

RIVER AND WEATHER CONDITIONS

Prepared for Waterways Association Meeting 1/13/2016
National Weather Service Forecast Office, Pittsburgh PA

For the latest river and weather forecasts--<http://www.weather.gov/pittsburgh>

WEATHER RECAP

Temperatures averaged well above normal, and finished as the 2nd warmest December on record. A total of 0.3 inches of snow fell making it second least snowy starts to a winter on record. The normal amount of snowfall is 8.3 inches.

Record Warmest Decembers...

- 45.6 in 1889
- 44.5 in 2015
- 43.0 in 1923
- 43.0 in 1877

OUTLOOK

Rest of week of Jan 11: Cold with below normal precipitation. Warming up slightly Friday and Saturday.(about .40 inch rain)

Outlook for week of Jan 18: Cold with chance of snow, then a chance of rain/snow by late week. (approx. 0.75 inch liquid)

Outlook for week of Jan 25: Cold with chance of snow (approx. 1.00 inch liquid precipitation)

Outlook February: Cold weather continues, while some brief periods of moderation. Chance for some east coast snow storms.

Winter Outlook: The much predicted weather pattern shift to a colder pattern has finally materialized. This is a very similar pattern to El Nino of 2009-10 & 1963-64 and 1957-58. Each had similar El Niño's

Winter Outlook for Pittsburgh:

- A respite from the colder than normal temperatures into early January, then turning colder.
- Very cold in February with some larger snowstorms
- Continue the cold/snow into March with late spring

Areas to the South of us like Dallas, Atlanta, Knoxville, likely a severe winter very snowy in New Mexico and Southern Colorado. Western Europe expected to be very cold this winter.

River Ice Outlook

River temperatures are above what they have been for the last 2 years. The projected intrusions of Artic Outbreak will be lowering water temperatures. There will be a couple milder days this weekend and again the first week of February. It is very likely that by January 18 we will see the formation of ice on the upper Allegheny about the Navigation lock and dams. We predict that ice may start forming in the lower Allegheny by around January 22. The Monongahela water temperature is 9 degrees above last year at this time and should help avoid a flash freeze on area rivers this year.

HIGH WATER POTENTIAL







High water potential is below normal. A minimum of 1.75 inch basin wide rainfall in 6 to 12 hours is needed to bring rivers to bank full. Total liquid equivalent precipitation through the first week of February should average between 2.00 and 3.00 inches which is about normal.

<i>Location</i>	<i>Dec 2015 Precipitation</i>	<i>Departure (Inches)</i>	<i>Dec Snowfall</i>	<i>Seasonal Snowfall</i>
Pittsburgh	1.55	-0.84	0.3 (-8.0)	1.4(-13.1)

<i>Location</i>	<i>Dec Average Temperature</i>	<i>Departure Degrees</i>	<i>Extreme High</i>	<i>Extreme Low</i>
Pittsburgh	44.5	+12.1	68 Dec 12	19 Dec 20

	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
					
Partly Sunny	Chance Snow Showers	Chance Snow Showers	Mostly Cloudy	Mostly Cloudy then Chance Rain	Chance Rain then Rain/Snow Likely
High: 19 °F	Low: 17 °F	High: 36 °F	Low: 32 °F	High: 44 °F	Low: 34 °F

8-14 Day Outlook... Much below normal temperatures and normal precipitation.

30 Day Outlook... Below normal temperatures and normal precipitation.

Feb-Mar-Apr Outlook... Below normal temperatures and above normal precipitation

Apr-May-Jun Outlook... Below normal temperatures and near normal precipitation

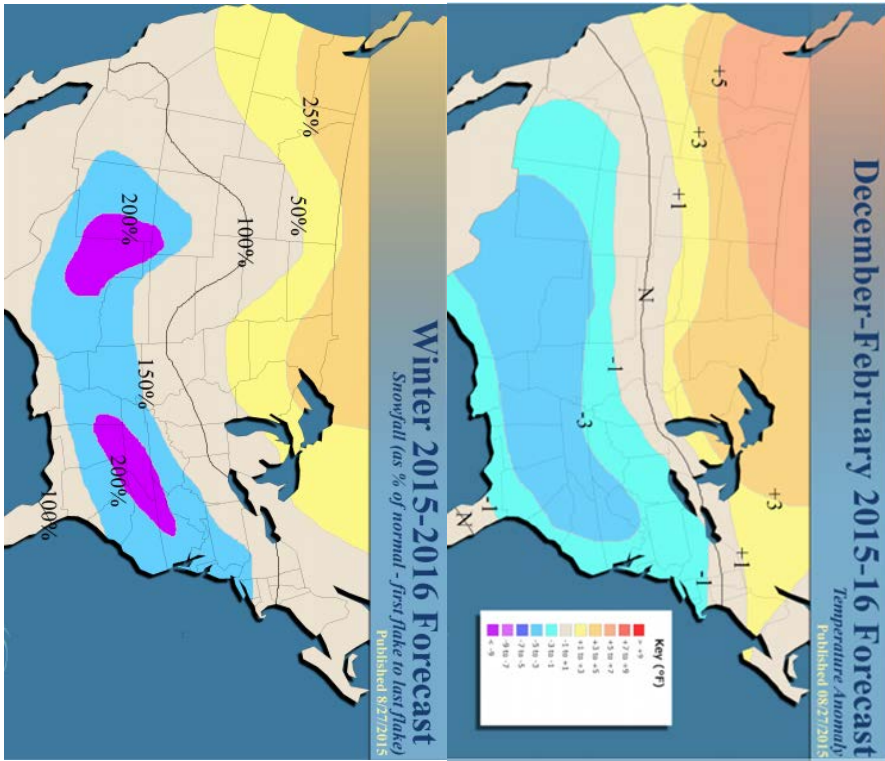
Jun-Jul-Aug Outlook... Normal temperatures and normal precipitation

Average Yearly rainfall Pittsburgh: 38.19 inches **So far in 2016:** 0.86 (-0.11)

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

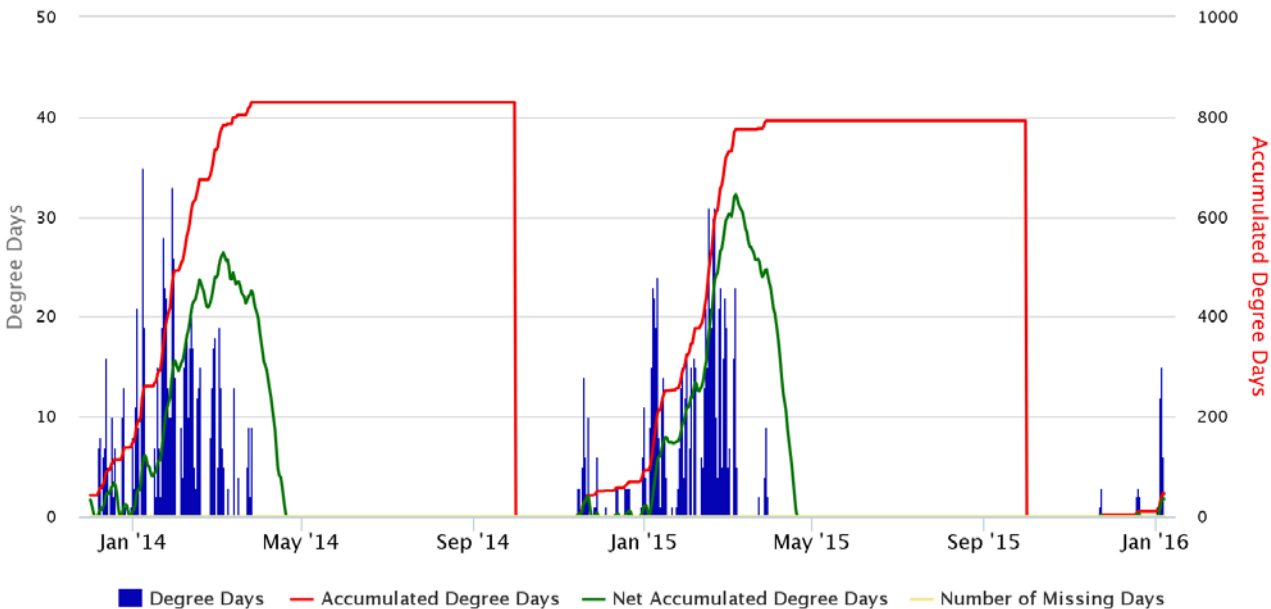
Average Yearly snowfall Pittsburgh: 41.9 inches So far this 2015-16 season: 1.4 inches (+13.1)

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



Freezing Degree Days (Base 32F) for PITTSBURGH INTL AP(PA)

Midwestern Regional Climate Center



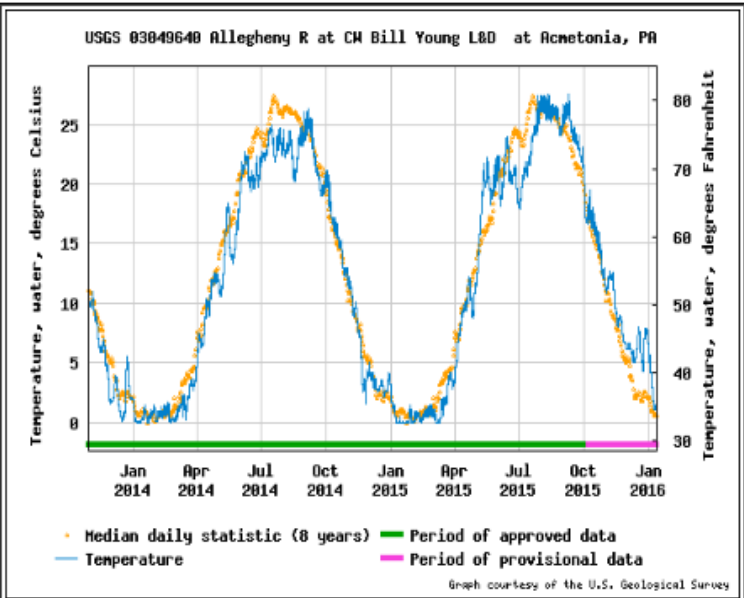
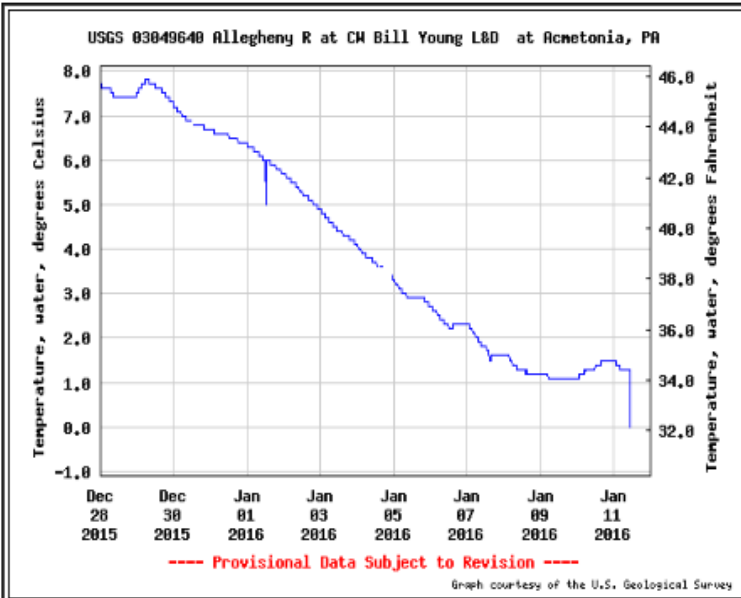
Click and drag to zoom

160 Freezing Degree days seems to be key number for ice to start forming on Pittsburgh Rivers

Dec 30 2013, Jan 8 2015

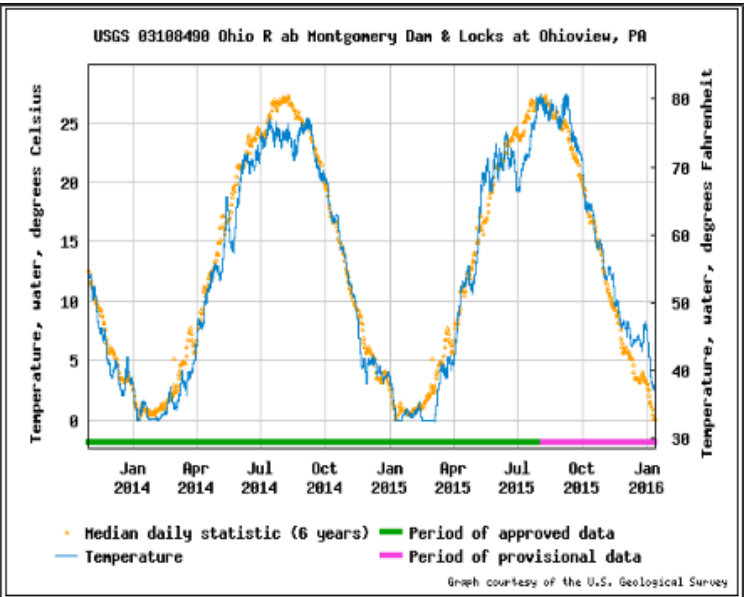
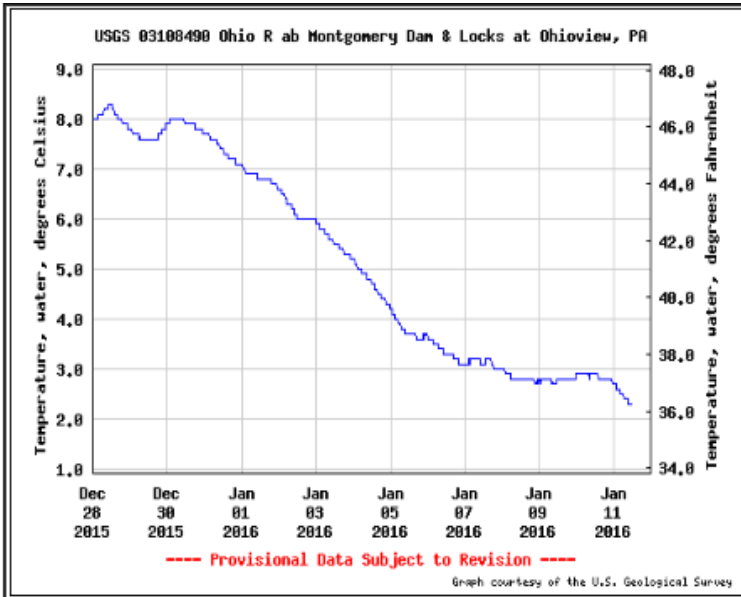
2016 Mean Lake Erie Surface Temp = 38.9 F; 2015 = 34.2 F; 2014 = 32.7 F

River Water Temperatures difference 2016 vs 2015: Allegheny +2F Monongahela +9 Ohio +5



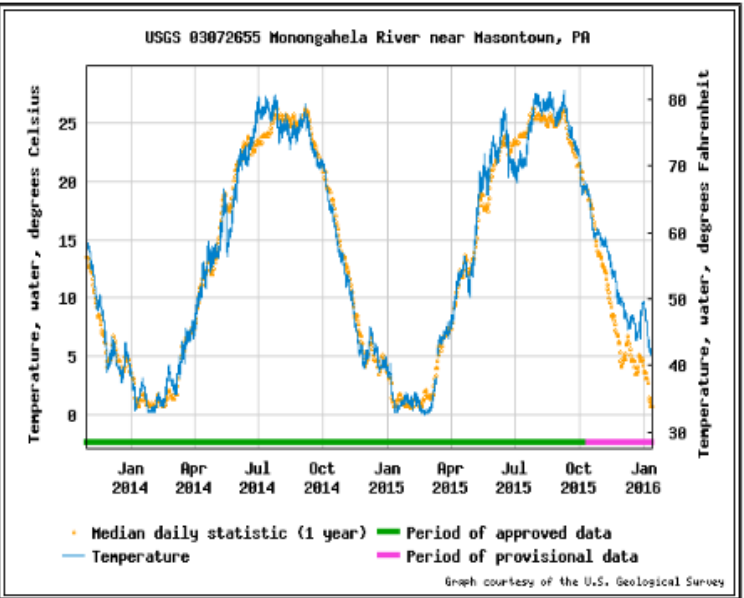
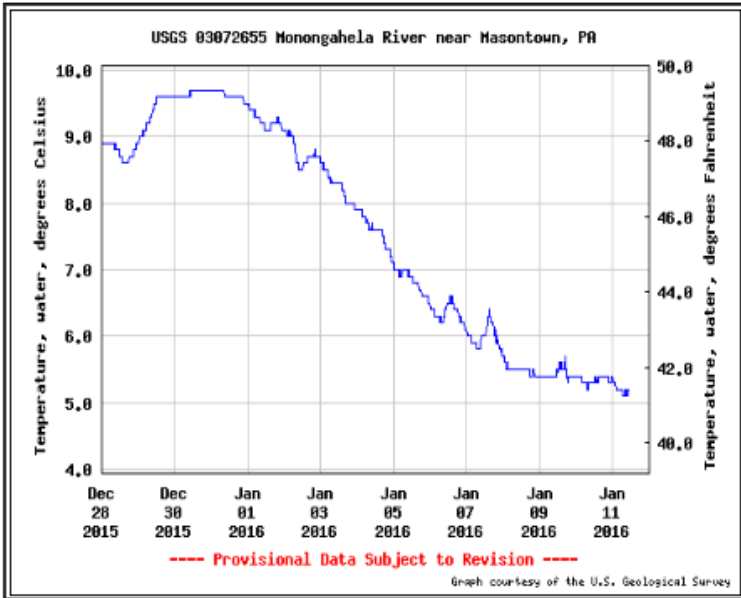
Allegheny River CW Bill Young L&D

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Ohio River Montgomery L&D

Ohio River Montgomery L&D



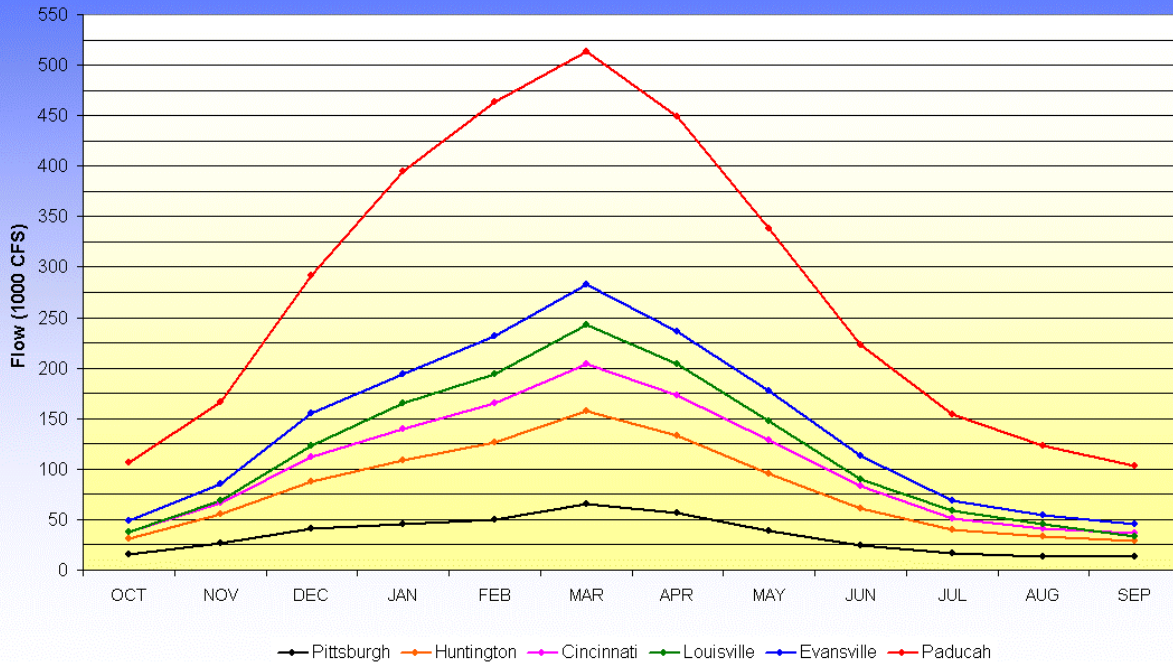
Monongahela River Masontown, PA

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For real time River water temperatures: www.weather.gov/pbz/rivertemps

OHIO RIVER: Mean Monthly Flow Values

77 year average 1928-2004
Mean Monthly Flow Plotted at Mid-Month
Data courtesy US Army Corps of Engineers



Percent of Normal Precipitation (%) 12/12/2015 - 1/10/2016

