

Do Ski Areas Negatively Effect Biodiversity of a Forest?

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Background

Many Vermonters enjoy the winter activity of skiing. Part of what makes it so fun are the glades trails, sections of forest near a ski area where the understory has been cleared out in order to make the sport more enjoyable. The understory of a forest is important habitat for the survival of many species. Cutting wide ski trails in main resort areas also creates a large amount of edge habitat and can cause fragmentation of important interior forest blocks.



The Forest through the Trees: Skiing the GBA's Glades

These glades established by the Granite Backcountry Alliance are the perfect place to seek out some Example of gladed area

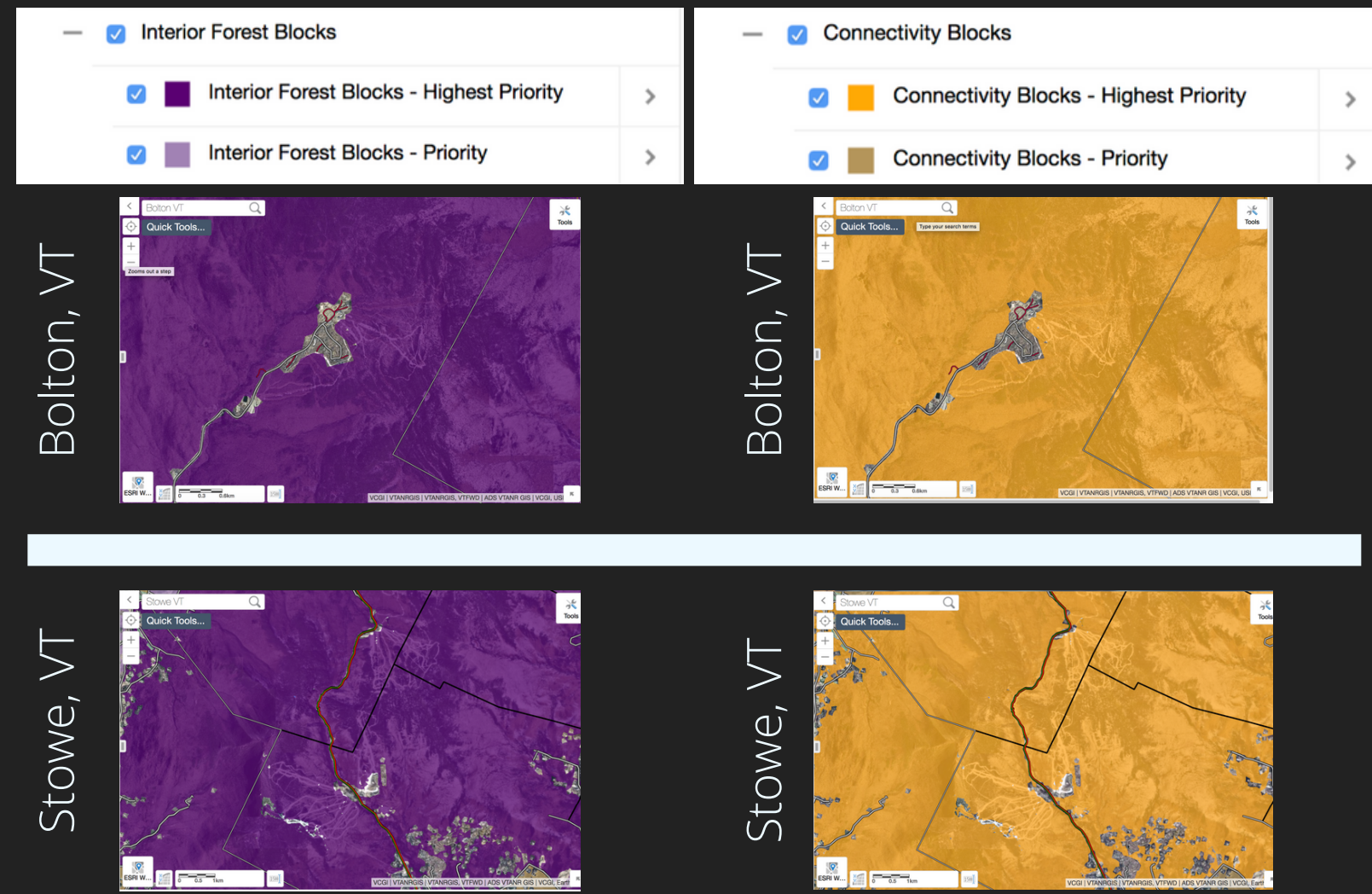


What Do Ski Trail Ratings Mean?

Ski resorts use colors and symbols to indicate the difficulty of ski trails. Learn what the standard symbols are in North America or Europe. Fragmentation by wide trails

Motivation

Vermont ANR classifies most of the states skis areas as located in interior forest blocks as high priority interior forest blocks and connectivity blocks. This means they are critical areas for many of VT's species. Below are Images from VTANR's Biofinder:



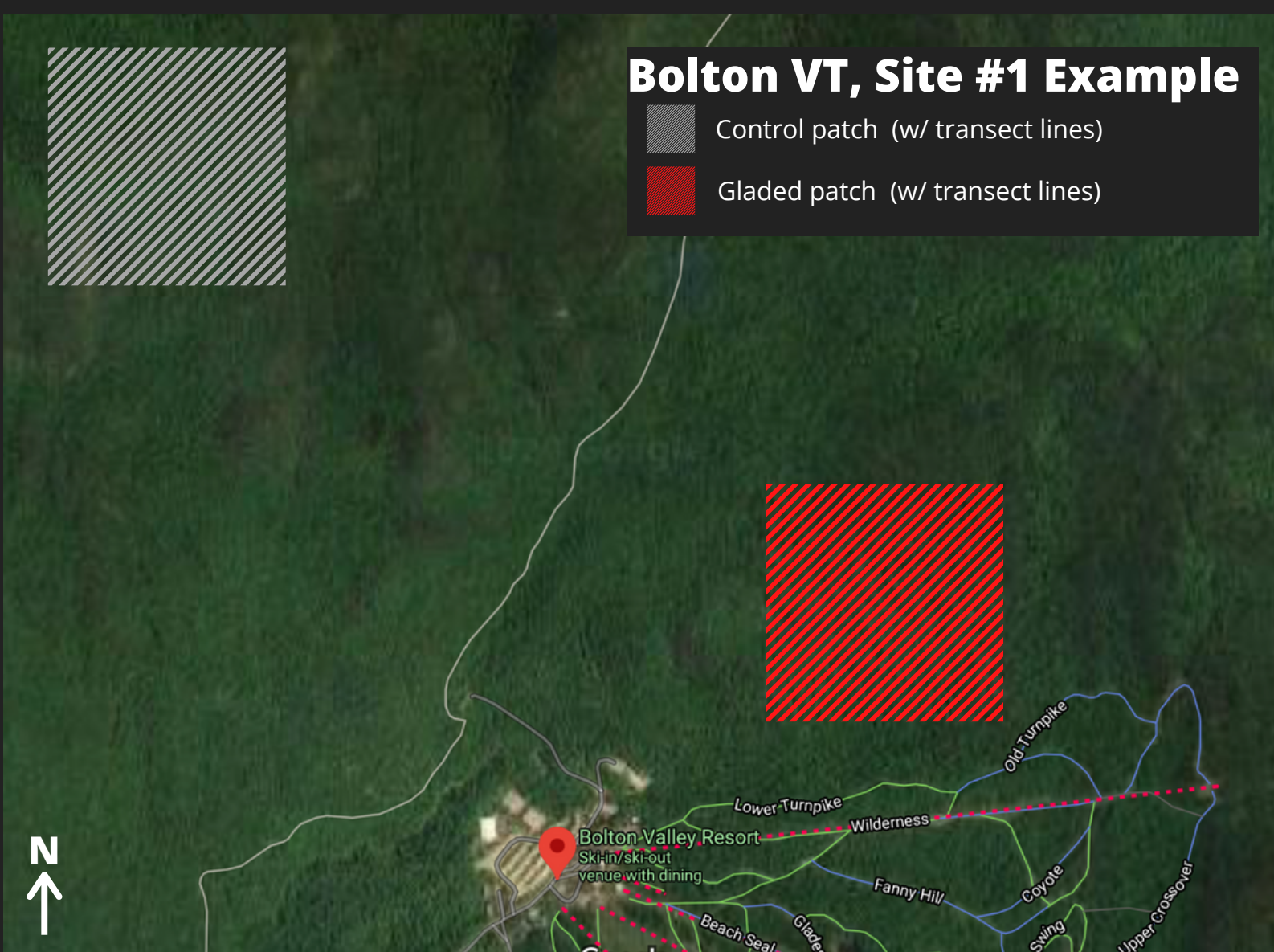
Hypothesis

There is a negative association between cutting glades and ski trails in a forested area for recreational use and the amount of biodiversity in those areas.

Study Design

We will conduct a field experiment in two locations, the Bolton Backcountry/Nordic area (which represents a glades area) and the Stowe ski resort (which represents locations with wide ski runs). In each location, there will be two patches of land where biodiversity data is collected. One patch will be in the altered landscape and the other will be a control patch in the adjacent land.

Biodiversity data will be collected by a series of transects in each patch that count the number of 1 focal tree species, 1 focal shrub species, 1 focal avian species, and 1 focal mammal species.



Intended Analysis

Given that our response variable (number of species observed) is continuous, and our independent variable (treatment: glades area, glades control, trail area, and trail control) is categorical with >2 groups, the data that is collected will be analyzed using a two-factor Analysis of Variance Analysis (ANOVA).

The results from the ANOVA test will help us determine whether there is a relationship b/w the different types of altered landscape and the number of each focal species observed in that area. As most ski areas in the Northeast are located in interior forest blocks, our inference will be limited to the Northeast region of the United States or locations with similar biomes.