

Summary of investigation into questions surrounding a bighorn sheep die-off which occurred on the Ruby Mountains\ East Humboldt Range during the winter of 2009 and 2010 as reported by Cliff Gardner, March 10, 2011.

Many believe that 80 to 90 percent of the bighorn sheep living on the Ruby Mountains died during the winter of 2009 and 2010. Dead and dying sheep were seen from Overland Canyon to the south, all the way to Welcome, on the north end of the East Humboldt portion of the range - with the greatest number of dead and dying sheep having been found near the Dry Hills just south of Wells. It is there that the greatest numbers of sheep have been wintering over the last several years.

This is not the first time that a die-off of this nature has occurred. Early records indicate a die-off occurred on the Wind River Range of Wyoming in 1895. That same year, 43 carcasses were counted on a hillside adjacent to present day Red Lodge Montana. Die-offs have occurred in Wyoming, Colorado, Utah, Idaho, Oregon, Washington and Canada. Again and again it seems - just when this game department, or that game department is getting the numbers of bighorn to where they like them, another big die-off occurs. Some think the die-offs are stress related. Others say die-offs are brought on by the transfer of disease from domestic sheep. Over the years, a great amount of time has been devoted to the issue of disease transfer, with little or no emphases placed on the question of stress. Nor has there been investigation into the effects of predator related stress.

Predators, we are told, are a natural part of the ecosystem - important for achieving a "natural balance" - a kind of self regulating sort of thing, whereby, if only we can remove man's influence within the natural world, there will be wildlife at every turn, just as there was before white man came along and threw everything out of balance. Trouble is, history does not support such theory. Truth is, there were no more bighorns found within the Great Basin at the time of earliest exploration than there were mule deer.

I suppose this issue would not bother me so much if it were not for the fact that so many ranching families have been forced off their grazing allotment, or put out of business because of this issue - when in fact, the actions that were taken against them ended up hurting the animals in question every bit as much as the ranchers were hurt.

That is why, not long ago, my son Walt and I decided we would load our snowmobiles and take a drive over to the Dry Hills area, southwest of Wells, to see for ourselves what may have been going on regarding the sheep die-offs - which we accomplished on Dec. 12, 2010.

What we found was pretty much what we thought we would find - browse plants closely hedged and eaten off within inches of the ground close in and next to escape habitat while further away - a quarter mile from escape habitat there was very little sign of overuse of vegetation.

Deer do best when they are in areas where there is a lot of brush. Deer bound over and through brush with more ease than do predators. Antelope being fleet of foot, do best in open terrain. Bighorn on the other hand like rough and rocky terrain. The only way they have of protecting themselves from predators is by staying close to cliffs or rocky areas - a place where there is plenty of feed but is rough enough to offer them a place where they can quickly move toward rough or rocky terrain should a predator be seen coming their way.

This is much of the problem bighorn face. Such areas, where ample feed is found in large enough quantities as to sustain large numbers of bighorn during winter, that also offers good escape habitat is often hard to find - particularly when the snow gets deep and the grass and brush become covered over with hard crusted snow. This is why bighorns have been so attracted to the Dry Hills area near Wells possibly. Its one of the few areas that provides the right kind of escape habitat coupled with other things sheep need, such as open terrain where the wind blows the snow from south facing slopes, where there is still an ample amount of feed available that the sheep like. But to think that such an area will support two hundred or more sheep during winter, year after year, is probably out of the question - particularly when there are a lot of predatory animals in the country.

Predators make their living by feeding on other animals. They hunt day after day, month after month - bighorn sheep, deer, antelope, rabbits, whatever - and when they find pray available in a given area they stay close by, preying on whatever species that exists there, again and again. Bighorn sheep, under these circumstances cannot stray far from rocky terrain for fear that they will be caught and killed. The more predators there are, the more bighorns are restricted in their ability to feed out away from their escape habitat. Consequently, its not hard to tell if bighorn are being stressed by predators. All one need to do is to look at the condition of the vegetation that is near the rocky ledges where bighorn are wintering. If the feed shows sighs of overuse close to escape habitat, but then shows progressively less use further away from escape habitat, then it can be assumed that there are too many predators in the area.

That is what Walt and I found when we visited the Dry Hills area this winter. In the draws and on the slopes near rock outcrops, the bitterbrush and low sage was hedged nearly to the ground in places, while on the slopes that were a quarter mile away such plants showed minimal use. Cattle use within the allotment did not appear to be a problem. If it were, overuse of vegetation by cattle would have been apparent throughout the entire allotment - but it was not. The bitterbrush that we saw on the upper portions of the allotment, showed no use by cattle whatsoever.

Deer and sheep have small muzzles and small teeth. Seldom do they take more than the leaves or the very ends of the leaders from a plant. While on the other hand, cattle have large mouths and large teeth. When cattle feed on bitterbrush, they generally take stems and all. Consequently, when cattle feed on bitterbrush, they tend to make the plant look as if it had been hedged by someone using trimming shears. And the results are usually the same as well. Bitterbrush that is routinely hedged by cattle, usually sends forth great amounts of new leaders, which by seasons end, can be from eight to fourteen inches long.

When deer alone use bitterbrush, it takes on a different look. The plants grow to their full height all right, but then stagnate and becomes unproductive. Instead of sending forth a large number of new leaders each year, the plants only send forth two or three new leaders on the very upper portions of the plant that are no more than about three or four inches long.

When bitterbrush is routinely used by cattle it has a healthy look to it. By this I mean the bitterbrush plants found on the upper portions of the allotment were of mature size, but appeared unproductive and scraggly, with only a few small leaders in evidence. Curl leaf mahogany found in this same area showed slight use as well, which would have been almost unheard of just a few years ago when great numbers of mule deer were feeding across Nevada's landscapes.

The second thing we noticed was the lack of bighorns in the area. People we had talked to, who were familiar with the area, indicated that during the winter of 2008/2009 and the winter of 2009/2010 it was estimated that there were somewhere between 200 and 240 bighorns wintering in the vicinity of the Dry Hills. We saw no bighorns the day we were there. Nor did we see tracks of bighorns. We did see tracks of coyotes however. And we saw tracks made by a large lion. We also saw a lot of scat left by coyotes, along the two track roads that were in the area - which indicated to us that there were a number of predators still petrolling the area looking for animals to prey on.

Interesting too, was the fact that a good many of the scats we were seeing were made up of a large amount of deer hair - which to us, was an indication that the coyotes of the area were not finding a lot of animals to feed on, for ordinarily when coyotes are finding plenty of game to feed on, they will only consume the entrails or meat of an animal. But when coyotes are hungry, and there is a lot of them- they will quickly clean up a carcass - hide and all.

Everything seen that day indicated to the two of us, that a large part of the problem leading to the die-off of 2009 and 2010 was probably stress related - poor management, allowing bighorn numbers to increase beyond the carrying capacity of available winter range, coupled with the reluctance on the part of those within the various agencies to recognize the importance of keeping predator numbers down.

I only wish we could have been on hand when the die-off was occurring. If we had, I believe I would have pressured for, or conducted observations myself, for determining the fat content within the marrow of the leg bones of each of the dead sheep that were found. Examining the marrow content of dead animals is nothing new. Biologists have been using the method for determining if malnutrition was a factor leading to mortality for more than fifty years now.

I would have liked to have had an opportunity to open the paunch of many of the dead sheep as well. Its been the observation of most who have studied the habits of bighorn, that they prefer grass over browse. If it had been found that there was a good deal of woody vegetation within the paunch, such would have indicated stress as well. Perhaps we shall be afforded the opportunity to make these kinds of investigations sometime in the future. I certainly hope so.