



Choosing Open Access

Most of the conservation scientists known to us have a strong personal desire to ensure their work is accessible to, and indeed used by, those implementing management and developing policy as well as society at large. Indeed, conservation scientists are increasingly engaging in innovative methods of communication such as writing summaries for traditional and social media (Darling et al. 2013). It is thus a poor reflection on the state of accessibility of conservation science that more than 95% of our papers published since 2000 do not meet basic international standards for open access, a much poorer record than that achieved by evolutionary biology (Fuller et al. 2014). Moreover, only 9% of our scientific publications are freely downloadable. One of the primary hurdles limiting consumption of our science, particularly by the scientifically literate practitioner and policy maker, remains resolutely in place; almost all of it resides behind a paywall.

We believe that an urgent transition to full open access among conservation journals is warranted, but an immediate workaround is for more conservation scientists to choose to publish their science as open access. However, open access comes in many different guises, and there are pitfalls for the unwary, even when author fees are being paid. Crucially, open access and free online availability are not synonymous, and all open access is not the same. Fundamental to the standard definition of *open access* is the principle that a piece of work can be freely reused for any lawful purpose providing attribution is given to the authors. This is the basis of the Budapest Open Access Initiative that kick started the open access movement (<http://www.budapestopenaccessinitiative.org>) and of the Creative Commons Attribution license (CC-BY; <http://creativecommons.org>), now widely used in open access scientific publishing. But buyer beware: it pays to check the license document being signed when opting for open access to ensure one is purchasing the real deal. At least 2 major variants to this genuine open access license are commonplace in scientific publishing.

Perhaps most frequently, commercial re-use is forbidden (e.g., a CC-BY-NC license). Although this might sound reasonable, imagine a scenario where a publisher wishes to produce a handbook for climate adaptation planning methods or a summary of the latest science on fisheries management. If a publisher has to pay fees to use and adapt our science, this could limit the quantity of science being used and at the same time affect the cost of the resulting materials for consumers. Simple reuse of the con-

tents of our scientific papers (e.g., figures, tables, sections of text, or a reproduction of the entire paper) requiring neither payment nor permission removes at least one barrier to turning science into action-relevant information. Whether a particular reuse is considered commercial or noncommercial in a Creative Commons license turns on whether the use is “primarily intended for or directed toward commercial advantage or monetary compensation.” Formal definitions are elusive, and a report on the issue (Creative Commons Corporation 2009) spans 255 pages. In our view, it is preferable for authors simply to permit commercial reuse of their work. In the case of journal articles, authors usually gain nothing by prohibiting commercial reuse because it is the publisher who typically receives payment for such use in any case.

A second major variant is for derivatives of the underlying work to be forbidden (e.g., a CC-BY-ND license), essentially meaning that only unaltered copies of the work and not derivatives based on it can be distributed. Depending on the precise wording of the license, this could limit the repackaging of results, translation of the material, rearrangement of the content, or alterations to figures. Again, we see no obvious reason why authors should opt for such restrictions.

So why is this important? For a start, the fees levied by publishers are typically the same for all major open access variants, despite the fact that all licenses restricting reuse beyond attribution fall short of international standards and the restrictions could limit the future utility of the author's work. Second, authors may be paying for what appears to be open access, when in fact it is not. As we studied the 20 major conservation science journals (Fuller et al. 2014, this issue), we noticed much confusion in how the license conditions were specified for journal articles and many cases of publishers charging or requiring permission for reuse of material that was expressly allowed under an open access license. In some journals, an attribution-only license is not available as part of the open access options. The good news is that Wiley, the publisher of *Conservation Biology*, offers an attribution-only license that complies fully with international standards. Given the significant growth in open access across science (Laakso et al. 2011), we see opportunity for all conservation science publishers to clarify their open access options available to authors and make crystal clear which kinds of reuse are permitted for each published article.

So, when you publish your next paper and you want to make it “open access,” choose a journal with an attribution-only option, take a close look at the paperwork, and do all you can to ensure that your paper conforms to international standards and that future reuse is not limited.

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Literature Cited

- Creative Commons Corporation. 2009. Defining “noncommercial”: a study of how the online population understands “noncommercial use”. Creative Commons Corporation, San Francisco, California.
- Darling, E. S., D. Shiffman, I. M. Côté, and J. Drew. 2013. The role of Twitter in the life cycle of a scientific publication. *Ideas in Ecology and Evolution* 6:32–43.
- Fuller, R. A., J. R. Lee, and J. E. M. Watson. 2014. Achieving open access to conservation science. *Conservation Biology* 28:1550–1557.
- Laakso, M. P. Welling, H. Bukvova, L. Nyman, B-C. Björk, and T. Hedlund. 2011. The development of open access journal publishing from 1993 to 2009. *PLoS ONE* 6:e20961.

