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| **Cenozoic Era****66 million years ago to the present** |
| **Period** | **Epoch** | **Millions ofYears Ago** | **Description of Events** |
| Quaternary | Holocene | .01 | Current erosional and depositional processes dominate. Basin-and-range faults continue to be active. Volcanic eruptions continue in western Utah, as recently as 660 years ago. The Great Salt Lake, a remnant of Lake Bonneville, diminishes and accumulates a vast quantity of salt. |
| Quaternary | Pleistocene | 1.6 | Glaciers blanket the Uinta Mountains, the Wasatch Range, and mountains of the Colorado Plateau. Lake Bonneville, a large fresh-water lake, covers many northern and western Utah valleys. Sand and gravel is deposited along the shoreline. Humans first appear in Utah during this epoch. |
| Tertiary | Pliocene | 5 | Volcanism continues in southwestern Utah. Basin-and-range faulting and regional uplift continues. |
| Tertiary | Miocene | 24 | Igneous intrusions continue to form in the Henry and Abajo Mountains. Igneous activity similar to that in the Oligocene continues until approximately 15 million years ago. Basalt flows and volcanic cones form in southwestern Utah. Basin-and-range faulting in western Utah creates mountain-valley-mountain topography and the Wasatch fault zone. Regional uplift rejuvenates major river systems in the Rocky Mountains and the Colorado Plateau. The carving of the canyonlands begins. |
| Tertiary | Oligocene | 38 | The igneous rocks that form the Henry, La Sal, and Abajo Mountains in southern Utah begin to intrude. Igneous activity produces intrusive rocks in northern Utah and volcanos in southwestern Utah. The majority of Utah's copper is probably associated with an Oligocene-age intrusion in the Bingham mining district, west of Salt Lake City. |
|  Tertiary | Eocene | 55 | Lake Uinta, part of a larger Green River Lake system in Wyoming and Colorado, forms in northeastern Utah. The lake gradually contracts and is replaced by a river system. In the Uinta Basin thousands of feet of sediment are deposited. Granitic intrusions and volcanic flows occur in northwestern Utah during the late Eocene. Eocene-age reservoir rocks contain sizable amounts of oil and gas. |
| Tertiary | Paleocene | 66 |

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|  | Eroding highlands prevail in western Utah. The Uinta Mountains, smaller uplifts, and the Uinta Basin, become prominent features in eastern Utah. Lake Flagstaff forms in central and northeastern Utah and possibly extends into southwestern Utah. Mammals flourish. |

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| **Mesozoic Era****240 to 66 million years ago** |
| **Period** | **Millions ofYears Ago** | **Description of Events** |
| Quaternary | 138 | Lake and river systems gradually decline. Sediments from highlands near the Utah-Nevada border spread eastward. In eastern Utah, seas invade from the east. Western Utah rises due to thrust faulting and folding generated by east-west-directed compressional forces. Dinosaurs and reptiles wander through major coal-forming swamps and marshes near the coastline that gradually retreats from central Utah eastward. Dinosaurs disappear at the end of this period. |
| Jurassic | 205 | A large, sandy desert covers most of Utah during the Early Jurassic. The resulting rocks now create some of the most spectacular scenery in Utah's national parks. Later, shallow seaways from the north invade Utah twice. In central Utah, the Arapien basin develops and receives over 6,000 feet of sediment including large amounts of gypsum and salt. In the Late Jurassic, dinosaurs roam within extensive lake and shifting river systems. Granitic intrusions form in western Utah. Jurassic-age host rocks contain large uranium deposits located in the Colorado Plateau and extensive oil and gas reserves in northern Utah. The first birds evolve. |
| Triassic | 240 | Shallow seas from the west spread across northern and western Utah and occasionally overlap with eastern and southern mudflats that are crisscrossed by reptiles and amphibians. After a period of erosion, river and lake systems dominate. Some of these sediments now contain large quantities of petrified wood. Currently uranium is found in Triassic-age rocks of the Colorado Plateau. Dinosaurs and primitive mammals appear. |

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| **Paleozoic Era****570 to 240 million years ago** |
| **Period** | **Millions ofYears Ago** | **Description of Events** |
| Permian | 290 | Deposition continues in the Oquirrh and Paradox basins. Red rocks form in the Paradox basin of sediments shed from the Uncompahgre highland. |
| Pennsylvanian | 330 | Seas containing fusulinids, brachiopods, and conodonts cover most of Utah. Sediments continue to accumulate in the Oquirrh basin. The Paradox basin and the adjacent Uncompahgre highland develop in southeastern Utah. Salt, potash, and organic-rich shale accumulate in the shallow, restricted Paradox basin. Pennsylvanian-age reservoir rocks contain large volumes of oil and gas. Reptiles originate during this period. |
| Mississippian | 360 | Warm, shallow seas rich with life cover Utah for most of this period. The Oquirrh basin develops in northwestern Utah. Large quantities of limestone are deposited. Mississippian-age reservoir rocks hold an abundant amount of oil and gas. |
| Devonian | 410 | Shallow, temporary seas in eastern Utah, and deeper seas in the west contain primitive fish, corals, brachiopods, and conodonts. The Stansbury uplift in north-central Utah develops into a prominent ridge above sea level during the Late Devonian. Amphibians appear. |
| Silurian | 435 | Shallow seas containing corals and brachiopods blanket Utah. Dolomite is the predominant rock being formed. |
| Ordovician | 500 | New life forms prosper in fluctuating seas of western Utah while eastern Utah remains above sea level. The first vertebrates, primitive armored fish, evolve. |
| Cambrian | 570 | Subsidence of western Utah continues. Trilobites thrive in the deep seas of western Utah, while shallow, oscillating seas cover eastern Utah. |

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| **Precambrian Era** |
| **Millions ofYears Ago** | **Description of Events** |
| 4500+ | This era encompasses approximately 85 percent of the earth's 4.5-billion-year history. Sediments shed from a newly formed continent (North America's predecessor) more than 2.5 billion years ago are visible in northern Utah. Granitic and metamorphic rocks found south of Salt Lake City are material that collided and adhered to the south side of the continent between 1.6 and 1.8 billion years ago.Later, western Utah subsides and sediment deposition increases. There are several periods of glaciation during the late Precambrian. Simple organisms such as bacteria and blue-green algae evolve (about 3.3 to 3.1 billion years ago). Marine invertebrates appear (750 to 700 million years ago). |

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