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Abstract

1 Introduction

2 Materials and Methods

2.1 Occurrence information

2.2 Diversity model

This model is based on the Jolly-Seber model for capture-mark-recapture data CITATION. There are three major parameters to this model: survival probability ϕ , recruitment probability γ , and sampling probability p . Implicit in this model is also removal probability $1 - \phi$.

ϕ_{t-1} is the probability of surviving to time t from $t - 1$ given presence at time $t - 1$. Survival probability is a function of both extinction and extirpation.

γ_t is the probability of first appearing at time t given absence at time $t - 1$. Recruitment is a function of both origination and colonization.

p_t is the probability of observing y_i at time t if it is present.

$$\begin{aligned} y_{i,t} &\sim \text{Bernoulli}(p_t z_{i,t}) \\ z_{i,t} &\sim \begin{cases} \text{Bernoulli}(\gamma_1) & \text{if } t = 1, \text{ and} \\ \text{Bernoulli}(z_{i,t}\phi_{t-1} + (1 - z_{i,t})\gamma_t) & \text{if } t > 1. \end{cases} \end{aligned} \quad (1)$$

3 Results

4 Discussion

Acknowledgements

References