MONTHLY WATER INVENTORY REPORT FOR OHIO

September 2012

http://www.ohiodnr.gov/tabid/4191/Default.aspx
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PRECIPITATION during September was above normal across most of the state, but below normal in some areas of northwestern and southwestern Ohio. The average for the state was 5.13 inches, 1.96 inches above normal. This was the ninth wettest September during the past 130 years for the state as a whole. Regional averages ranged from 6.37 inches, 3.12 inches above normal, for the North Central Region to 3.70 inches, 0.77 inch above normal, for the Northwest Region. This was the fifth wettest September on record for both the North Central and West Central regions. Galion (Crawford County) reported the greatest amount of September precipitation, 9.21 inches. Hicksville (Defiance County) reported the least amount, 2.10 inches.

Precipitation during September fell as showers and scattered thunderstorms with some storms producing severe weather and large amounts of precipitation. Most areas of the state received 2-3 inches of rain during the first eight days of the month; however, some areas in southwestern Ohio received more than 5 inches, while areas in northwestern Ohio received around 1 inch. The remnants of Hurricane Isaac passed through the state during September 1-5, with the greatest amount of rain falling in southwestern Ohio and from north-central to southeastern Ohio. Storms during September 7-8 were most numerous in the northwestern half of the state with more than 2 inches reported at some locations. The next eight days were rather dry across Ohio. Precipitation returned to the state during September 17-18 with most of the state receiving between 0.25 and 0.50 inch, but 1-2 inches fell in extreme southeastern Ohio. There were several days with precipitation during the week of September 21-28 and while much of the state received 1-2 inches of rain during this period, areas in northwestern, southwestern and southeastern Ohio received lesser amounts of around 0.50 inch.

Precipitation for the 2012 calendar year is below normal across most of the state; only the North Central Region is slightly above normal. The state average is 27.45 inches, 2.96 inches below normal. Regional averages range from 29.94 inches, 2.02 inches below normal, for the Southeast Region to 23.54 inches, 3.63 inches below normal, for the Northwest Region.

Precipitation for the 2012 water year was above normal throughout most of Ohio. The state average was 41.68 inches, 2.64 inches above normal. Regional averages ranged from 43.76 inches, 4.18 inches above normal, for the Northeast Region to 37.61 inches, 2.59 inches above normal, for the Northwest Region (see Precipitation table, departure from normal, past 12 months column). Fairfield (Butler County) reported the greatest amount

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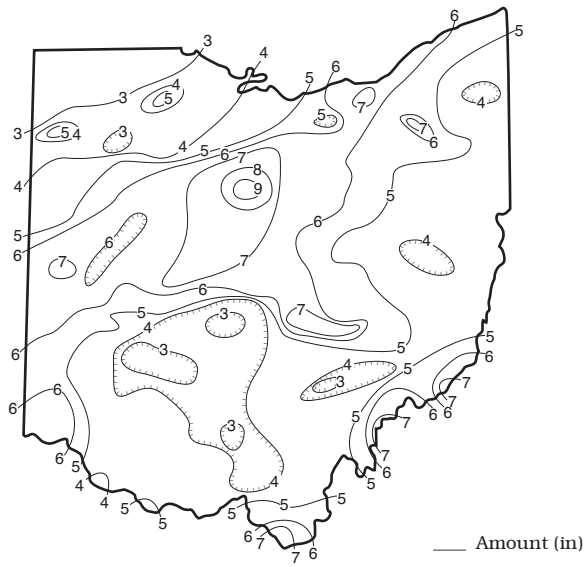
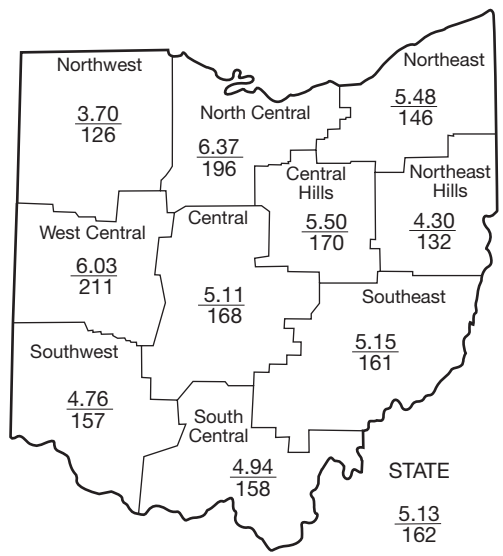
PRECIPITATION

Region	DEPARTURE FROM NORMAL (IN.) Base period 1961-2010					Palmer Drought Severity Index*
	This Month	Past 3 Mos.	Past 6 Mos.	Past 12 Mos.	Past 24 Mos.	
Northwest	+0.77	+1.24	-4.32	+2.59	+12.06	-2.2
North Central	+3.12	+1.87	-1.67	+5.94	+20.19	+0.1
Northeast	+1.73	+2.30	-2.72	+4.18	+21.09	-0.4
West Central	+3.17	+1.74	-2.91	+2.36	+13.64	-1.6
Central	+2.07	-0.45	-3.69	+3.01	+13.25	-1.9
Central Hills	+2.26	+0.05	-3.60	+3.09	+11.87	-1.2
Northeast Hills	+1.05	+0.15	-4.53	-0.06	+10.75	-3.2
Southwest	+1.72	-1.39	-4.52	+1.68	+12.86	-1.8
South Central	+1.81	-0.15	-1.83	+1.14	+14.31	-2.3
Southeast	+1.95	+0.92	-2.69	+2.70	+13.35	-1.1
State	+1.96	+0.62	-3.27	+2.64	+14.31	

*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

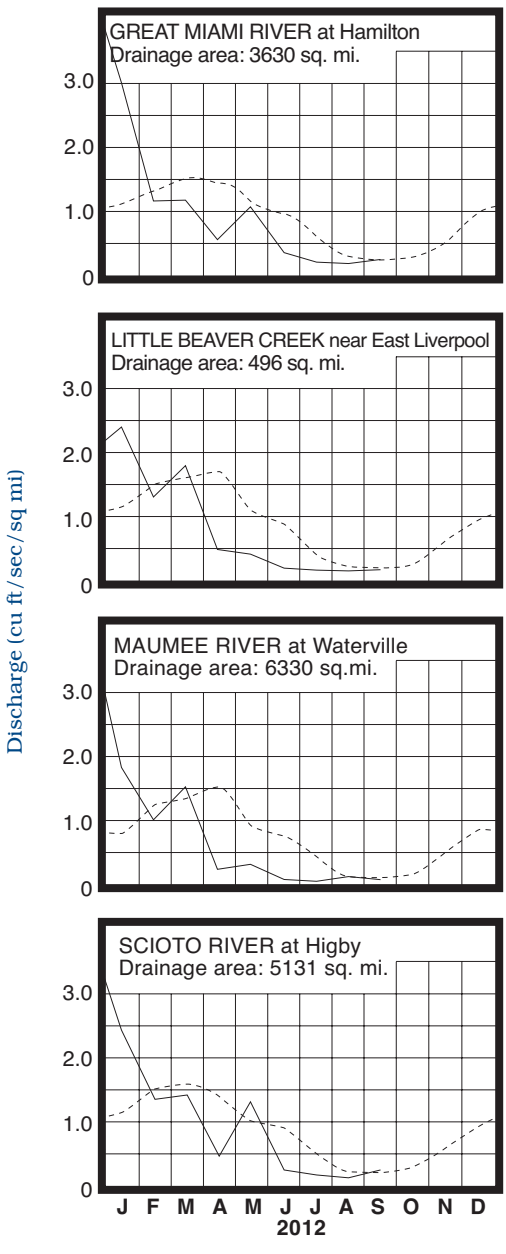
River and Location	Drainage Area (Sq. Mi.)	Mean Discharge (CFS)	% of Normal	% of Normal Past		
		This Month		3 Mos.	6 Mos.	12 Mos.
Grand River near Painesville	685	77	67	18	21	102
Great Miami River at Hamilton	3,630	924	106	41	47	130
Huron River at Milan	371	63	96	22	20	134
Killbuck Creek at Killbuck	464	108	99	33	39	108
Little Beaver Creek near East Liverpool	496	86	85	31	29	78
Maumee River at Waterville	6,330	504	57	23	19	118
Muskingum River at McConnelsville	7,422	1,691	90	33	39	94
Scioto River near Prospect	567	369	1,125	67	60	162
Scioto River at Higby	5,131	1,304	120	42	48	119
Stillwater River at Pleasant Hill	503	158	344	35	30	97

STREAMFLOW during September was generally above normal in the southern half of Ohio and below normal in the northern half. Flows were high enough to be considered excessive in some west-central and central Ohio basins. September flows were greater than the August flows throughout most of the state.

Flows at the beginning of September were below normal statewide. Most drainage basins had their lowest flows for the month on September 1; some basins in western Ohio had slightly lower flows on either September 17 or 25. Flows increased statewide following widespread precipitation during the first week of the month. Greatest flows for September in most areas of the state occurred during September 9-11. Drainage basins in northwestern Ohio and areas in eastern Ohio recorded their greatest flows during September 28-30. Flows at the end of the month were above normal throughout most of the state.

Streamflow for the 2012 water year was above normal across much of the state (see Mean Stream Discharge table, percent of normal, past 12 months column). Flows during the first four months of the 2012 water year were above normal statewide and high enough to be considered excessive across most of the state. Flooding was widespread during all four months, and although most of the flooding was minor, there was some moderate flooding following heavy precipitation during November. Flows during February were below normal statewide while during March, flows were above normal across much of the state. From April through August, streamflow was below normal statewide as below normal precipitation persisted throughout the state.

MEAN STREAM DISCHARGE



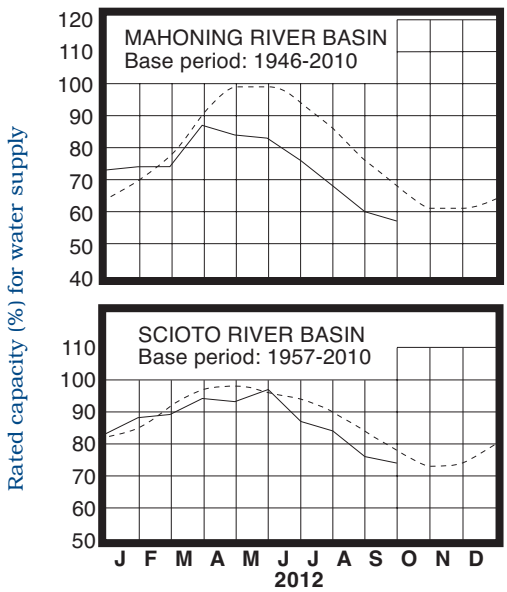
Base period for all streams: 1981-2010

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

Reservoir storage at the end of September in the Mahoning basin index reservoirs was 57 percent of rated capacity for water supply compared with 60 percent for last month and 79 percent for September 2011. Month-end storage in the Scioto basin index reservoirs was 74 percent of rated capacity for water supply compared with 76 percent for last month and 88 percent for September 2011.

Surface water supplies were adequate during the 2012 water year. Reservoir storage was above normal during the first four months of the water year as precipitation was above normal statewide. However, by late winter and continuing throughout the summer months, precipitation was below normal, often resulting in noticeably below normal streamflows. In addition, temperatures were much above normal and with the resultant increase in consumptive use, reservoir storage declined rapidly and was below normal during the last eight months of the 2012 water year.

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	17.09	-0.60	-1.17	-2.22
Fa-1	Jasper Mill, Fayette Co.	Limestone	12.42	-3.41	-1.68	-2.95
Fr-10	Columbus, Franklin Co.	Gravel	45.18	-0.41	-0.58	-1.15
H-1	Harrison, Hamilton Co.	Gravel	24.31	-0.96	-0.04	-0.45
Hn-2a	Dola, Hardin Co.	Dolomite	10.23	-1.77	-1.41	-2.66
Po-124	Freedom, Portage Co.	Sandstone	77.07	-0.20	-0.43	-0.07
Tu-1	Strasburg, Tuscarawas Co.	Gravel	15.82	-1.95	-0.18	-1.11

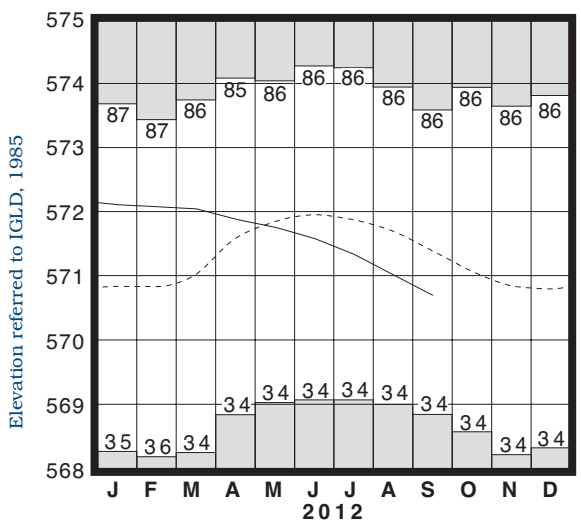
GROUND WATER levels during September declined throughout the state. Ground water levels in deeper aquifers declined steadily throughout the month while in shallower aquifers, levels rose during the first week of the month, and then declined through month's end. Net declines during September were greater than what is normally expected in most aquifers.

Ground water storage during the 2012 water year varied greatly from the first half to the second half of the year. Levels at the beginning of the water year were at above normal levels across most of the state. Ground water storage improved during the first half of the water year responding to the noticeably above normal precipitation that fell during 2011. By December, water levels were above normal statewide and record or near-record high monthly levels occurred in a few observation wells. Ground water storage declined seasonally during the second half of the water year. However, the rate of decline was accelerated by the below normal precipitation from February through August and above normal temperatures during the summer months. Ground water levels at the end of the 2012 water year were below normal statewide, ranging from around 0.20 foot to 3.5 feet below normal. Current ground water levels are also lower than the September 2011 levels throughout Ohio. Ground water supplies remained adequate during the 2012 water year; however, water supply managers with ground water sources should closely monitor their respective situations. The Ohio Agricultural Statistics Service reports that near the end of September, soil moisture was rated as being short or very short in 38 percent of the state, adequate in 56 percent of the state and surplus in 6 percent of the state.

LAKE ERIE level declined during September. The mean level was 570.70 feet (IGLD-1985), 0.30 foot lower than last month's mean level and 0.69 foot below normal. This month's mean level is 1.15 feet lower than the September 2011 level and 1.50 feet above Low Water Datum.

Lake Erie level was above normal during the first seven months of the 2012 water year. The combination of seasonal decline and below normal precipitation resulted in the level dropping below normal during May. The level of Lake Erie remained below normal the remainder of the 2012 water year. The U.S. Army Corps of Engineers 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.

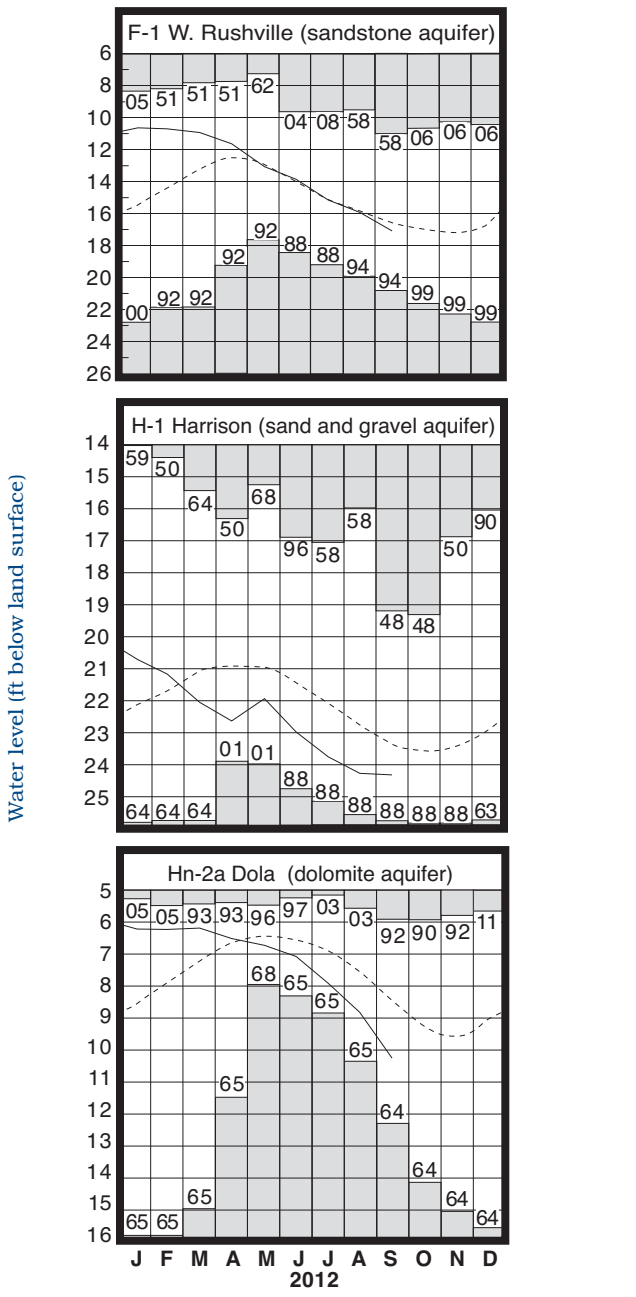
LAKE ERIE LEVELS



Base period: 1918-2010

Record high and low, year of occurrence

GROUND-WATER LEVELS



Base periods: F-1, 1947-2010; H-1 1951-2010.

Hn-2a, 1955-2010 Record high and low, year of occurrence

Normal – – – – Current ———

(Precipitation continued from front)

of precipitation for the water year, 54.44 inches. Hicksville (Defiance County) reported the least amount, 29.39 inches.

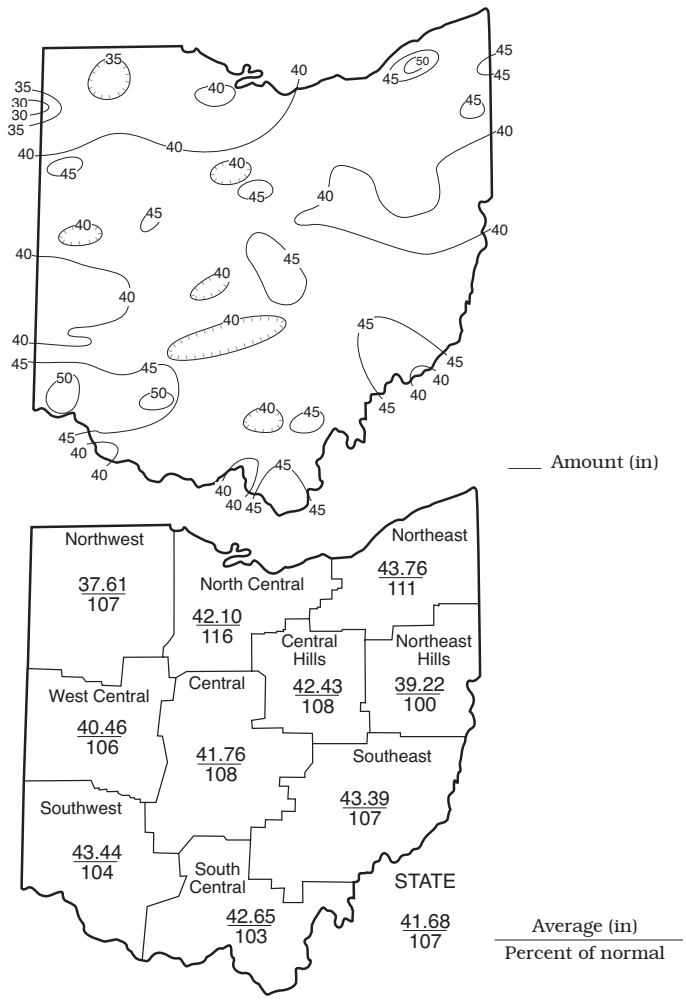
Precipitation during the first four months of the 2012 water year was much above normal throughout the state. October 2011 was the 13th wettest October for the state during the past 129 years of record, while it was the fifth wettest November and the seventh wettest December. Precipitation during February was below normal across most of the state; during March it was generally above normal in the northeastern half of Ohio. From April through August, precipitation was below normal statewide with much of the state experiencing moderate to severe drought conditions. The weather during the 2012 water year had major implications on business, agriculture and citizens in Ohio. Flooding was a concern during the last three months of 2011 from excessive precipitation. Agriculture was adversely impacted by the weather during the growing season, not only by below normal precipitation but also by much above normal temperatures. A line of severe storms moved through the state on June 29 with heavy rains and damaging winds. These storms left extensive damage across much of the state and power outages that lasted several days for many.

SUMMARY

Precipitation during September was above normal throughout most of the state. Streamflow was generally above normal in the southern half of the state and below normal in the northern half. Reservoir storage declined and was below normal. Ground water levels declined statewide and range from around 0.2 foot to 3.5 feet below normal. Lake Erie level declined 0.30 foot and was 0.69 foot below the long-term September average.

Precipitation during the 2012 water year was above normal throughout most of the state. Streamflow for the water year was above normal across much of Ohio. Surface water supplies, ground water supplies and Lake Erie were at below normal levels at the end of the 2012 water year.

PRECIPITATION 2012 WATER YEAR



ACKNOWLEDGMENTS

This report has been compiled from Division 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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