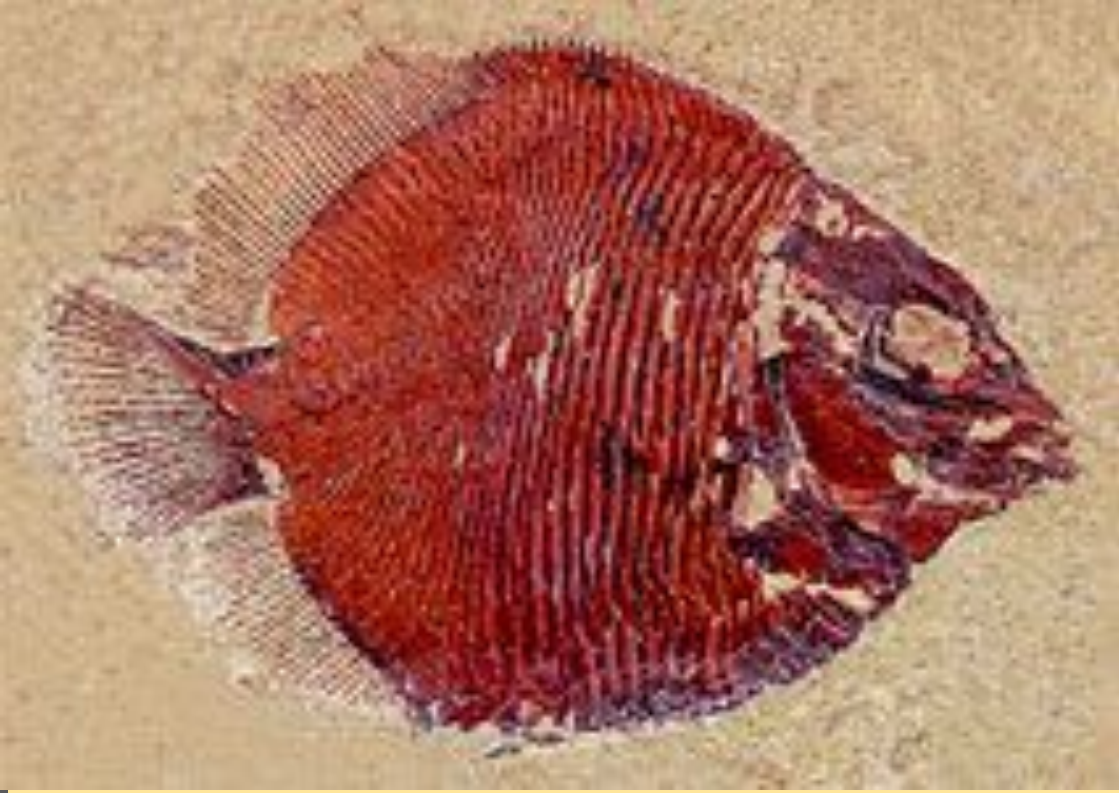


Bear Gulch Limestone

Fish Lagerstätte in Montana



A fossilized Fish from the BGL^[5]

Fossilized Shark from the BGL^[5]

Introduction

BGL is a limestone layer located in Montana, around 30 meters thick that covers around 25 miles laid down in the Bashkirian Stage of the Early Pennsylvanian epoch of the Carboniferous period, around 318 million years ago.

The BGL is a lagerstätte known for having an abundance of extremely well preserved marine organism fossils.



A picture of the BGL^[6]

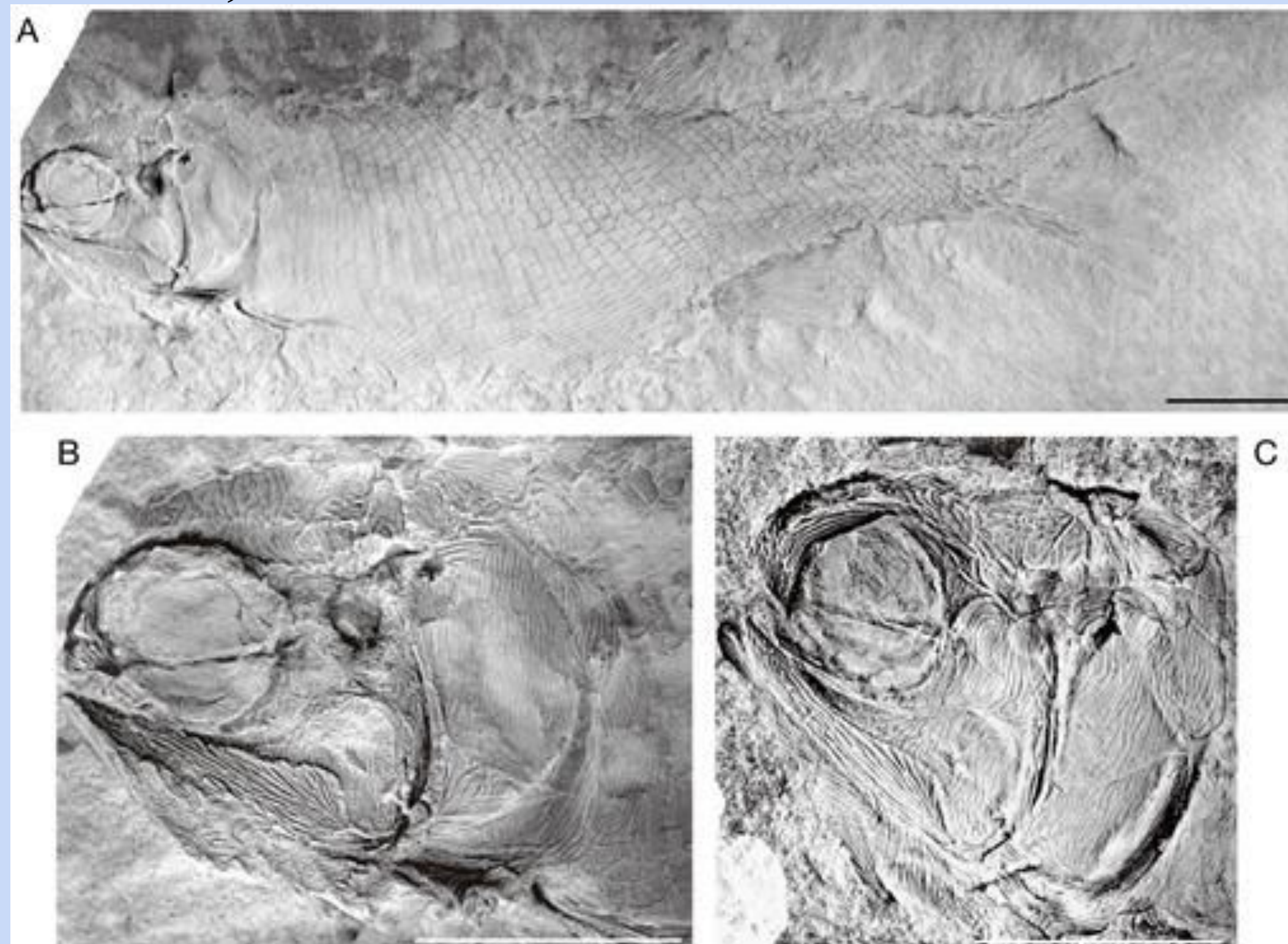
History of the Site

The Bear Gulch Limestone was first described as “barren of fossils,” until the activities of ranchers uncovered fish remains in the 20th century. After this, numerous studies and field operations were done, finding the multitude of fossils that the Bear Gulch Limestone is known for today. Most of the fossils are marine, because BGL was a lakebed.

Species Found

Sharks, coelacanth, sponges, starfish, worms, and more have been found at Bear Gulch. There are over 5700 fish specimens of 149 different species.^[1]

When it was discovered, many of the fossils discovered had never been seen by science before, nevermind intact.



Well preserved Palaeoniscoid specimens^[1]

This site allowed for the preservation of both soft-bodied organisms and bony fish.



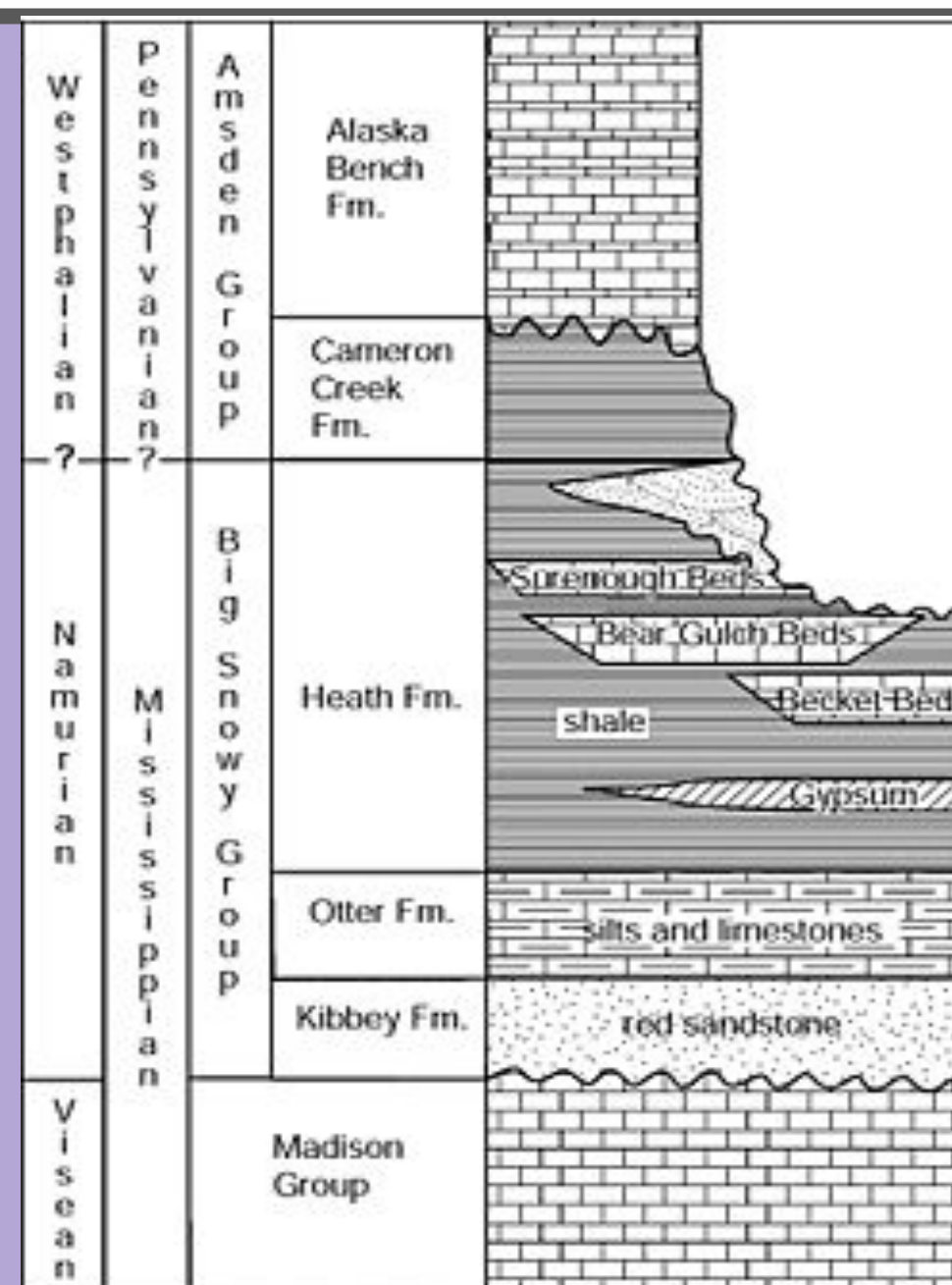
Fossilized Sponge from BGL^[7]

Geological and Biological Environment

There are four lithofacies at this site: upper beds, marginal, basin slope, and central basin facies.

In addition, there are three types of biofacies: *Arbospongia*-productid, filamentous algae, and shallow.

There is a trend of microturbidites, in which they are concentrated in the central basin axis, making it the best area of preservation. Geologists believe these microturbidites were previously generated during summer monsoonal storms.^[3]

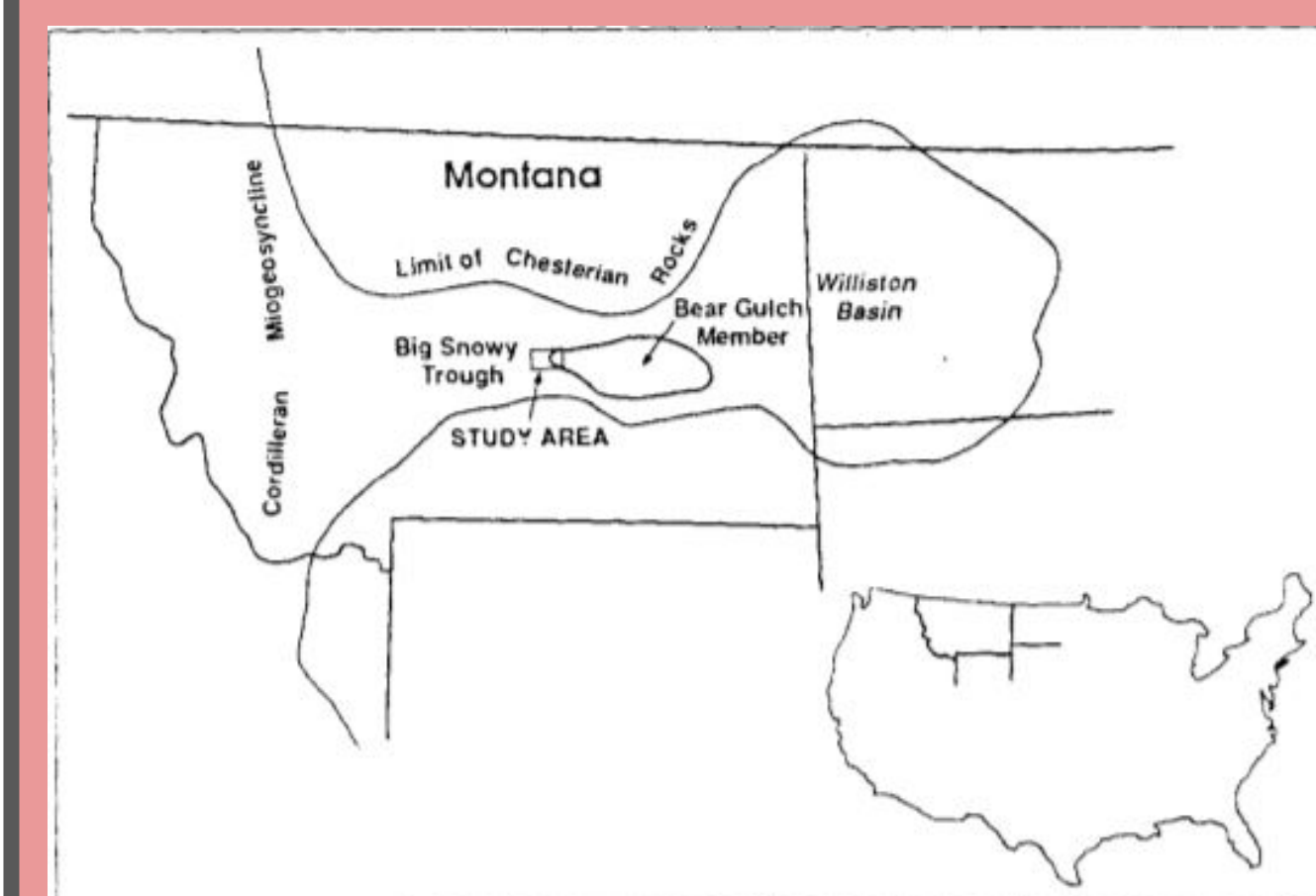


Depositional model.^[3]

Past Environment

Lack of evidence of bottom currents and small amounts of visible erosion suggest that this was

a quiet water environment. The conditions at the seafloor were often disturbed by rapid depositional events. The



Major paleo-geographic features of the area.^[2]

preservational quality of the fossils supports this rapid deposition. Genus richness was very high.

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