MONTHLY WATER INVENTORY REPORT FOR OHIO

September 2008

http://www.dnr.state.oh.us/tabid/4191/Default.aspx
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PRECIPITATION during September was generally above normal in the northern half of the state and below normal in the southern half. The state average was 2.58 inches, 0.37 inch below normal. Regional averages ranged from 4.22 inches, 1.22 inches above normal, for the North Central Region to 0.84 inch, 2.11 inches below normal, for the South Central Region. This was the 4th driest September during the past 126 years for the South Central Region and the 9th driest for the Southeast Region. LaGrange (Lorain County) reported the greatest amount of September precipitation, 5.96 inches. Greenup Dam (Scioto County) reported the least amount, a scant 0.20 inch.

Most of the September precipitation fell during the first half of the month. Scattered showers during September 3-6 were most numerous along a line from southwestern to northeastern Ohio where generally 0.5-1.5 inches fell. Rain amounts during September 8-9 were greatest in west central and north central Ohio where 1-2 inches fell, while most of the remainder of the state received 0.25 inch or less. Showers and thunderstorms during September 12-13 were most numerous across the northern half of the state. Much of this area received 1-2 inches of rain and as much as 4 inches fell in a large area stretching from northwestern to north-central Ohio. Although a few isolated locations in southern Ohio received up to an inch of rain, most of southern Ohio received less than 0.25 inch during this period. On September 14, the remnants from hurricane Ike passed through the state. Although 0.25-0.75 inch of rain fell across northwestern Ohio, this storm will be remembered for the accompanying high winds that battered the state for several hours. Sustained winds of 40 mph with gusts exceeding 75 mph were recorded and unofficial observations measured wind gusts in excess of 90 mph. The wind toppled trees, damaged structures and knocked out power to nearly 2 million customers. Some customers were without power for nearly 2 weeks. Preliminary estimates put the damages at more than $600 million. Tragically, 4 people were killed and several more injured. The next 2 weeks were extremely dry throughout the state with most areas receiving little or no rain. The month ended with light showers and scattered thunderstorms, with most of the state receiving 0.50 inch or less; although as much as 1 inch of rain fell in a few isolated areas across central Ohio.

Precipitation for the 2008 calendar year is above normal throughout the state. The state average is 35.47 inches, 5.66 inches above normal. Regional averages range from 37.91 inches, 8.63 inches above normal, for the Northeast Region to 32.79 inches, 6.10 inches above normal, for the Northwest Region.

Precipitation for the 2008 water year (October 1, 2007-September 30, 2008) was noticeably above normal statewide. The state average was 46.70 inches, 8.69 inches above normal. This was the 5th wettest water year for the state as a whole during the past 126 years. Regional averages ranged from 50.75

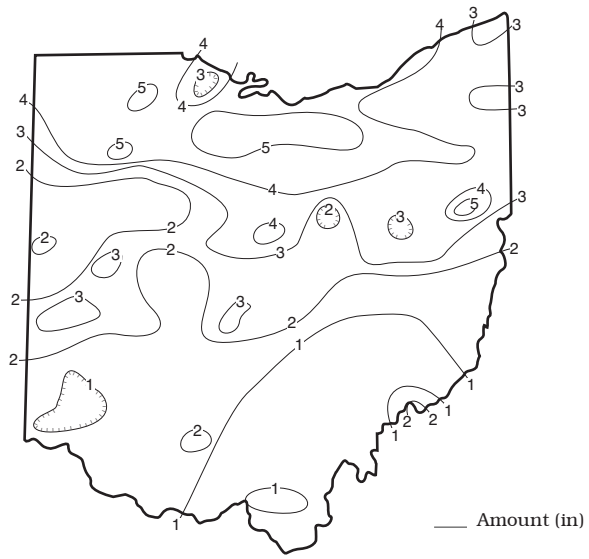
(continued on back)

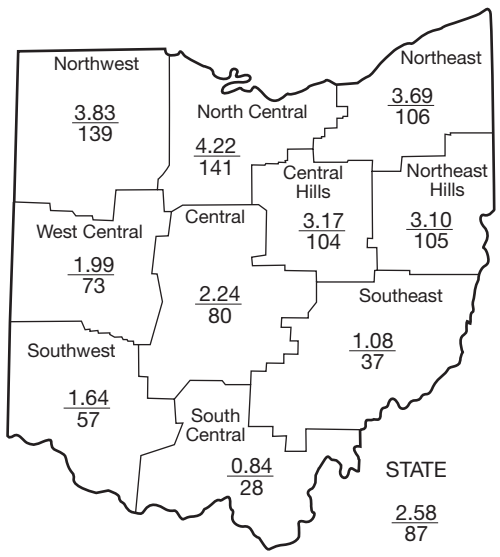
PRECIPITATION

Region	DEPARTURE FROM NORMAL (IN.) Base period 1951-2000					Palmer Drought Severity Index*
	This Month	Past 3 Mos.	Past 6 Mos.	Past 12 Mos.	Past 24 Mos.	
Northwest	+1.07	-1.19	+0.72	+8.35	+17.11	+1.2
North Central	+1.22	-1.13	+1.00	+10.20	+20.18	+1.6
Northeast	+0.20	+0.89	+1.32	+12.24	+17.15	+2.0
West Central	-0.74	-2.64	+0.23	+9.39	+17.17	-0.8
Central	-0.55	-3.22	+0.20	+8.58	+14.11	-1.1
Central Hills	+0.11	-2.83	-2.14	+6.39	+11.42	-1.0
Northeast Hills	+0.14	-2.20	-2.03	+5.88	+10.06	-1.2
Southwest	-1.23	-4.20	-0.98	+9.24	+8.02	-1.7
South Central	-2.11	-3.48	+0.32	+8.42	+3.58	-1.5
Southeast	-1.83	-2.33	+0.56	+8.24	+6.92	-1.1
State	-0.37	-2.24	-0.09	+8.69	+12.55	

*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 SEPTEMBER





MEAN STREAM DISCHARGE

River and Location	Drainage Area (Sq. Mi.)	Mean Discharge (CFS)	% of Normal	% of Normal Past		
		This Month		3 Mos.	6 Mos.	12 Mos.
Grand River near Painesville	685	96	55	119	88	139
Great Miami River at Hamilton	3,630	973	100	105	144	173
Huron River at Milan	371	129	282	101	116	205
Killbuck Creek at Killbuck	464	114	102	79	84	131
Little Beaver Creek near East Liverpool	496	112	98	60	62	123
Maumee River at Waterville	6,330	614	80	91	107	159
Muskingum River at McConnelsville	7,422	1,654	67	166	174	123
Scioto River near Prospect	567	20	67	69	121	189
Scioto River at Higby	5,131	760	57	70	118	154
Stillwater River at Pleasant Hill	503	35	58	91	146	180

STREAMFLOW during September was below normal across most of the state, except in northeastern Ohio where a few basins had above normal flows. Flows were low enough to be considered deficient in some southeastern Ohio basins. Flows during September were less than those observed during August in southern Ohio, but were greater in many basins in northern Ohio.

Streamflow at the beginning of September was below normal statewide. Western Ohio had its lowest flows during the first week of the month. Flows increased statewide following the September 3-6 precipitation and across southwestern Ohio were the greatest for the month between September 7 and10. Flows continued to increase in the northeastern two-thirds of the state where the greatest flows for the month occurred September 14-16. Following these peaks, streamflow across the state declined steadily and were at their lowest near the end of the month in eastern Ohio. Flows at the end of September were below normal throughout the state.

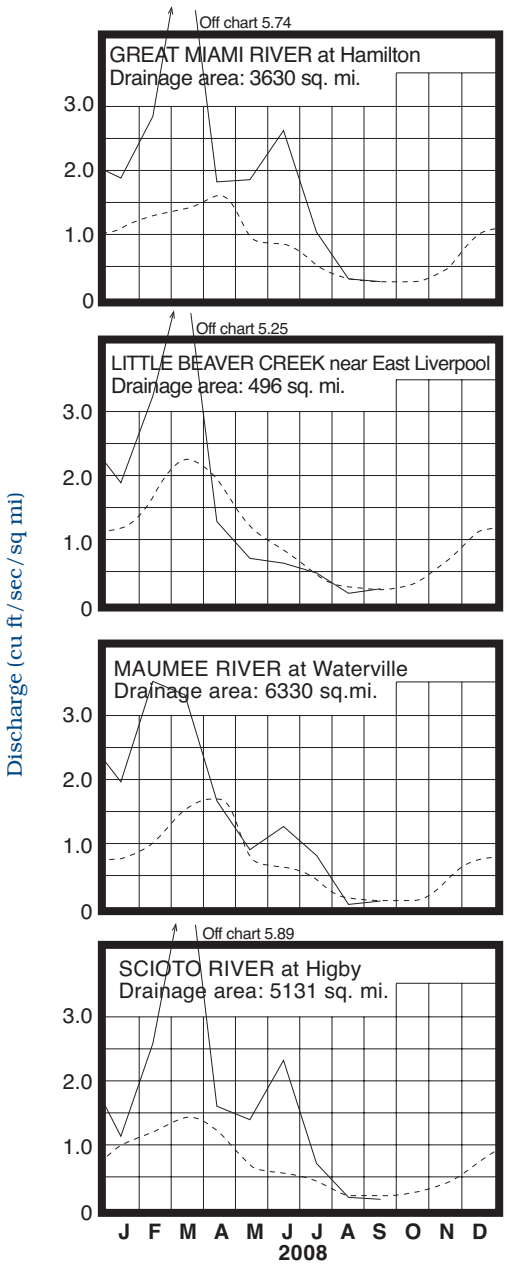
Streamflow for the 2008 water year was notably above normal statewide (see Mean Stream Discharge table, percent of normal, past 12 months column). Flows were below normal during October and November in southern and northeastern Ohio and then were noticeably above normal statewide from December through March in response to the much above normal precipitation that fell during this period. Flows during April were above normal in the southern half of Ohio and below normal in the northern half. During the next 3 months, streamflow was generally above normal across most of the state, but below normal in some basins in eastern Ohio. Flows during August and September were below normal throughout much of the state. Record and near-record monthly flows were observed at several gauging stations during February, March and June. During March, 8 of the 10 index gauging stations published in this report established new high flows for March for their respective periods of record. Significant flooding also occurred during these 3 months, especially across the western half of the state.

RESERVOIR STORAGE during September decreased in both the Mahoning and Scioto river basins. At the end of September, storage remained above normal in both basins.

Reservoir storage at the end of September in the Mahoning basin index reservoirs was 83 percent of rated capacity for water supply compared with 88 percent for last month and 80 percent for September 2007. Month-end storage in the Scioto basin index reservoirs was 78 percent of rated capacity for water supply compared with 86 percent for last month and 73 percent for September 2007.

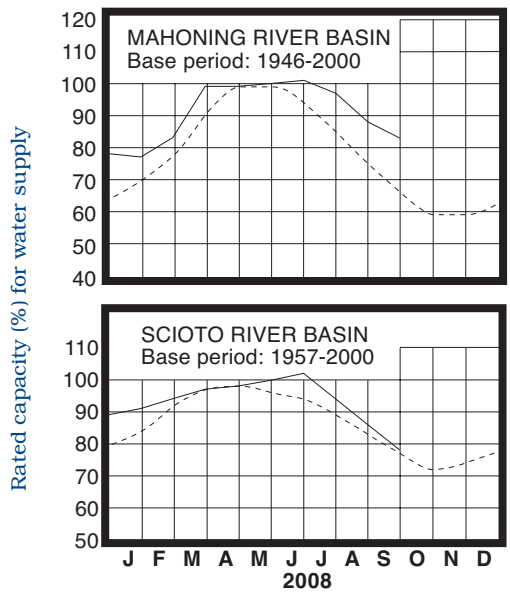
Surface water supplies were adequate during the 2008 water year. Reservoir storage in the Mahoning basin index reservoirs was above normal throughout the 2008 water year. Reservoir storage in the Scioto basin index reservoir was below normal during the first 2 months of the 2008 water year, rebounding to above normal during December where it remained through the end of the water year.

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

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	14.12	+2.84	-1.52	+2.93
Fa-1	Jasper Mill, Fayette Co.	Limestone	9.69	-0.92	-0.40	+1.87
Fr-10	Columbus, Franklin Co.	Gravel	45.14	-0.85	-0.57	+0.80
H-1	Harrison, Hamilton Co.	Gravel	23.84	-0.34	-0.67	+0.91
Hn-2a	Dola, Hardin Co.	Dolomite	9.21	-0.81	-1.56	-1.80
Po-1	Windham, Portage Co.	Sandstone	17.00	+3.21	-0.04	+1.01
Tu-1	Strasburg, Tuscarawas Co.	Gravel	14.95	-1.15	-0.61	-0.02

GROUND WATER levels during September declined seasonally statewide. Levels in most aquifers declined steadily throughout the month. Net declines from last month's levels ranged from near normal to more than twice that usually observed.

Ground water levels are below normal in most areas of the state. The exception is in some consolidated aquifers in eastern Ohio where levels remain above normal. Current levels are higher than they were at this time last year across most of the state, but are lower in a few northern Ohio aquifers. In spite of the recent dry conditions, ground water supplies remain adequate across the state. The Ohio Agricultural Statistics Service reports that near the end of September, soil moisture was rated as being short or very short in 70 percent of the state, adequate in 29 percent of the state and surplus in 1 percent of the state. A return to near-normal precipitation and other climatic conditions over the next several months should produce conditions favorable for recharge.

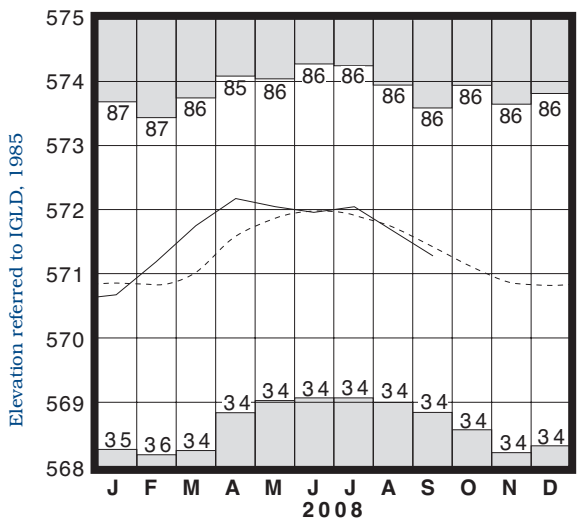
The 2008 water year was generally favorable for ground water supplies. Ground water levels at the beginning of the water year were below normal throughout most of the state, but above normal in consolidated aquifers in northern Ohio. With above normal precipitation falling during the first 9 months of the water year, ground water storage was in a favorable position, rising to above normal across most of the state through the spring and early summer months. Below normal precipitation from late July through September across much of the state reversed this trend and by the end of the water year ground water levels had returned to below normal across most of the state; only a few consolidated aquifers in eastern Ohio remained above normal. However, at the end of the 2008 water year, ground water supplies were adequate across the state.

LAKE ERIE level declined during September. The mean level was 571.29 feet (IGLD-1985), 0.36 foot lower than last month's mean level and 0.13 foot below normal. This month's mean level is 0.13 foot higher than the September 2007 level and 2.09 feet above Low Water Datum.

The U.S. Army Corps of Engineers (USACE) reports that precipitation in the Lake Erie basin during September averaged 3.69 inches, 0.54 inch above normal. For the entire Great Lakes basin, September precipitation averaged 4.06 inches, 0.65 inch above normal. For calendar year 2008 through September, the Lake Erie basin has averaged 30.72 inches, 3.87 inches above normal, while the entire Great Lakes basin has averaged 28.05 inches, 3.54 inches above normal.

Lake Erie's level was below normal during the first 4 months of the 2008 water year. Above normal precipitation during the first half of the water year reversed this trend and by February, Lake Erie level rose to above normal. Levels remained above normal during most of the next 6 months, and then fell back below normal in August. At the end of the 2008 water year, the level of Lake Erie remained below normal, but was higher than the September 2007 mean level. The USACE reports that based on the current condition of the Great Lakes basin and anticipated weather conditions, the level of Lake Erie should remain below normal for the foreseeable future. Deviations from the anticipated weather patterns could result in the level of Lake Erie ranging from about 8 inches above normal to as much as 12 inches below the normal seasonal levels.

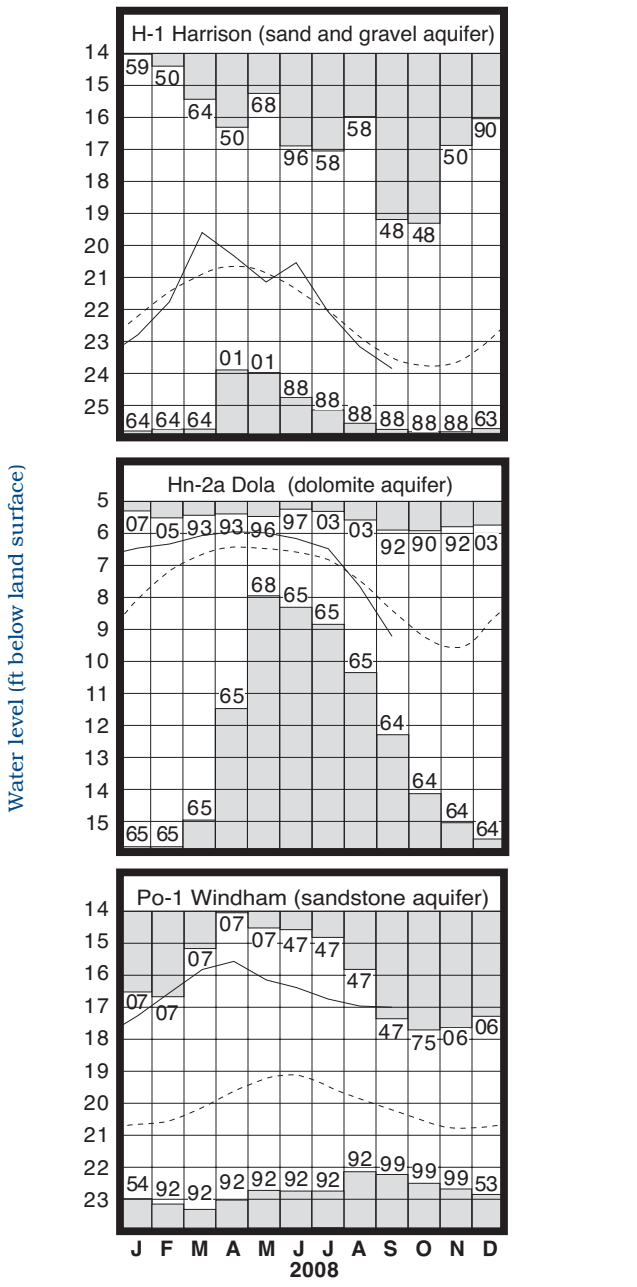
LAKE ERIE LEVELS



Base period: 1918-2000

Record high and low, year of occurrence

GROUND-WATER LEVELS



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)

inches, 12.24 inches above normal, for the Northeast Region to 42.63 inches, 8.35 inches above normal, for the Northwest Region (see Precipitation table, departure from normal, past 12 months column). This was the wettest water year for the Northeast Region and the 5th wettest for the Southwest Region. Chardon (Geauga County) reported the greatest amount of precipitation for the 2008 water year, 59.61 inches. Wauseon (Fulton County) reported the least amount, 36.14 inches. An isohyetal map and regional averages with percentages of normal for the 2008 water year appear below.

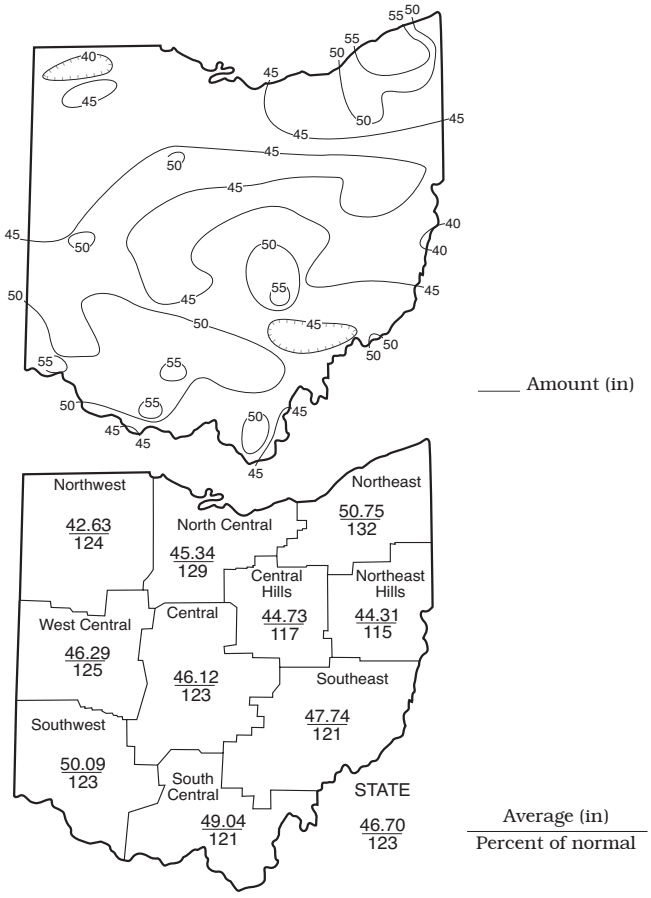
Precipitation during the first 3 months of the 2008 water year was above normal throughout Ohio with December being the 4th wettest on record. Precipitation during January was below normal across much of the state, but generally above normal in northern and western Ohio. February and March were extremely wet statewide with February being the 7th wettest and March the 4th wettest for the state as a whole. Although precipitation during April was below normal throughout most of Ohio, above normal precipitation returned during May and June, with June being the 7th wettest for Ohio. Precipitation during the last 3 months of the water year was below normal across most of the state, with the exception of northern Ohio where precipitation during September was above normal. The above normal precipitation during the water year was beneficial to Ohio's water supplies. However, it also resulted in numerous episodes of flooding across many areas of the state with loss of life and significant property damage.

SUMMARY

Precipitation during September was generally above normal in northern Ohio and below normal in southern Ohio. Streamflow was below normal across most of the state. Reservoir storage decreased in both the Mahoning and Scioto river basins, but remained above normal in both basins. Ground water levels declined statewide and were below normal across much of the state. Lake Erie level declined 0.36 foot and was 0.13 foot below the long-term September average.

Precipitation and streamflow for the 2008 water year were noticeably above normal statewide. Reservoir storage was above normal nearly the entire water year. Although it improved during the middle of the water year, ground water storage ended the year in much the same position that it began the year, below normal across much of the state. Lake Erie level was below normal during the first 4 months of the water year, rose to above normal during the late winter through summer months, and then fell back below normal near the end of the 2008 water year.

PRECIPITATION 2008 WATER YEAR



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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