



MONTHLY WATER INVENTORY REPORT FOR OHIO

January 2002

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

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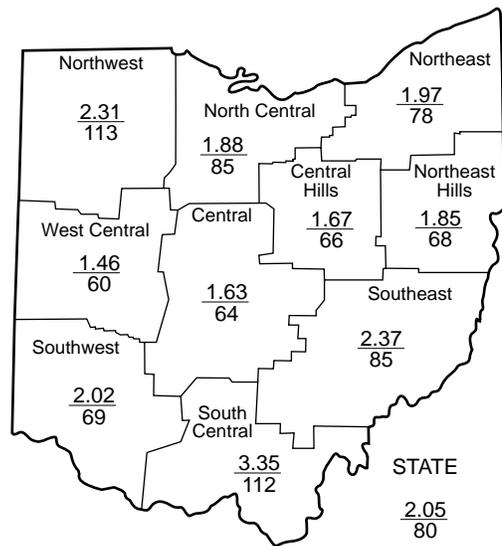
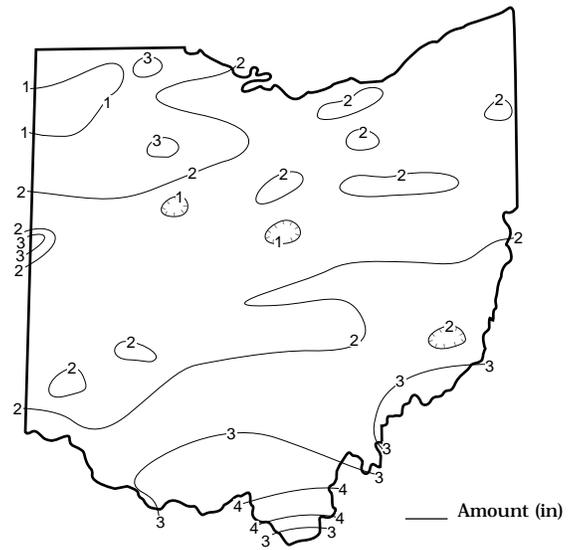
PRECIPITATION during January was below normal across most of the state, but was above normal in much of northwestern and south-central Ohio. The average for the state as a whole was 2.05 inches, 0.52 inch below normal. Regional averages ranged from 3.35 inches, 0.37 inch above normal, for the South Central Region to 1.46 inches, 0.96 inch below normal, for the West Central Region. Greenup Lock and Dam (Scioto County) reported the greatest amount of January precipitation, 4.89 inches. Fredericktown (Knox County) reported the least amount, 0.81 inch.

Precipitation during January fell as both rain and snow. Snowfall during the month was below normal across most of the state, but was above normal in some areas of southeastern Ohio. A weather system brought snow to Ohio during January 6-7 with the greatest amounts of precipitation falling across the southeastern half of the state where storm totals of around 0.50-1.0 inch (melted, liquid) were reported. Precipitation amounts decreased to the north and west to less than 0.25 inch in northwestern Ohio. Conditions were rather dry across most of the state during the next two weeks with only some scattered, light precipitation. However, moderate amounts of snow fell across southern Ohio during January 19-20 with generally 1-3 inches of snow falling and ranging up to 6 inches in extreme southeastern Ohio. Rain showers arrived late on the 23rd and lasted through the 24th with generally 0.5-1.0 inch falling across the southern half of the state and lesser amounts in the northern half. Widespread rains began late on the 29th and continued on and off through month's end. Some of the rain was heavy locally and resulted in minor flooding, especially in the northern half of the state. Storm totals ranged from 0.50-1.0 inch in the southern half of Ohio to 1-2 inches in the northern half of the state. The precipitation turned to freezing rain in northwestern Ohio on the 31st resulting in numerous power outages and other inconveniences.

Precipitation for the 2002 water year is above normal across most of the state. The average for the state as a whole is 12.44 inches, 1.69 inches above normal. Regional averages range from 14.38 inches, 2.59 inches above normal, for the Southwest Region to 11.24 inches, 0.15 inch below normal, for the South Central Region.

Precipitation for the 2002 calendar year is off to a rather dry start across most of the state with only northwestern and south-central Ohio reporting above normal amounts. The below normal precipitation during January did not add favorably to the optimistic outlook for an exceptional recharge season deemed possible at the end of December. However, several months remain with the potential for additional recharge. Near normal precipitation during these next several months should be adequate for replenishing the state's water supplies.

PRECIPITATION JANUARY



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	+0.27	-0.78	+5.24	+4.46	+7.36	+3.3
North Central	-0.33	-0.58	+3.36	-1.42	+2.90	+2.3
Northeast	-0.55	-1.33	+0.44	-5.29	-3.74	+0.5
West Central	-0.96	-0.69	+5.39	+5.19	+5.78	+3.0
Central	-0.92	-0.28	+1.38	+1.30	+3.43	+0.7
Central Hills	-0.85	-0.59	+1.99	-3.30	-1.38	+0.5
Northeast Hills	-0.87	-0.63	+0.06	-3.38	-1.76	-0.1
Southwest	-0.91	-0.01	+4.46	+3.31	+3.27	+2.7
South Central	+0.37	-0.28	-2.45	-2.23	-1.11	-1.2
Southeast	-0.41	-0.05	-0.16	+0.91	+1.05	+0.6
State	-0.52	-0.49	+2.00	-0.02	+1.60	

*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	934	62	58	53	61
Great Miami River at Hamilton	3,630	2,573	64	139	176	108
Huron River at Milan	371	183	43	67	64	62
Killbuck Creek at Killbuck	464	214	41	59	56	58
Little Beaver Creek near East Liverpool	496	395	67	63	58	55
Maumee River at Waterville	6,330	2,045	42	89	136	105
Muskingum River at McConnelsville	7,422	4,324	47	105	105	65
Scioto River near Prospect	567	214	43	106	117	90
Scioto River at Higby	5,131	2,809	44	85	83	88
Stillwater River at Pleasant Hill	503	241	54	127	197	100

STREAMFLOW during January was below normal statewide. Flows in some drainage basins in the eastern half of the state were low enough to be considered deficient. Flows during January were noticeably less than the December flows.

Streamflow at the beginning of the month was below normal statewide. Flows generally declined during the first 10 days of January and then remained rather stable or increased slightly during the next week due to warmer temperatures and runoff from melting snow. Flows declined during the following week before temporarily increasing following precipitation that occurred on January 24. Low flows for the month generally occurred either prior to the runoff from melting snow, or prior to the precipitation that occurred on January 24.

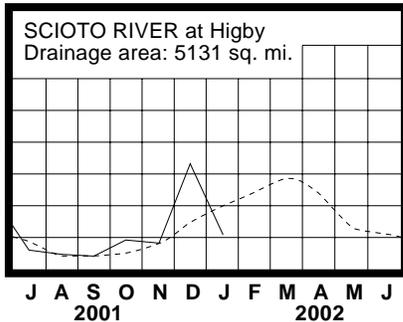
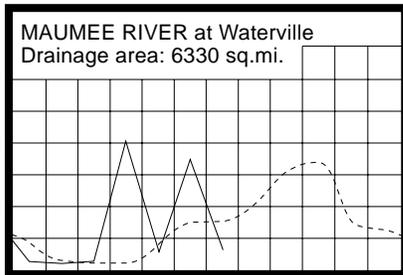
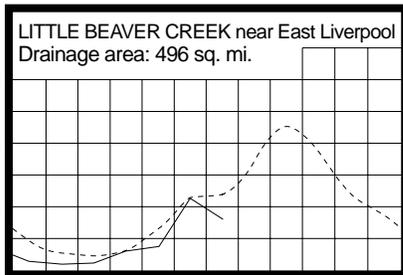
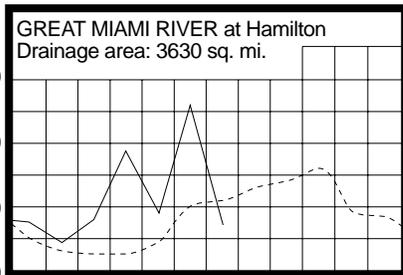
Flows increased rapidly in response to the widespread rain that began late on January 29 and lasted through the end of the month. Greatest flows for January occurred statewide on the last day of the month and had increased to above normal. Minor flooding was reported in some flood prone areas, especially in northern Ohio.

RESERVOIR STORAGE for water supply during January increased in the Mahoning River basin and decreased in the Scioto River basin. Storage remains above normal in both basins.

Reservoir storage at the end of January in the Mahoning basin index reservoirs was 73 percent of rated capacity for water supply compared with 69 percent for last month and 70 percent for January 2001. Month-end storage in the Scioto basin index reservoirs was 86 percent of rated capacity for water supply compared with 97 percent for last month and 84 percent for January 2001.

MEAN STREAM DISCHARGE

Discharge (cu ft/sec/sq mi)

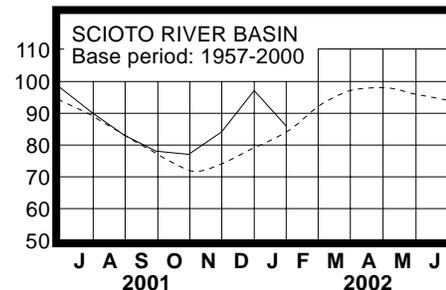
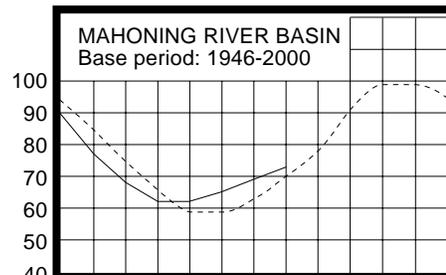


Base period for all streams: 1971-2000

Normal - - - - Current ———

RESERVOIR STORAGE FOR WATER SUPPLY

Rated capacity (%) 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	16.91	-1.12	+0.74	+0.39
Fa-1	Jasper Mill, Fayette Co.	Limestone	8.16	-0.64	+0.24	+0.06
Fr-10	Columbus, Franklin Co.	Gravel	45.47	-2.13	+0.36	-0.13
H-1	Harrison, Hamilton Co.	Gravel	22.06	+0.17	-0.83	+1.41
Hn-2a	Dola, Hardin Co.	Dolomite	6.86	+1.22	-0.12	+0.37
Po-1	Windham, Portage Co.	Sandstone	21.24	-0.57	+0.15	+0.21
Tu-1	Strasburg, Tuscarawas Co.	Gravel	15.79	-2.67	+0.21	-0.97

GROUND WATER levels during January showed mixed responses across the state with levels in some aquifers in western Ohio declining contra-seasonally. Net changes during January from the December levels were less than usually observed statewide.

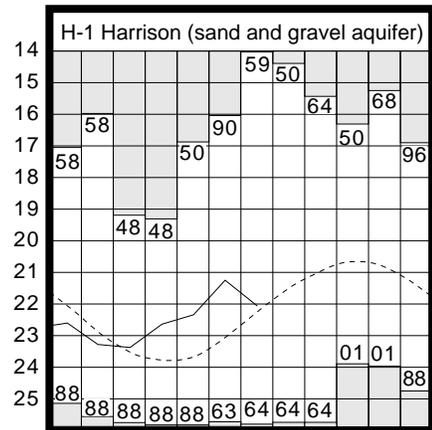
Ground water levels remain below normal across most of the state, ranging up to nearly 2.75 feet below the long-term January average. However, levels in some aquifers in western Ohio continue at above normal levels. Current levels are higher than last year's levels across much of the state. Although the potential for recharge is still favorable, normal precipitation and other climatic conditions during the next several months will be needed to ensure continued improvement to the state's ground water storage.

LAKE ERIE level declined slightly during January. The mean level was 570.41 feet (IGLD-1985), 0.06 foot lower than last month's level and 0.46 foot below normal. This month's mean level is 0.30 foot higher than the January 2001 level and 1.21 feet above Low Water Datum.

The U. S. Army Corps of Engineers (USACE) reports that precipitation in the Lake Erie basin during January averaged 2.83 inches, which is 0.39 inch above normal. The entire Great Lakes basin averaged 1.45 inches, 0.72 inch below normal.

The USACE also reports that, based on the current condition of the Great Lakes basin and anticipated weather conditions, the level of Lake Erie should range between 2-8 inches below the long-term seasonal averages 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 above normal to as much as 16 inches below the normal seasonal levels.

GROUND-WATER LEVELS



SUMMARY

Precipitation during January was below normal across most of the state, but was above normal in much of northwestern and south-central Ohio. Streamflow was below normal statewide. Reservoir storage increased in the Mahoning River basin and decreased in the Scioto River basin. Ground water levels showed mixed responses with net changes from the December levels being less than usually observed statewide. Lake Erie level declined 0.06 foot and was 0.46 foot below the long-term January average.

NOTES AND COMMENTS

NEW PUBLICATION

The Ohio Department of Natural Resources (ODNR), Division of Water and the U. S. Geological Survey, Water Resources Division, announce the availability of the following new publication:

Hydrologic Considerations for Estimation of Storage-Capacity Requirements of Impounding and Side-Channel Reservoirs Used for Water Supply in Ohio (U. S. Geological Survey Water-Resources Investigations Report 01-4256)

by Greg F. Koltun

This report, prepared in cooperation with the ODNR Division of Water, provides data and methods to aid in the hydrologic design or evaluation of impounding reservoirs and side-channel reservoirs used for water supply in Ohio. Data from 117 streamflow-gauging stations throughout Ohio were analyzed by means of nonsequential-mass-curve-analysis techniques to develop relations between storage requirements, water demands, duration and frequency. Information is also provided on minimum runoff for selected durations and frequencies. Systematic record lengths for the streamflow-gauging stations ranged from about 10 to 75 years; however, in many cases, additional streamflow records were synthesized.

Copies of this new report are available from the U. S. Geological Survey (USGS), Water Resources Section, 6480 Doubletree Avenue, Columbus, Ohio, 43229 or call Mike Eberle at (614) 430-7718. Copies are also available from the ODNR, Division of Water, 1939 Fountain Square, Building E-1, Columbus, Ohio, 43224, phone (614) 265-6739. You may also view an abstract of the report or download the report in a Portable Document Format (PDF) by visiting the USGS web page at: <http://oh.water.usgs.gov/reports/abstract.html>.

GAZETTEER OF OHIO STREAMS NOW AVAILABLE ON-LINE

The *Gazetteer of Ohio Streams* is now available electronically. This publication, compiled by John C. Krolczyk, is a geographical and alphabetical listing of every named stream in Ohio that is shown on topographical maps of the USGS. Many descriptive features of each stream are included such as length (miles), elevations and drainage area. Information contained in the original 1954 publication has been entered into a database format and information from the 1967 supplement to the *Gazetteer, Drainage Areas of Ohio Streams*, has also been incorporated. The format of Part One of the original *Gazetteer* has been modified somewhat, but the new electronic version still contains the alphabetic listing of streams found in Part Two of the original publication. The *Gazetteer* can be viewed and/or downloaded as a PDF document from the ODNR, Division of Water web page at: <http://www.dnr.state.oh.us/water/>. Versions in MS Access and MS Word may also be obtained via electronic transfer by calling Valerie Childress at (614) 265-6757.

NEW NORMALS FOR MONTHLY WATER INVENTORY REPORT

Beginning with this report, a new base period is being used to determine the long-term averages for each hydrologic category presented in this report. The updated averages are now calculated with data compiled through 2000. All changes are reflected in the graphs and tables used in this report. The specific base period used for each individual hydrologic category is listed with its associated graph or table. Alum Creek Reservoir has been included in the reservoir storage calculations for the Scioto River basin. Lake Erie level will now be reported as a 4-gauge mean. The 4 gauges are located at Toledo, Fairport, Port Stanley and Port Colborne.

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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