

Super Predators And Mass Extinctions

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WASHINGTON, June 16 (SPX) -- Mass extinctions seem to occur on Earth roughly every 26 million years, leading some scientists to propose that they may be caused by rare collisions with comets or asteroids. A researcher in Poland thinks it may be possible that extraordinary predators are at fault instead.

Adam Lipowski (Adam Mickiewicz University) constructed a numerical model of many species competing for both food and living space. The model also included a term that controls mutation rates, allowing new species to develop over time.

The model shows that, much of time, the system is populated with "medium efficiency" predators whose numbers fluctuate only slightly as the prey population waxes and wanes.

Inevitably, their stable community is disrupted when mutations lead to a super predator that quickly decimates the prey population, which in turn leads to its own demise.

The few creatures that survive the predatory apocalypse gradually mutate to fill the existing ecological niches - and the cycle begins again.

The period of the cycle depends on mutation rates in the model. The lower the mutation rate, the longer the periods between super predators. For a sufficiently low mutation rate, the model can lead to cycles that correspond to our 26 million year mass extinctions.

Previous models that do not show these sorts of cycles could be faulty, according to Lipowski, because they failed to account for the effects of limited living spaces shared by a large number of different species.

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