MONTHLY WATER INVENTORY REPORT FOR OHIO

June 2000

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 June was above normal across most of the state, but below normal in parts of central, south-central and southeastern Ohio. The state average was 4.79 inches, 0.83 inch above normal. Regional averages ranged from 6.85 inches, 3.02 inches above normal, for the Northwest Region to 3.57 inches, 0.57 inch below normal, for the Southeast Region. Based on 106 years of record, this was the 5th wettest June for the Northwest Region, the 7th wettest June for the North Central Region and the 13th wettest June for the Northeast Region. Van Wert (Van Wert County) reported the greatest amount of precipitation for June, 9.23 inches. Other notable amounts were reported at Stryker (Williams County), 8.98 inches and Sandusky (Erie County), 8.32 inches. Marietta State Nursery (Washington County) reported the least amount for June, 1.51 inches. Cooperdale (Coshocton County) reported 1.89 inches, the only other location reporting less than 2 inches of rain for the month.

Precipitation fell during every week of the month. Widespread rain during June 5-6 brought generally 0.25-0.50 inch rains to the southern half of the state and 0.5-1.0 inch rains to the northern half. Following this, starting on June 12 and continuing for about 10 days, a series of showers and thunderstorms moved across the state. Most of the precipitation was light with typically 0.25 inch or less amounts reported locally on any given day. However, some locally heavy showers with 1 inch or greater rains were reported on a few of the days through this period, especially in the northern half of Ohio. During this 10-day period, rainfall totals of 1-2 inches were common in the southern half of the state while 2-5 inches were reported in the northern half. Some minor flooding following locally excessive rainfall was reported in a few areas of northern Ohio. Showers and thunderstorms during June 24-25 produced additional heavy rainfall in northwestern Ohio with 1.0-2.5 inches reported from this part of the state. Lesser amounts fell to the south and east with many locations receiving less than 0.25 inch, except for an area in south-central Ohio where up to 1 inch was reported. Only widely scattered, light showers occurred during the last few days of the month.

Precipitation for the first half of the 2000 calendar year is above normal statewide. The average for the state as a whole is 22.18 inches, 2.58 inches above normal. Regional averages range from 23.85 inches, 2.30 inches above normal, for the Southwest Region to 20.90 inches, 3.33 inches above normal, for the Northwest Region (see Precipitation table, departure from normal, past 6 months column).

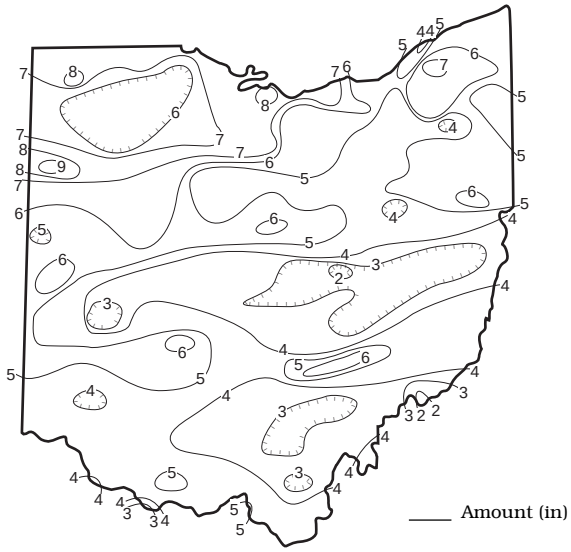
Precipitation for the 2000 water year is above normal across most of the state. The state average is 29.53 inches, 2.36 inches above normal. Regional averages range from 32.49 inches, 2.73 inches above normal, for the South Central Region to 26.51 inches, 1.91 inches above normal, for the Northwest Region.

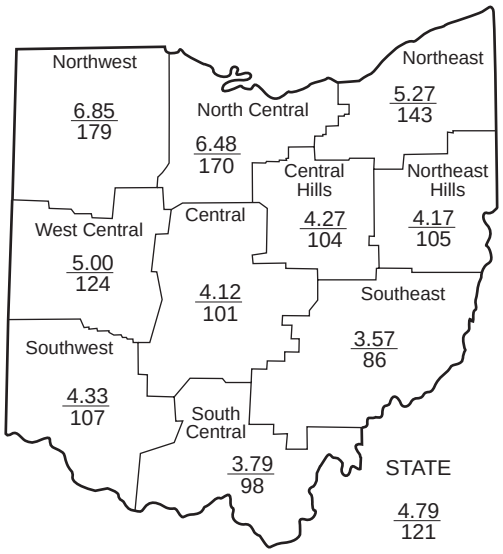
PRECIPITATION

Region	DEPARTURE FROM NORMAL (IN.) This Month	Past 3 Mos.	Past 6 Mos.	Past 12 Mos.	Past 24 Mos.	Palmer Drought Severity Index*
Northwest	+3.02	+4.97	+3.33	+0.28	+2.05	+0.4
North Central	+2.66	+4.79	+3.73	+3.69	+1.49	+0.7
Northeast	+1.59	+4.65	+3.14	+5.41	+0.50	-0.5
West Central	+0.96	+2.45	+1.69	-2.06	-4.62	-1.0
Central	+0.06	+2.19	+3.32	+0.57	-7.35	-2.5
Central Hills	+0.16	+3.16	+3.57	+3.05	-2.02	-0.4
Northeast Hills	+0.21	+3.06	+2.04	+0.80	-1.71	-2.6
Southwest	+0.28	+0.76	+2.30	-4.30	-11.44	-1.5
South Central	-0.09	-0.09	+1.05	+0.35	-9.82	-1.5
Southeast	-0.57	+0.72	+1.58	+0.63	-6.88	-0.9
State	+0.83	+2.66	+2.57	+0.83	-4.01	

*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 JUNE





MEAN STREAM DISCHARGE

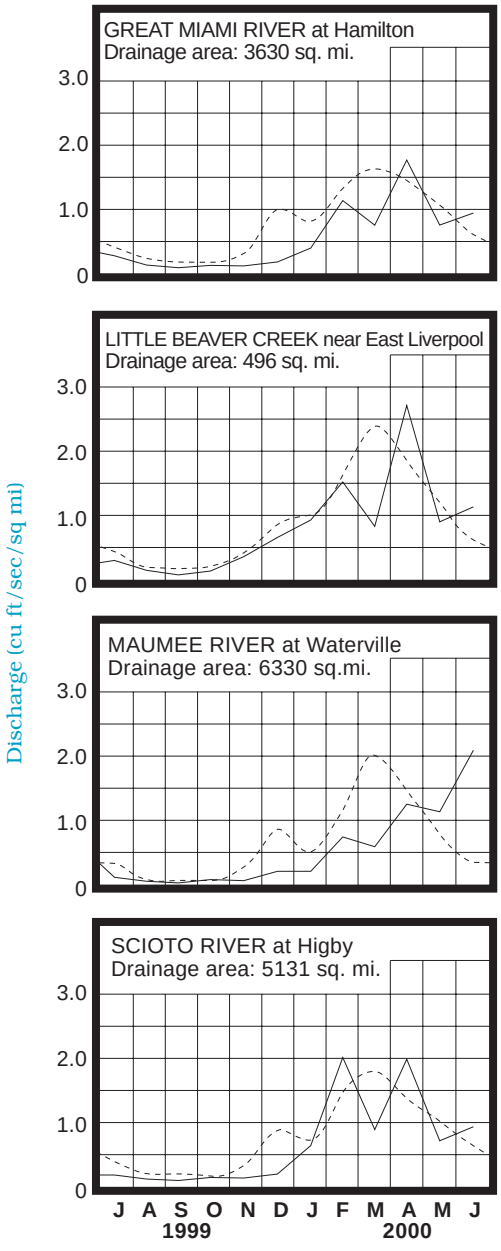
This Month

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	1,345	517	171	92	81
Great Miami River at Hamilton	3,630	3,424	147	90	71	61
Huron River at Milan	371	793	458	190	121	107
Killbuck Creek at Killbuck	464	426	162	108	89	78
Little Beaver Creek near East Liverpool	496	559	179	115	92	76
Maumee River at Waterville	6,330	13,210	581	137	85	66
Muskingum River at McConnelsville	7,422	7,779	131	103	89	79
Scioto River near Prospect	567	752	283	121	83	74
Scioto River at Higby	5,131	4,760	136	94	81	72
Stillwater River at Pleasant Hill	503	777	290	118	71	59

STREAMFLOW during June was above normal across most of the state. Flows were high enough to be considered excessive in the northern half of Ohio. June's flows increased atypically from May's flows statewide.

Streamflow at the beginning of the month was above normal across much of the state. Greatest flows for the month occurred at this time in many drainage basins in eastern Ohio. Flows generally declined during the first half of the month statewide. Low flows for June were recorded around mid-month in the western half of Ohio, just prior to a series of weather systems that crossed the state. Greatest flows for June for the remaining areas of the state occurred during this period of unsettled weather, generally between June 17-20, with some minor flooding reported in northern Ohio. Flows declined during the remainder of the month except for temporary rises noted following rain events. At the end of the month flows had declined to their lowest rates for June in the eastern half of the state and were below normal across most of the state.

MEAN STREAM DISCHARGE



Base period for all streams: 1961-1990

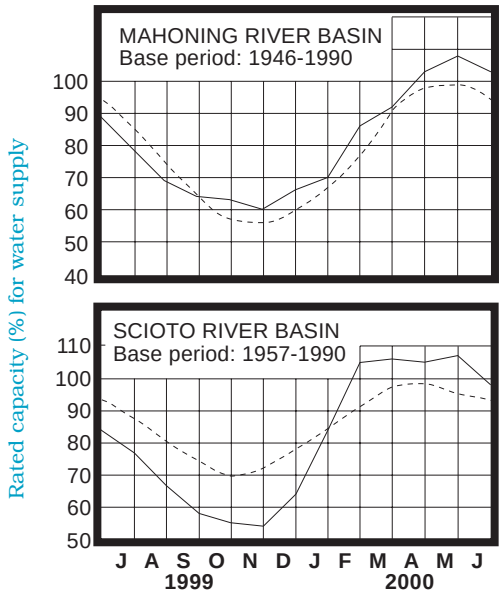
RESERVOIR STORAGE for water supply during June declined seasonally in both the Mahoning and Scioto river basins. Storage remained above normal in both basins.

Reservoir storage at the end of June in the Mahoning basin index reservoirs was 103 percent of rated capacity for water supply compared with 108 percent for last month and 90 percent for June 1999. Month-end storage in the Scioto basin index reservoirs was 98 percent of rated capacity for water supply compared with 107 percent for last month and 84 percent for June 1999.

Lakes and reservoirs throughout the state remain at or near normal seasonal levels. With near normal precipitation during the next few months, surface water supplies should continue to remain adequate throughout Ohio.

GROUND WATER levels during June declined seasonally across most of Ohio, except for consolidated aquifers in the northern half of the state where levels rose, receiving some delayed recharge. Elsewhere, net declines during June from May's levels were less than usually observed. Generally, levels in unconsolidated aquifers slowly declined throughout the month except for some temporary rises noted following a series of weather systems that crossed the state just after mid-month. Levels in consolidated aquifers remained rather steady in the southern half of the state while they rose slowly throughout most of the month in the northern half. Levels in consolidated aquifers in northern Ohio reflect the above normal precipitation that has fallen the past 2-3 months in that part of the state. Some limited additional delayed recharge is still possible following the notably above normal precipitation in that area during June.

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	15.57	-1.66	-0.45	+1.76
Fa-1	Jasper Mill, Fayette Co.	Limestone	7.96	-0.59	+0.05	+0.40
Fr-10	Columbus, Franklin Co.	Gravel	45.05	-2.00	-0.50	-0.16
H-1	Harrison, Hamilton Co.	Gravel	22.83	-1.53	-0.13	+0.29
Hn-2a	Dola, Hardin Co.	Dolomite	6.18	+0.45	+0.48	+0.71
Po-1	Windham, Portage Co.	Sandstone	20.74	-1.82	+0.35	0.00
Tu-1	Strasburg, Tuscarawas Co.	Gravel	13.71	-1.82	-0.54	+0.39

Ground water supplies continue to reflect last year's drought-like conditions. Fortunately, after experiencing unfavorable recharge conditions during the first half of the 2000 water year recharge season, the above normal precipitation during the past three months has provided much needed recharge for ground water supplies (see Precipitation table, departure from normal, past 3 months column). Except in some northwestern Ohio carbonate aquifers, ground water levels remain below normal statewide, ranging up to 2 feet below the normal seasonal levels. Current levels in most aquifers are now higher than they were a year ago ranging up to 1.75 feet above the June 1999 levels. With continued near normal precipitation and other climatic conditions during the next few months, ground water supplies should remain adequate. Still, water supply managers with ground water sources should continue to monitor their respective situations closely throughout the summer high-use period.

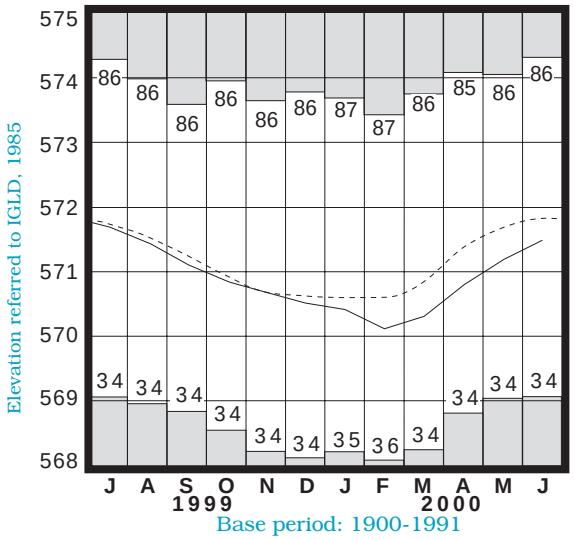
Agricultural concerns appear to be better than they were a year ago. However, recent excessive rains in the northern half of the state have created poor growing conditions for many crops in some areas. The Ohio Agricultural Statistics Service reports that at the end of June soil moisture was rated as being short in 3 percent of the state, adequate in 69 percent of the state and surplus in 28 percent of the state.

LAKE ERIE level rose seasonally during June. The mean level was 571.49 feet (IGLD-1985), 0.30 foot above last month's mean level and 0.33 foot below normal. This month's level is 0.36 foot lower than the June 1999 level and 2.29 feet above Low Water Datum.

The U. S. Army Corps of Engineers (USACE) reports that precipitation in the Lake Erie basin during June averaged 5.30 inches, 1.86 inches above normal. The entire Great Lakes basin averaged 3.70 inches during June, 0.51 inch above normal. For calendar year 2000 through June, the Lake Erie basin has averaged 19.86 inches of precipitation, which is 2.74 inches above normal, and the entire Great Lakes basin has averaged 16.17 inches, 1.42 inches 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 remain below the long-term average for the foreseeable future. As a result of the above normal precipitation that has occurred recently throughout the Great Lakes basin, the USACE current projections show that lake levels may not approach near record-low levels by years end, as earlier predicted.

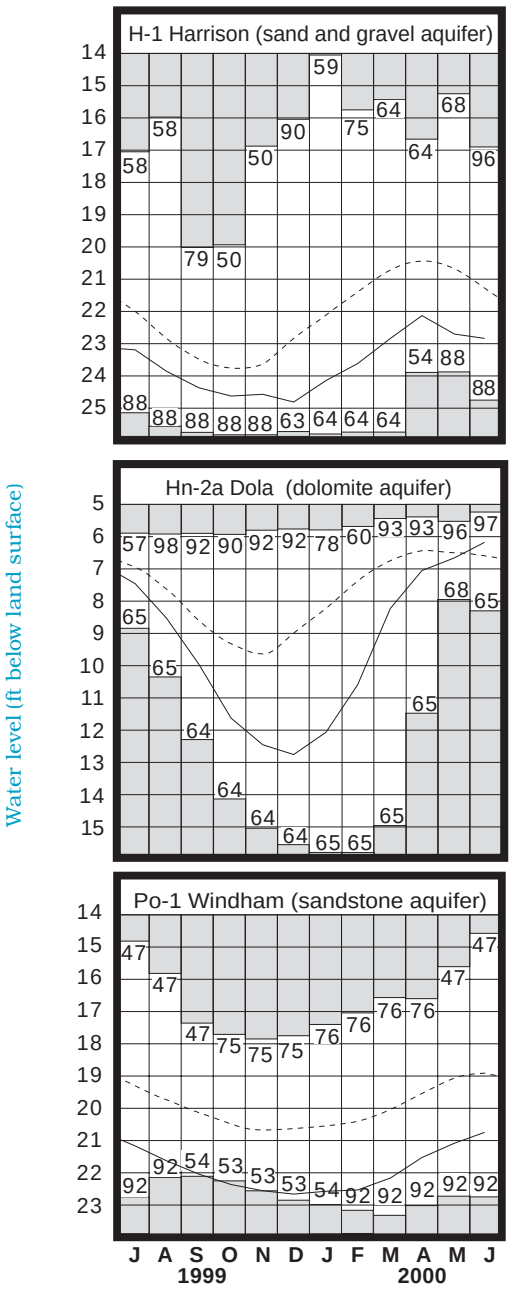
LAKE ERIE LEVELS at Fairport



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.

OHIO Department of Natural Resources

DIVISION OF WATER
1939 FOUNTAIN SQUARE
COLUMBUS, OHIO 43224

SUMMARY

Precipitation during June was above normal across most of the state, but below normal in much of central, south-central and southeastern Ohio. Streamflow was above normal throughout most of Ohio, and high enough to be considered excessive in the northern half of the state. Reservoir storage declined statewide, but remained above normal. Ground water levels declined less than usually observed for June, but remained below normal statewide. Lake Erie level rose 0.30 foot and was 0.33 foot below the long-term June average.

NOTES AND COMMENTS

FLOODPLAIN MANAGEMENT IN OHIO-STATEWIDE CONFERENCE 2000

The 1st Floodplain Management in Ohio Conference will be held on August 30 and 31. The conference will be at the Ramada Plaza Hotel and Conference Center in Columbus, Ohio. The Ohio Department of Natural Resources, Ohio Floodplain Management Association and Federal Emergency Management Agency will jointly sponsor the event. Topics will include the following:

General Floodplain Management
- ODNR's Flood Loss Reduction Workshop
- Generating Elevations in Approximate A Zones
- Retrofitting Structures
- Elevation Certificates
- Selling Floodplain Management to Elected Officials and the Public
- Post-Disaster Floodplain Management Panel Discussion
- Substantial Damage Assessment (Including Increased Cost of Compliance)
- Letters of Map Change
- Map Modernization
- Inspecting Floodplain Development
- Community Rating System
- Comprehensive Floodplain Management - Beyond the NFIP

Mitigation
- Hazard Mitigation Grant Program
- Flood Mitigation Assistance Program
- Project Impact
- Mitigation Planning

Enforcement
- Effective Code Enforcement
- Takings and Appeals

There will also be an opportunity to take the Association of State Floodplain Managers' Certified Floodplain Manager (CFM) Exam. The CFM exam will be offered at the conference on Thursday, August 31, 2000. Additional information regarding this exam will be posted at: http://www.floods.org/certmenu.htm.

For further information regarding this conference, please contact:

Ohio Department of Natural Resources
Division of Water, Floodplain Management Program
1939 Fountain Square Drive, Building E-3
Columbus, OH 43224-1336
Phone: 614-265-6750
Fax: 614-447-9503