

Making effective use of "messy data" for conservation

Unconventionally collected data are increasingly being used in conservation - collected by citizen scientists, rangers or local residents, or gathered from the internet or other records. However their potential is still unrealised, and some uses are even counterproductive. I illustrate this with examples grouped into three common fallacies: i) "That's what the data say so it must be true!" - believing raw data without properly considering biases and uncertainties; ii) "We don't know anything about this, and it would be too expensive to find out!" - dismissing the opportunity to use messy data to support conservation actions; iii) "I gave them instructions, what more do they need?" - ignoring the motivations of the data generators. I then talk about potential ways forward for each of these fallacies: using field trials, models and rules of thumb to account for observation and process error; thinking creatively about the kinds of data that could be collected and by whom, in a cost-effective way; and empowering data collectors to support more effective and sustainable monitoring for conservation. I bring these themes together into a framework to support the effective use of messy data in conservation - with statistical ecologists at its heart.