
A CHALLENGE BORN OF FRUSTRATION

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A lot of bison have died here in Montana this winter, [96-97] and a lot of words have been spoken and written about these deaths. Actually, this has been going on for about 30 years and one can only guess at the amount of verbiage devoted to the issue. Yet with it all, it is remarkable how the real issues have been avoided. It is almost surrealistic, like listening to someone discussing Greek mythology while a train wreck is occurring. Another analogy that strikes me, is a stage with six monolinguals on it, each speaking in a different language. No one on the stage has any idea of what is going on, nor does the listening audience.

The Players:

There are many players in this Kafkaesque tragedy, but there are at least eleven major stars. These are listed below. Additionally there are some bit players, like the "hunters", who think that shooting a starving box-car size animal standing alongside the road like your old dog Blue is a fine way to spend a Saturday afternoon. Their role in the drama is miniscule, except for an occasional misguided legislator (and more recently, the Secretary of Interior) who tries to raise the public bison hunt from the dead. Other bit players are represented by the various snowmobiler associations and the West Yellowstone Chamber of Commerce, who fear that the closing of the YNP roads to snowmobiling will bring down the economy of the western world. They will probably assume a larger role in this drama in the months and years to come. Still another bit player is the Montana Department of Fish, Wildlife and Parks, which used to hold a public "hunt" for the wandering bison. They stopped doing that several years ago, after the general public found the practice without much redeeming value and certainly not even remotely related to an ethical sporting activity. Fearing that the shooting of bison would give hunting a bad name, they discontinued the hunt and got as far away from the problem as possible, and in doing so, probably distinguished themselves as the smartest bunch in the whole show. For the moment, these players make only brief appearances.

The Stars:

The Yellowstone bison herd, played by somewhere around 1,700 bison in 1997.

The Yellowstone elk herd, played by some 35,000 elk.

The National Park Service, played by the officials of Yellowstone National Park

USDA's Animal and Plant Health Inspection Service (APHIS), played by domestic animal veterinarians

Montana Department of Livestock, played by more domestic animal veterinarians

Animal welfare advocates, played largely, but not exclusively, by The Fund for Animals

MONTANA LIVESTOCK GROWERS (the big guys), played by institutional special interest groups who regularly have coffee with Montana's governor and the state's two Republican congressional delegates.

Montana livestock growers (the little guys), played by about five small and one large rancher who actually live close to the park

and have, potentially, something to lose.

The Politicians, played by Montana's governor and the state's three congressional delegates.

Native Americans, played by representatives from many different tribes from throughout the western U.S.

The public, played by a very confused large group of people who don't understand what is going on.

The Problem(s):

Unfortunately, the issue of the Yellowstone bison gets confusing even before the problem is defined. That is because each player sees either a slightly different problem or a totally different problem in some instances. So, what are the problems as seen by the players?

The Bison: For the sake of argument, we will assume that the bison are cognizant of their problem. Some people will take issue with this idea but they probably have at least as good a grip on rational thought as most of the other players in this drama (that opinion is based on the level and quality of intellectual arguments from the other players - all things in life are relative). I am willing to admit that the remaining 1,700 Yellowstone bison do not realize that they are the world's only remaining wild and unmanaged herd of Bison bison. Historically, according to most of the archeologists, paleontologists, and historians, the Yellowstone country was home to fairly large numbers of bison. It is a pleasant place for bison in the summer and fall, but the winters are sometimes brutal. Those who would best know feel that bison are pleistocene relics and very much adapted and comfortable in the cold and snow of Yellowstone. This makes sense when one considers that there are at least six herds of bison thriving in northern Canada. So, these bison either luck out with mild winters, or, when the hard winters come, they either "tough it out" in the geyser basins or walk down to Gardiner, Montana to find better temperatures and something to eat. The great fires of 1988 resulted in additional food for the bison - enough for the whole herd - but plowing through many feet of snow and standing around in temperatures approaching absolute zero while trying to eat was still not as much fun as vacationing in Gardiner. So, over the years, the bison learned to migrate out of the park and into the valley south of Yankee Jim Canyon, along with thousands of elk, who faced much the same dilemma as the bison. The problem, however, is that as soon as they leave the park someone either shoots them or captures them and sends them off to a slaughter house. Put another way, it's stay in the park and in the event of a bad winter, starve or leave the park and die. It's a pretty simple problem for the bison. Another problem is that bison can't read maps or no-trespassing signs, nor can they understand why hunger should go unabated.

There is no scientific evidence that there are (or were) too many bison in Yellowstone National Park. On ranges inhabited by the bison, there has been no loss of grass diversity, and grass productivity is better than fenced grasslands without any elk and bison.

The YNP bison herd is a pretty healthy bunch of animals, with natural selection and the harsh environment in which they live producing robust animals. There are some flaws however. About 10-20% of the YNP bison actually harbor the disease organism brucella abortus. That's a fact. This disease was brought to the YNP bison more than 70 years ago, by domestic cattle, and in its virulent form, it can cause abortion in cattle and undulant fever in humans. About 50% of the YNP bison test sero-positive for

brucellosis. That's also a fact. This means that 50% of the YNP have been exposed to the brucella organism at some point in their life and that they have antibodies against the organism, but it doesn't mean that 50% of the bison have brucellosis. The disease has few clinical manifestations in the bison and it has no known affect on the population dynamics of the herd. That's also a fact. It is transmitted by means of afterbirth, an aborted fetus, or direct sexual contact. That's also a fact. Bison calve in May, long after they have returned to the park, and they breed in August and September, long before they leave the park. That's also fact. No YNP bison has ever been shown to pass the disease brucellosis on to a domestic cow. That's also a fact, and one that is hardly profound, given the other facts above.

The Elk:

There are nine different herds and about 35,000 elk (wapiti, really) in YNP, 16,000 of which winter in the park. They migrate from the park in larger numbers than the bison. That's a fact. They are hunted and the elk hunting industry is a multi-million dollar industry for the State of Montana, Idaho, and Wyoming. That's a fact. YNP elk carry brucellosis. That's a fact.

The National Park Service:

This organization is charged with the responsibility for managing the wildlife (and other) resources of Yellowstone National Park (YNP). They operate, when they can, on the philosophy of non-intervention - let nature take its course. Put another way, their responsibility is to insure that Yellowstone remains a home for the world's only wild and unmanaged bison herd, for the enjoyment of 270 million citizens and millions of others from around the world. They really don't have a problem, except that when their bison leave the park, their ownership changes from "U.S. citizens" to "Montana citizens" and the bison get shot or slaughtered. Other players think they have a problem. The problem that other players perceive is that YNP should not let its wild animals leave the park. Interesting. The pertinent YNP managers are trained as wildlife biologists. They understand that disease is common in wildlife and that wildlife live with disease. They monitor wildlife disease, but they don't believe in "treating" wild animals. They pretty much believe in the axiom put forth by a scientist that says, "No one has ever eradicated a disease in wildlife without eradicating the wildlife." The YNP officials also recognize that a major source of the migration problem is the grooming of the park roads in the winter, for snowmobiling, which has caused a redistribution of the bison throughout the park in the winter, and is providing the bison with easy routes out of the park. It was never the park's desire to open the YNP roads in the winter. That was forced by the Wyoming congressional delegation in order to enhance the park's economic benefits across the winter months. Actually, the congressmen and Senators wanted the park to plow the roads open for wheeled vehicles and the snowmobile trails were a compromise. That's a fact.

APHIS:

APHIS is a federal agency that is concerned with agriculture. It belongs to the U.S. Department of Agriculture and is a sister agency to Animal Damage Control, which is given about 25 million taxpayer dollars a year to kill wildlife that eats animal or plant crops. APHIS has a lot of domestic animal veterinarians and they are very concerned about diseases that affect domestic livestock. This agency enforces laws having to do with domestic animal diseases. With reference to the YNP bison issue, they believe that the bison

will pass brucella abortus along to domestic cattle when they come out of the park and consort with domestic cows, but there are no facts to support this belief. Because 10-20% of the bison have the brucella organism, they threaten to revoke Montana's declared status as a "brucellosis-free state" (a "status" which exists without the benefit of blood tests!), which would mean that Montana could no longer send its cattle out of the state. In general, APHIS is just a group of well-meaning enforcers of regulation, which unfortunately makes a cattle rancher in Glendive, Montana, 400 miles from YNP, equally at risk from the YNP bison as a rancher living 10 miles from the park's borders. Nothing in their charter makes APHIS responsible for or sensitive to wildlife. In fact, one former head of APHIS described the YNP bison as "infected pests". Herein lies a major problem, because this view of the bison is at odds with those of the YNP officials and probably most of the 270 million Americans who own and value these animals. Another problem is that the involved APHIS people are trained as domestic animal veterinarians and their view of the world is to eradicate disease wherever it is found. This is, of course, at odds with the views of wildlife biologists and wildlife veterinarians. These APHIS people have scared Montana cattle ranchers and the state treasurer. For some reason, APHIS has not voiced concern about the YNP elk.

Montana Department of Livestock:

This group of people is similar to the APHIS people, except the focus of their concern is only within Montana. They have spent a lot of money vaccinating cattle against brucellosis, and culling diseased animals over the years - millions - in order to make Montana "brucellosis free". That's a fact (that they made the effort, not that they actually made Montana "brucellosis free"). They are worried that the loss of the "brucellosis free" legal status would result in an economic disaster for the state. That's probably true. They also employ domestic animal veterinarians, who like their APHIS counterparts, believe that the disease can be eradicated from the herd. They have made several suggestions for controlling these animals. Unofficially, they have suggested that the entire bison herd be destroyed and replaced with brucellosis-free animals. Officially, they have also suggested that the bison be inoculated against brucellosis. Finally, they have suggested - and implemented - a program of testing the bison for brucellosis exposure and killing the positive animals. They have killed more than 1,100 bison in 1996-97. That's a fact.

Animal Rights/ Animal Welfare Advocates:

These players generally oppose the killing of the bison on philosophical grounds. They recognize that much of the perceived threat to the cattle industry is based on speculation and not fact. This group tends to side with the NPS as far as just leaving the bison alone. One of these groups carried out an aerial survey several years ago, to find out how many domestic cows were at risk next to the park. They found that there were usually about 65 domestic cows in the area where the bison roamed in the winter. That's a fact. For those who doubt the accuracy of those surveys, we will assume for the rest of this paper that there are 100 domestic cows. Several years ago a coalition of these groups made a fairly rational suggestion for a solution. They offered to pay to truck the 100 domestic cows down to the Gallatin Valley in the fall, before the bison start leaving the park, and to pay for leased land on which to graze the animals over the winter, and to pay to truck them back in the spring, after the bison have returned to the park. They even offered to pay for mending the broken fences caused by wandering

bison. No one paid any attention to their suggestion. Their latest effort has been to bring the issue of the bison killing to the American public and stimulate a tourism and beef boycott in Montana (it is very interesting that in the summer of 1997 Montana tourism dropped significantly, but no one in the state has been willing to see any connection with the bison controversy). These people are very frustrated. That's a fact.

Montana's Livestock Growers:

This is not a monolithic group either. Many are sympathetic to the bison, but they fear the financial consequences of losing Montana's "brucellosis-free" status. In general, the majority seem to side with the Department of Livestock and APHIS. They do not like the NPS or the animal rights/welfare groups.

The Politicians:

These people (all four of them) know all the facts but remain unencumbered by them. They persist in talking about inoculating the bison, fencing them in the park, reducing the number of bison, capturing bison and testing them for brucellosis and killing positive animals, or having public hunts. They do not like the NPS, they do not like animal rights/welfare groups, but they do like APHIS and the Montana Department of Livestock.

The Native Americans:

These folks are very uncomfortable watching the bison being destroyed, having had ancestors who had to watch the same thing about 120 years ago. They have real reverence for the animals and they often suggest that the bison that leave the park should be transferred to tribal lands, where at very least they would be given some respect before they were killed.

The Public:

For the sake of clarity and precision we shall separate the public into two groups. These would include the national public, and the Montana public (who, to a large degree, do not believe they are part of the national public). The majority of the national public opposes the killing of the Yellowstone bison. That is because they own these bison and the park in which they live and the federal land surrounding the park, where many of the bison are being killed. The majority of the Montana public generally feels the same way about the bison, but they resent the tourism and beef boycott efforts and they generally do not agree that the larger public owns Yellowstone or the surrounding public lands. They do not like the NPS, but they also don't particularly care for the Montana state agencies either. In fact, they generally dislike all forms of government and most agencies as a matter of principle.

A SUMMARY OF FACTS

1. There is no evidence that there are too many bison in YNP.
2. There is no evidence that bison have overgrazed YNP
3. Bison will migrate from YNP regardless of the number of bison in the park.
4. About 10-20% of YNP bison actually carry the brucellosis organism.
5. About 50% of the YNP bison test seropositive for brucellosis (that is, they have been exposed to brucella in the past and have developed antibodies against the organism).
6. Bison breed in August and September in YNP.
7. Bison calve in May and June in YNP.
8. YNP bison have changed their winter distribution patterns in YNP because of groomed snowmobile roads.
9. Bison leave the park between November and April, largely

because of groomed snowmobile trails or the open road though the northern part of the park.

10. There is very little data regarding whether or not the strain of brucellosis that is carried by the 10-20% of the YNP is a clinical strain that can cause disease.

11. There is no evidence or data that indicate that YNP bison can transmit brucellosis to cattle.

12. There are lots of elk in YNP.

13. There is very little evidence that elk have overgrazed YNP.

14. YNP elk migrate from the park in greater numbers, and inhabit much larger areas of land outside the park than bison.

15. YNP elk carry brucellosis.

16. The best brucellosis vaccine available is only about 60% effective in cattle and less so in bison (a new one was recently tested and was found to be even less effective).

17. There are only about 100 domestic cows at risk from contracting brucellosis from the YNP bison.

18. APHIS regulations place all cows in Montana, regardless of how far from the park they live, equally at risk with cows living next to the park.

19. Yellowstone National Park is not a ranch and its wildlife are not ranch animals.

20. Yellowstone National Park and its wildlife belong to 270 million Americans.

SOME COMMONLY SUGGESTED SOLUTIONS AND THE REALITY OF FACTS

1. We can inoculate the YNP bison herd against brucellosis.

This won't be achieved with a vaccine that is 60% effective. However, just for the sake of argument, let's make believe that there is a vaccine that is 90% effective. Let's also be optimistic and make believe that we can even find 90% of the YNP bison. Let's be even more optimistic and assume that we can successfully inoculate 90% of the bison that we can find. A little arithmetic tells us we will immunize about 70% of the YNP bison and 30% won't get inoculated. Little will have been achieved. Worse, every new bison calf born may be at risk of contracting brucellosis from the elk. The cost of this would be very high.

2. We can eradicate the YNP bison herd and start over with brucellosis-free bison.

Excluding the fact that placing new bison in the park still leaves us with the loss of the world's only remaining wild herd and its biological adaptations, what is to prevent these animals and their offspring from getting the disease from elk? The destruction of the entire herd would be unacceptable to the American public, unethical, and unrealistic. It would run counter to the mission of the NPS and it is absurd to think that we should destroy the nation's last wild, free-ranging bison herd to protect 100 domestic cows.

3. We can build a fence to keep the bison in the park.

This would have to be some kind of fence, but it is probably possible to some degree. It would have serious consequences on the migration of the elk (and deer, pronghorn, moose, bighorn sheep and mountain goats!) and it would be phenomenally expensive. It also ignores the concept that YNP is in the center of a larger ecosystem.

4. We can test the bison for brucellosis and destroy the seropositive animals.

That is presently being done and no one is very happy with the "solution". Also, because only 10-20% of the bison actually

harbor the disease, and because about 50% test seropositive for exposure to brucella, this translates into the fact that about 60-80% of the animals that are destroyed do not have brucellosis. There is a serious ethical question here and I for one am glad that we do not handle human seropositive tuberculosis testers in this manner.

5. We can use some combination of numbers one, two, three, and four above in the park to manage the YNP bison.

This could be done, at huge expense, but we would no longer have a wild bison population in YNP. We would have a bison ranching operation, which is a direct contradiction to the mission of the NPS.

6. We could reinstate the public hunt.

That is an option that is being considered. This was tried years back and it failed because of the expense of having each hunter chaperoned by someone from Montana Department of Fish, Wildlife and Parks, and the horrible public image that it gave to sport hunting. In fact, the end of the public hunt was promoted by no less than a former director of Montana's Department of Fish, Wildlife and Parks, who understood the damage that the hunt was causing to the image of sport hunting. If bison acted like elk - that is, wild, after they left the park, hunting might be an option, but they do not.

7. We can transfer bison that leave the park to Native American tribal lands.

This could be done, but we still have the problem of sero-positive and potentially infected bison roaming around Montana and perhaps even other states. The tribal lands are federally protected trust lands, but then Yellowstone National Park is federal land too, so what has been gained? Will APHIS, or the Montana Department of Livestock, or the Montana Cattleman's Association be any more comfortable with seropositive translocated Yellowstone bison living on the Crow or Fort Peck Reservations? I think not.

SOME UNCOMMONLY SUGGESTED SOLUTIONS AND THE REALITY OF FACTS

One solution that would reduce, but not eliminate the problem, would be to close the YNP to snowmobiling in the winter and reduce migration routes for the animals. This is unlikely to produce a complete solution for several reasons. First, it is not politically feasible. Montana, Idaho, and Wyoming mostly see YNP as an economic resource and curtailing snowmobiling would have big economic effects in at least two of these states, or at least a few towns in two of the states. Second, the citizens of Cooke City and Silver Gate, Montana, require that the northern road through the park remain open all winter as this is their only link with civilization. This, in turn, means that the northern range bison, which are the most problematic, would still have an escape route from the park. At very least, the closing of the roads would reduce or eliminate migration out through the east and west entrances.

Because there are 1,700 bison and only 100 domestic cows involved in this drama, it seems most logical and economical to focus on the domestic cows rather than the bison. A solution could be affected by carrying out a relatively few inexpensive and simple steps. First, permit the bison to migrate and inhabit the federal and private lands that constitute winter range. Second, inoculate the 100 domestic cows that spend the winter in the same area. This would be fairly easy and inexpensive and should be part of regular veterinary care anyway. Third, in the spring, after the

bison have returned to the park, test the 100 domestic cows for brucellosis. Unfortunately, the currently available tests cannot distinguish between wild brucella antibodies and the domestic strain 19 vaccine antibodies, but I'll make a good guess that the domestic cows haven't been inoculated anyway. Anyway, if the domestic cows are not positive, there is no problem. If they are positive, destroy the positive cows and reimburse the rancher the market price for the cow (which isn't that much these days!). This could be paid for from a fund established by the various animal rights/welfare and bison advocacy groups who oppose the destruction of the bison. Finally, APHIS would have to change the regulations to create a buffer zone around the park that separates the rest of Montana's cattle industry - which is not at risk from bison - from the area where the 100 domestic cows live.

Who has won and who has lost? The bison have won because they can eat and live. The elk haven't won or lost anything. Yellowstone National Park has won because the bison are not being killed and people and agencies can stop hating the NPS. APHIS has won, because they are still protecting Montana's livestock industry with a rational regulation. The Montana Department of Livestock has won, because they are not threatened by the bison. The few ranchers in the immediate area of YNP come out even - they haven't lost anything and they haven't won anything. They would receive no less money for a destroyed seropositive cow than they would have received from a meatpacker. The Montana Department of Livestock could pay for any damaged fences with only a fraction of the money they are now spending for killing animals. The animal rights/welfare groups win because the bison are not being killed. They would have to reconcile the destruction of an occasional domestic cow in the event one tested positive (this of course, assumes the cows can even get the disease from bison). They would lose some money, but saving animals' lives is the very reason for which they raise money in the first place. Montana's governor and its congressional delegation would actually lose something, because they would no longer be able to verbally thrash the NPS, but these are only four people, so who cares anyway? The public, both the national and the Montana public win. Tourism thrives, bison live and get photographed, the Montana beef industry lives on, and sensibilities are not damaged. The public also wins in that a great deal of tax money will be saved.

If anyone out there can produce a simpler, less expensive, and more responsible solution, which would produce more winners and fewer losers, please do so. That is a challenge.