

What will our grandchildren see on the Kenai?

by John Morton

We all know that the Kenai is a wonderful place to live. We've got salmon and moose and bears, campgrounds, hiking trails, the Kenai River, Cook Inlet, the Kenai Mountains, and lakes of all sizes for boating. We've got places where we can snowmachine and places where we can find true wilderness. All these countless ways to recreate and most of it are within spitting distance of where we live and work. This is why the number of people who live on the Kenai has increased 22% in the last decade. It's also why 2.4 million people traveled down the Sterling Highway last year. They're all trying to get to this nice place we call the Kenai.

And every time somebody builds their home here, it's another septic field in the ground, another driveway, another acre carved up, more kilowatts, and more BTUs of gas. And every visitor puts demands on the resources, perhaps as another RV on the highway, another motorboat on the Kenai, one less red, or another night of full campsites. But new residents bring skills and expand the workforce; more visitors bring cash and help keep many of us employed.

So how do we find a reasonable balance? One innovative tool to help us find a solution is a computer model, called *ALCES*®, A Landscape Cumulative Effects Simulator. *ALCES* is a stock-and-flow model that was designed to track human "footprints" across the natural landscape.

Footprints are the artifacts of humans going about their business of living, such as seismic lines, roads, residential homes, trails, utility right-of-ways, oil and gas fields. The natural landscapes is what the Kenai looked like before we really started affecting the natural system: the 5.5 million acres of forests, wetlands, glaciers, streams, and lakes that are still mostly intact on the peninsula.

ALCES tracks human footprints on the landscape, and can cumulatively "grow" these footprints into the future, in response to different scenarios that we decide are plausible. Students of the computer game *SIM-CITY* will recognize this idea of experimenting with possible futures.

Suppose we think that the residential population on the Kenai will continue to grow by 2.2% each year

for the next 5 decades. What will our grandchildren likely see on the Kenai in 50 years? *ALCES* can help us forecast the demands on the utilities, predict economic growth, show us how forests and wetlands may change, and how critical wildlife species like brown bears may be impacted.

Several athletes from the Kenai competed in the Arctic Winter Games this past year in Fort McMurray, Alberta. This is also the heart of the burgeoning Alberta oil sands industry that is extracting oil at almost 1 million barrels per day. The population in Alberta is growing at 1.3% per year and the economy is growing by 3.2% per year. *ALCES* was originally developed in Alberta to specifically address these kinds of growth issues. Government agencies, commercial forestry, and oil companies have used *ALCES* extensively alike to help understand how their decisions today will affect the quality of life tomorrow.

Forecasting possible futures is a pretty tall order for any piece of computer software. It took two years out of the life of a pretty smart guy, Dr. Brad Stelfox, to develop *ALCES*, and several years of use by Canadian agencies to refine it. And it will take the experience and expertise of a lot of local professionals to ensure that the Kenai version has the proper data inputs and is running reasonable future scenarios.

The Refuge worked with the Kenai Watershed Forum to host two workshops in April of 2003 and 2004 to bring *ALCES* to the Kenai. Stephanie Sims, the new *ALCES* Consortium Coordinator at the Kenai Watershed Forum, is actively working to bring local experts from Federal and State agencies, Kenai Peninsula Borough, industries, and native governments to the table. I encourage you to look at <http://www.kenaiwatershed.org/effectsmodel.html>. It's an ambitious project, but one that I sincerely believe is critical to help us strategically plan economic opportunities while ensuring that the Kenai will be as nice a place for our grandchildren as it is for us.

John Morton is the Supervisory Fish & Wildlife Biologist at the Kenai National Wildlife Refuge. Previous Refuge Notebook columns can be viewed on the Web at <http://www.fws.gov/refuge/kenai/>.