

Letter to the Editor

A response to Welden et al. (2020) The contributions of EAZA zoos and aquaria to peer-reviewed scientific research. Journal of Zoo and Aquarium Research 8(2): 133-138

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Welden et al. (2020) summarise and analyse the contribution of EAZA zoos and aquariums to peer-reviewed scientific research, analysing publications generated from EAZA members. As an organisation founded in 1826 that represents the first scientific zoo in the world, we are supportive of publications that highlight this important and often overlooked role of the zoo and aquarium community. However, the paper notes that 'An outlier, the Zoological Society of London was treated differently, in that only contributions from London Zoo and Whipsnade Zoo were included. The Institute of Zoology which acts as a separate research institution was excluded, as it would not rightfully portray the contribution of zoos or aquaria (D. Field, personal communication)'. As a result, the authors have excluded many staff of the Zoological Society of London (ZSL) who contribute towards the publication of peer-reviewed scientific research from the analysis, meaning the organisation's full contribution is not well presented.

We recognise that the Institute of Zoology (IoZ) is a special case, as a research institute affiliated with University College London (UCL), although it does still receive central support from the ZSL and publications led by IoZ researchers also often involve co-authors from other parts of the organisation. However, there are staff across the rest of ZSL working in our two zoos (London Zoo and Whipsnade Zoo) as well as our Conservation and Policy Directorate and Wildlife Health Services team who regularly publish in the scientific literature and whose contributions are not reflected in this analysis.

The reason for the omission appears to be based on an erroneous personal communication focused on the Institute of Zoology, plus only including papers where authors identify with one or other ZSL zoo. ZSL's zoo and conservation staff do not routinely include the name of our zoos in the institutional address on paper submissions as it has been institutional policy to present ourselves as a single organisation (ZSL) for many years. In addition, income from our two zoos provides

direct financial support to the delivery of work in both the Conservation and Policy Directorate and Science Directorate, which enables us to leverage income from grants and restricted foundations. This core financial and operational support should be recognised and included as a 'zoo contribution to research'.

We reviewed our publication output for the two most recent financial years (2017-2018 and 2018-2019), and find that we published 58 and 54 peer-reviewed papers respectively from ZSL staff outside of the Institute of Zoology. These two years alone are considerably higher than the findings indicated in Table 1 of Welden et al. (2020), which suggest less than 64 peer-reviewed scientific papers since 1998. Indeed, based on these two years alone, ZSL would feature as the 8th organisation in Table 1. Yet, as previously discussed, IoZ is part of ZSL and, whilst unique, does also represent a contribution by the zoo and aquarium community. Thus, we broadly followed the method and time period outlined in the manuscript and, reporting against metrics portrayed in Table 1 of Welden et al. (2020), and estimate that ZSL as a whole (i.e. including IoZ), has contributed approximately 1,038 publications with 36,016 citations. This compares to the current combined published contribution of the top ten zoos and aquariums totalling 1,458 publications with 20,630 citations (Welden et al., 2020).

The omission of this impactful scientific research from ZSL in the article misses a major contribution by the zoo and aquarium community, as previously evaluated by Butchart et al. (2019), that we suggest is acknowledged and rectified.

References

- Butchart, S.H.M., Clements, A. & Gibbons, D.W. (2019) Conservation charities top citation charts. *Nature* 566: 182
- Welden, L.A., Stelvig, M., Nielsen, C.K., Purcell, C., Eckley, L., Bertelsen, M.F., Hvilsum, C. (2020) The contributions of EAZA zoos and aquaria to peer-reviewed scientific research. *Journal of Zoo and Aquarium Research* 8(2): 133-138.

