



# MONTHLY WATER INVENTORY REPORT FOR OHIO

February 2005

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

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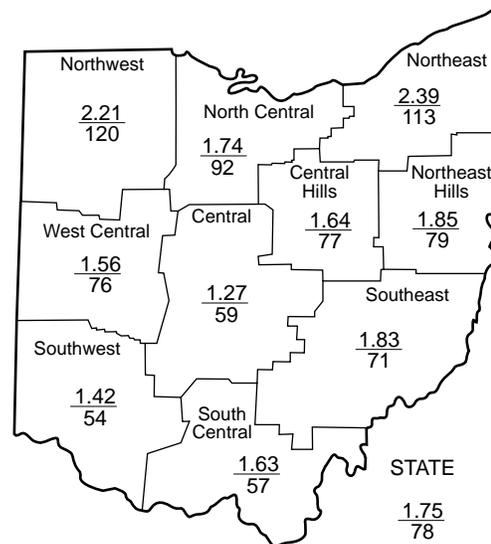
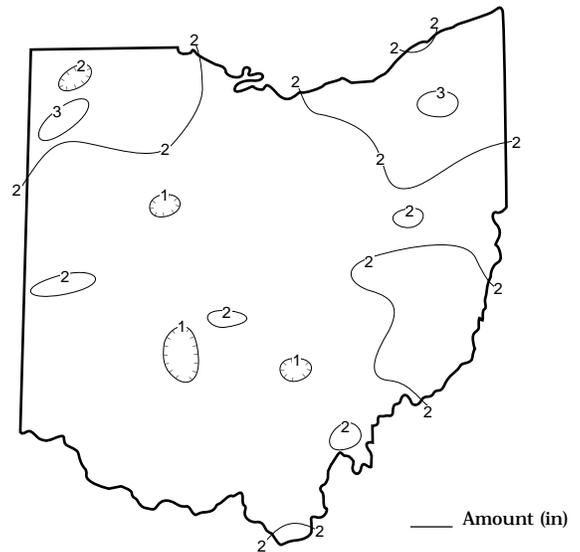
**PRECIPITATION** during February was below normal across most of the state, but above normal in northwestern and northeastern Ohio. The average for the state as a whole was 1.75 inches, 0.51 inch below normal. Regional averages ranged from 2.39 inches, 0.27 inch above normal, for the Northeast Region to 1.27 inches, 0.88 inch below normal, for the Central Region. Hiram (Portage County) reported the greatest amount of February precipitation, 3.53 inches. Sedalia (Madison County) reported the least amount, 0.73 inch.

Precipitation during February fell as both rain and snow. Snow totals for the month were below normal throughout most of the state. Chardon (Geauga County), located in the northeast Ohio snowbelt, reported 16.5 inches of snow for the month, which is about 4 inches below normal. For the season, Chardon has reported 117 inches of snow, about 34 inches above normal. The first 6 or 7 days of the month were dry with only scant amounts of precipitation falling. There were several days with precipitation during the remainder of February, but daily amounts were usually nominal. Precipitation during February 7-10 generally totaled 0.25-0.75 inch with isolated areas in northern Ohio receiving more than 1 inch. The combination of this precipitation with melting snow resulted in some minor, mostly lowland flooding, especially across northwestern Ohio. Precipitation during February 13-16 fell as mainly rain, but ended as a period of snow in northern Ohio on the 16<sup>th</sup>, with amounts of around 2-4 inches reported. Melted, liquid precipitation during this period was generally 0.25-0.50 inch across southern Ohio and 0.50-1.0 inch in northern Ohio. The month ended with rain, changing to snow late, with most of the state receiving between 0.25 and 0.50 inch of precipitation.

Precipitation for the 2005 calendar year is above normal statewide. The average for the state as a whole is 8.86 inches, 4.03 inches above normal. Regional averages range from 11.10 inches, 6.62 inches above normal, for the West Central Region to 6.52 inches, 0.70 inch above normal for the South Central Region.

Precipitation for the 2005 water year is also above normal statewide. The average for the state as a whole is 18.53 inches, 5.49 inches above normal. Regional averages range from 20.71 inches, 8.37 inches above normal, for the West Central Region to 15.93 inches, 4.46 inches above normal, for the Northwest Region. Precipitation during the first five months of the 2005 water year has been favorable for surface and ground water supplies. Near-normal precipitation during the remainder of the current recharge season will continue to benefit water supplies throughout Ohio.

## PRECIPITATION FEBRUARY



## 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	+0.37	+3.86	+3.62	+7.09	+13.58	+4.7
North Central	-0.15	+4.53	+4.45	+10.97	+17.54	+4.8
Northeast	+0.27	+5.86	+5.80	+12.44	+22.09	+5.9
West Central	-0.50	+7.07	+6.56	+9.21	+22.98	+4.0
Central	-0.88	+6.04	+7.40	+13.03	+22.52	+4.5
Central Hills	-0.49	+5.99	+6.49	+15.42	+22.94	+5.4
Northeast Hills	-0.48	+4.65	+9.47	+19.91	+30.60	+6.6
Southwest	-1.22	+3.52	+3.74	+5.14	+12.13	+2.9
South Central	-1.21	+0.69	+7.57	+9.24	+18.40	+3.1
Southeast	-0.74	+4.68	+13.18	+18.81	+28.70	+5.5
State	-0.51	+4.68	+6.83	+12.13	+21.09	

\*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	2,140	126	198	162	153
Great Miami River at Hamilton	3,630	6,760	143	245	196	140
Huron River at Milan	371	1,114	227	300	264	215
Killbuck Creek at Killbuck	464	1,006	144	208	179	161
Little Beaver Creek near East Liverpool	496	986	114	204	251	194
Maumee River at Waterville	6,330	14,930	228	226	201	144
Muskingum River at McConnsville	7,422	23,150	190	360	380	173
Scioto River near Prospect	567	1,169	179	285	246	192
Scioto River at Higby	5,131	11,320	146	260	227	174
Stillwater River at Pleasant Hill	503	1,094	174	300	234	137

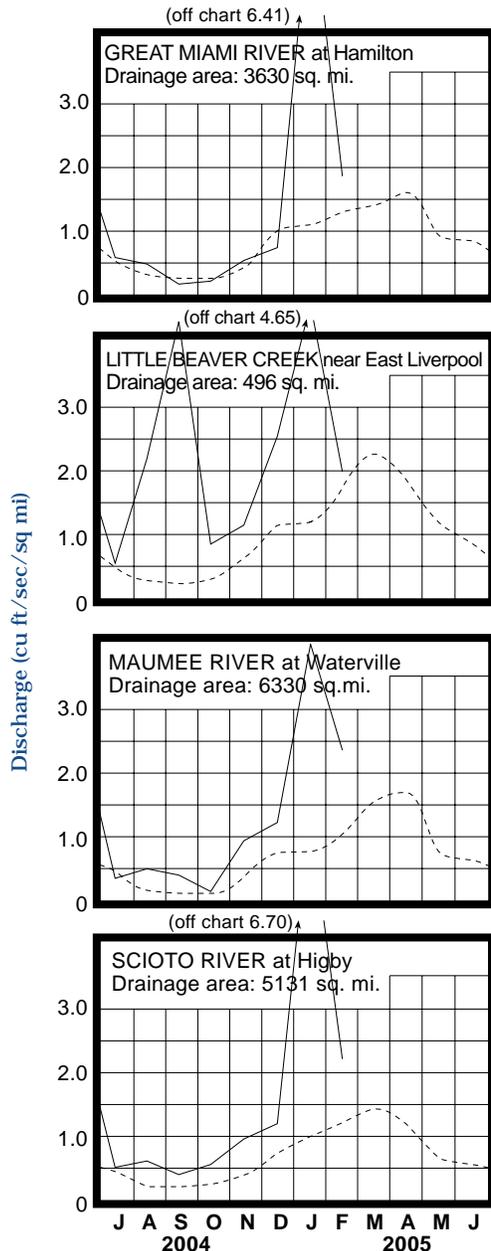
**STREAMFLOW** during February was above normal statewide. Flows were high enough to be considered excessive across most of Ohio.

Flows at the beginning of February were below normal throughout much of the state, with only the southeastern and north-central areas starting the month with above normal flows. Flows decreased statewide during the first week of the month, with the lowest flows for February occurring near the end of the first week across all but southeastern and north-central Ohio. Flows increased in response to the precipitation that fell during the second week of the month. Greatest flows for February generally occurred between the 8th and 10th across western Ohio and between the 10th and 15th in eastern Ohio. Although flows during the remainder of the month steadily decreased from these peak flows, they remained above normal until late in the month. By month's end, flows had decreased to below normal nearly statewide and were at their lowest for the month in basins throughout southeastern and north-central Ohio.

**RESERVOIR STORAGE** during February increased slightly in the Mahoning River basin and decreased in the Scioto River basin. Storage remained above normal in both basins.

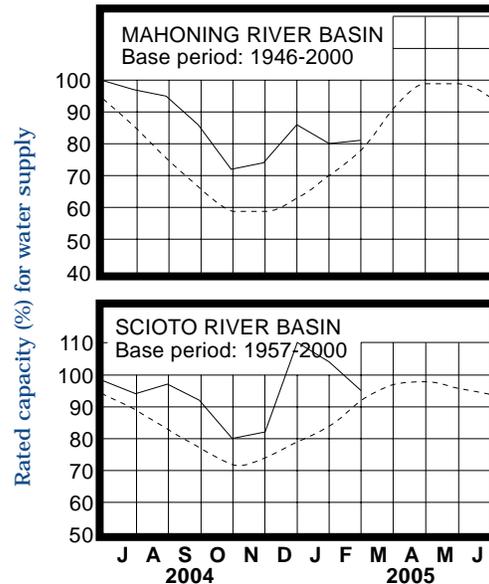
Reservoir storage at the end of February in the Mahoning basin index reservoirs was 81 percent of rated capacity for water supply compared with 80 percent for last month and 82 percent for February 2004. Month-end storage in the Scioto basin index reservoirs was 95 percent of rated capacity for water supply compared with 104 percent for last month and 95 percent for February 2004.

### 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 February showed mixed responses throughout the state. Levels in consolidated aquifers declined during the first week of the month and then rose slightly during the remainder of the month. Levels in unconsolidated aquifers were variable, with most levels generally declining throughout the month with some temporary rises noted following local precipitation.

Ground water levels remain above normal across most of the state. A new record-high February level was reached in index observation well HN-2A (Hardin County), representing the carbonate aquifers of northwestern Ohio. Current levels are also higher than they were a year ago across most of the state. At this point in the current recharge season, ground water storage is in a favorable position throughout Ohio.

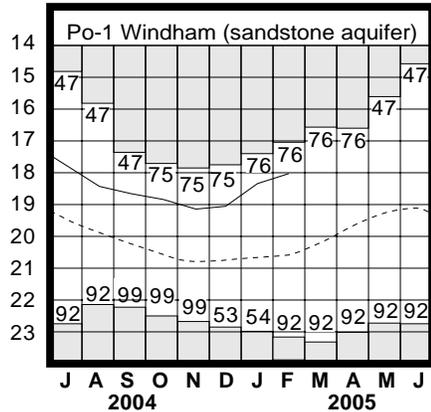
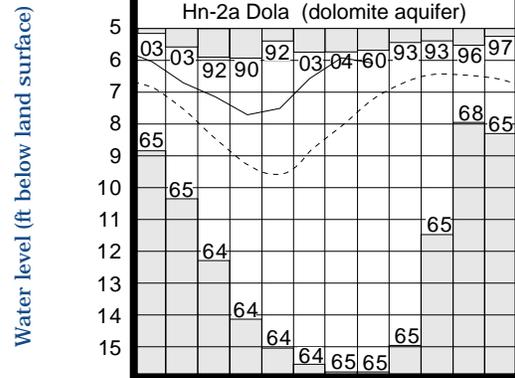
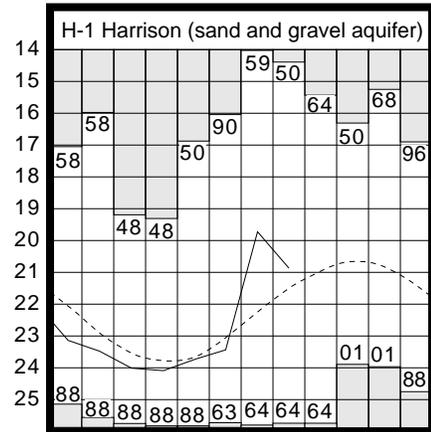
**LAKE ERIE** level rose during February. The mean level was 571.75 feet (IGLD-1985), 0.10 foot higher than last month's mean level and 0.92 foot above normal. This month's mean level is 1.34 feet higher than the February 2004 level and 2.55 feet above Low Water Datum.

The U.S. Army Corps of Engineers (USACE) reports that precipitation in the Lake Erie basin during February averaged 2.59 inches, which is 0.52 inch above normal. For the entire Great Lakes basin, February precipitation averaged 1.69 inches, which is 0.07 inch below normal. For calendar year 2005 through February, the Lake Erie basin has averaged 6.89 inches, 2.35 inches above normal, while the entire Great Lakes basin has averaged 4.42 inches, 0.45 inch above 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 continue to range above normal, falling from its current position of 11 inches above to about 2 inches above normal by late summer. Deviations from the anticipated weather patterns could result in the level of Lake Erie ranging from as high as 13 inches above to as much as 8 inches below the normal seasonal average. If current projections hold true, levels on Lake Erie should remain above normal throughout most of the upcoming summer boating season.

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	10.64	+3.93	-1.32	+1.17
Fa-1	Jasper Mill, Fayette Co.	Limestone	7.64	-0.47	-0.30	+0.46
Fr-10	Columbus, Franklin Co.	Gravel	42.64	+0.24	+0.68	+1.33
H-1	Harrison, Hamilton Co.	Gravel	20.86	+0.64	-1.15	+0.97
Hn-2a	Dola, Hardin Co.	Dolomite	6.07	+1.16	-0.16	+0.90
Po-1	Windham, Portage Co.	Sandstone	18.02	+2.56	+0.29	+0.01
Tu-1	Strasburg, Tuscarawas Co.	Gravel	9.50	+2.94	+0.92	+2.28

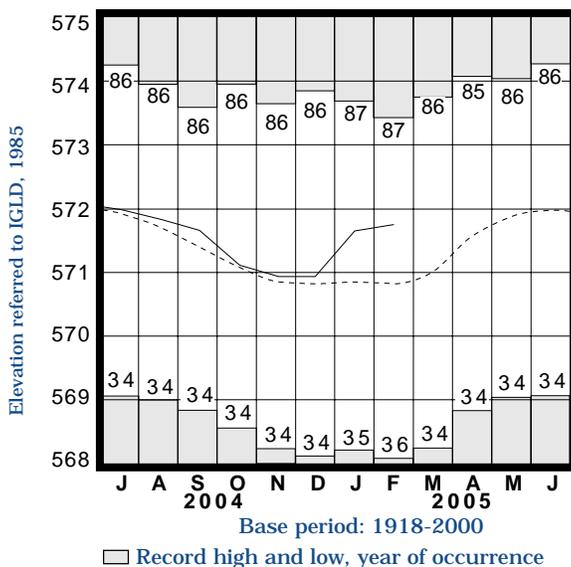
## GROUND-WATER LEVELS



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

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

## LAKE ERIE LEVELS



Normal - - - - Current ———

## SUMMARY

Precipitation during February was below normal across most of the state, but above normal in northwestern and northeastern Ohio. Streamflow was above normal statewide and high enough to be considered excessive throughout most of the state. Reservoir storage increased slightly in the Mahoning River basin and decreased in the Scioto River basin. Storage remained above normal in both basins. Ground water levels showed mixed responses and remained above normal in most aquifers. Lake Erie level rose 0.10 foot and was 0.92 foot above the long-term February average.

## NOTES AND COMMENTS

### Federal Disaster Assistance Granted

President Bush has approved Governor Bob Taft's request for federal disaster assistance. The President signed a Presidential Disaster Declaration approving public and individual assistance for approximately 60 Ohio counties. This disaster declaration allows individuals and businesses in the counties eligible for individual assistance to receive federal aid to help cover the cost from damages incurred from the ice and snowstorm of December 22, 2004 through the storms and floods of January 2005. In addition, federal public assistance, which pays 75 percent of eligible costs, is available to state and local governments and certain private nonprofit organizations for the repair or replacement of disaster-damaged facilities or infrastructure such as roads and bridges, snow and debris removal costs, and other disaster related costs.

### Ground Water Resources Maps Available Online

The Ohio Department of Natural Resources (ODNR), Division of Water, has announced the availability of county ground water resources maps for all of Ohio's 88 counties on the Division's website. To view or download a map, go to:

<http://www.dnr.state.oh.us/water/gwrmaps/>

Ground water resources maps show the regional ground water characteristics based on interpretations of water well drilling records and local geology. These maps show the expected yield to a drilled well at any location within a county by using a consistent color-coding system to represent well yields. In addition, several other types of data provided by the maps can be used to aid in the development of a new or expand an existing ground water supply. All maps show selected well log data for locations throughout the county, including typical depths of wells, aquifer type and depth to bedrock. Each map includes a brief written description of the ground water geology within the county. The maps are useful to homeowners, ground water consultants, engineers, planners and developers.

Also, pollution potential maps for several additional counties have been added to the Division's website (see New Publications under Notes and Comments section in the August 2004 issue of this report). These new counties are: Butler, Crawford, Cuyahoga, Fairfield, Franklin, Harrison, Holmes, Mahoning, Morgan, Muskingum, Richland, Summit, Tuscarawas and Wayne. To view or download a pollution potential map, go to:

<http://www.dnr.state.oh.us/water/gwppmaps/>

Paper copies of both types of maps can be ordered from: ODNR, Division of Water, Water Resources Section, 2045 Morse Road, Building E-1, Columbus, Ohio, 43229-6693, phone (614) 265-6740. Ground water resources maps cost \$8.00 each plus postage and handling (see chart below) and pollution potential maps cost \$10.00 each plus postage and handling. Payment can be made by check or credit card. Please make checks payable to ODNR Division of Water. For more information, please contact Jim Raab at: [jim.raab@dnr.state.oh.us](mailto:jim.raab@dnr.state.oh.us) or phone (614) 265-6747.

## 50-Year Anniversary Highlights

### Notable February Events From The Past 50 Years

**February 1978:** For many stations this was the coldest and driest February of record. For the state as a whole, the 0.44 inch of precipitation was the driest February of record and the statewide average of 16 degrees for the month was the coldest February ever recorded for Ohio. By the end of the month, there had been 51 consecutive days of snow on the ground across the state.

**February 1987:** Noticeably below normal precipitation occurred throughout the state. The 0.51 inch for the state as a whole is the 2<sup>nd</sup> driest February of record. Record or near-record dry conditions were prevalent in the northern two-thirds of Ohio. Some stations, especially in northwestern Ohio, received no precipitation for the entire month.

**February 1990:** Heavy rain during February 22 resulted in moderate flooding across northwestern Ohio. On February 24, blizzard conditions engulfed most of the state. Several tragic multi-vehicle accidents occurred, the worst on Interstate 75 in Miami County where 9 people died. This was the wettest February of record for the Northwest and North Central regions and the second wettest for the Northeast Region.

**February 14-17, 2003:** Valentine's Day weekend storm brought heavy snow across most of the state except in extreme southern Ohio where a major ice storm occurred. By the end of the storm 12-18 inches of snow was on the ground across the central third of the state, and a significant accumulation of ice caused problems in southern Ohio. The weight of the ice toppled trees, snapped branches and brought down power lines. Several counties in southern Ohio were declared disaster areas.

## 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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Dick Bartz

Chief

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