

Open access solutions for biodiversity journals: Do not replace one problem with another

A. Townsend Peterson¹  | Robert P. Anderson²  | Maria Beger³ |
 Janine Bolliger⁴  | Lluís Brotons⁵  | Christopher P. Burridge⁶  |
 Marlon E. Cobos¹  | Angela P. Cuervo-Robayo⁷ | Enrico Di Minin^{8,9}  | Jeffrey Diez¹⁰ |
 Jane Elith¹¹  | Clare B. Embling¹² | Luis E. Escobar¹³ | Franz Essl¹⁴  | Kenneth J. Feeley¹⁵  |
 Lucy Hawkes¹⁶  | Daniel Jiménez-García¹⁷  | Laura Jimenez¹ | David M. Green¹⁹  |
 Eva Knop²⁰  | Ingolf Kühn²¹  | José J. Lahoz-Monfort¹¹  | Andres Lira-Noriega²² |
 Jorge M. Lobo²³ | Rafael Loyola²⁴  | Ralph Mac Nally²⁵  |
 Fernando Machado-Stredel¹  | Enrique Martínez-Meyer⁷ | Michael McCarthy¹¹  |
 Cory Merow²⁶ | Javier Nori²⁷  | Claudia Nuñez-Penichet¹  | Luis Osorio-Olvera¹⁸  |
 Petr Pyšek^{28,29}  | Marcel Rejmánek³⁰ | Anthony Ricciardi³¹ | Mark Robertson³² |
 Octavio Rojas Soto²²  | Daniel Romero-Alvarez¹  | Núria Roura-Pascual³³  |
 Luca Santini³⁴  | David S. Schoeman³⁵  | Boris Schröder³⁶  | Jorge Soberon¹  |
 Diederik Strubbe³⁷  | Wilfried Thuiller³⁸  | Anna Traveset³⁹  | Eric A. Tremblay⁴⁰ |
 Tomáš Václavík⁴¹  | Sara Varela^{42,43,44} | James E. M. Watson^{45,46}  | Yolanda Wiersma⁴⁷  |
 Brendan Wintle^{11,48}  | Carlos Yañez-Arenas⁴⁹ | Damaris Zurell⁵⁰ 

¹Department of Ecology & Evolutionary Biology and Biodiversity Institute, University of Kansas, Lawrence, Kansas

²City College of New York and Graduate Center, City University of New York, New York, New York

³School of Biology, Faculty of Biological Sciences, University of Leeds, Leeds, UK

⁴Swiss Federal Research Institute WSL, Birmensdorf, Switzerland

⁵CSIC at InForest Jru (CTFC-CREAF), Cataluña, Spain

⁶School of Natural Sciences, University of Tasmania, Hobart, Tasmania, Australia

⁷Universidad Nacional Autónoma de México, Ciudad de México, Mexico

⁸Department of Geosciences and Geography, University of Helsinki, Helsinki, Finland

⁹School of Life Sciences, University of KwaZulu-Natal, Durban, South Africa

¹⁰University of California, Riverside, California

¹¹University of Melbourne, Parkville, Victoria, Australia

¹²University of Plymouth, Plymouth, UK

¹³Department of Fish and Wildlife Conservation, Virginia Tech, Blacksburg, Virginia

¹⁴Division of Conservation Biology, Vegetation and Landscape Ecology, University Vienna, Vienna, Austria

¹⁵University of Miami, Coral Gables, Florida

¹⁶College of Life and Environmental Sciences, University of Exeter, Penryn, UK

¹⁷Centro de Agroecología y Ambiente-ICUAP, Benemérita Universidad Autónoma de Puebla, Puebla, Mexico

- ¹⁸Centro del Cambio Global y la Sustentabilidad en el Sureste AC, Tabasco, Mexico
- ¹⁹Redpath Museum, McGill University, Montreal, Quebec, Canada
- ²⁰University of Bern, Bern, Switzerland
- ²¹Helmholtz Centre for Environmental Research – UFZ, Halle, Germany
- ²²Instituto de Ecología (INECOL), Xalapa, Mexico
- ²³Museo Nacional de Ciencias Naturales, Madrid, Spain
- ²⁴Universidade Federal de Goiás, Goiânia, Brazil
- ²⁵University of Canberra, Bruce, Australian Capital Territory, Australia
- ²⁶Yale University, New Haven, Connecticut
- ²⁷Universidad Nacional de Córdoba, Córdoba, Argentina
- ²⁸Institute of Botany, Czech Academy of Sciences, Prague, Czech Republic
- ²⁹Faculty of Science, Charles University, Prague, Czech Republic
- ³⁰University of California, Davis, California
- ³¹McGill University, Montreal, Quebec, Canada
- ³²University of Pretoria, Pretoria, South Africa
- ³³Departament de Ciències Ambientals, Universitat de Girona, Girona, Catalonia, Spain
- ³⁴Radboud University, Nijmegen, The Netherlands
- ³⁵University of the Sunshine Coast, Maroochydore, Queensland, Australia
- ³⁶Technische Universität Braunschweig, Braunschweig, Germany
- ³⁷Ghent University, Gent, Belgium
- ³⁸Université Grenoble Alpes, Saint-Martin-d'Hères, France
- ³⁹Mediterranean Institute of Advanced Studies (CSIC-UIB), Mallorca, Spain
- ⁴⁰Deakin University, Burwood, Victoria, Australia
- ⁴¹Palacky University Olomouc, Olomouc, Czech Republic
- ⁴²Université Grenoble Alpes, Grenoble, France
- ⁴³CNRS, Université Savoie Mont Blanc, Chambéry, France
- ⁴⁴LECA-Laboratoire d'Ecologie Alpes, Gières, France
- ⁴⁵School of Earth and Environmental Sciences, University of Queensland, Brisbane, Queensland, Australia
- ⁴⁶Wildlife Conservation Society, Bronx, New York
- ⁴⁷Department of Biology, Memorial University, St. John's, NL, Canada
- ⁴⁸University of Queensland, St Lucia, Queensland, Australia
- ⁴⁹Laboratorio de Biología de la Conservación, Parque Científico y Tecnológico de Yucatán, Facultad de Ciencias-Universidad Nacional Autónoma de México, Mérida, Yucatán, México
- ⁵⁰Humboldt-Universität zu Berlin, Berlin, Germany

Correspondence

A. Townsend Peterson, Biodiversity Institute, University of Kansas, Lawrence, KS.
Email: town@ku.edu

For much of the twentieth century, many or most scholarly journals in biodiversity, ecology, biogeography and conservation were owned and published by scientific societies and made available to the broader scientific community at relatively low cost. However, the past several decades have seen a dominant process of commercialization of the publication process in this field, either by commercial publishing firms taking over publication of journals owned by a society (e.g., *Evolution*), or by commercial publishers starting new journals to fill “niches” that were until then empty in the scholarly publishing ecosystem. *Diversity and Distributions* is an example of this latter category of journals, having been created by Wiley Publishers in 1993 (as *Biodiversity Letters*). Being a journal owned by a commercial publisher, it has always been accessed by readers via subscription, but the publication process has been free to potential authors whose work has passed peer review.

A recent announcement from Wiley Publishers on the *Diversity and Distributions* website, however, was as follows:

We are pleased to announce that *Diversity and Distributions* will join the Wiley Open Access portfolio as of 1st January 2019, when all articles (including the entire back catalogue) will become free to read, download and share for all. This exciting development will place the journal at the forefront of open science in the community.

This change would appear to be positive, as it would remove the for-pay subscription barrier to reader access to the journal, and thus would appear to constitute an intriguing step in a series of advances

in opening access to the scientific literature, in line with recent proposals as those of cOAlition S (<https://www.scienceurope.org/coalition-s/>). However, the good news on the webpage is followed by a more ominous, "... all submissions received after 8th October 2018 will be subject to an Article Processing Charge (APC)." We have come to understand that these APCs will be US\$2,200 per paper published, which is very expensive compared with the bulk of open access journals in the fields of ecology and conservation science (Van Noorden, 2013; Solomon & Björk, 2012a, 2012b).

As authors (generators), reviewers and editors (evaluators), and readers (consumers) of papers published in this field, we write this commentary to express our strongest disagreement with the planned shift to APC-based open access for *Diversity and Distributions*. Whatever the business model, *Diversity and Distributions* has become a lead journal in the field thanks to the free-of-charge support of the scientific community as editors and reviewers and has long been a zero-cost publishing outlet. Of course, it has not been an easily accessible journal for the readers, as it has been behind a paywall (i.e., pay-for-view), but the work has indeed been published, and readers have accessed papers via author request, institutional subscriptions, Sci-Hub (Himmelstein et al., 2018), institutional repositories, preprint archives that conform to copyright restrictions, or other platforms. Wiley's "open access" solution changes the equation radically, making the journal accessible to readers, but effectively off-limits to many potential authors.

The community of scholars in biodiversity, ecology, biogeography, and conservation has become and is continuing to be increasingly diverse and global, distributed across borders of countries, levels of economic potential, and institutional size. As a consequence, the community varies dramatically in its economic ability, for example, to pay US\$2,200 to publish a paper. The *Diversity and Distributions* page states, "... automatic APC waivers and discounts will be given to authors from countries on the Waivers and Discounts List," yet the list is quite short, including automatic waivers to only 69 countries worldwide and discounts to only 49 countries that have contributed few papers to *Diversity and Distributions* (7 with waivers and 7 with discounts in 2017, according to information provided by Wiley), and excluding countries with scarce economic resources for science such as Cuba and Venezuela. In addition to scientists in countries for which the discounts are not sufficient, researchers in many countries not on that list will also not be able to pay, with the planned APC exceeding a senior investigator's yearly income in some cases.

In truth, authors at smaller institutions or working without grants at larger institutions even in the United States, Canada, Australia and Europe, will often find it difficult to come up with this sum. In response to initial protests, particularly from a large number of the Associate Editors of the journal, Wiley agreed to a broader waiver policy: "Ability to pay the APC should not be a barrier to the publication of important science. Authors without funding for publication charges will be provided with a waiver of the APC." Although Wiley Publishers plans to offer waivers, we note that a substantial body of literature documents the fact that such fee-waiver requests carry a stigma, and frequently constitute a significant barrier to participation

in a wide variety of activities (Berk & Moon, 2016; Challed, 1996). Also, Wiley Publishers has not made clear whether they will include university funds in the "ability to pay," or what sort of documentation will be required to document authors' inability to pay. Quite simply, given the global nature of the challenges of biodiversity conservation, excluding voices—and particularly voices from countries that frequently are those holding the richest biodiversity—does not seem to be a beneficial or equitable path to take, and we do not wish to see *Diversity and Distributions* make such a change.

We think that this problem arises from an inappropriate choice of business model for scientific journals and for lack of consultation with the client community. Surely, Wiley Publishers is well aware of the increasing number of journal subscription cancellations by large research institutions (SPARC, 2018) and is presumably exploring and developing new future revenue streams for its massively profitable enterprise. That is to say, the traditional subscription model may be approaching the end of its profitability (Else, 2018); for publishers and scientists alike, another model is needed, and an open access model sounds good politically. However, any such change should be made considering the consequences for the community in question, and for the journal itself. Clearly, the *Diversity and Distributions* decision was not taken out of a deep, carefully considered concern for open participation in scholarly publishing, which would have taken into account the effects of high APC rates on full participation by the journal's constituency.

The authors of this commentary are a large group of scientists based at institutions around the world, including 40 of the associate editors of *Diversity and Distributions* at the time of writing. All of us view *Diversity and Distributions* as an important element in our community's scholarly communications universe. The shift to an "author pays" publishing model damages the essential role of the journal deeply, as it will make publishing there expensive and potentially off-limits for us and many of our colleagues. Collectively, we have published numerous papers in *Diversity and Distributions* and have donated many hundreds of hours reviewing and editing papers for the journal as well, to the massive financial benefit of Wiley Publishers. We note that Wiley Publishers saw a net profit of \$252,000,000 in 2017 (Matthews, 2018), which is enough net profit to cover the APCs for 114,545 articles costing \$2,200! Hence, presumably, substantial room exists to reduce profit margins and increase participation for a journal in a field like that of *Diversity and Distributions*.

We therefore tentatively applaud Wiley Publishers' reconsideration of its initial author-pays plans for the journal *Diversity and Distributions*, and their offer of strong, equitable waivers and discounts. If Wiley Publishers indeed holds to its promise not to let APCs be a barrier to scholarly communication, we would see the new situation more positively; even better would be a "platinum" open access business model, in which external subsidy is used to avoid crippling APCs. Some platinum open access journals have close relationships with scientific societies or charitable foundations, are subsidized by a particular institution or entity, or charge much more modest APCs in exchange for membership dues; examples of

journals using these different funding solutions include *Perspectives in Ecology and Conservation*, *Current Science*, *Current Zoology*, *Emerging Infectious Diseases*, *European Journal of Ecology*, *Neotropical Biodiversity*, and *Revista Mexicana de Biodiversidad*. If, however, Wiley Publishers does not hold to its “no APC barriers” policy (e.g., if they start withholding waivers to authors claiming lack of funds), we anticipate that *Diversity and Distributions* will see a rather rapid decline in submission rates of quality papers, out of both economic necessity and “protest” by the community. As members of the research community, we would likely send our manuscripts for publication elsewhere and reconsider our customary volunteer work as referees and editors for such a high-cost and low-participation journal. More generally, we urge that Wiley Publishers and other commercial publishers realize that the future of scholarly publishing is not just one of open access, but rather *open participation*, such that the fullest scholarly community can participate in all dimensions of scholarly communications.

ORCID

A. Townsend Peterson  <https://orcid.org/0000-0003-0243-2379>
 Robert P. Anderson  <https://orcid.org/0000-0002-7706-4649>
 Janine Bolliger  <https://orcid.org/0000-0001-8145-559X>
 Lluís Brotons  <https://orcid.org/0000-0002-4826-4457>
 Christopher P. Burridge  <https://orcid.org/0000-0002-8185-6091>
 Marlon E. Cobos  <https://orcid.org/0000-0002-2611-1767>
 Enrico Di Minin  <https://orcid.org/0000-0002-5562-318X>
 Jane Elith  <https://orcid.org/0000-0002-8706-0326>
 Franz Essl  <https://orcid.org/0000-0001-8253-2112>
 Kenneth J. Feeley  <https://orcid.org/0000-0002-3618-1144>
 Lucy Hawkes  <https://orcid.org/0000-0002-6696-1862>
 Daniel Jiménez-García  <https://orcid.org/0000-0002-2237-3305>
 David M. Green  <https://orcid.org/0000-0003-4438-2285>
 Eva Knop  <https://orcid.org/0000-0001-9402-2216>
 Ingolf Kühn  <https://orcid.org/0000-0003-1691-8249>
 José J. Lahoz-Monfort  <https://orcid.org/0000-0002-0845-7035>
 Rafael Loyola  <https://orcid.org/0000-0001-5323-2735>
 Ralph Mac Nally  <https://orcid.org/0000-0002-4473-1636>
 Fernando Machado-Stredel  <https://orcid.org/0000-0002-8378-3172>
 Michael McCarthy  <https://orcid.org/0000-0003-1039-7980>
 Javier Nori  <https://orcid.org/0000-0002-7127-7934>
 Claudia Nuñez-Penichet  <https://orcid.org/0000-0001-7442-8593>

Luis Osorio-Olvera  <https://orcid.org/0000-0003-0701-5398>
 Petr Pyšek  <https://orcid.org/0000-0001-8500-442X>
 Octavio Rojas Soto  <https://orcid.org/0000-0002-0201-1454>
 Daniel Romero-Alvarez  <https://orcid.org/0000-0002-6762-6046>
 Núria Roura-Pascual  <https://orcid.org/0000-0003-0025-2972>
 Luca Santini  <https://orcid.org/0000-0002-5418-3688>
 David S. Schoeman  <https://orcid.org/0000-0003-1258-0885>
 Boris Schröder  <https://orcid.org/0000-0002-8577-7980>
 Jorge Soberon  <https://orcid.org/0000-0003-2160-4148>
 Diederik Strubbe  <https://orcid.org/0000-0002-2613-4985>
 Wilfried Thuiller  <https://orcid.org/0000-0002-5388-5274>
 Anna Traveset  <https://orcid.org/0000-0002-1816-1334>
 Tomáš Václavík  <https://orcid.org/0000-0002-1113-6320>
 James E. M. Watson  <https://orcid.org/0000-0003-4942-1984>
 Yolanda Wiersma  <https://orcid.org/0000-0003-4604-9240>
 Brendan Wintle  <https://orcid.org/0000-0002-4234-5950>
 Damaris Zurell  <https://orcid.org/0000-0002-4628-3558>

REFERENCES

- Berk, M., & Moon, L. M. (2016). Effects of a facilitated fee waiver program on participation in youth sports programs. *Journal of Park and Recreation Administration*, 34, 99–105. <https://doi.org/10.18666/JPra-2016-V34-I3-6434>
- Challed, D. G. (1996). Student fee waivers in public schools: Have fees created a private school within a public school. *Clearinghouse Review*, 30, 121.
- Else, H. (2018). Radical open-access plan could spell end to journal subscriptions. *Nature*, 561, 17–18. <https://doi.org/10.1038/d41586-018-06178-7>
- Himmelstein, D. S., Romero, A. R., Levernier, J. G., Munro, T. A., McLaughlin, S. R., Tzovaras, B. G., & Greene, C. S. (2018). Sci-hub provides access to nearly all scholarly literature. *eLife*, 7, e32822.
- Matthews, D. (2018). Is it time to nationalise academic publishers? *Times Higher Education*; 2 March 2018.
- Solomon, D. J., & Björk, B.-C. (2012a). Publication fees in open access publishing: Sources of funding and factors influencing choice of journal. *Journal of the American Society for Information Sciences*, 63, 98–107.
- Solomon, D. J., & Björk, B. C. (2012b). A study of open access journals using article processing charges. *Journal of the American Society for Information Science and Technology*, 63, 1485–1495.
- SPARC (2018). *Big deal cancellation tracking*. Scholarly Publishing and Academic Resources Coalition. Retrieved from <https://sparcopen.org/our-work/big-deal-cancellation-tracking/>
- Van Noorden, R. (2013). The true cost of science publishing. *Nature*, 495, 426–429.