

14. Folds and Unconformities: Proofs the Earth Does Not Stand Still

Unconformity

Here, in the stream bank, is an outcrop of steeply dipping rock. Why do the beds in the outcrop dip so steeply? If you keep track of the dips going eastward and westward, you will see the rocks are folded in this area.

This outcrop reveals Jurassic beds that were folded upward, then weathered and eroded, and finally covered by much younger valley sediment.

The line between the old rocks and the new sediment is called an **unconformity**, an eroded surface between the two sets of beds. Many unconformities are angular, like this one, where beds above and below the unconformity are at different angles.

Unconformities hide some of the great mysteries of Earth's history. Nothing is left here from the time between the deposition of the two layers. This unconformity is a gap of 150 million years, from Late Jurassic to Recent time. Luckily, we can look elsewhere around the Grand Valley to figure out what happened over some of that time.

Here we are on the steep part of a big monocline, the one between Opal Hill and Devils Canyon.

Kinds of Folds

Anticline: The center of the fold is bent upward. On the top surface, the oldest beds are in the middle.

Syncline: The center of the fold is bent downward. On the top surface, the youngest beds are in the middle.

Monocline: A step-like fold with beds on one side higher than those on the other side.

Rocky Mountain bee plant

Mike Williams Trail Committee
MIKE'S TRAIL

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KEY
D1 BLM trail and number
S Mike's Trail Sign
P Parking
R Restroom
N North arrow
0.5 mile / 0.5 km