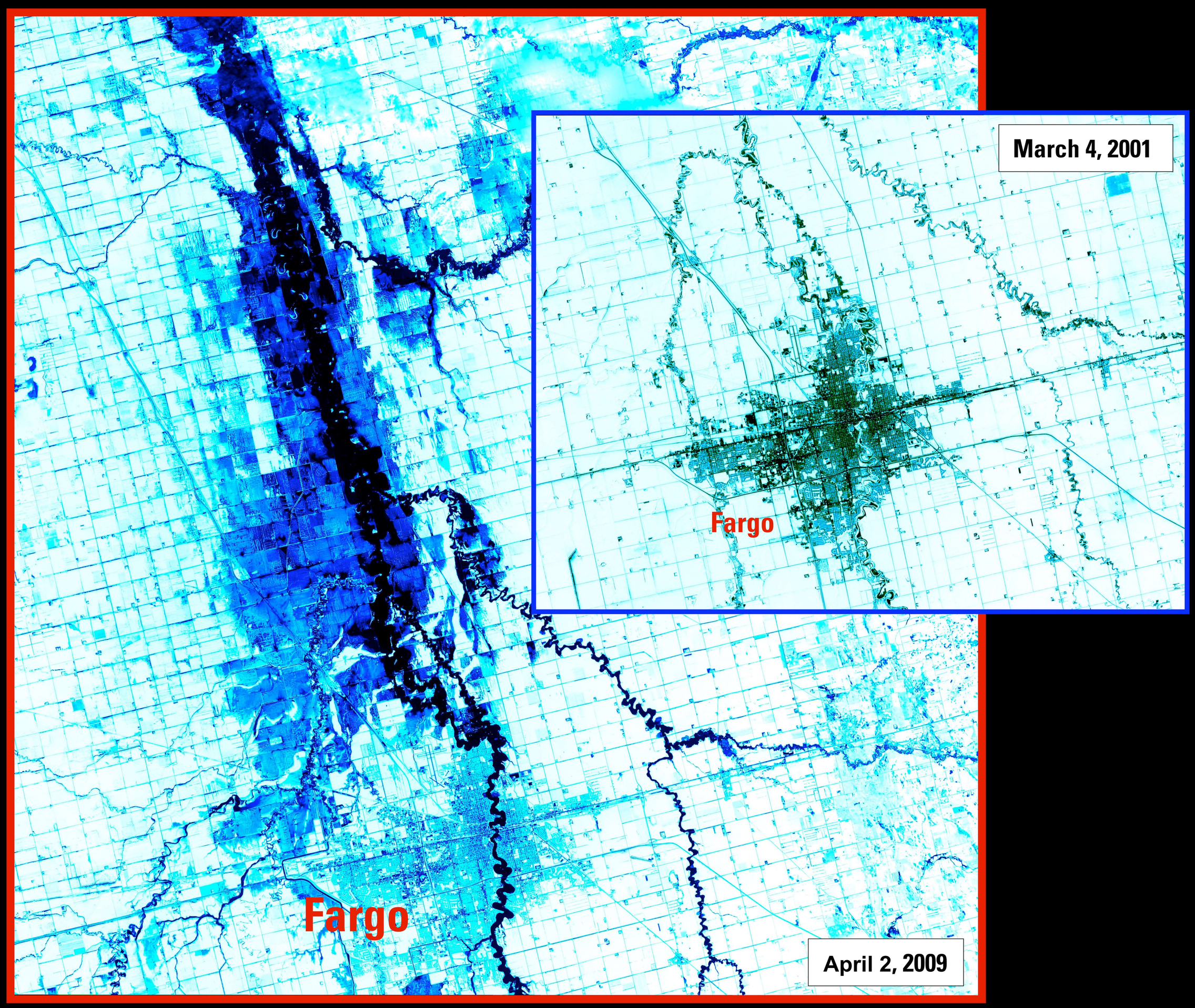
Red River Flooding

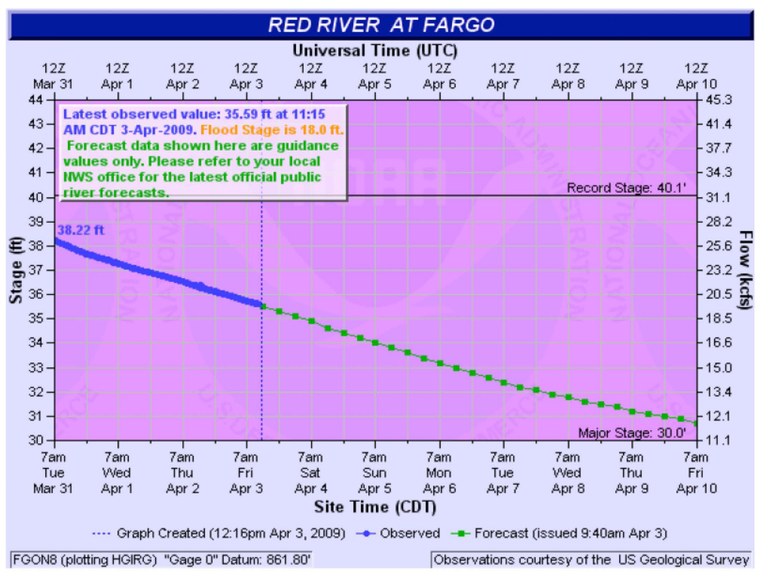
April 2, 2009 ASTER Expedited Data

Kenneth A. Duda

SGT, Inc. (duda@usgs.gov). Contractor to the U.S. Geological Survey (USGS) Earth Resources Observation and Science (EROS) Center, Sioux Falls, SD. Work performed under USGS contract 08HQCN0005.



Fargo, North Dakota, experienced the most severe floods in its recorded history during March 2009. This scene was acquired by the Advanced Spaceborne Thermal Emission and Reflection Radiometer (ASTER) on April 2, 2009. The enlarged state of the Red River, shown in black, is readily visible. For comparison, an ASTER scene collected on March 4, 2001 is provided in the inset. Substantially higher river levels at Fargo and to the north are clearly apparent in the 2009 image. The grid pattern of the road network is evident in both scenes amidst snow-covered fields. To create this stretched display, ASTER bands 3 (0.76 - 0.86 µm), 2 (0.63 - 0.69 µm), and 1 (0.52 - 0.60 µm) were assigned to red, green, and blue colors, respectively. The ASTER instrument orbits Earth on the Terra spacecraft at an altitude of 438 miles (705 km).



At the time of this observation, the Red River was in a major flood stage at a level of over 36 feet. A second crest was later forecast to occur in mid-April.

ASTER data courtesy of NASA, GSFC, METI, ERSDAC, JAROS, U.S./Japan ASTER Science Team, and LP DAAC. Red River flood stage courtesy of NOAA NWS Advanced Hydrologic Prediction Service, with observations courtesy of USGS.