Learning about past helps with predicting the future

by Ed Berg

Welcome to Refuge Notebook.

This is day one, page one of a new weekly column devoted to life and happenings on the Kenai National Wildlife Refuge. We staff members and friends of the refuge have signed up for this project because we think we have some interesting stories to tell. we hope that the more our readers learn about the refuge, the more they will appreciate it and help take care of it.

That being said, let me tell you a bit about my work on the refuge. As the refuge ecologist, I deal with the Big Picture. The "eco" in "ecology" comes from the Greek work "oikos" for house. So I study the "house" or the habitat wherein the animals (that's us, too) and plants live out their daily lives.

My chief angle for studying the Big Picture is to look at the past. If you know the past, maybe you can predict the future. when I first came to this job, we had no idea if spruce bark beetles had been in the Kenai Peninsula forests in the past. We knew very little about forest fires before European settlement. By studying tree-rings, we now know that the bark beetle outbreaks occurred regionally in the 1820's and 1880's, and that fires were much less frequent (but did occur) before the 1850's.

Fire and bark beetles are two disturbances that rebuild the forest house. Moose and hares for example need fire to produce the hardwood (willow, birch, and aspen) browse that gets them through the winter. Indeed, our most productive wildlife areas are the "middle-aged" burns, such as the 1969 burn west of Swanson River Road. These browse-filled burns support moose and hares, and everything that eats moose and hares, such as wolves, lynx, and bears.

With fewer fires before European settlement, there were probably fewer moose on the Kenai. At the Bufflehead oil well site I looked at the innermost tree rings in birch trees more than 200 years old. I could see that these trees had wide inner rings and grew rapidly when they were little shrubs. Modern birch shrubs are heavily browsed and you can put 40 rings (years) in the size of a dime. This suggests there weren't alot of moose browsing the Bufflehead site 200 years ago.

So, one conclusion from such studies is that if we want more moose, we need more fire on the refuge landscape. Toward this end, you'll be hearing from "firebugs" Larry Adams and Doug Newbould who manage our prescribed burning program.

Another conclusion is that bark beetles are a natural part of our spruce ecosystem, and that they like warm summers and drought-stressed trees. If the present warming trend continues (i.e., if global warming is real), I'm predicting more beetles and more wildfires.

So, there's my case for studying the past. There may not be any crystal balls, but we can certainly look to the past to see where we fall on the big trends. Like the stock market, these trends can change, but then that's what keeps ecologists (and stockbrokers) employed!

I'll tell you more about some of these findings and prognostications in future columns. In the meantime, enjoy that snow!

Ed Berg has been an ecologist at the Kenai National Wildlife Refuge since 1993. He also teaches geology at the Kenai Peninsula College and serves on the Kenai Peninsula Borough Trails Committee.