Habitat Block/Wildlife Corridor (VT)

Tags

Habitat Blocks, Forest, Vermont

Summary

This layer displays habitat blocks in Vermont.

Description

Statewide representation of all habitat blocks. Habitat blocks are areas of contiguous forest and other natural habitats that are unfragmented by roads, development, or agriculture. Vermont's habitat blocks are primarily forests, but also include wetlands, rivers and streams, lakes and ponds, cliffs, and rock outcrops. Forests included in habitat blocks may be young, early-successional stands, actively managed forests, or mature forests with little or no recent logging activity. The defining factor is that there is little or no permanent habitat fragmentation from roads and other forms of development within a habitat block.10472

Credits

There are no credits for this item.

Use limitations

There are no access and use limitations for this item.

Extent

West -73.453309 East -71.467100

North 45.018177 South 42.723074

Scale Range

There is no scale range for this item.

ArcGIS Metadata

Topics and Keywords

* CONTENT TYPE Downloadable Data

Citation

* TITLE Ecologic_HABITATBLKS_poly

PRESENTATION FORMATS digital map

Resource Details

DATASET LANGUAGES English (UNITED STATES)

SPATIAL REPRESENTATION TYPE vector

* PROCESSING ENVIRONMENT Microsoft Windows 7 Version 6.1 (Build 7601) Service Pack 1; ESRI ArcGIS 10.0.3.3600
ARCGIS ITEM PROPERTIES
* NAME Ecologic_HABITATBLKS_poly
* SIZE 0.000
* LOCATION
* ACCESS PROTOCOL Local Area Network

Extents

EXTENT
GEOGRAPHIC EXTENT
BOUNDING RECTANGLE
EXTENT TYPE Extent used for searching
* WEST LONGITUDE -73.453309
* EAST LONGITUDE -71.467100
* NORTH LATITUDE 45.018177
* SOUTH LATITUDE 42.723074
* EXTENT CONTAINS THE RESOURCE Yes

BOUNDING RECTANGLE
EXTENT TYPE Extent used for searching
* WEST LONGITUDE -73.453309
* EAST LONGITUDE -71.467100
* NORTH LATITUDE 45.018177
* SOUTH LATITUDE 42.723074
* EXTENT CONTAINS THE RESOURCE Yes

EXTENT IN THE ITEM'S COORDINATE SYSTEM
* WEST LONGITUDE 424855.830634
* EAST LONGITUDE 581418.843750
* SOUTH LATITUDE 25258.527344
* NORTH LATITUDE 279778.527344
* EXTENT CONTAINS THE RESOURCE Yes

Spatial Reference

ARCGIS COORDINATE SYSTEM
* TYPE Projected
* GEOGRAPHIC COORDINATE REFERENCE GCS_North_American_1983
* PROJECTION NAD_1983_StatePlane_Vermont_FIPS_4400
* COORDINATE REFERENCE DETAILS
PROJECTED COORDINATE SYSTEM
WELL-KNOWN IDENTIFIER 32145
X ORIGIN -5123000
Y ORIGIN -14708800
XY SCALE 450278912.53279358
Z ORIGIN -100000
Z SCALE 10000
M ORIGIN -100000
M SCALE 10000
XY TOLERANCE 0.001
Z TOLERANCE 0.001
M TOLERANCE 0.001
HIGH PRECISION true
WELL-KNOWN TEXT
PROJCS["NAD_1983_StatePlane_Vermont_FIPS_4400",GEOGCS["GCS_North_American_1983",DATUM["D_North_American_1983",SPHEROID["GRS_1980",6378137.0,298.257222101]],PRIMEM[

"Greenwich",0.0],UNIT["Degree",0.0174532925199433]],PROJECTION["Transverse_Mercator"],PARAMETER["False_Easting",500000.0],PARAMETER["False_Northing",0.0],PARAMETER["Central_Meridian",72.5],PARAMETER["Scale_Factor",0.9999642857142858],PARAMETER["Latitude_Of_Origin",42.5],UNIT["Meter",1.0],AUTHORITY["EPSG",32145]]

REFERENCE SYSTEM IDENTIFIER
VALUE 32145
* CODESPACE EPSG
* VERSION 7.4.1

Spatial Data Properties

VECTOR
* LEVEL OF TOPOLOGY FOR THIS DATASET geometry only

GEOMETRIC OBJECTS
FEATURE CLASS NAME Ecologic_HABITATBLKS_poly
* OBJECT TYPE composite
* OBJECT COUNT 0

ARCGIS FEATURE CLASS PROPERTIES

* FEATURE TYPE Simple
* GEOMETRY TYPE Polygon
* HAS TOPOLOGY FALSE
* FEATURE COUNT 0
* SPATIAL INDEX FALSE
* LINEAR REFERENCING FALSE

Distribution

DISTRIBUTOR
AVAILABLE FORMAT
* NAME SDE Feature Class

TRANSFER OPTIONS
* TRANSFER SIZE 10.051

ONLINE SOURCE
* LOCATION
* ACCESS PROTOCOL Local Area Network
* DESCRIPTION Downloadable Data

DISTRIBUTION FORMAT
* NAME Shapefile

TRANSFER OPTIONS
* TRANSFER SIZE 0.000

Fields

DETAILS FOR OBJECT Ecologic_HABITATBLKS_poly
* TYPE Feature Class
* ROW COUNT 0

FIELD FID
* ALIAS FID
* DATA TYPE OID
* WIDTH 4
* PRECISION 0
* SCALE 0

* FIELD DESCRIPTION
  Internal feature number.

* DESCRIPTION SOURCE
  ESRI

* DESCRIPTION OF VALUES Sequential unique whole numbers that are automatically generated.

FIELD Shape
* ALIAS Shape
* DATA TYPE Geometry
* WIDTH 0
* PRECISION 0
* SCALE 0
* FIELD DESCRIPTION
  Feature geometry.

* DESCRIPTION SOURCE
  ESRI

* DESCRIPTION OF VALUES Coordinates defining the features.

FIELD cons_pct
* ALIAS cons_pct
* DATA TYPE Double
* WIDTH 19
* PRECISION 18
* SCALE 8
FIELD DESCRIPTION
  Percent of polygon area that is permanently conserved. Roads, houses, and other forms of development are the leading source of habitat fragmentation in Vermont. Land that has been conserved by legal means will not be developed in the future. Habitat blocks that contain a higher percentage of conserved lands are at less threatened than those with little or no conserved lands. The conserved lands data used for this analysis are those available statewide and include federal land, state land, town land, and other land conserved by legal means. Unfortunately, land enrolled in the Use Value Appraisal Program was not used in this analysis, as it is currently not available statewide in a digital format.

DESCRIPTION SOURCE
  Custom

FIELD bldg_dens
* ALIAS bldg_dens
* DATA TYPE Double
* WIDTH 19
* PRECISION 18
* SCALE 8
FIELD DESCRIPTION
  Building density, derived from E911 data, was used as an indicator of development pressure on unfragmented habitat blocks. Buildings, and the people that live and work in them, have an impact on wildlife habitat that extends well beyond the building's footprint. Lights, noise, pets and increased recreational use are just a few examples of how habitat blocks adjacent to buildings can be degraded.

DESCRIPTION SOURCE
  Custom

FIELD avg_parcsz
* ALIAS avg_parcsz
* DATA TYPE Double
* WIDTH 19
* PRECISION 18

* SCALE 8
FIELD DESCRIPTION
Average parcel size. Related to population growth and building density, average parcel size in a town is an indicator of development trends. Analyzing each town's Grand List, we found average parcel sizes ranging from a third of an acre in Rutland to over 5,800 acres in Averys Gore. Towns with larger average parcel sizes rank low for potential threat.

DESCRIPTION SOURCE
Custom

FIELD pop_chg
* ALIAS pop_chg
* DATA TYPE Double
* WIDTH 19
* PRECISION 18
* SCALE 8
FIELD DESCRIPTION
Population change. We looked at population growth per acre by town from 1990 to 2004. Population growth rates ranged widely, with a general trend of population declines in traditional population centers like Burlington, Rutland, Brattleboro and Bennington and population increases in so-called "bedroom communities" – areas within commuting distance of population centers, like Hinesburg, Hubbardton, Putney and Shaftsbury. Towns with high population growth rates rank high for potential threat; towns with low population growth rank low for potential threat.

DESCRIPTION SOURCE
Custom

FIELD threatF1
* ALIAS threatF1
* DATA TYPE Integer
* WIDTH 5
* PRECISION 5
* SCALE 0
FIELD DESCRIPTION
Building Density, quantile reclassification of bldg_dens.

DESCRIPTION SOURCE
Custom

FIELD threatF2
* ALIAS threatF2
* DATA TYPE Integer
* WIDTH 5
* PRECISION 5
* SCALE 0
FIELD DESCRIPTION
Average Parcel Size, quantile reclassification of avg_parcsz.

DESCRIPTION SOURCE
Custom

FIELD threatF3
* ALIAS threatF3
* DATA TYPE Integer
* WIDTH 5
* PRECISION 5
* SCALE 0
FIELD DESCRIPTION
Population Change, quantile reclassification of pop_chg.

DESCRIPTION SOURCE
Custom

FIELD threatF4
* ALIAS threatF4
* DATA TYPE Integer
* WIDTH 5
* PRECISION 5
* SCALE 0
FIELD DESCRIPTION
Percent of polygon area that is permanently conserved. Quantile reclassification of cons_pct.

DESCRIPTION SOURCE
Custom

FIELD threat
* ALIAS threat
* DATA TYPE Double
* WIDTH 19
* PRECISION 18
* SCALE 8
FIELD DESCRIPTION
The 4,055 habitat blocks were also evaluated using five factors to assess the potential threat of the block being fragmented by development. No time frame is assigned to this potential threat. The five factors were all weighted equally (20 percent) in determining the overall threat.

DESCRIPTION SOURCE
Custom

FIELD ThreatF5
* ALIAS ThreatF5
* DATA TYPE Integer
* WIDTH 5
* PRECISION 5
* SCALE 0
FIELD DESCRIPTION
Miles of Class IV and private roads per square mile of habitat block, quantile reclassification of F6. This is the same factor that we used in the biological value assessment of habitat blocks. Here it is used as an indication of potential threat to the interior of a habitat block by future development. Habitat blocks with higher densities of Class 4 and other narrow roads included within their boundaries rank higher for threat than blocks with fewer interior roads.

DESCRIPTION SOURCE
Custom

FIELD F1rcl
* ALIAS F1rcl
* DATA TYPE Integer
* WIDTH 5
* PRECISION 5
* SCALE 0
FIELD DESCRIPTION
Cost distance to Core Areas, quantile reclassification of F1raw

DESCRIPTION SOURCE
Custom

FIELD F1raw
* ALIAS F1raw
* DATA TYPE Double
* WIDTH 19
* PRECISION 18
* SCALE 8

FIELD DESCRIPTION

To evaluate a habitat block's contribution to connectivity at a landscape level, we used the cost grid to calculate the cost for wildlife to travel between large core areas (> 2,000 acres). Large habitat blocks with core area greater than 2,000 acres rank highest, smaller blocks that have good connectivity to the larger blocks rank moderately high, while isolated blocks that have poor connectivity (high cost to travel) to larger blocks rank lowest.

DESCRIPTION SOURCE

Custom

FIELD F2rcl

* ALIAS F2rcl
* DATA TYPE Integer
* WIDTH 5
* PRECISION 5
* SCALE 0

FIELD DESCRIPTION

Ecological Landscape Unit weighted acreage, geometrical interval reclassification of F2raw.

DESCRIPTION SOURCE

Custom

FIELD F2raw

* ALIAS F2raw
* DATA TYPE Double
* WIDTH 19
* PRECISION 18
* SCALE 8

FIELD DESCRIPTION

In an effort to represent landscape diversity in our habitat block rankings we developed 10 groupings of blocks based on the three components used to delineate Ecological Landscape Units: elevation, landforms, and bedrock geology. For each of the 10 groupings, we calculated what percentage of the landscape they occupy (ranging from 1.9 percent for coarse sediment flats to 49.2 percent for upper elevation acidic steep hills/mountains) and the average block size for each of the groupings (ranging from 162 acres for coarse sediment flats to 9,684 acres for upper elevation acidic steep hills/mountains). A habitat block of a rare ELU group (one that occupies a small percentage of the landscape, such as coarse sediment flats) that is larger than the average block size for that ELU group ranks higher than a habitat block of a common ELU group that is larger than the average block size for its ELU group. The goal of this factor is to give higher rank to those blocks that represent less common physical features in the landscape, with additional weight given to large blocks within each category.

DESCRIPTION SOURCE

Custom

FIELD F3rcl

* ALIAS F3rcl
* DATA TYPE Integer
* WIDTH 5
* PRECISION 5
* SCALE 0

FIELD DESCRIPTION

Element Occurence Count, manual reclassification of F3 raw

DESCRIPTION SOURCE

Custom

FIELD F3raw

* ALIAS F3raw
* DATA TYPE Double
* WIDTH 19
* PRECISION 18

* SCALE 8

FIELD DESCRIPTION

An element occurrence is a place on the ground where there is a rare species or state-significant natural community that has been mapped by Vermont Fish and Wildlife Department. Conservation of rare species and state-significant natural communities is an important component of conserving biological diversity. Habitat blocks with more rare species or state-significant natural communities rank higher than blocks with fewer or no element occurrences. Element occurrences of widespread (S4) and common (S5) natural communities were excluded as there has been little inventory of these community types except on state land. Note: Rare species and natural community inventories have not been completed statewide, so some habitat blocks and regions of the state that have been thoroughly inventoried have higher block ranks. Also, as this factor is based on a count of element occurrences, larger blocks generally rank higher than smaller blocks.

DESCRIPTION SOURCE

Custom

FIELD F4rcl

* ALIAS F4rcl
* DATA TYPE Integer
* WIDTH 5
* PRECISION 5
* SCALE 0

FIELD DESCRIPTION

Percent Core, manual reclassification of F4raw

DESCRIPTION SOURCE

Custom

FIELD F4raw

* ALIAS F4raw
* DATA TYPE Double
* WIDTH 19
* PRECISION 18
* SCALE 8

FIELD DESCRIPTION

Each habitat block with at least 250 acres of core was ranked based on its ratio of core area to total block area. Habitat blocks with a higher percentage of core provide more interior habitat values for wildlife. We considered 250 acres to be a minimum core area to support interior forest habitat values. The percent of a habitat block that is core is directly related to the size of the habitat block (larger blocks have more core), the shape of the habitat block (round blocks have more core than elongated blocks), and the degree to which the block boundary is formed by fragmenting features (blocks with roads and developments that partially penetrate into the block have less core area – this is really a part of the shape of the habitat block).

DESCRIPTION SOURCE

Custom

FIELD F5rcl

* ALIAS F5rcl
* DATA TYPE Integer
* WIDTH 5
* PRECISION 5
* SCALE 0

FIELD DESCRIPTION

Block Size, manual reclassification of F5raw

DESCRIPTION SOURCE

Custom

FIELD F5raw
* ALIAS F5raw
* DATA TYPE Double
* WIDTH 19
* PRECISION 18
* SCALE 8
FIELD DESCRIPTION
Larger blocks provide more interior forest habitat values, better support the needs of wide-ranging wildlife, and are most likely to include a diversity of physical and environmental conditions found in that biophysical region. Note: The largest habitat blocks in Vermont are at higher elevations in the Green Mountains and other remote areas. The Champlain Valley, Vermont Valley, and most of the piedmont biophysical regions have very few large habitat blocks because of concentrated development in these areas, but these regions have high levels of biological diversity.

DESCRIPTION SOURCE
Custom

FIELD F6rcl
* ALIAS F6rcl
* DATA TYPE Integer
* WIDTH 5
* PRECISION 5
* SCALE 0
FIELD DESCRIPTION
Miles of Class IV and private roads per square mile of habitat block, quantile reclassification of F6.

DESCRIPTION SOURCE
Custom

FIELD F6raw
* ALIAS F6raw
* DATA TYPE Double
* WIDTH 19
* PRECISION 18
* SCALE 8
FIELD DESCRIPTION
Habitat blocks with higher densities of Class 4 and other narrow roads included within their boundaries rank lower than blocks with fewer interior roads. While Class 4 and other narrow roads identified on the E-911 data layer were not considered fragmenting features in the context of habitat block delineation for this model, these roads do create some habitat fragmentation that can have an adverse effect on ecological integrity of a block. Class 4 roads are public rights-of-way and may be the sites of future development. Note: It is interesting that although this factor is normalized to block area (it is presented as road density), small habitat blocks generally rank higher than large blocks. The explanation for this is simply that there are no roads within the smallest blocks. Although these smallest blocks include no roads they also provide little interior forest habitat value – this is expressed in the "percent core" and "acres" factors.

DESCRIPTION SOURCE
Custom

FIELD F7rcl
* ALIAS F7rcl
* DATA TYPE Integer
* WIDTH 5
* PRECISION 5
* SCALE 0
FIELD DESCRIPTION
Percentage of the area of the habitat block covered by lakes and ponds, quantile reclassification of F7raw.

DESCRIPTION SOURCE
Custom

FIELD F7raw
* ALIAS F7raw
* DATA TYPE Double
* WIDTH 19
* PRECISION 18
* SCALE 8
FIELD DESCRIPTION
Habitat blocks are ranked by the ratio of pond surface area to overall block size. Habitat blocks that include a high percentage of ponds rank higher than habitat blocks without ponds. Lakes and ponds are very important habitat for many species of plants and animals and they are a relatively rare landscape feature compared to upland habitats.

DESCRIPTION SOURCE
Custom

FIELD F8rcl
* ALIAS F8rcl
* DATA TYPE Integer
* WIDTH 5
* PRECISION 5
* SCALE 0
FIELD DESCRIPTION
Percentage of the area of the habitat block covered by wetlands, quantile reclassification of F8raw.

DESCRIPTION SOURCE
Custom

FIELD F8raw
* ALIAS F8raw
* DATA TYPE Double
* WIDTH 19
* PRECISION 18
* SCALE 8
FIELD DESCRIPTION
Habitat blocks are ranked by the ratio of wetland area to overall block size. Habitat blocks that include a high percentage of wetlands rank higher than habitat blocks with a small percentage of wetlands. Wetlands are very important habitat for many species of plants and animals, provide good connectivity habitat, and are a relatively rare landscape feature compared to upland habitats.

DESCRIPTION SOURCE
Custom

FIELD F9rcl
* ALIAS F9rcl
* DATA TYPE Integer
* WIDTH 5
* PRECISION 5
* SCALE 0
FIELD DESCRIPTION
Exemplary aquatic features, equal interval reclassification of F9raw.

DESCRIPTION SOURCE
Custom

FIELD F9raw
* ALIAS F9raw
* DATA TYPE Double
* WIDTH 19
* PRECISION 18

* SCALE 8

FIELD DESCRIPTION

Habitat blocks are ranked by the percentage of block area that is in a watershed containing one or more exemplary aquatic features. For example, a block falling entirely within the Lewis Creek watershed (Lewis Creek is an exemplary aquatic feature) ranks higher than a block that has 20 percent of its area in the Lewis Creek watershed and 80% in Little Otter Creek watershed (not identified as an exemplary aquatic feature). This ranking does not consider the role habitat blocks play in all watersheds upstream of an exemplary aquatic feature, only those blocks that are in a watershed containing the water body. Exemplary aquatic features are those that were identified as the best examples of each aquatic natural community type for the Vermont Biodiversity Project (Langdon et al. 1998).

DESCRIPTION SOURCE

Custom

FIELD F10rcl

* ALIAS F10rcl
* DATA TYPE Integer
* WIDTH 5
* PRECISION 5
* SCALE 0

FIELD DESCRIPTION

Rivers/Streams (miles of stream/square mile of habitat block, quantile reclassification of F10rcl.

DESCRIPTION SOURCE

Custom

FIELD F10raw

* ALIAS F10raw
* DATA TYPE Double
* WIDTH 19
* PRECISION 18
* SCALE 8

FIELD DESCRIPTION

To account for the high aquatic habitat value of streams and the connectivity benefits of riparian corridors, habitat blocks are ranked by the length and size of streams and rivers within contained within them. Streams and rivers are weighted by stream order, so a block traversed by 0.5 mile of the Lamoille River ranks higher than an upper elevation block with 0.5 mile of first order streams.

DESCRIPTION SOURCE

Custom

FIELD F11rcl

* ALIAS F11rcl
* DATA TYPE Integer
* WIDTH 5
* PRECISION 5
* SCALE 0

FIELD DESCRIPTION

Percent TNC Matrix Block, manual reclassification of F11raw.

DESCRIPTION SOURCE

Custom

FIELD F11raw

* ALIAS F11raw
* DATA TYPE Double
* WIDTH 19
* PRECISION 18
* SCALE 8

FIELD DESCRIPTION

Habitat blocks are ranked by the percent of a block that falls within a matrix block as identified by

The Nature Conservancy (TNC) through their ecoregional planning process. TNC matrix blocks are large areas with minimal fragmentation by roads that were selected across ecoregions as the best locations for conservation of the "matrix" forest natural community types that are included in these blocks. Although only assigned a five percent weight toward the overall block scores, this factor identifies a few habitat blocks that are likely to have regional significance as they were identified as part of TNC's ecoregional planning. (See Anderson et al. 2006 for description of TNC matrix blocks for the Northern Appalachian ecoregion.)

DESCRIPTION SOURCE
Custom

FIELD Fwght
* ALIAS Fwght
* DATA TYPE Double
* WIDTH 19
* PRECISION 18
* SCALE 8

FIELD DESCRIPTION
Final weighted score of inputs F1-F11, using the following formula: (([F1rcl] * .15) + ([F2rcl] * .1) + ([F3rcl] * .1) + ([F4rcl] * .15) + ([F5rcl] * .15) + ([F6rcl] * .1) + ([F7rcl] * .05) + ([F8rcl] * .05) + ([F9rcl] * .05) + ([F10rcl] * .05) + ([F11rcl] * .05))

DESCRIPTION SOURCE
Custom

FIELD Fwghtrcl
* ALIAS Fwghtrcl
* DATA TYPE Integer
* WIDTH 5
* PRECISION 5
* SCALE 0

FIELD DESCRIPTION
Final weighted score of inputs F1-F11, equal interval reclassification of Fwght.

DESCRIPTION SOURCE
Custom

FIELD threatrcl
* ALIAS threatrcl
* DATA TYPE Integer
* WIDTH 5
* PRECISION 5
* SCALE 0

FIELD DESCRIPTION
Threat weighted score, equal interval reclass of threat.

DESCRIPTION SOURCE
Custom

FIELD test2
* ALIAS test2
* DATA TYPE Integer
* WIDTH 5
* PRECISION 5
* SCALE 0

FIELD Shape_area
* ALIAS Shape_area
* DATA TYPE Double
* WIDTH 19
* PRECISION 0
* SCALE 0

* FIELD DESCRIPTION
  Area of feature in internal units squared.

* DESCRIPTION SOURCE
  ESRI

* DESCRIPTION OF VALUES Positive real numbers that are automatically generated.

FIELD Shape_len
* ALIAS Shape_len
* DATA TYPE Double
* WIDTH 19
* PRECISION 0
* SCALE 0

Metadata Details

METADATA LANGUAGE English (UNITED STATES)
* METADATA CHARACTER SET utf8 - 8 bit UCS Transfer Format

SCOPE OF THE DATA DESCRIBED BY THE METADATA dataset
SCOPE NAME * dataset
* LAST UPDATE 2012-12-10

ARCGIS METADATA PROPERTIES
  METADATA FORMAT ArcGIS 1.0
  METADATA STYLE ISO 19139 Metadata Implementation Specification

  CREATED IN ARCGIS FOR THE ITEM 2012-10-29 14:51:54
  LAST MODIFIED IN ARCGIS FOR THE ITEM 2012-12-10 10:11:03

  AUTOMATIC UPDATES
    HAVE BEEN PERFORMED Yes
    LAST UPDATE 2012-12-10 10:11:03

  ITEM LOCATION HISTORY
    ITEM COPIED OR MOVED 2012-10-29 14:51:54
      FROM
      TO

FGDC Metadata (read-only)