MONTHLY WATER INVENTORY REPORT FOR OHIO

August 1998

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

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PRECIPITATION during August was above normal in the northern half of the state but noticeably below normal in the southern half. The state average was 4.03 inches, 0.55 inch above normal. Regional averages ranged from 7.68 inches, 4.75 inches above normal, for the Northwest Region to 2.00 inches, 1.89 inches below normal, for the South Central Region. This was the wettest August during the past 104 years in the Northwest Region and the fourth wettest in the North Central Region. Fostoria (gauge is in Hancock County) reported the greatest amount of precipitation for the month, 14.99 inches, of which 9.52 inches fell during August 24-25. Several other locations in extreme northwestern Ohio reported more than 10 inches for the month. In contrast, the least amount of precipitation was reported at Westerville (Franklin County), only 0.39 inch, while Patriot (Gallia County) was a close second with 0.40 inch reported. A few other locations along the river in southeastern Ohio and a small area in southwestern Ohio also reported less than 1 inch of precipitation for the month.

Precipitation during August fell in the form of showers and thunderstorms and varied greatly across the state. Locally severe weather was reported at several locations during the month. The month started off dry, but quickly changed starting on August 4 when the first in a series of storms began moving in to the state from the west and northwest. Between 1 and 3 inches of rain was reported at some locations. Storms continued to cross western and northwestern Ohio for the next several days as the storm track slowly drifted east. Hardin County reported severe storms on August 8. By August 9 and 10, the storms were hitting north-central and northeastern Ohio rather hard with lesser amounts of precipitation falling elsewhere. By the time this storm system left the state, most locations in northwestern Ohio had received more than 3 inches of rain, western, north-central and northeastern Ohio up to 2 inches, and the remaining areas of the state generally less than 1 inch with many areas in southeastern Ohio missing the rain entirely.

The next 2 weeks of the month were rather dry statewide, but a few storms crossed extreme northern Ohio on August 15 and spotty light showers fell elsewhere during August 17-18. Storms returned to the state on August 24 with heavy rain falling across most areas in the northern one-third of the state. The heaviest rain fell during August 24-25 when more than 9 inches was reported in northwestern Ohio at Fostoria (Hancock and Seneca counties). Many areas received between 2 and 4 inches of rain during this storm. Locally severe flooding occurred along portions of the Huron and Portage rivers and also in smaller drainage basins. A few areas in the southern portion of the state also saw heavy showers during this period, but amounts seldom exceeded 1 inch. The month ended with a few widely scattered, light showers falling during August 27-29.

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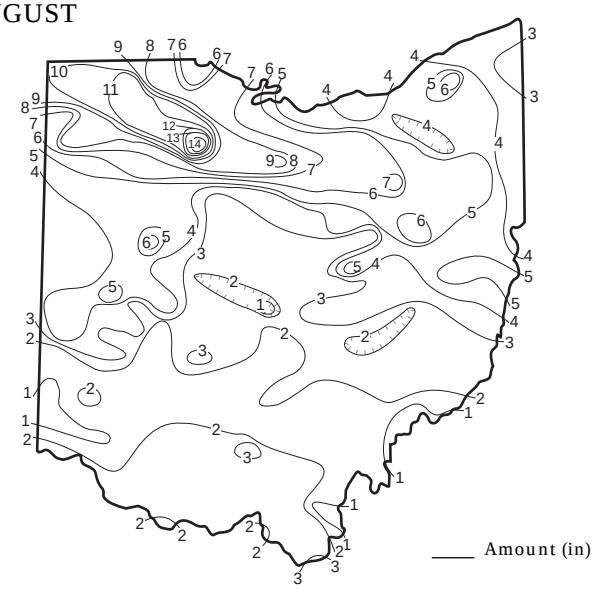
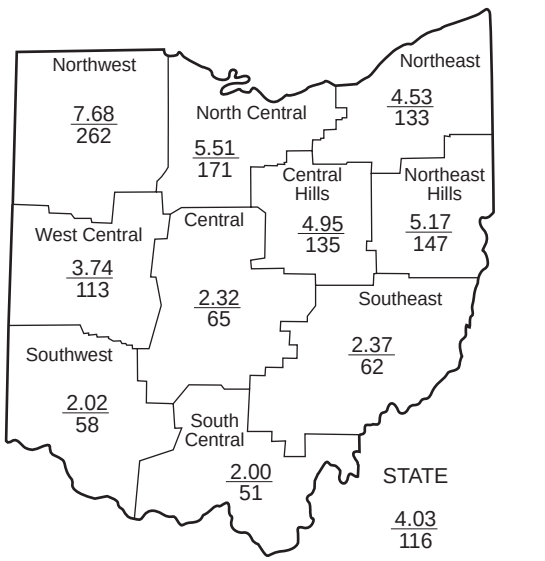
PRECIPITATION

Region	DEPARTURE FROM NORMAL (IN.) This Month	Past 3 Mos.	Past 6 Mos.	Past 12 Mos.	Past 24 Mos.	Palmer Drought Severity Index*
Northwest	+4.75	+6.15	+6.61	+8.24	+16.27	+2.4
North Central	+2.28	+6.01	+5.90	+7.37	+19.30	+0.6
Northeast	+1.13	+0.60	+1.17	+0.85	+10.95	-2.6
West Central	+0.44	+4.59	+5.42	+2.52	+8.26	-0.1
Central	-1.23	+1.21	+1.83	-0.44	+6.14	-1.4
Central Hills	+1.29	+3.16	+2.98	+1.23	+8.79	+0.2
Northeast Hills	+1.65	+3.93	+4.45	+4.13	+8.96	-2.5
Southwest	-1.45	+2.35	+5.94	+2.09	+8.26	+0.2
South Central	-1.89	+1.95	+3.61	+2.76	+8.35	-1.1
Southeast	-1.47	+2.54	+3.00	+3.18	+9.79	-2.0
State	+0.55	+3.26	+4.10	+3.20	+10.51	

*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

PRECIPITATION AUGUST





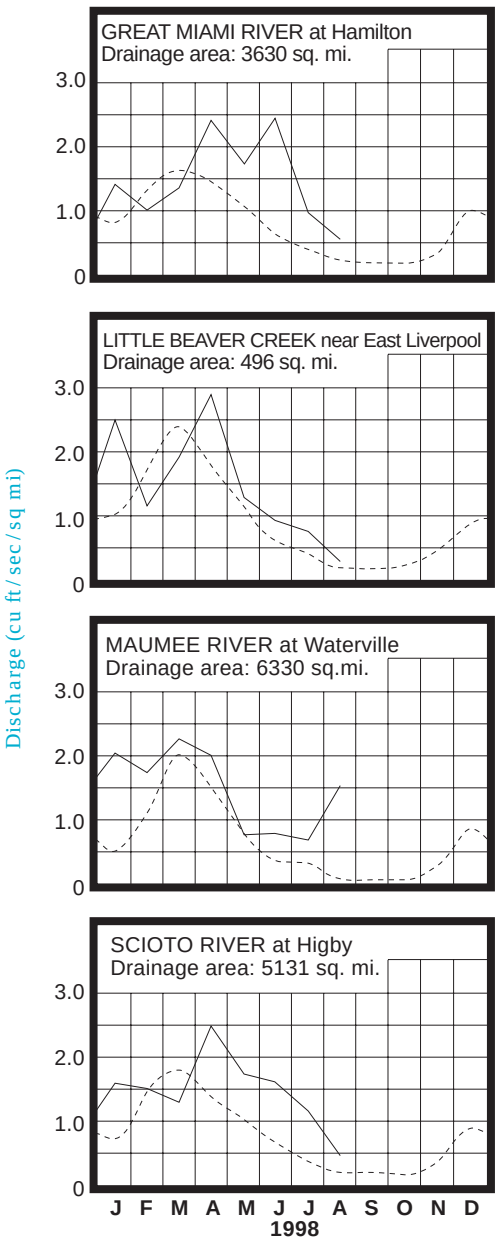
MEAN STREAM DISCHARGE

River and Location	Drainage Area (Sq. Mi.)	This Month: Mean Discharge (CFS)	This Month: % of Normal	% of Normal Past: 3 Mos.	% of Normal Past: 6 Mos.	% of Normal Past: 12 Mos.
Grand River near Painesville	685	31	28	14	77	79
Great Miami River at Hamilton	3,630	2,010	217	274	140	118
Huron River at Milan	371	786	1,638	497	185	176
Killbuck Creek at Killbuck	464	281	220	192	108	92
Little Beaver Creek near East Liverpool	496	138	133	147	106	111
Maumee River at Waterville	6,330	9,665	1,449	345	147	146
Muskingum River at McConnelsville	7,422	3,380	128	211	123	116
Scioto River near Prospect	567	219	538	207	95	103
Scioto River at Higby	5,131	2,336	199	240	128	127
Stillwater River at Pleasant Hill	503	259	443	419	138	107

STREAMFLOW during August was noticeably above normal in most areas of the state, but below normal in extreme northeastern Ohio. Flows in the western half of the state were high enough to be considered excessive. August flows in most drainage basins declined seasonally from those flows recorded during July. The exception was in north-central and northwestern Ohio were flows were markedly higher as a result of excessive precipitation. Preliminary data indicates that the flows this month for the Huron River at Milan and the Maumee River at Waterville gauging stations were the highest ever recorded for August at each location.

Flows at the beginning of the month were above normal throughout the state with only extreme northeastern Ohio having below normal flows. Flows increased after the first week of the month as storms crossed many areas of the state during August 4-10. Drainage basins in northern Ohio had their lowest flows for the month prior to the passage of these storms. Drainage basins in western, southwestern ans extreme northeastern Ohio had their greatest flows for the month during the August 6-10 period following these storms. Flows then declined for the next 2 weeks bottoming out in many areas during August 23-24 just prior to the passage of more storms. Flows in central and southwestern Ohio continued to decline through the end of the month when they were at the lowest for August. However, in northern Ohio, especially north-central and northwestern Ohio, flows increased sharply on August 24-26 as heavy storms drenched the area. Locally severe flooding occurred from Huron County westward. Flows at the end of the month remained above normal in northern and eastern Ohio but had fallen to below normal in western and southwestern Ohio.

MEAN STREAM DISCHARGE

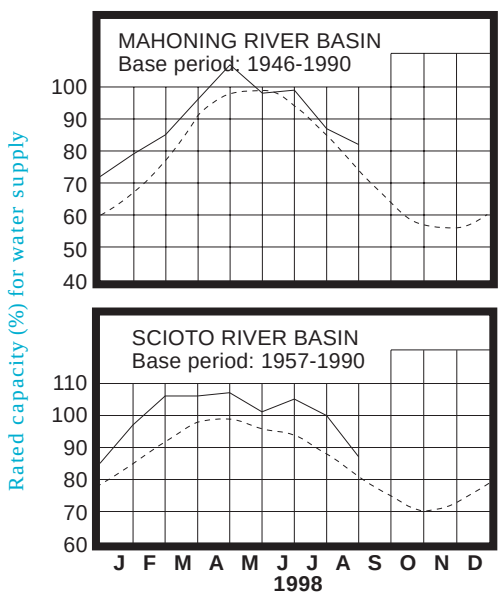


Base period for all streams: 1961-1990

RESERVOIR STORAGE for water supply during August decreased in both the Mahoning and Scioto river basins. Storage remained at above-normal seasonal levels in both basins.

Reservoir storage at the end of August in the Mahoning basin index reservoirs was 82 percent of rated capacity for water supply compared with 87 percent for last month and 78 percent for August 1997. Month-end storage in the Scioto basin index reservoirs was 87 percent of rated capacity for water supply compared with 100 percent for last month and 98 percent for August 1997. Surface-water supplies in both on- and off-stream reservoirs remain adequate throughout the state.

RESERVOIR STORAGE FOR WATER SUPPLY



Normal – – – – Current ————

GROUND WATER LEVELS during August declined seasonally in most aquifers. Generally, declines were greater than those usually observed. An exception occurred in some aquifers in north-central and northwestern Ohio where levels showed improvement in areas where precipitation was noticeably above normal. Levels in most aquifers declined throughout the month, but levels in aquifers in areas where precipitation was abundant showed some improvement after the middle of the month following the first round of storms or just before the end of the month following the second round. Observation well Hn-2a (Dola, Hardin County), representing the carbonate aquifers of northwestern Ohio, equaled its highest level for August during the month.

Although most areas of the state have experienced a period of dryness at one point during the spring or summer months, ground water supplies continue to remain adequate throughout the state. Current levels range from about 1 foot higher to 1 foot lower than they were a year ago. Generally, levels are slightly below normal in the eastern half of the state and slightly above normal in the western half. An extremely dry autumn could have an adverse effect on ground water supplies in areas that were markedly dry during August. However, near-normal climatic conditions would be adequate to maintain the current favorable position until the 1999 water year recharge period begins.

LAKE ERIE level declined during August. The mean level was 572.90 feet (IGLD-1985), 0.36 foot below last month's mean level and 1.34 feet above normal. This month's level is 0.79 foot lower than the August 1997 level and 3.70 feet above Low Water Datum.

The U. S. Army Corps of Engineers (USACE) reports that precipitation in the Lake Erie basin during August averaged 3.4 inches, 0.2 inch above normal. The entire Great Lakes basin averaged 2.9 inches of precipitation during August, 0.2 inch below normal. For calendar year 1998 through August, the Lake Erie basin has averaged 26.3 inches of precipitation, 2.7 inches above normal, and the entire Great Lakes basin has averaged 20.8 inches, 0.2 inch below normal.

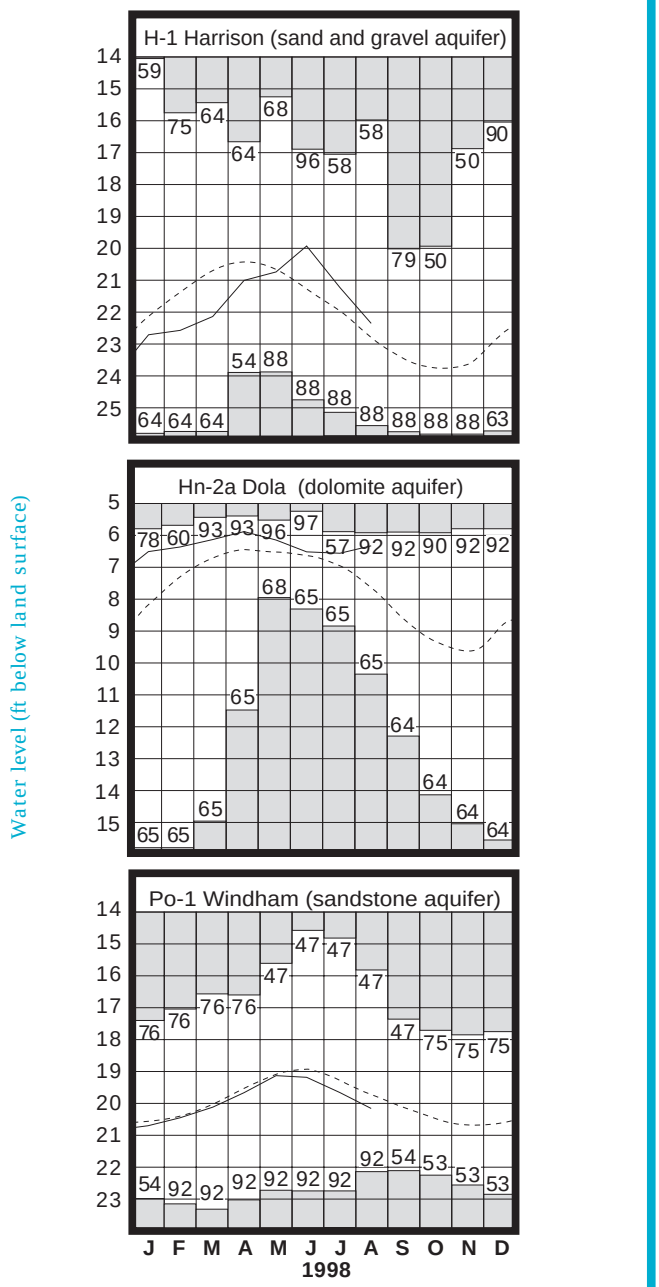
In addition, the USACE predicts that, based on the current condition of the Great Lakes basin and anticipated future weather conditions, the level of Lake Erie should remain above the long-term average for the foreseeable future. However, levels are expected to be lower than they were during the past 2 years and could approach normal if climatic conditions are exceptionally dry.

GROUND-WATER LEVELS

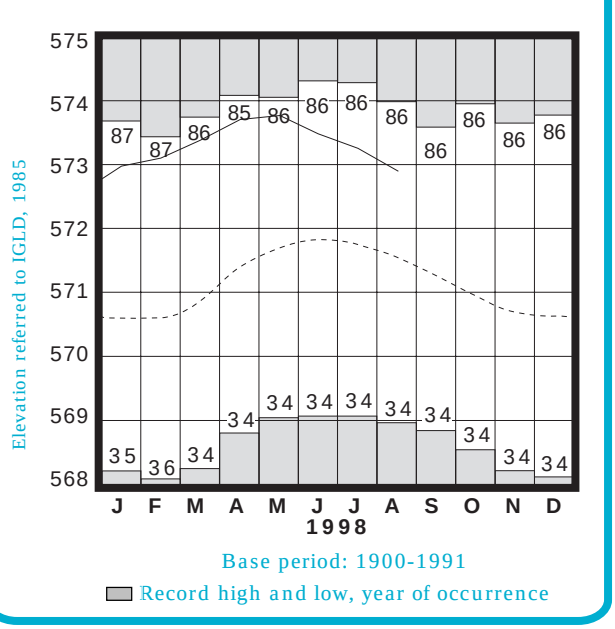
Based on daily lowest level in feet below land-surface datum

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	16.92	-1.13	-1.25	+0.76
Fa-1	Jasper Mill, Fayette Co.	Limestone	8.54	-0.26	-1.08	-0.23
Fr-10	Columbus, Franklin Co.	Gravel	43.81	+0.21	-1.35	-0.90
H-1	Harrison, Hamilton Co.	Gravel	22.33	+0.48	-1.10	+0.24
Hn-2a	Dola, Hardin Co.	Dolomite	6.34	+1.32	+0.23	-0.04
Po-1	Windham, Portage Co.	Sandstone	20.16	-0.44	-0.50	-1.05
Tu-1	Strasburg, Tuscarawas Co.	Gravel	13.38	-0.29	-1.21	+0.98

GROUND-WATER LEVELS



LAKE ERIE LEVELS at Fairport



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Precipitation for the 1998 calendar year is above normal throughout Ohio. The state average is 32.11 inches, 5.10 inches above normal. Regional averages range from 35.71 inches, 5.57 inches above normal, for the South Central Region to 27.65 inches, 2.10 inches above normal, for the Northeast Region.

Precipitation for the 1998 water year is above normal through the state. The average for the state as a whole is 38.45 inches, 3.88 inches above normal. Regional averages range from 42.23 inches, 4.12 inches above normal, for the South Central Region to 34.65 inches, 0.86 inch above normal, for the Northeast Region.

SUMMARY

Precipitation was above normal in the northern half of Ohio and below normal in the southern half. Streamflow was noticeably above normal in most drainage basins, but remained below normal in extreme northeastern Ohio as it has been for the past several months. Notable flooding occurred in north-central and northwestern Ohio on August 25. Reservoir storage decreased but remained at above-normal seasonal levels. Ground water levels declined in most aquifers but remain adequate. Lake Erie level declined 0.36 foot and was 1.34 feet above the long-term August average.

NOTES AND COMMENTS

OHIO WATER RESOURCES COUNCIL

The Ohio Water Resources Council (OWRC) was established by the State Legislature in 1997 to coordinate water policy and planning between the ten state agencies, commissions or authorities that deal with water issues of the state. The Council is made up of the Directors, or their designees, from each of the state agencies along with eleven members representing other interested parties in the state.

The OWRC has recently completed the first draft of the State of Ohio Water Resources Strategic Plan. The Plan is available for review on the Council's website at: http://www.OhioWater.com.

To obtain additional public input on the Plan, the Council has scheduled a series of public meetings in September and October. The meetings are currently scheduled as follows:

REGION	CITY	LOCATION	DATE	TIME
Southwest	Springboro	Malachi's	Sept. 17	2 - 4:00
Central	Columbus	Highbanks MetroPark	Sept. 28	2 - 4:00
South Central	Piketon	OSU Extension	Sept. 29	2 - 4:00
Northeast	Hudson	Holiday Inn	Sept. 30	3 - 5:00
Southeast	Cambridge	Civic Center	Oct. 01	2 - 4:00
Northwest	Perrysburg	French Quarter Conference Center	Oct. 06	2 - 4:00

For additional information on the OWRC, the Plan or the public meetings contact Jim Rozelle, Executive Director, at (614) 728-9792 or e-mail OhioWater@AOL.com.

250 Project WET Workshops

The Ohio Project WET program passed a milestone earlier this summer when its 250th Educator's Workshop was held. Division of Water staff member Lenn Black is the state coordinator for Project WET. He indicates that everyone involved with the Ohio Project WET project is very happy with this achievement. He further reports that more than 4,300 Ohio educators have now been through the workshop and have received the Project WET "Curriculum and Activity Guide."

Project WET is a national nonprofit water education program for educators and students in grades K-12. Its purpose is to facilitate and promote awareness, appreciation, knowledge, and stewardship of water resources through the development of classroom-ready teaching aids disseminated through the establishment of state-sponsored Project WET programs. Project WET activities are designed to fit into existing curricula and cut across many disciplines in the study of water resources, including chemistry and physics, life sciences, earth sciences, natural resource management, history, and culture.

Ohio Project WET is sponsored by the Ohio Water Education Program, a partnership involving the Water Resources Center at The Ohio State University, the Water Management Association of Ohio, the Ohio Department of Natural Resources, and the Ohio Environmental Protection Agency. Since Ohio's program began in 1995, more than 300 people have been through facilitator training and are certified to conduct the 6-hour Educator's Workshops. These workshops provide intensive, hands-on training in the use of the Project WET "Curriculum and Activity Guide." Completing the workshop is the only way to obtain the Guide. Educator's Workshops are conducted by facilitators throughout the year all around the state. Facilitator training is conducted once a year. The next Facilitator Workshop is scheduled for March 1999. Those interested in becoming Project WET Educators or Facilitators may contact Lenn Black at the Ohio Department of Natural Resources, Division of Water, 1939 Fountain Square, Columbus, Ohio 43224-1336, phone: 614 265-6758, e-mail: leonard.black@dnr.state.oh.us or Carol Moody at The Ohio State University, Water Resources Center, phone: 614 292-6108, e-mail: moody.5@osu.edu.

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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