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The Effect of Timber Harvest
on the Range Resource
by

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My work is primarily concentrated at the Manatwa Forest, in the ponderosa pine zone about 28 miles northwest of Rock Springs. The area is primarily cattle grazing land, with most of the grazing occurring in the natural openings of the pine zone. Additional livestock grazing occurs in the small openings among the trees, and very little underneath the dense canopy. In terms of herbage, protected grasslands in this area get up to nearly 2,000 pounds per acre, while if they are grazed at all we get somewhere between 12-1300 pounds. In the open timber type herbage levels drop down to about 500 pounds per acre: in the dense timber type it's less than 100 pounds per acre. By thinning out densely stocked stands it is possible to develop stands with sufficient herbage for livestock grazing in a matter of a few years after the harvest has been completed.

The zone around Manatwa Recreational Forest has a high recreational value, so we have to balance our grazing program and our timber harvest program against recreational values and leave the place looking good--or we have trouble. We have found that at a basal area level of 33 square feet per acre livestock production will drop off by 50 percent. However, just because livestock production goes down, this observation doesn't mean that this basal area level necessarily represents the best balanced use for the area. For optimum returns on both timber and livestock we find that leaving 50-60 square feet per acre is a good level. At this level we get almost no opposition in terms of recreational activities or esthetic activities.

In addition to adjusting the basal area it is necessary to consider measures to get rid of the understory and slash. We have been fortunate in this area, particularly with the recent developments in firewood cutting, and have been able to clean up our forests strictly through firewood permits. Since going to a multi-product type of timber harvest program, involving removal of trees down to post and pole size followed by the firewood cutters, we end up with a nearly clear forest and have had a 2/3 increase in our stocking rate for domestic livestock. Consequently, we feel that we can manage ponderosa pine for domestic livestock and for other values very easily in this particular area.

In terms of the timber operators, I might mention that they enjoyed or liked having this kind of work in this particular area because it was a winter operation. Their operating timber loss was less than 10 percent. We kept their crews busy, removed the trees, got more forage, and were producing more beef.

Where we go from here, we're not real sure. We keep plugging away, however, and hope to develop more information, particularly on the affect of logging on other values such as small mammals, bird populations, and recreational activity within this area.

I would like to switch over now and talk a little about some work done on the Fraser Experimental Forest. During the 1954-1956 period small clearcut blocks of different shapes and widths of one, two, three and six chains were established in this area and grazed with domestic mule deer. The object was to determine what the deer eat on these ranges. The reason I have switched over to deer is that this area is not domestic livestock country, so to speak. The only domestic livestock in the area graze the natural openings and we have almost no livestock in the created openings unless a band of sheep is herded in or something like that. So, from the standpoint of livestock, I don't have any information on these rangelands. In any event, it was found that the use by both tame and wild deer was about 70 percent greater in the created openings.

Now you may wonder why we put both types of animals in there. The answer is that almost immediately when you domesticate a wild animal you begin hearing criticism from your colleagues that a wild animal and a tame animal don't behave the same. So, to avoid this conflict, they used both types of animals to try to get some measure of their relative activity within the area, and from their results they feel reasonably confident that the two types of deer behave the same.

Moving on down, forage availability was about 25 percent greater on the clear cut areas and forage use about 70 percent greater. Analysis of diets from the domesticated deer indicated that protein intake and digestible dry matter were much higher on the cutover areas. Looking at these results from a range analysis standpoint, which could be applied to livestock, all factors are positive in terms of this being a better range. Whether you would ever get cattle or sheep to travel through the slash, however, is a different type of problem. But, the range quality is up on these areas.

As I mentioned, in reference to the 1, 2, 3 and 6-chain intervals used, both deer and elk counts were highest in the 2 and 3 chain areas. Again this comes back to something that Lorin Ward referred to earlier on width of clearcuts being important to grazing animals.

By way of a closing comment I would like to point out that, although deer and elk use these areas these particular ranges are not limiting for big game animals. It is usually winter ranges that are limiting. Consequently, harvest cutting of some sort is not usually necessary to have good wildlife range.

Thank you.