

Soundscapes to Landscapes: The Power of Citizen Scientists in a Bioacoustics Monitoring Workflow

Rose L. Snyder

rsnyder@pointblue.org

The Soundscapes to Landscapes (S2L) project, based in Sonoma County, CA, seeks to advance landscape-level monitoring of bird diversity and soundscape components (e.g., human sounds, animal sounds, natural sounds) by leveraging the power of citizen science and bioacoustics. This publication reports on lessons learned from project management and citizen science engagement within the S2L project.

Between 2017-2021, S2L engaged 259 citizen scientists, who contributed a total of 8,390 hours participating in a wide range of activities predominantly relating to field work (deploying and retrieving sound recorders) and online bird call identification.

We found that word-of-mouth and personal connections were the best strategies for recruitment and retainment of citizen scientists. Levels of engagement among citizen scientists varied, and community volunteers who participated in more than one task generally contributed more time to the project overall.

Undergraduate students who received academic credit through internships were a critical group to engage, were pivotal to field work success, and ultimately contributed nearly half of all volunteer hours. We leveraged their knowledge in topics of social media, bird identification, and Geographic Information Systems (GIS) to contribute to the project more effectively.

Advanced birders were another group of citizen scientists who were critical to the success of the project. They collected 75% of 51,906 bird vocalization clips that were used to train a computer model to identify 54 bird species in all 12,431 hours of audio recordings.

Although S2L was focused on sampling at the county scale, our approach of engaging undergraduate students and community volunteers in citizen science could be scaled to include sampling over larger regions and longer time spans.

Main Points

Over five years, 259 volunteers contributed 8,390 hours to the S2L project

Community volunteers who participated in more than one task invested more time in the project

College students were a critical group of citizen scientists, contributing half of all volunteer hours

Advanced birders collected 75% of 51,906 bird call clips

S2L's countywide model can be scaled to larger areas and longer time periods

Snyder, R., Clark, M., Salas, L., Schackwitz, W., Leland, D., Stephens, T., Erickson, T., Tuffli, T., Tuffli, M. and Clas, K. 2022. [The Soundscapes to Landscapes Project: Development of a Bioacoustics-Based Monitoring Workflow with Multiple Citizen Scientist Contributions](#). *Citizen Science: Theory and Practice*, 7(1), p.24.