



MONTHLY WATER INVENTORY REPORT FOR OHIO **September 2005**

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

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PRECIPITATION during September was above normal throughout most of Ohio, but generally below normal across the southeastern quarter of the state. The average for the state as a whole was 3.51 inches, 0.56 inch above normal. Regional averages ranged from 5.32 inches, 2.59 inches above normal, for the West Central Region to 1.71 inches, 1.24 inches below normal, for the South Central Region. This was the 8th wettest September during the past 111 years for the West Central Region and the 13th wettest for the Northwest Region. St. Paris (Champaign County) reported the greatest amount of September precipitation, 7.48 inches. Greenup Locks and Dam (Scioto County) reported the least amount, 0.72 inch.

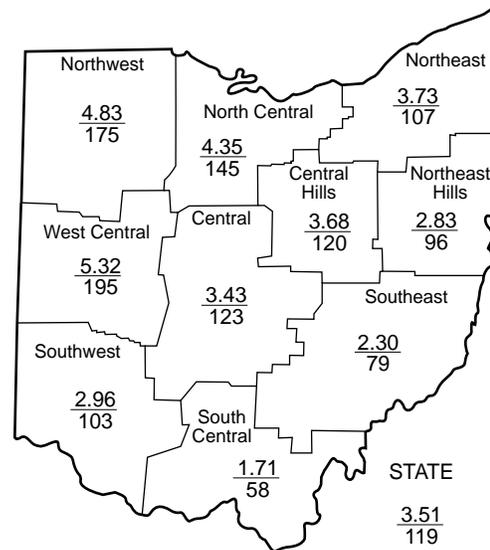
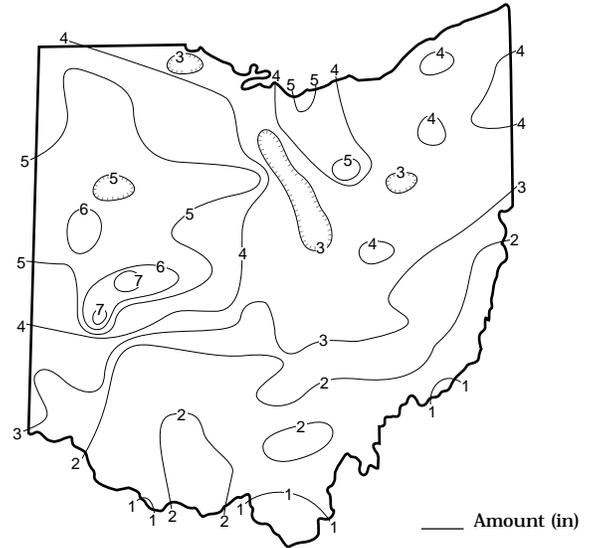
The first half of September was extremely dry statewide, with many locations receiving no measurable precipitation. Widely scattered showers and thunderstorms on September 8 brought less than 0.25 inch of precipitation to most of the state with a few locations in west-central Ohio reporting around an inch of rain. Most of the September precipitation fell during the second half of the month. Scattered showers and thunderstorms during September 14-16 were most numerous in the northwestern half of Ohio, with generally 0.50-1.0 inch of precipitation reported. Heavier downpours in an area from west-central to northwestern Ohio brought from 2 to more than 4 inches of rain during this period while less than 0.25 inch was reported in most of south-central and southeastern Ohio. Precipitation amounts during the next week were generally 0.25-0.50 inch across much of the state with a few isolated locations receiving more than 1 inch. However, only meager amounts of rain fell in extreme southern Ohio during this period. There were several days of rain during the last week of the month. Showers and thunderstorms occurred on September 23-24. Precipitation amounts were 0.50-2.0 inches across much of the state, except in southeastern Ohio, where less than 0.25 inch fell. On September 25-26, the remnants from Hurricane Rita moved through Ohio. As the system passed through the state, precipitation amounts of 1-2 inches fell throughout the northern half of Ohio tapering to less than 0.25 inch across southern and eastern Ohio.

Precipitation for the 2005 calendar year is above normal throughout most of the state. Only the South Central Region has had below normal precipitation. The state average is 32.92 inches, 3.11 inches above normal. Regional averages range from 36.53 inches, 7.49 inches above normal, for the West Central Region to 27.88 inches, 1.19 inches above normal, for the Northwest Region.

Precipitation for the 2005 water year was above normal throughout most of the state with only the South Central Region having below normal precipitation. The average for the state was 42.61 inches, 4.59 inches above normal. Regional averages ranged from 46.14 inches, 9.24 inches above normal, for the West Central

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PRECIPITATION SEPTEMBER



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	+2.07	+3.32	-1.26	+1.86	+2.70	+0.5
North Central	+1.35	+4.79	+3.25	+7.25	+13.32	+1.2
Northeast	+0.24	+3.25	+2.57	+5.98	+13.63	+1.6
West Central	+2.59	+3.46	+1.42	+9.24	+11.81	+2.0
Central	+0.64	+2.29	-0.66	+6.28	+14.31	+0.0
Central Hills	+0.62	+2.81	+0.89	+5.83	+15.65	+1.1
Northeast Hills	-0.13	+2.02	-0.17	+4.17	+20.63	-0.3
Southwest	+0.09	+0.79	-2.91	+2.32	+2.56	-0.4
South Central	-1.24	-0.72	-3.81	-1.17	+7.50	-3.3
Southeast	-0.61	-0.16	-2.24	+4.19	+20.41	-2.1
State	+0.56	+2.18	-0.30	+4.59	+12.25	

*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	380	217	123	130	136
Great Miami River at Hamilton	3,630	2,362	243	90	87	129
Huron River at Milan	371	82	179	47	102	178
Killbuck Creek at Killbuck	464	204	182	78	97	124
Little Beaver Creek near East Liverpool	496	137	120	55	91	127
Maumee River at Waterville	6,330	2,032	263	61	60	111
Muskingum River at McConnellsville	7,422	3,812	155	128	140	129
Scioto River near Prospect	567	426	1,401	97	88	145
Scioto River at Higby	5,131	2,293	172	66	95	154
Stillwater River at Pleasant Hill	503	231	380	65	86	136

STREAMFLOW during September was above normal statewide. Flows were high enough to be considered excessive across the southwestern quarter of Ohio. Streamflow during September was greater than the flows recorded during August across the state.

Flows at the beginning of September were above normal throughout all but some northwestern Ohio basins. Greatest flows for the month occurred on September 1 in basins in the eastern half of the state. Flows decreased steadily during the first half of September as only meager amounts of precipitation fell throughout most of the state. Low flows for the month occurred during September 15-16 nearly statewide. Flows increased during the second half of the month. Greatest flows for September occurred between September 26 and 28 in western Ohio following the precipitation that fell as the remnants from Hurricane Rita moved through the state. Flows at the end of the month were above normal across most of the state.

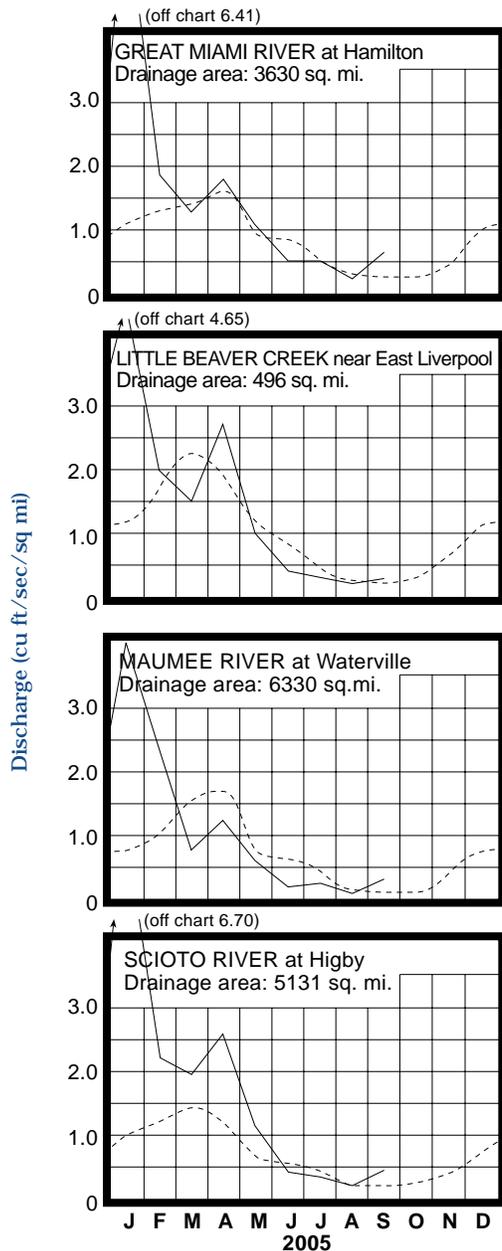
Streamflow during the 2005 water was above normal in most areas of the state (see Mean Stream Discharge table, percent of normal, past 12 month column). Annual average flows across most of the state were high enough to be considered excessive. Flows during the first 5 months of the 2005 water year were above normal, and in many instances were high enough to be considered excessive. Widespread, significant flooding across much of the state during January was in response to excessive precipitation that fell during the first half of the month. Flows during March were below normal across most of the state, but were again above normal nearly statewide during April. Flows during May were above normal in southern Ohio and below normal in northern Ohio. Streamflow was below normal across much of the state from June through most of August. Precipitation near the end of August and again during the second half of September had flows running at above normal during September statewide. In addition to the flooding in January, some minor flooding occurred following locally heavy rains mainly during April, June and July.

RESERVOIR STORAGE during September decreased seasonally in both the Mahoning and Scioto river basins. Storage is above normal in both basins.

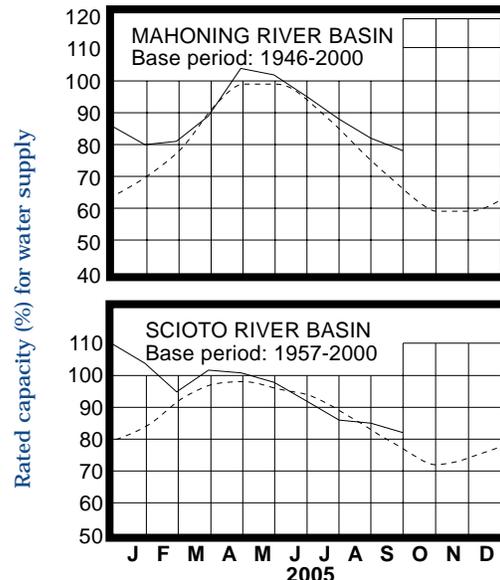
Reservoir storage at the end of September in the Mahoning basin index reservoirs was 78 percent of rated capacity for water supply compared with 82 percent for last month and 86 percent for September 2004. Month-end storage in the Scioto basin index reservoirs was 82 percent of rated capacity for water supply compared with 85 percent for last month and 92 percent for September 2004.

Surface water supplies were adequate statewide during the 2005 water year. Storage in the Mahoning basin index reservoirs was briefly below normal during March, but above normal the remainder of the water year while storage in the Scioto basin index reservoirs was below normal during June and July, and above normal the remainder of the water year.

MEAN STREAM DISCHARGE



RESERVOIR STORAGE FOR WATER SUPPLY



Normal - - - - Current ———

GROUND-WATER LEVELS

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

GROUND WATER levels during September declined seasonally across most of the state. Net declines during September were less than usually observed in most aquifers. Ground water storage is below normal throughout most of the state except for some consolidated aquifers in northeast Ohio where storage continues to be above normal. Current ground water levels are lower than they were a year ago across most of the state, ranging from slightly above to nearly 3 feet below the September 2004 levels.

Ground water storage began the 2005 water year at above normal levels across most of the state, but at below normal levels in much of southwestern Ohio. Hydrologic conditions during the first 4 months of the 2005 recharge season were favorable for ground water supplies and following the excessive precipitation in January, ground water levels were above normal statewide. New record-high January levels were reached in index observation wells F-1 (Fairfield County), representing sandstone aquifers in eastern and southeastern Ohio and HN-2A (Hardin County), representing the carbonate aquifers of northwestern Ohio. But then, below normal precipitation during 4 of the next 5 months helped accelerate the typical normal seasonal rate of decline that ground water usually experiences and by mid-August, ground water levels had fallen to below normal across nearly the entire state. Widespread rain during the last week of August and the second half of September helped reduce the overall demand and rate of seasonal decline on ground water supplies. However, at the end of the water year, ground water levels remained below normal across most of the state. In spite of this, ground water supplies remain adequate across Ohio.

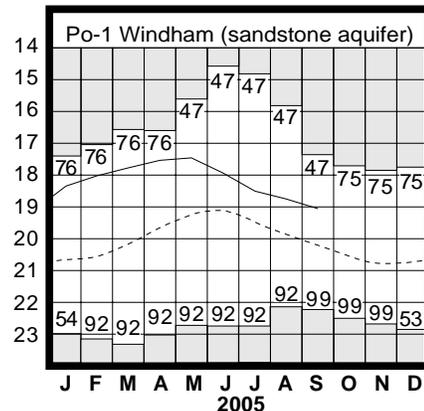
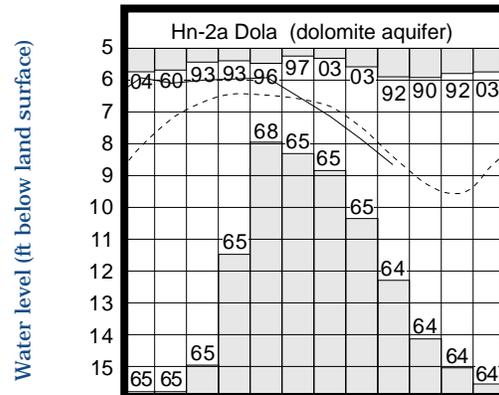
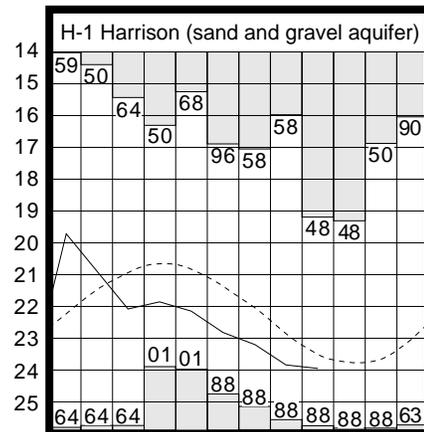
LAKE ERIE level declined during September. The mean level was 571.13 feet (IGLD-1985), 0.23 foot lower than last month's mean level and 0.29 foot below normal. This month's mean level is 0.52 foot lower than the September 2004 level and 1.93 feet above Low Water Datum.

The U.S. Army Corps of Engineers (USACE) reports that precipitation in the Lake Erie basin during September averaged 3.25 inches, 0.10 inch above normal. For the entire Great Lakes basin, September precipitation averaged 3.34 inches, 0.07 inch below normal. For calendar year 2005 through September, the Lake Erie basin has averaged 25.54 inches, 1.31 inches below normal, while the entire Great Lakes basin has averaged 21.30 inches, 3.21 inches below normal.

Lake Erie level was above normal during the first 8 months of the 2005 water year. However, following the above normal precipitation during January, precipitation throughout the entire Great Lakes basin was below normal during the next 8 months. As a result, and combined with other Great Lakes basin hydrologic condition, Lake Erie mean level fell below normal during June where it remained through September. 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 5 inches above to as much as 16 inches below the normal seasonal average.

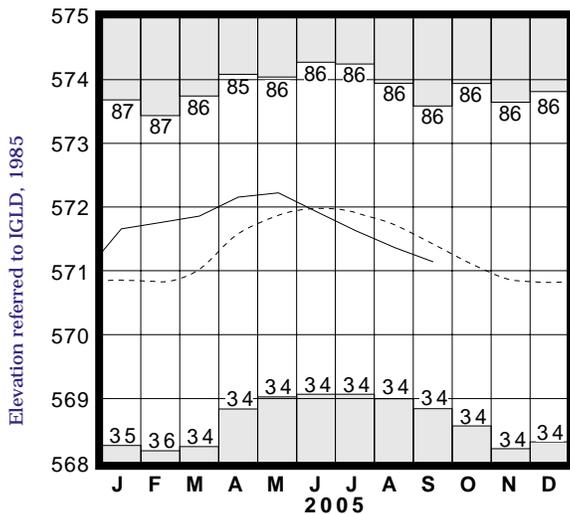
Index Well	Location	Aquifer	Mean This Month	Departure From Normal	Change in feet from:	
					Last Month	Year Ago
F-1	W. Rushville, Fairfield Co.	Sandstone	16.74	-0.22	-0.43	-2.77
Fa-1	Jasper Mill, Fayette Co.	Limestone	10.92	-2.15	-0.97	-1.76
Fr-10	Columbus, Franklin Co.	Gravel	44.78	-0.49	-0.45	+0.33
H-1	Harrison, Hamilton Co.	Gravel	23.95	-0.45	-0.12	+0.08
Hn-2a	Dola, Hardin Co.	Dolomite	8.67	-0.27	-0.82	-1.54
Po-1	Windham, Portage Co.	Sandstone	19.07	+1.14	-0.32	-0.41
Tu-1	Strasburg, Tuscarawas Co.	Gravel	14.36	-0.56	+0.40	-2.70

GROUND-WATER LEVELS



Base periods: H-1, 1951-2000. Hn-2a, 1955-2000.
Po-1, 1947-2000 □ Record high and low, year of occurrence

LAKE ERIE LEVELS



Base period: 1918-2000
□ Record high and low, year of occurrence

Normal - - - - Current ———

(Precipitation continued from front)

Region to 36.14 inches, 1.86 inches above normal, for the Northwest Region (see Precipitation table, departure from normal, past 12 months column). This was the 2nd wettest water year of record for the North Central Region, the 4th wettest for the West Central Region, 8th wettest for the Northeast Region and the 9th wettest for the Central Hills Region. Chardon (Geauga County) reported the greatest amount of precipitation for the 2005 water year, 55.67 inches. Toledo Express Airport (Lucas County) reported the least amount, 31.94 inches.

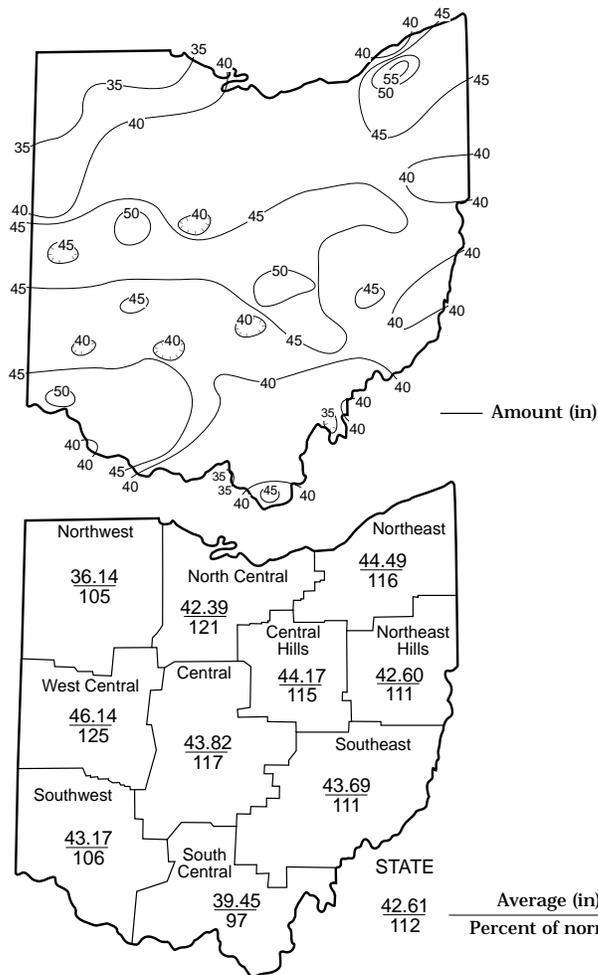
Precipitation during the first 4 months of the 2005 water year was above normal statewide. January was exceptionally wet across the state and was the 4th wettest January during the past 123 years for the state as a whole. Regionally, 9 of the state's 10 climatic regions ranked in their top 5 wettest Januarys. February and March precipitation was below normal across most of the state, followed by above normal precipitation during April. Drought like conditions began to develop across areas of the state during May. Northwestern and southern Ohio were impacted the greatest by the dry conditions. May and June precipitation was below normal statewide, ranking as the 3rd driest June for the state as a whole. Precipitation during July was also below normal across the southern half of the state, but above normal in the northern half, lessening the drought conditions in northwestern Ohio. August precipitation was above normal across all but northwestern Ohio, while September precipitation was above normal across all but southeastern Ohio. Drought conditions persisted in areas of southeastern and south-central Ohio through the end of the water year.

SUMMARY

Precipitation during September was above normal throughout most of the state. Streamflow was above normal statewide. Reservoir storage decreased in both the Mahoning and Scioto river basins. Storage remains above normal in both basins. Ground water levels declined seasonally across most of Ohio. Lake Erie declined 0.23 foot and was 0.29 foot below the long-term September average.

Precipitation for the 2005 water year was above normal throughout most of the state, with only the South Central Region having below normal precipitation. Streamflow was above normal in most areas of the state. Surface water supplies were above normal most of the water year. Ground water storage was generally above normal the first half and below normal the second half of the water year. Lake Erie level was above normal the first 8 months and below normal the remainder of the water year.

TOTAL PRECIPITATION 2005 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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