

Project Proposal

I propose an application of max flow algorithms to a new problem of finding the best continuous parcel of land to buy for the purpose of species conservation. We can formulate the problem as such: we are given a graph, where the nodes represent areas of land that could be purchased, and edges indicate that two areas are adjacent. Each node has an associated cost, and a score, indicating the number of species it contains. The goal is to find a continuous region with low cost and a high number of species, or the best such region if possible.

I propose utilizing existing max/min flow algorithms to solve this problem optimally if possible, or at least produce good potential solutions.

This proposal is an extension to the following paper:

Nahid Jafari, Clinton T. Moore, Jeffrey Hepinstall-Cymerman. "Solution alternatives to achieve parcel connectivity in the dynamic reserve design problem." AAI, 2015.