Dear Editor,

thanks a lot for the time you have spend on my manuscript and for forwarding the comprehensive answer of the authors of the original paper. I appreciate that authors clarified some points and furnished some additional elements to explain their rational. However, I still think the major conclusion of the paper “*Weather explains the decline and rise of insect biomass over 34 years*” is wrong. My point is based on three arguments:

* Authors have contested the inclusion of a time effect to their model only by saying that a temporal trend is not a causal mechanism and thus does not help. It is true it does not reflect any causal mechanism, but it should be included to absorb any effects of temporal drivers that were not modelled (agricultural intensification for example). Not including this year effect, would imply that the model includes all possible mechanisms, which is an illusion, and would unavoidably lead to a mis-estimation of the role of modelled drivers.
* When including such year effect, I find that: weather conditions have driven partially the insect decline (-1.4%/year) but most of the long-term decline in insects remains unexplained (-4%/year in addition to habitats and weather effects).
* Consistently with the original analyses from Hallman et al., I also find a significant role of habitat conditions in driving the long-term decline in insect biomass that is not negligible relative to the role of weather conditions (-0.9%/year *versus* -1.4%/year), while habitat conditions have been modelled with a coarser time resolution and less parameters than weather conditions.

For these reasons, after reading the answer of the authors, I still think the points I raise challenge the reported conclusions by Müller *et al.* and are of importance for the interpretation of the paper by the broad readership of Nature. Thus. I would like to ask the editorial members to re-consider these elements.

Accounting for authors clarification, I wrote a new version of my comment (attached with that email). Since I think they are important for the scientific debate, I would anyway make it publicly available through a pre-print server.

I would like to thank you again for the time you took to read this email.

Best regards,

François Duchenne