ILLINOIS STATE WATER SURVEY
PRAIRIE RESEARCH INSTITUTE

DROUGHT UPDATE

www.isws.illinois.edu/hilites/drought

April 10, 2012

Illinois is dry, but not yet in drought

Drought is usually characterized by marked deficits in precipitation and its related impacts to agriculture, water supply, and other water uses. The current dry conditions in Illinois are unusual in that they appear to be caused to a greater extent by seasonally-abnormal warm temperatures, and not (in most locations) by significant departures in precipitation amount. Also, as yet there are no current detrimental impacts related to the dry condition. However, this could change if dry conditions continue and we get further into the growing season.

Unusually warm and moderately dry weather conditions over the past few months have caused soil moisture, streamflow, and shallow groundwater levels to be below what we would typically expect for this time of year, particularly for a wide swath across Illinois from the west-central to east-central portions of the State. Within this region, total streamflow amounts for March were much below normal (lowest 10^{th} percent) when compared to seasonal expectations. On the other hand, stream levels are not particularly low when viewed in the context of the entire year. Of the major rivers, only the Sangamon River is the close to flow levels that would be experienced in a typical late summer or fall. Thus, most rivers and streams are not currently experiencing a "low flow" condition, and there currently are not any identified impacts related to these seasonally- abnormal flows.

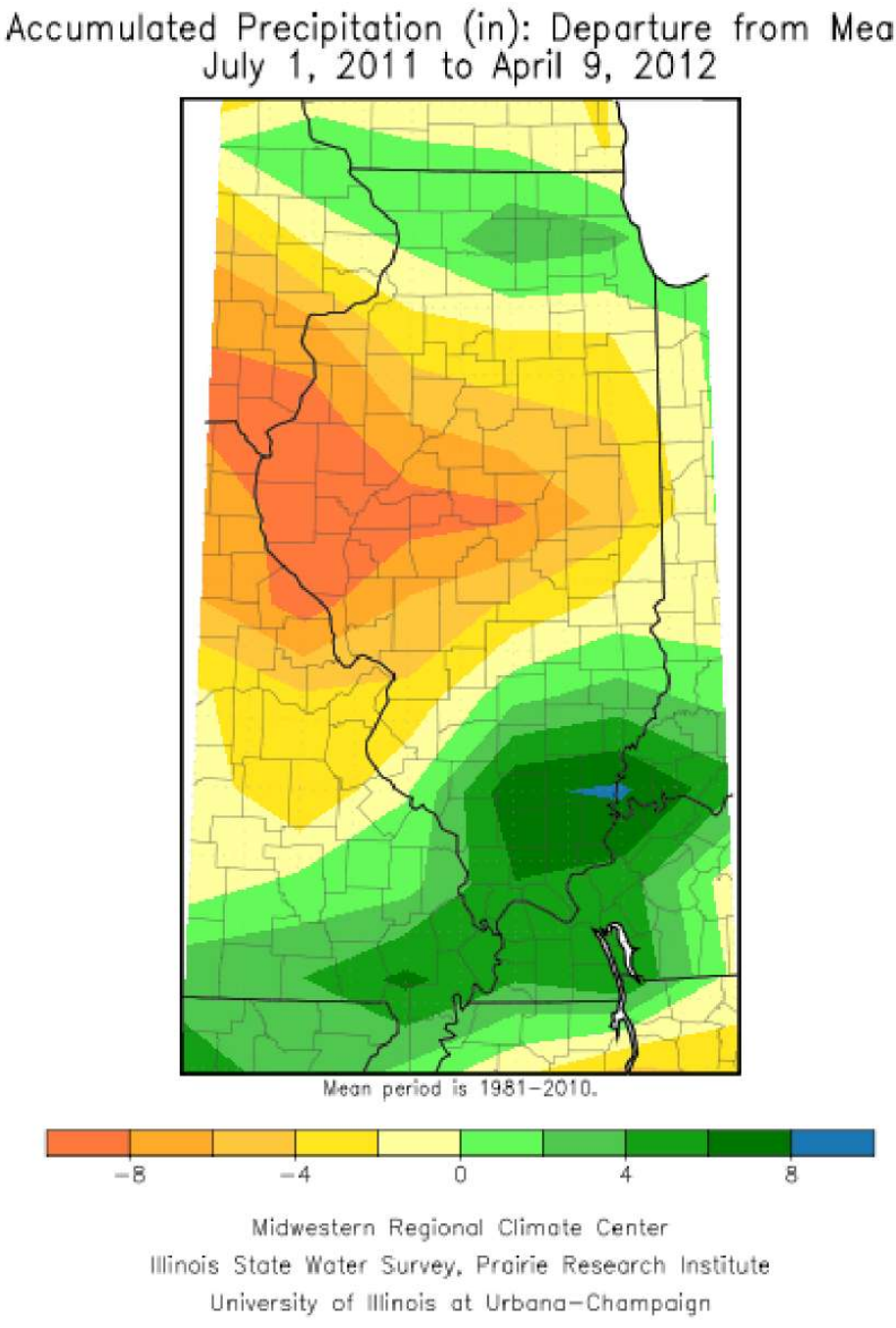
Groundwater levels declined in March, which is unusual because recharge normally occurs in March. Shallow well readings from west-central (Pike and Green counties) and central Illinois (Champaign County) are particularly low, with the Champaign County site experiencing its lowest March reading during its period of record (since 1982).

Water levels for most community water supply lakes are full; however, there are isolated instances where water levels have not fully recovered from the dry fall and winter seasons. Canton Lake (Fulton County), in particular, is nearly 5 feet below full pool.

In western Illinois, precipitation has been below normal for much of the past 9 months and has accumulated roughly an 8-inch deficit since July 1, 2011 (see attached figure). In many other locations, such as East-Central Illinois, precipitation over the last 9 months is only 4 inches or less below normal; however, the warm temperatures have caused greater soil evaporation, thus resulting in drier than normal soil conditions. In contrast, precipitation and streamflow conditions for the northern quarter and southernmost parts of Illinois are above normal since last July and near-normal for the past 2-3 months.

The months of March, April and May typically produce the greatest surplus of moisture within the year and, in most years during this time, soils are typically at or near their moisture-bearing capacity. Most of the current dryness in the soils is occurring within the top 4 inches, and moisture is adequate and close to seasonal averages at lower levels. Consequently, normal to above-normal rainfall in the upcoming months could rapidly transform the current dry conditions. On the other hand, if precipitation amounts continue to stay on the low side through April and May, the potential exist for the current situation to develop into a drought condition, impacting not only agriculture, but also water supplies that depend on both streamflows and shallow groundwater.

Given current conditions, the probability of a drought occurring this year is clearly higher than normal, but still well below 50%. The National Weather Service's 14-day forecast predicts precipitation amounts and temperatures that are near their long-term average.



Precipitation departures from average in inches for July 1, 2011, to April 9, 2012).