Glacier National Park

Geologic map of Glacier National Park. Rock strata from the Belt Supergroup. These sediments were deposited between 1.4 to 1.5 billion years ago and are mildly metamorphosed.

A geologic cross section from A to A' on the geologic map above shows the estimated location of the Lewis overthrust. The strata above this fault have been transported tens of miles to the east along this fault boundary. These strata make a syncline, or bowl, structure, called the Akamina syncline. The youngest strata (pink and purple colors) are preserved along the axis of this syncline. The strata below the Lewis overthrust are actually younger than those above the fault.

Overthrusts are common in the northern Rocky Mountains, including Glacier National Park and the Canadian Rockies.
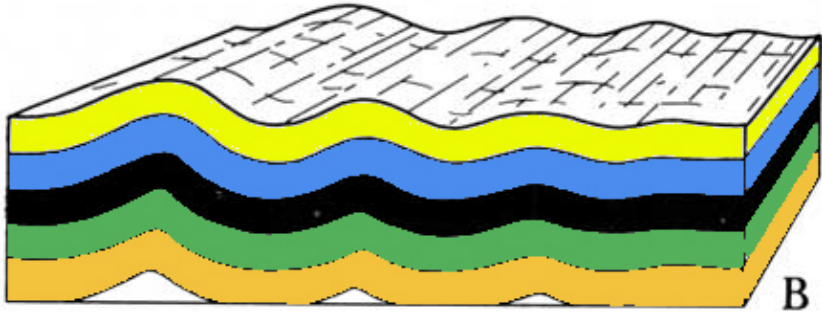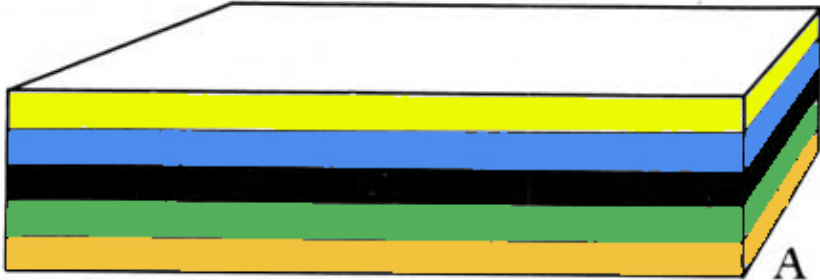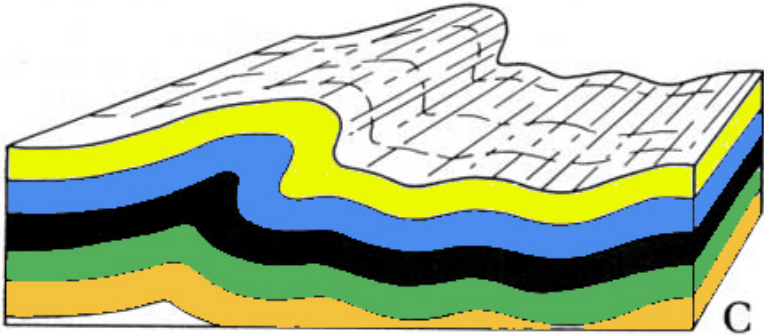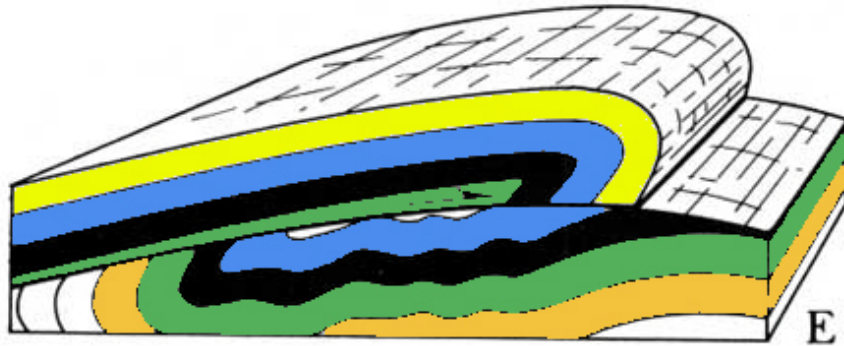
Development of an overthrust by compressive tectonic forces.

Compressive forces begin to develop bulges (anticlines) and sags (synclines).

The dominant anticline often overturns and ruptures, creating a thrust fault (D).

Continued thrusting along this fault produces a major overthrust, typically placing older strata above younger strata (green above blue in E). The primary overthrust in Glacier National Park is called the Lewis Overthrust. The Lewis thrust has long been considered the "classic" example of an overthrust. The fault overlies the Cretaceous age rocks of the disturbed belt; a narrow north- south trending strip of land to the east of Glacier National Park.

The rocks of Glacier National Park belong to the Belt Supergroup and were deposited between 1.4 to 1.5 billion years ago in a giant tectonic basin. In Canada they are referred to as the Purcell Supergroup. The basin continually subsided as sediments were deposited, resulting in a sedimentary sequence several miles thick. Sediments include mudstone, siltstone, sandstone, limestone. Sedimentary structures are beautifully preserved since there was no bioturbation from multicellular organisms.