



MONTHLY WATER INVENTORY REPORT FOR OHIO

April 2002

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

Compiled By David H. Cashell and Scott Kirk

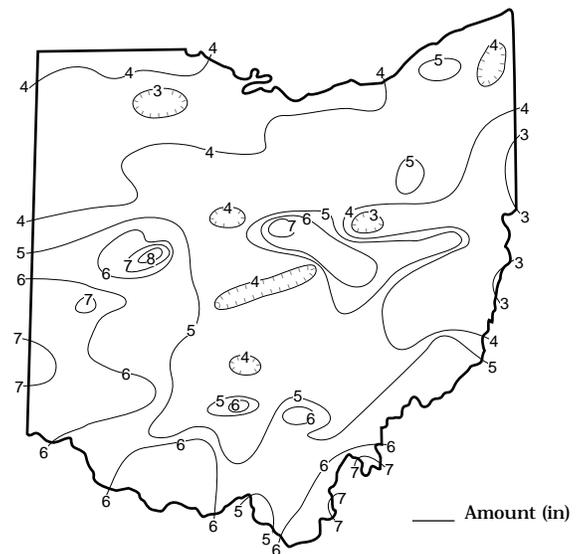
Hydrologists
Water Inventory Unit

PRECIPITATION during April was above normal across most of Ohio. The average for the state as a whole was 4.72 inches, 1.14 inches above normal. For the state, this was the 15th wettest April during the past 120 years of record. Regional averages ranged from 6.03 inches, 2.07 inches above normal, for the Southwest Region to 3.70 inches, 0.32 inch above normal, for the Northwest Region. This was the 10th wettest April of record for the West Central and South Central regions, the 11th wettest for the Central Hills Region and the 13th wettest for the Southwest Region. Bellefontaine (Logan County) reported the greatest amount of April precipitation, 8.43 inches. Millersburg (Holmes County) reported the least amount, 2.84 inches.

Precipitation during April fell mainly as rain, but some light snow showers occurred across most of the state during the first week of the month. Light precipitation fell on many days during the month with daily amounts of 0.25 inch or less. However, several significant storms occurred during the month. Showers during April 2-3 brought generally 0.50-1.0 inch of rain to the northern half of the state with lesser amounts in the southern half. The most notable storm of the month began on April 12 in western Ohio and spread statewide during the next two days. Showers and thunderstorms with locally heavy rain at times, especially across the southern half of the state, resulted in urban and lowland flooding. Storm amounts of 1-2 inches were reported across most of the state with scattered areas in southern Ohio receiving around 3 inches. Showers and thunderstorms returned to the state during April 19-21 and were strongest in the southwestern quarter of Ohio. Most areas in southwestern Ohio received 1-2 inches of rain with isolated locations reporting as much as 4 inches. Amounts decreased to generally 0.50-1.0 inch across the remainder of the state. Minor small stream and urban flooding was reported in a few areas of southwestern Ohio. Steady, widespread rain during April 27 was followed by scattered thunderstorms on April 28 producing another 0.50-1.0 inch across most of the state. Some of these thunderstorms produced large hail and damaging winds. A tornado touched down in Stark County causing considerable damage.

Precipitation for the 2002 water year is above normal statewide. The average for the state as a whole is 22.59 inches, 2.84 inches above normal. Regional averages range from 26.59 inches, 4.49 inches above normal, for the Southwest Region to 21.06 inches, 1.03 inches above normal, for the Northeast Hills Region.

PRECIPITATION APRIL



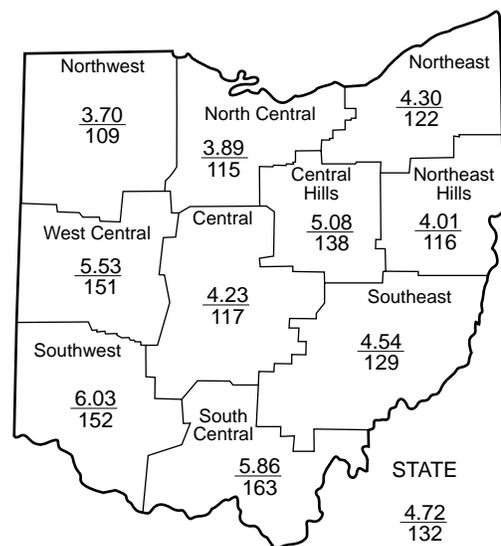
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PRECIPITATION

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	+0.32	+0.83	+0.05	+6.32	+9.39	+1.9
North Central	+0.50	+1.09	+0.84	+2.07	+4.91	+1.4
Northeast	+0.77	+1.36	+0.03	-1.71	-2.18	+0.6
West Central	+1.87	+2.39	+1.70	+10.11	+8.07	+3.3
Central	+0.60	+0.34	+0.06	+3.05	+2.22	+0.5
Central Hills	+1.40	+1.21	+0.62	0.00	-1.46	+1.5
Northeast Hills	+0.55	-0.12	-0.75	-2.08	-2.57	+0.1
Southwest	+2.07	+1.90	+1.89	+9.41	+3.78	+2.9
South Central	+2.27	+2.08	+1.80	+3.19	-1.71	+0.8
Southeast	+1.03	+0.39	+0.34	+1.59	-0.95	+0.6
State	+1.14	+1.15	+0.66	+3.19	+1.94	

*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	1,753	119	94	78	67
Great Miami River at Hamilton	3,630	12,350	211	139	139	139
Huron River at Milan	371	763	128	98	86	74
Killbuck Creek at Killbuck	464	981	124	82	73	66
Little Beaver Creek near East Liverpool	496	954	103	73	69	58
Maumee River at Waterville	6,330	14,990	140	112	104	116
Muskingum River at McConnelsville	7,422	17,328	102	114	111	67
Scioto River near Prospect	567	1,617	177	116	113	106
Scioto River at Higby	5,131	11,003	144	88	87	96
Stillwater River at Pleasant Hill	503	1,780	243	137	133	135

STREAMFLOW during April was above normal statewide. Flows were high enough to be considered excessive in the western half of Ohio. April flows were greater than the March flows statewide.

Streamflow was above normal across most of the state at the beginning of April. Flows generally declined during much of the first half of the month except for some temporary increases noted following local precipitation. Flows began to increase statewide on April 13 in response to precipitation that occurred during April 12-14. Greatest flows for the month were observed during April 14-16 across most of the state as a result of this precipitation. Some of the rain was locally heavy and resulted in urban and small stream flooding, especially across the southeastern quarter of Ohio. After peaking, flows generally declined until late in the month across much of the state. However, flows in the southwestern quarter of the state declined only briefly before rising again as a result of showers and thunderstorms that occurred during April 19-21. A few of these storms contained copious amounts of rainfall resulting in urban and small stream flooding in some areas of southwestern Ohio. Low flows for the month occurred around April 27 across most of the state just prior to widespread precipitation that fell on April 27-28. Flows at the end of April had declined to below normal across most of the state, but were above normal throughout the southwestern quarter of Ohio.

RESERVOIR STORAGE for water supply during April increased in the Mahoning River basin and was unchanged in the Scioto River basin. Storage at the end of April was above normal in both basins.

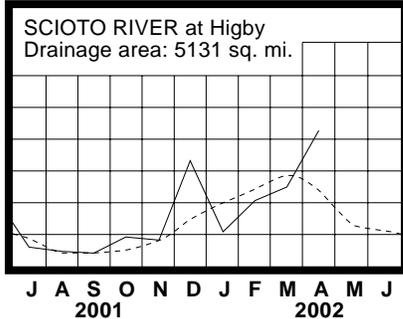
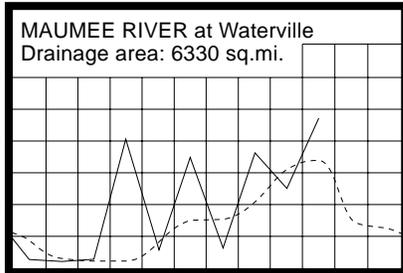
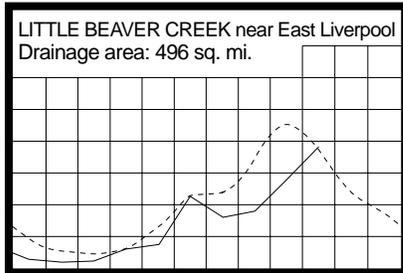
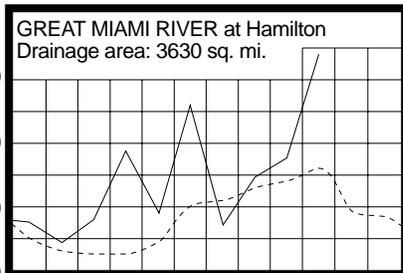
Reservoir storage at the end of the month in the Mahoning basin index reservoirs was 103 percent of rated capacity for water supply compared with 101 percent for last month and 96 percent for April 2001. Month-end storage in the Scioto basin index reservoirs was 101 percent of rated capacity for water supply compared with the same for last month and 99 percent for April 2001.

Surface water supplies are in excellent condition throughout Ohio. Both on- and off-stream water-supply reservoirs are near capacity and recreational reservoirs have reached summer pool levels.

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MEAN STREAM DISCHARGE

Discharge (cu ft/sec/sq mi)

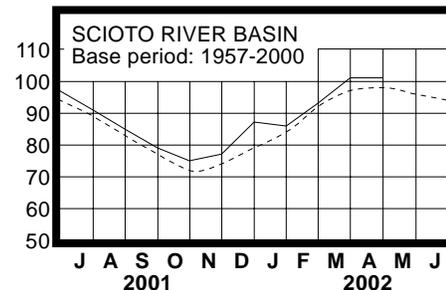
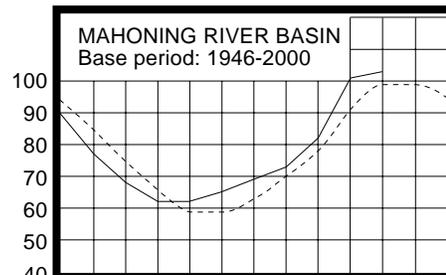


Base period for all streams: 1971-2000

Normal - - - - Current - - - -

RESERVOIR STORAGE FOR WATER SUPPLY

Rated capacity (%) for water supply



GROUND-WATER LEVELS

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

GROUND WATER levels during April rose statewide. Positive net changes from the March levels were near or greater than usually observed for April across most of the state. Generally, ground water levels were rather stable during the first half of the month and then rose during the second half of April in response to precipitation.

Ground water levels remain below normal across most of the state ranging to nearly 3 feet below the long-term April average. The one exception is in some carbonate aquifers in northwestern Ohio where levels continue to be above normal. Current levels are higher than the April 2001 levels across nearly the entire state.

The above normal precipitation during April helped reverse the unfavorable recharge trend that has persisted since the beginning of the year. Although the state is approaching the end of the typical recharge season, current soil and climatic conditions may extend the season this year. The Ohio Agricultural Statistics Service reports that near the end of April, soil moisture was rated as being short or very short in 1 percent of the state, adequate in 62 percent of the state and surplus in 37 percent of the state. With near normal precipitation and other climatic conditions during the next month or two, the outlook for additional recharge is favorable. However, the wet conditions have delayed field activities for most of Ohio's farmers.

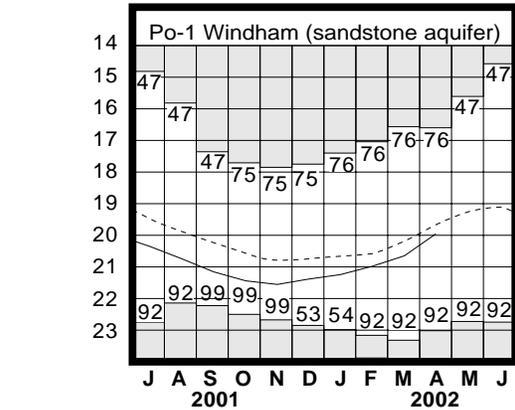
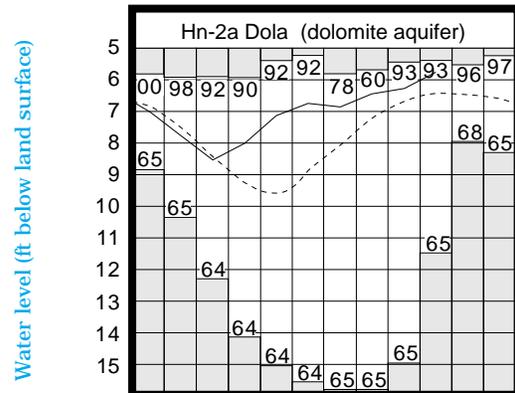
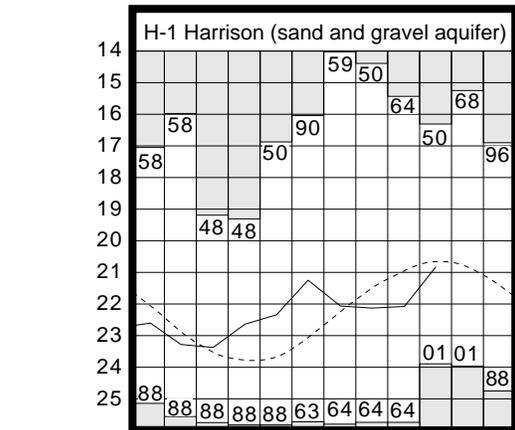
LAKE ERIE levels rose during April. The mean level was 571.56 feet (IGLD-1985), 0.60 foot higher than last month's mean level and 0.03 foot below normal. This month's mean level is 0.60 foot higher than the April 2001 level and 2.36 feet above Low Water datum.

The U.S. Army Corps of Engineers (USACE) reports that precipitation in the Lake Erie basin during April was 3.92 inches, which is 0.77 inch above normal. The entire Great Lakes basin averaged 3.32 inches, which is 0.79 inch above normal. For calendar year 2002 through April, the Lake Erie basin has averaged 12.69 inches of precipitation, 2.29 inches above normal, while the entire Great Lakes basin has averaged 9.86 inches, which is 1.24 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 2 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 4 inches above to as much as 12 inches below the normal seasonal levels. Forecasters from the USACE predict Lake Erie's mid-summer level should be at least 5 inches higher than last summer's level because of significantly above normal precipitation last fall throughout the Great Lakes basin and near normal snow pack in the Lake Superior basin this past winter.

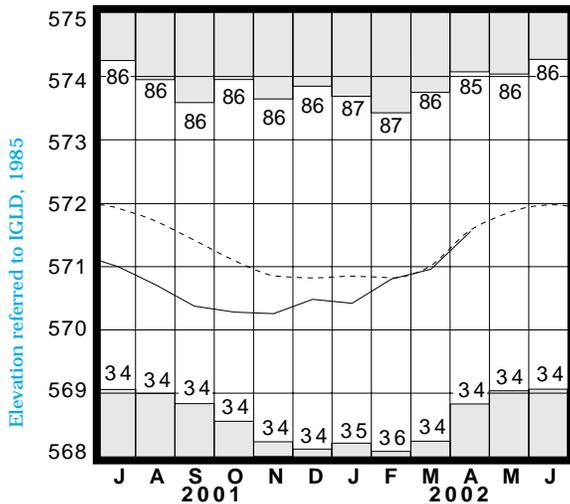
Index Well	Location	Aquifer	Mean This Month	Departure From Normal	Change in feet from:	
					Last Month	Year Ago
F-1	W. Rushville, Fairfield Co.	Sandstone	13.10	-0.41	+1.14	+0.26
Fa-1	Jasper Mill, Fayette Co.	Limestone	7.68	-0.85	+0.31	+0.15
Fr-10	Columbus, Franklin Co.	Gravel	44.34	-2.07	+0.48	+0.08
H-1	Harrison, Hamilton Co.	Gravel	20.82	-0.15	+1.26	+2.45
Hn-2a	Dola, Hardin Co.	Dolomite	5.76	+0.67	+0.52	+0.51
Po-1	Windham, Portage Co.	Sandstone	19.96	-0.30	+0.69	+0.22
Tu-1	Strasburg, Tuscarawas Co.	Gravel	13.99	-2.83	+1.46	+0.08

GROUND-WATER LEVELS



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

LAKE ERIE LEVELS



Base period: 1918-2000

Record high and low, year of occurrence

Normal - - - - Current ———

(Precipitation continued from front)

Precipitation for the 2002 calendar year is above normal across much of the state, but is below normal in some areas of central and east-central Ohio. The average for the state as a whole is 12.21 inches, 0.63 inch above normal. Regional averages range from 15.75 inches, 2.45 inches above normal, for the South Central Region to 10.79 inches, 0.58 inch below normal, for the Central Region.

SUMMARY

Precipitation during April was above normal across most of the state. Streamflow was above normal statewide. Reservoir storage generally increased and was above normal in both the Mahoning and Scioto basins. Ground water levels rose statewide, but remain below normal across most of the state. Lake Erie level rose 0.60 foot and was 0.03 foot below the long-term April 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 2001

This report, a two volume set, contains data from cooperative long-term surface-water and ground water networks as well as data collected as part of special short-term projects by various agencies. 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. 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 U.S. Geological Survey, Water Resources Division, 6480 Doubletree Avenue, Columbus, Ohio 43229, phone (614) 430-7700. The report can also be viewed by way of the USGS water web page for Ohio (<http://oh.water.usgs.gov>), click on Publications and then on "Water Data Report for Ohio."

Former Division Of Water Deputy Chief Passes

It is with sadness that we report that Peter G. Finke, former Deputy Chief for the Division of Water, passed away on April 18. Peter had recently retired from the Division of Water after 31 years of service. Peter provided distinguished service and leadership for more than three decades in the field of floodplain management. He utilized collaboration and creativity throughout his career and drew strength from his personal dedication and conviction to build a statewide floodplain management program. His efforts have helped to improve the quality of life for all Ohioans, present and future. Peter was also instrumental in the development of the national policy on floodplain management. As a Committee Chair for the Association of State Floodplain Managers, he promoted legislation and initiatives that addressed the broad goals of reducing risk and promoted the natural benefit and function of the floodplain. Peter's career and contributions have provided a solid foundation for his colleagues and friends to build upon. His positive attitude and genuine concern for others will be greatly missed by all of us at the Division of Water.

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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