

1 Taking steps towards diversifying priority setting research 2 in conservation science: reflections on de Gracia (2021)

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39 There is growing awareness across many branches of science of the need to decolonize research
40 practices and curricula (Aikenhead, 2006; Radcliffe, 2017), and the fields of ecology and
41 conservation are no exception (Baker *et al.*, 2019). However, while conservation scientists and
42 practitioners from the Global North are gradually waking up to the fact that local knowledge and
43 agency – including that of indigenous people – are essential for social justice and to achieving
44 conservation outcomes, the road to decolonizing conservation science remains a long one (Baker
45 *et al.*, 2019). As a discipline, conservation has a long colonial history and remains heavily
46 dominated by institutions in the Global North when it comes to publications, funding and research
47 networks (Maas *et al.*, 2021).

48 In a letter drawing attention to the need to decolonize conservation science, de Gracia (2021)
49 focuses on how exercises that aim to set global conservation priorities are heavily biased in their
50 representation towards researchers from the Global North. This despite the fact that many of
51 today's most pressing conservation challenges are faced by countries and people in the Global
52 South. To make this point, de Gracia identifies Jucker *et al.* (2018) as an example of research
53 that perpetuates the power dynamics and priorities of researchers in the Global North. We thank
54 de Gracia for voicing this issue and for giving us the opportunity to contribute to this important
55 conversation. We strongly encourage others to read de Gracia (2021) and related perspectives,
56 which provide much needed context on why we should strive for better representation in
57 conservation science. Here we take this opportunity to reflect on some of the limitations of our
58 own work, while also clarifying a few points made by de Gracia (2021) in reference to Jucker *et*
59 *al.* (2018) and priority setting research more broadly.

60 **Broadening participation in priority setting research**

61 de Gracia's (2021) central message is that certain groups – particularly those from the Global
62 South and those outside traditional academic circles – rarely get a seat at the table when
63 conservation priorities are set. We entirely agree. This disparity is captured clearly in a recent
64 meta-analysis by Dey *et al.* (2020), who report that only around a third of priority setting exercises
65 in ecology and conservation involve resource users, and almost none engage with indigenous
66 organizations (although most do include participants from governmental and non-governmental
67 organizations outside academia). It is easy to see why de Gracia chooses Jucker *et al.* (2018) as
68 a specific example of this broader issue. This project was led by a group of conservation scientists
69 largely based at a single institution, the University of Cambridge, which in many ways epitomizes
70 the power imbalance between different regions of the globe. Lack of broad institutional and
71 societal representation is certainly a valid criticism of our work, and a limitation which we ourselves

72 drew attention to in our paper. However, de Gracia's letter does overlook three important aspects
73 of Jucker *et al.* (2018): (i) our goal was not to set new conservation priorities, but to develop a
74 method to re-evaluate existing ones; (ii) the approach we developed actively sought to increase
75 representation (albeit imperfectly); and (iii) despite our shared institutional affiliation, as authors
76 we actually represented a diverse group of early career researchers (ECRs).

77 First, Jucker *et al.* (2018) was not a conventional priority setting exercise, as the paper did not aim
78 to identify any new priority research areas. Instead, what motivated our work actually echoes
79 several of de Gracia's general criticisms of current priority setting exercises. Recent years have
80 seen priority setting research become increasingly popular in the environmental sciences (Dey *et al.*,
81 2020), with at least 35 such papers being published in the decade between 2006–16 (see Fig
82 S12 in Jucker *et al.* 2018). However, continuously identifying new areas of priority research might
83 not necessarily be the best way to advance conservation, particularly if no attempt is made to
84 determine how the broader conservation community judges their relative importance. We therefore
85 set out to develop a framework to revisit existing priority questions and identify key knowledge gaps
86 that remained. We used the 100 questions posed in Sutherland *et al.* (2009) as our case study, as
87 it was one of the first exercises of its kind explicitly focused on conservation. Using these as a
88 reference, we asked two basic questions: (i) how much effort had gone into addressing each of the
89 100 questions over the past decade? and (ii) are these topics still perceived as highly relevant to
90 achieving global conservation goals? We did this using a two-pronged approach: a literature review
91 to estimate effort and an online survey to assess relevance (the latter of which is the focus of de
92 Gracia's letter). We acknowledge that by choosing these specific 100 questions as our reference,
93 we implicitly legitimize them, even if in our paper we were careful to highlight lack of broad
94 representation as a major limitation of Sutherland *et al.* (2009). However, it is important to keep in
95 mind that at its heart ours was a methodological exercise – a first attempt to develop a framework
96 for re-evaluating existing priority topics across any field of research.

97 Second, by using an online survey to assess relevance, our approach aimed to address de
98 Gracia's major criticism of priority setting exercises: lack of representation. Our survey reached
99 222 conservation scientists and practitioners, five times as many as those who originally
100 contributed to Sutherland *et al.* (2009). This included respondents from the Global South (South
101 America, Africa and Asia, excluding Japan), which, despite being a minority (17%), generally
102 tended to assign relevance scores that were broadly consistent with those of respondents from
103 Europe, North America and Australia (Pearson's correlation coefficient = 0.47, $P = 0.002$ for
104 questions with at least 5 respondents from both groups). This is not to say that our approach was

105 perfect, nor that it went far enough in addressing the issue of representation. Beyond the obvious
106 geographic biases in the survey which de Gracia (2021) focuses on, there are also less visible
107 ones linked to age, gender, ethnicity, disability, socio-economic status and education which could
108 have affected our results. These are important limitations of our work which we documented and
109 discussed in our original paper. However, while acknowledging these limitations, our approach
110 did at least take a first step towards broadening participations in priority setting exercises.

111 Third, while the authors of Jucker *et al.* (2018) were all based at the University of Cambridge and
112 its Conservation Research Institute (UCCRI), we did not reflect the typical make-up of a priority
113 setting group. For one, at the time this project was undertaken, all 45 authors were ECRs (PhDs,
114 Postdocs or Research Fellows), not established experts in our respective fields. For practical
115 purposes (including funding constraints) we needed to restrict participants to those based in
116 Cambridge, hence the strong institutional bias. We were nonetheless conscious that the
117 composition of the team was critical, as it strongly influences how collaborative and
118 interdisciplinary research is perceived, theorized and implemented (Aijazi *et al.*, 2021). To
119 encourage inclusivity and participation, diverse voices from academia and NGOs were consulted
120 during the design phase of the project. This included ECRs from across disciplines in the natural
121 and social sciences – Geography, Land Economy, Law, Plant Sciences and Zoology – who
122 participated in this planning process. Collaboration in the project emerged from an open call to
123 ECRs, irrespective of ethnicity, race, gender, or area of expertise. Of the 45 authors, $\frac{2}{3}$ were
124 women, and while certainly not a majority, several were from the Global South, including one of
125 the two project leads. There are of course many factors beyond age, gender and ethnicity which
126 determine who participates in priority setting research, and we cannot (and did not) claim to
127 represent everyone with a stake in the conservation of the world's biodiversity. But we did make
128 a concerted effort to broaden this group.

129 **The future of priority setting research in conservation**

130 Reflecting on the need to broaden participation when prioritizing conservation objectives, de Gracia
131 (2021) ultimately comes to the conclusion that "*until this work is seriously undertaken, articles such*
132 *as Jucker et al. are harmful and inappropriate*". A deeper debate is needed about how we tackle
133 the issue of representation in conservation, and whether we should accept to make incremental
134 progress while acknowledging limitations (as was the spirit of Jucker *et al.* 2018) or if a more radical
135 shift in practices needs to occur first. What we certainly agree with is that we can and should do
136 more to narrow the representation gap. Thinking practically, one thing we can do is set clear
137 authorship guidelines that ensure people from diverse backgrounds are given the opportunity to

138 participate in and lead priority setting research. This is similar to the model that the
139 Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES)
140 follows when nominating contributing authors (although this too has been criticized for not going far
141 enough; Báldi & Palotás, 2021). Language is another important barrier to participation which we
142 can take concrete steps to remove (Amano *et al.*, 2016), although it is by no means the only one.
143 For instance, subsequent work led by authors who contributed to Jucker *et al.* (2018) looked to
144 canvass a broader group of people by translating their questionnaire into five languages (Rose *et*
145 *al.*, 2018). Finally, it is important that we think of diversity and representation holistically. de Gracia
146 (2021) puts a strong emphasis on the Global North-South divide. But diversity and inclusion are
147 much more complex than just geography. Opportunities to contribute to decision making vary
148 dramatically not just between the Global North and South, but also within them, due to factors such
149 as age, gender, ethnicity, religion, access to education, disability and socio-economic status. In
150 striving for greater geographic representation, we must not lose sight of this fact.

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