

Is ecology different when studied with citizen scientists? A bibliometric analysis

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Abstract

Ecology is broad and relies on several complementary approaches to study the mechanisms driving the distribution and abundance of organisms and their interactions. One of them is citizen science, the co-production of scientific data and knowledge by non-professional scientists, in collaboration with or under the direction of professional scientists. Citizen science has bloomed in the scientific literature over the last decade and is being increasingly popular. We used a bibliometric analysis to study whether associating the public to ecological research changes the making of ecology and the nature of questions it asks. We analysed keywords and abstracts of 41,105 articles published the last ten years, disentangling CitSci articles (those explicitly referring to citizen science) and non-CitSci articles. Keyword co-occurrence and thematic map analyses revealed that CitSci articles primarily focused on biodiversity and climate change in a more descriptive way than non-CitSci articles which were more likely to address theoretical questions in ecology. Roughly, citizen science in ecology addressed patterns, whereas non participatory research dug further into mechanisms. Biodiversity also appeared as a more central theme in the CitSci corpus, where it was more systematically associated with other keywords. Our study indicates that should the surge of citizen science approaches in ecological scientific literature have change the type of ecological inquiry, this thematic change is marginal. Still, we provide evidence that specific research questions individualized from ecological CitSci thus supporting the view that citizen science is becoming an independent field of investigation, and not only a peculiar methodological approach to ecological research.

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