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An Appraisal of Grazing Intensity in Elk Island National Park

Winter 1966-67

In October of 1966 Mr. C. Finlay, assisted by the Warden Staff, chose seven grassy sites in the main part of Elk Island Park, and at each site placed five wire cones. Each cone enclosed a circular plot of 9.6 square feet. At each site five unprotected control plots were also selected and marked with spikes.

In late May and early June, 1967, the present writer lifted the cones, clipped the grass from the enclosed areas and air-dried and weighed the clippings. The weight of the grass remaining on control plots was measured in the same way. The difference in the weight of the clippings between a plot protected by a cone and the corresponding control plot provided an estimate of the amount of grass consumed during the winter from an area of 9.6 square feet. The percentage by weight grazed during winter from the standing crop of grass present in the fall was calculated.

As all of the plots, except one, were in open, well drained locations they were not representative of all the range types used by bison within the park. Because the bison had smashed many cones and because the plots were of such similar nature, only one or two protected plots and their controls were clipped at each site, and the other plots were noted as showing similar use.

The sites were as follows:

1. West Hayburger Trail 0.6 miles west of the "soap holes."
Four cones were placed on an open meadow and one in an adjacent slough. The four plots on the meadow were grazed heavily, the plot in the slough appeared to have received little or no use. Pellet group observations at this site indicated more use by elk than by bison. Open grassy sites such as this one lose their snow cover earlier than shaded areas and are favoured by elk in the early spring.
2. South of the Big Beaver House Lake on the Old Homestead Meadow.
This area also showed signs of heavy grazing, particularly by elk.
3. East Spruce Island Lake.
This site was not examined due to inaccessibility caused by heavy rains.
4. Oster Lake Warden Station.
This meadow has been cultivated in the past. It showed signs of heavy grazing by bison.
5. North end of Big Tawayik Lake.
Large open grassy meadow. This meadow had been utilized heavily by bison.
6. Tawayik Lake Narrows west of the Channel.
An open grassy area heavily utilized primarily by bison. Four of the five cones at this site had been destroyed.

7. Salt lick meadow at south end of Cooking Lake Trail.

A large grassy meadow with an adjacent slough. The meadow had been moderately to heavily utilized by both bison and elk. The slough had received only slight use.

Though the data are limited, they are the only information available on winter use of the grass stands. The winter of 1966-67 was the first in which all bison grazed at large in the main part of the park without being fed hay. For that reason the data are worthy of consideration as an immediate guide to stocking rates.

The weight of the forage clipped from each plot and the calculated percentage grazed are given in Table 1. As there had been some use at most sites previous to the cones having been put in place, the weight of grass clipped in the spring represents in most cases less than the total weight of grass produced at that site during 1966. The calculated percentage grazed varied from 0 per cent at a slough near the "soap holes" to 97 per cent from one plot at the Tawayik Lake Narrows.



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Table 1. Air-dried weight of grass clipped from protected and unprotected plots, and percentage used, Elk Island National Park, winter 1966-67.

| Site Number | Grass clipped from plot (g) | | Percentage Use |
|-------------|-----------------------------|---------|----------------|
| | Cone | Control | |
| 1 | 209.1 | 342.0 | 0 |
| | 254.9 | 35.1 | 86.3 |
| 2 | 290.6 | 165.4 | 43.1 |
| 3 | | | |
| 4 | 240.4 | 60.4 | 74.9 |
| 5 | 285.8 | 51.0 | 82.2 |
| 6 | 278.8 | 6.5 | 97.6 |
| 7 | 354.0 | 181.8 | 48.6 |