

**Bed / Stratum:** Piles of sediment that form beds / strata

**Bedding plane:** Top and bottom of a bed / stratum. (Blue line)

- Mark the end of one depositional even and the beginning of another.
- Where mud cracks and ripple marks can be found.



<http://www.portland.ukfossils.co.uk/geology-guide/Geology.jpg>

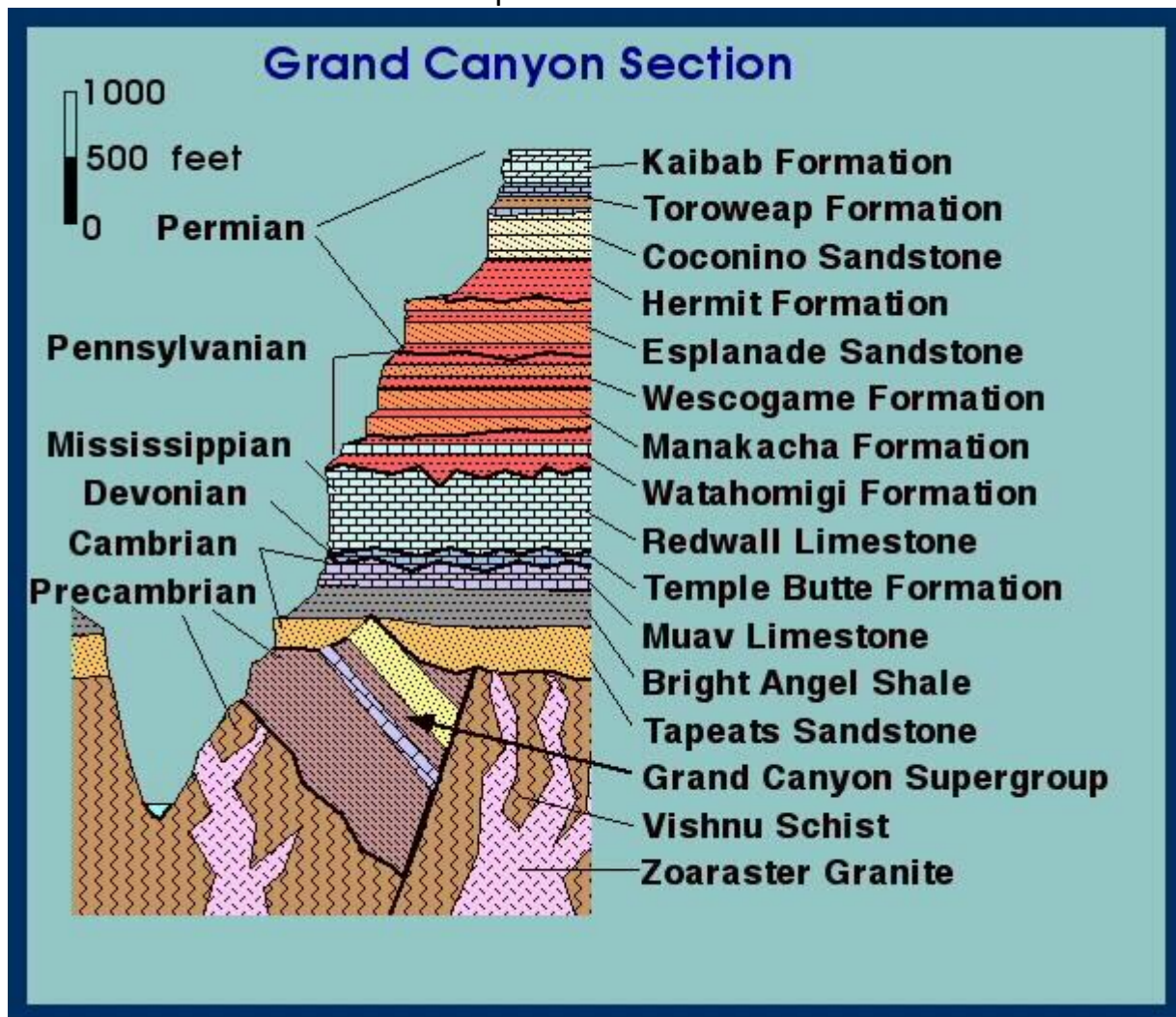
**Planar bedding:** Bedding that forms from bottom to top in generally horizontal stratum.



[http://toxics.usgs.gov/photo\\_gallery/photos/nawc/NAWC\\_outcrop2.JPG](http://toxics.usgs.gov/photo_gallery/photos/nawc/NAWC_outcrop2.JPG)

**Stratigraphic sequence:** A continual set of bed / stratum

- Divide into units, most common are formations
  - Formation: A stratigraphic unit that is defined as a body of rock that is distinctive enough from the rocks above and below it and large enough to be put on a map.
    - Can be a single type of rock or multiple types of rock.
    - Two or more adjacent formations can be combined to form a group.
    - Formations can be subdivided into members.
  - BIG → small
    - Series → Group → Formation → Member.



[http://martianchronicles.files.wordpress.com/2009/03/grand\\_canyon\\_pz.jpg](http://martianchronicles.files.wordpress.com/2009/03/grand_canyon_pz.jpg)



**Geologic Columns:** shows the vertical arrangement of rock units at a given location.

**Time-rock unit:** all strata deposited during a particular period of time.

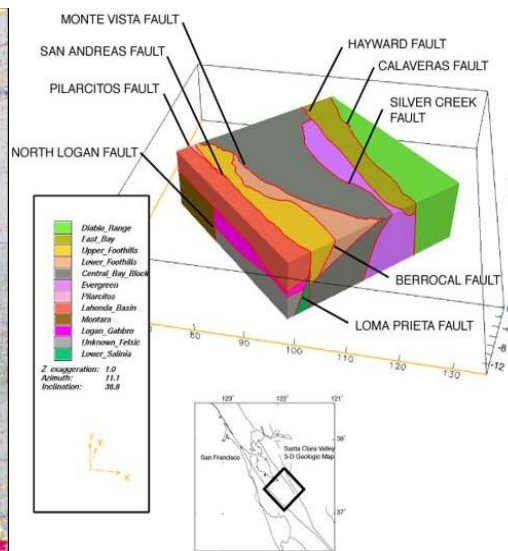
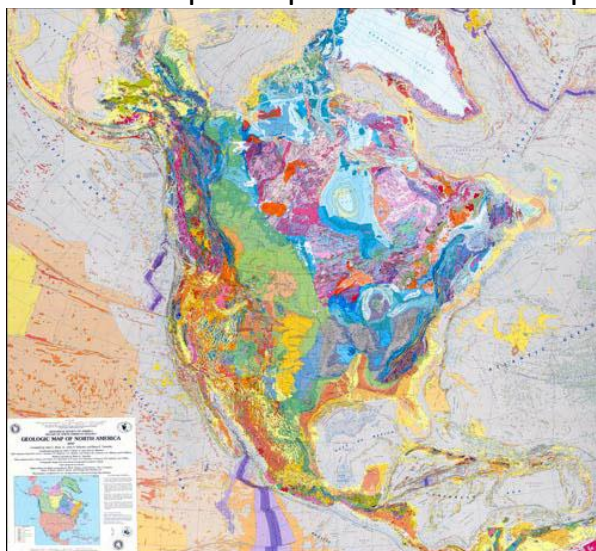
- Can be used to make a paleographic map

THE GEOLOGIC COLUMN			Typical fossils
Eras	Periods	Millions of Years Ago	
MESOZOIC CENOZOIC	QUATERNARY	2	Elephant, Hominid, Horse, Camel
	TERTIARY	65	Dinosaur, Mammal, Bird
	CRETACEOUS	130	Dinosaur, Pterosaur, Marine Reptile
	JURASSIC	180	Dinosaur, Pterosaur, Marine Reptile
	TRIASSIC	225	Dinosaur, Pterosaur, Marine Reptile
PALAEOZOIC	PERMIAN	275	Dinosaur, Pterosaur, Marine Reptile
	CARBONIFEROUS	345	Trilobite, Insect, Plant
	DEVONIAN	405	Trilobite, Insect, Plant
	SILURIAN	435	Trilobite, Insect, Plant
	ORDOVICIAN	480	Trilobite, Insect, Plant
	CAMBRIAN	600	Trilobite, Insect, Plant
	PRE-CAMBRIAN		

<http://www.ukapologetics.net/08/gcolumn.jpg>

**Geologic Map:** Shows the distribution of rocks in an area.

- Base map: simple form, shows area
  - Outcrops and structural information plotted on base map
- Completed geologic map: Fills in areas of similar outcrops and structure
  - Shows cross sections along geologic map.
- Block map: 3-D picture of base map.



<http://esp.cr.usgs.gov/info/gmna/gnma2.jpg>

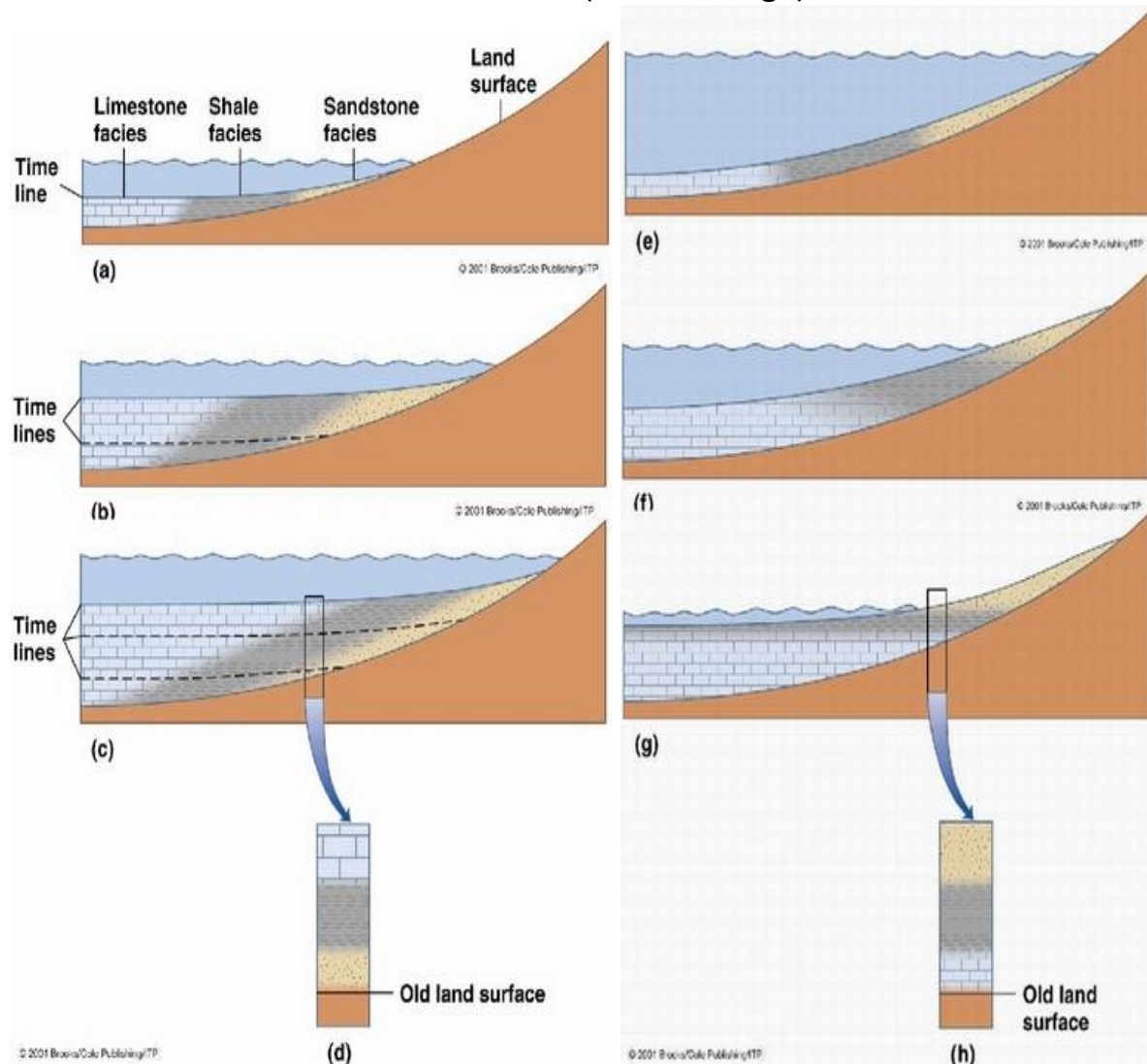
<http://pubs.usgs.gov/of/2001/of01-223/jachens1.jpg>

**Marine transgression:** sea level rises, more land is under water (water level rises)

- Sediment sorted: Coarse → Fine (large → small)

**Marine regression:** sea level drops, more land is exposed (water level drops)

- Sediment sorted: Fine → Coarse (small → large)



[http://www.ocean.odu.edu/~spars001/geology\\_112/laboratory/session\\_04/transgression.jpg](http://www.ocean.odu.edu/~spars001/geology_112/laboratory/session_04/transgression.jpg)

[http://www.ocean.odu.edu/~spars001/geology\\_112/laboratory/session\\_04/regression.jpg](http://www.ocean.odu.edu/~spars001/geology_112/laboratory/session_04/regression.jpg)