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EDITORIAL

Remote Sensing in Ecology and Conservation: three years on

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In 2014, Wiley and the Zoological Society of London launched *Remote Sensing in Ecology and Conservation*, an open-access journal that aims to support communication and collaboration among experts in remote sensing, ecology and conservation science. Remote sensing was from the start understood as the acquisition of information about an object or phenomenon through a device that is not in physical contact with the object, thus including camera traps, field spectrometry, terrestrial and aquatic acoustic sensors, aerial and satellite monitoring as well as ship-borne automatic identification systems (Pettorelli et al. 2015). The primary goals of this new journal were, and still are, to maximize the understanding and uptake of remote sensing-based techniques and products by the ecological and conservation communities, prioritizing findings that advance the scientific basis of, and applied outcomes from, ecology and conservation science; and to identify ecological challenges that might direct development of future remote sensors and data products.

In October 2015, the first issue of the journal was published, with four other issues produced in 2016 and four to be published in 2017. As *Remote Sensing in Ecology and Conservation* is about to complete its second full year of publication and is working towards a first impact factor score in early 2019, the time has come to reflect on how the journal has done to date, what impact it has had, which niches it has successfully filled and where the journal is yet to meet its full potential. By sharing our successes and experiences so far with our contributors and readers, we hope to demonstrate how *Remote Sensing in Ecology and Conservation* has swiftly gained significant visibility and status among scientists and practitioners interested in natural resource management.

So what is our record so far? Since its inception and up until late December 2016, 24 peer-reviewed papers have been published in *Remote Sensing in Ecology and Conservation,* including 15 original research papers, three policy forums, five interdisciplinary perspectives and one review. As of the 31st of March 2017, average downloads per article was 1038 for articles published in 2015

Table 1. Total number of downloads (as at 31/3/2017) and altmetric scores for each article published in *Remote Sensing in Ecology and Conservation* in 2015 and 2016. The articles are listed in order of the highest to the lowest numbers of downloads.

Publication year	Article title	Type of contribution	No. of full text downloads	Altmetric score
2015	Will remote sensing shape the next generation of species distribution models?	Interdisciplinary perspectives	5141	55
2016	Framing the concept of satellite remote sensing essential biodiversity variables: challenges and future directions	Policy forum	3983	81
2016	Satellite remote sensing to monitor species diversity: potential and pitfalls	Review	3103	92
2015	Earth observation as a tool for tracking progress towards the Aichi Biodiversity Targets	Policy forum	3011	30
2015	Under the snow: a new camera trap opens the white box of subnivean ecology	Research	2068	41
2016	From imagery to ecology: leveraging time series of all available Landsat observations to map and monitor ecosystem state and dynamics	Research	1763	23
2016	Patterns of twenty- first century forest loss across a global network of important sites for biodiversity	Research	1712	104
2015	Testing the water: detecting artificial water points using freely available satellite data and open source software	Research	1586	30
2016	Is waveform worth it? A comparison of LiDAR approaches for vegetation and landscape characterization	Interdisciplinary perspectives	1563	19
2015	Life- history attributes and resource dynamics determine intraspecific home-range sizes in Carnivora	Research	1532	33
2015	High-resolution forest canopy height estimation in an African blue carbon ecosystem	Research	1502	46
2016	Wildlife speed cameras: measuring animal travel speed and day range using camera traps	Research	1287	27
2016	An invasive- native mammalian species replacement process captured by camera trap survey random encounter models	Research	1135	28
2016	Sea turtle nesting patterns in Florida vis-a- vis satellite-derived measures of artificial lighting	Research	1057	84
2016	Remote sensing of species dominance and the value for quantifying ecosystem services	Interdisciplinary perspectives	1017	12
2016	Integrating LiDAR-derived tree height and Landsat satellite reflectance to estimate forest regrowth in a tropical agricultural landscape	Research	988	48
2016	How do passive infrared triggered camera traps operate and why does it matter? Breaking down common misconceptions	Interdisciplinary perspectives	966	14
2016	The higher you go the less you will know: placing camera traps high to avoid theft will affect detection	Research	858	33
2016	The role of space agencies in remotely sensed essential biodiversity variables	Policy forum	843	18
2016	Observing ecosystems with lightweight, rapid-scanning terrestrial lidar scanners	Research	747	11
2016	A simple remote sensing based information system for monitoring sites of conservation importance	Interdisciplinary perspectives	616	1
2016	Upland vegetation mapping using Random Forests with optical and radar satellite data	Research	449	13
2016	Ultrasonic monitoring to assess the impacts of forest conversion on Solomon Island bats	Research	420	19
2016	Earth observation archives for plant conservation: 50 years monitoring of Itigi-Sumbu thicket	Research	377	12

(bearing in mind that only six contributions were published that year), and 899 for 2016. Table 1 provides the total number of downloads as of the 31st of March 2017 for each article published in *Remote Sensing in Ecology and Conservation*. The global reach of the journal is also reflected in its readership, as shown in Figure 1.

Are these papers impactful? Have these papers been cited? If so, have they been cited in both remote sensing and ecological and conservation journals? The short answer is yes, yes, and yes. In 2015 alone, our papers received a total of 10384 viewings with an average of 1038 accesses per article, placing *Remote Sensing in Ecology and Conservation* fourth out of all Wiley journals for the top full-text download accesses per article. Based on available altmetric data for the 24 contributions published in 2015 and 2016, the average altmetric score was 36 at the end of March 2017, with several articles achieving altmetric scores of 80 or above (Table 1).

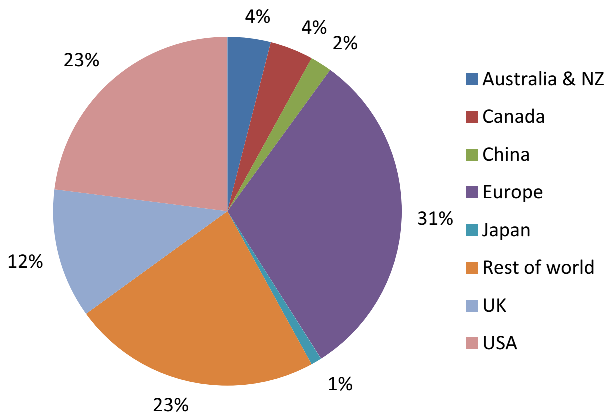

Figure 1. The geographic distribution of full text downloads of *Remote Sensing in Ecology and Conservation* in 2016.

Our citations records for these contributions are equally strong given our young history. According to Scopus, our 2015 and 2016 papers have so far been cited 63 times (or 133 times according to Google scholar) in 37 peer reviewed journals, including *Methods in Ecology and Evolution, Journal of Applied Ecology, Biodiversity and Conservation, Remote Sensing of Environment, Progress in Physical Geography, Ecology and Current Opinion in Environmental Sustainability*. Interestingly, our most popular contributions have by far been Policy Forums and Interdisciplinary Perspectives, with one Perspective and a Policy Forum published in late 2015 cited over 10 times by the end of March 2017. It is important at this stage to acknowledge that Scopus has a different coverage to Clarivate Analytics (who produce impact factor scores), and that the numbers presented relied on specific data requests, which means that some citations may have been

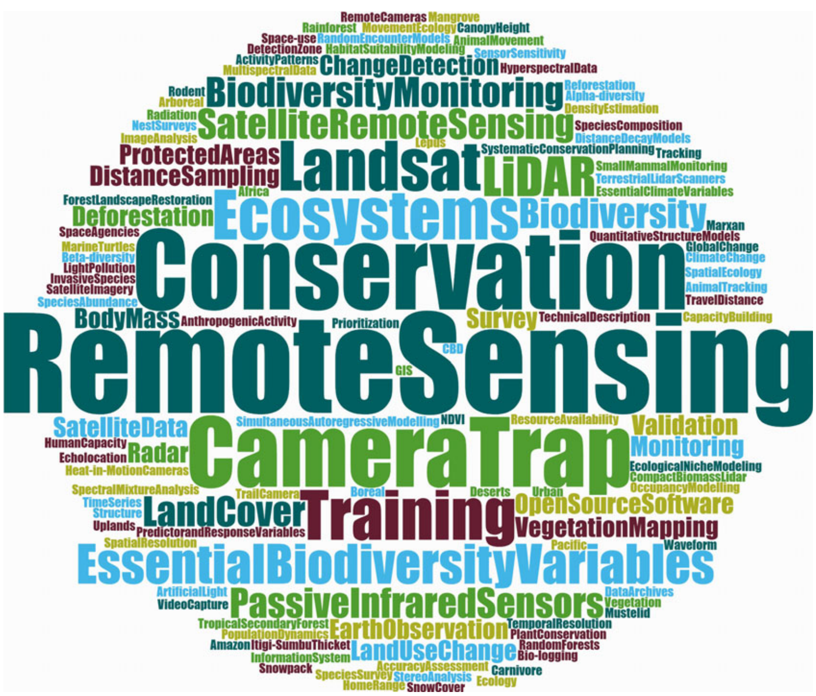

Figure 2. Keyword wordle, based on the keywords used by authors to describe their contributions published in *Remote Sensing in Ecology and Conservation*.

missed. As such, these data should be interpreted as indicative, and obviously a different set of data will be used to generate the first impact factor for *Remote Sensing in Ecology and Conservation*.

What can we learn from these statistics and reports? Without doubt, there was a need for a publishing platform that capitalizes on the growing set of interdisciplinary research interests shared by the remote sensing, ecological and conservation communities, and indications so far are that *Remote Sensing in Ecology and Conservation* has successfully engaged many members of these communities (Fig. 2). Launching a new journal in the context of a competitive publishing environment was always going to be difficult, especially as new journals cannot use impact factors to attract top-notch contributions. Despite these challenges, *Remote Sensing in Ecology and Conservation* has managed to publish regular, high-quality issues that have attracted the attention of, and recognition from, the audiences it seeks to enthuse. As we build up a track record of publishing excellent science that is reaching its intended audience, and as the prospect of getting our first impact factor approaches, we know that our efforts have paid off, and that our journal is here to stay.

But we are still far from where we want to be. Our contributions so far have mainly targeted the terrestrial realm, and primarily relate to the use of satellite remote sensing data. Thanks to two successful calls for special issues and the recent appointment of several new editorial board members, we have recently seen an increase in the number of submissions capitalizing on the use of unmanned aerial vehicles and camera traps to address ecological and conservation issues. Going forward, we will be redoubling our efforts to engage with communities working with marine and freshwater ecosystems and scientists interested in acoustics. Growing submissions in these areas is a priority for the years to come, as is further supporting knowledge transfer among researchers and practitioners involved with different remote sensing technologies. But above all, our top priority remains providing a platform where people can publish excellent science important to the ecology and conservation of biodiversity. Ultimately, we believe the concept of remote sensing for theoretical and applied ecological research is innovative and exciting; we are delighted to reflect this through the manuscripts we publish and look forward to extending our reach to encompass diverse technologies across environments.

Reference

Pettorelli, N., H. Nagendra, R. Williams, D. Rocchini, and E. Fleishman. 2015. A new platform to support research at the interface of remote sensing, ecology and conservation. *Remote Sens. Ecol. Conserv.* **1**, 1–3.

