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RURAL ECONOMY

PROJECT REPORT

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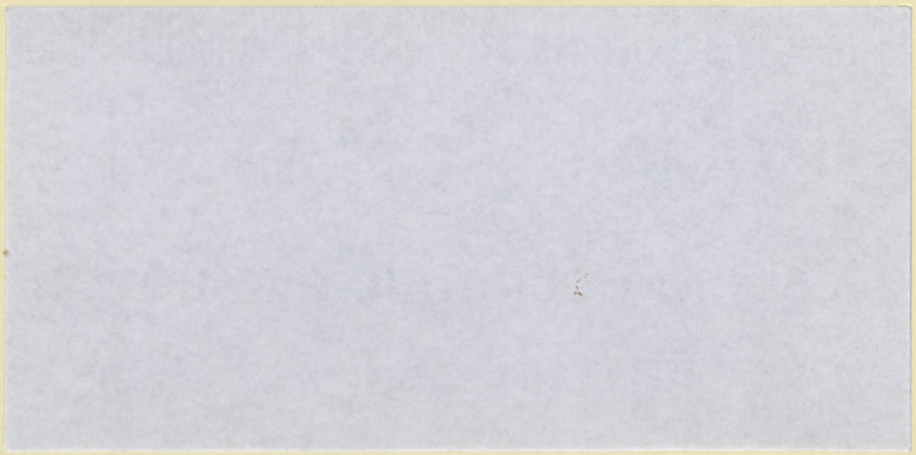

A Socio-Economic Evaluation of Woodland Caribou in Northwestern Saskatchewan

M. Tanguay[1], W. Adamowicz[2], P. Boxall[3], W. Phillips[4], and W. White[5]

Project Report 93-04

The authors are: 1. Research Associate, Department of Rural Economy, University of Alberta, Edmonton; 2. Associate Professor, Department of Rural Economy, University of Alberta, Edmonton; 3. Non-Timber Valuation Economist, Forestry Canada, Edmonton; 4. Professor, Department of Rural Economy, University of Alberta, Edmonton; 5. Senior Economist/Project Leader, Forestry Canada, Edmonton.

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A Socio-Economic Evaluation of Woodland Caribou in Northwestern Saskatchewan

Interim Project Report

INTRODUCTION

Maintaining the abundance of wildlife and the preservation of endangered species are serious concerns to the people of Saskatchewan. In the 1991 survey "Importance of Wildlife to Canadians" over 80% of Saskatchewan respondents stated that these two issues are important. This same survey also found that over 40 000 Saskatchewan residents were involved in maintaining natural areas. Clearly, wildlife and natural areas preservation are important to the citizens in this province.

A particular forest species, the woodland caribou, is classified as vulnerable to the effects of timber harvesting. In the Northwestern region of Saskatchewan increased forest industry activity could place local populations of this species in jeopardy. Given the degree of public interest in maintaining wildlife populations, a study was proposed to examine the socio-economic significance of this species. For completeness, this proposed study would include the cost of maintaining caribou numbers.

Such a study was initiated in 1992. A survey was developed to collect information on the social and economic elements that would influence the valuation of wildlife. Contingent valuation (CV) methods were incorporated, into the survey, to estimate the value of woodland caribou. The opportunity cost of maintaining caribou numbers will be derived by determining foregone harvest volumes to industry. These cost estimates will be completed in 1993.

This report will supply the descriptive results of the survey. In the future, research models will be developed to measure the value of woodland caribou to the people of Saskatchewan. A final report will include these valuation estimates and the opportunity cost associated with the identified caribou population goals. The information within these reports will assist professional managers in designing optimal management strategies for the Northwestern region of Saskatchewan.

BACKGROUND

In the Northwestern region of Saskatchewan a Forest Management Lease Agreement (FMLA) was recently allocated to Millar Western Industries and Norsask Lumber. Through a community and industry initiative a management group was formed, Mistik Management. Mistik in turn hired TAEM (Terrestrial Aquatic and Environmental Management) to determine allowable cuts and assist in forest operation plans. A major goal of TAEM is to incorporate environmentally sensitive practices within Mistik's forest operations. This objective was set so Millar Western Industries' "zero effluent" pulp mill could maintain market share for its environmentally friendly product.

Of importance to the initiation of this study was the completion of the "Woodland Caribou Management Proposal" (Wildlife Group Report 92-3) in May of 1992. The report contains information about caribou population densities in the Northwestern region of Saskatchewan. With the changing forest structure caused by timber harvesting, caribou numbers will likely decrease. This decrease in caribou can be viewed as a trade-off for the creation of jobs in the forest sector. A value for these negative benefits, fewer woodland

caribou, is a required element in developing an optimal management strategy for the Northwestern region.

A study, using contingent valuation (CV) methods, was proposed to estimate the value of woodland caribou to the people of Saskatchewan. CV methods involve a survey designed to collect attitudinal and socio-economic data from respondents in addition to value questions. These questions are structured so that respondents identify the "maximum amount s/he is willing to pay" to maintain or change some described good. From these responses, using willingness to pay (WTP) models, values are estimated for the good of concern. These values are used to estimate the benefits of maintaining caribou numbers. In addition to these benefits the relevant costs in maintaining caribou numbers must be determined. Once all costs and benefits are identified, an optimal management strategy can be developed.

Several objectives were addressed during the study. They are:

(1) to develop a survey and sampling design to accurately collect the data required for a WTP model;

(2) to use the data collected to analyze the socio-economic and demographic characteristics of respondents who are willing to make the trade-offs to maintain woodland caribou;

(3) to estimate the value of woodland caribou, by developing a WTP model that incorporates socio-economic and demographic characteristics;

(4) to estimate the opportunity cost to the firms in the Northwestern region by calculating foregone harvest volumes using the timber harvest simulator FORMAN.

This interim report meets the requirements of the first and second stated objectives and a final report will address objectives three and four.

SURVEY DESIGN

The survey was developed by individuals in the Department of Rural Economy, University of Alberta with assistance from individuals in Forestry Canada (Northwestern Division), TAEM, Mistik Management Ltd, and Saskatchewan Environment and Resource Management (Saskatchewan Wildlife Branch). The survey is designed to elicit information on attitudes about wildlife, participation in wildlife and outdoor related activities, CV questions and a variety of socio-economic information about respondents.

The survey was sent to several individuals for review and comments. The comments were evaluated and incorporated as required. No mailed pretest was conducted. A pretest using an undergraduates class and two small focus groups were done. Following the pretest and focus groups, minor revisions to the questionnaire were made.

The questionnaire is composed of 3 sections. The first section contains questions concerning attitudes and opinions towards wildlife and more specifically, woodland caribou. Also included in this section are questions eliciting information about participation in wildlife and outdoor related activities. These questions were asked so that the importance of wildlife to the respondents could be determined (i.e., entertainment, outdoor activities and the perceptions of wildlife). The second section is composed of several CV questions, which are described in the following paragraph. The final section elicited demographic information from the respondents. The size of household, income, age, and other attributes could be important in predicting the value respondents have for woodland caribou.

The final form of the questionnaire is composed of 9 versions. These versions can be divided into two groups: opened ended WTP (OE WTP) questions (versions 5 through 8) and dichotomous choice WTP (DC WTP) questions (versions 1 through 4 and 9). DC WTP describes a hypothetical market situation and a dollar value cost is elicited. The respondent can either accept or refuse the offer, mimicking a real market situation where the individual is a price taker. The Open Ended WTP question is similar in format to DC WTP questions, but no dollar value is elicited. Instead, the respondent is asked the maximum amount s/he would be willing to pay for some service or good. In versions 1 to 8 a donation type payment vehicle was used; version 9 used increased expenditures as the payment vehicle.

The presentation of the WTP questions varied in the 9 versions of the questionnaire. This variation in design will allow for future detailed analysis on caribou valuation. Versions 1, 2, 5 and 6 were composed of two-tiered questions. In versions 1 and 5 a question about the Canadian population of caribou was first, followed by a Saskatchewan caribou WTP question. In versions 2 and 6 the question order is reversed. A Canadian WTP question was the single question presented in versions 3 and 7 and the Saskatchewan question was presented alone in versions 4, 8 and 9. A complete copy of the questionnaire and the different versions of the contingent valuation question can be found in Appendix B. The a complete coding list for the questionnaire can be found in Appendix C.

The complete survey package contained a survey, covering letter and a ballot for a prize draw. The covering letter and the cover of the questionnaire included logos from the University of Alberta and the Canada-Saskatchewan Partnership in Forestry Agreement. The letter was written to give the respondents information as to why the survey was sent, to

encourage participation and to inform them of a prize draw for all returned completed questionnaires. Several prizes were donated, ranging from binoculars donated by Forestry Canada to participation pins from Trout Unlimited. A separate ballot was included for the prize draw and to facilitate the removal of names from the list for the second and third mailings.

SAMPLING DESIGN

1. Northwestern Region and Provincial Sample

Since Northwestern Saskatchewan was the major area of interest, the region was sampled with an intensity of 7.5%. The Saskatchewan sample was set at .75% of the population.

Names and mailing addresses were purchased from Targetwest Marketing of Saskatoon, Saskatchewan. These addresses were randomly generated from telephone listings provided by Sask-Tel.

After cross-checking the two mailing lists with one another and with the listings for the Saskatchewan moose and deer hunting surveys being mailed out at the same time, an initial mailing of 4 246 were sent out on November 30, 1992. All responses returned had their names removed from the second and third mailing lists. The second mailing was a reminder card sent on December 10, 1992. The third mailing consisting of 2 745 complete survey packages, was sent to all non-respondents on January 13, 1993.

RESPONSE RATES

Table 1 summarizes the response rates for the completed returns for the

Saskatchewan and Northwestern samples. The total mail out for the Saskatchewan sample was 2 774 (309 per version) and the Northwestern was 1 472 (164 per version). The total completed returns for the Saskatchewan sample were 1 374, another 113 surveys were returned unopened (deceased, incorrect address or moved). The completed returns represent a response rate of 51.63%. For the Northwestern region, 680 completed (50.4% response rate) and 123 unopened questionnaires were returned. These response rates are considered good for a general household survey. Both unopened return rates were below 10%.

The first and third mailings were examined for any response bias using the demographic variables and none was found. No additional test for response bias was conducted.

Table 1. Sample Size, Response and Response Rates for the Survey

Mailed	Number sent	Number returned unopened	Percent returned unopened	Effective sample size	Number completed	Percent of effective completed
Sask. Region	2 774	113	4.0	2 661	1 374	51.6
N.W. Region	1 472	123	8.4	1 349	680	50.4
Total	4 246	236	5.6	4 010	2 054	51.22

SURVEY RESULTS

A detailed summary of the survey results can be found in Appendix A. The results are partitioned by "region", the provincial sample is labelled Region 1 and the Northwestern sample, Region 2. This labelling criteria will be used in the following section. This section

will provide the reader with the descriptive of these results.

Attitudes and Opinions about Wilderness and Woodland Caribou

Question 1.1 and 1.2 provide information on the amount of wildlife or outdoor educational and entertainment activities the respondents participated in within their homes or educational facilities. Approximately 80% read material related to wildlife or outdoor activities with 78.7 and 80 percent for Region 1 and Region 2, respectively. Over 90% of all respondents answered yes to the question "did you watch T.V. or movies related to wildlife and outdoor activities?". The actual breakdown was 91.8% for Region 1 and 92.8% for Region 2. These numbers clearly indicate that the level of interest for wildlife and outdoor activities is very high.

Question two was composed of 4 parts, 2.1, 2.2, 2.3 and 2.4. Question 2.1 asked the respondents whether they had hunted or fished in the last year, the average value was over 50%. By sample, Region 2 had a greater proportion of respondents (58% vs. 50.1%) who had hunted or fished in the last year. The lower percentage for Region 1 could be a reflection of the higher urbanization of the respondents within the sample. Question 2.2 asked respondents if they had been involved in other wildlife activities, which would include non-consumptive uses like watching or photographing wildlife. The two samples were similar in responses with Region 1 and Region 2 reporting 56.1% and 58.5%, respectively. A high percentage of the respondents from both regions reported doing outdoor sports related activities (question 2.3). The percentage breakdown by sample is 67.7% for Region 1 and

71.1% for Region 2. The last question of this set, 2.4, enquired about the number of days the individuals participated in any of the above activities. The average number of days for Region 1 and Region 2 were 67.7 and 71.1, respectively. In general, Region 2 appeared more actively involved in outdoor pursuits than Region 1. This attribute of Region 2 could be related to the availability of wilderness areas to the respondents.

The proactive role of the respondents to wilderness related issues was captured in question 3.1. This question asked respondents if they were involved in any wilderness or conservation type clubs. The responses were low, with 14.2% for Region 1 and 16.1% for Region 2. The average number of days each participant spent doing club activities was 8.9 days and 7.7 days for Region 1 and Region 2, respectively. The median values were 2 days for Region 1 and 4 days for Region 2. The average amount of monies the respondents spent per year on club memberships, related activities, or donations, was $ 81.69 for the Region 2 and $ 80.41 for Region 1. The median amounts for Region 1 and Region 2 were $35 and $39, respectively.

Question 4.1 through to 4.6 dealt with respondent attitudes to wildlife and nature in general. The questions were ordinal in design with 4 representing strongly agreeing with a presented statement and 1 strongly disagreeing. A zero value was given for no opinion responses. Question 4.6 showed the strongest opinion. In both Regions, over 78% of respondents strongly agreed with the statement "people have a moral obligation in preserving the environment". For both regions, the next highest percent (78%) was for the use value wilderness provides for humans (question 4.1). In question 4.2 only 67% of the respondents from both samples strongly agreed with the statement "wildlife that has no

direct benefits to people should be preserved and protected". Approximately 30% of all respondents strongly agreed that some protection should be provided for harmful wildlife. Region 2 was slightly lower than Region 1 (28.7% vs. 30.7%). Nearly 70% of Region 1 respondents disagreed or strongly disagreed with the statement "Species of wildlife that can damage property or harm people should not be protected ...". This compares with 51% for Region 2. Most respondents believed inaction in the preservation of wildlife was wrong. Seventy-five percent, of all respondents, strongly disagreed with the statement " preserving wildlife for the future is not important as the future will take care of itself ...". Regionally, this breaks down to 74.2 and 75.6 percentage for Region 2 and Region 1, respectively. Question 4.4 provided the most ambiguous responses. Nearly 60% of all respondents chose either "agree" or "disagree" to the statement "Wildlife is important but peoples needs should come first ...". A break down by sample showed that Region 1 had 64% in these two categories and Region 2 approximately 59%.

Question 5 through 9 dealt exclusively with the respondents' attitudes, knowledge and opinions concerning woodland caribou. The survey revealed that over 80% of all respondents had heard of woodland caribou before receiving the questionnaire, with Region 2 being only slightly more aware of caribou (81.1% vs. 80.9%) than Region 1. Question 6 asked the question "have you ever seen a woodland caribou in the wild?". Over 60% of all respondents said no. In Region 2, just slightly over 30% had seen a caribou a few times (1 to 5 times) verses 26.1% for Region 1. The importance of the existence of woodland caribou was reported to be important to very important to over 80% of respondents in both samples. Question 8 was composed of 8 sub-questions on the reasons why individuals felt woodland

caribou are important. Most respondents identified several reasons concerning the importance of caribou. Question 9 was included so respondents would identify the reason that was the most important from question 8. The reason identified most often, over 35% for both samples, was that caribou simply had a right to exist. A distant second was that caribou are important to maintain the balance of nature. All other reasons were less than 10% for both samples. The least chosen reason for Region 1 was "a chance to see a caribou" (1.4%) and for Region 2, "an opportunity to hunt caribou" (2.5%).

Contingent Valuation Question

The CV questions 10 and 11 were composed in several different frameworks. Because of the more complex nature of the DC WTP questions they are not discussed in this report, but will be analyzed at a later date.

The OE WTP questions were evaluated by sample region within the different frameworks described earlier. The means and medians were calculated for each question. The average mean, over all regions, for the Canadian question was $17.06 and the Saskatchewan question was $20.26. These two values showed a high variance. The fact the means are positive indicates that certain segments of the population do place a value on maintaining caribou. An effort will be made to determine who benefits from the preservation of caribou. The results of this analysis will be contained within the final report.

The final report will also include the results from the DC WTP questions. Because DC WTP questions are considered more reliable than OE WTP questions, they may yield different results.

Demographics

For both regions sampled, the majority of the respondents were male (approximately 74.5% for each region). The average age for each region varied slightly with Region 2 being older (47.46 years) than Region 1 (45.08 years). The median ages were 45 and 42 years, respectively. Question 14/15 enquired whether the respondents had ever visited Northwestern Saskatchewan. A map was provided showing the region. For Region 2, 81% answered yes, compared to 70% for Region 1. The difference between the two samples is not surprising since Region 2 was almost identical to the included map. A question asking the name of the closest town to the respondent's residence was included as was a question concerning the size of the respondents present place of residence. Region 1 was shown to be mostly urban in nature with over 67% of the respondents living in towns greater than one thousand people. Region 2 was evenly distributed between urban and rural (live on a farm) residences. Both urban and rural residences were identified at 35.7% of the Region 1 sample. The number of individuals who reside in a household, for both regions, was 2.8 people/household, with the median being 2 for both samples. In both samples the median value for income was 4, which translates to an income range of between 30 and 40 thousand dollars per year. Question 19/20 elicited the highest year of education completed. Region 1 showed a higher average education (12.5 years vs. 11.6 years), however both regions had a median of 12 years. The occupation of the respondents was elicited in question 20/21. For both samples approximately 1/5 of respondents identified themselves as retired (17.2% for Region 1 and 19.6% for Region 2). Region 2 reflected its more rural nature by having a higher percentage of the respondents reporting their occupation as farmers (22.7% vs.

14.1%). The only other notable difference was the higher number of professional occupations reported in Region 1 relative to Region 2 (19.1% vs. 13.4%).

CONCLUSION

This interim report was prepared to provide the descriptive results of the 1992 Saskatchewan Woodland Caribou Survey. Additional analysis will be required to understand further the data collected from this survey. It is hoped that the data gathered from the survey will provide professional managers and decision makers with relevant information now and in the future.

Appendix A

QUESTION 1. During the last year have you

1.1 Read books, magazines or articles on wildlife or outdoor activities?

REGION: 1

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
no	0	285	20.7	21.3	21.3
yes	1	1051	76.5	78.7	100.0
missing	9	38	2.8	Missing	
	Total	1374	100.0	100.0	

Valid cases 1336 Missing cases 38

REGION: 2

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
no	0	132	19.4	20.0	20.0
yes	1	528	77.6	80.0	100.0
missing	9	20	2.9	Missing	
	Total	680	100.0	100.0	

Valid cases 660 Missing cases 20

1.2 Watched films or T.V. on wildlife or outdoor activities?

REGION: 1

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
no	0	110	8.0	8.2	8.2
yes	1	1236	90.0	91.8	100.0
missing	9	28	2.0	Missing	
	Total	1374	100.0	100.0	

Valid cases 1346 Missing cases 28

REGION: 2

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
no	0	48	7.1	7.2	7.2
yes	1	623	91.6	92.8	100.0
missing	9	9	1.3	Missing	
	Total	680	100.0	100.0	

Valid cases 671 Missing cases 9

QUESTION 2. During the last year

2.1 Did you hunt or fish?

REGION 1

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
no	0	674	49.1	49.9	49.9
yes	1	676	49.2	50.1	100.0
missing	9	24	1.7	Missing	
	Total	1374	100.0	100.0	

Valid cases 1350 Missing cases 24

REGION 2

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
no	0	278	40.9	41.6	41.6
yes	1	390	57.4	58.4	100.0
missing	9	12	1.8	Missing	
	Total	680	100.0	100.0	

Valid cases 668 Missing cases 12

2.2 Were you involved in other wildlife activities?

REGION: 1

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
no	0	592	43.1	43.9	43.9
yes	1	757	55.1	56.1	100.0
missing	9	25	1.8	Missing	
	Total	1374	100.0	100.0	

Valid cases 1349 Missing cases 25

REGION: 2

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
no	0	277	40.7	41.5	41.5
yes	1	390	57.4	58.5	100.0
missing	9	13	1.9	Missing	
	Total	680	100.0	100.0	

Valid cases 667 Missing cases 13

2.3 Were you involved in other outdoor activities?

REGION 1

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
no	0	432	31.4	32.3	32.3
yes	1	907	66.0	67.7	100.0
missing	9	35	2.5	Missing	
	Total	1374	100.0	100.0	

Valid cases 1339 Missing cases 35

REGION 2

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
no	0	188	27.6	28.3	28.3
yes	1	477	70.1	71.7	100.0
missing	9	15	2.2	Missing	
	Total	680	100.0	100.0	

Valid cases 665 Missing cases 15

2.4 Please indicate the approximate number of days that you participated in these activities during the last year.

REGION: 1

Mean	26.437	Median	14.000	Mode	10.000
Std dev	46.994	Variance	2208.391	Minimum	.000
Maximum	365.000				

Valid cases 1092 Missing cases 282

REGION: 2

Mean	36.109	Median	20.000	Mode	10.000
Std dev	62.124	Variance	3859.415	Minimum	1.000
Maximum	365.000				

Valid cases 558 Missing cases 122

QUESTION 3. Are you a member of a wilderness/environmental/outdoor activity club/organization, such as ducks Unlimited or The Canadian Parks and Wilderness Society?

REGION: 1

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
no	0	1157	84.2	85.8	85.8
yes	1	191	13.9	14.2	100.0
missing	9	26	1.9	Missing	
	Total	1374	100.0	100.0	

Valid cases 1348 Missing cases 26

REGION: 2

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
no	0	556	81.8	83.9	83.9
yes	1	107	15.7	16.1	100.0
missing	9	17	2.5	Missing	
	Total	680	100.0	100.0	

Valid cases 663 Missing cases 17

QUESTION 3.1 If yes, please indicate approximately how much in total you spent on memberships etc. and about how many days you were involved in club activities.

3.21 Days spent

REGION: 1

Mean	8.916	Median	2.000	Mode	.000
Std dev	21.218	Variance	450.205	Minimum	.000
Maximum	200.000				

Valid cases 190 Missing cases 1184

REGION: 2

Mean	7.738	Median	4.000	Mode	.000
Std dev	12.719	Variance	161.780	Minimum	.000
Maximum	100.000				

Valid cases 107 Missing cases 573

3.22 Dollars spent

REGION: 1

Mean	80.412	Median	35.000	Mode	50.000
Std dev	150.818	Variance	22746.052	Minimum	.000
Maximum	1000.000				

Valid cases 199 Missing cases 1175

REGION: 2

Mean	81.685	Median	39.000	Mode	50.000
Std dev	122.257	Variance	14946.722	Minimum	.000
Maximum	750.000				

Valid cases 108 Missing cases 572

QUESTION 4. Please circle the response that best describes your attitudes towards wildlife and wildlands for each statement below. **Note:** These attitude questions are scaler design!

4.1 Wildlife is important for people to use and enjoy ....

REGION: 1

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
no opinion	0	12	.9	.9	.9
strongly disagree	1	14	1.0	1.0	1.9
	2	26	1.9	1.9	3.9
	3	250	18.2	18.6	22.5
strongly agree	4	1042	75.8	77.5	100.0
missing	9	30	2.2	Missing	
	Total	1374	100.0	100.0	

Valid cases 1344 Missing cases 30

REGION: 2

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
no opinion	0	4	.6	.6	.6
strongly disagree	1	6	.9	.9	1.5
	2	8	1.2	1.2	2.7
	3	129	19.0	19.3	21.9
strongly agree	4	523	76.9	78.1	100.0
missing	9	10	1.5	Missing	
	Total	680	100.0	100.0	

Valid cases 670 Missing cases 10

4.2 Even wildlife which has no direct benefits to people should be protected and preserved ....

REGION 1

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
no opinion	0	17	1.2	1.3	1.3
strongly disagree	1	5	.4	.4	1.6
	2	31	2.3	2.3	3.9
	3	380	27.7	28.1	32.0
strongly agree	4	919	66.9	68.0	100.0
missing	9	22	1.6	Missing	
	Total	1374	100.0	100.0	

Valid cases 1352 Missing cases 22

REGION 2

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
no opinion	0	11	1.6	1.6	1.6
strongly disagree	1	2	.3	.3	1.9
	2	21	3.1	3.1	5.1
	3	197	29.0	29.4	34.5
strongly agree	4	438	64.4	65.5	100.0
missing	9	11	1.6	Missing	
	Total	680	100.0	100.0	

Valid cases 669 Missing cases 11

4.3 Species of wildlife that can damage property or harm people should not be protected ....

REGION: 1

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
no opinion	0	40	2.9	3.0	3.0
strongly disagree	1	411	29.9	30.7	33.7
	2	527	38.4	39.3	73.0
	3	256	18.6	19.1	92.1
strongly agree	4	106	7.7	7.9	100.0
missing	9	34	2.5	Missing	
	Total	1374	100.0	100.0	

Valid cases 1340 Missing cases 34

REGION: 2

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
no opinion	0	23	3.4	3.5	3.5
strongly disagree	1	186	27.4	28.1	31.5
	2	225	33.1	33.9	65.5
	3	166	24.4	25.0	90.5
strongly agree	4	63	9.3	9.5	100.0
missing	9	17	2.5	Missing	
	Total	680	100.0	100.0	

Valid cases 663 Missing cases 17

4.4 Wildlife is important but peoples needs should come first ...

REGION 1

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
no opinion	0	37	2.7	2.8	2.8
strongly disagree	1	266	19.4	19.9	22.6
	2	375	27.3	28.0	50.7
	3	481	35.0	35.9	86.6
strongly agree	4	179	13.0	13.4	100.0
missing	9	36	2.6	Missing	
	Total	1374	100.0	100.0	

Valid cases 1338 Missing cases 36

REGION 2

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
no opinion	0	29	4.3	4.4	4.4
strongly disagree	1	114	16.8	17.1	21.5
	2	191	28.1	28.7	50.2
	3	203	29.9	30.5	80.6
strongly agree	4	129	19.0	19.4	100.0
missing	9	14	2.1	Missing	
	Total	680	100.0	100.0	

Valid cases 666 Missing cases 14

4.5 Preserving wildlife for the future is not important as the future will take care of itself ....

REGION: 1

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
no opinion	0	29	2.1	2.2	2.2
strongly disagree	1	1016	73.9	75.6	77.8
	2	202	14.7	15.0	92.8
	3	59	4.3	4.4	97.2
strongly agree	4	38	2.8	2.8	100.0
missing	9	30	2.2	Missing	
	Total	1374	100.0	100.0	

Valid cases 1344 Missing cases 30

REGION: 2

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
no opinion	0	18	2.6	2.7	2.7
strongly disagree	1	495	72.8	74.2	76.9
	2	99	14.6	14.8	91.8
	3	31	4.6	4.6	96.4
strongly agree	4	24	3.5	3.6	100.0
missing	9	13	1.9	Missing	
	Total	680	100.0	100.0	

Valid cases 667 Missing cases 13

4.6 People have a moral obligation in preserving the environment ...

REGION 1

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
no opinion	0	19	1.4	1.4	1.4
strongly disagree	1	18	1.3	1.3	2.7
	2	17	1.2	1.3	4.0
	3	236	17.2	17.5	21.5
strongly agree	4	1061	77.2	78.5	100.0
missing	9	23	1.7	Missing	
	Total	1374	100.0	100.0	

Valid cases 1351 Missing cases 23

REGION 2

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
no opinion	0	9	1.3	1.3	1.3
strongly disagree	1	10	1.5	1.5	2.8
	2	8	1.2	1.2	4.0
	3	114	16.8	17.1	21.1
strongly agree	4	527	77.5	78.9	100.0
missing	9	12	1.8	Missing	
	Total	680	100.0	100.0	

Valid cases 668 Missing cases 12

QUESTION 5. Have you heard of Woodland Caribou before this survey

REGION: 1

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
no	0	260	18.9	19.1	19.1
yes	1	1104	80.3	80.9	100.0
missing	9	10	.7	Missing	
	Total	1374	100.0	100.0	

Valid cases 1364 Missing cases 10

REGION: 2

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
no	0	127	18.7	18.9	18.9
yes	1	544	80.0	81.1	100.0
missing	9	9	1.3	Missing	
	Total	680	100.0	100.0	

Valid cases 671 Missing cases 9

QUESTION 6. Have you ever seen a Woodland Caribou in the wild?

REGION 1

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
never	1	782	56.9	67.6	67.6
a few times	2	302	22.0	26.1	93.8
alot of times	3	72	5.2	6.2	100.0
missing	9	218	15.9	Missing	
	Total	1374	100.0	100.0	

Valid cases 1156 Missing cases 218

REGION 2

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
never	1	361	53.1	62.7	62.7
a few times	2	181	26.6	31.4	94.1
alot of times	3	34	5.0	5.9	100.0
missing	9	104	15.3	Missing	
	Total	680	100.0	100.0	

Valid cases 576 Missing cases 104

QUESTION 7. How important/unimportant is it to you that Woodland Caribou exist?

REGION: 1

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
no opinion	0	101	7.4	7.4	7.4
not at all important	1	21	1.5	1.5	9.0
	2	136	9.9	10.0	19.0
	3	476	34.6	35.0	53.9
very important	4	627	45.6	46.1	100.0
missing	9	13	.9	Missing	
	Total	1374	100.0	100.0	

Valid cases 1361 Missing cases 13

REGION: 2

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
no opinion	0	53	7.8	7.9	7.9
not at all important	1	14	2.1	2.1	10.0
	2	65	9.6	9.7	19.7
	3	228	33.5	34.0	53.7
very important	4	311	45.7	46.3	100.0
missing	9	9	1.3	Missing	
	Total	680	100.0	100.0	

Valid cases 671 Missing cases 9

Question 8. Which of the following statements best describe the reasons why Woodland Caribou are important to you?

8.1 I want the chance to see a caribou in the wild.

REGION: 1

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
no	0	716	52.1	52.5	52.5
yes	1	647	47.1	47.5	100.0
missing	9	11	.8	Missing	
	Total	1374	100.0	100.0	

Valid cases 1363 Missing cases 11

REGION: 2

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
no	0	296	43.5	44.1	44.1
yes	1	375	55.1	55.9	100.0
missing	9	9	1.3	Missing	
	Total	680	100.0	100.0	

Valid cases 671 Missing cases 9

8.2 All animals including caribou, have a right to exist.

REGION 1

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
no	0	224	16.3	16.4	16.4
yes	1	1139	82.9	83.6	100.0
missing	9	11	.8	Missing	
	Total	1374	100.0	100.0	

Valid cases 1363 Missing cases 11

REGION 2

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
no	0	124	18.2	18.5	18.5
yes	1	547	80.4	81.5	100.0
missing	9	9	1.3	Missing	
	Total	680	100.0	100.0	

Valid cases 671 Missing cases 9

8.3 Woodland Caribou should be preserved for future generations.

REGION: 1

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
no	0	363	26.4	26.6	26.6
yes	1	1000	72.8	73.4	100.0
missing	9	11	.8	Missing	
	Total	1374	100.0	100.0	

Valid cases 1363 Missing cases 11

REGION: 2

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
no	0	174	25.6	25.9	25.9
yes	1	497	73.1	74.1	100.0
missing	9	9	1.3	Missing	
	Total	680	100.0	100.0	

Valid cases 671 Missing cases 9

8.4 I feel Woodland Caribou are an indicator of environmental quality.

REGION 1

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
no	0	801	58.3	58.8	58.8
yes	1	562	40.9	41.2	100.0
missing	9	11	.8	Missing	
	Total	1374	100.0	100.0	

Valid cases 1363 Missing cases 11

REGION 2

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
no	0	358	52.6	53.4	53.4
yes	1	313	46.0	46.6	100.0
missing	9	9	1.3	Missing	
	Total	680	100.0	100.0	

Valid cases 671 Missing cases 9

8.5 There should be opportunities for others to view Woodland Caribou

REGION: 1

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
no	0	593	43.2	43.5	43.5
yes	1	770	56.0	56.5	100.0
missing	9	11	.8	Missing	
	Total	1374	100.0	100.0	

Valid cases 1363 Missing cases 11

REGION: 2

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
no	0	265	39.0	39.5	39.5
yes	1	406	59.7	60.5	100.0
missing	9	9	1.3	Missing	
	Total	680	100.0	100.0	

Valid cases 671 Missing cases 9

8.6 I feel Woodland Caribou are important for maintaining the balance of nature.

REGION 1

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
no	0	500	36.4	36.7	36.7
yes	1	863	62.8	63.3	100.0
missing	9	11	.8	Missing	
	Total	1374	100.0	100.0	

Valid cases 1363 Missing cases 11

REGION 2

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
no	0	219	32.2	32.6	32.6
yes	1	452	66.5	67.4	100.0
missing	9	9	1.3	Missing	
	Total	680	100.0	100.0	

Valid cases 671 Missing cases 9

8.7 Woodland Caribou are a part of our Canadian heritage.

REGION: 1

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
no	0	593	43.2	43.5	43.5
yes	1	770	56.0	56.5	100.0
missing	9	11	.8	Missing	
	Total	1374	100.0	100.0	

Valid cases 1363 Missing cases 11

REGION: 2

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
no	0	253	37.2	37.7	37.7
yes	1	418	61.5	62.3	100.0
missing	9	9	1.3	Missing	
	Total	680	100.0	100.0	

Valid cases 671 Missing cases 9

8.8 I feel Woodland Caribou are important for hunting.

REGION 1

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
no	0	1006	73.2	73.8	73.8
yes	1	357	26.0	26.2	100.0
missing	9	11	.8	Missing	
	Total	1374	100.0	100.0	

Valid cases 1363 Missing cases 11

REGION 2

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
no	0	463	68.1	69.0	69.0
yes	1	208	30.6	31.0	100.0
	9	9	1.3	Missing	
	Total	680	100.0	100.0	

Valid cases 671 Missing cases 9

QUESTION 9. If you chose more than one of the above please identify the response you consider the most important.

REGION: 1

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
chance to see	1	17	1.2	1.4	1.4
have a right to exist	2	516	37.6	41.0	42.3
preserved for the future	3	221	16.1	17.6	59.9
indicator of environment	4	59	4.3	4.7	64.6
opportunities for others	5	49	3.6	3.9	68.5
maintain the balance	6	263	19.1	20.9	89.4
part of Canadian heritage	7	94	6.8	7.5	96.8
important for hunting	8	40	2.9	3.2	100.0
multiple selection	0	37	2.7	Missing	
	9	78	5.7	Missing	
	Total	1374	100.0	100.0	

Valid cases 1259 Missing cases 115

REGION: 2

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
chance to see	1	18	2.6	3.0	3.0
have a right to exist	2	219	32.2	36.2	39.2
preserved for the future	3	106	15.6	17.5	56.7
indicator of environment	4	36	5.3	6.0	62.6
opportunities for others	5	28	4.1	4.6	67.3
maintain the balance	6	134	19.7	22.1	89.4
part of Canadian heritage	7	49	7.2	8.1	97.5
important for hunting	8	15	2.2	2.5	100.0
multiple selection	0	22	3.2	Missing	
	9	53	7.8	Missing	
	Total	680	100.0	100.0	

Valid cases 605 Missing cases 75

QUESTION 10. What is the maximum amount you would be willing to pay annually for ten years into a trust fund run by an independent foundation for this Caribou Maintenance Program?

REGION: 1 AREA1: 1 = Canada AREA2: 2 = Saskatchewan
VALUE1 = Value given below for Canada only. (1st order)

Mean	11.053	Median	.000	Mode	.000
Std dev	27.094	Variance	734.111	Minimum	.000
Maximum	200.000				

Valid cases 133 Missing cases 2

REGION: 2 AREA1: 1 = Canada AREA2: 2 = Saskatchewan
VALUE1 = Value given below for Canada only. (1st order)

Mean	11.609	Median	.000	Mode	.000
Std dev	25.740	Variance	662.536	Minimum	.000
Maximum	100.000				

Valid cases 69 Missing cases 5

QUESTION 11. What is the maximum amount you would be willing to pay annually for ten years into a trust fund run by an independent foundation for this Caribou Maintenance Program?

REGION: 1 AREA1: 2 = Saskatchewan AREA2: 1 = Canada
VALUE2 = Value given below for Canada only (2nd order)

Mean	19.107	Median	.000	Mode	.000
Std dev	53.342	Variance	2845.402	Minimum	.000
Maximum	500.000				

Valid cases 122 Missing cases 10

REGION: 2 AREA1: 2 = Saskatchewan AREA2: 1 = Canada
VALUE2 = Value given below for Canada only (2nd order)

Mean	15.016	Median	.000	Mode	.000
Std dev	29.992	Variance	899.524	Minimum	.000
Maximum	120.000				

Valid cases 62 Missing cases 3

QUESTION 10. What is the maximum amount you would be willing to pay annually for ten years into a trust fund run by an independent foundation for this Caribou Maintenance Program?

REGION: 1 AREA1: 1 = Canada AREA2: 7 = single question given
VALUE1 = Value given below for Canada only. (single question)

Mean	11.215	Median	.000	Mode	.000
Std dev	25.073	Variance	628.664	Minimum	.000
Maximum	100.000				

Valid cases 191 Missing cases 14

REGION: 2 AREA1: 1 = Canada AREA2: 7 = single question given
VALUE1 = Value given below for Canada only. (single question)

Mean	10.012	Median	.000	Mode	.000
Std dev	26.988	Variance	728.337	Minimum	.000
Maximum	200.000				

Valid cases 81 Missing cases 12

QUESTION 10. What is the maximum amount you would be willing to pay annually for ten years into a trust fund run by an independent foundation for this Caribou Maintenance Program?

REGION: 1 AREA1: 2 = Saskatchewan AREA2: 1 = Canada
VALUE1 = Value given below for Saskatchewan only (1st order)

Mean	21.115	Median	.000	Mode	.000
Std dev	55.780	Variance	3111.441	Minimum	.000
Maximum	500.000				

Valid cases 122 Missing cases 10

REGION: 2 AREA1: 2 = Saskatchewan AREA2: 1 = Canada
VALUE1 = Value given below for Saskatchewan only (1st order)

Mean	19.397	Median	.000	Mode	.000
Std dev	33.721	Variance	1137.114	Minimum	.000
Maximum	120.000				

Valid cases 63 Missing cases 2

QUESTION 11. What is the maximum amount you would be willing to pay annually for ten years into a trust fund run by an independent foundation for this Caribou Maintenance Program?

REGION: 1 AREA1: 1 = Canada AREA2: 2 = Saskatchewan
VALUE2 = Value given below for Saskatchewan only (2nd order)

Mean	11.729	Median	.000	Mode	.000
Std dev	25.864	Variance	668.956	Minimum	.000
Maximum	150.000				

Valid cases 133 Missing cases 2

REGION: 2 AREA1: 1 = Canada AREA2: 2 = Saskatchewan
VALUE2 = Value given below for Saskatchewan only (2nd order)

Mean	14.217	Median	.000	Mode	.000
Std dev	27.534	Variance	758.143	Minimum	.000
Maximum	100.000				

Valid cases 69 Missing cases 5

QUESTION 10. What is the maximum amount you would be willing to pay annually for ten years into a trust fund run by an independent foundation for this Caribou Maintenance Program?

REGION: 1 AREA1: 7 = single question given AREA2: 2 = Saskatchewan
VALUE2 = Value given below for Saskatchewan only (single question)

Mean	13.818	Median	.000	Mode	.000
Std dev	43.672	Variance	1907.266	Minimum	.000
Maximum	360.000				

Valid cases 148 Missing cases 7

REGION: 2 AREA1: 7 = single question given AREA2: 2 = Saskatchewan
VALUE2 = Value given below for Saskatchewan only (single question)

Mean	7.938	Median	.000	Mode	.000
Std dev	21.134	Variance	446.642	Minimum	.000
Maximum	100.000				

Valid cases 80 Missing cases 3

Question 12/13. What is your sex?

REGION 1

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
female	0	344	25.0	25.4	25.4
male	1	1010	73.5	74.6	100.0
missing	9	20	1.5	Missing	
	Total	1374	100.0	100.0	

Mean	.746	Median	1.000	Mode	1.000
Std dev	.435	Variance	.190	Minimum	.000
Maximum	1.000				
Valid cases	1354	Missing cases	20		

REGION 2

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
female	0	170	25.0	25.5	25.5
male	1	496	72.9	74.5	100.0
protest	8	1	.1	Missing	
missing	9	13	1.9	Missing	
	Total	680	100.0	100.0	

Mean	.745	Median	1.000	Mode	1.000
Std dev	.436	Variance	.190	Minimum	.000
Maximum	1.000				
Valid cases	666	Missing cases	14		

Question 13/14. How old are you?

REGION: 1

Mean	45.083	Median	42.000	Mode	30.000
Std dev	16.839	Variance	283.539	Minimum	14.000
Maximum	93.000				
Valid cases	1348	Missing cases	26		

REGION: 2

Mean	47.458	Median	45.000	Mode	36.000
Std dev	17.271	Variance	298.300	Minimum	12.000
Maximum	98.000				
Valid cases	657	Missing cases	23		

Question 14/15. Have you ever been to Northwestern Saskatchewan?

REGION 1

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
No	0	395	28.7	29.3	29.3
Yes	1	953	69.4	70.7	100.0
Missing	9	26	1.9	Missing	
	Total	1374	100.0	100.0	

Mean	.707	Median	1.000	Mode	1.000
Std dev	.455	Variance	.207	Minimum	.000
Maximum	1.000				
Valid cases	1348	Missing cases	26		

REGION 2

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
No	0	126	18.5	19.0	19.0
Yes	1	536	78.8	81.0	100.0
Protest	8	1	.1	Missing	
Missing	9	17	2.5	Missing	
	Total	680	100.0	100.0	

Mean	.810	Median	1.000	Mode	1.000
Std dev	.393	Variance	.154	Minimum	.000
Maximum	1.000				

Valid cases 662 Missing cases 18

Question 15/16. Size of present place of residence.

REGION: 1

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Rural, Farm	1	246	17.9	18.3	18.3
Village (less than 1000)	2	185	13.5	13.8	32.1
Urban (more than 1000)	3	913	66.4	67.9	100.0
Missing	9	30	2.2	Missing	
	Total	1374	100.0	100.0	

Mean	2.496	Median	3.000	Mode	3.000
Std dev	.785	Variance	.617	Minimum	1.000
Maximum	3.000				

Valid cases 1344 Missing cases 30

REGION: 2

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Rural, Farm	1	236	34.7	35.7	35.7
Village (less than 1000)	2	189	27.8	28.6	64.3
Urban (more than 1000)	3	236	34.7	35.7	100.0
Protest	8	1	.1	Missing	
Missing	9	18	2.6	Missing	
	Total	680	100.0	100.0	

Mean	2.000	Median	2.000	Mode	1.000
Std dev	.846	Variance	.715	Minimum	1.000
Maximum	3.000				

* Multiple modes exist. The smallest value is shown.

Valid cases 661 Missing cases 19

Question 17/18. Number of individuals who reside in your household?

REGION: 1

Value	Frequency	Percent	Valid Percent	Cum Percent
1	254	18.5	18.9	18.9
2	456	33.2	33.9	52.7
3	211	15.4	15.7	68.4
4	242	17.6	18.0	86.3
5	126	9.2	9.4	95.7
6	39	2.8	2.9	98.6
7	16	1.2	1.2	99.8
8	2	.1	.1	99.9
9	1	.1	.1	100.0
99	27	2.0	Missing	
	Total	1374	100.0	100.0

Mean	2.797	Median	2.000	Mode	2.000
Std dev	1.457	Variance	2.122	Minimum	1.000
Maximum	9.000				

Valid cases 1347 Missing cases 27

REGION: 2

Value	Frequency	Percent	Valid Percent	Cum Percent
1	124	18.2	18.8	18.8
2	223	32.8	33.8	52.7
3	109	16.0	16.5	69.2
4	104	15.3	15.8	85.0
5	62	9.1	9.4	94.4
6	28	4.1	4.2	98.6
7	7	1.0	1.1	99.7
8	2	.3	.3	100.0
88	1	.1	Missing	
99	20	2.9	Missing	
	Total	680	100.0	100.0

Mean	2.816	Median	2.000	Mode	2.000
Std dev	1.491	Variance	2.223	Minimum	1.000
Maximum	8.000				

Valid cases 659 Missing cases 21

Question 18/19. Please check one of the following categories that best represents the TOTAL ANNUAL HOUSEHOLD INCOME from all sources before taxes in 1992.

REGION: 1

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
0 - 10,000	1	130	9.5	10.6	10.6
10,001 - 20,000	2	197	14.3	16.1	26.7
20,001 - 30,000	3	218	15.9	17.8	44.4
30,001 - 40,000	4	203	14.8	16.5	61.0
40,001 - 50,000	5	151	11.0	12.3	73.3
50,001 - 60,000	6	108	7.9	8.8	82.1
60,001 - 70,000	7	78	5.7	6.4	88.4
70,001 - 80,000	8	56	4.1	4.6	93.0
80,001 - 90,000	9	36	2.6	2.9	95.9
90,001 - 100,000	10	13	.9	1.1	97.0
over 100,000	11	37	2.7	3.0	100.0
	88	3	.2	Missing	
	99	144	10.5	Missing	
	Total	1374	100.0	100.0	

Mean	4.277	Median	4.000	Mode	3.000
Std dev	2.464	Variance	6.072	Minimum	1.000
Maximum	11.000				

Valid cases 1227 Missing cases 147

REGION: 2

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
0 - 10,000	1	87	12.8	14.7	14.7
10,001 - 20,000	2	115	16.9	19.4	34.1
20,001 - 30,000	3	87	12.8	14.7	48.8
30,001 - 40,000	4	118	17.4	19.9	68.8
40,001 - 50,000	5	71	10.4	12.0	80.7
50,001 - 60,000	6	35	5.1	5.9	86.7
60,001 - 70,000	7	29	4.3	4.9	91.6
70,001 - 80,000	8	16	2.4	2.7	94.3
80,001 - 90,000	9	6	.9	1.0	95.3
90,001 - 100,000	10	7	1.0	1.2	96.5
over 100,000	11	21	3.1	3.5	100.0
	88	2	.3	Missing	
	99	86	12.6	Missing	
	Total	680	100.0	100.0	

Mean	3.887	Median	4.000	Mode	4.000
Std dev	2.427	Variance	5.891	Minimum	1.000
Maximum	11.000				

Valid cases 592 Missing cases 88

Question 19/20. Please circle the highest number of years of education completed?

REGION: 1

Mean	12.532	Median	12.000	Mode	12.000
Std dev	3.008	Variance	9.047	Minimum	.000
Maximum	21.000				

Valid cases 1342 Missing cases 32

REGION: 2

Mean	11.578	Median	12.000	Mode	12.000
Std dev	2.899	Variance	8.406	Minimum	3.000
Maximum	21.000				

Valid cases 657 Missing cases 23

Question 20/21. What is your occupation?

REGION: 1

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
professional and technical	1	257	18.7	19.1	19.1
managerial	2	75	5.5	5.6	24.7
contractor	3	6	.4	.4	25.1
farming (farmer, rancher)	4	190	13.8	14.1	39.3
tradesman	5	140	10.2	10.4	49.7
transportation and communication	6	66	4.8	4.9	54.6
service occupation	7	111	8.1	8.3	62.8
retail sales	8	7	.5	.5	63.3
real estate	9	3	.2	.2	63.6
operative	10	29	2.1	2.2	65.7
armed forces	11	2	.1	.1	65.9
clerical	12	24	1.7	1.8	67.7
labourers (unskilled)	13	24	1.7	1.8	69.4
homemaker	14	38	2.8	2.8	72.3
student	15	66	4.8	4.9	77.2
retired	16	231	16.8	17.2	94.3
not in labour force	17	25	1.8	1.9	96.2
self-employed	18	30	2.2	2.2	98.4
miscellaneous	19	21	1.5	1.6	100.0
protest	88	1	.1	Missing	
did not answer	99	28	2.0	Missing	
	Total	1374	100.0	100.0	

Valid cases 1345 Missing cases 29

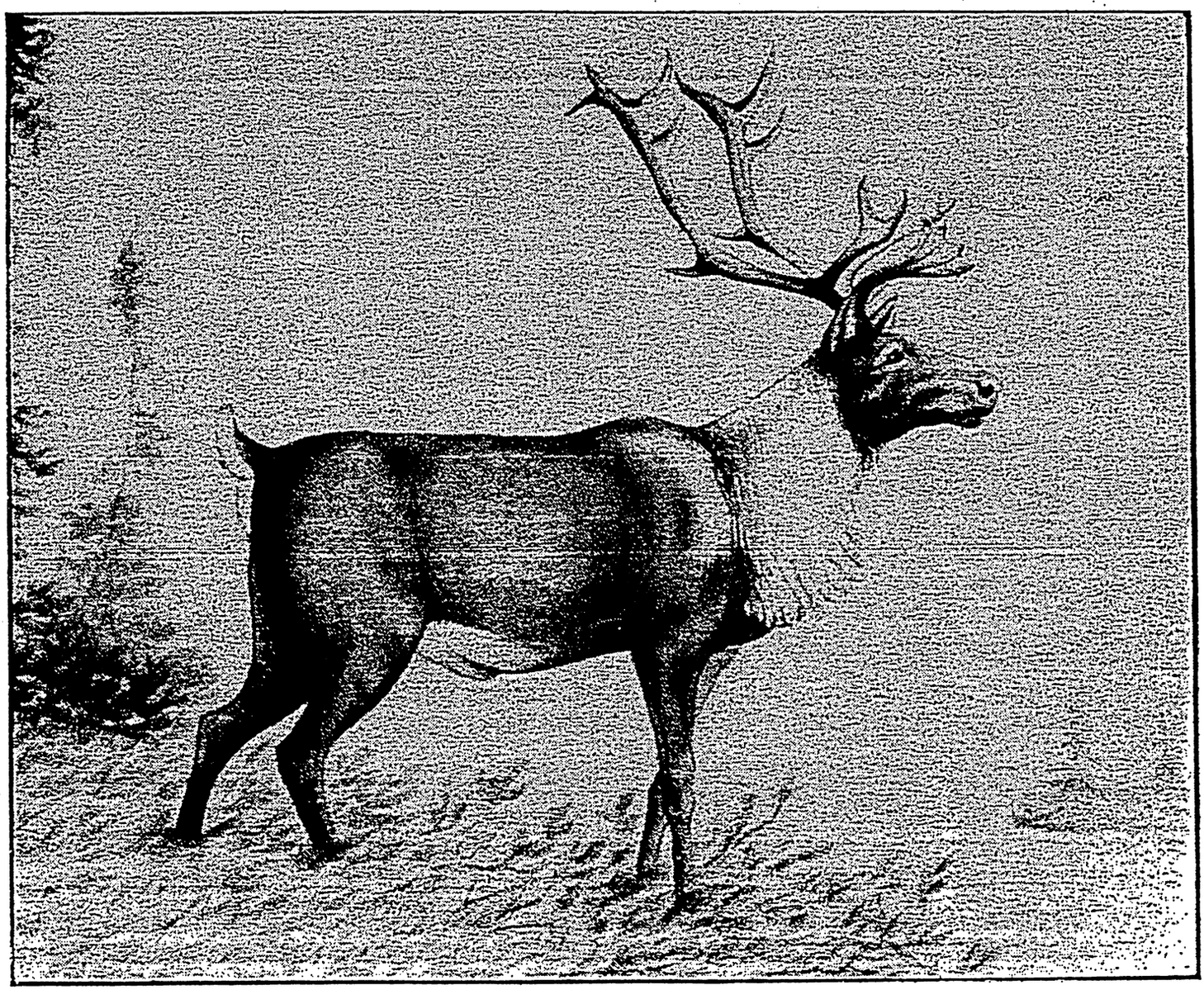
REGION: 2

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
professional and technical	1	88	12.9	13.4	13.4
managerial	2	18	2.6	2.7	16.1
contractor	3	5	.7	.8	16.9
farming (farmer, rancher)	4	149	21.9	22.7	39.6
tradesman	5	58	8.5	8.8	48.4
transportation and communication	6	15	2.2	2.3	50.7
service occupation	7	68	10.0	10.4	61.0
retail sales	8	4	.6	.6	61.6
real estate	9	1	.1	.2	61.8
operative	10	17	2.5	2.6	64.4
clerical	12	14	2.1	2.1	66.5
labourers (unskilled	13	12	1.8	1.8	68.3
homemaker	14	30	4.4	4.6	72.9
student	15	17	2.5	2.6	75.5
retired	16	129	19.0	19.6	95.1
not in labour force	17	8	1.2	1.2	96.3
self-employed	18	16	2.4	2.4	98.8
miscellaneous	19	8	1.2	1.2	100.0
protest	88	1	.1	Missing	
missing	99	22	3.2	Missing	
	Total	680	100.0	100.0	

Valid cases 657 Missing cases 23

Appendix B

Saskatchewan Woodland Caribou Survey



University of Alberta
Edmonton

Canada–Saskatchewan
Partnership Agreement
in Forestry

Entente d'association
Canada–Saskatchewan
en foresterie

Saskatchewan Woodland Caribou Survey

You have been chosen to participate in a survey to determine the importance of Woodland Caribou to the people of Saskatchewan. It is important that you take the time to complete the questionnaire and return it as soon as possible. The information collected can then be used to better manage one of our natural resources.

This first section asks about your interest/participation in outdoor recreation activities (canoeing, hiking, fishing, wildlife watching, etc)

1. During the last year [from (1/Jan./92) to (15/Nov./92)] have you (**please** ☑)

- Read books, magazines or articles on wildlife or outdoor activities? ☐ **Yes** ☐ **No**
- Watched films or T.V. on wildlife or outdoor activities? ☐ **Yes** ☐ **No**

2. During the last year [from (1/Jan./92) to (15/Nov./92)] (**please** ☑)

- Did you hunt or fish? ☐ **Yes** ☐ **No**
- Were you involved in other wildlife activities (some examples are: viewing, feeding, attracting or photographing wildlife)? ☐ **Yes** ☐ **No**
- Were you involved in other outdoor activities (some examples are: canoeing, cross country skiing, hiking or camping)? ☐ **Yes** ☐ **No**

If you answered **yes,** to any of the above in **Question 2,** please state the approximate total number of days that you participated in these activities during the last year.

_____ **days**

3. Are you a member of a wilderness/environmental/outdoor activity club/organization, such as Ducks Unlimited or The Canadian Parks and Wilderness Society? (**please** ☑),

☐ **Yes.** ☐ **No**

If **yes,** please indicate approximately how much in total you spent on memberships etc. and about how many days you were involved in club activities.

$ _____ **spent on memberships/donations**
_____ **days active in club activities**

Please circle the response that best describes your attitudes towards wildlife and wildlands for each statement below.

4.

	Strongly Agree	Moderately Agree	Moderately Disagree	Strongly Disagree	No Opinion
Wildlife is important for people to use and enjoy	4	3	2	1	N
Even wildlife which has no direct benefits to people should be protected and preserved	4	3	2	1	N
Species of wildlife that can damage property or harm people should not be protected	4	3	2	1	N
Wildlife is important but people's needs should come first	4	3	2	1	N
Preserving wildlife for the future is not important as the future will take care of itself	4	3	2	1	N
People have a moral obligation in preserving the environment	4	3	2	1	N

The following questions ask for your opinions about Woodland Caribou. The Woodland Caribou is a member of the deer family which lives in mature forest and muskeg areas in the Northern Canadian Evergreen forest zones. Both the male and female grow antlers, with the female's antlers being smaller in size. The caribou of the woodlands do not travel great distances like their cousins in the north, the Barren-Ground Caribou. As a result, this species has been shown to be sensitive to logging and associated activities.

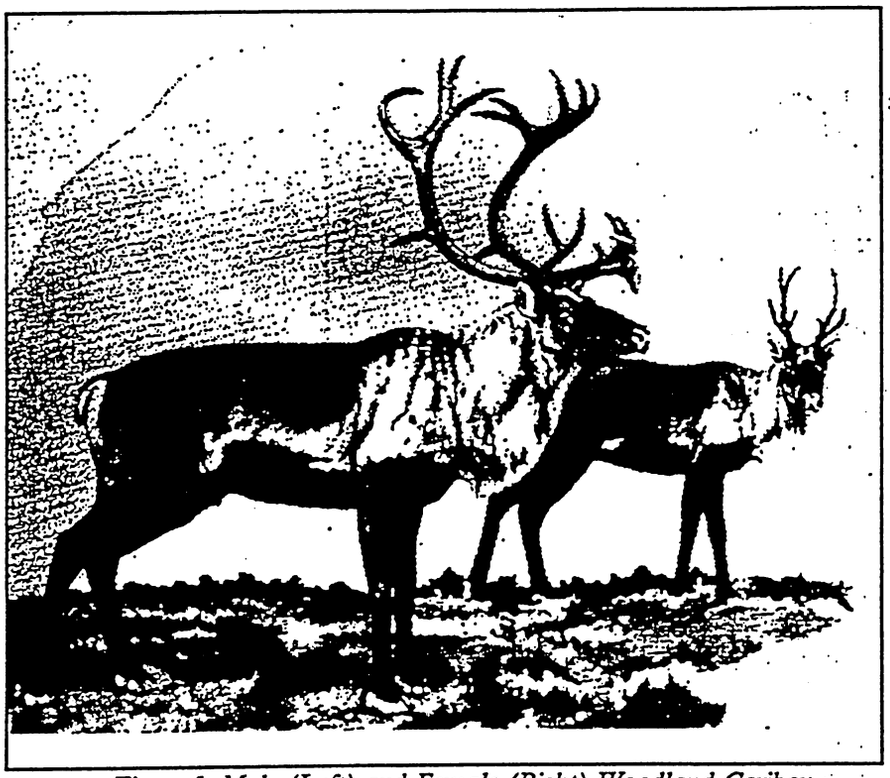


Figure 1. Male (Left) and Female (Right) Woodland Caribou

5. Have you heard of Woodland Caribou before this survey? **(please ☑)**

☐ **Yes** ☐ **No**

If you answered **No** please **go to Question 7**

6. Have you ever seen a Woodland Caribou in the wild? **(please ☑)**

☐ **Never** ☐ **A few times (1-5 times)** ☐ **A lot of times (more than five times)**

7. How important/unimportant is it to you that Woodland Caribou exist?
(please circle appropriate number)

Very Important			**Not at all Important**	**No Opinion**
4	**3**	**2**	**1**	**N**

8. Which of the following statements best describe the reasons why Woodland Caribou are important to you (**please check** the appropriate box(es))?

a) ☐ I want the chance to see a caribou in the wild.

b) ☐ All animals including caribou, have a right to exist.

c) ☐ Woodland Caribou should be preserved for future generations.

d) ☐ I feel Woodland Caribou are an indicator of environmental quality.

e) ☐ There should be opportunities for others (family, friends, etc) to view Woodland Caribou.

f) ☐ I feel Woodland Caribou are important for maintaining the balance of nature.

g) ☐ Woodland Caribou are a part of our Canadian heritage.

h) ☐ I feel Woodland Caribou are important for hunting.

9. If you chose more than one of the above please identify the response you consider most important. (Place **letter** from above responses in blank provided)

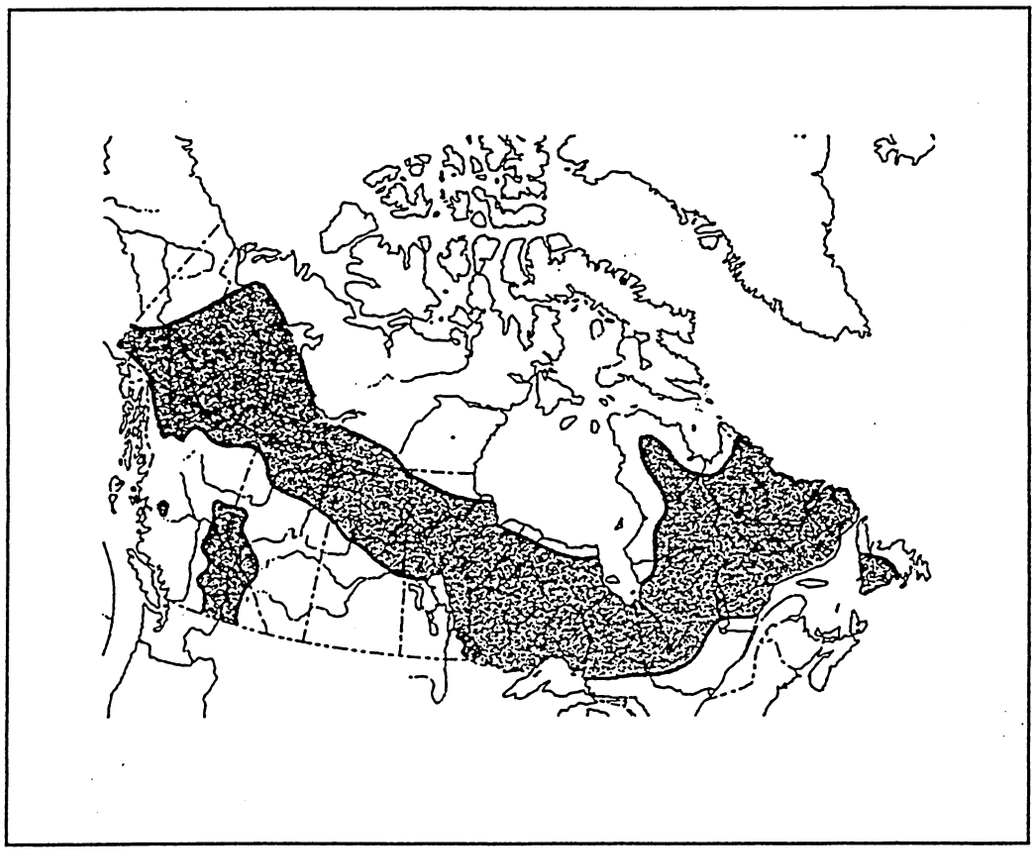
Most Important _____

The Preservation of Woodland Caribou.

Woodland Caribou live in mature forest and treed muskeg regions. Mature forests are considered areas in which the forest has reached a state of slower tree growth and a closed canopy. Treed muskegs are wet areas that have moss ground cover and small scattered black spruce and tamarack. Since world demand for forest products is increasing, areas that were once not considered for logging are now being cut. The result of this action is a changing forest (a greater amount of younger trees) and increasing access to remote areas. The logging of these forests allows for the stability of consumer prices for paper and wood based products. An additional benefit from logging is the creation of jobs in small remote communities in Canada's more northern regions.

A consequence of these changes from logging, has been a gradual decline of Woodland Caribou populations in localized areas due to increased hunting (from man and wolves) and to a lesser extent loss of habitat. Therefore the removal of the forest in remote areas may not hurt the Woodland Caribou directly, but the associated actions and outcome of logging does have an impact on them. Some of these effects may be offset through the development of regulations to retain critical habitat and limit access.

The following is a <u>hypothetical</u> situation and is not being considered as part of any government policy

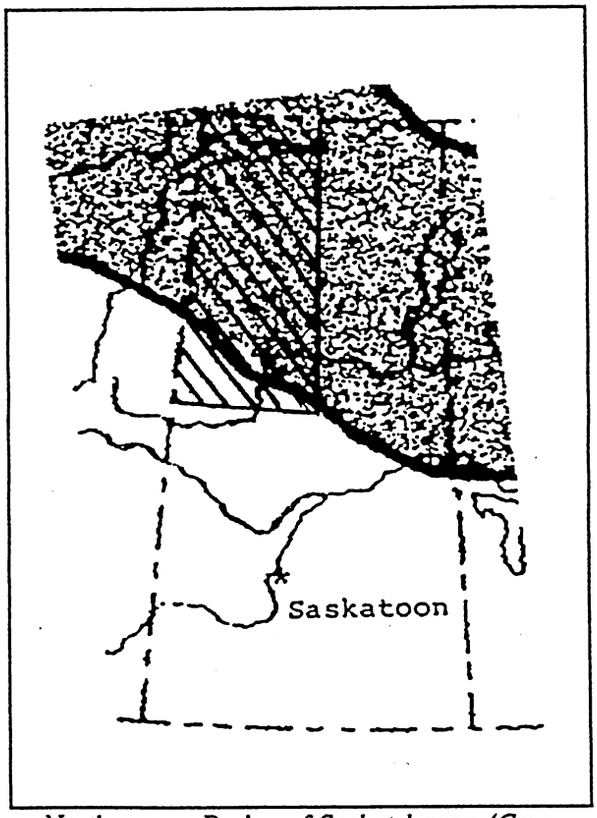


Present Range of Woodland Caribou in Canada

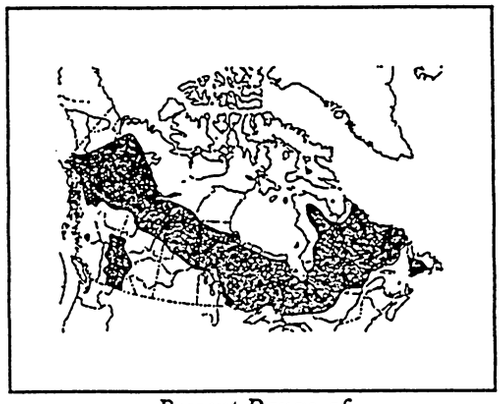
The above map shows the present range of Woodland Caribou (shaded region) in Canada. It is estimated that within this area there is a population of 700,000 Caribou and that this species is not considered threatened. Across this same broad region logging, mining and recreational activities are occurring. Research has shown that in areas where logging or human activity occurs the local Woodland Caribou population disappears due to increased hunting by people and wolves, habitat loss and animals leaving the area.

10. *It is possible that by the year 2002 there will be 350,000 Woodland Caribou in Canada. A Woodland Caribou Maintenance program could be developed and implemented to ensure that Caribou maintain their current numbers at approximately 700,000 and their range within Canada. What is the maximum amount you would be willing to pay annually for ten years into a trust fund run by an independent foundation for this Caribou Maintenance Program? (fill in amount) $_____*

The following is a <u>hypothetical</u> situation and is not being considered as part of any government policy.



Northwestern Region of Saskatchewan (Cross Hatch) and Woodland Caribou Range (Shaded)



Present Range of Woodland Caribou in Canada

The above map shows the present range of Woodland Caribou (shaded region) in Northern Saskatchewan. The cross hatch zone is the Northwestern region of Saskatchewan. It is estimated that 3,600 Woodland Caribou live in this area. Across this same broad region logging activities are expected to increase in the near future. Research has shown that in areas where logging activity occurs the local Woodland Caribou population disappears due to increased hunting from people and wolves, habitat loss and animals leaving the region.

11. *It is possible that by the year 2002 there will be 1,800 Woodland Caribou in Northwestern Saskatchewan. A Woodland Caribou Maintenance program could be developed and implemented to ensure that Caribou maintain their current numbers at approximately 3,600 and their range within Northwestern Saskatchewan. What is the maximum amount you would be willing to pay annually for the next ten years into a trust fund run by an independent foundation for this Caribou Maintenance Program? (fill in amount)* $_____

If you wish you may go back to the previous question page and change the value that you gave.

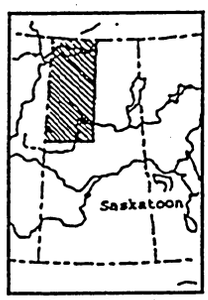
12. If you were not willing to pay anything (zero) for either of the previous two questions, please give your reason for doing so: (please ☑ only one)

- ☐ I do not receive any benefits from Woodland Caribou.
- ☐ I am not interested in spending my money on the preservation of Woodland Caribou.
- ☐ I do not think Woodland Caribou should get in the way of the forestry industry.
- ☐ Other (please specify) _____

_____

_____

We would like to ask a few questions about your household. These questions are necessary because they help us understand how people feel about these issues. Your answers to these questions will be kept in absolute confidence and will never be related to your name.



Map showing Northwestern Saskatchewan

13. What is your sex? (please ☑) **Male** ☐ **Female** ☐

14. How old are you? _____ years

15. Have you ever been to Northwestern Saskatchewan? (please ☑)

Yes ☐ **No** ☐

16. Size of present place of residence? (please ☑)

☐ **Rural, Farm** ☐ **Village (less than 1000)** ☐ **Urban (more than 1000)**

17. What is your place of residence (name of nearest city or town) _____

18. Number of individuals who reside in your household (Including yourself)? _____

19. Please check one of the following categories that best represents the **TOTAL ANNUAL HOUSEHOLD INCOME** from all sources before taxes in 1992? (please ☑)

☐ **$0 - $10,000**	☐ **$10,001 - $20,000**	☐ **$20,001 - $30,000**
☐ **$30,001 - $40,000**	☐ **$40,001 - $50,000**	☐ **$50,001 - $60,000**
☐ **$60,001 - $70,000**	☐ **$70,001 - $80,000**	☐ **$80,001 - $90,000**
☐ **$90,001 - $100,000**	☐ **Over $100,000**	

20. Please **circle** the highest number of years of education completed.

- Elementary School **1 2 3 4 5 6 7 8**
- High School **9 10 11 12**
- University/Technical School **13 14 15 16**
- Post-Graduate **17 18 19 20 20+**

21. What is your occupation? _____

22. If you have any concerns or opinions you would like to share concerning the questionnaire or wilderness preservation, please use the space below.

If you have questions about this survey please call Mark Tanguay at:

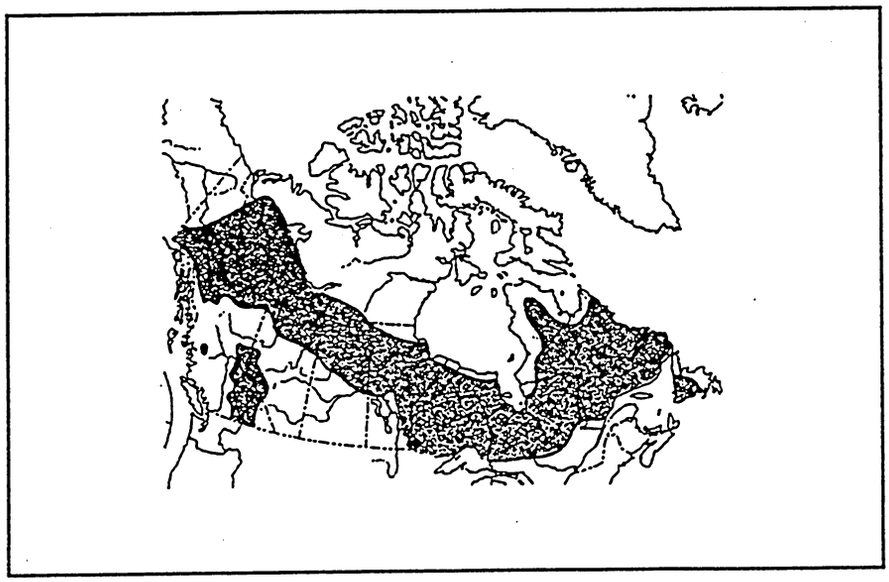
1 - 800 - 267 - 6413 (Toll Free)

THANK YOU FOR TAKING THE TIME TO PARTICIPATE IN THIS SURVEY

Please remember to return your completed questionnaire in the self-addressed stamped envelope to:

DEPARTMENT OF RURAL ECONOMY
MATERIALS MANAGEMENT BLDG
UNIVERSITY OF ALBERTA
EDMONTON AB
T6G 9Z9

The following is a hypothetical situation and is not being considered as part of any government policy.



Present Range of Woodland Caribou in Canada

The above map shows the present range of Woodland Caribou within Canada (shaded area). It is estimated that the Canadian Woodland Caribou population is approximately 700,000 and is not considered a threatened species. This region also represents areas in which logging, mining and recreational activities are taking place or are being considered.

Suppose you have a choice between two options, given below. The action described will be carried out for the option that receives the majority of votes.

11. *Option A, Have No Maintenance Program to preserve Woodland Caribou. Local populations will disappear within 10 years of logging and mining activities due to increased hunting from people and wolves, habitat loss and animals leaving the area. The end result is that Woodland Caribou populations will decrease to 350,000 in Canada by the year 2002.*

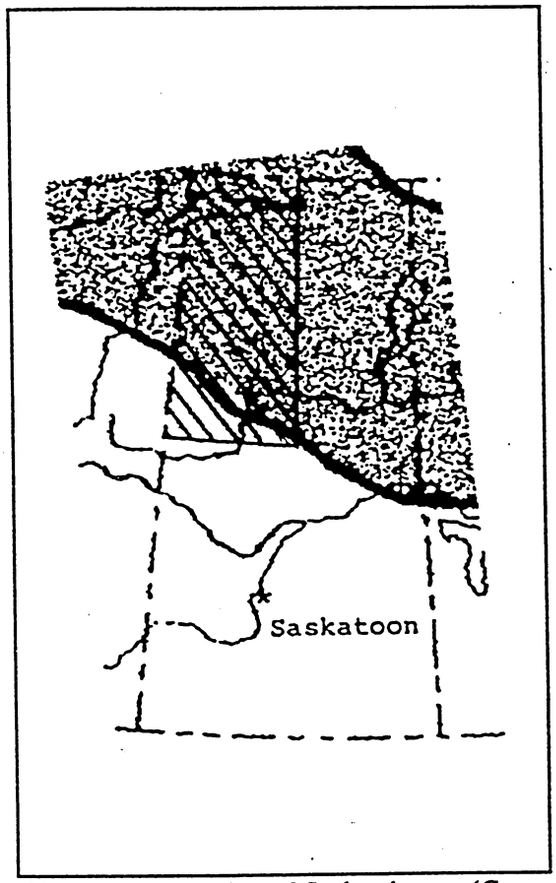
    Option B, Have every household in Canada pay $ 88 per year into a trust fund over the next ten years to be spent on a Caribou Maintenance Program. This maintenance program will be run by an independent foundation and will maintain the current range and numbers of approximately 700,000 Woodland Caribou within Canada.

If you could vote for either **Option A or B** which one would you choose? (please ☑)

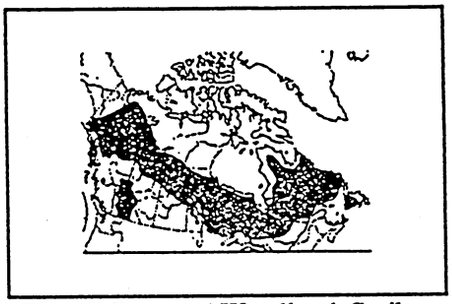
☐ **Option A** ☐ **Option B**

If you wish you may go back to the previous question and change your vote.

The following is a <u>hypothetical</u> situation and is not being considered as part of any government policy.



Northwestern Region of Saskatchewan (Cross Hatch) and Woodland Caribou Range



Present Range of Woodland Caribou in Canada

To the left is a map that shows the present range of Woodland Caribou within Northern Saskatchewan (shaded area). The cross hatch area is the Northwestern region of Saskatchewan. It is estimated that 3,600 Woodland Caribou live in this area. This region is also an area where logging activity is expected to increase in the coming years.

Suppose you have a choice between two options, given below. The action described will be carried out for the option that receives the majority of votes.

10. *Option A, Have No Maintenance Program to preserve Woodland Caribou. Local populations will disappear within 10 years of logging activities due to increased hunting from people and wolves, habitat loss and animals leaving the area. The end result is that Woodland Caribou populations will decrease to 1,800 in Northwestern Saskatchewan by the year 2002.*

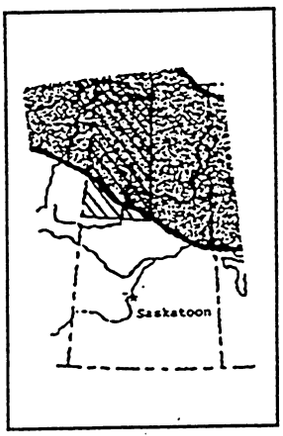
Option B, Have every household in Saskatchewan pay $ 29 per year for the next ten years into a trust fund to be spent on a Caribou Maintenance Program. This maintenance program will be run by an independent foundation and will maintain the current range and numbers of approximately 3,600 Woodland Caribou within Northwestern Saskatchewan.

Given the opportunity to vote for **Option A or B** which one would you choose? **(please ☑)**

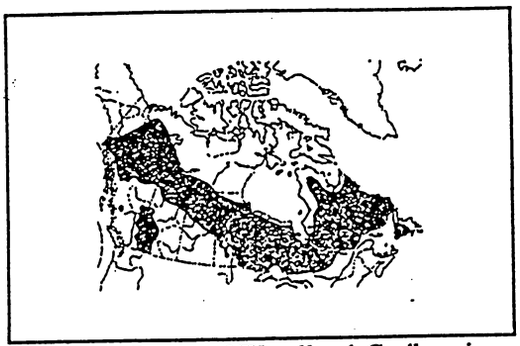
☐ **Option A** ☐ **Option B**

The following is a hypothetical situation and is not being considered as part of any government policy.

To the left is a map of the present range of Woodland Caribou within Northern Saskatchewan (shaded area). The cross hatch area is the Northwestern region of Saskatchewan where logging activity is expected to increase in the coming years.



Northwestern Region of Saskatchewan (Cross Hatch) and Woodland Caribou Range (Shaded) in Saskatchewan



Present Range of Woodland Caribou in Canada

It is estimated that Woodland Caribou numbers are currently 3,600 in Northwestern Saskatchewan. If these are to be preserved, new logging regulations will have to be enforced by government. This could result in you paying higher prices for paper products such as newspapers and toilet paper. In Saskatchewan we estimate the average household spent $427.10 last year on paper products. This compares with about $3,690.00 spent on food.

Suppose you have a choice between two options, given below. The action described will be carried out for the option that receives the majority of votes.

10. *Option A, You will continue to pay 427.10 per year for print and paper products. No New Regulations to preserve Woodland Caribou will be developed for Northwestern Saskatchewan. Some local populations of Woodland Caribou will disappear within 10 years of logging due to increased hunting by people and wolves and some Woodland Caribou leaving the logged areas. The end result is that there will be 1,800 Caribou in Northwestern Saskatchewan by the year 2002.*

    Option B, You will pay an additional $ 14.00 per year for paper products for a total of $ 441.10 per year for the next ten years. New Regulations will be used to maintain the current range and numbers of Woodland Caribou, approximately 3,600, in Northwestern Saskatchewan.

    If you could vote for either **Option A or B** which one would you choose? (please ☑)

    ☐ **Option A** ☐ **Option B**

Appendix C

Coding Sheet

NOTE: unless stated other wise, 9's are for missing values and 8's are protest

1. Code:	6 digit,	1st mailing, 2nd version, remaining four counters
2. Mailing:	1 digit,	1 for first, 2 for second
3. Mailing region:	1 digit,	1 to Sask, 2 to Northwest
4. Version:	1 digit,	1 to 9

Question 1

5. Read:	1 digit,	1 for Yes, 0 for No
6. Watch:	1 digit,	1 for Yes, 0 for No

Question 2

7. Hunt:	1 digit,	1 for Yes, 0 for No
8. Actwild:	1 digit,	1 for Yes, 0 for No
9. Actout:	1 digit,	1 for Yes, 0 for No
10. Day1:	4 digit,	number of days, 9999 no response, 7777 not applicable

Question 3

11. Org:	1 digit,	1 for Yes, 0 for No; belong to organization
12. Dollars:	5 digit,	monies spent, 99999 no response, 77777 not applicable
13. Day2:	4 digit,	number of days, 9999 no response, 7777 not applicable

Question 4

14. Att1:	1 digit,	4 to 1, st. agree to st. disagree, 0 no opinion
15. Att2:	1 digit,	4 to 1, st. agree to st. disagree, 0 no opinion
16. Att3:	1 digit,	4 to 1, st. agree to st. disagree, 0 no opinion
17. Att4:	1 digit,	4 to 1, st. agree to st. disagree, 0 no opinion
18. Att5:	1 digit,	4 to 1, st. agree to st. disagree, 0 no opinion
19. Att6:	1 digit,	4 to 1, st. agree to st. disagree, 0 no opinion

Question 5

20. Heard:	1 digit,	1 for Yes, 0 for No: heard of W. Car.

Question 6

21. Seen:	1 digit,	1 for Yes, 0 for No: Seen a W. Car.

Question 7

22. Imp:	1 digit,	4 to 1, st. agr. to st. disagr., 0 for no opin., importance of W. Car.

Question 8

23. Rea1:	1 digit,	1 for Yes, 0 for No
24. Rea2:	1 digit,	1 for Yes, 0 for No
25. Rea3:	1 digit,	1 for Yes, 0 for No

26. Rea4:	1 digit,	1 for Yes, 0 for No
27. Rea5:	1 digit,	1 for Yes, 0 for No
28. Rea6:	1 digit,	1 for Yes, 0 for No
29. Rea7:	1 digit,	1 for Yes, 0 for No
30. Rea8:	1 digit,	1 for Yes, 0 for No

Question 9

31. Imprea:	1 digit,	1 to 8, depending on above reasons, 0 multiply reasons given.

Question 10

32. Area1:	1 digit,	1 for Sask, 2 for Northwest
33. WTP1:	1 digit,	1 for Option B, 0 for Option A; 9 no response, 8 protest,
34. Value1	4 digit,	elicited value or value accepted or rejected, 7's N.A.,8's range of values, 8881 - $100 000, 8811 - $1 000 000.

Question 11

35. Area2:	1 digit,	1 for Sask, 2 for Northwest, 7 N.A.
36. WTP2:	1 digit,	1 for Option B, 0 for Option A; 9 no response, 8 protest, 7 N.A.
37. Value2:	4 digit,	elicited value or value accepted or rejected, 7777 N.A., 8's for range of values, 8881 - $100 000, 8811-$1 000 000

For the Questions that following, numbering sequence depends on structure of previous CV Questions.

Question 11/12

38. Rearef:	1 digit,	1 no benefits, 2 spend money on other, 3 Forest. ind., 4 other, 6 protest, 8 combination.
39. Other:	1 digit,	coding for "other" selection, see attached sheet

Question 12/13

40. Sex:	1 digit,	1 Male, 2 Female

Question 13/14

41. Age:	3 digit,	age of respondent, 999 no response

Question 14/15

42. NW:	1 digit,	0 never in Northwest, 1 has been in Northwest

Question 15/16

43. Residsz:	1 digit,	1 rural (farm), 2 small town (<1000), 3 lge. urban (>1000)

Question 16/17

44. Residce:	3 digit,	code for nearest urban centre see attached sheet

Question 17/18

45. Numind:	2 digit,	number of individuals in family

Question 18/19

46. Income:	2 digit,	income category, 99 no response, 88 protest

Question 19/20

47. Educ:	2 digit,	years of school completed, 0 no eduction, 99 missing, 88 protest

Question 20/21

48. Ocptn:	2 digit,	coded occupation, see attached sheet.

Coding for "other"

1. Amount too high/Can not afford to give
2. Government Responsibility
3. Responsibility of Forest Industry
4. Responsibility other
5. Other Options should be available
6. Other groups can not afford
7. Impossible to implement
8. National Responsibility
9. Miscellaneous
10. Other Priorities
11. Lots of caribou left/caribou will be alright
12. Just pay for Canada-refernce to the Saskatchewan question
13. Taxed enough/ pay enough in hunting fees
14. Should be a voluntary payment
15. More information required

For occupation coding please reference:

Adamowicz, W., P. Boxall, D. Watson and T. Peters. " A Socio-economic Evaluation of Sportfishing Activity in Southern Alberta", Project Report 92-01, Department of Rural Economy, University of Alberta, Edmonton, Alberta, Canada, (1992).