MONTHLY WATER INVENTORY REPORT FOR OHIO

June 2009

http://www.dnr.state.oh.us/tabid/4191/Default.aspx
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PRECIPITATION during June varied greatly and was generally near or below normal across much of the state except in some sections of southwestern, central and eastern Ohio where it was above normal. The state average was 4.14 inches, 0.29 inch above normal. Regional averages ranged from 5.32 inches, 1.43 inches above normal, for the Southwest Region to 3.47 inches, 0.20 inch below normal, for the Northwest Region. Hamilton (Butler County) reported the greatest amount of June precipitation, 8.57 inches. Kings Mills (Warren County) reported 8.03 inches for the month. McArthur (Vinton County) reported the least amount, 1.98 inches.

Precipitation during June fell in a typical summer pattern with some areas receiving heavy downpours while other areas missed many of the storms throughout much of the month. Showers and thunderstorms moved across Ohio during the first 3 days June. Most areas of the state received 0.25-0.75 inch of rain during this period with some areas in southern Ohio receiving more than 1 inch. Isolated showers and thunderstorms brought heavy rain to extreme western Ohio June 8-9 with some locations receiving more than 1.5 inches of rain. However, these storms dissipated rapidly as they moved east resulting in little rain falling elsewhere. Showers and thunderstorms during June 10-12 were most numerous across the southern half of Ohio where some locations received up to 2 inches of rain; however, much of northern Ohio received less than 0.25 inch. On June 14 scattered showers and thunderstorms were confined to southwestern Ohio where generally 0.25-0.50 inch of rain fell with more than 1 inch reported at a few locations. Rain during June 16-20 was widespread with most of the state receiving 0.50-1.0 inch of rain for the period. The most significant rain during this period fell on June 18-19 in a line from northwestern to southeastern Ohio with locations within this band receiving in excess of 3 inches of rain causing some minor flooding. Conditions dried out for a few days before precipitation returned to the state on June 25. Several storms were severe with locally heavy rain and high winds. Rain amounts were greatest across southwestern Ohio where generally more than 1 inch fell and as much as 2.5 inches reported at some locations. Some local, minor flooding was reported. Lesser amounts fell in areas of northwestern and northeastern Ohio where many locations received less than 0.25 inch. While most of the state was dry the last few days of the month, areas in extreme northeast Ohio received up to 2 inches of rain during the last 2 days of June.

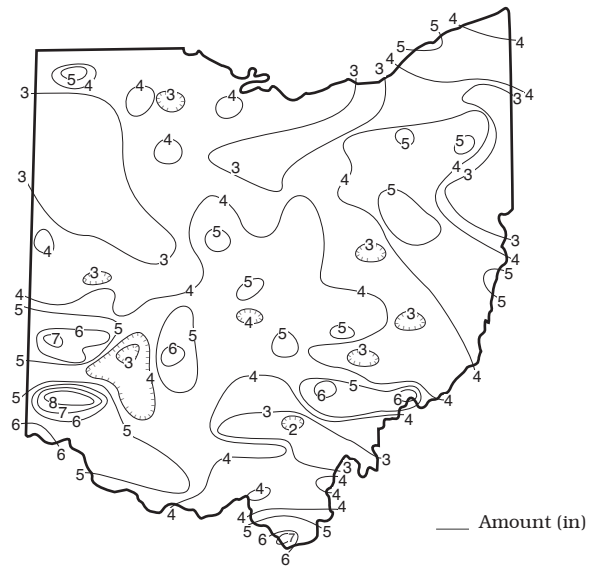
(continued on back)

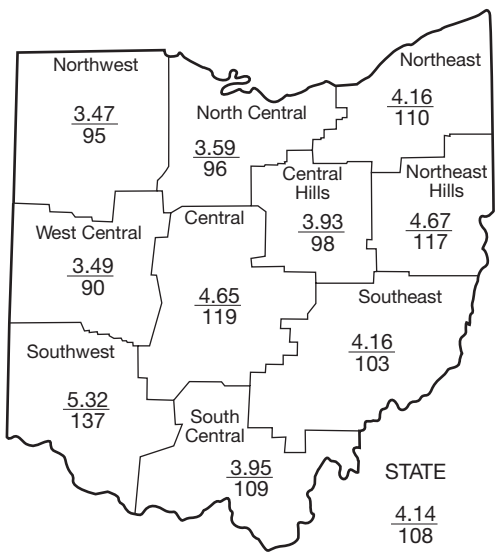
PRECIPITATION

Region	DEPARTURE FROM NORMAL (IN.) Base period 1951-2000					Palmer Drought Severity Index*
	This Month	Past 3 Mos.	Past 6 Mos.	Past 12 Mos.	Past 24 Mos.	
Northwest	-0.20	+0.22	+2.48	+2.57	+18.07	+1.1
North Central	-0.15	+0.31	+1.54	+1.86	+18.56	+1.0
Northeast	+0.37	-0.33	+0.99	+3.99	+17.19	-2.0
West Central	-0.40	-0.06	-2.22	-4.52	+9.03	-1.7
Central	+0.74	+0.08	-1.89	-4.98	+7.80	-1.9
Central Hills	-0.09	-0.25	-1.43	-3.67	+7.83	-1.8
Northeast Hills	+0.69	-1.06	-2.58	-4.21	+6.15	-2.1
Southwest	+1.43	+1.18	-1.95	-6.97	+4.39	-2.2
South Central	+0.34	+2.59	-0.22	-3.14	+6.12	-1.5
Southeast	+0.14	+1.39	-0.58	-1.57	+8.10	-1.4
State	+0.29	+0.41	-0.59	-2.07	+10.31	

*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	298	113	71	105	117
Great Miami River at Hamilton	3,630	2,803	90	103	85	82
Huron River at Milan	371	177	83	73	130	134
Killbuck Creek at Killbuck	464	171	51	62	69	68
Little Beaver Creek near East Liverpool	496	455	107	75	86	76
Maumee River at Waterville	6,330	4,846	121	108	133	117
Muskingum River at McConnelsville	7,422	3,617	61	107	106	68
Scioto River near Prospect	567	274	90	78	77	70
Scioto River at Higby	5,131	3,288	93	67	62	60
Stillwater River at Pleasant Hill	503	301	80	129	93	82

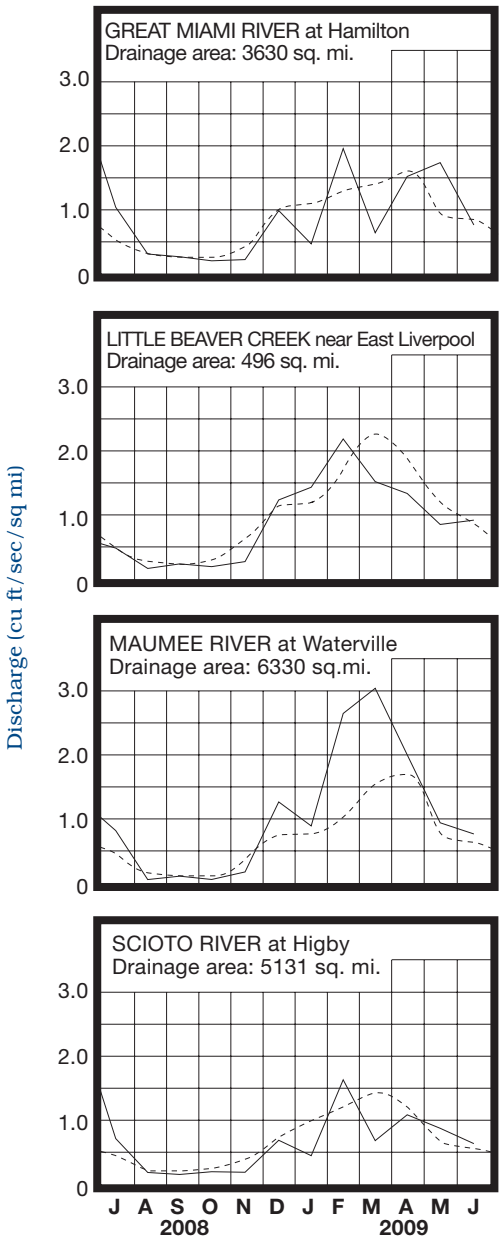
STREAMFLOW during June was below normal across much of the state but above normal in some basins in northern Ohio. Flows during June were less than the May flows across most of the state.

Flows at the beginning of the month were below normal throughout nearly the entire state. Except for some increases noted following local precipitation, flows generally declined through the middle of the month. Flows then increased statewide following widespread precipitation that fell during June 16-20 with greatest flows for the month being observed across most of Ohio during June 20-21; a few basins in southwestern Ohio had their greatest flows on June 26. Low flows for the month occurred at various times, generally during June 16-18 in the eastern two-thirds of Ohio, around June 25 in southwestern Ohio and at the end of the month in northwestern Ohio. Flows at the end of June were below normal statewide except for some extreme northeastern Ohio basins where localized precipitation increased streamflow to above normal at month's end.

RESERVOIR STORAGE for water supply during June increased in both the Mahoning and Scioto river basins. At the end of June, storage was above normal in both basins.

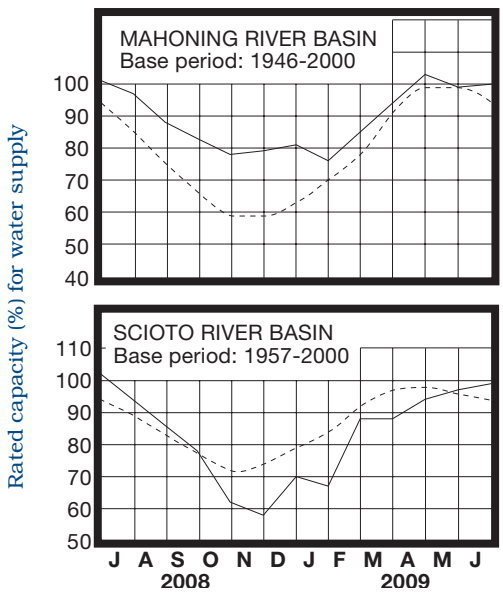
Reservoir storage at the end of June in the Mahoning basin index reservoirs was 100 percent of rated capacity for water supply compared with 99 percent for last month and 101 percent for June 2008. Month-end storage in the Scioto basin index reservoirs was 99 percent of rated capacity for water supply compared with 97 percent for last month and 102 percent for June 2008. Surface water supplies continue to remain adequate across the state.

MEAN STREAM DISCHARGE



Base period for all streams: 1971-2000

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	12.57	+1.66	-1.30	-1.69
Fa-1	Jasper Mill, Fayette Co.	Limestone	8.51	-1.11	-0.08	-0.33
Fr-10	Columbus, Franklin Co.	Gravel	44.51	-1.75	-0.87	-1.35
H-1	Harrison, Hamilton Co.	Gravel	22.70	-1.31	-0.63	-2.16
Hn-2a	Dola, Hardin Co.	Dolomite	6.94	-0.35	-0.19	-0.77
Po-124	Freedom, Portage Co.	Sandstone	76.06	+1.51	-0.12	-0.20
Tu-1	Strasburg, Tuscarawas Co.	Gravel	14.40	-2.30	-0.92	-1.34

GROUND WATER levels during June declined seasonally throughout Ohio. Ground water levels in most consolidated aquifers were rather stable throughout the month. Levels in most unconsolidated aquifers declined until around the middle of the month, then after rising during the next week, generally declined the remainder of the month.

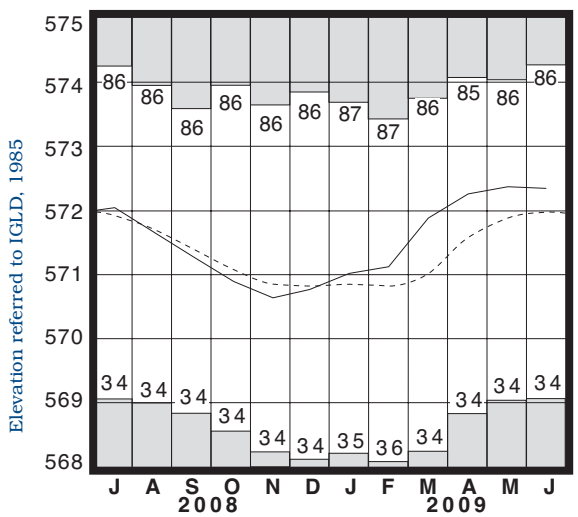
Although ground water levels are below normal across much of the state, ground water supplies continue to remain adequate. Current levels are lower than they were a year ago in most aquifers ranging from slightly lower to more than 2 feet lower than the June 2008 levels. The recent dry conditions across many areas of the state have brought an apparent end to the 2009 recharge season. Little or no additional improvement to ground water storage can usually be expected during the next several months under normal climatic conditions. The Ohio Agricultural Statistics Service reports that near the end of June, top soil moisture was rated as being short or very short in 11 percent of the state, adequate in 77 percent of the state, and surplus in 12 percent of the state.

LAKE ERIE level declined during June. The mean level was 572.34 feet (IGLD-1985), 0.03 foot lower than last month's mean level and 0.36 foot above normal. This month's mean level is 0.38 foot higher than the June 2008 level and 3.14 feet above Low Water Datum.

The U.S. Army Corps of Engineers (USACE) reports that precipitation in the Lake Erie basin during June averaged 3.98 inches, 0.53 inch above normal. For the entire Great Lakes basin, June precipitation averaged 3.19 inches, 0.01 inch below normal. For calendar year 2009 through June, the Lake Erie basin has averaged 20.22 inches, 2.98 inches above normal, while the entire Great Lakes basin has averaged 15.31 inches, 0.43 inch above 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 above normal for the foreseeable future. Deviations from the anticipated weather patterns could result in the level of Lake Erie ranging from as much as 10 inches above normal to around 7 inches below the normal seasonal level.

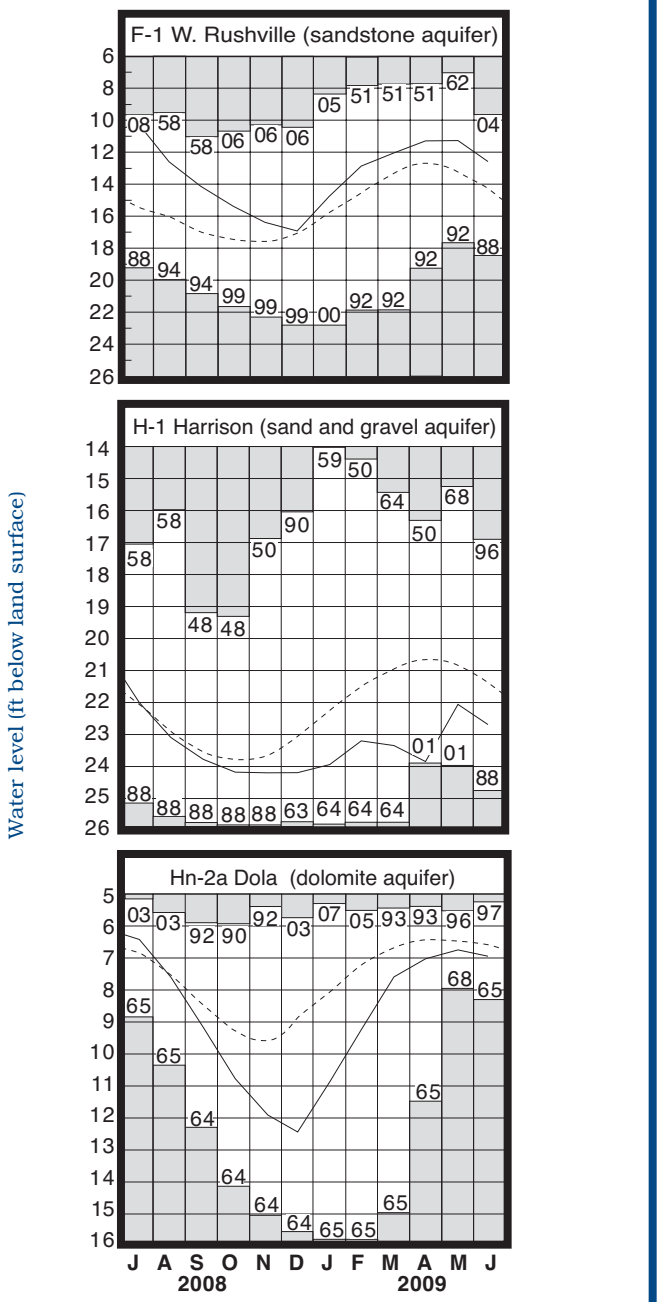
LAKE ERIE LEVELS



Base period: 1918-2000

Record high and low, year of occurrence

GROUND-WATER LEVELS



Base periods: F-1, 1947-2000 H-1, 1951-2000.

Hn-2a, 1955-2000 Record high and low, year of occurrence

Normal – – – – Current ———

(Precipitation continued from front)

Precipitation for the 2009 water year is above normal in the northern one-third and southeastern areas of Ohio, and below normal elsewhere. The average for the state is 27.74 inches, 0.19 inch above normal. Regional averages range from 30.79 inches, 3.10 inches above normal, for the Northeast Region to 25.08 inches, 1.74 inches below normal, for the West Central Region.

Precipitation for the 2009 calendar year is below normal in the southern two-thirds of Ohio and above normal in the northern one-third. The average for the state is 18.75 inches, 0.59 inch below normal. Regional averages range from 20.85 inches, 0.22 inch below normal, for the South Central Region to 16.74 inches, 2.22 inches below normal, for the West Central Region (see Precipitation table, departure from normal, past six months column).

SUMMARY

Precipitation during June varied greatly and was generally near or below normal across much of the state except in some sections of southwestern, central and eastern Ohio where it was above normal. Streamflow was below normal across most of the state, but above normal in some basins in northern Ohio. Reservoir storage for water supply increased and was above normal in both the Mahoning and Scioto river basin. Ground water storage declined seasonally and was below normal throughout much of the state. Lake Erie level declined 0.03 foot and was 0.36 foot above the long-term June average.

NOTES AND COMMENTS

Water Resources Data For Ohio Available On-Line

The Water Resources Division of the U.S. Geological Survey (USGS) recently announced the availability of the following report:

Water Resources Data For The United States, Water Year 2008

This report contains data from cooperative long-term surface water and ground water networks as well as data collected as part of special short-term projects. Beginning with the 2006 annual report, paper reports are no longer produced. The USGS annual Water Data Report is part of a national web-based product with a "Site Data Sheet" available for each individual station that can be viewed and/or downloaded. Site Data Sheets contain all surface-water, ground-water and/or water-quality data that were collected at a particular site in a given water year. All Site Data Sheets for water year 2008 in Ohio have been completed and are available at: http://wdr.water.usgs.gov/wy2008/search.jsp. Connecting to this web site will take you directly to the Site Data Sheet search page. Site Data Sheets are indexed by USGS station number and physical location, which includes state, county and hydrologic unit. If you have any questions or comments, please contact James Mangus with the USGS at (614) 430-7727 or e-mail: jpmangus@usgs.gov. Water Resources Data-Ohio reports for water year 2002-2007 can also be accessed online at: http://wdr.water.usgs.gov/.

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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