January 1981

Issue unavailable

Contact the Ohio Department of Natural Resources, Division of Soil & Water, Water Inventory & Planning Section, for further information or questions.

February 1981

Issue unavailable

Contact the Ohio Department of Natural Resources, Division of Soil & Water, Water Inventory & Planning Section, for further information or questions.

March 1981

Issue unavailable

Contact the Ohio Department of Natural Resources, Division of Soil & Water, Water Inventory & Planning Section, for further information or questions.

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. Corps of Engineers, Detroit District.

OHIO DEPARTMENT OF NATURAL RESOURCES
DIVISION OF WATER
FOUNTAIN SQUARE
COLUMBUS, OHIO 43224

SUMMARY

The water supply situation continues to be favorable for most areas of the state for the 1981 water year thus far. The excessive precipitation during April was instrumental in helping to sustain this favorable situation. Reservoir storage, streamflow and ground-water storage showed noticeable gains during the month. Lake Erie level rose slightly and is 0.99 foot above normal.

NOTES AND COMMENTS

This is the first Monthly Water Inventory Report for Ohio to be published since November 1980. Fiscal constraints, which developed as a result of the economic situation, required many temporary measures including interrupting the printing and distribution of such reports. We hope to continue this service now that we have been able to resume publication.

DEPARTMENT OF NATURAL RESOURCES

James A. Rhodes Governor *Robert W. Teater Director*

APRIL 1981

monthly water inventory report for ohio

Compiled by Leonard J. Harstine

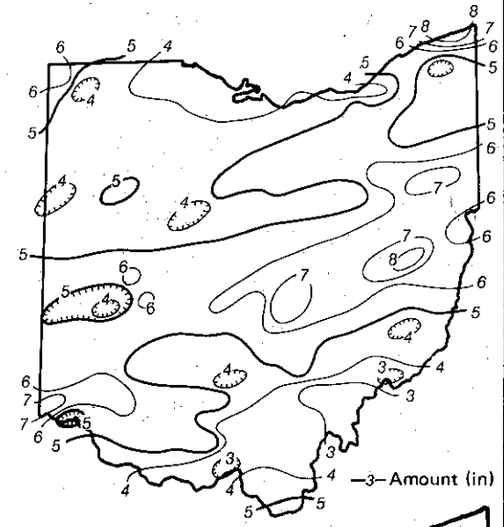
PRECIPITATION

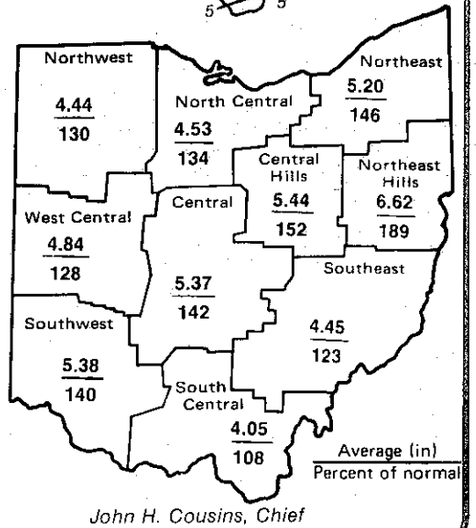
PRECIPITATION for April was noticeably above normal throughout the state. The average for the state as a whole was 5.03 inches, 1.41 inches above normal. Regional averages ranged from 6.62 inches, 3.13 inches above normal, for the Northeast Hills region to 4.05 inches, 0.30 inch above normal, for the South Central region. Ashtabula, Ashtabula County, reported the greatest amount of precipitation for the month, 8.43 inches and Marietta, Washington County, reported the least amount, 2.03 inches.

Generally, the larger portion of the state received between 4 and 5 inches of precipitation for the month. An area along the western end of Lake Erie received less than 4 inches and isolated areas in the northwest, northeast, east central and southwest received from 7 to 8 inches. The bulk of the month's precipitation occurred during severe storms on April 4, 12, 23, and 29. The storm of April 12th was probably the most severe in Central Ohio where 3.8 inches of precipitation was observed in a 6 hour period at Westerville, Franklin County. Although many urban areas suffered flood damage because of inadequate storm water drainage capacity, stream flooding was limited to low lying areas.

Cumulative precipitation for the first four months of the 1981 calendar year remains below normal throughout most of the state; the only exceptions are in the Northeast and Northeast Hills regions where precipitation is slightly above normal. The average for the state as a whole was 10.69 inches, 1.39 inches below normal. Regional averages ranged from 13.60 inches, 1.58 inches above normal, for the Northeast Hills regions to 8.19 inches, 2.07 inches below normal, for the Northwest region. Other regions which show noticeable departures from normal are: West Central, 3.20 inches below normal; Southwest, 2.99 inches below normal; South Central, 3.11 inches below normal.

Cumulative precipitation for the first 7 months of the 1981 water year continues to be below normal throughout most of the state; the only exception being the Northeast Hills region where precipitation is above normal for the first time in this water year. The average for the state as a whole was 16.56 inches, 3.02 inches below normal. Regional averages ranged from 19.99 inches, 0.32 inch above normal, for the Northeast Hills region to 12.95 inches, 4.50 inches below normal, for the Northwest region. The West Central region continues to show the greatest departure for the water year 5.11 inches below normal. The water supply situation for this water year continues to remain favorable throughout most of the state despite the below normal precipitation.

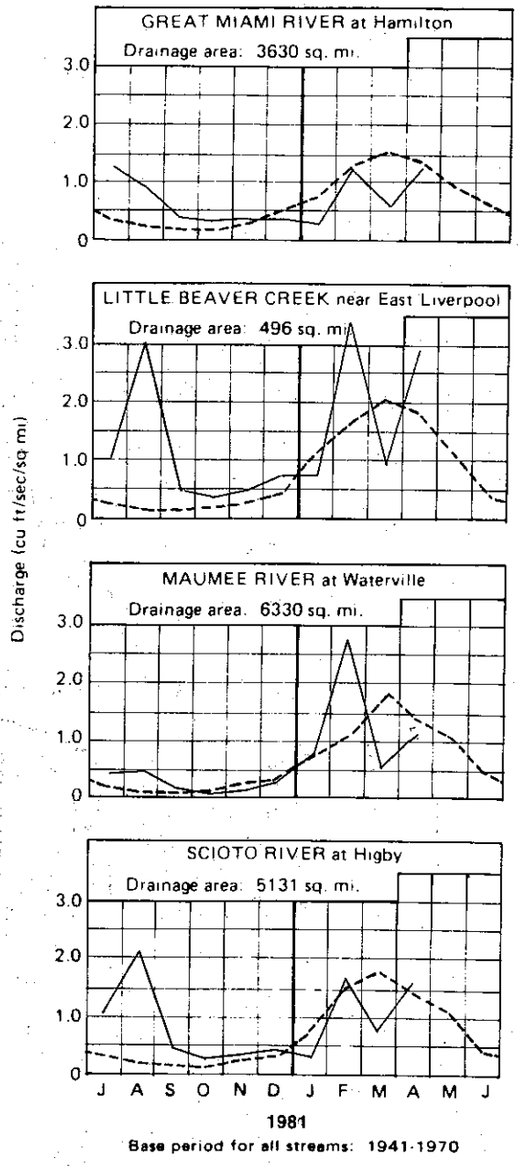




DIVISION OF WATER

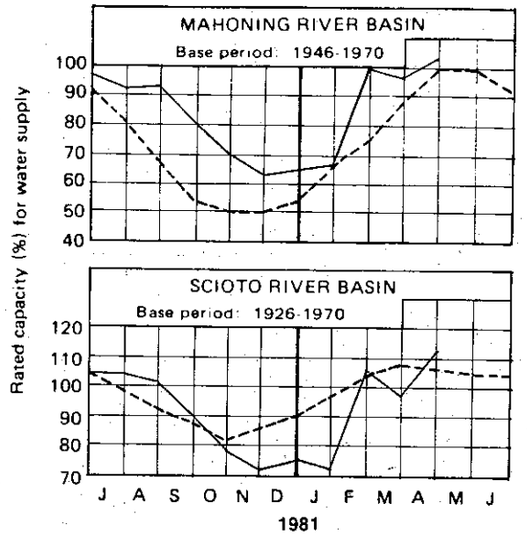
John H. Cousins, Chief

MEAN STREAM DISCHARGE



Base period for all streams: 1941-1970

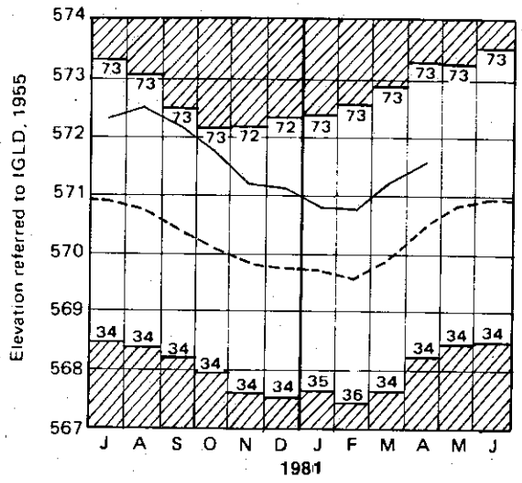
RESERVOIR STORAGE FOR WATER SUPPLY



RESERVOIR STORAGE for water supply for April was above normal in both the Mahoning River and the Scioto River basins in response to the above normal precipitation. Reservoir storage at the month end for the Mahoning basin index reservoirs was 105 percent of rated capacity for water supply compared to 95 percent for last month and 98 percent for April 1980. Storage at the month end for the Scioto River basin index reservoirs was 111 percent of rated capacity for water supply compared to 97 percent for last month and 100 percent for April 1980.

STREAMFLOW for April was normal throughout most of the state; the only exception was in the eastern portion of the state where it was excessive. Although streams were bank full in many areas of the state during severe storm periods, there were few reports of serious flooding. Mean discharge and percent of normal for April at the index gaging stations were as follows: Great Miami River, 4,639 cfs, 90 percent; Little Beaver Creek, 1,474 cfs, 161 percent; Maumee River, 7,387 cfs, 81 percent; Scioto River, 6,710 cfs, 90 percent.

LAKE ERIE LEVELS

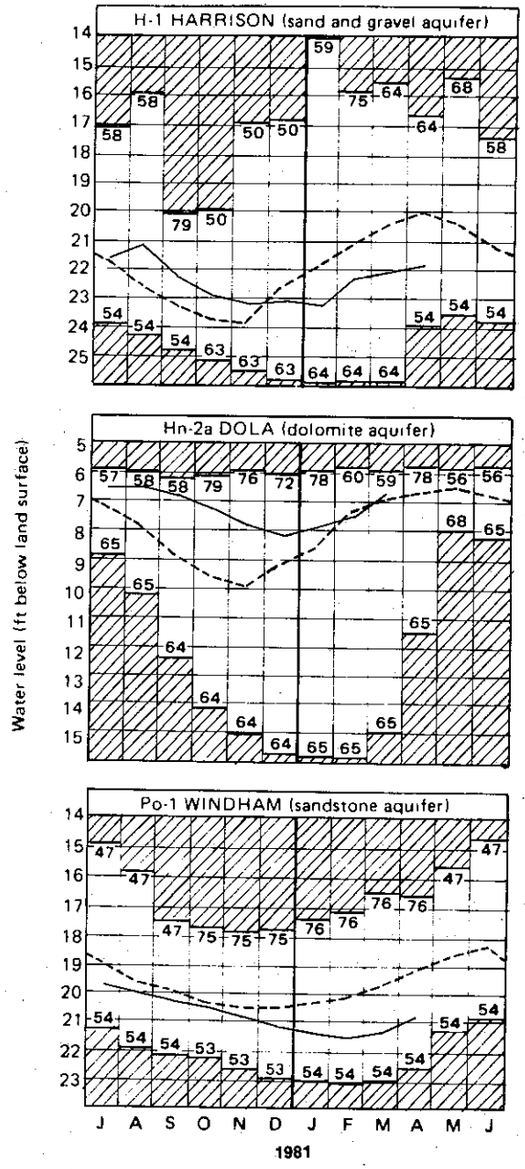


Base period: 1900-1974

LAKE ERIE mean level for April was 571.47 feet above IGLD (1955), 0.21 foot above last month's mean level and 0.99 foot above normal. The lake level was 0.94 foot above the level observed for April 1980 and 2.87 feet above Low Water Datum.

GROUND-WATER LEVEL for April rose throughout the state in response to recharge from the excessive precipitation. However, the rises were not as great as would normally be expected. Ground-water levels are generally from 0.5 foot to 2 feet lower than those levels observed for April 1980; the only exception being index observation well Fa-1 near Washington C.H., Fayette County, where the water level was slightly higher. Ground-water levels range from near normal to 1.5 feet below normal for most areas of the state; the only exception being index well Fr-10, for which the water level has been significantly above normal for the past 4 years. The water supply situation remains satisfactory in so far as ground-water storage is concerned.

GROUND-WATER LEVELS



Base periods: H-1, 1951-1979; Hn-2a, 1955-1979; Po-1, 1947-1979

normal - - - - - current ———

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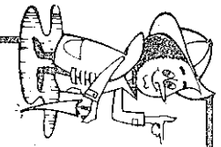

OHIO DEPARTMENT OF NATURAL RESOURCES
DIVISION OF WATER
FOUNTAIN SQUARE
COLUMBUS, OHIO 43224

PRECIPITATION *continued*

Cumulative precipitation for the first 8 months of the 1981 water year remains below normal throughout most of the state; the only exceptions are in the Central and Northeast Hills regions where precipitation is slightly above normal. The average for the state as whole was 21.55 inches, 1.94 inches below normal. Regional averages range from 24.43 inches, 0.19 inch below normal, for the Southeast region to 16.79 inches, 4.40 inches below normal for the Northwest region. Cumulative precipitation for both the Central and Northeast Hills regions is 0.13 inch above normal.

SUMMARY

The water-supply situation in general improved during the month and continues to be favorable in most areas of the state. Precipitation for May was below normal in the northeast portion of the state and noticeably above normal elsewhere. Reservoir storage, streamflow and ground-water levels remain near normal. Lake Erie mean level rose slightly and is 1.14 feet above normal.

NOTES AND COMMENTS

NEW PUBLICATIONS

The Division of Water announces the availability of the following publications:

THE GROUND-WATER RESOURCES OF FAIRFIELD COUNTY by James J. Schmidt

THE GROUND-WATER RESOURCES OF MORROW COUNTY by Richard J. Kostelnick

These maps are two of a series of county ground-water resources maps being completed for each of Ohio's counties. The maps are designed as a guide to locating new ground-water supplies or as an aid for expanding supplies already established. They will be useful to homeowners, developers, and planners.

In addition, ground-water resources maps are available for the following counties: Ashland, Ashtabula, Champaign, Columbiana, Cuyahoga, Delaware, Geauga, Harrison, Holmes, Knox, Lake, Lorain, Mahoning, Marion, Medina, Pickaway, Portage, Richland, Ross, Sandusky, Stark, Summit, Trumbull, Union, and Wayne. The maps are available for $2.50 a copy plus $0.14 cents tax and $0.25 cents mailing charges from the Publications Center, Ohio Department of Natural Resources, Fountain Square, Columbus, Ohio 43224. Checks or money orders should be made payable to the ODNR Publications Center.

DEPARTMENT OF NATURAL RESOURCES

James A. Rhodes Governor *Robert W. Teater Director*

MAY 1981

monthly water inventory report for Ohio

Compiled by Leonard J. Harstine

PRECIPITATION

PRECIPITATION for May was noticeably above normal throughout most of the state; the only exceptions were in the North Central, Northeast and Northeast Hills regions where precipitation was below normal. The average for the state as a whole was 4.99 inches, 1.08 inches above normal. Regional averages ranged from 6.69 inches, 2.74 inches above normal, for the Central region to 2.97 inches, 0.84 inch below normal, for the Northeast region. Springfield water treatment plant at Eagle City, Clark County, reported the greatest amount of precipitation for the month, 10.06 inches, and Painesville, Lake County, reported the least amount, 1.76 inches. The 10.06 inches at the Springfield station was the second greatest amount of precipitation for May and the sixth greatest observed monthly amount for all months in this century for the Springfield record. Urbana, Champaign County, reported 9.30 inches, the greatest amount for May and the fourth greatest for all months in this century for that station.

There were substantial amounts of precipitation during every week of the month throughout most of the state; the only exception was in the northern portion of the state where there was very little precipitation during the third week. Thunderstorms producing in excess of 1 inch of precipitation occurred several times during the month in the central and southwestern portions of the state. Springfield water treatment plant reported 2.74 inches on the morning of the 28th. Generally there was between 6 to 10 inches of precipitation for the month in the central and southwestern portions of the state diminishing toward the north to less than 3 inches along the lake front. The excessive rain during the month has helped to improve the water supply situation but has stymied planting activities for agriculture.

Cumulative precipitation for the 1981 calendar year thus far averages 15.68 inches, 0.31 inch below normal. Six of the ten regions show precipitation to be above normal for the calendar thus far. Regional averages ranged from 17.38 inches, 1.08 inches above normal, for the Central region to 11.16 inches, 4.15 inches below normal, for the Northeast region.

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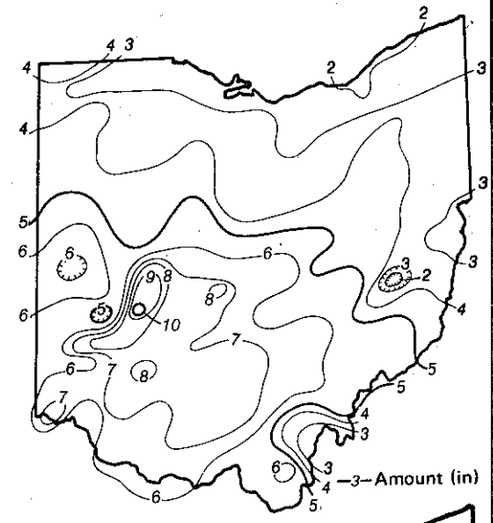
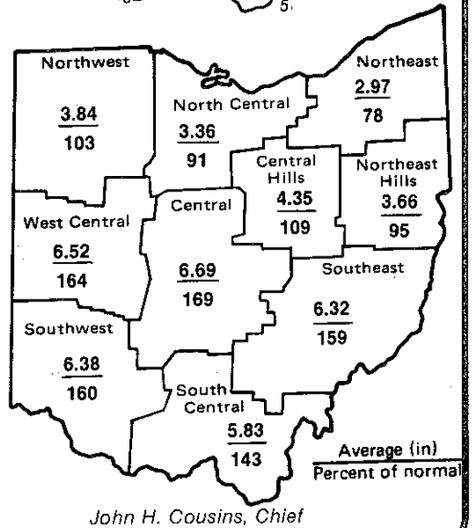
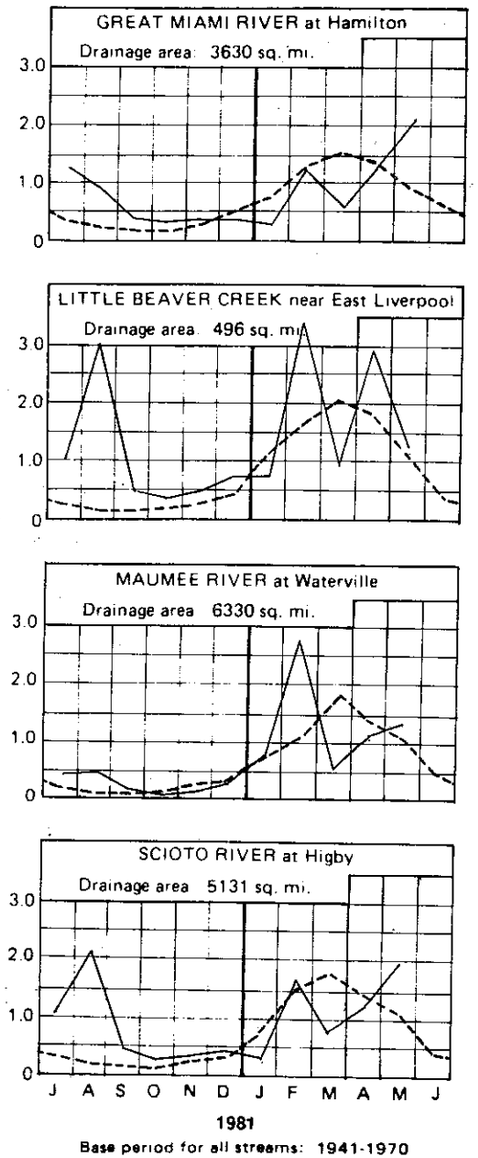




DIVISION OF WATER

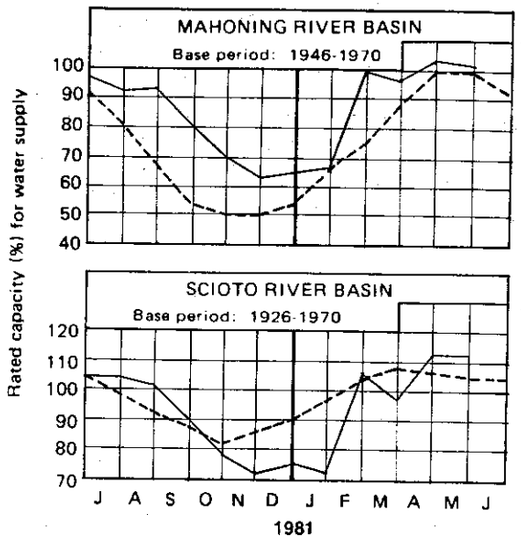
John H. Cousins, Chief

MEAN STREAM DISCHARGE



Base period for all streams: 1941-1970

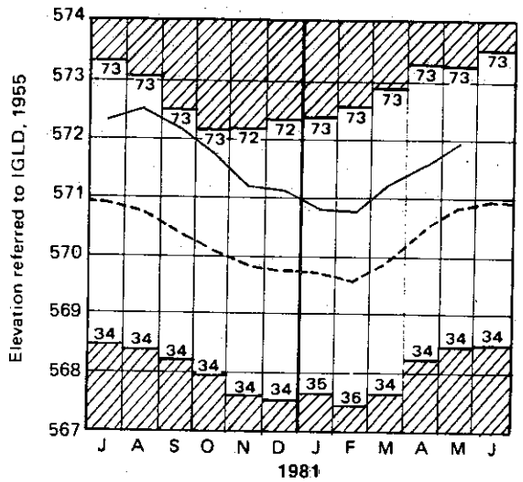
RESERVOIR STORAGE FOR WATER SUPPLY



RESERVOIR STORAGE for water supply for May remained above normal in both the Mahoning River and the Scioto River basins. Storage at the month end decreased slightly for the Mahoning basin index reservoirs and increased slightly for the Scioto basin index reservoirs. Reservoir storage at the month end for the Mahoning basin index reservoirs was 102 percent of rated capacity for water supply compared to 105 percent for last month and 101 percent for May 1980. Storage at the month end for the Scioto basin index reservoirs was 112 percent of rated capacity for water supply compared to 111 percent for last month and 100 percent for May 1980.

STREAMFLOW for May was above normal throughout the state and in the central and southwest portions it was excessive in response to the excessive precipitation. The only serious flooding occurred in the Scioto River basin south of Columbus following the storm of the 13th and 14th. Mean discharge and percent of normal for May for the index gauging stations were as follows: Great Miami River 7,541 cfs, 222 percent; Little Beaver Creek, 670 cfs, 107 percent; Maumee River, 8,709 cfs, 131 percent; Scioto River, 10,095 cfs, 178 percent. Flows at the month end were above normal for most areas of the state.

LAKE ERIE LEVELS

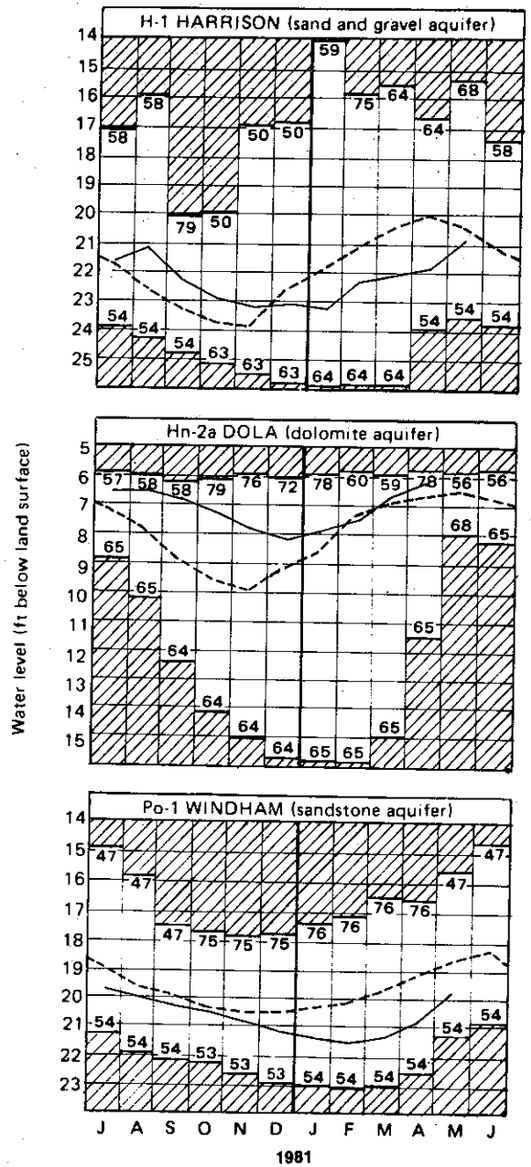


Base period: 1900-1974

LAKE ERIE mean level for May was 571.94 feet above IGLD(1955), 0.47 foot above last month's mean level and 1.14 feet above normal. The lake level was 0.53 foot below the level observed for May 1980 and 3.34 feet above Low Water Datum. (Correction; the lake level for April 1981 should have read 0.94 foot below the level observed for April 1980).

GROUND-WATER LEVELS for May showed marked rises in most areas of the state; the only exception was in the gravel aquifers in the Central Hills region where precipitation was only about normal and water levels declined during the month. Water levels in all the key index wells showed marked rises from last month's mean levels, whereas they usually show a noticeable decline for May. Water levels are generally above normal in the consolidated rock aquifers and below normal in the unconsolidated sand and gravel aquifers. There are some exceptions to this, especially in the consolidated rock aquifers in the northeastern portion of the state where precipitation and water levels remain below normal. Thus the ground-water storage situation showed some improvements during the past two months and continues to be favorable for the state.

GROUND-WATER LEVELS



Base periods: H-1, 1951-1979; Hn-2a, 1955-1979; Po-1, 1947-1979

normal ----- current ——

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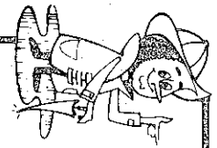

OHIO DEPARTMENT OF NATURAL RESOURCES
DIVISION OF WATER
FOUNTAIN SQUARE
COLUMBUS, OHIO 43224

PRECIPITATION *continued*

Southwest and South Central regions where precipitation remains below normal for the water year. The average for the state as a whole was 27.95 inches, 0.64 inch above normal. Departures from normal for the water year ranged from 3.95 inches above normal for the Southeast region to 3.02 inches below normal for the Southwest region.

SUMMARY

The water supply situation improved and remains very favorable throughout the state for June. Precipitation was generally excessive for most of the state; the average for the state as a whole was 6.40 inches, 2.58 inches above normal. As a result, streamflow was excessive and serious flooding occurred in many areas. In the northwest, record flood stages were observed at Findlay and Ottawa, exceeded only by the March 1913 flood. Reservoir storage and ground-water storage continued to improve from last month. Lake Erie level continued to rise whereas it usually begins to decline.

NOTES AND COMMENTS

Residents of northwest Ohio have again been reminded of the vagaries of Mother Nature. During the weekend of June 13 many normally placid streams overflowed their banks causing several million dollars of damage to homes and businesses. As a result of the flooding three counties—Hancock, Putnam and Wyandot—were declared major disaster areas.

Because of the availability of flood insurance—made possible through the National Flood Insurance Program (NFIP)—many residents and businesses in the flooded areas were indemnified for the losses they suffered. It is estimated that claims totaling one million dollars will be paid to insured property owners as a result of this flood.

The NFIP was created by Congress in 1968 to make available flood insurance which was previously unobtainable through the private sector. Flood insurance can be purchased from any licensed insurance agent in a community participating in the NFIP. A community joins the program by adopting standards designed to reduce future flood losses.

The Ohio Department of Natural Resources Flood Plain Planning Unit is the state agency that coordinates the flood insurance program and assists Ohio communities with the application process. There are 651 Ohio communities now participating in the program and in these communities some 21,000 flood insurance policies are in effect. The total value of these policies is about $600 million.

If you would like more information on the NFIP, contact the Flood Plain Planning Unit at (614) 466-6020.

DEPARTMENT OF NATURAL RESOURCES

James A. Rhodes Governor *Robert W. Teater Director*

JUNE 1981

monthly water inventory report for ohio

Compiled by Leonard J. Harstine

PRECIPITATION

PRECIPITATION for June was above normal and even excessive in most areas of the state; the only exception was in the Southwest region where precipitation was below normal. Regional averages ranged from 9.10 inches, 5.37 inches above normal, for the Northwest region to 2.94 inches, 0.93 inch below normal, for the Southwest region. Galion, Crawford County, reported the greatest amount of precipitation for the month, 12.19 inches and Germantown, Montgomery County, reported the least amount, 1.39 inches. Several stations in Northwest Ohio reported record high monthly and daily amounts of precipitation for their respective periods of record.

The bulk of the months precipitation was produced by several intensive thunderstorms which swept across the state during the first three weeks of the month. Several tornadoes also touched down during the month, the most notable of these was on June 13th at Cardington, Morrow County, which resulted in very severe damage to the town. The northwestern portion of the state experienced a flood producing storm on the 13th and 14th. Many stations including Ottawa and Findlay reported more than 4.50 inches of rain during this storm period. An unofficial report of 5.05 inches was reported at Mt. Cory, Hancock County, southwest of Findlay. This storm, which was preceeded by more than 2 inches of precipitation in the early part of the week, produced record breaking floods in both Findlay and Ottawa and peak flood stages were exceeded only by the March 1913 flood. Flooding in many other areas including the Scioto River also approached record stages set by the January-February 1959 floods. The excessive rainfall also took its toll on agriculture where extensive damage is still being observed throughout the state.

Cumulative precipitation for the first six months of the 1981 calendar year was above normal throughout most of the state; the only exceptions were in the Southwest and South Central regions where it remains below normal. The average for the state as a whole was 22.08 inches, 2.27 inches above normal. Regional averages ranged from 24.95 inches, 4.22 inches above normal, for the Southeast region to 19.77 inches, 0.86 inch above normal for the Northeast region.

Cumulative precipitation for the 1981 water year was generally above normal for most of the state for the first time; the only exceptions are in the Northeast, West Central,

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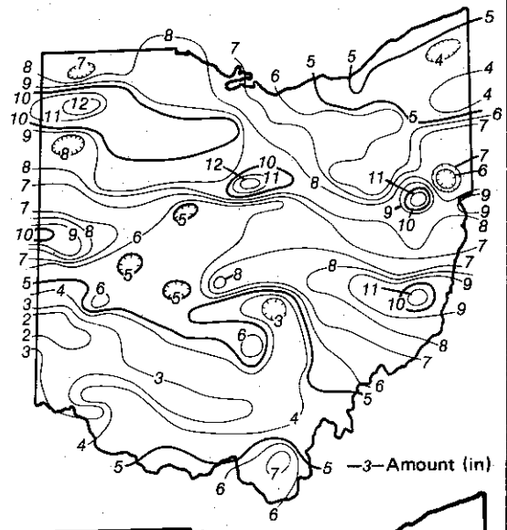
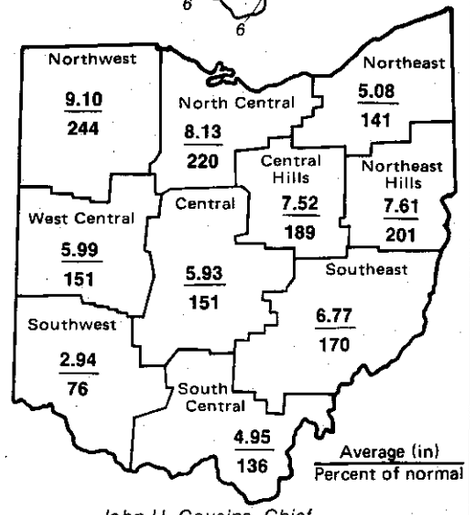
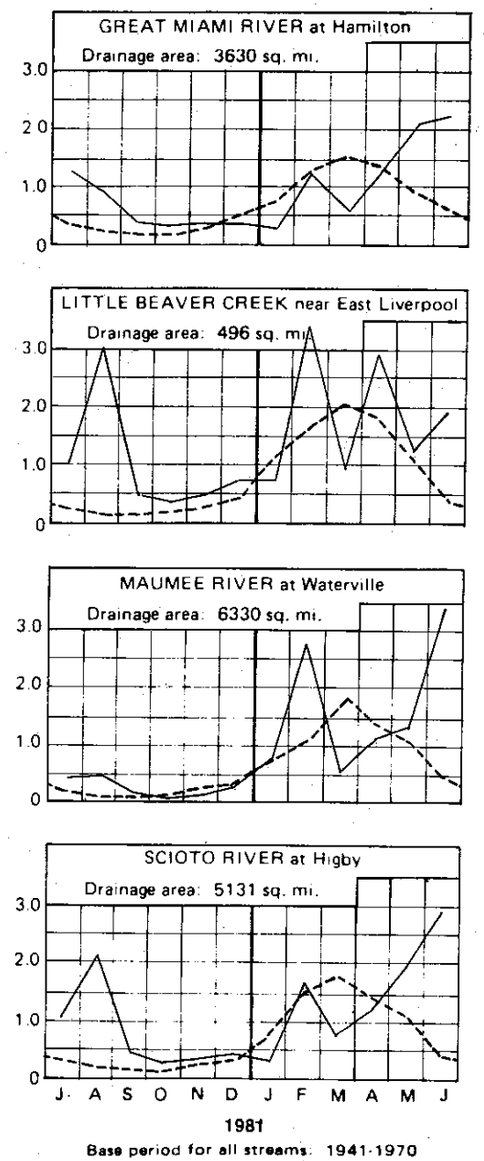




DIVISION OF WATER

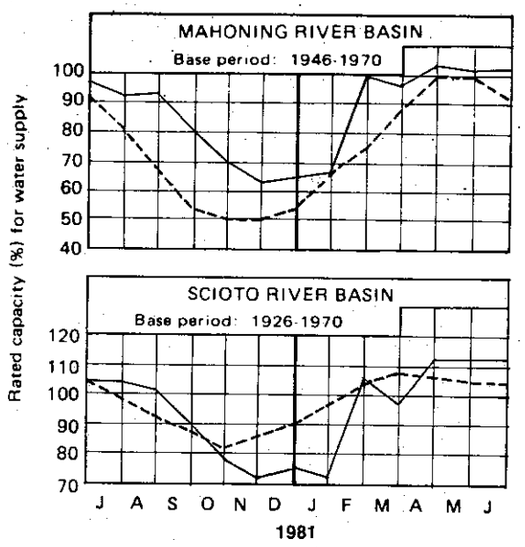
John H. Cousins, Chief

MEAN STREAM DISCHARGE



Base period for all streams: 1941-1970

RESERVOIR STORAGE FOR WATER SUPPLY

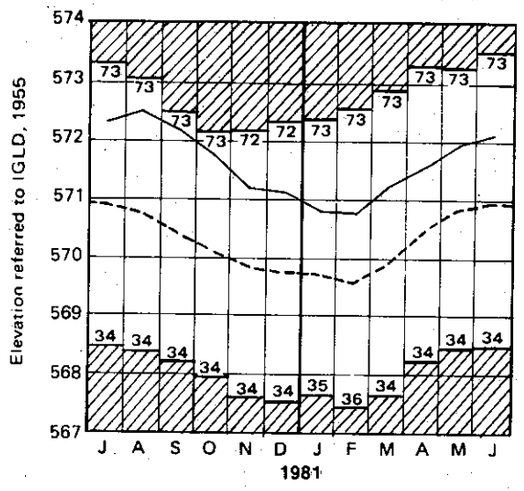


RESERVOIR STORAGE for water supply for June remained nearly the same as last months and was above normal for both the Mahoning River and the Scioto River basins at the month end. Reservoir storage at the month end for the Mahoning basin index reservoirs was 103 percent of rated capacity for water supply compared to 102 percent for last month and 89 percent for June 1980. Storage at the month end for the Scioto basin index reservoirs was 112 percent of rated capacity for water supply, the same as that observed for last month and above the 105 percent for June 1980.

STREAMFLOW for June was excessive throughout most of the state as a result of the excessive precipitation during the month. The storm of June 13-14 produced record breaking floods on the Blanchard River at Findlay and Ottawa; exceeded only by the 1913 flood. The peak stages for the Blanchard at Findlay are as follows: 18.50 feet, March 1913; 17.84 feet, June 14, 1981; 16.76 feet, February 11, 1959. The Maumee River at Defiance was about 1 foot below the 1959 peak of 13.7 feet. Many other areas throughout the state experienced serious flooding. New discharge records were set for June for Maumee River at Defiance for the period of record 1921 to 1981-monthly maximum, 21,636 cfs, and daily maximum, 69,400 cfs on June 16. A new monthly maximum flow, 14,650 cfs, was set for June for the Scioto River at Higby for the period of record beginning in 1930.

Mean discharge and percent of normal for June for the index gaging stations are as follows: Great Miami River, 8,073 cfs, 372 percent; Little Beaver Creek, 961 cfs, 437 percent; Maumee River, 21,636 cfs, 825 percent; Scioto River, 14,650 cfs, 718 percent.

LAKE ERIE LEVELS

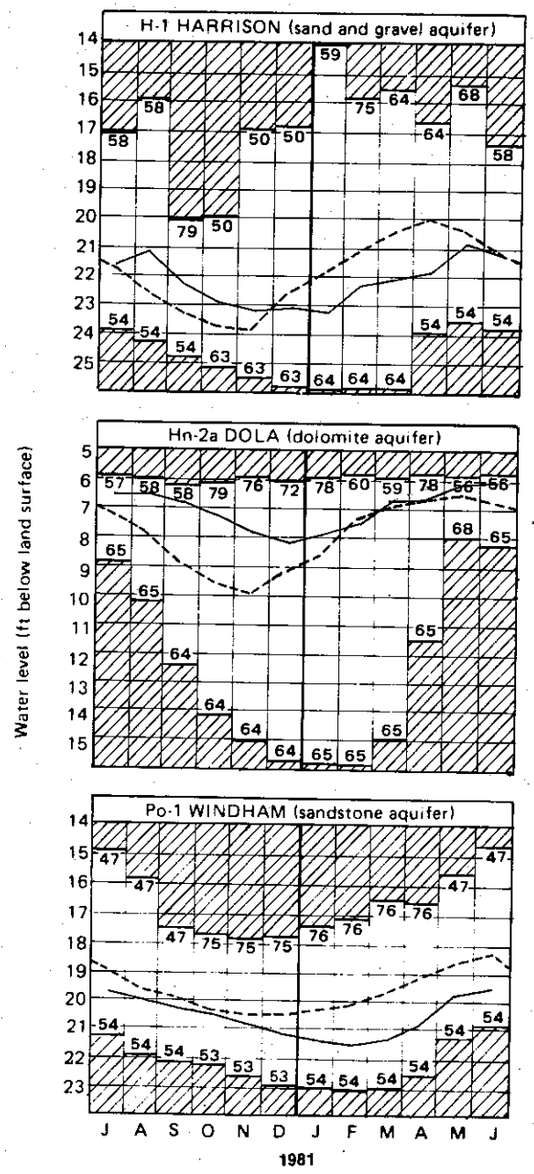


Base period 1900-1974

LAKE ERIE level continued to rise in June whereas it usually begins its seasonal decline. The mean level for June was 572.15 feet above IGLD (1955), 1.21 feet above normal. The lake level was 0.23 foot below the level observed for June 1980 and 3.55 feet above Low Water Datum.

GROUND-WATER LEVELS showed mixed responses to the excessive precipitation in June. Generally water levels declined during the month but the declines were not nearly as great as usually observed for June. One of the key index wells, Tu-1 at Strasburg, Tuscarawas County, representing a sand and gravel aquifer, showed marked rises in response to the excessive precipitation in that area. The overall status of the ground-water situations has been improved. Water levels for June in consolidated rock aquifers are generally above normal and above those levels observed in June 1980 and are near normal for unconsolidated sand and gravel aquifers. The ground-water storage situation continues to be favorable throughout the state.

GROUND-WATER LEVELS



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OHIO DEPARTMENT OF NATURAL RESOURCES
DIVISION OF WATER
FOUNTAIN SQUARE
COLUMBUS, OHIO 43224

SUMMARY

The water supply situation continues to be favorable throughout the state. Precipitation for July was normal and streamflow, reservoir storage, and ground-water storage remain about normal throughout the state. Lake Erie level rose slightly and remains noticeably above normal for July.

NOTES AND COMMENTS

NEW DAM RULES PROPOSED

The Ohio Department of Natural Resources, Division of Water, pursuant to Sections 1521.06, 1521.061, and 1521.062 of the Ohio Revised Code has filed proposed new and revised administrative rules relating to issuing construction permits for dams, dikes, and levees and to making periodic inspections of existing dams, dikes, and levees. The proposed rules pertain to: application procedures; administrative procedures; necessary field investigations; classifications of dams, dikes, and levees; general and specific design criteria for each classification; requirements and procedures for inspecting construction; exemptions from permit requirements; periodic inspection procedures and requirements for existing dams, dikes, and levees; owner responsibilities for correction, operation, maintenance, and inspection; and definitions of terms used in the rules. The Division of Water will conduct a public hearing on these proposed rules on Monday, August 31, 1981, at 10:00 a.m. in the Ohio Department of Natural Resources Assembly Center, Building E, Fountain Square, Columbus, Ohio.

Copies of the proposed rules may be obtained from the Ohio Department of Natural Resources, Division of Water, Fountain Square, Building E, Columbus, Ohio 43224.

DEPARTMENT OF NATURAL RESOURCES

James A. Rhodes Governor *Robert W. Teater Director*

JULY 1981

monthly water inventory report for ohio

Compiled by Leonard J. Harstine

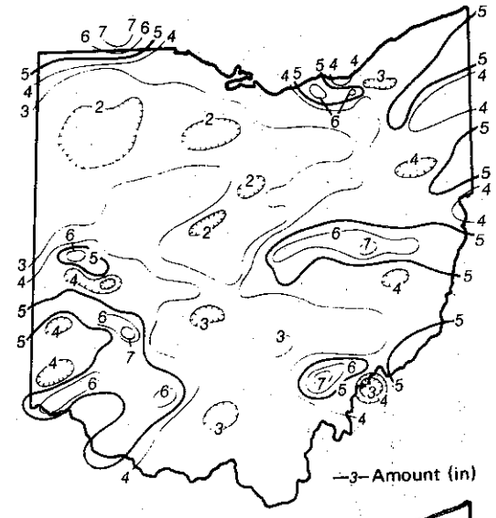
PRECIPITATION

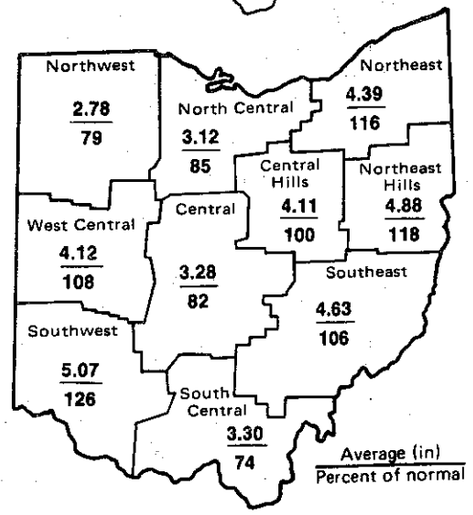
PRECIPITATION for July was generally normal for the state as a whole; the state averaged 3.97 inches, 0.01 inch below normal. Regional averages ranged from 5.07 inches, 1.06 inches above normal, for the Southwest region to 2.78 inches, 0.73 inch below normal, for the Northwest region. Departures from normal ranged from 1.06 inches above normal for the Southwest region to 1.13 inches below normal for the South Central region. Xenia, Greene County, reported the greatest amount of precipitation for the month, 7.95 inches; New Commerstown, Tuscarawas County, reported 7.31 inches and Athens, Athens County, reported 7.23 inches. Galion, Crawford County, reported the least amount, 1.42 inches.

Generally the central and northwestern portions of the state were dry during the first two weeks of the month while the remainder of the state received substantial amounts of precipitation during this period. There were moderate amounts of precipitation throughout the state during the last two weeks of the month. Heavy thunderstorms produced in excess of six inches of rain for the month in many isolated areas of the state. A storm along the eastern border of the state on the 29th produced between 1.5 and 2.5 inches of rain from Andover in Ashtabula County to Marietta in Washington County.

Cumulative precipitation for the 1981 calendar year thus far is above normal throughout most of the state; the only exceptions are in the Southwest and South Central regions where it is below normal. The average for the state as a whole was 26.05 inches, 2.26 inches above normal. Regional averages ranged from 29.75 inches, 5.94 inches above normal for the Northeast Hills region to 23.57 inches, 2.19 inches above normal for the North Central region.

Cumulative precipitation for the first 10 months of the 1981 water year averages 31.92 inches, 0.63 inch above normal. Regional averages range from 36.14 inches, 4.68 inches above normal for the Northeast Hills region to 28.26 inches, 0.01 inch below normal for the North Central region. Cumulative precipitation for the water year was above normal in the Northwest, Central, Central Hills, Northeast Hills and Southeast regions and below normal in all other regions.

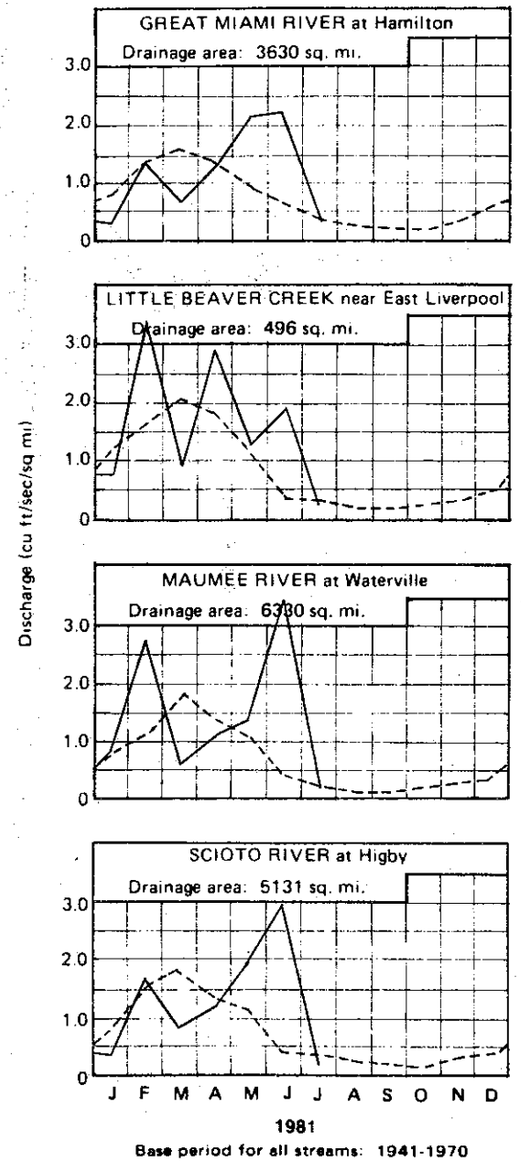




DIVISION OF WATER

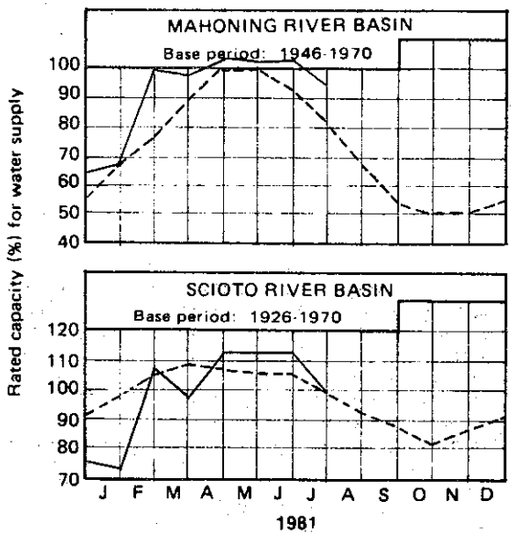
John H. Cousins, Chief

MEAN STREAM DISCHARGE



Base period for all streams: 1941-1970

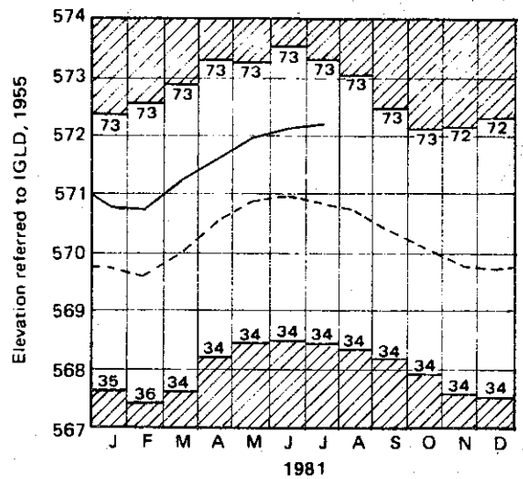
RESERVOIR STORAGE FOR WATER SUPPLY



RESERVOIR STORAGE for water supply for July showed noticeable declines from last month but remained above normal for both the Mahoning River and the Scioto River basins at the month end. Reservoir storage at the month end for the Mahoning basin index reservoirs was 96 percent of rated capacity for water supply compared to 103 percent for last month and 92 percent for July 1980. Storage at the month end for the Scioto basin index reservoirs was 99 percent of rated capacity for water supply compared to 112 percent for last month and 105 percent for July 1980.

STREAMFLOW for July was generally above normal throughout most of the state for the third consecutive month in response to noticeably above normal precipitation during these months. The only exceptions are in the Central, Southwest and South Central regions where streamflow is normal. Although there was some flooding in the low lying areas along small tributaries, there was no serious flooding reported in July. Mean discharge and percent of normal for July for the index gaging stations were as follows: Great Miami River, 2,756 cfs, 205 percent; Little Beaver Creek, 246 cfs, 216 percent; Maumee River, 2,801 cfs, 209 percent; Scioto River, 2,114 cfs, 134 percent.

LAKE ERIE LEVELS

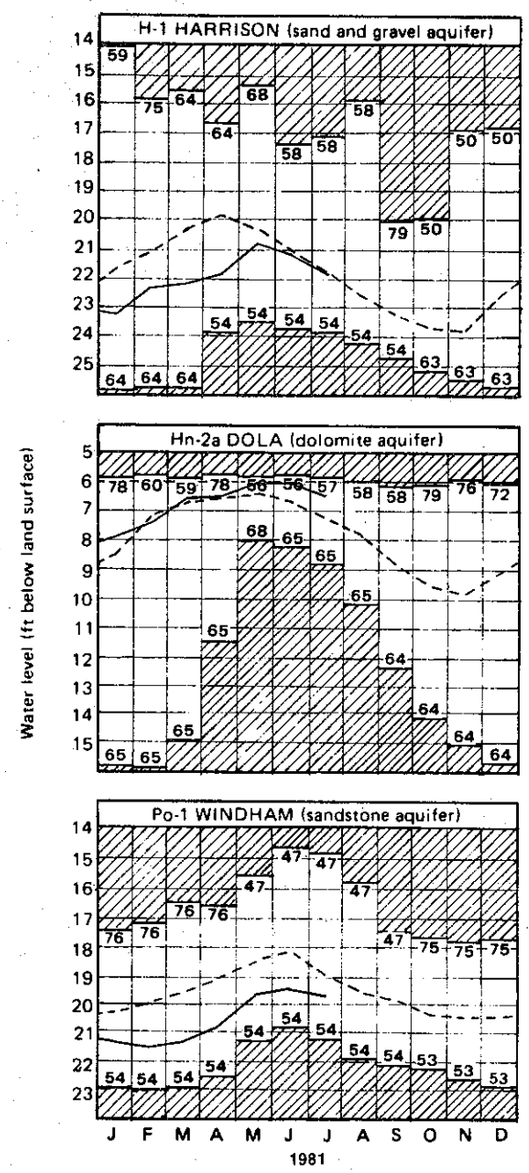


Base period: 1900-1974

LAKE ERIE mean level continued to rise through July. The mean level for July was 572.24 feet above IGLD (1955), 0.07 foot above last month's mean level and 1.34 feet above normal. The lake level is 0.19 foot below the level observed for July 1980 and 3.64 feet above Low Water Datum.

GROUND-WATER LEVELS for July showed moderate declines throughout the state. The above normal precipitation during the past three months has provided some much needed recharge to ground-water storage, thus water levels are generally about the same as those levels observed for July 1980. Ground-water levels range from about 1 foot above normal to 1 foot below normal throughout the state. The only exception is observation well Fr-10 at the OSU Farms, Franklin County, which set a new record high level for the month and remains about 4 feet above normal. This observation well has been showing unusually high levels for nearly two years in response to above normal precipitation in the area. The ground-water storage situation continues to be favorable throughout the state.

GROUND-WATER LEVELS



Base periods: H-1, 1951-1979; Hn-2a, 1955-1979; Po-1, 1947-1979

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. Corps of Engineers, Detroit District.

OHIO DEPARTMENT OF NATURAL RESOURCES
DIVISION OF WATER
FOUNTAIN SQUARE
COLUMBUS, OHIO 43224

SUMMARY

The water supply situation remains favorable throughout the state, despite the lack of precipitation. Precipitation for August was below normal throughout most of the state. Reservoir storage was above normal in the northeast and below normal in the central area of the state. Streamflow and ground-water storage were about normal for most areas of the state. Lake Erie level declined slightly and remained noticeably above normal for the month.

NOTES AND COMMENTS

Bucyrus and Delta Reservoirs progress report.

At Bucyrus, the pipeline installation for a new upground reservoir has been completed and bids have been made for the earthwork, concrete and electrical work necessary to complete the project. The new 1 billion gallon cooperative State-Bucyrus upground reservoir will serve to augment the water supply Bucyrus now realizes from its three existing reservoirs and will provide public recreation.

At Delta, plans for a new 400 million gallon reservoir have been approved. When complete, this cooperative State-Delta upground reservoir will not only provide additional water supply for Delta and eastern Fulton County but will also provide public recreation.

Both reservoirs, recommended in the Northwest Ohio Water Development Plan, will include parking areas, latrine facilities, water fountains and boat launching facilities. Through the cooperation of the ODNR Division of Wildlife, both will be stocked with fish.

DEPARTMENT OF NATURAL RESOURCES

James A. Rhodes Governor *Robert W. Teater Director*

AUGUST 1981

monthly water inventory report for ohio

Compiled by Leonard J. Harstine

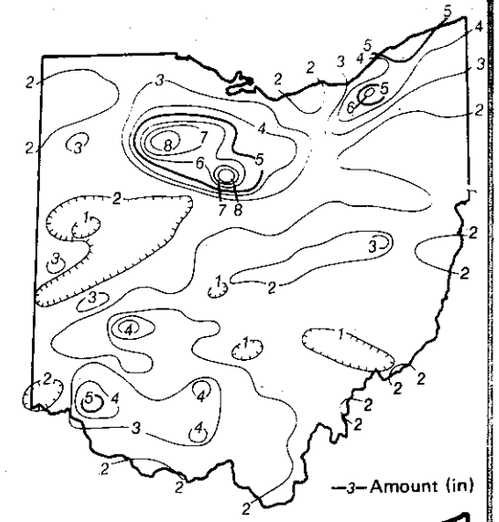
PRECIPITATION

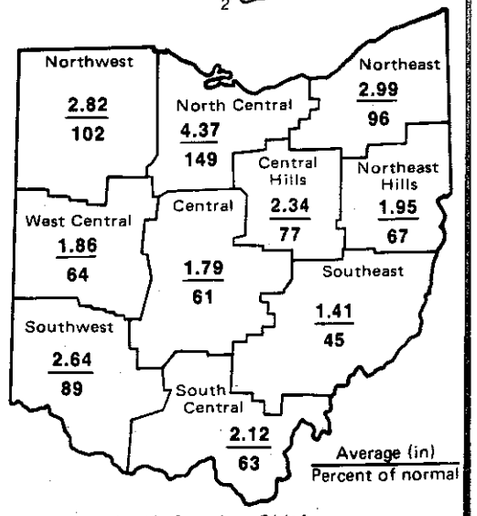
PRECIPITATION for August was below normal throughout the state; the only exceptions were in the Northwest and the North Central regions where precipitation was above normal. The average for the state as a whole was 2.43 inches, 0.57 inch below normal. Regional averages ranged from 4.37 inches, 1.43 inches above normal, for the North Central region to 1.41 inches, 1.70 inches below normal, for the Southeast region. Bucyrus, Crawford County, reported the greatest amount of precipitation for the month, 8.54 inches and Laurelville, Hocking County, reported the least amount, 0.62 inch.

Generally, August was considered a dry month; the bulk of the month's precipitation fell during the last three days of the month. The larger portion of the state received between 1 and 2 inches of precipitation. A few isolated areas in the southwest and an area in the northeast along Lake Erie received 3 to 5 inches while an area between Findlay and Bucyrus received between 3 and 8.54 inches of precipitation for the month. A storm which began on the 31st and extended into the first week of September produced from 5 to 6 inches of precipitation at Findlay and Bucyrus on the morning of the 31st. As a result there was surface flooding in low lying areas on the 31st. Considerable damages to homes and properties were reported in the area by the Crawford County Disaster Services representative.

Cumulative precipitation for the first eight months of the 1981 calendar year averaged 28.48 inches, 1.69 inches above normal. Regional averages ranged from 31.70 inches, 5.00 inches above normal for the Northeast Hills region to 26.73 inches, 2.73 inches above normal, for the Northwest region. The Southwest and South Central regions continue to show below normal precipitation for the calendar year thus far.

Cumulative precipitation for the 1981 water year thus far averages 34.35 inches, 0.06 inch above normal. Regional averages ranged from 38.09 inches, 3.74 inches above normal, for the Northeast Hills region to 31.49 inches, 0.30 inch above normal, for the Northwest region. Cumulative precipitation for the 1981 water year continues to be below normal in the Northeast, West Central, Southwest and South Central regions. Deficiencies range from 0.62 inch below normal for the Northeast region to 4.29 inches below normal for the South Central region.

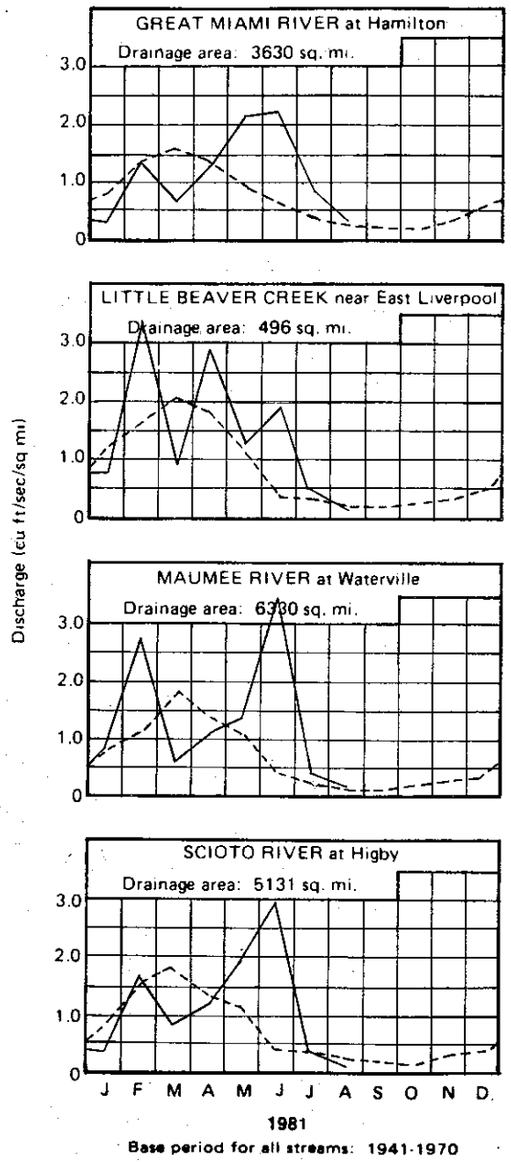




DIVISION OF WATER

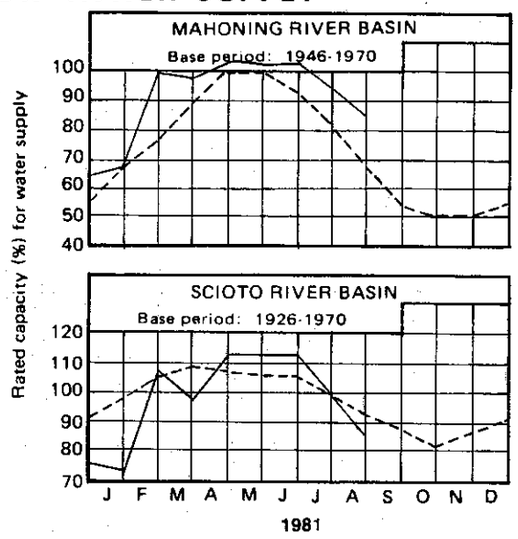
John H. Cousins, Chief

MEAN STREAM DISCHARGE



Base period for all streams: 1941-1970

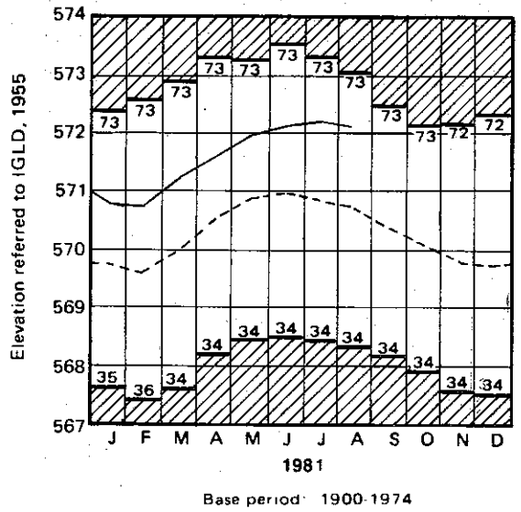
RESERVOIR STORAGE FOR WATER SUPPLY



RESERVOIR STORAGE for water supply for August declined in both the Mahoning and the Scioto River basins in response to the below normal precipitation. Storage in the Mahoning River basin reservoirs was above normal while storage in the Scioto River basin fell below normal for the first time since March. Reservoir storage at the month end for the Mahoning basin index reservoirs was 86 percent of rated capacity for water supply compared to 96 percent for last month and 94 percent for August 1980. Reservoir storage at the month end for the Scioto basin index reservoirs was 87 percent of rated capacity for water supply compared to 99 percent for last month and 102 percent for August 1980.

STREAMFLOW for August was normal for most of the state; the only exception was in the northwest where it was excessive. Streamflow throughout the state generally declined steadily during the month in response to the lack of precipitation. Mean discharge and percent of normal for August for the index gaging stations were as follows: Great Miami River, 1,304 cfs, 167 percent; Little Beaver Creek, 968 cfs, 142 percent; Maumee River, 1,332 cfs, 224 percent; Scioto River, 781 cfs, 86 percent.

LAKE ERIE LEVELS

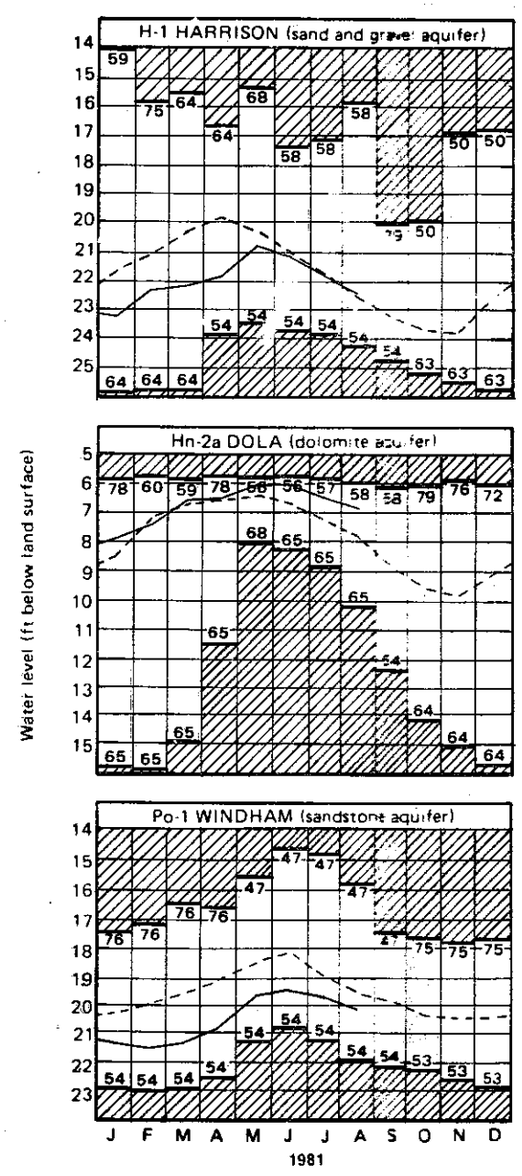


Base period: 1900-1974

LAKE ERIE level declined for the first time since February. The mean level for August was 572.05 feet above IGLD (1955), 0.19 foot below last month's mean level and 1.34 feet above normal. The lake level is 0.51 foot below the level observed for August 1980 and 3.45 feet above Low Water Datum.

GROUND-WATER LEVELS throughout the state showed noticeable declines during August in response to the below normal precipitation. Observation wells F-1 at West Rushville, Fairfield County, representing a sandstone aquifer and Tu-1 near Strasburg, Tuscarawas County, representing a gravel aquifer, both showed marked declines in response to noticeably below normal precipitation in their respective areas while the declines in most wells were about normal for August. Groundwater levels varied from nearly 4 feet above to 2 feet below normal for the month and they are from 0 to 4 feet below the levels observed for August 1980. Groundwater storage continues to be favorable throughout the state.

GROUND-WATER LEVELS



Base periods: H-1, 1951-1979; Hn-2a, 1955-1979; Po-1, 1947-1979

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.

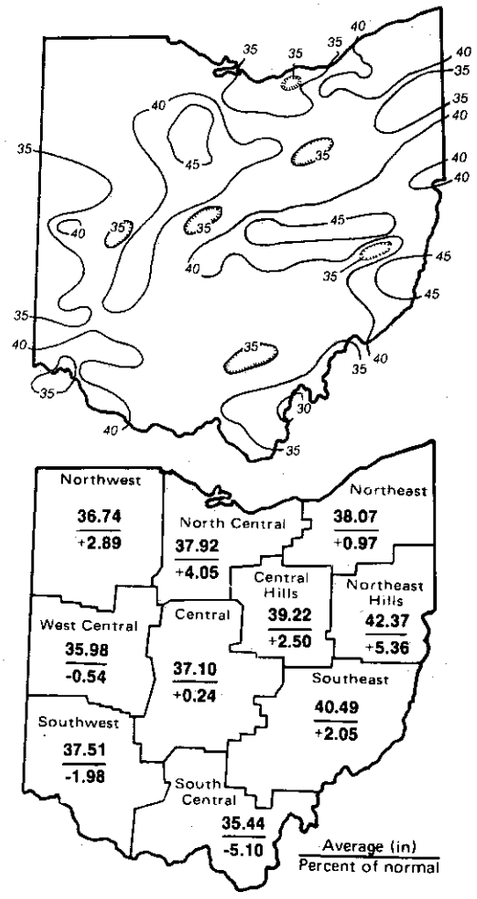
Lake Erie level data:
U.S. Corps of Engineers, Detroit District.

OHIO DEPARTMENT OF NATURAL RESOURCES
DIVISION OF WATER
FOUNTAIN SQUARE
COLUMBUS, OHIO 43224

greatest amount of precipitation for the year, 49.25 inches, and Gallipolis, Gallia County, reported the least amount, 29.99 inches.

SUMMARY

The water supply situation was favorable throughout the 1981 water year. Water supplies were sustained very well during the recharge period despite the below normal precipitation and continued to hold a favorable position throughout the remainder of the year in response to above normal precipitation during the water supply depletion period. Precipitation for September was above normal throughout most of the state. Reservoir storage, streamflow, and ground-water storage remained favorable. Lake Erie level declined but remained markedly above normal.



DEPARTMENT OF NATURAL RESOURCES

James A. Rhodes Governor *Robert W. Teater Director*

SEPTEMBER 1981

monthly water inventory report for ohio

Compiled by Leonard J. Harstine

PRECIPITATION

PRECIPITATION for September was above normal for most of the state; the only exceptions were in the Central and South Central regions where precipitation was below normal. The average for the state as a whole was 3.74 inches, 0.99 inch above normal. Regional averages ranged from 5.29 inches, 2.63 inches above normal, for the North Central region to 2.18 inches, 0.81 inch below normal, for the South Central region. Upper Sandusky, Wyandot County, reported the greatest amount of precipitation for the month, 9.18 inches and Cincinnati Abbe Observatory, Hamilton County, reported the least amount, 0.76 inch. Generally the southern half of the state received between 1 and 3 inches of precipitation for the month while the northern half received between 3 to 9 inches.

The bulk of the month's precipitation occurred during the first three days of the month. In addition, the northern portion of the state and a few other isolated stations in the state received substantial amounts of precipitation on the 14th and 15th and during the latter part of the month. The north central portion of the state experienced a severe thunderstorm on the morning of the 2nd which produced nearly 4 inches of precipitation over an area including Tiffin, Upper Sandusky and Bucyrus. An unofficial observation of 7 inches was reported near Nevada. Considerable flood and property damage was reported in the vicinity of Bucyrus from this storm.

Cumulative precipitation for the first nine months of the 1981 Calendar year was above normal throughout most of the state; the only exceptions were in the Southwest and South Central regions. The average for the state as a whole was 32.22 inches, 2.68 inches above normal. Regional averages range from 35.98 inches, 6.62 inches above normal, for the Northeast Hills region to 29.41 inches, 3.24 inches below normal, for the South Central region.

Precipitation for the 1981 water year which began October 1, 1980 and ended September 30, 1981, was above normal throughout most of the state; the only exceptions were in the West Central, Southwest and South Central regions where precipitation was below normal for the year. The average for the state as a whole was 38.09 inches, 1.05 inches above normal. Regional averages range from 42.37 inches, 5.36 inches above normal, for the Northeast Hills region to 35.44 inches, 5.10 inches below normal, for the South Central region. Newcomerstown, Tuscarawas County, reported the

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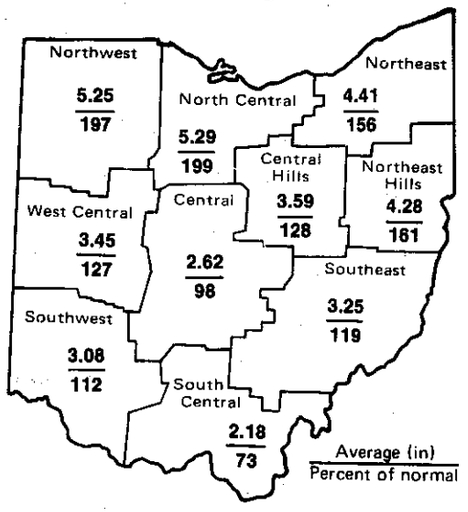
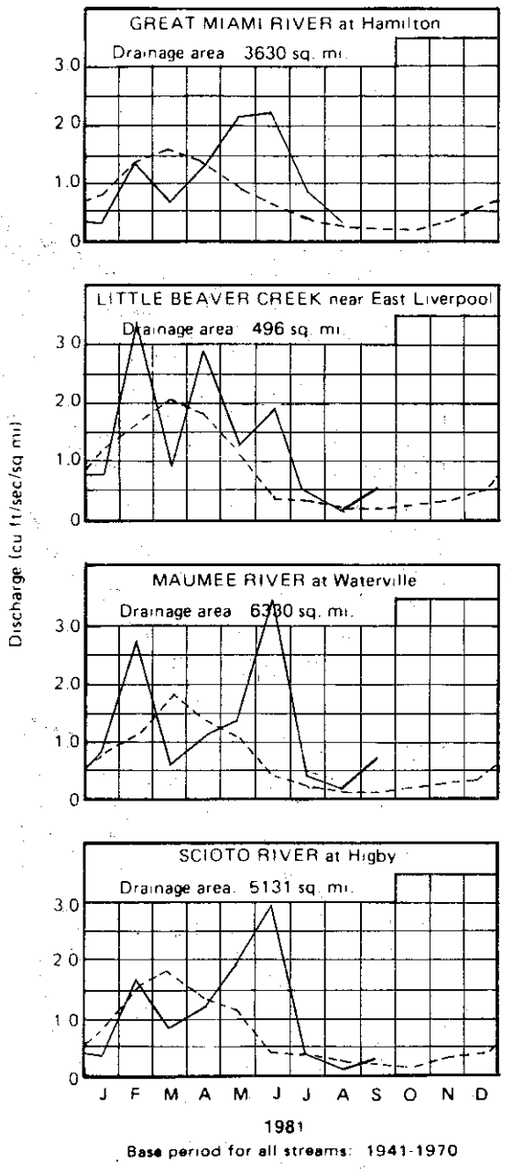


DIVISION OF WATER

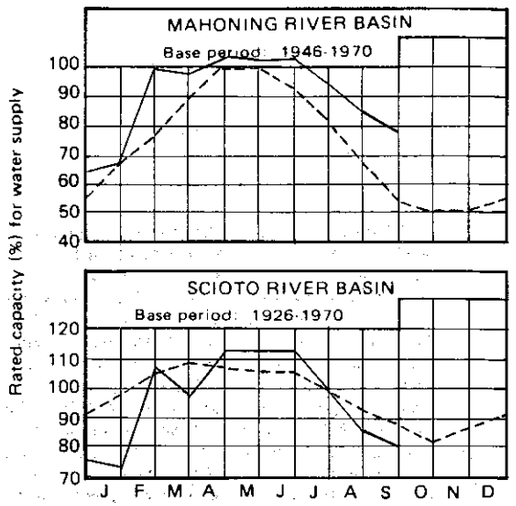
John H. Cousins, Chief

MEAN STREAM DISCHARGE



Base period for all streams: 1941-1970

RESERVOIR STORAGE FOR WATER SUPPLY

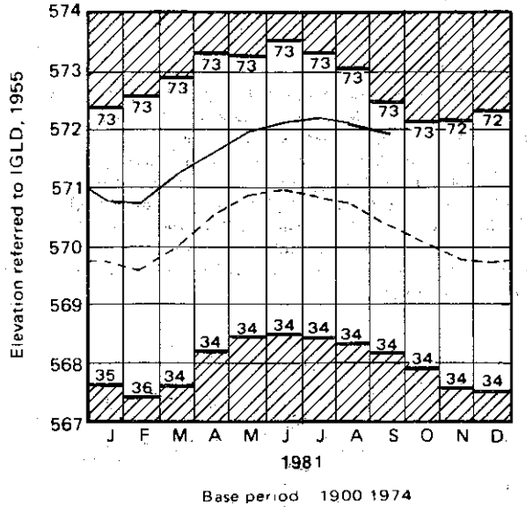


RESERVOIR STORAGE for water supply for September showed normal declines in both the Mahoning River and the Scioto River basins. Storage at the month end was noticeably above normal in the Mahoning basin while it was below normal in the Scioto basin. Reservoir storage at the month end for the Mahoning basin index reservoirs was 79 percent of rated capacity for water supply compared to 86 percent for last month and 80 percent for September 1980. Reservoir storage at the month end for the Scioto basin index reservoirs was 80 percent of rated capacity for water supply compared to 87 percent for last month and 90 percent for September 1980. Reservoir storage for water supply was generally favorable throughout the state during the 1981 water year.

STREAMFLOW for September was excessive throughout the state as a result of the heavy rains during the first 10 days of the month and the above normal to excessive streamflows during the previous three months. Mean discharge and percent of normal for September for the index gauging stations were as follows: Great Miami River, 1,606 cfs, 264 percent; Little Beaver Creek, 260 cfs, 427 percent; Maumee River, 4,742 cfs, 1,278 percent; Scioto River, 1,151 cfs, 191 percent.

Streamflow for the 1981 water year was generally normal during the first six months (October-March) and excessive during the last six months (April-September). A severe storm on June 13-14 resulted in record breaking monthly and daily flows for the Maumee River at Defiance and produced floods on the Blanchard River at Findlay and Ottawa which were exceeded only by the 1913 flood. Mean discharge and percent of normal for the water year at the index gauging stations were as follows: Great Miami River, 3,075 cfs, 94 percent; Little Beaver Creek, 579 cfs, 134 percent; Maumee River, 6,084 cfs, 124 percent; Scioto River, 4,450 cfs, 98 percent. This is the fourth consecutive year for which streamflows have been most favorable throughout the state for the water year as a whole.

LAKE ERIE LEVELS



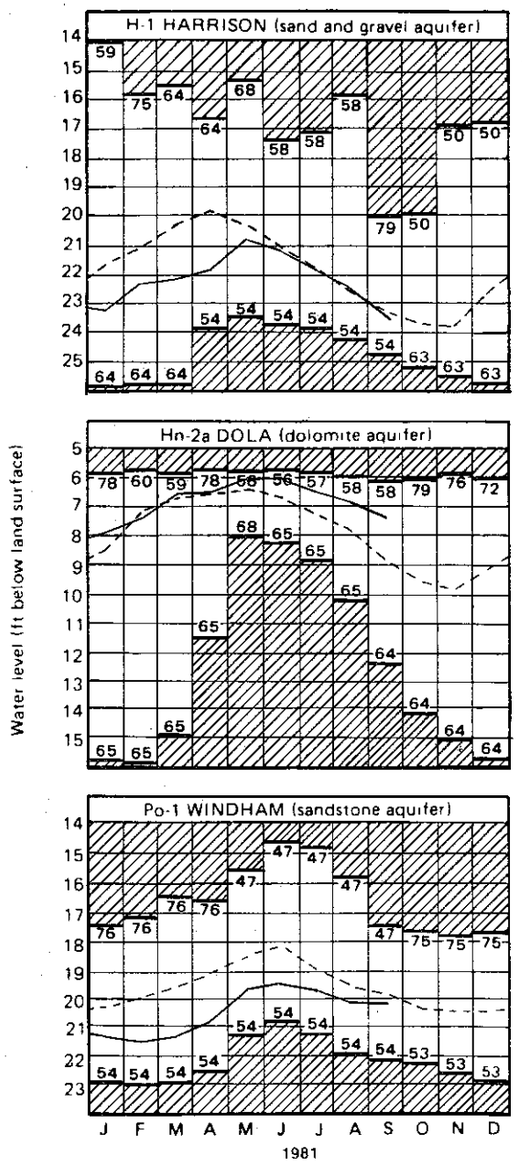
Base period 1900-1974

LAKE ERIE mean level declined slightly in September and remained markedly above normal for the month. The mean level for September was 571.93 feet above IGLD (1955), 0.12 foot below last month's mean level and 1.52 feet above normal. The lake level is 0.37 foot below the level observed for September 1980 and 3.33 feet above Low Water Datum. The Lake level remained noticeably above normal during the entire 1981 water year.

GROUND-WATER LEVELS for September generally declined steadily during the month. The net declines from last month were about normal for September. Ground-water levels for the index wells range from 4.23 feet above normal in observation well Fr-10 at the OSU Farms, Franklin County, to 2.20 feet below normal in observation well F-1 at West Rushville, Fairfield County. The water level in observation well Fr-10 has been unusually high for the past two years in response to above normal precipitation in the area. Generally, water levels throughout the state are near normal and they vary from 0 to 4 feet below those levels observed for September 1980.

The ground-water storage situation was favorable throughout the state during the 1981 water year. Generally, ground-water levels were noticeably above normal during the first three months of the water year and declined considerably during the next six months to below normal levels. However, water levels recovered favorably during the last three months of the water year in response to the above normal precipitation and were generally near normal at the year end.

GROUND-WATER LEVELS



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normal ----- current ——

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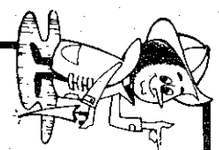

OHIO DEPARTMENT OF NATURAL RESOURCES
DIVISION OF WATER
FOUNTAIN SQUARE
COLUMBUS, OHIO 43224

period for water supplies. The water supply situation is favorable for the beginning of the water year throughout most of the state; however, much depends on the amount of precipitation received during the current recharge period.

SUMMARY

The water supply situation continues to be favorable for most of the state; however, declining water levels and soil moisture deficiencies have been reported in the eastern portions of the state. Water users should take notice and monitor their water supplies closely and plan accordingly. Precipitation for October was above normal in the western and northern portions of the state and below normal in the central and eastern portions. Reservoir storage showed noticeable declines while streamflow and ground-water storage continued to be about normal. Lake Erie level declined only slightly and remained markedly high for the month.

NOTES AND COMMENTS

NEW PUBLICATIONS

The Division of Water announces the availability of the following publications:

THE GROUND-WATER RESOURCES of ALLEN COUNTY by Richard J. Kostelnick

THE GROUND-WATER RESOURCES of CRAWFORD COUNTY by James J. Schmidt

THE GROUND-WATER RESOURCES of HANCOCK COUNTY by James J. Schmidt

These maps are three of a series of county ground-water resources maps being completed for each of Ohio's counties. The maps are designed as a guide to locating new ground-water supplies or as an aid for expanding supplies already established. They will be useful to homeowners, developers, and planners.

In addition, ground-water resources maps are available for the following 27 counties:

ALLEN	HOLMES	PORTAGE
ASHLAND	KNOX	RICHLAND
ASHTABULA	LAKE	ROSS
CHAMPAIGN	LORAIN	SANDUSKY
COLUMBIANA	MAHONING	STARK
CUYAHOGA	MARION	SUMMIT
DELAWARE	MEDINA	TRUMBULL
FAIRFIELD	MORROW	UNION
GEAUGA	PICKAWAY	WAYNE

The maps are available for $2.50 each plus $0.14 cents tax and $0.25 cents mailing charge from the Publications Center, Ohio Department of Natural Resources, Fountain Square, Columbus, Ohio 43224. Checks or money orders should be made payable to the ODNR Publications Center.

DEPARTMENT OF NATURAL RESOURCES

James A. Rhodes Governor *Robert W. Teater Director*

OCTOBER 1981

monthly water inventory report for ohio

Compiled by Leonard J. Harstine

PRECIPITATION

PRECIPITATION for October was above normal for the western and northern portions of the state and below normal for the central and eastern portions. The average for the state as a whole was 2.42 inches, 0.11 inch above normal. Regional averages ranged from 4.00 inches, 1.55 inches above normal, for the Northwest region to 1.53 inches, 1.07 inches below normal, for the Northeast Hills region. Andover in Ashtabula County reported the greatest amount of precipitation for the month, 6.19 inches, and Mohawk Dam in Coshocton County reported the least amount, 0.58 inch. Generally, the western and northern portions of the state received between 2 and 5 inches of precipitation for the month while the central and eastern portions received between 0.58 inch and 2 inches. An area in the extreme northeast received between 5 and 6 inches of precipitation for the month.

There were substantial amounts of precipitation during the first week of the month; however, the bulk of the month's precipitation occurred during the third and fourth weeks of the month. The Toledo area experienced an unusually heavy storm on the 27th; unofficial reports said 3 to 5 inches of precipitation fell in the downtown area resulting in minor surface flooding and some problems in the city's storm sewer system. At the other extreme, some areas in the eastern and southeastern areas of the state are experiencing a serious lack of precipitation. There have been reports of declining water levels, springs drying up, and noticeable soil moisture deficiencies.

Cumulative precipitation for the first 10 months of the 1981 calendar year was above normal throughout most of the state; the only exception was in the South Central region where cumulative precipitation was below normal. The average for the state as a whole was 34.64 inches, 2.79 inches above normal. Regional averages ranged from 37.51 inches, 5.55 inches above normal, for the Northeast Hills region to 31.28 inches, 3.53 inches below normal, for the South Central region. Cumulative precipitation for the Northwest region was 35.98 inches, 6.87 inches above normal, and for the North Central region it was 35.47 inches, 6.35 inches above normal.

This is the first month of the 1982 water year, which began on October 1, 1981 and will end on September 30, 1982. The water year—a common reference period for surface-water reports—is also useful for discussion of ground-water phenomena. This is also the beginning of the nominal recharge

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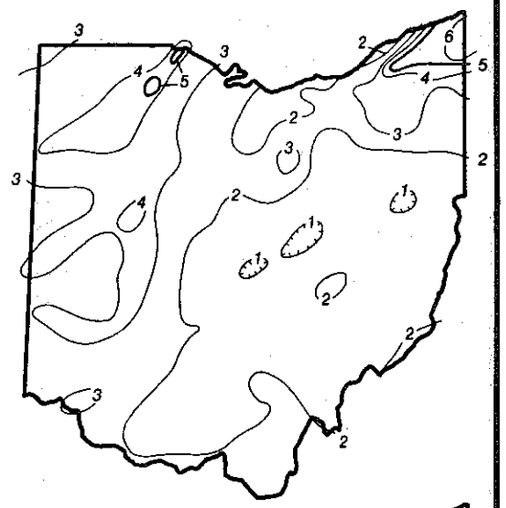
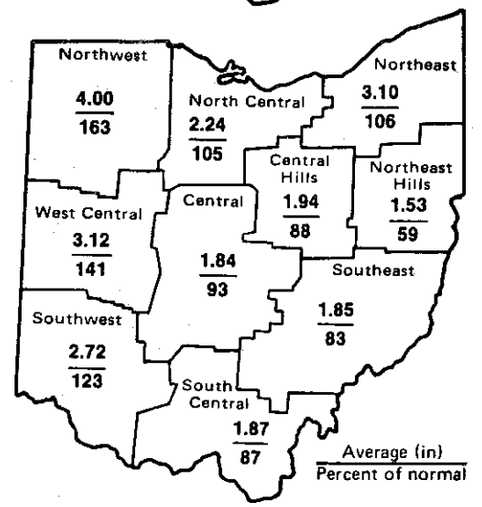
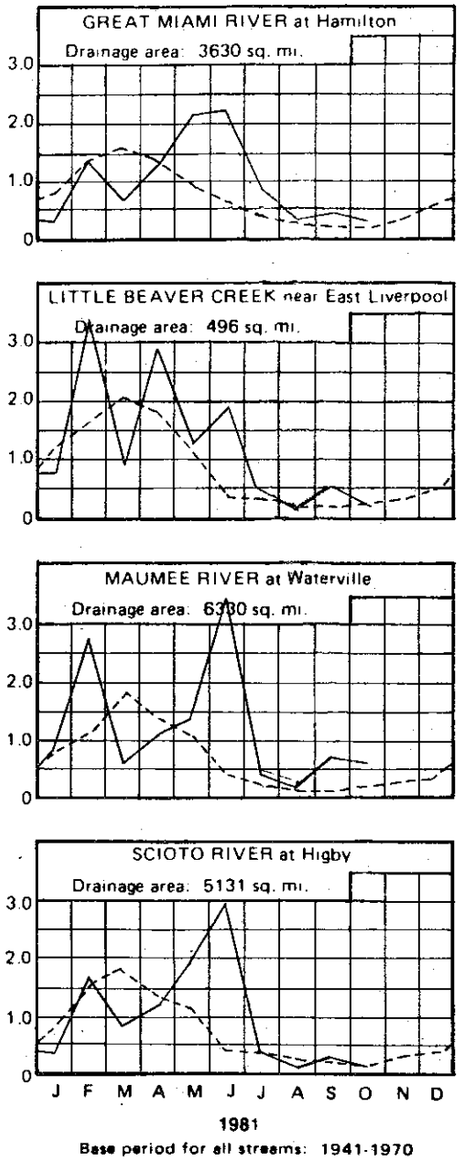




DIVISION OF WATER

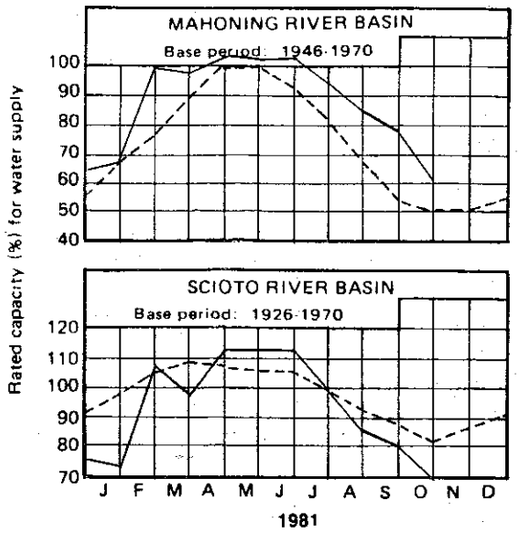
John H. Cousins, Chief

MEAN STREAM DISCHARGE



Base period for all streams: 1941-1970

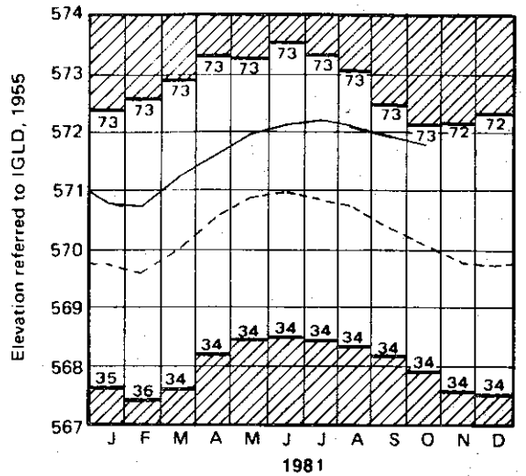
RESERVOIR STORAGE FOR WATER SUPPLY



RESERVOIR STORAGE for water supply for October showed marked declines from last month in both the Mahoning River and the Scioto River basins in response to the below normal precipitation in their respective areas. Reservoir storage remained above normal in the Mahoning River basin while it was noticeably below normal in the Scioto basin reservoirs. Reservoir storage at the month's end for the Mahoning basin index reservoirs was 62 percent of rated capacity for water supply compared to 79 percent for last month and 70 percent for October 1980. Storage at the month's end for the Scioto basin index reservoirs was 69 percent of rated capacity for water supply compared to 80 percent for last month and 79 percent for October 1980.

STREAMFLOW for October continued to be excessive for the western and central portions of the state and normal in the eastern portion. These high streamflows have been sustained by above normal precipitation in these areas and also by contributions to the streamflow from above normal ground-water levels during the past several months. Mean discharge and percent of normal for October for the index gaging stations were as follows: Great Miami River, 1,138 cfs, 191 percent; Little Beaver Creek, 105 cfs, 139 percent; Maumee River, 3,969 cfs, 780 percent; Scioto River, 976 cfs, 167 percent. Runoff was slightly above normal in all the index drainage basins for the first month of the new 1982 water year.

LAKE ERIE LEVELS

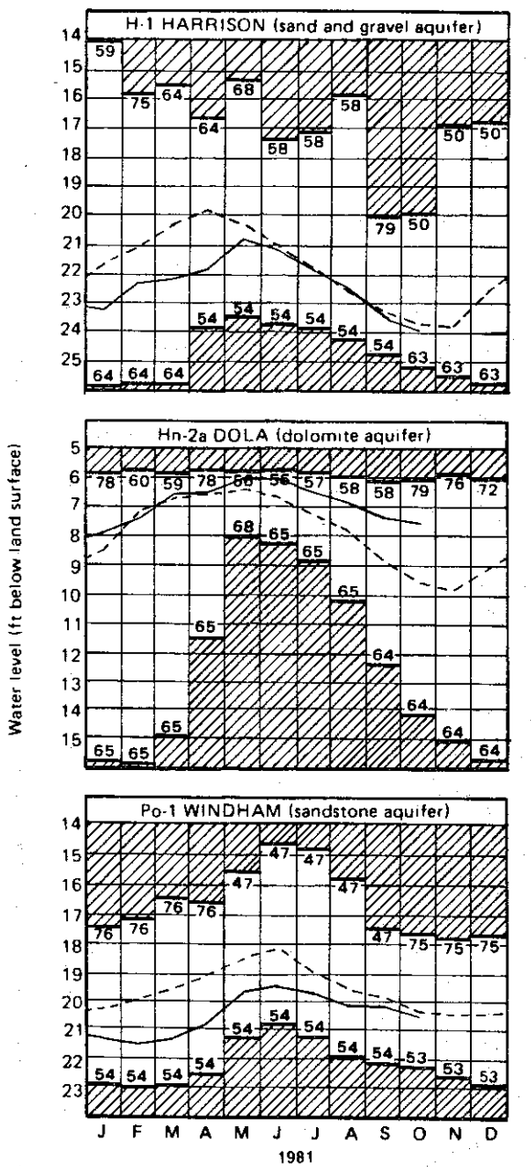


Base period: 1900-1974

LAKE ERIE mean level declined slightly for October. The mean level for October was 571.72 feet above IGLD (1955), 0.21 foot below last month's mean level and 1.63 feet above normal. The lake level is the same as that observed for October 1980 and 3.12 feet above Low Water Datum. It is most interesting to note that the October mean level for the lake has been the same (571.72 feet) for the past three years.

GROUND-WATER LEVELS for October continued to decline slightly during the month. The net declines from last month's mean levels were about normal. Generally, ground-water levels are above normal in the northern portion of the state and below normal in the southern portion. Ground-water levels throughout the state are noticeably below those levels observed for October 1980. Observation well F-1 near West Rushville, Fairfield County, set a new record-low water level for October for the period of record beginning in 1946. Examination of precipitation data for this area shows that precipitation has been about 50 percent of normal for the past three months. Ground-water storage continues to be favorable throughout the state; however, water users should be aware of the present climatic conditions in their areas and plan accordingly.

GROUND-WATER LEVELS



Base periods: H-1, 1951-1979; Hn-2a, 1955-1979; Po-1, 1947-1979

normal - - - - current ——

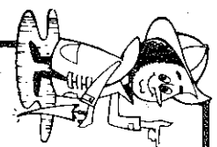
ACKNOWLEDGMENTS

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. Corps of Engineers, Detroit District.



OHIO DEPARTMENT OF NATURAL RESOURCES
DIVISION OF WATER
FOUNTAIN SQUARE
COLUMBUS, OHIO 43224

SUMMARY

The water supply situation for November remains favorable for most of the state. Precipitation for November was below normal throughout the state. Streamflow was above normal while reservoir storage and ground-water storage were normal in the northern portion of the state and below normal in the southern portion. Lake Erie level continues to be noticeably above normal. Those responsible for our water supplies should monitor them closely and plan accordingly.

NOTES AND COMMENTS

This is the first of a series of comments on the data presented in this report. It is not practical to include this information on a monthly basis. We hope that you will preserve these comments for future reference; however, we will repeat them from time to time.

The purpose of this report is to disseminate current hydrologic data in brief form. Observation points have been selected which are considered to be sufficiently representative of water conditions in the state to permit an evaluation of the current water-supply situation. These key observation stations offer the best available data on the basis of (1) accuracy and length of record, (2) minimal artificial effects on data, and (3) availability of records. Data from these stations are collected by various agencies at the end of each month and processed immediately. Because of the time limitations involved, all data must be considered preliminary and may be subject to revision before final publication in regular form by the agencies involved. The remarks in this report include the writer's opinions of the cause and significance of the phenomena reported therein. The reader is urged to examine the data and formulate his own evaluation.

The author is indebted to the various agencies and individuals who make the data available. More complete and detailed information can be obtained by writing to the Division of Water, Ohio Department of Natural Resources, Bldg. E., Fountain Square, Columbus, Ohio 43224.

DEPARTMENT OF NATURAL RESOURCES **NOVEMBER 1981**

James A. Rhodes Governor *Robert W. Teater Director*

monthly water inventory report for ohio

Compiled by Leonard J. Harstine

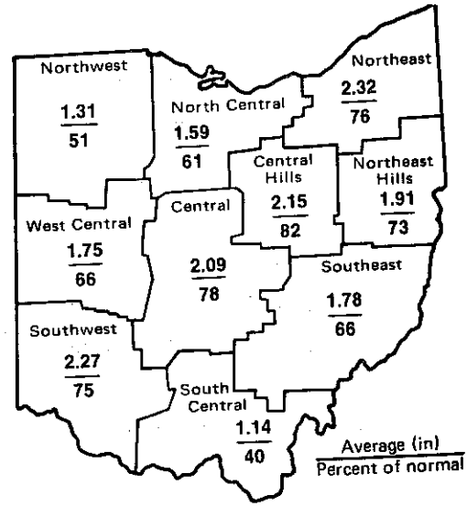
PRECIPITATION

PRECIPITATION for November was below normal throughout the state. The average for the state as a whole was 1.83 inches, 0.91 inch below normal. Regional averages ranged from 2.32 inches, 0.73 inch below normal, for the Northeast region to 1.14 inches, 1.73 inches below normal, for the South Central region. Andover, Ashtabula County, reported the greatest amount of precipitation for the month, 4.23 inches, and South Webster, Scioto County, reported the least amount, 0.37 inch.

Generally, about half of the state, including most of the area within a 50-mile wide band across the state from Cincinnati through Columbus to Youngstown, received between 2 and 3 inches of precipitation for the month. The remainder of the state to the northwest and southeast received between 0.3 and 2 inches of precipitation. There were measureable amounts of precipitation during every week of the month in most areas of the state. Snowfall throughout the state was below normal. Chardon in the snowbelt east of Cleveland reported 9 inches of snow for the month which is 72 percent of normal for that station. However, most areas received less than half that normally observed in November.

Cumulative precipitation through November of the 1981 calendar year remains above normal for most of the state, the only exceptions are in the Southwest and South Central regions where precipitation is below normal. The average for the state as a whole was 36.47 inches, 1.88 inches above normal. Regional averages range from 39.42 inches, 4.83 inches above normal, for the Northeast Hills region to 32.42 inches, 5.26 inches below normal, for the South Central region. Departures from normal for the Northwest and the North Central regions are 5.62 inches and 5.35 inches above normal, respectively.

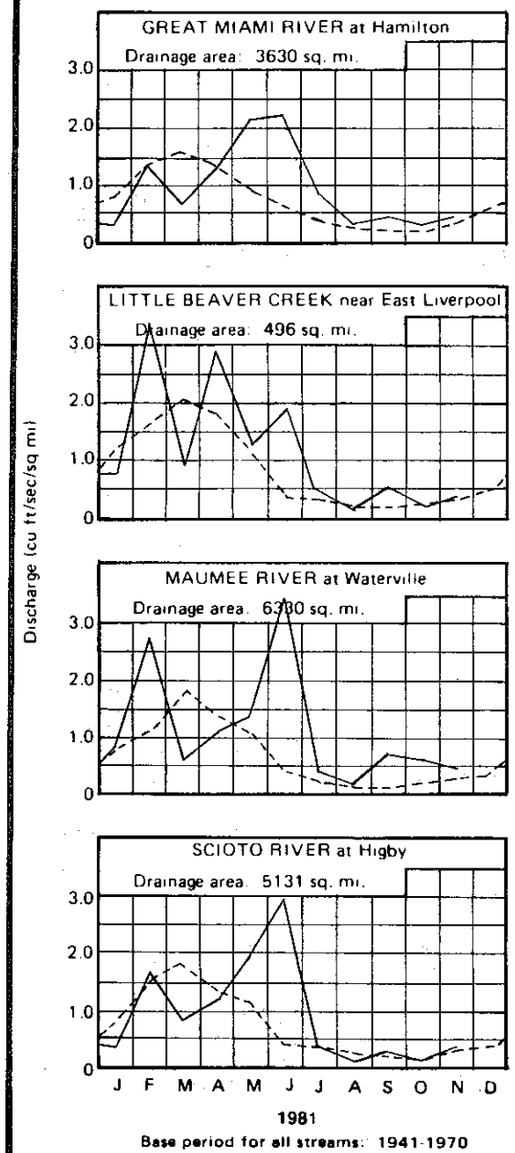
Cumulative precipitation for the first two months of the new 1982 water year was below normal throughout most of the state, the only exception is in the Northwest region where precipitation is slightly above normal thus far. The average for the state as a whole was 4.25 inches, 0.80 inch below normal. Regional averages range from 5.42 inches, 0.55 inch below normal, for the Northeast region to 3.01 inches, 2.02 inches below normal, for the South Central region. It is difficult at this time to determine what effect the below normal precipitation thus far in this water year will have on our water supply situation in the ensuing months.



DIVISION OF WATER

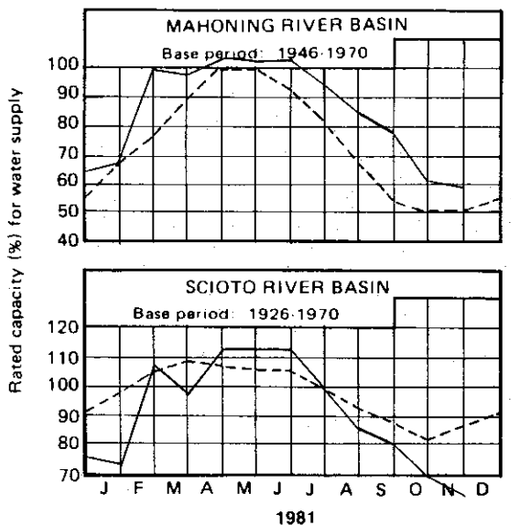
John H. Cousins, Chief

MEAN STREAM DISCHARGE



Base period for all streams: 1941-1970

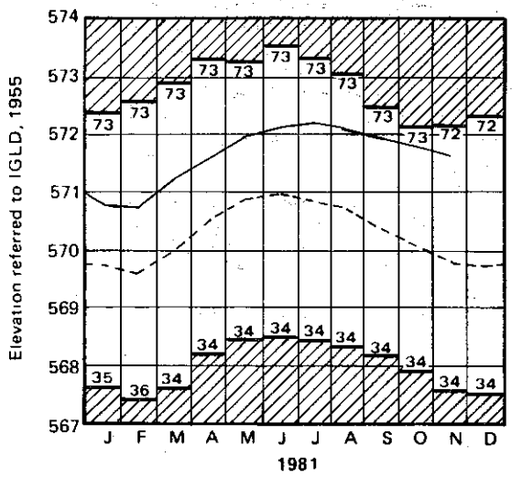
RESERVOIR STORAGE FOR WATER SUPPLY



RESERVOIR STORAGE for water supply for November in both index basins showed noticeable declines from last month, whereas, reservoir storage usually shows slight gains in November. Storage in the Mahoning River basin declined slightly but remained above normal while storage in the Scioto River basin showed a marked decline and is noticeably below normal at the month end. Reservoir storage for water supply in the Scioto River basin index reservoirs is the lowest since November 1978 and the ninth lowest for the period of record beginning in 1955. Reservoir storage at the month end for the Mahoning basin index reservoirs was 58 percent of rated capacity for water supply compared to 62 percent for last month and 63 percent for November 1980. Reservoir storage at the month end for the Scioto basin index reservoirs was 62 percent of rated capacity for water supply compared to 69 percent for last month and 72 percent for November 1980.

STREAMFLOW for November was above normal throughout the state. Runoff for the month at the respective gaging stations was slightly above normal despite the below normal precipitation. Mean discharge and percent of normal for November for the index gaging stations were as follows: Great Miami River, 1,511 cfs, 151 percent; Little Beaver Creek, 186 cfs, 128 percent; Maumee River, 2,782 cfs, 178 percent; Scioto River, 1,532 cfs, 135 percent.

LAKE ERIE LEVELS



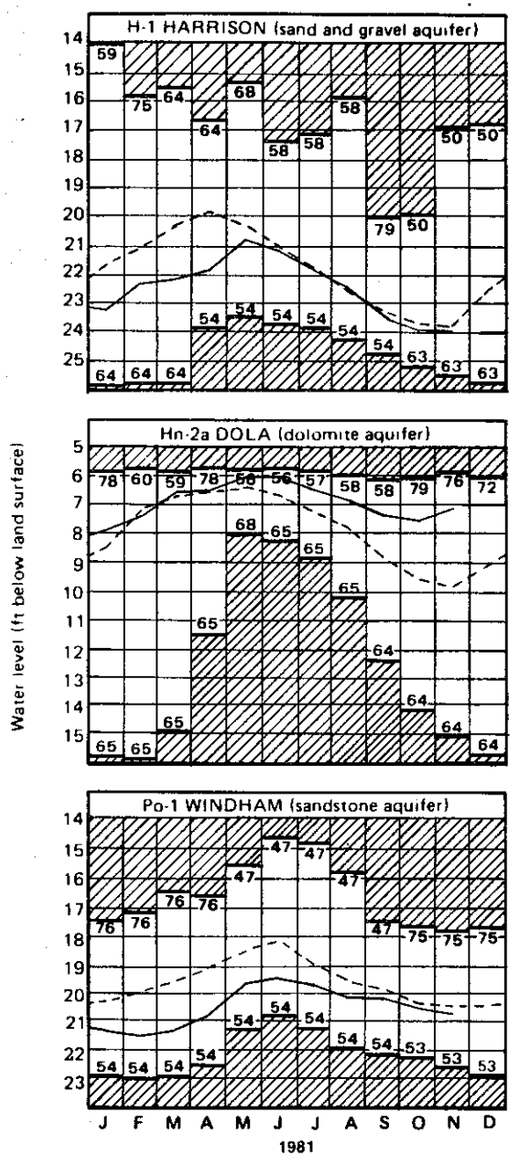
Base period 1900 1974

LAKE ERIE mean level declined slightly during November. The mean level for November was 571.55 feet above IGLD (1955), 0.17 foot below last month's mean level and 1.73 feet above normal. The lake level was 0.32 foot above the level observed for November 1980 and 2.95 feet above Low Water Datum.

GROUND-WATER LEVELS for November showed about normal declines for most areas of the state, the only exception was in the dolomite aquifers in the northwest where water levels showed unusual rises in response to the excessive precipitation over the past six months. Water levels in unconsolidated sand and gravel aquifers are generally at or below normal throughout the state. Water levels in consolidated rock aquifers are generally above normal in the northwestern portion of the state where precipitation has been consistently above normal during the past several months and below normal elsewhere. The water level in index well **F-1** at West Rushville, Fairfield County, set a new monthly record low for the second consecutive month; precipitation in this area has been noticeably below normal for several months. Water levels are noticeably below those levels observed for November 1980 in the southern portion of the state and near or above those levels observed last year in the northern portion.

Generally, recharge to ground-water supplies has been deficient for the first two months of the new water year. Although ground-water levels usually show net declines through November, declines this year are more pronounced. In view of this, those who depend on ground-water should monitor their supplies closely and plan accordingly.

GROUND-WATER LEVELS



Base periods: H-1, 1951-1979; Hn-2a, 1955-1979; Po-1, 1947-1979

normal ---- current ——

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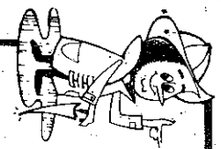
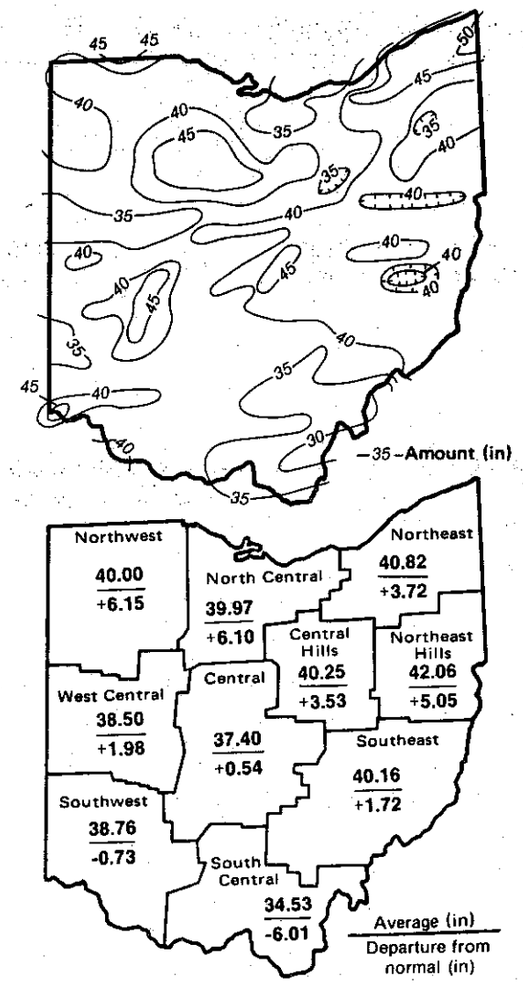


OHIO DEPARTMENT OF NATURAL RESOURCES
DIVISION OF WATER
FOUNTAIN SQUARE
COLUMBUS, OHIO 43224

SUMMARY

The water supply situation remained favorable throughout most of the state at the end of the 1981 calendar year. However, areas in the east and southern portions of the state are beginning to experience problems as precipitation deficiencies continue in these areas. Precipitation for December was above normal throughout the state. Streamflow, reservoir storage and ground-water storage were about normal. Lake Erie level continues to be noticeably above normal.

PRECIPITATION
1981 CALENDAR YEAR



DEPARTMENT OF NATURAL RESOURCES

James A. Rhodes Governor *Robert W. Teater Director*

DECEMBER 1981

monthly water inventory report for ohio

Compiled by Leonard J. Harstine

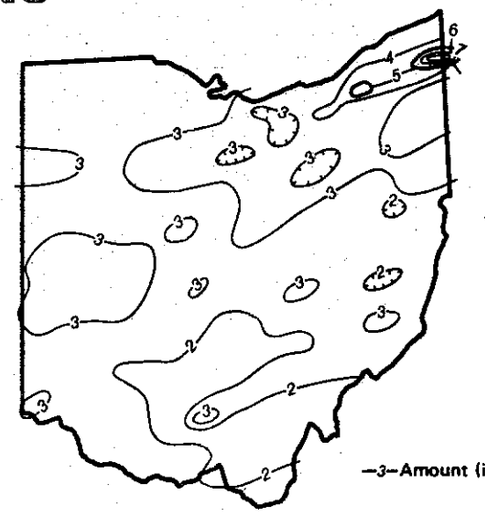
PRECIPITATION

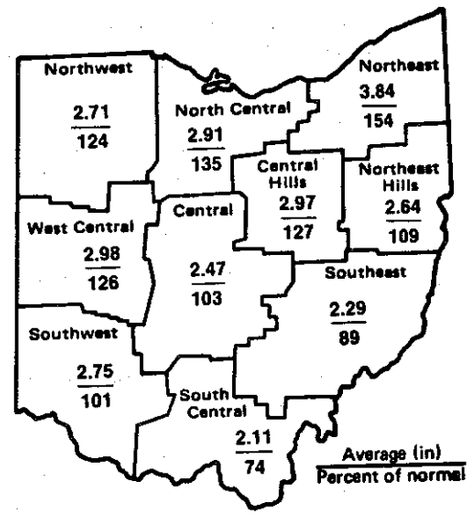
PRECIPITATION for December was above normal throughout most of the state; the only exceptions were in the South Central and Southeast regions where precipitation was below normal. The average for the state as a whole was 2.77 inches, 0.32 inch above normal. Regional averages ranged from 3.84 inches, 1.34 inches above normal, for the Northeast region to 2.11 inches, 0.75 inch below normal, for the South Central region. Andover, Ashtabula County, reported the greatest amount of precipitation for the month, 7.81 inches, and Portsmouth, Scioto County, reported the least amount, 1.38 inches.

Generally, about two-thirds of the state received between 2 and 3 inches of precipitation for the month, while an area in the South Central portion received less than 2 inches and areas in the west central and northeast portions in general received between 3 and 5 inches. There were measurable amounts of precipitation during every week of the month. A winter storm on the 21st produced heavy snowfall throughout the state, being unusually heavy in the central and southern portions where amounts of 7 to 8 inches were reported. Chardon, Geauga County, reported 42.5 inches of snow for the month, nearly twice that normally observed for December. Chardon is considered the center of the snowbelt area of the state which runs from Cleveland east to the Ohio Border.

Cumulative precipitation for the 1981 calendar year was above normal throughout most of the state, the only exceptions were in the Southwest and South Central regions where precipitation for the year was below normal. The average for the state as a whole was 39.24 inches, 2.20 inches above normal. Regional averages ranged from 42.06 inches, 5.05 inches above normal, for the Northeast Hills region to 34.53 inches, 6.01 inches below normal, for the South Central region. Precipitation for the Northwest and North Central regions were 6.15 and 6.10 inches above normal respectively. These noticeably above normal departures were primarily as a result of the heavy flood producing storms of June 13th and 14th in this area of the state. Upper Sandusky, Wyandot County, reported the greatest amount of precipitation for the year, 49.04 inches, and Gallipolis, Gallia County reported the least amount, 28.03 inches. An isohyetal map and regional averages and departures from normal for the 1981 calendar year appears on the last page of this report.

Precipitation throughout the year was about normal, being above normal in 7 of the 12 months. Precipitation for the year began with a sizeable deficiency in January and this deficiency continued through May which is the end of the nominal water supply replenishment season. Despite the fact that precipitation was below normal during the nominal recharge period, the water supply situation remained favorable throughout the recharge period and was generally favorable throughout the remainder of the year. However, some areas in the east central and southeast portions of the state were experiencing water shortages near the end of the year as a result of below normal precipitation in those areas.

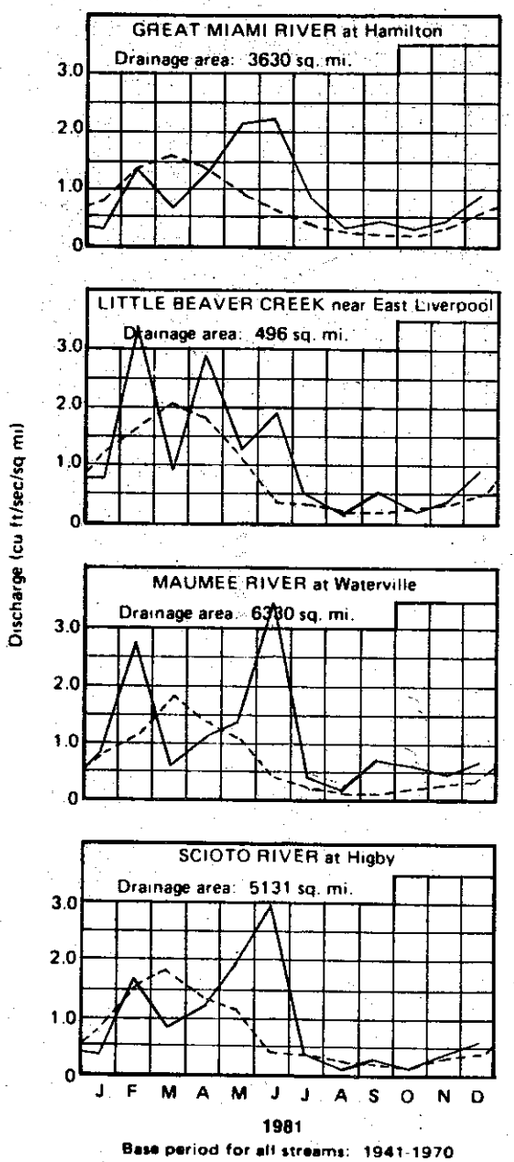




DIVISION OF WATER

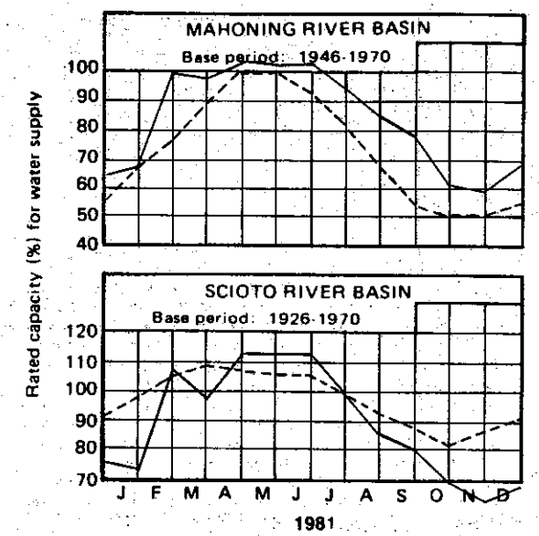
John H. Cousins, Chief

MEAN STREAM DISCHARGE



Base period for all streams: 1941-1970

RESERVOIR STORAGE FOR WATER SUPPLY

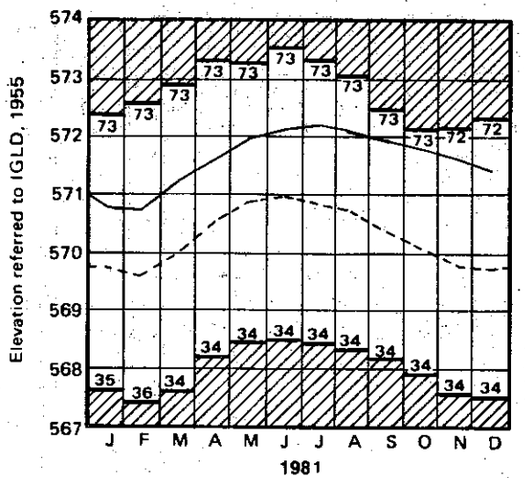


Cumulative precipitation for the first three months of the 1982 water year is below normal throughout most of the state; the only exceptions are in the Northwest, Northeast and West Central regions where it is above normal. The average for the state as a whole is 7.02 inches, 0.48 inch below normal. Regional averages range from 9.26 inches, 0.79 inch above normal, for the Northeast region to 5.12 inches, 2.77 inches below normal, for the South Central region.

RESERVOIR STORAGE for water supply for December 1981 increased in both the Mahoning River and the Scioto River basins in response to above normal precipitation during the month. Storage in the Mahoning River basin index reservoirs remained above normal while storage in the Scioto River basin index reservoirs continued to be markedly below normal. Reservoir storage at the month end for the Mahoning basin index reservoirs was 67 percent of rated capacity for water supply compared to 58 percent for last month and 64 percent for December 1980. Reservoir storage at the month end for the Scioto basin index reservoirs was 68 percent of rated capacity for water supply compared to 62 percent for last month and 75 percent for December 1980.

LAKE ERIE mean level for December was 571.35 feet above IGLD (1955), 0.20 foot below last month's mean level and 1.60 feet above normal. The lake level is 0.21 foot below that level observed for December 1980 and 2.75 feet above Low Water Datum. The lake level continues to be noticeably above normal.

LAKE ERIE LEVELS



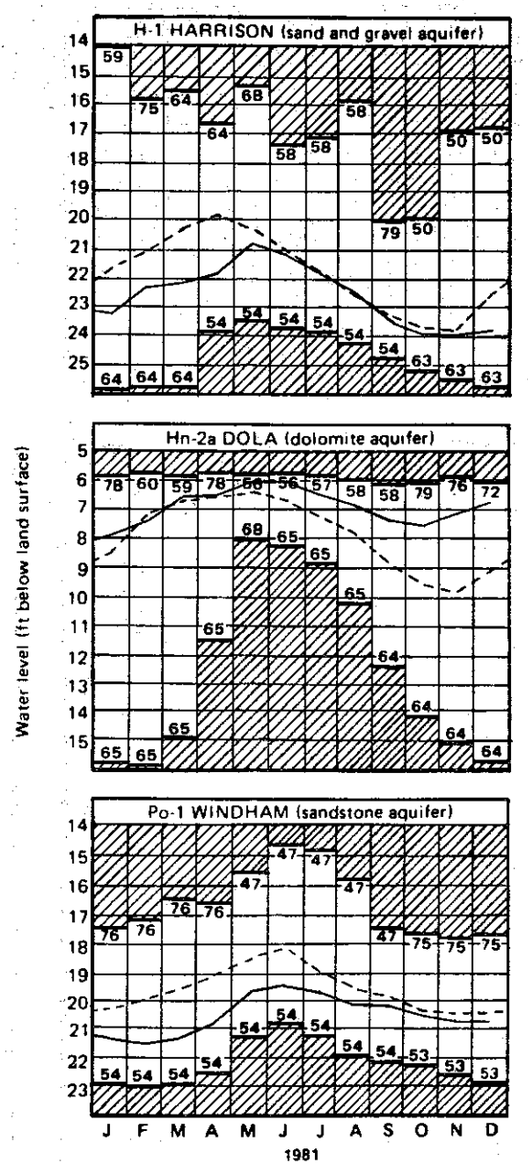
Base period 1900-1974

GROUND-WATER LEVELS for December in general rose slightly in response to recharge during the month. The water levels in some consolidated rock aquifers continued to decline during the month. Ground-water levels are generally below those levels observed for December 1980 and below normal; the only exceptions are in consolidated rock aquifers where water levels are generally above normal. The water level in index well F-1 at West Rushville, Fairfield County, continues to be significantly below normal as a result of deficient precipitation in this area. Some ground-water problems have been reported in the eastern and southern portions of the state as a result of deficient precipitation in these areas. Generally, the ground-water supply situation remains favorable throughout most of the state.

STREAMFLOW for December was normal throughout the state. Flows throughout the state had approached deficient stages near the middle of the month but increased significantly during the last week of the month in response to runoff from snow melt and rains on the 21st and 23rd. Mean discharge and percent of normal for December at the index gaging stations were as follows: Great Miami River, 3,187 cfs, 134 percent; Little Beaver Creek, 453 cfs, 97 percent; Maumee River, 4,385 cfs, 99 percent; Scioto River, 2,768 cfs, 68 percent.

(Please note: the base reference period for streamflow has been revised from 1941-70 to 1951-80. This has made significant changes in percents of normal flows as shown in previous reports. Percents of normal for October and November 1981, respectively, as revised according to the new reference base period are as follows: Great Miami River, 168 and 137; Little Beaver Creek, 98 and 92; Maumee River, 715 and 172; Scioto River, 128 and 94).

GROUND-WATER LEVELS



Base periods: H-1, 1951-1979, Hn-2a, 1955-1979, Po-1, 1947-1979

normal ---- current ——