

Connectivity Blocks

Landscape connectivity refers to the degree to which blocks of suitable habitat are connected to each other (Noss and Cooperrider 1994). Connectivity Blocks are the network of forest blocks that together provide terrestrial connectivity at the regional scale (across Vermont and to adjacent states and Québec) and connectivity between all Vermont biophysical regions. There is a high level of connectivity within individual forest blocks. The proximity of one forest block to another, the presence of riparian areas, and the characteristics of the intervening roads, agricultural lands, or development determine the effectiveness of the network of Connectivity Blocks in a particular area.

Ecological Functions

A network of Connectivity Blocks allows wide-ranging animals to move across their range, allows animals to find suitable habitat for their daily and annual life needs, allows young animals to disperse, allows plant and animal species to colonize new and appropriate habitat as climate and land uses change, and contributes to ecological processes, especially genetic exchange between populations (Austin et al. 2004). Maintaining the landscape connectivity function requires both Connectivity Blocks and Riparian Corridors, especially in highly fragmented areas of Vermont. There is general agreement among conservation biologists that landscape connectivity and wildlife corridors can mitigate some of the adverse effects of habitat fragmentation on wildlife populations and biological diversity (Beier and Noss 1998; Noss and Cooperrider 1994; Haddad et al. 2003; Damschen et al. 2006). Specifically, climate change adaptation is enhanced if the long-distance movements of plants and animals is supported by a combination of short movements within large, topographically diverse forest blocks and short corridor movements between forest blocks (Beier 2012).



Highest Priority Features and Guidelines for Maintaining Ecological Function

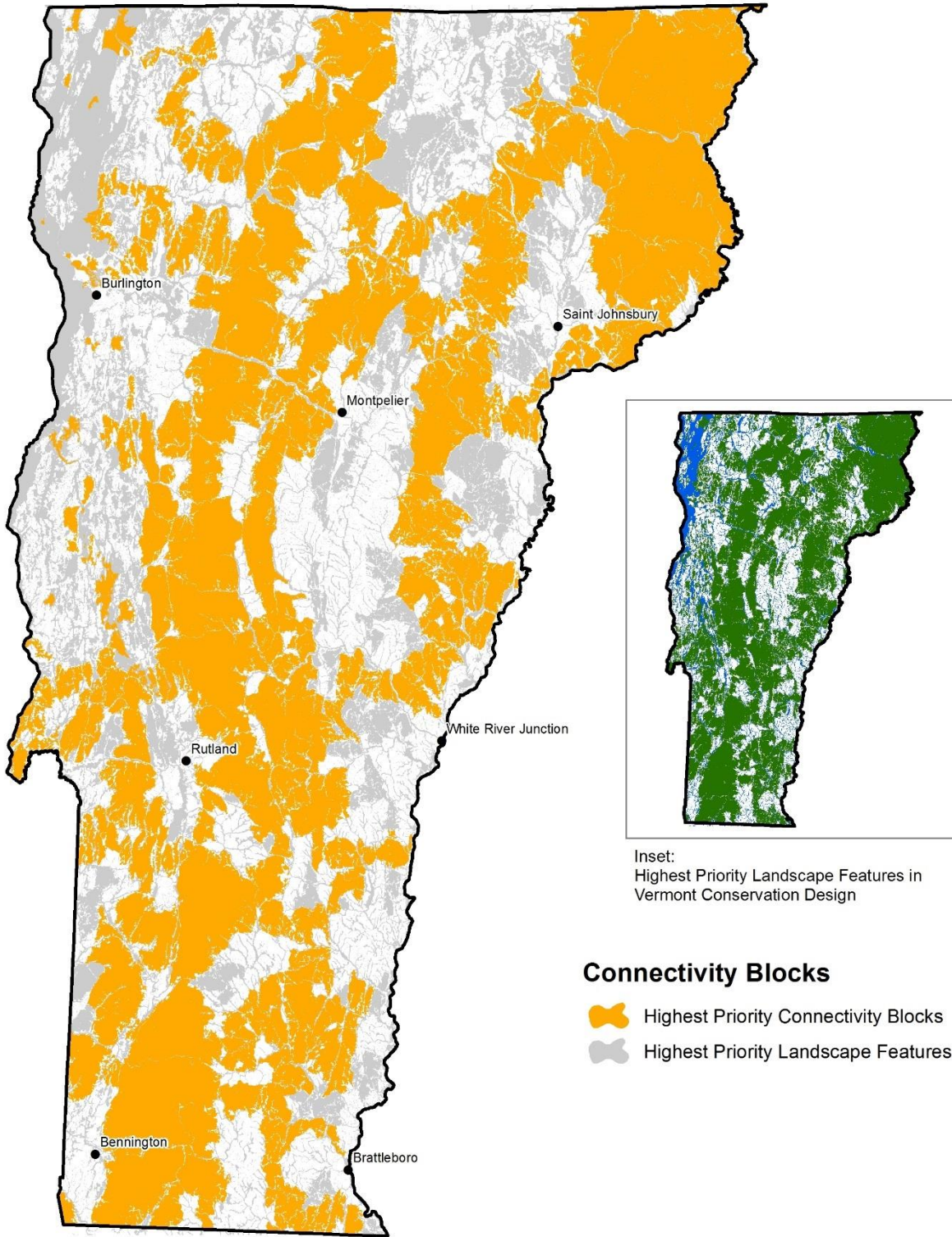
Vermont Conservation Design identifies a highest priority network, or “backbone” of connectivity blocks.

This “backbone” incorporates the spines of the major mountain ranges, connections outside Vermont to unfragmented habitat, and anchor blocks in fragmented biophysical regions based on abundant known occurrences of rare species and significant natural communities. Small forest blocks are included at pinch-points in the connectivity network as they are critical stepping stones.

Similar to Interior Forest Blocks, it is important to maintain the interior forest conditions in Connectivity Blocks by avoiding permanent interior forest fragmentation resulting from development. Connectivity within forest blocks will remain high if they remain unfragmented. For Connectivity Blocks it is also critically important to maintain or enhance the structural and functional connectivity that occurs on the margins of these blocks where they border other blocks. This can be accomplished by maintaining forest cover along the margins and by limiting development in these areas of block-to-block connectivity.

For more information on connectivity blocks, see the following section in the Part 1 Vermont Conservation Design Technical Report:

- Connectivity Blocks



Map 2. Highest Priority Connectivity Blocks.