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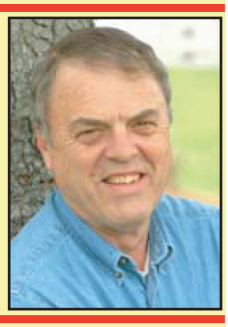

Neal G. Lineback

NORTH AMERICA'S BOREAL FOREST

Development pressure is increasingly threatening one of the world's greatest forest regions. North America's boreal forest stretches from Labrador and Newfoundland on Canada's east coast to Alaska's west coast.

One of the threats to the forest, a major pipeline along the Mackenzie River, has galvanized the interests of a host of environmental, industrial and cultural groups seeking ways to preserve Canada's portion of the great forest.

The boreal forest is a region of about 2.6 million square miles (6.7 million sq. k.), 2.2 million square miles (5.7 million sq. k.) of which are located in Canada. It is somewhat difficult to define the exact geographic limits of the forest, as its edges transition with the arctic tundra on the north and more temperate forest and grasslands on the south. Consequently, the adjacent transition zones are mixes of two or more ecosystems, making it difficult to draw definitive lines separating them.

The North American boreal forest has a counterpart in Russia, called the *taiga*. Both regions reside in the subarctic climate, where long, subfreezing winters give way to short summers. Vegetation found in this harsh climate is mostly coniferous plants of both evergreen needleleaf and deciduous varieties.

In North America, spruce, tamarack, jack pine, aspen and birch prevail, each possessing evolutionary ways of surviving long, cold and dark winters and short summers with long daily daylight periods. Many of the trees have a stunted appearance and are widely spaced, particularly toward the northern edge of the boreal forest. Additionally, much of the region was scoured by Pleistocene glaciers, leaving some areas with little soil for plant growth.

In the past, much of the boreal forest was not greatly threatened by widespread deforestation, except near the towns and villages widely scattered across the landscape. Sparse population, transportation difficulties and more competitive forest products available elsewhere largely left the boreal forest intact. Things have changed radically, however, over the past 30 years as mineral and petroleum extraction and new forest extraction technology now bring major threats to the forest.

The boreal forest overlies increasingly valuable resources, including petroleum, diamonds, nickel, iron ore, zinc, copper, gold, lead, molybdenum and silver. Canada's crude oil reserves, represented largely by its oil sands and tar shale, are estimated at 179 billion barrels, more than seven times that of the United States and 68 percent as large as Saudi Arabia's. Extraction of crude from oil sands and tar shale, however, represents major technological and environmental problems.

One example of impending threats to the boreal forest appears to have focused efforts by numerous public, semi-public and private agencies to protect Canada's boreal forest. The Mackenzie Gas Pipeline project was first proposed in 1967 and designed to follow the north-south Mackenzie River valley. The Canadian Boreal Initiative takes a broad collaborative approach to widespread regional planning, according to an article, "The Last Stand," in the summer 2007 issue of *Nature Conservancy* magazine (vol. 57, No. 2).

The galvanizing idea is not to defeat the proposed pipeline, but to minimize its impact. "Our focus is to ensure that as the pipeline goes in—if it goes in—that it does so in a way that's sustainable, with a robust system of protected areas already in place, and with best practices laid out for management," according to naturalist Scott Weidensaul. The groups hope their initiatives will develop into a regional planning program that will provide long-term protection to the forest.

The North American and Russian boreal forests and the Amazonian rainforest represent the last of the earth's great natural forest ecosystems. Having a plan may arrest the helter-skelter development that threatens at least one of these major ecological regions.

And that is *Geography in the News™*.June 15, 2007. #889.

(The author is a Professor Emeritus of Geography at Appalachian State University, Boone, NC. University News Director Jane Nicholson serves as technical editor.)

Developmental Threats Brings Danger to the Deep Woods

Sources: Weidensaul, Scott, "The Last Stand," *Nature Conservancy, Summer 2007, Vol. 57, No. 2.*