

Peninsula wildlife require large areas to survive

by Ted Bailey

How large of an area do you require to survive? If you live and work in Soldotna and obtain all of your essential "survival" items such as groceries, household goods and gasoline in Soldotna, your area could be as small as 1-2 square miles, depending on where you live, work and shop. (Pleasure trips to Anchorage and vacations to Hawaii don't count because you can survive in Soldotna without them. We're talking basic survival!)

However, if you live in Soldotna but are employed in Kenai, your area of use will be much larger, perhaps 10-30 square miles. Your area will now include some additional space between Soldotna and Kenai as well. Within this space you may not only travel to Kenai by driving the Spur Highway, but you may also purchase food or gasoline along the way. It is important that you are not prevented from getting to Kenai or from using the resources along the way.

Now consider a situation where there are no grocery stores and the only way you can survive is by gathering native plants and by fishing and hunting. Now your survival area is much larger. It may include portions of the Kenai River or perhaps the Kasilof or Russian Rivers or Cook Inlet.

If you depend on moose, caribou or mountain sheep for food, your area of use may also include the Swanson River area, the Tustumena Benchlands or the Kenai Mountains. Your survival area has now grown to 100-500 square miles or more, depending on how successful you are catching fish and getting a moose, caribou or sheep.

If you are raising offspring, your area of need becomes still larger and more complex because you must have a safe place to rear your children and a safe place to leave them when you are off fishing or hunting. Your area must have adequate escape cover to help protect the offspring from other potentially dangerous individuals of the same or of different species.

These are the same basic problems wildlife face each day in order to survive, and they do this without the benefits of human intelligence, social programs, ingenuity, and technology. How large an area (or "home range") do wild animals need in order to survive?

It depends on several factors including the species, the quantity, quality, and distribution of the food supply, and special needs such as denning places and escape cover from enemies. In general the smaller the species the smaller the area needed to survive.

Species that eat plants (herbivores) generally require less area than similar sized species that hunt prey (carnivores) because plants are much more abundant and easier to obtain than crafty, evasive or defensive prey. In the early 1980's we deployed over 50 radio collars on free-roaming moose on the Kenai Refuge. We found that cow moose had an average home range of 43 square miles, while bull moose averaged 47 square miles.

However, about 43% of the radio-equipped cows and bulls had distinct summer and winter ranges and were thus classified as migratory moose. This meant that some moose left their summer range and moved to an area with more accessible winter browse or less snow. Some bulls moved from summer ranges to winter ranges as far as 14 miles and some cows moved as far as 27 miles.

In other areas of Alaska moose have an average seasonal home range of at least 36 square miles. It thus takes a large area to support an Alaskan moose.

Lynx also require large areas, given their relatively small size. Their home range size varies with the abundance of snowshoe hares, which cycle every 10-13 years. In the mid-1980's when hares were in peak abundance in the 1947 burn, the average home range size of a female lynx was 41 square miles and that of male lynx 87 square miles.

The home range overlap between adult males averaged only 4% while that of adult females was 5%. Within the home ranges of these breeding adult lynx were their offspring from the current or previous years and nomadic or dispersing lynx from other areas. Nomadic or dispersing lynx usually were usually non-breeders looking for a place to live among the established resident breeding lynx.

Nomadic lynx often move over an area much larger than resident lynx and do not have an established home range. During 1997-98, the latest peak in snowshoe hare numbers, resident female lynx home

range varied between 9-17 square miles and that of resident males between 27-33 square miles, depending on habitat and snowshoe hare density.

The size of an area needed by a lynx increases with decreasing snowshoe hare density. It may eventually become two to ten times as large when hares are scarce. Large home ranges notwithstanding, in the early 1990s some adult female lynx still died of starvation because so few hares could be found even with expanded home ranges.

It takes an even larger home range to support wolves. On the Kenai Peninsula, wolf pack territory size is influenced by the number of wolves and the density and vulnerability of moose. In the late 1970's the average size of a wolf pack's territory was 246 square miles or about 6 times that of a cow moose.

Wolves living in mature forests where moose densities are low have pack territory sizes many times larger than wolves living in young forests where moose densities are higher. For example, a small pack was able to survive one winter in a moose-rich area of only 68 square miles, whereas a large pack that lived in mature forest used an area of 600 square miles.

Brown bears probably require the largest home ranges, but this is difficult to accurately quantify because of the uneven distribution of the bears' food supply. Salmon are very important food for brown bears on the Kenai Peninsula.

Some brown bears radio collared and monitored on the Refuge by the Interagency Brown Bear Study Team fed intensively on salmon in one stream then moved 15-30 miles to other streams to feed on different runs of spawning salmon.

In the spring after leaving their den, some bears search over large areas for carcasses of winter-killed moose or for fresh young plants growing in wet areas or in avalanche chutes. If one were to connect all of these feeding places into a single area of use for these particular bears, the area might be many hundreds of square miles in size. Even more important than the size of the area is the ability of the bears to move unhindered and safely between important feeding places, while using the habitat along the way.

These connecting habitat areas are as important to bears as the area between Soldotna and Kenai for people who live in one town and work in the other. From our radio-collar studies, we see that it takes a very large area to support a single moose, a resident breeding lynx, a pack of wolves, and a wide-ranging brown bear on the Kenai Peninsula. With a human population growth rate of 2.2% per year on the Kenai Peninsula, lots of land is being subdivided and developed, and our former large areas are shrinking.

This may not be noticeable from one day to the next, but the cumulative loss over five or ten or fifteen years can be pretty severe if you are one of those critters that lives off the land. In the next century, public lands on the Kenai are the only hope for preserving large areas for wildlife, and these lands will only be preserved with solid public support and far-thinking political leadership.

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