

WOLF PREDATION:

More Bad News

By Dr. Charles Kay

As I explained in the last issue of MuleyCrazy, pro-wolf advocates are now demanding 6,000 or more wolves as one interbreeding population in every western state. Pro-wolf advocates also claim that predation, in general, and wolves in particular have no impact on prey populations. Recent research by Dr. Tom Bergerud and his colleagues, however, paints an entirely different picture and serves as a poignant example of what will happen to the west's mule deer if pro-wolf advocates have their way....

Woodland and mountain caribou have been declining throughout North America since European settlement. Many attribute the decline to the fact that caribou must feed on aboral or terrestrial lichens during winter, a food that is being destroyed by logging, forest fires, and other human activities; i.e., modern land-use practices are to blame. However, others attribute the caribou's decline to predation by wolves and other carnivores. To separate between these competing hypotheses, Dr. Tom Bergerud and his co-workers designed a series of simple but elegant experiments and have now accumulated 30 years of data.

In the northern most arc of Lake Superior, there lies a cluster of seven major islands plus smaller islets. The Slate Islands are five miles from the mainland at their nearest point and only twice, during the last 30 years, has winter ice bridged that gap. Terrestrial lichens are absent, plus the islands have been both logged and burned, making them unfit for caribou according to most biologists. The Slate Islands lack wolves, black bears, whitetailed deer, and moose, but caribou are indigenous. As a companion study, Bergerud and his associates chose Pukaskwa National Park, which stretches for 50 miles along the north shore of Lake Superior. In contrast to the Slate Islands, Pukaskwa has an abundance of lichens, which are supposed to be a critical winter food for caribou, but unlike the Slate Islands, Pukaskwa is home to wolves, bears, moose, and whitetails. Woodland caribou are also present.

So we have islands that are poor caribou habitat, but which have no predators versus a nearby national park that is excellent caribou habitat but which contains wolves. Now according to what many biologists and pro-wolf advocates would have you believe, habitat is the all important factor in maintaining healthy ungulate populations, while predation can largely be ignored. Well, nothing could be further from the truth. Habitat, as it turns out, is irrelevant and ecologists have been, at best, brain-dead for years.

Despite the supposedly "poor" habitat in the Slate Islands, Bergerud and his research team recorded the highest densities of caribou ever found anywhere in North America. Moreover, those high densities have persisted since at least 1949 when the herd was first censused. More importantly, the density of caribou in the "poor" habitat, but predator-free, Slate Islands was 100 times that in Pukaskwa National Park where predators hold sway; 100 times or 10,000% more caribou per unit area—a significant difference by any objective standard!

Then during the winter of 1993-94, a natural experiment occurred when Lake Superior froze and two wolves crossed to the Slate Islands. Within days, the two wolves proceeded to cut through the Slate Island caribou like a hot knife through butter. Because caribou, like mule deer, are exceedingly susceptible to wolf predation. Only when the two wolves disappeared did caribou numbers recover.

A second set of manipulated experiments was conducted when Bergerud and his associates transplanted Slate Island caribou to adjoining areas with and without wolves. A release to Bowman Island, where wolves and moose were present, failed due to predation. A second release to Montreal Island doubled in numbers until Lake Superior froze and wolves reached that island. A third release was to Michipicoten Island where wolves were absent but so too were lichens. Despite the "poor" habitat, those caribou increased at an average annual rate of 18% for nearly 20 years. A fourth release to Lake Superior Provincial Park on the mainland failed due to wolf predation. Thus, the data are both conclusive and overwhelming. Habitat is largely irrelevant because caribou numbers are limited by wolf predation. Bergerud goes so far as to say that managers have wasted the last 50 years measuring lichens! Remove the wolves and you have 100 times more caribou, even on supposedly "poor" ranges.

Based on his research in the Slate Islands and elsewhere, Dr. Bergerud has come to the conclusion that mountain and woodland caribou throughout the length and breadth of North America are facing extinction due to increased predation, mostly from wolves, but also from bears, both black and grizzly, mountain lions, and coyotes. Caribou populations that have persisted for thousands of years will be gone in our lifetimes. But here is the kicker, it is not really a "wolf



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problem.” Instead it is a problem of too many moose and/or whitetails.

Historically and prehistorically moose were absent from most of western North America and eastern Canada, as well. Even in Alaska, moose were historically limited to a few, very remote areas. Since European settlement, however, moose numbers have exploded, as has the area occupied by those animals. There are more moose in North

second, based on fire-history studies there has always been a significant amount of the browse favored by moose and whitetails. Instead, as I have explained elsewhere, (see Kay, C.E. 1997. *Aboriginal Overkill and the Biogeography of Moose in Western North America*. *Alces* 33:141-164), native hunters extirpated moose over large areas, which allowed woodland and mountain caribou to persist. As native hunting declined, moose populations

keep moose populations at only 10% or less of what the habitat would support in the absence of predation. Even at those low moose densities, though, there are still more than enough wolves to drive woodland and mountain caribou to extinction. So, if we were to significantly reduce the number of wolves, we would not only save the caribou, but we would also have more moose, which is a key issue among subsistence hunters in Alaska and the far north.



The above photos show that wolves do not only attack the weak or the young. This great Wyoming buck was brought down by wolves during the winter of 2007. The 236-inch giant was one of Wyoming's biggest bucks still roamin' the hills after hunting season. Unfortunately, because of wolves, it was his last.

America today than at anytime in the last 12,000 years, except for the 1950's-60's when predator control was widespread and effective. Historically, caribou numbers were low and those animals so widely spaced that they could support only a few or no wolves. The addition of alternative prey, though, has allowed wolves to increase and the wolves then drive the more vulnerable caribou ever downward. That is to say, the addition of moose did not buffer, or reduce, predation pressure on caribou but instead increased predation on caribou, the exact opposite of what most people would predict.

That, however, is not the most intriguing part. Why were moose absent historically and prehistorically? According to Dr. Bergerud, moose, and to a lesser extent whitetails, have expanded in numbers and range due to climatic change and/or logging. In this, though, Bergerud erred. First, the expansion of moose occurred well before any global warming that may have occurred and

expanded, followed by wolves.

Two of the woodland caribou herds in most rapid decline lie not in Alberta's heavily logged boreal forests, but rather in the remote wilderness of Canada's Banff and Jasper National Parks. Why are caribou headed towards extinction in two national parks where there is no logging or other development? Wolves! Wolves that are maintained at too high a density by unnaturally large numbers of elk. Elk, that like moose, were historically kept at very low levels by native hunters. There are more elk on western ranges today than at anytime since the last glaciation.

All this has led Dr. Bergerud to conclude that there are only two ways to keep mountain and woodland caribou from going extinct. You either have to significantly reduce wolves or significantly reduce the number of moose or whitetails where the latter occur. Here we need to note that other studies have shown that wolves and bears routinely

As I have explained in my previous articles on predation, all this is of critical importance to mule deer and mule deer hunters because the same thing, termed apparent or predator mediated competition, occurs with elk and mule deer. By preying mostly on the elk, wolves can/will take the more vulnerable mule deer to exceedingly low levels or extinction. The wolves that were turned loose in Montana, Idaho, and Wyoming have preyed primarily on elk and there are data on how many elk each wolf kills per year—22 elk/wolf/year—but there is little data from those states or anywhere else on the effect of wolf predation on mule deer. To put it simply, mule deer decline so rapidly that there is nothing left to study!

Hunter harvest of black-tailed deer on Vancouver Island though, gives some idea of what will happen if pro-wolf advocates have their way. Before wolves arrived, sportsmen on Vancouver Island took home around 25,000 blacktails a year. Now that wolves have overrun the island, the figure has plummeted to less than 4,000 deer a year. Moreover, blacktails are now found in reasonable abundance only where they live in suburbs or cities; i.e., the deer have moved into towns to avoid predators.

And that is not the end of the bad news. Dr. Scott Creel, a professor at Montana State University, recently published a study in *Science* on predation risk and elk reproductive physiology. According to that research, elk in the Yellowstone ecosystem are being harassed by wolves to such a degree that pregnant cows are aborting or reabsorbing their unborn calves. Even studies of oil and gas development on win-

ter ranges have never shown this level of harassment. If humans chased wildlife around the way wolves do, the humans would be in jail.

Attention also needs to be drawn to a recent book by Bergerud, Luttich, and Camps on "The Return of Caribou to Ungava", which I just reviewed at the request of the Canadian Field-Naturalist. This is simply the best book that has appeared on caribou ecology and predator-prey relationships in many years, perhaps ever. Not only do Bergerud and his co-authors discuss the woodland caribou-wolf dilemma outlined above, but they also address the age-old question of why migratory barren ground caribou are so abundant relative to sedentary woodland and mountain ecotypes. And again the answer is wolves, or more correctly, the lack thereof.

First you need to understand a little about evolution in that male and female arctic caribou have entirely different strategies to maximize their inclusive fitness. Males select habitats with large amounts of high-quality foods so that they can produce maximum body and antler growth, thereby winning breeding opportunities during the rut. Females, on the other hand, select habitats that maximize the survival of their reproductive output; i.e., calves. So, in the spring, pregnant caribou migrate to remote tundra locations where there are no alternative prey to support wolves or bears. The forage on those areas is of poor quality, but security for newborn young is paramount. Breeding wolves can not follow the female caribou to the barrens because the wolves are tied to densities at treeline where there are moose. Male caribou also remain near treeline because green-up comes earlier there and the quantity and quality of forage are better.

Towards the end of summer, the bulls move north to join the cows and calves on their annual migration to distant winter ranges. After their pups can keep up with the adults, wolves abandon their territories and shadow the ever-moving caribou. This is when the wolves begin

to kill the young calves. And annihilation it is, for even with the caribou's long-distance, anti-predator migrations, wolves eventually gain the upper hand and drive caribou numbers down. That is until the caribou are saved by Arctic foxes! How can Arctic foxes save caribou from wolf predation? Rabies!

Rabies is endemic in Arctic foxes and every four to five years the disease reaches epidemic proportions. And when it does, wolves become infected, wolf numbers decline by 80% to 90%, and the caribou calves and their mothers can breathe a little easier, and more importantly, a lot longer. Without Arctic foxes and rabies, the large herds of barren ground caribou would not exist. All this, though, has been ignored by the pro-wolf crowd.



To quote Dr. Bergerud, "When...biologists attempt to reduce wolf populations to increase caribou stocks, they are blamed [by pro-wolf advocates and the media] for intruding into the Balance of Nature." Earthjustice, the environmental law firm representing pro-wolf groups, for instance, has repeatedly cited "The Balance of Nature" in its legal briefs to federal judges. But according to Dr. Charles Elton, the father of ecology, "The Balance of Nature" though widely believed by the public "has the disadvantage of being untrue."

To again quote Dr. Bergerud, "The Balance of Nature is not a scientific hypothesis, since there is no disproof that its [advocates] will accept. [Instead] it is a closely held idea [like religion]

that is not testable... Balance of Nature advocates, as a last [resort] blame imbalances between predator and prey...[on modern] man's intrusion. The most widely quoted balance of nature example... is the interaction of wolves and moose on Isle Royale.... [but] Isle Royale is a [totally] unnatural area [as there was/is] no opportunity for egress-ingress of the wolves, the major [way] they adjust their numbers, and [because] there [are] no bears on the island, a major predator of moose." Which is exactly what I said in 1993 when I wrote my first article on predation. In short, Isle Royale is a flawed test of predator-prey ecology. The Slate Islands and Pakaskwa National Park are not.

What the world needs to learn from the Slate Islands is that wolves, not habitat, limit ungulate populations. While the take home message for mule deer hunters is that if pro-wolf advocates get their way, our already limited hunting opportunities will decline to nothingness—which unfortunately, has been the goal of some all along. But letting predators decimate the game herds that sportsmen worked so hard to build over the last 70 years will destroy the fundamental framework of wildlife conservation in North America.

Just look at what has happened in Kenya. At the urging of animal rights groups, Kenya banned all consumptive use of wildlife in 1977 and as a result, Kenya's once magnificent game herds have plummeted by 80% and are predicted to be extinct in the near future. Banning hunting either by decree or by leaving predators, and especially wolves with their high reproductive rate, unchecked would be an ecological disaster. After all if there are no mule deer to help safeguard winter ranges, those areas stand a high probability of being turned into housing developments. For if wildlife is not an economic asset, it will simply disappear, as it has in Kenya. And do not let anyone fool you, wolves are not an economic asset. That too is another of the pro-wolf lies.