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Wilderness areas halve the risk of extinction for plants and animals

By **Richard A. Lovett** Sep. 18, 2019 , 3:00 PM

It may seem like an obvious argument: Undeveloped lands, including parks, wilderness areas, and national forests, are critical refuges for endangered or threatened species. But scientists have had surprisingly little evidence to support that claim, aside from the occasional anecdote. Now, a new study suggests that if present global habitat-degradation trends continue, vascular plants and invertebrates living in wildlands—from wildflowers to bees—are twice as likely to survive as their cousins dwelling in nonwilderness areas.

To come up with the new figure, researchers first divided Earth's land surface into millions of 1-kilometer-square grids. Not counting Antarctica, protected or unprotected de facto wildernesses made up about 20%. The rest were lands that had been more heavily affected by human activities, ranging from farming and ranching to mining, logging, and urban development. The researchers then filled in the known ranges of 400,000 species of plants and invertebrates—and estimated the extinction risk for each one.

They found that those species whose range included wilderness areas had only a 2.1% chance of going extinct within the next several decades, whereas those in nonwilderness areas had a **5.6% chance of extinction**—a difference of more than a factor of 2, they report today in *Nature* (https://www.nature.com/articles/s41586-019-1567-7). That finding suggests wildlands do indeed serve as a buffer against extinction.

Although some of the most critical habitats are already protected, the researchers found that many are unprotected, including the Bolivian Amazon, and parts of British Columbia in Canada, Central Africa, and Australia (above). What's more, the wilderness set-asides that do exist are distributed in a haphazard fashion, indicating that biodiversity protection has played little role in their establishment.

But the researchers say their somber conclusions have at least one silver lining: By setting aside other such biodiversity hot spots now, we may be able to prioritize future land protections to better protect the world's biodiversity.