MONTHLY WATER INVENTORY REPORT FOR OHIO

February 2001

http://www.dnr.state.oh.us/odnr/water/pubs/newsltrs/mwirmain.html
Compiled By David H. Cashell and Scott Kirk
Hydrologists
Water Inventory Unit

PRECIPITATION during February was below normal across the state except for extreme northwestern Ohio where it was above normal. The state average was 1.55 inches, 0.69 inch below normal. Regional averages ranged from 2.27 inches, 0.43 inch above normal, for the Northwest Region to 1.24 inches, 0.99 inch below normal, for the Northeast Hills Region. Stryker (Williams County) reported the greatest amount of precipitation for February, 3.76 inches. Chillicothe Mound City (Ross County) reported the least amount for the month, 0.53 inch.

Precipitation fell mainly as light snow during the first week of February and as rain during the remainder of the month. Snow accumulations for the month were below normal statewide. Most of the state received between 1-2 inches of precipitation during February. A few areas in northwestern Ohio received more than 2 inches of precipitation while an area in south-central Ohio received less than 1 inch. Most of the month's precipitation fell during two periods. The first period occurred during February 8-9 with most of the precipitation falling on the 9th as rain. Light showers fell across the state with amounts of 0.25-0.50 inch common with a few isolated areas, especially in northwestern Ohio, receiving up to 1 inch. The second period occurred around mid-month. Generally, the heaviest rains were reported on the 14th and 15th with light, scattered showers falling during the next 2 days. Precipitation totals for this period ranged from 0.50-1.0 inch across most of the state. The remainder of the month was rather dry in the eastern two-thirds of the state. In the western one-third, a weather system on February 25 brought 0.25-0.50 inch of rain to that part of the state.

Precipitation for the 2001 calendar year is below normal statewide. The average for the state as a whole is 2.88 inches, 2.12 inches below normal. Regional averages range from 3.52 inches, 1.94 inches below normal, for the Southeast Region to 2.27 inches, 1.90 inches below normal, for the North Central Region.

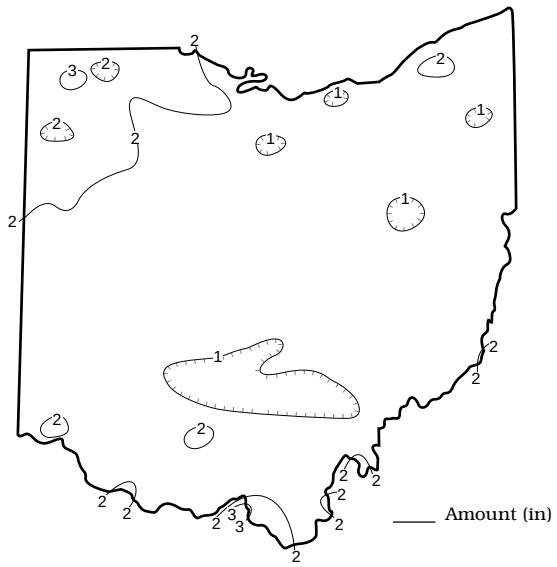
Precipitation for the 2001 water year is also below normal statewide. The state average is 10.05 inches, 2.52 inches below normal. Regional averages range from 11.62 inches, 1.38 inches below normal, for the Northeast Region to 8.52 inches, 2.50 inches below normal, for the North Central Region.

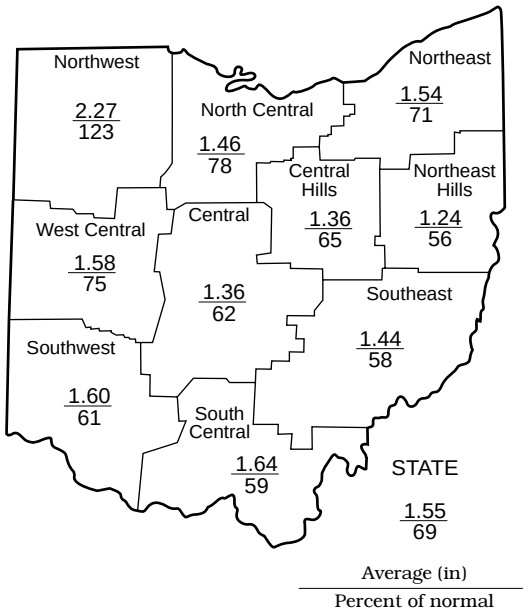
PRECIPITATION

Region	DEPARTURE FROM NORMAL (IN.) This Month	Past 3 Mos.	Past 6 Mos.	Past 12 Mos.	Past 24 Mos.	Palmer Drought Severity Index*
Northwest	+0.43	-0.24	+0.24	+3.74	-0.79	+1.9
North Central	-0.41	-1.86	-1.53	+4.32	+2.12	+1.5
Northeast	-0.63	-1.23	-1.35	+2.63	+1.80	0.0
West Central	-0.53	-2.01	-1.36	+0.01	-7.49	-0.1
Central	-0.85	-1.48	-0.92	+0.30	-6.28	-0.9
Central Hills	-0.73	-1.23	-1.32	+1.60	-2.66	-0.7
Northeast Hills	-0.99	-1.78	-2.21	+0.63	-4.41	-0.4
Southwest	-1.02	-2.75	-2.43	-2.20	-12.20	-0.9
South Central	-1.14	-2.27	-3.63	-3.50	-9.15	-1.0
Southeast	-1.05	-1.54	-1.87	-3.21	-8.06	-0.8
State	-0.69	-1.64	-1.64	+0.43	-4.73	

*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

River and Location	Drainage Area (Sq. Mi.)	This Month: Mean Discharge (CFS)	This Month: % of Normal	% of Normal Past: 3 Mos.	% of Normal Past: 6 Mos.	% of Normal Past: 12 Mos.
Grand River near Painesville	685	2,044	104	101	87	88
Great Miami River at Hamilton	3,630	4,360	90	79	81	82
Huron River at Milan	371	606	130	131	158	148
Killbuck Creek at Killbuck	464	552	79	87	85	87
Little Beaver Creek near East Liverpool	496	544	65	79	74	79
Maumee River at Waterville	6,330	15,780	224	121	110	102
Muskingum River at McConnelsville	7,422	11,290	93	88	85	89
Scioto River near Prospect	567	813	121	86	77	82
Scioto River at Higby	5,131	6,230	82	81	85	83
Stillwater River at Pleasant Hill	503	585	105	69	60	75

STREAMFLOW during February was generally above normal in the northern half of the state and below normal in the southern half. Flows were high enough to be considered excessive in a few extreme northwestern Ohio basins. Flows for the month increased seasonally from the January flows statewide.

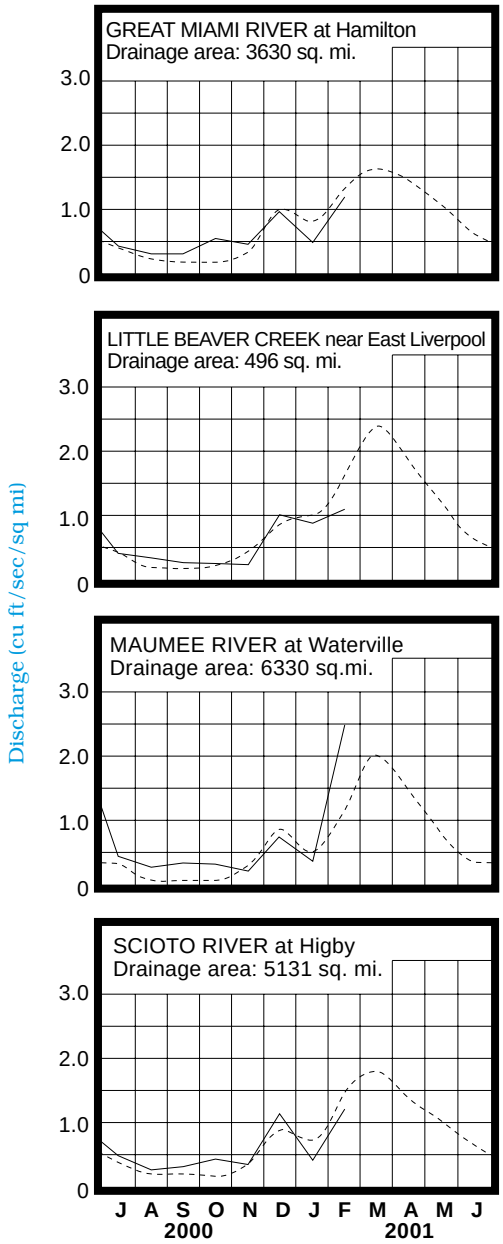
Streamflow at the beginning of the month was above normal across most of the state. Greatest flows were observed at the beginning of the month for basins in east-central, southeastern and south-central Ohio as a result of the rainfall that occurred near the end of January. Flows declined statewide during the first week of the month and were then at their lowest monthly minimum in the western half of the state. Following this, flows increased across the state in response to widespread precipitation that occurred during the next 10 days. The first increase followed precipitation that fell during February 8-9. This resulted in the greatest flows for the month occurring on February 10 in most basins in the northern half of the state. Minor flooding was reported during this time in some basins in northwestern Ohio. Flows again increased statewide following mid-month precipitation with greatest flows for the month occurring during February 16-17 in basins in central and southwestern Ohio. Flows generally declined statewide during the remainder of the month and were at their lowest monthly flow in the eastern half of the state toward the end of the month. Flows at the end of February were below normal statewide.

RESERVOIR STORAGE for water supply during February declined in the Mahoning River basin and increased in the Scioto River basin. Month-end storage was normal in the Mahoning River basin and above normal in the Scioto River basin.

Reservoir storage at the end of February in the Mahoning basin index reservoirs was 77 percent of rated capacity for water supply compared with 81 percent for last month and 86 percent for February 2000. Month-end storage in the Scioto basin index reservoirs was 103 percent of rated capacity for water supply compared with 98 percent for last month and 105 percent for February 2000.

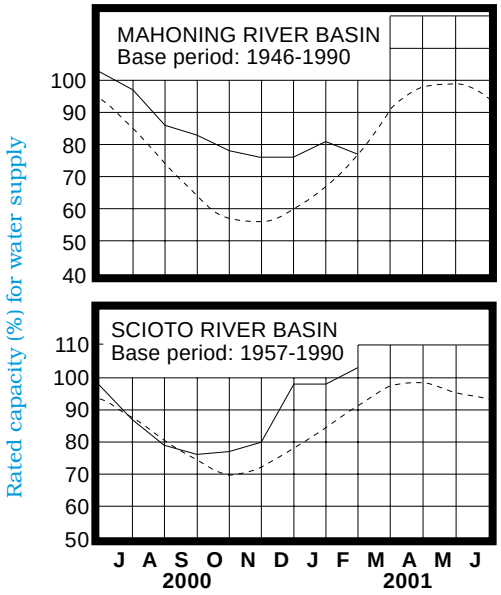
Surface water supplies continue to remain favorable across the state. Currently, both on- and off-stream reservoirs are near their normal seasonal levels. Reservoir managers will soon start capturing water and should be able to fill to summer pool or capacity provided there is near normal precipitation and streamflow during the next several months.

MEAN STREAM DISCHARGE



Base period for all streams: 1961-1990

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	15.70	-1.22	+1.60	+4.70
Fa-1	Jasper Mill, Fayette Co.	Limestone	7.50	-0.42	+0.72	+2.36
Fr-10	Columbus, Franklin Co.	Gravel	45.07	-1.98	+0.27	+0.40
H-1	Harrison, Hamilton Co.	Gravel	22.96	-1.56	+0.51	+0.66
Hn-2a	Dola, Hardin Co.	Dolomite	6.95	+0.39	+0.28	+3.65
Po-1	Windham, Portage Co.	Sandstone	21.08	-0.68	+0.37	+1.45
Tu-1	Strasburg, Tuscarawas Co.	Gravel	14.43	-2.29	+0.39	+0.99

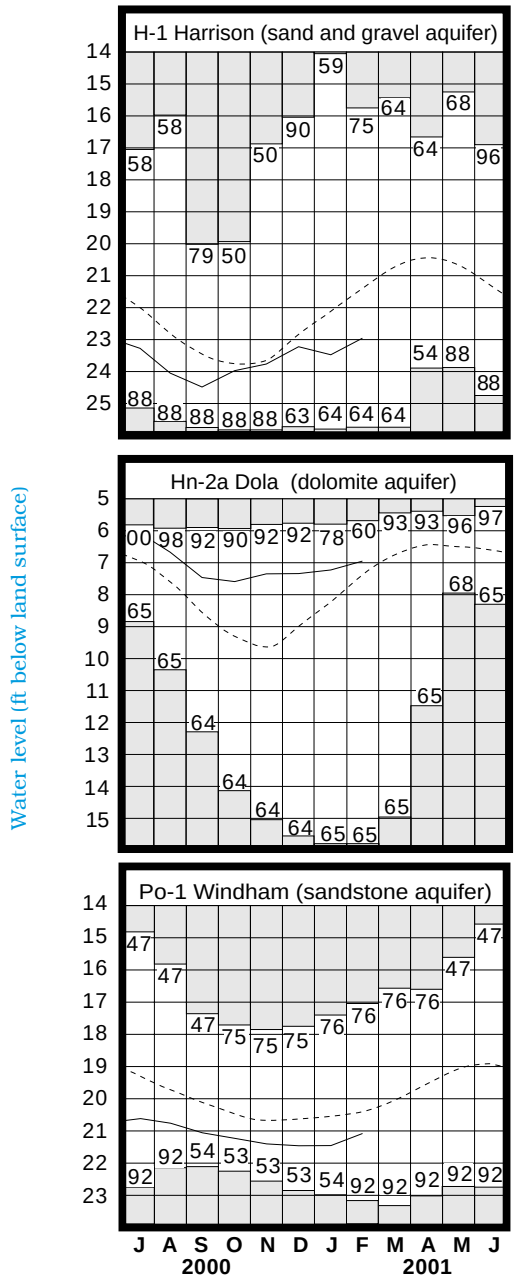
GROUND WATER levels during February showed net improvement in all aquifers throughout the state. Net changes from January's levels were greater than usually observed in some consolidated aquifers in the southern half of Ohio, but were less than usually expected across most of the remainder of the state. Generally, levels in most aquifers in the state were rather stable or rose slightly throughout the month.

Ground water storage remains below normal across most of the state, except in some carbonate aquifers in northwestern Ohio where water levels are above normal. Although ground water storage is below normal, levels remain above the February 2000 levels statewide ranging from about 0.5 foot to nearly 5 feet above last year's levels. Several months remain with the potential for additional recharge. Normal precipitation and other climatic conditions during the next several months could provide much needed recharge to the state's ground water supplies.

LAKE ERIE level rose during February. The mean level was 570.44 feet (IGLD-1985), 0.33 foot higher than last month's mean level and 0.16 foot below normal. This month's mean level is 0.33 foot higher than the February 2000 level and 1.24 feet above Low Water Datum.

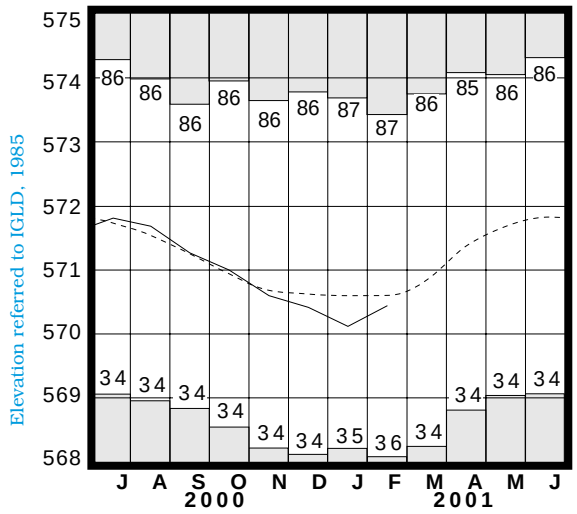
The U. S. Army Corps of Engineers (USACE) reports that precipitation in the Lake Erie basin during February averaged 2.23 inches, 0.17 inch above normal, and the entire Great Lakes basin averaged 2.39 inches, 0.63 inch above normal. For calendar year 2001 through February, the Lake Erie basin has averaged 4.06 inches of precipitation, 0.44 inch below normal, while the entire Great Lakes basin has averaged 4.07 inches which is 0.14 inch above normal. In addition, the USACE predicts that, based on the current condition of the Great Lakes basin and anticipated future weather conditions, the level of Lake Erie should range from 0.5-1.0 foot below the long-term seasonal average for the foreseeable future. However, deviations from the expected weather patterns could result in the lake level ranging from slightly below to nearly 2 feet below the normal seasonal levels. Preliminary forecasts predict Lake Erie will reach summer peak during mid-May which is 4 or 5 weeks earlier than normal.

GROUND-WATER LEVELS



Base periods: H-1, 1951-1990. Hn-2a, 1955-1990. Po-1, 1947-1990 ▭ Record high and low, year of occurrence

LAKE ERIE LEVELS at Fairport



Base period: 1900-1991

▭ Record high and low, year of occurrence

Normal - - - - Current ———

SUMMARY

Precipitation during February was below normal across the state except for areas in extreme northwestern Ohio where it was above normal. Streamflow was generally above normal in the northern half of the state and below normal in the southern half. Reservoir storage decreased in the Mahoning River basin and increased in the Scioto River basin. Reservoir storage was near or above normal. Ground water levels showed net improvement statewide, but remained below normal across most of the state. Lake Erie level rose 0.33 foot and was 0.16 foot below the long-term February average.

NOTES AND COMMENTS

EL SALVADOR EARTHQUAKE MAKES ITS MARK IN OHIO

On January 13, 2001 at 12:33 pm EST, an earthquake measuring 7.8 on the open-ended Richter scale hit El Salvador causing severe damage and loss of lives. Shock waves radiating out from the epicenter of the quake traveled through rock formations and reached Ohio. Seismic waves pass through rock formations and cause alternating compression and expansion of the rock. Water levels in some wells finished in certain rock formations may rise and fall with the passing of these waves. Several wells in Ohio's observation well network have responded to earthquakes in the Western Hemisphere. Minimum Richter scale readings of 6.5 to 7.0, depending on the earthquake's location, are necessary for wells in Ohio to show any response. The most sensitive well in Ohio's observation well network is VW-1, located in Van Wert (Van Wert County). Seismic waves from the El Salvador earthquake caused a 0.6 foot fluctuation of water level in this well. The most notable earthquake related fluctuation in VW-1 occurred March 27, 1964 when the water level changed 5.8 feet following the Alaskan Good Friday earthquake that had a Richter scale magnitude of 8.4.

The Division of Geological Survey of the Ohio Department of Natural Resources has established a seismograph network throughout the state in order to continuously record earthquake activity. The Ohio Seismograph Network, also known as OhioSeis, is responsible for detecting and locating earthquake activity in Ohio and its border regions. The 21 stations in the network are distributed across the state, but are concentrated in the most seismically active areas or in areas that provide optimal conditions for detecting and locating small earthquakes that are below the threshold of being felt by humans. One of the long-term goals of the network is to assess the earthquake risk to the state and determine where active faults lay which can then be used to identify areas with the greatest earthquake risk. Detecting these smaller earthquakes, which occur more frequently, will help identify the location of faults that may periodically produce larger, potentially damaging earthquakes.

Information about the OhioSeis network is provided to the general public, government agencies and news media. If you would like more information about OhioSeis, please visit the Division of Geological Survey's web page at: http://www.dnr.state.oh.us/odnr/geo_survey/.

SEVERE WEATHER SAFETY AWARENESS WEEK

Governor Taft has proclaimed March 25th through 31st as Severe Weather Safety Awareness Week. Each year the Ohio Severe Weather Committee (OSWC) sponsors 2 awareness weeks to draw attention to the need to prepare for severe weather. The OSWC consists of representatives from National Weather Service, Ohio Departments of Education - Health - Natural Resources, Ohio Emergency Management Agency, County Emergency Management Director's Association, Red Cross, Ohio Insurance Institute, State Fire Marshal's office, and the Ohio News Network. A statewide tornado drill will be conducted on March 28, 2001 at 9:50 am. Communities and individuals should use this time to think about what course of action they would take in the event if severe weather were to affect them and their property.

For more information, please visit the National Weather Service (Wilmington, Ohio) web page at: http://www.nws.noaa.gov/er/iln/ or call 937-383-0031.

ACKNOWLEDGMENTS

This report has been compiled from Division of Water 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.

DIVISION OF WATER
1939 FOUNTAIN SQUARE
COLUMBUS, OHIO 43224

Bob Taft
Governor

Samuel W. Speck
Director

James R. Morris P.E.
Chief

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