



MONTHLY WATER INVENTORY REPORT FOR OHIO

May 2010

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Compiled By Scott C. Kirk

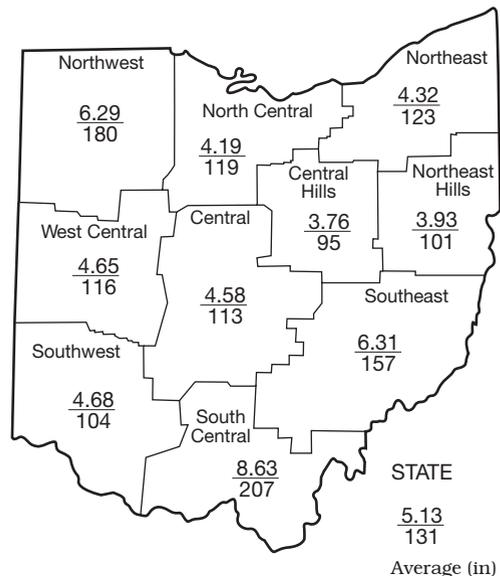
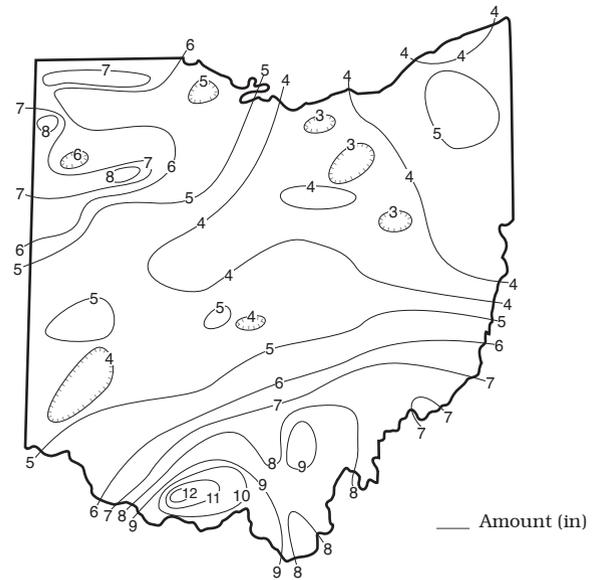
Hydrologist
Water Inventory Unit

PRECIPITATION during May was above normal throughout most of Ohio, but slightly below normal in the Central Hills Region. The state average was 5.13 inches, 1.22 inches above normal. Regional averages ranged from 8.63 inches, 4.47 inches above normal, for the South Central Region to 3.76 inches, 0.20 inch below normal, for the Central Hills Region. This was the 3rd wettest May during the past 128 years of record for the South Central Region, the 6th wettest for the Northwest Region and the 12th wettest for the Southeast Region. West Union (Adams County) reported the greatest amount of May precipitation, 12.24 inches. Oberlin (Lorain County) reported the least amount, 2.59 inches.

Although precipitation fell during every week of the month, most of the rainfall fell during the first 3 weeks with many stations reporting measurable precipitation on 14 of the first 22 days of May. The month started with heavy rain during May 1-2 across western and southern Ohio with most of this area reporting at least 1 inch of rain. A large area in south-central and southeastern Ohio reported 3-5 inches during this period, resulting in numerous reports of flooding. Light, scattered showers fell across the southern two-thirds of the state during May 7-8. During the same period, a few isolated, severe storms crossed through northern Ohio with rainfall amounts in excess of 1 inch. Large hail and high winds accompanied some of these storms, including a tornado that damaged several structures in Wood County. Severe storms that moved through the state during May 11-12 produced heavy rain, high winds and at least 2 confirmed tornadoes. Most of the state received around 1.0-1.5 inches of rain from these storms, with areas in southern Ohio reporting nearly 2 inches. With the ground already saturated from previous rain, several reports of flooding were received from southern Ohio. During May 17-22 the state received widespread precipitation. Most of the state received at least 1 inch of rain with lesser amounts reported in north-central and areas of northeastern Ohio. The most notable storms during this period occurred on May 21 across western and southern Ohio, with heavy rain and at least 2 additional confirmed tornadoes in southwestern Ohio. Amounts of 1-2 inches of rain fell across this region with some isolated locations receiving more than 3.5 inches. Small stream and urban flooding was reported in western and southern Ohio from this excessive precipitation. The next 8 days were rather dry throughout most of the state. Some isolated, heavy downpours occurred in the western half of Ohio around May 27-28 from slow moving storms. Radar estimates indicate Van Wert

(continued on back)

PRECIPITATION MAY



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	+2.80	+2.98	+1.81	-0.46	+4.49	-0.4
North Central	+0.68	-0.50	-1.54	-4.51	-0.43	-0.5
Northeast	+0.81	-1.31	-0.60	-1.24	+3.96	-1.9
West Central	+0.65	-0.35	-1.65	-2.76	-3.89	-0.9
Central	+0.51	-1.15	-1.61	-0.13	-1.42	-1.4
Central Hills	-0.20	-2.04	-2.21	-2.86	-4.27	-2.1
Northeast Hills	+0.03	-1.55	-1.14	-2.84	-6.11	-1.6
Southwest	+0.20	-1.55	-3.53	-1.62	-7.18	-0.6
South Central	+4.47	+1.47	+1.03	+2.59	+1.58	+0.2
Southeast	+2.29	-0.54	+0.07	-2.45	-1.51	-0.4
State	+1.22	-0.46	-0.95	-1.64	-1.51	-0.4

*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	998	193	94	93	80
Great Miami River at Hamilton	3,630	4,694	138	124	101	92
Huron River at Milan	371	350	159	90	61	56
Killbuck Creek at Killbuck	464	283	62	89	79	72
Little Beaver Creek near East Liverpool	496	537	92	106	106	90
Maumee River at Waterville	6,330	14,900	308	135	99	87
Muskingum River at McConnelsville	7,422	6,934	75	118	110	62
Scioto River near Prospect	567	406	109	90	73	64
Scioto River at Higby	5,131	5,915	140	99	86	83
Stillwater River at Pleasant Hill	503	693	178	142	105	84

STREAMFLOW during May was above normal across much of Ohio, but below normal in eastern areas of the state. Flows were high enough to be considered excessive in some basins, especially across northwestern Ohio. Flows during May were greater than the flows observed during April throughout most of the state, but were less in east-central Ohio.

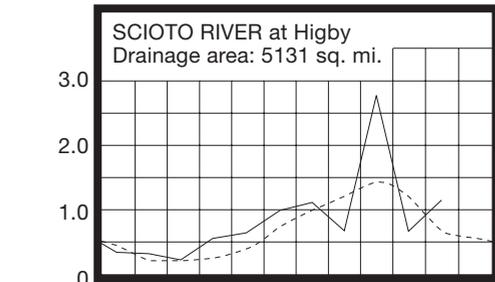
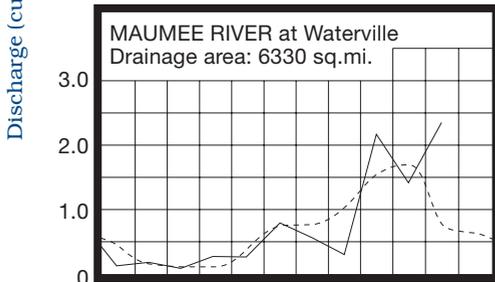
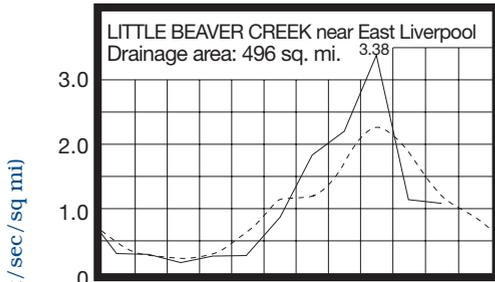
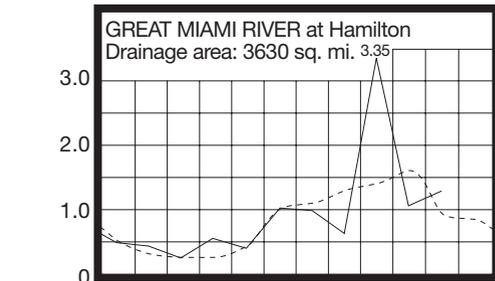
Flows at the beginning of the month were below normal in most areas of the state. Flows during the month varied greatly, increasing noticeably following local precipitation. Heavy rain during May 1-2 resulted in flooding across south-central and southeastern Ohio. Flooding was also reported in southern Ohio following thunderstorms on May 11-12. Greatest flows for the month occurred following these storms in north-central and northeastern Ohio.

Greatest flows across the remainder of the state occurred following the heavy rain that fell during May 17-22. Additional flooding was reported across western and southern Ohio as a result of this rain. Lowest flows for the month occurred at various times, generally at the beginning of the month in southwestern Ohio, around May 10-11 in northwestern and south-central Ohio and near the end of the month in eastern Ohio. Flows at the end of the month were below normal throughout most of the state except in northwestern Ohio where streamflow remained above normal.

RESERVOIR STORAGE for water supply during May decreased slightly in both the Mahoning and Scioto river basins. Month-end storage was slightly below normal in the Mahoning basin reservoirs and at normal levels in the Scioto basin reservoirs.

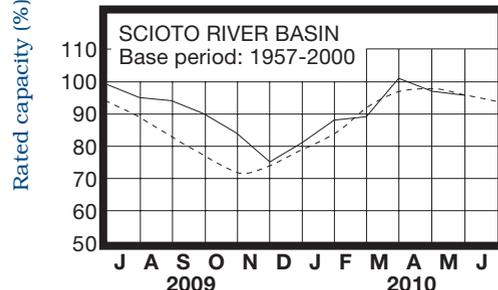
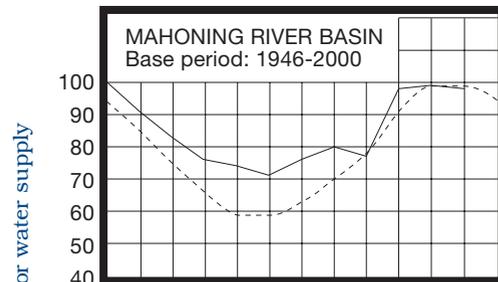
Reservoir storage at the end of May in the Mahoning basin index reservoirs was 98 percent of rated capacity for water supply compared with 99 percent for both last month and May 2009. Storage at the end of the month in the Scioto basin index reservoirs was 96 percent of rated capacity for water supply compared with 97 percent for both last month and May 2009. Surface water supplies remain adequate throughout the state.

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

GROUND WATER levels during May declined in most aquifers, but rose in the consolidated aquifers of northern Ohio. Net declines in ground water levels during May from the April levels were greater than usually observed, continuing to respond to the below normal precipitation of the past few months. Some exceptions were noted in carbonate aquifers in northwestern Ohio where net improvement in water levels during May was greater than usually observed.

The 2010 recharge season appears to have ended in April for most of Ohio. It was not a particularly good recharge season for ground water supplies in the state. Since the above normal precipitation during October 2009, most regions of the state have experienced below normal precipitation during 4 of the next 6 months (November-April), and some areas during 5 of the next 6 months. As a result, current ground water levels continue to be below normal across much of the state with only some consolidated aquifers in eastern Ohio having above normal levels. Water levels are also lower than they were at this time last year in most aquifers across the state. In spite of this, ground water supplies remain adequate throughout Ohio. The above normal precipitation during May helped reduce overall demand on ground water supplies. Also, soil moisture remains positive throughout most of the state. The Ohio Agricultural Statistics Service reports that near the end of May, soil moisture was rated as being short in 2 percent of the state, adequate in 73 percent of the state and surplus in 25 percent of the state. Near-normal precipitation and other climatic conditions during the summer high water use period should help reduce demand and keep ground water supplies adequate throughout Ohio.

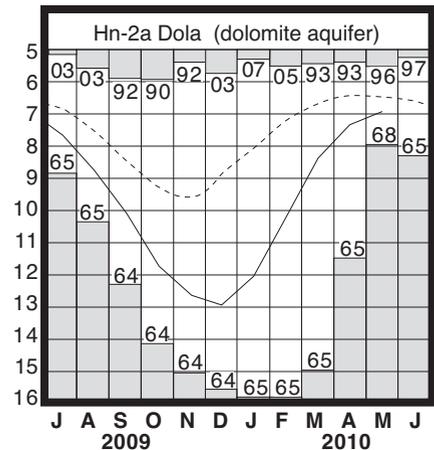
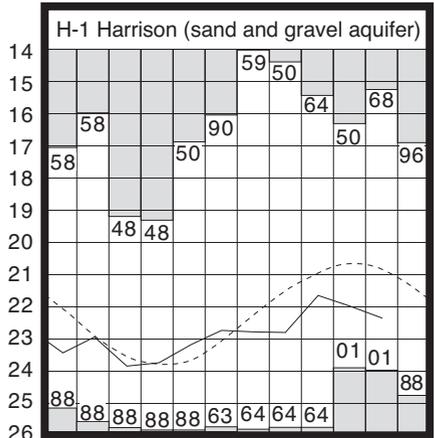
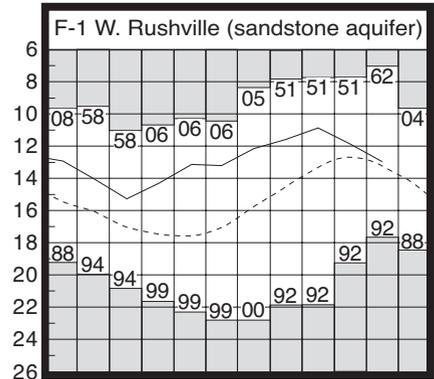
LAKE ERIE level rose during May. The mean level was 571.56 feet (IGLD-1985), 0.40 foot higher than last month's mean level and 0.32 foot below normal. This month's mean level is 0.81 foot lower than the May 2009 level and 2.36 feet above Low Water Datum.

The U.S. Army Corps of Engineers (USACE) reports that precipitation in the Lake Erie basin during May averaged 4.83 inches, 1.47 inches above normal. For the entire Great Lakes basin, May precipitation averaged 2.71 inches, 0.31 inch below normal. For calendar year 2010 through May, the Lake Erie basin has averaged 12.62 inches of precipitation, 1.17 inches below normal, while the entire Great Lakes basin has averaged 7.46 inches, 4.22 inches below 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 below normal for the foreseeable future. Deviations from the anticipated weather patterns could result in the level of Lake Erie ranging from about 2 inches above to as much as 14 inches below the normal seasonal average.

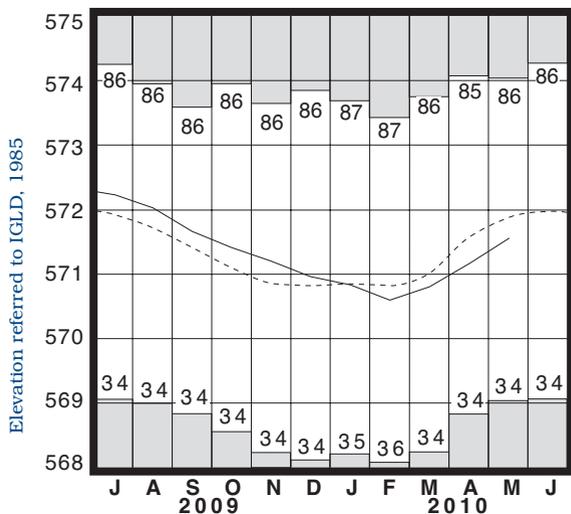
Index Well	Location	Aquifer	Mean This Month	Departure From Normal	Change in feet from:	
					Last Month	Year Ago
F-1	W. Rushville, Fairfield Co.	Sandstone	12.96	+0.26	-1.14	-1.69
Fa-1	Jasper Mill, Fayette Co.	Limestone	8.27	-1.20	-0.33	+0.16
Fr-10	Columbus, Franklin Co.	Gravel	43.54	-1.20	-0.22	+0.10
H-1	Harrison, Hamilton Co.	Gravel	22.35	-1.52	-0.37	-0.28
Hn-2a	Dola, Hardin Co.	Dolomite	6.91	-0.42	+0.43	-0.16
Po-124	Freedom, Portage Co.	Sandstone	76.19	+1.43	+0.08	-0.25
Tu-1	Strasburg, Tuscarawas Co.	Gravel	14.22	-2.79	-0.80	-0.74

GROUND-WATER LEVELS



Water level (ft below land surface)

LAKE ERIE LEVELS



Base period: 1918-2000

■ Record high and low, year of occurrence

Base periods: F-1, 1947-2000 H-1, 1951-2000.

Hn-2a, 1955-2000 ■ Record high and low, year of occurrence

Normal - - - - Current ———

(Precipitation continued from front)

County received more than 4 inches from one of these slow-moving storms. However, much of the state received little or no rain during this 8-day period. Some drying of soils allowed farmers to get into fields to resume planting of field crops and conduct other necessary fieldwork. Storms moved across northern Ohio on the last day of the month with some locally heavy rainfall being reported.

Precipitation for the 2010 calendar year is below normal throughout most of the state but above normal in the Northwest and South Central regions. The state average is 14.20 inches, 1.29 inches below normal. Regional averages range from 17.83 inches, 0.37 inch above normal, for the South Central Region to 12.15 inches, 1.52 inches below normal, for the North Central Region.

Precipitation for the 2010 water year is also below normal throughout most of the state but above normal in the Northwest and South Central regions. The state average is 22.54 inches, 1.16 inches below normal. Regional averages range from 26.49 inches, 0.62 inch above normal, for the South Central Region to 19.27 inches, 2.04 inches below normal, for the North Central Region.

SUMMARY

Precipitation during May was above normal throughout most of Ohio, but slightly below normal in the Central Hills Region. Streamflow was above normal across much of the state, but below normal in eastern areas of the state. Reservoir storage decreased slightly in both the Mahoning and Scioto river basins. Ground water storage decreased in most aquifers and remained below normal in most aquifers. Lake Erie level rose 0.40 foot and was 0.32 foot below the long-term May average.

NOTES AND COMMENTS

Water Resources Data For Ohio Available On-Line

The Water Resources Division of the U.S. Geological Survey (USGS) recently announced the availability of the following report:

Water Resources Data For The United States, Water Year 2009.

This report contains data from cooperative long-term surface water and ground water networks as well as data collected as part of special short-term projects. Beginning with the 2006 annual report, paper reports are no longer produced. The USGS annual Water Data Report is part of a national web-based product with a "Site Data Sheet" available for each individual station that can be viewed and/or downloaded. Site Data Sheets contain all surface-water, ground-water and/or water-quality data that were collected at a particular site in a given water year. All Site Data Sheets for water year 2009 in Ohio have been completed and are available at: <http://wdr.water.usgs.gov/wy2009/search.jsp>. Connecting to this web site will take you directly to the Site Data Sheet search page. Site Data Sheets are indexed by USGS station number and physical location, which includes state, county and hydrologic unit. If you have any questions or comments, please contact James Mangus with the USGS at (614) 430-7727 or e-mail: jpmangus@usgs.gov. Water Resources Data-Ohio reports for water year 2002-2008 can also be accessed online at: <http://wdr.water.usgs.gov/>.

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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