



# MONTHLY WATER INVENTORY REPORT FOR OHIO

June 2014

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<http://soilandwater.ohiodnr.gov/water-use-planning/water-inventory-levels>

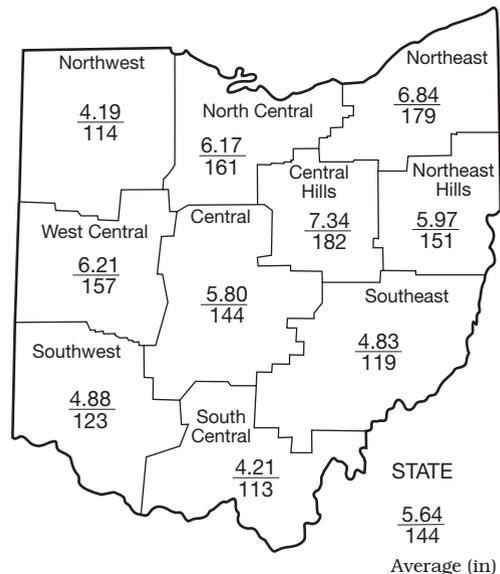
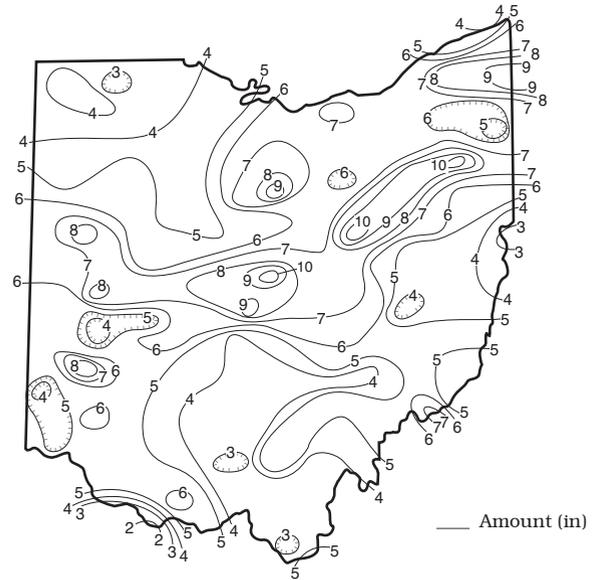
**PRECIPITATION** during June was above normal throughout most of the state, but below normal in some areas especially in south-central, southeastern and northwestern Ohio. The average for the state was 5.64 inches, 1.73 inches above normal. Regional averages ranged from 7.34 inches, 3.30 inches above normal, for the Central Hills Region to 4.19 inches, 0.52 inch above normal, for the Northwest Region. This was the second wettest June on record for the Northeast Region and the seventh wettest for the Central Hills Region. Millersburg (Holmes County) reported the greatest amount of June precipitation, 10.72 inches. Other locations reporting more than 10 inches of precipitation were: Berlin Reservoir (Mahoning County), 10.19 inches, and Centerburg (Knox County), 10.17 inches. Maysville Locks and Dam (Brown County) reported the least amount of precipitation, 1.98 inches.

Precipitation during June fell as showers and thunderstorms with locally severe storms and intense downpours reported in many areas. During June 1-4, most of the state received at least 1 inch of rain, less falling in some areas of northern and east-central Ohio, but more than 2.5 inches in parts of southwestern Ohio. The strongest storms occurred on June 4 in southern Ohio. Tornadoes were confirmed in Highland and Scioto counties. Showers and storms on June 8 brought 0.5-1.0 inch of rain throughout the northern half of the state, but little or no rain fell in the southern half. The next rain occurred during June 10-12 and was greatest across the southern half of Ohio. Showers and thunderstorms were nearly daily events during June 16-25 in many areas of Ohio with the greatest amounts falling in the northwestern two-thirds of the state. More than 2 inches of rain was reported throughout this area during this period with locations in north-central, northeastern and central Ohio reporting more than 5 inches. Much of the remainder of the state received around 1 inch. Some of the strongest storms during this period occurred on June 23. Small stream and urban flooding, mainly in northern Ohio, was reported as a result of heavy rain from these storms. Many of these storms also produced high winds, downing trees and power lines, including damage from a tornado in the Medina County city of Brunswick. Widely scattered showers and thunderstorms during June 28-29 were numerous across the eastern half of the state.

Precipitation for the 2014 water year is above normal statewide. The average for the state is 32.96 inches, 4.80 inches above normal. Regional averages range from 35.49 inches, 7.24 inches above normal, for the Northeast Region to 27.50 inches, 2.45 inches above normal, for the Northwest Region.

(continued on back)

## PRECIPITATION JUNE



## 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	+0.52	+0.72	+0.92	+2.87	+4.65	-0.6
North Central	+2.33	+4.70	+3.94	+9.95	+15.46	+2.8
Northeast	+3.01	+5.52	+4.64	+9.36	+15.73	+1.3
West Central	+2.25	+4.36	+3.20	+5.87	+7.24	-0.4
Central	+1.78	+4.52	+3.06	+6.64	+6.79	-0.5
Central Hills	+3.30	+6.19	+4.56	+7.99	+10.69	+0.5
Northeast Hills	+2.01	+5.28	+3.19	+5.38	+6.17	+0.5
Southwest	+0.90	+1.90	+0.31	+3.23	+0.24	-0.9
South Central	+0.48	+1.23	-0.11	+3.01	+1.92	-1.6
Southeast	+0.78	+1.98	+0.86	+5.97	+6.13	-0.9
State	+1.73	+3.62	+2.44	+6.00	+7.46	-0.9

\*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

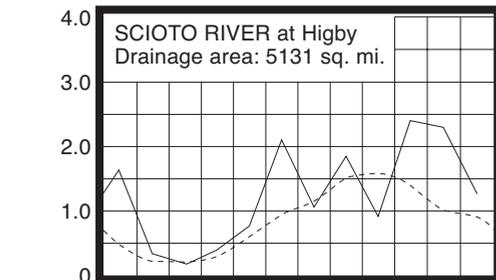
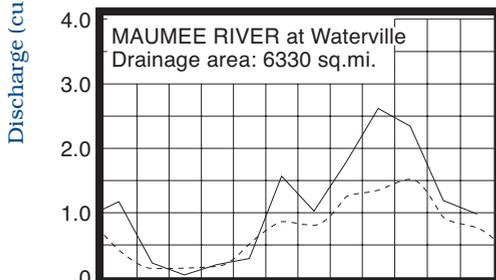
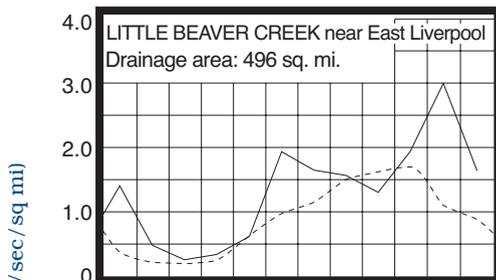
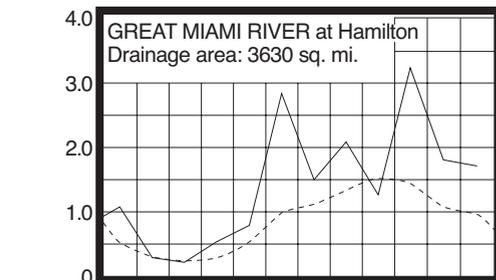
River and Location	Drainage Area (Sq. Mi.)	Mean Discharge (CFS)	% of Normal	% of Normal Past		
				3 Mos.	6 Mos.	12 Mos.
Grand River near Painesville	685	959	320	148	107	129
Great Miami River at Hamilton	3,630	6,251	178	158	129	141
Huron River at Milan	371	733	240	168	157	205
Killbuck Creek at Killbuck	464	1,103	325	200	134	144
Little Beaver Creek near East Liverpool	496	813	186	165	123	115
Maumee River at Waterville	6,330	6,198	129	125	125	124
Muskingum River at McConnelsville	7,422	11,390	187	165	120	119
Scioto River near Prospect	567	893	223	170	123	168
Scioto River at Higby	5,131	6,539	140	146	110	124
Stillwater River at Pleasant Hill	503	757	185	139	111	116

**STREAMFLOW** during June was above normal statewide. Flow in southwest, central and northeast Ohio drainage basins was high enough to be considered excessive. Flows during June declined seasonally across most of the state but increased in a few drainage basins in north-central and west-central Ohio.

Flows at the beginning of the month were below normal throughout most of the state, but above normal in central and southeastern Ohio drainage basins. Flows during the month varied greatly, increasing following local precipitation. Greatest flows for the month occurred during June 19-22 in the southwestern quarter of the state and during June 25-27 across the remainder of Ohio. Low flows for the month occurred during June 17-19 throughout most of the state; a few west-central drainage basins

had their lowest June flows near the beginning of the month. Flows at the end of the month were above normal across much of the state, but below normal in the southwestern quarter of Ohio.

### MEAN STREAM DISCHARGE

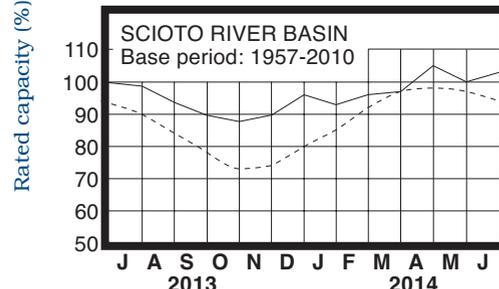
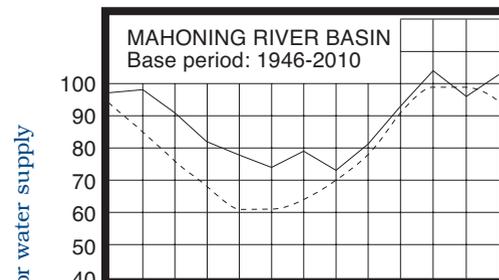


Base period for all streams: 1981-2010

**RESERVOIR STORAGE** for water supply during June increased in both the Mahoning and Scioto river basins. Month-end storage was above normal in both basins.

Reservoir storage at the end of June in the Mahoning basin index reservoirs was 103 percent of rated capacity for water supply compared with 96 percent for last month and 97 percent for June 2013. Month-end storage in the Scioto basin index reservoirs was 103 percent of rated capacity for water supply compared with 100 percent for both last month and June 2013. Surface water supplies are in excellent shape throughout Ohio.

### 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	11.87	+2.13	-1.21	+2.50
Fa-1	Jasper Mill, Fayette Co.	Limestone	8.61	-1.04	-0.03	-0.33
Fr-10	Columbus, Franklin Co.	Gravel	41.82	+1.16	-0.24	+1.60
H-1	Harrison, Hamilton Co.	Gravel	22.32	-0.88	-0.46	+0.48
Hn-2a	Dola, Hardin Co.	Dolomite	6.82	-0.25	+0.27	-0.36
Po-124	Freedom, Portage Co.	Sandstone	76.23	0	+0.01	+0.45
Tu-1	Strasburg, Tuscarawas Co.	Gravel	11.81	+0.53	-0.50	+1.82

**GROUND WATER** levels during June declined in most aquifers across Ohio. A few exceptions were observed in areas of the state that received noticeably above normal precipitation where levels were rather stable, especially in shallow aquifers. Generally, ground water levels were steady or declined slightly during the first half of the month. Levels in deeper aquifers continued to steadily decline during the remainder of the month, while in most shallow aquifers levels rose during the last week of June in response to widespread precipitation. Net changes in ground water levels during June from the levels recorded in May were about what is usually observed in most areas of the state.

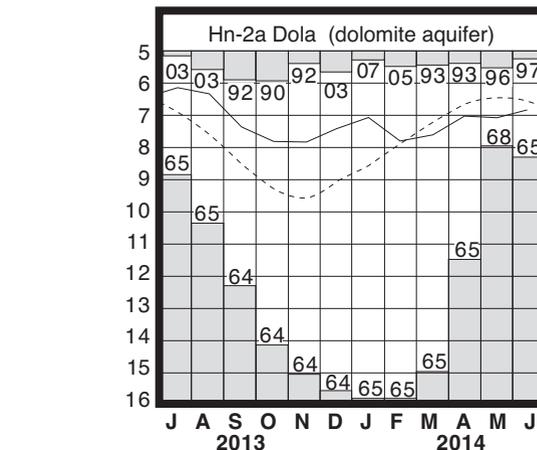
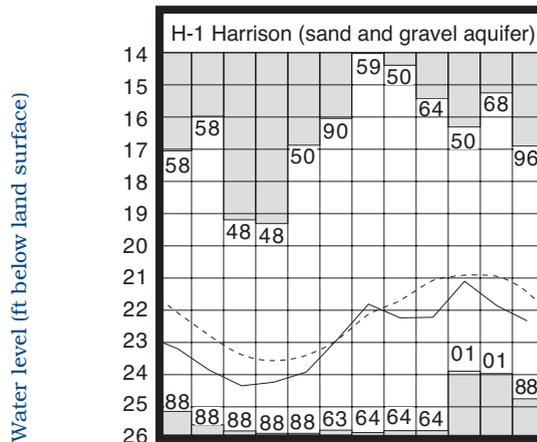
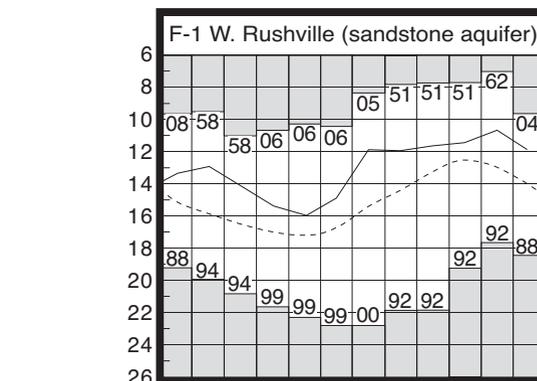
Ground water storage is at below normal levels in western Ohio and above normal in eastern Ohio. Current ground water levels are above the levels of June 2013 in most aquifers with just a few aquifers in western Ohio having slightly lower levels. Ground water supplies remain adequate throughout the state. With near-normal precipitation during the next few months, supplies should continue to be adequate in Ohio. The Ohio Agricultural Statistics Service reports that soil moisture near the end of June was rated as being short in 2 percent of the state, adequate in 58 percent of the state and surplus in 40 percent of the state.

**LAKE ERIE** level rose seasonally during June. The mean level was 572.18 feet (IGLD-1985), 0.17 foot above last month's mean level and 0.23 foot above normal. This month's level is 0.56 foot above the June 2013 level and 2.98 feet above Low Water Datum.

The U.S. Army Corps of Engineers (USACE) reports that precipitation in the Lake Erie basin during June averaged 3.79 inches, 0.32 inch above normal. For the entire Great Lakes basin, June precipitation averaged 4.30 inches, 1.07 inches above normal. For calendar year 2014 through June, the precipitation in the Lake Erie basin has averaged 16.72 inches, 0.61 inch below normal while precipitation in the entire Great Lakes basin has averaged 15.45 inches, 0.52 inch above normal.

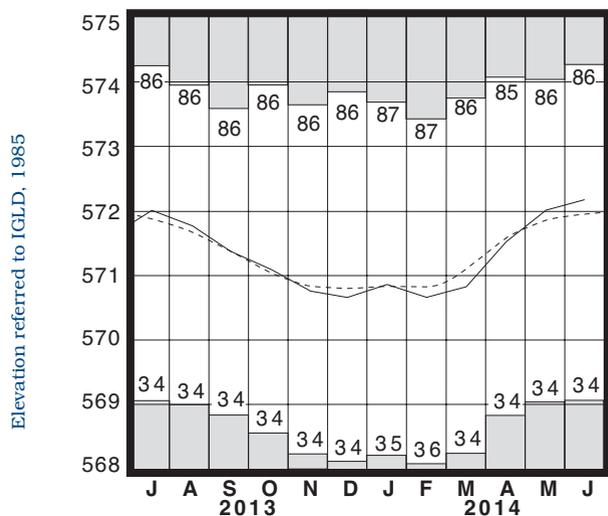
In addition, the USACE reports that based on the current condition of the Great Lakes basin and anticipated weather patterns, the level of Lake Erie should remain about 2-3 inches above normal for the next six months. Deviations from the anticipated weather patterns could result in the level of Lake Erie ranging from as much as 13 inches above to around 7 inches below the normal seasonal level.

## GROUND-WATER LEVELS



Base periods: F-1, 1947-2010; H-1 1951-2010.  
Hn-2a, 1955-2010

## LAKE ERIE LEVELS



Base period: 1918-2010

■ Record high and low, year of occurrence

Normal - - - - Current ———

(Precipitation continued from front)

Precipitation for the 2014 calendar year is above normal throughout most of Ohio with only the South Central Region having below normal precipitation. The average for the state is 21.97 inches, 2.44 inches above normal. Regional averages range from 24.15 inches, 4.56 inches above normal, for the Central Hills Region to 18.12 inches, 0.92 inch above normal, for the Northwest Region (see Precipitation table, departure from normal, past six months column).

#### SUMMARY

Precipitation during June was above normal throughout most of Ohio, but below normal in some southern and northwestern areas of the state. Streamflow was above normal statewide and high enough to be considered excessive in several drainage basins. Reservoir storage increased and was above normal. Ground water storage declined in most aquifers and was below normal in western Ohio, but above normal in eastern Ohio. Lake Erie level rose 0.17 foot and was 0.23 foot above the long-term June average.

#### NOTES AND COMMENTS

##### Update: Small Business Administration Disaster Declaration

The U.S. Small Business Administration (SBA) has declared Clark County a disaster area as a result of damage caused by severe storms and flooding from the May 21, 2014 storms. The SBA disaster declaration enables residents and businesses impacted by the storms in Clark County and the contiguous counties of Champaign, Greene, Madison, Miami and Montgomery, to be eligible for long-term low-interest loans for uninsured losses. Heavy rain from storms on May 21 dumped more than 5 inches in about a two-hour period at some locations, resulting in extensive flooding in many areas in this region, including high water that closed sections of Interstates 70 and 75 in Miami County.

#### 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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