

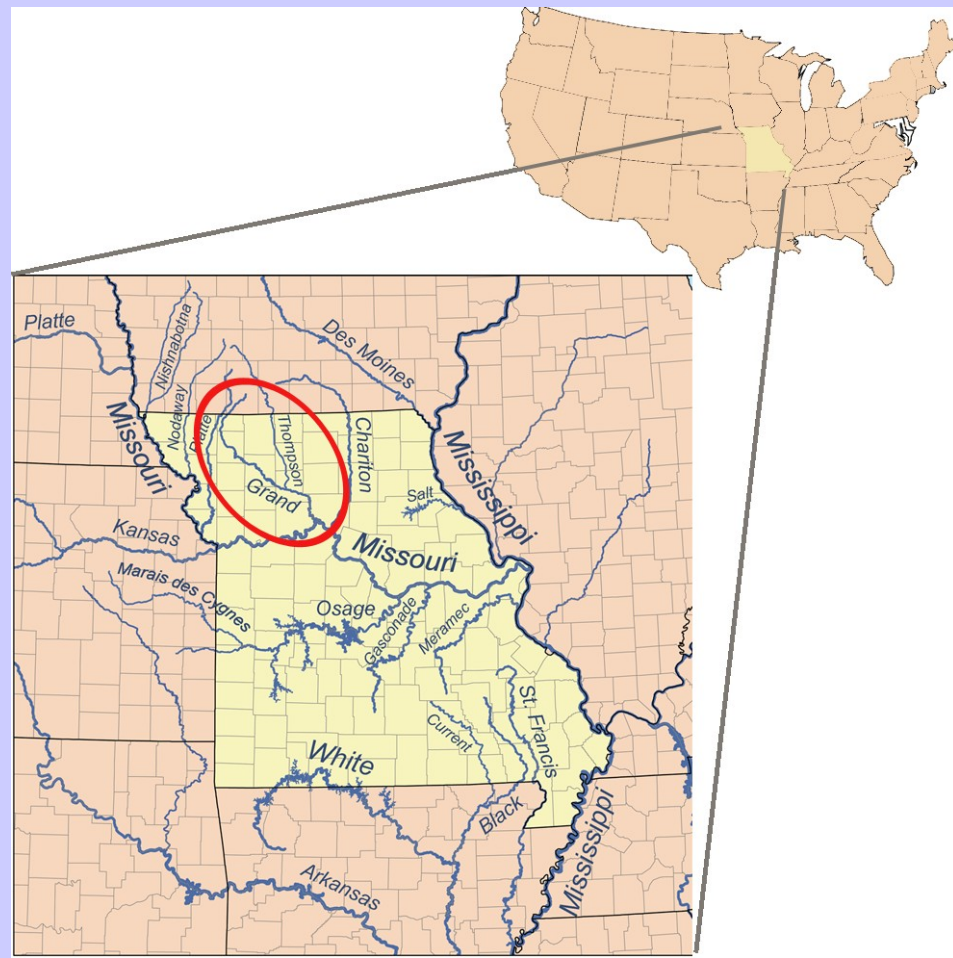
# GRAND RIVER

An aerial photograph showing a wide, blue river meandering through a landscape of green fields and forests. The river curves from the left towards the right, with a large, circular island in the middle. The surrounding land is a mix of green fields and dense forests. The sky is a pale blue with some light clouds.

Veronika Kůsová

# Základní informace:

- většina toku Missouri, USA
- pramen- stát Iowa, Creston
- ústí do Missouri u města Brunswick
- 364 km
- povodí- 20 tis. km<sup>2</sup>



- průměrný průtok u města Sumner – 111 m<sup>3</sup> / s
- šířka koryta – 120 m

- nejvíce srážek- duben, květen, červen- 365 mm
- nejméně- prosinec, leden, únor- 127 mm
- největší povodňové stavy- **červen 1947**
  - ➔ maximální okamžitý průtok- 5 100 m<sup>3</sup> / s
  - **1993**
  - ➔ 4 200 m<sup>3</sup> / s



# Kvantifikace laterálního pohybu:

- zkoumaná období- 1997, 2005, 2009

## EROZNÍ A AKUMULAČNÍ OBLASTI KORYTA TOKU GRAND RIVER za období let 1997- 2009



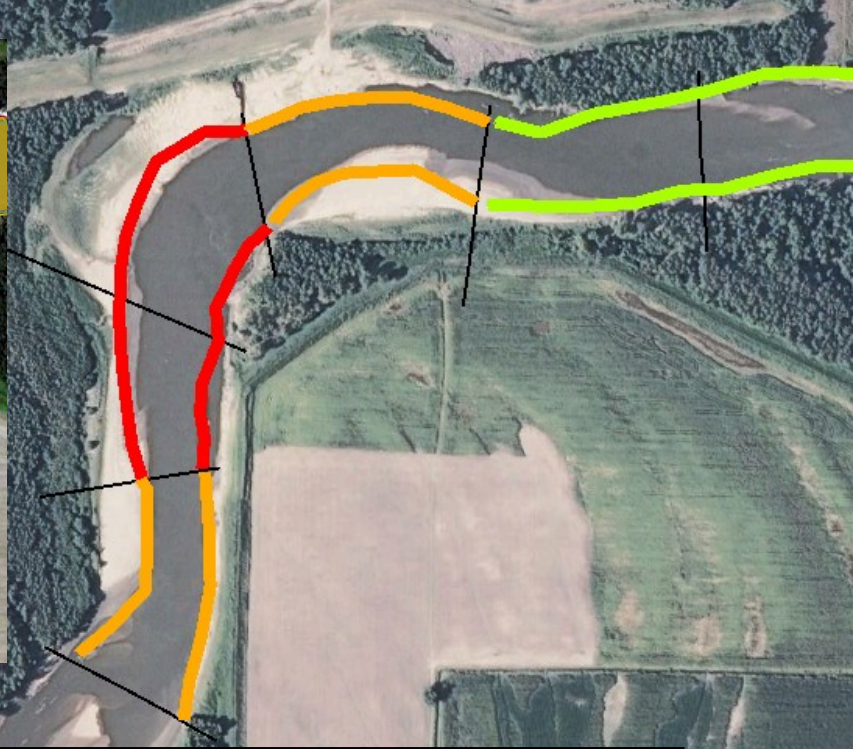
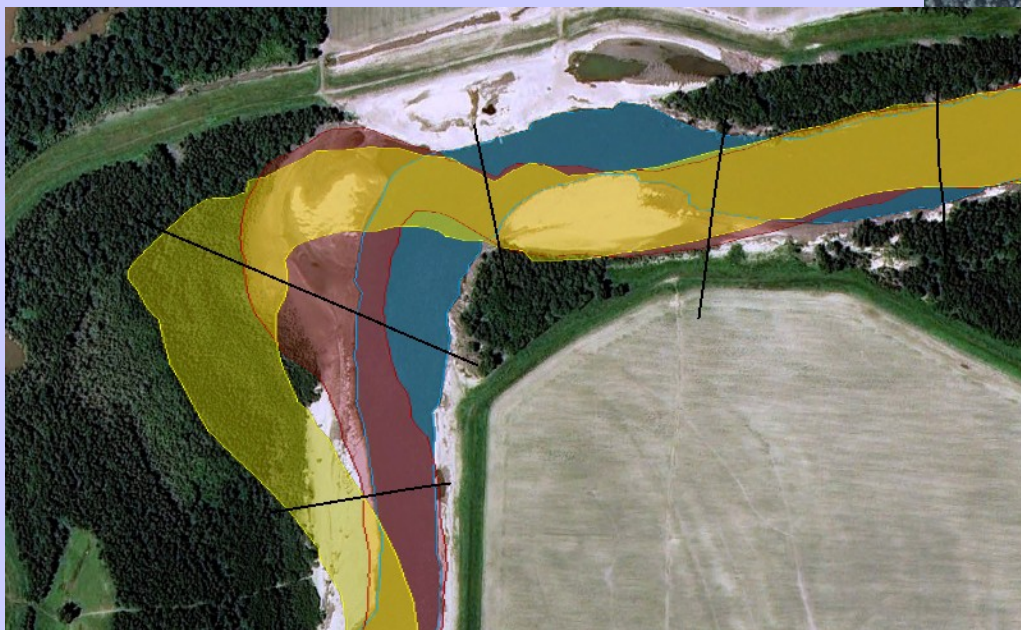
- směr toku
- rozdělení toku na úseky

### Stupeň eroze a akumulace:

- minimální nebo žádný
- velký
- maximální



Veronika KŮSOVÁ, PřF MU, Brno 2012;  
zdroj dat: Google Earth.



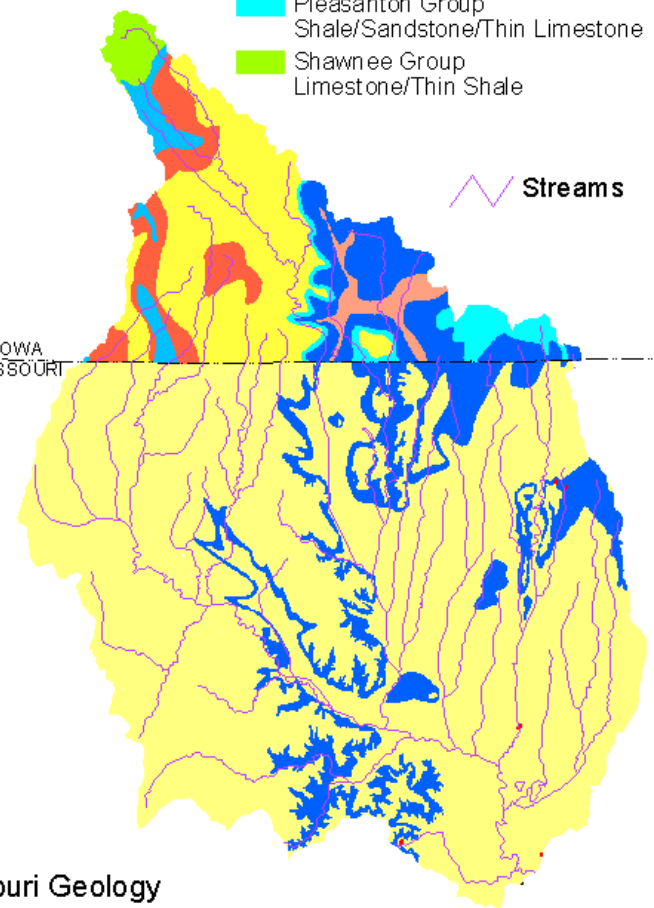
úsek		t-t1 [m]		t1-t2 [m]		t-t1 [m/rok]		t1-t2 [m/rok]	
		Ebrut	Abrut	Ebrut	Abrut	Enet	Anet	Enet	Anet
4.	500-750	83,8	84,6	22,1	11,6	<b>10,5</b>	<b>10,6</b>	5,5	2,9
	750-1 000	126,1	128,1	75,1	132,2	<b>15,8</b>	<b>16,0</b>	<b>18,8</b>	<b>33,1</b>
5.	0-250	115,7	88,4	84,8	132,0	<b>14,5</b>	<b>11,1</b>	<b>21,2</b>	<b>33,0</b>
	250-500	10,3	6,8	74,3	90,7	1,3	0,9	<b>18,6</b>	<b>22,7</b>
6.	0-250	9,1	6,0	14,7	5,5	<b>1,1</b>	<b>0,8</b>	3,7	<b>1,4</b>
	250-500	3,0	11,7	0,0	11,0	<b>0,4</b>	<b>1,5</b>	<b>0,0</b>	<b>2,8</b>
	500-750	0,0	5,0	7,1	14,6	<b>0,0</b>	<b>0,6</b>	<b>1,8</b>	<b>3,7</b>
	750-1 000	6,1	14,1	11,3	12,7	<b>0,8</b>	<b>1,8</b>	<b>2,8</b>	<b>3,2</b>
7.	0-250	3,1	16,2	0,0	14,6	<b>0,4</b>	<b>2,0</b>	<b>0,0</b>	3,7

- Iowa Stratigraphic Units
- Cherokee Group  
Shale/Clay/Siltstone/Sandstone and Thick Coal Beds
  - Douglas Group  
Shale/Siltstone/Thin Limestone
  - Kansas City Group  
Limestone/Shale
  - Lansing Group  
Thin Limestone/Red and Green Shale
  - Marmation Group  
Shale/Limestone with some Sandstone and Coal
  - Pleasanton Group  
Shale/Sandstone/Thin Limestone
  - Shawnee Group  
Limestone/Thin Shale

Streams



STATE OF IOWA  
STATE OF MISSOURI



- Missouri Geology
- Clay
  - Limestone
  - Sandstone

10 0 10 20 Miles

Grand River Watershed

**IOWA LANDFORM**

- Des Moines Lobe
- Iowan Surface
- Loess Hills
- Mississippi Alluvial Plain
- Missouri Alluvial Plain
- Northwest Iowa Plains
- Paleozoic Plateau
- Sioux Quartzite
- Southern Iowa Drift Plain

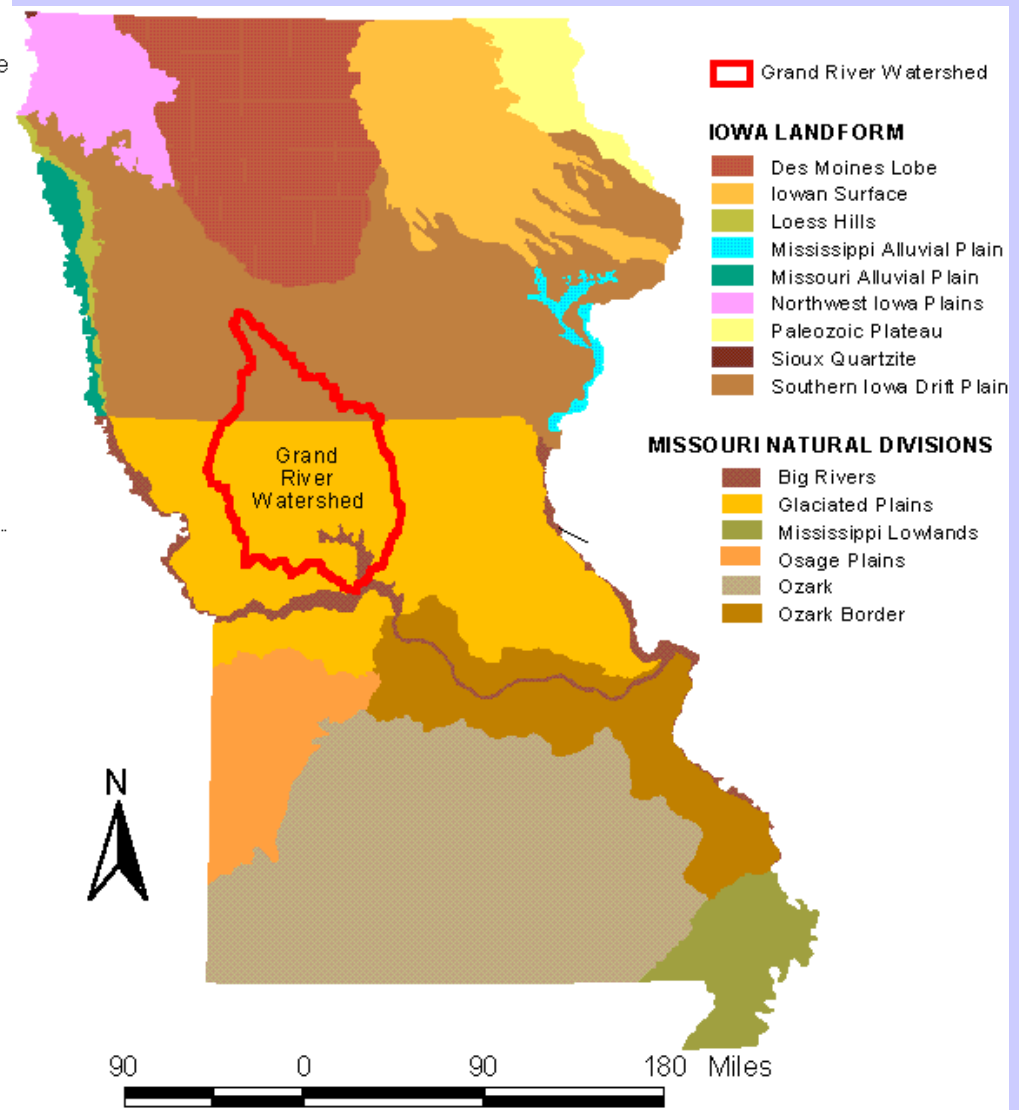
**MISSOURI NATURAL DIVISIONS**

- Big Rivers
- Glaciated Plains
- Mississippi Lowlands
- Osage Plains
- Ozark
- Ozark Border

Grand River Watershed



90 0 90 180 Miles



# Děkuji za pozornost 😊

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