MONTHLY WATER INVENTORY REPORT FOR OHIO

February 2014

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http://www.ohiodnr.gov/tabid/4191/Default.aspx

PRECIPITATION during February was above normal throughout most of the state, but slightly below normal in the Central Hills, Northeast Hills and Southwest regions. The state average was 2.62 inches, 0.42 inch above normal. Regional averages ranged from 3.87 inches, 1.19 inches above normal, for the South Central Region to 2.05 inches, 0.06 inch below normal, for the Central Hills Region. South Point (Lawrence County) reported the greatest amount of February precipitation, 5.55 inches. Zanesville Municipal Airport (Muskingum County) reported the least amount, 1.28 inches.

Precipitation during February fell as rain and snow. Snow was above normal statewide. Chardon (Geauga County) reported 36.5 inches of snow for February, which brought its winter season total to 125.5 inches, about 43 inches above normal. Many locations reported measurable precipitation on nearly one-half of the days in February, although only a few of those days had significant amounts of precipitation. During the first nine days of the month most locations received at least 1 inch of precipitation (liquid, melted) with as much as 3 inches reported in extreme south-central Ohio. Rain mostly fell across the state during February 1-2, but changed to a period of snow on February 2 across northern Ohio. Heavy snow during February 4-5 fell in the northern half of Ohio while a mix of snow and freezing rain occurred in southern Ohio. Snow during February 8-9 brought 1-3 inches across most of the state with more than 5 inches reported in northeastern Ohio. Precipitation during February 14-17 fell as snow across northern Ohio and as a mix of snow and rain in southern Ohio. Warmer temperatures and a storm system produced widespread rain during February 20-21. Some of these storms were severe with high winds and brief heavy downpours. Two rare February tornadoes touched down in the state during this storm: one in Delaware County and the other in Montgomery County. Most areas of Ohio reported from 0.50 inch to more than 1.5 inches of rain during this period. For a second straight month, runoff from rain and melting snow, compounded by ice jams, brought many streams out of their banks. Flooding was minor, limited to low-lying areas. Colder temperatures returned to the state during the last few days of the month with periods of light snow; heavier snow fell across northeastern Ohio where several inches were reported.

Precipitation for the 2014 water year is above normal statewide. The average for the state is 15.74 inches, 2.35 inches above normal. Regional averages range from 17.18 inches, 2.59 inches above normal, for the Southwest Region to 14.64 inches, 2.53 inches above normal, for the North Central Region.

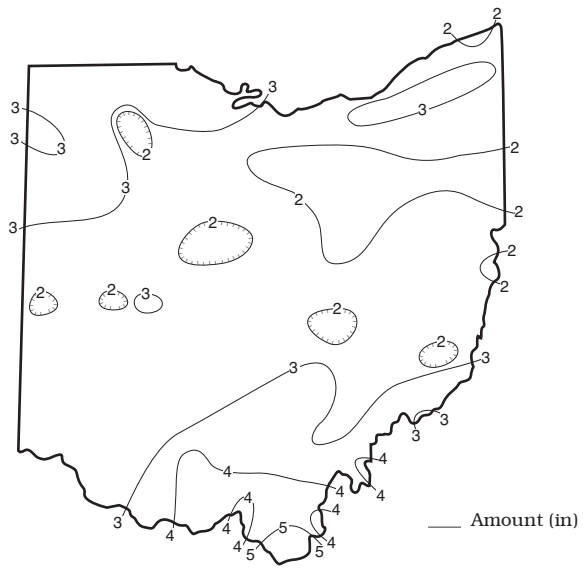
Precipitation for the first two months of the 2014 calendar year is below normal in the southwestern, central and northeastern areas of the state, and above normal in northwestern and southeastern Ohio. The state average is 4.75 inches, 0.01 inch below normal. Regional averages range from 5.87 inches, 0.27 inch above normal, for the South Central Region to 3.90 inches, 0.71 inch below normal, for the Central Hills Region.

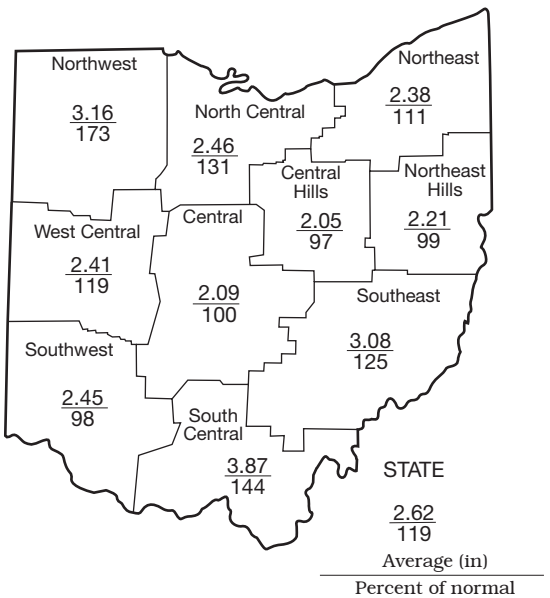
PRECIPITATION

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	+1.33	+2.11	+2.13	+3.31	-0.20	+1.7
North Central	+0.58	+1.55	+1.75	+7.40	+9.40	+3.9
Northeast	+0.24	+0.28	+1.95	+5.75	+6.22	+1.1
West Central	+0.38	+2.10	+3.58	+2.15	-1.49	+0.4
Central	0.00	+0.76	+1.38	+3.31	+0.03	+0.4
Central Hills	-0.06	+0.28	+1.17	+4.13	+1.95	+0.1
Northeast Hills	-0.03	+0.06	+0.62	+1.00	-2.86	-0.2
Southwest	-0.05	+1.12	+2.96	+2.28	-4.56	+1.1
South Central	+1.19	+2.25	+1.89	+1.15	+0.09	+0.6
Southeast	+0.62	+1.84	+0.96	+3.46	+2.41	+0.7
State	+0.42	+1.23	+1.83	+3.37	+1.07	

*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 FEBRUARY





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	1,362	76	94	108	110
Great Miami River at Hamilton	3,630	7,580	156	158	141	126
Huron River at Milan	371	1,234	240	160	154	162
Killbuck Creek at Killbuck	464	663	97	113	114	115
Little Beaver Creek near East Liverpool	496	777	104	119	105	90
Maumee River at Waterville	6,330	11,260	143	117	98	111
Muskingum River at McConnelsville	7,422	11,020	87	106	97	95
Scioto River near Prospect	567	1,156	225	156	151	159
Scioto River at Higby	5,131	9,484	122	124	116	108
Stillwater River at Pleasant Hill	503	1,057	169	168	134	110

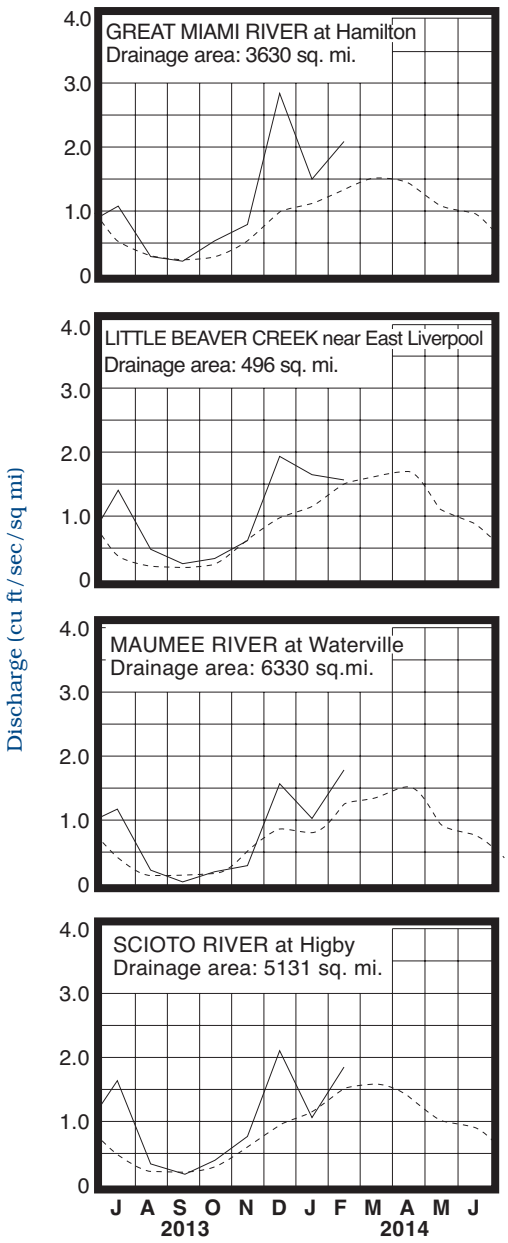
STREAMFLOW during February was above normal in the western and central drainage basins of Ohio and below normal in most eastern drainage basins. Flows in areas of western and central Ohio were high enough to be considered excessive. Flows in most areas of the state during February were greater than flows during January.

Flows at the beginning of the month were below normal throughout the state. Many drainage basins, especially in the northern third of the state, had their lowest flows for the month on February 1; other areas had slightly lower flows during February 17-18. Generally, flows declined during the first three weeks of the month. Flows increased rapidly following widespread precipitation and melting snow during February 20-21. Most drainage basins recorded the month's greatest flows during February 21-24. Minor lowland flooding was observed during this period as frozen soils allowed rainfall and melting snow to run off directly into streams. Ice jams on many streams also contributed to the flooding. Flows declined from these peaks through month's end and were below normal across much of the state, but above normal in northwestern and southeastern Ohio drainage basins.

RESERVOIR STORAGE for water supply during February increased in both the Mahoning and Scioto river basins. Storage remained above normal in both basins.

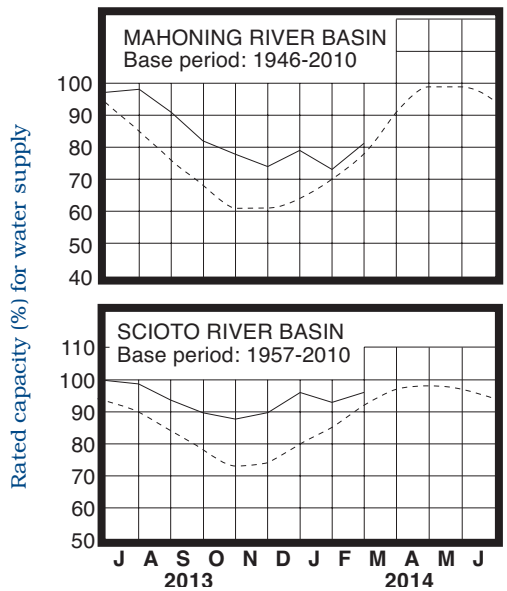
Reservoir storage at the end of February in the Mahoning basin index reservoirs was 81 percent of rated capacity for water supply compared with 73 percent for last month and 83 percent for February 2013. Month-end storage in the Scioto basin index reservoirs was 96 percent of rated capacity for water supply compared with 93 percent for last month and 97 percent for February 2013. Surface water supplies continue to remain in a favorable position throughout the state.

MEAN STREAM DISCHARGE



Base period for all streams: 1981-2010

RESERVOIR STORAGE FOR WATER SUPPLY



Normal – – – – Current ———

GROUND-WATER LEVELS

GROUND WATER levels during February declined throughout most of the state. February is usually a month when ground water levels rise statewide. Levels in most aquifers declined during the first three weeks of the month before beginning to rise during the last week of February.

The 2014 recharge season has thus far been mixed. Precipitation during the October-December period was above normal and ground water levels responded favorably. Precipitation was below normal during January and with frozen soils during much of January and February, precipitation and melting snow often became runoff instead of infiltrating the ground. As a result of frozen soils limiting the rate of recharge during the past two months, ground water storage has fallen below normal across much of the state. However, current ground water levels in most aquifers continue to remain higher than they were at the same time last year. In addition, conditions still favor additional improvement in the state's ground water storage, but with only two or three months remaining with the potential for significant recharge, it is important there be near or above normal precipitation during this period.

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

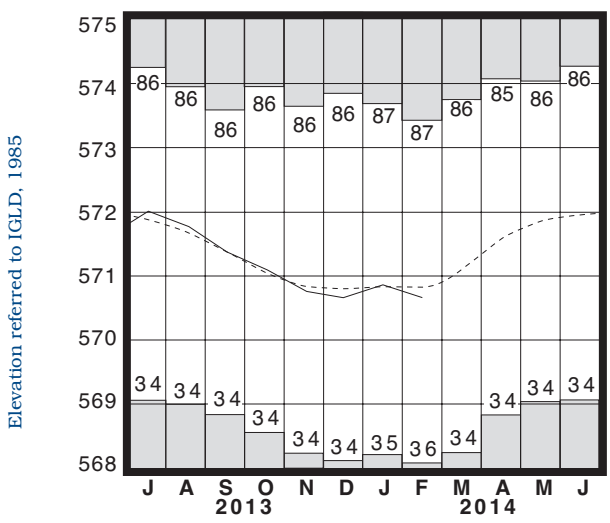
Index Well	Location	Aquifer	Mean This Month	Departure From Normal	Change in feet from:	
					Last Month	Year Ago
F-1	W. Rushville, Fairfield Co.	Sandstone	11.97	+2.43	-0.09	+1.39
Fa-1	Jasper Mill, Fayette Co.	Limestone	8.95	-1.45	-0.46	+1.86
Fr-10	Columbus, Franklin Co.	Gravel	42.49	+0.96	+0.41	+1.22
H-1	Harrison, Hamilton Co.	Gravel	22.23	-0.53	-0.42	+0.52
Hn-2a	Dola, Hardin Co.	Dolomite	7.80	+0.19	-0.72	-1.31
Po-124	Freedom, Portage Co.	Sandstone	76.97	-0.20	-0.14	+0.24
Tu-1	Strasburg, Tuscarawas Co.	Gravel	13.66	-1.10	-0.19	+0.25

LAKE ERIE level declined during February. The mean level was 570.67 feet (IGLD-1985), 0.20 foot below last month's mean level and 0.16 foot below normal. This month's level is 0.26 foot above the February 2013 level and 1.47 feet above Low Water Datum.

The U.S. Army Corps of Engineers (USACE) reports that precipitation in the Lake Erie basin during February averaged 2.49 inches, 0.40 inch above normal. For the entire Great Lakes basin, February precipitation averaged 1.64 inches, 0.14 inch below normal. For the first two months of calendar year 2014, precipitation in the Lake Erie basin is slightly above normal while precipitation in the entire Great Lakes basin is 0.84 inch below normal.

In addition, the USACE reports that based on the current condition of the Great Lakes basin and anticipated weather patterns, the level of Lake Erie should remain about 2 inches below normal for the next six months. Deviations from the anticipated weather patterns could result in the level of Lake Erie ranging from about 5 inches above normal to as much as 12 inches below the normal seasonal level.

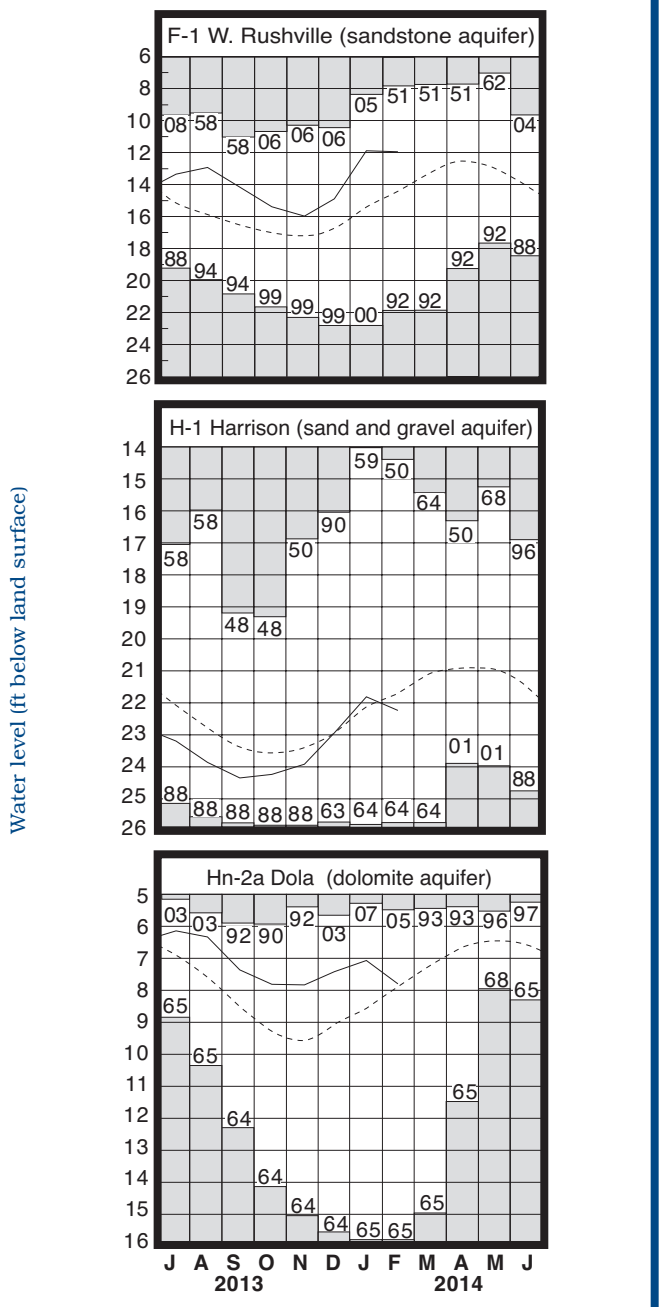
LAKE ERIE LEVELS



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 ———

SUMMARY

Precipitation during February was above normal throughout most of Ohio, but slightly below normal in the Central Hills, Northeast Hills and Southwest regions. Streamflow was above normal in western and central Ohio drainage basins, but below normal in most eastern Ohio drainage basins. Reservoir storage increased and was above normal. Ground water levels declined throughout most of the state and fell to below normal levels across much of Ohio. Lake Erie level declined 0.20 foot and was 0.16 foot below the long-term February average.

NOTES AND COMMENTS

Severe Weather Awareness Week

Governor John Kasich has designated the week of March 2-8, 2014 as Ohio's Spring Severe Weather Awareness Week. For the second year in a row, this year's safety campaign coincides with the Federal Emergency Management Agency's (FEMA) and the National Oceanic and Atmospheric Administration's (NOAA) National Severe Weather Preparedness Week. The goal is to better educate people about the hazards of severe weather and to encourage people to have a plan in the event severe weather should occur. Each year the Ohio Committee for Severe Weather Awareness (OCSWA) sponsors two awareness weeks to draw attention to the need to prepare for severe weather. The OCSWA consists of representatives from the National Weather Service, American Red Cross, Emergency Management Association of Ohio, Ohio Citizens Corps, State Fire Marshal's office, Ohio Emergency Management Agency, Ohio Departments of Aging, Education, Health, Insurance, Natural Resources, and Transportation, Ohio Mental Health and Addiction Services, WBNS-10TV and the Ohio Insurance Institute. Communities and individuals should take this opportunity to think about what course of action they would take in the event if severe weather was to affect them and their property.

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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