



MONTHLY WATER INVENTORY REPORT FOR OHIO

April 2003

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

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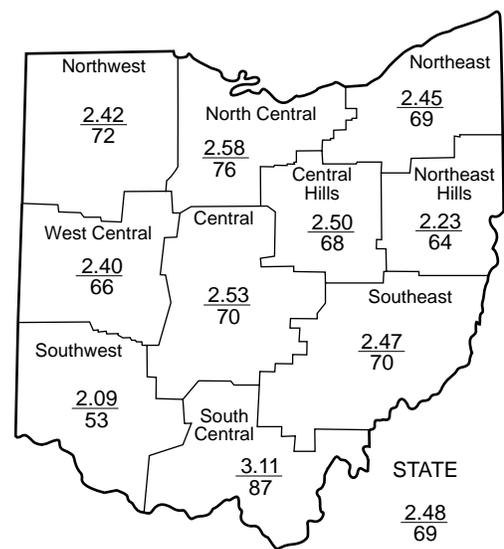
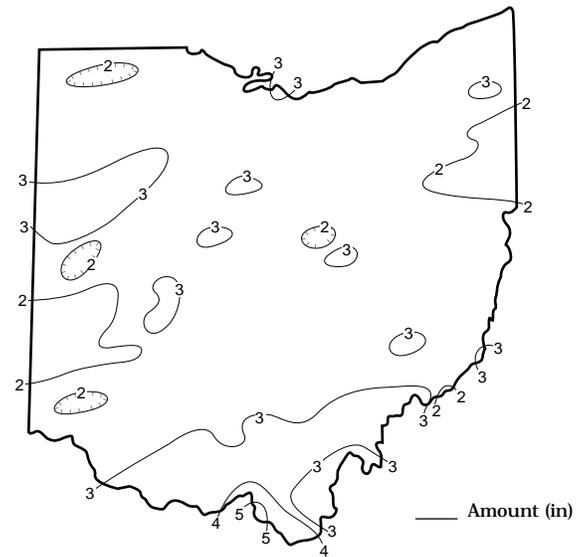
PRECIPITATION during April was below normal statewide, except for a few locations in extreme south-central Ohio along the Ohio River where it was above normal. The average for the state as a whole was 2.48 inches, 1.10 inches below normal. Regional averages ranged from 3.11 inches, 0.48 inch below normal, for the South Central Region to 2.09 inches, 1.87 inches below normal, for the Southwest Region. Greenup Locks and Dam (Scioto County) reported the greatest amount of April precipitation, 5.55 inches. West Manchester (Preble County) reported the least amount, 1.18 inches.

Most of the month's precipitation in the northern half of the state fell during the first week of the month. Precipitation totals during this period ranged between 1-2 inches in the northern half of Ohio decreasing to 0.5-1.0 inch in the southern half. The next two weeks were dry statewide with only meager amounts of rain reported through the 19th. Rainfall amounts from showers and thunderstorms during April 20 varied across the state, but generally ranged from 0.25-0.50 inch in the northern half of Ohio to 0.50-1.0 inch in the southern half. The most severe storms on the 20th occurred in central Ohio where heavy rains, strong winds and damaging hail was reported. A line of storms producing a band of large hail passed through central Ohio, damaging structures and vehicles, most notably in northern Franklin and southern Delaware counties. In some spots hail accumulated several inches deep. Early projections from the Ohio Insurance Institute put the damages from this storm at more than \$50 million. The remainder of the month was relatively dry with only scattered showers accounting for less than 0.25 inch across most of the state. A few widely scattered, heavier downpours brought around 0.50 inch to areas mainly in central Ohio on April 30.

Precipitation for the 2003 calendar year is below normal statewide. The average for the state as a whole is 9.45 inches, 2.13 inches below normal. Regional averages range from 11.90 inches, 1.40 inches below normal, for the South Central Region to 7.72 inches, 2.19 inches below normal, for the Northwest Region.

Precipitation for the 2003 water year is below normal statewide, except south-central Ohio where it is above normal. The average for the state as a whole is 17.97 inches, 1.82 inches below normal. Regional averages range from 22.81 inches, 1.10 inches above normal, for the South Central Region to 14.19 inches, 3.31 inches below normal, for the Northwest Region.

PRECIPITATION APRIL



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	-0.96	-1.30	-2.49	-6.73	-0.40	-2.1
North Central	-0.81	-1.47	-1.93	-3.40	-1.55	-0.7
Northeast	-1.08	-1.13	-1.16	-3.27	-4.83	-1.6
West Central	-1.26	-0.69	-1.21	-3.34	+6.80	-0.8
Central	-1.10	-1.13	-2.54	-0.96	+2.17	-1.2
Central Hills	-1.18	-1.48	-2.90	-4.22	-4.33	-2.1
Northeast Hills	-1.23	-1.88	-2.92	-4.18	-6.28	-1.7
Southwest	-1.87	-2.10	-3.09	+0.32	+9.70	-0.8
South Central	-0.48	-0.14	-1.30	+1.15	+3.95	-0.6
Southeast	-1.04	-1.53	-2.66	-0.79	+0.82	-1.5
State	-1.10	-1.29	-2.23	-2.56	+0.57	

*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

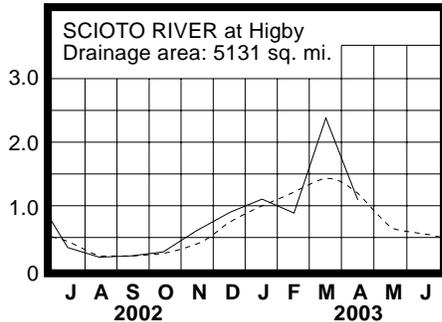
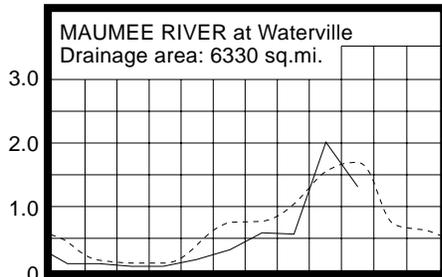
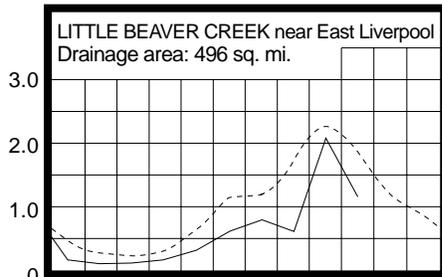
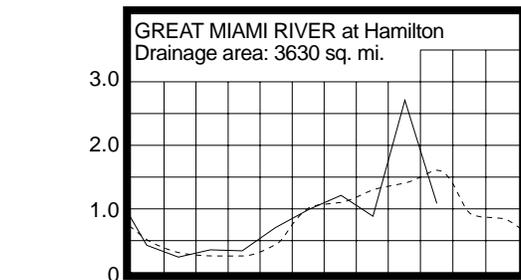
MEAN STREAM DISCHARGE

River and Location	Drainage Area (Sq. Mi.)	Mean Discharge (CFS)	% of Normal	% of Normal Past		
				3 Mos.	6 Mos.	12 Mos.
				This Month		
Grand River near Painesville	685	1,474	100	150	103	99
Great Miami River at Hamilton	3,630	3,885	66	99	98	106
Huron River at Milan	371	572	96	166	138	119
Killbuck Creek at Killbuck	464	633	80	83	68	72
Little Beaver Creek near East Liverpool	496	573	62	67	60	61
Maumee River at Waterville	6,330	8,275	78	82	67	66
Muskingum River at McConnelsville	7,422	9373	55	103	97	72
Scioto River near Prospect	567	830	91	113	108	95
Scioto River at Higby	5,131	5,612	74	88	87	92
Stillwater River at Pleasant Hill	503	333	45	87	71	73

STREAMFLOW during April was below normal across most of Ohio. Flows were low enough to be considered deficient in several basins in the southern half of the state.

Flows at the beginning of the month were below normal across much of the state. After initially decreasing during the first 3-4 days of the month, flows increased in response to precipitation that fell during the next 3-4 days. Greatest flows for the month generally occurred on April 5 in the northern third of the state and during April 8-9 across the remainder of the state. Flows steadily decreased the remainder of the month, except for some temporary increases noted following precipitation that fell around April 20. Low flows for April occurred at the end of the month and were below normal statewide.

MEAN STREAM DISCHARGE

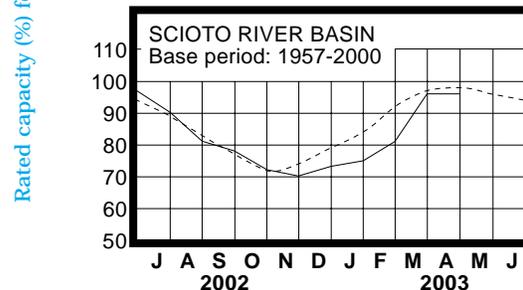
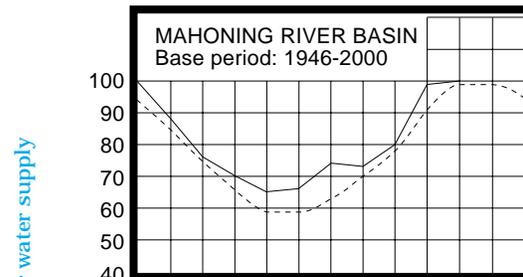


Base period for all streams: 1971-2000

RESERVOIR STORAGE during April was nearly unchanged across the state, increasing slightly in the Mahoning River basin and decreasing slightly in the Scioto River basin. Storage at the end of the month was near normal in the Mahoning River basin and slightly below normal in the Scioto River basin.

Reservoir storage at the end of April in the Mahoning basin index reservoirs was 100 percent of rated capacity for water supply, compared with 99 percent for last month and 103 percent for April 2002. Month-end storage in the Scioto basin index reservoirs was 96 percent of rated capacity for water supply, compared with the same for last month and 101 percent for April 2002.

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 showed mixed responses throughout the state. Generally, aquifers in the northern half of the state had positive net changes, while in the southern half levels declined. Ground water levels statewide normally show net rises during April. Even in most of those aquifers showing improvement, net changes from the March levels were less than usually observed during April. Ground water levels remain below normal throughout most of the state, ranging up to nearly 2.5 feet below the long-term April average. Current levels are also lower than the April 2002 levels in most aquifers in the state.

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	12.39	+0.30	-0.25	+0.71
Fa-1	Jasper Mill, Fayette Co.	Limestone	8.01	-1.18	-0.11	-0.33
Fr-10	Columbus, Franklin Co.	Gravel	44.49	-2.22	+0.28	-0.15
H-1	Harrison, Hamilton Co.	Gravel	22.87	-2.20	-0.73	-2.05
Hn-2a	Dola, Hardin Co.	Dolomite	6.68	-0.25	+1.27	-0.92
Po-1	Windham, Portage Co.	Sandstone	20.24	-0.58	+0.61	-0.28
Tu-1	Strasburg, Tuscarawas Co.	Gravel	13.51	-2.35	+0.22	+0.98

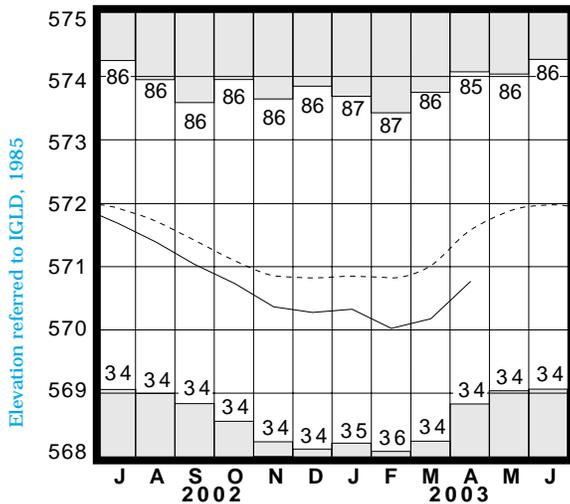
The 2003 water year recharge season has not been as favorable as usually expected for replenishing the state's ground water supplies. The below normal precipitation during most of the 2003 water year continued during April. Ground water levels during April were comparable, and in some aquifers, lower than were observed during the recent past droughty years of 1988, 1992, 1995, 1999 and 2000. However, ground water supplies remain adequate throughout the state. Although time is running short for this year's recharge season, normal precipitation during the next couple of months could still provide some much needed replenishment to the state's ground water supplies. Soil moisture at the end of the month was favorable for potential recharge. The Ohio Agricultural Statistics Service reports that near the end of April, soil moisture was rated as being short or very short in 8 percent of the state, adequate in 80 percent of the state, and surplus in 12 percent of the state.

LAKE ERIE level rose during April. The mean level was 570.77 feet (IGLD-1985), 0.59 foot higher than last month's mean level and 0.82 foot below normal. This month's mean level is 0.79 foot lower than the April 2002 level and 1.57 feet above Low Water Datum.

The U. S. Army Corps of Engineers (USACE) reports that precipitation in the Lake Erie basin during April averaged 2.18 inches, which is 0.97 inch below normal. The entire Great Lakes basin averaged 2.55 inches, which is 0.02 inch above normal. For calendar year 2003 through April, the Lake Erie basin has averaged 7.83 inches, 2.57 inches below normal, while the entire Great Lakes basin has averaged 7.36 inches, 1.26 inches 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 around 1 foot 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 4 inches below normal to as much as 20 inches below the normal seasonal level.

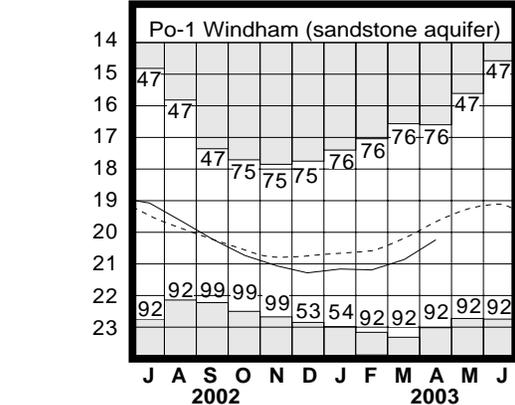
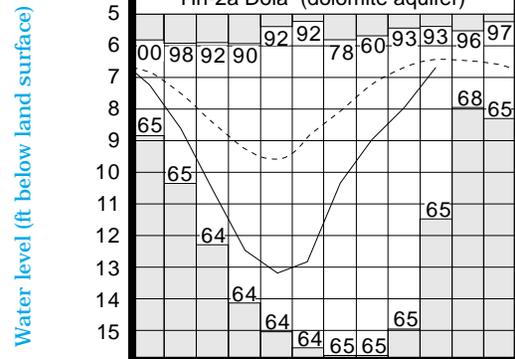
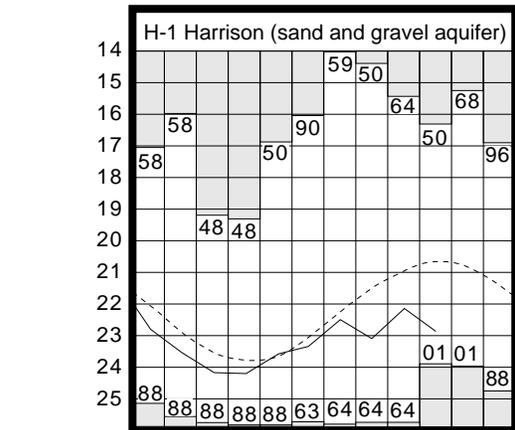
LAKE ERIE LEVELS



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 April was below normal statewide, except for a few locations in extreme south-central Ohio where it was above normal. Streamflow was below normal across most of the state. Reservoir storage was nearly unchanged statewide and was near normal in the Mahoning River basin and slightly below normal in the Scioto River basin. Ground water levels generally had positive net changes in aquifers in the northern half of Ohio and declined in aquifers in the southern half. Levels remained below normal across most of the state. Lake Erie level rose 0.59 foot and was 0.82 foot below the long-term April average.

NOTES AND COMMENTS

Division Of Water Has New Chief

Ohio Department of Natural Resources (ODNR) Director Sam Speck recently announced the appointment of Dick Bartz as Chief of the Division of Water (DOW).

Dick has been with DOW almost his entire career since he joined ODNR in July 1974. For the past 8 years Dick has served as the Assistant Chief. "His extensive background with the Division of Water and his thorough understanding of complex water management issues should serve him well as he takes on this new leadership assignment," Director Speck said.

Dick began his career with the DOW as a land planner in the Coastal Zone Management Program (CZM). During these early years he developed the baseline data for use in the resource management program for Lake Erie and its shoreline as he worked closely with local communities, township and county governments, state agencies and interest groups. In 1980 he became Supervisor of the CZM Section and in 1985 was named Special Assistant for Lake Erie. During the 1980s he served as the Ohio coordinator for the Great Lakes Commission and helped develop the Ohio Water Withdrawal Facility Registration Program. Also, he was appointed by former Governor Richard F. Celeste to represent Ohio on the Council of Great Lakes Governors' Water Resources Management Committee. Prior to becoming Assistant Chief, Dick was Administrator for the Water Resources Section.

Dick is a Certified Public Manager and a member of the Ohio Certified Public Manager Society. He is also a member of the American Water Resources Association, the American Water Works Association and Water Management Association of Ohio. He earned both a Bachelor of Arts and Master of Environmental Sciences degree from Miami (Ohio) University.

We would like to take this opportunity to congratulate Dick on his appointment as Chief.

USGS Has New Ohio District Chief

Jim Morris, former Chief of the ODNR, Division of Water, accepted the position of District Chief for the United States Geological Survey (USGS) Ohio office. Jim took over for Steve Hindall, who retired after 23 years as District Chief.

After serving 3 years in the U. S. Army as a technical engineering supervisor and chief construction surveyor, Jim was employed by ODNR's Division of Water from 1978 to 1985. During this time, he worked in the Floodplain Management and Dam Safety sections. In 1985, Jim left ODNR for the Arizona Department of Water Resources where he served as Chief of the Flood Management Section. He returned to ODNR in 1992 to become the Chief of the Division of Water. During the next few years he also served as Chief for the Division of Real Estate and Land Management before being appointed Deputy Director in 1995. In May 1999, Jim returned to the Division of Water as Chief. Jim's many years of experience along with his excellent management skills and leadership abilities will be an asset as he begins this new chapter in his career. He is a registered professional engineer in Ohio and has earned Bachelor of Science and Master of Science degrees in Civil Engineering from The Ohio State University.

All of us at the ODNR, Division of Water wish Jim the best and thank him for his many years of support and service he has given the division and department.

USGS District Chief Retires

Steve Hindall, District Chief for the USGS Ohio office, retired after more than 36 years of government service, 23 as District Chief. Steve began his career at USGS in 1966 as project support for the Wisconsin District. He later became project chief while working on a series of hydrologic atlases. In 1978, he became the Assistant District Chief in New Jersey, and later was named the Acting District Chief. In 1980, Steve was named the District Chief for Ohio. Steve, a professional engineer and professional hydrologist, received his Bachelor of Science degree in Civil Engineering from Ohio Northern University and his Master of Science degree in Civil Engineering from the University of Arizona.

The Division of Water staff wishes Steve the best in his retirement and thanks him for his many years of close association and cooperation with the Division.

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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