

## What is the Virginia Natural Landscape Assessment?

Source: [http://www.dcr.virginia.gov/natural\\_heritage/vclnavnla.shtml](http://www.dcr.virginia.gov/natural_heritage/vclnavnla.shtml)

### ***What are ecological cores?***

The Virginia Natural Heritage Program (VNHP) in the Department of Conservation and Recreation has developed a network of natural lands for the commonwealth of Virginia. This project, named the Virginia Natural Landscape Assessment (VaNLA), is a landscape-scale geospatial analysis for identifying, prioritizing, and linking natural lands in Virginia. Using land cover data derived from satellite imagery, the VaNLA identifies large patches of natural land with at least one hundred acres of interior cover. This interior cover, known as core area, begins one hundred meters from patch edges. Small patches with ten to ninety-nine acres of interior cover are included as habitat fragments that support landscape corridors and that may be important in localities with few large patches of natural land. For simplicity in the remainder of this document, core areas and habitat fragments will be referred to collectively as ecological cores. Although the VaNLA is predominantly an analysis of forests, ecological cores include marshes, dunes, and beaches where these covers are abundant and exceed minimum size requirements.

### ***How was ecological integrity determined?***

Ecological cores were mapped for the entire study area, which included the commonwealth of Virginia and a 20-mile buffer around the state. Over fifty attributes were assigned to the ecological cores providing information about rare species and habitats, environmental diversity, species diversity, patch characteristics, patch context, and water quality benefits. These attributes can be used by planners to select ecological cores that have the characteristics and provide the benefits of greatest interest to them. To assist in identifying highly significant ecological cores, VNHP selected nine ecological attributes and used them in a principal components analysis to develop a prioritization by ecological integrity. The following paragraph provides a synopsis of ecological integrity and describes the factors used in the prioritization.

Maintaining vital natural landscapes is essential for basic ecosystem services such as cleaning our air and filtering our water. Natural lands also harbor thousands of species of animals and plants and contain libraries of genetic information from which we derive new foods, materials, and medicinal compounds. These parts of the landscape also provide us with recreational opportunities and open space resources. But these qualities are represented differently across the cores and habitat fragments that constitute the natural landscape. To assess their unique values, each core and habitat fragment has been assigned an Ecological Integrity Score that rates the relative contribution of that area to the ecosystem service values above. *In general, larger, more biologically diverse areas are given higher scores. Scores are enhanced if the core or habitat fragment is part of a larger complex of natural lands. Scores also are increased for those cores and habitat fragments that contribute to water quality enhancement.*

The resulting scores were classified into five categories of ecological integrity:

**C1 – Outstanding; C2 – Very High; C3 – High; C4 – Moderate; and C5 – General.**

### ***Corridors***

All ecological cores in the two highest categories (i.e. C1 and C2) were connected by landscape corridors and nodes to create a statewide network of natural lands. This was done by developing a model that represented impedances to wildlife movement through the landscape and then selecting the easiest routes between each high priority ecological core and its neighboring cohorts. These routes, known as least cost paths, were each expanded to a width of three hundred meters to create the landscape corridors. This width was chosen to maintain one hundred meters of interior cover along the entire length and one hundred meters of buffer on each side. The corridors were guided as much as possible through natural lands and lower-ranked ecological cores (i.e. C3, C4 or C5), the latter automatically becoming parts of the statewide network of natural lands as corridor nodes.

For more information on VaNLA or other models in the VCLNA, please visit:

[http://www.dcr.virginia.gov/natural\\_heritage/vclnagr.html](http://www.dcr.virginia.gov/natural_heritage/vclnagr.html)

To view maps online, please visit:

<http://www.vaconservedlands.org/gis.aspx>