MONTHLY WATER INVENTORY REPORT FOR OHIO

June 2008

http://www.dnr.state.oh.us/tabid/4191/Default.aspx
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PRECIPITATION during June was noticeably above normal throughout most of Ohio with only a few scattered locations in northeastern Ohio having slightly below normal precipitation. The state average was 6.32 inches, 2.47 inches above normal. This ranks as the 7th wettest June for the state as a whole during the past 126 years. Regional averages ranged from 8.43 inches, 4.52 inches above normal, for the Central Region to 5.27 inches, 1.48 inches above normal, for the Northeast Region. All 10 of the state's climatic regions ranked in their top 20 wettest June's of record including, the 2nd wettest for the Central Region, 5th wettest for the South Central Region and the 6th wettest for the West Central Region. Port Columbus International Airport (Franklin County) reported the greatest amount of June precipitation, 10.39 inches, making this the wettest June on record at this location. Unofficial reports indicate more than 12 inches of precipitation fell in localized areas in central Ohio. Youngstown/Warren Regional Airport (Trumbull County) reported the least amount, 3.18 inches.

Precipitation during June fell as showers and thunderstorms with locally severe storms occurring at many locations. Most of the state received rain during June 3-4, with strong storms crossing the southern half of Ohio where at least 2 inches of rain fell during this period with some locations reporting more than 4 inches. Rain from these storms tapered to around 0.50 inch in northern Ohio. On and off showers and thunderstorms were widespread during the second week of the month. Most of the state received 1-3 inches of rain during this period with greater amounts reported from isolated areas, especially across central Ohio. The heavy rains resulted in some urban and small stream flooding. Most of Ohio reported very little rain from June 15-20; however, the last 10 days of the month were stormy across the state. The most notable storm occurred during June 25-26 when showers and thunderstorms were widespread, with as much as 4 inches of rain reported in areas of central and northeastern Ohio. Portions of Interstate 70 in Licking County were closed temporarily due to high water.

Precipitation for the 2008 calendar year is above normal statewide. The average for the state is 27.12 inches, 7.78 inches above normal. Regional averages range from 30.35 inches, 8.74 inches above normal for the Southwest Region to 24.17 inches, 7.10 inches above normal, for the Northwest Region. For the state, this was the second wettest January-June period in 126 years of record. Regionally, all 10 climatic regions ranked in their top 10 wettest January-June periods including the wettest for the Central and West Central regions, and the 2nd wettest for the North Central and Northeast regions (see Precipitation table, departure from normal, past 6 months column).

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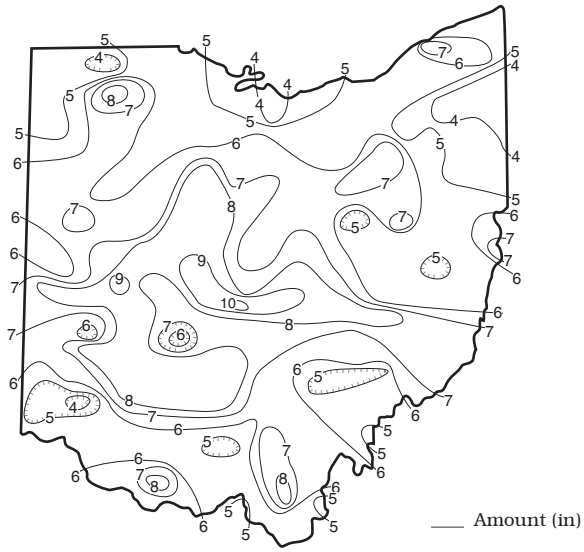
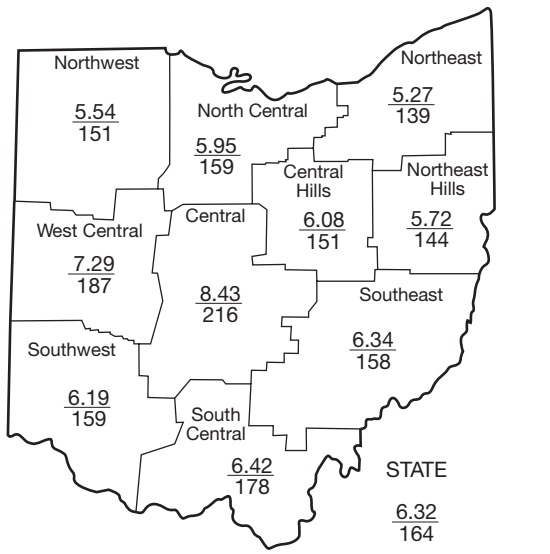
PRECIPITATION

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	+1.87	+1.77	+7.10	+15.15	+20.96	+3.9
North Central	+2.21	+2.04	+8.77	+16.45	+22.02	+5.2
Northeast	+1.48	+0.46	+7.77	+13.23	+21.47	+1.9
West Central	+3.40	+3.11	+9.98	+13.79	+22.80	+3.5
Central	+4.52	+3.49	+8.94	+13.17	+20.88	+3.3
Central Hills	+2.06	+0.52	+5.79	+11.48	+16.61	+2.1
Northeast Hills	+1.74	+0.17	+5.46	+10.25	+14.33	+0.2
Southwest	+2.30	+2.49	+8.74	+10.63	+14.65	+3.0
South Central	+2.81	+3.78	+7.75	+9.44	+11.85	+2.7
Southeast	+2.32	+2.53	+7.54	+9.44	+12.07	+3.2
State	+2.47	+2.04	+7.78	+12.28	+17.72	

*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	350	133	79	141	137
Great Miami River at Hamilton	3,630	9,515	307	159	202	166
Huron River at Milan	371	421	198	121	206	219
Killbuck Creek at Killbuck	464	316	95	86	139	135
Little Beaver Creek near East Liverpool	496	314	74	63	137	129
Maumee River at Waterville	6,330	7,950	199	112	164	174
Muskingum River at McConnelsville	7,422	9,486	159	176	208	121
Scioto River near Prospect	567	1,106	361	138	209	191
Scioto River at Higby	5,131	11,890	335	137	175	151
Stillwater River at Pleasant Hill	503	1,451	385	166	214	174

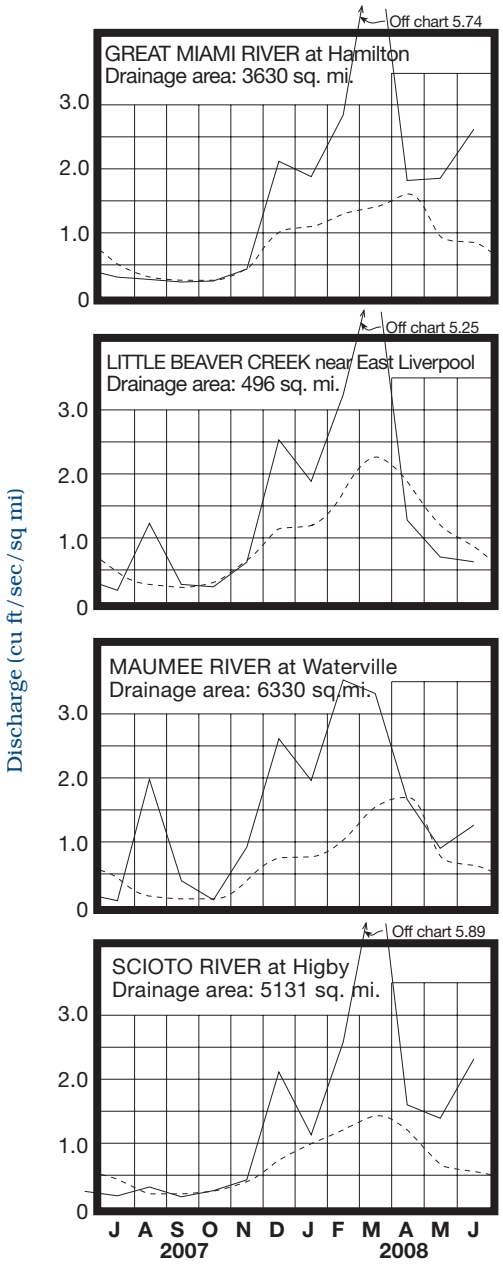
STREAMFLOW during June was above normal across most of the state, but below normal in some basins in northeast Ohio. June flows for the southwestern quarter of the state were high enough to be considered excessive. Flows for the month declined seasonally from those flows recorded during May in the eastern half of the state, but were greater than last month's flows in the western half of Ohio. Preliminary data indicates that flows for the gauging stations used in this report and located in the western half of the state ranked in or near the top ten greatest for June, including the 3rd greatest for the Great Miami River at Hamilton.

Flows at the beginning of the month were below normal in drainage basins across northeastern, west-central and south-central Ohio, and above normal elsewhere. Flows increased statewide following the heavy rain that fell during June 3-4. Most drainage basins in the western half of the state recorded their greatest June flows following this precipitation, generally on June 5 or 6, when minor flooding was reported, most notably in the southwestern quarter of Ohio. Flows generally decreased from these peaks during the next 2 weeks in most drainage basins, although there were temporary rises noted following local precipitation. Lowest flows for the month occurred around June 21 in most northern Ohio basins and around June 25 in most southern Ohio basins. Flows increased during the last few days of the month in response to several days of precipitation. Greatest June flows in eastern Ohio were recorded near the end of the month. Minor flooding was again reported across many areas of the state. Flows at the end of the month were above normal throughout most of Ohio.

RESERVOIR STORAGE during June increased slightly in both the Mahoning and Scioto river basins. At the end of June, surface water storage in both basins remained above normal.

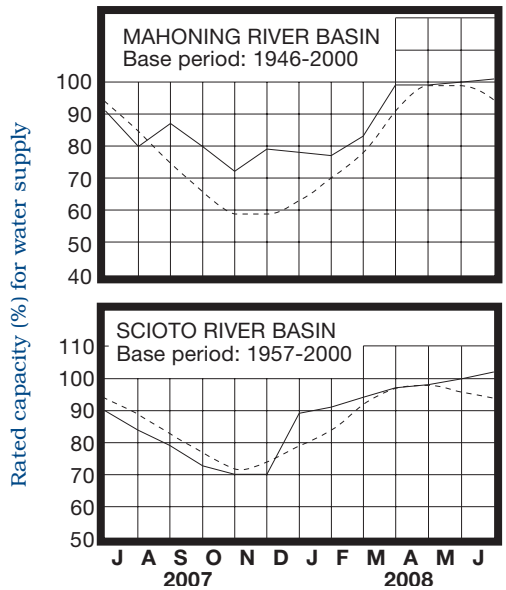
Reservoir storage at the end of June in the Mahoning basin index reservoirs was 101 percent of rated capacity for water supply compared with 100 percent for last month and 91 percent for June 2007. Month-end storage in the Scioto basin index reservoirs was 102 percent of rated capacity for water supply compared with 100 percent for last month and 90 percent for June 2007. Surface water supplies continue to remain in excellent condition throughout 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	10.88	+3.35	+0.30	+3.25
Fa-1	Jasper Mill, Fayette Co.	Limestone	8.18	-0.78	-0.08	+0.76
Fr-10	Columbus, Franklin Co.	Gravel	43.16	-0.40	-0.60	+0.96
H-1	Harrison, Hamilton Co.	Gravel	20.54	+0.85	+0.59	+2.91
Hn-2a	Dola, Hardin Co.	Dolomite	6.17	+0.42	-0.18	+0.61
Po-1	Windham, Portage Co.	Sandstone	16.39	+2.72	-0.41	-0.12
Tu-1	Strasburg, Tuscarawas Co.	Gravel	13.06	-0.96	-1.35	+0.47

GROUND WATER levels during June declined seasonally in most aquifers. A few exceptions were noted in areas that received noticeably above normal precipitation. Levels in most aquifers declined the first few days of June, and then rose through mid-month. Exceptions were noted in some northeastern Ohio aquifers where levels declined through mid-month. Levels generally declined during the second half of June, but began to rise near month's end due to the abundant rainfall that fell late in the month.

Ground water storage is in excellent condition across the state. The above normal precipitation during the 2008 water year has been beneficial for ground water supplies throughout Ohio. Current levels in nearly all aquifers are higher than they where at this time last year, ranging up to more than 3 feet higher than the June 2007 levels. Levels are above normal in most aquifers across western Ohio and in most consolidated aquifers in eastern Ohio. With near-normal precipitation during the next few months, ground water supplies should remain adequate across the state. The Ohio Agricultural Statistics Service reports that near the end of June, soil moisture was rated as being short in 2 percent of the state, adequate in 53 percent of the state and surplus in 45 percent of the state.

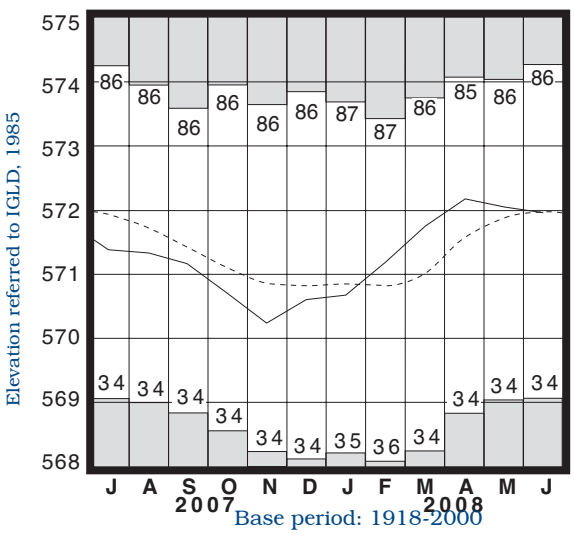
Note: Mean monthly ground water levels for observation wells H-1 and Hn-2a as published in the May 2008 issue of this report were incorrect. The corrected mean levels are: H-1, 21.13 ft.; Hn-2a, 5.99 ft. Corrections to the charts and tables have been made in the online version of this report.

LAKE ERIE level declined during June. The mean level was 571.96 feet (IGLD-1985), 0.09 foot lower than last month's mean level and 0.02 foot below normal. This month's mean level is 0.17 foot higher than the June 2007 level and 2.76 feet above Low Water Datum.

The U.S. Army Corps of Engineers (USACE) reports that precipitation in the Lake Erie basin during June averaged 4.47 inches, 1.02 inches above normal. For the entire Great Lakes basin, June precipitation averaged 4.54 inches, 1.34 inches above normal. For calendar year 2008 through June, the Lake Erie basin has averaged 21.53 inches of precipitation, 4.34 inches above normal, while the entire Great Lakes basin has averaged 17.99 inches, 3.18 inches 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 range from near-normal to about 3 inches below the long-term seasonal average for the foreseeable future. Deviations from the anticipated weather patterns could result in the level of Lake Erie ranging from around 5 inches above to as much as 12 inches below the normal seasonal levels.

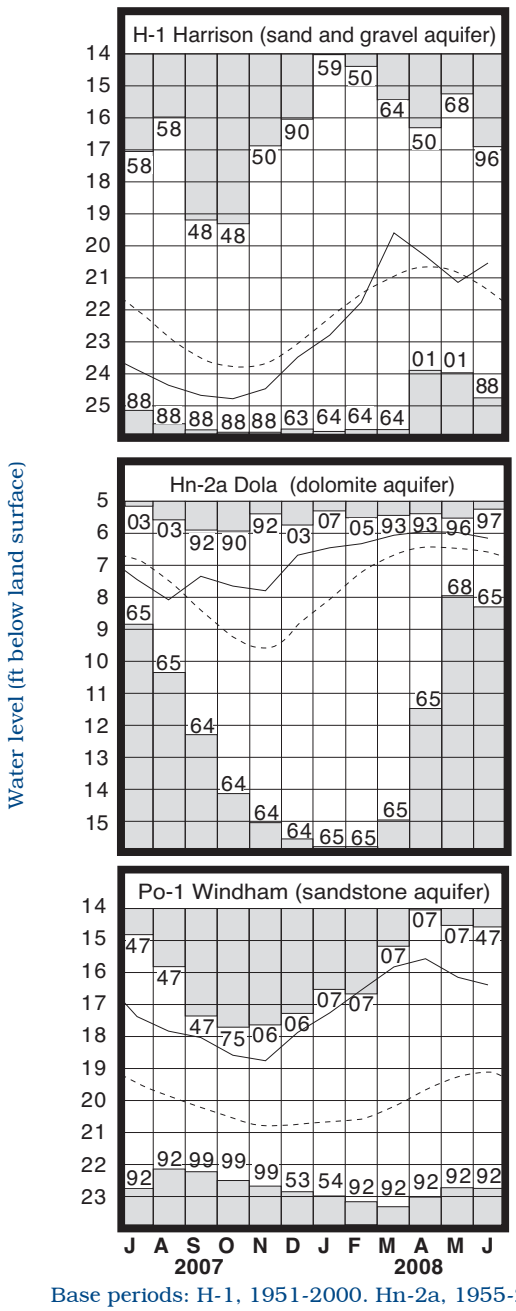
LAKE ERIE LEVELS



Base period: 1918-2000

Record high and low, year of occurrence

GROUND-WATER LEVELS



Base periods: H-1, 1951-2000. Hn-2a, 1955-2000. Po-1, 1947-2000

Record high and low, year of occurrence

Normal – – – – Current ———

(Precipitation continued from front)

Precipitation for the 2008 water year is above normal statewide. The average for the state is 38.38 inches, 10.83 inches above normal. Regional averages range from 43.18 inches, 12.71 inches above normal, for the Southwest Region to 34.13 inches, 9.47 inches above normal, for the Northwest Region.

SUMMARY

Precipitation during June was noticeably above normal throughout most of Ohio. Streamflow was above normal across most of the state, but below normal in some northeastern Ohio basins. Reservoir storage increased and was above normal. Ground water levels declined seasonally in most aquifers and are above normal across much of the state. Lake Erie level declined 0.09 foot and was 0.02 foot below the long-term June average.

NOTES AND COMMENTS

Potentiometric Surface Maps Now Available for Hardin and Marion Counties

The ground water potentiometric surface maps for Hardin and Marion Counties are now available from the ODNR – Division of Water website at http://www.dnr.state.oh.us/tabid/3626/Default.aspx.

A potentiometric surface map is a contour map that represents the top of the ground water surface in an aquifer. The contour lines illustrate the potentiometric surface much like the contour lines of a topographic map represent a visual model of the ground surface. Potentiometric surface maps are being created for bedrock (consolidated) and sand and gravel (unconsolidated) aquifers. County-based maps are available as PDF images and as GIS Shape files.

Ohio's potentiometric surface mapping program began in the late 1990's. Potentiometric surface maps can be used to determine the direction and gradient of ground water flow, to determine ground water recharge and discharge areas, and as input data into ground water modeling programs. These maps can also be used to assist in preparing water resource plans and technical studies, in the mapping of ground water stress areas, and in possible ground water diversion issues. Since these maps were created using existing data collected over a fifty-year period, field verification of the ground water flow direction should be conducted before drilling of monitoring wells to satisfy compliance monitoring. If you have any questions concerning these maps, please contact Jim Raab at jim.raab@dnr.state.oh.us or (614) 265-6747.

Governor Signs Legislation Ratifying Great Lakes-St. Lawrence River Basin Water Resources Compact

Governor Ted Strickland has signed Ohio's legislation ratifying the Great Lakes-St. Lawrence River Basin Water Resources Compact (Compact). The Compact will create unprecedented protections for the Great Lakes-St. Lawrence River Basin. Governor Strickland's signing illustrates the regional and bi-partisan consensus that is growing in support of the Compact. Six of the eight Great Lakes States have now completed ratification of the Compact's protections: Minnesota, Illinois, Indiana, New York, Wisconsin and Ohio. To become law, the Compact must be approved by each of the Great Lake State legislatures and Congress must give its consent. Already, more than 20 members of Congress including Senators McCain, Obama, Voinovich and Brown have expressed their support.

The interstate Compact legislation signed by Governor Strickland includes the following points:

- Economic development will be fostered through the sustainable use and responsible management of Basin waters.
- The States will ensure that authority over Great Lakes water uses is retained in the region.
- Regional goals and objectives for water conservation and efficiency will be developed, and they will be reviewed every five years. Each State will develop and implement a water conservation and efficiency program.
- The collection of technical data will be strengthened, and the States will share comparable information that will improve decision-making by the governments.
- There is a strong commitment to continued public involvement in the implementation of the Compact.

For more information regarding the Compact and the legislation, please visit the Division of Water website: www.ohiodnr.com/default/tabid/4048/Default.aspx.

ACKNOWLEDGMENTS

This report has been compiled from Division of Water 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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