



# MONTHLY WATER INVENTORY REPORT FOR OHIO

July 2012

<http://www.ohiodnr.gov/tabid/4191/Default.aspx>

Compiled By Scott C. Kirk

Hydrologist  
Water Inventory Unit

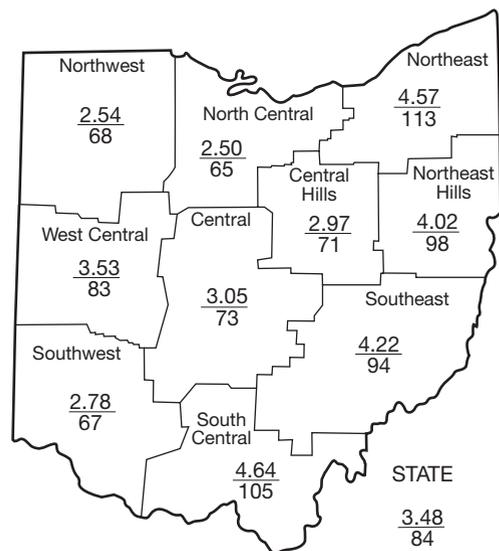
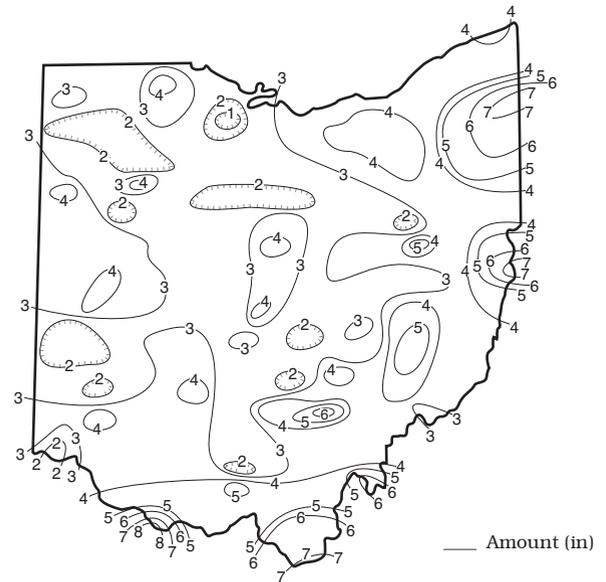
**PRECIPITATION** during July was below normal across much of the state, but was above normal in the Northeast and South Central regions. The average for the state was 3.48 inches, 0.65 inch below normal. Regional averages ranged from 4.64 inches, 0.23 inch above normal, for the South Central Region to 2.50 inches, 1.32 inches below normal, for the North Central Region. Maysville Lock and Dam (Brown County) reported the greatest amount of July precipitation, 8.08 inches. Fremont (Sandusky County) reported the least amount, 0.85 inch.

Precipitation during July fell in a typical summer pattern of scattered showers and thunderstorms, with some of these storms accompanied by locally heavy downpours. Temperatures averaged substantially above normal statewide during July. Precipitation during the first week of the month averaged about 0.50 inch in most areas of the state, but amounts of more than 2 inches fell in north-central and northeastern Ohio. However, some areas in western Ohio received only light amounts during this period. Most areas of the state were rather dry during the second week of the month. Scattered storms moved across that state during July 14-15, but were most numerous in southern Ohio. Storms were again scattered during July 18-20 and brought about 0.50 inch to most of the state, but areas in western and southeastern Ohio received more than 1 inch. Storms during July 23-28 brought another 1-2 inches of rain across much of the state, but less than 0.50 inch in areas of northwestern Ohio.

Precipitation during the 2012 water year is above normal throughout most of the state, but slightly below normal in the West Central and Northeast Hills regions. The state average is 33.75 inches, 1.46 inches above normal. Regional averages range from 37.24 inches, 2.00 inches above normal, for the Southwest Region to 29.34 inches, 0.56 inch above normal, for the Northwest Region.

Precipitation during the 2012 calendar year is below normal statewide. The state average is 19.47 inches, 4.19 inches below normal. Regional averages range from 22.76 inches, 2.95 inches below normal, for the South Central Region to 15.22 inches, 5.71 inches below normal, for the Northwest Region. Precipitation has been noticeably below normal during the past four months across most of the state. Preliminary data indicates that the 2012 April-July period has been the third driest during the past 118 years in the Northwest Region.

## PRECIPITATION JULY



## 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	-1.19	-4.67	-6.33	+5.41	+7.53	-4.8
North Central	-1.32	-3.19	-3.77	+6.88	+15.48	-4.0
Northeast	+0.54	-2.22	-4.44	+7.23	+17.46	-4.2
West Central	-0.71	-3.20	-7.11	+4.00	+9.84	-3.7
Central	-1.12	-3.08	-4.38	+4.87	+11.32	-3.6
Central Hills	-1.23	-2.72	-4.93	+4.50	+8.77	-4.0
Northeast Hills	-0.08	-2.95	-5.71	+2.38	+8.49	-4.7
Southwest	-1.37	-3.16	-6.75	+4.92	+9.77	-2.9
South Central	+0.23	-0.37	-3.08	+3.69	+13.60	-2.7
Southeast	-0.25	-2.06	-4.33	+4.04	+10.78	-2.9
State	-0.65	-2.77	-5.10	+4.76	+11.28	

\*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

Average (in)  
Percent of normal

## 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	41	19	27	49	114
Great Miami River at Hamilton	3,630	778	37	50	56	134
Huron River at Milan	371	16	17	24	53	137
Killbuck Creek at Killbuck	464	68	35	43	59	111
Little Beaver Creek near East Liverpool	496	78	42	27	53	81
Maumee River at Waterville	6,330	288	11	17	44	122
Muskingum River at McConnelsville	7,422	1,329	29	40	61	96
Scioto River near Prospect	567	33	20	67	59	178
Scioto River at Higby	5,131	895	36	53	61	125
Stillwater River at Pleasant Hill	503	33	16	27	35	95

**STREAMFLOW** during July was unusually below normal statewide. Flows were low enough to be considered deficient throughout the state. July flows were seasonally less than the flows recorded during June. Preliminary data indicates the mean monthly flow in Killbuck Creek at Killbuck and Maumee River at Waterville was the fourth lowest ever recorded for July and the fifth lowest for Huron River at Milan and Stillwater River at Pleasant Hill.

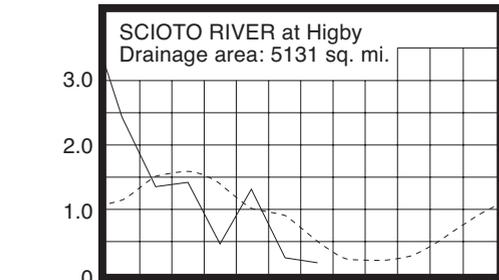
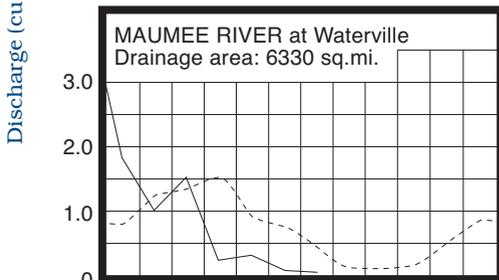
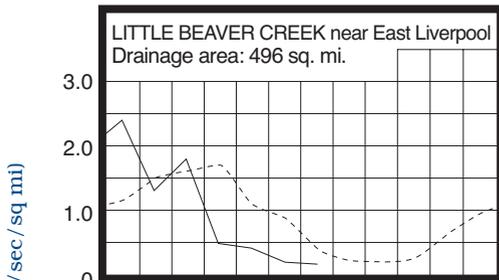
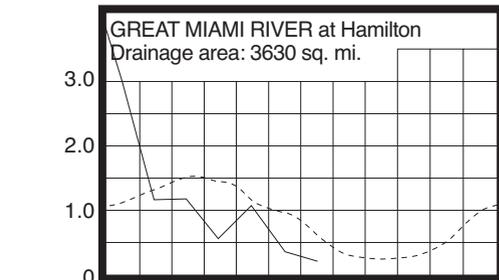
Flows were below normal across the state at the beginning of July. Flows during the month varied greatly depending on local precipitation. Generally, greatest flows for the month occurred during the first week in central and north-central Ohio, and during the last week of July throughout most of the remainder of the state. Lowest flows occurred near the middle

of the month in most basins in Ohio, but some basins in central Ohio had their lowest flows near the end of July. Streamflow was noticeably below normal at the end of the month.

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

Reservoir storage at the end of July in the Mahoning basin index reservoirs was 68 percent of rated capacity for water supply compared with 76 percent for last month and 87 percent for July 2011. Month-end storage in the Scioto basin index reservoirs was 84 percent of rated capacity for water supply compared with 87 percent for last month and 99 percent for July 2011.

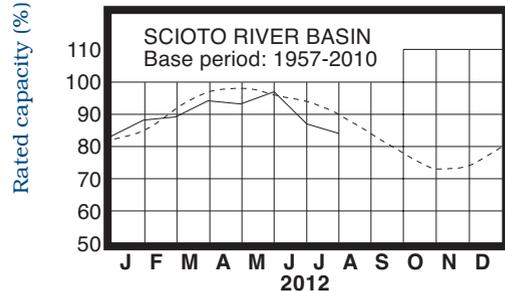
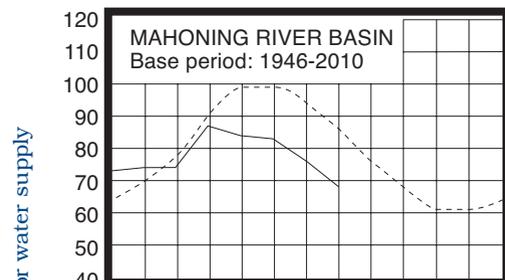
### MEAN STREAM DISCHARGE



Base period for all streams: 1981-2010

Normal - - - - Current ———

### 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	15.16	-0.04	-1.30	-2.67
Fa-1	Jasper Mill, Fayette Co.	Limestone	9.64	-1.58	-0.68	-0.75
Fr-10	Columbus, Franklin Co.	Gravel	44.08	-0.43	-1.06	-0.72
H-1	Harrison, Hamilton Co.	Gravel	23.76	-1.67	-0.77	-1.30
Hn-2a	Dola, Hardin Co.	Dolomite	7.91	-1.01	-0.82	-1.01
Po-124	Freedom, Portage Co.	Sandstone	76.01	+0.35	-0.57	+0.37
Tu-1	Strasburg, Tuscarawas Co.	Gravel	15.16	-2.23	-0.72	-1.71

**GROUND WATER** levels during July declined statewide. As is typical for this time of the year, ground water levels declined steadily throughout the month. However, net declines were greater than usually expected for July across most of the state.

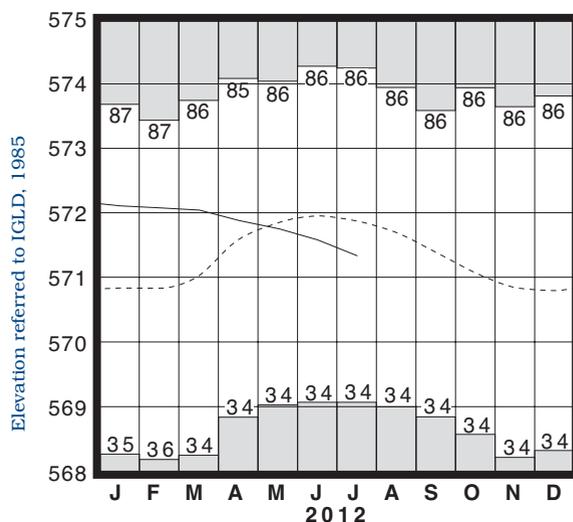
Following another month of below normal precipitation throughout much of Ohio and above normal temperatures, ground water levels remain below normal across nearly the entire state. July levels range from slightly above normal to more than 2 feet below normal. Current levels are lower than they were during July 2011 throughout nearly the entire state. Observation well TU-1 near Strasburg (Tuscarawas County), representing sand and gravel aquifers in eastern Ohio, reached a record-low level for July. Ground water levels can be expected to decline seasonally through late autumn. According to the Palmer Drought Severity Index, northern Ohio was experiencing extreme drought conditions near the end of month. The Ohio Agricultural Statistics Service reports that soil moisture near the end of July was rated as being short or very short in 86 percent of the state and adequate in 14 percent of the state. In spite of this, ground water supplies remain adequate throughout most of Ohio.

**LAKE ERIE** level declined during July. The mean level was 571.33 feet (IGLD-1985), 0.26 foot lower than last month's mean level and 0.55 foot below normal. This month's mean level is 1.11 feet lower than the July 2011 level and 2.13 feet above Low Water Datum.

The U.S. Army Corps of Engineers (USACE) reports that precipitation in the Lake Erie basin during July averaged 2.81 inches, 0.58 inch below normal. For the entire Great Lakes basin, July precipitation averaged 2.66 inches, 0.49 inch below normal. For calendar year 2012 through July, the Lake Erie basin has averaged 16.36 inches of precipitation, 4.33 inches below normal, while the entire Great Lakes basin has averaged 16.80 inches, 1.27 inches 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 3 inches above to as much as 18 inches below the normal seasonal average.

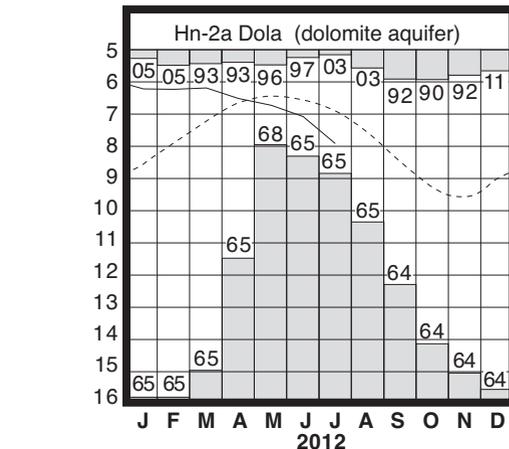
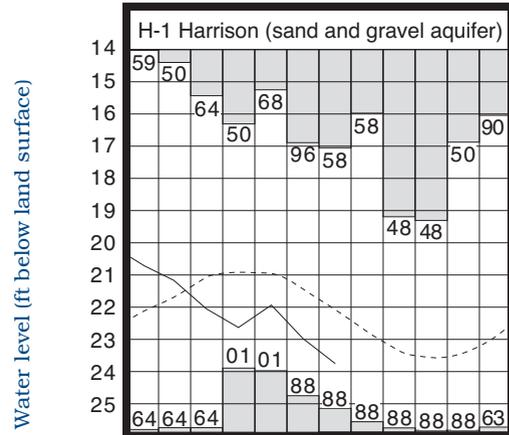
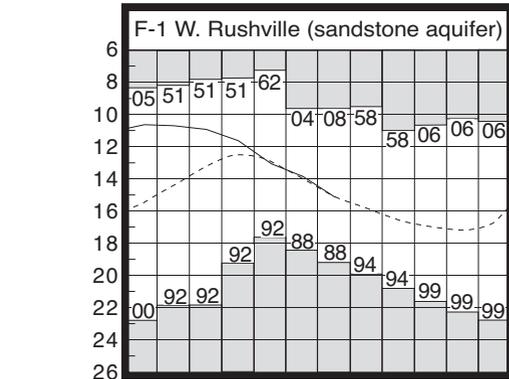
### LAKE ERIE LEVELS



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

## SUMMARY

Precipitation during July was below normal throughout much of the state, but above normal in the Northeast and South Central regions. Streamflow was below normal statewide and low enough to be considered deficient. Reservoir storage decreased and was below normal in both the Mahoning and Scioto river basins. Ground water levels declined statewide and were below normal throughout nearly the entire state. Lake Erie level declined 0.26 foot and was 0.55 foot below the long-term July average.

## NOTES AND COMMENTS

### 2012 Ohio Statewide Floodplain Management Conference

On August 29-30, 2012, the Ohio Department of Natural Resources (ODNR) will be holding the 2012 Ohio Statewide Floodplain Conference. The conference will be held at the Doubletree Hotel, Columbus/Worthington. The theme of this year's conference is "Examining Local Flood Hazards" which will focus on providing attendees with the basic tools to regulate and manage flood hazard areas throughout Ohio.

The Ohio Statewide Floodplain Management Conference is an annual training event that focuses on various elements of floodplain management, such as regulations, insurance, mapping, engineering, and natural benefits. The conference is intended to develop and expand the capabilities of floodplain management professionals throughout Ohio. Conference sessions are designed to provide local floodplain managers with information and skills necessary to implement effective floodplain management programs within their respective communities. Continuing education credits/hours are available to Building Officials, Certified Floodplain Managers and Engineers for attendance at this conference.

All conference information will be posted at <http://www.dnr.state.oh.us/Water/FloodPlains/FloodConferencesPage/tabid/17934/Default.aspx>. If you have any questions regarding the 2012 Ohio Statewide Floodplain Management Conference, please contact Alicia Silverio at 614-265-1006 or [alicia.silverio@dnr.state.oh.us](mailto:alicia.silverio@dnr.state.oh.us).

## 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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