

An update on the Caribou Strategy from the NLWF

In February 2008, the provincial government launched a five year, \$15 million Caribou Strategy to address a steep decline in the population of woodland caribou in insular Newfoundland.

As part of that effort, a Caribou Resource Committee was established to act as an information conduit between the research effort and the community stakeholders, including the Newfoundland and Labrador Wildlife Federation, the Newfoundland and Labrador Outfitters Association, the Newfoundland and Labrador Trappers Association, the province's rod and gun clubs, and others. The committee has met regularly (usually bi-annually) and been on the receiving end of a great deal of the research and analysis conducted as part of the Strategy. The sheer volume of research and reading material has been considerable.

The mandate of the Strategy has now come to an end and the final day of meetings was held recently. The results and conclusions are voluminous, and there are many pages of graphs, charts and the like behind each comment being made here.

Of the many considerable chunks of science have been completed during the course of the Strategy, two of the major ones have concerned (1) the predator-prey dynamic (as concerns caribou) and (2) their habitat.

A bit of a primer firstly on predators of caribou in Newfoundland. The most significant one is black bear, followed closely by coyote. To a lesser degree come lynx and bald eagle. The vast majority of this predation takes place with newly born caribou calves. There was a point in the early 2000's when upwards of 85 percent of calves born in the spring were being eaten before they made it through the summer.

There has been a lot of chatter in recent years about the effects of eastern coyote on our woodland caribou population, to the point that sometimes the coyote has been blamed as the principal culprit for their decline. This, however, would not be an accurate statement. They are of course a predator, and a major factor, but they are not the cause.

The eastern coyote is now believed to have made its way to the island as early as the late 1970s or early 1980s, rather than the mid 1980s date usually referenced. In fact, a possible kill of a caribou by coyote occurred possibly as early as 1982.

Some black bears, especially among the mature males, are superb predators. They have developed a specialized skill of ambushing moose and caribou calves in the spring and summer months, and will also occasionally take adults. On the caribou calving grounds in particular, these bears can act like minesweepers, methodically sweeping back and forth across the area until they find that calf that the doe has attempted to hide.

As part of the research, it was decided to manipulate predator populations (aiming in particular at bear and coyote) to see if calf survival rates could be improved. It was also decided - largely for social reasons - that lethal removal would only be considered after other avenues or options were explored. The experiment would be undertaken in a remote area called Middle Ridge South, where calf survival rates were bleakest.

The experiment with black bears was diversionary feeding. In other words, an attempt would be made to divert bears away from calving grounds in the springtime by providing other food. A large amount of bakery waste (e.g. donuts) was deposited by helicopter at bait sites in 2010 and 2011. Cameras and hair collection systems

were strategically placed around these sites. Perhaps unsurprisingly, bears loved the donuts but coyotes did not. Beaver carcasses were added in 2011, but again it was bears that dragged these off without the coyotes getting much of the action at all.

Calf survival rates in MR South showed a slight improvement after the diversionary feeding but it wasn't a statistically significant improvement. Moreover, the effort was very expensive and probably not feasible in the long run.

Lethal removal of coyotes was undertaken in 2012 and 2013. Trappers were brought into the same area (MR South), with slightly more than 1,000 snares placed in 2012 and a little more than 900 in 2013. (The number of snares were lower in 2013 because of the reduced coyote sign in the area. The lethal removal of coyotes did show a more marked improvement in calf survival. Not a huge improvement, but noticeable.

The experiments appeared to show that lethal removal, in concert with diversionary feeding, might work. And, moreover, that lethal removal of both species would probably produce an even more dramatic effect.

While predator-prey science is fantastically interesting, it is probably NOT the most critical piece of work accomplished through the Strategy. That part of the research focused on determining what was required for habitat availability, changes to that habitat, and the reasons for habitat selection by caribou.

After a somewhat painstaking stop and start process with trying to find the best mechanism for accomplishing this, the Strategy has now established an island wide map using Landsat imagery.

Almost every part of the island (excepting some small areas that refused to be imaged due to persistent cloud cover) has now been broken down into a habitat map with an accuracy level of just a few meters, providing an excellent tool for future environmental assessment. As new imagery becomes available, it will be added.

What it has also found is that our island is still relatively undisturbed. And this in turn leads to the most important consideration: taking a "landscape down" view of the caribou issue.

Caribou need vast areas of relatively undisturbed wilderness to survive. They are not like moose, coyotes or bears that can survive in relatively small pockets of forest.

This means that habitat management - and individual stewardship of that habitat - will be an absolutely critical priority.

The population of woodland caribou in insular Newfoundland peaked at around 97,000 animals in the late 1990s. It is now believed to be around 31,000, and with future projections, likely to decline to around 15,000 by the year 2030.

As with many things in history, this has happened before.

Caribou numbers were believed to close to the 100,000 mark sometime before the turn of the century. They crashed shortly thereafter, no doubt aggravated by the railway, and by the mid 1920s, were less than 10,000. You will recall that the Newfoundland Wolf went with them, with the last pair seen crossing Birchy Lake around 1922.

The cycle began to repeat itself in the years following, with a steep population climb up through the 1960s, 1970s, and 1980s.

There are flags that begin to appear during this population increase, all of which point to the inevitable (?) crash to follow.

The weight of newborn calves, the number of antler points, jawbone length all decreased as population increased. Diet diversity increased (e.g. caribou eat a wider variety of forage (including moss, which is virtually nutrient free), with a resulting increase in tooth wear.

Rather importantly, vigilance against predators also decreases, especially among does with calves. In other words, these does, which are already struggling to take in enough nourishment to sustain both themselves and their calf, become more concerned about forage (eating) than protecting their calf.

As the population peaks, fidelity to their historical summer range becomes relaxed. In other words, they range further and further away from the areas in which they would have typically been found. There is decreased use of the protections offered by forest and more use of more open habitats, with increasingly fragmented herd ranges (they become more dispersed).

A prime example is the recorded move by caribou into a burn-over area in Middle Ridge in 1984, something caribou would have never have done previously. This was an indication of their stressed forage. They were likely seeking out new growth plants but did so at the cost of exposing themselves to serious danger. The criss cross of fallen, burned trees made it a death trap for calfs trying to escape ambush from black bears.

So, it is believed (and reinforced by experience elsewhere) that caribou have population cycles of 60 to 90 years, which are largely dependent on habitat.

The 15 million dollar question becomes - for our insular caribou population - if and when they recover, what habitat will there be for them to recover to? The juxtaposition of human land use versus undisturbed habitat, therefore, is critical.

Fixed site disturbances (mines, roads, hydro stations, etc) themselves have not proven to be a huge concern. They tend to be static and predictable, and caribou learn to adapt to their presence and adjust their behaviour accordingly. What these human activities do, however, is provide avenues for access to the wilderness that is not static, predictable or controlled.

Snowmobiles, for example, are going to be an especially difficult issue going forward. Their lanes of travel are not predictable, the big new machines are extremely loud and powerful, and can be very disconcerting to caribou at a time of year that is already stressful for them. They are, for all intents and purposes, a "mechanized wolf".

The Lower Churchill transmission line will be a disruption of habitat. There is no doubt about that. It will largely avoid most of the critical caribou habitat in the province, but like other transmission lines and roads, it brings with it a much more serious danger. It provides yet another means of accessing relatively undisturbed wilderness at myriad points along its entire length.

Areas like Middle Ridge and the Grey River heartland are especially vulnerable, and you will probably see a move to protect large tracts of wilderness here, especially in the latter area. (MR already has the Bay du Nord wilderness area, albeit with poor enforcement, a story that repeats itself everywhere).

We are seeing small improvements in the calf survival rates. Fidelity to range is improving. We are seeing better coats on the adults. Antler points are a more finicky indicator, but that is likely to happen in time as well.

It is surmised that the island can sustain a threshold population of as many as 60,000 animals.

An important comment here on the legal (hunting) harvest. It did not cause or drive the population decline, but like the predation issue, it may have aggravated it. And, in fact, it could be argued that more intensive hunting during the population increase might have forestalled an eventual crash. But elimination of a legal harvest now would not bring about an improvement in the population growth rate. It is not enough on its own.

COSEWIC is due to make an assessment of our insular caribou. An end to all hunting, however, may not be a useful move. The process locks out hunter engagement and prevents valuable data collection. And, as stated, it would not produce a significant improvement on its own.

The caribou is an iconic species here in this Province. There is a reason why it is a symbol of the Newfoundland Regiment and appears on our provincial coat of arms (albeit in the form of an elk there). It deserves our best efforts to take such measures as are necessary and possible to ensure that it continues here.

And not at some basic level of mere existence, but thrive, at a level where they can be enjoyed - by the casual observer, the ardent naturalist, and yes, the hunter too.

Accomplishing that goal will require setting aside critical habitat and keeping it largely free and clear from disruptive interference. That means (at one level or another) excluding industry, snowmobiles, ATVs, and yes, possibly even curtailing hunting when and where necessary.

Woodland caribou (and caribou generally) have been under negative pressure across Canada, and in many ways, the story is similar wherever you go. Other provinces are making progress. You may have heard that Manitoba, for example, is already well on its way toward achieving that end.

More science is not being advocated, although continued monitoring is important. The end of legal harvest is not being advocated. But protection of critical habitat is of utmost priority.