
Citizen scientists of a national garden butterfly survey shift to biodiversity-friendly garden practices with multi-annual participation

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Abstract

By monitoring their local environment through citizen science (CS) programs, participants increase their knowledge and awareness of the surrounding biodiversity. However, whether improved knowledge and/or such type of experience of nature may lead to environmentally-friendly behaviors is still intensely debated.

Here, we explored whether short- to long-term participation to the French Garden Butterfly Observatory is associated to changes in gardening practices. Specifically, using annual information provided by participants (> 2 350, from 2006 to 2013), we quantified gardening practices through three different index: 1) garden nectar resources, 2) garden naturality, and 3) use of pesticides.

We found quantitative evidence, at a national scale, that gardening practices shifted with participation, with garden nectar offer and naturality increasing and the use of pesticides decreasing. Other covariables (e.g. garden area and urban context) not only affected gardening practices but also mediated the effects of participation on practices. This confirms the relevance of other factors as co-determinants of participants' behaviors.

This study reveals that from participation to a biodiversity-focus CS program can emerge biodiversity-friendly behaviors, and highlights CS not only as a way to collect ecologically

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sound data on unprecedented scales but also as a direct tool to locally improve the environment for biodiversity. Further research is still needed to understand and enhance the potential of CS for promoting biodiversity-significant behaviors.