TITLE Trial of Cattle Exclosures on TFL 8

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Silviculture Branch

Approved: D.L. Oswald (Typed) (for Regions - Forestry Manager)
Working Plan for SX Trial cattle exclosures on TFL 8

1. Objectives:

To determine the effect of domestic livestock grazing on the rate of growth of trees, grass and shrubs, the amount of damage to seedlings caused by cattle, and the degree to which grazing can be used in the control of grass and shrubs impeding natural regeneration and planted seedlings.

2. Location:

Two exclosures on block 1 of TFL 8 in compartments 3 and 7. Three exclosures on block 2 of TFL 8 in compartments 12, 13 and 14.

3. (Exclosure design and plot establishment:

Enclosures are 100 m X 100 m each, with posts every 5 meters; 4 strand barbed wire; droppers between posts; and one escape gate per exclosure.

Forty sample plots are to be established per exclosure, 20 inside and 20 outside the fenced area. Plots will be established on a 20 m X 20 m grid with a steel post marking the plot centres.

4. Data Collection:

Data on tree growth, survival and condition will be collected from 3.99 m circular plots. The location and number of stems by species are to be recorded and each stem rated for growth and damage assessment on a scale of 0 through 4. Zero indicating a dead tree; one a tree showing trampling damage; two a tree showing browse damage; three an undamaged tree exhibiting poor colour, form or vigor; and four an undamaged healthy tree.

The five categories mentioned above will be further subdivided in order to better isolate possible caused and effects. The zero category will be subdivided into 5 subcategories. These are pulled trees, browsed trees, scarred trees, other (i.e. insects or diseases etc.) and unknown. Category one will be subdivided by percentage of stem circumference girdled in the following classes:
Working Plan for SX Trial cattle exclosures on TFL 8 Continued

4. Data Collection Continued:

0% to 10%; 11% to 30%; 31% to 50%; and 51% to 100%. Category two will be subdivided to record browsing of the terminal, greater than 50% of the laterals or less than 50% of the laterals. Category three will be subdivided to record poor form (forks or crooks) or poor colour (chlorotic). Category four will not be subdivided. We will also record yearly tree growth and total tree height.

Data on plant cover present on the sites will be collected by the range section of the Ministry of Forests. These plots will record the overall cover and species composition in order to monitor changes in these two variables over time. Annual forage utilization will also be assessed by the range section.

5. Dates of Assessment and Reporting:

1985 - sites selected, exclosures constructed, plot centres located on 4 exclosures, operational tree planting on one exclosure.

1986 - complete location of plot centres, operational planting on one exclosure
- collect data on tree growth, survival and condition
- collect data on overall cover and species condition, assess forage utilization
- interim report.

1988 - collect data as per 1986
- interim report.

1990 - collect data as per 1986
- summary report.

Valuable data may be collected from these exclosures after 1990 but this data collection is beyond the present scope of this trial.

6. Report Distribution:

Research Officer, Nelson
Silviculture Officer, Grand Forks
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