Geomorphic change along the Red River

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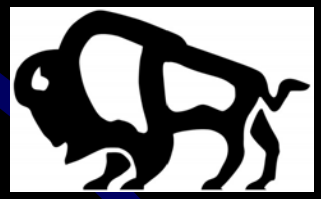
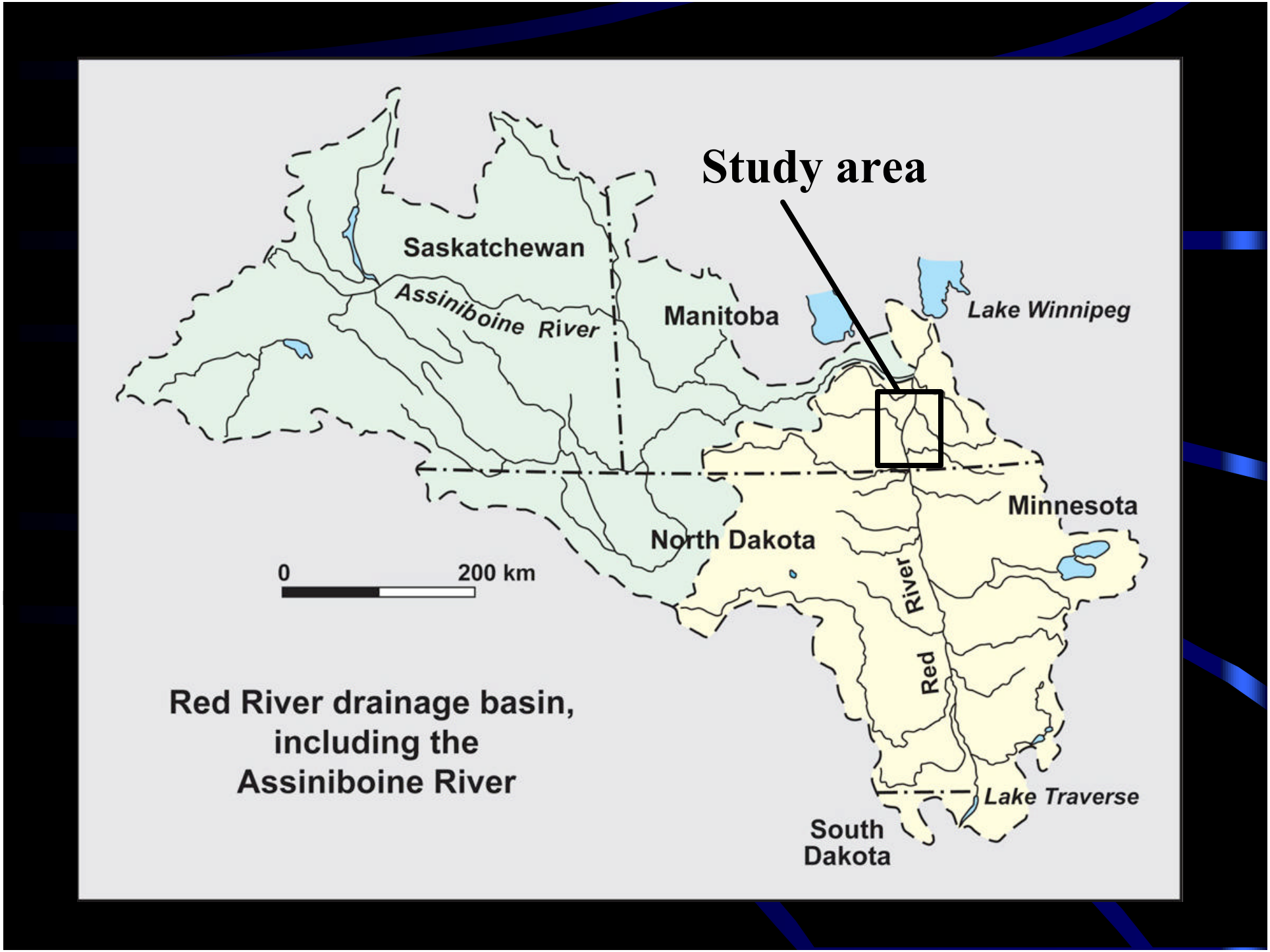


Purpose of talk

- Highlight research on the:
  - Evolution of the Red River floodplain
  - Long-term change in flood extent caused by regional tilting of Manitoba
  - Place these factors within the context of the modern flood hazard

'Long-term' context to flood problem

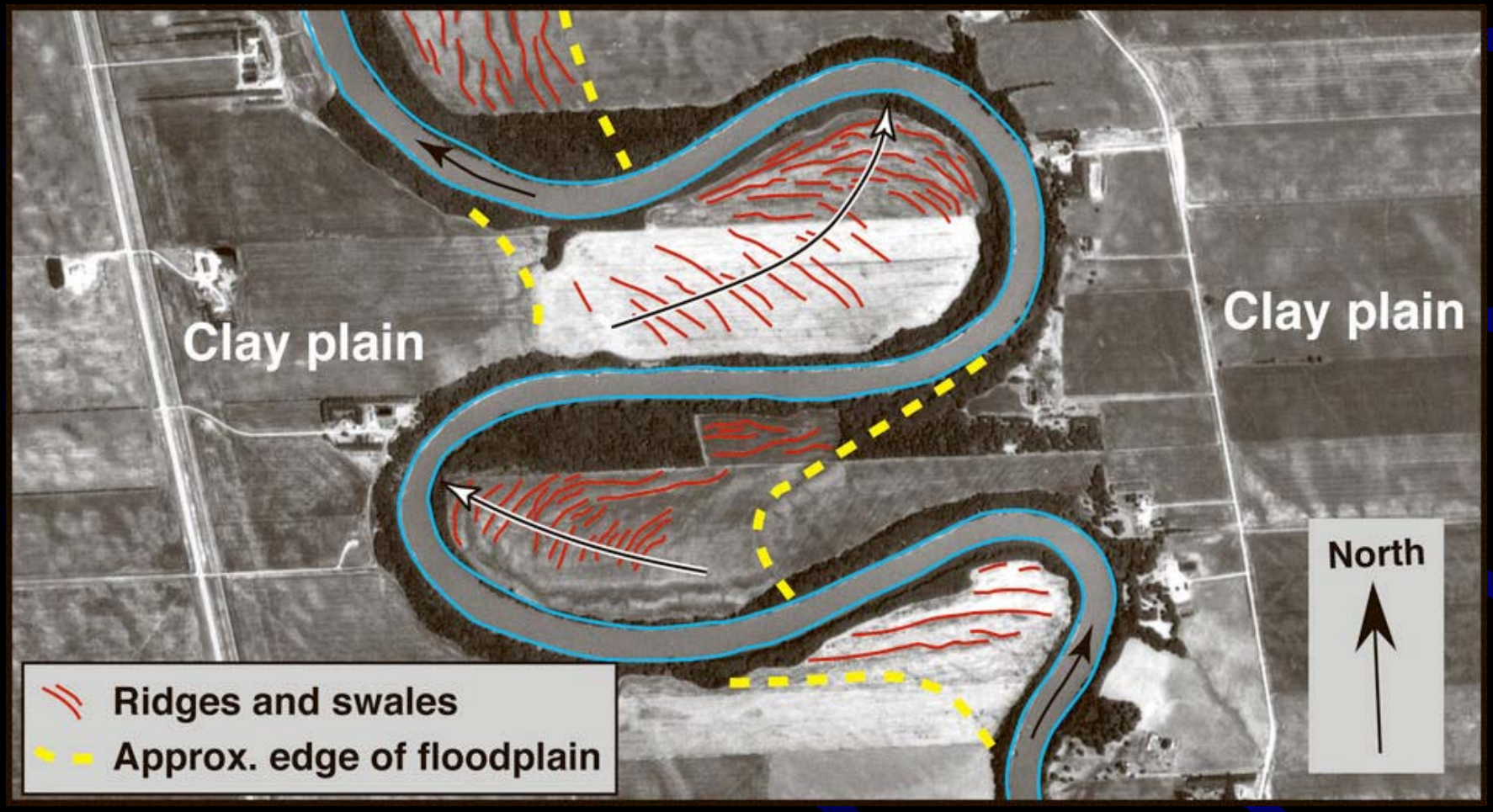
- How large can the Red River floods get and how often do the large floods occur?
- Are there geologic processes that may be changing the Red River flood risk?


Study area
Saskatchewan
Assiniboine River
Manitoba
Lake Winnipeg
Minnesota
North Dakota
0
200 km
Red River
Lake Traverse
South Dakota
Red River drainage basin,
including the
Assiniboine River

Alluvial river valley

- Low valley gradient (~0.07 m km^{-1})
- River occupies shallow (~ 15 m deep) river valley incised into flat glacial Lake Agassiz clay plain
- Shallow alluvial valley cannot contain major flows
- Are geomorphic processes significantly altering the discharge capacity of valley?

Pattern of lateral channel migration



Minimal 20th century lateral migration