

COULD THE PYGMY HOG-SUCKING LOUSE BE THE NEW MASCOT OF CONSERVATION?

Sat by the roadside feeling the glorious December chill, I explained to the recovery driver rescuing me after an unfortunate incident involving an exploded tyre that I was so far from home due to university. He politely asked what I was studying, but instead of the usual confusion and thinly-veiled distaste I've come to expect from my answer, I was taken aback by his delight. "Entomology! That's amazing! I mean, without insects we'd be doomed*, right?". Noticing my reaction, he told me, "I'm not like other people, y'know. I really understand how important bugs are."

This simple and brief exchange has been on my mind for weeks. How can it be that insects are thought to constitute up to 90% of all animal species¹, yet are often disregarded as nothing more than mere pests and carriers of disease by the general public? Why are they so greatly undervalued and underrepresented within conservation strategies worldwide²? When you think of endangered animals and the charities that seek to protect them, what do you envision - pandas, leopards and rhinos, or grasshoppers, beetles and flies? Whilst the former undeniably do a fantastic job of attracting attention and

catalysing the necessary action, it seems as though they undermine the perhaps less obviously-visible decline of smaller organisms that are critical in the proper functioning of our ecosystems^{3,4} and negatively impact the wider public perception of wildlife in general⁴.



So, why don't we see more insects as the figureheads of conservation? Is it because they simply aren't as cute as little baby turtles, as engaging as great apes or as awe-inspiring as the giant whales? In a word, yes. Picture this, if you can (or take a look at the image above if you can't!) - the famous panda we've all seen fronting a leading conservation charity, replaced by the image of the charmingly named Pygmy hog-sucking louse. Selling pin badges or cuddly plush toys of this mascot may be a little harder to shift, I feel - societal preferences play a huge role in conservation strategies, and the

simple truth is that it's far more difficult to prioritise or obtain funding for researching animals that don't interest or warm the hearts of the general public⁵. Consequently, this means there are huge groups of insects that are poorly studied (if at all), making it exceedingly challenging to protect or even understand them at a basic level. The IUCN, the organisation responsible for curating the Red List as a tool for collating data on current endangered species, have themselves acknowledged that their surveys favour terrestrial animals within certain ecosystems and have vowed to prioritise invertebrates such as butterflies and bumblebees in future assessments⁶. A step in the right direction, of course, but still displaying that there is a preference towards the creatures that benefit humans through food security (i.e. pollination) as opposed to invertebrates in their entirety². This begs the question - are insects only appealing/important to us as humans when they serve an obvious purpose? If that is the case, have our views really evolved since Descartes proposed that animals are no more than automata, simply existing in a world to assist with the functions that benefit mankind⁷?

*actually, much more colourful language was used but changed for the purpose of this article - rest assured, the sentiment remained the same

Scientists have estimated using the fossil record that current extinction rates are around 1,000 times higher than expected, making the protection of our biodiversity perhaps more important now than ever before⁸. Alas, as with many things in life, it is critical to find balance in order to achieve success. Whilst it is somewhat frustrating as an entomologist to see the charismatic megafauna fronting conservation efforts and channelling funds away from the less visible but ecologically significant

invertebrate species, I would be remiss to deny that they highlight vital global issues and capture the hearts of the public, drawing interest in conservation science that may not otherwise be there.

Until more research is carried out and gaps in invertebrate knowledge are at least partially filled, it seems almost unreasonable to expect people to care about a tiny world below our feet that we don't yet fully understand. Until that day comes and insects can stand alone in their fight to be recognised, I will

remain hopeful that I meet more people like that recovery driver and that the ignorance of "the other people" he spoke of can steadily be dispelled. Although I have to admit, I'm not sure that even then we'll see lice representing any organisations - perhaps a parasite isn't the best place to start with winning hearts and minds in a world that is already challenging for our insect species.

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References

1. Royal Entomological Society (undated) *Facts and figures*. Available at: <https://www.royensoc.co.uk/understanding-insects/facts-and-figures/> (Accessed: 29 December 2022).
2. Eisenhauer, N., Bonn, A. and Guerra, C.A. (2019) 'Recognizing the quiet extinction of invertebrates'. *Nature Communications*, 10(50), pp.1-3.
3. Ford, A.T., Cooke, S.J., Goheen, J.R. and Young, T.P. (2017) 'Conserving megafauna or sacrificing biodiversity?' *BioScience*, 67(3), pp.193-196.
4. Leather, S. (2013) *Think small and local - focus on large charismatic mega-fauna threatens conservation efforts*. Available at: <https://simonleather.wordpress.com/2013/02/01/think-small-and-local-focus-on-large-charismatic-mega-fauna-threatens-conservation-efforts/> (Accessed: 29 December 2022).
5. Donaldson, M.R., Burnett, N.J., Braun, D.C., Suski, C.D., Hinch, S.G., Cooke, S.J. and Kerr, J.T. (2016) 'Taxonomic bias and international biodiversity conservation research.' *FACETS*, 1(1), pp.105-113.
6. IUCN. (2021) *Barometer of Life*. Available at: <https://www.iucnredlist.org/about/barometer-of-life/> (Accessed: 20 December 2022).
7. Carere, C., Wood, J.B. and Mather, J. (2011) 'Species differences in captivity: Where are the invertebrates?' *Trends in Ecology & Evolution*, 26(5), p.211.
8. De Vos, J., Joppa, L.N., Gittleman, J. L., Stephens, P.R. and Pimm, S.L. (2014) 'Estimating the normal background rate of species extinction'. *Conservation Biology*, 29(2), pp.452-46.