



# MONTHLY WATER INVENTORY REPORT FOR OHIO

March 2003

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

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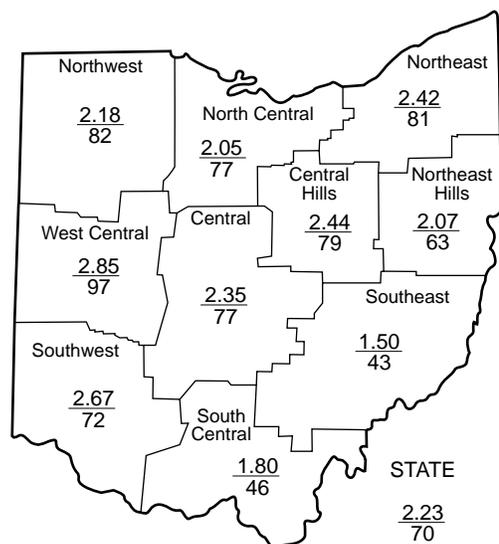
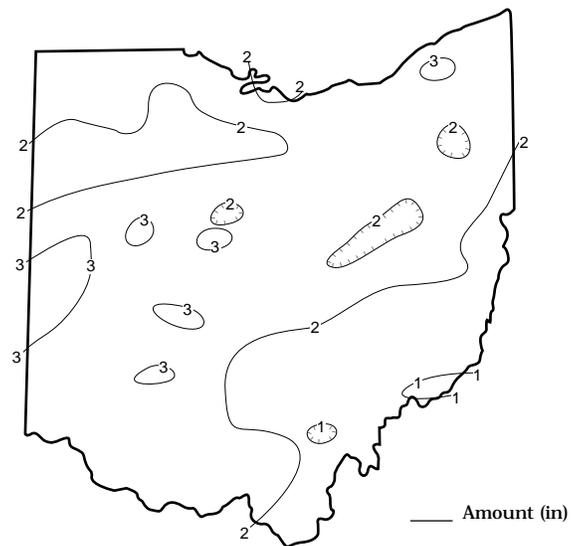
**PRECIPITATION** during March was below normal statewide. The average for the state as a whole was 2.23 inches, 0.94 inch below normal. Regional averages ranged from 2.85 inches, 0.08 inch below normal, for the West Central Region to 1.50 inches, 1.98 inches below normal, for the Southeast Region. This was the 7<sup>th</sup> driest March during the past 109 years for the Southeast Region, the 11<sup>th</sup> driest for the South Central Region, and tied for the 17<sup>th</sup> driest for the Northeast Hills Region. Versailles (Darke County) reported the greatest amount of March precipitation, 3.84 inches. Marietta Waste Water Treatment Plant (Washington County) reported the least amount, 0.53 inches.

Precipitation during the first half of March fell as rain, snow and a wintry mix and as rain only during the second half. Although occurring on several days during the month, most precipitation was rather light, amounting to less than 0.25 inch on any one day. A mix of rain and snow during March 5-8 brought 0.25-0.50 inch precipitation (liquid, melted) across most of the state. Precipitation on March 13 fell mainly as rain with generally 0.50-1.0 inch reported in the northern half of the state and 0.25-0.50 inch in the southern half. Scattered showers during March 19-21 brought around 0.50-1.0 inch of rain across southwestern Ohio, with generally 0.25-0.50 inch reported elsewhere. Showers and thunderstorms during March 25-26 produced 0.25-0.50 inch of rain in a wide band stretching from southwestern to northeastern Ohio, with lesser amounts north and south of this area. Widespread rain during March 28-29 amounted to around 0.50 inch statewide.

Precipitation for the 2003 calendar year is below normal statewide. The average for the state as a whole is 6.97 inches, 1.03 inches below normal. Regional averages range from 8.79 inches, 0.92 inch below normal, for the South Central Region to 5.30 inches, 1.23 inches below normal, for the Northwest Region.

Precipitation for the first half of the 2003 water year is below normal across most of the state, but is above normal in southeastern Ohio. The average for the state as a whole is 15.49 inches, 0.72 inch below normal. Regional averages range from 19.70 inches, 1.58 inches above normal, for the South Central Region to 11.77 inches, 2.35 inches below normal, for the Northwest Region (see Precipitation table, departure from normal, past 6 month's column).

## PRECIPITATION MARCH



## 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	-0.47	-1.23	-2.35	-5.45	+0.82	-2.0
North Central	-0.62	-1.43	-1.85	-2.06	-0.83	+0.6
Northeast	-0.57	-0.40	-0.95	-1.34	-4.45	-1.0
West Central	-0.08	-0.19	-0.02	-0.05	+7.94	+0.4
Central	-0.69	-1.06	-0.80	+0.91	+4.34	+0.5
Central Hills	-0.66	-1.10	-1.72	-1.64	-2.87	-0.6
Northeast Hills	-1.21	-1.39	-1.07	-2.39	-4.57	-0.5
Southwest	-1.04	-1.27	-0.35	+4.26	+10.68	+1.3
South Central	-2.09	-0.92	+1.58	+3.90	+2.95	+1.0
Southeast	-1.98	-1.26	+0.38	+1.26	+2.93	-0.1
State	-0.94	-1.03	-0.73	-0.28	+1.66	

\*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	4,952	296	135	98	101
Great Miami River at Hamilton	3,630	9,832	192	112	106	125
Huron River at Milan	371	1,768	294	156	143	124
Killbuck Creek at Killbuck	464	1,035	116	73	64	78
Little Beaver Creek near East Liverpool	496	1,034	92	66	58	66
Maumee River at Waterville	6,330	12,820	131	76	61	76
Muskingum River at McConnelsville	7,422	16,138	103	104	98	79
Scioto River near Prospect	567	1,826	200	121	109	108
Scioto River at Higby	5,131	12,260	135	95	90	101
Stillwater River at Pleasant Hill	503	1,467	204	98	76	97

**STREAMFLOW** during March was above normal across most of Ohio. Flows were high enough to be considered excessive in several basins throughout the state, most notably in southwestern and northeastern Ohio.

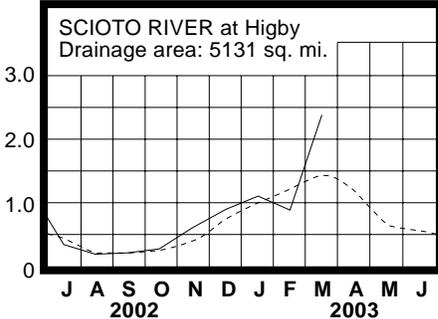
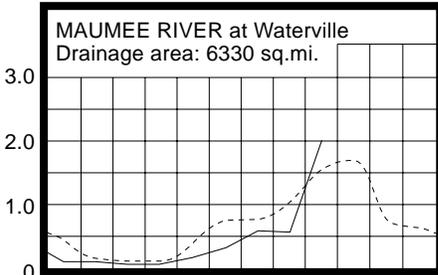
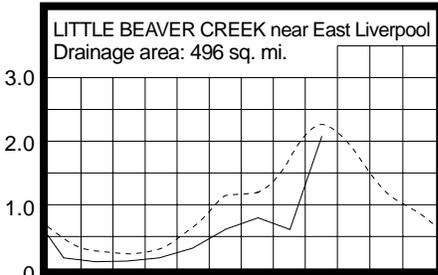
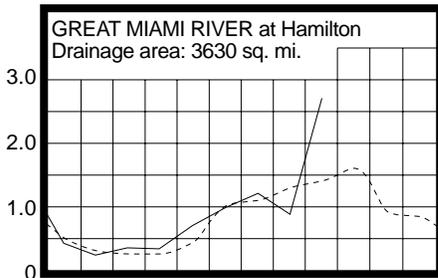
Flows at the beginning of the month were below normal throughout most of the state. Low flows for March occurred early in the month. As temperatures soon began to moderate, flows began to increase due to runoff from both melting snow and light precipitation that fell during March 5-13. Flows peaked during March 10-15 across most of the state. Although some minor flooding was observed at scattered locations during this period, it was confined to low-lying, flood-prone areas. Following these peaks, flows generally decreased during the second half of the month, with temporary increases noted following precipitation that fell during March 19-21 and 28-29. At month's end, streamflow remained above normal in some basins in southwestern, central and northeastern Ohio, but was below normal elsewhere.

**RESERVOIR STORAGE** during March increased in both the Mahoning and Scioto river basins. Storage at the end of the month was above normal in the Mahoning River basin and slightly below normal in the Scioto River basin.

Reservoir storage at the end of February in the Mahoning basin index reservoirs was 99 percent of rated capacity for water supply, compared with 80 percent for last month and 101 percent for March 2002. Month-end storage in the Scioto basin index reservoirs was 96 percent of rated capacity for water supply compared with 81 percent for last month and 101 percent for March 2002.

## MEAN STREAM DISCHARGE

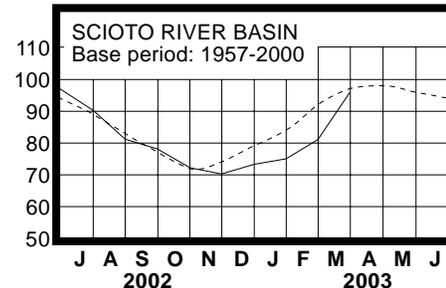
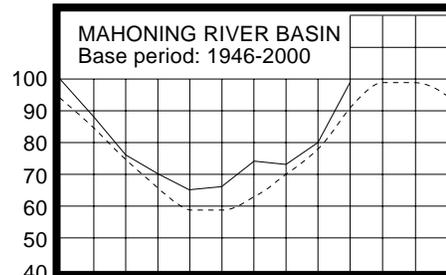
Discharge (cu ft/sec/sq mi)



Base period for all streams: 1971-2000

## RESERVOIR STORAGE FOR WATER SUPPLY

Rated capacity (%) for water supply



Normal - - - - Current ———

## GROUND-WATER LEVELS

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

**GROUND WATER** levels during March rose statewide. During the first half of the month levels initially declined before rising in response to recharge from melting snow and light precipitation. During the second half of the month levels were rather stable or declined slightly in most unconsolidated aquifers, while in consolidated aquifers levels generally continued to rise through month's end. Positive net changes during March from February's levels were greater than usually observed in most aquifers.

Ground water levels remain below normal across most of the state ranging up to just over 2 feet below the long-term March average. An exception would be in some sandstone aquifers in eastern Ohio where current levels are above normal. Current levels are near or higher than the March 2002 levels in most aquifers.

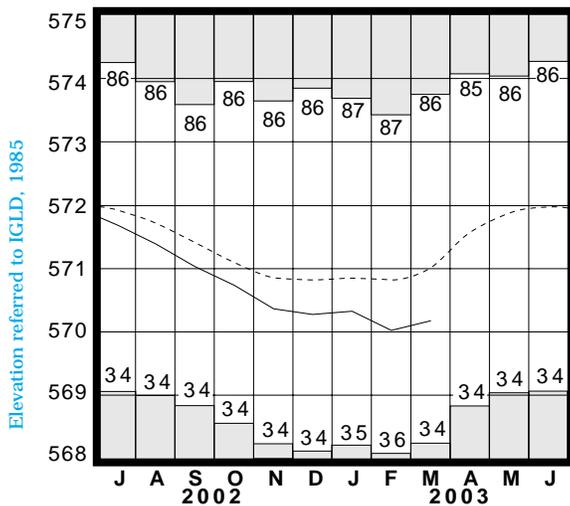
Even though ground water supplies remain adequate across the state, the below normal precipitation during the first half of the 2003 water year, and especially the past three months, has not been as beneficial as expected for replenishing the state's ground water supplies. This marks the 5<sup>th</sup> consecutive year that the January-March period has not been exceptionally favorable for this anticipated recharge. However, the melting of the February snow combined with the March precipitation reduced the overall unfavorable impact the below normal precipitation has had on ground water supplies. These conditions have improved soil moisture supplies. The Ohio Agricultural Statistics Service reports that near the end of March, soil moisture was rated as being short or very short in only 3 percent of the state, adequate in 64 percent of the state and surplus in 33 percent of the state. With near-normal precipitation and other climatic conditions during the next few months, the prospects for additional recharge are favorable.

**LAKE ERIE** level rose during March. The mean level was 570.18 feet (IGLD-1985), 0.17 foot higher than last month's mean level and 0.92 foot below normal. This month's mean level is 0.78 foot lower than the March 2002 level and 0.98 foot above Low Water Datum.

The U.S. Army Corps of Engineers (USACE) reports that precipitation in the Lake Erie basin during March averaged 2.21 inches, which is 0.54 inch below normal. The entire Great Lakes basin averaged 2.25 inches, which is 0.09 inch above normal. For calendar year 2003 through March, the Lake Erie basin has averaged 5.65 inches of precipitation, 1.60 inches below normal, while the entire Great Lakes basin has averaged 4.81 inches of precipitation, 1.28 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 between 12-14 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 as high as 4 inches below normal to as much as 21 inches below the normal seasonal level. The projected water levels during the upcoming recreation season are expected to be the lowest since 1965.

### LAKE ERIE LEVELS



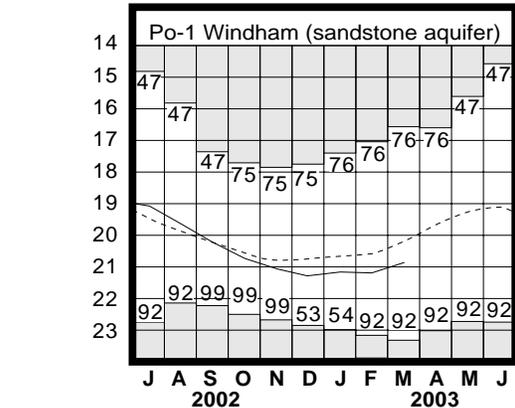
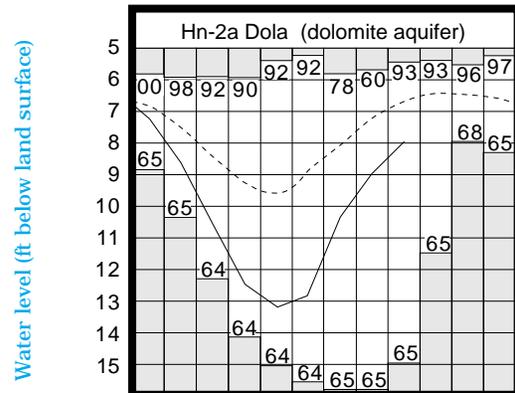
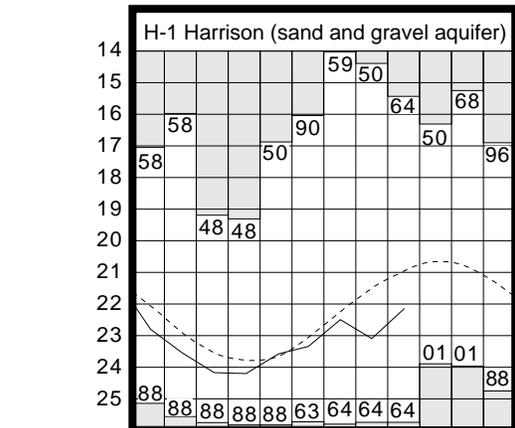
Base period: 1918-2000

□ Record high and low, year of occurrence

Normal - - - - Current ———

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	12.14	1.18	1.82	2.10
Fa-1	Jasper Mill, Fayette Co.	Limestone	7.90	-0.98	0.32	0.09
Fr-10	Columbus, Franklin Co.	Gravel	44.77	-2.24	0.36	0.05
H-1	Harrison, Hamilton Co.	Gravel	22.14	-1.20	0.96	-0.06
Hn-2a	Dola, Hardin Co.	Dolomite	7.95	-1.25	1.04	-1.67
Po-1	Windham, Portage Co.	Sandstone	20.85	-0.66	0.34	-0.20
Tu-1	Strasburg, Tuscarawas Co.	Gravel	13.73	-2.06	1.76	1.72

### GROUND-WATER LEVELS



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

Po-1, 1947-2000 □ Record high and low, year of occurrence

## SUMMARY

Precipitation during March was below normal statewide. Streamflow was above normal across most of the state. Reservoir storage increased statewide and was above normal in the Mahoning River basin, but slightly below normal in the Scioto River basin. Ground water levels rose statewide, but remained below normal across most of Ohio. Lake Erie level rose 0.17 foot and was 0.92 foot below the long-term March average.

## NOTES AND COMMENTS

### Ohio Water Advisory Council Reappointments

Governor Bob Taft recently reappointed four members of the Ohio Water Advisory Council (OWAC) to new two-year terms. Those being reappointed are: Dr. Harry Kaneshige (Chair) from Athens, representing public interests; Doug Johnson (Vice Chair) from Dayton, representing Dam Safety issues; Paul R. Labovitz from Peninsula, representing the canal lands; and Dr. Vincent T. Ricca from Columbus, representing floodplain issues.

The OWAC consists of seven members appointed by the governor. The members, who serve without compensation, represent a broad spectrum of water management knowledge and expertise reflective of responsibilities of the ODNR Division of Water. This includes, but is not limited to, dam safety, surface water, ground water and flood plain management. The council's mission includes: 1) advising the chief of the Division of Water in carrying out the duties under state law; 2) recommending policy and legislation about water management and conservation to promote the economic, industrial and social development of the state, while minimizing threats to the environment; 3) reviewing and recommending the development of plans and programs for long-term, comprehensive water management; and 4) recommending ways to enhance cooperation among governmental agencies with an interest in water to encourage wise use and protection of Ohio's ground and surface waters.

### Division of Water Strategic Plan

The Division of Water has recently completed the process of developing a new strategic plan. The plan, which sets out 5-year targets for the Division's programs, will be used by the Division and its program managers to define the direction of the Division's efforts over the next few years. A mission, vision and guiding principles and values statement for the entire Division is followed by a strategic statement for the different programs within the Division of Water.

The Strategic plan can be viewed at:  
[http://www.dnr.state.oh.us/water/aboutdiv/2003\\_Strategic\\_Plan.pdf](http://www.dnr.state.oh.us/water/aboutdiv/2003_Strategic_Plan.pdf).

Your comments and suggestions concerning the plan will be greatly appreciated and can be forwarded to [Water@dnr.state.oh.us](mailto:Water@dnr.state.oh.us).

### Subscription Renewal Reminder

Most subscribers to the *Monthly Water Inventory Report For Ohio* have recently received a subscription renewal notice. Each subscriber must return the renewal letter or contact our office by e-mail to continue receiving a copy of this report through the mail. This is the last report that will be mailed using our current mailing list. If you have not returned your subscription renewal, please do so immediately in order to remain on our mailing list. You can send your e-mail to: [scott.kirk@dnr.state.oh.us](mailto:scott.kirk@dnr.state.oh.us).

This report is available on line through the Division of Water's web page at: <http://www.dnr.state.oh.us/water/pubs/newsltrs/mwirmain.html>. Several subscribers have indicated they will take advantage of the report's availability over the Internet. Please let us know if you experience any problems or have any suggestions for our web page. Also, the authors and the entire Water Inventory Unit staff appreciate all the favorable comments that have been included with your return of the renewal notice.

### Valentine's Day Weekend Winter Storm Update

On March 14, President Bush approved Governor Bob Taft's request for federal disaster aid in Ohio as a result of considerable damage and cleanup expenses incurred following heavy snow and ice accumulation during the February 14-17 storm. Federal disaster assistance will be available in at least 30 counties in the southern half of the state as a result of this declaration. Homeowners and businesses that incurred damage from the storm will be eligible for assistance. Local governments will be eligible for some reimbursement for their cleanup and recovery costs. For more information, log onto the Ohio Emergency Management Agency's web page at: <http://www.state.oh.us/odps/division/ema/>.

## 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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