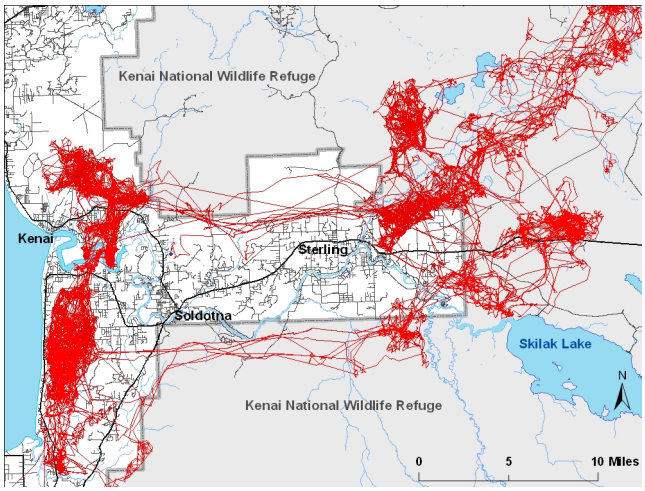
Why did the caribou cross the road?

by Rick Ernst



Map of caribou movement in Kenai. Click on image to enlarge. Photo Credit: Rich Ernst

Caribou are fascinating creatures here on the Kenai Peninsula. They are well adapted for our cold climate with short ears and tails, as well as hollow hair which insulates them against extreme cold. They also have large rounded hooves for pawing through snow to reach lichens—a preferred winter food. The hooves spread wide to support the animal when walking on snow, and act as paddles when swimming.

The central Peninsula is one of the few places where you can see caribou in your back yard, in your neighborhood, or from the road. In order to learn more about these animals, we have collared them with radio transmitters, and in more recent years, with global positioning satellite (GPS) collars. While the average radio collar costs $300, a GPS collar can run up to $1750. The cost difference is large but so is the benefit. GPS collars can be programmed for obtaining locations, can include a "drop off" mechanism to release the collar on a specific date and time, can store a large amount of data, and do not burden the animal for life.

With the radio collar, a biologist must track the animal from the ground or the air to obtain location data. This involves a vehicle or an airplane which (especially with high fuel costs) can greatly increase the cost of each location "fix" obtained. However the GPS collar uses satellites to obtain a location fix and then records the information within the collar. Depending on the goals of the study, you can program the collar to obtain a fix at various times.

We first used GPS collars on the Kenai Lowland Herd in November 2000. We programmed the collars to obtain a location ever 13 hours throughout the year. As part of the Sterling Highway Wildlife-Vehicle Collision Study we collared caribou starting in November 2006 to identify specific crossing areas of the Sterling Highway between Milepost 58 and 79. These collars were programmed to obtain a fix every 30 minutes from November until April, and then every two hours until the collar dropped in September of the following year.

The limiting factor on programming a location fix frequency is the battery pack. The more locations you obtain, the shorter the battery life of the collar. This is critical because you must retrieve the collar in order to obtain the data. If the battery fails before the collar can be retrieved, the transmitter will stop sending out a signal and you will have no way to track or locate the collar. All the data stored on the collar will be lost. This can be disastrous for the researcher.

GPS collars have been a tremendous aid to more accurately documenting home ranges for the Kenai Lowland Herd as well as determining the timing and location of migration routes between their summer and winter ranges. Caribou winter over a vast area between the Moose River and Funny River. Their summer range is smaller and includes wetlands north of the Kenai Airport and the Kenai gas fields surrounded by K-Beach Road. Two critical road crossings for caribou during the summer are the Kenai Spur west of the intersection with Beaver Loop, and K-Beach near the intersection with Bridge Access Road.

While Kenai Lowland caribou are frequently observed by locals and visitors along K-Beach, Bridge Access, Beaver Loop and the Kenai Spur roads, it is evident from the GPS data that caribou avoid roadways. Of 61,009 locations from nine GPS-collared caribou only 278 were within 100 feet of any road – that is less than half of one percent! If we extend the distance to within 500 feet of any road 1,857 locations occurred, that is still only three percent of all the GPS locations.

The red lines show the movements of nine cari-

bou with GPS satellite locator collars during 2006-2007. These caribou belong to the Kenai Lowland Herd. The summer range is shown by the dense red color on the west side covering the Kenai gas fields, and the Kenai River flats to north of the Kenai airport. The winter range lies generally east of Sterling. The route lines clearly indicate that the caribou avoid roadways and developed areas

Even though the caribou clearly avoid roads, they must travel across roads to get back and forth from winter to summer ranges. And some fall prey to vehicles when they do cross roads, especially the Sterling Highway, Kenai Spur, Beaver Loop, K-Beach and Bridge Access. Approximately four caribou are killed each year in collisions with vehicles. While this is a small number, the Kenai Lowland Herd is only around 100 animals. This herd has not been hunted since 1994 due to its small size.

One concern of managers is that cow caribou in the Kenai Lowland Herd are aging and will become less productive in coming years. Typically male caribou live about seven to eight years while females live slightly longer—up to 10 years. However, one caribou we captured was from the original transplant to the Kenai back in 1986. She was at least 17 years old. Each individual animal has its own set of circumstances which influence its health and life span. Injuries, disease, parasites, predation (both wild and domestic) and vehicle collisions can all shorten a caribou's life.

We can help caribou survival by driving attentively and watching for caribou crossing the road, especially when weather and road conditions are poor. Also during calving season in May and June, please do not let your dog run loose. Dogs, especially in groups, can kill caribou calves.

The Kenai Lowland caribou are one of the highlights of living in this area. With some care we can help ensure their presence here for years to come.

Rick Ernst has been a wildlife biologist and pilot at the Kenai National Wildlife Refuge since 1993. Previous Refuge Previous Refuge Notebook columns can be viewed on the Web at http://www.fws.gov/refuge/kenai/.