USING LANDSCAPE SCALE CONSERVATION DESIGN TO PRIORITIZE TRANSPORTATION INFRASTRUCTURE

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Climate Resilience

- Habitat Loss
- Forest Fragmentation
- Climate Change

Fragmented Forest Blocks in Hartland, VT

From Union of Concerned Scientists – Confronting Climate Change in the Northeast (NECIA 2007)
State-level Connectivity

Highest Priority
Surrounded by buffers and alternative routes
Connectivity Blocks
Vermont Conservation Design

- Connected landscape
  - Forested Network
  - Riparian Systems
  - Physical features

http://biofinder.vermont.gov/
CONSERVING NATURE’S STAGE

The theory behind, and the challenges of, conserving nature's stage in a time of rapid change
Is your land trust interested in...

The science of climate resilience?
Learning how your conservation work contributes to a climate resilient landscape?
Communicating the importance of climate resilience?
Figure 1. Location of regions with 5% beech (Fagus) pollen and 5% hemlock (Tsuga) pollen (in the upper row maps) and 20% southern pine (Pinus) pollen and 20% oak (Quercus) pollen (in the lower row of maps) at 12,000, 8,000, 6,000, and 500 yr B.P. with the stippled area in the north showing the shrinking Laurentide ice sheet from 12,000 to 6,000 yr B.P. Source: Modified from Plates 1 and 2 in Jacobson, Webb, & Grimm 1987.
Landscape Diversity Units

Landscape Diversity Units are defined based on elevation zone (a surrogate for climate), bedrock geology, surface geology, and topography, as shown here. Each spot on the landscape is classified this way. We identified about 1,400 Landscape Diversity Units, or unique combinations of elevation, bedrock type, surface geology type, and landform, throughout Vermont.
calcareous bedrock
coarse sediment
fine surficial sediment

55%
15%
A STRONGER NETWORK

Bringing connectivity & physical landscapes into your transportation design
Interior Forest
Riparian Wildlife Connectivity & Interior Forest
Physical Landscape Diversity
Connectivity Blocks

- Highest Priority Connectivity Blocks
- Priority Connectivity Blocks
Wildlife Road Crossings
Vermont Conservation Design - Prioritization
Thank you… Questions?