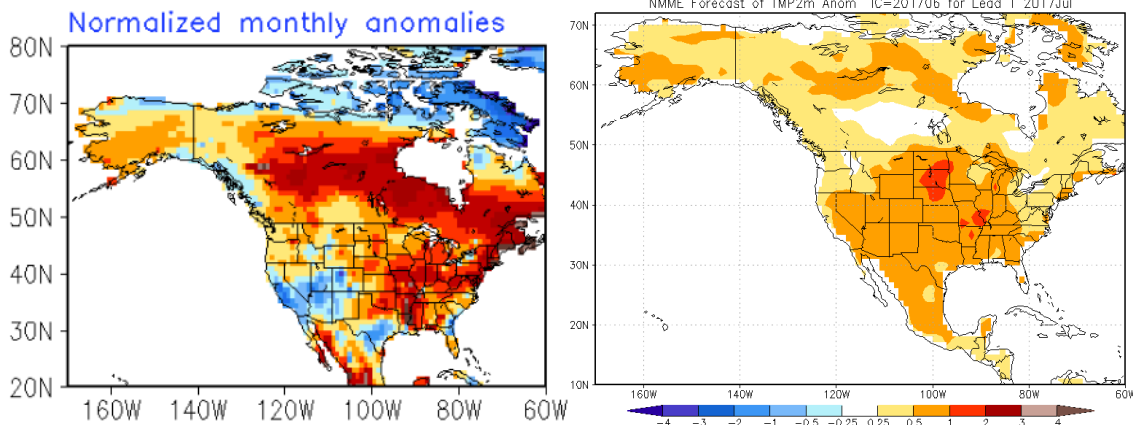# 6-Month Climate Model Forecast Summary for Pennsylvania

July 1, 2017

Climate models continue to improve and may have some skill in forecasting patterns of temperature and precipitation anomalies several months in advance. However, climate modeling is still a very inexact science. Lacking highly precise observations from the earth's environment (air, land and sea) and a full understanding of the scientific processes that affect the motions in the atmosphere, it is impossible to make precise seasonal-scale weather predictions with any accuracy. Please keep this in mind as you review this forecast.

The following forecast is produced based on analysis of monthly forecast products from the Climate Forecast System Version 2 (CFS) and the North American Multi-Model Ensemble (NMME). Links to forecasts are provided at the end of this document.

Discussion:

Generally speaking, one would expect the first month of the six-month forecast to have the clearest signal – that is far from the case in this forecast period. CFS forecasts that were consistently showing warmth during July have swapped back to slightly below normal temperatures. The NMME contradicts this with slightly above normal temperatures (see below). For precipitation, the CFS has had everything from relatively wet to relatively dry and anywhere in between, while the NMME is predicting seasonal precipitation. The remainder of the summer and early Fall are predicted to be near seasonal levels of both temperature and precipitation. Early indications for Fall show a slightly warmer than normal season with uncertainty in precipitation anomalies.

CFS Standardized 2m Temp Anomalies – July 2017   NMME 2m Temp Anomalies – July 2017

Forecast:

Changes highlighted in yellow
Previous forecast in parentheses

Month	Temperature	Precipitation
July	N (N)	N (N)
August	N (N)	N (N)
September	N (N)	N (N)
October	A (A)	**U (N)**
November	N (N)	**A (U)**
December	**A (N)**	U (U)

BB = Much Below Normal
B = Below Normal
N = Near Normal
A = Above Normal
AA = Much Above Normal
U = Uncertain

The next forecast will be issued on July 15, 2017.

References:

CFS forecasts:
http://www.cpc.ncep.noaa.gov/products/CFSv2/CFSv2seasonal.shtml
CFS forecasts:
http://www.cpc.ncep.noaa.gov/products/people/mchen/CFSv2FCST/monthly/
NMME forecasts: http://www.cpc.ncep.noaa.gov/products/NMME/monanom.shtml
NMME forecasts:
http://www.cpc.ncep.noaa.gov/products/NMME/verif/monindex.html