HYDROLOGIC INVESTIGATIONS UNIVERSITY EXTENSION—THE UNIVERSITY OF WISCONSIN DEPARTMENT OF THE INTERIOR ATLAS HA-474 (SHEET 3 OF 4) UNITED STATES GEOLOGICAL SURVEY GEOLOGICAL AND NATURAL HISTORY SURVEY

surface water used is taken from the Mississippi for thermoelectric

power production. The only other significant quantity used is for

cranberry culture. At present surface water is used for only one mu-

Station No. 05-3809 Station No. 05-3810 Black River at Neillsville Poplar River near Owen Drainage area: 159 square miles Drainage area: 756 square miles Period of record: 1905-09, 1913-present¹ Period of record: 1964-present¹ Maximum instantaneous discharge: 8,250 cfs Maximum instantaneous discharge: 48,800 cfs Average discharge: (no winter records) Average discharge, 58 years: 572 cfs Minimum instantaneous discharge: 0.6 cfs Minimum daily discharge: 3.1 cfs Station No. 05-3825 Little La Crosse River near Leon Drainage area: 77.1 square miles Period of record: 1934-61 Maximum instantaneous discharge 4,620 cfs Average discharge, 27 years: 46.3 cfs Minimum daily discharge: 18 cfs Station No. 05-3794 Trempealeau River at Arcadia Drainage area: 552 square miles Period of record: 1960-present¹ Maximum instantaneous discharge: 9,740 cfs Average discharge, 8 years: 330 cfs Minimum instantaneous discharge: 110 cfs Buffalo River near Tell Drainage area: 406 square miles Period of record: 1932-51 Maximum instantaneous discharge: 8,650 cfs Average discharge, 19 years: 254 cfs Minimum instantaneous discharge: 59 cfs Station No. 05-3795 Trempealeau River at Dodge Drainage area: 643 square miles Period of record: 1913-19, 1934-present¹ Maximum instantaneous discharge: 17,400 cfs Average discharge, 39 years: 387 cfs Minimum daily discharge: 98 cfs Station No. 05-3785 Mississippi River at Winona, Minn. Drainage area: 59,200 square miles Period of record: 1928-present¹ Maximum instantaneous discharge: 268,000 cfs Average discharge, 40 years: 24,920 cfs F w Minimum instantaneous discharge: 2,250 cfs Station No. 05-3820 Black River near Galesville Drainage area: 2,120 square miles Period of record: 1931-present¹ Maximum instantaneous discharge: 65,500 cfs Average discharge, 36 years: 1,635 cfs Minimum instantaneous discharge: 180 cfs , Wisconsin Department of Natural Resources; MINNESOTA 2, Minnesota Pollution Control Agency 3, Iowa State Hygenic Laboratory. Station No. 05-3830 Station No. 05-3895 La Crosse River near West Salem All others, U.S. Geological Survey Mississippi River at McGregor, Iowa Drainage area: 398 square miles Orainage area: 67,500 square miles Period of record: 1936-present¹ Maximum daily discharge: 276,000 cfs Period of record: 1913-present¹ Maximum instantaneous discharge: 8,200 cfs Average discharge, 54 years: 288 cfs Average discharge, 32 years: 32,230 cfs Minimum instantaneous discharge: 30 cis Minimum daily discharge: 6,200 cfs Station No. 05-3871 ¹Based on data through North Fork Bad Axe River near Genoa 1968 water year Drainage area: 68.8 square miles Period of record: 1964-present¹ Maximum instantaneous discharge: 3,500 cfs Average discharge: (no winter records) SCALE 1:1 000 000 Minimum instantaneous discharge: 25 cfs 10 5 0 10 20 KILOMETERS

DATA NETWORK AND AVERAGE FLOW

Stream discharge has been monitored continuously during various periods at 20 sites in the basin, nine of which are measured at present.

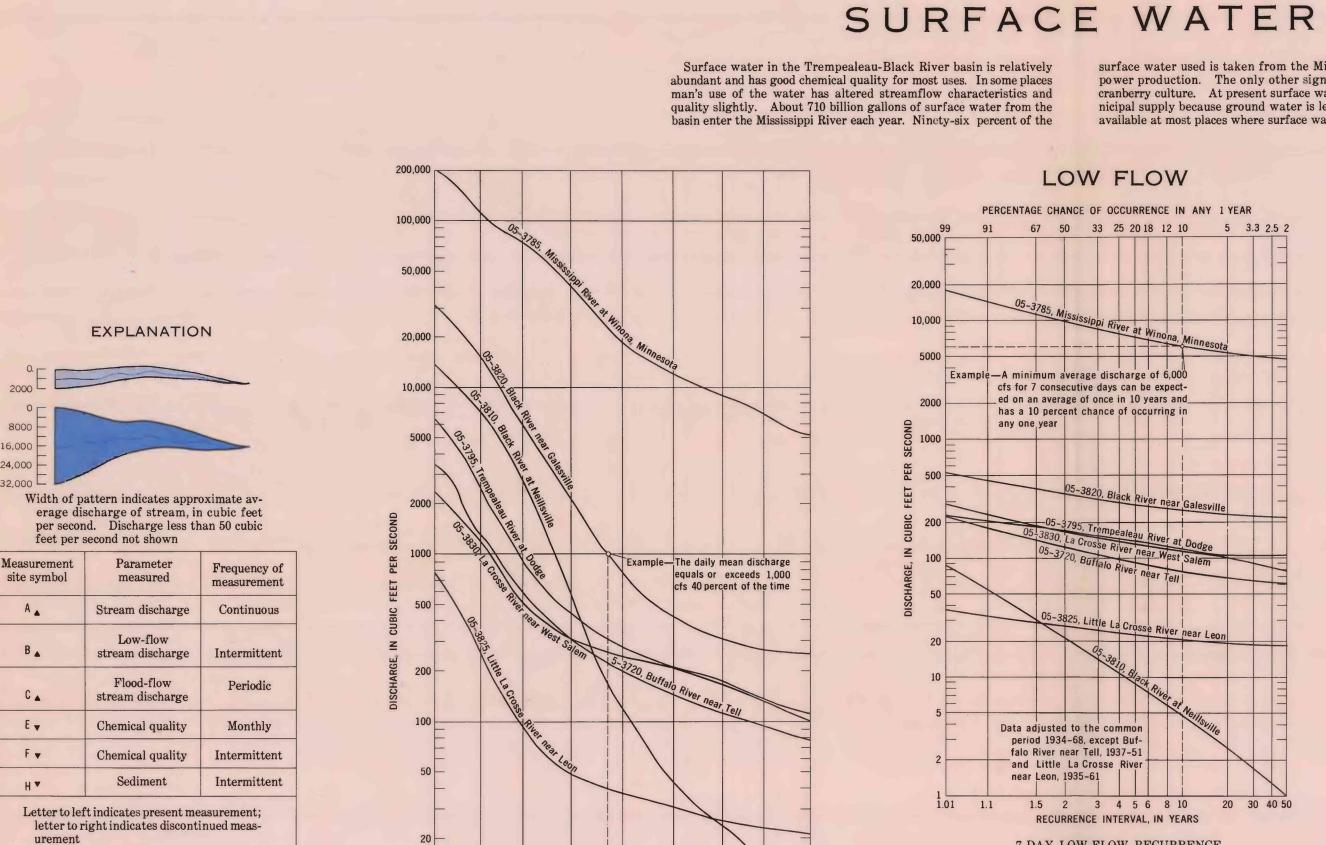
Station data are given for these nine active stations (two of which

have no winter records), and for two discontinued stations with long

records. The accompanying frequency and duration curves are based

on these continuous records.

Sites of past and present data collection are shown on the map.



Data adjusted to the common period 1935-68,

dicate a nearly constant and uniform release of storage from ground water, surface reservoirs, or both. The flat curve for the Black River

near Galesville is caused by release of ground water from thick sand-

stones and unconsolidated deposits in the lower part of the Black River

basin and release of water from Lake Arbutus during dry periods. The very steep lower part of the curve for the Black River at Neillsville

reflects the small amount of ground water released from the thin sand-stone and glacial drift and the still smaller amount from the under-

lying, relatively impermeable crystalline rock (see section "Distribution

the gaging station. The steep slopes of the curves shown indicate

short-term high flows from rainfall or rapid snowmelt. A slight flat-

tening of the upper end of the curves probably is an effect of minor

The upper end of the flow-duration curve represents high flow at

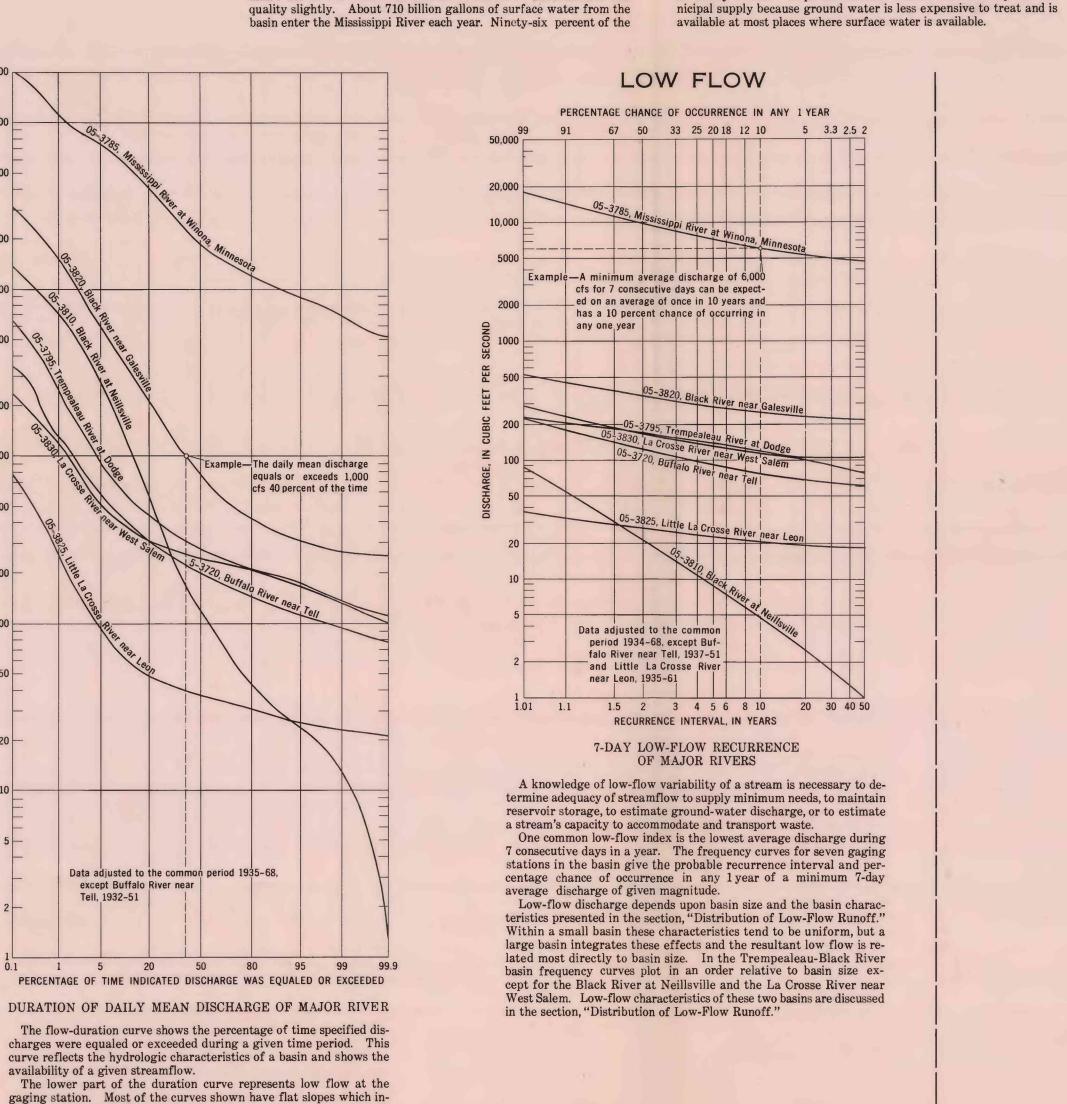
except Buffalo River near

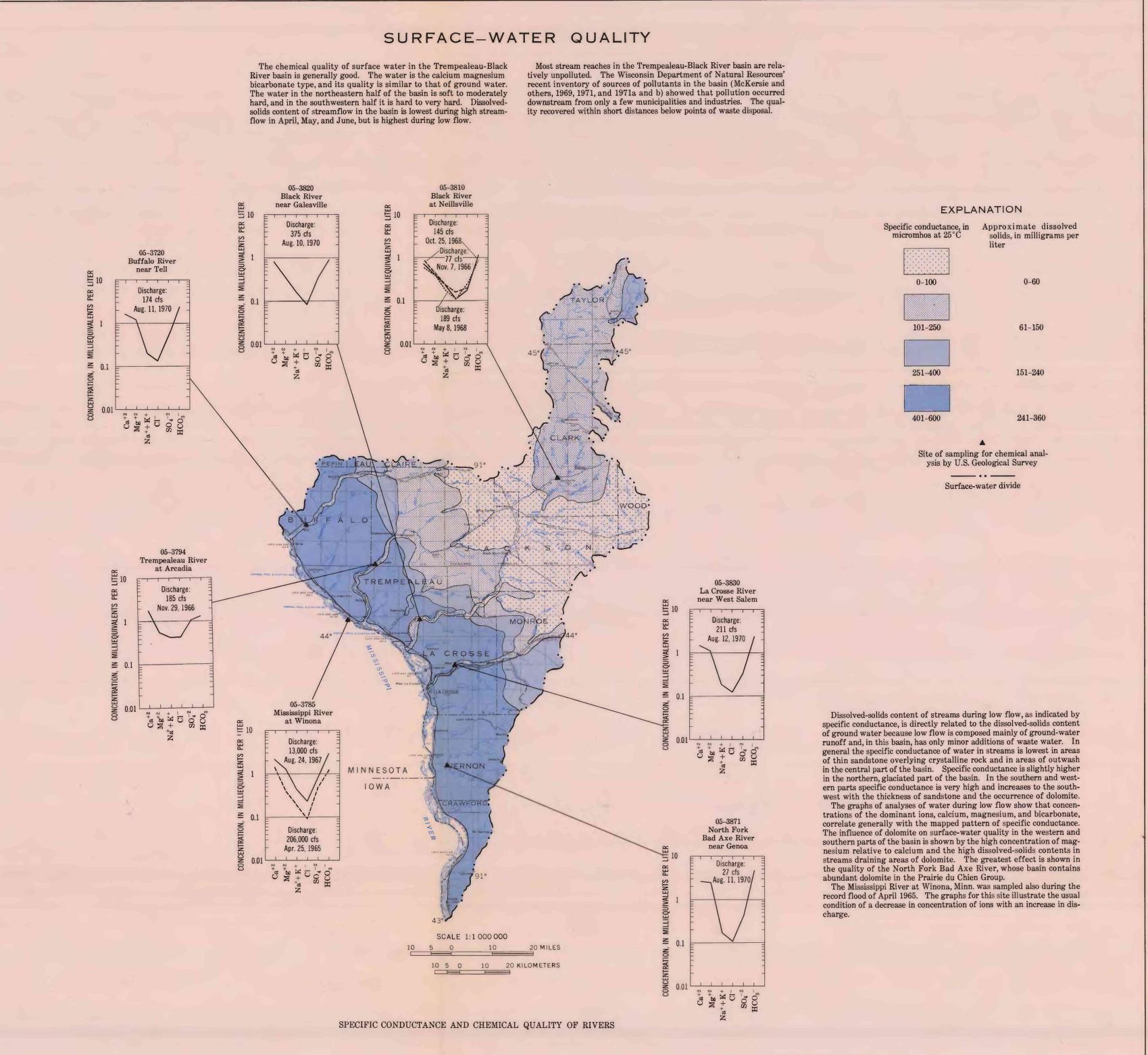
Tell, 1932-51

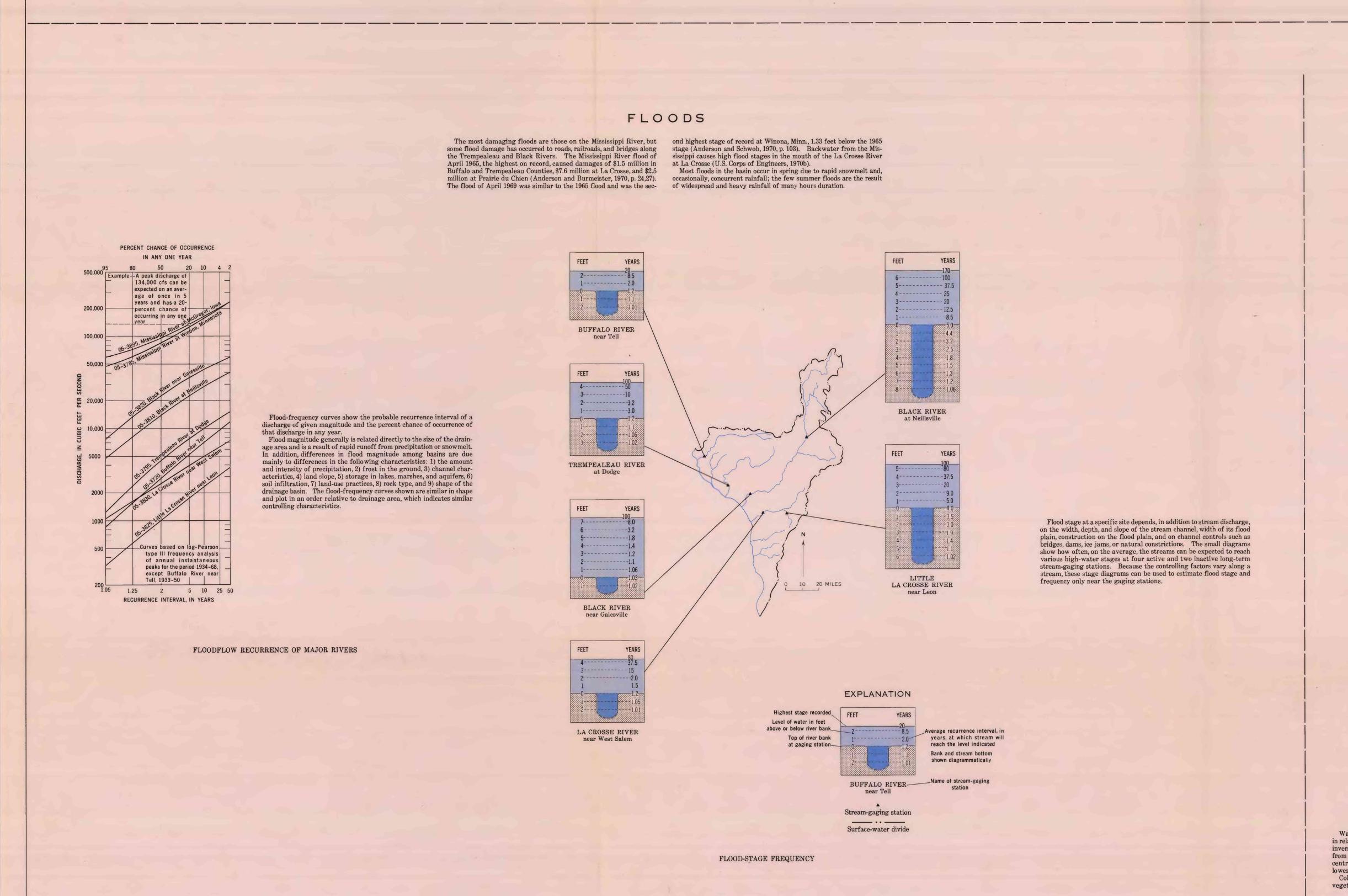
availability of a given streamflow.

of Low-Flow Runoff").

channel storage.







Operating agency

Boundary of basin above active

continuous record station

Surface-water divide

