



Extinction

EVO-3.G.1

Extinctions have occurred throughout Earth's history.

EVO-3.G.2

Extinction rates can be rapid during times of ecological stress.

EVO-3.H.1

Human activity can drive changes in ecosystems that cause extinctions.



Extinction

EVO-3.I.1

The amount of diversity in an ecosystem can be determined by the rate of speciation and the rate of extinction.

EVO-3.J.1

Extinction provides newly available niches that can then be exploited by different species.

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Why does mass speciation occur after a mass extinction event?

Why does mass speciation occur after a mass extinction event?



There are more available niches.

As the extinction event takes place, organisms that would normally take up a niche are no longer living making the niche available.

Organisms undergo speciation as they take up that niche.

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What is the process after an extinction event that allows population to evolve?

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What is the process after an extinction event that allows population to evolve?



Adaptive Radiation



**Which scientist believe
catastrophism?**

- A. Aristotle**
- B. Cuvier**
- C. Darwin**
- D. Lamarck**

**Which scientist believe
catastrophism?**

B. Cuvier



Cuvier believed in catastrophism

Aristotle developed the scala naturae

**Darwin developed theory of Natural
Selection and believed in descent with
modification**

Lamarck believed in use and disuse.

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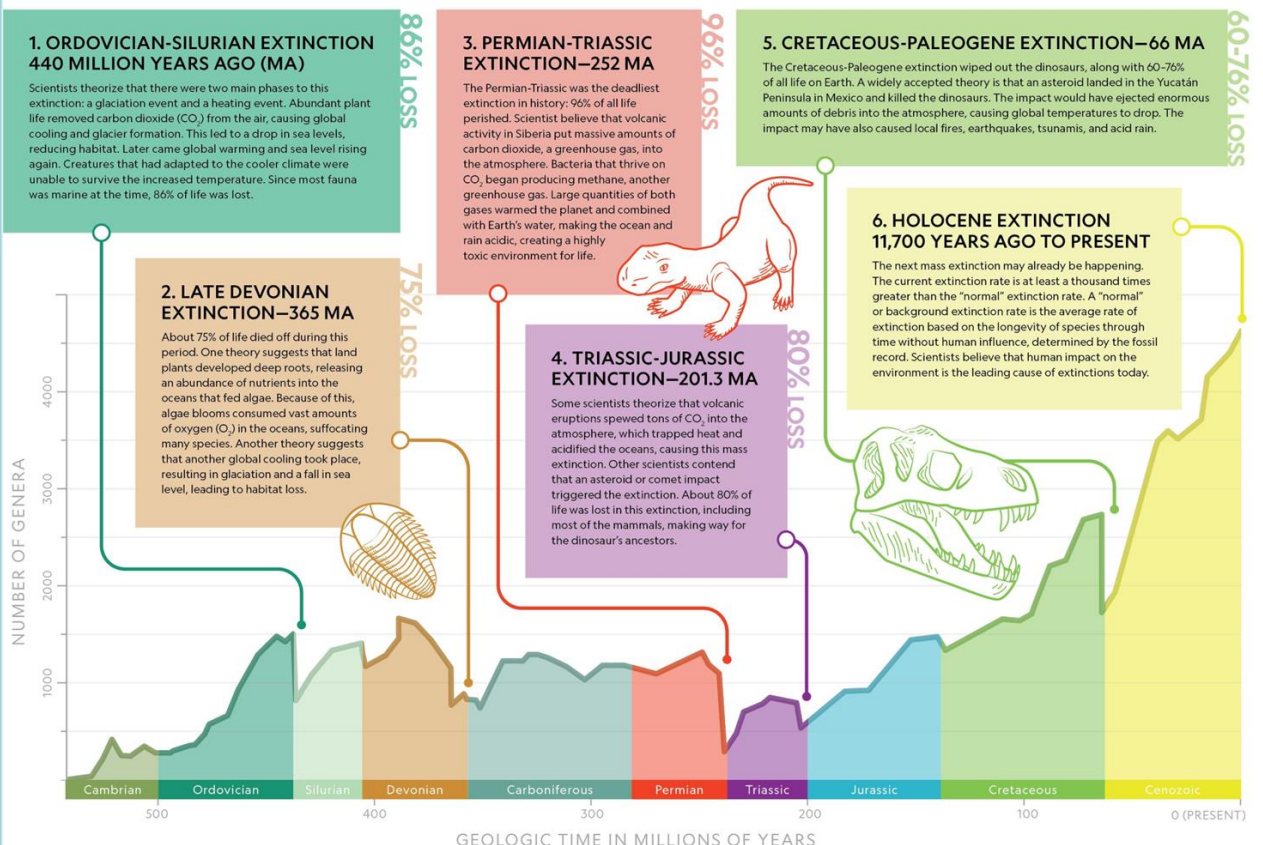
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Mass Extinctions

MASS EXTINCTIONS

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.





What is species diversity?

- A. Number of individuals in an area**
- B. Number of phenotypes in a population**
- C. Number of species in a community**
- D. Number of species in a community plus abundance**

What is species diversity?

D. Number of species in a community plus abundance



Species diversity refers to how diverse the community is. So, how many different types of species are in an area and the abundance of each of those species.



**If the species diversity
decreases...**

- A. Rate of extinction decreases**
- B. Rate of extinction increases**

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**If the species diversity
decreases...**

**B. Rate of extinction
increases**



**The less diverse in the
community, the more extinction
occurs. A higher species diversity
leads to higher ecological
stabilization and resilience. More
ecological relationships lead to
more ability to resist stress.**



An increase of species diversity,

**A. Results in a decrease in rate
of speciation**

**B. Results in an increase in rate
of speciation**

**An increase of species
diversity,**

**A. Results in a decrease
in rate of speciation**



**An increase in species diversity
leads to less available niches
which decreases speciation within
the community.**



Extinctions

- A. Decrease available niches**
- B. Increase available niches**

Extinctions

**B. Increase available
niches**



**As individuals die, there are
more available niches. So,
extinctions increase available
niches.**