

RIVER AND WEATHER CONDITIONS

Prepared for Waterways Association Meeting 07/12/2017
 National Weather Service Forecast Office, Pittsburgh PA
 For the latest river and weather forecasts--<http://www.weather.gov/pittsburgh>

WEATHER RECAP

June was a wetter than normal month, with most places receiving between 1.00 and 2.00 inches above normal. June temperatures were slightly above normal. Nighttime lows were warmer than normal and 90 degree was only reached once. Flash flooding in some areas with 200 year reoccurrence interval floods in Indiana and Butler counties. Braddock Lock and Dam received 11 inches of rain during the month. Remnants of TS Cindy brought rain especially over the Youghiogheny and Conemaugh.

OUTLOOK

Rest of Week: Warm & humid weather with thunderstorms, that could bring 1.00-2.00 inches of rain. Pleasant weekend.
Week of July 17: Humidity returns with summertime scattered thunderstorms. Drier week overall with rain around 1.00 inch.
Week of July 24: Warm and humid weather returns with more frequent summertime thunderstorms. Rainfall 1.00-2.00.
Outlook August: About average temperatures. Rainfall above average. Keep watch on the tropics.
Outlook September: Very warm, drier than normal but watch for hurricanes.
Outlook October: Normal to above normal temperatures. Normal rainfall. Watch for late season hurricanes.

HIGH WATER POTENTIAL

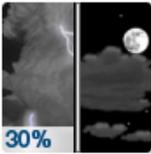
High water potential is about normal. Soils are beginning to dry out. Very lush and actively growing dense Vegetation/foliage quickly absorbs runoff. A minimum of 2.50 inch basin wide rainfall in 6 to 12 hours is needed to bring rivers to bank full. Rainfall through the end of July should average 3.00 to 4.00 inches which is close to normal.

<i>Location</i>	<i>Jun 2017 Precipitation</i>	<i>Departure (Inches)</i>
<i>Pittsburgh</i>	3.78	-0.52

<i>Location</i>	<i>Jun Average Temperature</i>	<i>Departure Degrees</i>	<i>Extreme High</i>	<i>Extreme Low</i>
<i>Pittsburgh</i>	69.7	+1.0	91 Jun 13	49 Jun 9,28

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average monthly precipitation	2.7	2.39	2.95	3.11	3.95	4.3	3.83	3.48	3.11	2.29	3.23	2.85	38.19
Average High Temperature	35.7	39.3	49.2	61.7	70.8	79.1	82.5	81.4	74.3	62.6	51.2	39.4	60.7
Average Low Temperature	21.1	23	30	40.2	49.3	58.4	62.8	61.5	54	42.9	34.7	25.3	42
Average monthly snowfall	11.8	10.3	7.6	1.5	0	0	0	0	0	0.4	2	8.3	41.9

WEATHER FORECAST

Wednesday	Wednesday Night	Thursday	Thursday Night	Friday	Friday Night	Saturday
						
30%		70%	60%	60%	30%	
Chance T-storms	Partly Cloudy	T-storms Likely	T-storms Likely	T-storms Likely	Chance T-storms then Partly Cloudy	Mostly Sunny
High: 88 °F	Low: 72 °F	High: 86 °F	Low: 69 °F	High: 82 °F	Low: 66 °F	High: 83 °F

8-14 Day Outlook... Warm Humid days with thunderstorms, next week trending to a drier week.

30 Day Outlook... Normal to slightly below normal temperatures with above normal rainfall.

Aug-Sep-Oct Outlook... Warmer than normal, with near normal precipitation. Tropical season may become active.

Nov-Dec-Jan Outlook... Colder & wetter/snowier than normal. Early snows possible. More snow than normal..

Feb-Mar-Apr Outlook... Below normal temperatures and much above normal snowfall.

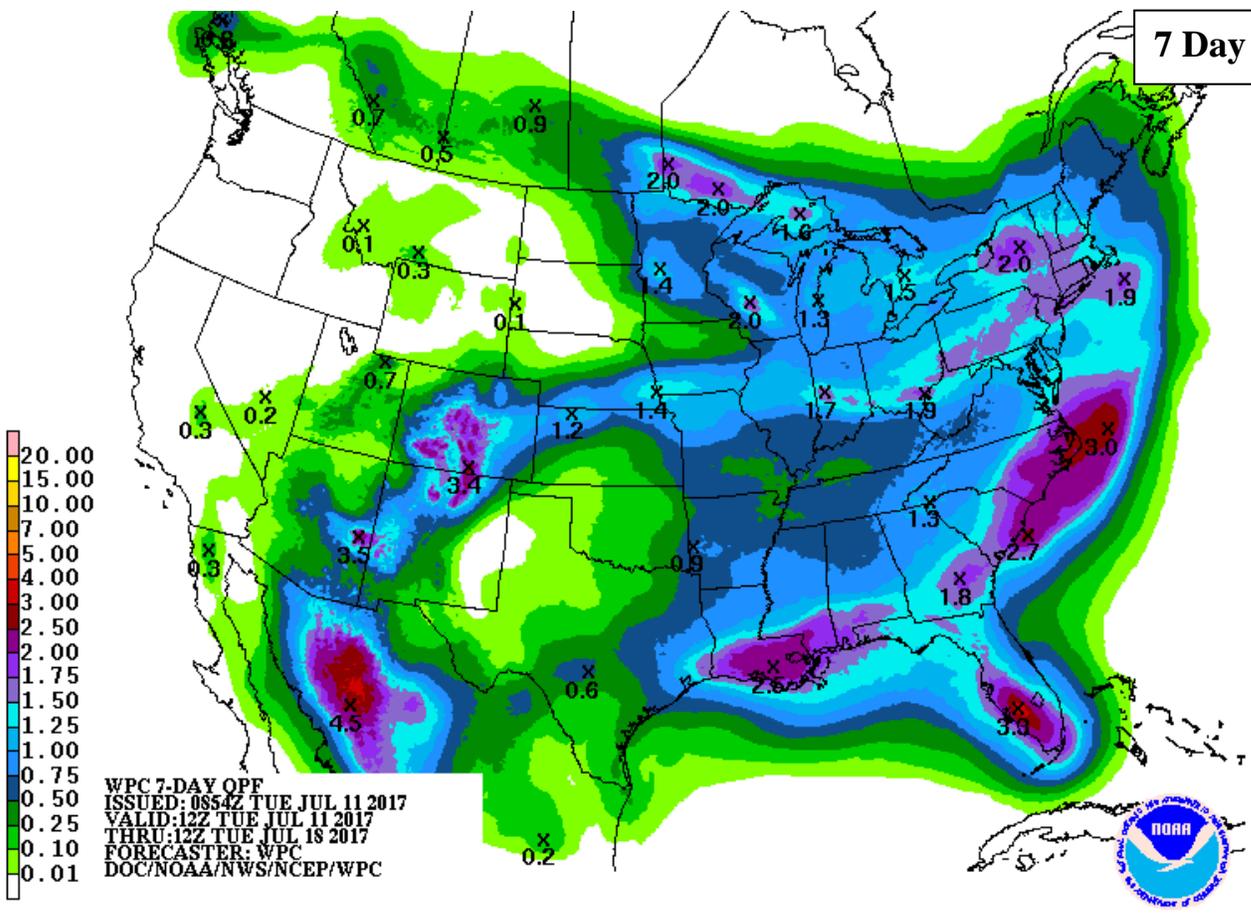
Average Yearly rainfall Pittsburgh: 38.19 inches **So far in 2017:**24.54 (+3.73)

Totals for: 2016:35.01 in 2015:40.56 in 2014:36.84 in 2013: 36.65 in; 2012: 41.74 in; 2011: 44.24 in; 2010: 37.85 in

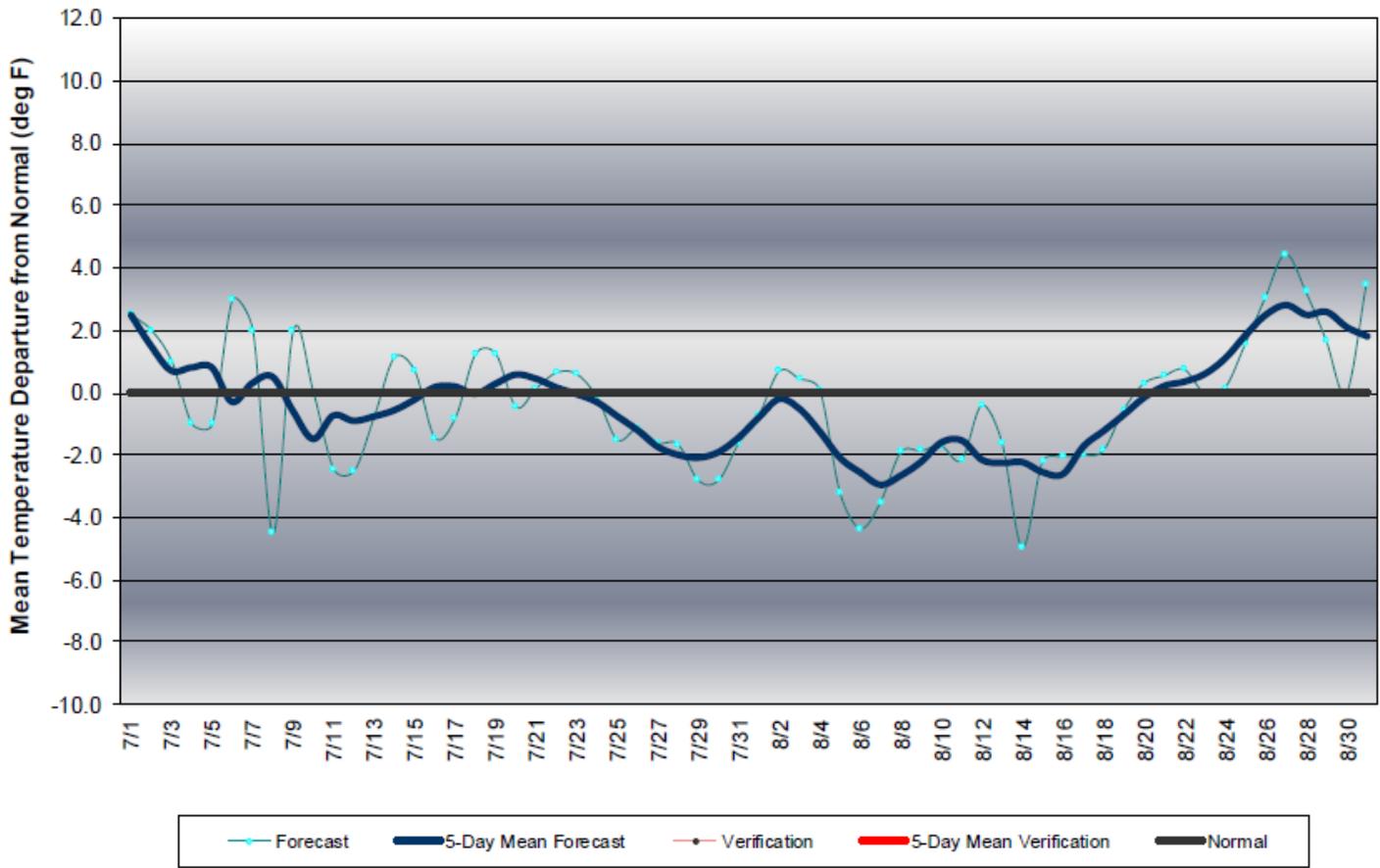
Average Yearly snowfall Pittsburgh: 41.9 inches 2016-17 Season: 32.0(-9.2), 2015-16: 29.6 inches (-12.3)

2014-15: 47.2 in 2013-14: 63.4 in; 2012-13: 57 in; 2011-12: 37 in; 2010-11: 57 in; 2009-10: 77 in

7 Day rain forecast

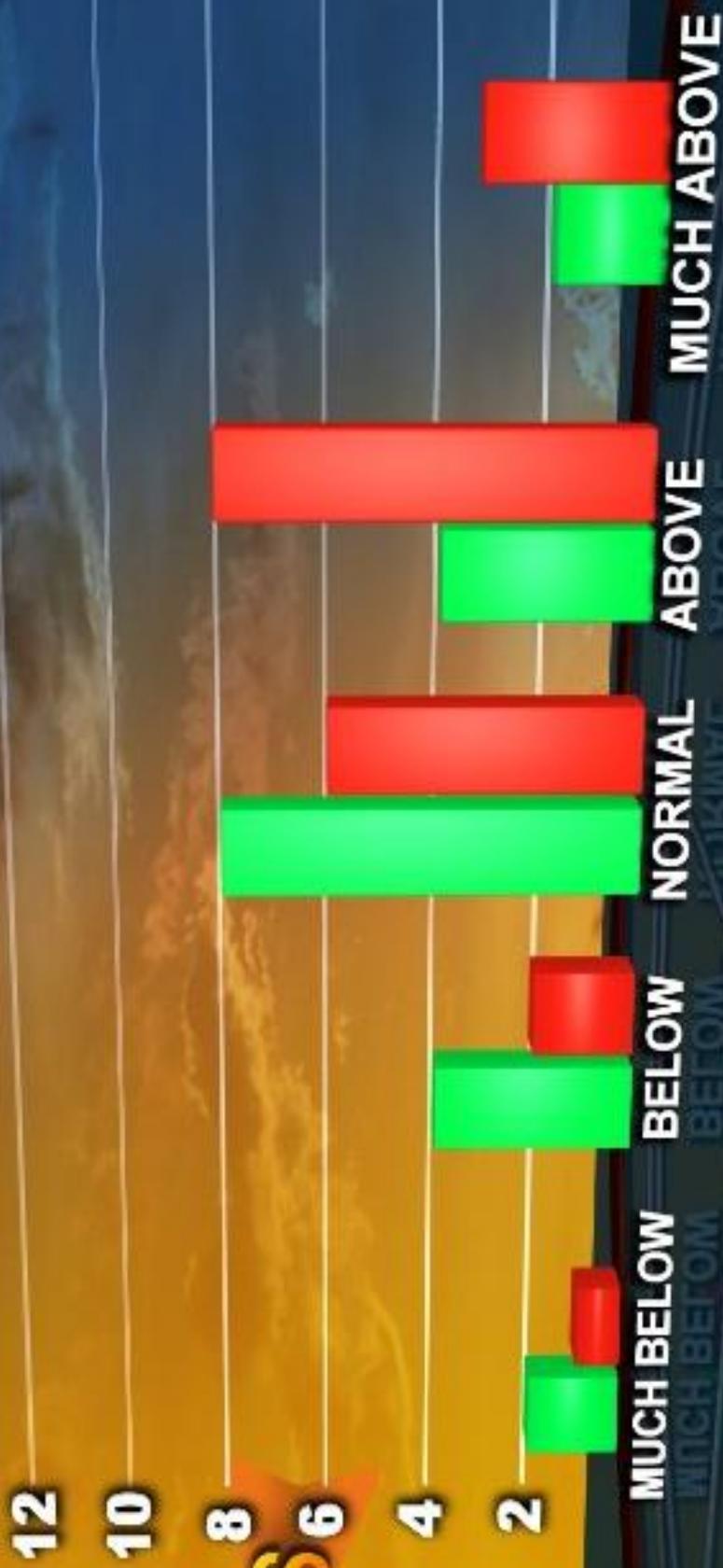


**Western Pennsylvania Temperature Forecast
 July - August 2017**



SEPTEMBER TEMPS IN PENNSYLVANIA

CLIMATOLOGY (GREEN)/AFTER WET OHIO VALLEY SPRING (RED)



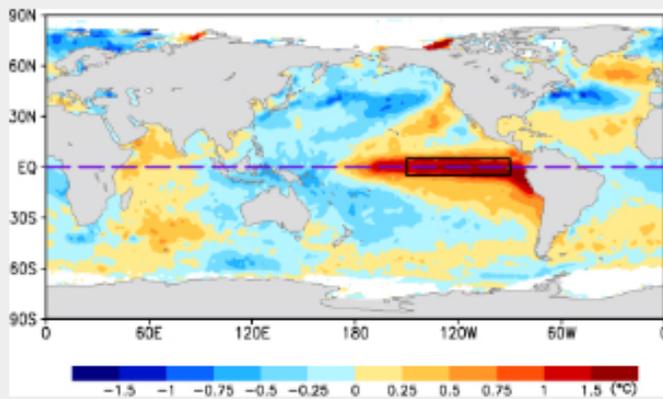
Higher Flash Flood threat this summer. July and August more normal temperatures but surges of warm humid air with cold fronts from time to time. Not as dry as last summer September expected to be very warm and drier than normal.

Hurricane season may be more active than earlier expected but about an average year. We have had a below normal hurricane season from several years.

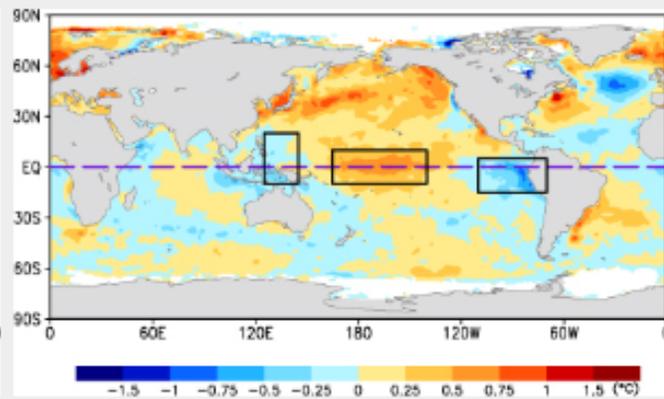
The El Niño Modoki

El Niño Modoki is a coupled ocean-atmosphere phenomenon in the tropical Pacific. It is different from another coupled phenomenon in the tropical Pacific namely, El Niño. Conventional El Niño is characterized by strong anomalous warming in the eastern equatorial Pacific (see figure below). Whereas, El Niño Modoki is associated with strong anomalous warming in the central tropical Pacific and cooling in the eastern and western tropical Pacific (see figure below). Associated with this distinct warming and cooling patterns the teleconnections are very different from teleconnection patterns of the conventional El Niño. Hence, the new phenomenon is of interest to the climate community.

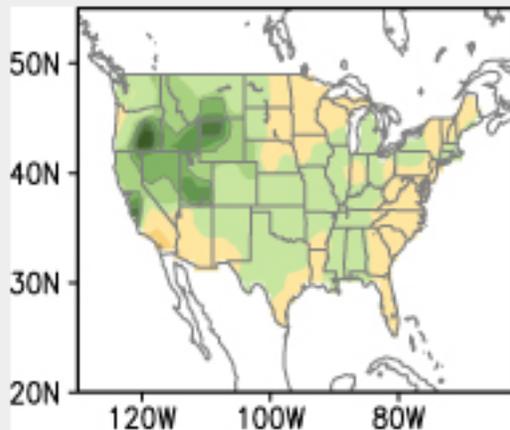
Anomalous SST during El Niño



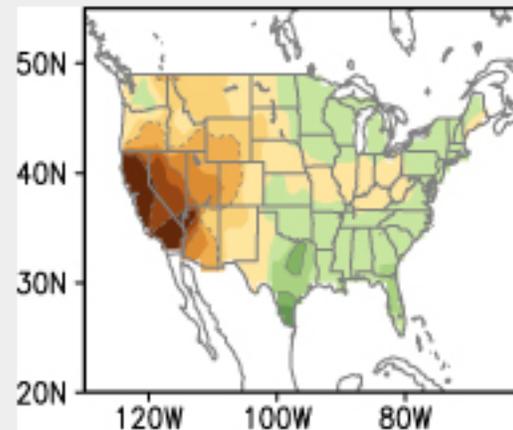
Anomalous SST during El Niño Modoki



USA, rainfall during El Niño



USA, rainfall during El Niño Modoki



Summary

With much of the US and especially the Mississippi Valley wetter than normal, it harder to get very hot temperatures as it takes energy to heat up wet ground. The Southwest which is normally hot this time of year has had very few > 90 degree days. The Northeast and the Upper mid-west has been where the heat has been.

Atlantic Hurricane season expected to be more active than expected earlier and overall a normal season. But we have not seen a normal tropical season in recent years!

If Modoki El Nino forms/remains through the end of the year. Winter 2017-18 may be snowy than normal similar to 2009-2010 with East Coast Storms

Percent of Normal Precipitation (%) 6/10/2017 - 7/9/2017

