

UTAH'S PAST

1. Early Years-Paleozoic: 400 MYA

Utah was on the western edge of North America. Coral reefs, now thick limestone in the Wasatch Mountains, grew in the shallow seas that led to the deep oceans in the west.

Event: Coral reef grew in the shallow seas near the land.

Result: Limestone quarries in the Wasatch Mountains.

Result: Timpanogos Cave in the Wasatch Mountains.

Event: Shallow seas near the land with many early types of sea dwellers.

Result: Fossils found (trilobites) on the western edge of Utah.

2. Wind Deposited Sands: Early Jurassic: 200 MYA

Cut off from moisture because of rising mountains to the west, desert sands were blown into Utah from the north and southwest that later formed dunes that eventually turned into rock called Navajo Sandstone. These are found in Zion National Park and San Rafael Swell.

Event: Desert sands blew in from the north and southwest forming dunes.

Result: The sand dunes hardened into beautiful large hills of pink rock found in Southern Utah.

3. Famous Dinosaurs—Late Jurassic: 150 MYA

Utah was a hot, swampy lowland with mountains and volcanoes to the west and northwest. Many rivers and lakes existed while dinosaurs roamed the land. Their fossil bones can be found at the Cleveland-Lloyd Dinosaur Quarry and Dinosaur National Monument.

Event: Hot, swampy lowlands with rivers and lakes during dinosaur times.

Result: This drew dinosaurs to the area to live.

Result: Dinosaur bones found in central and northeastern Utah.

4. Coal Formations—Late Cretaceous: 100 MYA

Pressure from continental collision with the Pacific Plate to the west produced high mountains in western Utah. The eastern part of Utah was covered by an inland sea stretching from the Gulf of Mexico to the Arctic. Sediments gradually began to fill the sea causing the basin to sink. Coal swamps formed in the basin. Dinosaurs are still ruling the land.

Event: High mountains formed to the west bringing in rainy weather. Water rushed down the mountainside eroding the mountains brought down sediments that began the process of filling up the sea with sediments.

Result: Eastern Utah is filled with sediments later turning into hard sedimentary rock.

Event: Swamps formed as the sediments filled in the sea. Many plants grew in the swampy area.

Results: Coal was formed in eastern Utah.

5. Utah Starts to Come Up in the World: Paleocene: 65 MYA

The mountains to the west were worn down by erosion and the sediments completely filled in the inland sea. Pressure from the Pacific Plate caused both the Uinta Mountains and the Colorado Plateau to uplift. The Colorado Plateau warped as it rose making swells and depressions now found in Utah. Rainstorms coming off the mountains to the west create Lake Flagstaff that occupied a depression that is now in central Utah.

Event: The Pacific Plate hits up against the North American Plate.

Results: The Uinta Mountains form and the Colorado Plateau begins its uplift.

Results: The Colorado Plateau warps making swells and depressions making many small hills and small valleys.

6. Oil Shale and Fossil Fish—Eocene: 55 MYA

Utah continued to rise nearly a mile in elevation. There is continued warping of the Colorado Plateau producing basins for lakes. Organic rich soil is formed at the bottom of these lakes. Well-preserved fish fossils and oil shale are formed. The western mountains are gone.

Event: The Pacific Plate hits up against the North American Plate.

Results: Colorado Plateau continues its uplift still making swells and depressions.

Event: Depressions are made during the uplift. Water, forming lakes, and soil fills up the depressions from mountain runoff.

Results: Rich soil is formed at the bottom of the lakes for farming in central/eastern Utah.

Results: Fossils are found in central/eastern Utah letting us know what types of water dwellers lived at that time.

Results: Oil shale is made under the water because of the water animals that went to the bottom of the lake when they died.

7. Uplift and Volcanoes—Oligocene: 35 MYA

Water began to fill up the basins in the broad plains. The modern rivers that we have today began to run across the plains. The western part of Utah began to extend, leading up to the making of the basin and range. Extensive volcanic activity started to occur.

Event: Modern rivers ran across the plains.

Results: Filling up the basins to find water dwelling fossils.

Event: Western Utah began to extend.

Results: Made the expanded basin and range that stretched from the Wasatch Mountains to the Sierra Nevada Mountains in California.

8. Precious Metal Emplaced—Miocene: 15 MYA

Once where San Francisco land was near Salt Lake City land, extension of the land moved them apart. This extension created the basin and range area with uplifted mountain blocks and down dropping basins. Volcanoes continued to form giving the Utah area the metallic mineral belt from Park City to Wah Wah-Tushar. The Colorado Plateau continued to rise.

Event: Extension of the land from where Salt Lake City and San Francisco were once near each other.

Results: San Francisco land has moved westward many hundreds of miles.

Event: Volcanoes form.

Results: Volcanoes gave Utah great metallic minerals in its mountains.

Event: The Pacific Plate continued to hit up against the North American Plate.

Results: Colorado Plateau continues its uplift tilting northeastward.

9. Water and Ice—Pleistocene: 100,000 YA

The geography of Utah was very close to what it is now. Mountains and river are all in place. The climate, however, is wetter and colder because of the glacial activity. Canyons are carved in all the mountains from glaciers and water runoff. Lake Bonneville is formed stretching from the Utah-Idaho border to Cedar City and the Wasatch Mountains to Nevada.

Event: Glaciers exist in some of the mountains.

Results: Glaciers carved out some of the canyons in a U-shape. Scratches are found on the sides of the mountains. Hills (moraines) are found at the bottom of the mountains.

Event: Glaciers and snow on the mountains melt.

Results: The water forms a huge lake from northern Utah to southern Utah in the Great Basin forming Lake Bonneville.

Event: Lake Bonneville finally evaporates away.

Results: Leaves minerals (salt) behind in the soil that makes it hard to grow crops in creating a wasteland.

10. These are the Places—Present:

The geologic history of Utah has left its lasting marks on Utah. It explains why the rocks to the east are brightly colorful while those to the west have somber colors. It explains why we have spectacularly massive canyons on the Colorado Plateau while much of the Basin and Range has no external drainage. It helps us understand why the Wasatch Mountains run down the middle of the state. All of this helped with the location of the settlements, industry, and the recreation sites.