



MONTHLY WATER INVENTORY REPORT FOR OHIO

May 1999

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

Compiled By David H. Cashell and Scott Kirk
Hydrologists
Water Inventory Unit

PRECIPITATION during May was noticeably below normal in most areas of the state except for a few stations in extreme northwest Ohio and in portions of the Northeast Hills Region where rainfall was above normal. The state average was 2.27 inches, 1.48 inches below normal. For the state as a whole, this was the 18th driest May during the past 117 years. Regional averages ranged from 3.36 inches, 0.42 inch below normal, for the Northeast Hills Region to 1.53 inches, 2.39 inches below normal, for the Southwest Region. This was the 8th driest May of record for the Central and Southwest regions. Toledo Express Airport (Lucas County) reported the greatest amount of precipitation for the month, 4.93 inches. Captain Anthony Meldahl Locks and Dam (Clermont County) reported the least amount, only 0.63 inch.

Precipitation during the first 3 weeks of May was light and spotty in most areas of the state. Scattered showers occurred around May 6-7 producing up to 0.5 inch at some locations in southwest Ohio, but generally less than 0.25 inch elsewhere. Light showers from May 13-15 produced meager amounts of up to 0.25 inch at many locations across the state. Light showers fell on May 18-19 with rainfall of less than 0.25 inch occurring throughout most of the western and southern sections of the state. A few heavier downpours occurred in northeast and east-central Ohio where amounts of 0.5 inch were common with some isolated locations receiving between 1-2 inches of rain. Still, the showers were spotty and many areas received little or no rain during this period. The most significant rain occurred during May 22-25 as showers and occasional thunderstorms with brief, heavy downpours moved through the state. The greatest amount of rain fell in the eastern half of Ohio and also in the northwest corner of the state. Amounts of 1 to more than 2 inches of rain fell in these areas with lesser amounts to the south and west where rain totals of 0.5-1.0 inch were typical. On the last day of the month a few widely scattered showers and isolated thunderstorms occurred mainly across the northern half of the state with amounts of around 0.5 inch reported in some areas.

Precipitation for the 1999 calendar year is above normal in west-central, northwest and east-central Ohio and below normal elsewhere. The average for the state as a whole is 15.29 inches, 0.35 inch below normal. Regional averages range from 17.38 inches, 1.69 inches above normal, for the Northeast Hills Region to 13.18 inches, 0.61 inch below normal, for the North Central Region.

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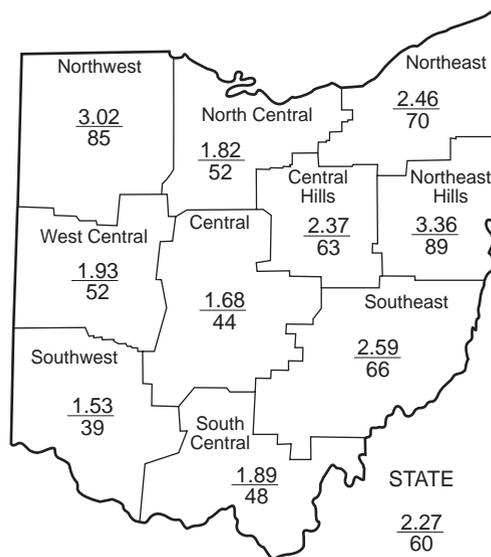
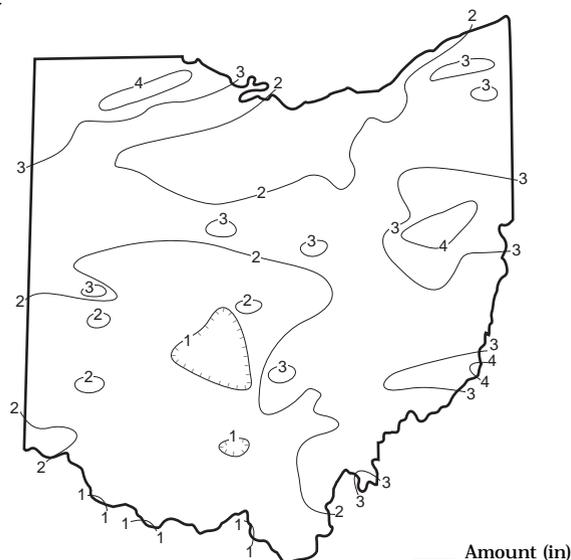
PRECIPITATION

Region	DEPARTURE FROM NORMAL (IN.)					Palmer Drought Severity Index*
	This Month	Past				
		3 Mos.	6 Mos.	12 Mos.	24 Mos.	
Northwest	-0.52	+0.01	+0.23	+3.52	+8.65	-2.2
North Central	-1.69	-1.16	-1.41	+1.26	+4.10	-1.7
Northeast	-1.07	-1.14	-0.67	-2.45	-2.21	-2.1
West Central	-1.79	-2.81	-0.47	+1.85	+2.06	-1.3
Central	-2.13	-2.79	-1.32	-1.56	+1.43	-2.0
Central Hills	-1.40	-1.66	-0.38	+1.65	+1.27	-1.7
Northeast Hills	-0.42	-1.18	+1.32	+4.18	+3.82	-2.0
Southwest	-2.39	-4.81	-2.38	-2.11	-0.97	-1.9
South Central	-2.04	-4.20	-2.84	-2.82	-0.52	-1.9
Southeast	-1.35	-2.42	-0.66	+1.42	+5.28	-1.6
State	-1.48	-2.21	-0.85	+0.49	+2.28	

*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

PRECIPITATION MAY



Average (in)
Percent of normal

MEAN STREAM DISCHARGE

River and Location	Drainage Area (Sq. Mi.)	This Month			% of Normal Past		
		Mean Discharge (CFS)	% of Normal	3 Mos.	6 Mos.	12 Mos.	
Grand River near Painesville	685	262	42	72	62	49	
Great Miami River at Hamilton	3,630	1,798	46	65	87	109	
Huron River at Milan	371	113	42	89	88	123	
Killbuck Creek at Killbuck	464	249	50	81	98	105	
Little Beaver Creek near East Liverpool	496	371	64	63	106	95	
Maumee River at Waterville	6,330	3,842	76	109	108	114	
Muskingum River at McConnelsville	7,422	5,334	54	77	100	115	
Scioto River near Prospect	567	180	43	91	86	93	
Scioto River at Higby	5,131	1,822	34	65	80	95	
Stillwater River at Pleasant Hill	503	198	51	59	88	113	

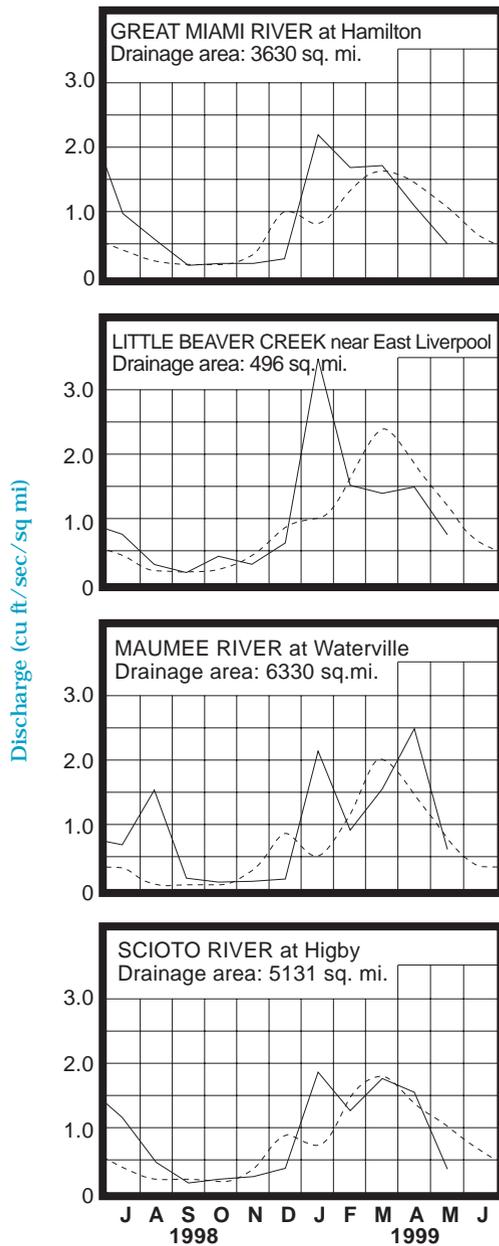
STREAMFLOW during May was below normal statewide. Flows were low enough in most areas of the state to be considered deficient. Flows for the month were noticeably less than the April flows across Ohio.

Flows at the beginning of the month were below normal throughout most of the state, but slightly above normal in some northwest Ohio drainage basins. Greatest monthly flows for May were reached at the beginning of the month in the southern half of the state and also in some north-central basins. Generally, flows declined steadily during the first 3 weeks of the month except for slight temporary rises around the 13th and again around the 19th in some drainage basins. Low flows for the month occurred during May 17-21 in most basins in the northeastern two-thirds of the state. Steamflow increased statewide around May 22-25 as a result of the heaviest, most widespread rain of the month. Many basins in the northern half of the state recorded their greatest May flows during this period. Flows declined statewide the last few days of the month and were lower at the end of the month than they were in the beginning. Most drainage basins in the southwestern third of the state recorded their lowest May flows at the end of the month. Flows at the end of May were below normal statewide.

RESERVOIR STORAGE for water supply during May declined in both the Mahoning and Scioto river basins. Storage remained slightly above normal in the Mahoning basin reservoirs but fell to below normal in the Scioto basin reservoirs.

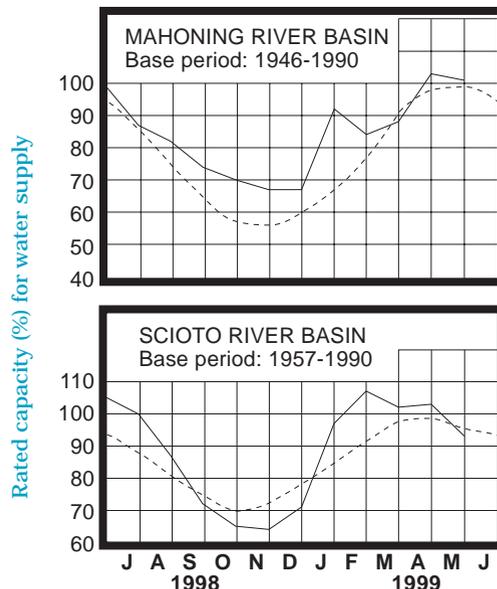
Reservoir storage at the end of May in the Mahoning basin index reservoirs was 101 percent of rated capacity for water supply compared with 103 percent for last month and 98 percent for May 1998. Month-end storage in the Scioto basin index reservoirs was 93 percent of rated capacity for water supply compared with 103 percent for last month and 101 percent for May 1998. Surface water supplies remain adequate throughout the state.

MEAN STREAM DISCHARGE



Base period for all streams: 1961-1990

RESERVOIR STORAGE FOR WATER SUPPLY



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	15.51	-2.79	-1.21	-2.42
Fa-1	Jasper Mill, Fayette Co.	Limestone	7.70	-0.68	-0.23	-0.86
Fr-10	Columbus, Franklin Co.	Gravel	43.39	-0.76	-0.48	-1.81
H-1	Harrison, Hamilton Co.	Gravel	22.74	-2.06	-0.59	-2.00
Hn-2a	Dola, Hardin Co.	Dolomite	6.47	+0.06	-0.14	+0.31
Po-1	Windham, Portage Co.	Sandstone	20.51	-1.42	+0.26	-1.38
Tu-1	Strasburg, Tuscarawas Co.	Gravel	13.10	-1.97	-0.70	-0.11

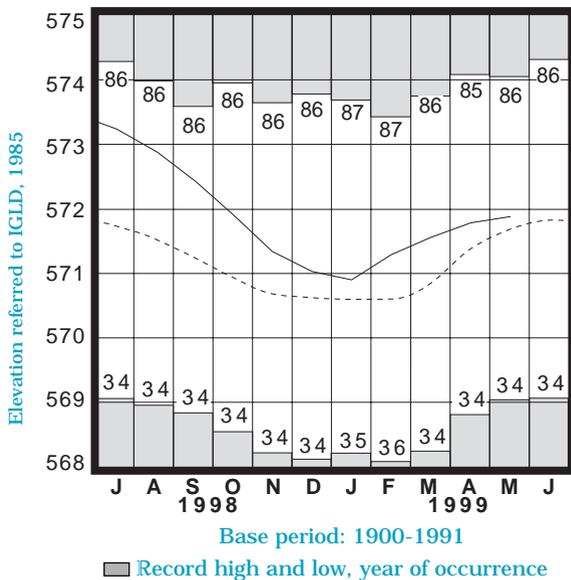
GROUND WATER levels during May remained stable or declined throughout the state. In most aquifers, the declines were greater than usually observed for May. Some aquifers, especially shallow unconsolidated aquifers, did experience slight temporary rises around May 24-25 due to the rains of May 22-25. However, ground water levels were falling in most aquifers at the end of the month. Ground water levels remain below normal in most aquifers across the state with the exception of a few consolidated aquifers in northwestern Ohio where they are slightly above normal. Most aquifers range from just over 0.5 foot to almost 3 feet below normal. Water levels are also lower than they were a year ago in nearly all aquifers across the state.

The 1999 recharge season seems to have ended abruptly in April for most of Ohio. It was not a particularly good recharge season for the state's ground water supplies. Many regions of the state have experienced below normal precipitation in 4 of the past 7 months and some areas in southern Ohio during 6 of the past 7 months. The Ohio Agricultural Statistics Service reports that near the end of May soil moisture was rated as being short or very short in 23 percent of the state, adequate in 73 percent and surplus in 4 percent. A return to a more normal weather pattern throughout the summer high water use period would help reduce demand. Water supply managers with ground water sources are urged to monitor their situations closely throughout the summer months.

LAKE ERIE level peaked at the beginning of May and then slowly declined throughout the month. The mean level for May was 571.88 feet (IGLD-1985) which is 0.10 foot higher than last month's mean level and 0.19 foot above normal. This month's level is 1.91 feet lower than the May 1998 level and 2.68 feet above Low Water Datum.

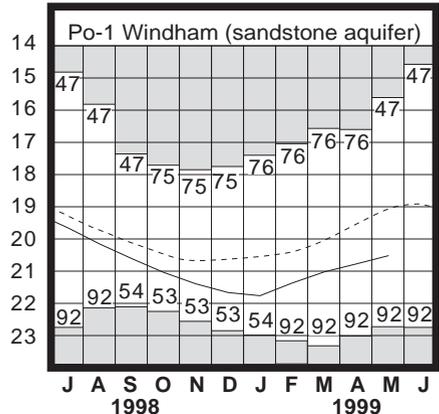
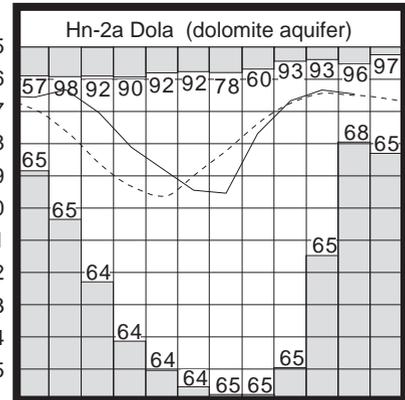
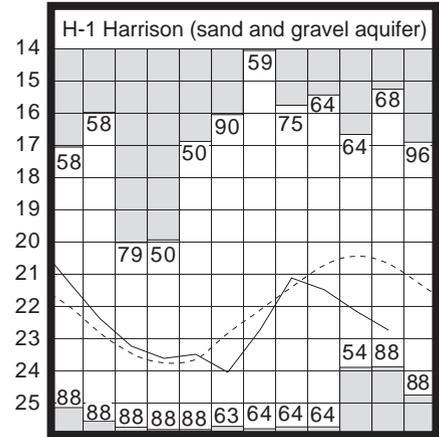
The U. S. Army Corps of Engineers reports that precipitation in the Lake Erie basin during May averaged 3.0 inches, 0.3 inch below normal. The entire Great Lakes basin averaged 3.0 inches during May, which is normal. For the calendar year 1999 through May, the Lake Erie basin has averaged 14.4 inches of precipitation, 0.7 inch above normal, and the entire Great Lakes basin has averaged 11.9 inches, 0.3 inch above normal.

LAKE ERIE LEVELS at Fairport



GROUND-WATER LEVELS

Water level (ft below land surface)



Base periods: H-1, 1951-1990. Hn-2a, 1955-1990.

Po-1, 1947-1990

(continued from front page)

Precipitation for the 1999 water year is below normal statewide except in the Central Hills and Northeast Hills regions where it is slightly above normal. The state average is 22.05 inches, 1.16 inches below normal. Regional averages range from 25.17 inches, 1.77 inches above normal, for the Northeast Hills Region to 17.82 inches, 2.82 inches below normal, for the North Central Region.

SUMMARY

Precipitation was below normal in most areas of the state, except in some areas in the Northwest and Northeast Hills regions where it was above normal. Streamflow was below normal statewide and was low enough to be considered deficient in most drainage basins. Reservoir storage declined statewide but remained slightly above normal in the Mahoning River basin. Ground water levels were stable or steadily declined throughout the month and are below normal in most aquifers across the state. Lake Erie level peaked at the beginning of the month and slowly declined thereafter.

NOTES AND COMMENTS

NEW DIRECT WELL LOGS FAX NUMBER

The Ohio Department of Natural Resources, Division of Water, Water Resources Section has added a new fax number to be used to request well logs and other hydrogeological technical information. The new fax number is 614-265-6767. The new number will help better serve those who fax in well log requests.

CAUTION URGED FOR BOATERS ON LAKE ERIE

Lake Erie boaters are urged to use extreme caution while on the lake this year due to the lower lake levels. Lake Erie water level is currently about 2 feet lower than last year's level and lower for the summer boating season than at almost anytime during the past 30 years or so. Levels are expected to drop even further as it appears the seasonal rise in lake levels has ended early and the normal annual decline, which normally lasts through mid winter, has begun.

Shoreline and other shallow areas which were deep enough for boaters to pass through last year could pose a problem this year. A greater risk of grounding or damage to boats from debris also exists this year. Boaters are at greater risk of injury if they are traveling too fast in these problem areas.

Lake Erie levels have generally ranged at above normal levels for the past 30 years or so. Record-high levels were established in the early 1970s, and then surpassed in the mid 1980s. Levels approached record-high levels in 1997 and continued at notably high levels through mid 1998 before starting the current downturn. For many summer boaters this may well be the first time they will navigate in water levels this low. It is best to be forewarned and plan ahead so boaters will not find themselves in any trouble. The Ohio Department of Natural Resources (ODNR), Division of Watercraft, along with other boating agencies, have identified 10 areas with the greatest potential for boaters to run aground in Lake Erie's shallow western basin. The areas where water may be too low for safe navigation are:

- 1) All water between Johnson's Island and Bay Point in Sandusky Bay, including the Bay Point Sandbar.
- 2) Gull Island Shoal north of Kellys Island.
- 3) Middle Harbor Shoal near East Harbor Beach
- 4) Gem Beach entrance to West Harbor.
- 5) Starve Island Reef area.
- 6) All water along the northeast side of South Bass Island from Perry's Victory Monument to Ballast Island, including Buckeye Reef.
- 7) Lonz's Point Reef off Middle Bass Island.
- 8) Put-In-Bay's Alligator Reef between Gibraltar Island and South Bass Island.
- 9) Sugar Island Reef between Sugar Island and Middle Bass Island.
- 10) All water between Mouse Island and Catawba Island.

The ODNR, Division of Watercraft urges all Lake Erie Boaters to use caution. For more information please contact Dennis Evans at (614) 265-6695.

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.



Bob Taft
Governor

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DIVISION OF WATER
1939 FOUNTAIN SQUARE
COLUMBUS, OHIO 43224