

# Old Growth Forests

*Don't discount the Southeast's ancient forests. Forests undisturbed by logging or most other human activities since European settlement are now documented in virtually every state east of the Great Plains. These newfound old forests include more than 2.2 million acres, more than four times the acreage thought to exist. And don't be surprised by the trees. These forests are less dependent on the size of the trees, and more on how little the processes of nature have been interfered with. Still, trees can reach several hundred years old here.*

Unfortunately, these forests are in state of crisis. We've already lost 80% of Old Growth forests worldwide and less than 5% remain in the United States. Remaining Old Growth forests are a living link to climatic, geological, and biological processes that have shaped and continue to shape this mountain region. Old growth forests are the preferred, and sometimes only, habitat for a growing list of species, and mounting scientific evidence indicates that continued logging in Old Growth forests will further endanger many species.

The US Forest Service has identified Old Growth as an important resource on National Forest lands that should be conserved. The public has concurred. However, the US Forest Service has devoted few resources to identifying remaining Old Growth forests. In the "Guidance for Conserving and Restoring Old Growth Forest Communities on National Forests in the Southern Region," and in final forest management plans released in January 2004, the US Forest Service indicates that field inventories will be conducted to find remaining Old Growth. However, resources and direction will largely leave this to occur as projects are planned. And once logging projects are planned, there is little guarantee that discovered Old Growth will be preserved.



# Characteristics of Old Growth

- *Great Age.* Old Growth forests have a number of trees of great age. In a typical southeast mixed-oak forest, trees in excess of 150-200 years old would constitute an Old Growth condition. An important point to recognize is that age need not translate into large diameters, depending upon site quality. A very dry, low-quality site may produce trees that do not have the same impressive diameter structure that they would on a moist, high-quality site.
- *Uneven-Aged Trees.* Eastern Old Growth forests are generally characterized by trees of all ages and diameters. The age/diameter structure is driven largely by small-scale natural disturbances that create gaps in the forest, and differential shade tolerance among species.
- *Downed Logs.* Downed logs should be a prominent component of the forest floor and be of multiple sizes and in various states of decay. These logs contain much of the nutrients present in a stand, are important in maintaining forest hydrology, and function as important wildlife habitat.
- *Standing Snags.* Standing dead trees indicate that trees have reached natural mortality in place and have not been selectively removed. Snags perform many of the same ecological functions as do logs and are vitally important for a variety of species of wildlife.
- *Undisturbed Soils.* Old-growth forests typically have a soil which is high in organic matter, with a thick organic layer and considerable numbers of ferns, mosses, and fungi. Not having experienced heavy logging equipment, horses, dragged logs, or grazing livestock, the soils will not be compacted.
- *Ecosystem Stability.* Tree mortality generally balances growth, and nutrient input is roughly equivalent to nutrient output. In essence, nutrients are conserved.
- *Diversity of Plants and Animals.* In addition to plants, there may be a variety of animals which are associated with Old Growth stands because of their structural elements. Certain species of salamanders, soil invertebrates, small mammals, songbirds, and black bear are often found in much greater abundance in Old Growth stands compared to younger stands.
- *Little or No Evidence of Human Disturbance.* Stands with obvious signs of human disturbance cannot likely be classified as Old Growth.

## Values of Old Growth

- They tell us about the natural structure, function, and disturbance regimes of forests. They present a remarkable opportunity to understand natural forest processes and can help us restore other forests.
- Old-growth forests provide a valuable benchmark or "experimental control" against which we can compare our managed lands. In this way, we can evaluate the effects of various forest management practices vs. no management on the flora, fauna, and soils.
- Southern Appalachian Old Growth functions as a reservoir of biological diversity. These forests may favor unique populations of plants and animals, or they may simply provide a habitat structure that certain animals need and can't find elsewhere in the landscape because Old Growth is so rare.
- They have great heritage value. These forests exist as living museums and present the forests as our forefathers would have experienced them. They provide a remarkable educational tool for historians and social scientists, as well as biologists.
- Old Growth forests are the last substantial tracts of forests where people have not intervened. There is the ethical and practical question, "Is it appropriate for us [humans] to destroy or modify all of nature?"