Dear Editor

We are submitting a manuscript entitled “Quantifying Limits to Detection of Early Warning for Critical Transitions” by Carl Boettiger and Alan Hastings for consideration for publication as a Report in Science.

We believe that this manuscript is particularly suitable for Science because it provides new results on an issue that is both of broad scientific interest and also of interest to policymakers: the detection of early warning signs for regime shifts (such as eutrophication or more complex shifts). We recognize that this is a very active area, and argue that our contribution is truly novel and important as *we are the first to quantify the important trade-off between false positives and missed signals for early warning signs. While the problem of quantifying uncertainty has been largely avoided in a literature that has relied on direct comparisons with control systems, experimental replicates, or the knowledge of hindsight, such luxuries will not be available in natural systems, which will require robust uncertainty quantification.*

1. *We quantify the performance of different warning signal metrics with respect to false alarms and missed events.*
2. *We estimate how much data is required to achieve a given degree of confidence in a signal of collapse.*
3. *We show that previous applications have done little better than coin flipping to identify a collapse, either because the data has been too limited or the method too insensitive.*
4. *We provide a new indicator which substantially out-performs existing methods on smaller data sets.*

Thus our manuscript makes a significant advance in the understanding of an area of great interest.

We believe that it is important that referees be selected who are open to new ways of thinking about this problem. There has been a tendency for the literature in this area to be dominated by a few major paradigms. Thus we suggest reviewers who have strong expertise in the technical areas that form the basis for our contribution and who we believe would be open to fresh approaches:

Suggested reviewers include

Mark Lewis, Tony Ives, Steve Ellner, Simon Levin, Hugh Possingham, Yoh Iwasa