MONTHLY WATER INVENTORY REPORT FOR OHIO

November 2001

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

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PRECIPITATION during November was above normal across most of the state, but below normal in much of northwestern, northeastern and the Ohio River counties of southeastern Ohio. The average for the state as a whole was 2.95 inches, 0.30 inch above normal. Regional averages ranged from 3.43 inches, 0.45 inch above normal, for the Southwest Region to 1.98 inches, 0.45 inch below normal, for the Northwest Region. Ripley Experimental Farm (Brown County) reported the greatest amount of November precipitation, 5.08 inches. Wauseon Water Plant (Fulton County) reported the least amount, 1.28 inches.

Precipitation during November fell as rain as warmer than normal temperatures prevailed across the state. The first 18 days of the month were rather dry with most areas of Ohio receiving less than 0.50 inch of precipitation. Some rain fell on November 19 and was heaviest in the southeastern half of the state with amounts generally around 0.25-0.50 inch. After a few dry days, rain returned to the state for much of the remainder of the month. The most widespread and significant precipitation of the month began late on November 26 and continued on and off through November 30. Showers with an occasional thunderstorm occurred on the 26th and 27th with steadier rains falling during November 28-30. Rainfall amounts from this period ranged from 2-3 inches in the southern two-thirds of the state to 1-2 inches in the northern third.

Precipitation for the 2001 calendar year is generally below normal in the eastern half of Ohio and above normal in the western half. The state average is 34.42 inches, 0.57 inch below normal. Regional averages range from 39.87 inches, 2.42 inches above normal, for the Southwest Region to 29.94 inches, 4.39 inches below normal, for the Northeast Region.

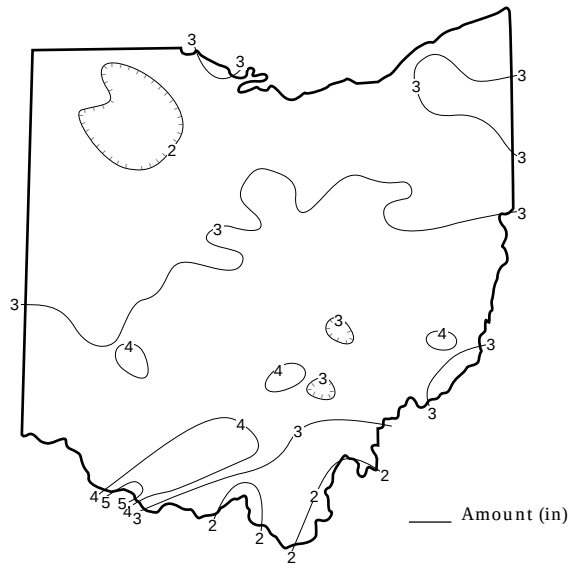
Precipitation for the first two months of the 2002 water year (October 1, 2001-September 30, 2002) is above normal statewide. The state average is 7.61 inches, 2.62 inches above normal. Regional averages range from 8.75 inches, 4.03 inches above normal, for the Northwest Region to 5.56 inches, 0.55 inch above normal, for the South Central Region. The 2002 water recharge season is off to a good start as far as precipitation is concerned. Widespread rains late in the month helped improve soil moisture supplies throughout the state. However, normal precipitation and other climatic conditions during the next several months will be needed to maintain the optimistic outlook for adequate replenishment of ground water supplies across the state.

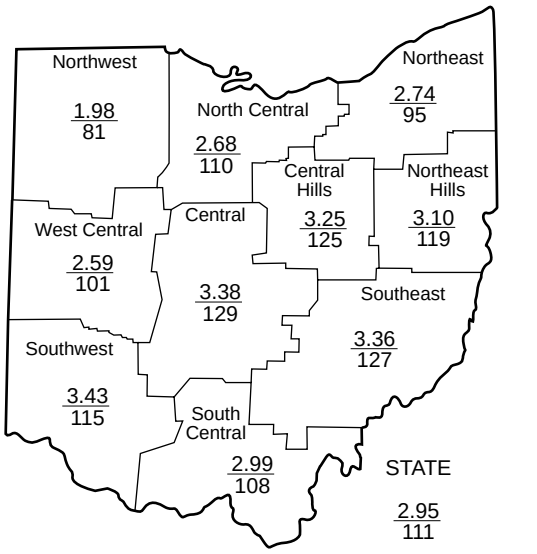
PRECIPITATION

Region	DEPARTURE FROM NORMAL (IN.) This Month	Past 3 Mos.	Past 6 Mos.	Past 12 Mos.	Past 24 Mos.	Palmer Drought Severity Index*
Northwest	-0.45	+5.37	+3.94	+4.16	+7.27	+3.1
North Central	+0.25	+4.73	+2.01	-1.46	+5.06	+2.5
Northeast	-0.14	+2.09	-0.80	-3.84	-0.25	+1.3
West Central	+0.03	+4.35	+6.26	+4.35	+6.84	+3.7
Central	+0.76	+2.59	+0.84	+1.29	+5.00	+1.2
Central Hills	+0.64	+3.08	-0.35	-2.34	+1.26	+1.5
Northeast Hills	+0.50	+2.31	-1.10	-3.04	-0.91	-0.2
Southwest	+0.45	+4.06	+6.99	+2.65	+5.77	+3.3
South Central	+0.22	-0.66	-2.71	-3.43	-2.40	-0.4
Southeast	+0.72	+0.38	-0.19	+0.87	+0.49	+0.8
State	+0.30	+2.83	+1.49	-0.07	+2.82	

*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 NOVEMBER





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	251	22	29	29	65
Great Miami River at Hamilton	3,630	3,253	249	378	221	104
Huron River at Milan	371	92	106	113	66	80
Killbuck Creek at Killbuck	464	164	80	86	72	69
Little Beaver Creek near East Liverpool	496	184	81	72	47	60
Maumee River at Waterville	6,330	1,821	102	394	192	105
Muskingum River at McConnelsville	7,422	3,063	65	69	68	77
Scioto River near Prospect	567	228	235	342	132	87
Scioto River at Higby	5,131	2,080	110	114	114	91
Stillwater River at Pleasant Hill	503	413	449	743	313	97

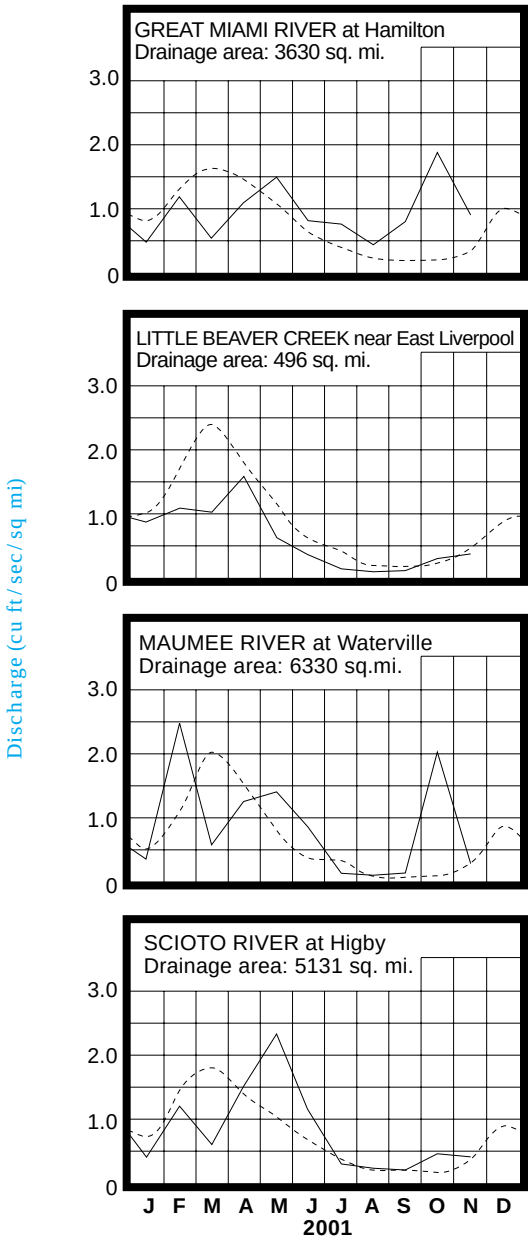
STREAMFLOW during November was generally above normal in the western half of the state and below normal in the eastern half. Some flows were high enough to be considered excessive in west-central and southwestern Ohio, still reflecting the notably above normal precipitation and streamflow of last month. Conversely, flows were low enough to be considered deficient in some basins in eastern Ohio.

Streamflow at the beginning of November was above normal across most of the state. Flows declined steadily across Ohio during the first 3 weeks of the month with only some slight, temporary increases noted in a few basins following local precipitation. Drainage basins in the eastern half of the state had their lowest flows for the month generally between November 14-19 while drainage basins in the western half reached their lowest flows around November 24, just prior to the month's most widespread precipitation. Greatest flows for November occurred on the last day of the month statewide as a result of the widespread precipitation that fell during the last week of the month. Flows were above normal across Ohio at the end of November.

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

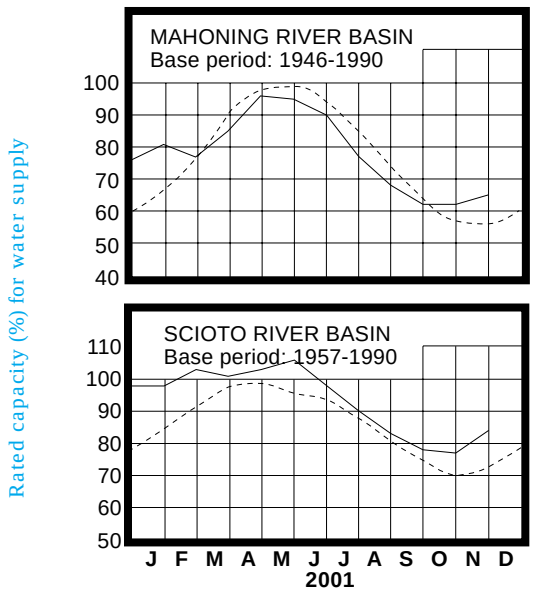
Reservoir storage at the end of November in the Mahoning basin index reservoirs was 65 percent of rated capacity for water supply compared with 62 percent for last month and 76 percent for November 2000. Month-end storage in the Scioto basin index reservoirs was 84 percent of rated capacity for water supply compared with 77 percent for last month and 80 percent for November 2000.

MEAN STREAM DISCHARGE



Base period for all streams: 1961-1990

RESERVOIR STORAGE FOR WATER SUPPLY



Normal – – – – Current ———

GROUND WATER levels during November showed mixed responses across the state. Levels in some aquifers were rather stable through much of the month while levels in other aquifers, especially unconsolidated aquifers, declined steadily for most of the month. Levels in nearly all aquifers had begun rising by the end of November in response to the precipitation that fell during the last week of the month.

Ground water levels generally remain below normal across the state ranging up to nearly 3 feet below the long-term November average. However, levels in some aquifers in western Ohio are currently above normal, reflecting the above normal precipitation the region has received during the past 7 months. Also, current ground water levels are lower than last year's levels across much of the state, but are now higher than the November 2000 levels in some aquifers in western Ohio. Index observation well Tu-1, near Strasburg (Tuscarawas County), representing sand and gravel aquifers in eastern and northeastern Ohio, reached a record-low level during November, continuing to reflect the below normal precipitation the region has received the past few years.

The 2002 recharge season has apparently started in the western half of the state, but has generally not begun in the eastern half. Recharge from the notably above normal rainfall during October combined with rains from the last week of November have resulted in improving water levels in many aquifers in western Ohio. Precipitation during the past 2 months has potentially set the stage for a good recharge season. However, continued near-normal precipitation and other climatic conditions during the next several months will be needed to ensure this will be a favorable recharge season.

LAKE ERIE level declined slightly during November. The mean level was 570.31 feet (IGLD-1985), 0.03 foot lower than last month's mean level and 0.39 foot below normal. This month's mean level is 0.29 foot lower than the November 2000 level and 1.11 feet above Low Water Datum.

The U. S. Army Corps of Engineers (USACE) reports that precipitation in the Lake Erie basin during November averaged 3.39 inches which is 0.54 inch above normal. The entire Great Lakes basin averaged 3.01 inches which is 0.26 inch above normal. For calendar year 2001 through November, the Lake Erie basin has averaged 33.01 inches of precipitation, 0.62 inch above normal, while the entire Great Lakes basin has averaged 31.99 inches of precipitation, 1.96 inches above normal.

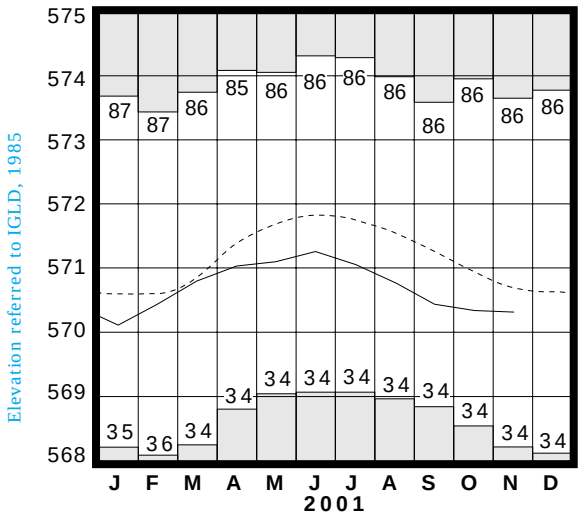
The USACE reports that based on the current condition of the Great Lakes basin and anticipated weather conditions, the level of Lake Erie should range around 6-8 inches below the long-term seasonal average for the foreseeable future. Deviations from the anticipated weather patterns could result in the level of Lake Erie ranging from around 5 inches above normal to 20 inches below the normal seasonal levels.

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	18.78	-1.52	-0.20	+0.40
Fa-1	Jasper Mill, Fayette Co.	Limestone	9.50	-0.55	+0.63	-1.39
Fr-10	Columbus, Franklin Co.	Gravel	46.34	-2.05	+0.36	-0.28
H-1	Harrison, Hamilton Co.	Gravel	22.32	+1.34	+0.29	+1.45
Hn-2a	Dola, Hardin Co.	Dolomite	7.13	+2.50	+0.87	+0.21
Po-1	Windham, Portage Co.	Sandstone	21.54	-0.86	-0.11	-0.14
Tu-1	Strasburg, Tuscarawas Co.	Gravel	16.48	-2.92	-0.02	-0.79

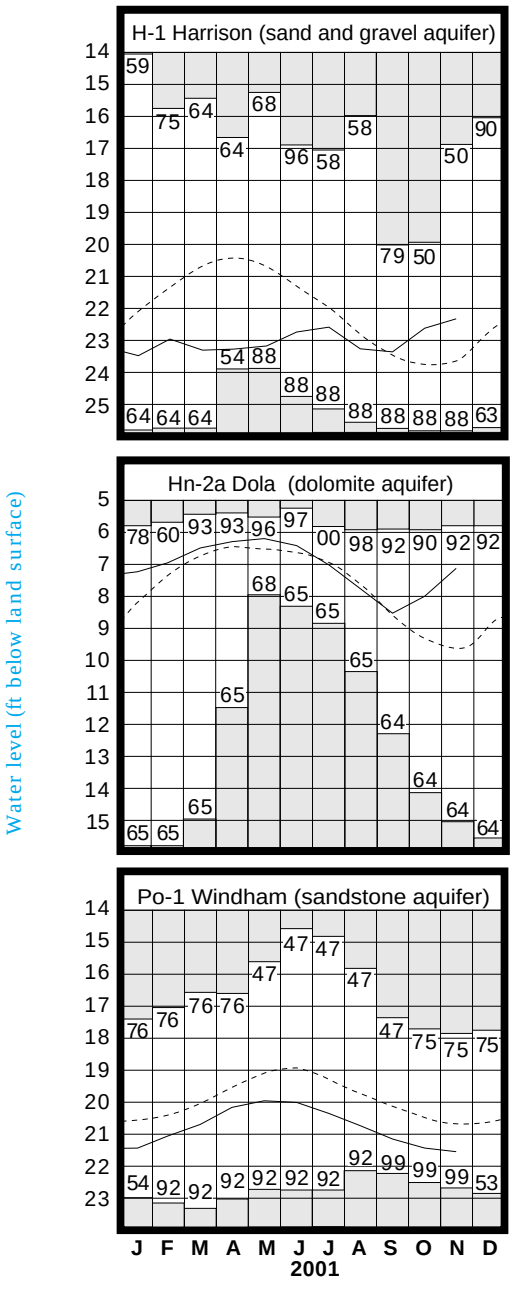
LAKE ERIE LEVELS at Fairport



Base period: 1900-1991

Record high and low, year of occurrence

GROUND-WATER LEVELS



Base periods: H-1, 1951-1990. Hn-2a, 1955-1990. Po-1, 1947-1990

Record high and low, year of occurrence

Normal– – – – Current———

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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SUMMARY

Precipitation during November was above normal across most of the state, but below normal in northwestern, northeastern and the Ohio River counties of southeastern Ohio. Streamflow was generally above normal in the western half of the state and below normal in the eastern half. Reservoir storage increased in both the Mahoning and Scioto river basins and was above normal in both basins. Ground water levels showed mixed results across the state and remained below normal across much of Ohio. Lake Erie level declined 0.03 foot and was 0.39 foot below the long-term November average.

NOTES AND COMMENTS

Ohio Water Resources Council Drafts Strategic Plan

On July 1, 2001, Governor Taft signed legislation permanently establishing the Ohio Water Resources Council (OWRC). The OWRC was designed as a forum for policy development, collaboration and coordination among state agencies, and strategic direction with respect to state water-resource programs. The council is comprised of an Executive Assistant to the Governor and the heads of nine state agencies: the Ohio departments of Agriculture, Development, Health, Natural Resources and Transportation; Ohio Environmental Protection Agency; Ohio Public Works Commission; Ohio Water Development Authority; and Public Utilities Commission of Ohio. Samuel Speck, Director of the Ohio Department of Natural Resources, is current chair of the council.

At its December 4, 2001 meeting, the OWRC approved a draft Strategic Plan containing goals and objectives for the next 18 months for the Council and its member agencies. After some suggested revisions are incorporated, the OWRC Strategic Plan will be published early next year. For more information about the Ohio Water Resources Council and the Strategic Plan please visit the Council's website at: http://www.dnr.state.oh.us/owrc/.

Division Of Water Staff Complete OCPM

Three members of the Division of Water's management team recently graduated from the Ohio Certified Public Manager (OCPM) program. Those earning this certification were Dick Bartz, Assistant Chief, Ted Lozier, Administrator of the Water Resources Section, and Mark Ogden, Administrator of the Water Management Section.

OCPM is a nationally accredited, 2-year management development program for public managers in Ohio. It is designed to enhance the management skills of administrative and supervisory employees and requires participants to complete extensive coursework and two major projects (one individual and one team). Twenty-six states participate in the program including Arizona where Division of Water Chief Jim Morris completed the program several years ago. Seven of the Division's 15 managers have now completed or are currently enrolled in the OCPM program.

For more information about the OCPM program, please visit their web site at: http://ocpm.state.oh.us/.