

Fire helps control moose?

by Andy Devolder

If you have ever tried to keep moose away from your shrubs and young trees, you know what an appetite moose have for woody vegetation, especially in the winter. They don't like spruce, but love to browse the hardwoods, such as willow, birch, and aspen. These sun loving species grow quickly after a forest fire, but after several decades the slow growing spruce will over top them and shade them out. Without periodic fires to clear out the spruce, the moose simply can not find enough to eat in the winter and their population declines.

The 300,000-acre 1947 burn in the central peninsula created record high moose numbers in the late 60s. The 80,000-acre 1969 Swanson River burn north of Kenai and Soldotna is still one of our best moose hunting areas. We know the story of these two large burns quite well, but what about earlier burns? Has the Kenai had large fires in the past? And if so, how frequently?

Early accounts from hunters, trappers and homesteaders often mentioned fires, but were usually vague as to locations and fire sizes. Fire records from the Alaska Fire Service and the Bureau of Land Management contain valuable data, but only for the past 50 or 60 years. However, a reliable source of older fire history information can be found in the trees themselves.

I recently completed a study of the fire history of Kenai lowland black spruce forests. With tree ring dating I was able to use fire scars and tree ages to date 10 previously unknown fires within the lowland black spruce forests on the refuge. The earliest fire that I could date occurred in 1708 and the most recent fire (prior to 1947) occurred in 1898. From my research, I concluded that fires occurred in 1708, 1762, 1828, 1833, 1834, 1849, 1867, 1874, 1888, and 1898. The sizes of these fires ranged from merely a point to more than 74,000 acres. Since tree ring evidence of older fires is lost with each younger fire (because trees are burned in each successive fire event), these fire sizes are probably not the true sizes, but only the extent that I could determine using tree ring analysis of many different trees.

on average from the early 1700s to the turn of the

20th century, fires burned every 20 years somewhere within lowland black spruce forests on the refuge. This means that somewhere in these forests during the past 300 years there has been substantial areas of young trees to support moose populations. Since the 1946 and 1969 burns were very large fires, there now large areas of forest that are "even aged" i.e., stands that originated after a single fire event. My research, however, suggests that in the past the Kenai lowlands were much more patchy with stands of different ages, due to the smaller fires.

The benefits of having a patchy age structure are twofold. First, as noted, young forests tend to have substantial amounts of willow and birch regeneration which is good moose browse. So we need an ongoing supply of "adolescent" forests.

Second, and from the human point of view, perhaps the best reason for having different aged forests across the landscape is for fire protection. Black spruce forests less than 30 years old are basically "fireproof" and therefore act as effective firebreaks.

Once black spruce reaches 60 to 70 years of age, its flammability increases rapidly. Large areas of old, mature black spruce could, in the future, present dangerous problems if weather conditions and ignition sources were present in the right combination.

For this reason, on the refuge we look to "prescribed burning in order to remove or isolate hazardous fuels before accidental or natural ignition creates fires that are difficult to control.

The refuge has a prescribed burning program in the Mystery Creek area which seeks to create a good firebreak between the large beetle-killed forest in the mystery foothills and Kenai mountains and the areas to the west, including Sterling, Soldotna, and Kenai. With luck, a good burn will generate some excellent hardwood browse to keep the moose (and their various two- and four- legged predators) fat and happy in the winter.

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