

Response to Comment on “Metapopulation Persistence with Age-Dependent Disturbance or Succession”

The comment by Dushoff (1) elaborates on the probabilistic arguments in (2) and provides a succinct explanation of the connection between patch age and the process of disturbance. The further expansion of the analogy to the Feller (3) example of buses cited in (2) also provides a heuristic explanation of Dushoff's results. The underlying view that colonizing species are most likely to be found in the patches that survive the longest just due to chance is

worth further emphasis and consideration. Choosing the most valuable sites for conservation in a matrix of habitat needs to be done with caution, so that mere chance is not the only reason that some sites appear more valuable.

Despite the importance of the formulas in (1), it is also important to be cautious in applying these insights directly, or even indirectly, to field systems. The relationship among patch age, disturbance process, and

metapopulation persistence will also depend critically on the temporal autocorrelation of the disturbance process, which was ignored in (1, 2). The incorporation of further details into metapopulation models that remove other underlying, often implicit and underappreciated assumptions, is a very promising avenue for further research.

Alan Hastings

*Department of Environmental
Science and Policy
University of California, Davis
One Shields Avenue
Davis, CA 95616, USA*

References

1. J. Dushoff, *Science* **304**, 684 (2004); www.sciencemag.org/cgi/content/full/304/5671/684c.
2. A. Hastings, *Science* **301**, 1525 (2003).
3. W. Feller, *An Introduction to Probability Theory and Its Applications* (Wiley, New York, 1971), vol. 2.

4 February 2004; accepted 22 March 2004

Response to Comment on "Metapopulation Persistence with Age-Dependent Disturbance or Succession"

Alan Hastings

Science **304** (5671), 684.
DOI: 10.1126/science.1096412

ARTICLE TOOLS

<http://science.sciencemag.org/content/304/5671/684.4>

RELATED CONTENT

<http://science.sciencemag.org/content/sci/304/5671/684.3.full>
<http://science.sciencemag.org/content/sci/301/5639/1525.full>

REFERENCES

This article cites 1 articles, 1 of which you can access for free
<http://science.sciencemag.org/content/304/5671/684.4#BIBL>

PERMISSIONS

<http://www.sciencemag.org/help/reprints-and-permissions>

Use of this article is subject to the [Terms of Service](#)

Science (print ISSN 0036-8075; online ISSN 1095-9203) is published by the American Association for the Advancement of Science, 1200 New York Avenue NW, Washington, DC 20005. 2017 © The Authors, some rights reserved; exclusive licensee American Association for the Advancement of Science. No claim to original U.S. Government Works. The title *Science* is a registered trademark of AAAS.