

IMPACT FACTOR IS NOT THE EVIL FOR ECOLOGY AND CONSERVATION IN SOUTH AMERICA

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Lately the use of impact factor (IF) has received a series of critics (Buena-Casal and Zych 2012, Vanclay 2012) with scientists supporting the end of its use (Alberts 2013), although no concrete practical alternative has been proposed. On the other hand, Buena-Casal and Zych (2012) showed that nearly 90% of scientists agree that the IF is important for the evaluation of the scientific performance in their countries. Our aim here is to argue with recent critiques stating that in the field of ecology and biodiversity IF is impeding local conservation strategies and progress, especially in Latin America (Monjeau *et al.* 2013). We agree that IF has several flaws as stated by Mello *et al.* (2013) but, we believe that there is another side to the same coin. Indeed IF is not perfect, but it is a valuable and useful metric today to assess research quality, especially about biodiversity and conservation. Most of the critics pointed out are controversial and IF is still not yet replaceable (Brody 2013). We believe that Brazil's evaluation system is a good example of how IF can be used in a better sense. Brazilian research is the most successful one in Latin America greatly because the main research funding agencies such as Coordination for the Improvement of Higher Level Personnel (CAPES) and the National Council for Scientific and Technological Development (CNPq), use IF in many ways as an evaluation criteria (Loyola *et al.* 2012). For example, to evaluate graduate programs and researchers, CAPES uses a system, named QUALIS, where each journal is ranked according to its IF. In this system a journal may be ranked by specific committees into more than one category according to each discipline, but a journal

is ranked in comparison to others within the same discipline. This way, publications on a journal in the biodiversity committee will not compete (*e.g.*, for funding) with publications in a journal in the biotechnology committee as mentioned by Monjeau *et al.* (2013). However, if necessary, the Qualis system enable journals in different fields to be compared even when there is a huge difference between the average IF in each field. The Qualis system classifies journals according to eight categories (A1, A2, B1, B2, B3, B4, B5 and C) and in a simplified view the 25% of the journals with highest impact factor in a specific area are assigned to the A1 and A2 categories. For researchers evaluation in Brazil, unfortunately, quantity still is stressed, for example, in 2011, to the Ecology and Limnology Committee, two papers in journals with IF<0.90 outperforms one with IF>2.87 (Loyola *et al.* 2012). An alternative to the quantity "problem" already exists. The H index proposed by Hirsch (2005) considers both quantitative and qualitative aspects of scientists' publications. However, the question whether quantity is better or worse than quality for developing nations is still an open debate (Loyola 2013), and it does not mean that the use of IF should be ditched if quantity is the way to go. Although ecologists still have limited publications with high IF, the described IF's usage is a real incentive to improve science (Loyola *et al.* 2012). Focus in IF may be an uncertain risk or even dangerous, but necessary phase for a strong and applicable Science. Without a comparison metric two distinct journals in scientific reach and publication quality would be equivalent. In addition, for young inexperienced

scientists, especially in biodiversity research, local journals can be stepping stones to higher impact international journals, so local problems would not be left aside as stated by Monjeau *et al.* (2013). We agree that confronting regional challenges is important, but it is also possible to do this and still maintain its global visibility via international partnerships and good innovative ideal and methods in ecology and biodiversity research. For instance, the incentive for international cooperation (see: www.cienciasemfronteiras.gov.br/web/csf-eng) is key to increase scientific quality helping local demands. We believe a more sensible alternative to ‘abandon’ the IF (Monjeau *et al.* 2013) is to use it in a better sense and jointly with international cooperation, top-tier courses and innovative researches to empower locally relevant research.

Abandoning IF could cause science to remain internal, without international exchange of information and/or experience. Without IF, or

any type of journal or scientist ranking, science would decay in quality. We need to be charged to improve our quality.

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