# MONTHLY WATER INVENTORY REPORT FOR OHIO

June 2012

http://www.ohiodnr.gov/tabid/4191/Default.aspx
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**PRECIPITATION** during June was below normal throughout Ohio with only a few scattered locations having above normal precipitation. The average for the state was 2.32 inches, 1.59 inches below normal. Regional averages ranged from 2.81 inches, 1.21 inches below normal, for the Central Region to 1.71 inches, 1.96 inches below normal, for the Northwest Region. Springfield Waste Water Treatment Plant (Clark County) reported the greatest amount of June precipitation, 5.16 inches. Wauseon (Fulton County) reported the least amount, 0.45 inch.

Much of June was dry with temperatures averaging considerably above normal across Ohio. Precipitation for the month came in the form of widely scattered showers and thunderstorms. Showers and thunderstorms crossed the state on June 1 with generally less than 0.50 inch of rain falling across much of the state. However, the rain was heavier and more widespread in an area from southwestern to north-central Ohio and in eastern areas of the state where 1.0-1.5 inches were reported. Most of the state was rather dry during the next two weeks, but scattered showers fell across some areas in western and southern Ohio on June 11. Showers and thunderstorms during June 17-18 brought some much-needed rain to parts of Ohio. The rain on June 17 was heaviest in southern Ohio and the rain on June 18 was heaviest across northern Ohio. Some areas received more than 2 inches of rain from this storm, but areas in western Ohio received less than 0.25 inch. Fast-moving severe storms impacted much of the state on June 29. The heaviest rains from this storm fell from west-central to southeastern Ohio, where more than 1 inch was reported at many locations. Much of northeastern Ohio received little or no rain from these storms. This storm will long be remembered for the high winds that caused extensive damage across much of the state and power outages to an estimated 1 million Ohioans.

Precipitation for the 2012 water year is above normal throughout most of the state, but below normal in the Northeast Hills Region. The state average is 30.26 inches, 2.10 inches above normal. Regional averages range from 34.46 inches, 3.37 inches above normal, for the Southwest Region to 26.80 inches, 1.75 inches above normal, for the Northwest Region.

Precipitation for the first half of the 2012 calendar year is below normal statewide. The state average is 15.99 inches, 3.54 inches below normal. Regional averages range from 18.24 inches, 3.62 inches below normal, for the Southwest Region to 12.68 inches, 4.52 inches below normal, for the Northwest Region (see Precipitation table, departure from normal, past 6 months column). Precipitation has been noticeably below normal

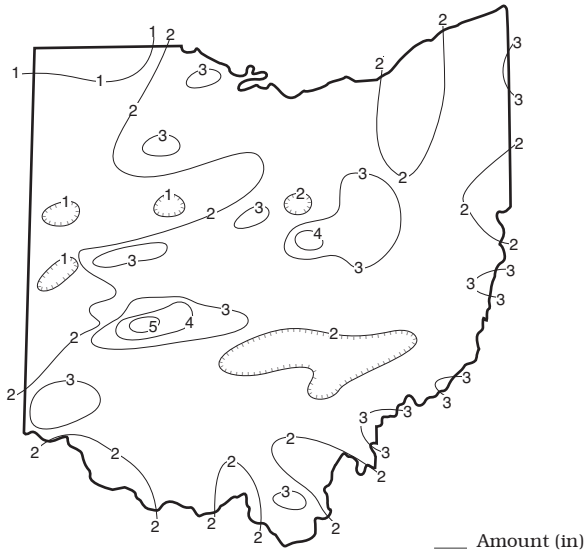
(Continued on back)

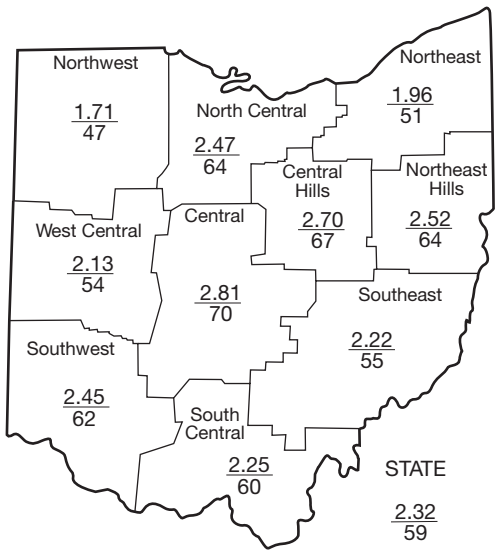
## PRECIPITATION

| Region | DEPARTURE FROM NORMAL (IN.) Base period 1961-2010 | | | | | Palmer Drought Severity Index* |
|---|---|---|---|---|---|---|
| | This Month | Past | | | | |
| | | 3 Mos. | 6 Mos. | 12 Mos. | 24 Mos. | |
| Northwest | -1.96 | -5.32 | -4.52 | +5.53 | +7.64 | -4.2 |
| North Central | -1.37 | -3.64 | -1.70 | +9.60 | +16.51 | -2.7 |
| Northeast | -1.87 | -5.02 | -3.59 | +6.67 | +17.11 | -4.1 |
| West Central | -1.83 | -4.65 | -5.62 | +3.20 | +8.86 | -3.8 |
| Central | -1.21 | -3.08 | -2.03 | +6.65 | +12.01 | -3.0 |
| Central Hills | -1.34 | -3.52 | -2.85 | +5.57 | +9.38 | -3.4 |
| Northeast Hills | -1.44 | -4.68 | -5.01 | +2.22 | +7.57 | -4.3 |
| Southwest | -1.53 | -3.13 | -3.62 | +4.80 | +10.18 | -2.4 |
| South Central | -1.48 | -1.68 | -3.18 | +3.12 | +13.19 | -2.6 |
| Southeast | -1.83 | -3.61 | -3.12 | +3.80 | +10.12 | -2.7 |
| State | -1.59 | -3.85 | -3.54 | +5.09 | +11.24 | |

*Above +4 = Extreme Moist Spell
3.0 To 3.9 = Very Moist Spell
2.0 To 2.9 = Unusual Moist Spell
1.0 To 1.9 = Moist Spell
0.5 To 0.9 = Incipient Moist Spell
0.4 To-0.4 = Near Normal
-0.5 To -0.9 = Incipient Drought
-1.0 To -1.9 = Mild Drought
-2.0 To -2.9 = Moderate Drought
-3.0 To -3.9 = Severe Drought
Below -4.0 = Extreme Drought

## PRECIPITATION JUNE



## MEAN STREAM DISCHARGE

This Month

| River and Location | Drainage Area (Sq. Mi.) | Mean Discharge (CFS) | % of Normal | % of Normal Past | | |
|---|---|---|---|---|---|---|
| | | | | 3 Mos. | 6 Mos. | 12 Mos. |
| Grand River near Painesville | 685 | 62 | 21 | 22 | 70 | 115 |
| Great Miami River at Hamilton | 3,630 | 1,289 | 37 | 49 | 83 | 136 |
| Huron River at Milan | 371 | 85 | 28 | 20 | 75 | 140 |
| Killbuck Creek at Killbuck | 464 | 142 | 42 | 41 | 81 | 114 |
| Little Beaver Creek near East Liverpool | 496 | 101 | 23 | 28 | 74 | 82 |
| Maumee River at Waterville | 6,330 | 477 | 10 | 18 | 63 | 123 |
| Muskingum River at McConnelsville | 7,422 | 1,987 | 33 | 41 | 78 | 99 |
| Scioto River near Prospect | 567 | 59 | 15 | 58 | 85 | 183 |
| Scioto River at Higby | 5,131 | 1,286 | 28 | 50 | 81 | 130 |
| Stillwater River at Pleasant Hill | 503 | 53 | 13 | 28 | 57 | 96 |

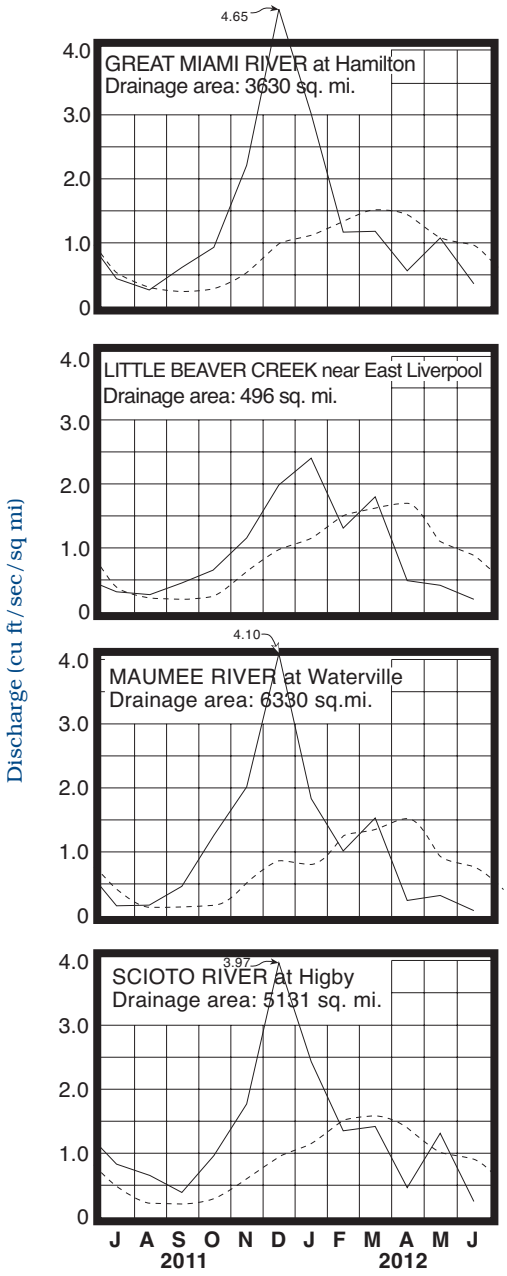
**STREAMFLOW** during June was noticeably below normal statewide. Flows were low enough to be considered deficient throughout the state. June flows were less than the May flows in most basins. Preliminary data indicates the mean monthly flows in the Grand River near Painesville and Maumee River at Waterville were the third lowest ever recorded for June, and the fourth lowest in the Stillwater River at Pleasant Hill.

Flows were below normal across most of the state at the beginning of June. Flows generally decreased throughout most of the month with temporary increases observed following local precipitation. Greatest flows for the month occurred at the beginning of June across most of the state. Flows increased across much of the state just after mid-month as a result of the June 17-18 precipitation. Greatest flows for the month were noted following this precipitation in some basins in north-central and northeastern Ohio. Flows decreased during the next two weeks and were at their lowest for the month at or near the end of June throughout the state. Some flows increased slightly at the end of the month in response to the June 29 precipitation. However, flows at the end of June were below normal statewide.

**RESERVOIR STORAGE** for water supply during June declined in both the Mahoning and Scioto river basins. Storage is below normal in both basins.

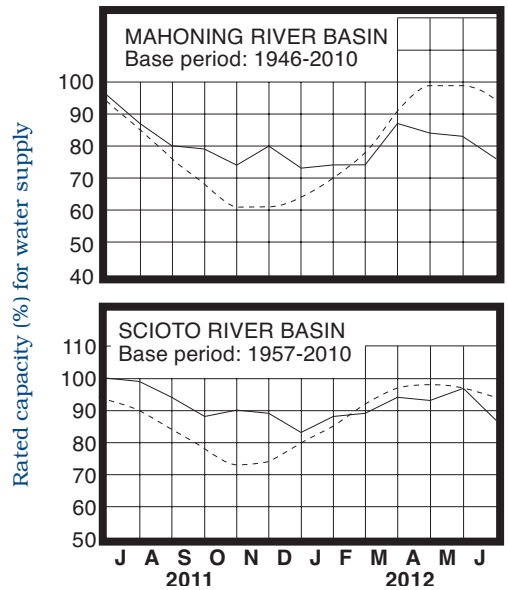
Reservoir storage at the end of June in the Mahoning basin index reservoirs was 76 percent of rated capacity for water supply compared with 83 percent for last month and 96 percent for June 2011. Month-end storage in the Scioto basin index reservoirs was 87 percent of rated capacity for water supply compared with 97 percent for last month and 100 percent for June 2011.

## MEAN STREAM DISCHARGE




Base period for all streams: 1981-2010

## RESERVOIR STORAGE FOR WATER SUPPLY




Normal – – – – Current ———

## GROUND-WATER LEVELS

Based on daily lowest level in feet below land-surface datum

| Index Well | Location | Aquifer | Mean This Month | Departure From Normal | Change in feet from: | |
|---|---|---|---|---|---|---|
| | | | | | Last Month | Year Ago |
| F-1 | W. Rushville, Fairfield Co. | Sandstone | 13.86 | +0.14 | -0.78 | -2.69 |
| Fa-1 | Jasper Mill, Fayette Co. | Limestone | 8.96 | -1.39 | -0.53 | -0.73 |
| Fr-10 | Columbus, Franklin Co. | Gravel | 43.02 | -0.04 | -1.08 | -0.52 |
| H-1 | Harrison, Hamilton Co. | Gravel | 22.99 | -1.55 | -1.06 | -1.82 |
| Hn-2a | Dola, Hardin Co. | Dolomite | 7.09 | -0.52 | -0.37 | -0.81 |
| Po-124 | Freedom, Portage Co. | Sandstone | 75.53 | +0.70 | -0.41 | +0.49 |
| Tu-1 | Strasburg, Tuscarawas Co. | Gravel | 14.44 | -2.10 | -0.86 | -2.43 |

**GROUND WATER** levels during June declined statewide. Water levels in most aquifers steadily declined throughout the month. A few exceptions were noted just after mid-month in some shallow, unconsolidated aquifers where levels temporarily rose in response to local precipitation. Net declines in water levels were greater than usually expected for June across most of the state.

Following the below normal precipitation and above normal temperatures during June, ground water levels remain below normal across most of the state. Only a few consolidated aquifers in eastern Ohio remained above normal at the end of June. June's levels range from 0.70 foot above normal to 2 feet below normal. Current levels are lower than the June 2011 levels across nearly the entire state. Although storage remains adequate across most of the state, the dry conditions have had an unfavorable impact on Ohio's ground water supplies. Ground water levels can be expected to further decline seasonally through late autumn. According to the Palmer Drought Severity Index, much of northern Ohio was experiencing severe drought conditions near the end of June.

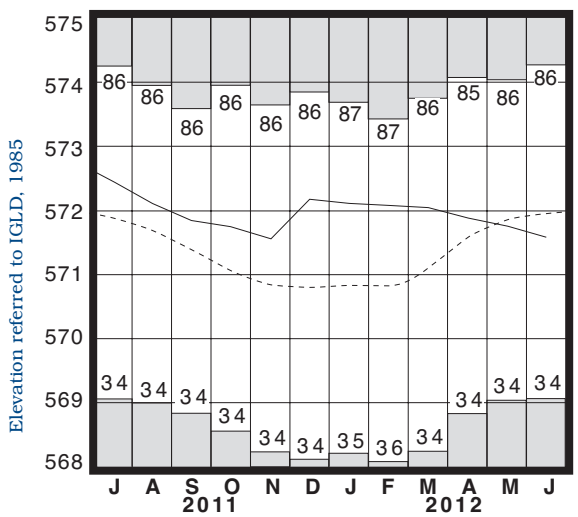
Agriculture continues to be adversely impacted by the weather. The hot and dry conditions the state has been experiencing has a negative impact on crop development. The Ohio Agricultural Statistics Service reports that near the end of June, soil moisture was rated as being short or very short in 89 percent of the state, adequate in 10 percent of the state, and surplus in 1 percent of the state.

**LAKE ERIE** level declined during June. The mean level was 571.59 feet (IGLD-1985), 0.16 foot lower than last month's mean level and 0.36 foot below normal. This month's mean level is 1.18 feet lower than the June 2011 level and 2.39 feet above Low Water Datum.

The U.S. Army Corps of Engineers (USACE) reports that precipitation in the Lake Erie basin during June averaged 2.32 inches, 1.13 inches below normal. For the entire Great Lakes basin, June precipitation averaged 3.31 inches, 0.10 inch above normal. For calendar year 2012 through June, the Lake Erie basin has averaged 13.55 inches, 3.75 inches below normal, while the entire Great Lakes basin has averaged 14.14 inches, 0.78 inch below normal.

In addition, the USACE reports that based on the current condition of the Great Lakes basin and anticipated weather conditions, the level of Lake Erie should remain below normal for the foreseeable future. Deviations from the anticipated weather patterns could result in the level of Lake Erie ranging from about 2 inches above normal to as much as 17 inches below the normal seasonal average.

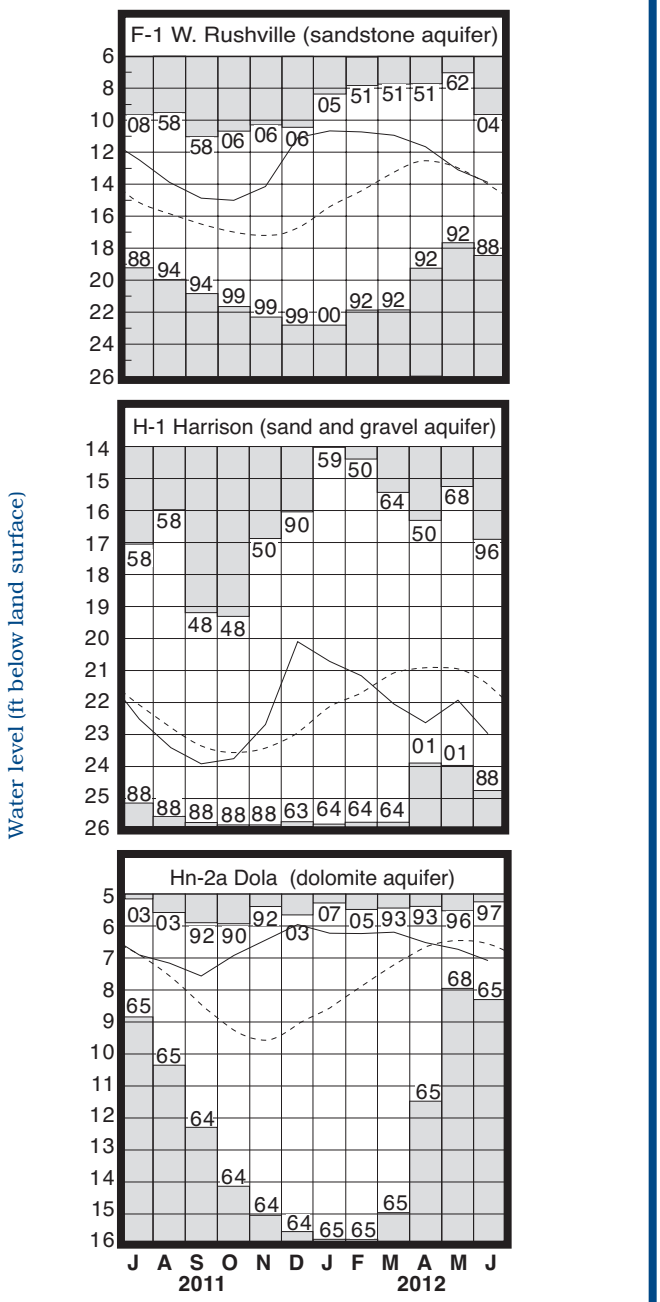
## LAKE ERIE LEVELS




Base period: 1918-2010

Record high and low, year of occurrence

## GROUND-WATER LEVELS




Base periods: F-1, 1947-2010; H-1 1951-2010.

Hn-2a, 1955-2010 Record high and low, year of occurrence

Normal – – – – Current ———

(Precipitation continued from front)

during the past three months. Preliminary data indicates that the 2012 April-June period has been the second driest during the past 118 years in the Northwest Region (5.40 inches) and the third driest in the Northeast Region (5.91 inches).

**SUMMARY**

Precipitation during June was below normal throughout most of the state. Streamflow was below normal and low enough to be considered deficient statewide. Reservoir storage decreased and was below normal in both the Mahoning and Scioto river basins. Ground water levels declined throughout the state and were below normal throughout most of Ohio. Lake Erie level declined 0.16 foot and was 0.36 foot below the long-term June average.

**NOTES AND COMMENTS**

**Editorial**

The purpose of this report is to disseminate current hydrologic data in a timely and brief format. Observation points have been selected which are considered to be sufficiently representative of hydrologic conditions in the state to permit an evaluation of the current water-supply situation. These key observation stations offer the best available data on the basis of accuracy and length of record, minimal artificial effects on data, and availability of records. Data from these stations are collected by various agencies at the end of each month and processed immediately. Because of the time limitations involved, all data presented in this report must be considered preliminary and may be subject to revision before publication in regular form by the agencies involved. The remarks in this report include the writer's opinion of the cause and significance of the phenomena reported. The author is indebted to the various agencies and individuals who make this data available.

More complete and detailed information regarding water resources can be obtained by contacting the Division of Soil and Water Resources or visiting our website at: http://www.dnr.state.oh.us/tabid/21817/Default.aspx. Comments and suggestions regarding this report are always welcome.

## ACKNOWLEDGMENTS

This report has been compiled from Division data and from information supplied by the following:

Precipitation data:

*U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Weather Service: The Miami Conservancy District: U.S. Army Corps of Engineers, Muskingum Area.*

Streamflow and reservoir storage data:

*U.S. Geological Survey, Water Resources Division.*

Lake Erie level data:

*U.S. Army Corps of Engineers, Detroit District.*

Palmer Drought Severity Index:

*U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Weather Service.*



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