Hunting a Threatened Species:

Why the Hay-Zama Hunt is Good for Bison and People

By Andrea Johancsik, *AWA Conservation Specialist*

Do you want to hunt bison in the Hay-Zama? There is over a 99 percent chance you're out of luck. Last year, a whopping 12,587 hunters applied for a licence but only 100 licenses were issued. People vie for a rare opportunity to hunt a wild wood bison herd in the Hay-Zama, as most of the wood bison in Alberta are protected within Wood Buffalo National Park. The Hay-Zama herd is important to conservation because it is disease-free. To the east of highway 35, wild bison are assumed to be diseased; we know that over half of the population in Wood Buffalo National Park population are diseased.

New to conservation issues in Alberta, I was surprised to hear that hunting the Hay-Zama wood bison herd was allowed and regulated by the province. Wood bison still are listed as a threatened species under the federal *Species at Risk Act* (SARA). I thought it ironic that Alberta would allow hunting on a free-roaming, disease-free, wild population of a species undergoing recovery. In May 2016, the draft Recovery Strategy for Wood Bison under SARA was released.

But wood bison conservation presents a more complicated situation for management. The main reason for the Hay-Zama hunt is to prevent the spread of disease from bison in Wood Buffalo National Park. Understanding this requires traveling back in time, to the great slaughter of the American bison in North America.

A Familiar Tale of Resource Exploitation

When Europeans arrived in the New World, an estimated 30-40 million plains bison roamed the prairies and a smaller but still substantial population of 168,000 wood bison occupied the boreal from central Alberta through the Northwest Territories and Alaska. The wholesale slaughter of bison herds began in the 1830s as the market for bison hides and meat boomed. The US Fish and Wildlife Service writes that in a matter of decades "an average of 5,000 bison were killed each day, every day of the year, as ten thousand hunters poured onto the plains." When the wild herds were decimated to the point where only a handful of individuals were left the market for bison bones was exploited next. The amount and tonnage of bones collected is mind-boggling; Le Roy Barnett wrote that "the volume brought in to Saskatoon exceeded the capacity of the railroad to haul them away."

At the same time as unbridled exploitation of the bison resource occurred across America, the wealthy saw an opportunity in the value of living bison and secured private herds. National Parks played a large role in re-establishing populations as well. Elk Island National Park, for example, received 410 plains bison in 1907 from Montana in order to preserve the species. By the time Wood Buffalo National Park was established in 1922, over 6,000 plains bison had been introduced in the region. This was a conservation blunder though as the plains bison interbred with pure wood bison. This reduced genetic purity and spread two diseases that presumably originated from cattle: bovine tuberculosis *(mycobacterium bovis)* and brucellosis *(brucella spp.)*. Genetic purity has improved since but disease still plagues the populations and conservation efforts to this day.

Even with these challenges, the tale of wood bison is less gloomy than that of the plains bison, which were more plentiful and perhaps more available, and therefore more extensively slaughtered – wild plains bison remain extirpated in the wild in Alberta.

How do we manage disease?

Both bovine tuberculosis and brucellosis have no cure. A vaccine exists for brucellosis but vaccinating free-ranging wild bison is not feasible. Imagine trying to vaccinate thousands of animals weighing 350-1000kg – annually! Bovine tuberculosis is even harder to control as there are no vaccines. A 2004 fact-sheet from Alberta Fish and Wildlife states the problem frankly: "It makes no sense to put time, dollars, and endangered wood bison into a program that simply provides additional habitat for bovine TB." Both diseases are health risks to humans, though risk can be lowered by proper handling and cooking meat thoroughly (smoking, drying, or freezing will not kill the bacteria).

Eliminating the Wood Buffalo National Park diseased herd and repopulating the area with non-diseased individuals is distasteful, to say the least, for many stakeholders. When an Environmental Assessment exploring that option was done in the late 1980s, AWA opposed a cull, calling it "ecologically disastrous" and questioning its cost, feasibility, and effectiveness. Furthermore, that's not to mention the scale of such a slaughter would be chillingly reminiscent of what happened in the late 1800s. In 1990 the federal Environmental Assessment Re-

Wood bison, Northwest Territories PHOTO: © C. OLSON

view Office recommended this mass cull option; the government never proceeded down this path.

However, there may be another option. Novel genetic salvage technologies are being developed to wash disease from eggs or sperm and therefore create a disease-free, viable embryo. These embryos would then be implanted into surrogate cows in a similar process to human in vitro fertilization. Salvage technologies are another example of human ingenuity trying to return the natural order to the way it was before another form of human 'ingenuity' – advances in rifle technology – contributed to our ability to wipe out millions of bison in a century. In other words, these technologies could constitute a conservation method to fix past mistakes. Humility, not hubris, is what should guide us as we consider these technologies. When we consider a new technology to solve a problem we created we need to consider a vital "what if" question. What if there are consequences from implementing this new technology that we didn't anticipate? Plus, the problem we already see – cost – is a huge barrier. The draft Recovery Strategy for Wood Bison doesn't discuss salvage technology extensively; it only mentions that it needs to be assessed.

The short- and long-term goals in the draft Recovery Strategy do not go as far as to say disease should be eliminated. They only aspire to maintain disease-free status in uninfected herds and to ensure the existence of disease-free populations in their original range. More arguably needs to be done to answer how disease will be eliminated short of a massive bison cull; salvage technology should be explored on a pilot-scale. In the meantime, can hunting bison help maintain the current balance between diseased and disease-free herds?

Hunting the Hay-Zama Bison Herd

Hunting, as contradictory as it might sound, may improve recovery of the wood bison. A well-managed hunt can work to achieve both social and environmental goals. If the healthy Hay-Zama bison population was left to grow and it expanded eastward, there is a real risk the diseased animals from the greater WBNP population would come in contact with the herd.

Hay-Zama's bison are particularly unique, as they reside within a Wildland Provincial Park that is a model of successful collaboration between the petroleum industry, First Nations, and environmental groups. The Wildland Park also partnered with China's Dalai Lake National Reserve under the Ramsar Convention. The Convention is a valuable resource to protect wetlands; it's a lever that may be used if any further resource extraction threatens the ecological integrity of the Hay-Zama wetlands. Hay-Zama, indeed, is one of AWA's most heady achievements. Reintroducing bison adds to the conservation success in this unique area. In fact, the reintroduction was so successful that the population went from zero to 700 in the last 30 years.

Of course, "success" is subjective and de-

Wetlands in the Hay-Zama region PHOTO: © C. OLSON

pends on who you ask.

Pat Cabezas, co-chair of the Hay-Zama Committee, emphasizes that bison were never welcomed to Hay-Zama by local people during the bison's introduction in the 1990s. "They don't eat them, they don't shoot them, they don't want them here," he says, referring to the Dene Tha' First Nation's attitude toward bison reintroduction. "For them it's an alien animal." Indeed, the Dene Tha' traditionally ate and still do eat other wild game, like moose, as an important part of their diet, and bison can disturb important moose habitat. Cabezas describes how even a government initiative to give away permits for the Dene Tha' to kill bison after the bison's population exploded didn't work, because community members didn't have much taste for bison culturally or biologically. "But, the First Nations from the Northwest Territories are more familiar with bison and they come to the area when the government releases permits to do so," Cabezas explains.

The hunt therefore may be important to securing First Nation support for bison recovery by alleviating some of the problems that bison cause in the Dene Tha' community. James Ahnassay, former Chief of the Dene Tha' First Nation, says some residents of Chateh would rather not have the bison around as they pose a risk by wandering freely through the community and could become agitated and dangerous. In addition, they can disturb areas around Hay-Zama Lakes, making it difficult for people to walk through the soft land. Cabezas also noted problems, saying "one of the most frequent calls to Fish & Wildlife from the Dene Tha' is to get rid of the bison wandering near their house." After the hunt was introduced, however, Cabezas thinks the number of calls has decreased. The government has a population target for the herd of between 400 and 600 individuals and adjusts the number of hunting licenses each year depending on the population size. That has seemed to work to control bison migration eastward where disease is a risk, as well as increasing acceptance among local people.

Is Hay-Zama a model for solutions?

According to Cabezas, communication and education is the key to solving the disease issues and increasing acceptance of bison in local communities saying bringing political pressure from locals is far more effective than scattered pressure from environmental groups and people outside of the community. Cabezas noted the success of caribou education programs in Dene Tha' schools as an example. He believes that after education was introduced to Dene Tha' schools about threatened caribou, there have been few, if any, caribou kills from the community, despite a general enjoyment of caribou meat.

According to the draft recovery strategy, *"increased access to hunting has been shown to increase public acceptance, as the perceived value of these animal on the landscape is increased. Thus, while unregulat-*

ed hunting is a significant threat, as is the control of Wood Bison movement across the landscape, permitting hunting of populations where it can be done sustainably may help to improve public acceptance and have a positive impact on Wood Bison recovery overall." Public acceptance of any reintroduced species is important and would help to support the argument that, in light of the urgency of the disease issue, a hunt is a useful conservation measure. A carefully managed hunt in the Hay-Zama is a positive step toward increasing public acceptance of bison's presence on the landscape and reducing the risk of spreading disease.

As for other herds in Alberta, there are few non-diseased wood bison populations left. Two populations close to WBNP are believed to be diseased, the Slave River Lowlands and Wentzel Lake populations, but two are not. In the April 2015 *Advocate* Sean Nichols criticized the Alberta government for not classifying the non-diseased Ronald Lake Bison herd as wildlife. We're relieved and pleased that in the past year the herd received new status as a Subject Animal in the Wildlife Regulations. This means it receives the same protection as a non-game animal. The Wabasca herd, a small herd consisting of a few dozen individuals south of Wood Buffalo National Park, is also known to be disease-free but has not been granted the same protection. The government intends to complete a status assessment of bison in Alberta by the end of the year. We hope that sufficient disease testing has been done of the Wabasca population to determine whether it is genetically different from the Wood Buffalo National Park population. Clearly this knowledge would help to inform appropriate policy priorities for recovery.

But before we can prioritize populations, the recovery plan needs to address more strongly the disease issue and more solutions need to be implemented. In the short term, disease reporting could be made mandatory, not voluntary, for all hunted bison including the Hay-Zama. A Canada-wide strategy on bovine tuberculosis and brucellosis could be developed that focuses on both wild animals and livestock, and researches how the diseases are transmitted between animals. Disease-free populations could be supplemented with additional animals from Elk Island National Park.

The diseases won't be eliminated overnight, but collaborative processes like the Hay-Zama Wildland Park have produced meaningful solutions, so there is hope for the disease issue, too. Until then, the diseases are a reminder of the tragic ruin of one of North America's most iconic species and the complexities of human interference with wildlife.

**After designated as Endangered since 1978 and Threatened in 1988, the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) recommended in 2013 to Environment and Climate Change Canada that the Species at Risk Act status of the wood bison be changed to Special Concern. However, COSEWIC didn't consider that, under Alberta's wildlife laws, diseased species are not considered wildlife and are not protected. Wood bison within Wood Buffalo National Park number in the thousands, but non-diseased, free-roaming herds are vulnerable to experiencing significant mortality events, like starvation or anthrax outbreaks. AWA does not support the downgrading of the Threatened status of wood bison at this time.*

Abbreviated History of Bison Hunting in the Hay-Zama

1888 – 1900: It is estimated that by 1888, only 8 plains bison remained in Canada. At the turn of the century, only 500 pure wood bison remained

1981 – A program was initiated with Dene Tha' First Nation to re-establish wood bison in northwestern Alberta

1984 – 29 wood bison from Elk Island National Park established as captive herd

1993 – In Hay-Zama, the captive herd became free-ranging at a population size of 49

2002 – Hay-Zama population at 234. Alberta gov't establishes a 36,000km^2 bison management area to protect against disease

2008 – Hunting season in the Hay-Zama is introduced as population grew to more than 700 individuals

2016 – The 2016-17 hunt allows 250 Aboriginal licenses and 125 non-Aboriginal licenses for hunting between December and February. The population size was counted at 625 individuals in February 2016.