

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

Creating a framework for conservation and development that respects community values and natural systems

The Regional Conservation and Development Network is

an interconnected network of lands valuable for their ecological systems and services including farmlands, forests, water resources, wildlife habitat, recreation areas – and areas most suited for future growth and development.

Wildlife Habitat and Biodiversity

The Wildlife Habitat and Biodiversity Assessment is one of three assessments conducted as a part of the Linking Lands and Communities Project. This assessment was developed by a working group of partners and identifies areas of significant ecological value that will make up the basic framework of the regional green infrastructure network.

The Land-of-Sky Region lies in the midst of the Southern Blue Ridge Province - an area of rugged mountains, long broad ridges, steep slopes, and deep ravines. Located in one of the oldest mountain ranges on earth, our forests are remnants of the original temperate forest formed 50-65 million years ago. Variations in elevation and topography (e.g., ridge, slope, or cove) create a variety of climatic conditions, providing suitable habitat for a wide range of species, including 400 rare plants and more than 250 native plants that are only found here. Our streams and rivers contain the highest diversity of freshwater fish, crayfish, and snails in North America, and the highest diversity of mussels in the world. One of the most obvious and dramatic causes of loss of biodiversity in our region is fragmentation, degradation, and loss of habitat.

Wildlife Habitat as an Indicator of Intact, Healthy Ecosystems

Our region's ability to support high levels of biodiversity also indicates of the presence of high quality, intact natural systems. In addition to providing habitat, these natural areas also support ecosystem functions that are necessary for the survival of all of life. The cumulative result of these ecosystem functions are a complex web of food, water, shelter, and interrelationships that plants, animals, and humans depend on for survival.

A few examples of **ecosystem functions** include:

- building soil and maintaining its fertility;
- cycling important nutrients like Nitrogen, Phosphorus, Carbon, and Oxygen;
- cycling water through the hydrologic cycle; and
- stabilizing soil and protecting against erosion.

The Value of Wildlife

The presence of wildlife is important to our region for many reasons. Plants and animals provide food and other products important for the health and well being of our communities and play a critical role in maintaining the region's cultural heritage and sense of place. Our communities also benefit economically from the people who visit the region to participate in outdoor recreation activities related to wildlife, including bird watching, wildlife viewing, nature photography, fishing and hunting. They purchase related supplies, licenses, and gear, use services provided by local guides, and dine in local restaurants. Studies have also shown that for many people, wildlife possesses intrinsic value and reminds them of their connection to other living things. Just knowing that wildlife exists brings inspiration and makes them feel more at peace.

Wildlife Habitat and Biodiversity in our Region



Black Bear

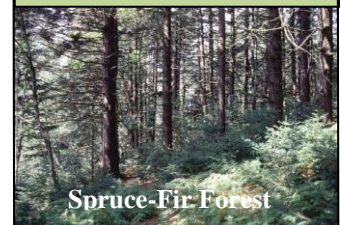


Appalachian Cove Forest



Carolina Northern Flying Squirrel

Wildlife habitat is defined as an area that offers feeding, roosting, breeding, nesting, and refuge areas for a variety of plant and animals who live here.



Spruce-Fir Forest



Spotfin Chub

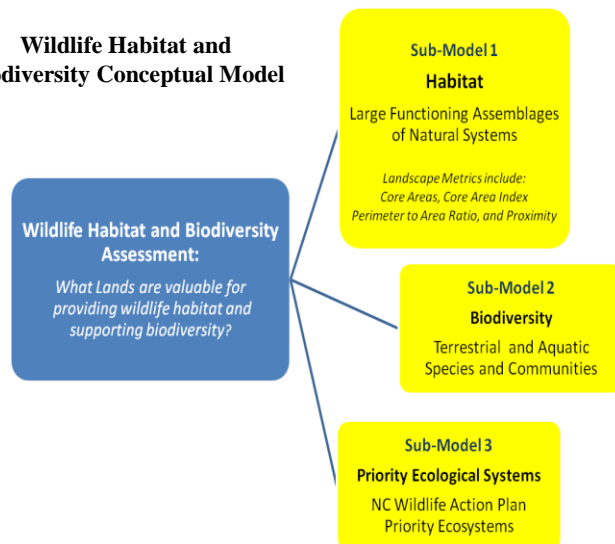
The Wildlife Habitat and Biodiversity Assessment

The Wildlife Habitat and Biodiversity Assessment identifies lands that provide wildlife habitat, support high levels of biodiversity, and provide associated ecosystem services and functions.

The three primary goals of the assessment are:

1. To identify large blocks of natural habitat;
2. To identify areas of high biodiversity; and
3. To identify priority ecological systems .

Wildlife Habitat and Biodiversity Conceptual Model



Core Components of the Assessment

Size and Shape of Core Habitat Areas:

In general, *larger habitat patches support more species*. This model ranks larger, intact, well connected habitat patches higher than smaller, isolated areas. This is because larger (and less fragmented) forest patches often have a greater diversity of habitats and support larger populations that are less vulnerable to extinction. Additionally, only larger patches are likely to contain enough habitat to support species like black bears that require larger areas.

Natural Areas Known to Support High Levels of Biodiversity: For this assessment, levels of biodiversity are indicated by presence of species and of the communities that support them, and have been identified through direct surveys, sampling, and on the ground research.

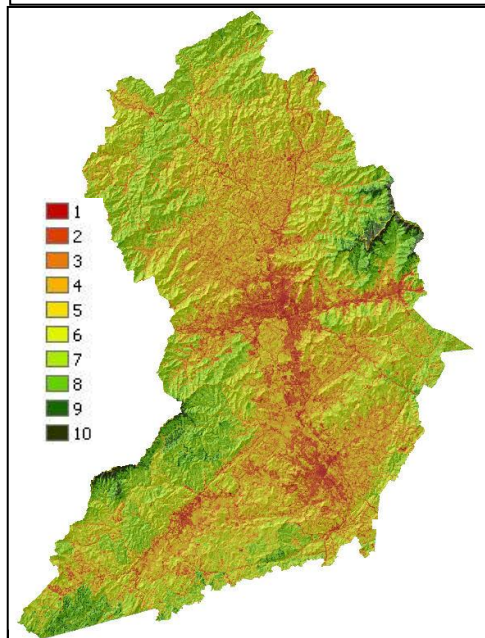
Species-specific data include the presence of threatened and endangered species, important bird areas, native trout, and streams with good or excellent bioclass indicator rankings.

Community-specific data includes high priority watersheds, wetlands, rare and threatened communities, streams designated as High Quality Waters (HQW), Outstanding Resource Waters (ORW), and Significant Natural Heritage Areas, as designated by the NC Department of Natural Resources. Significant Natural Heritage Areas contain one or more high quality or rare natural communities, rare species, and/or special animal habitats.

Priority Ecological Systems:

These are ecosystems that are identified in the North Carolina Wildlife Action Plan as priority ecosystems in the mountains. Many have been identified as rare, threatened natural communities. In this assessment, ecosystems above 4,000 feet in elevation, and floodplain and riverine aquatic communities are considered to be the highest priority natural communities.

The Wildlife Habitat and Biodiversity Assessment



This map represents the **cumulative model** developed when combining the three sub-models listed above.

The ranking system of 1-10 indicates the value of that land for providing wildlife habitat and supporting biodiversity.