



MONTHLY WATER INVENTORY REPORT FOR OHIO

August 2002

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

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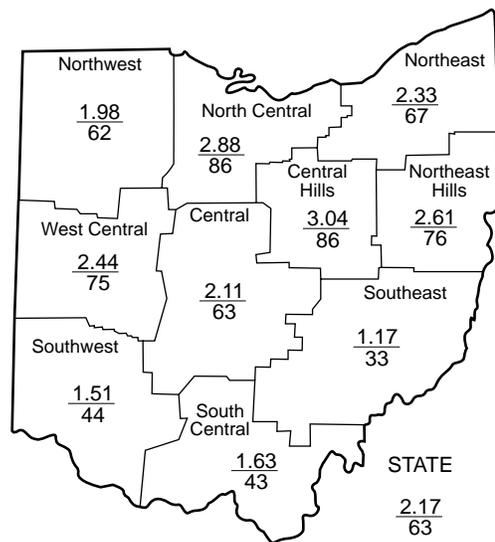
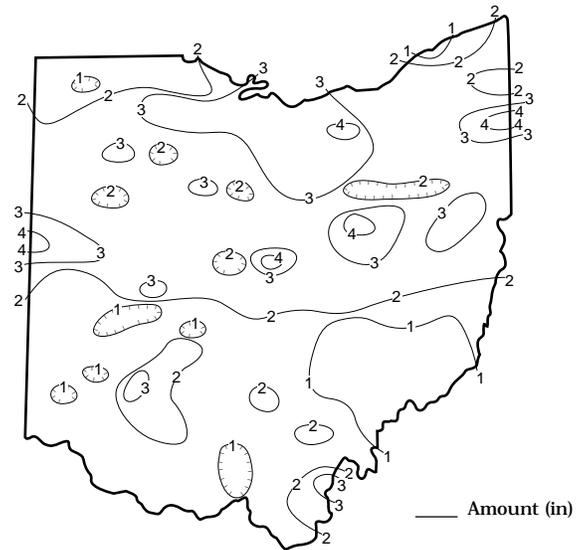
PRECIPITATION during August was notably below normal across most of the state. The average for the state as a whole was 2.17 inches, 1.27 inches below normal. Regional averages ranged from 3.04 inches, 0.48 inch below normal, for the Central Hills Region to 1.17 inches, 2.41 inches below normal, for the Southeast Region. For the state as a whole this was the 19th driest August during the past 120 years. Regionally, this was the 3rd driest August for the Southeast Region, the 4th driest for the Southwest Region and the 5th driest for the South Central Region. Millersburg (Holmes County) reported the greatest amount of August precipitation, 4.63 inches. Willow Island Dam and Marietta State Forest Nursery (both in Washington County) reported the least amount of August precipitation, a meager 0.20 inch. Many other stations in the southern half of the state reported less than 1 inch of precipitation for the month.

Precipitation during August was spotty with no widespread rains during the entire month. Generally, the greatest amount of precipitation during August fell in northern Ohio. Although a few areas received locally heavy downpours during the month, most of the precipitation was light. Some stations reported precipitation on only 1 or 2 days during the entire month. Other locations received measurable rain on 8-10 days, but typically less than a tenth of an inch was reported on most of those days. Widely scattered showers and thunderstorms during August 4-5 brought less than 0.25 inch of rain to some areas in the northeastern two-thirds of the state with a few locations receiving up to 1.5 inches from locally heavier downpours. Hit and miss showers occurred on several of the days during August 11-19. Most areas of the state received some rain during this period, but amounts were generally nominal. The more significant rains during this period occurred on August 11 in an isolated area of west-central Ohio with 1-2 inches reported, on the 16th in extreme northeastern Ohio where up to 1 inch of rain fell, and on August 19 when rain was confined mainly to the northern half of the state when some areas were fortunate enough to receive 0.50-1.0 inch of rain. Showers during August 22-24 were spotty with some locally heavy rainfall in northern Ohio. Most areas in the southern half of the state received 0.25 inch or less of rain while the northern half generally received 0.25-0.50 inch with amounts of greater than 3 inches reported from isolated areas. The remainder of the month was rather dry across the state.

Precipitation for the 2002 water year is above normal across much of the state, but is below normal in eastern Ohio. The average for the state as a whole is 36.04 inches, 1.01 inches above normal. Regional averages range from 42.02 inches, 4.04 inches above normal, for the Southwest Region to 32.85 inches, 1.33 inches above normal, for the Northwest Region.

(continued on back)

PRECIPITATION AUGUST



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	-1.21	-3.53	-2.59	+2.76	+1.57	-2.1
North Central	-0.47	-3.00	-0.99	+3.28	-3.30	-2.2
Northeast	-1.16	-3.57	-0.50	-0.03	-7.66	-2.6
West Central	-0.80	-4.81	-0.91	+2.88	+3.32	-2.2
Central	-1.26	-2.07	-0.39	+0.63	+0.05	-2.2
Central Hills	-0.48	-2.98	-0.31	+0.85	-5.18	-2.7
Northeast Hills	-0.82	-4.12	-2.03	-1.75	-7.93	-3.0
Southwest	-1.90	-2.71	+2.31	+4.88	+3.21	-2.1
South Central	-2.15	-1.41	+3.38	+0.35	-3.11	-2.5
Southeast	-2.41	-2.47	+0.61	-1.21	-0.96	-2.2
State	-1.27	-3.08	-0.14	+1.26	-2.01	

*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

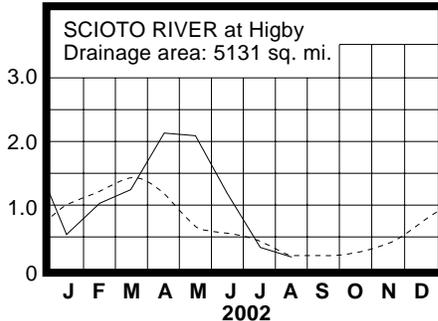
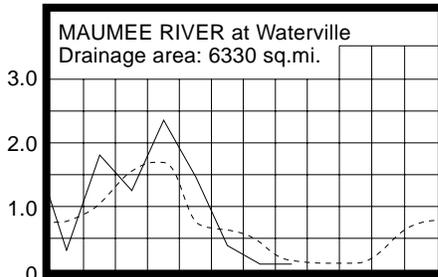
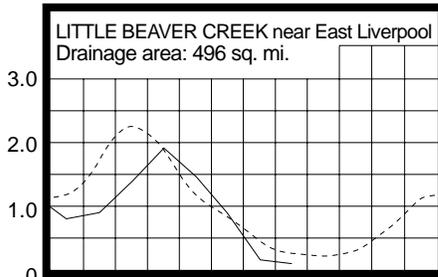
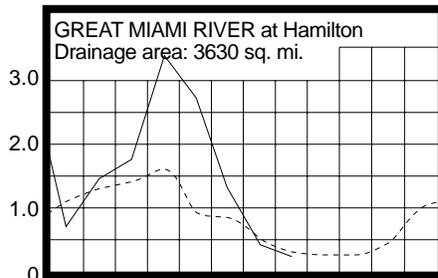
MEAN STREAM DISCHARGE

River and Location	Drainage Area (Sq. Mi.)	Mean Discharge (CFS)	% of Normal	% of Normal Past		
				3 Mos.	6 Mos.	12 Mos.
Grand River near Painesville	685	20	23	29	103	81
Great Miami River at Hamilton	3,630	822	71	88	144	149
Huron River at Milan	371	15	16	15	83	83
Killbuck Creek at Killbuck	464	65	46	86	93	77
Little Beaver Creek near East Liverpool	496	48	35	56	81	68
Maumee River at Waterville	6,330	631	65	35	93	111
Muskingum River at McConnelsville	7,422	1,262	43	139	148	78
Scioto River near Prospect	567	21	46	30	100	105
Scioto River at Higby	5,131	936	71	78	105	95
Stillwater River at Pleasant Hill	503	28	40	44	129	141

STREAMFLOW during August was below normal statewide. Flows were low enough to be considered deficient across most of Ohio. August flows were seasonally less than the July flows statewide.

Streamflow was below normal across most of Ohio at the beginning of August. Generally, flows declined steadily throughout the month with temporary increases noted following local precipitation. The timing of the low and high flows for the month varied greatly across the state due to the scattered nature of precipitation during the month. Generally, the greatest flows for the month occurred at the beginning of August in southwestern and northeastern Ohio, on August 12 in west-central Ohio and during August 23-27 elsewhere. Low flows occurred during August 11-15 in the northwestern half of the state, just prior to the scattered showers and thunderstorms that began in west-central Ohio on August 11 and at the end of the month in the southeastern half of the state. Streamflow at the end of August was below normal statewide.

MEAN STREAM DISCHARGE



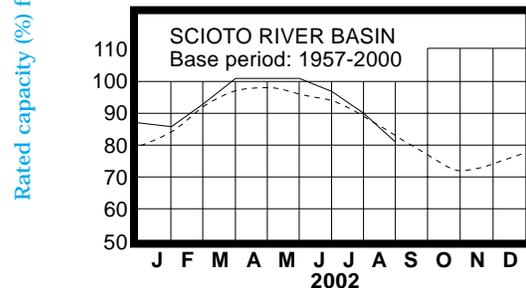
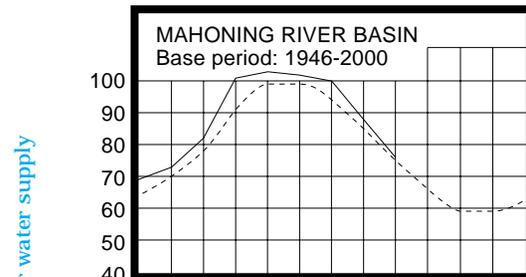
Base period for all streams: 1971-2000

RESERVOIR STORAGE for water supply during August decreased in both the Mahoning and Scioto river basins. Storage at the end of the month was slightly above normal in the Mahoning River basin and below normal in the Scioto River basin.

Reservoir storage at the end of August in the Mahoning basin index reservoirs was 76 percent of rated capacity for water supply compared with 88 percent for last month and 68 percent for August 2001. Month-end storage in the Scioto basin index reservoirs was 81 percent of rated capacity for water supply compared with 90 percent for last month and 83 percent for August 2001.

Surface water supplies remain adequate in most areas of the state in spite of the dry conditions the state has experienced this summer. However, water supply managers should closely monitor their respective situations.

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	Year Ago
F-1	W. Rushville, Fairfield Co.	Sandstone	16.90	-0.86	-1.98	0
Fa-1	Jasper Mill, Fayette Co.	Limestone	11.89	-3.57	-1.18	-3.57
Fr-10	Columbus, Franklin Co.	Gravel	46.17	-2.37	-0.92	-0.08
H-1	Harrison, Hamilton Co.	Gravel	24.53	-1.66	-1.73	-1.27
Hn-2a	Dola, Hardin Co.	Dolomite	8.61	-1.12	-1.39	-0.85
Po-1	Windham, Portage Co.	Sandstone	19.62	+0.25	-0.56	+1.11
Tu-1	Strasburg, Tuscarawas Co.	Gravel	15.39	-1.98	-1.02	+0.37

GROUNDWATER levels during August declined statewide. Levels in most aquifers declined steadily throughout the month. Although typical of the season, the declines were noticeably greater than usually observed during August.

The climatic conditions during the past few months are beginning to negatively impact ground water supplies in Ohio. As a result, levels are below normal in most aquifers across the state. August levels ranged from near normal to 3.50 feet below normal. Also, current levels are lower than the August 2001 levels across most of the state. The levels in a few aquifers are lower than those August levels during either 1988, 1992 or 1999, recent benchmark years for drought in Ohio. Index observation well Fa-1 near Washington Court House (Fayette County), representing limestone aquifers in south-central and southwestern Ohio, reached a record low-level for August.

Although ground water levels are below normal across most of the state, supplies remain adequate. However, ground water levels are expected to decline seasonally through late autumn. The Ohio Agricultural Statistics Service reports that near the end of August, soil moisture was rated as being short or very short in 84 percent of the state and adequate in 16 percent of the state. Water supply managers using ground water sources are urged to monitor their respective situations closely. According to the Palmer Drought Severity Index, the Northeast Hills Region was rated as experiencing severe drought conditions at the end of August while the remainder of the state was enduring moderate drought conditions.

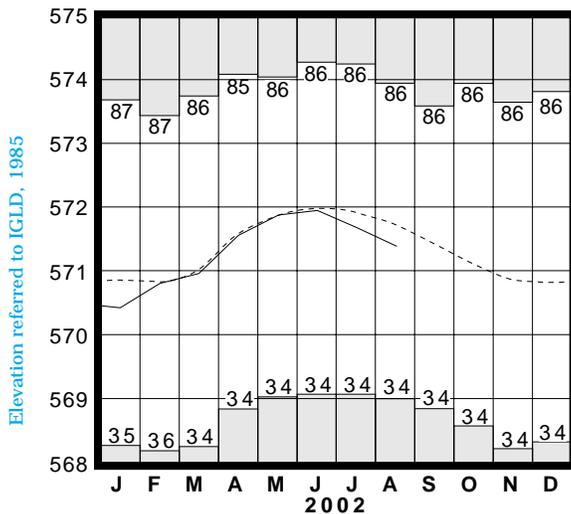
Agricultural concerns have been impacted the most by the hot and droughty weather conditions. Much of the crops, hay and pastures in the state are rated as being in poor or very poor condition. The dry weather has negatively impacted both the yield and the quality of crops in the state.

LAKE ERIE level declined during August. The mean level was 571.39 feet (IGLD-1985), 0.30 foot lower than last month's mean level and 0.33 foot below normal. This month's mean level is 0.69 foot higher than the August 2001 level and 2.19 feet above Low Water Datum.

The U. S. Army Corps of Engineers (USACE) reports that precipitation in the Lake Erie basin during August averaged 1.63 inches, which is 1.54 inches below normal. The entire Great Lakes basin averaged 2.93 inches during August, which is 0.21 inch below normal. For calendar year 2002 through August, the Lake Erie basin has averaged 23.38 inches of precipitation, 0.24 inch below normal, while the entire Great Lakes basin has averaged 22.12 inches, 1.08 inches 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 range about 5 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 8 inches above normal to as much as 14 inches below the normal seasonal level.

LAKE ERIE LEVELS

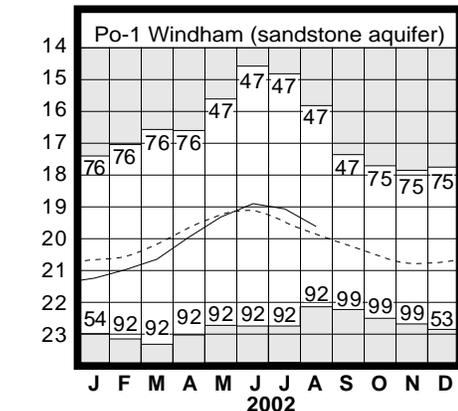
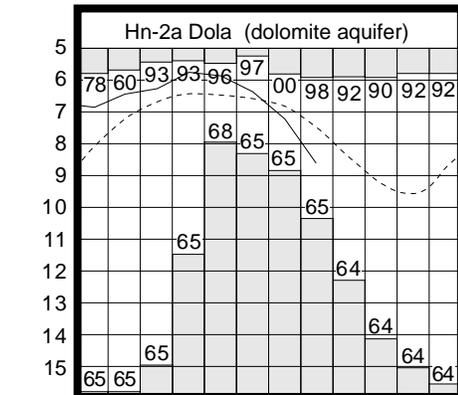
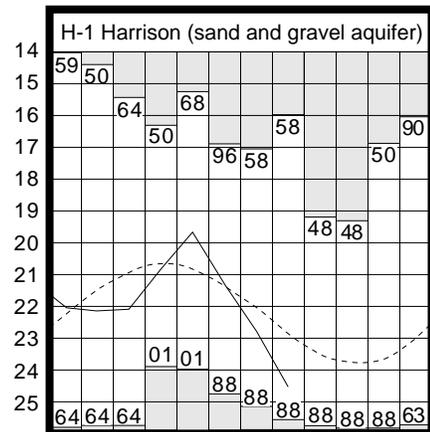


Base period: 1918-2000

□ Record high and low, year of occurrence

GROUND-WATER LEVELS

Water level (ft below land surface)



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)

Precipitation for the 2002 calendar year is below normal across most of the state, but above normal in southern Ohio. The average for the state as a whole is 25.66 inches, 1.20 inches below normal. Regional averages range from 31.11 inches, 1.85 inches above normal, for the South Central Region to 21.81 inches, 2.12 inches below normal, for the Northwest Region.

Following a very wet late spring, dry conditions and above-normal temperatures prevailed during the summer months. As a result, the summer of 2002 (June-August) was among the driest on record for much of the state. During the 3-month period, the state averaged 8.29 inches of precipitation, 3.08 inches below normal, ranking as the 11th driest summer for the state as a whole during the past 120 years. Regionally, 8 of Ohio's 10 climatic regions' summer precipitation totals ranked among the top 20 driest for the period. Most notably, the West Central Region reported 6.43 inches of precipitation, 4.81 inches below normal, ranking as the 5th driest June-August period. It was the 7th driest for the Northeast Hills Region, the 8th driest for the Northeast Region and the 10th driest for the Southeast Region.

SUMMARY

Precipitation during August was notably below normal across most of the state, ranking among the driest Augusts in the Southeast, Southwest and South Central regions. Streamflow was below normal statewide and was deficient across most of Ohio. Reservoir storage decreased in both the Mahoning and Scioto river basins, dropping to below normal in the Scioto basin. Ground water levels declined statewide and were below normal throughout most of the state. Lake Erie level declined 0.30 foot and was 0.33 foot below the long-term August average.

NOTES AND COMMENTS

WMAO Fall Conference

The Water Management Association of Ohio's (WMAO) 31st annual fall conference is scheduled for October 23 and 24, 2002. The theme of the conference will be *The Three-Dimensional Watershed*. WMAO is a volunteer organization comprised of water-resources professionals and students. There are several divisions of WMAO that may not consider aspects of both ground water and surface water. This conference is an attempt to bring these disciplines together.

The conference will be held at the Ramada Plaza Hotel and Conference Center, 4900 Sinclair Road, Columbus, OH., 43229. The registration deadline for the conference is October 16, 2002. For information on fees or any other information, please visit the WMAO web site at: <http://www.ohiowater.org/wmao/> or contact:

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WMAO Announces Two-Day Workshop

A two-day workshop on watershed management will be held on October 21-22, 2002, just prior to the WMAO fall conference. The title of the workshop is *Bringing it Home: Lessons From the Field for Making Watershed Management Work*. The workshop will bring together watershed coordinators, state agency representatives, and regional and national watershed experts to discuss issues critical to watershed management.

The workshop will be held at the Deer Creek Resort and Conference Center, 22300 State Park Road #20, Mt. Sterling, OH. The cost is \$60 per day or \$100 for both days. Cost includes instructional material, continental breakfast and lunch each day. For complete details and registration information, please visit the Great Lakes Commission web site at: <http://www.glc.org/watershed/> or call (734) 665-9135.

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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