

Geosci. Commun. Discuss., author comment AC2
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Reply on RC2

Miles Richardson

Author comment on "GC Insights: Nature stripes for raising engagement with biodiversity loss" by Miles Richardson, Geosci. Commun. Discuss.,
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Thank you for your comments on GC Insights: Nature stripes for raising engagement with biodiversity loss. I understand the time it takes to read and comment on even a brief article.

Thank you for noting the important issue of loss of biodiversity and the clear goal to increase the awareness of this problem in the general public.

Regarding your concerns about 'manipulating data' through adding 'random noise'. It is my understanding that there is some 'noise' within the warming stripes? However, one point of the GC Insights paper is to acknowledge and record the approach in a transparent way. As the variation is within the confidence intervals, from a statistical perspective the smooth line is also artificial to some extent, as it exists within confidence intervals. The actual variation is unknown.

Regarding the stripes being misleading. As above, the biodiversity stripes are a tool to raise awareness and engagement with biodiversity loss in general over 50 years, rather than a precise visualisation of variation each year – the stripes format doesn't lend itself to examination of figures for each year in the same way as a chart where values can be extracted from the axes. Therefore, as an awareness raising tool, I don't think the stripes are misleading as overall they represent a decline which is acknowledged as real, problematic and lacking attention and engagement. They perform a useful function in highlighting overall trends and are not intended as a tool to examine yearly fluctuation.

Regarding credibility, this is the issue that is perhaps preventing the public becoming aware of an important topic. As the biodiversity stripes have become more popular, I've had several discussions with ecologists unwilling to clearly communicate the issue of biodiversity loss, which they acknowledge is a huge issue, because of imperfections in the data. Such that they could not recommend any data source for sharing with the public. I think the adoption of the stripes by many of the world's leading nature conservation organisations demonstrated a willingness and need to be pragmatic with headlining the decline. It should be remembered that the biodiversity stripes are intended to raise public engagement with biodiversity loss, rather than provide a scientific visualisation of the data. I can revise the manuscript to ensure the article is clear on the aim of public engagement and trade-offs in line with the GC insights remit to present "well-founded ideas related to geoscience communication" in 500 to 1500 words.

With regard to reproduction of the results, I can acknowledge this, but as a communication tool rather than empirical research is replication an issue?

Thank you for your final suggestions, I did explore aspects such as rate of change, but, as an engagement tool, the results weren't engaging. Further, the simple message to the public becomes complex, e.g. stripes showing the rate of change of decline. I have since revised the colourmap to allow declines from 10 to 100% to be represented without the 10% decline appearing the same as 90% etc. This makes it difficult to produce a colourmap which reveals subtle changes.

Since submitting the article the appearance of the biodiversity stripes in the French Parliament, at COP27, at COP15, on magazine covers, UK national news and shared to millions by Greta Thunberg suggests they do present a "well-founded idea related to geoscience communication" and therefore fall within the GC Insights remit with appropriate caveats. This level of exposure hasn't been accompanied with feedback that the stripes are misleading.

Once again, thank you for providing your comments, I hope my response above provides some reassurance, and indeed the need for pragmatic communication tools. As I say, I'm happy to make revisions to cover the various caveats above, while noting that the submitted paper was already at the upper limit of the 500 to 1500 words band.