Optimizing corridor placement using simulated annealing

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how many different chapter ones will i have hmmm

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1 Introduction

Human activity has rapidly reshaped the face of Earth's surface, leaving fragments of patchy habitat. Although there is no shortage of debate as to the effects of fragmentation *per se* on biodiversity and ecosystem function (**cite?**), it is generally accepted that the combination of habitat and ensuing subdivision produce negative outcomes for ecosystem function and services (**resasco?** review).

In order to mitigate the consequences of landscape change on ecosystems, developing landscape *corridors* has seen much attention in the last several decades. Bit more evidence for corridors here. But still, given the spatter of fragments in a landscape, where should ecologists choose to use their limit resources to build a corridor?

Here we propose to answer that question by proposing an algorithm to estimate the landscape modification that results in optimizing a specific ecosystem process (in this paper maximizing the time until extinction of a metapopulation, although the algorithm and associated software can be generally applied to any process-based model with a quantifiable target state).

Although algorithms have been proposed for this (**peterman?** etc), they are focused on finding the where the paths of least existance for a given species is given data on that species dispersal.

2 An algorithm for optimizing corridor placement

3 Simulation of data for testing the algorithm

3.1. Simulation of occupancy dynamics

3.2. Simulation of landscapes

4

Results

Some type of performance fig vs. raster size and budget figure

5

Discussion