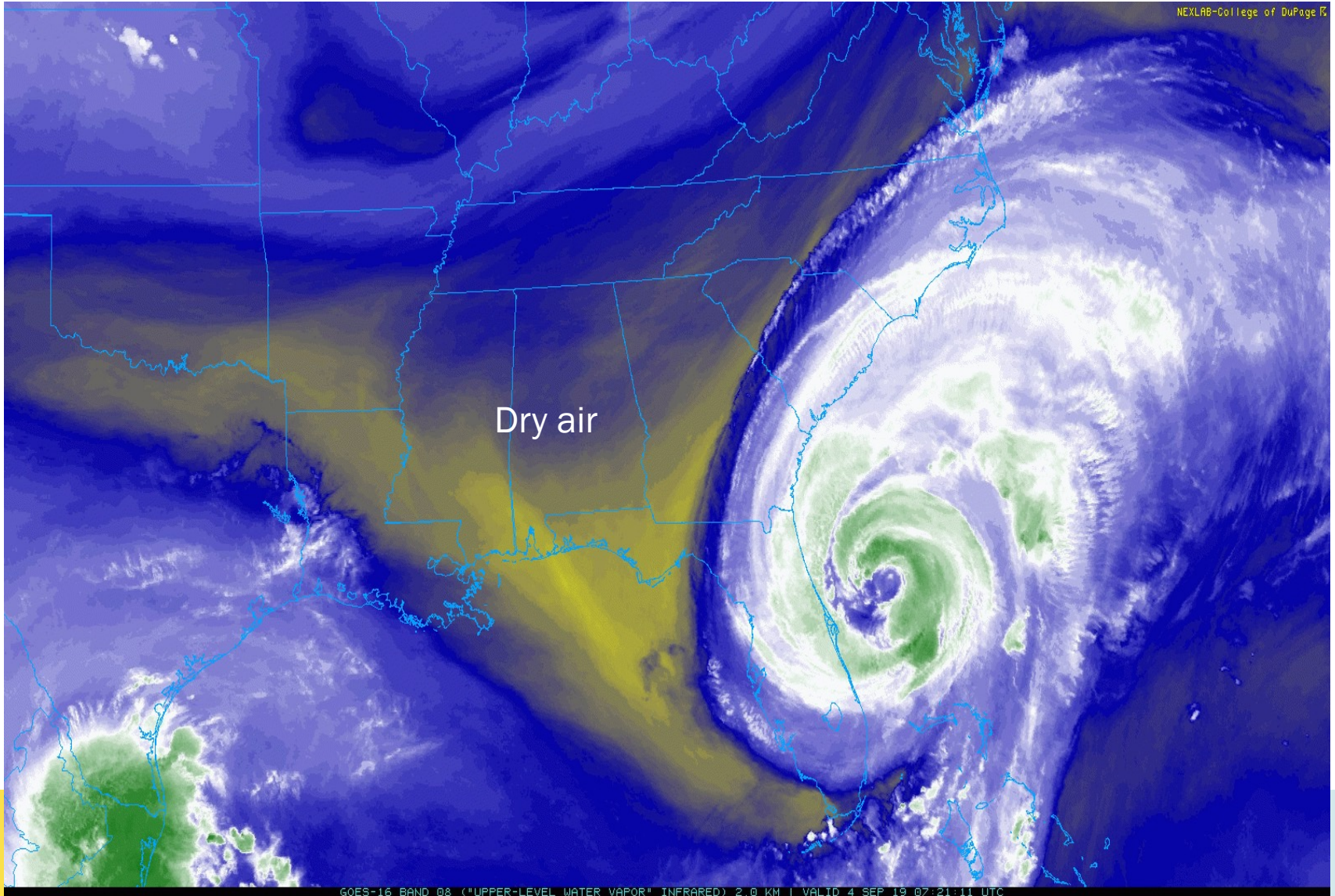
90day Percent of Normal Precipitation



Pike County Soil Moisture 07/02-10/02



Hurricane Dorian (9/4/2019)

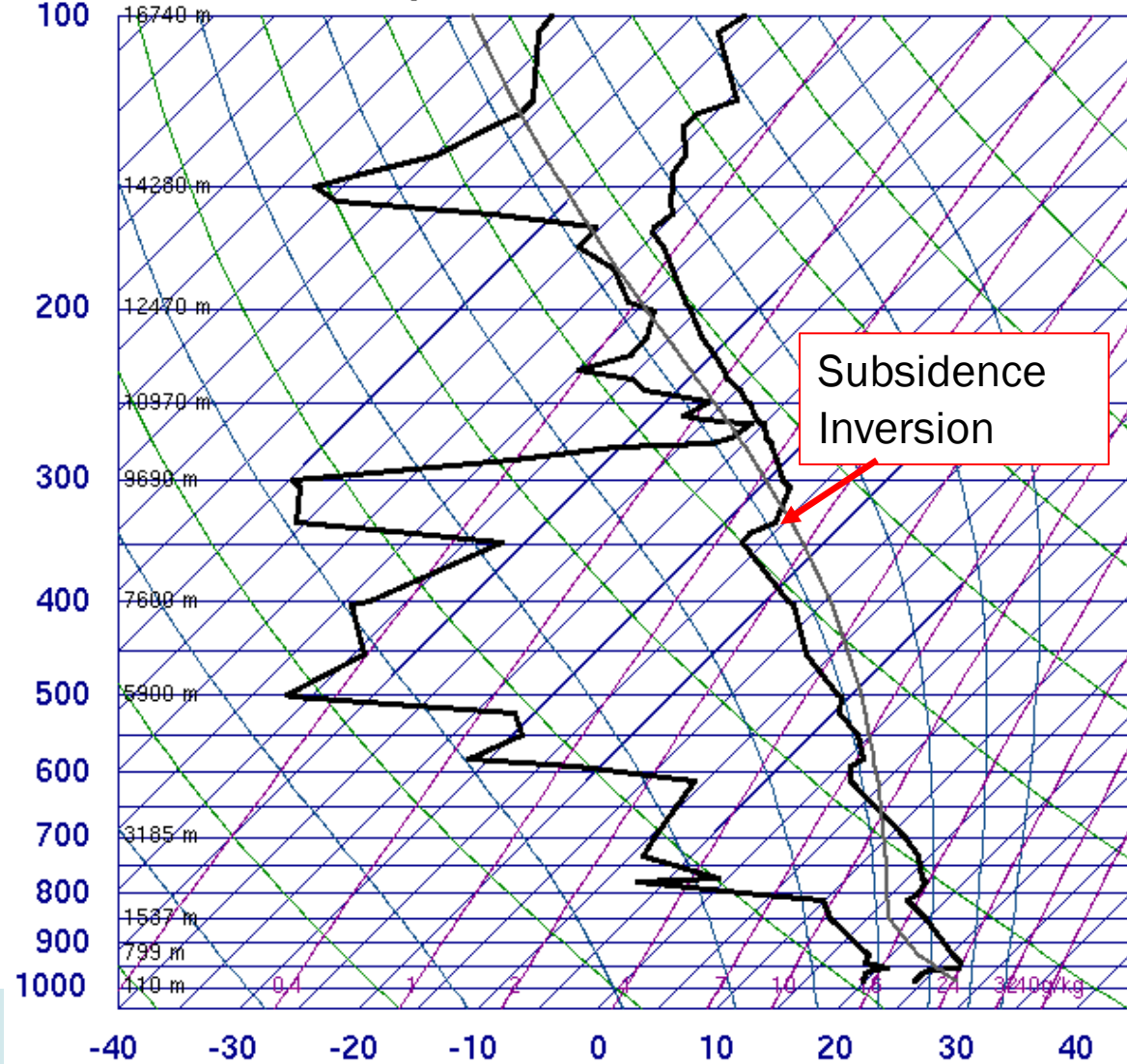


GOES-16 BAND 08 (**UPPER-LEVEL WATER VAPOR* INFRARED) 2.0 KM | VALID 4 SEP 19 07:21:11 UTC

Subsidence from Hurricane Dorian



72215 FFC Peachtree City



SLAT	33.36
SLON	-84.57
SELV	245.0
SHOW	1.22
LIFT	-1.96
LFTV	-2.87
SWET	209.0
KINX	17.10
CTOT	18.10
VTOT	26.10
TOTL	44.20
CAPE	544.9
CAPV	701.8
CINS	-245.
CINV	-150.
EQLV	319.3
EQTV	317.6
LFCT	660.6
LFCV	690.8
BRCH	41.42
BRCV	53.35
LCLT	291.2
LCLP	878.6
LCLE	346.9
MLTH	302.2
MLMR	15.12
THCK	5790.
PWAT	30.72

12Z 05 Sep 2019

University of Wyoming



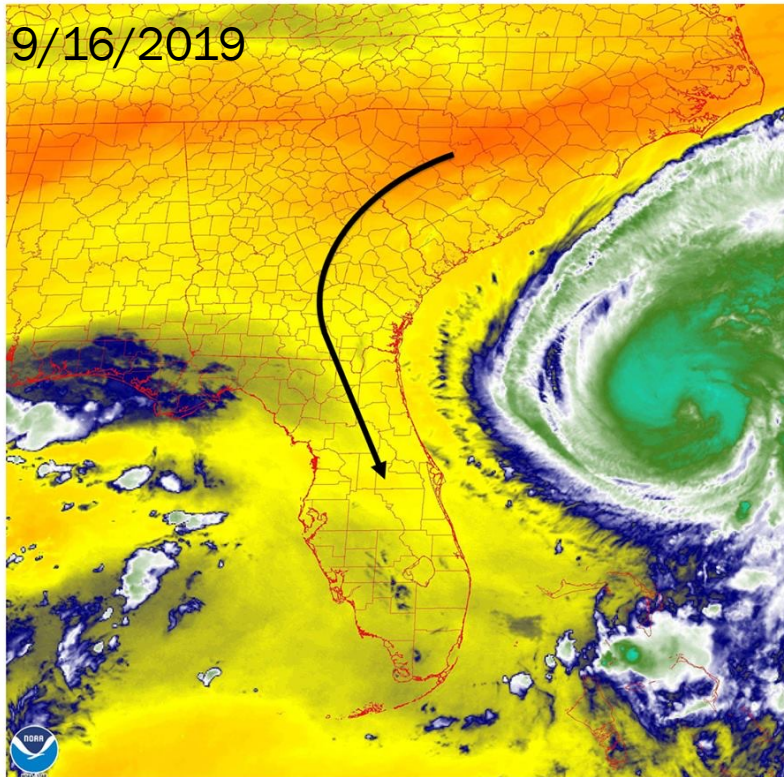
Subsidence from Hurricane Humberto

Current Satellite View – Water Vapor Imagery



Tampa Bay/Ruskin
WEATHER FORECAST OFFICE

Valid This Morning



- Dry air (yellow/orange colors) wrapping around the back side of Humberto will help to keep the weather dry across the Florida through at least mid-week

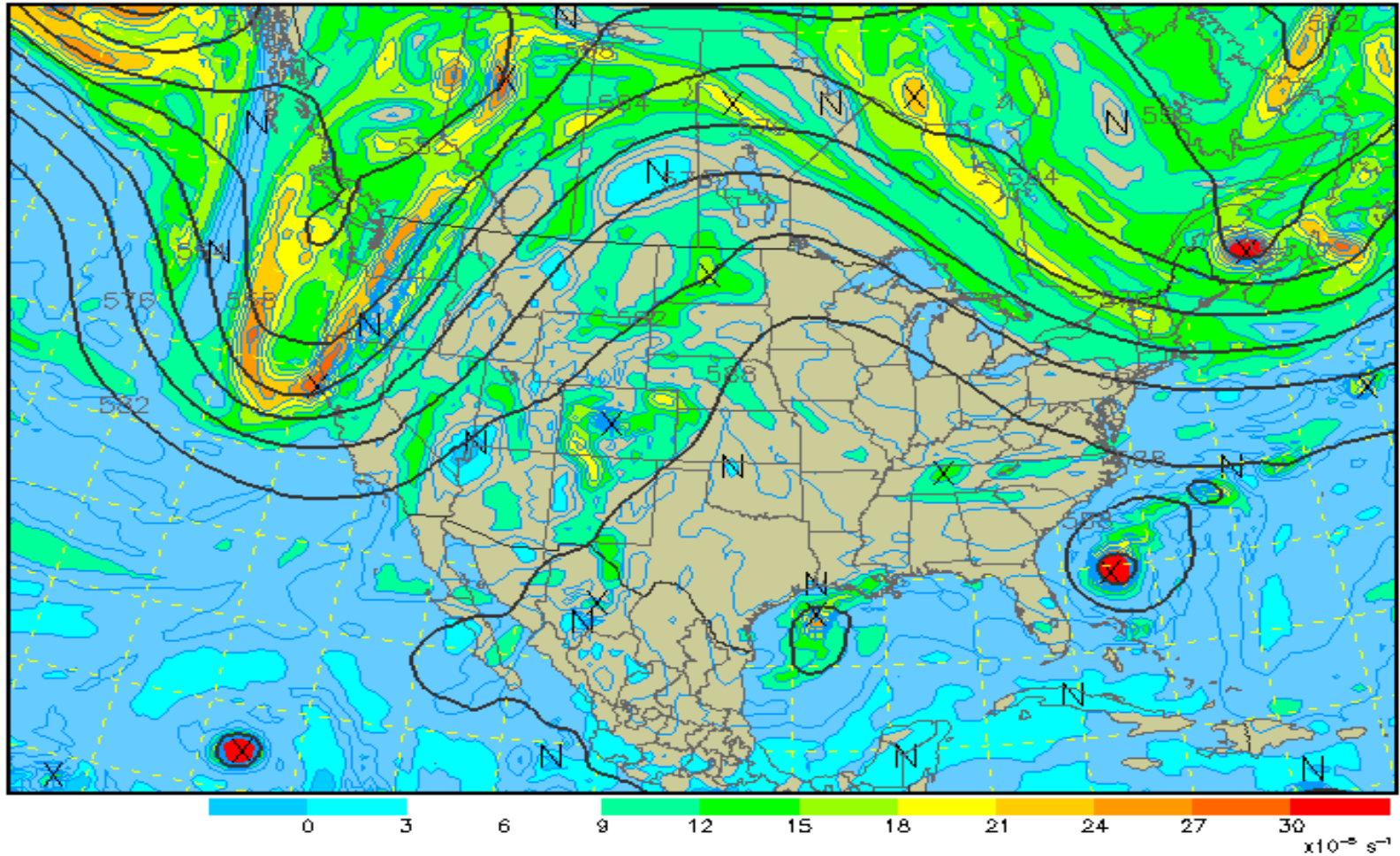


Subsidence from Hurricane Humberto and Ridge Intensification

500 mb Heights (dm) / Abs. Vorticity ($\times 10^{-5} \text{ s}^{-1}$)

Analysis valid 1200 UTC Mon 16 Sep 2019

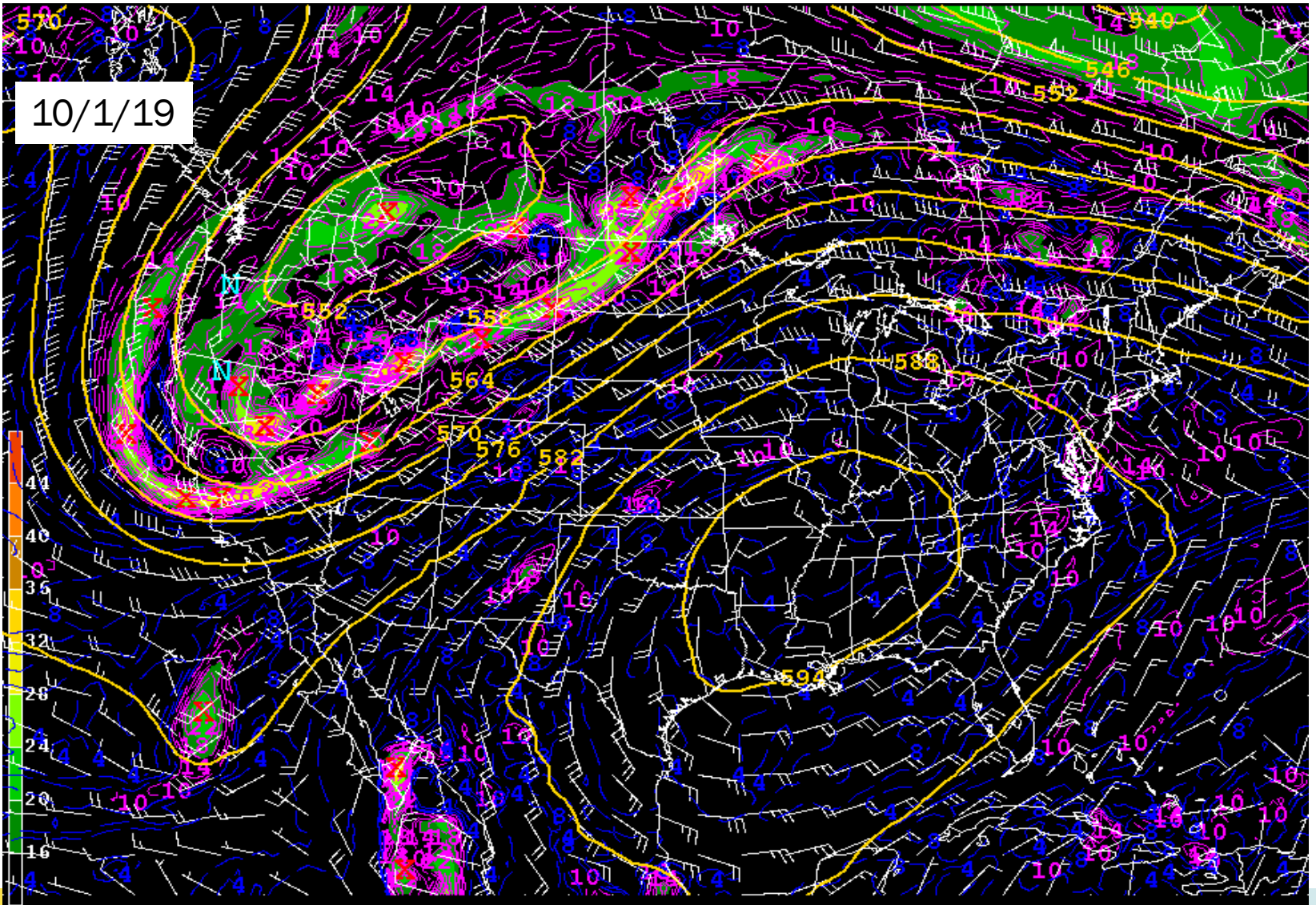
NAM (WRF-NMM) (12z 16 Sep)



Strong Upper-level Ridge



10/1/19

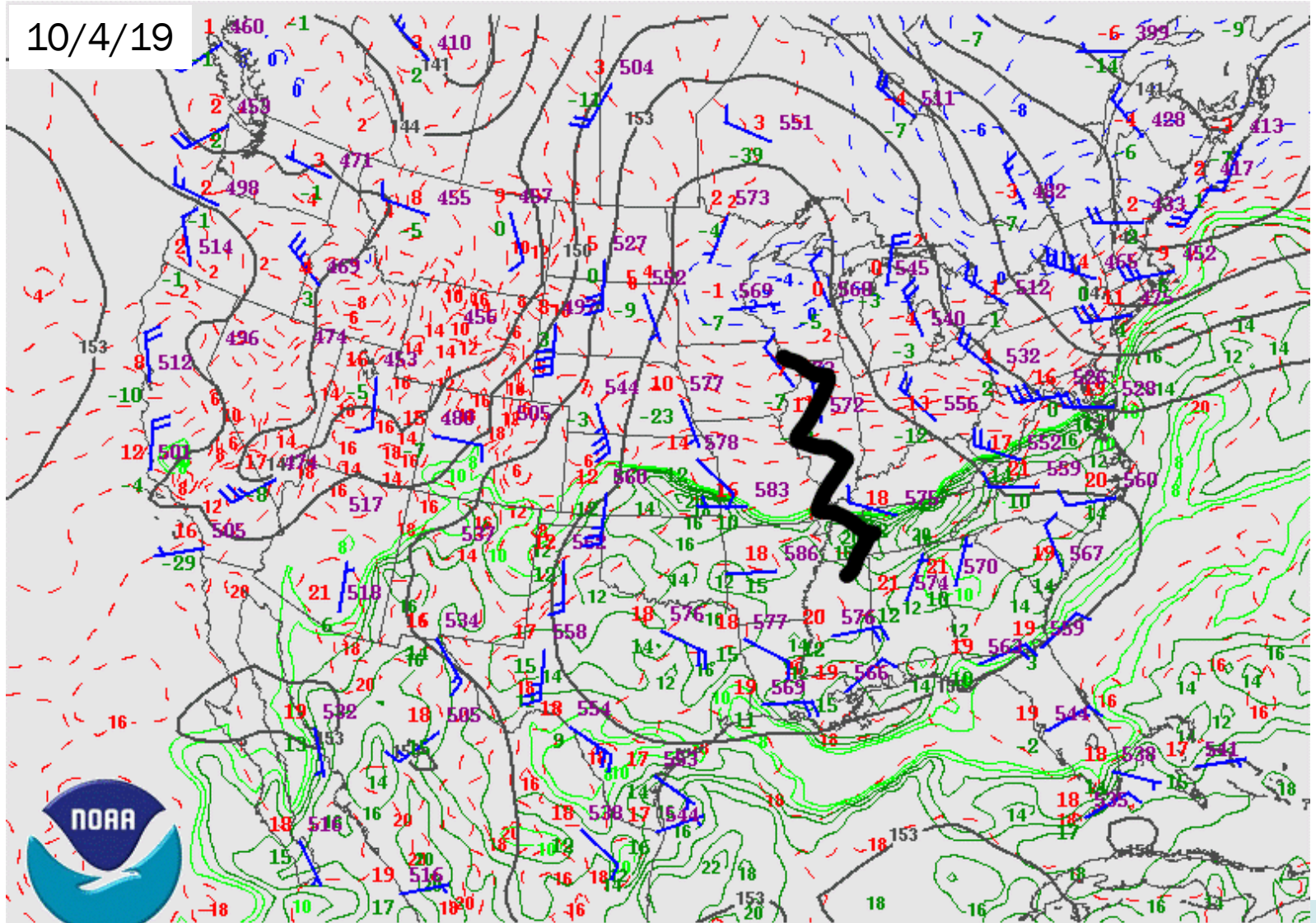


191001/0000V006 RAP 500 HEIGHTS AND VORTICITY



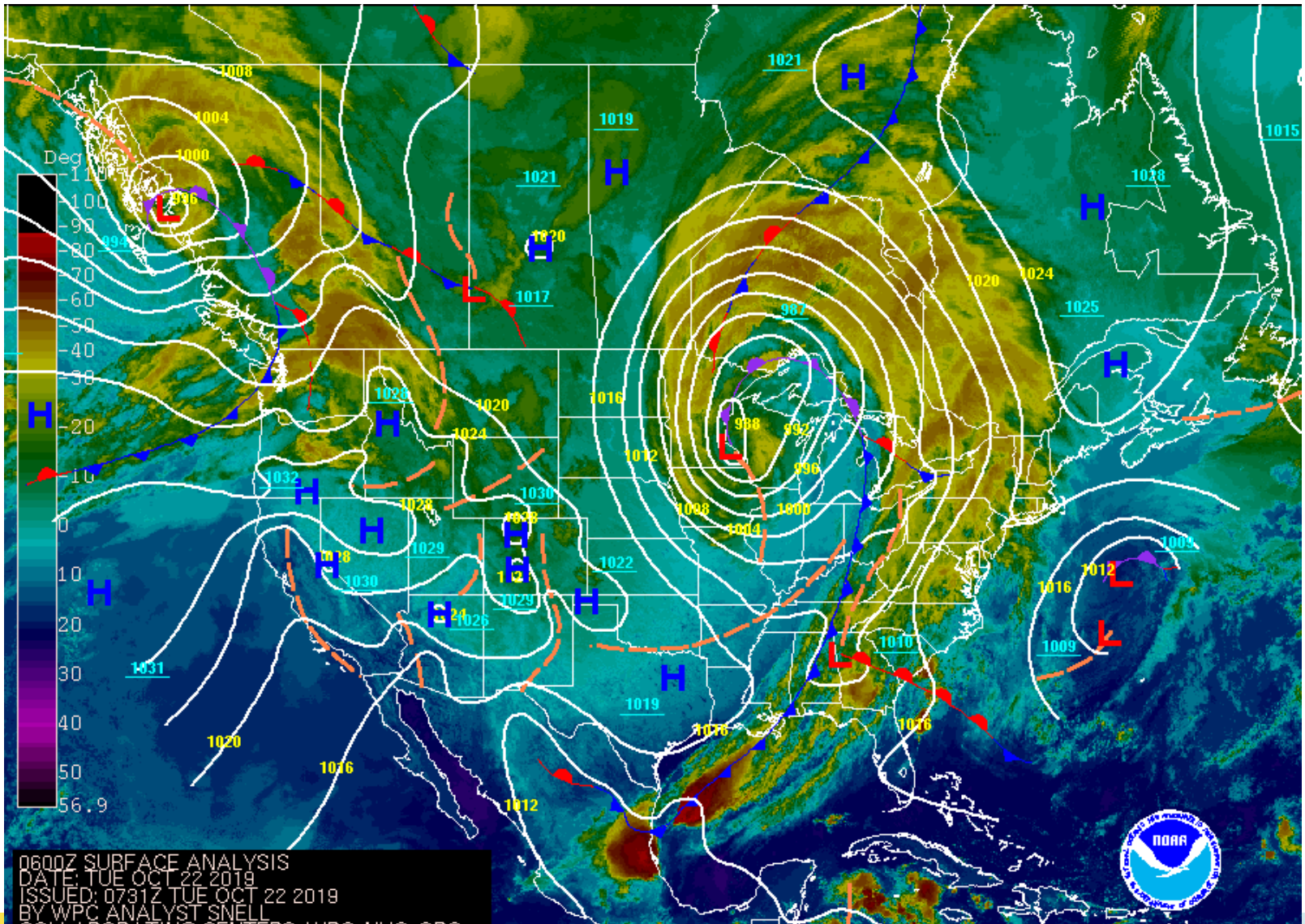
Strong Upper-level Ridge Continues

10/4/19



National Weather Service
Storm Prediction Center

Pattern Breaks in Late October



0600Z SURFACE ANALYSIS
DATE: TUE OCT 22 2019
ISSUED: 0731Z TUE OCT 22 2019
BY WPC ANALYST SNELL
COLLABORATING CENTERS: WPC, NHC, OPC

IR_20191022_0652Z GOES-E/W MOSAIC SAT IMAGE



Summary

- Drought evolved from the end of August through September
- September experienced record-breaking daytime temperatures increasing evapo-transpiration
- Subsidence from Hurricane Dorian and Humberto in early and mid-September suppressed convection and enhanced evaporation
- Strong middle and upper-level anticyclone in early October
- Lack of rainfall and intense daytime heating contributed to rapid decline of soil moisture
- Severe agricultural impacts suffered statewide