MONTHLY WATER INVENTORY REPORT FOR OHIO

February 1999

http://www.dnr.state.oh.us/odnr/water/pubs/newsltrs/mwirmain.html

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PRECIPITATION during February was above normal throughout much of the state, but below normal in portions of northwestern, north-central, northeastern and southeastern Ohio. The state average was 2.59 inches, 0.35 inch above normal. Regional averages ranged from 3.68 inches, 1.06 inches above normal, for the Southwest Region to 1.76 inches, 0.11 inch below normal, for the North Central Region. Cheviot (Hamilton County) reported the greatest amount of precipitation for the month, 4.99 inches. Maumee State Forest (Fulton County) reported the least amount, 1.11 inches.

Precipitation fell during every week of February, generally falling as rain during the first half of the month and as snow or a wintery mix during the second half. For the month, snowfall was below normal statewide. The month started with moderate rain falling throughout the state during February 1-2 with additional sprinkles and showers continuing to fall on and off for the next few days. Total accumulations around the state averaged 0.5 inch or so during the week. In spite of the bright lights from all the television cameras, rain and overcast skies precluded "Buckeye Chuck" from seeing his shadow on February 2, forecasting an early spring. Heavier rain moved through much of the state during February 7-8 although many areas in the northern third of Ohio saw mostly snow from this storm. Total precipitation ranged from 0.5 to 1.5 inches in the southern two-thirds of the state to less than 0.25 inch in extreme northwestern Ohio. The heaviest amounts fell in portions of west-central, south-central and southwestern Ohio. The next storm period was during February 11-12 as rain which changed to snow, especially in northeastern Ohio, fell as a cold front moved through the state. Total precipitation during this period ranged from 0.25 to around 0.5 inch. During the next week, light showers fell again during February 15-17 with generally less than 0.25 inch of rain reported. Light snow fell on and off during February 20-25. Temperatures warmed enough by February 27 to allow the precipitation to fall as moderately heavy rain throughout much of the state, but the precipitation changed back to a wintery mix on February 28 as temperatures dropped. Most locations received 0.5 to 1 inch of precipitation (liquid) during this period.

Precipitation for the first two months of the 1999 calendar year is above normal throughout Ohio. The state average is 6.87 inches, 1.87 inches above normal. Regional averages range from 8.14 inches, 2.29 inches above normal, for the Southwest Region to 4.72 inches, 0.55 inch above normal, for the North Central Region. Precipitation during the 1999 calendar year is off to a good start as far as water supplies are concerned.

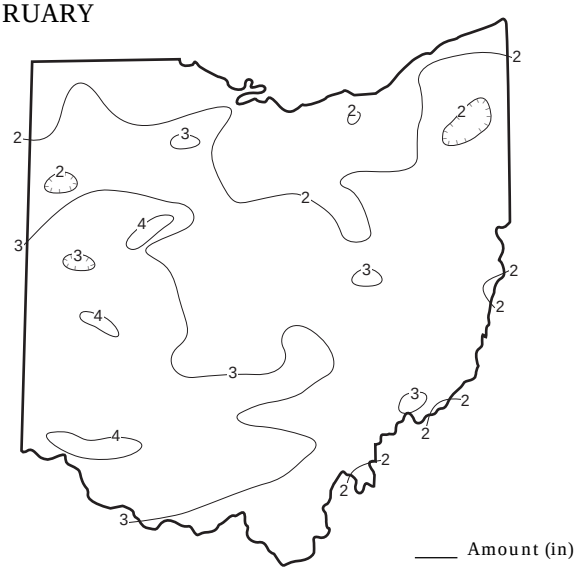
Precipitation for the 1999 water year is above normal in the southern two-thirds of the state and below normal in the northern third. The state average is 13.63 inches, 1.06 inches above normal. Regional averages range from 16.31 inches, 2.27 inches above normal, for the Southwest Region to 9.36 inches, 1.66 inches below normal, for the North Central Region.

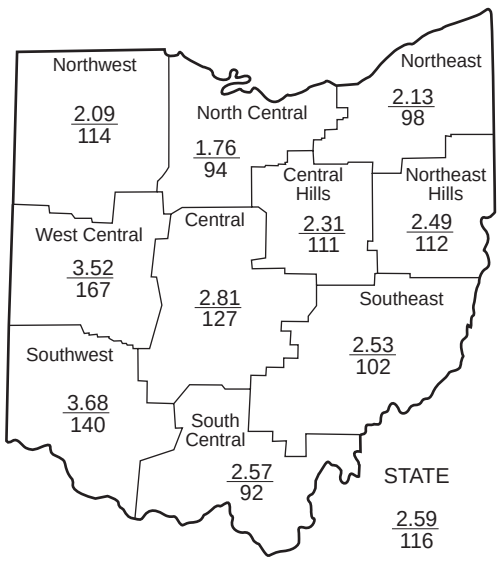
PRECIPITATION

Region	DEPARTURE FROM NORMAL (IN.) This Month	Past 3 Mos.	Past 6 Mos.	Past 12 Mos.	Past 24 Mos.	Palmer Drought Severity Index*
Northwest	+0.25	+0.22	-2.50	+3.92	+10.19	+0.6
North Central	-0.11	-0.25	-3.53	+2.36	+7.54	+0.1
Northeast	-0.04	+0.47	-1.90	-0.74	+0.20	+0.2
West Central	+1.41	+2.34	-0.26	+5.69	+4.11	+1.1
Central	+0.60	+1.47	+0.13	+1.93	+3.82	+1.0
Central Hills	+0.22	+1.28	+0.02	+3.51	+3.83	+0.7
Northeast Hills	+0.26	+2.50	+1.31	+5.81	+6.13	+0.3
Southwest	+1.06	+2.43	+0.26	+6.34	+5.83	+1.1
South Central	-0.21	+1.36	-0.84	+2.89	+6.80	+1.9
Southeast	+0.04	+1.76	+1.20	+4.53	+9.58	+1.2
State	+0.35	+1.36	-0.62	+3.61	+5.79	

*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	968	49	57	45	60
Great Miami River at Hamilton	3,630	6,085	125	123	96	130
Huron River at Milan	371	195	42	90	87	139
Killbuck Creek at Killbuck	464	617	88	120	108	109
Little Beaver Creek near East Liverpool	496	750	89	150	130	115
Maumee River at Waterville	6,330	5,759	82	113	92	119
Muskingum River at McConnelsville	7,422	14,410	119	132	116	125
Scioto River near Prospect	567	502	75	102	81	95
Scioto River at Higby	5,131	6,496	86	103	90	117
Stillwater River at Pleasant Hill	503	863	155	145	99	128

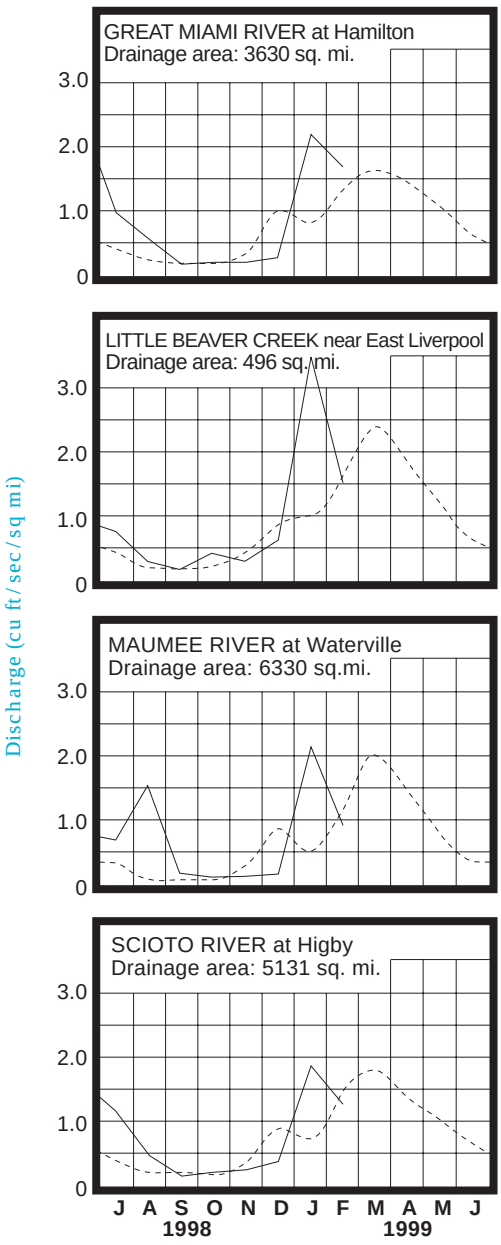
STREAMFLOW during February was below normal throughout most of Ohio, but above normal in the western and southwestern areas of the state. Flows in north-central Ohio were low enough to be considered deficient. February flows were noticeably less than the above-normal flows recorded during January.

Flows at the beginning of February were near or below normal in most areas of the state. Flows increased during the first few days of the month following moderate, statewide precipitation and then again at the end of the first week following much greater precipitation. Some drainage basins in northern Ohio had their greatest flows for February early in the first week, but most basins throughout the state had their greatest flows during February 8-10. Generally, flows declined steadily during the second half of the month bottoming out at noticeably below-normal levels during February 25-27. Flows began to increase sharply the last day of the month in response to precipitation and had risen to above-normal levels in all areas except northeastern Ohio.

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

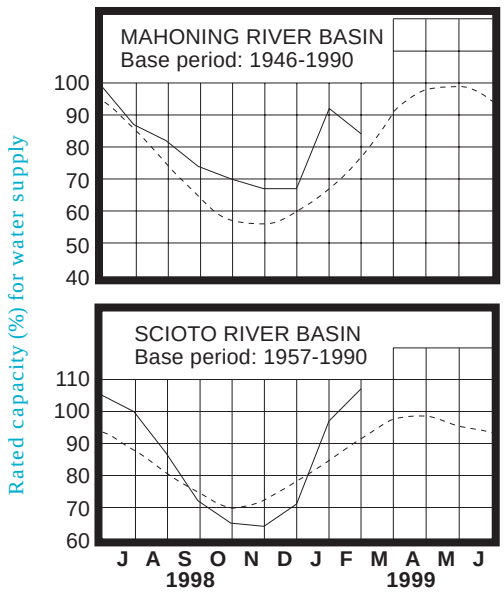
Reservoir storage at the end of February in the Mahoning basin index reservoirs was 84 percent of rated capacity for water supply compared with 92 percent for last month and 85 percent for February 1998. Month-end storage in the Scioto basin index reservoirs was 107 percent of rated capacity for water supply compared with 97 percent for last month and 106 percent for February 1998. Surface-water supplies remain in good shape throughout the state.

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	13.11	+1.37	+3.20	+1.00
Fa-1	Jasper Mill, Fayette Co.	Limestone	7.60	-0.52	+1.61	-0.49
Fr-10	Columbus, Franklin Co.	Gravel	43.56	-0.47	+0.55	-1.17
H-1	Harrison, Hamilton Co.	Gravel	21.12	+0.28	+1.61	+1.45
Hn-2a	Dola, Hardin Co.	Dolomite	7.70	-0.36	+1.85	-1.33
Po-1	Windham, Portage Co.	Sandstone	21.39	-0.99	+0.38	-0.94
Tu-1	Strasburg, Tuscarawas Co.	Gravel	11.97	+0.17	+1.96	+2.90

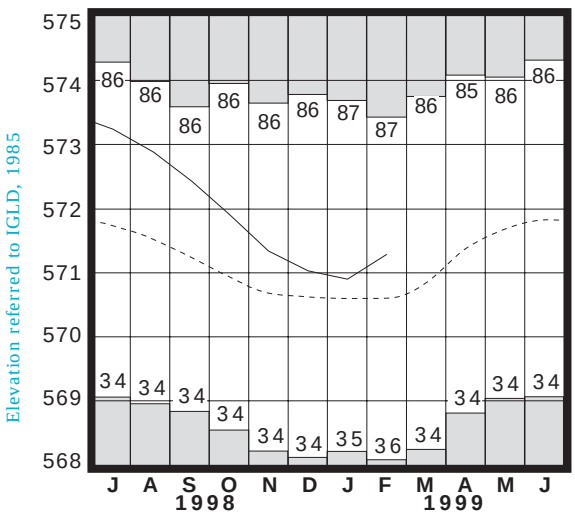
GROUND WATER levels during February showed net improvement from last month's levels in all aquifers throughout the state. Net changes during February from January's levels were greater than usually observed, ranging from about average to nearly four times that expected. Generally, ground-water levels rose steadily throughout the month. A few exceptions were noted in shallow unconsolidated aquifers were levels were stable or declined slightly during the second half of the month.

Precipitation during early February reinforced the improvement in ground-water storage that began in January. Although ground water levels remain below normal in most aquifers, levels in some shallow aquifers have risen above the normal seasonal levels. Current levels in most of these shallow aquifers are also higher than they were a year ago, in contrast to the other aquifers where current levels continue to run lower than last year's levels. Hydrologic and soil moisture conditions are favorable for additional recharge to ground water supplies during the next few months. However, near-normal precipitation and other climatic conditions will be needed to sustain this improvement. Although the ground water supply situation is improving, water supply managers with ground water sources should continue to monitor their situation closely throughout the recharge season.

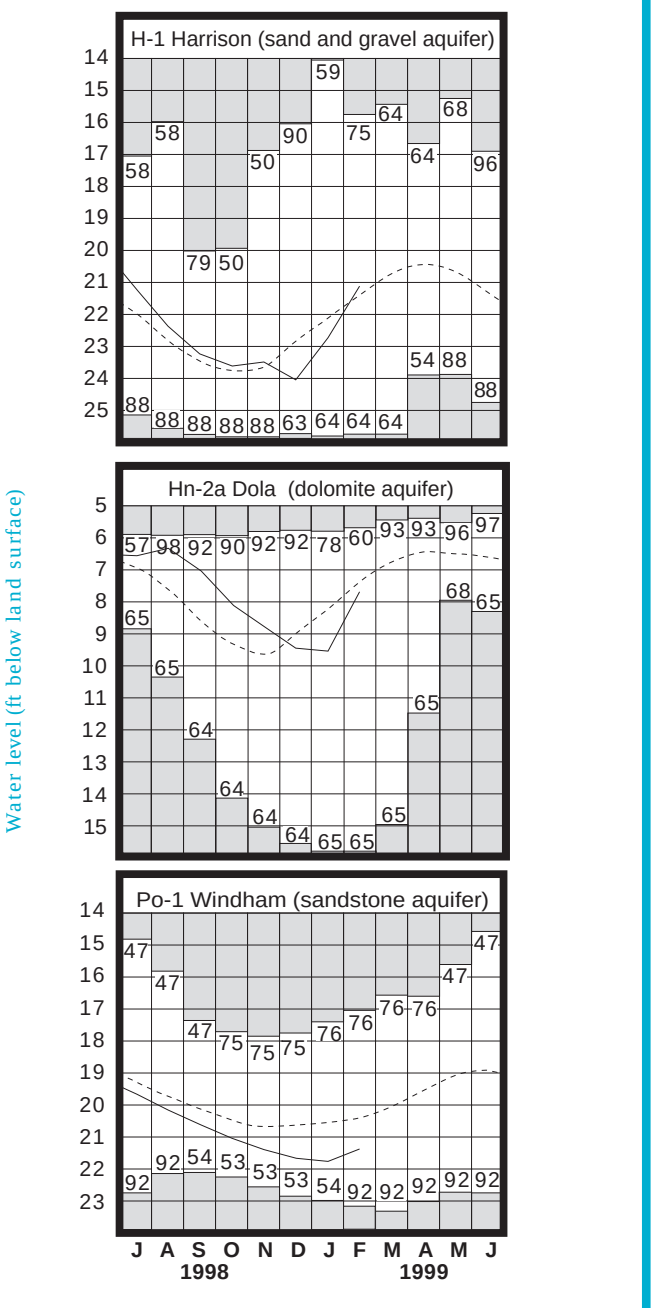
LAKE ERIE level started its seasonal rise during February. The mean level for February was 571.29 feet (IGLD-1985), 0.39 foot higher than last month's mean level and 0.69 foot above normal. This month's level is 1.81 feet lower than the February 1998 level and 2.09 feet above Low Water Datum.

The U. S. Army Corps of Engineers reports that precipitation in the Lake Erie basin during February averaged 1.9 inches, 0.2 inch below normal. The entire Great Lakes basin averaged 1.8 inches of precipitation during February which is normal. For calendar year 1999 through February, the Lake Erie basin has averaged 5.6 inches of precipitation, 1.1 inches above normal, and the entire Great Lakes basin has averaged 5.0 inches, 1.1 inches above normal.

LAKE ERIE LEVELS at Fairport



GROUND-WATER LEVELS



SUMMARY

Precipitation was above normal throughout most of the state except in portions of northern Ohio and a few locations in southeastern Ohio were it was below normal. Streamflow was below normal in most areas with only those drainage basins in western and southwestern Ohio having above normal flows. Reservoir storage decreased in the Mahoning basin, but increased in the Scioto basin. Storage remained above normal in both basins. Ground water storage improved in all aquifers across the state, but levels remain below normal in the deeper aquifers. Lake Erie reversed its seasonal decline during the month rising 0.39 foot to a level which was 0.69 foot above the long-term February average. Water supplies are in good condition throughout Ohio.

NOTES AND COMMENTS

South Fork Licking River Watershed Initiative

The Ohio Department of Natural Resources (ODNR) is spearheading the South Fork Licking River Watershed Initiative, a new partnership of local, state and federal government agencies formed to address flooding concerns and related issues in major portions of Licking, Fairfield and Perry counties. The Natural Resources Conservation Service is active at the federal level. State-level agencies include ODNR and the Ohio Department of Transportation. At the local level, County Commissioners from the three impacted counties (Licking, Fairfield and Perry counties) and the South Licking Watershed Conservancy District are represented. The targeted region encompasses the watershed of the South Fork Licking River, including Raccoon Creek, Buckeye Lake and the Kirkersville Feeder Canal. Fuller, Mossbarger, Scott & May Engineers, Inc. of Columbus, Ohio, was chosen by ODNR to conduct the watershed project.

The South Fork Licking River Watershed Initiative seeks to develop a plan that will provide environmentally sound water management in the watershed through effective practices with local community involvement and support. The project will use the watershed approach which is a stakeholder-driven planning process to gather data, define the problem, obtain public input and involvement, evaluate possible solutions and recommend a plan for better management of flooding and stormwater runoff related problems in the watershed. A Citizens Advisory Group with broad representation from the entire watershed and affected parties has been formed to provide input and increase public involvement in the project.

The objective of the South Fork Licking River Watershed Initiative is to develop, evaluate and recommend measures to resolve flood problems, taking into account current and potential future conditions. The overall schedule for the completion of the initiative runs into the year 2001. For further information about the initiative, please visit the South Fork Licking River Watershed Initiative Web site at www.southforkwatershed.org.

Midwest Ground Water Conference

The annual Midwest Ground Water Conference is scheduled to return to Columbus in October 2000. The organization of a planning committee is just underway. Anyone interested in helping with the conference can contact Mike Hallfrisch, ODNR Division of Water, 1939 Fountain Square, Building E-1, Columbus, Ohio, 43224-1336, phone: (614) 265-6745, e-mail: mike.hallfrisch@dnr.state.on.us.

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.*

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