

The Geology Beneath Us

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Dubuque Area Writers Guild
**Gallery 2025:
Connections**



IECA

**Great
Lakes**

CHAPTER



GREAT CONNECTIONS



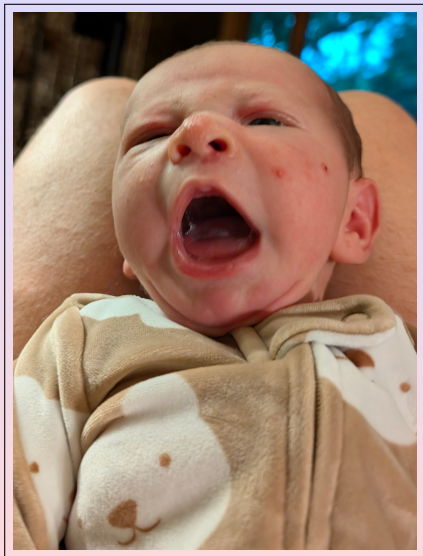
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**GREAT
RIVERS**



CHAPTER

Why geology?



My new (and first) grandchild during his first geology lecture.

The Story of the Earth

A good story has a

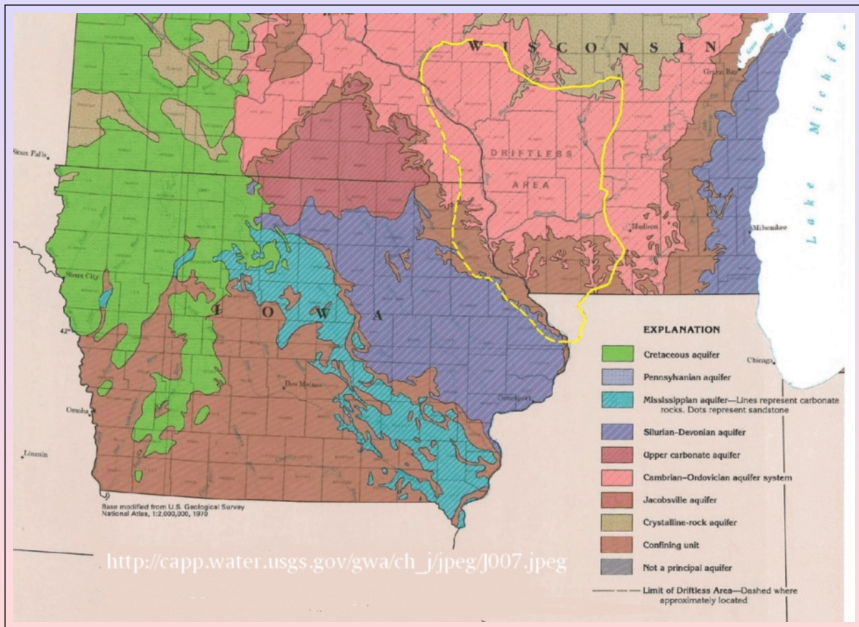
- setting,
- time, and
- plot.



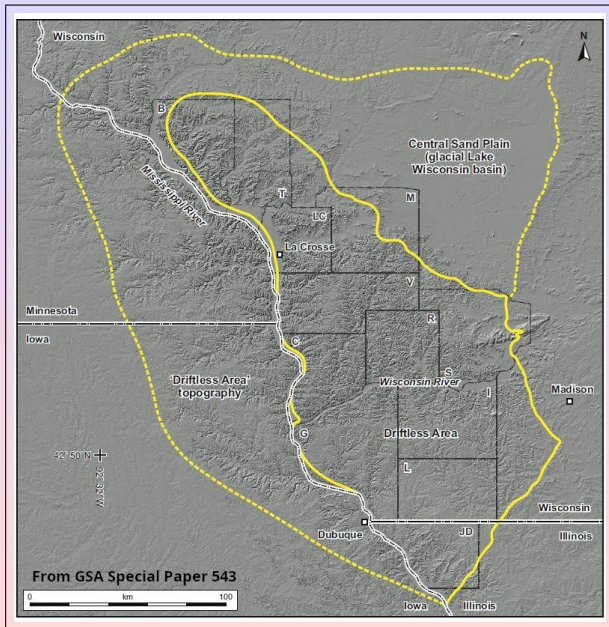
Setting: The Driftless Area



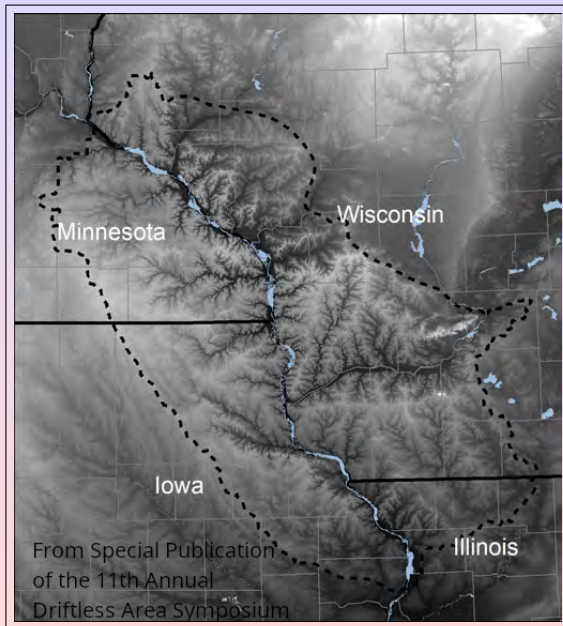
The Driftless Area



Or the Driftless Area



Here's what's important



And here's one effect



NRCS image

Wis-717

Early conservation work



Time: Relative time



Time: Relative time



Nautiloid fossil at Graf, Iowa.



Time: Absolute time



Time: Absolute time

Atomic Nuclei of Three Isotopes of Carbon

^{12}C



^{13}C



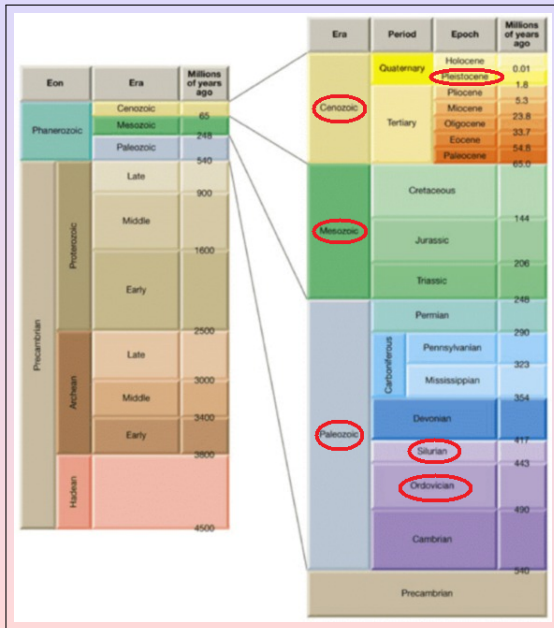
^{14}C



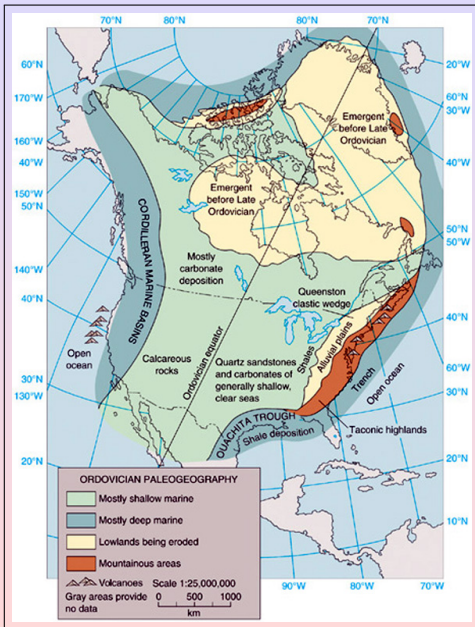
 Proton

 Neutron

The times most important to us here

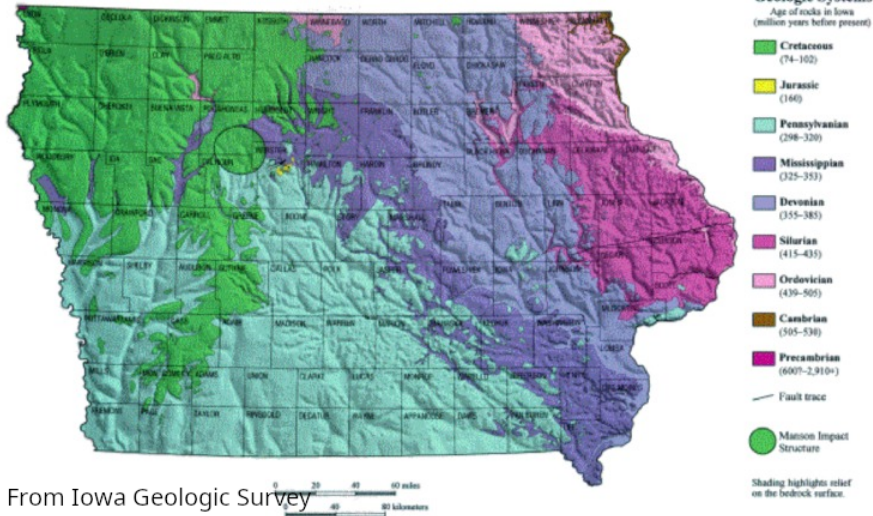


Plot: Forming rocks from ancient seas



The sea recedes

BEDROCK GEOLOGY AND BEDROCK TOPOGRAPHY OF IOWA



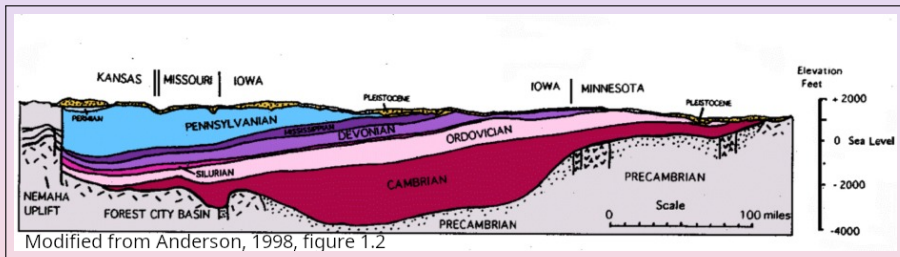
Not much happening tectonically



Then the glaciers!



A thin new skin

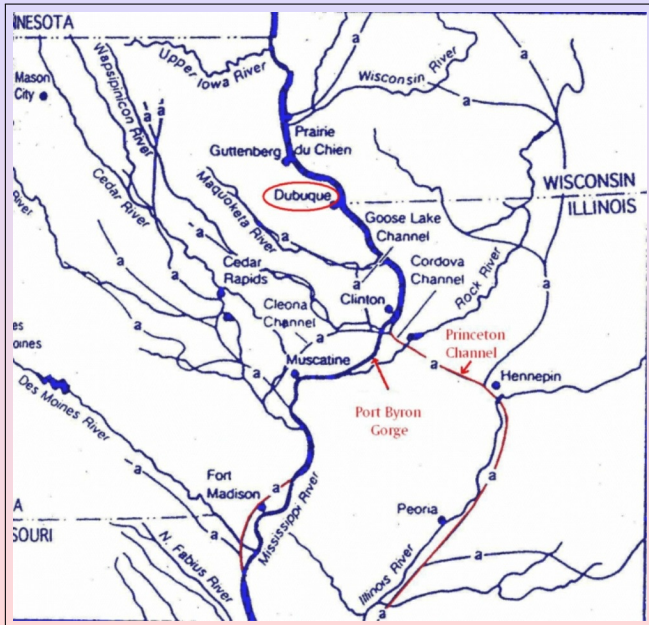


Karst develops: weathering of carbonates



From geologyscience.com

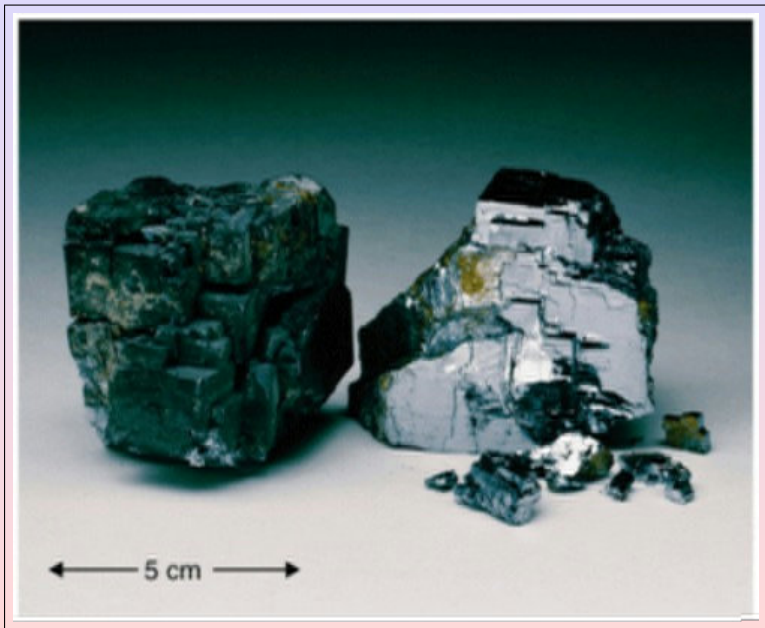
Why no bluffs downstream?



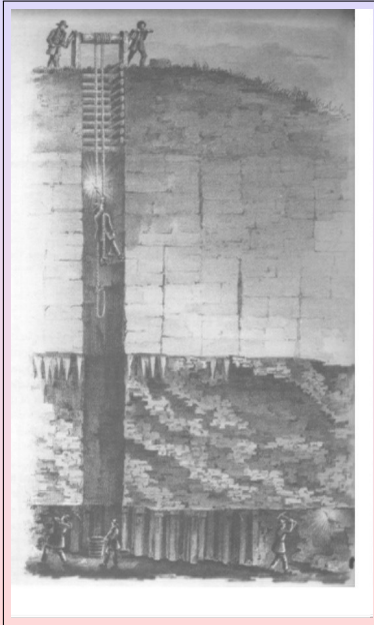
Ice in the fractures



Galena in the fractures, too



Julien Dubuque and the Europeans



Soil loss



Goat prairies!



CAFOs



Climate change: How we tell temperature



Questions?

