



Chapter 10 Opener
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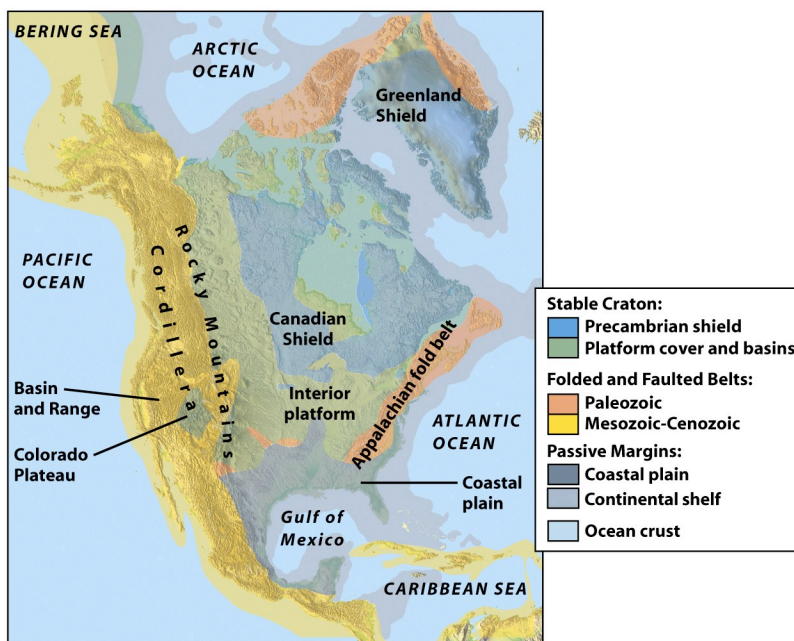
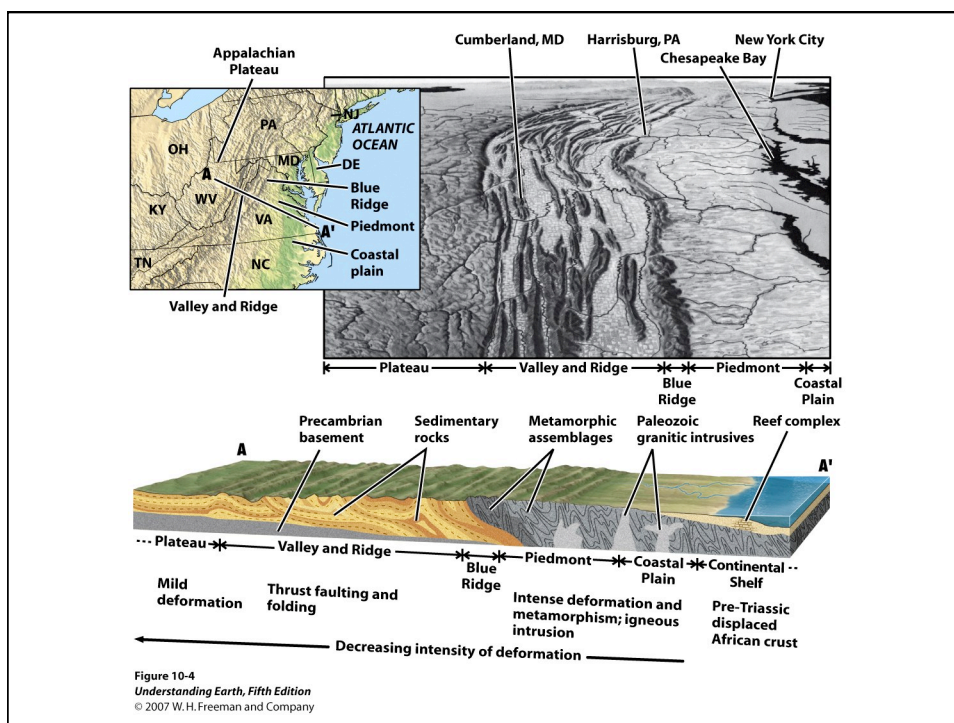
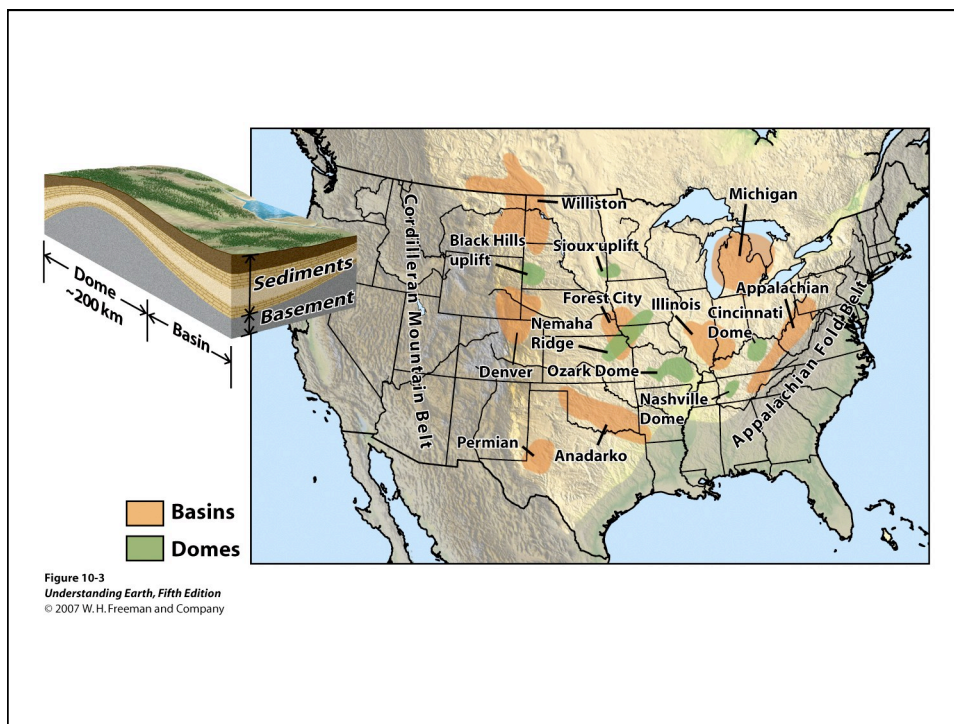


Figure 10-1
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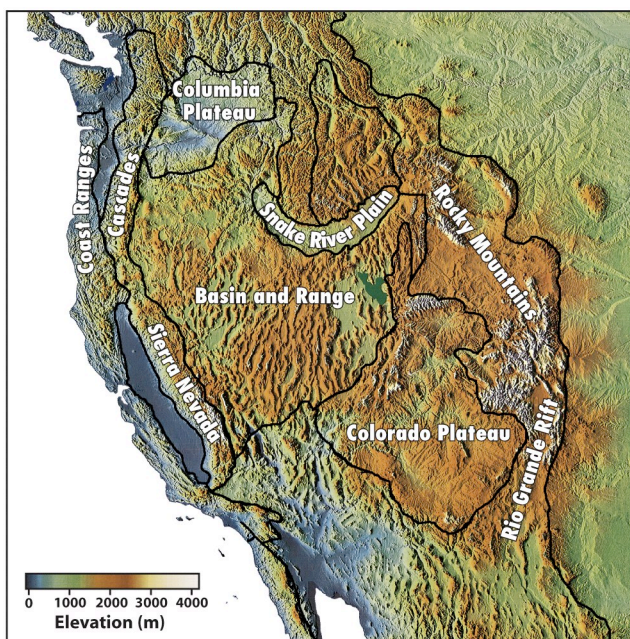


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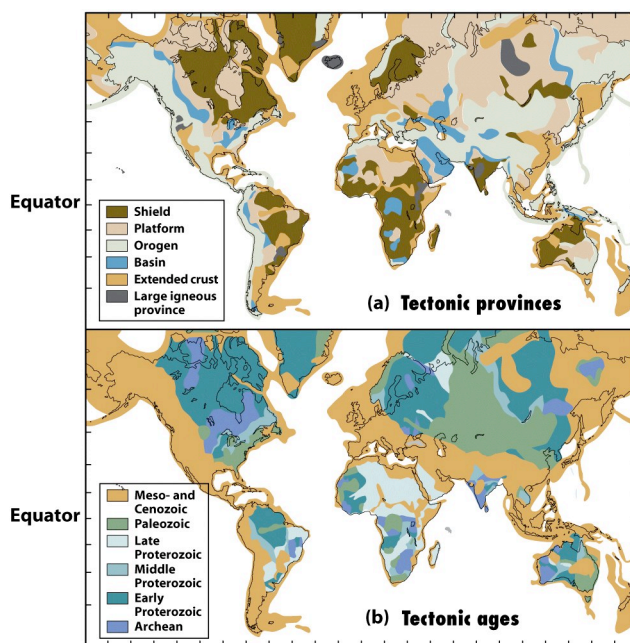
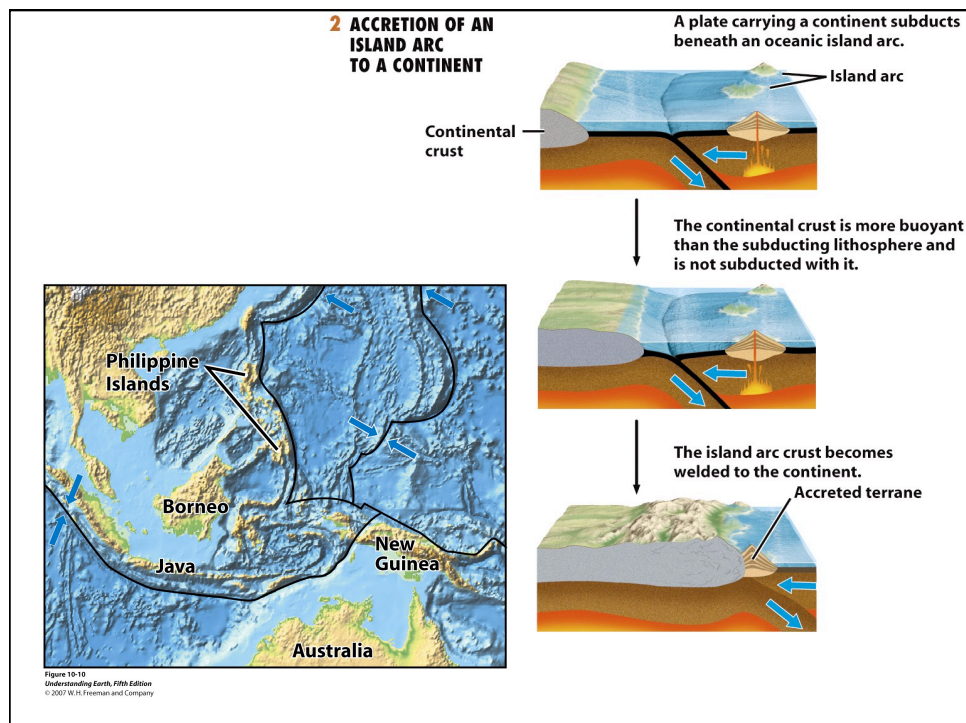
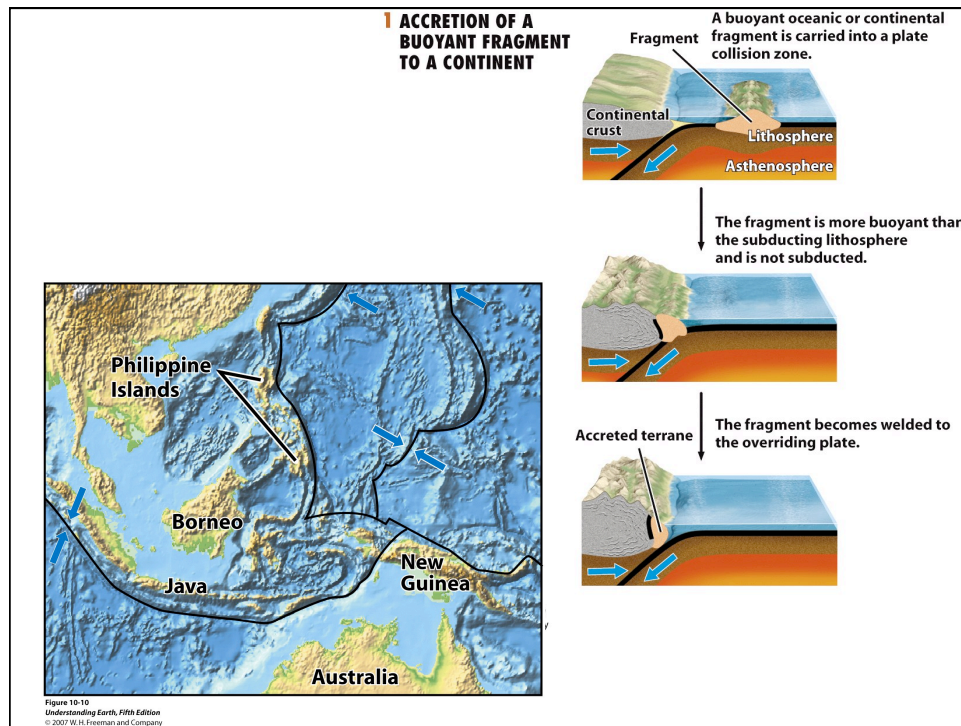
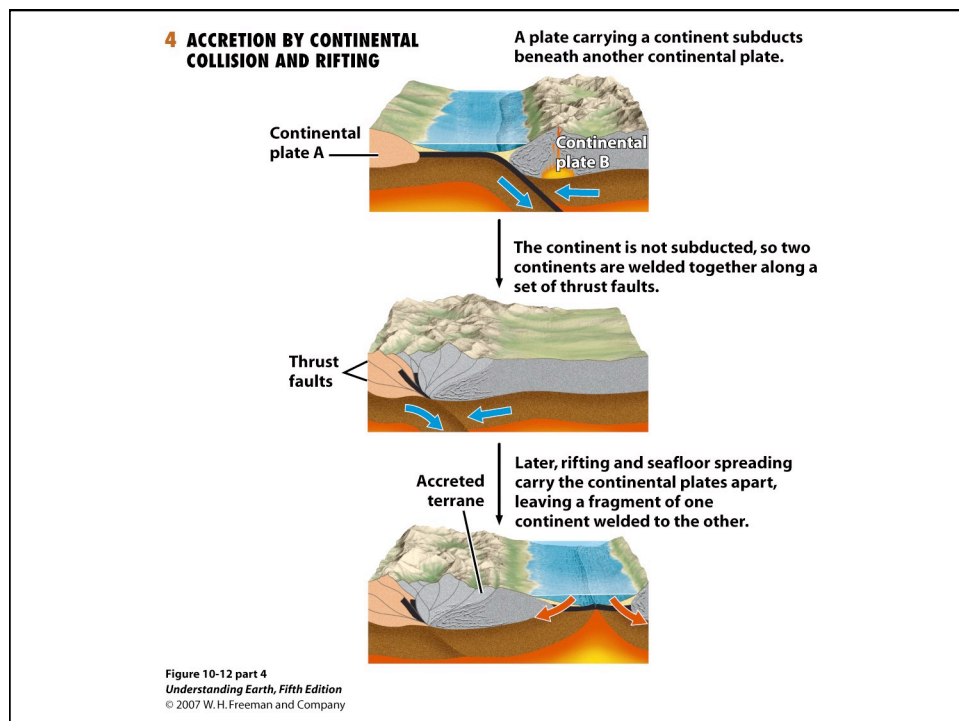
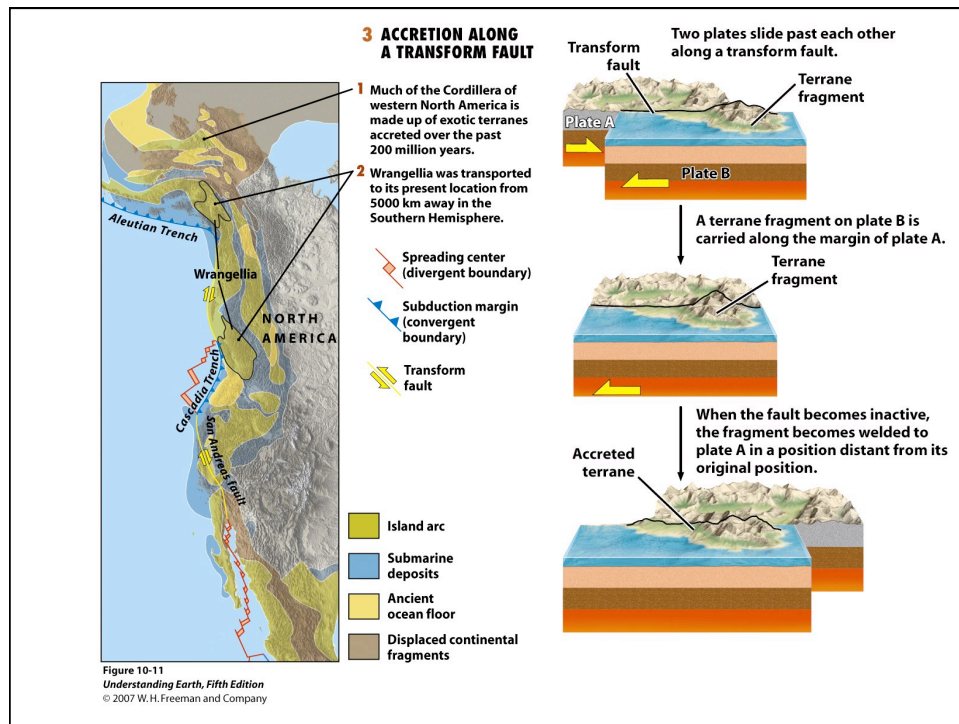


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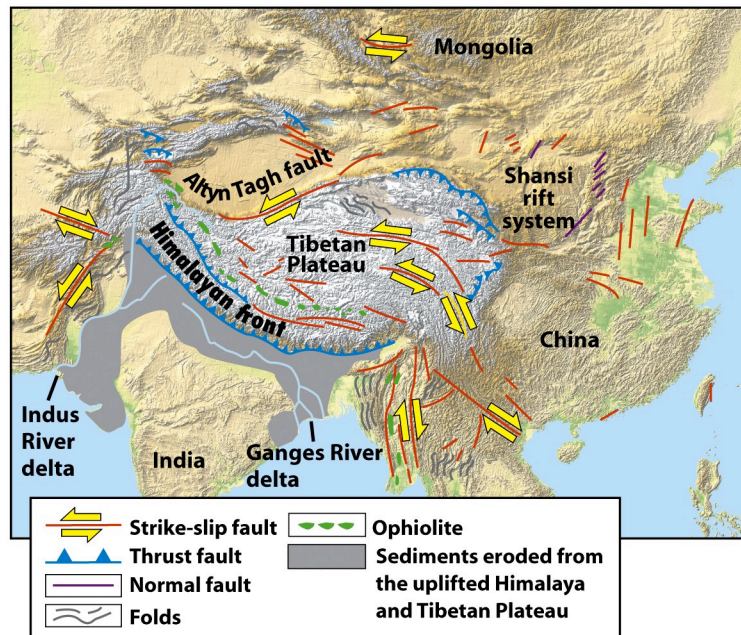
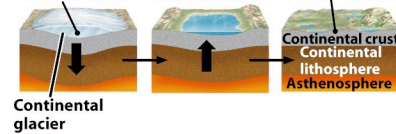


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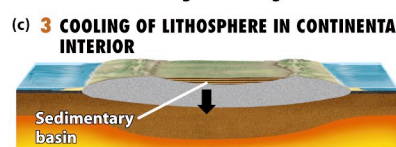
(a) **1 GLACIAL REBOUND**

A glacial ice load downwarps the continental lithosphere, ... which rebounds once the ice is removed.



(b) **2 HEATING OF LITHOSPHERE**

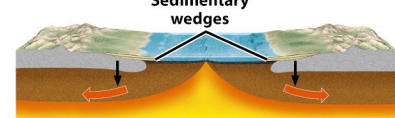
Upwarping and thinning of continental lithosphere are a result of heating and rifting.



As the lithosphere cools and contracts, it subsides to form a basin within the continent.

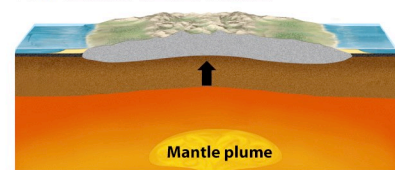
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(d) **4 COOLING OF LITHOSPHERE ON CONTINENTAL MARGIN**



When a new episode of seafloor spreading splits a continent apart, the edges of the continent subside as they cool, accumulating thick sedimentary wedges.

(e) **5 HEATING OF DEEP MANTLE**



A plume rising from the mantle heats the continent and raises the base of the lithosphere, upwarping the surface over a broad area.



Figure 10-21
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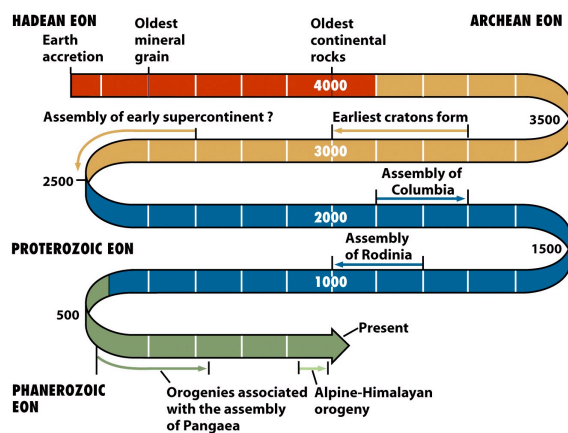
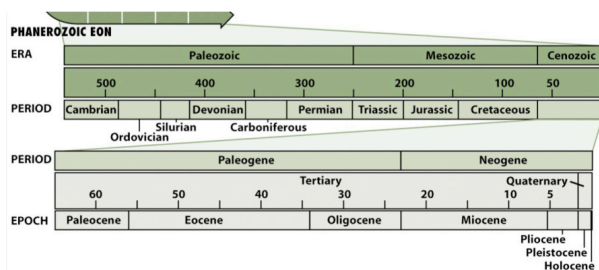
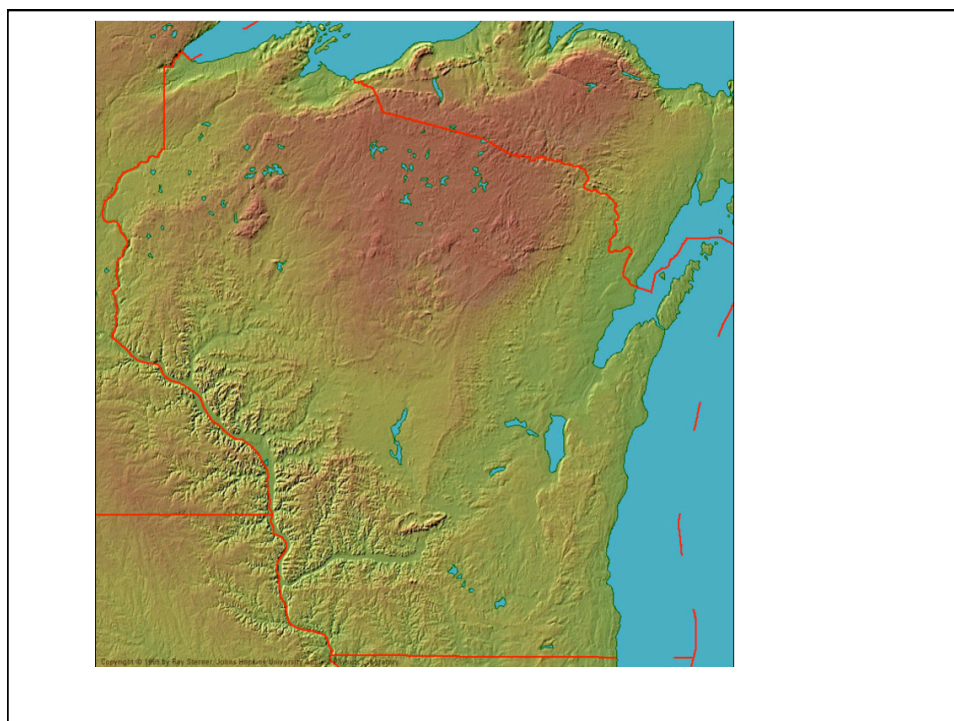
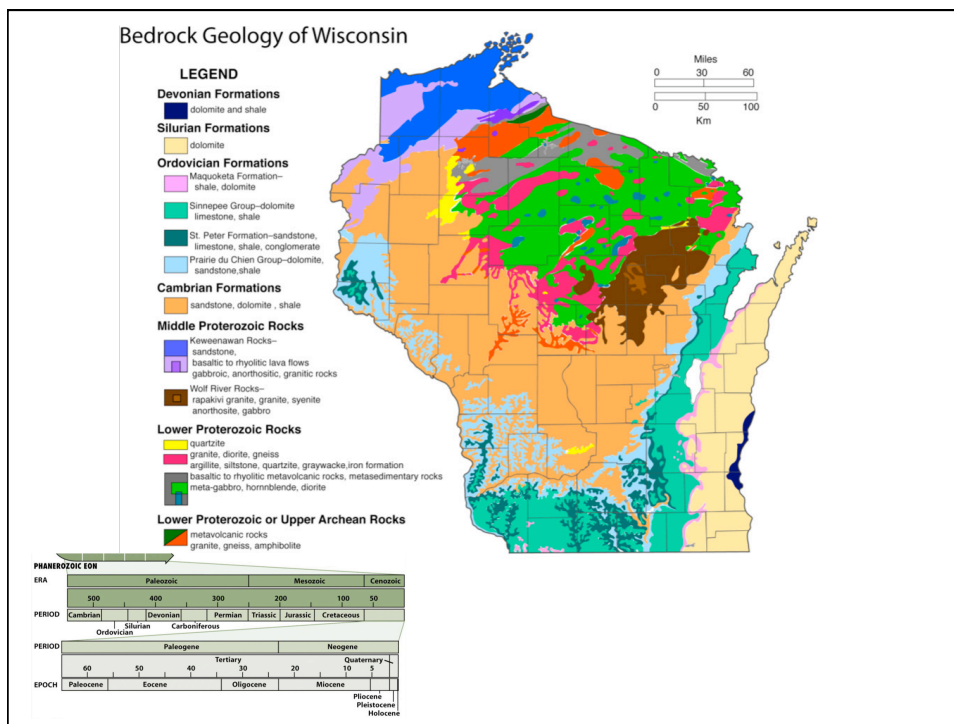
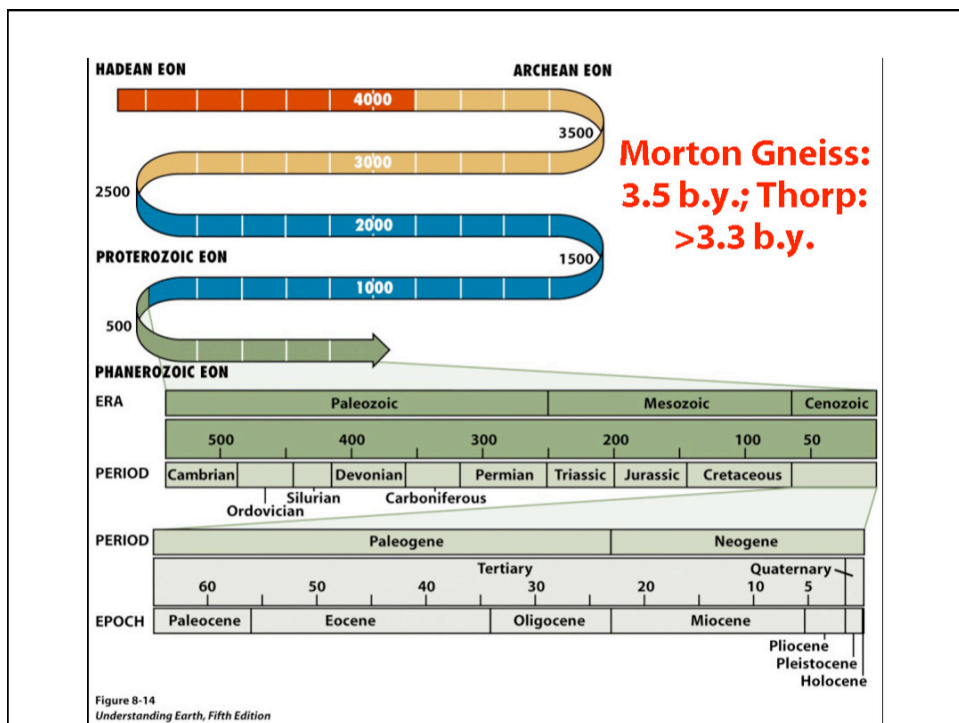
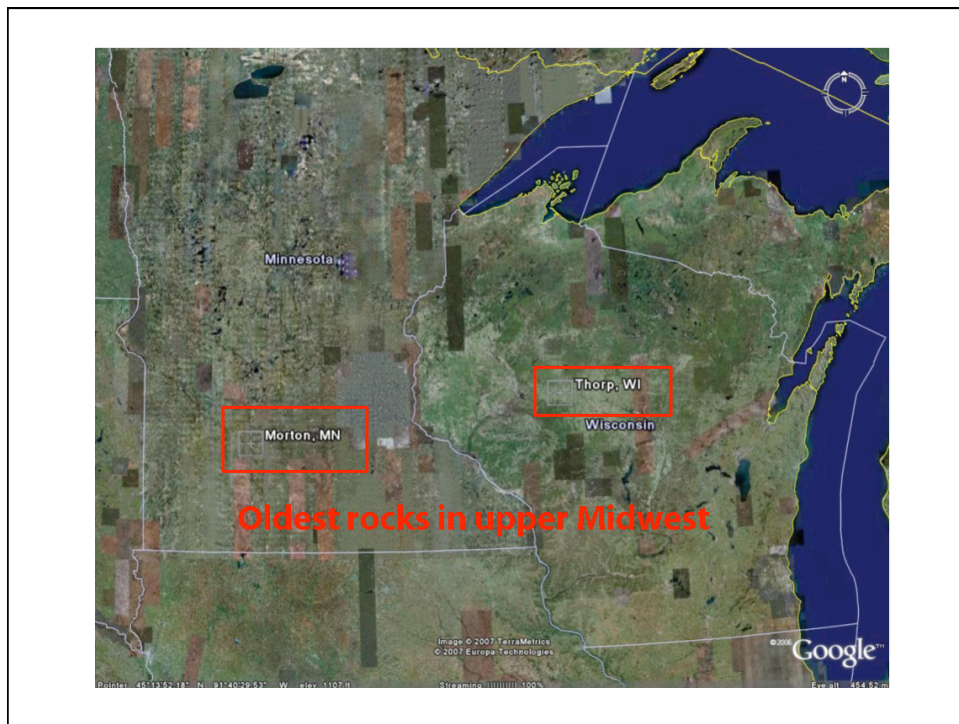
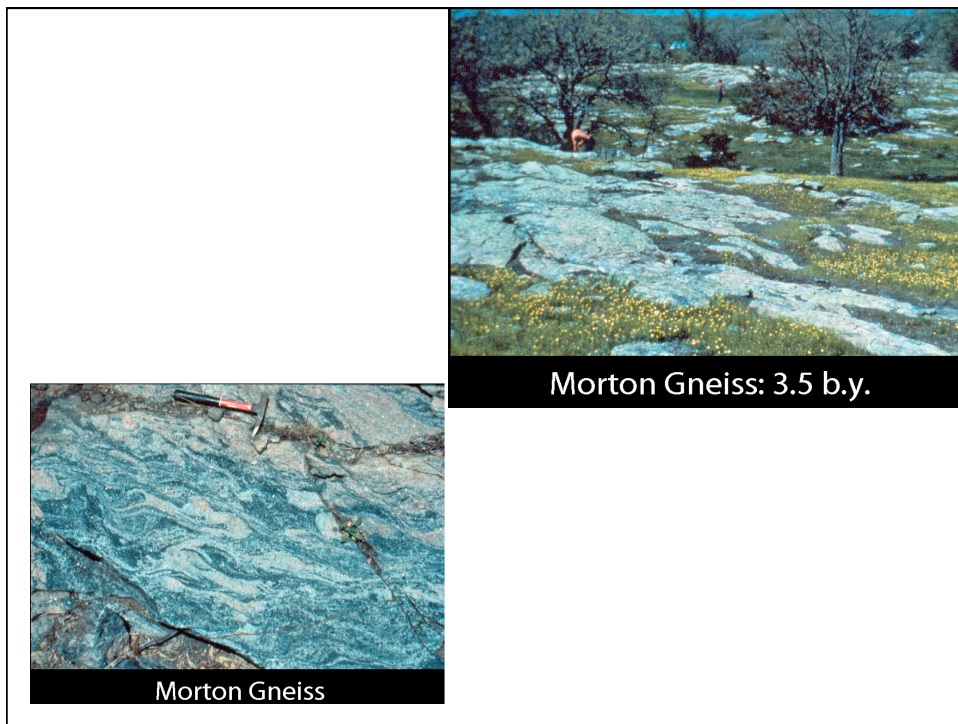


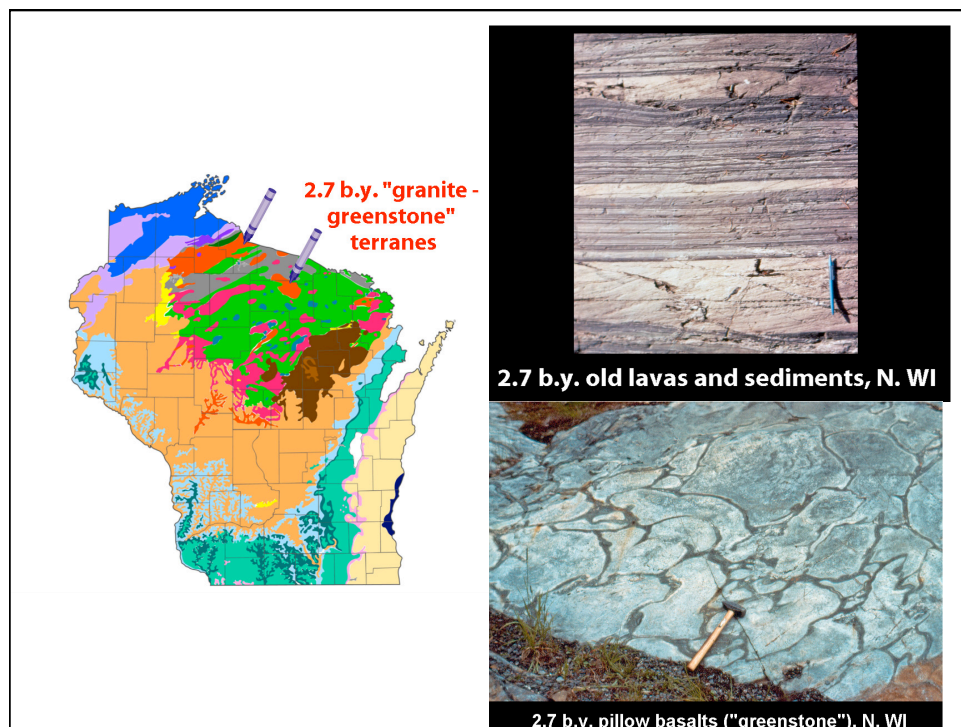
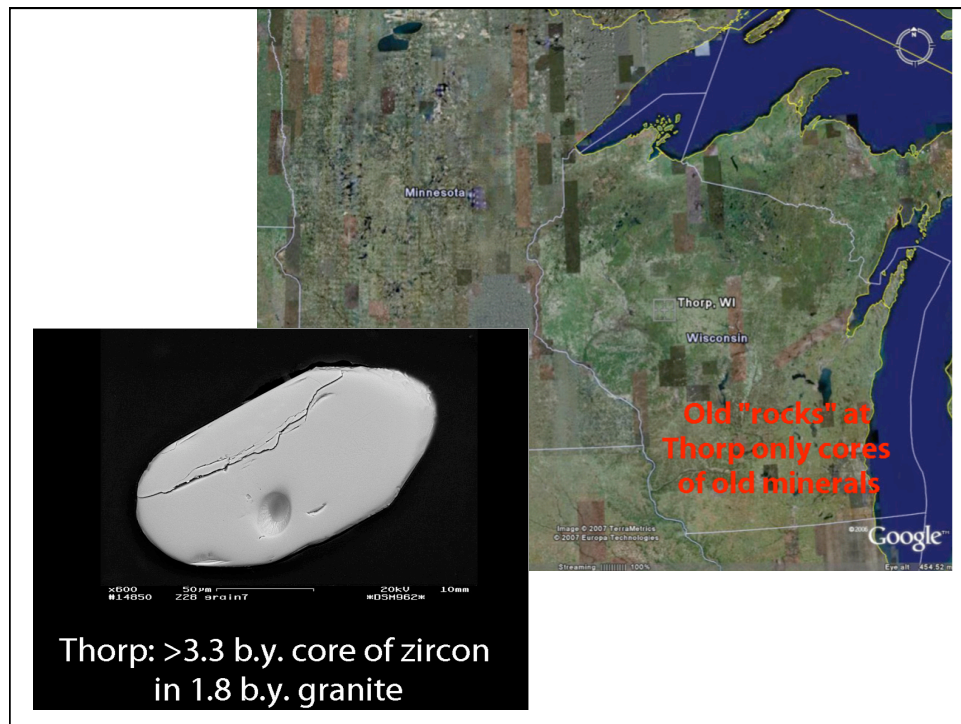
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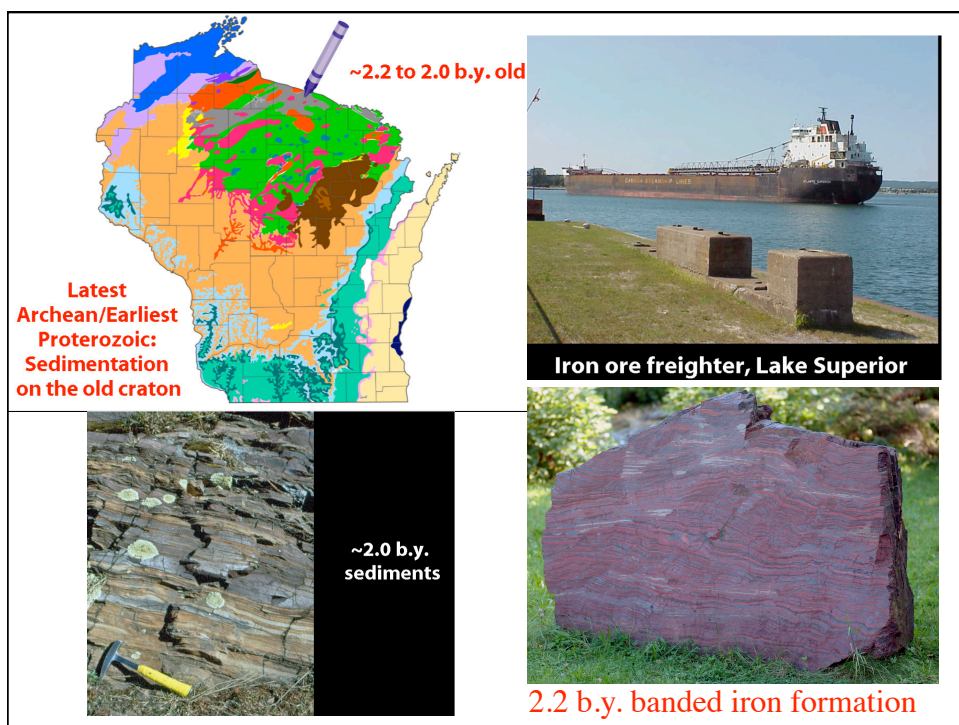
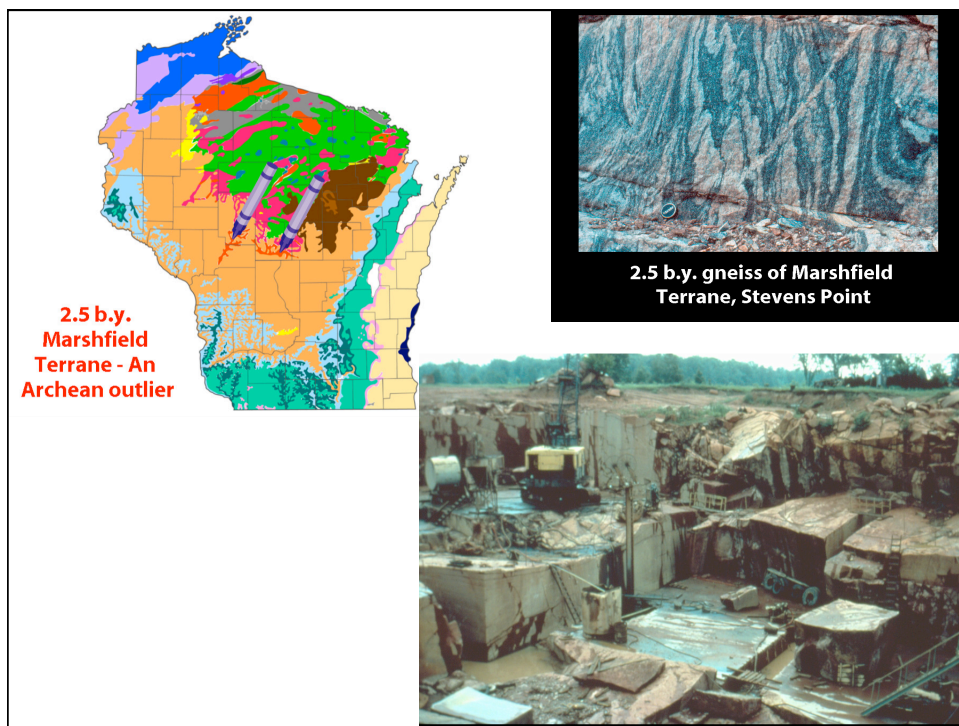


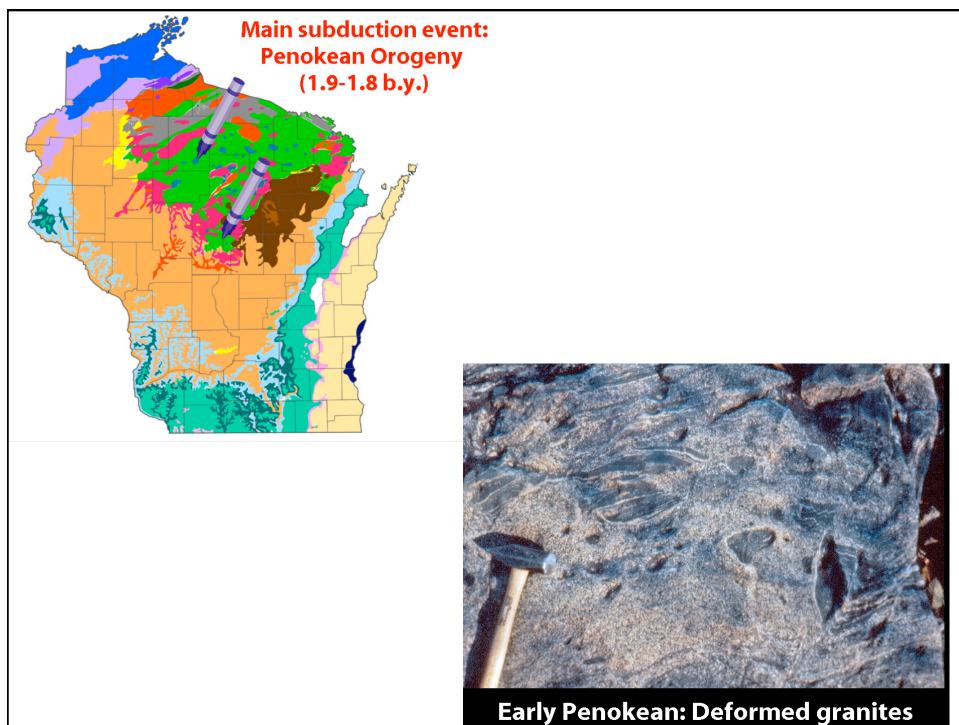
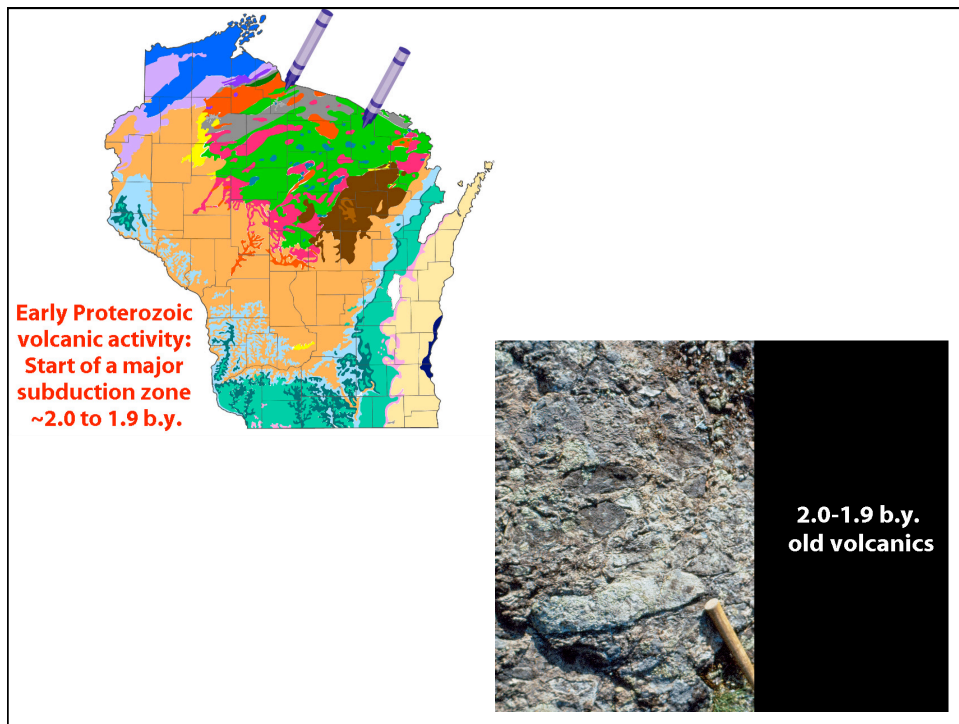


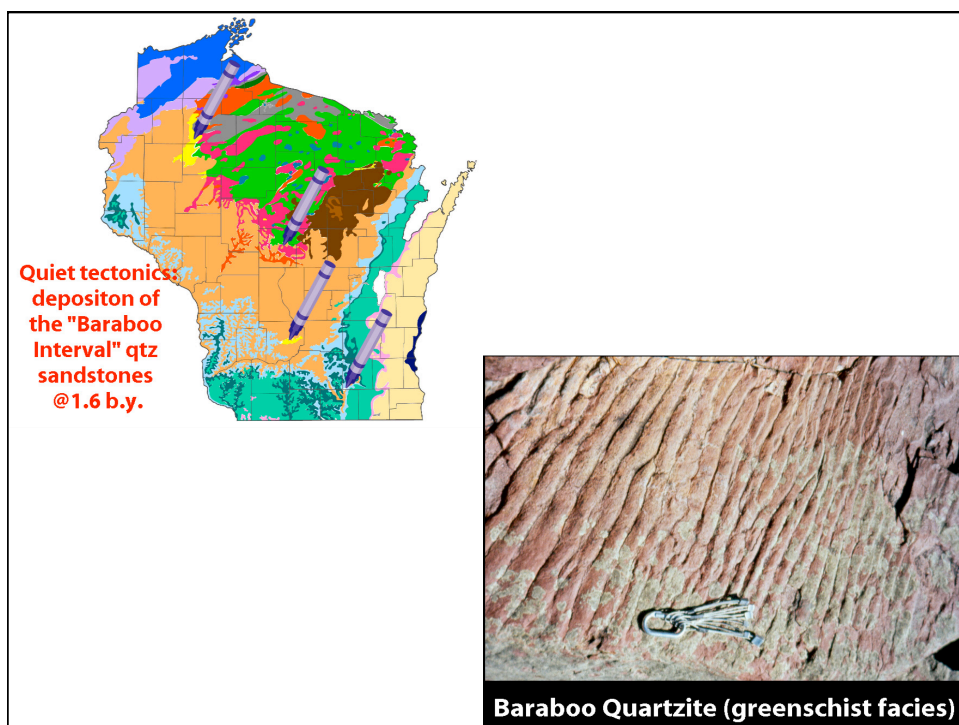
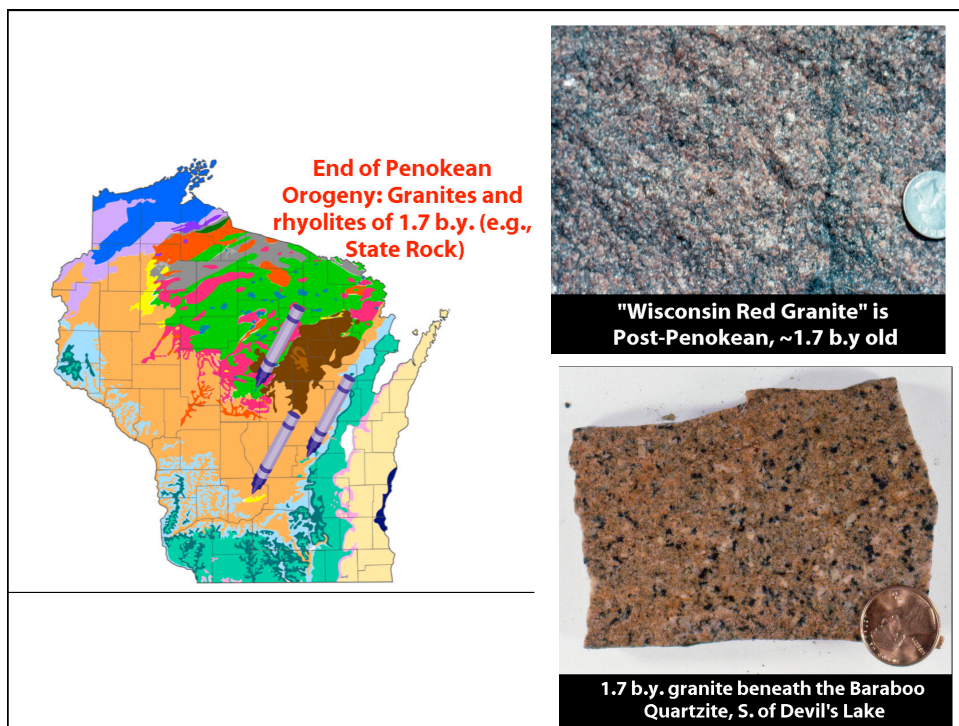


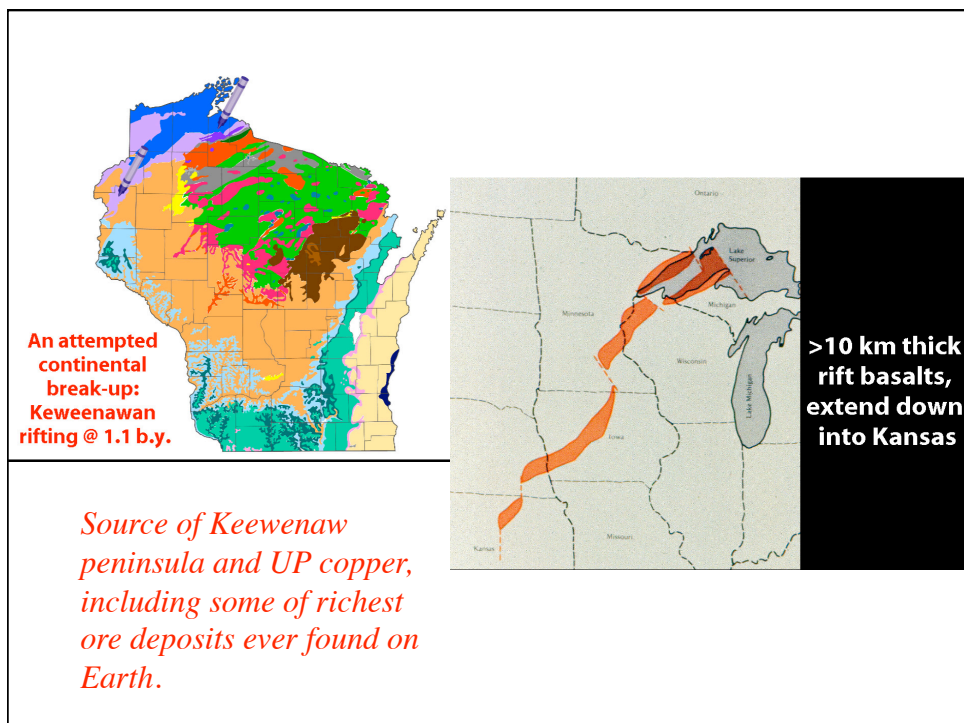
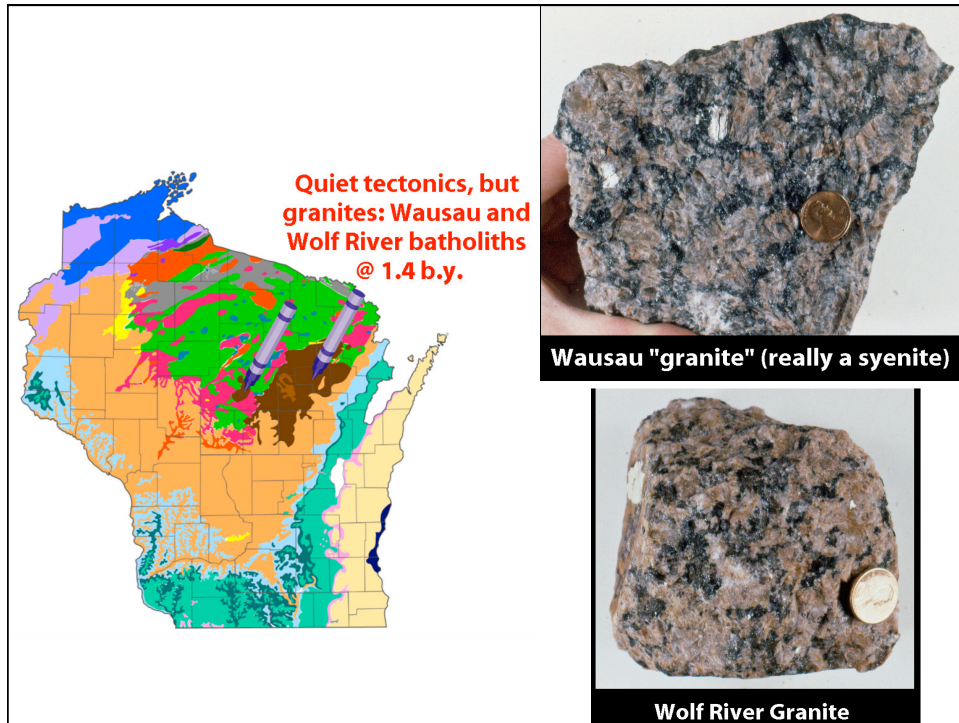








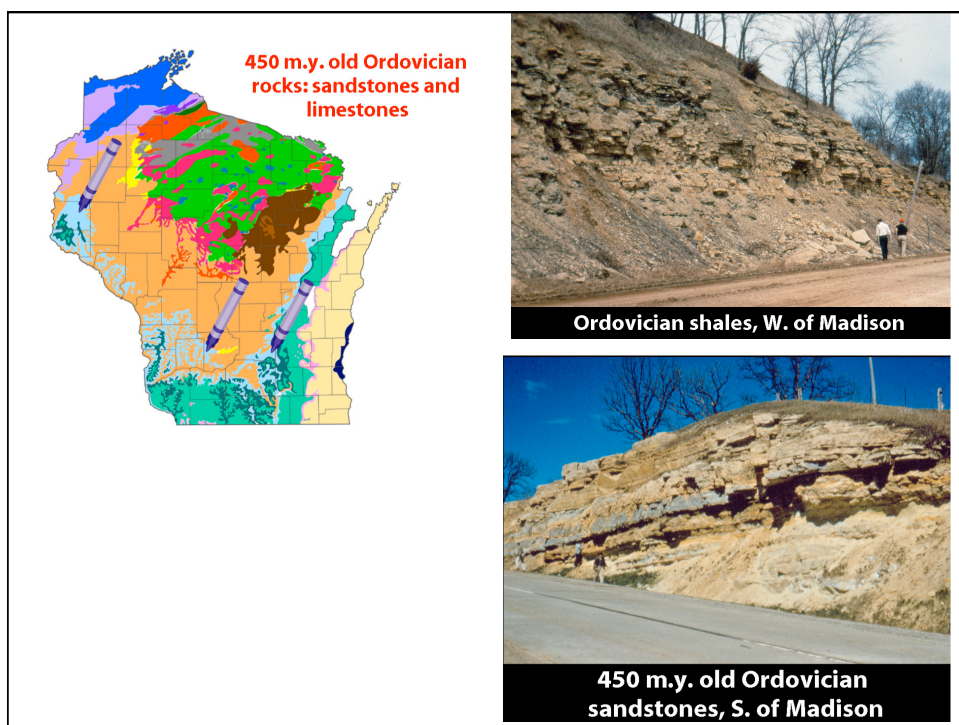
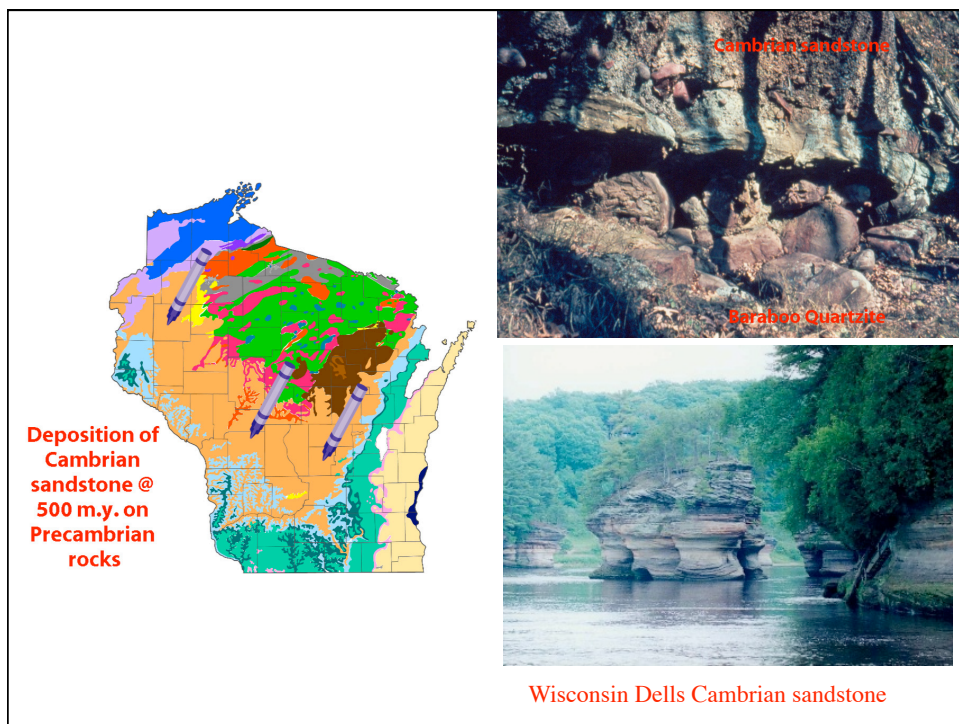


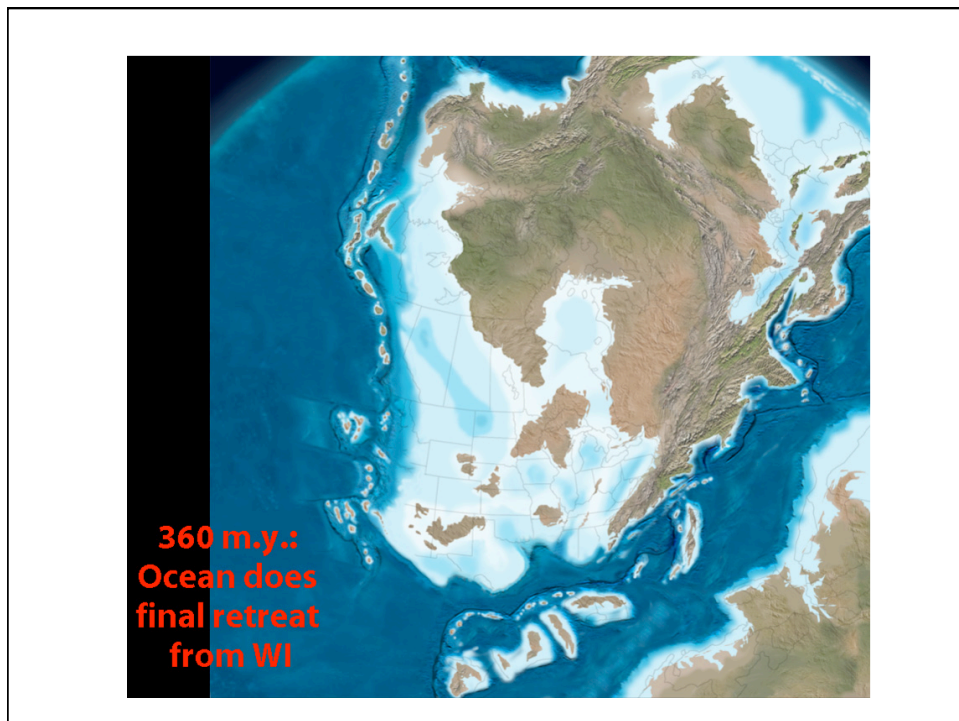
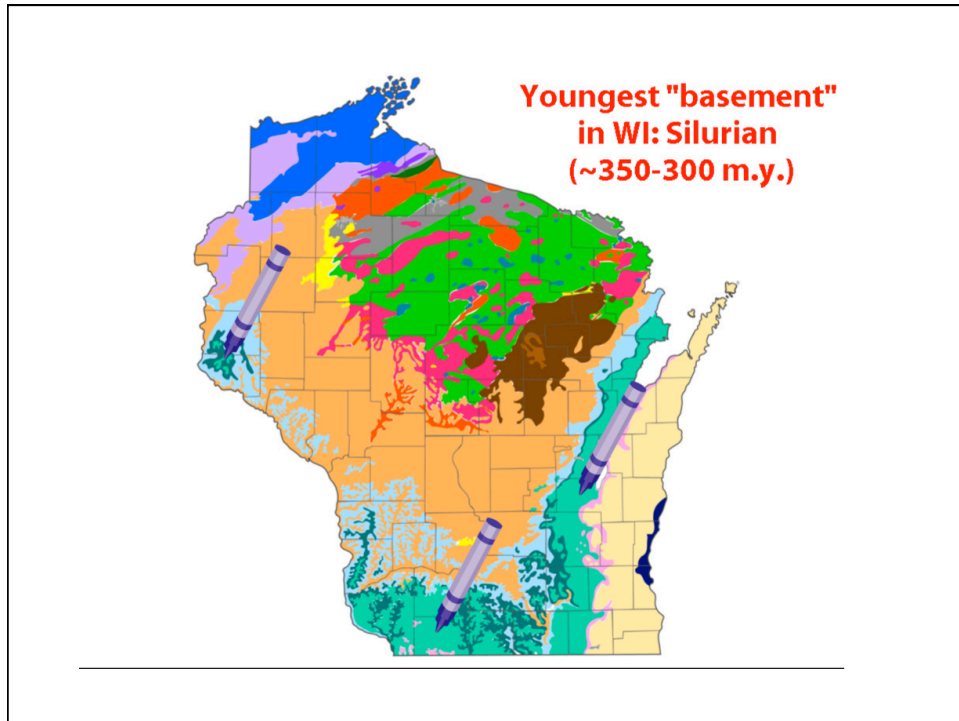




So far:

- * Fragments of very early crust, >3.3 b.y.
- * 2.7-2.5 b.y. "granite-greenstone" terranes
- * 2.0-1.9 b.y. sediments
- * 1.9-1.8 b.y. Penokean orogeny: a very major subduction system
- * Suturing of the N&S Archean terranes with the Penokean orogenic belt
- * Intrusion of post-tectonic granites (State Rock) at ~1.7 b.y.
- * Quiet: Baraboo qtz sands deposited ~1.6 b.y.; metamorphism shortly after
- * Quiet: 1.4 b.y. Wolf River granites
- * Continental rifting: 1.1 b.y. Keweenawan rift

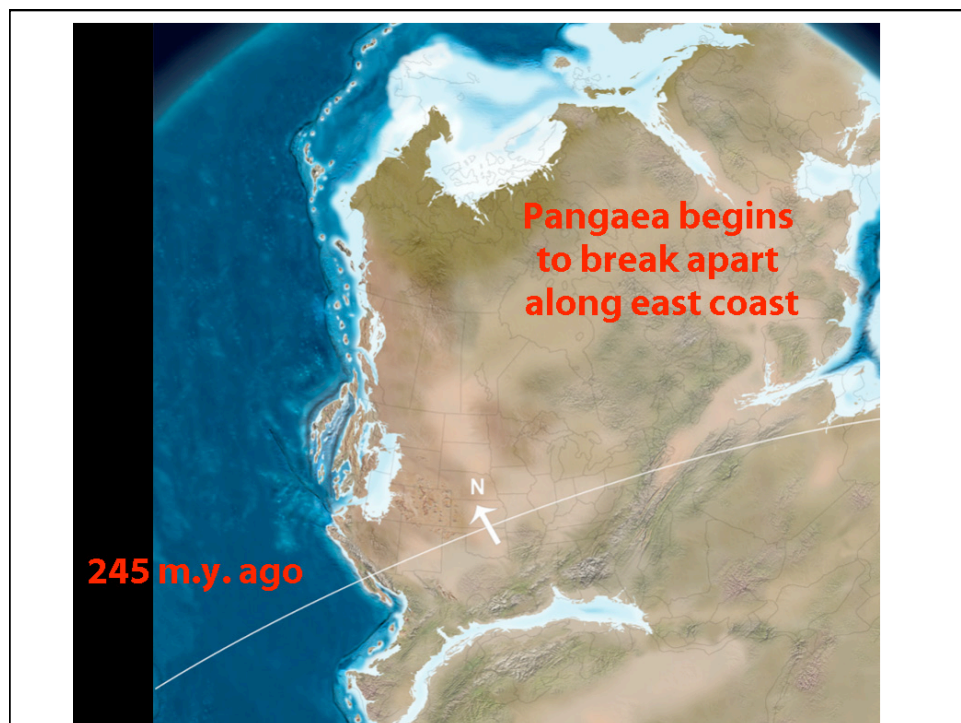
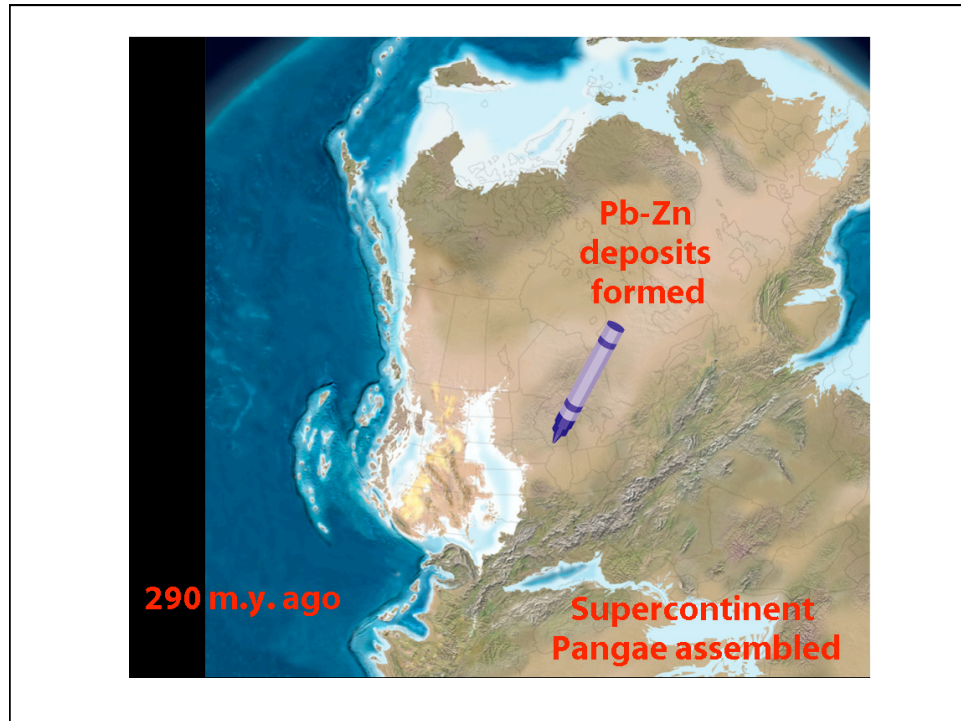


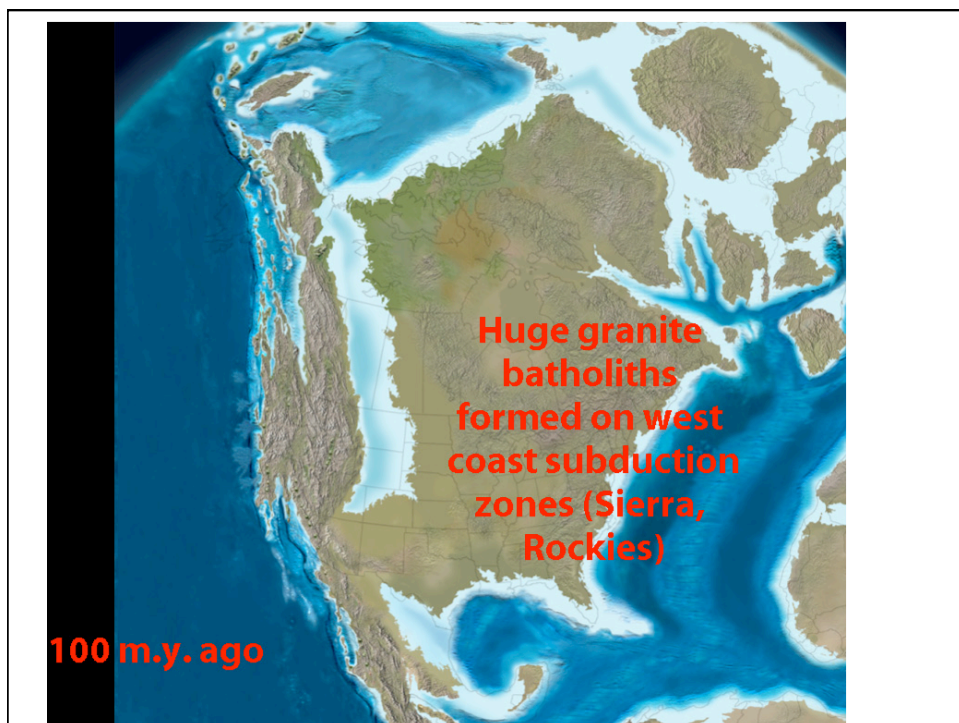
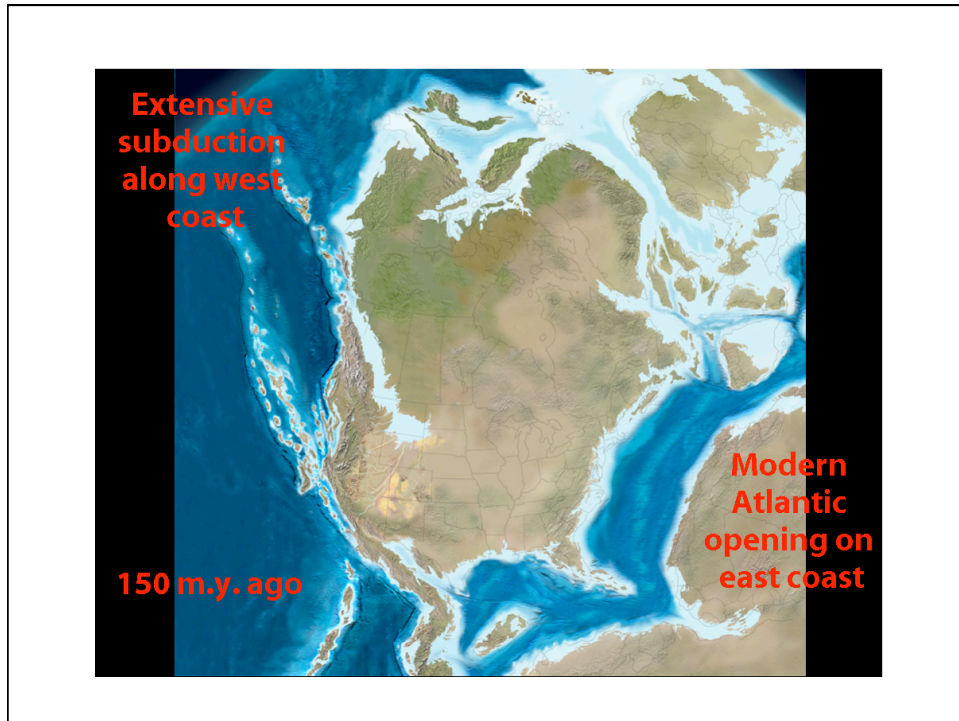


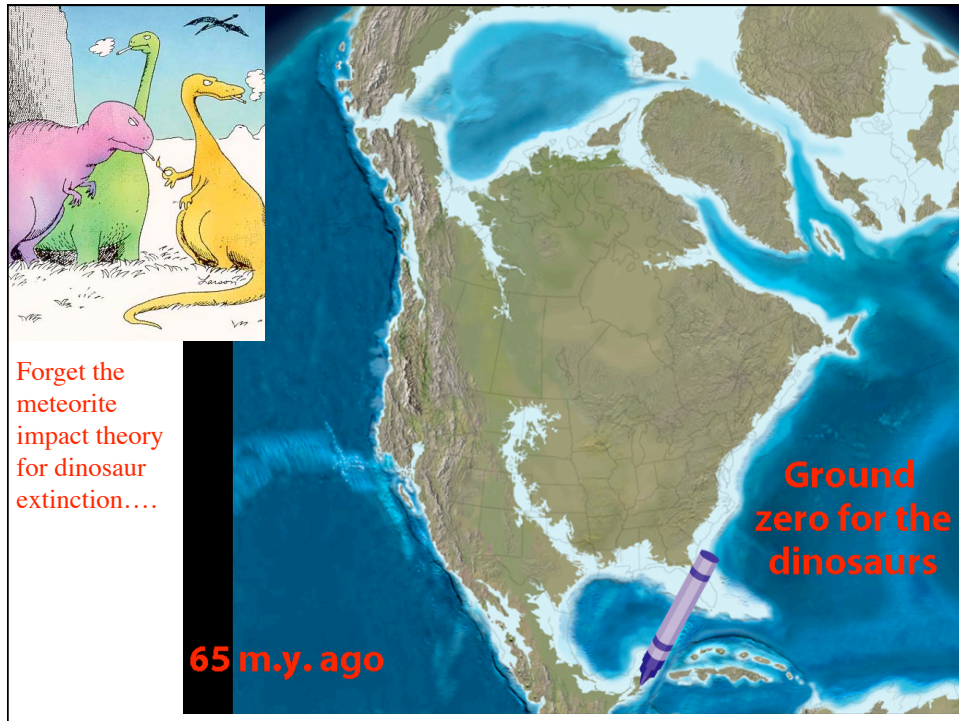
**No rocks younger than the
300-350 m.y.-old Silurian
sediments deposited in WI until
recent glaciation (2 m.y. to
10,000 yrs. ago).**

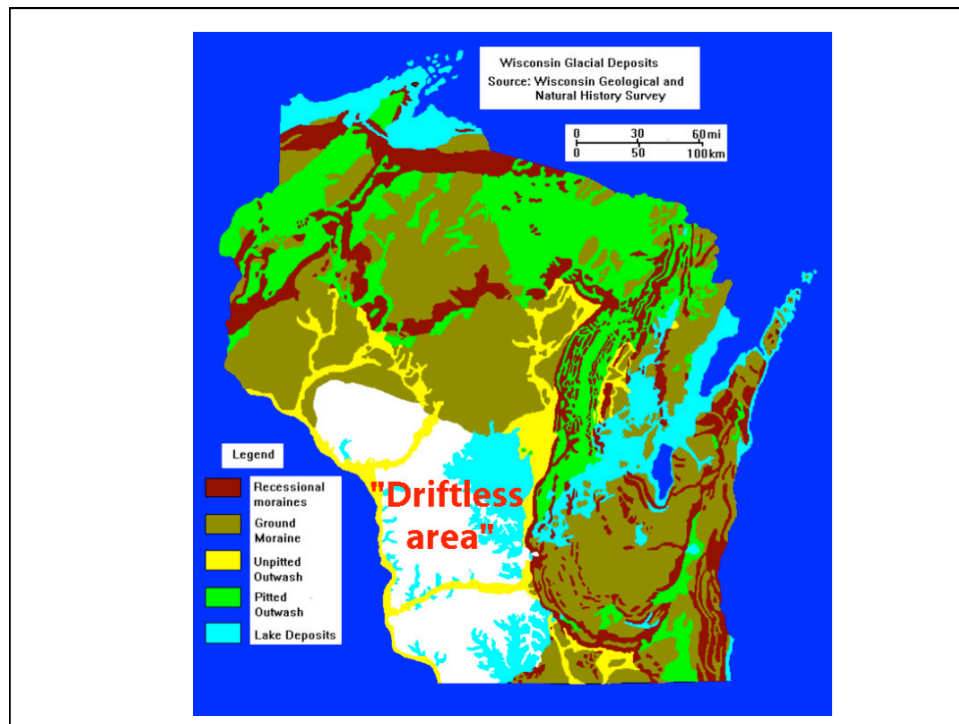
What happened elsewhere?











Moulin kame near Dundee, Wisc. Isolated hills of glacial sediments dumped into “holes” within glaciers. The kame consists of unconsolidated and poorly sorted till – no bedrock is present.



