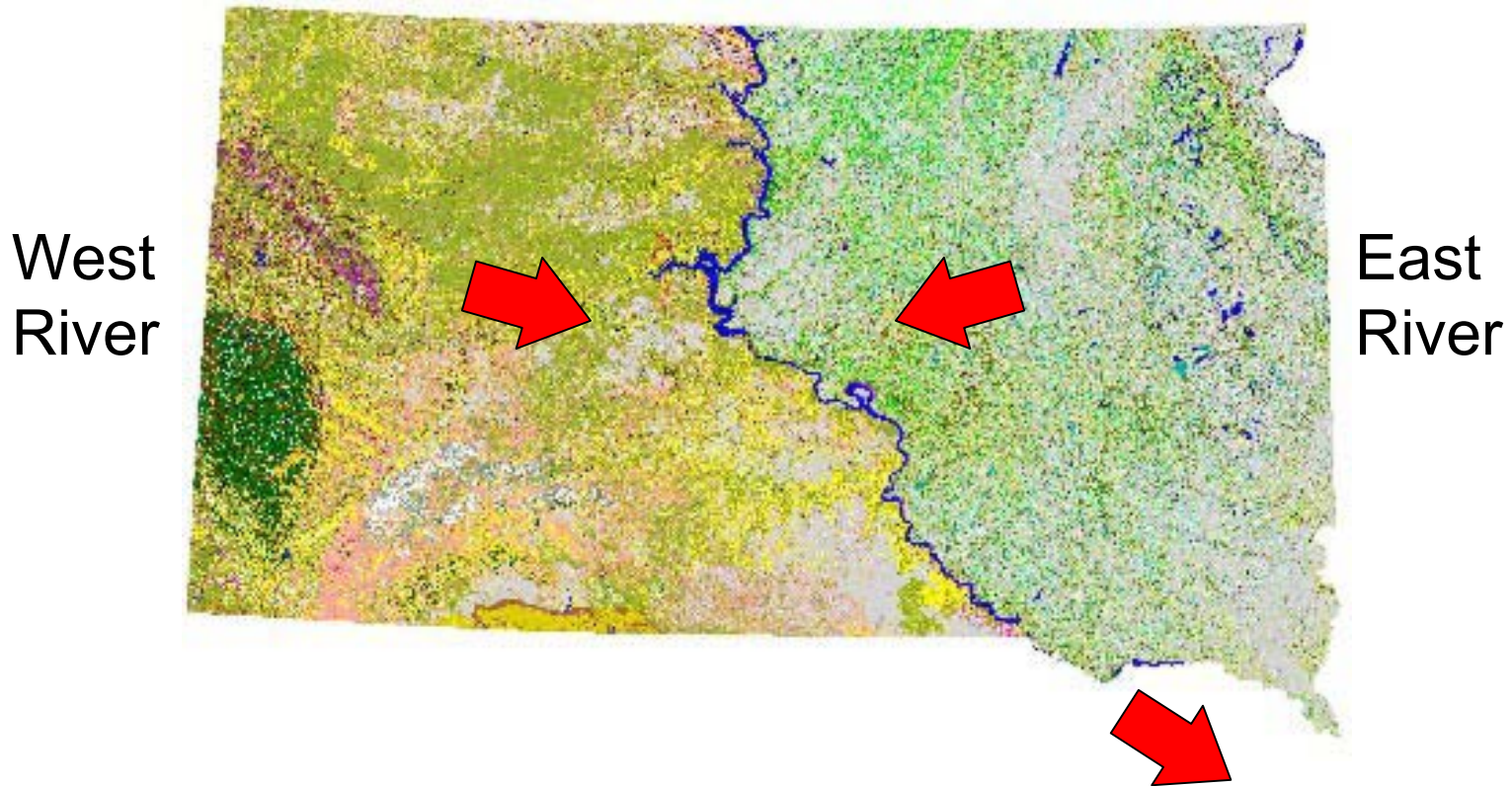


Use of Remote Sensing to Monitor Impacts of Land Use and Seasonal Land Cover Changes on Missouri River Water Chemistry and Sediment Loads

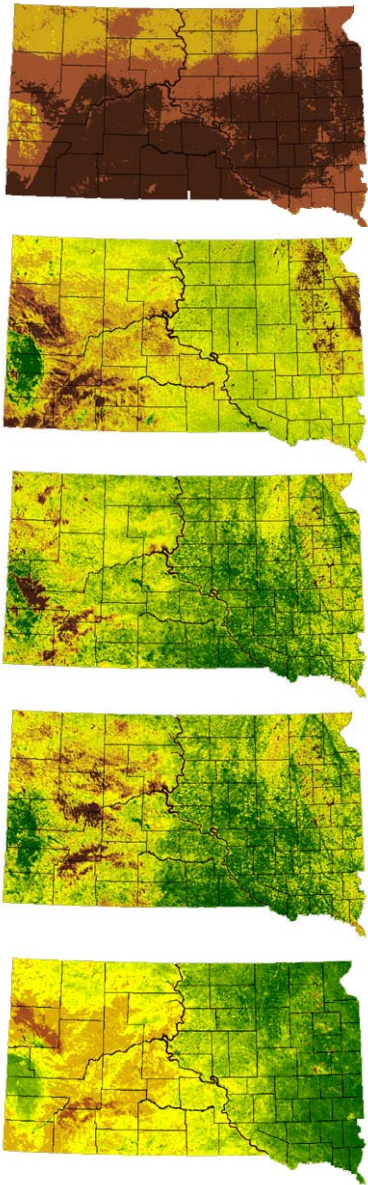


NASA-EPSCoR Program Initiation Grant
Edward Duke, South Dakota School of Mines & Technology

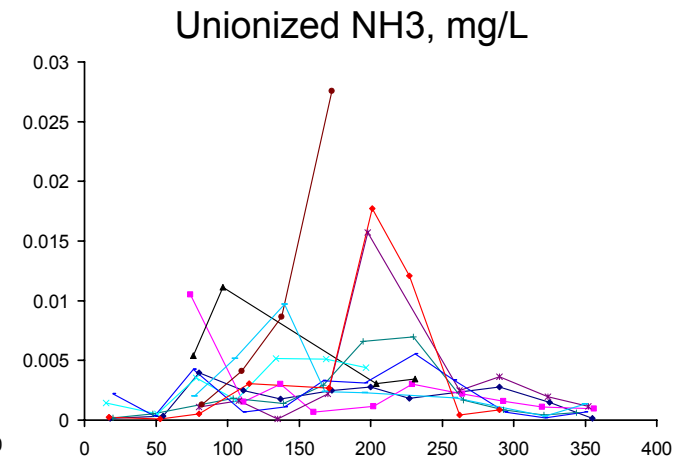
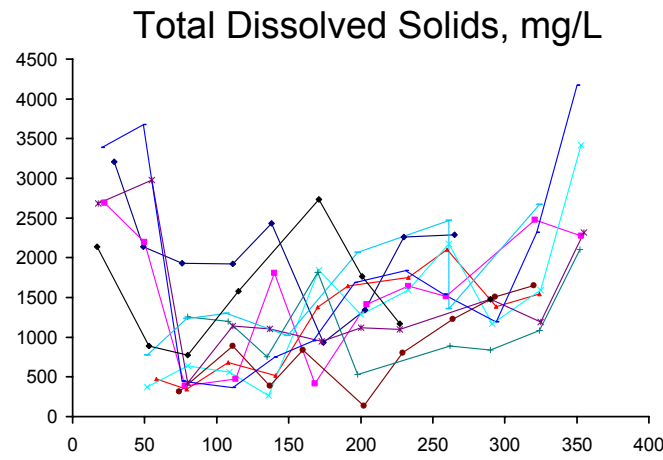
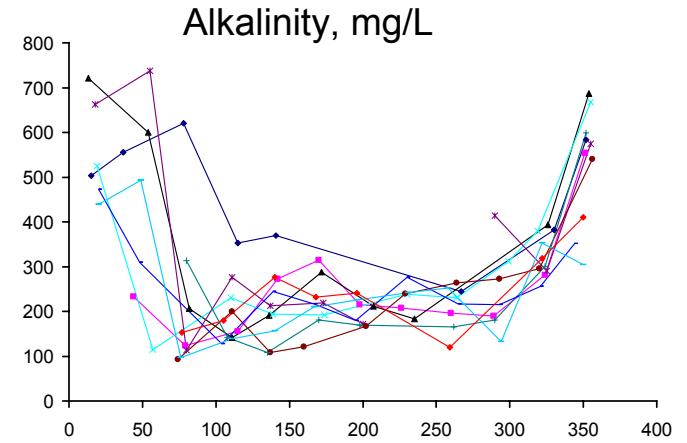
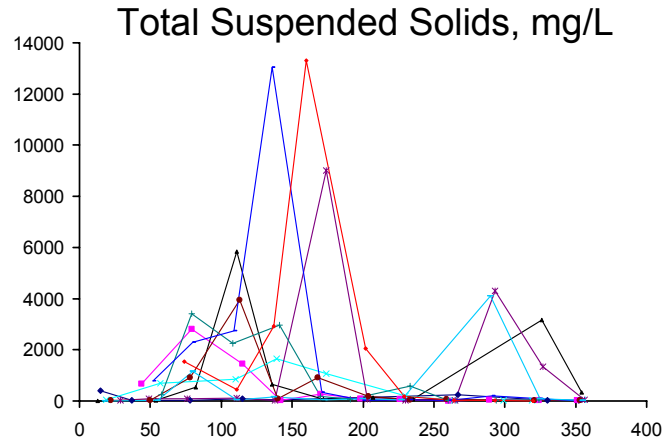
Rationale

- Missouri River and tributaries are a natural focus for statewide and regional research
- Water chemistry and suspended sediment are important aspects of system but not actively studied
- South Dakota provides marked contrast in land use in Missouri River basin, e.g., agricultural land (east) and rangeland (west)
- Potential to correlate seasonal and longer-term changes in measured water quality parameters with remotely-sensed images of respective drainage basins

MODIS NDVI

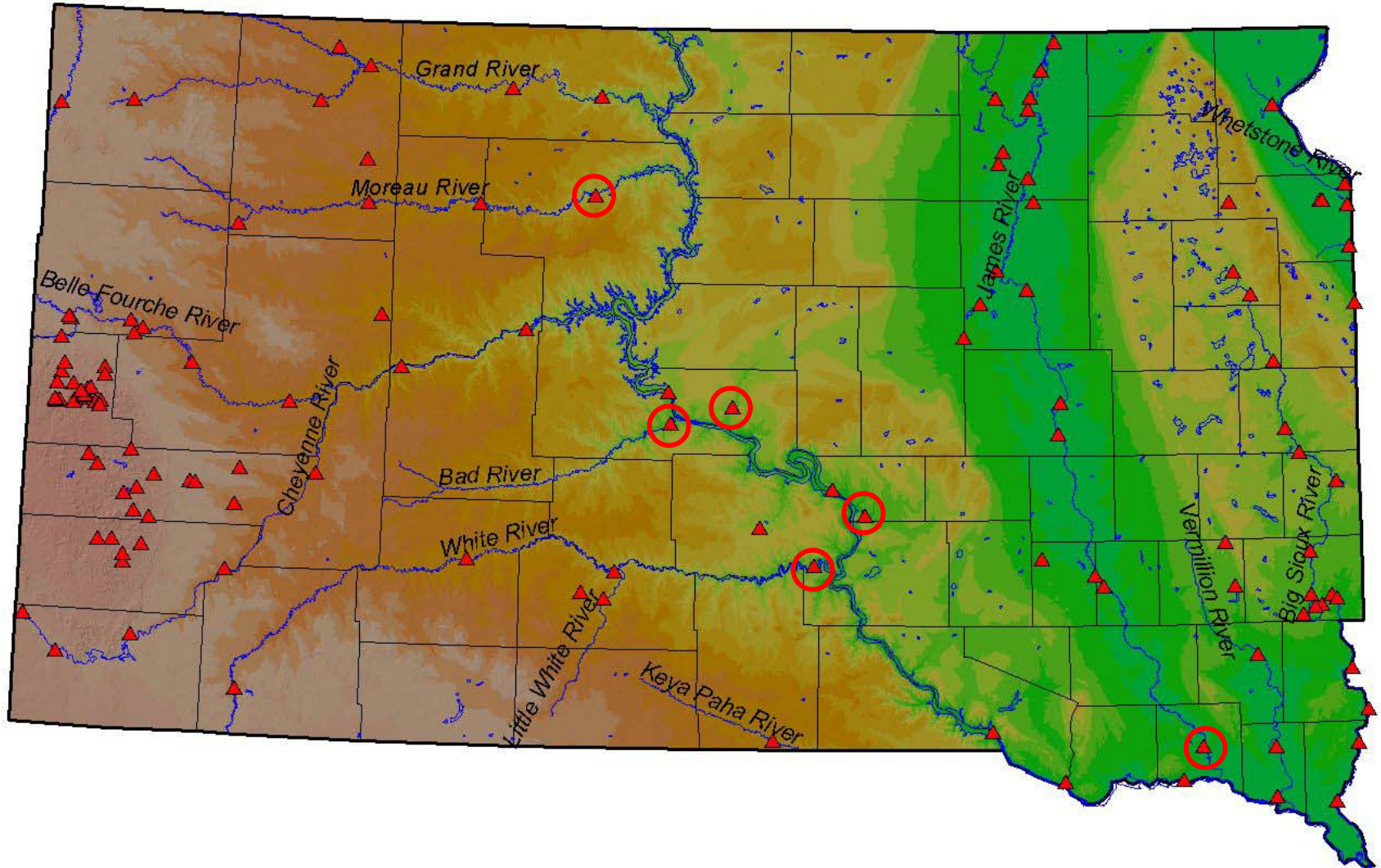


Moreau River Water Quality Data

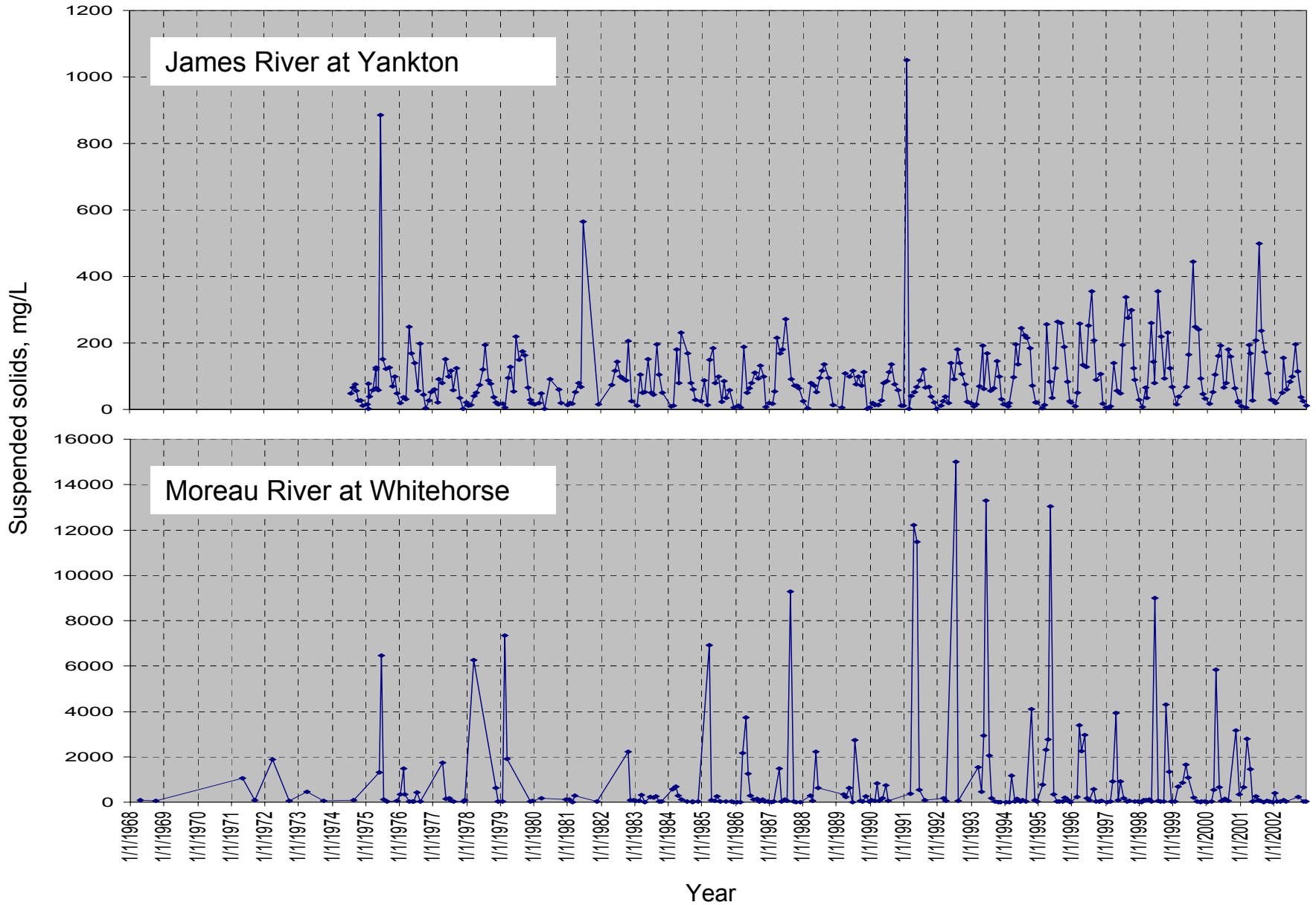


Julian Day

SD DENR Surface Water Quality Monitoring Sites (134 Sites, 1968-present)

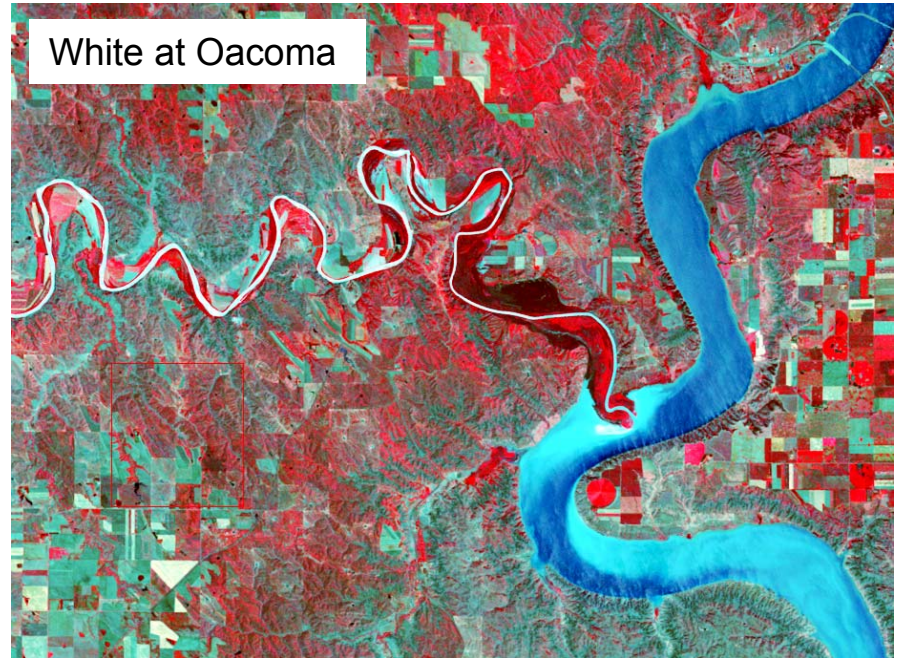


Total Suspended Solids, 1974-2002

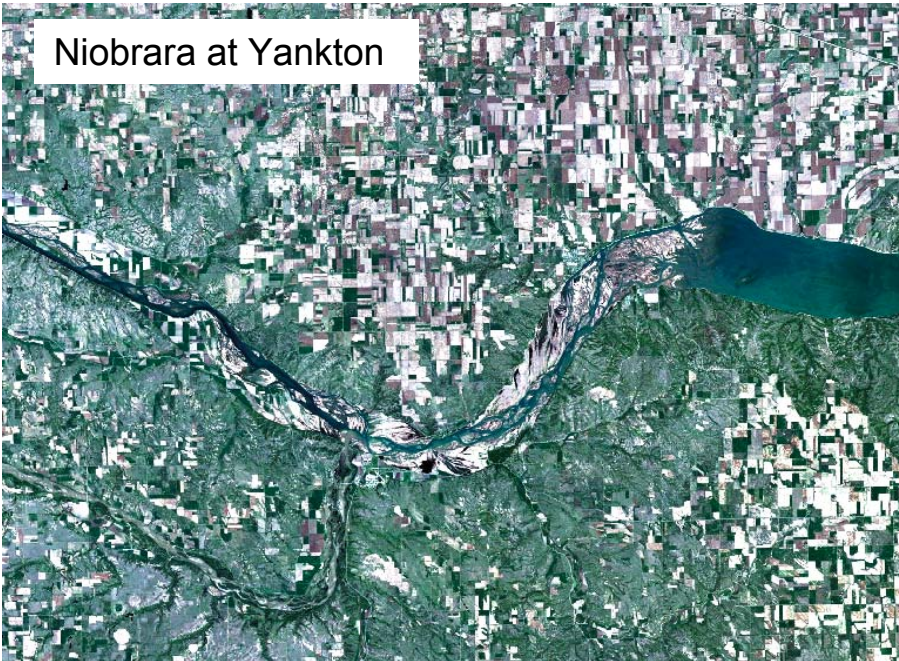


Suspended Sediment

White at Oacoma



Niobrara at Yankton



Moreau at Whitehorse

