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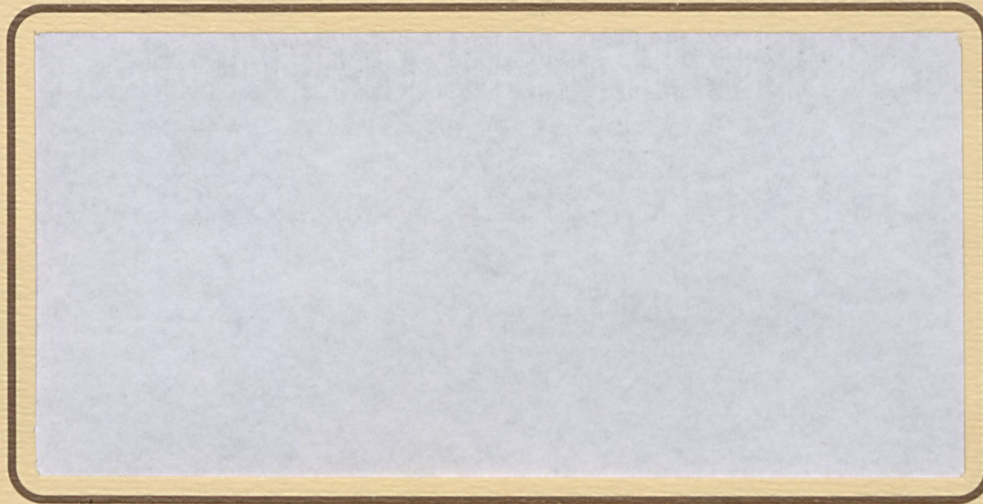
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ALBERTA

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# RURAL ECONOMY



## PROJECT REPORT



Department of Rural Economy  
Faculty of Agriculture and Forestry  
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Edmonton, Canada



**PRIVATE WOODLOT SURVEY RESULTS  
FOR NORTHWESTERN SASKATCHEWAN**

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**Project Report 93-06**

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## 1.0 INTRODUCTION

There are approximately 37 million acres (15 million hectares) of productive, non-reserved forest land in Saskatchewan of which 2.6%, or 961 000 acres (389 000 hectares), is privately owned. It is estimated that this private forest land is owned by 15 000 landowners (Forestry Canada, 1988).

Private woodlot owners in northwestern Saskatchewan have historically had few options when marketing wood. Limited markets existed for firewood and rough lumber but there were few stable markets. Aspen had generally been considered a weed species with no commercial value.

The recent construction of a pulp mill in Meadow Lake that uses Aspen as its primary input has created a long-term demand for Aspen pulpwood. Although the pulp mill, and other industrial forest products companies, are allocated public timber reserves through Forest Management Licence Agreements, increasing pressure from other forest users, such as native groups and recreationalists, has placed uncertainty on the long-term availability of current fibre allocations on public lands. This has caused industrial timber managers to look to alternative sources for sustainable timber supply. The private woodlot sector offers a potential long-term supply of fibre.

Private lands as a source of timber supply has a number of advantages. Woodlots are generally located on the agriculture/forestry fringe and are served by an existing transportation infrastructure; this reduces the cost of accessing timber and frequently puts woodlots in close proximity to processing facilities. In addition, woodlots are generally close to towns and thus have readily available labour forces.

If the forest industry is to take advantage of this resource there is a need for more information about the private timber resources and the attitudes of the relevant landowners. The objective of this project

was to identify characteristics of landowners that have motivated them to manage and supply timber in the past and may be related to a willingness to consider timber management and harvesting in the future. The project also investigated the use of various contracts to encourage private forest management and sustainable timber harvesting.

A survey was developed and in-person interviews conducted to collect the relevant information.

Survey design and sampling procedure are outlined in Chapter 2. Chapter 3 summarizes the results of the survey and a discussion of the results is included as Chapter 4. A copy of the survey questionnaire is included in the Appendix.

## 2.0 SURVEY DESIGN AND SAMPLING TECHNIQUE

Only that portion of the population that could feasibly participate in timber management was sampled. The population for this survey was identified as those persons owning at least 40 acres of bush land within a 100 kilometre radius of Meadow Lake, Saskatchewan<sup>1</sup>. The population was restricted by a minimum bush requirement to reflect economies of scale associated with timber management. The 40 acre minimum was selected to correspond with the minimum area identified by the Private Lands Program administered by Forestry Canada. Mistik Management Ltd. suggested a maximum distance of 100 km from Meadow Lake to reflect a reasonable haul distance to the pulp mill.

Aerial photos were examined, and subsequently cross matched with townships maps, to identify lands with enough bush to be included in the population. Aerial photos of the target area were taken between 1979 and 1982. Thus in some cases land had been cleared subsequent to the photo.

The population was identified as a pool of 1,970 individuals. The intent was to interview 100 individuals from this pool. To allow for less than a 100% response rate a random sample of 133 names was drawn from the population. Of this sample 89 (66.9%) were interviewed. Sixteen (12.0%) individuals had cleared their land and no longer met the minimum requirement of 40 acres of bush. Eight (6.0%) had sold their land to people already included in the population and eight (6.0%) could not be located. An additional 12 (9.0%) were not available for miscellaneous reasons.

Individuals were first contacted by phone and arrangements were made for personal interviews. Most interviews took place at the respondents' homes.

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<sup>1</sup> The word 'bush' is often used in Saskatchewan to refer to private forest land. The forty acres of bush was either totally within a quarter section block of land or continuous between quarters.

### 3.0 SURVEY RESULTS

This section presents the results of the survey. Responses are listed in the order of the questions on the survey<sup>2</sup>. The appendix contains the survey questionnaire.

#### 3.1 Property Inventory, Harvesting History, and Intentions

Section I of the survey collected inventory information and landowners' harvesting history and intentions. Landowners first identified their land holdings (Table 3.10a). The mean land holding was 801.2 acres. Although the mean weighted length<sup>3</sup> of time the respondents had owned their land was 19.9 years, the average length of time their family had owned at least one parcel of their land holdings was 43.6 years. Respondents had owned some of their land 24.9 years on average. The mean distance individuals lived from their land was 29 miles, but 68.5% lived within 5 miles.

The mean acreage of treed area owned was 269 acres (Table 3.10b). Some 41.6% of those interviewed owned between 40 and 100 acres of trees and 85.4% owned less than 300 acres.

Of those sampled 29.2% rented some of their land to others. Payment methods for rented land were split almost equally between crop share and cash lease arrangements (Table 3.10c). Of those renting land out, the mean quantity of land rented out on a crop share basis was 159.9 acres, while an average of 248.2 acres was rented out on a cash lease basis.

Respondents were then asked if they leased or rented land from others (Table 3.10d). Of those

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<sup>2</sup> Some questions are omitted as they, with hindsight, were irrelevant.

<sup>3</sup> Each parcel of land owned by an individual was weighted by the length of time they had owned that parcel to determine the weighted length of time the individual had owned their total land holdings.

interviewed 48.3% indicated that they did lease land; the mean area leased was 604.6 acres.

The next area of the survey dealt with the purchase and sale of land in the past ten years. Results indicated that 48.3% of the sample had purchased a mean area of 468.4 acres. An average of 200.9 acres of this land was forest. Land had been sold by 21.3% of the respondents in the past ten years, with a mean of 395.4 acres being sold, of which 127.9 acres was forest land. (Table 3.11a)

Respondents cited a variety of reasons for purchasing land (Table 3.11b). The most common reason given was to increase the farm size, which was cited by 39.5% of those who had purchased land. A further 48.8% gave other farm related reasons for their land purchases. Only 11.7% of those who had purchased land gave non-farm related reasons for their purchase. No land was purchased specifically for timber related uses; any bush related uses were derived from pasture and/or recreation.

Questions were then asked to determine if the respondents farmed, and if so, the type of farm that they operated. Of the sample 76.4% indicated that they operated a farm (Table 3.12a). Of these 41.2% had only one operation<sup>4</sup> and 52.9% indicated they had two operations. The majority of the farmers (72.1%) indicated cattle as one of their farm enterprises (Table 3.12b).

The majority of the sample (75.3%) owned at least one tractor (Table 3.13). Additionally 12.3% of those interviewed owned either a CAT, Backhoe, or Skidder that could be used for forestry purposes, and 9% owned a sawmill.

Respondents past harvesting activities are addressed in Table 3.14a. Harvesting was defined as any activity which generated income either in cash or in kind from forest products of at least \$500

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<sup>4</sup> An operation is defined as any farm enterprise, for example cattle, grain, or hogs. Individuals with more than one operation would include mixed farms such as crop production combined with a cow/calf operation.

annually. Some 75.3% of the respondents had not harvested any trees from their land in the past ten years. Of those harvesting timber, 63.6% harvested it themselves and 36.4% hired someone else to do it. Only 6.7% of the sample had sold timber.

A number of reasons were cited for past harvests (Table 3.14b). Fibre products were given as the primary reason by 68.2% of those who had harvested: 13.6% had harvested to control either disease or fire, 4.6% for financial reasons, and 13.6% to either increase the area in crop or to improve pasture.

Of those who had harvested 72.7% had some bush remaining on the site after harvest (Table 3.14c). Of the remainder, 4.6% regenerated the area to bush, 13.6% used it for pasture, and 9.1% converted it to cropland.

Some 41.6% had cleared land of bush within the past ten years (Table 3.15). In 73% of these cases between 11 and 200 acres were cleared. The majority, 78.4%, of those clearing land hired someone else to perform the work.

Respondents were then asked why they acquired their forest land (Table 3.16). This question was open ended and more than one response was allowed. The most common response, given by 50.6% of the sample, was that the bush came with the parcel of land they obtained. Only 22.5% of the respondents had acquired the land for reasons other than farming.

The next two questions asked the landowners how they used their forests and whether other people used the land. Due to the open ended nature of the question 43 different use combinations were identified for the property owners, and 11 use combinations were identified for people other than the owners. These uses were then categorized as either consumptive, such as firewood, lumber, and hunting, and non-consumptive, such as recreation, wildlife and conservation (Table 3.17a). While

29.2% of the sample had no consumptive uses of their forest land the majority, 51.7%, used it for one consumptive use. In most cases other people did not use the forests in a consumptive manner.

Landowners and others also used the forests for non-consumptive purposes (Table 3.17b). Some 59.5% of the respondents cited one or two such uses from their forest land and 48.3% indicated that others used their land for one non-consumptive purpose.

Questions were then asked to assess landowners familiarity with woodlot management (Table 3.18). Although 62.5% of landowners felt help was needed with woodlot management none of the sample group had heard of the Farm Woodlot Association of Saskatchewan, a non-profit organization that delivers Forestry Canada's private land program. Some 14.6% had heard of other groups that were interested in the development of private woodlots, such as wildlife federations, but only 1.1% belonged to such a group.

Although 85.4% of the respondents were aware of markets for fibre products which they could supply from their land, only 55.1% would consider harvesting timber in the future (Table 3.19a). Some 53.9% would consider forest management in the future for a variety of reasons (Table 3.19b). Timber production was the most common management objective; 47.9% of those who would consider forest management cited this as one of their objectives. Wildlife and conservation concerns were each mentioned by 29.2% of the potential managers.

Tables 3.10: Land Inventory

Table 3.10a: Land holdings		
Total Area Owned		
Area (acres)	Frequency	%
≤ 160	16	18.0
161 - 320	9	10.1
321 - 480	11	12.4
481 - 640	8	9.0
641 - 800	13	14.6
801 - 1280	17	19.1
≥ 1280	15	16.9
Length of Ownership		
Weighted length of time land owned by present owner (years)		19.9
Mean length of time oldest piece has been in the family (years)		43.6
Mean length of time current owner has owned oldest piece (years)		24.9



Weighted Distance of Land From Residence		
Distance (miles)	Frequency	Percent
≤ 1	38	42.7
1.1 - 5	23	25.8
5.1 - 15	10	11.2
15.1 - 50	6	6.7
50.1 - 100	2	2.3
> 100	10	11.2

Table 3.10b: Area of trees owned		
Area (acres)	Frequency	%
40 - 100	37	41.6
101 - 200	29	32.6
201 - 300	10	11.2
301 - 400	5	5.6
401 - 500	5	5.6
> 500	3	3.4

Table 3.10c: Summary of owned land rented out						
Area (acres)	Total Land Rented		Land Rented by Crop Share <sup>1</sup>		Land Rented By Cash Lease <sup>1</sup>	
	Frequency	%	Frequency	%	Frequency	%
0	63	70.8	14	56.0	13	52.0
1 - 160	13	14.6	6	24.0	4	16.0
161 - 320	5	5.6	1	4.0	4	16.0
321 - 480	1	1.1	1	4.0	0	0.0
481 - 640	2	2.2	2	8.0	0	0.0
> 640	5	5.6	1	4.0	4	16.0
missing	0		1		1	

<sup>1</sup> Percents are based on the proportion of the sample who rented land out

Table 3.10d: Land leased or rented from others		
Frequency	%	Mean Area (acres)
43	48.3	604.6

**Table 3.11a: Land purchased and sold in the past ten years**

	Land Purchased (acres)	Land Sold (acres)
Total land (mean)	468.4	395.4
Forest land (mean)	200.9	127.9

**Table 3.11b: Reasons for land purchases**

Reason Cited	Frequency	%
To increase farm size	17	39.5
To start farming	5	11.6
Family death/retirement	3	7.0
Lease related	9	20.9
For pasture	4	9.3
Residence	2	4.7
Investment	2	4.7
Recreation	1	2.3

**Table 3.12a: Number of different farm enterprises**

Number of Enterprises	Frequency	%
None	21	23.6
1	28	31.5
2	36	40.4
3	3	3.4
4	1	1.1

**Table 3.12b: Farm Enterprise**

Enterprise Type	Frequency	%
None	21	23.6
Grain	13	14.6
Cattle	13	14.6
Grain + Cattle	32	36.0
Grain + Cattle + Hogs	2	2.2
Cattle + Hogs	2	2.2
Other	6	6.7

<b>Table 3.13: Equipment owned</b>		
<b>Equipment Description</b>	<b>Frequency</b>	<b>%</b>
No Equipment	22	24.7
At least one tractor	67	75.3
At least one CAT	8	9.0
2 skidders	1	1.1
One backhoe	2	2.2
A sawmill	8	9.0

<b>Table 3.14a: Harvesting activity in past ten years</b>		
	<b>Frequency</b>	<b>%</b>
No trees harvested	67	75.3
< 10 acres	14	15.7
10 - 50 acres	5	5.6
> 50 acres	3	3.4
Sold Forest Products	6	6.7

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< 10 acres	14	15.7
10 - 50 acres	5	5.6
> 50 acres	3	3.4
Sold Forest Products	6	6.7

Reason	Frequency	%
Firewood/buildings	10	45.5
Lumber	3	13.6
Pulpwood	2	9.1
Disease/fire control	3	13.6
Cropland/pasture	3	13.6
Financial	1	4.6

Land Use	Frequency	%
Still in bush	11	50.0
Regenerated to bush	1	4.5
Pasture	3	13.6
Crop	2	9.1
Bush + building site	2	9.1
Bush + pasture	1	4.5
Bush + crop	2	9.1



Table 3.15: Land clearing in past ten years		
Area Cleared (acres)	Frequency	%
None	52	58.4
< 10	8	9.0
11 - 50	13	14.6
51 - 200	14	15.7
> 200	2	2.2

Table 3.16: Reasons for acquiring forest land		
Reason	Frequency	%
Bush came with the land	45	50.6
Investment	4	4.5
Residence	7	7.9
Pasture	19	21.3
Aesthetics, recreation, wildlife	5	5.6
Farming	5	5.6
Other	4	4.5

Table 3.17a: Number of consumptive <sup>1</sup> uses				
# of uses	By Owner		By Others	
	Frequency	%	Frequency	%
0	26	29.2	76	85.4
1	46	51.7	11	12.4
2	14	15.7	2	2.2
3	3	3.4	0	0

<sup>1</sup> Consumptive uses include lumber, firewood, grazing, bed and breakfast, and trapping.

Table 3.17b: Number of non-consumptive <sup>1</sup> uses				
# of uses	By Owner		By Others	
	Frequency	%	Frequency	%
0	26	29.2	37	41.6
1	30	33.7	43	48.3
2	23	25.8	9	10.1
3	8	9.0	0	0
4	2	2.2	0	0

<sup>1</sup> Non-consumptive uses included hunting, aesthetics, recreation, wildlife, conservation, and security for the future.

<b>Table 3.18: Familiarity with woodlot management</b>		
	<b>Frequency</b>	<b>%</b>
Feel woodlot owners need help with woodlot management	55	61.8
Are aware of group associations interested in the promotion of private woodlots <sup>1</sup>	13	14.6
Belong to such a group association	1	1.1

<sup>1</sup>Groups mentioned included local tourist boards, wildlife federations, and habitat preservation programs. No one was familiar with the Farm Woodlot Association of Saskatchewan.

<b>Table 3.19a: Willingness to consider timber harvesting and management</b>		
	<b>Frequency</b>	<b>%</b>
Will consider harvesting in future	49	55.1
Aware of markets for potential products	76	85.4
Will consider forest management in the future	44	49.4

Table 3.19b: Forest management objectives <sup>1</sup>		
Objectives	Frequency	%
Timber	23	47.9
Wildlife	14	29.2
Conservation	14	29.2
Grazing	6	12.5
To keep natural	4	10.4

<sup>1</sup> Respondents were able to cite more than one objective

### 3.2 Contracts

Section II of the survey involved a hypothetical situation in which the landowners were asked to assume that they had marketable timber and a market existed for their timber. Questions were then asked to assess landowners preferences for a number of characteristics of management and/or harvesting contracts.

Each question was asked in two stages. Landowners were first asked the general question as an open ended question, for example:

"If you were considering woodlot management would you manage it yourself or would you consider having someone else manage it for you?"

Once they had responded to this question they were asked if they would reconsider their answer if presented with a specific managing agency. Four agencies were presented: a government agency; a forest products company; a landowner organization; and an independent contractor. This procedure was designed to investigate whether the managing agency affected the landowners willingness to enter into a contractual arrangement.

The first question dealt with managing their woodlots (Table 3.20). Some 42.5% indicated that they would consider letting someone else manage their woodlot, although when presented with a specific managing agency, the responses varied. A landowner organization was the preferred managing agency with 66.7% indicating they would be willing to allow this agency to manage their forest.

Landowners were then asked whether they would prefer to prepare their own management plan for their woodlot or would consider having someone else prepare it for them; 59.3% said they would consider having someone else prepare it for them (Table 3.21). Again a landowner organization was the preferred agency to prepare the plan with 72.1% of respondents willing to let them develop their management plan.

When asked about timber harvests 66.7% of the respondents indicated they would prefer to have someone else harvest the timber (Table 3.22). Respondents were quite sensitive to the harvesting agency in this question with only 36.8% willing to consider letting a government agency harvest the timber but 72.4% willing to consider an independent contractor.

Respondents were then presented with three different payment methods they could use to pay for managing and/or harvesting services they received. They were asked to select their preferred option or identify an alternative method. A crop share arrangement was the preferred option for 51.7% of the respondents (Table 3.23a-e). Some 29.9% preferred to pay in cash for services and 18.4% selected the option of giving the managing agency an option to purchase timber. There was little variation when presented with specific management agencies however some respondents were unwilling to consider dealing with some of the agencies.

The next question presented four different contract lengths (Table 3.24a-e). A length of 1 to 5 years was preferred by for 58.6% of the sample. There was limited variation in the responses when presented with a specific agency however some individuals would not deal with certain agencies. Only 5.7% preferred a contract that was longer than 15 years.

Respondents were then presented with four different types of cash payments that they could receive for their timber; they were asked to select one of the four options or suggest a different payment option (Table 3.25a-e). The four options presented were based on leases used in the United States for timber contracts. The preferred option was a contract in which the land was leased with a periodic payment and the timber paid for at the time of harvest; 35.6% of the respondents selected this option. A second option in which they also receive a periodic lease payment for the land but are paid for all standing timber at the outset of the contract was preferred by 26.4% of the respondents. Some 19.5% suggested an alternate arrangement in which they would not receive any lease payment for

the land and were paid for the timber at the time it was harvested. The order of preference was unchanged when respondents were presented with specific agencies.

The final contract characteristic investigated was the condition the land was to be left in following the contract term (Table 3.26). The majority of the respondents, 61.2%, wanted young growth to be established on the land before the end of the contract term. However 22.4% preferred the land be left with no regeneration and 3.5% were not concerned with the land condition.

<b>Table 3.20: Willingness to consider letting someone else manage their woodlot</b>		
<b>Agency</b>	<b>Frequency</b>	<b>%</b>
Willingness to consider someone else	37	42.5
Forest products company	42	48.3
Government agency	35	40.2
Independent contractor	47	54.0
Landowner organization	58	66.7
Missing values	2	

<b>Table 3.21: Willingness to consider letting someone else prepare a management plan for their woodlot</b>		
<b>Agency</b>	<b>Frequency</b>	<b>%</b>
Willingness to consider someone else	51	59.3
Forest products company	53	61.6
Government agency	41	47.7
Independent contractor	55	64.0
Landowner organization	62	72.1
Missing values	3	



<b>Table 3.22: Willingness to consider letting someone else harvest their woodlot</b>		
<b>Agency</b>	<b>Frequency</b>	<b>%</b>
Willingness to consider someone else	58	66.7
Forest products company	50	57.5
Government agency	32	36.8
Independent contractor	63	72.4
Landowner organization	57	65.5
Missing values	2	

<b>Table 3.23a: Preferred payment option for management/harvesting services received</b>		
<b>Option</b>	<b>Frequency</b>	<b>%</b>
Cash for services	26	29.9
Crop share	45	51.7
Giving the managing agency an option to purchase	16	18.4
Missing values	2	

<b>Table 3.23b: Preferred payment option to a forest products company for management/harvesting services received</b>		
<b>Option</b>	<b>Frequency</b>	<b>%</b>
Cash for services	23	26.4
Crop share	40	46.0
Giving the managing agency an option to purchase	14	16.1
Would not deal	10	11.5
Missing values	2	

<b>Table 3.23c: Preferred payment option to a government agency for management/harvesting services received</b>		
<b>Option</b>	<b>Frequency</b>	<b>%</b>
Cash for services	26	29.9
Crop share	32	36.8
Giving the managing agency an option to purchase	12	13.8
Would not deal	17	19.5
Missing values	2	

<b>Table 3.23d: Preferred payment option to an independent contractor for management/harvesting services received</b>		
<b>Option</b>	<b>Frequency</b>	<b>%</b>
Cash for services	28	32.2
Crop share	44	50.6
Giving the managing agency an option to purchase	12	13.8
Would not deal	3	3.4
Missing values	2	

<b>Table 3.23e: Preferred payment option to a landowner organization for management/harvesting services received</b>		
<b>Option</b>	<b>Frequency</b>	<b>%</b>
Cash for services	25	28.7
Crop share	43	49.4
Giving the managing agency an option to purchase	13	14.9
Would not deal	6	6.9
Missing values	2	

<b>Table 3.24a: Preferred contract duration</b>		
<b>Contract Length</b>	<b>Frequency</b>	<b>%</b>
< 1 year	20	23.0
1 - 5 years	51	58.6
6 - 15 years	11	12.6
15 - 30 years	4	4.6
> 30 years	1	1.1
Missing values	2	

<b>Table 3.24b: Preferred contract duration with a forest products company</b>		
<b>Contract Length</b>	<b>Frequency</b>	<b>%</b>
< 1 year	18	20.7
1 - 5 years	50	57.5
6 - 15 years	7	8.0
16 - 30 years	6	6.9
> 30 years	0	0
Would not deal	6	6.9
Missing values	2	

<b>Table 3.24c: Preferred contract duration with a government agency</b>		
<b>Contract Length</b>	<b>Frequency</b>	<b>%</b>
< 1 year	17	19.5
1 - 5 years	43	49.4
6 - 15 years	6	6.9
16 - 30 years	4	4.6
> 30 years	1	1.1
Would not deal	16	18.4
Missing values	2	

<b>Table 3.24d: Preferred contract duration with an independent contractor</b>		
<b>Contract Length</b>	<b>Frequency</b>	<b>%</b>
< 1 year	21	24.1
1 - 5 years	49	56.3
6 - 15 years	11	12.6
16 - 30 years	4	4.6
> 30 years	0	0
Would not deal	2	2.3
Missing values	2	

Table 3.24e: Preferred contract duration with a landowner organization		
Contract Length	Frequency	%
< 1 year	20	23.0
1 - 5 years	47	54.0
6 - 15 years	10	11.5
16 - 30 years	5	5.7
> 30 years	0	0
Would not deal	5	5.7
Missing values	2	

<b>Table 3.25a: Preference for payment received for timber harvested</b>		
<b>Payment Method<sup>1</sup></b>	<b>Frequency</b>	<b>%</b>
Option 1	23	26.4
Option 2	5	5.7
Option 3	31	35.6
Option 4	11	12.6
Cash at time of harvest	17	19.5
Missing values	2	

<sup>1</sup>The payment options were defined as:

- Option 1: A contract in which they are paid for all standing timber initially and receive a periodic lease payment for the land throughout the contract period.
- Option 2: A contract in which both land and timber are leased through a periodic payment.
- Option 3: A contract in which the land is leased with a periodic payment and the timber is paid for at the time it is harvested.
- Option 4: A contract in which a periodic payment is paid based on the average annual growth of timber. At the time of timber harvest adjustments are made for over or under payment.

<b>Table 3.25b: Preference for payment received from a forests products company for timber harvested</b>		
<b>Payment Method</b>	<b>Frequency</b>	<b>%</b>
Option 1	21	24.1
Option 2	5	5.7
Option 3	29	33.3
Option 4	11	12.6
Cash at time of harvest	18	20.7
Not willing to deal	3	3.4
Missing values	2	

<b>Table 3.25c: Preference for payment received from government agency for timber harvested</b>		
<b>Payment Method</b>	<b>Frequency</b>	<b>%</b>
Option 1	18	20.9
Option 2	5	5.8
Option 3	26	30.2
Option 4	8	9.3
Cash at time of harvest	18	20.9
Not willing to deal	11	12.8
Missing values	3	



**Table 3.25d: Preference for payment received from an independent contractor for timber harvested**

Payment Method	Frequency	%
Option 1	23	26.4
Option 2	4	4.5
Option 3	29	33.3
Option 4	11	12.6
Cash at time of harvest	18	20.7
Not willing to deal	2	2.3
Missing values	2	

<b>Table 3.25e: Preference for payment received from a landowner organization for timber harvested</b>		
<b>Payment Method</b>	<b>Frequency</b>	<b>%</b>
Option 1	21	24.1
Option 2	5	5.7
Option 3	30	34.5
Option 4	11	12.6
Cash at time of harvest	17	19.5
Not willing to deal	3	3.4
Missing values	2	

<b>Table 3.26: Land condition at contract end</b>		
<b>Land Condition</b>	<b>Frequency</b>	<b>%</b>
Same volume of timber as at contract outset	11	12.9
No regeneration	19	22.4
Young growth established	52	61.2
Condition of the land is not important	3	3.5
Missing values	4	

### 3.3 Socioeconomic Characteristics

Section III of the survey collected demographic information. Of those surveyed 93.3% were raised on a farm (Table 3.30) and 47.2% are currently full-time farmers, another 22.5% farm part-time. The majority of the sample, 50.6%, were between 46 and 65 years of age (Table 3.31). The education level ranged considerably; 29.2% had Grade 8 or less and 45% had at least a Grade 12 education. Some 11.2% of the sample had completed post-secondary education. The average income level was between twenty-five and thirty thousand dollars and, on average, 49.5% of this income was derived from the respondent's land (Tables 3.33-3.36). Only 0.9% of the reported income came from owned forest land.

<b>Table 3.30: Where the respondent was raised</b>		
<b>Location</b>	<b>Frequency</b>	<b>%</b>
On a farm	83	93.3
Town under 500	1	1.1
Town between 501 and 1 000	1	1.1
Town between 1 001 and 5 000	2	2.2
Town between 5 001 and 10 000	1	1.1
City between 10 001 and 50 000	0	0
City over 50 000	1	1.1

<b>Table 3.31: Age of respondent</b>		
<b>Age</b>	<b>Frequency</b>	<b>%</b>
Under 25	2	2.2
26 - 35	12	13.5
36 - 45	17	19.1
46 - 55	24	27.0
56 - 65	21	23.6
Over 65	13	14.6

Table 3.32: Level of education		
Highest Education Level Achieved	Frequency	%
Less than Grade 8	10	11.2
Grade 8	16	18.0
Some high school	23	25.8
Grade 12	20	22.5
Some post-secondary	10	11.2
Trade School	2	2.2
College Diploma	2	2.2
Undergraduate Degree	3	3.4
Post-Graduate Degree	3	3.4

**Table 3.33: Income**

Income Bracket (\$)	Frequency	%
< 5 000	3	3.4
5 000 - 9 999	5	5.6
10 000 - 14 999	14	15.7
15 000 - 19 999	8	9.0
20 000 - 24 999	6	6.7
25 000 - 29 999	8	9.0
30 000 - 34 999	16	18.0
35 000 - 39 999	4	4.5
40 000 - 44 999	1	1.1
45 000 - 49 999	3	3.4
50 000 - 59 999	10	11.2
60 000 - 69 999	1	1.1
70 000 - 79 999	3	3.4
80 000 - 99 999	1	1.1
≥ 100 000	6	6.7

**Table 3.34: Percentage of Income from land**

Percentage of Total Income	Frequency	%
none	17	19.1
1 - 5	9	10.1
6 - 15	6	6.7
16 - 25	8	9.0
26 - 50	9	10.1
51 - 75	6	6.7
76 - 95	6	6.7
96 - 100	28	31.5

**Table 3.35: Percentage of Income from forest land**

Percentage of Total	Frequency	%
none	81	91.0
1 - 5	5	5.6
6 - 10	1	1.1
11 - 20	1	1.1
21 - 30	1	1.1

**Table 3.36: Occupation**

Occupation	Frequency	%
Farmer	42	47.2
Trades	2	2.2
Professional	7	7.9
Retired	8	9.0
Self-employed	6	6.7
Farmer and other occupation	20	22.5
Other	4	4.5



#### 4.0 Discussion and Conclusions

The results of this survey indicate that there is significant potential for the development of a private land forest sector in Saskatchewan. Although private forests are only 2.6% of the total provincial productive non-reserved forests they amount to over 960 000 acres; a large enough area to supply significant quantities of fibre for industrial use.

The northwest region of Saskatchewan offers potential because of local demand for pulpwood. The landowners in this area appear to be well suited to meeting this demand. The mean landholding of bush owners in the region is approximately 800 acres of which nearly 270 acres is bush land. Three quarters of the sample owned at least one tractor and 44.9% were involved in at least two farm enterprises. Although only one quarter of the respondents had harvested fibre in the past, over 70% used their forest consumptively for such things as grazing, trapping, and firewood. The opportunity to develop a private forest sector is also apparent because approximately half of those interviewed indicated that they would consider timber harvest and management contracts in the future.

The study was also intended to examine the use of timber contracts as a means of encouraging sustainable timber harvests on private land. Nearly 60% would consider having someone else develop a management plan for their forest and approximately 43% would consider letting someone else manage their forest land. Two thirds of the sample would consider letting someone else harvest timber from their land. Willingness to involve someone else in the management and harvesting of private forests may imply a willingness to enter into timber contracts. When presented with various agencies landowners showed a general preference for landowner organizations as a managing agency and independent contractors as timber harvesters.

Respondents also identified preferences for a number of contract characteristics. Over half of those

interviewed would prefer to use a crop share arrangement to pay for management and/or harvesting services received. A contract of between 1 and 5 years duration was preferred by nearly 60% of the respondents. The strongest preference for timber payments was an arrangement in which the land is leased with a periodic payment and landowners are paid for their timber at the time of harvest; this method was preferred by approximately 35% of the respondents. Over 60% of the respondents wanted their land left with young growth established at the end of the contract term which may suggest an interest in sustainable forest management.

Rural Saskatchewan, and the farm culture, are in transition. Over 90% of those interviewed were raised on a farm but less than 50% now farm full-time and only 22% farm part-time. This trend away from farm life may impact the development of the private forest sector and may explain the difference between the historical lack of timber harvests and the level of interest in future timber harvests. Respondents average age was between 46 and 55 and they had some high school education; as the land is taken over by younger individuals average education levels are likely to change and this may also affect farm woodlots.

As rural Saskatchewan goes through this transition it is important that decision makers have the information they need to make optimal land use decisions. This study suggests that landowners are poorly informed about opportunities in private forestry. Although over 60% felt there is a need for help with woodlot management, none of those interviewed were aware of the Farm Woodlot Association of Saskatchewan, an organization that delivers woodlot extension services for Forestry Canada. Less than 15% had heard of any association that may be interested in farm woodlots.

These results demonstrate the need for education of woodlot owners about opportunities in private forestry, and promotion of existing programs. There is interest in forest management but lack of information is one of the factors impeding the development of the sector. Contracts may be one

mechanism that can be used to encourage sustainable forest management.

Future research will use this data to investigate relationships between landowner characteristics and harvesting and management behaviour. Models will identify landowner characteristics associated with willingness to consider future timber harvest and management; willingness to allow someone else to harvest or manage forest stands; and preferences associated with timber contract characteristics.

**APPENDIX, SURVEY QUESTIONNAIRE**

**AN ECONOMIC ANALYSIS OF FACTORS INFLUENCING THE FOREST MANAGEMENT AND HARVESTING DECISIONS  
OF PRIVATE WOODLOT OWNERS IN NORTHWESTERN SASKATCHEWAN - A SURVEY<sup>1</sup>**

**LANDOWNER NAME(S):**

**TELEPHONE NUMBER:**

**ADDRESS:**

I am surveying people in Northwestern Saskatchewan who own forested land as part of my thesis work towards a Masters of Science degree at the University of Alberta. This research is being funded through the Canada-Saskatchewan Partnership Agreement in Forestry.

This project is being undertaken because very little information is available on the use of private land for forestry. I hope that by finding out more about you and your woodlot I will be able to identify ways that may improve the opportunities for woodlot development.

The information I gather will be kept strictly confidential. I am interested in the aggregate results for the region, not individual results.

I'd like to begin by finding out about your land holdings.

**OPERATIONS:**

1. **LAND HOLDINGS**

How many acres do you own in total? \_\_\_\_\_

	1/4	Total Acres	Length of Ownership (years)	How Did You Obtain It (buy from family or other...)	How Long Has it Been in Your Family (years)	How Many Acres are Rented Out	Type of Rental Arrangement (crop share or cash lease)	Distance From Residence (miles)
Cultivated Area (Acres)								
Improved Pasture (Acres)								
Unimproved Pasture (Acres)								
Trees/Bush (Acres)								
Other (Acres)								

2. LAND LEASED

How many acres do you lease in total? \_\_\_\_\_

	1/4	Total Acres	How Long Have You Leased It (years)	How Long Is the Agreement For (years)	Is The Land Publicly or Privately Owned	Type of Rental Arrangement (Crop Share or Cash Lease)	Distance From Residence
Cultivated Acres							
Improved Pasture (Acres)							
Unimproved Pasture (Acres)							
Trees/Bush (Acres)							
Other (Acres)							

45

3. Have you purchased any land in the past ten years?

1. Yes \_\_\_\_\_

Quarter	Area	Year	Price	Land Type(s) (%)	Reason For Purchase

2. No \_\_\_\_\_

4. Have you sold any land in the past ten years?

1. Yes \_\_\_\_

Quarter	Area	Year	Price	Land Type(s) (%)	Reason For Sale

2. No \_\_\_\_

5. Do you have a farm operation?

1. Yes \_\_\_\_

What crops do you grow?

What livestock do you own?

None:

Cattle:

Pigs:

Chickens:

Other:

Do you participate in any government programs?

Yes \_\_\_\_, please specify:

No \_\_\_\_

2. No \_\_\_\_



6. What machinery do you own?

Equipment Size	Tractors (hp)	Combines	Trucks	Cultivators	Seeding Equipment	Haying Equipment	Silage Equipment	Other
Small								
Medium								
Large								

**HARVESTING:**

7. Have any trees been harvested, cleared or otherwise removed from your land in the past ten years?

1/4	Date	Area Or Volume and Species Harvested, Cleared, or Otherwise Removed	Who Harvested, Cleared, or Otherwise Removed	Was Financial Assistance Received For Completing These Activities (for eg. free information or government subsidy)		Reason For Harvest, Clearing or Removal	What Was The Timber Used For	Did You Sell The Timber	Land Use After Harvest
				What Assistance Was Provided	Who Provided The Assistance				

**MANAGEMENT:**

8. In the past ten years have you undertaken any forest management activities such as planting new areas, regenerating cleared areas, thinning, weeding, release work, or any other management activity?

1/4	Date	Area	Activities						Was assistance received for completing these activities		Reason for Management
			Plant	Regen.	Weeding	Thinning	Release Work	Other, Specify	What was Provided	Who Provided It	

9. Do you currently have a management plan for your woodlot?

1. Yes \_\_\_

Did you develop the management plan?

a. Yes \_\_\_, did you receive assistance in developing the plan?

b. No \_\_\_, who developed the management plan?

Did you receive financial assistance?

2. No \_\_\_

**MOTIVATIONS**

10. People acquire their forested lands for a number of different reasons ranging from owning the forested land because it is part of their primary residence to purchasing an area for recreation. What are the main reasons that you acquired your forested lands?

11. Forests can be used for a number of different functions ranging from aesthetic satisfaction to timber production. In what ways do you use your forested land?

In what ways do others use your forested lands?

12. Do you perceive that there is a need for help with woodlot management?

1. Yes \_\_\_\_

What type of help do you perceive a need for?

What type of organization would you want to deliver the assistance?

2. No \_\_\_\_

13. Are you aware of any group associations interested in the development of private woodlots?

1. Yes \_\_\_\_

Which Ones?

Do you belong to any such organization?

Yes \_\_\_\_, Which one? \_\_\_\_\_

No \_\_\_\_, Why not?

2. No \_\_\_\_

Would you be interested in joining such an organization?

14. Would you consider harvesting timber from your forested land in the future?

1. Yes \_\_\_\_, what forest products would you consider selling?

Have you considered selling ...

Product	Volunteered	Prompted	
		Yes	No
Ralls			
Posts			
Fuelwood			
Rough Lumber			
Value Added Lumber			
To Supply a Forest Products Company			
Christmas Trees			
Ornamentals			
Other, _____			

2. No \_\_\_\_, why not?

Do you know of markets for forest products that can be produced on your forested land?  
a. Yes \_\_\_\_, for what products are their markets?

Are you aware of markets for ...

Product	Volunteered	Prompted	
		Yes	No
Rails			
Posts			
Fuelwood			
Rough Lumber			
Value Added Lumber			
To Supply a Forest Products Company			
Christmas Trees			
Ornamentals			
Other, _____			

b. No \_\_\_\_

Have you considered products such as

Product	Yes	No
Rails		
Posts		
Fuelwood		
Rough Lumber		
Value Added Lumber		
To Supply a Forest Products Company		
Christmas Trees		
Ornaments		
Other, _____		

15. Would you consider managing the timber on your forested land in the future?

1. Yes \_\_\_\_, what objectives would you manage for?

What activities would you consider undertaking?

Have you considered ... ?

Activity	Volunteered	Prompted	
		Yes	No
Planting previously untreed areas			
Regeneration of harvested or cleared areas			
Weeding			
Thinning			
Release Work			
Other, _____ _____			

**CONTRACTS AND OPTIONS**

In answering the following questions please assume that a market exists for your timber.

16.1 If you were considering woodlot management would you manage it yourself or would you consider having someone else manage it for you?

1. Themselves
2. Someone else
3. Both
4. Neither

16.2 Would you reconsider this management arrangement if the second party was a(n):

1. government agency, Yes \_\_\_ No \_\_\_
2. forest products company, Yes \_\_\_ No \_\_\_
3. independent contractor, Yes \_\_\_ No \_\_\_
4. landowner organization, Yes \_\_\_ No \_\_\_

17.1 If you were considering developing a management plan for your forested land would you prefer to prepare your own management plan or have someone else prepare it for you?

1. Themselves
2. Someone else
3. Both
4. Neither

17.2 Would you reconsider the preparation of your management plan if the second party was a(n):

1. independent contractor, Yes \_\_\_ No \_\_\_
2. government agency, Yes \_\_\_ No \_\_\_
3. landowner organization, Yes \_\_\_ No \_\_\_
4. forest products company, Yes \_\_\_ No \_\_\_



18.1 If you were considering harvesting timber from your forested land would you prefer to harvest it yourself or have someone else harvest for you?

- 1. Themselves
- 2. Someone else
- 3. Both
- 4. Neither

18.2 Would you reconsider your harvest arrangements if the second party was a(n):

- 1. forest products company, Yes \_\_\_ No \_\_\_
- 2. government agency, Yes \_\_\_ No \_\_\_
- 3. landowner organization, Yes \_\_\_ No \_\_\_
- 4. independent contractor, Yes \_\_\_ No \_\_\_

19.1 This card lists several different payment options that could be used by you to pay for harvesting and/or management services, please select the method you would prefer.

- 1. Cash for services
- 2. A crop share arrangement for timber harvested
- 3. Giving the managing agency an option to purchase wood
- 4. Other, please specify \_\_\_\_\_

19.2 Would your preference change if the second party was a(an):

	Yes	No	New Selection			
			1	2	3	4
Forest Products Company						
Landowner Organization						
Independent Contractor						
Government Agency						

20.1 This card list several different time period for which a harvesting and/or management agreement could be in effect.

Please select the time period that you would prefer.

1. Less than one year
2. 1 year to 5 years
3. 6 years to 15 years
4. 16 years to 30 years
5. Over 30 years

20.2 Would your preference change if the second party was a:

	Yes	No	New Selection				
			1	2	3	4	5
Landowner Organization							
Independent Contractor							
Forest Products Company							
Government Agency							

21.1 This card describes five different types of cash payment options you could receive for timber from your woodlot.

Please select the option that you prefer.

1. You enter into a contract and are paid for all standing timber initially and receive a periodic lease payment for the land throughout the contract period.
2. You enter into a contract in which both land and timber are leased through a periodic payment.
3. You enter into a contract in which the land is leased with a periodic payment and the timber is paid for at the time it is harvested.
4. You enter into a contract and receive a periodic payment based on the average annual growth of timber. At the time of timber harvest adjustment are made for over or under payment.
5. Other, please specify \_\_\_\_\_

21.2 Would your preference change if the second party was a(an):

	Yes	No	New Selection			
			1	2	3	4
Independent Contractor						
Landowner Organization						
Forest Products Company						
Government Agency						

22. This card describes different conditions in which the land could be left following a contract term. Please select the option that you prefer.

1. The land is returned with the same volume of timber as it had at the outset of the contract.
2. The land is returned following harvesting without regeneration.
3. The land is returned with young growth established.
4. The condition of the land following a contract is not important to me.

**PERSONAL INFORMATION:**

Finally I would like to find out more about the demographics of woodlot owners. The next few questions are designed for this purpose. All the results of this survey will be pooled and your individual answers will not be used in the research. Your individual responses to these questions, as with your responses to the entire survey, are confidential.

23. Could you please select the appropriate age bracket from this card.

1. Under 25

2. 26 - 35

3. 36 - 45

4. 46 - 55

5. 56 - 65

6. Over 65

24. Were you raised on a farm?

1. Yes \_\_\_\_

2. No \_\_\_\_, what was the approximate population of the area in which you were raised?

a. In a town of under 200

b. In a town of 201 to 500

c. In a town of 501 to 1 000

d. In a town of 1 001 to 5 000

e. In a town of 5 001 to 10 000

f. In a city of 10 001 to 50 000

g. In a city over 50 000

25. What is the highest level of education that you have received?

26. This card lists several income brackets; please select the bracket that best represents your household income before taxes.

- |                        |                        |                        |
|------------------------|------------------------|------------------------|
| A. \$0 - \$4,999       | F. \$25,000 - \$29,999 | K. \$50,000 - \$59,999 |
| B. \$5,000 - \$9,999   | G. \$30,000 - \$34,999 | L. \$60,000 - \$69,999 |
| C. \$10,000 - \$14,999 | H. \$35,000 - \$39,999 | M. \$70,000 - \$79,999 |
| D. \$15,000 - \$19,999 | I. \$40,000 - \$44,999 | N. \$80,000 - \$99,999 |
| E. \$20,000 - \$24,999 | J. \$45,000 - \$49,999 | O. Over \$100,000      |

27. What percentage of your income is derived from your land? \_\_\_\_\_

28. What percentage of your income is derived from your woodlot? \_\_\_\_\_

29. What is your occupation? \_\_\_\_\_

(options: unemployed, student, retired, professional, self-employed, trade, sales, other)

Thankyou!!

