

Bovine Tuberculosis Update
Riding Mountain National Park

April 8, 2015

An update on what's going on re: RMNP's active surveillance for bovine TB:

A total of 58 cow elk were captured inside RMNP in January and early February, in the core disease area, as part of the 2014/15 surveillance program. Of these, 3 died as a result of the capture process (this capture mortality rate is consistent with previous years). A necropsy was performed on these three animals, with none of them showing signs of bovine TB. However, as part of our normal protocols, they were sent for culture at the CFIA lab in Ottawa, with final results from these animals expected by summer.

Of the remaining 55 animals, all were blood tested, radio collared, and released wearing high visibility collars. On March 26, the test results for two of the blood tests were received from the CFIA, and a total of 6 animals reacted on the LST test (there were an additional 2 blood samples that were considered "unfits." These 2 animals will be recaptured and retested next winter). One of the suspect animals was a capture mortality, and has already been necropsied. The remaining 5 animals are to be removed, necropsied, and cultured.

In addition, DPP tests were also recently run on stored serum from the test animals. All 58 animals were test negative on this test. Thus, no additional removals will be required.

As a reminder and/or for sharing with others who have questions about the program, I have drafted some additional info about this past winter's program (including the estimated populations from the ungulate survey):

TB positives, our operating theory, and defining the core area of disease:

1. The current theory is that bovine Tuberculosis (TB) is restricted to a relatively small area in the western part of the RMNP region, including inside Riding Mountain National Park, and parts of the RMs of Rosburn, Grandview, and Gilbert Plains. Through testing of hunter-killed elk and deer, as well as in-Park testing, it is believed that the disease is also restricted to cow elk born before 2004. The theory is that concerted efforts to control the disease have stopped the spread of the disease between (and among) wildlife and domestic livestock. As cow elk can live relatively long lives (up to 21 or 22 years of age), these older animals remain the reservoir of disease (basically, the assumption is that most of the deer and bull elk exposed to the disease before 2004 are now dead).
2. The last 4 cases of bovine TB, all found within the core area inside RMNP, demonstrate/support this theory. In the spring of 2014, a cow elk tested positive for TB. She was born in 2003. In the spring of 2011, three other cow elk were found to be positive, and again were born before 2004. The last TB positive deer was found 2009, as was the last TB positive bull elk. We now believe that the disease is below detectable levels in deer and bull elk, and as a reminder, the last case of bovine TB found in domestic cattle occurred in 2008, despite extensive on-farm testing and inspection at abattoirs.

3. There are still unknowns about why the disease appears to be confined to the core area. In the last 5 or more years, collared elk have made no significant movements out of the core area, which may explain why the disease hasn't moved beyond the core area border.

What does this theory mean in terms of bovine TB management in wildlife inside RMNP?

1. Given the theory above, it means that we can concentrate our work in a very specific manner. We now consider TB in White-tailed Deer to be below detectable levels, and thus no special monitoring is required, with the exception of having hunters turn in samples from all deer shot in GHA 23 and 23a. The same is true for bull elk. The extensive surveillance program on bull elk over the past years since 2009 have shown no incidents of the disease, and disease monitoring is now confined to hunter-kill sampling.
2. However, cow elk remain the species and sex of concern. Parks Canada program is pretty straight forward. We have confidence in the ability of the 3 blood tests to find bovine TB, and thus we have switched entirely to a program of test and release. Cow elk are captured by a netgun fired from a helicopter, blood samples are taken, a radio collar attached, and then the animals are released and blood test suspects later removed and tissues cultured.
3. The goal is to capture and test 80% to 100% the cow elk in the core area of disease over 2 years. Animals that test negative on the three blood tests are believed to be truly negative, and thus will not be recaptured (cow elk are released with a highly visible, bright orange, collar to avoid recaptures).
4. The estimated population of mature cow elk in this area is 125 individuals with 100 cow elk within RMNP. During the winter of 2014/15, a total of 58 cow elk were tested, representing nearly 60% of the estimated cow elk population within RMNP.
5. Of these, a total of 6 reacted on the blood test, and we are now currently in the process of arranging to remove these animals. These animals will be recaptured by helicopter, killed, and samples taken. Meat from these animals will be salvaged for human consumption once inspected by Provincial meat inspectors. The blood test reaction rate of 10% is consistent with recent years, and is much lower than the 20% to 30% reaction rate experienced in the mid-2000s. The declining reaction rate, along with reduced positives, indicates that the current management program is working.
6. Culture results from this year's testing are expected by the end of July, at which time final decisions will be made as to the testing strategy in the winter of 2015/16.
7. Also of interest, a total of 21 bison were removed this past winter, representing approximately one third of the Park bison herd. These bison were shipped to a local slaughter plant, where they were inspected for bovine TB. There were no visible lesions found, and the bison herd continues to be considered to be bovine TB free.

Wildlife populations in the RMNP region (both inside and outside the Park), and in the core area (the survey only covers 60% of the core area)

Species	2015 estimate	2014 est.	2013 est.	Core area pop. 2015
Elk	1830	1540	1605	250
Moose	3100	2500	2660	955
Deer	2500	829 (survey late)	2200	268
Wolf	XX	69	91	N/A

1. The population survey, conducted by helicopter, were completed in mid-February. As seen above, the estimated populations of all three ungulates is up from both the 2013 and 2012 survey. The winter of 2013 was not a particularly good one for conducting surveys, and due to several factors the east side of RMNP was survey later (March) than normal and the estimate likely under represented the actual population of these three ungulate species.
2. The results of the wolf survey for this year are pending. The Parks is currently planning to collar and track a number of wolves in the core area this coming winter to get a better understanding of their movement in the area, as well as their prey preference, considering the change in prey availability in the core area.

Prescribed burns and other vegetation management

1. During the spring of 2014, the Prescribed Burn in the Baldy Lake area was semi-successful given the challenging spring weather, and a total of 100 hectares were burnt. The plan for the spring of 2015 is to burn in the area around Deep Lake and in portions of the Birdtail Valley, with up to 3500 hectares targeted. This spring is shaping up a bit better for burning, and our hopes are high that we will achieve this goal.
2. Work continues at Lake Audy at the plantation. Removal of the dead and dying trees has progressed, with the goal to restore grasslands to this area.

What's next?

1. As the wildlife surveillance program is a 2 year program, this coming winter of 2015/16 will consist of capturing, blood testing, collaring, and releasing another 40-50 cow elk and re-capture and re-test the two unfits. All of these animals will be wearing high visibility collars so that they can be identified from the air, and thus avoiding their recapture. All collars are programmed to drop off in the spring of 2017.
2. If no positives are found, it is planned that no additional surveillance, apart from hunter-killed animals, will be required for a number of years. At this point in time, it is expected that the elk population will also continue to increase particularly in areas outside of the core, as fewer and fewer animals are removed as part of the bovine TB management program.