

Geological Diversity Blocks Summary



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Geologic Diversity Blocks

Geologic Diversity Blocks are a selection of habitat blocks that represent the range of physical landscapes across VT. On the surface, these places are mostly forested areas including shrubland and wetland but below the surface they have interesting mixes of bedrock, soils and other characteristics like elevation and aspect. Geological Diversity Blocks include rare settings (such as the Vermont Escarpment) as well as settings that are representative of Vermont's overall landscape (such as Mountain Slopes) as well as places for which we have a responsibility because Vermont has a higher proportion of them compared to the rest of the Northeastern United State (such as Calcareous Sediments).

Why is it Important?

Places that have diverse physical settings also tend to have biological diversity, reflecting a close correlation between these attributes. These are the parts of the landscape that resist change, the "stage" upon which the "actors" (things like plants and animals) move around. They will also be the stage for biological diversity as the climate changes. As changes occur over time, plant and animal species adjust their ranges to more climatically suitable conditions. Conserving and stewarding a connected network of diverse physical landscapes will allow for these adjustments to occur and to help protect the diversity of natural communities and species through time.

Some physical landscapes are indicators for locating specific natural communities and species. For example, the Valley Clayplain Forest is a natural community that is associated with Valley Floor Glacial Lake/Marine Plains and is found exclusively on clay soils. Two of its component plant species, bur oak and barren strawberry, are also most common on those soils. Therefore, it is possible to examine surficial geology information to determine where clay deposits exist and, with that information, predict the potential location of a Valley Clayplain Forest and its associated species. Conservation scientists and practitioners have used specific physical landscape features successfully to locate places to search for particular natural communities or rare species.

How was it made?

Geologic Diversity Blocks are a selection of Habitat Blocks that represent the full range of physical landscape settings present in Vermont. The selection process began by analyzing what was already captured as Highest Priority area in the Vermont Conservation Design to gauge representation of geologic diversity within the Design relative to statewide distribution. All the Highest Priority landscape scale components (interior forest blocks, connectivity blocks, surface waters and riparian areas, and riparian connectivity) were grouped and assessed for Land Type Associations they included. Certain settings were under-represented in the Highest Priority area relative to how often they occur statewide. To fix this underrepresentation, 956 Habitat blocks were added to the 603 Highest Priority Habitat Blocks that had already been selected as Interior or Connectivity to create the Geological Diversity Blocks.

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Highest Priority Geologic Diversity Blocks are areas 1) that are otherwise underrepresented in the rest of the Highest Priority area in Interior Forests, Connectivity Blocks and Surface Waters compared to how often they occur statewide or 2) that are especially rare 3) that are relatively common in VT but underrepresented across the northeastern United States or 4) home to considerable biological diversity (e.g. Clayplain forest) or 3) have a high diversity score because of the amount and types of different geological settings. *Priority* Geologic Diversity Blocks are representative of more common geological settings across VT.

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