

Before
the flood



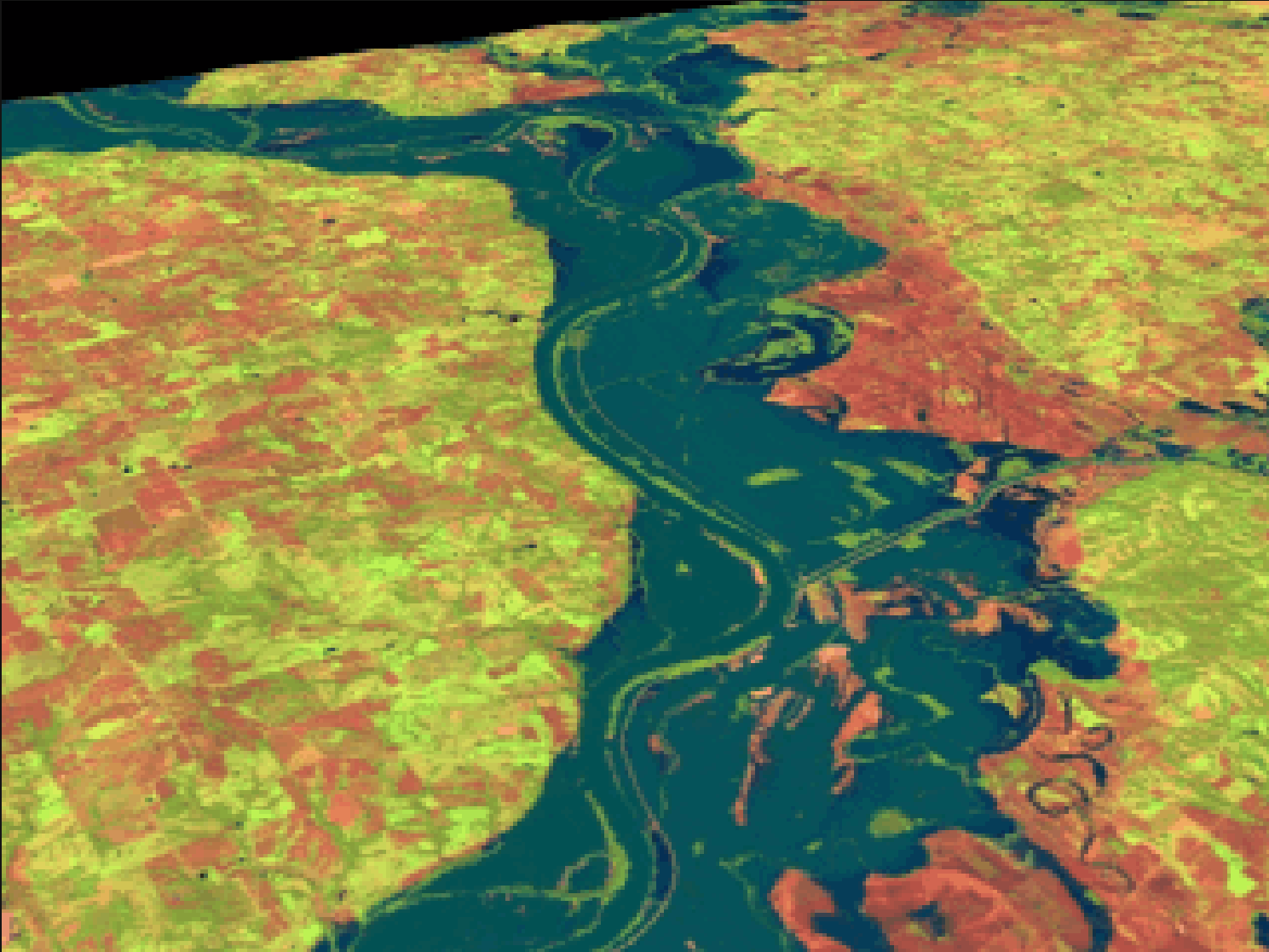
Great Flood of 1993

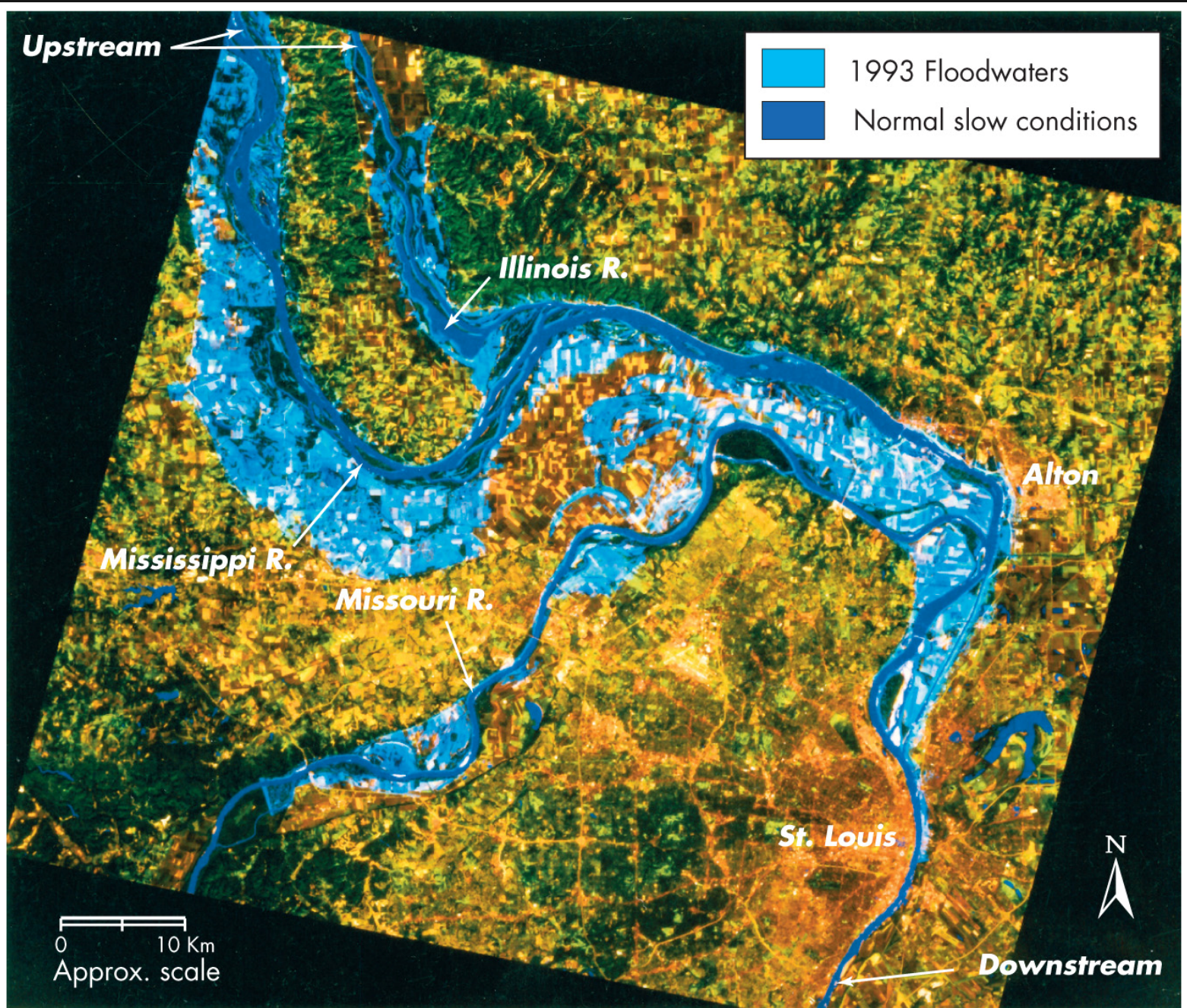


Gasconade River

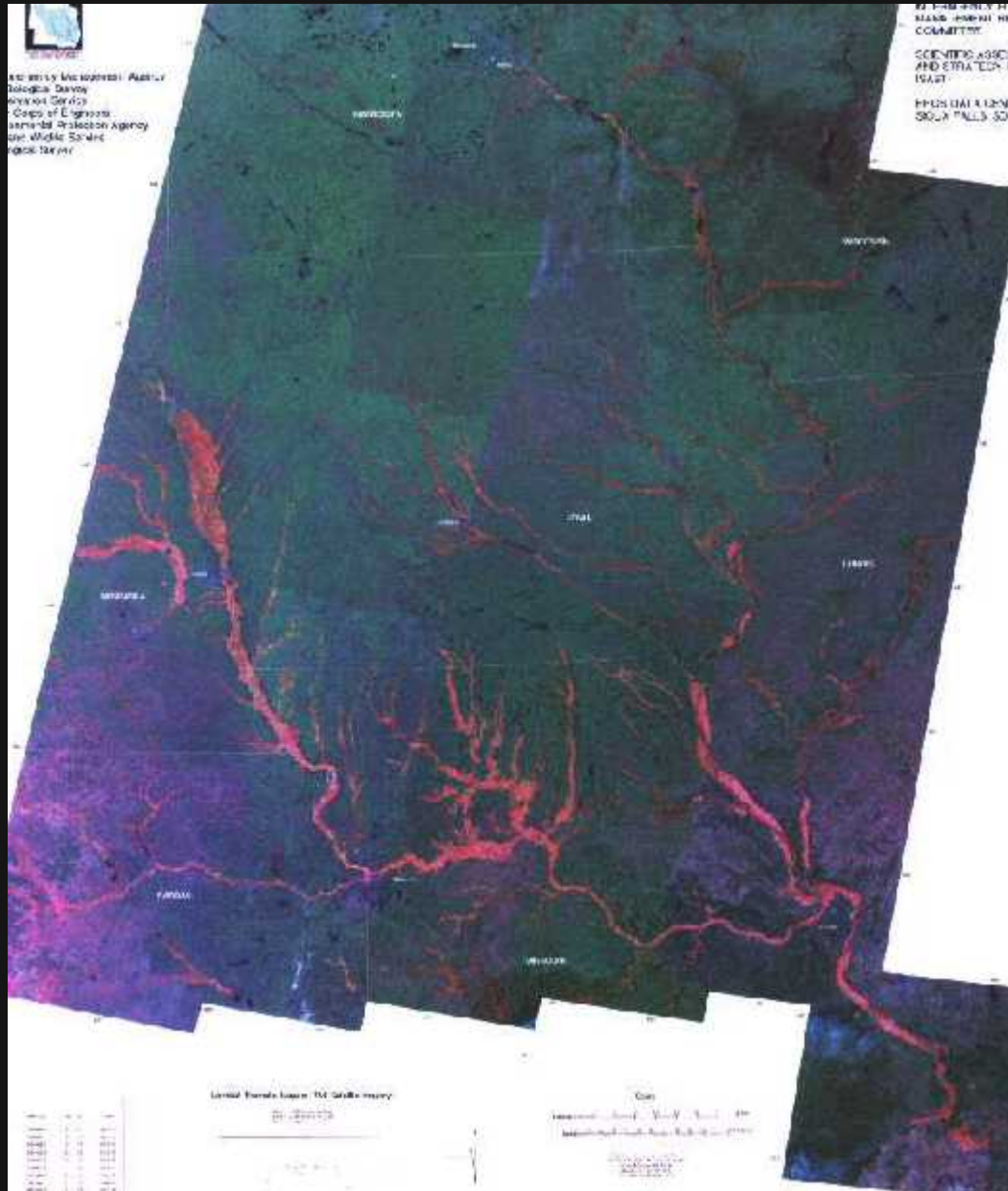


Missouri River





Regional – affected nine states



Region affected

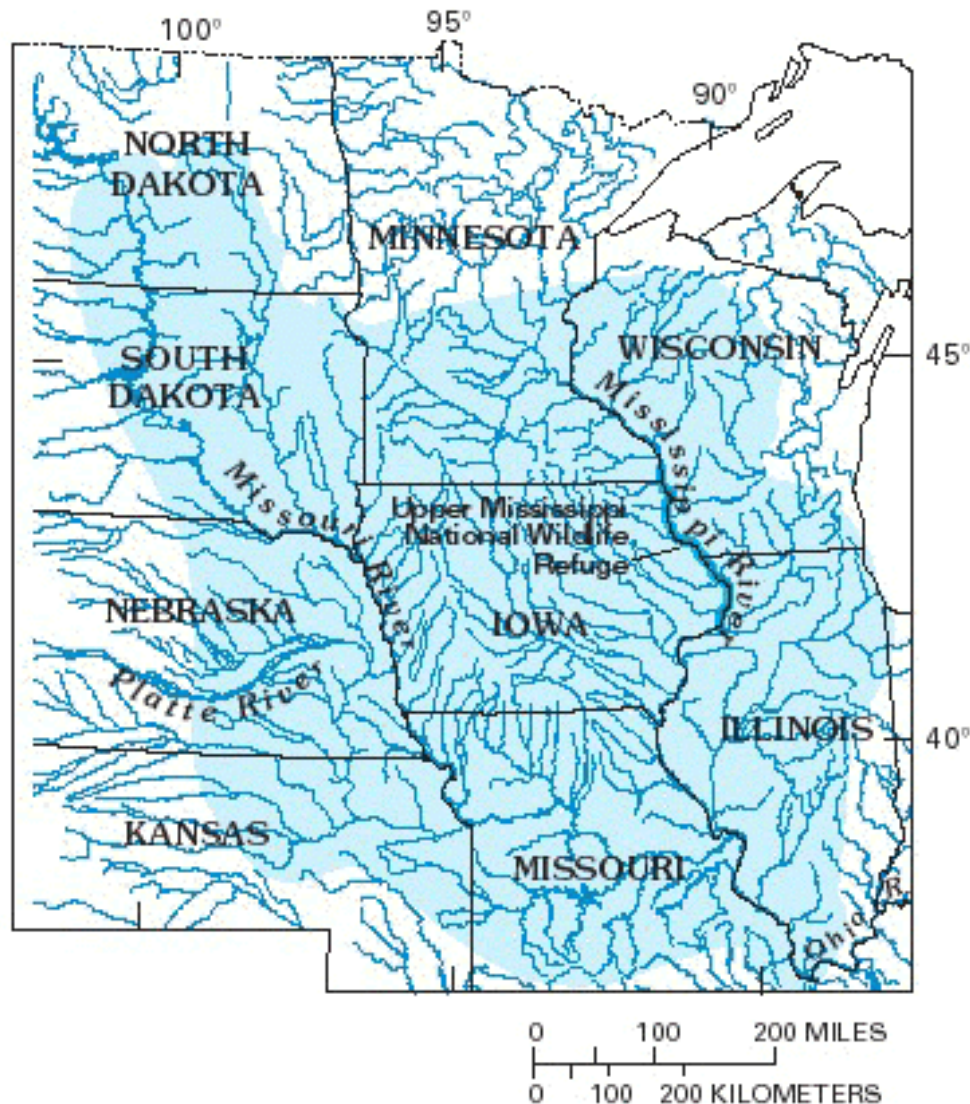
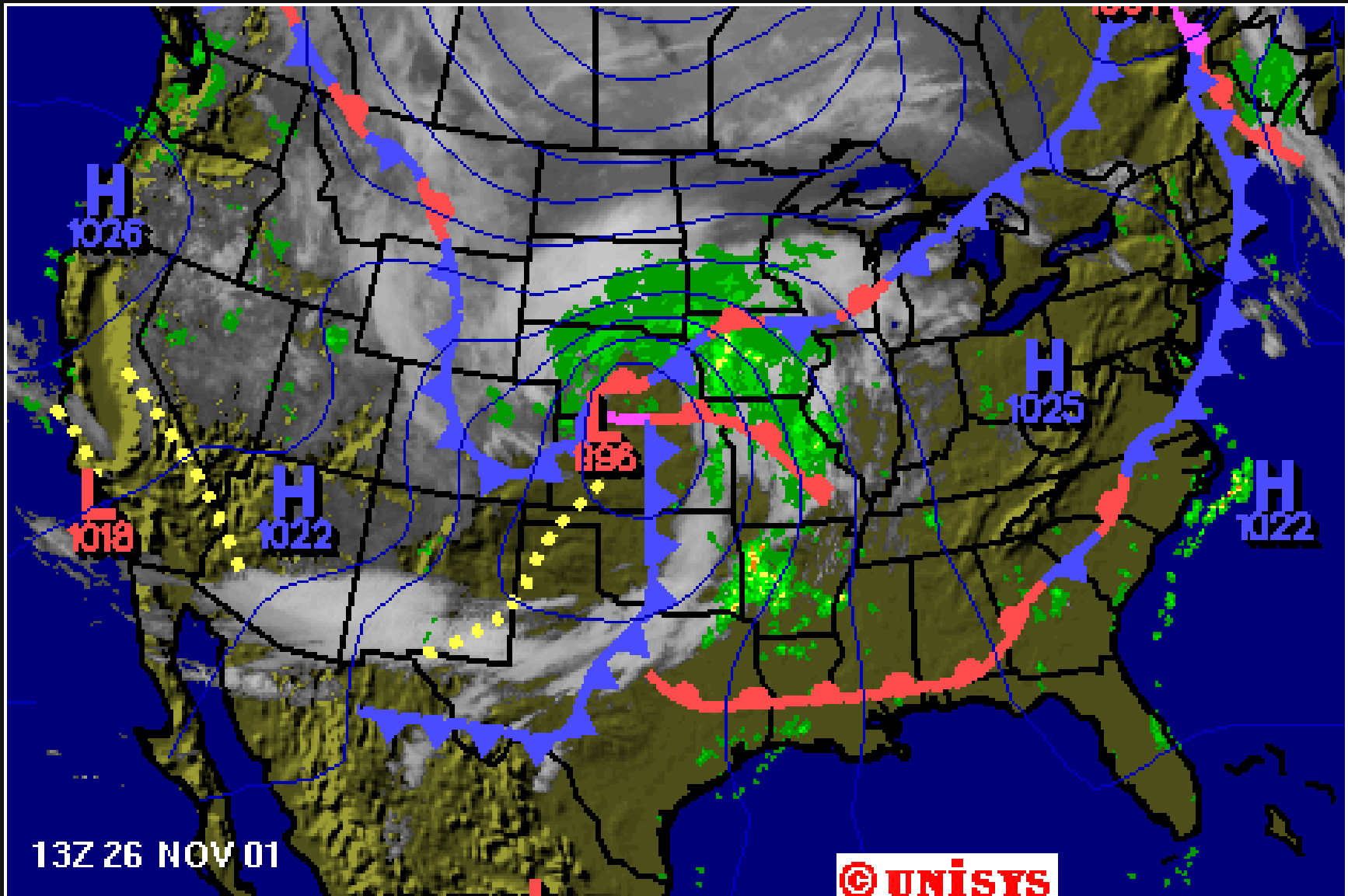


Figure 62. Areal extent of flooding in the Upper Mississippi River Basin during the Great Midwest Flood of 1993. (Source: Modified from Parrett and others, 1993).



Previous major flood 1973 \$1.2 billion

1993 Flood > \$15 billion

Late June through early August

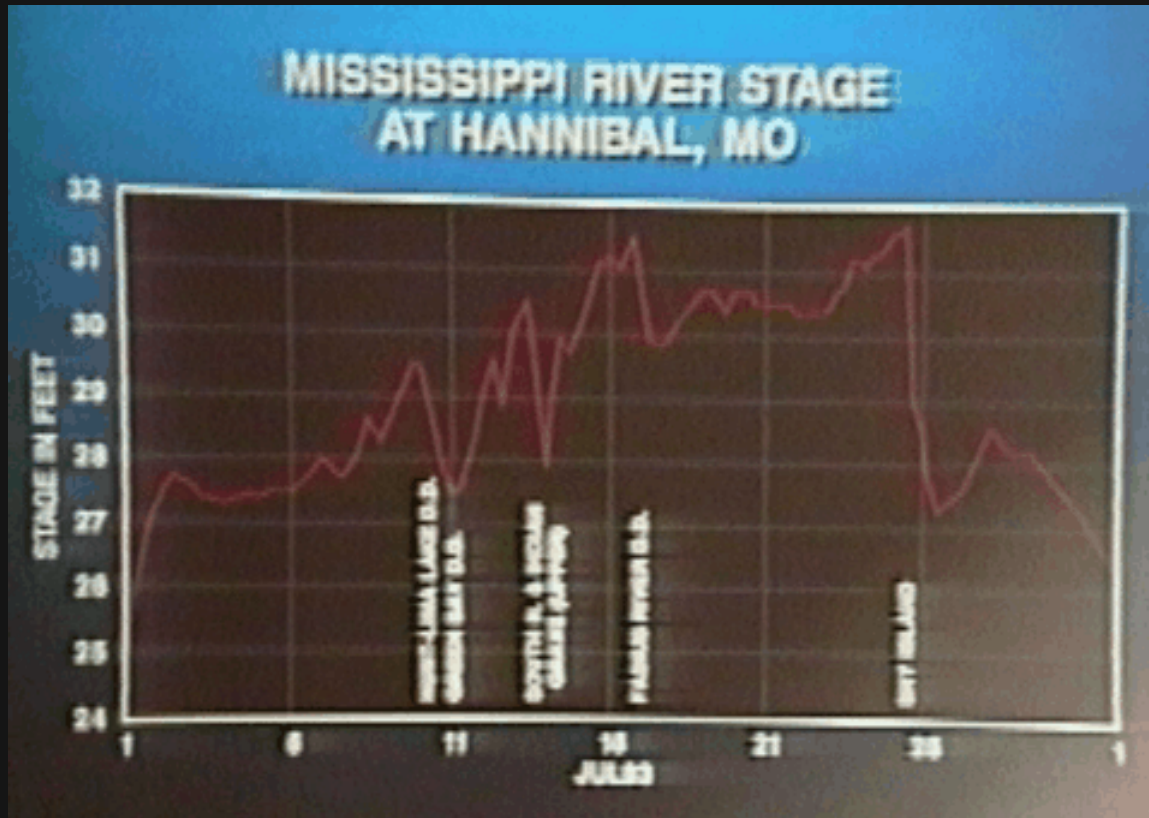
21,000 square miles flooded

Wet autumn, heavy spring snowmelt,
early June high and low pressure patterns
established and did not move

Wettest summer on record 35 inches in 4 months
(equivalent to an entire average year)

Hydrograph from Mississippi River

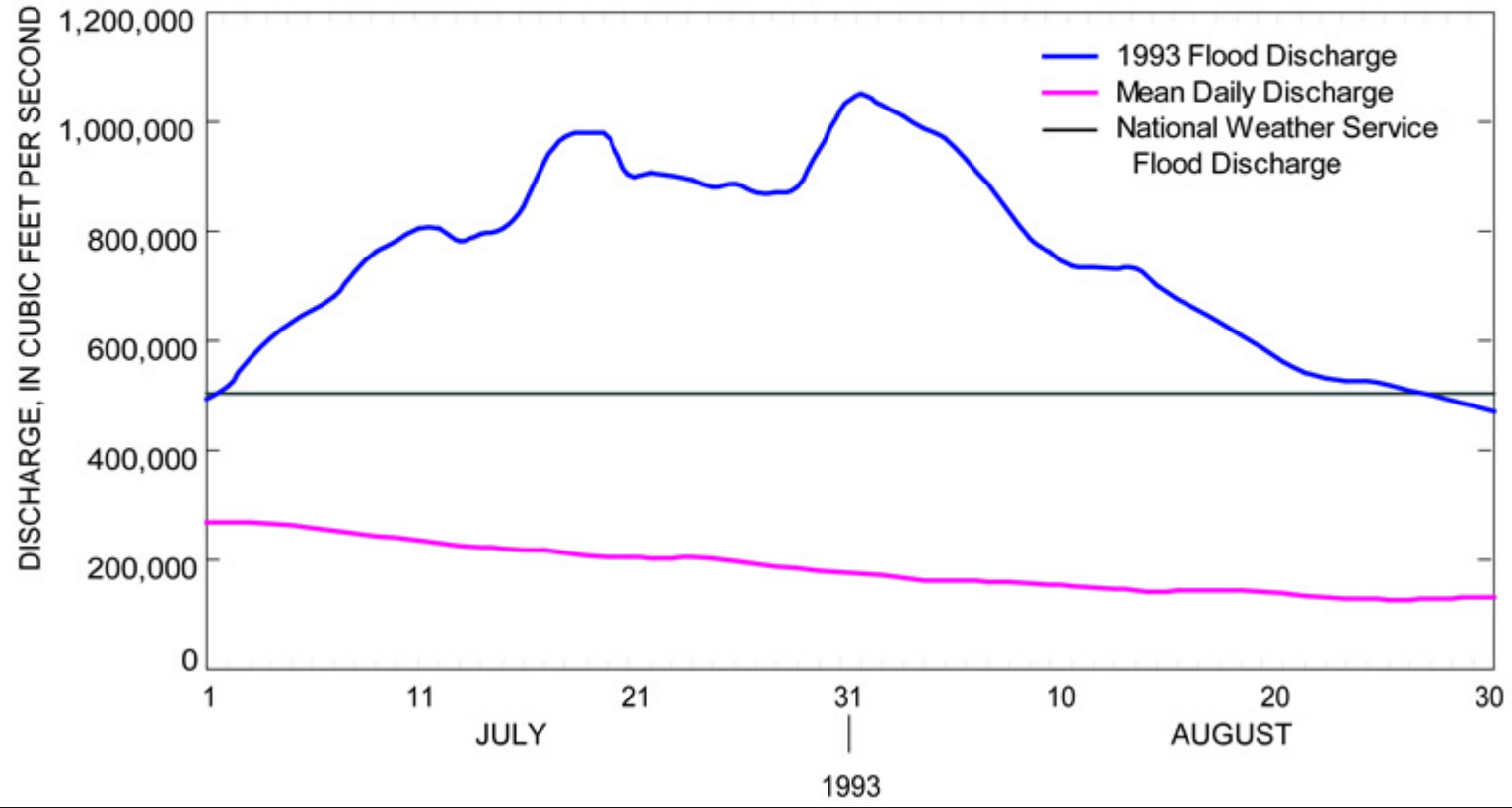
30 feet was considered 500-year flood





Mississippi River at St. Louis 70710000

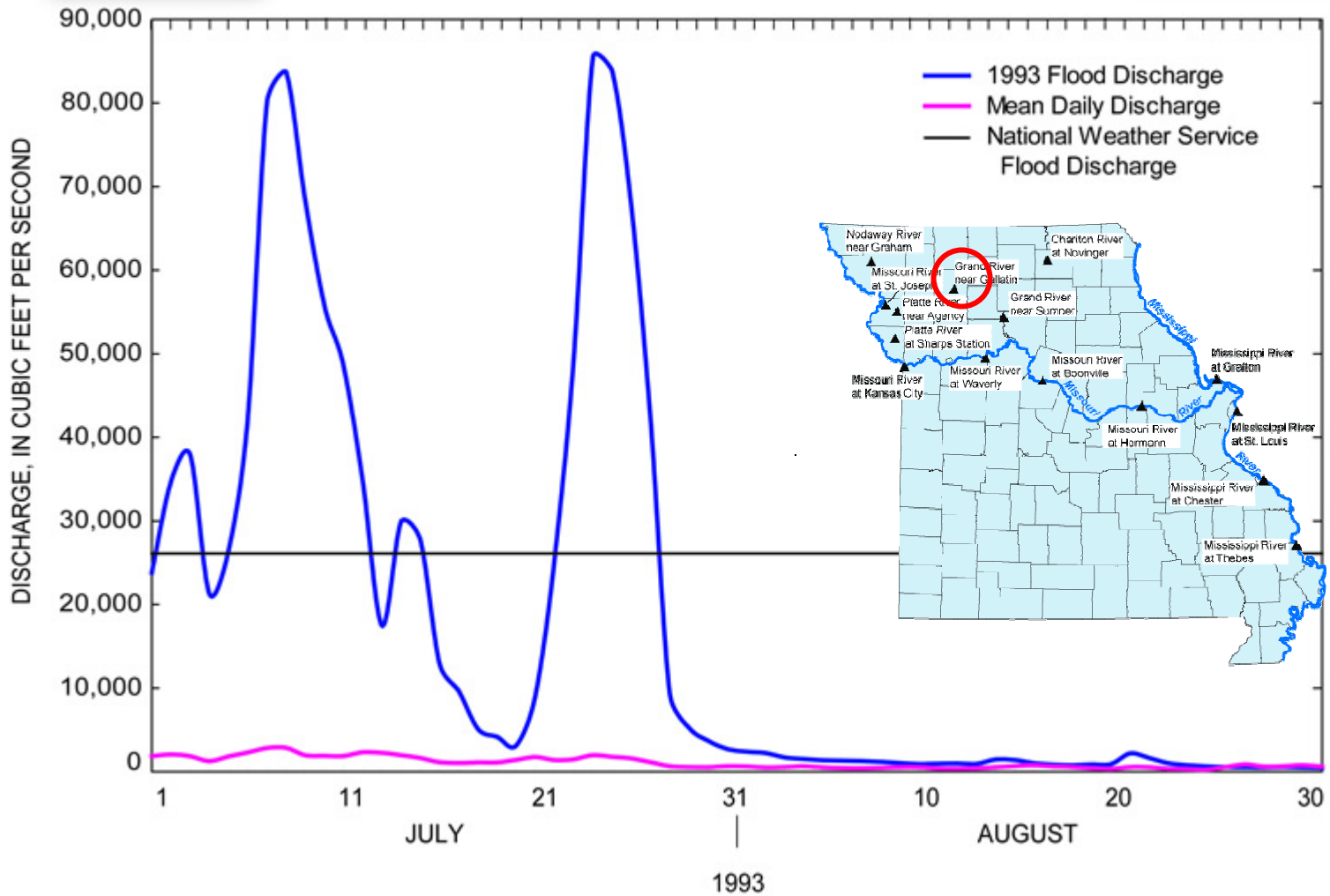
Real-Time Data





Grand River near Gallatin 06897500

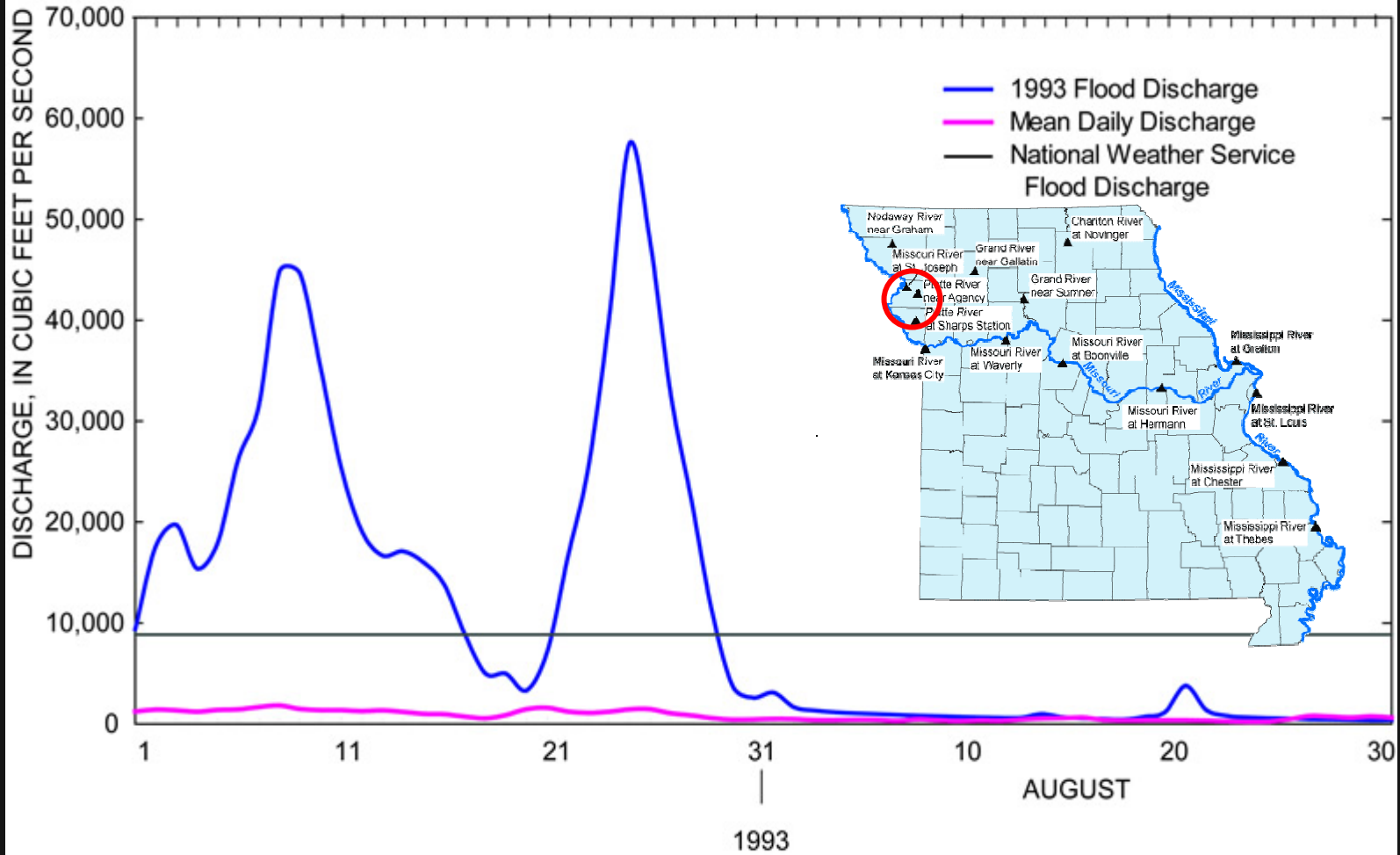
Real-Time Data





Platte River near Agency 06820500

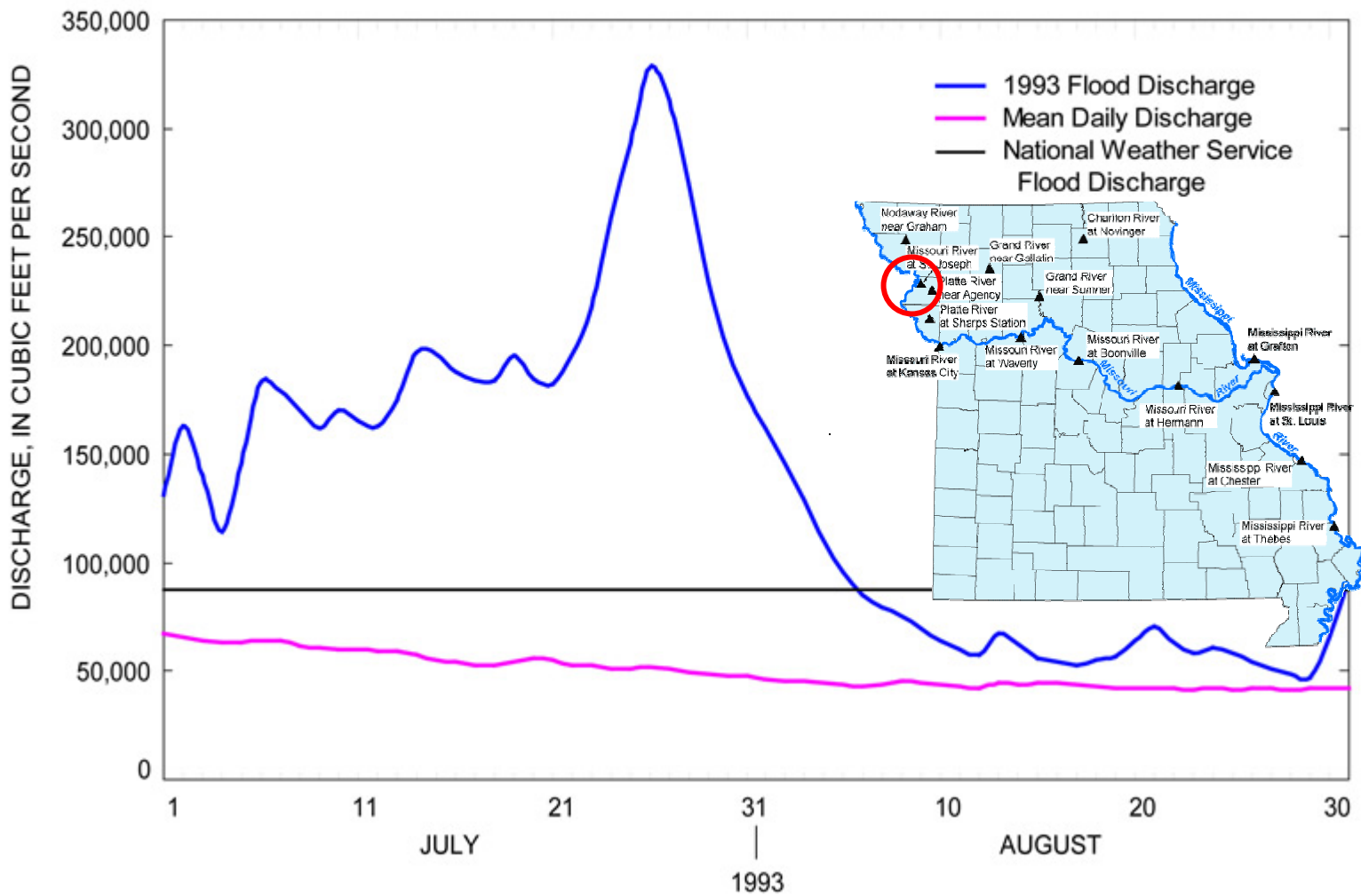
Real-Time Data





Missouri River at St. Joseph 06818000

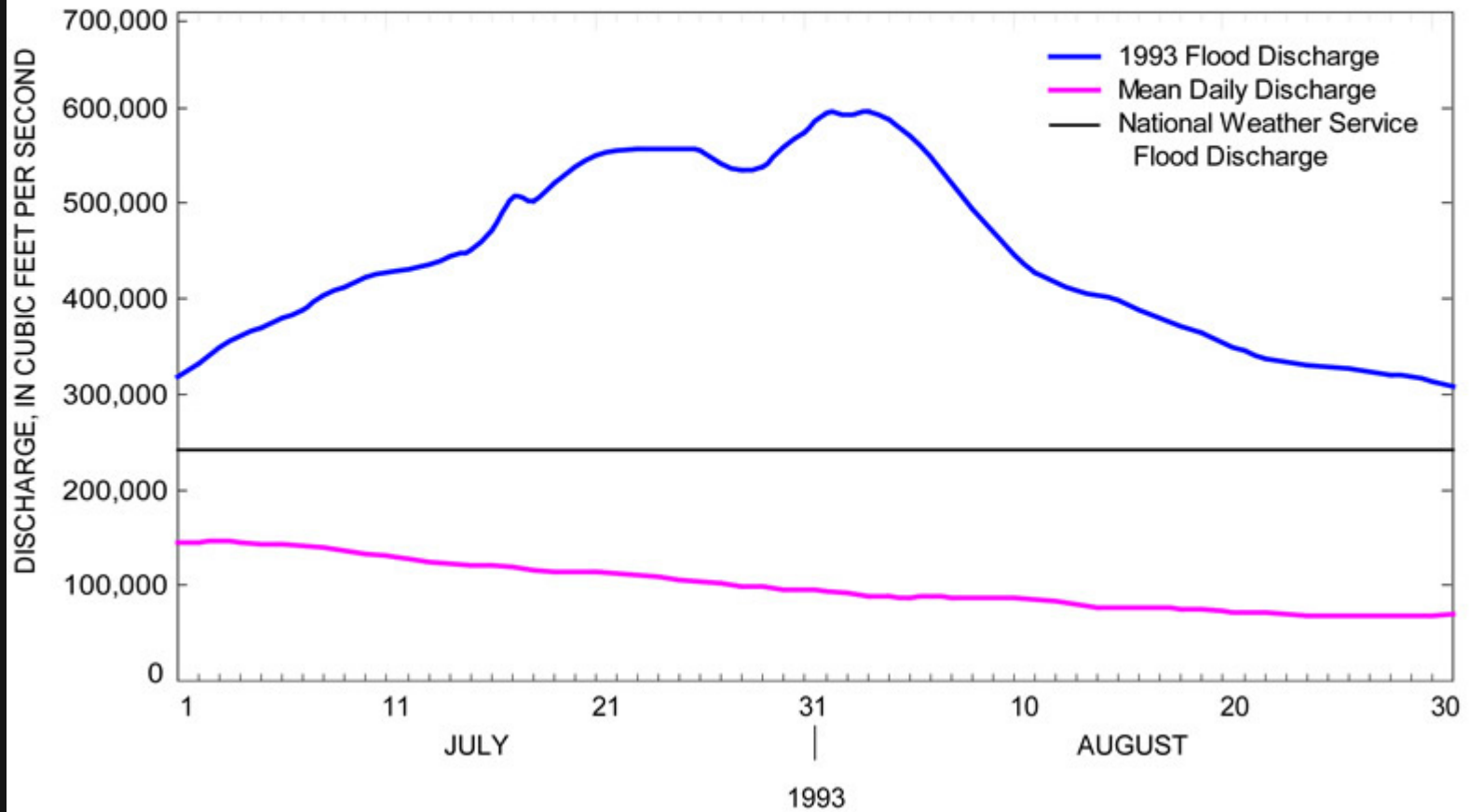
Real-Time Data





Mississippi River at Grafton 05587450

Real-Time
Data



Missouri River floodplain



Cedar City, Iowa



Iowa farmland



Levee breaks



Jefferson City, Missouri



Confluence of Mississippi & Missouri Rivers



Confluence of Mississippi and Missouri Rivers, August 1993. Extensive floods in the Mississippi River Basin during the spring and summer of 1993 caused \$20 billion in damages. (Photograph, Srenco Photography, St. Louis, Mo.)





Aerial view of the Missouri River flooding on July 30, 1993, in the vicinity of Cedar City and Jefferson City Memorial Airport immediately north of Jefferson City, Missouri, looking south (photograph from the Missouri Highway and Transportation Department).



Aerial view of the Missouri River flooding on July 30, 1993, at U.S. Highway 54 just north of Jefferson City, Missouri, looking south (photograph from the Missouri Highway and Transportation Department).













Floodplain deposits



Missouri River floodplain after the flood



Rebuilding: Higher and stronger levees



Mississippi River

Levee

Rebuilding: A new mall in the floodplain



Levee

What policies would you recommend to minimize future flood damage?