

Wildlife Habitat (Sub-model 1 of 3) Assessment Map

Linking Lands and Communities in the Land-of-Sky Region



Which Lands are Valuable for
Maintaining Wildlife Habitat?

Value for Maintaining Wildlife Habitat



Note that 1 = Least Valuable

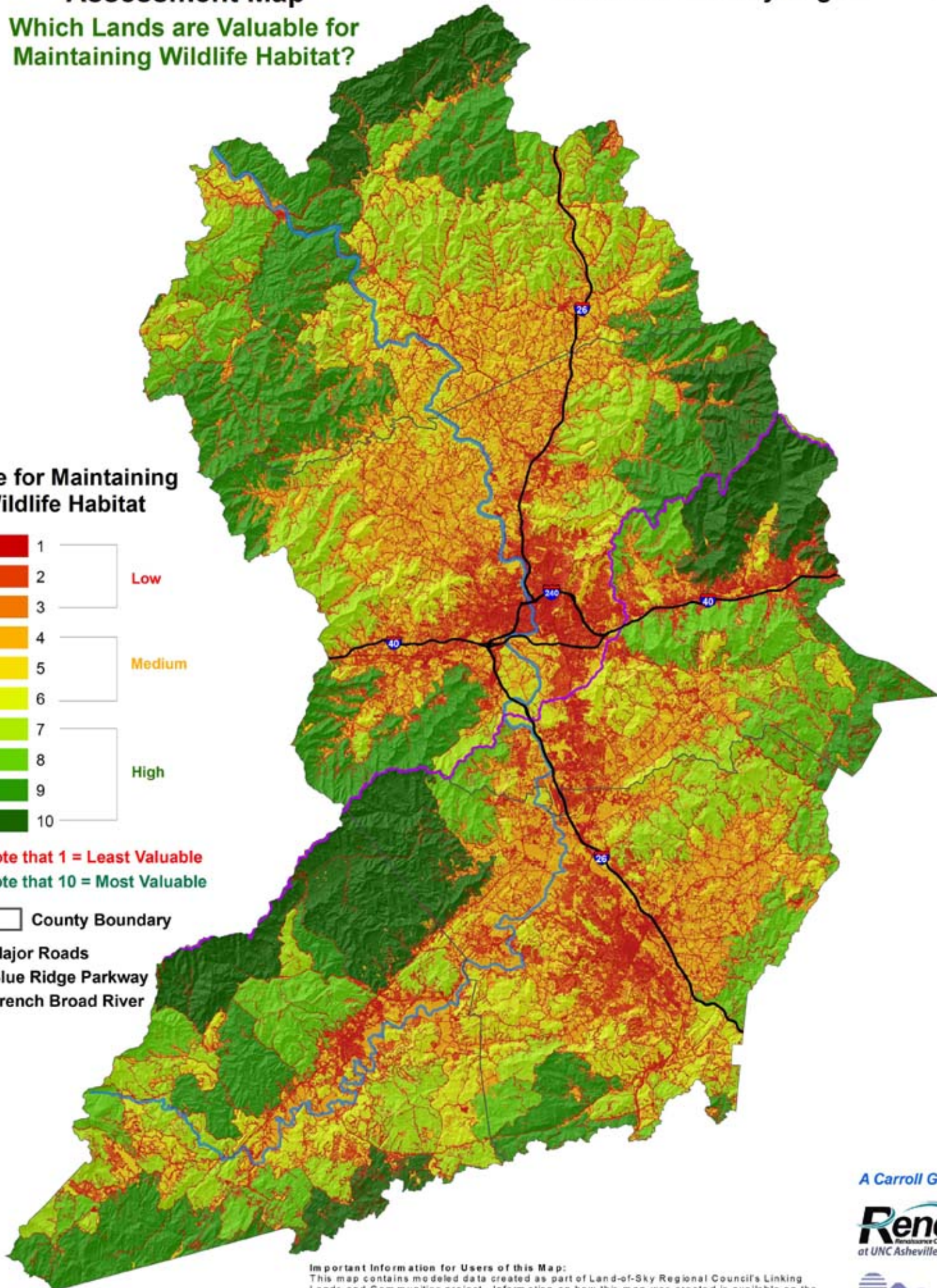
Note that 10 = Most Valuable

County Boundary

Major Roads

Blue Ridge Parkway

French Broad River



Important Information for Users of this Map:
This map contains modeled data created as part of Land-of-Sky Regional Council's Linking Lands and Communities project. Information on how this map was created is available on the project website. To access this information, visit www.linkinglands.org and click on "Resource Assessments" in the left-hand menu. The web page for each assessment explains how the assessment model was created, and includes links to a fact sheet, conceptual model, data sources & definitions, ranking scheme and input data layers. LOSRC, RENCi and A Carroll GIS consider all of this information to be an integral part of this map, and essential to understanding what this map represents and how to interpret it properly.

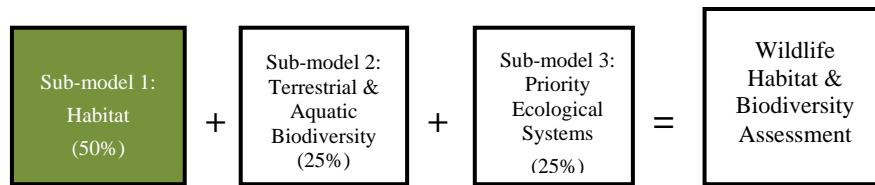
A Carroll GIS

Renci
The Regional Computing Institute
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Land-of-Sky Regional Council
Renoirville • Henderson • Madison • Thompson • Coopers • NC

Map Date: June 5th, 2010



Wildlife Habitat and Biodiversity Assessment Sub-model 1: Wildlife Habitat

The Wildlife Habitat and Biodiversity Assessment is one of three resource assessments conducted as a part of the Linking Lands and Communities project, and aims to capture the inherent ecological health and functioning of the region’s ecosystems. It was created by combining and assigning weights to three separate sub-models: habitat; biodiversity; and priority ecological systems.

Sub-model 1: Wildlife Habitat

The Wildlife Habitat Model prioritizes the connectivity, distribution, and health of naturally occurring ecological systems. Size, shape, and patterns of natural communities across the landscape are evaluated regardless of the type of habitat (e.g., spruce-fir forest) that occurs there. Larger (and less fragmented) forest patches typically have a greater diversity of habitats and support larger populations that are less vulnerable to extinction.

The GAP Ecological Systems data layer based on the 1998-2001 LandSat source imagery was the primary data source for this assessment. Priority areas were determined by calculating the following landscape metrics:

- *Core Areas*: area of habitat patch unaffected by edge
- *Core Area Index*: percentage of patch that is core habitat
- *Perimeter-to-area-ratio*: metric of shape and compactness where the lower the value, the more compact (and less fragmented and influenced by the edge)
- *Proximity*: measurement of patch-to-patch proximity, where higher values indicate tighter clustering of natural communities and less fragmentation

These landscape metrics were selected based upon a review of the procedures in the Georgia State Wildlife Action Plan. Assemblages of systems that contain large core areas, a high percentage of core area and compact shapes (not fragmented) that are proximate to other patches received a high priority.

Recognizing that ecosystems cross jurisdictional boundaries and extend into other counties outside of the Land-of-Sky Region, a 10 km buffer around the perimeter of the region was included in the calculations. The Bald Mountains in northern Madison County, the Black Mountains in eastern Buncombe County, and the Great Balsam Mountains and Cedar Mountain area in Transylvania County all ranked high in the model and spanned across regional boundaries.

The working group* recognized that lands that did not rank exceptionally well using the landscape metric calculations, including open water, cropland, and developed open space, still had some value as wildlife habitat. Thus, four categories from the Land Cover dataset (LandSat 2001) were added to the ranking system to create the full range of rankings from 1-10.

Because large, intact natural systems serve as hubs in the regional green infrastructure network and are so critical in maintaining ecosystem functions and services, this sub-model was weighted higher (50%) than the other two sub-models (weighted 25% each) in the cumulative Wildlife Habitat and Biodiversity Assessment.

Wildlife Habitat Ranking System

Data	Ranking
Combined Landscape Metric Layer	5-10
Open Water	5
Cropland	4
Developed Open Space	2
Impervious Surfaces & Quarries/Mines	1

* The Wildlife Habitat sub-model was created by A Carroll GIS, staff from Land-of-Sky Regional Council, and a working group of regional partners, including NCDENR Natural Heritage and One NC Naturally Programs, NC Wildlife Resources Commission, WNC Alliance, Open Space Institute, Southern Appalachian Forest Coalition, Mars Hill College, Southern Appalachian Highlands Conservancy, NC Wildlife Federation, Blue Ridge Forever, Friends of DuPont State Forest, and USDA Forest Service.