

Mammals that hibernate or burrow less likely to go extinct

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The best way to survive the ill-effects of climate change and pollution may be to simply sleep through it.

According to a new study published in *The American Naturalist*, mammals that hibernate or that hide in burrows are less likely to turn up on an endangered species list. The study's authors believe that the ability of such "sleep-or-hide" animals to buffer themselves from changing environments may help them avoid extinction.

The idea that sleepers and hidiers may have a survival advantage first arose from a study of the fossil record conducted by Dr. Lee Hsiang Liow of the University of Oslo. That study found that sleep-or-hide mammals seem to last longer as species than other mammals.

In this latest study, Liow and colleagues from the Universities of Oslo and Helsinki wanted to see if this trend holds for mammals living today.

Using a database of over 4,500 living mammal species, Liow and his team identified 443 mammals that exhibit at least one sleep-or-hide behavior. Their list includes tunneling and burrowing animals like moles and chipmunks, as well as animals that can periodically lower metabolic rates like squirrels, bats and bears.

The sleep-or-hide list was then compared with "Red List" of threatened species compiled by the International Union for Conservation of Nature. As the researchers suspected, sleep-or-hide species are less likely appear

in any of the IUCN's high-risk categories. The pattern holds even under controls for other traits that may influence extinction rates, such as body size (smaller animals generally have lower extinction rates) and geographic distribution.

Despite these results, sleepers and hidiers shouldn't be viewed as evolutionary "winners," the authors say.

"Sleep-or-hide species survive longer, but in a changing world they run the risk of eventually becoming seriously obsolete," says Mikael Fortelius of the University of Helsinki, one of the study's authors.

"Species that don't sleep or hide are short-lived, but they may be more likely to leave successful descendants.

"In a way it's the classic choice between security and progress."

Reference: Lee Hsiang Liow, Mikael Fortelius, Kari Lintulaakso, Heikki Mannila, and Nils Chr. Stenseth, "Lower Extinction Risk in Sleep-or-Hide Mammals," *The American Naturalist*, Feb. 2009

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