

Rising household numbers damage hotspots

More homes with fewer occupants are endangering plants and animals.

Kendall Powell

Moving back home or getting a divorce affects our impact on other species, a new study suggests¹. Human population growth is threatening animals and plants, but so too is the rising number of households, even in areas where the population is steady or shrinking.

Throughout the world, the number of generations living under one roof has declined, and divorce is splitting families into multiple homes. More households containing fewer people are more damaging to the environment than simple population growth, warn Jianguo Liu of Michigan State University in East Lansing and colleagues.

"This may be a wake-up call that everything we do, including personal freedom and personal choice, may have an impact on the environment," says Liu, an ecologist who studies the effects of economics on ecosystems.

The abundance of dwellings with just one, two or three occupants can cause a sharp rise in the use of energy, land, construction materials and water. For example, both two-person and six-person households typically have one refrigerator.

Liu's team calculated the population growth, number of households and average household size for 76 countries with biodiversity hotspots and 65 without. A biodiversity hotspot is a region where large numbers of species are endangered or threatened by human activity. Many are in the tropics, but there are also two in the United States - in Indian River County, Florida, and in the California desert - as well as a habitat for giant pandas in southwestern China.

The group find that the growth in household numbers globally, particularly in countries with biodiversity hotspots, has been more rapid than overall population growth. They calculate that, compared with 1985, there were 155 million more households in hotspot countries in 2000 as a result of downsizing and that by 2015 this figure will have risen by 233 million if the trend continues. Even in areas where population is declining, such as Italy, Greece, Portugal and Spain, the number of households is soaring.



The number of generations living under one roof has declined.

© Getty Images

"The more we take from biological systems, the greater the impact on biodiversity," says Jessica Hellmann, a conservation biologist at the Centre for Biodiversity Research at the University of British Columbia in Vancouver. She says measuring human consumption in terms of household units is a better way of thinking about the global problem.

She would like to see more household analysis done on a smaller - city - scale to see if the same trend holds true for regions where hotspots and high human density overlap. San Francisco would be a good example, Hellmann says. Here, conservation is difficult and expensive, but changes in household resource use might be easier to implement.

Policy changes such as tax incentives for sharing housing and resources could help, suggests Liu. Moving back in with Mom and Dad? It would have to be some tax break.

References

1. Liu, J., Dally, G. C., Ehrlich, P. R. & Luck, G. W. Effects of household dynamics on resource consumption and biodiversity. *Nature*, published online, (2003).

Nature ISSN 1744-7933 EISSN 1476-4687

[About NPG](#)

[Contact NPG](#)

[RSS web feeds](#)

[Help](#)

[Privacy policy](#)

[Legal notice](#)

[Accessibility statement](#)

[Terms](#)

[Nature News](#)

[Naturejobs](#)

[Nature Asia](#)

[Nature Education](#)

[About Nature News](#)
[Nature News Sitemap](#)

Search:

go

© 2011 Nature Publishing Group, a division of Macmillan Publishers Limited.
All Rights Reserved.

partner of AGORA, HINARI, OARE, INASP, ORCID, CrossRef and COUNTER