

Assessing the feasibility of using citizen science for songbird monitoring to evaluate Four Forest Restoration Initiative treatment effects



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Introduction

The Four Forest Restoration Initiative (4FRI) is a Collaborative Forest Landscape Restoration Program spanning 4 National Forests (NF) in Arizona (Coconino, Kaibab, Apache-Sitgreaves, Tonto).

Songbird monitoring objectives

- Quantify songbird community metrics (species richness, species evenness, community dynamics, multi-scale occupancy) within project treatment areas and across the National Forests.
- Evaluate multi-scale habitat relationships with abundance of select songbird species with respect to treatment effects.

Locations

- Coconino NF (45 grids, 576 points)
- Kaibab NF (32 grids, 316 points)

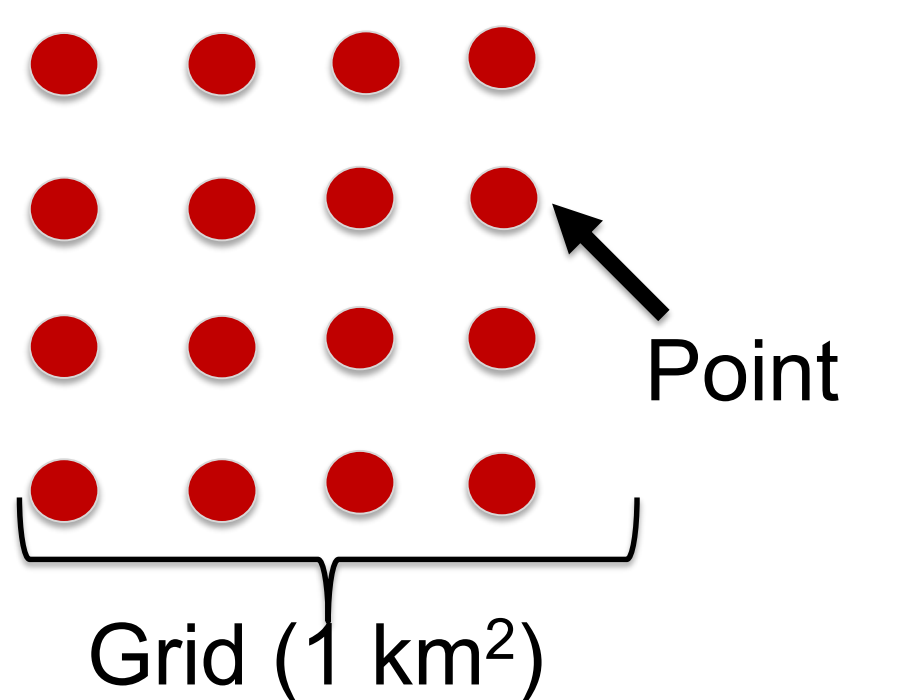


Figure 4. Pre-treatment data were collected at IMBCR bird grids (Pavlacky et al. 2017)

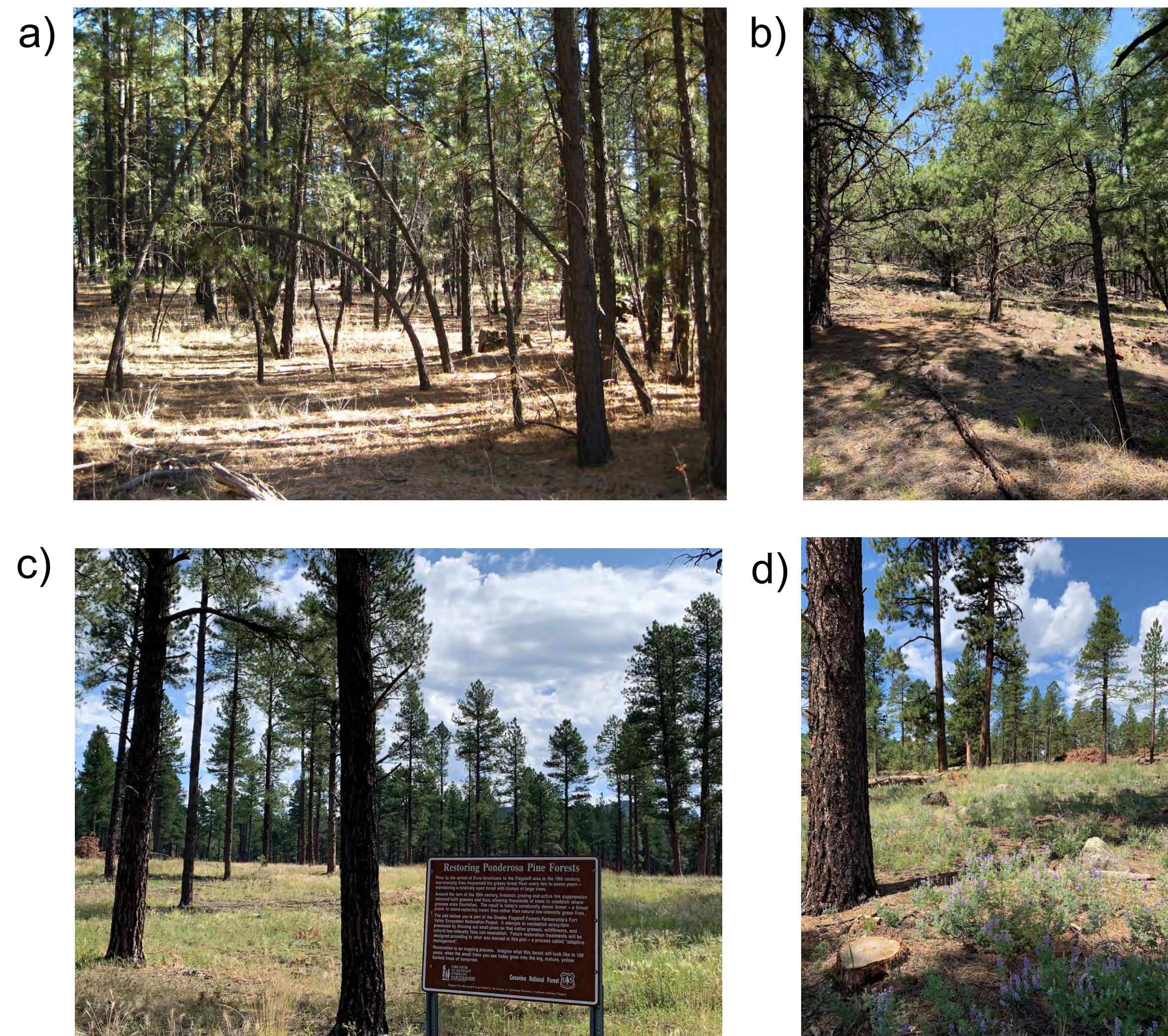


Figure 1. Forest pre-treatment areas have dense understory vegetation (a and b) compared to treated areas characterized by groups of trees separated by space and cleared understory (c and d).

Management need and approach

An assessment of citizen science bird monitoring feasibility and planning for a pilot study is needed for making decisions on integrating citizen science into the songbird monitoring protocols due to uncertainty in future funding.

We are using experience from a citizen science bird project in the Sky Islands (Ganey et al. 2017, Miller et al. 2018) and in multi-species monitoring programs (Sanderlin et al. 2014) to develop a pilot study.

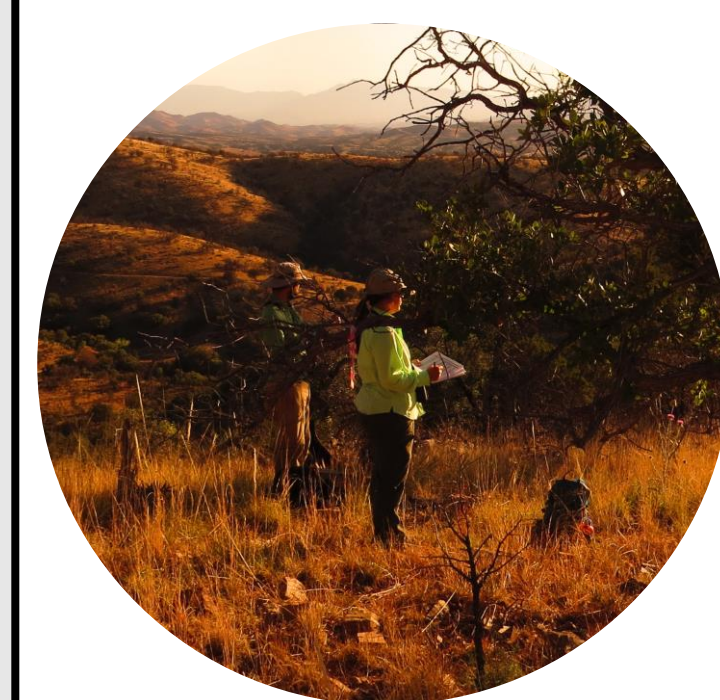


Figure 2. Double-observers from the Sky Island bird study were used to account for differences in detection among observers.

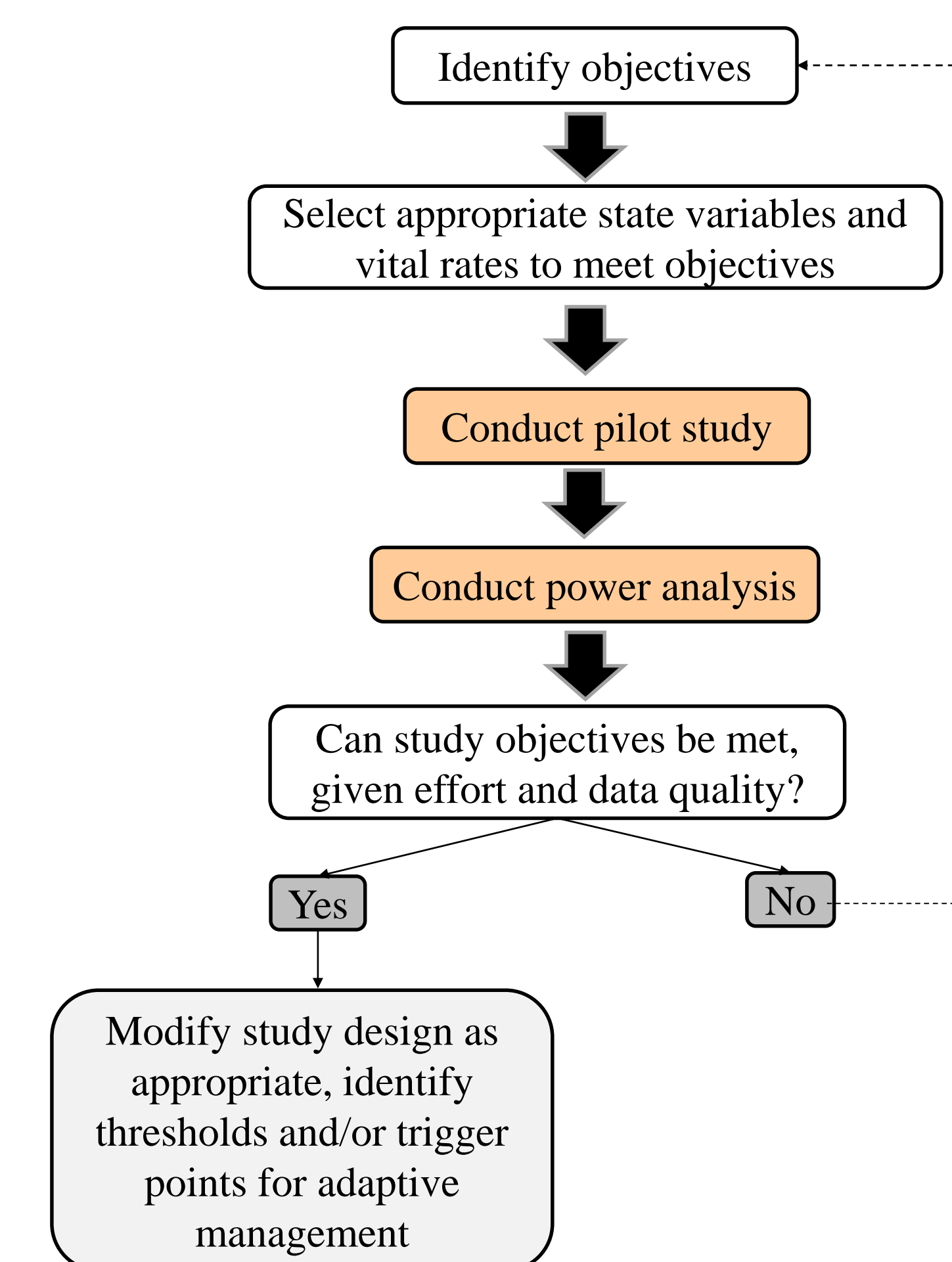


Figure 3. General citizen science monitoring study design framework (Sanderlin et al. *Accepted*). Orange boxes indicate the steps we are at in the process.

Deliverables

- Agreement(s) with local partner group(s) of citizen scientists
- RMRS General Technical Report with:
 - Pilot study design to gauge workload and feasibility of objectives
 - Identification of expected volunteer workload and protocol modifications
 - Development of training and outreach materials
 - Identification of partners to contribute sampling equipment

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Literature cited

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