Flook

1955

CWS
55-25

CANADIAN WILDLIFE SERVICE

IM
CWS-~~25-55~~
55-25

Flook, D.R.

Appraisal of the elk situation in the Athabasca Valley of Jasper Park. Edmonton 1955.

9 *l*.

1. Elk - Surveys - Athabasca Valley.
I Title.

CANADIAN WILDLIFE SERVICE
WESTERN REGIONAL LIBRARY

5104
WLJ 234

AN APPRAISAL OF THE ELK SITUATION IN THE ATHABASCA VALLEY OF JASPER PARK

Donald R. Flook
1955

INTRODUCTION

This work was done following instructions received from the Chief, Canadian Wildlife Service. The purpose was to collect information on the conditions of the Athabasca Valley Winter Ranges so as to recommend management procedures. It was originally intended that a quantitative range survey be made in July prior to the Brazeau trip. As the south boundary inspection trip was conducted earlier than had been anticipated, this was postponed. When the work in the Athabasca valley was begun on September 30th, the vegetation was too far advanced for quantitative data on plant composition to be comparable to that obtained in previous years. The writer therefore made a reconnaissance of the principal ranges and evaluated condition on the basis of: plant density, abundance of good forage species, presence and abundance of invader species, plant vigour and production, hedging of browse, and soil erosion.

September 30th, the Henry House Flats and Talbot Lake range areas were inspected. October 1st, with Warden Frank Berstrom, the writer drove to Devona, and inspected ranges at Koberley Flats, Windy Point and Devona. October 2nd, with Warden Dawson, the range area at the foot of the Colin Range was checked. October 3rd the Miette area was visited and reconnaissance of the ranges made.

CONDITION OF RANGES

Data on the plant composition and density of the Athabasca valley ranges are available from surveys made by Cowan 1/ in 1946, Banfield 2/ in 1952, and Webb 3/ in 1953.

1/ Cowan, I.McT. 1946, General report upon wildlife studies in the Rocky Mountain National Parks in 1946. Nat. Parks Bur., pp. 1-19, (mimeo).

2/ Banfield, A.W.F. 1952, Range Studies, Jasper Nat. Park. Report to Can. Wildlife Service, pp. 1-14 (typewritten).

3/ Webb, R. 1953. Range Studies, Jasper Nat. Park, Aug. 1953. Report to Can. Wildlife Service, pp. 1-6 (typewritten).

5104

se provide information on past trends in range condition. range study areas will be discussed in the same order they were presented by those workers.

lette Slopes

Banfield noted a decline in the grass-sedge cover on this area in the period between 1946 and 1952.

This writer was unable to locate an exclosure in the area.

Terracing was still evident on the east facing slopes. However, there was a fairly dense cover of grasses principally wheat grasses (Agropyron spp.), and brome (Bromus sp.), with a good production of forage. There were also limited amounts of rose (Rosa sp.), shrubby cinquefoil (Potentilla fruiticosa), and silverberry (Eleagnus argentea).

The south facing slope on the north side of the Moosehorn River was found rather severely terraced by elk trampling and grazing. It carried a fair growth of grass. However there was a large proportion of kinnikinick (Arctostaphylus uva ursi), and some shrubby cinquefoil.

2. Miette Flats

Banfield's findings showed a decline in grass-sedge cover in this area in the period between 1946 and 1952.

The 8 foot square exclosure was found by the writer. The poles were rotten but the fence was still standing, and excluding game. The vegetation inside the exclosure was a dense cover of grass of which brome was dominant. There were traces of pasture sage (Artemisia frigida), and pussytoes (Antennaria sp.) The grass cover outside the exclosure was less dense than inside and there were higher proportions of pasture sage and pussytoes. There were also, on the Flats, large stands of vigorous silverberry (Eleagnus argentea), and large amounts of Buffaloberry (Sheperdia Canadensis) in good condition.

3. Devona Flats

Banfield found that the grass-sedge cover on this range showed slight improvement between 1946 and 1952. Webb's results indicated a very pronounced improvement in 1953.

...ever, in the latter case the apparent increase in grass ...t have been partially due to the survey having been ...nducted later in the season, rather than to actual range ...provement.

The 8 foot square, pole exclosure on Devona Flats was located. This is still standing and excluding game but it is very shaky and the poles rotten. The vegetation inside the exclosure is a fairly dense cover principally of wheatgrasses, with a fairly large proportion of sage. Outside this exclosure the plant cover is slightly less dense and growth less luxuriant indicating lower vigour of the grass plants. Plant composition is similar to that inside the exclosure but there are a few patches of needle-and-thread grass (Stipa sp.), a grass which is often mechanically injurious to grazing animals, and which tends to invade overused ranges.

Devona Slopes

The 8 foot square, pole exclosure on the slope at Devona was also located. This fence is in better condition. The vegetation inside the exclosure is a fairly dense cover of grasses, the dominant of which was brome. There were also appreciable amounts of lily zigadene (Zigadenus elegans). Outside this exclosure was a grass cover comparable in density and production to that inside. However there was a very low proportion of brome here, and more wheatgrasses and ryegrass (Elymus innovatus). Also present were other grass species, coarse sedges (Carex spp.) and lily zigadene.

In general, the flats and gradual slopes at Devona were found in good condition. However, the critical slopes on the north side of the Snake Indian River are in rather poor condition, with considerable erosion pavement. These areas are used heavily by sheep and their condition is probably due mostly to trampling by this species.

4. Windy Point

Banfield noted a very definite increase in the grass-sedge cover of this range area.

An exclosure was located here. It was 30 feet square of poplar poles, now rotted and collapsed on one side so that the area is exposed to grazing. The exclosure was

located partly in a gully and the area contained was, in the opinion of this writer, too favorable a site to be representative of the surrounding range.

The range in the Windy Point area is in fair to poor condition. On the grassland of the slopes is a high proportion of sage in the cover and there are extensive patches of needle-and-thread grass. Terracing, and erosion by both wind and water, are severe on many parts of the slopes and a large proportion of the ground is bare soil or erosion pavement. Kinnikinick is the main plant cover on the eroding slopes and is helping to stabilize the soil although it is poor as forage. Trampling by both sheep and elk are probably the main factors preventing range recovery on these critical slopes.

5. Moberley Flats

Banfield's findings indicated a slight decline in the grass-sedge cover on this range between 1946 and 1952. Webb noted a further decline the following year.

The 30 foot square pole exclosure was found in this area. The poles are rotting and the exclosure is in a tottering condition. This exclosure was built around a clump of aspen poplars (Populus tremuloides) in the middle of the flats. The aspen had been barked by elk before the fence was erected. Little information on trends in plant cover could be obtained from examining this exclosure as the shaded site beneath the aspen canopy does not provide conditions comparable to the remainder of the Flats.

The Flats were in fair condition. There were a few sprouts of aspen and saskatoon (Amelanchier alnifolia). Grasses occurring were wheat grasses, rye grass, needle-and-thread grass, and foxtail (Hordeum jubatum), which is also an invader species, often mechanically injurious to grazing animals. There was a fairly large proportion of sage in the plant cover. Seedlings of white spruce were in evidence on the periphery of the meadows.

In general the forage production on the Moberley Flats this year has been good.

Talbot Lake

A decline in the grass-sedge cover of this area in the period between 1946 and 1952 was noted by Banfield. (A slight improvement was noted by Webb in 1953). This writer found that there are still some areas of bare drifting sand. However the presence of young plants stabilizing much of the drifted area indicated a current improvement trend. The plants included principally: wheat grasses, brome, needle-and-thread grass, and dwarf birch (Betula glandulosa). Probably a certain amount of drifting is normal on exposed ridges in this area, as it is swept by sand-bearing winds off Jasper Lake. However the condition of this range when visited was not considered satisfactory.

7. Henry House Flats

Cowan noted a serious decline in the grass-sedge cover of this area between 1943 and 1946 and Banfield noted a slight decline between 1946 and 1952. Webb's results indicated a slight improvement in 1953.

The writer found this range in fair condition. Shrubby plants present were: Kinnikinick, shrubby cinquefoil, and buffalo-berry (Shepherdia canadensis). These were all in a fairly productive condition. The grass cover was of moderate density with large proportions of invaders including sage, and pussytoes. The current forage production of grass was fair.

The exclosure on this range was not located.

8. Colin Range

Banfield noted an appreciable increase in grass-sedge cover on this range between 1946 and 1952.

The writer found the ground cover rather sparse. The main forage plants were wheat grasses, rye grass, and brome. Undesirable plants present in fairly large amounts were pussytoes, needle-and-thread grass and needle grass (Stipa spp.). The grasses, although sparse, had a tall growth. The aspen poplars in the area were all mature and were barked at an earlier period. There is no sprouting. There were many severely hedged shrubs of silver willow

(Eleagnus argentea), some dead and others showing sign of recovery.

9. Range Condition in General

In summarizing, winter ranges were found generally in fair condition. Certain critical slopes are in poor condition and some of the level meadows are in good condition.

Current range trends are probably a gradual improvement except for critical slopes where recovery is prevented by trampling and grazing by elk and sheep coupled with run-off and wind.

The current years growth of grass forage was generally good, as a result of plenty of moisture early in the season.

Previous elk slaughters in the Athabasca valley are summarized in table 1.

Table 1. Previous Elk Reduction Slaughters, Athabasca Valley

	Objective	No. Elk Slaughtered	Remarks
1942-43	200	127	
1943-44	200	0	
1944-45	300	250	
1945-46	250	197	
1946-47	700	375	
1947-48	400	219	Elk decline reported
1948-49	100	103	
1949-50	0	0	Further decline noted
1950-51			No information available
1951-52	0	0	Poor calf crop. No slaughter
1952-53	75	78	
1953-54	100	60	Open winter, hunting slow
1954-55	200	137	Open winter, hunting slow

Total 972 slaughtered 1942-1955

ANNUAL INCREASE OF ELK

Wardens in the Jasper, Pocahontas, Snaring and Devona districts, classified 215 elk during June, July and August, and recorded them on observation cards. Of this number, 60 were calves or 28%. ($\frac{60}{215}$ x 100). If it is assumed that the elk classified represent a cross section of the herd, then the annual increase can be estimated as 38% of the precalving population. ($\frac{\text{\# of calves seen}}{\text{\# elk seen yr. old \& older}}$ x 100). This is relatively high for elk.

No estimates of the size of the elk population in the Athabasca Valley are available.

OBSERVATIONS OF SHEEP

During this work, five sheep bands were observed. The greatest number of sheep seen in each band on any one occasion was as follows:

Mile 3 on East Highway	-	24
Roche Miette	-	14
Windy Point	-	22
Devona	-	15
		75

It was reported that the sheep were just beginning to appear on the low elevation ranges at this time, and many more could be expected later. The seventy-five sheep were segregated as follows:

Ewes (adult & two-year-olds)	-	37
Lambs	-	21
Yearlings (both sexes)	-	10
Two-Year-old rams	-	7

This rather limited sample indicates a fairly good rate of reproduction. Little can be concluded from this sample regarding survival to yearling stage. Smith 1/ pointed out that ewe : yearling ratios taken throughout the summer do not represent a true cross section of the population.

1/ Smith, Dwight R. 1954. The Bighorn Sheep in Idaho. Idaho Fish and Game Department, Wildlife Bulletin No.1, pp. 1-154.

5. Eight, or 50 per cent of the 16 adults had hydatid cysts.

It appears that the ranges are well stocked with sheep. Trampling, and grazing by concentrations of sheep may be having as much effect as elk use in preventing range recovery on certain critical slopes.

RECOMMENDATIONS

The winter ranges are not yet in a satisfactory condition and recovery is slow in spite of repeated elk reduction slaughters. It is therefore recommended that a slaughter be carried out in the 1955-56 winter with a goal of two hundred elk. The kill should be distributed through the main Athabasca Valley similarly to what was done last winter.

It is recommended that the hunt be non-selective. Elk should be killed at random as they are encountered. There are three reasons for this -

1. If a cross section of the elk population is taken it will provide information on the proportions of sexes and age classes in the herd. This information is useful in management.

2. It is desirable to maintain a normal distribution of sexes and age classes in the herd.

3. If hunting excludes bulls it tends to permit them to live to old age. Old animals tend to be reservoirs for disease and parasites.

2. It is the opinion of this writer that under the existing status of elk, sheep, and deer and present range conditions, predator control in the Athabasca Valley is not justified.

3. Range exclosures are useful as a means of studying and demonstrating the effect of grazing on the plant cover. To be most valuable exclosures must be permanent. It is therefore recommended that exclosures thirty feet square

eight foot page wire on metal posts be erected at the llowing sites:

1. On the critical slope west of the highway and railway tracks at about mile three north of Jasper.
2. Henry House Flats
3. Moberley Flats
4. Windy Point
5. Devona (preferably two exclosures, one on flats, one on slope).
6. Miette Station (preferably two exclosures, one on flats, one on slope).

Number (1) will be a new location for a range study area. It is particularily advantageous as a demonstration as it is visible from the highway and on a key range for sheep and elk.

The remainder of the exclosures should be located so as to include the areas protected by the old pole exclosures. Exceptions to this are Moberley Flats and Windy Point. The pole exclosures on these ranges are on areas which represent peculiar conditions, i.e., a clump of aspens, and a gulley. They should therefore be relocated on areas typical of the surrounding range.

A quantitative "condition and trend" range survey should be made in the Athabasca Valley by the Wildlife Service next summer. The exact locations for the exclosures could be selected at that time and the existing conditions of plant cover recorded and photographed.

Respectfully submitted,

Donald R. Flook

Donald R. Flook
Mammalogist.

Edmonton, Alta.,
November 18, 1955.

CANADIAN WILDLIFE SERVICE
WESTERN REGIONAL LIBRARY