



MONTHLY WATER INVENTORY REPORT FOR OHIO

April 2004

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

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Water Inventory Unit

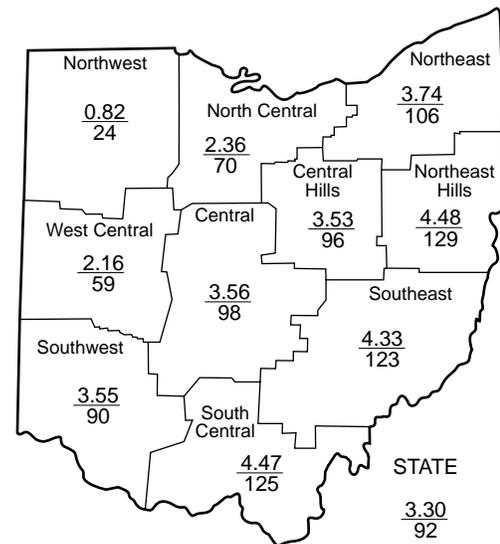
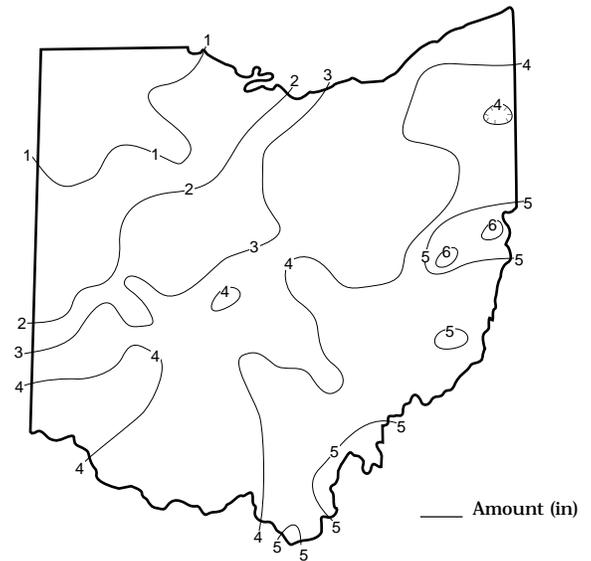
PRECIPITATION during April was generally below normal in the northwestern half of the state and above normal in the southeastern half. The average for the state as a whole was 3.30 inches, 0.28 inch below normal. Regional averages ranged from 4.48 inches, 1.02 inches above normal, for the Northeast Hills Region to 0.82 inch, 2.56 inches below normal, for the Northwest Region. This was the 2nd driest April during the past 110 years for the Northwest Region. New Cumberland Locks and Dam (Jefferson County) reported the greatest amount of April precipitation, 6.56 inches. Grover Hill (Paulding County) reported the least amount, only 0.23 inch. Several stations in northwestern Ohio reported less than 1 inch of precipitation for April.

Precipitation during April fell mostly as rain with only small amounts of snow reported in northeastern Ohio. The greatest amount of precipitation fell across southeastern Ohio where several stations reported in excess of 5 inches for the month. From these highs, April precipitation totals generally decreased to the north and west to less than 1 inch in northwestern Ohio. The rainy weather that existed at the end of March continued during the first few days of April. Amounts of 0.25-0.50 inch of precipitation fell across eastern Ohio during these first few days of April, with isolated locations in northeastern Ohio reporting greater than 1 inch. Less than 0.25 inch was reported elsewhere. After a few drier days, rain returned to the state during April 12-13 with most of the state receiving 1-2 inches of rain, except in northwestern Ohio where less than 0.25 inch fell. On and off showers, some containing brief heavier downpours, were common during April 19-25. The northern half of the state received 0.25-1.0 inch of precipitation while the southern half received 1 to 2 inches during this period. The month ended with light showers across all but northwestern Ohio with 0.25-0.50 inch reported in southern Ohio and less than 0.25 inch elsewhere.

Precipitation for the 2004 calendar year is above normal in the eastern two-thirds of the state and below normal in the western one-third. The average for the state as a whole is 11.76 inches, 0.18 inch above normal. Regional averages range from 14.58 inches, 2.24 inches above normal, for the Southeast Region to 5.19 inches, 4.72 inches below normal, for the Northwest Region.

Precipitation for the 2004 water year is above normal across most of the state, but below normal in much of the western one-third of Ohio. The average for the state as a whole is 20.73 inches, 0.94 inch above normal. Regional averages range from 25.09 inches, 3.38 inches above normal, for the South Central Region to 12.55 inches, 4.95 inches below normal, for the Northwest Region.

PRECIPITATION APRIL



PRECIPITATION

Region	DEPARTURE FROM NORMAL (IN.) Base period 1951-2000					Palmer Drought Severity Index*
	This Month	Past				
		3 Mos.	6 Mos.	12 Mos.	24 Mos.	
Northwest	-2.56	-4.56	-4.85	+4.81	-2.02	-1.0
North Central	-1.03	-1.34	-0.22	+7.82	+4.39	+2.3
Northeast	+0.21	+0.16	+1.13	+12.51	+9.41	+3.6
West Central	-1.50	-2.94	-0.47	+13.38	+10.11	+1.6
Central	-0.07	-0.32	+2.57	+11.58	+10.63	+2.2
Central Hills	-0.15	-0.12	+0.98	+9.72	+5.21	+2.3
Northeast Hills	+1.02	+0.62	+2.41	+14.13	+9.87	+2.2
Southwest	-0.41	-2.45	-0.60	+8.47	+8.86	+1.9
South Central	+0.88	+0.40	+3.25	+13.08	+13.94	+2.1
Southeast	+0.82	+0.44	+4.00	+13.85	+13.00	+2.7
State	-0.28	-1.01	+0.84	+10.90	+8.28	

*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

Average (in)
Percent of normal

MEAN STREAM DISCHARGE

River and Location	Drainage Area (Sq. Mi.)	Mean Discharge (CFS)	% of Normal	This Month		
				3 Mos.	6 Mos.	12 Mos.
Grand River near Painesville	685	1,952	133	127	121	148
Great Miami River at Hamilton	3,630	3,619	62	75	130	166
Huron River at Milan	371	682	114	111	150	162
Killbuck Creek at Killbuck	464	1,208	153	109	125	155
Little Beaver Creek near East Liverpool	496	1,111	120	112	139	178
Maumee River at Waterville	6,330	2,455	23	53	81	138
Muskingum River at McConnelsville	7,422	19,860	117	147	192	135
Scioto River near Prospect	567	663	73	86	137	180
Scioto River at Higby	5,131	9,158	120	99	134	157
Stillwater River at Pleasant Hill	503	244	33	51	112	150

STREAMFLOW during April was above normal in eastern Ohio and below normal in western Ohio. Flows were high enough to be considered excessive in some basins in eastern Ohio while flows were low enough to be considered deficient in western Ohio.

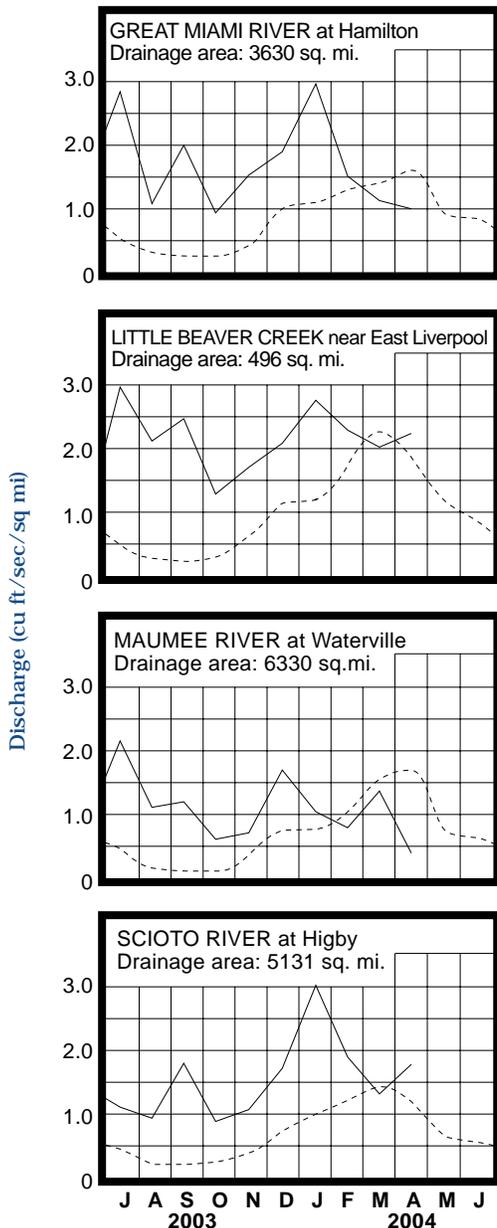
Flows at the beginning of April were above normal across most of the state. Greatest flows for the month occurred during the first 3 days as a result of the precipitation that fell in late March and early April. After peaking, flows decreased for several days until the precipitation that fell around April 12 and 13 increased flows statewide. Some minor low-land flooding was reported from southeastern

Ohio as a result of this rain. Low flows for the month occurred in the southern one-third of the state just prior to this precipitation. Flows generally decreased throughout the rest of the month, except for temporary increases noted during April 22-26 following local precipitation. Low flows for the month occurred at the end of April across most of the northern two-thirds of the state and were below normal statewide.

RESERVOIR STORAGE during April increased in both the Mahoning and Scioto river basins. Storage was above normal statewide.

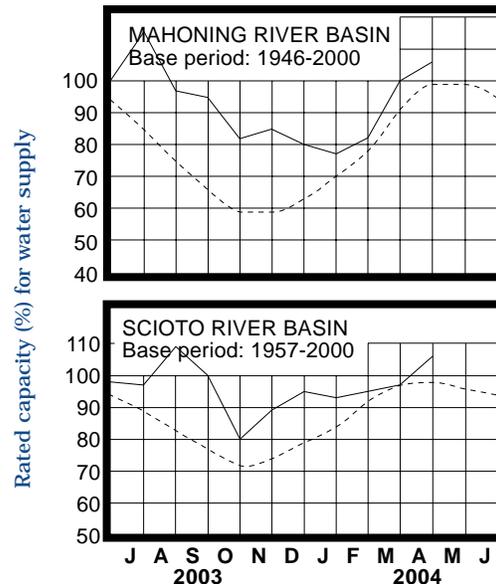
Reservoir storage at the end of April in the Mahoning basin index reservoirs was 106 percent of rated capacity for water supply compared with 100 percent for both last month and April 2003. Month-end storage in the Scioto basin index reservoirs was 106 percent of rated capacity for water supply compared with 97 percent for last month and 96 percent for April 2003.

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

GROUND WATER levels during April rose across most of the state. Net changes during April from March's levels were generally greater than usually observed in eastern Ohio, but less than usually observed in western Ohio. Levels in unconsolidated aquifers were rather stable during the month with only some temporary rises noted following local precipitation. Levels in consolidated aquifers in eastern Ohio rose steadily throughout April, while in western Ohio they slowly declined after rising during the first week.

Ground water supplies remain adequate across the state. Ground water levels are generally below normal in unconsolidated aquifers and above normal in consolidated aquifers. Current levels are higher than they were a year ago across nearly all of Ohio. With near-normal precipitation and other climatic conditions during the next month or two, some improvement in ground water storage could still occur. Soil moisture is favorable for additional recharge across much of the state. However, little time remains in the nominal recharge season for this year. The Ohio Agricultural Statistics Service reports that at the end of April, soil moisture was rated as being short or very short in 7 percent of the state, adequate in 64 percent of the state and surplus in 29 percent of the state.

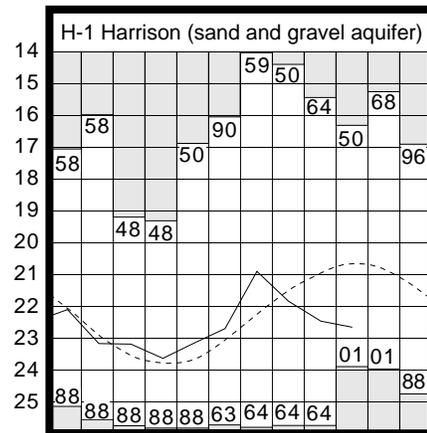
LAKE ERIE level rose during April. The mean level was 571.26 feet (IGLD-1985), 0.53 foot higher than last month's mean level and 0.33 foot below normal. This month's mean level is 0.49 foot higher than the April 2003 level and 2.06 feet above Low Water Datum.

The U.S. Army Corps of Engineers (USACE) reports that precipitation in the Lake Erie basin during April averaged 2.02 inches, which is 1.13 inches below normal. For the entire Great Lakes basin, April precipitation averaged 2.23 inches, which is 0.30 inch below normal. For calendar year 2004 through April, the Lake Erie basin has averaged 8.82 inches of precipitation, 1.58 inches below normal, while the entire Great Lakes basin has averaged 8.62 inches of precipitation, 0.27 inch below normal.

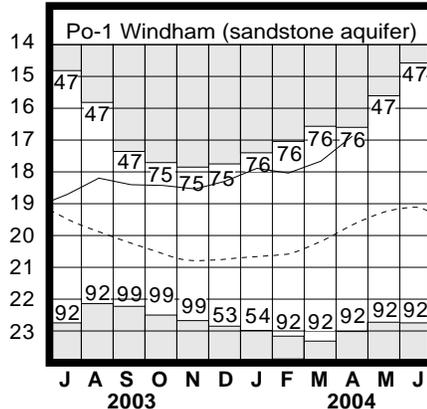
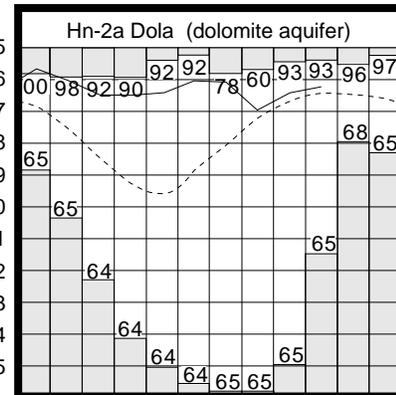
In addition, the USACE reports that based on the current condition of the Great Lakes basin and anticipated weather conditions, the level of Lake Erie should range between 4-7 inches below the long-term seasonal average for the foreseeable future. Deviations from the anticipated weather patterns could result in the level of Lake Erie ranging from near normal to as much as 16 inches below the normal seasonal average.

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	11.03	+1.66	+1.45	+1.36
Fa-1	Jasper Mill, Fayette Co.	Limestone	7.89	-1.06	+0.34	+0.12
Fr-10	Columbus, Franklin Co.	Gravel	43.28	-1.01	+0.38	+1.21
H-1	Harrison, Hamilton Co.	Gravel	22.66	-1.99	-0.20	+0.21
Hn-2a	Dola, Hardin Co.	Dolomite	6.23	+0.20	+0.18	+0.45
Po-1	Windham, Portage Co.	Sandstone	16.87	+2.79	+0.79	+3.37
Tu-1	Strasburg, Tuscarawas Co.	Gravel	11.51	-0.35	+0.75	+2.00

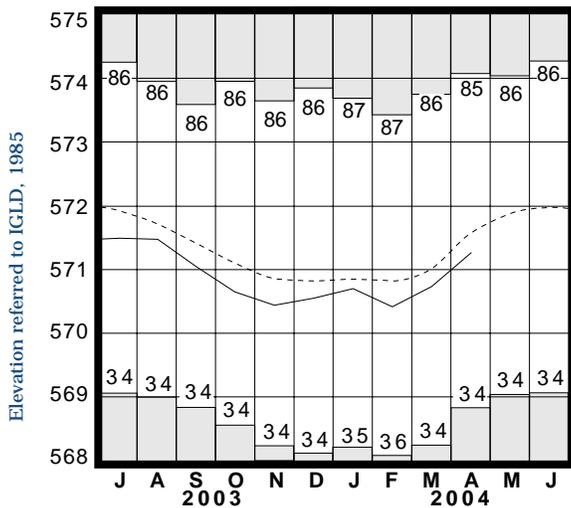
GROUND-WATER LEVELS



Water level (ft below land surface)



LAKE ERIE LEVELS



Base period: 1918-2000

□ Record high and low, year of occurrence

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 April was generally below normal in the north-western half of the state and above normal in the southeastern half. Streamflow was above normal in eastern Ohio and below normal in western Ohio. Reservoir storage increased in both the Mahoning and Scioto river basins and was above normal in both basins. Ground water levels rose across most of the state. Lake Erie level rose 0.53 foot and was 0.33 foot below the long-term April average.

NOTES AND COMMENTS

Division Of Water Chief Receives Award

Ohio Department of Natural Resources (ODNR) Director Sam Speck recognized Dick Bartz, Chief of the ODNR, Division of Water for his accomplishments over the last two years. Dick received the distinguished "Director's Award" for his outstanding work on the Great Lakes Charter Annex Initiative, and for his leadership of the Division of Water for its receipt of the Ohio Award for Excellence. The Annex Initiative is an effort by the eight Great Lakes States and two Canadian Provinces that make up or are a part of the Great Lakes watershed to develop a more binding agreement on how to manage the protection, restoration and use of the Great Lakes waters. The Ohio Award for Excellence is an organizational development system whereby organizations are assessed against organizational criteria including strategic planning, information and analysis, process management, leadership, human resources focus, customer & market focus, and organizational results. Congratulations to Dick and the Division of Water!

50-Year Anniversary Highlights

Notable April Events From The Past 50 Years

April 11, 1965 Palm Sunday: Severe storms, several producing tornadoes, killed 55 in Ohio.

April 1971: State precipitation averaged a record-low 0.93 inch. Most regions experienced either their driest or second driest April in 77 years.

April 3, 1974 Xenia tornado: Part of a large complex of tornadoes, dubbed the "Superoutbreak", that struck several states. In Ohio, 12 tornadoes touched down, killing 36 people, 33 of whom were killed in Xenia.

April 3-5, 1987: Late season snowstorm produces record-breaking amounts of snow for a 24-hour period at many stations throughout central and eastern Ohio, including Akron-Canton Airport, 20.6 inches; Dillon Reservoir, 18 inches; New Philadelphia, 17 inches; Columbus Airport, 12.6 inches.

ACKNOWLEDGMENTS



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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

Samuel W. Speck
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Chief

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