



MONTHLY WATER INVENTORY REPORT FOR OHIO

June 2003

<http://www.dnr.state.oh.us/water/pubs/newsltrs/mwirmain.html>

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Water Inventory Unit

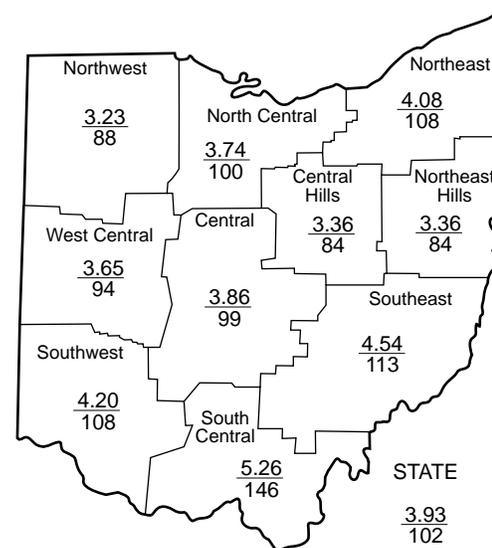
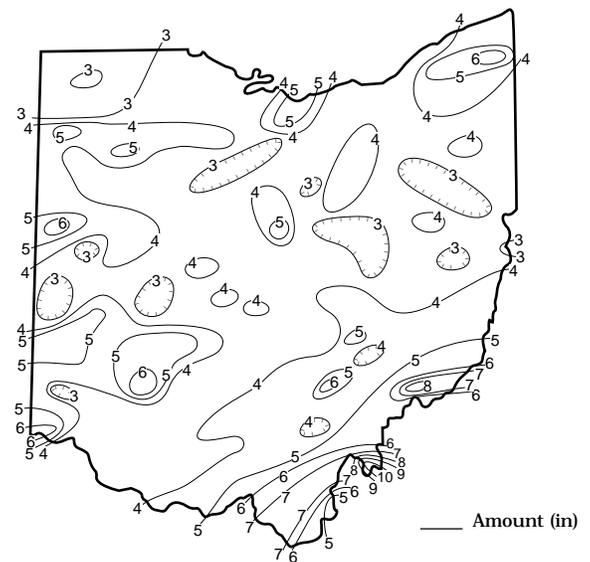
PRECIPITATION during June was generally above normal across much of the state, but below normal in northwestern, east-central and portions of west-central Ohio. The average for the state as a whole was 3.93 inches, 0.08 inch above normal. Regional averages ranged from 5.26 inches, 1.65 inches above normal, for the South Central Region to 3.23 inches, 0.44 inch below normal, for the Northwest Region. This was the 13th wettest June during the past 109 years for the South Central Region. Racine Locks and Dam (Meigs County) reported the greatest amount of June precipitation, 10.98 inches. Wauseon (Fulton County) reported the least amount of June precipitation, 2.09 inches.

Rainfall during the month varied across the state, with the greatest amounts tending to be in southeastern Ohio decreasing to the northwest. Most of the June rain fell during the first half of the month. Rain amounts generally ranged from 2 to more than 4 inches during the first half of June as showers and thunderstorms, some containing locally heavy rains, occurred on several days. Precipitation from showers and thunderstorms on June 3 was greatest in the southern half of Ohio with storm totals of around 0.50-1.0 inch with lesser amounts falling in northern Ohio. Precipitation during June 7-8 amounted to 0.50-1.0 inch across most of the state, except in northwestern Ohio where little or no rain occurred. The most significant event of the month occurred during June 11-17. Slow moving showers and thunderstorms, some producing locally heavy rains, dropped 1-3 inches of precipitation across most of the state with isolated locations receiving in excess of 4 inches. Some localized flooding was observed as a result of these heavy rains, most notably in southwestern Ohio. The remainder of the month was noticeably drier across most of the state with generally less than 0.50 inch reported. An exception was in extreme southeastern Ohio on June 19 when heavy rains of 1-3 inches fell.

Precipitation for the 2003 calendar year is near or above normal statewide. The average for the state as a whole is 20.04 inches, 0.70 inch above normal. Regional averages range from 24.96 inches, 3.89 inches above normal, for the South Central Region to 17.32 inches, 0.25 inch above normal, for the Northwest Region (see Precipitation table, departure from normal, past six months column).

Precipitation for the 2003 water year is above normal across most of the state, but below normal in some of northwestern and east-central Ohio. The average for the state as a whole is 28.56 inches, 1.01 inches above normal. Regional averages range from 35.87 inches, 6.39 inches above normal, for the South Central Region to 23.79 inches, 0.87 inch below normal, for the Northwest Region.

PRECIPITATION JUNE



PRECIPITATION

Region	This Month	DEPARTURE FROM NORMAL (IN.) Base period 1951-2000				Palmer Drought Severity Index*
		Past				
		3 Mos.	6 Mos.	12 Mos.	24 Mos.	
Northwest	-0.44	+1.48	+0.25	-2.89	+0.56	-0.2
North Central	0.00	+1.72	+0.29	-0.94	+2.41	-0.5
Northeast	+0.29	+2.73	+2.33	-0.18	+0.30	+0.4
West Central	-0.24	+0.37	+0.18	-1.94	+7.39	+0.1
Central	-0.05	+1.55	+0.49	+0.98	+3.40	-0.3
Central Hills	-0.66	+0.81	-0.29	-3.30	-0.95	-0.6
Northeast Hills	-0.62	+1.14	-0.25	-2.82	-3.26	-0.4
Southwest	+0.31	+1.16	-0.11	+0.73	+11.74	+1.3
South Central	+1.65	+4.81	+3.89	+4.82	+5.21	+1.9
Southeast	+0.52	+1.50	+0.24	-0.18	+1.85	+0.3
State	+0.08	+1.73	+0.70	-0.59	+2.83	

*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

River and Location	Drainage Area (Sq. Mi.)	Mean Discharge (CFS)	% of Normal	This Month		
				% of Normal Past		
				3 Mos.	6 Mos.	12 Mos.
Grand River near Painesville	685	1,463	554	151	141	106
Great Miami River at Hamilton	3,630	5,382	174	112	112	100
Huron River at Milan	371	349	164	124	143	128
Killbuck Creek at Killbuck	464	514	154	124	96	77
Little Beaver Creek near East Liverpool	496	495	117	101	81	65
Maumee River at Waterville	6,330	5,725	143	146	107	83
Muskingum River at McConnelsville	7,422	8,422	142	150	124	68
Scioto River near Prospect	567	632	207	155	136	112
Scioto River at Higby	5,131	7,224	203	120	107	95
Stillwater River at Pleasant Hill	503	247	66	64	83	62

STREAMFLOW during June was above normal across most of the state. Flows were high enough to be considered excessive in some basins, particularly those in northeastern and southwestern Ohio.

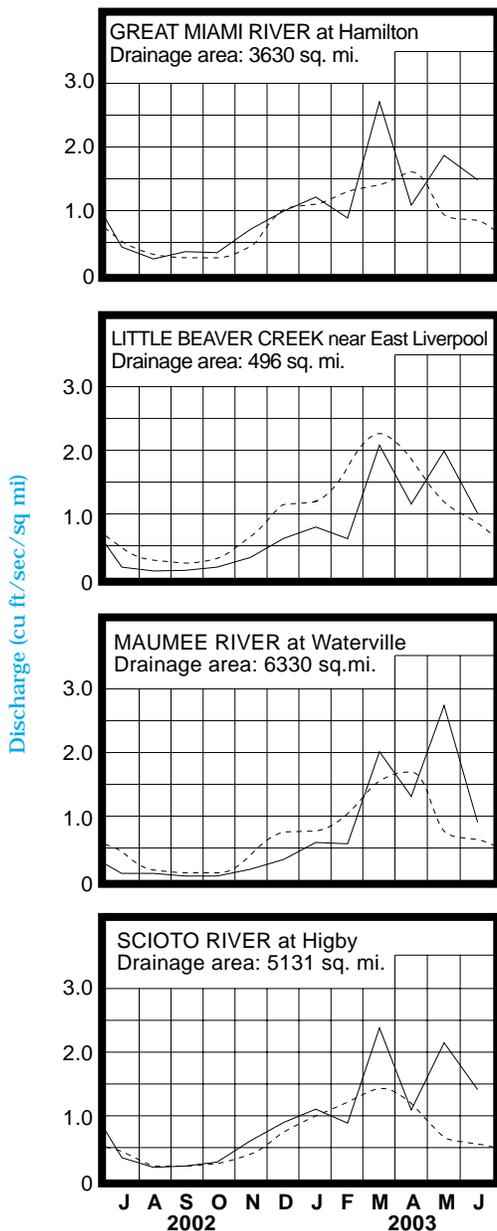
Flows at the beginning of June were below normal across western Ohio and above normal elsewhere. After declining for a few days at the beginning of June, flows rose near the end of the first week of the month in response to precipitation. Flows temporarily declined before rising following rainfall that fell during June 11-17. Greatest flows for the month occurred either during or just after this period statewide. Minor flooding, which was confined to low-lying, flood prone lands, affected mainly farmland and roadways in these areas. After peaking, flows gradually declined throughout the remainder of the month and were below normal statewide at month's end. Low flows for the month occurred at the end of June across most of the state.

RESERVOIR STORAGE during June decreased seasonally in both the Mahoning and Scioto river basins. Storage at the end of the month remained above normal in both basins.

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Reservoir storage at the end of June in the Mahoning basin index reservoirs was 100 percent of rated capacity for water supply compared with 107 percent for last month and 100 percent for June 2002. Month-end storage in the Scioto basin index reservoirs was 98 percent of rated capacity for water supply compared with 100 percent for last month and 97 percent for June 2002. Currently, surface water supplies throughout Ohio are in an excellent position to meet the increased consumptive use and evaporation rates typical of the summer season.

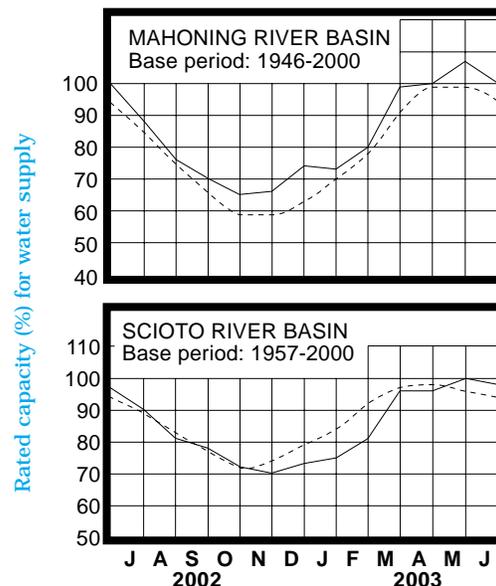
MEAN STREAM DISCHARGE



Base period for all streams: 1971-2000

Normal - - - - Current - - - -

RESERVOIR STORAGE FOR WATER SUPPLY



GROUND-WATER LEVELS

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

GROUND WATER levels during June rose contra-seasonally across most of Ohio. Wet conditions prevalent during May and the first half of June helped extend this year's recharge season across much of the state. However, drier conditions during the second half of June across most of the state effectively put an end to the current recharge season. Net improvement to ground water storage was greater than normally expected during June statewide. Generally, levels in most aquifers were rather stable or increased until just after mid-month and then declined during the remainder of June.

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	12.67	1.56	0.79	0.16
Fa-1	Jasper Mill, Fayette Co.	Limestone	7.87	-0.47	0.02	0.44
Fr-10	Columbus, Franklin Co.	Gravel	44.27	-1.51	0.09	-0.17
H-1	Harrison, Hamilton Co.	Gravel	22.47	-1.08	-0.07	-1.15
Hn-2a	Dola, Hardin Co.	Dolomite	6.26	0.33	-0.08	0.12
Po-1	Windham, Portage Co.	Sandstone	19.07	0.04	0.66	-0.17
Tu-1	Strasburg, Tuscarawas Co.	Gravel	13.11	-1.01	0.20	-0.05

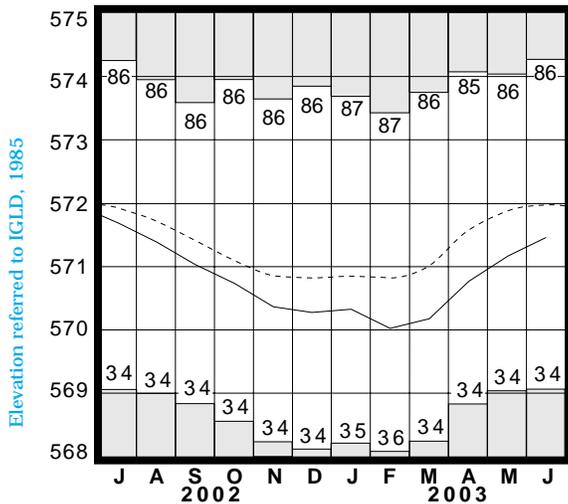
The abundant precipitation during May and the first half of June had a positive impact on ground water supplies statewide. Generally, ground water levels increased to above normal in consolidated aquifers, but remained below normal in unconsolidated aquifers. Levels are also near or higher than the levels observed during June 2002 across most of Ohio. With near normal precipitation and other climatic conditions 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 reported as being short in 4 percent of the state, adequate in 78 percent of the state and surplus in 18 percent of the state.

LAKE ERIE level rose during June. The mean level was 571.46 feet (IGLD-1985), 0.30 foot higher than last month's mean level and 0.52 foot below normal. This month's mean level is 0.49 foot lower than the June 2002 level and 2.26 feet above Low Water Datum.

The U.S. Army Corps of Engineers (USACE) reports that precipitation in the Lake Erie basin during June averaged 2.84 inches, which is 0.60 inch below normal. The entire Great Lakes basin averaged 2.51 inches of precipitation, which is 0.68 inch below normal. For calendar year 2003 through June, the Lake Erie basin has averaged 16.03 inches, 1.09 inches below normal, while the entire Great Lakes basin has averaged 13.72 inches, 1.04 inches below normal.

In addition, the USACE predicts that based on the current condition of the Great Lakes basin and anticipated weather conditions, the level of Lake Erie should range between 6-11 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 as high as 2 inches below normal to as much as 20 inches below the normal seasonal level.

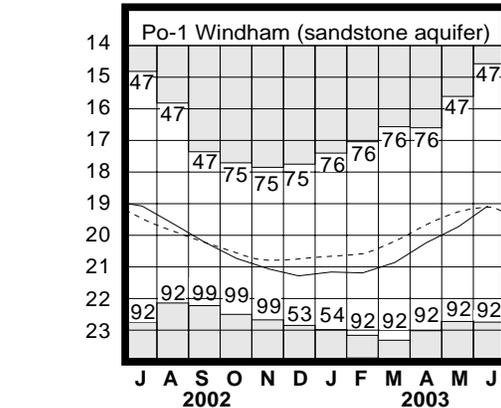
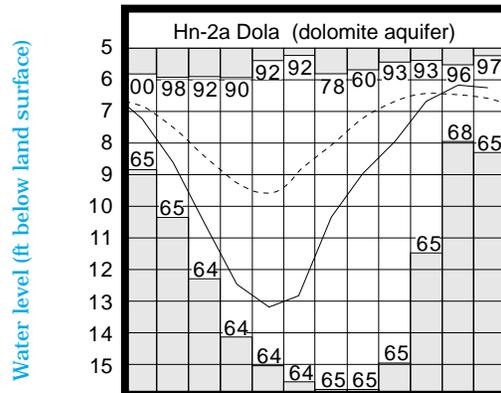
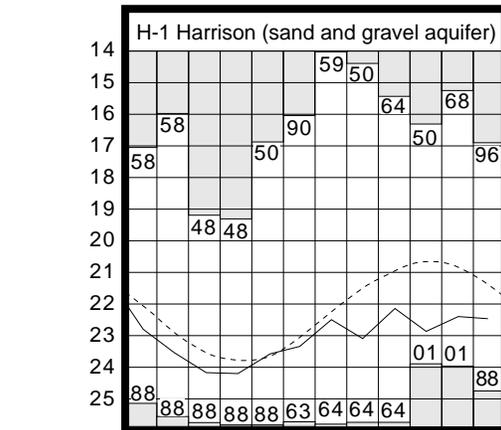
LAKE ERIE LEVELS



Base period: 1918-2000

□ Record high and low, year of occurrence

GROUND-WATER LEVELS



Base periods: H-1, 1951-2000. Hn-2a, 1955-2000.
Po-1, 1947-2000 □ Record high and low, year of occurrence

Normal - - - - Current ———

SUMMARY

Precipitation during June was above normal across much of the state. Streamflow was above normal throughout most of Ohio. Reservoir storage decreased statewide, but remained above normal. Ground water levels rose across most of the state and improved to above normal in many consolidated aquifers, but remained below normal in unconsolidated aquifers. Lake Erie level rose 0.30 foot and was 0.52 foot below the long-term June average.

NOTES AND COMMENTS

New Publication

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

Water Resources Data-Ohio Water Year 2002

This report, prepared in cooperation with the State of Ohio and other various agencies, is a two-volume set containing data from cooperative long-term surface-water and ground-water networks as well as data collected as part of special, short-term projects. Volume 1 comprises data from the Ohio River Basin while Volume 2 contains data from the St. Lawrence River Basin plus data from the special projects. Water-resources data for this report consist of records of stage, discharge and water quality of streams; stage and contents of lakes and reservoirs; and water levels and water quality of ground water wells. To make these data readily available to interested parties outside of the USGS, they are published annually in the *Water Resources Data-Ohio* report. Copies can be obtained by writing Michael Eberle, U.S. Geological Survey, Water Resources Division, 6480 Doubletree Avenue, Columbus, Ohio 43229, phone (614) 430-7718. The report can also be viewed and downloaded as a PDF file at the USGS water web page for Ohio (<http://oh.water.usgs.gov>), click on publications and then on "Water Data Report for Ohio".

Floodplain Management in Ohio - Statewide Conference 2003

On August 27-28, 2003, the Ohio Department of Natural Resources (ODNR), Federal Emergency Management Agency, and the Ohio Floodplain Management Association will be sponsoring *Floodplain Management in Ohio - Statewide Conference 2003*. The conference will be held at the Ramada Plaza Hotel and Conference Center in Columbus, Ohio. Concurrent conference sessions will address a wide range of topics under Floodplain Management Fundamentals, Advanced Floodplain Management, and Engineering/Technology in Floodplain Management. The Association of State Floodplain Manager's Certified Floodplain Manager Exam will also be offered in coordination with the conference at ODNR on Tuesday, August 26th, 2003. The conference brochure is available on ODNR's website at: <http://www.dnr.state.oh.us/water/>. For additional questions contact: Christopher M. Thoms, CFM, Conference Program Chairman at (614) 265-6750.

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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