

W1 Citizen Science: The impacts of 'next generation' citizen science programs

Objective(s)

This project will improve Melbourne Water's understanding of how the transition to digital platforms for volunteer environmental monitoring influences the participation and retention of volunteers.

Why this research is important

Volunteers are increasingly important to biodiversity and environmental monitoring in Australia, given the urgent need for extensive data sets to inform the management of sites and species. In the last few years, a key trend has been the development and use of smartphones and internet technologies as the interface for data collection and capture, data storage, data analysis and review, and communication with organizers and other participants.

Melbourne Water is currently increasing its commitment to such 'next generation' digitally-mediated citizen science programs. Whilst there has been some research to date that considers how to do this, there has been relatively little research into the impacts of digitalisation on the experiences of volunteer participants in these programs. An understanding of the technologically mediated experiences of citizen scientists can inform the design of citizen science programs and their technological interfaces, as well as strategies for recruiting, supporting and retaining participants.

Contribution to Melb. Water research priorities

- Key Evaluation Question 4a: To what extent are interventions appropriate and effective for achieving outcomes?
- Regional Performance Objective 37: Participation rates in education, capacity building, incentive programs and citizen science activities have increased and enable greater levels of environmental stewardship for our waterways.

Approach

The research project employs a case study approach, with detailed and intensive focus on two citizen science programs in Australia: Frog Census (a citizen science initiative of Melbourne Water) and Beach Nesting Birds (a citizen science initiative of Birdlife Australia focused on monitoring Hooded Plovers).

Data has been collected through three primary methods: i) semi-structured in-depth interviews with CS program participants and program staff (covering a diversity in roles, years of experience in citizen science,

degrees of engagement in CS, age and gender); ii) participant observation (accompanying different participants in CS programs, participating in and observing CS activities alongside them); and iii) content analysis (of documents, communications and other materials generated by the two CS programs).

Key Outputs

- Journal Paper on the knowledge practices of biodiversity citizen scientists.
- Journal paper on ways are digital technologies reshaping the participation of volunteers.
- Journal paper on how volunteers care about and for the data they produce.
- MWRPP Technical Report 24.8, translating research findings on the experiences of citizen scientists into recommendations to the business.
- Short, animated videos with voice-over that summarize key research findings, designed to communicate the research to study participants, other participants in citizen science programs, citizen science practitioners, and researchers

Expected benefits

- Improved understanding of the diverse contributions of citizens scientists to the protection of ecosystems and species, including and beyond the collection of data.
- Improved understanding of the role of digital tools in facilitating the pathway from a citizen scientist's field observation to formalised evidence, including the ways in which records are made valid, authoritative, credible, and salient.
- Development of protocols for the use of digital technologies.
- Improved volunteer programs that support the desired experiences of volunteers as well as their contributions to protecting the health of waterways.

Project teams

University Of Melbourne: Stephanie Lavau (Primary supervisor), Debbie Gonzalez Canada (PhD student), Darren Bos. Melbourne Water: Rhys Coleman, Slobodanka Stojkovic, Yvonne Cabuang, Leesa Riley, Jane Petch, Trish Grant.