



MONTHLY WATER INVENTORY REPORT FOR OHIO

January 2014

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Hydrologist, Water Inventory Unit

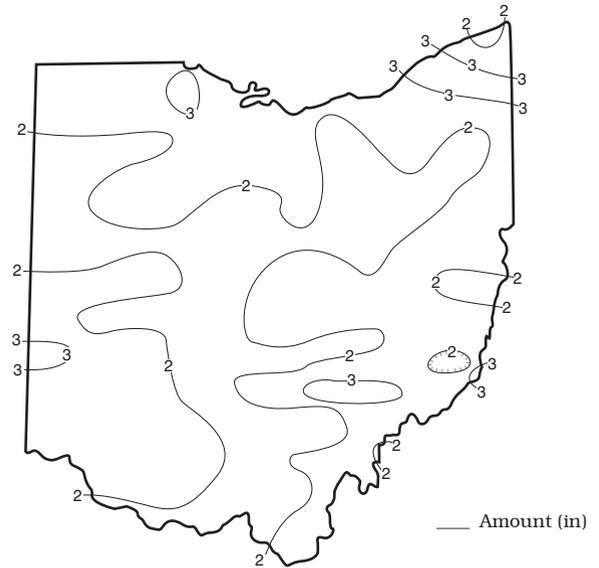
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PRECIPITATION during January was below normal throughout most of the state; only the Northwest Region had above normal precipitation. The state average was 2.13 inches, 0.43 inch below normal. Regional averages ranged from 2.57 inches, 0.29 inch below normal, for the Southwest Region to 1.85 inches, 0.65 inch below normal, for the Central Hills Region. Painesville Water Plant (Lake County) reported the greatest amount of January precipitation in Ohio, 3.54 inches. Ashtabula (Ashtabula County) reported the least amount of precipitation, 1.07 inches.

Precipitation during January fell as both rain and snow. Snow amounts were above normal statewide and temperatures were much below normal for the month. Chardon (Geauga County), located in the northeast Ohio snowbelt, recorded 50 inches of snow for January, which is about 20 inches above normal. Toledo Express Airport (Lucas County) reported 40 inches of snow for the month making this the snowiest January on record for Toledo. Many locations reported measureable precipitation on more than half of the days in January, although only a few days had significant amounts. The month began with snow falling across northern Ohio on New Year's Day and across most of the state on January 2. Generally, 4-10 inches of snow was reported in northern Ohio while 2-5 inches fell across southern Ohio. Precipitation during January 5-6 fell as mostly rain across most of the state and ended as a period of snow on the sixth. The exception was in northwestern Ohio where the precipitation fell as snow with more than 12 inches reported at some locations. Precipitation totals (melted, liquid) varied during this storm from 0.50-1.0 inch across the northwestern half of the state to less than 0.50 inch in the southeastern half. Light snow fell during January 9-10 with generally 1-3 inches accumulating throughout most of Ohio. Warmer temperatures ushered in rain on January 11 with 0.25-0.50 inch falling across most of the state. The resultant runoff from the rain and melting snow was exacerbated by frozen soils and ice jams on many area streams, in particular throughout northern Ohio. Flooding was widespread across northern Ohio but was mostly minor and confined to low-lying areas. Light rain fell across the state on January 13 with 0.25 inch or less falling at most locations. Precipitation fell on the majority of days during the second half of the month. The precipitation was light on most days and fell as mainly snow throughout this period. The strongest storm during this period occurred on January 25-26 as snow fell across the state with 5-10 inches common. With temperatures averaging well below normal during the remainder of the month, significant amounts of snow remained on the ground at the end of January.

Precipitation for the 2014 water year is above normal statewide. The average for the state is 13.12 inches, 1.93 inches above normal. Regional averages range from 14.73 inches, 2.64 inches above normal, for the Southwest Region to 11.57 inches, 1.68 inches above normal, for the Northwest Region.

PRECIPITATION JANUARY



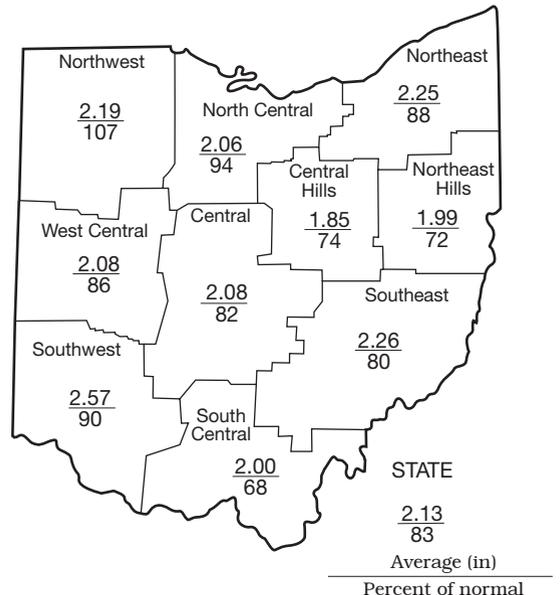
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PRECIPITATION

Region	DEPARTURE FROM NORMAL (IN.) Base period 1961-2010					Palmer Drought Severity Index*
	This Month	Past				
		3 Mos.	6 Mos.	12 Mos.	24 Mos.	
Northwest	+0.15	+0.16	-0.35	+2.41	-1.61	+1.6
North Central	-0.12	+0.61	+0.90	+7.01	+9.05	+4.1
Northeast	-0.31	+0.17	+1.36	+5.51	+5.90	+1.7
West Central	-0.33	+1.41	+1.04	+1.26	-2.69	+0.8
Central	-0.46	+0.70	+0.46	+3.10	-0.69	+0.6
Central Hills	-0.65	+0.26	-0.54	+4.19	+1.70	+0.5
Northeast Hills	-0.77	+0.27	-0.80	+0.86	-3.38	0.0
Southwest	-0.29	+0.88	+1.18	+1.37	-5.74	+1.3
South Central	-0.92	+1.44	-0.25	-1.13	-2.20	+0.2
Southeast	-0.55	+1.59	+0.73	+2.46	+0.80	+0.7
State	-0.43	+0.74	+0.36	+2.68	+0.08	

*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



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	1,072	83	110	120	110
Great Miami River at Hamilton	3,630	5,440	134	154	134	118
Huron River at Milan	371	475	100	139	133	144
Killbuck Creek at Killbuck	464	532	105	129	118	113
Little Beaver Creek near East Liverpool	496	820	144	121	107	89
Maumee River at Waterville	6,330	6,452	128	98	86	103
Muskingum River at McConnellsville	7,422	10,950	133	115	101	94
Scioto River near Prospect	567	634	141	160	155	151
Scioto River at Higby	5,131	5,481	93	124	112	101
Stillwater River at Pleasant Hill	503	577	132	152	123	100

STREAMFLOW during January was above normal throughout most of Ohio. Flows in most drainage basins during January decreased noticeably from the excessive flows recorded during December.

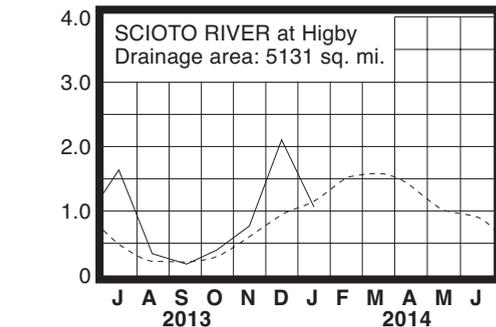
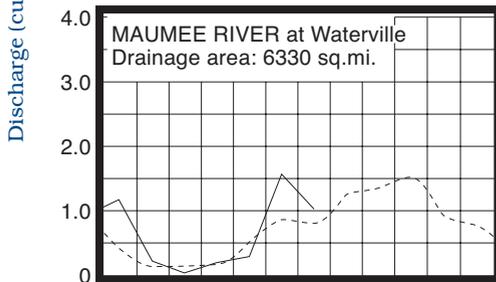
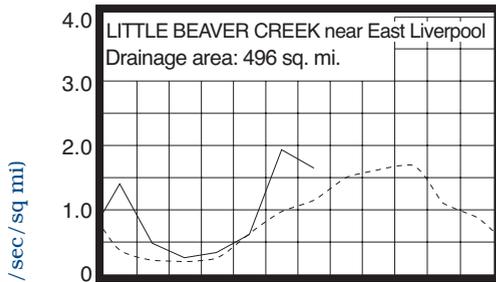
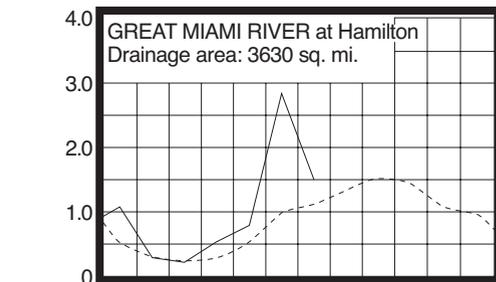
Flows at the beginning of the month were generally above normal in the southeastern half of the state and below normal in the northwestern half. Flows were rather stable or declined during the first 10 days of the month across most of Ohio. Flows increased rapidly on January 11 following precipitation and melting snow. The runoff from frozen soils compounded by ice jams forced several streams out of their banks, mainly in the northern half of the state. Most of the flooding was minor confined to low-lying areas. However, some roads in low-lying areas were flooded for several days. Counties and streams in north-central and northeastern Ohio were impacted the most by

the flooding. Greatest flows for the month occurred during January 12-14 statewide. Flows decreased from these peaks through the remainder of the month as frozen precipitation and cold temperatures significantly reduced the amount of runoff into streams. Lowest flows for the month occurred at or near the end of January across most of Ohio. Flows at the end of the month were below normal throughout most of the state.

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

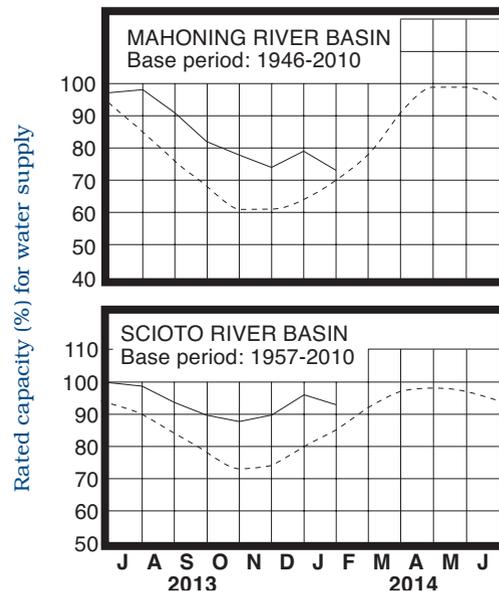
Reservoir storage at the end of January in the Mahoning basin index reservoirs was 73 percent of rated capacity for water supply compared with 79 percent for both last month and January 2013. Month-end storage in the Scioto basin index reservoirs was 93 percent of rated capacity for water supply compared with 96 percent for last month and 97 percent for January 2013.

MEAN STREAM DISCHARGE



Base period for all streams: 1981-2010

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	11.88	+3.61	+2.99	+3.46
Fa-1	Jasper Mill, Fayette Co.	Limestone	8.49	-0.51	+0.18	+5.48
Fr-10	Columbus, Franklin Co.	Gravel	42.90	+1.06	+0.45	+1.25
H-1	Harrison, Hamilton Co.	Gravel	21.81	+0.31	+1.13	+1.17
Hn-2a	Dola, Hardin Co.	Dolomite	7.08	+1.49	+0.34	-0.47
Po-124	Freedom, Portage Co.	Sandstone	76.83	-0.01	+0.12	+0.48
Tu-1	Strasburg, Tuscarawas Co.	Gravel	13.47	-0.29	+1.20	+0.65

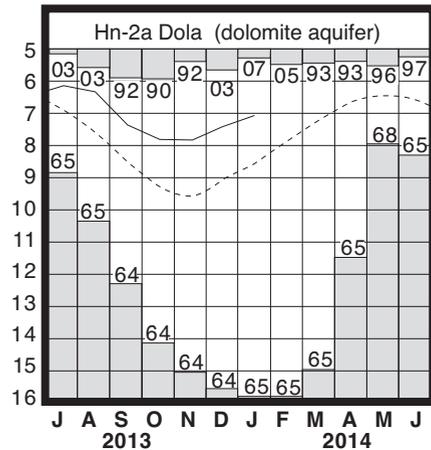
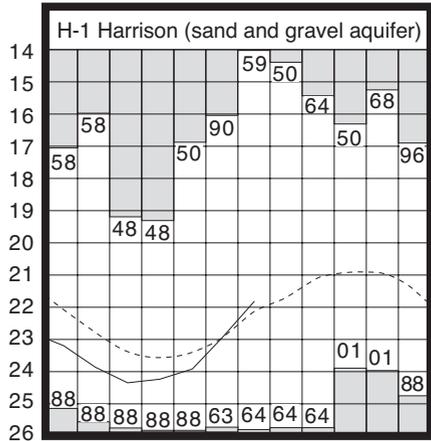
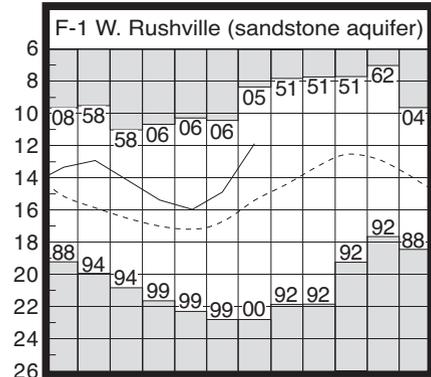
GROUND WATER levels during January rose throughout the state. Levels in most aquifers rose during the first half of the month and declined during the second half. Exceptions were noted in southern Ohio where some consolidated aquifers rose throughout most of the month, then began declining near month's end. Below normal temperatures, frozen soils and frozen precipitation limited recharge, especially during the second half of the month.

Ground water storage continues to remain at near or above normal levels across most of the state. Also, ground water levels in most aquifers are higher than they were at the same time last year. Current conditions generally favor continued improvement in ground water storage; however, the frozen soils could have a negative impact on recharge rates as melting snow and any new precipitation will tend to runoff instead of infiltrate the ground. Near-normal precipitation and other climatic conditions will be necessary during the next few months to sustain the improvement in ground water storage that has occurred thus far during the 2014 water year recharge season.

LAKE ERIE level rose during January. The mean level was 570.87 feet (IGLD-1985), 0.20 foot above last month's mean level and 0.04 foot above normal. This month's level is 0.59 foot above the January 2013 level and 1.67 feet above Low Water Datum.

The U.S. Army Corps of Engineers (USACE) reports that precipitation in the Lake Erie basin during January averaged 2.15 inches, 0.34 inch below normal. For the entire Great Lakes basin, January precipitation averaged 1.50 inches, 0.70 inch below normal. In addition, the USACE reports that based on the current condition of the Great Lakes basin and anticipated future weather patterns, the level of Lake Erie should remain near normal for the next six months. Deviations from the anticipated weather patterns could result in the level of Lake Erie ranging from as high as 6 inches above to as much as 12 inches below the normal seasonal level.

GROUND-WATER LEVELS

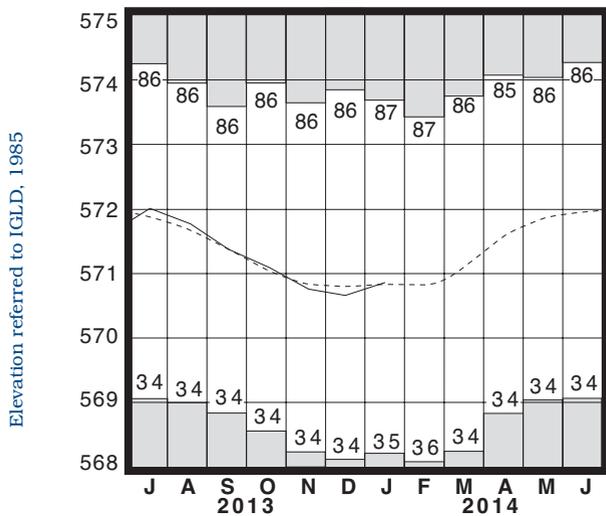


Water level (ft below land surface)

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

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

LAKE ERIE LEVELS



Base period: 1918-2010

Record high and low, year of occurrence

Normal - - - - Current ———

(Precipitation continued from front)

Precipitation for the 2014 calendar year is off to an adequate start. However, frozen soils across most of Ohio during much of January reduced the amount of recharge to ground water supplies. Near-normal precipitation and other climatic conditions during the next few months would help ensure a favorable recharge season for the state's water supplies.

SUMMARY

Precipitation during January was below normal throughout most of the state with only the Northwest Region having above normal precipitation. Streamflow was above normal across most of the state. Reservoir storage decreased but remained above normal. Ground water storage improved statewide and was near or above normal in most aquifers in Ohio. Lake Erie level rose 0.20 foot and was 0.04 foot above the long-term January average.

NOTES AND COMMENTS

Division of Soil and Water Resources Announces Staff Changes

Ted Lozier, former Deputy Chief of the Ohio Department of Natural Resources (ODNR), Division of Soil and Water Resources (DSWR), accepted a new position with the Muskingum Watershed Conservancy District (MWCD). Ted will be the Chief of Conservation in his new role at MWCD. The DSWR recently announced that Rodney Tornes will replace Ted as the Deputy Chief for the division. Rodney began his career at ODNR in August of 1989. For the past 15 years, Rodney has been the Program Manager for the Dam Safety section within the DSWR. In his new role as Deputy Chief, Rodney will be providing administrative oversight to the Dam Safety, Floodplain Management, Ground Water and Water Inventory and Planning programs. The DSWR wishes both Rodney and Ted the best in their new positions.

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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