MASS EXTINCTIONS

1. ORDOVICIAN-SILURIAN EXTINCTION 440 MILLION YEARS AGO (MA)

Scientists theorize that there were two main phases to this extinction: a glaciation event and a heating event. Abundant plant life removed carbon dioxide (CO_2) from the air, causing global cooling and glacier formation. This led to a drop in sea levels, reducing habitat. Later came global warming and sea level rising again. Creatures that had adapted to the cooler climate were unable to survive the increased temperature. Since most fauna was marine at the time, 86% of life was lost.

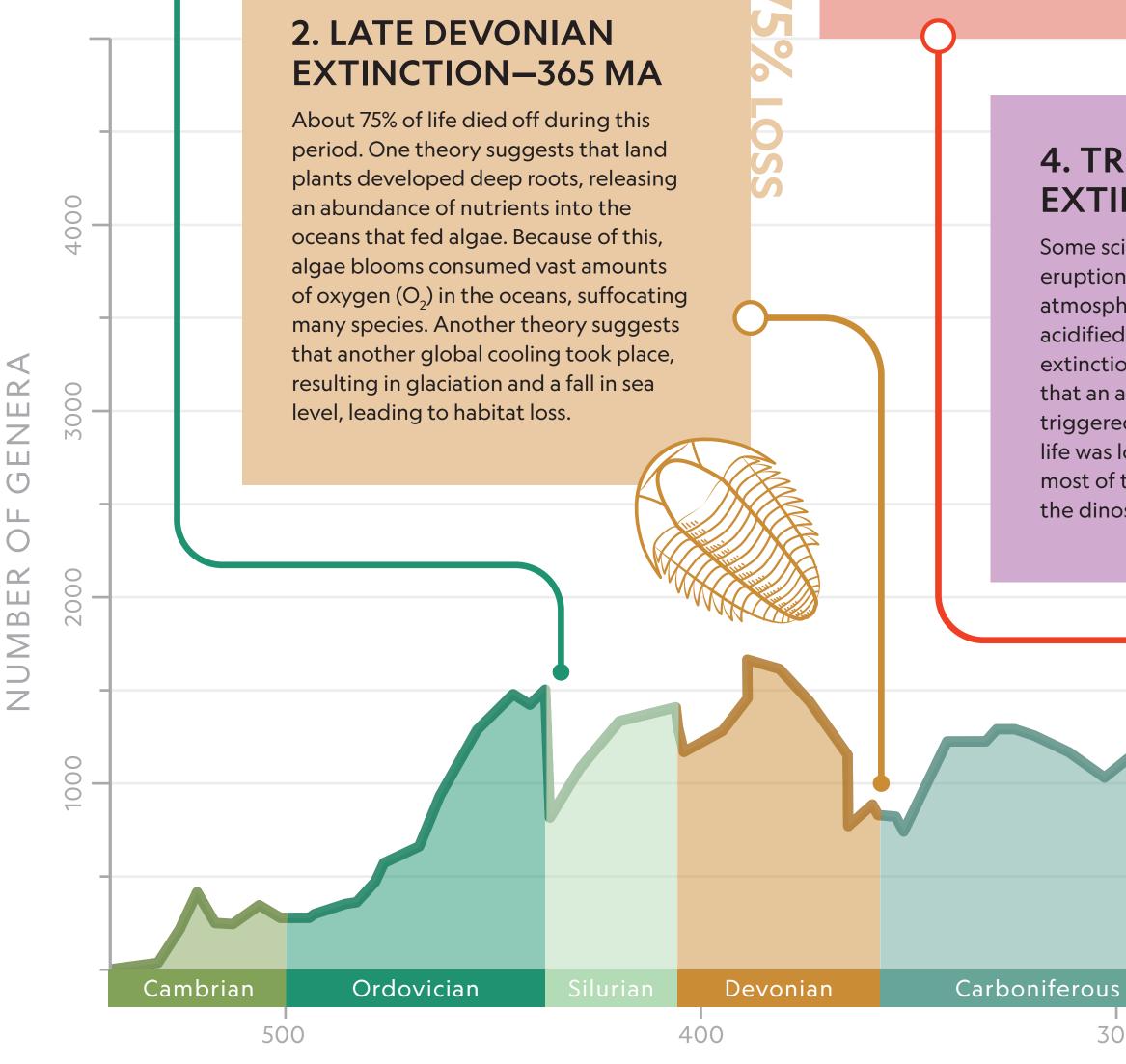
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3. PERMIAN-TRIASSIC EXTINCTION-252 MA

The Permian-Triassic was the deadliest extinction in history: 96% of all life perished. Scientist believe that volcanic activity in Siberia put massive amounts of carbon dioxide, a greenhouse gas, into the atmosphere. Bacteria that thrive on CO₂ began producing methane, another greenhouse gas. Large quantities of both gases warmed the planet and combined with Earth's water, making the ocean and rain acidic, creating a highly toxic environment for life.



GEOLOGIC TIME IN MILLIONS OF YEARS

A mass extinction is a sharp spike in the rate of extinction of species caused by a catastrophic event or rapid environmental change. Scientists have been able to identify five mass extinctions in Earth's history, each of which led to a loss of more than 75 percent of animal species.

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5. CRETACEOUS-PALEOGENE EXTINCTION-66 MA

The Cretaceous-Paleogene extinction wiped out the dinosaurs, along with 60-76% of all life on Earth. A widely accepted theory is that an asteroid landed in the Yucatán Peninsula in Mexico and killed the dinosaurs. The impact would have ejected enormous amounts of debris into the atmosphere, causing global temperatures to drop. The impact may have also caused local fires, earthquakes, tsunamis, and acid rain.

6. HOLOCENE EXTINCTION 11,700 YEARS AGO TO PRESENT

The next mass extinction may already be happening. The current extinction rate is at least a thousand times greater than the "normal" extinction rate. A "normal" or background extinction rate is the average rate of extinction based on the longevity of species through time without human influence, determined by the fossil record. Scientists believe that human impact on the environment is the leading cause of extinctions today.

4. TRIASSIC-JURASSIC EXTINCTION-201.3 MA

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Some scientists theorize that volcanic eruptions spewed tons of CO₂ into the atmosphere, which trapped heat and acidified the oceans, causing this mass extinction. Other scientists contend that an asteroid or comet impact triggered the extinction. About 80% of life was lost in this extinction, including most of the mammals, making way for the dinosaur's ancestors.

Triassic Cretaceous Permian Jurassic 300 200 100

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