

Do conservation scientists work too hard?

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This is Ahimsa Campos-Arceiz, one of the authors of the study, reviewing a manuscript while conducting fieldwork in northern Malaysia. Credit: The University of Nottingham

An international study of the work habits of conservation biologists suggests that they do work very hard—producing a substantial amount of work late at night and over weekends. The results have been published in an editorial article for the scientific journal *Biological Conservation*.

The research, by Dr Ahimsa Campos-Arceiz of The University of

Nottingham Malaysia Campus (UNMC), Dr Richard Primack of Boston University and Dr Lian Pin Koh of Princeton University, put to the test the commonly held belief that scientists are like [laboratory rats](#), working long hours at night and on weekends, with little time left for family and other personal matters. They were also curious about the differences in working habits of scientists in different countries. To find out, they analysed data for 10,000 manuscript submissions and almost 15,000 reviews sent to *Biological Conservation*.

Dr Campos-Arceiz, an Associate Professor at UNMC's School of Geography, said: "The motivation for the study had clear personal roots. I went to Bali to attend a friend's wedding and found myself spending most of the short holiday reviewing manuscripts in front of the beach, instead of swimming or reading a novel. I realised that finding time to review manuscripts at work is really difficult and I personally do most of my manuscript reviews in my own time, mostly weekends and during holidays."

Many working hours out of hours

The submission of manuscripts for publication in a scientific journal and their subsequent peer-review by fellow scientists are quintessential components of the scientific process. This process is now done online through a portal that records the exact time when the authors or reviewers are in front of the computer submitting their files. Dr Campos-Arceiz and his collaborators used this information—the day and time of submission—to understand the working habits of scientists contributing to *Biological Conservation*.

Dr Campos-Arciez said: "Reviewing someone else's manuscript is a relatively altruistic act, since it is generally done anonymously and it aims to improve someone else's work, or to prevent poor science being published. If reviews are done during personal time, the altruism is even

greater. We were also concerned with the potential effects on the quality of the scientific work—if authors or reviewers are working late at night or over weekends, it might indicate time pressures that can potentially lead to a lower quality of the scientific work."

The results showed that scientists do a substantial amount of their work late at night (16 per cent of the manuscripts) and on weekends (11 per cent of the manuscripts and 12 per cent of the reviews); and that this work outside of normal hours has been increasing at about 5-6 per cent per year. Working habits also vary greatly across the globe. Japanese, Chinese, and Indian researchers seemed to work hardest, submitting nearly 40 per cent of their manuscripts outside regular office hours whereas scientists from Belgium, Norway, Finland, and South Africa submitted 16-17 per cent of them outside regular office hours. The countries that stood out in the study for being hard-working were Japanese and Mexican scientists working late at night and Chinese and Indian scientists working much more on weekends. In contrast, Belgian and Norwegian scientists did not work much on weekends, and Finnish scientists did not work at night. American and British scientists had average work habits, working moderate amounts on weekends and evenings.

Richard Primack said he was surprised by the study, "Until we saw the data, I did not appreciate how hard-working Chinese, Indian, and Japanese scientists were. Also, I thought that Americans were about the hardest working scientists in the world, but they are about average. In my own case, I am pretty much working all of the time, other than when I am occupied with family and friends or exercising."

The academic's working week needs reviewing

Overall this study shows that conservation biologists and potentially other scientists do a considerable amount of their scientific work outside

regular working hours. This trend is increasing and that there are marked geographical patterns in scientists' behavior.

The authors consider that the continuous increase in workloads experienced in academic institutions—particularly with ever-increasing teaching and administration duties—has a potential negative impact on the quality of the scientific work and, at the same time, on the scientists' life-work balance, which often results in neglecting family, friends, physical exercise, or just resting time.

Dr Campos-Arceiz said: "We call for academic institutions to remember that good science requires time to read and think and over-stressed scientists are likely to be less productive overall. We also recommend that peer-review activities are included as part of the academic job description and considered in staff performance evaluations. At the end of the day, working on this paper has been an opportunity to reflect about our own behavior and priorities. Next time I go to Bali, I will spend more time swimming and talking with my wife and less working on manuscripts"

More information: [www.sciencedirect.com/science/ ...
ii/S000632071300219X](http://www.sciencedirect.com/science/.../S000632071300219X)

Provided by University of Nottingham

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