



MONTHLY WATER INVENTORY REPORT FOR OHIO

March 2007

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

Compiled By Scott C. Kirk

Hydrologist
Water Inventory Unit

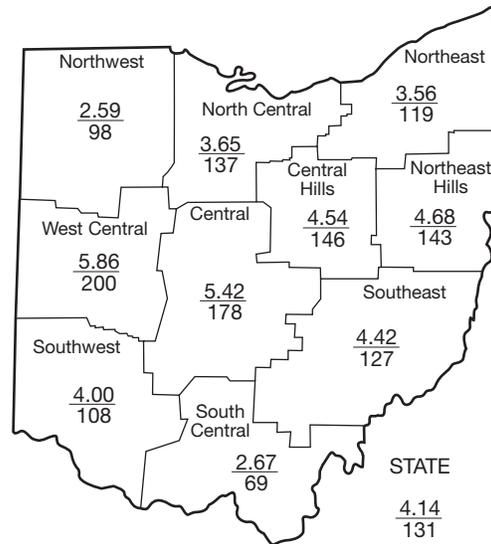
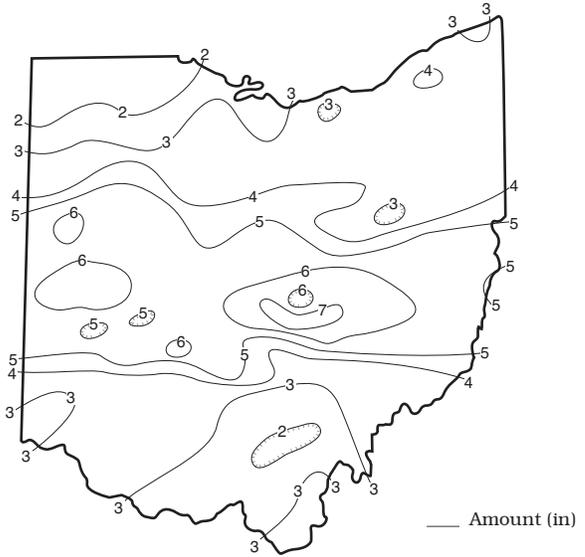
PRECIPITATION during March was above normal across most of the state, but below normal in extreme northwestern and much of south-central Ohio. The state average was 4.14 inches, 0.97 inch above normal. Regional averages ranged from 5.86 inches, 2.93 inches above normal, for the West Central Region to 2.59 inches, 0.06 inch below normal, for the Northwest Region. This was the 7th wettest March during the past 113 years for the West Central Region. Dillon Dam (Muskingum County) reported the greatest amount of March precipitation, 7.96 inches. Carpenter (Meigs County) reported the least amount, 1.11 inches.

Precipitation during March fell as both rain and snow, but snow amounts were below normal across much of Ohio. The greatest amount of precipitation for the month fell in the central one-third of the state, decreasing in amount to the north and to the south. The month started with rain falling throughout Ohio on March 1 with amounts of 1.0 to 1.5 inches reported. Minor flooding was observed in the northwestern two-thirds of the state following this rain. Light precipitation during March 3-7 fell as mainly snow with accumulations of 2-4 inches in northeastern Ohio and lesser amounts elsewhere. Widespread precipitation during March 14 and 15 brought 1-3 inches of rain across most of the northern two-thirds of the state, but lesser amounts in the southern third. Minor flooding occurred from the southwestern area of the state up through east-central and northeastern Ohio. Precipitation during March 19 was greatest in the central one-third of Ohio where 0.50-1.0 inch was common. Rain during March 22-24 was again heaviest through the central one-third of the state with 1-2 inches common and a few locations receiving nearly 3 inches. Most of northern and southern Ohio received between 0.25 and 0.50 inch of precipitation during this period. Once again, minor flooding occurred across areas of the state, especially where precipitation was the greatest. The remainder of the month was rather dry in most locations with some light precipitation near the end of the month, except for a few heavier downpours in areas of southern Ohio where amounts around 0.50 inch were reported.

Precipitation for the 2007 water year is above normal statewide. The average for the state as a whole is 22.11 inches, 5.90 inches above normal. Regional averages range from 24.70 inches, 9.43 inches above normal, for the West Central Region to 19.65 inches, 5.53 inches above normal, for the Northwest Region.

(continued on back)

PRECIPITATION MARCH



Average (in)
Percent of normal

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	-0.06	+2.12	+5.53	+8.46	+7.33	+3.6
North Central	+0.98	+3.73	+8.22	+12.35	+14.79	+4.6
Northeast	+0.57	+3.19	+6.15	+13.66	+14.76	+5.0
West Central	+2.93	+5.91	+9.43	+13.48	+15.48	+5.2
Central	+2.38	+4.76	+8.71	+11.92	+11.62	+4.0
Central Hills	+1.44	+2.88	+5.80	+8.83	+8.46	+3.1
Northeast Hills	+1.40	+2.46	+4.09	+8.35	+8.04	+2.2
Southwest	+0.29	+3.05	+5.37	+9.04	+4.82	+3.0
South Central	-1.22	-0.62	+1.91	+4.71	-1.06	+1.8
Southeast	+0.94	+2.39	+3.85	+6.25	+3.79	+2.4
State	+0.97	+2.98	+5.90	+9.69	+8.79	

*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

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	3,588	262	225	345	178
Great Miami River at Hamilton	3,630	16,190	317	213	223	164
Huron River at Milan	371	1,351	225	181	192	168
Killbuck Creek at Killbuck	464	1,554	174	144	148	136
Little Beaver Creek near East Liverpool	496	1,773	158	163	159	123
Maumee River at Waterville	6,330	17,490	179	175	195	147
Muskingum River at McConnsville	7,422	26,670	171	213	227	116
Scioto River near Prospect	567	2,804	307	217	242	178
Scioto River at Higby	5,131	19,960	220	175	194	141
Stillwater River at Pleasant Hill	503	2,843	396	233	232	165

STREAMFLOW during March was above normal statewide. Flows were high enough to be considered excessive across most of the state. March flows were considerably higher than the flows recorded during February. Preliminary data indicates that several of the gauging stations cited in this report set record or near-record March flows for the period of systematic data collection: Great Miami River at Hamilton and Stillwater River at Pleasant Hill had the greatest March flows for their respective period of record; Scioto River near Prospect the third greatest; Huron River at Milan the fourth greatest; and Killbuck Creek at Killbuck recorded the fifth greatest March flow.

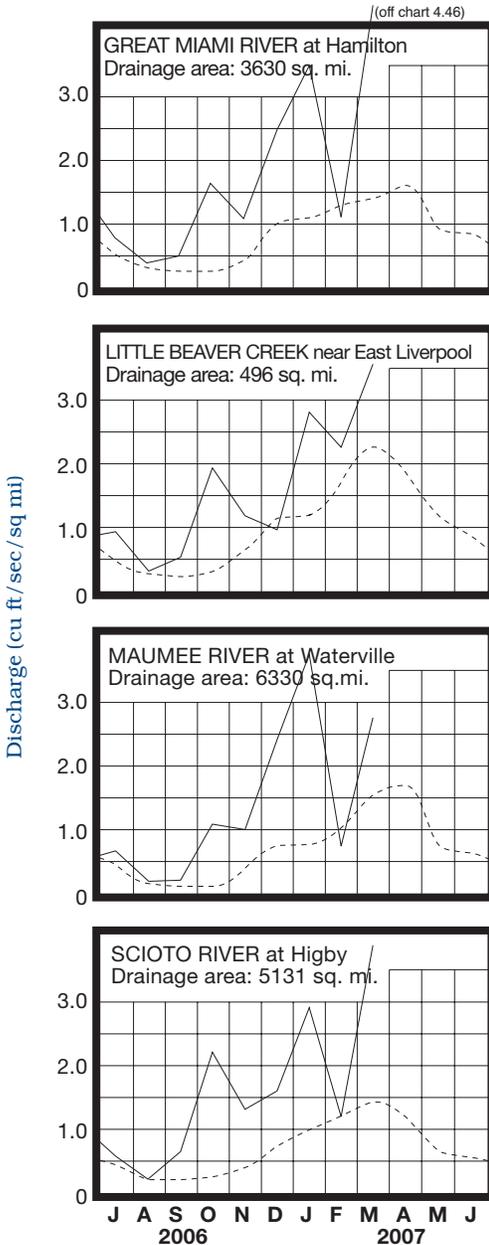
Flows at the beginning of the month were above normal across most of the state. Flows increased during the first few days of March

in response to the precipitation that fell at the beginning of the month. Greatest flows for the month in basins in the northern half of the state were observed during this time. Flows declined for several days following these peaks and were at their monthly low flows between March 10 and March 14 across much of Ohio. Flows increased statewide following precipitation that fell during March 14-15 and again during March 22-24. Greatest flows for the month in the southern half of the state occurred between March 24 and 26. Flows were declining at the end of the month and were at their lowest for the month in northeastern Ohio basins. Flows in many basins across the state had fallen to below normal by month's end. Flooding was reported across various areas of the state during March following the precipitation that fell at the beginning of the month and again following the March 14-15 and March 22-24 precipitation. Most of the flooding was minor, limited to low-lying areas. However, several streams were above flood stage for several days, especially across the central-third of the state, keeping fields near streams under water for several days and closing some roads in flood-prone areas.

RESERVOIR STORAGE during March increased in both the Mahoning and Scioto river basins. Storage continued to be above normal in both basins.

Reservoir storage at the end of March in the Mahoning basin index reservoirs was 97 percent of rated capacity for water supply compared to 79 percent for last month and 89 percent for March 2006. Month-end storage in the Scioto basin index reservoirs was 100 percent of rated capacity for water supply compared to 95 percent for last month and 94 percent for March 2006.

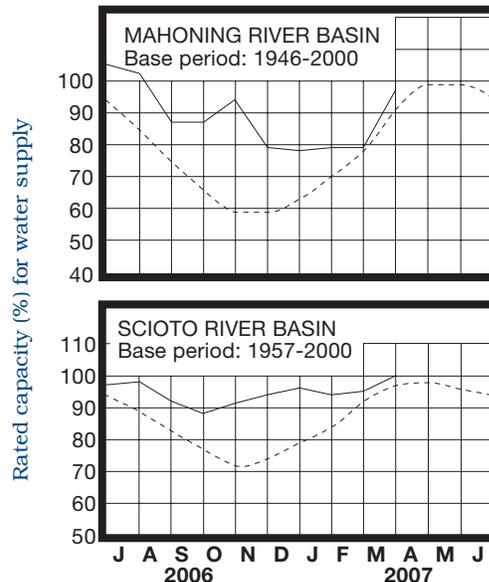
MEAN STREAM DISCHARGE



Base period for all streams: 1971-2000

Normal - - - - Current ———

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	9.88	+3.44	+1.00	+1.94
Fa-1	Jasper Mill, Fayette Co.	Limestone	7.85	-0.93	-0.27	+0.47
Fr-10	Columbus, Franklin Co.	Gravel	42.64	-0.11	+0.48	+0.93
H-1	Harrison, Hamilton Co.	Gravel	20.62	+0.32	+0.84	+0.96
Hn-2a	Dola, Hardin Co.	Dolomite	6.24	+0.46	+0.16	-0.05
Po-1	Windham, Portage Co.	Sandstone	16.31	+3.88	+0.80	+2.36
Tu-1	Strasburg, Tuscarawas Co.	Gravel	11.39	+0.28	+0.96	+1.53

GROUND WATER levels during March rose in most aquifers across the state. Levels rose steadily throughout the month except in some shallower, unconsolidated aquifers where levels had begun to decline by the end of March in response to the drier conditions that existed across most of the state during the last week of the month.

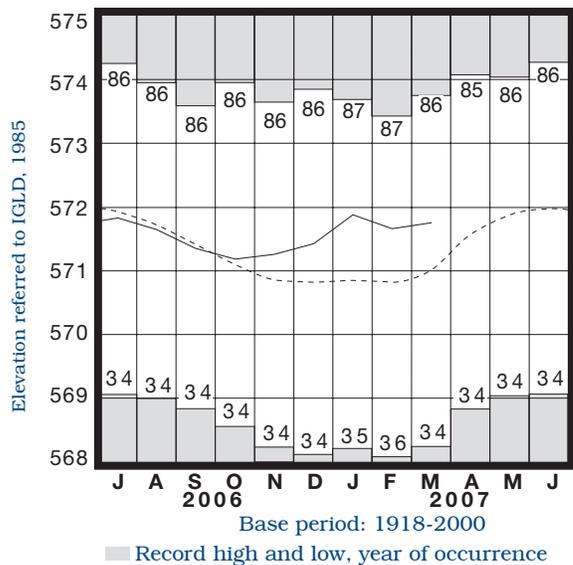
Ground water supplies continue to be in good shape across Ohio. Water levels remain above normal throughout most of the state. Observation well PO-1 (Portage County), representing the sandstone aquifers in eastern and northeastern Ohio, reached a record-high level for March. Also, current ground water levels are higher than they were at this time last year across nearly the entire state. There still remains time for some additional improvement to ground water storage during this recharge season and current conditions bode well for further improvement. The Ohio Agricultural Statistics Service reports that near the end of March, soil moisture was rated as being adequate in 39 percent of the state and surplus in 61 percent of the state. With near-normal precipitation and other climatic conditions over the next month or so, further improvement in ground water storage can be expected.

LAKE ERIE level rose during March. The mean level was 571.75 feet (IGLD-1985), 0.13 foot higher than last month's mean level and 0.65 foot above normal. This month's mean level is 0.46 foot higher than the March 2006 level and 2.55 feet above Low Water Datum.

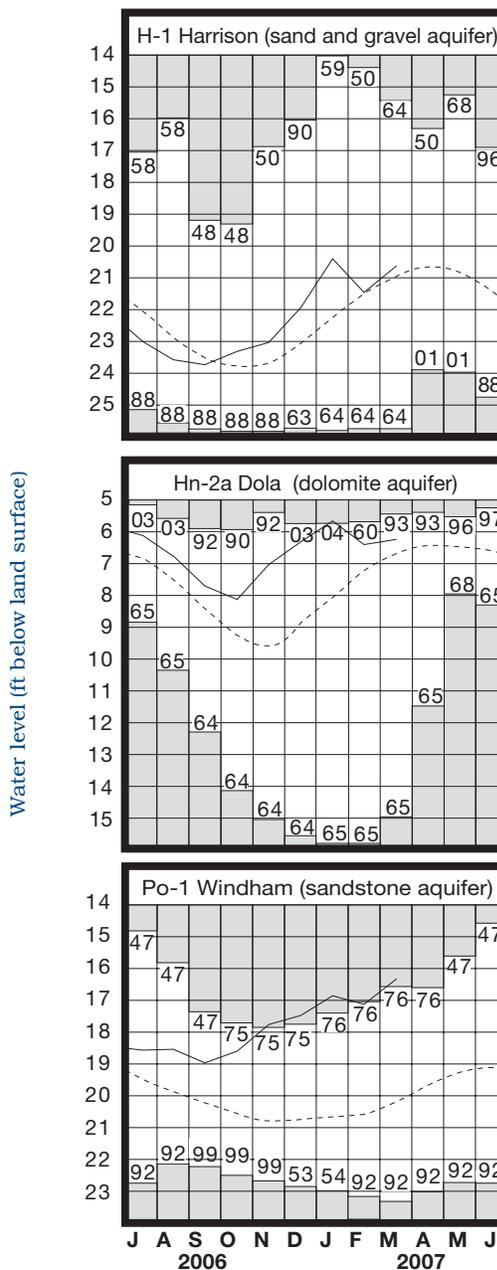
The U.S. Army Corps of Engineers (USACE) reports that precipitation in the Lake Erie basin during March was 2.84 inches, 0.08 inch above normal. For the entire Great Lakes basin, March precipitation averaged 2.40 inches, 0.23 inch above normal. For calendar year 2007 through March, the Lake Erie basin has averaged 8.12 inches, 0.82 inch above normal, while the entire Great Lakes basin has averaged 5.48 inches, 0.66 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 8 inches above normal to around 4 inches below normal by late summer. Deviations from the anticipated weather patterns could result in the level of Lake Erie ranging from its current position to as much as 13 inches below the normal seasonal average.

LAKE ERIE LEVELS



GROUND-WATER LEVELS



Base periods: H-1, 1951-2000. Hn-2a, 1955-2000.

Po-1, 1947-2000

Normal - - - - Current - - - -

(Precipitation continued from front)

Precipitation for the 2007 calendar year is above normal throughout the state. The average for the state as a whole is 10.99 inches, 2.99 inches above normal. Regional averages range from 13.32 inches, 5.91 inches above normal, for the West Central Region to 8.65 inches, 2.12 inches above normal, for the Northwest Region.

SUMMARY

Precipitation during March was above normal across most of the state, but below normal in extreme northwestern and much of south-central Ohio. Streamflow was above normal statewide and was high enough to be considered excessive across most of the state. Reservoir storage increased in the Mahoning and Scioto river basins, and remained above normal in both basins. Ground water levels rose in most aquifers, and were above normal throughout most of the state. Lake Erie level rose 0.13 foot and was 0.65 foot above the long-term March average.

NOTES AND COMMENTS

Ohio Observation Well Network

The Ohio Department of Natural Resources (ODNR), Division of Water, Water Resources Section is responsible for collecting, researching, interpreting and disseminating hydrologic and ground water resource information for the state of Ohio. An important component of this program is the Ohio Observation Well Network. The Observation Well Network characterizes Ohio's ground water resources through monitoring and evaluating both short- and long-term trends in ground water level fluctuations throughout the state's various aquifer systems. Over the past several years, the Division of Water has been fortunate to have an opportunity to expand, enhance and upgrade the Ohio Observation Well Network. There have been 20 new wells drilled in areas where the network was lacking in coverage and added to the observation well network. In addition, 12 wells have been drilled as replacements for existing network wells that were in need of complete renovation and 10 other wells have been repaired or in some way rehabilitated. Funds for these enhancements were made available through NatureWorks, a bond issue dedicated to natural resources projects passed by the Ohio voters that provided money for capital improvements.

Since the beginning of ground water level monitoring in Ohio in 1938, observation wells have been used to monitor an aquifer's response to changing climatic conditions and the impacts from man-induced activities. Monitoring and evaluating long-term trends in ground water levels enables water resource professionals to access the availability and annual replenishment of ground water supplies. The Ohio Observation Well Network is a tool that professionals use to determine the availability of ground water supplies, thus promoting the wise management and efficient use of this valuable resource. Currently, the Division of Water monitors 140 wells distributed across the state. Once information is gathered from the field for each observation well, it is reviewed and verified for accuracy. The data is then made available on-line through the Division of Water's web page. The web site allows the user to view and/or retrieve data from the Ohio Observation Well Network database. Several options are provided that offer a wide range of flexibility in viewing and/or retrieving current and historical data. Statistical and water quality data are also available through the web site. In addition to the 140 currently active observation wells, ground water level data from an additional 204 historic/inactive observation wells is available on-line through the division's web page. To visit this web site, go to the Division of Water's home page at: www.dnr.state.oh.us/water/ and click on "Observation Well Records."

The Ohio Observation Well Network is a successful example of both public and private and local, state and federal partnerships. The U.S. Geological Survey (USGS) has been a cooperative partner with the ODNR since the establishment of the network. As part of that cooperative effort, 10 of the observation wells have been equipped with automated equipment, providing near-real time ground water level information that can be accessed through the division's web site. To view data from the 10 near-real time sites, go to the Division of Water, Water Inventory main page and click on "USGS Near real time data for select observation wells."

For more information about Ohio's Observation Well Network, contact the Division of Water at (614) 265-6739 or e-mail: Dave.cashell@dnr.state.oh.us.

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.



An Equal Opportunity Employer-M/F/H



Division of Water
2045 Morse Road
Columbus, Ohio 43229-6693

Ted Strickland
Governor

Sean D. Logan
Director

Dick Bartz
Acting Chief

Printed on recycled paper containing 30% post consumer waste.

