



MONTHLY WATER INVENTORY REPORT FOR OHIO

September 2001

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

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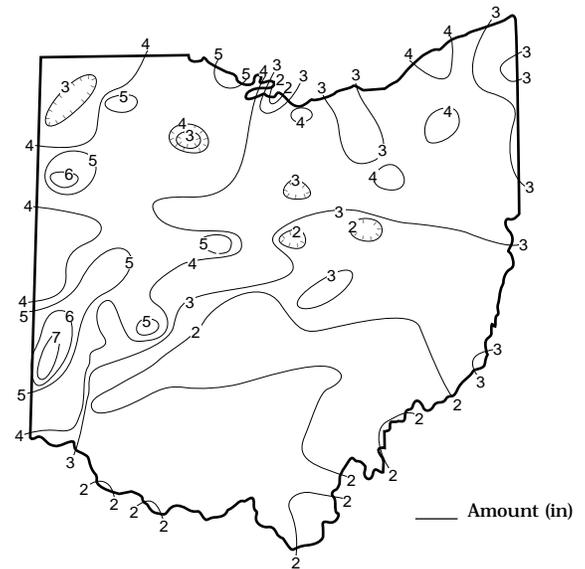
PRECIPITATION during September was above normal across much of Ohio, but was below normal in the southeastern third of the state. The state average was 3.21 inches, 0.21 inch above normal. Regional averages ranged from 4.28 inches, 1.35 inches above normal, for the West Central Region to 1.97 inches for both the South Central and Southeast regions, 1.21 inches and 1.02 inches below normal, respectively. Oxford (Butler County) reported the greatest amount of September precipitation, 7.56 inches. Columbus Parsons Avenue Water Plant (Franklin County) reported the least amount, 1.08 inches.

The first week of September was dry with little or no rain being reported. During the second week, showers with scattered thunderstorms occurred on several days. During September 8-10, generally 0.25-0.50 inch of rain fell across most of the state with the western third receiving the greatest amounts of more than 1 inch. Rain fell across most of the state during September 13-14. During this period, the greatest amounts were reported in the eastern half of Ohio with totals of 0.25-0.50 inch common and a few isolated areas reporting around 1 inch. The next weather system crossed the state during September 18-19. Most of Ohio received between 0.25-0.50 inch of precipitation with isolated areas in the western half receiving more than 1 inch. Showers fell on several days during the last week of the month. Generally, precipitation totals during this period were 0.50-1.00 inch in the southern half of the state and 1-2 inches in the northern half where some heavier downpours were reported.

Precipitation for the 2001 calendar year is below normal across most of the state, except in west-central Ohio where it is above normal. The average for the state as a whole is 26.82 inches, 3.18 inches below normal. Regional averages range from 31.22 inches, 0.86 inch below normal, for the Southwest Region to 22.08 inches, 5.10 inches below normal, for the North Central Region.

Precipitation for the 2001 water year (October 2000-September 2001) was below normal throughout most of Ohio, except in some west-central areas of the state where it was above normal. The state average was 33.99 inches, 3.58 inches below normal. Regional averages ranged from 38.92 inches, 1.35 inches below normal, for the Southwest Region to 28.33 inches, 5.70 inches below normal, for the North Central Region (see Precipitation table, departure from normal, past 12 months column). The 2001 water year was among the driest on record for several regions, mainly in northeastern Ohio. For the Northeast Hills Region, it was the 6th driest October-September period during the past 119 years of record. It was the 7th driest for the Central Hills Region, the 9th driest for the Northeast Region and the 10th driest for the North Central Region. Springfield Waste Water Treatment Plant (Clark County) reported the greatest amount of precipitation for the water year, 50.65 inches. Wingfoot Lake (Portage County) reported the least

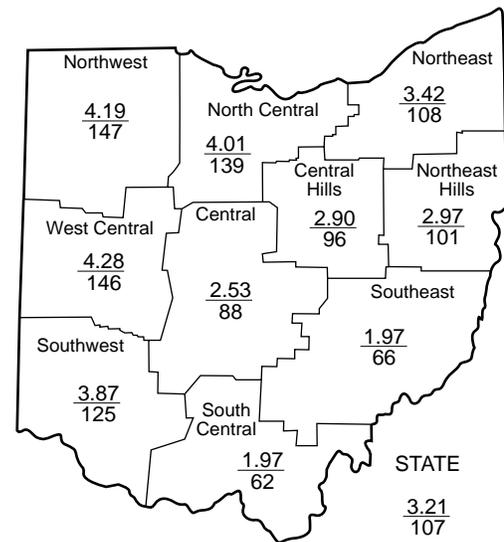
PRECIPITATION SEPTEMBER



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PRECIPITATION

Region	DEPARTURE FROM NORMAL (IN.)					Palmer Drought Severity Index*
	This Month	Past				
		3 Mos.	6 Mos.	12 Mos.	24 Mos.	
Northwest	+1.34	+0.69	+2.29	-0.85	+1.94	+0.8
North Central	+1.13	-0.03	-1.49	-5.70	+1.73	-1.2
Northeast	+0.24	-1.55	-3.34	-5.84	-1.17	-2.4
West Central	+1.35	+4.54	+5.67	+1.00	+2.20	+2.0
Central	-0.36	-0.65	+1.92	-1.79	+1.01	-1.1
Central Hills	-0.13	-1.86	-2.59	-6.36	-1.97	-2.0
Northeast Hills	+0.03	-2.61	-2.58	-6.42	-3.03	-3.2
Southwest	+0.78	+3.94	+4.59	-1.35	+0.48	+1.7
South Central	-1.21	-3.16	-0.80	-6.54	-1.62	-1.2
Southeast	-1.02	-1.19	+1.32	-1.94	+0.11	-1.4
State	+0.21	-0.19	+0.50	-3.58	-0.03	



*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	70	31	22	37	67
Great Miami River at Hamilton	3,630	2,892	376	211	106	88
Huron River at Milan	371	21	64	36	55	83
Killbuck Creek at Killbuck	464	64	63	51	64	68
Little Beaver Creek near East Liverpool	496	60	65	38	54	59
Maumee River at Waterville	6,330	874	138	63	90	86
Muskingum River at McConnelsville	7,422	1,246	63	52	75	77
Scioto River near Prospect	567	45	146	53	110	77
Scioto River at Higby	5,131	1,062	87	72	119	90
Stillwater River at Pleasant Hill	503	377	762	231	94	68

STREAMFLOW during September was below normal throughout most of the eastern half of the state and above normal elsewhere. Flows were low enough to be considered deficient in many basins in the eastern half of the state. Conversely, flows in southwestern Ohio were high enough to be considered excessive.

Streamflow at the beginning of September was above normal in the southern two-thirds of the state and below normal elsewhere. Greatest flows for the month in much of southeastern and south-central Ohio occurred around September 2-3 as a result of the rain that fell across the region at the end of August. Flows decreased during the next few days and low flows were established across much of the western half of the state during this period. Flows increased in the western half of the state following rains of September 8-10. Greatest flows in central and southwestern Ohio were

reported just after these storms. Low flows for the month occurred around mid-month throughout most of the eastern half of Ohio. Several days of rain during the second half of September, especially in the northern half of the state, increased flows. Greatest flows for the month occurred in the northern third of the state between September 22-26. Flows at the end of September were decreasing statewide and were below normal in the eastern half of Ohio and above normal in the western half.

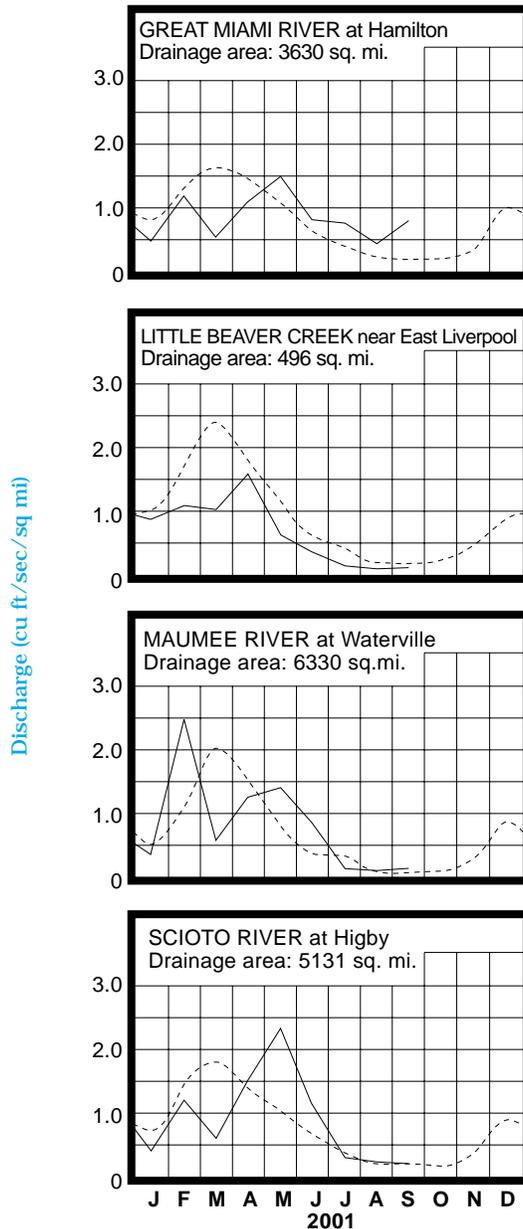
Streamflow for the 2001 water year was below normal statewide (see Mean Stream Discharge table, percent of normal, past 12 months column). Streamflow was below normal across most of the state during October. Flows during November and December were generally above normal. From January-April, flows tended to be below normal across much of the state. During May-August, the trend was for below normal flows in the northeastern half of the state and above normal in the southwestern half of Ohio. Flash flooding occurred during July in southwestern Ohio following locally heavy rains.

RESERVOIR STORAGE for water supply during September declined seasonally in both the Mahoning and Scioto river basins. Storage is below normal in the Mahoning River basin and above normal in the Scioto River basin.

Reservoir storage at the end of September in the Mahoning basin index reservoirs was 62 percent of rated capacity for water supply compared with 68 percent for last month and 83 percent for September 2000. Month-end storage in the Scioto basin index reservoirs was 78 percent of rated capacity for water supply compared with 83 percent for last month and 76 percent for September 2000.

Surface water supplies were adequate statewide during the 2001 water year. Storage in the Mahoning River basin reservoirs was above normal during the first 5 months of the water year and below normal the remainder of the water year. Storage in the Scioto River basin was above normal throughout the entire 2001 water year.

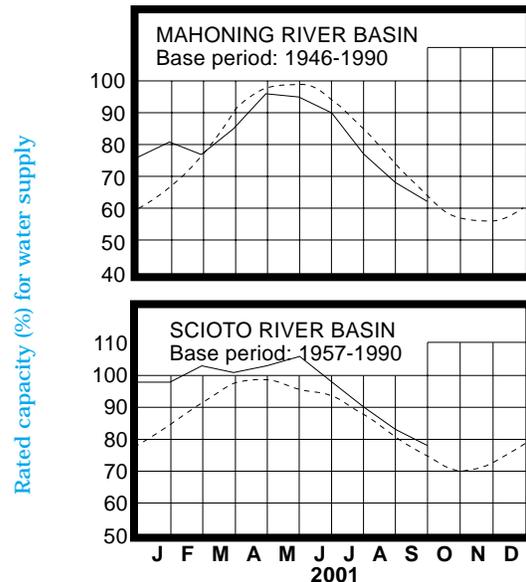
MEAN STREAM DISCHARGE



Base period for all streams: 1961-1990

Normal - - - - Current - - - -

RESERVOIR STORAGE 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	18.20	-1.78	-1.30	+0.16
Fa-1	Jasper Mill, Fayette Co.	Limestone	9.64	-0.97	-0.72	-0.55
Fr-10	Columbus, Franklin Co.	Gravel	46.48	-1.98	-0.39	+0.06
H-1	Harrison, Hamilton Co.	Gravel	23.36	-0.11	-0.10	+1.13
Hn-2a	Dola, Hardin Co.	Dolomite	8.52	+0.09	-0.76	-1.06
Po-1	Windham, Portage Co.	Sandstone	21.15	-1.03	-0.42	-0.09
Tu-1	Strasburg, Tuscarawas Co.	Gravel	16.23	-2.72	-0.47	-0.94

GROUND WATER levels during September declined seasonally throughout the state. Levels declined steadily during the month in most aquifers. However, temporary rises after precipitation was noted in some shallow unconsolidated aquifers in the western half of the state.

The 2001 water year was not particularly favorable for ground water supplies. Ground water levels began the 2001 water year below normal across most of the state. Below normal precipitation throughout most of the winter and spring months resulted in little improvement to ground water storage during the recharge season. At the end of the water year, ground water levels remain below normal across nearly the entire state. Levels range from slightly above normal in some carbonate aquifers in northwestern Ohio to as much as 2.75 feet below the long-term September average elsewhere. Current ground water levels are also lower than last year's levels across much of the state with only the southwestern quarter of Ohio experiencing levels that are higher than a year ago. Index observation well Tu-1, near Strasburg (Tuscarawas County), representing sand and gravel aquifers in eastern and northeastern Ohio, reached a record low level for September. However, ground water supplies remain adequate across most of the state.

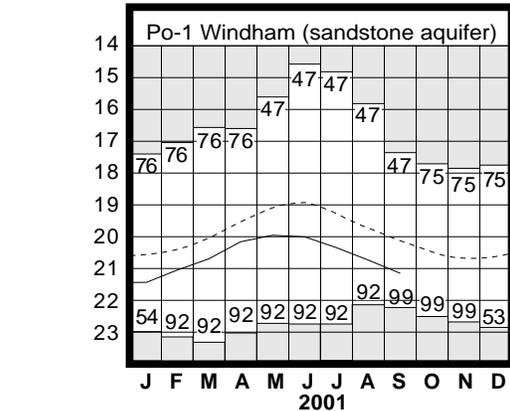
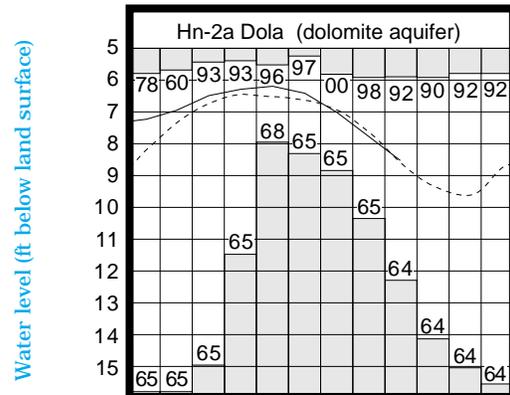
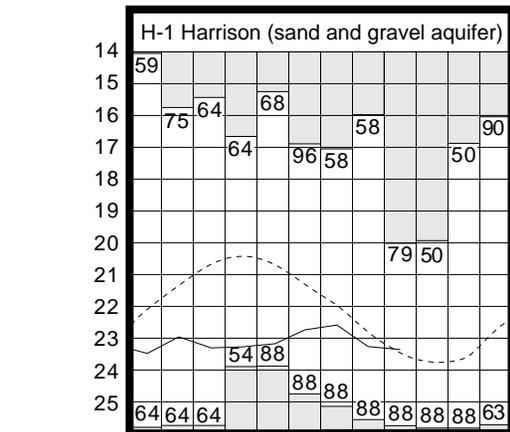
The Ohio Agricultural Statistics Service reports that at the end of September soil moisture was rated as being short or very short in 23 percent of the state, adequate in 67 percent of the state and surplus in 10 percent of the state.

LAKE ERIE levels declined during September. The mean level was 570.44 feet (IGLD-1985), 0.33 foot lower than last month's mean level and 0.82 foot below normal. This month's mean level is 0.82 foot lower than the September 2000 level and 1.24 feet above Low Water Datum.

The U. S. Army Corps of Engineers (USACE) reports that precipitation in the Lake Erie basin during September averaged 3.92 inches, 0.76 inch above normal, while the entire Great Lakes basin averaged 3.93 inches, 0.51 inch above normal. For calendar year 2001 through September, the Lake Erie basin has averaged 23.59 inches, 3.20 inches below normal. The entire Great Lakes basin has averaged 24.11 inches, which is 0.34 inch below normal.

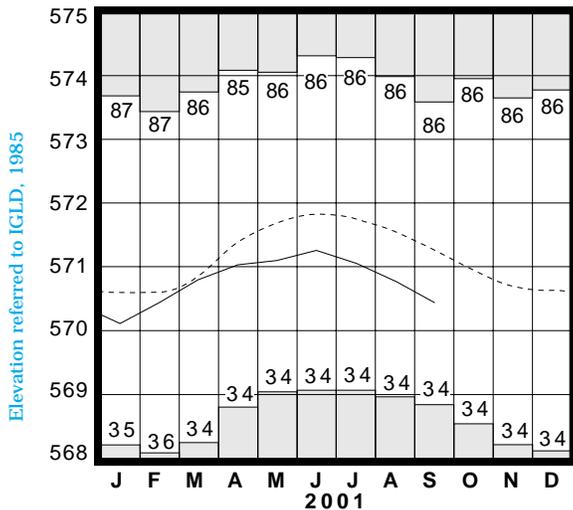
Lake Erie started the water year with near-normal levels, but then quickly fell below normal where it remained for the remainder of the 2001 water year. The USACE predicts that based on the current condition of the Great Lakes basin and anticipated weather conditions, the level of Lake Erie should range from 10-13 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 near normal to nearly 2 feet below the normal seasonal levels.

GROUND-WATER LEVELS



Base periods: H-1, 1951-1990. Hn-2a, 1955-1990.
Po-1, 1947-1990 □ Record high and low, year of occurrence

LAKE ERIE LEVELS at Fairport



Base period: 1900-1991

□ Record high and low, year of occurrence

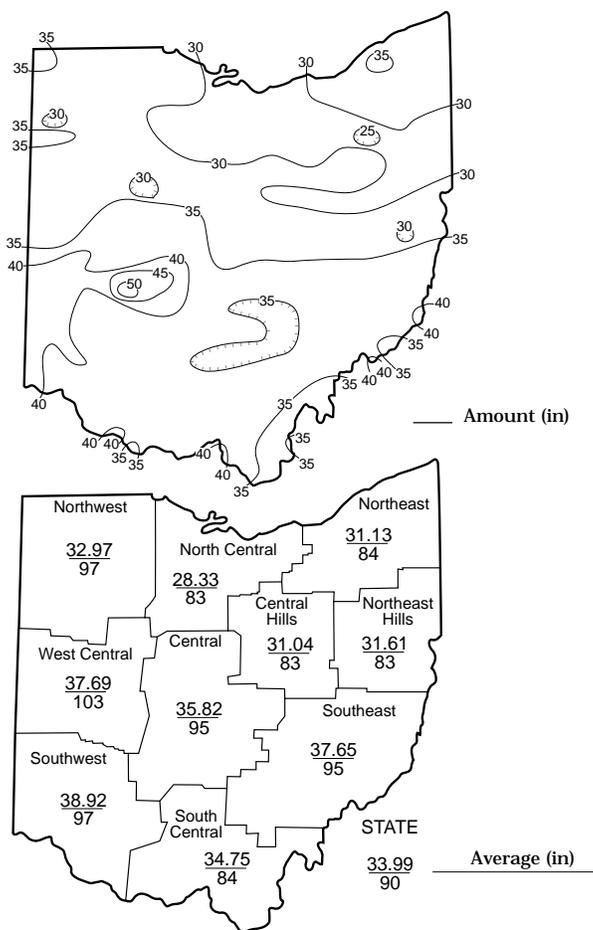
Normal - - - - Current ———

(Precipitation continued from front)

amount, 22.97 inches. An isohyetal map and regional averages with percentages of normal precipitation for the 2001 water year appears below.

The 2001 water year began with above normal precipitation in the northwestern half of the state and below normal in the southeastern half of Ohio during October. November precipitation was below normal statewide, followed by above normal precipitation across most of the state during December. Precipitation during January-March was below normal across most of the state. It was the 9th driest January during the past 119 years for the state as a whole with 8 of the 10 climatic regions ranking in the top 20 driest of record including the North Central Region, 4th driest and the Northwest Region, 5th driest. It was the 16th driest March for the state as a whole with 6 of the 10 climatic regions ranking in the top 10 driest of record including the Northwest and West Central regions, 5th driest and the North Central Region, 6th driest. During April and May precipitation was above normal across much of Ohio. May tied as the 4th wettest of record for the South Central Region and it was the 5th wettest for the Central and Northwest regions. June and July had below normal precipitation throughout most of the state, however, it was noticeably above normal in west-central and southwestern Ohio during July. It was the 7th driest July of record in the Northeast Region and tied for the 8th driest in the Central Hills Region. Conversely, it was the 9th wettest July of record for the Southwest Region and the 13th wettest for the West Central Region. August and September precipitation was above normal in most of Ohio, but below normal in the southeastern third of the state during September.

TOTAL PRECIPITATION 2001 WATER YEAR



SUMMARY

Precipitation during September was above normal across much of Ohio, but was below normal in the southeastern third of the state. Streamflow was below normal throughout most of the eastern half of the state and above normal elsewhere. Reservoir storage declined seasonally statewide. Ground water levels declined throughout the state and were below normal across most of Ohio. Lake Erie level declined 0.33 foot and was 0.82 foot below the long-term September average.

Precipitation for the 2001 water year was below normal across most of the state, but was above normal in some areas of west-central Ohio. Streamflow was below normal statewide. Reservoir storage in the Mahoning River basin was above normal during the first 5 months of the water year and below normal the remainder of the year while it was above normal in the Scioto River basin the entire water year. Ground water storage was below normal the entire water year across nearly all of Ohio. Lake Erie levels were near normal during October and below normal the remainder of the 2001 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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