**A response to O’Byrne et al.**

Andrew Balmforda,\*, Lizzy Colea, Chris Sandbrookb,c & Brendan Fisherd,e

a Conservation Science Group, Dept of Zoology, University of Cambridge, Downing St, Cambridge CB2 3EJ, UK

b UN Environment World Conservation Monitoring Centre, 219 Huntingdon Rd, Cambridge CB3 0DL, UK

c Dept of Geography, University of Cambridge, Downing Place, Cambridge CB2 3EN, UK

d Environmental Program, Rubenstein School of Environment and Natural Resources, University of Vermont, Burlington, Vermont 05405, USA

e Gund Institute for Environment, University of Vermont, 617 Main St, Burlington, Vermont 05405, USA

\* Corresponding author. E-mail address: [a.balmford@zoo.cam.ac.uk](mailto:a.balmford@zoo.cam.ac.uk)

We welcome O’Byrne and colleagues’ response to our piece, as a valuable contribution to the growing debate around how to accelerate urgently-needed reductions in people’s personal environmental footprints. We agree with some of the authors’ points, disagree on others, and conclude that actions targeting individuals and “a higher level of organization” are both likely to be essential.

At a trivial level, the primary focus of our paper is not, as O’Bryne et al. suggest, to “make suggestions as to how environmental behavior across society can be influenced in a positive direction”. Rather we focus on comparing environmentally-significant behaviours and knowledge of three groups of people in order to examine whether conservationists have smaller footprints, whether actions vary with knowledge, and whether they co-vary with one another. Suggestions for influencing behaviour are only explored in some of the sections of the Discussion. Likewise, we do not “focus solely on consumption-oriented choices” – unless decisions over how many children to have now fall under the heading of consumerism. And while we agree that if a pulmonologist smokes it does not impact on their medical expertise, we suggest it may make them a less credible advocate of giving up smoking.

More importantly, we agree strongly with O’Byrne and colleagues’ general argument that societal-level interventions are likely to be key in reducing people’s footprints. For that reason we used a lengthy paragraph in the Introduction, half a paragraph of the Discussion, and around 20 citations, to highlight the importance, in limiting or enabling pro-environmental behaviour, of (*inter alia*) social norms; structural, cognitive and economic constraints (including regulations and incentives); and choice architecture. Among the behaviours we quantified, high-level interventions are likely to play an important role, for example, in determining people’s adoption of energy-saving measures at home, how they travel to work, how much they recycle their waste, and their choice of family size.

However, we maintain that individual or family-level autonomous choice is also important (see McLeroy et al. 1988 for an analogous argument in the health sector). The people we sampled do, we contend, have considerable freedom to decide how much meat they eat. It is largely up to them whether they offset their carbon footprint, whether they buy bottled water, and how much of their food they throw away. They can choose whether they take holidays that require flying, and how many children or pets they have. Arguing otherwise risks, in our view, absolving people of liability for their actions. Of course there are high-level interventions that can encourage and sustain shifts in all these behaviours, but individuals also have the power and responsibility to act, even under current conditions. By doing so they can both reduce their own impacts and help catalyse and legitimize higher-level changes needed for bringing about much greater reductions across society at large.

**References**

McLeroy K.R., Bibeau D., Steckler A., Glanz, K., 1988. An ecological perspective on health promotion programs.  Health Education Quarterly 15, 351-377.