



MONTHLY WATER INVENTORY REPORT FOR OHIO

December 2006

<http://www.dnr.state.oh.us/water/pubs/newsltrs/mwirmain.htm>

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PRECIPITATION during December was generally above normal in the northwestern two-thirds of Ohio and below normal in the southeastern one-third. The state average was 3.30 inches, 0.54 inch above normal. Regional averages ranged from 4.48 inches, 1.94 inches above normal, for the North Central Region to 1.79 inches, 1.05 inches below normal, for the Southeast Region. Elyria (Lorain County) reported the greatest amount of December precipitation, 5.48 inches. Salem Center (Meigs County) reported the least amount, 1.12 inches.

Most of the precipitation during December fell as rain, with only northeastern Ohio reporting any significant snowfall. Above normal temperatures during most of the month kept snow amounts to a minimum across the remainder of the state. Precipitation during the month was distributed in a somewhat atypical pattern of being greatest in the northwestern third and least in the southeastern third of Ohio. A storm system that entered the state at the end of November brought heavy rain across parts of Ohio on December 1. The heaviest rain fell in the northwestern half of Ohio where generally 2-3 inches was reported. Amounts decreased to the south and east, with southeastern Ohio receiving 0.50 inch or less. Conditions were rather dry during the next 20 days throughout much of the state. Snow fell across northeastern Ohio during December 4-8, with little precipitation reported elsewhere. Showers during December 12-13 brought 0.50 inch of rain or less across the western half of the state. Widespread rain during December 21-22 brought 0.50-1.0 inch across much of the state, but lesser amounts in southeastern Ohio. Precipitation during December 25-26 brought another 0.50-1.0 inch of rain throughout most of the state. A storm system moved into Ohio at the end of the month, with showers being reported in western Ohio.

Precipitation for the first 3 months of the 2007 water year is above normal statewide. The average for the state as a whole is 11.13 inches, 2.92 inches above normal. Regional averages range from 12.19 inches, 2.96 inches above normal, for the Northeast Region to 9.74 inches, 1.46 inches above normal, for the Southeast Region.

Precipitation for the 2006 calendar year was above normal statewide. The average for the state as a whole was 44.15 inches, 6.13 inches above normal. This was the 12th wettest year during the past 124 years for the state as a whole. Regional averages ranged from 48.50 inches, 9.99 inches above normal, for the Northeast Region to 40.86 inches, 6.58 inches above normal, for the Northwest Region. Regionally, this was the 4th wettest year for the Northeast Region and the 6th wettest for the North Central Region. Chardon (Geauga County) reported the greatest amount of precipitation for the year, 61.71 inches. Ottawa (Putnam County) reported the least amount, 35.30 inches. An isohyetal map and regional averages with percentages of normal precipitation for the 2006 calendar year appear on the last page of this report.

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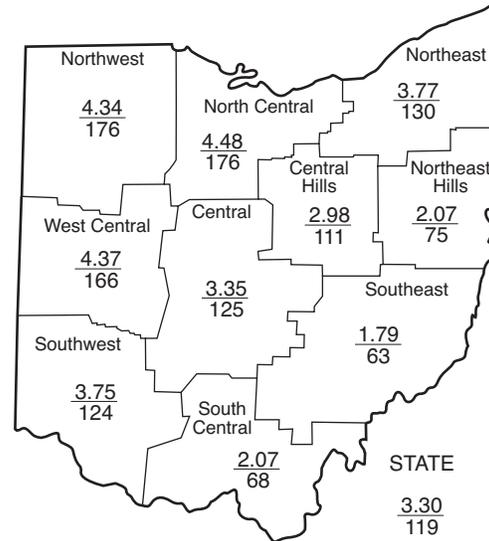
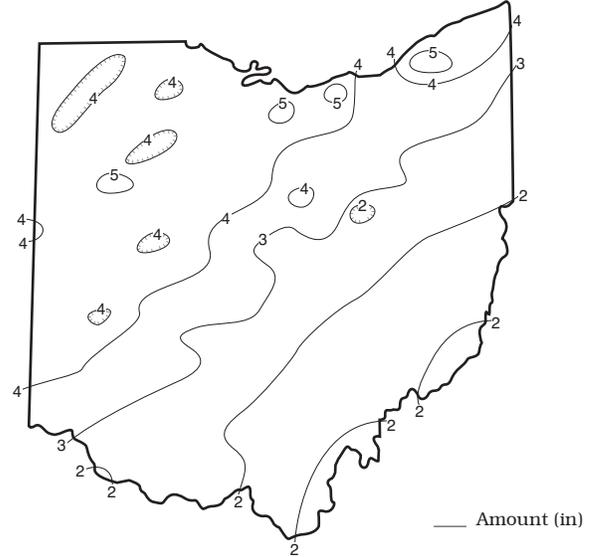
PRECIPITATION

Region	DEPARTURE FROM NORMAL (IN.) Base period 1951-2000					Palmer Drought Severity Index*
	This Month	Past				
		3 Mos.	6 Mos.	12 Mos.	24 Mos.	
Northwest	+1.88	+3.41	+6.14	+6.58	+7.66	+3.6
North Central	+1.94	+4.49	+5.35	+7.84	+13.38	+4.6
Northeast	+0.86	+2.96	+8.14	+9.99	+14.32	+5.6
West Central	+1.73	+3.52	+6.27	+7.12	+15.64	+4.5
Central	+0.68	+3.95	+7.19	+6.86	+12.17	+3.2
Central Hills	+0.29	+2.92	+5.30	+5.56	+9.13	+2.9
Northeast Hills	-0.68	+1.63	+3.81	+5.18	+8.72	+2.0
Southwest	+0.72	+2.32	+5.48	+5.50	+4.99	+3.6
South Central	-0.97	+2.53	+7.14	+3.90	+0.13	+3.2
Southeast	-1.05	+1.46	+4.68	+2.88	+6.14	+2.2
State	+0.54	+2.92	+5.94	+6.13	+9.22	

*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 DECEMBER



Average (in)
Percent of normal

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	3,120	228	245	302	171
Great Miami River at Hamilton	3,630	8,985	244	241	186	130
Huron River at Milan	371	902	370	219	168	128
Killbuck Creek at Killbuck	464	674	161	156	180	116
Little Beaver Creek near East Liverpool	496	475	84	153	142	91
Maumee River at Waterville	6,330	15,250	321	240	190	122
Muskingum River at McConnellsville	7,422	9,637	88	257	256	94
Scioto River near Prospect	567	1,584	593	299	240	132
Scioto River at Higby	5,131	8,215	179	235	178	109
Stillwater River at Pleasant Hill	503	1,338	361	230	163	119

STREAMFLOW during December was above normal throughout most of the state, but below normal in some basins across eastern Ohio. Flows were high enough to be considered excessive in many basins in northern and western Ohio. December flows were greater than the November flows in all except some eastern Ohio basins.

Streamflow at the beginning of December was above normal across much of the state, but generally below normal in southeastern Ohio. Flows increased early in the month in response to wide spread precipitation that fell at the beginning of December. Greatest flows for the month occurred between December 1 and 4 across most of the state as a result of this precipitation. Flows declined following these peaks and were at their monthly lowest during December 20-21. Flows increased following precipitation that fell on December 21-22 and again on December 25-26. Greatest flows for the month occurred during December 26-27 in some basins in eastern and

south-central Ohio following this precipitation. Flows declined during the last few days of the month, but remained above normal across most of the state. Exceptions were observed in the eastern third of the state where flows had declined to below normal by month's end.

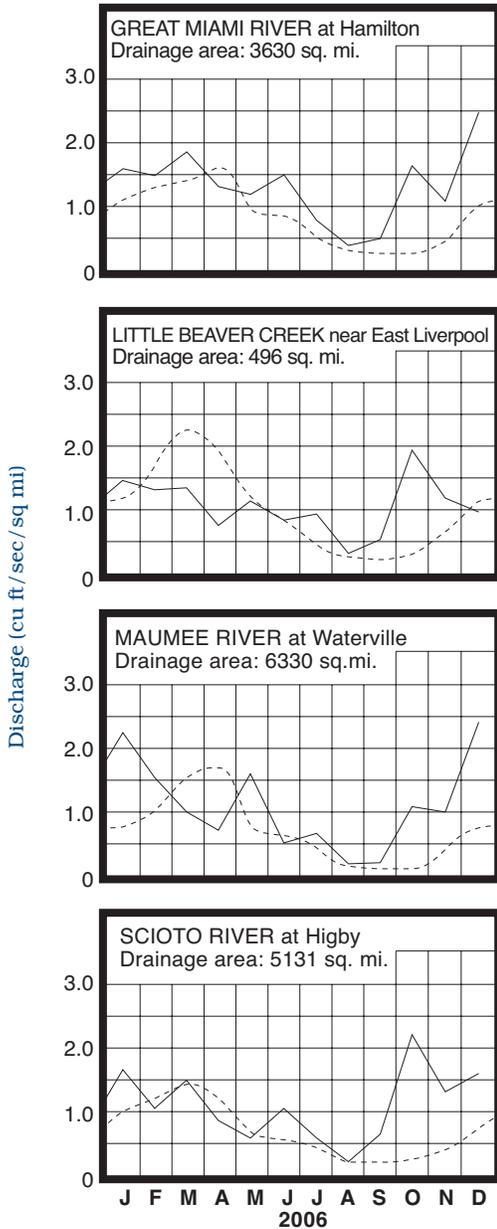
Calendar year 2006 streamflow was above normal across most of the state, but slightly below normal in some basins in eastern and southeastern Ohio (see Mean Stream Discharge table, past 12 months column). Several record or near-record monthly and daily maximum flows were observed during the year. Streamflow was above normal statewide during January and across western Ohio during February and March. Flows were below normal statewide during April and in southeastern Ohio during May. Flows were above normal across most of the state during the summer months and above normal statewide throughout the fall months. Heavy rain and locally severe thunderstorms caused widespread flooding in northern Ohio during June and July and in parts of central and southern Ohio during October. President Bush, paving the way for much needed assistance to the hardest hit areas, declared several counties a federal disaster area.

RESERVOIR STORAGE during December decreased slightly in the Mahoning River basin and increased slightly in the Scioto River basin. Storage remained above normal in both basins.

Reservoir storage at the end of December in the Mahoning basin index reservoirs was 78 percent of rated capacity for water supply, compared with 79 percent for last month and 82 percent for December 2005. Month-end storage in the Scioto basin index reservoirs was 96 percent of rated capacity for water supply, compared with 94 percent for last month and 85 percent for December 2005.

Surface water supplies were adequate during the past 12 months. Storage in both the Mahoning and Scioto river basins was above normal throughout most of the 2006 calendar year, falling to below normal during April and May only. Surface water supplies remain in good shape as the 2007 calendar year begins.

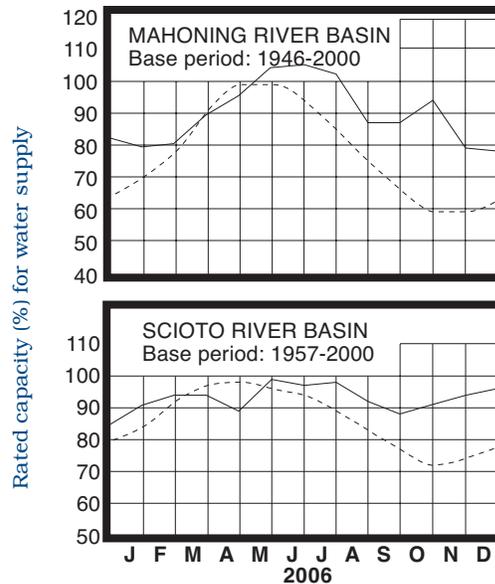
MEAN STREAM DISCHARGE



Base period for all streams: 1971-2000

Normal - - - - Current ———

RESERVOIR STORAGE FOR WATER SUPPLY



GROUND WATER levels during December rose in most aquifers throughout the state. Generally, levels in most aquifers rose during the first week of December, declined during the next 2 weeks and then rose during the last week of the month. Exceptions were noted in some consolidated aquifers where levels were rather stable or steadily rose throughout the month.

The 2007 recharge season is off to a good start as far as ground water is concerned. Ground water supplies have responded favorably to the above normal precipitation the state has received during the last few months. Current ground water levels are above normal across nearly the entire state. This month's levels are also higher than the December 2005 levels statewide. Index observation well PO-1 near Windham (Portage County), representing sandstone aquifers in eastern and northeastern Ohio, reached a record-high level for December.

Ground water storage during the 2006 calendar year improved throughout the state. Levels at the beginning of the year were generally below normal in unconsolidated aquifers and above normal in consolidated aquifers. Below normal precipitation across much of the state from February through April limited the amount of recharge aquifers received. By the end of April, ground water levels were further below normal in unconsolidated aquifers and below normal in some consolidated aquifers. However, the above normal precipitation during the second half of the year greatly benefited ground water storage. Summers rains reduced demand and above normal precipitation during the fall months led to a good start to the recharge season. At the end of the 2006 calendar year, ground water levels were above normal throughout nearly the entire state. A few new record high ground water levels were set during the last couple of months of 2006. Ground water supplies were in a favorable position at the end of the 2006 calendar year.

LAKE ERIE level rose during December. The mean level was 571.42 feet (IGLD-1985), 0.16 foot higher than last month's mean level and 0.59 foot above normal. This month's mean level is 1.01 feet higher than the December 2005 level and 2.22 feet above Low Water Datum.

The U.S. Army Corps of Engineers (USACE) reports that precipitation in the Lake Erie basin during December was 4.01 inches, 1.41 inches above normal. For the entire Great Lakes basin, December precipitation averaged 2.83 inches, 0.50 inch above normal. For calendar year 2006, the Lake Erie basin averaged 43.39 inches of precipitation, 8.37 inches above normal, while the entire Great Lakes basin averaged 34.61 inches, 2.20 inches above normal.

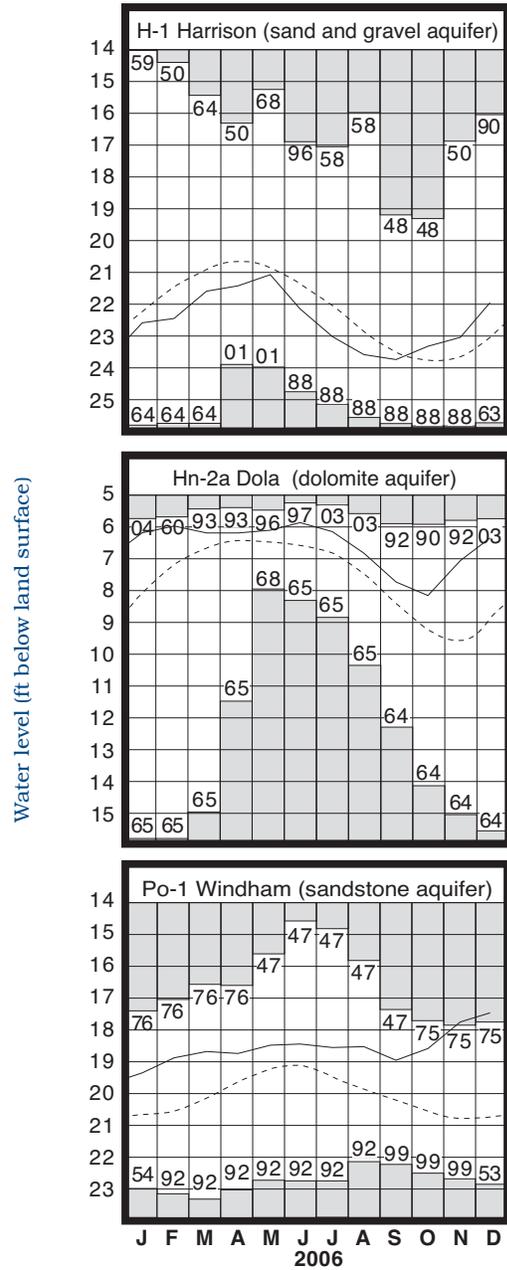
The above normal precipitation that fell across the Great Lakes basin during 2006 had a positive impact on Lake Erie levels. Lake Erie water levels were below normal during January but rebounded to above normal during February and March. Levels fell back below normal during April and remained there through September. Levels again rebounded to above normal during October and stayed there through the end of the year. 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 from 6 inches above to about 3 inches below normal for the foreseeable future. Deviations from the anticipated weather patterns could result in the level of Lake Erie ranging from about 10 inches above to as much as 14 inches below the normal seasonal average.

GROUND-WATER LEVELS

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

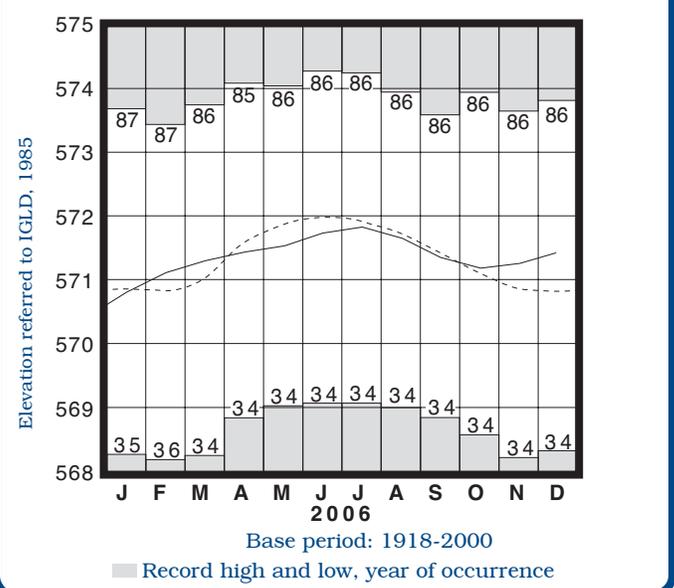
Index Well	Location	Aquifer	Mean This Month	Departure From Normal	Change in feet from:	
					Last Month	Year Ago
F-1	W. Rushville, Fairfield Co.	Sandstone	11.17	+5.92	-0.59	+3.07
Fa-1	Jasper Mill, Fayette Co.	Limestone	7.60	+0.59	-0.04	+2.20
Fr-10	Columbus, Franklin Co.	Gravel	44.28	-0.33	+0.58	+0.28
H-1	Harrison, Hamilton Co.	Gravel	21.95	+1.09	+1.07	+1.45
Hn-2a	Dola, Hardin Co.	Dolomite	6.31	+2.57	+0.78	+0.50
Po-1	Windham, Portage Co.	Sandstone	17.48	+3.26	+0.27	+2.07
Tu-1	Strasburg, Tuscarawas Co.	Gravel	12.65	+0.84	+0.01	+1.29

GROUND-WATER LEVELS



Base periods: H-1, 1951-2000. Hn-2a, 1955-2000.
Po-1, 1947-2000

LAKE ERIE LEVELS



Normal - - - - Current - - - -

(Precipitation continued from front)

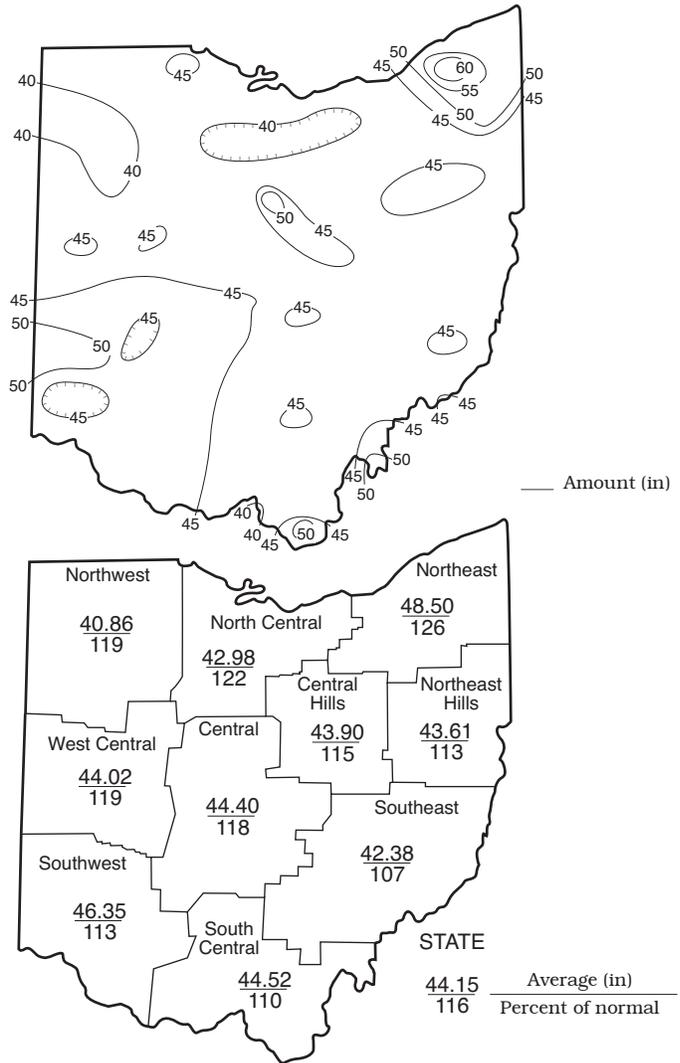
The 2006 calendar year began with above normal precipitation across most of the state during January. Total precipitation during February and March was below normal throughout most of Ohio. April precipitation was above normal in southern Ohio and below normal in northern Ohio. Conversely, May precipitation was above normal in northern Ohio and below normal in southern Ohio. Precipitation during June and July was above normal, with significant flooding occurring during both months in parts of northern Ohio. This was the 10th wettest July for the state as a whole during the past 124 years. August precipitation was generally below normal, while September precipitation was above normal across most of Ohio. Precipitation during October was noticeably above normal and was the 2nd wettest October during the past 124 years for the state as a whole. All 10 of the state's climatic regions ranked in the top 10 wettest October's of record. Precipitation during November was below normal, followed by above normal precipitation across much of the state during December. The above normal precipitation during 2006 benefited surface and ground water supplies, both of which are in a favorable position as we enter the new year.

SUMMARY

Precipitation during December was generally above normal in the northwestern two-thirds of Ohio and below normal in the southeastern one-third. Streamflow was above normal across most of the state and was high enough to be considered excessive in northern and western Ohio basins. Reservoir storage decreased slightly in the Mahoning River basin and increased slightly in the Scioto River basin. Storage remained above normal in both basins. Ground water levels rose in most aquifers and were above normal across nearly all of Ohio. Lake Erie level rose 0.16 foot and was 0.59 foot above the long-term December average.

Precipitation for the 2006 calendar year was above normal statewide. Streamflow was above normal across most of the state and reservoir storage was above normal nearly the entire year. Ground water levels improved during the year and were above normal across most of the state. Lake Erie level was below normal for much of 2006, but above normal during the last 3 months of the year.

PRECIPITATION 2006 CALENDAR YEAR



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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