

Connectivity Blocks

Connectivity Blocks are a selection of habitat blocks that create a connected network of forest across Vermont and into adjacent states and provinces. These are mostly forested areas but also include shrubland and wetland. They include the largest forests that are serving as core habitat, as well as sometimes smaller, connecting blocks. 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.

Connectivity Blocks are a connected network of forest that allow animals to move around to meet their needs. Some species have big home ranges and utilize many blocks to reach different food sources at different times of the year. Connected forests also allow for connections between populations of animals. When these populations intermix and breed, they are healthier than an isolated population would be. Furthermore, as the climate changes, populations of wildlife are slowly adjusting their ranges in response to a warming world. So individual animals are seeking out new habitat through this connected network.

Habitat is also connected at fine scales, by [Riparian Connectivity](#) and [Wildlife Road Crossings](#), where animals move alongside and in waterways and across roads. This most local scale of connectivity may not necessarily be of regional significance, but of course, the regional connections cannot function without local movement. There can be no genetic exchange between wildlife populations in New York and Vermont, for example, without individual animals making sections of the trip, crossing roads and eventually breeding with other individuals. Therefore, local and regional connectivity are both vital to the long-term sustainability of wildlife populations and the ecological functions that they support.

Why is it Important?

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. Landscape connectivity and wildlife corridors can mitigate some of the adverse effects of habitat fragmentation on wildlife populations and biological diversity. 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.

How was it made?

Connectivity Blocks are a selection (i.e., a subset) of all the available Habitat Blocks in VT. New Habitat Blocks were created in 2023 (See [Habitat Blocks](#) for more information on how that data was created.) and so the selection of Connectivity Blocks changed slightly to use the new Habitat Blocks.

2023 Connectivity Blocks were created by making modest additions and subtractions to the 2015 Connectivity Blocks. Given that this is a landscape-scale picture of connected habitat in VT that is both a reflection of the understanding of where there are connected forests as well as a conservation design for where Vermont should continue to invest in connectivity conservation, comparatively little changed between the 2015 to 2023 versions. Changes to the selection of Highest Priority and Priority Connectivity Blocks were done to better reflect the following concepts of connectivity;

- Genetic heterogeneity
- Movement of populations of wide-ranging mammal species
- Connecting to diversity in the geological landscape
- Connections between uplands and riparian areas
- Climate migration
- Connections from lowlands to uplands

The 2016 version of Connectivity Blocks is itself a refinement of the 2012 Network of Connected Lands, which included; Anchor Blocks, Connectivity Blocks and Connecting Lands. The 2016 edits refined the network into two tiers, highest priority and priority based on a review by the BioFinder Core team. Additional habitat blocks were selected for inclusion by the Core Team, to connect to areas of diversity in the physical landscape and places where the riparian network connects additional “stepping stone” habitat blocks to core habitat blocks. The Connectivity Blocks dataset reflects an understanding of connectivity that connects core habitat, areas of diversity in the physical landscape and the riparian network. To learn more about the 2015 Connectivity Blocks see the [Vermont Conservation Design Landscape report](#)

Highest Priority and Priority were differentiated based on their landscape context. *Highest Priority* Connectivity Blocks are the terrestrial “backbone” of forests that provides connectivity to all biophysical regions. The “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. *Priority* Connectivity blocks are forests that provide a major function supporting connectivity for the “backbone” of highest priority Connectivity Blocks. They also provide alternative pathways for connectivity, as redundancy is a critical safeguard in ensuring the long-term effectiveness of the connectivity network.

To get more technical information about the Connectivity Blocks Component, see the [2023 Technical Abstract](#)