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Oct. 22, 1941

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STORAGE

SPECIAL REPORT:

THE DEER PROBLEM IN ZION NATIONAL PARK

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National Park Service
Region Three

Santa Fe, New Mexico

October, 1941

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SPECIAL REPORT

THE DEER PROBLEM IN ZION NATIONAL PARK

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Parts of October 12 and 13 and all of October 14, 1941, were spent by the writer in Zion National Park making observations on the vegetation and on the deer in Zion Canyon. On October 13, I conferred with Superintendent Franke, Assistant Superintendent Holland, and Chief Ranger Jolley and, later, with Park Naturalist Grater who, although he was on annual leave, generously took time not only to confer with me but to go into the Canyon with me and point out certain features pertinent to the deer-browse problem which was the principle subject of my study.

The condition of the vegetation in Zion Canyon is becoming very serious. It is excessively over-browsed. As is true of most canyons, much of the beauty and charm of Zion Canyon is due to the plants that grow in it and on its rims, but most of the plants in the bottom of the canyon are at present in imminent danger of complete destruction. The damage to the vegetation from overbrowsing is progressively more severe toward the upper part of the canyon. From the Lodge to the Narrows, the "browse-line" is glaringly obvious and undergrowth is exceedingly scanty.

The wild grape, which is one of the most beautiful plants in the canyon, is everywhere browsed as high as the deer can reach and many low vines have been completely killed. The older, higher plants are being weakened by this constant over-browsing and there is no reproduction to replace the plants that are being killed. Many serviceberry plants have been killed and many others have been so severely over-browsed that they will probably die within a year. Gambel oak, ash, manzanita, maple, and even ash maple have all been severely over-browsed up to the browse line and reproduction of any of these species is impossible and nonexistent under present conditions.
(Very toothed)

The deer in the canyon are evidently very much undernourished. The contrast in appearance between these deer and those on the rims within the park, or those on the Kaibab Plateau, is most striking. It is so striking that visitors frequently ask whether they are the same "kind" of deer. Those in the canyon are much smaller, thinner, and less "sleek" looking.

No one knows how many deer there are in the canyon at the present time. However, on October 14, while driving from one end of the canyon just before dark, I counted 127 deer. It seems unlikely that I saw more than a third of the actual number of deer in the canyon. Therefore, I believe it is a good guess that there are between 300 and 400 deer in the canyon. I think it is an equally good guess that, under present conditions, there should be not more than 100 deer in the canyon, as a maximum. Therefore, I think that, if possible, a minimum of 200 deer should be removed from the canyon this winter.

Trapping and removal of deer from Zion Canyon has been practiced for several years. I do not have available the numbers that have been removed, but it is my understanding that the first year more than 100 were removed while since the first year the number has usually been less than 50. Probably the natural increase of deer within the canyon has been considerably more than 50 each year. It is my understanding that most of the deer trapped during the past year or two have been young animals.

In other words, the deer that have been removed are the very ones that it would be desirable to retain in the canyon while the old, scrubby animals that it would be more desirable to get rid of are left in the canyon. Possibly some of those removed are animals that have migrated into the canyon from the rims. However, I am told that no tagged deer have ever been trapped in the canyon. Therefore, it is evident that none of those removed have returned to the canyon. It is believed that during the coming winter no attempt should be made to select the deer that are to be removed. The immediate problem is a drastic reduction in numbers. After the numbers have been reduced to the carrying capacity of the canyon, selective methods may be put into practice in order to improve the quality of the canyon herd.

During recent years only small, automatic traps have been used for trapping the deer. Just south of the Lodge there is a large corral trap. I understand that when this large trap was in use it was more effective than the automatic traps, but it requires constant watching during the feeding hours of the deer in order that the trap-door may be closed after deer have entered the corral. It is recommended that a CCC job be set up this winter such that CCC boys may be used to work this large trap and that both this corral trap and the smaller automatic traps be made use of.

It is believed that a more effective bait than that used in the past could be used to great advantage. Apples, which have been

commonly used, make a fairly good bait but if a bait could be used that would be more relished by the deer than anything else they could find in the canyon and which they would diligently seek, the trapping program would be considerably simplified. I do not know what the bait should be. I believe that in some of the eastern States a rather inexpensive cake made of molasses and certain other plant products has been used successfully with whitetail deer. Whether this would be the best thing for use at Zion, I do not know. I do not have complete information about these cakes but I believe Park Naturalist Grater can furnish such information. Any information or suggestions that anyone in the Washington Office can give concerning a suitable bait for use at Zion will be very gratefully received. When a bait has been decided upon, it should be disposed freely within and in the vicinity of the traps for a couple of weeks or so before the trapping is actually started in order that the deer may form a habit of seeking this type of food.

If the trapping plans as outlined above should fail to remove the required number of deer from the canyon, then I can see no other alternative than to ask the Director to request Secretarial authority to slaughter a stated number of deer in the canyon and give the meat to Indians as is done with surplus buffalo in certain parks, for it is essential that these deer be drastically reduced in numbers in order to save the canyon vegetation.

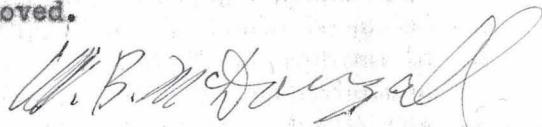
There are two fenced plots in Zion Canyon. One of these, near the east bank of the river between the Lodge and the upper campground, is not well placed so far as our present problem is concerned and does not show much. The other, on the west side of the river below the west rim trail, is very well placed and shows a great deal. The contrast between the very dense vegetation inside, which includes grape as well as various other plants, and that outside is very marked. However, with the proposed removal of the surplus deer we will be very much in need of a fenced plot where we can start from scratch and watch the development of the vegetation inside as compared with that outside in order to determine whether we have accomplished the purpose of removing a sufficient number of deer to permit a normal recovery of the vegetation.

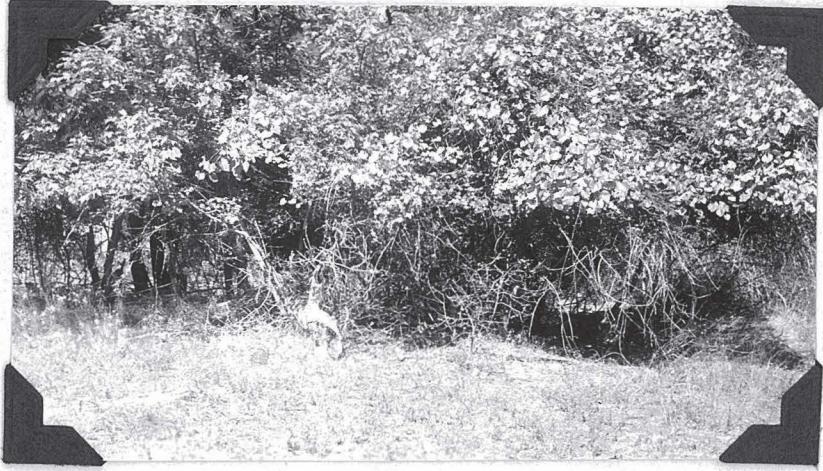
It is recommended, therefore, that a new fenced plot be constructed in a suitable place, preferably near this old one and where it will include some grape. I believe the Park Naturalist would be willing to assume responsibility for making regular observations on such a plot. If the fencing of a new plot is impossible at this time, this old one

could be opened up for a few months, or until it has been browsed down to the condition of the surrounding vegetation, and then closed again, but it would be much better to leave this old plot as it is, for comparative purposes, and have a new one constructed.

CONCLUSIONS AND RECOMMENDATIONS

1. The vegetation in Zion Canyon is very much over-browsed and is in grave danger of destruction unless the surplus deer are removed soon.
2. It is recommended that a minimum of 200 deer be removed from the Canyon this winter. More than 200 would be better than fewer.
3. It is recommended that the large corral trap south of the Lodge be used in addition to the automatic traps and that a CCC job be set up such that CCC boys can be used for working the trap-door of the corral.
4. It is recommended that every effort be made to find a type of bait that will be more effective than apples in luring deer into the traps.
5. It is recommended that a CCC job be set up at once to construct a fenced plot for studying the rate of recovery of the vegetation after the surplus deer have been removed.





Browse-line on wild grape near the upper end of Zion
Canyon.

Zion N.P.



The low grape vines at the right have been killed by
overbrowsing, the taller ones at the left show a de-
cided browse-line.

Zion Canyon, Zion N.P.