MONTHLY WATER INVENTORY REPORT FOR OHIO

April 2007

http://www.dnr.state.oh.us/water/pubs/newsltrs/mwirmain.htm

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PRECIPITATION during April was below normal across much of the state, but above normal in the northwestern one-third and other scattered locations throughout Ohio. The state average was 3.41 inches, 0.17 inch below normal. Regional averages ranged from 4.06 inches, 0.68 inch above normal, for the Northwest Region to 3.08 inches, 0.60 inch below normal, for the Central Hills Region. Chardon (Geauga County) reported the greatest amount of April precipitation, 6.21 inches. Woodsfield (Monroe County) reported the least, 2.00 inches.

Most of the April precipitation fell during the first 2 weeks and last week of the month. While most of the precipitation fell as rain, a significant amount of snow was reported during April in the northeastern Ohio snowbelt. Precipitation, which occurred on several days during the first 2 weeks of April, fell as rain at the beginning of the month. Colder temperatures moved into the state on April 4 and most of the precipitation that occurred during the next several days fell as snow. Accumulations were light across most of the state; however, heavier snow fell across the northeast Ohio snowbelt counties during April 5-8 with some locations receiving around 30 inches. Chardon (Geauga County) reported 27 inches of snow during this period. For the season, Chardon received 148 inches of snow, well above the average of 105 inches. Showers and thunderstorms during April 11 brought 0.5-1.0 inch of rain across most of the state. Some of these storms were severe with hail, high winds and a few tornadoes reported. Precipitation during April 14 was greatest in southern Ohio with 0.50-1.0 inch reported, tapering to less than 0.25 inch in northern Ohio. The next 8 days were extremely dry with most locations reporting no precipitation at all. Precipitation was widespread during the last week of April with the greatest amount falling in northern Ohio where 1.0-2.5 inches of rain was reported, decreasing to 0.5-1.0 inch in southern Ohio. Some minor flooding was reported during this period in areas of northern Ohio.

Precipitation for the 2007 water year is above normal statewide. The average for the state as a whole is 25.52 inches, 5.73 inches above normal. Regional averages range from 28.58 inches, 9.65 inches above normal, for the West Central Region to 23.29 inches, 1.58 inches above normal, for the South Central Region.

Precipitation for the 2007 calendar year is above normal across most of the state, but below normal in the South Central Region. The aver-

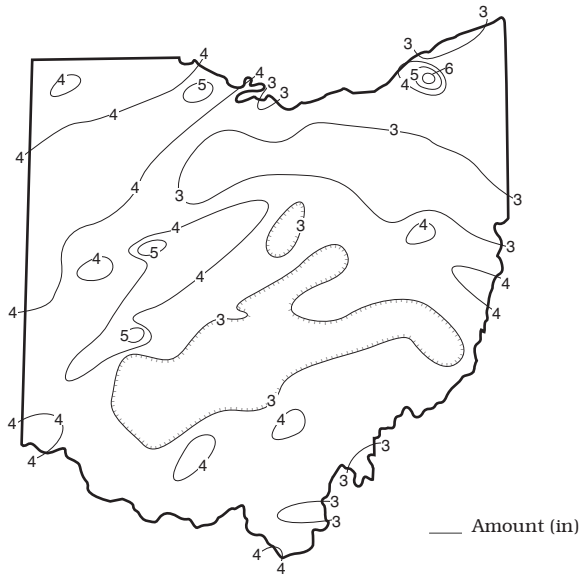
(continued on back)

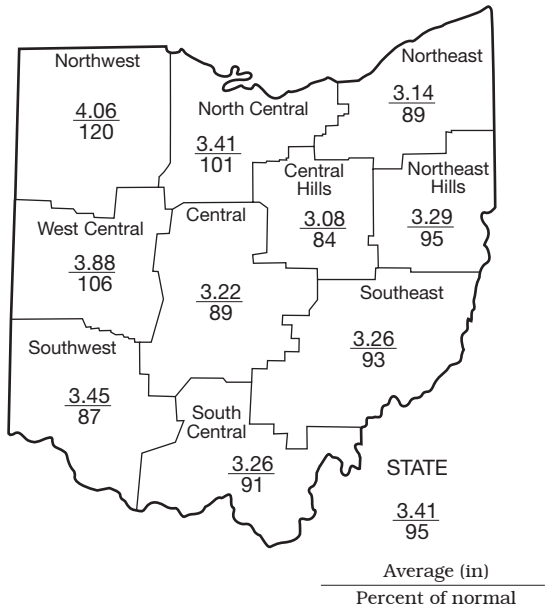
PRECIPITATION

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	+0.68	-0.15	+4.01	+10.66	+8.45	+3.8
North Central	+0.02	+0.70	+5.05	+13.25	+12.98	+4.1
Northeast	-0.39	-0.09	+2.72	+14.07	+12.46	+3.8
West Central	+0.22	+3.47	+6.91	+14.32	+14.68	+4.6
Central	-0.41	+2.33	+4.21	+11.99	+10.56	+2.9
Central Hills	-0.60	+0.61	+2.02	+9.43	+7.16	+2.1
Northeast Hills	-0.17	+0.78	+0.65	+9.24	+6.40	+1.4
Southwest	-0.51	+0.53	+2.17	+8.27	+4.21	+2.0
South Central	-0.33	-1.40	-2.88	+3.80	-2.49	+0.7
Southeast	-0.25	+0.69	-0.09	+5.64	+2.03	+1.4
State	-0.17	+0.75	+2.48	+10.06	+7.64	

*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 APRIL





MEAN STREAM DISCHARGE

This Month

River and Location	Drainage Area (Sq. Mi.)	Mean Discharge (CFS)	% of Normal	% of Normal Past		
				3 Mos.	6 Mos.	12 Mos.
Grand River near Painesville	685	1,637	119	185	321	186
Great Miami River at Hamilton	3,630	6,612	113	157	188	168
Huron River at Milan	371	491	82	124	166	177
Killbuck Creek at Killbuck	464	461	58	99	126	139
Little Beaver Creek near East Liverpool	496	663	72	124	128	127
Maumee River at Waterville	6,330	10,380	97	108	167	155
Muskingum River at McConnelsville	7,422	12,780	76	154	190	122
Scioto River near Prospect	567	942	103	154	200	188
Scioto River at Higby	5,131	6,810	89	130	153	145
Stillwater River at Pleasant Hill	503	866	118	176	200	173

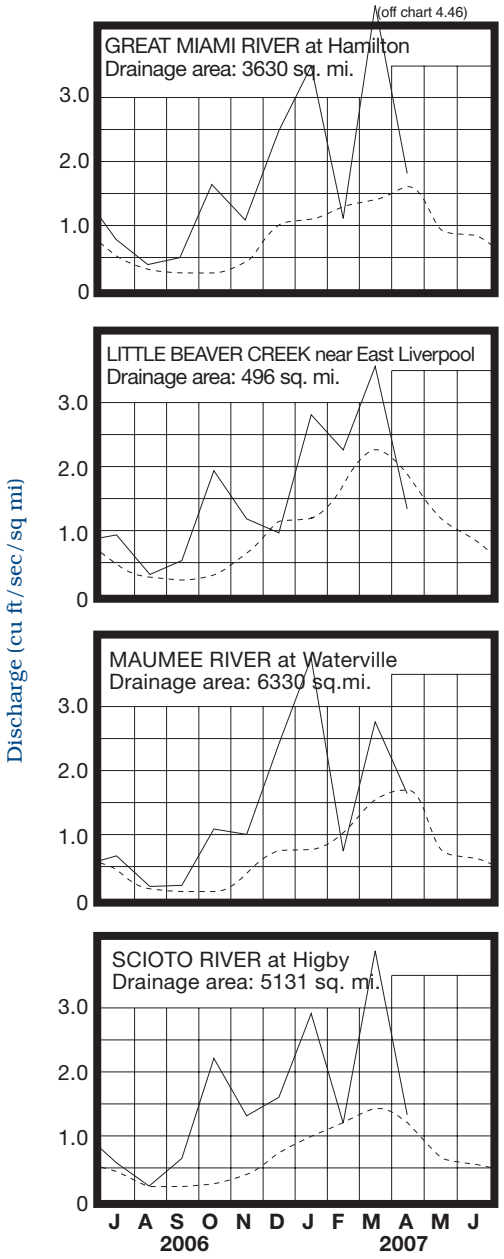
STREAMFLOW during April was below normal throughout much of the state, but above normal in some drainage basins in southwestern, west-central, central and extreme northeastern Ohio. Flows in a few basins in eastern Ohio were low enough to be considered deficient. April flows were significantly lower than the flows recorded during March throughout the state.

Streamflow at the beginning of April was below normal in the northern half of the state and above normal in the southern half. Greatest monthly flows occurred at the beginning of April in some southeastern Ohio basins. Flows generally declined the first 10 days of the month across most of the state, reaching their lowest monthly flow during April 10-11 in the northwestern quarter of Ohio. Lowest flows for the remainder of the state were recorded during April 23-24. Greatest flows for the month were observed during April 12-13 across southwestern and northeastern Ohio following precipitation and a combination of precipitation and melting snow in northeastern Ohio. Greatest flows across the remainder of the state occurred following widespread precipitation during the last week of the month, generally between April 27 and 29. Month-end flows were generally above normal in western Ohio and below normal in eastern Ohio.

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

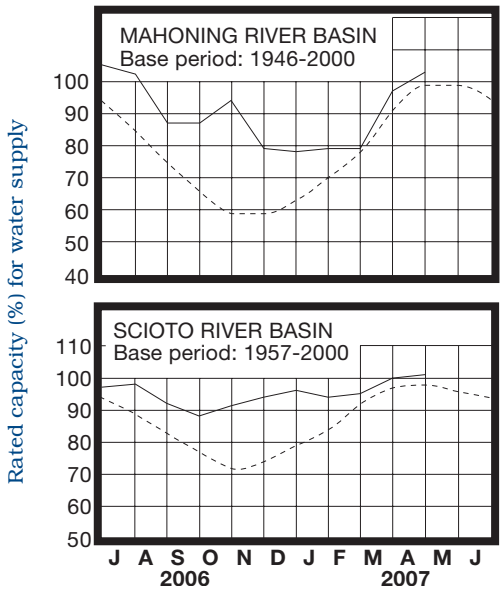
Reservoir storage at the end of April in the Mahoning basin index reservoirs was 103 percent of rated capacity for water supply compared to 97 percent for last month and 95 percent for April 2006. Month-end storage in the Scioto basin index reservoirs was 101 percent of rated capacity for water supply compared to 100 percent for last month and 89 percent for April 2006. Surface water supplies are at favorable levels for this time of the year.

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

Index Well	Location	Aquifer	Mean This Month	Departure From Normal	Change in feet from: Last Month	Change in feet from: Year Ago
F-1	W. Rushville, Fairfield Co.	Sandstone	9.88	+2.81	0.00	+1.68
Fa-1	Jasper Mill, Fayette Co.	Limestone	7.89	-1.06	-0.04	+0.33
Fr-10	Columbus, Franklin Co.	Gravel	41.94	+0.33	+0.70	+1.31
H-1	Harrison, Hamilton Co.	Gravel	21.58	-0.91	-0.96	-0.17
Hn-2a	Dola, Hardin Co.	Dolomite	5.80	+0.63	+0.44	+0.39
Po-1	Windham, Portage Co.	Sandstone	14.46	+5.20	+1.85	+4.27
Tu-1	Strasburg, Tuscarawas Co.	Gravel	11.61	-0.45	-0.22	+1.70

GROUND WATER levels during April showed mixed responses throughout the state. Generally, levels declined in most unconsolidated aquifers and were rather stable or rose in consolidated aquifers. Water levels during April in all aquifers statewide normally show a net rise from March's levels.

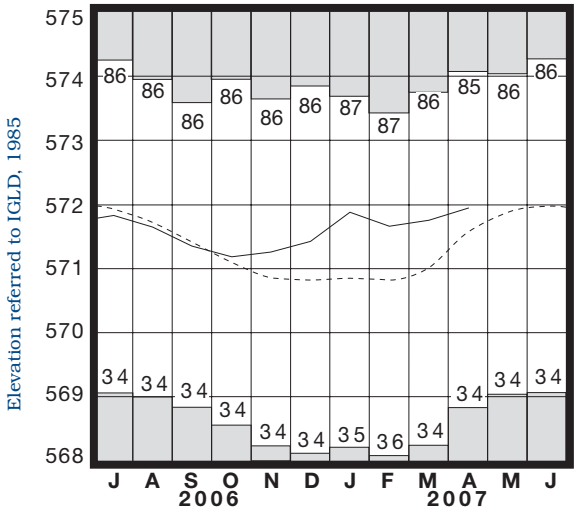
Ground water supplies are adequate across the state. Although ground water levels have fallen to below normal in shallow unconsolidated aquifers, levels in much of the state continue to remain above normal. Current levels generally range from 1 foot below to more than 5 feet above normal. During April, observation well PO-1 (Portage County), representing the sandstone aquifers in eastern and northeastern Ohio, reached a record-high water level. Also, current ground water levels are higher than they were at this time last year in most of the state. However, with below normal precipitation across much of Ohio during April, it appears the recharge season may have come to an end in some areas of the state. Current conditions are still favorable in other areas of Ohio with the potential for some improvement to ground water storage. The Ohio Agricultural Statistics Service reports that near the end of April, soil moisture was rated as being adequate in 59 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 so, additional recharge could still occur in some aquifers.

LAKE ERIE level rose during April. The mean level was 571.95 feet (IGLD-1985), 0.20 foot higher than last month's mean level and 0.36 foot above normal. This month's mean level is 0.53 foot higher than the April 2006 level and 2.75 feet above Low Water Datum.

The U.S. Army Corps of Engineers (USACE) reports that precipitation in the Lake Erie basin during April was 2.95 inches, 0.21 inch below normal. For the entire Great Lakes basin, preliminary April precipitation averaged 2.73 inches, 0.21 inch above normal. For calendar year 2007 through April, the Lake Erie basin has averaged 11.07 inches, 0.61 inch above normal, while the entire Great Lakes basin has averaged 8.21 inches, 0.45 inch below normal.

In addition, the USACE reports that based on the current condition of the Great Lakes basin and anticipated weather patterns, the level of Lake Erie should fall from its current position of about 4 inches above normal to around 4 inches below normal by early fall. Deviations from the anticipated weather patterns could result in the level of Lake Erie ranging from about 7 inches above normal to as much as 12 inches below the normal seasonal average.

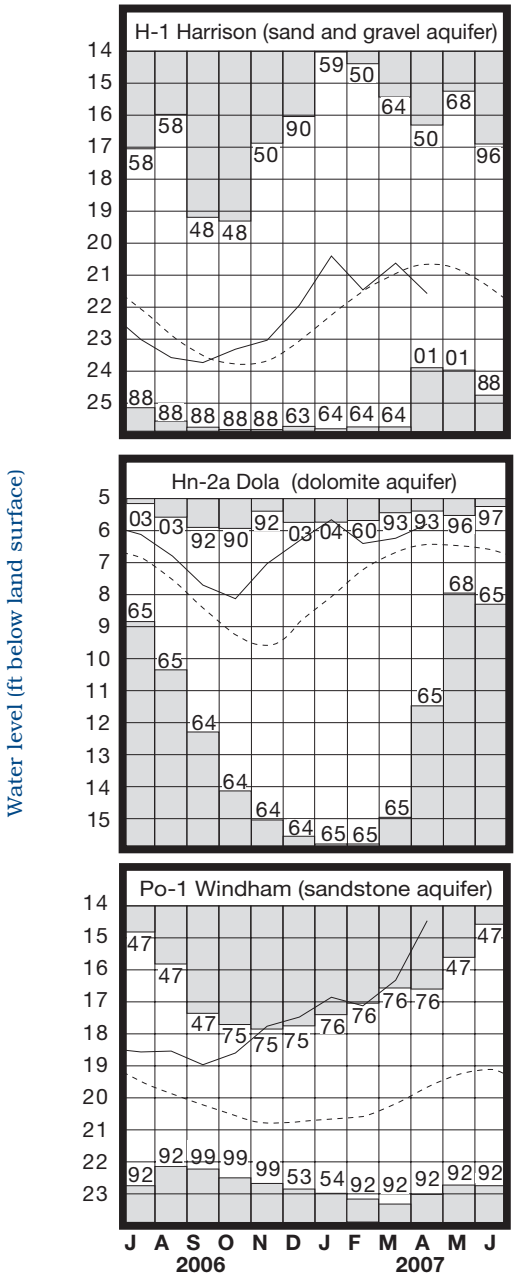
LAKE ERIE LEVELS



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 ———

(Precipitation continued from front)

age for the state as a whole is 14.39 inches, 2.81 inches above normal. Regional averages range from 17.20 inches, 6.13 inches above normal, for the West Central Region to 12.35 inches, 0.95 inch below normal, for the South Central Region.

SUMMARY

Precipitation during April was below normal across much of the state, but above normal in the northwestern one-third and other isolated areas throughout Ohio. Streamflow was below normal across much of the state, but above normal in southwestern, west-central, central and extreme northeastern Ohio. Reservoir storage increased in the Mahoning and Scioto river basins and remained above normal in both basins. Ground water levels showed mixed responses during April, but remained above normal across much of the state. Lake Erie level rose 0.20 foot and was 0.36 foot above the long-term April average.

NOTES AND COMMENTS

Division Of Water Chief Retires

Dick Bartz, Chief of the Ohio Department of Natural Resources (ODNR), Division of Water, retired on May 4, 2007, after more than 32 years of service with the department. Dick began his career at ODNR in 1974. During his first 15 years with ODNR, Dick's focus was on programs related to Lake Erie and developing the Coastal Management Program. Dick assisted in getting the Coastal legislation passed in 1988. In 1989, he was named the Administrator of the Water Resources Development Section with program responsibilities including the Water Withdrawal Facility Registration Program, Floodplain Management, Water Planning and Community Water Assistance. Dick was instrumental in the passage of the Great Lakes Charter legislation and establishment of the Water Withdrawal Facility Registration Program in 1990. In 1995, Dick was named as the Assistant Chief for the Division of Water, serving in that capacity under two chiefs. In May 2003, Dick was appointed Chief of the Division of Water. For the last several years, Dick was part of the team from Ohio that developed an agreement in December 2005 between the 8 Great Lakes states and 2 Canadian Provinces for managing the waters within the Great Lakes drainage basin and protecting them from diversions.

Dick attended the Miami University at Oxford and earned a Master of Environmental Sciences degree. He is affiliated with a number of professional organizations and received many awards for his expertise, hard work and dedication.

The Division of Water staff wishes Dick the best in his retirement and thank him for his many years of dedicated service to the division and the State of Ohio. Hopefully, Dick will be able to find more time to enjoy his favorite pastimes of snowboarding, biking, hiking and sailing.

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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