



MONTHLY WATER INVENTORY REPORT FOR OHIO

October 2009

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Hydrologists
Water Inventory Unit

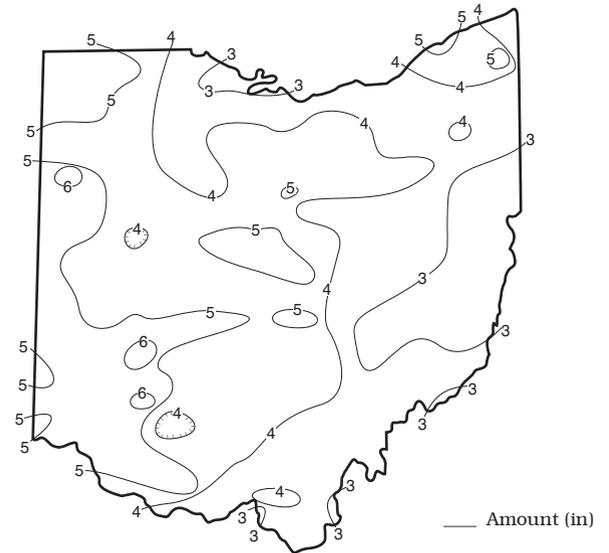
PRECIPITATION during October was above normal throughout the state with only a few scattered locations in eastern Ohio having below normal precipitation. The state average was 4.22 inches, 1.75 inches above normal. Regional averages ranged from 5.29 inches, 2.67 inches above normal, for the Southwest Region to 3.05 inches, 0.52 inch above normal, for the Northeast Hills Region. This was the 5th wettest October during the past 127 years for the Southwest Region, 6th wettest for both the Central and Northwest regions, and the 10th wettest for the West Central Region. Xenia (Greene County) reported the greatest amount of October precipitation, 6.70 inches. Willow Island Lock and Dam (Washington County) reported the least amount, 2.14 inches.

The first half of October was cool and wet. Rain on October 2 was greatest across northwestern and west-central Ohio. Most of the northwestern two-thirds of the state received at least 0.50 inch of rain with an area stretching from west-central to central Ohio reporting between 1 and 2.5 inches. Less than 0.25 inch fell in southeastern and south-central Ohio. Precipitation during October 8-9 was greatest across southwestern Ohio where 1-2 inches fell, tapering to less than 0.50 inch in northeastern Ohio. Light showers fell across the state around October 15 with 0.25-0.50 inch reported throughout most of state. The next week was warmer and drier, giving farmers an opportunity to get into their fields. Rain returned to the state on October 23 and was greatest across western Ohio where generally 0.50-1.0 inch fell. Widespread precipitation fell across the state during the last 5 days of the month. The greatest amount was observed from southwestern to northeastern Ohio with 1-2 inches reported.

Precipitation for the 2009 calendar year is above normal across most of the state, but below normal in the West Central, Northeast Hills and Southeast regions. The state average is 32.73 inches, 0.45 inch above normal. Regional averages range from 37.48 inches, 2.83 inches above normal, for the South Central Region to 29.55 inches, 3.17 inches below normal, for the Northeast Hills Region.

The 2010 water year (October 1, 2009 to September 30, 2010) is off to an excellent start as far as precipitation is concerned. Near-normal precipitation during the next several months will be beneficial for water supplies statewide.

PRECIPITATION OCTOBER

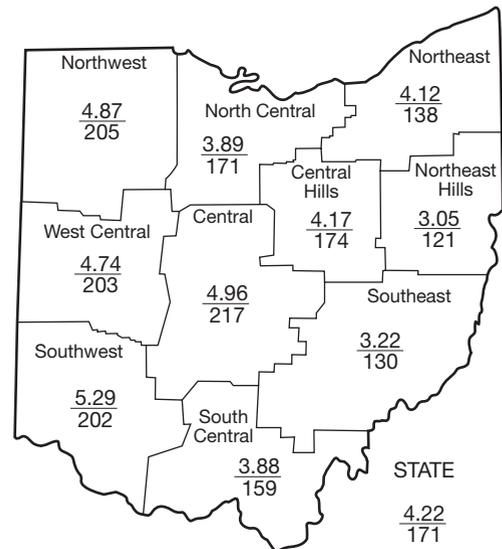


PRECIPITATION

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	+2.50	+0.77	-0.96	+3.91	+12.33	+0.7
North Central	+1.62	-0.43	-0.39	+2.16	+12.08	+1.1
Northeast	+1.14	+0.39	+0.58	+4.10	+15.77	+0.2
West Central	+2.41	+0.98	+0.05	+0.21	+8.28	+0.8
Central	+2.67	+3.26	+3.32	+2.40	+8.53	+1.3
Central Hills	+1.78	+2.48	+0.75	+1.43	+5.38	+0.6
Northeast Hills	+0.52	+0.41	-0.98	-2.21	+2.75	-0.3
Southwest	+2.67	+2.64	+4.22	+1.45	+7.26	+2.1
South Central	+1.44	+1.09	+5.07	+3.91	+10.62	+1.6
Southeast	+0.75	-0.62	-0.08	+0.41	+7.74	+1.0
State	+1.75	+1.10	+1.15	+1.76	+9.05	

*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

This Month

River and Location	Drainage Area (Sq. Mi.)	Mean Discharge (CFS)	% of Normal	% of Normal Past		
				3 Mos.	6 Mos.	12 Mos.
Grand River near Painesville	685	327	136	42	47	111
Great Miami River at Hamilton	3,630	1,839	191	100	99	80
Huron River at Milan	371	30	71	20	60	125
Killbuck Creek at Killbuck	464	208	155	76	54	66
Little Beaver Creek near East Liverpool	496	129	82	59	66	76
Maumee River at Waterville	6,330	1,714	221	67	76	114
Muskingum River at McConnelsville	7,422	2,378	94	119	99	64
Scioto River near Prospect	567	128	471	68	63	67
Scioto River at Higby	5,131	2,829	223	95	71	62
Stillwater River at Pleasant Hill	503	84	133	40	95	78

STREAMFLOW during October was above normal throughout most of the state with only some basins, mainly in eastern Ohio, having below normal flows. Flows were high enough to be considered excessive in central and southwestern Ohio. Flows during October were greater than the flows recorded during September.

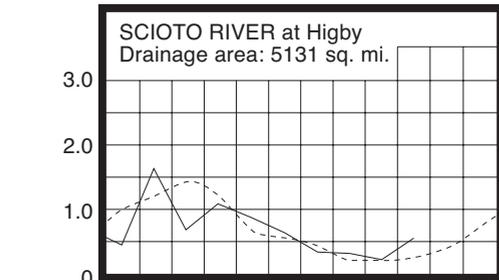
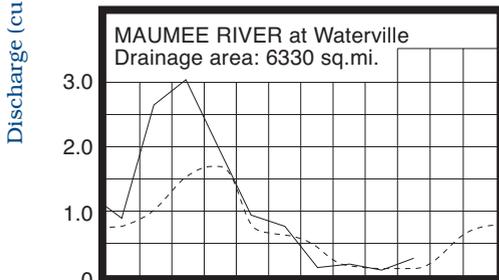
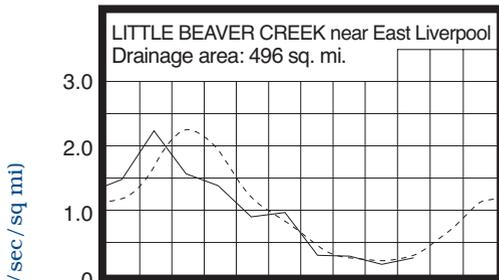
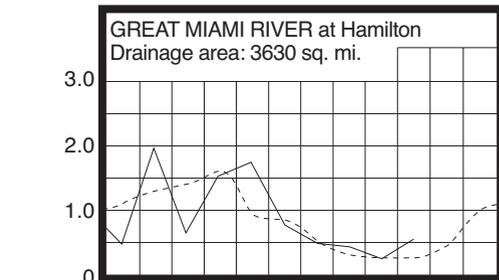
Flows at the beginning of the month were generally below normal throughout the state with the exception of a few basins in north-eastern Ohio where flows were above normal. Lowest flows for the month across western Ohio occurred at the beginning of October. Flows increased statewide following the precipitation that fell on October 2. Flows decreased during the next 6 days, then increased again following the October 9-10 precipitation. Following these

increases, flows generally decreased for the next 2 weeks and were at their lowest for the month in eastern Ohio around October 23. Flows increased statewide during the last week of October in response to the widespread precipitation that fell during this period. Greatest flows for October occurred near the end of the month throughout the state and were above normal at month's end.

RESERVOIR STORAGE for water supply during October decreased seasonally in both the Mahoning and Scioto river basins. At the end of October, storage remained above normal in both basins.

Reservoir storage at the end of October in the Mahoning basin index reservoirs was 74 percent of rated capacity for water supply compared with 76 percent for last month and 78 percent for October 2008. Month-end storage in the Scioto basin index reservoirs was 84 percent of rated capacity for water supply compared with 90 percent for last month and 62 percent for October 2008. Surface water supplies are in good condition at the beginning of the 2010 water year.

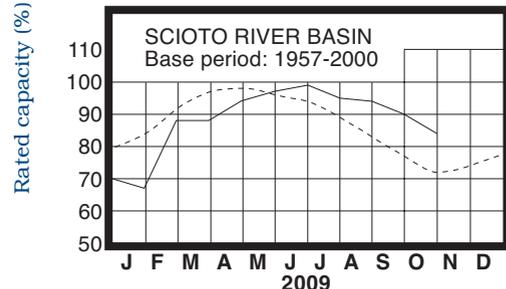
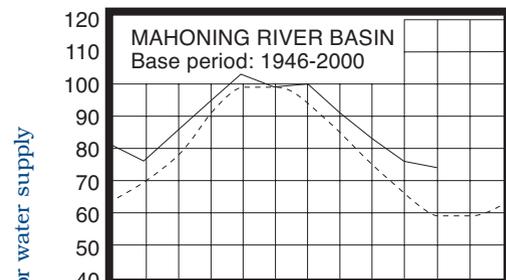
MEAN STREAM DISCHARGE



Base period for all streams: 1971-2000

Normal - - - - Current ———

RESERVOIR STORAGE FOR WATER SUPPLY



GROUND-WATER LEVELS

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

GROUND WATER levels during October declined seasonally across much of Ohio. However, levels in some aquifers in the southern half of the state rose in response to above normal precipitation. In general, levels in consolidated aquifers in southern Ohio rose steadily throughout the month while in northern Ohio they slowly declined until late in the month when they began to rise. Levels in most unconsolidated aquifers declined slightly during most of the month, but then rose during the last week in response to widespread precipitation that fell late in October.

The 2010 water year is off to a good start across most of the state as far as ground water supplies are concerned. Ground water supplies remain below normal throughout much of the state; however, they are above normal in the consolidated aquifers of eastern Ohio and some unconsolidated aquifers in southern Ohio. Current levels are higher than they were at this time last year across most of the state with the exception of a few northern Ohio aquifers where levels are lower. The above normal precipitation during the month improved soil moisture and bodes well for continued improvement to ground water supplies during the 2010 recharge season. The Ohio Agricultural Statistics Service reports that near the end of October, topsoil moisture was rated as being adequate in 68 percent of the state and surplus in 32 percent of the state. However, near-normal precipitation will be needed during the next few months to continue these favorable conditions.

LAKE ERIE level declined during October. The mean level was 571.29 feet (IGLD-1985), 0.36 foot lower than last month's mean level and 0.19 foot above normal. This month's mean level is 0.39 foot higher than the October 2008 level and 2.09 feet above Low Water Datum.

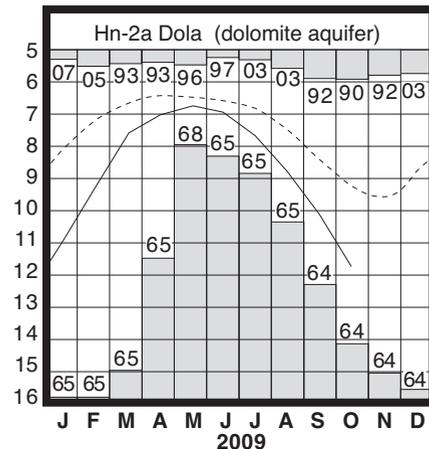
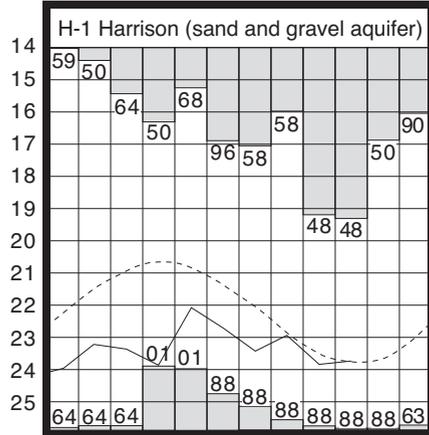
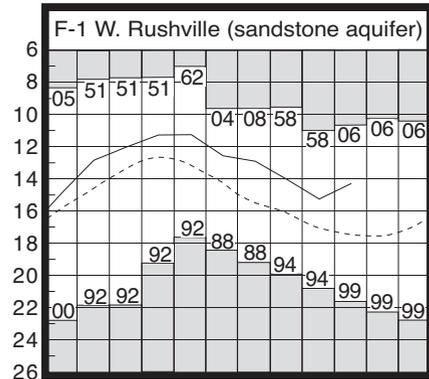
The U.S. Army Corps of Engineers (USACE) reports that precipitation in the Lake Erie basin during October averaged 3.62 inches, 0.85 inch above normal. For the entire Great lakes basin, October precipitation averaged 4.17 inches, 1.31 inches above normal. For calendar year 2009 through October, the Lake Erie basin has averaged 33.31 inches, 3.53 inches above normal, while the entire Great Lakes basin has averaged 28.43 inches, 0.99 inch above normal.

In addition, 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 above normal for the foreseeable future. Deviations from the anticipated weather patterns could result in the level of Lake Erie ranging from as much as 12 inches above normal to around 8 inches below the normal seasonal level.



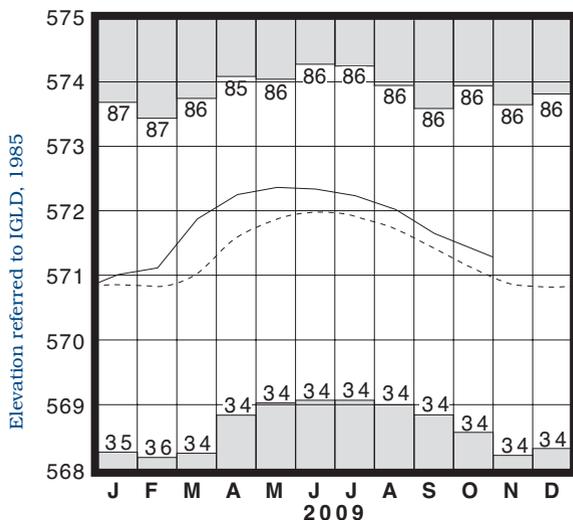
Index Well	Location	Aquifer	Mean This Month	Departure From Normal	Change in feet from:	
					Last Month	Year Ago
F-1	W. Rushville, Fairfield Co.	Sandstone	14.29	+3.15	+0.97	+1.09
Fa-1	Jasper Mill, Fayette Co.	Limestone	9.48	-0.40	-0.25	+1.04
Fr-10	Columbus, Franklin Co.	Gravel	45.53	-1.30	+0.22	+0.06
H-1	Harrison, Hamilton Co.	Gravel	23.73	+0.03	+0.10	+0.52
Hn-2a	Dola, Hardin Co.	Dolomite	11.73	-2.50	-1.63	-0.91
Po-124	Freedom, Portage Co.	Sandstone	76.54	+1.81	-0.18	+0.05
Tu-1	Strasburg, Tuscarawas Co.	Gravel	16.17	-2.21	-0.28	-0.82

GROUND-WATER LEVELS



Base periods: F-1, 1947-2000 H-1, 1951-2000.
Hn-2a, 1955-2000

LAKE ERIE LEVELS



Base period: 1918-2000

■ Record high and low, year of occurrence

Normal - - - - Current - - - -

SUMMARY

Precipitation during October was above normal throughout the state with only a few locations in eastern Ohio having below normal precipitation. Streamflow was above normal across most of the state, but below normal in some basins, mainly in eastern Ohio. Reservoir storage decreased seasonally, but remained above normal in both the Mahoning and Scioto river basins. Ground water levels declined seasonally across much of the state, but did improve in some aquifers in southern Ohio. Lake Erie level declined 0.36 foot and was 0.19 foot above the long-term October average.

NOTES AND COMMENTS

Division of Soil and Water Resources Employees Receive Awards

Two Division of Soil and Water Resources employees received awards recently for their dedicated service in the field of water resources at the Water Management Association of Ohio (WMAO) annual conference. David Hanselmann, Chief of the Division of Soil and Water Resources, was awarded the Wayne S. Nichols Award. This award is presented to a person who exemplifies public leadership, innovation and accomplishments in the water resources field. Chief Hanselmann was awarded the Wayne S. Nichols Award as acknowledgement for his dedicated service to protecting and restoring Ohio's soil and water resources.

Greg Nageotte, Watersheds Program Manager, was awarded the President's Service Award. The recipient of this award is chosen by the WMAO President and honors a person who has demonstrated outstanding service to WMAO and contributed to the water resources field. In addition to his commitment to the preservation of Ohio's water resources, Greg was recognized for his service as Vice President of WMAO and for being the Chair for the 2009 Annual Conference Committee.

Congratulations to both Chief Hanselmann and Greg on their much deserved awards.

Long Time Division of Soil and Water Resources Employee Retires

Neil Martin, administrator for the Soil Inventory and Evaluation Section of the ODNR, Division of Soil and Water Resources, retired at the end of October after 30 years of dedicated service to the Department. Neil has accepted a position with the USDA-NRCS in Findlay to become the leader of the Major Land Resource Area (MLRA) project office. Neil began his career at ODNR in 1979 as a soil scientist with the Division of Lands and Soils. He mapped soils and led soil-mapping efforts in several counties throughout Ohio. Later, Neil became the MLRA project leader for the project office in Marietta, leading both division and NRCS soils programs and staffs regionally. Approximately one year ago, he became the administrator for the Division's soils program. The Division of Soil and Water Resources staff congratulate Neil on his retirement from ODNR and thank him for his many years of dedicated service to the Division and the State of Ohio. We wish Neil the best in his new position with NRCS.

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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