

Climate change could trigger 'boom and bust' population cycles leading to extinction

April 16 2007

Climate change could trigger "boom and bust" population cycles that make animal species more vulnerable to extinction. , according to Christopher C. Wilmers, an assistant professor of environmental studies at the University of California, Santa Cruz.

Favorable environmental conditions that produce abundant supplies of food and stimulate population booms appear to set the stage for population crashes that occur when several "good years" in a row are followed by a bad year. "It's almost paradoxical, because you'd think a large population would be better off, but it turns out they're more vulnerable to a drop in resources," says Wilmers.

Understanding how environmental changes influence fluctuations in animal populations is crucial to predicting and mitigating the influence of global climate change. In a paper that appears in the May issue of *The American Naturalist*, Wilmers describes a powerful new mathematical model that evaluates how climate and resources interact with populations, including a fine-grained analysis of impacts on juveniles, reproducing adults, and adults.

In areas where climate change leads to more "good years," with the occasional poor year still occurring, populations will fluctuate dramatically and be more prone to extinction as a result, said Wilmers. Highly prolific species will be particularly vulnerable to such fluctuations because their populations will build up most rapidly, noted Wilmers, a vertebrate conservation ecologist. Dramatic population

fluctuations make species more vulnerable to extinction due to disease, inbreeding, and other causes; in addition, each crash reduces the genetic diversity of a species, lowering its ability to adapt and making it more prone to extinction.

Source: University of Chicago

Citation: Climate change could trigger 'boom and bust' population cycles leading to extinction (2007, April 16) retrieved 20 April 2024 from <https://phys.org/news/2007-04-climate-trigger-boom-population-extinction.html>

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