

# **The 2016-2017 Drought Overview & Update Since Last Fall**

**Nicole Belk**

**National Weather Service Taunton, MA**

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**National Weather Service  
Taunton, MA**

# Southern New England Droughts

*Significant Drought Episodes since the early 1900s*

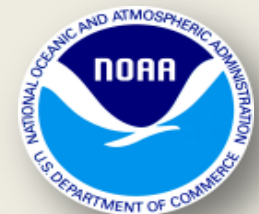
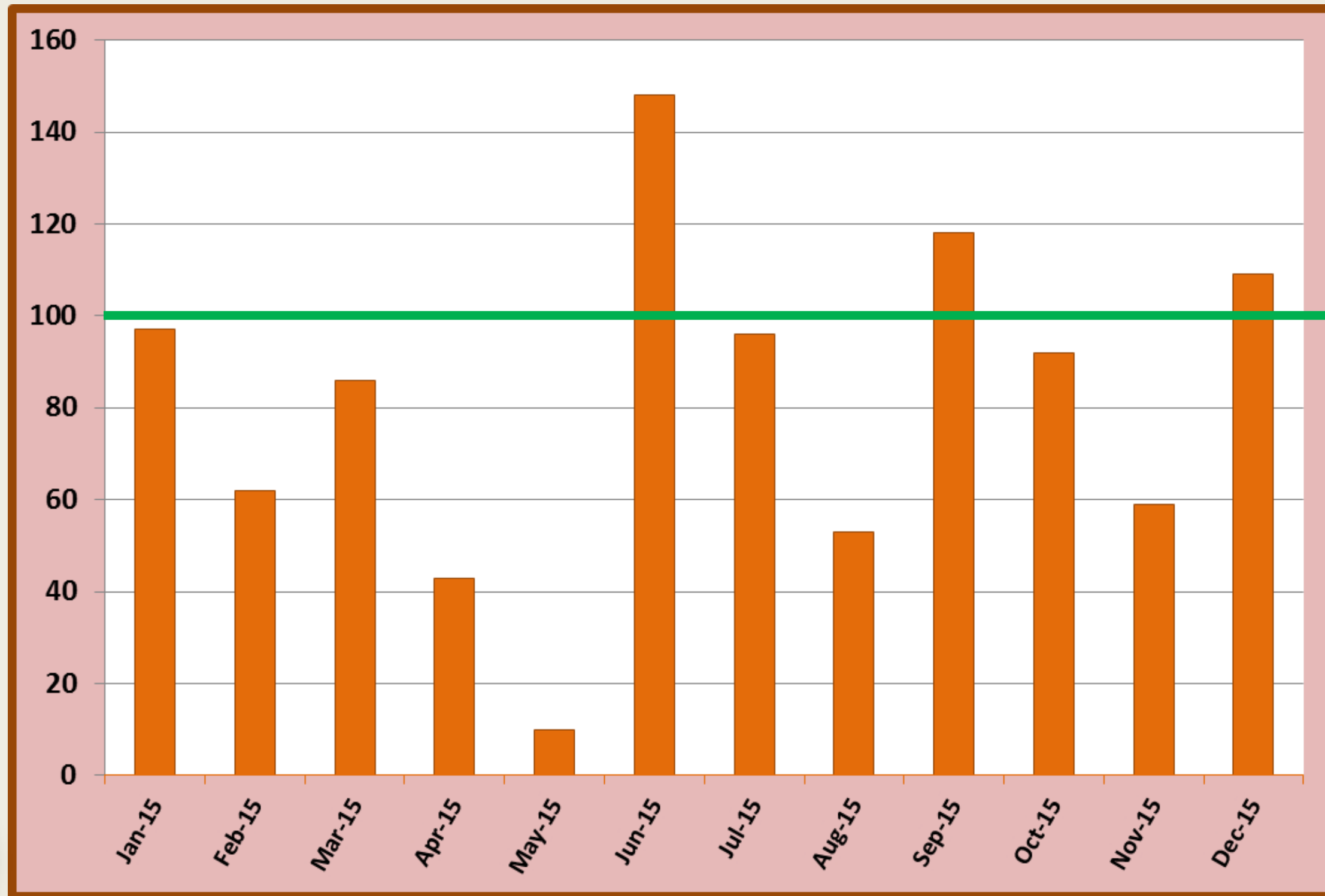
- Drought periods are not rare- nearly every 10 years
  - Most intense drought episodes included...
- |                    |                    |
|--------------------|--------------------|
| • <b>1922-1923</b> | • <b>1980-1981</b> |
| • <b>1924-1925</b> | • <b>1984-1985</b> |
| • <b>1929-1932</b> | • <b>1999</b>      |
| • <b>1939-1942</b> | • <b>2001-2002</b> |
| • <b>1956-1957</b> | • <b>2016-2017</b> |
| • <b>1961-1966</b> |                    |



# Precipitation Percent of Normal 2015

## Southern Drought Region RI

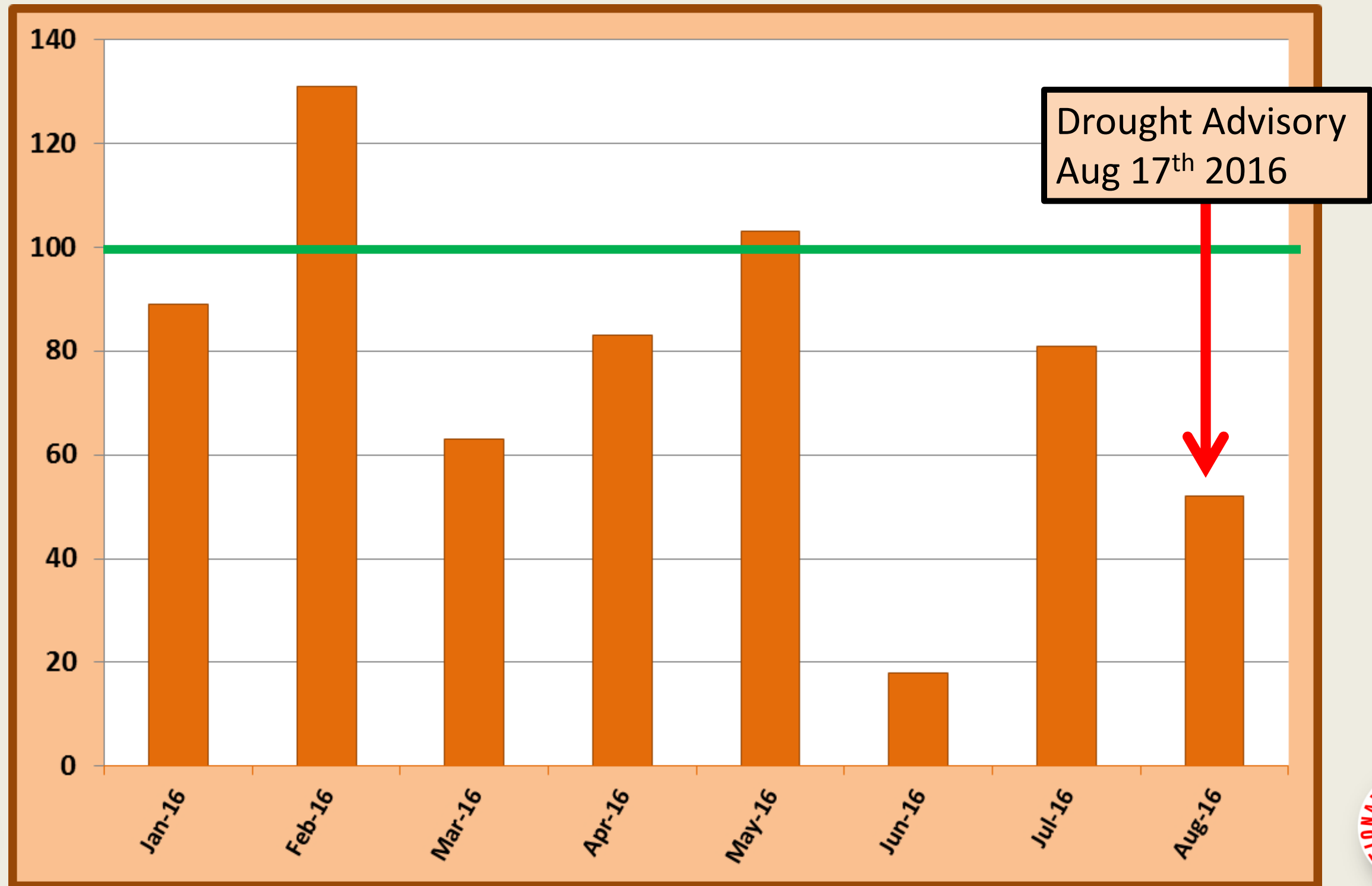
Normal based on 30-year record 1981-2010.



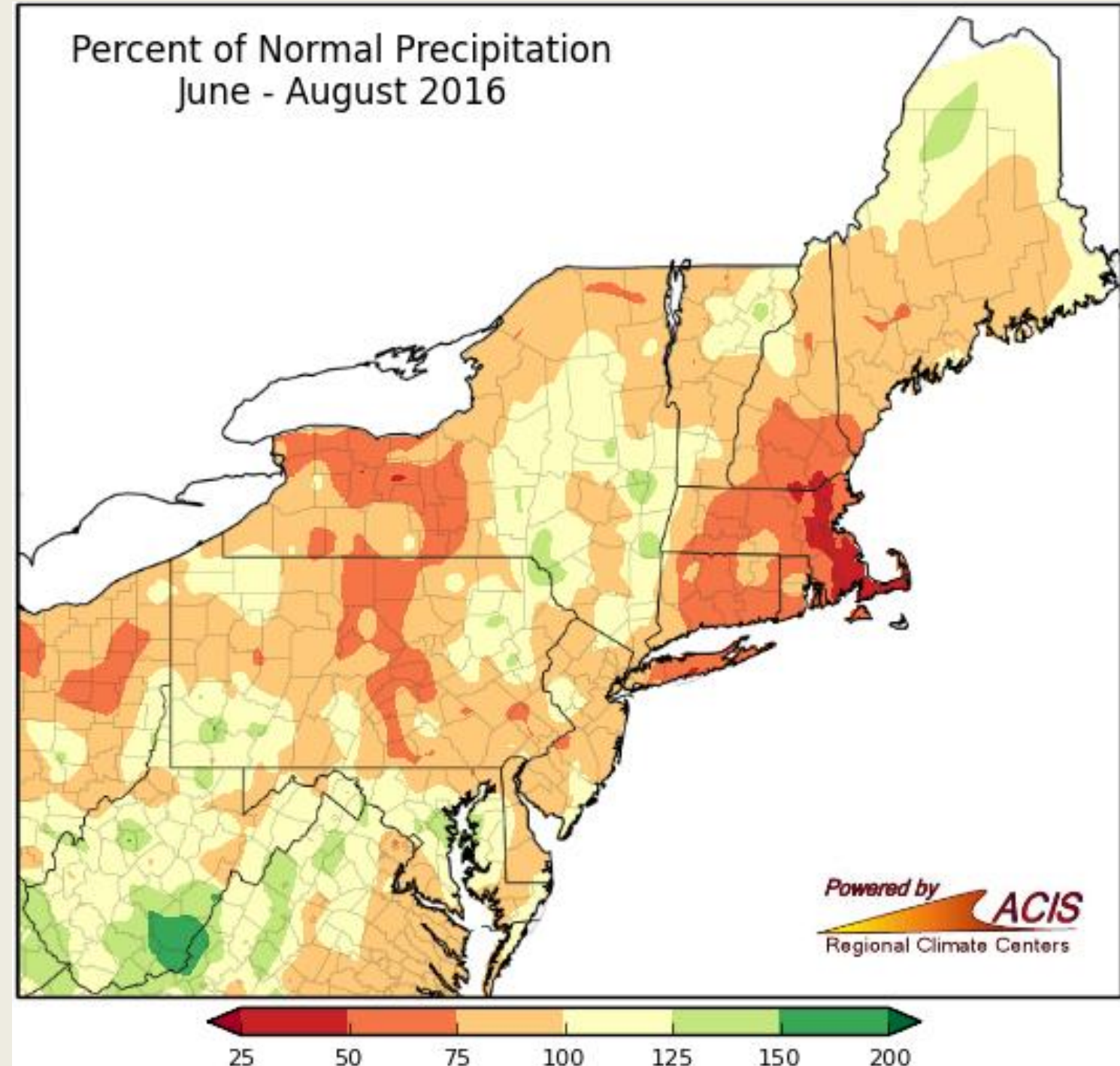
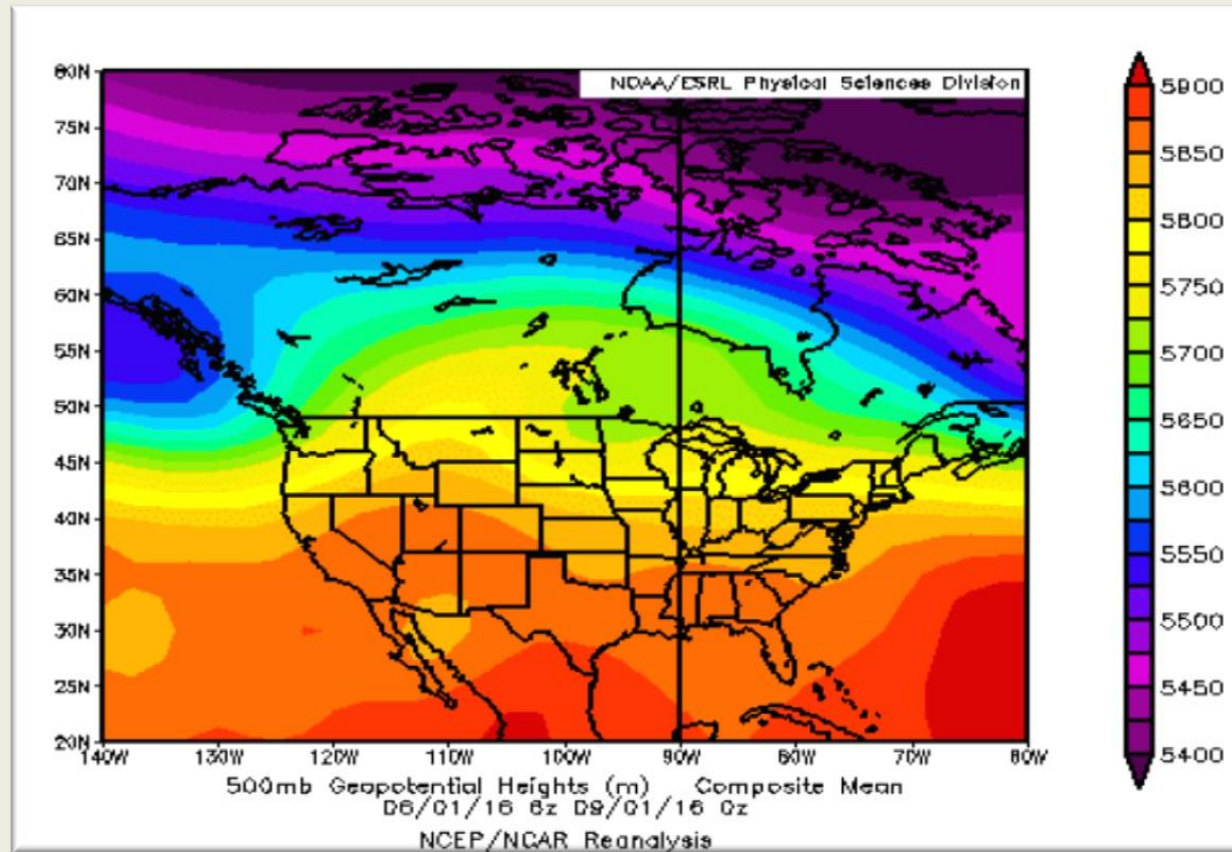
# Precipitation Percent of Normal Jan-Aug 2016

## Southern Drought Region RI

Normal based on 30-year record 1981-2010.



# Summer 2016 Was Hot and Dry- 3<sup>rd</sup> Hottest on Record at PVD & 5<sup>th</sup> at Kingston

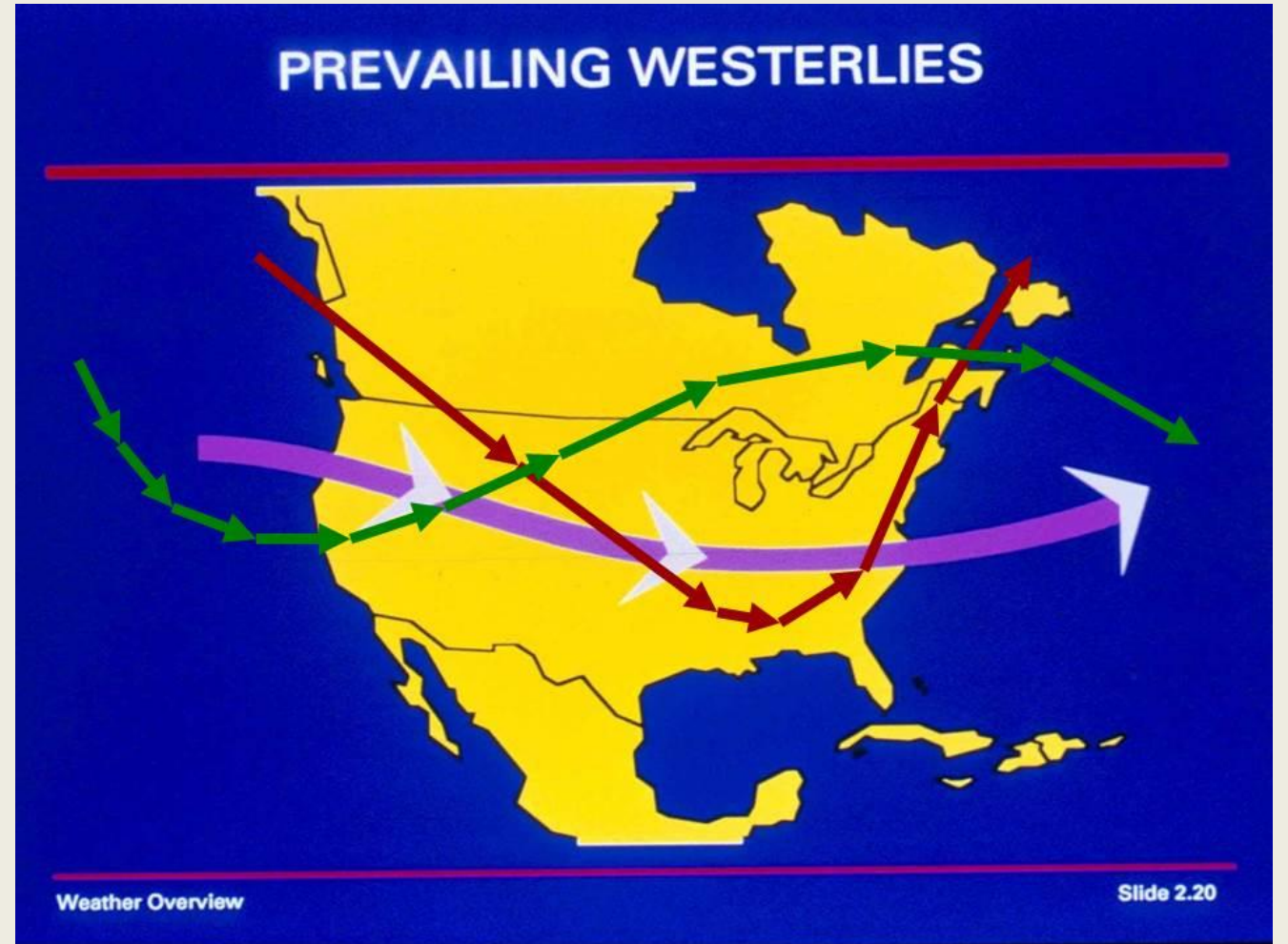
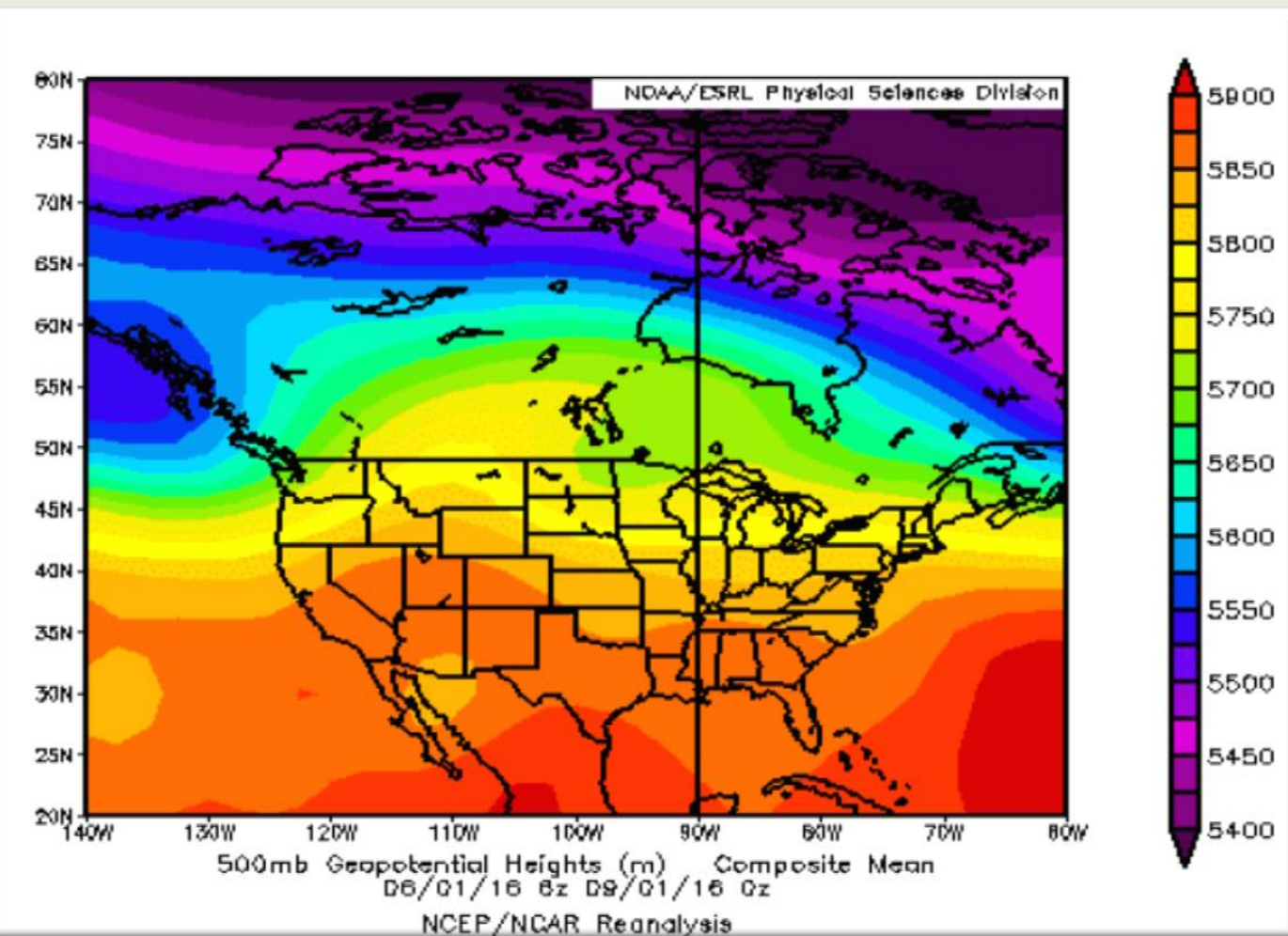


- For Southern New England:**
- High Pressure Centered to our West
  - Winds mainly from West-Northwest
  - Prevent any “Deep Atlantic/Gulf Moisture” from reaching New England



# Summer-Fall 2016 Weather Pattern

## Not Favorable for Tropical Cyclones to impact New England



Overall weather pattern for  
Summer 2016

Jet stream nosing northeastward along  
The coast more favorable for land-falling  
Tropical Cyclones in New England

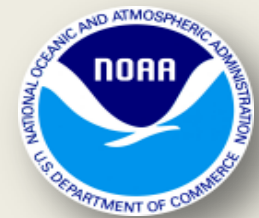
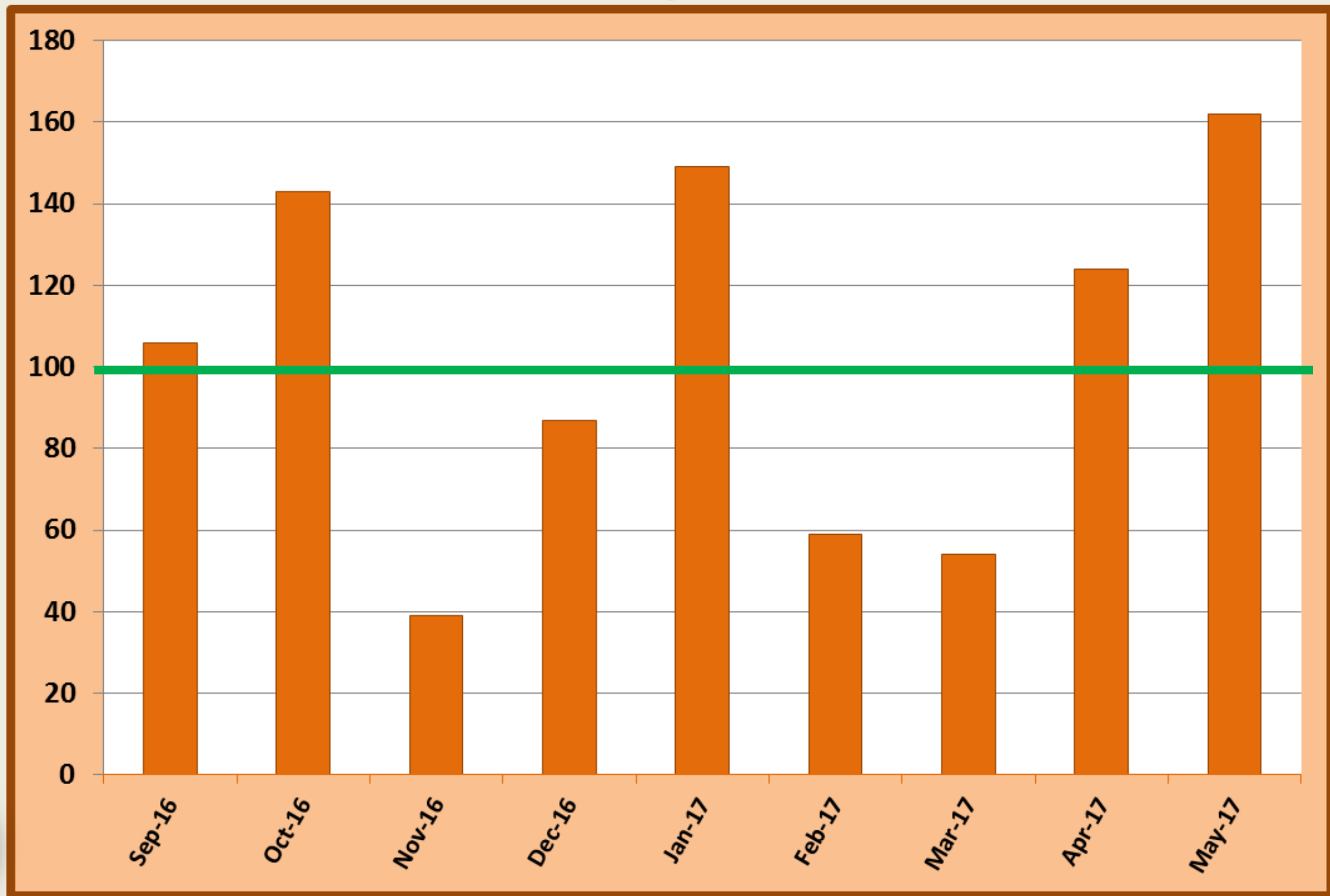


**UPDATE SINCE DROUGHT DECLARATION**

# Precipitation Percent of Normal Sep '16-May '17

## Southern Drought Region RI

Normal based on 30-year record 1981-2010.

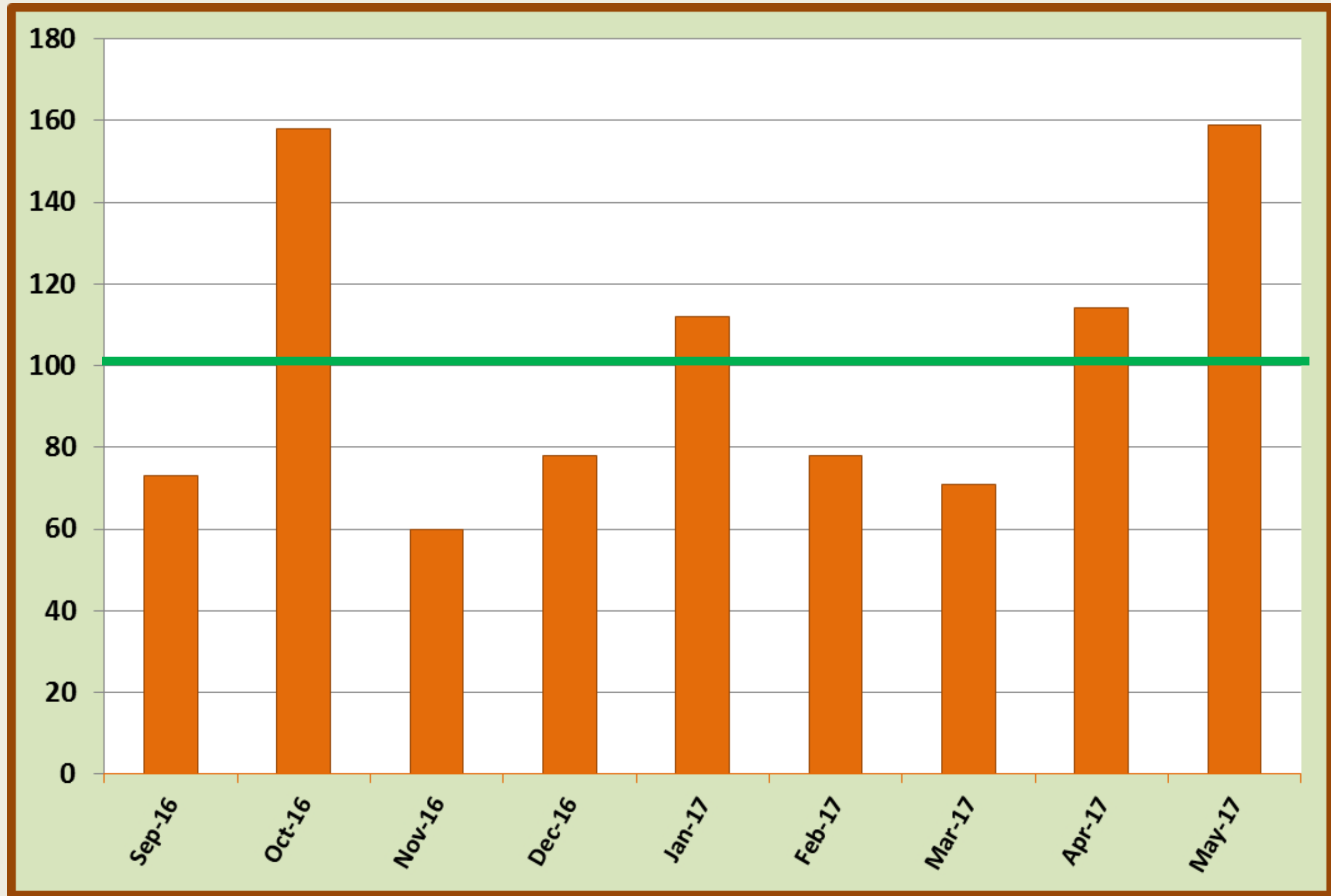




# Precipitation Percent of Normal Sep '16 to May '17

## Northeast Drought Region RI

Normal based on 30-year record 1981-2010.



# Jan-Feb-Mar: Normal to Below Normal Precip provided short term recovery?

Rain + Melt + Thawed Soil =  
Short Term Boost to Rivers/Streams/Groundwater/Reservoirs

- January 2017
- Averaged 34.8
- Degrees F (+5.6)
- February 2017
- averaged 35.7
- Degrees F (+3.7)
- March 2017
- averaged 35.1
- Degrees F (-3.8)

*Data for Providence RI/TF Green*

# A Remarkable Spring- 5<sup>th</sup> Wettest since 1904 at Providence/TF Green

Rank	Value	Ending Date
1	26.25	1983-05-31
2	21.04	2010-05-31
3	18.45	1984-05-31
4	17.94	1948-05-31
5	17.84	2017-05-31
6	17.16	1953-05-31
7	16.95	1967-05-31
8	16.82	2007-05-31
-	16.82	1998-05-31
10	16.69	1961-05-31

**54:** Number of days where at least a trace of precipitation fell at Providence this Spring

**92:** Number of days in Meteorological Spring

*Data for Providence RI/TF Green*



# A Remarkable Spring (Mar/Apr/May)- With Minimal Flooding

Rank	Value	Ending Date
1	26.25	1983-05-31
2	21.04	2010-05-31
3	18.45	1984-05-31
4	17.94	1948-05-31
5	17.84	2017-05-31
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Major Flooding- Pawtuxet  
Moderate- Pawcatuck

“Great Flood of 2010”

Moderate Flooding-  
Pawtuxet/Pawcatuck

-Minor flooding Pawcatuck  
-No flooding Pawtuxet



*Precipitation Data for Providence RI/TF Green*

# Drought Enders in Southern New England

## *Historical Perspective*

- Our most notable droughts in the past 50 years:
- *Ended with normal fall and winter precipitation*
- *Ended with multiple rain events or a tropical system*
- *Some just end as inconspicuously as they began*
- **2016-17:**
- *A warm Jan-Feb keeping soils thawed= recharge*
- *Rainy spring that stopped short of significant flooding*
- *The spring rain was well distributed, with slightly more damp days than dry*

