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Attitude and Knowledge Study

of: Newfoundland Residents

on: Understanding Forest Management Issues on the island portion of the province
of Newfoundland and Labrador

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Executive Summary

- The overall purpose of this human dimension in forest management research study is to provide a better understanding of public attitudes, beliefs and priorities toward forests and forest management on the island portion of the province of Newfoundland and Labrador. More specifically, two samples were randomly selected to be representative of western Newfoundland and central Newfoundland. Residents living in provincial forest management districts 14, 15 and 16 comprised the western Newfoundland region while residents of districts 5, 8, 9 and 10 made up the central region.
- Data were collected through a mail-out questionnaire sent to a random sample of residents proportional to population to be representative of two regions, a western region and a central region. Households were randomly selected from the current telephone directories for central (communities within districts 5, 8, 9 and 10) and western (communities within districts 14, 15 and 16) regions on the Island. Potential respondents over 18 years of age living within the same household were considered eligible and formed the sampling frame.
- The questionnaire consisted of 83 closed ended items
- The questionnaire began by having respondents describe the current state of the forests on the island by circling a number from one to ten positioned between a series of opposite adjectives (e.g., unsustainable – sustainable).
- Central did return more questionnaires (n=466) than western (n=429) producing a response rate of 55% compared to 52%. While refusal rates are always higher in larger urban centers and the western region does contain Corner Brook, the western region has also been exposed most recently to job losses in Corner Brook and the announcement of the closure of the Stephenville mill. These factors may explain the lower response rate for the western region. This being said, a response rate of greater than 50% from the general

public rather than a special interest group, in a mail-back questionnaire with 83 items, and only one postcard follow-up is excellent.

- Sample sizes are sufficiently large for results and conclusions to be accurate 19 times out of 20, plus or minus 5%, and be representative of each region.
- There has been a decline from 22% in 2000 to approximately 13% of residents who themselves or within their immediate family derived an income directly from timber activities.
- Participation in non-timber activities has remained the same over the past six years at approximately 10%.
- There were no statistically significant differences across any of the attitudinal items regarding the current state of the forests between residents of central and western region. Respondents felt strongest about logging destroying habitat, that the forests were unhealthy, and that the current state of the forests was ugly. However, most respondents still believed the forest was sustainable, yet low mean scores from responses suggested the perception that the forests are only barely considered managed well.
- While central residents tended to feel the forests were less sustainable, less managed well, more unproductive and more ugly than perceived by western residents, opinions were similar across the two regions. Western residents were more likely to see the current state of forests as destroying habitat, unhealthy, less protected and more ruined than their central counterparts.
- Bonnell (2000) found that 51% of respondents felt that there was insufficient wood on the Island to support the paper mills, sawmills, and domestic firewood cutters. In a relatively short period of time this belief has become much stronger amongst western residents, now at 68%.
- While uncertain about the possible management implications if there is insufficient wood left on the island portion of the province, residents clearly believe there is not enough wood left to support all the users.

- While perceptions of available wood supply are quite different than 6 years ago, perceptions of forest management being sustainable remains about the same. This may be due to a lack of understanding of the concept or a hope that forests are sustainable.
- Residents tend to believe that forestry regulations are not well-enforced and this may be one of the reasons behind negative perceptions toward overall forest management.
- Residents considered the Crown clearly as the best manager of the forest over Abitibi and Kruger across all issues except for sustaining jobs where for western residents Kruger was perceived as doing a much better job than the Crown.
- Knowledge levels about the forest were extremely low; there were only two items of seven where more than 50% of the residents identified the correct response. Less than 2% correctly identified that the statement: “To ensure a sustainable forest on the Island, trees must be replanted” was generally false. Perhaps more disturbing for resource managers is the fact that 95% of western residents and 97% of central residents believed the statement was generally true.
- Most residents in both regions believe too many trees are being cut in the forests on the Island. Residents seem less certain about whether clear-cutting is a suitable harvesting method for some areas expressing almost equal agreement, neutral and disagreement on this issue.
- Western residents were statistically significantly different than their central counterparts more strongly agreeing that clear-cutting has been directly responsible for increased flooding in areas and increased silting of streams.
- Strong support exists from western and central residents regarding limits on the amount of wood that can be cut for domestic use. There are, however, mixed feelings amongst residents about the impact, if any, of domestic wood cutting.
- When asked about priorities of values for the forests, the top five priorities were clearly non-consumptive and nature-oriented: wildlife, scenic beauty, protection of watersheds, wilderness preservation and plants. Recreational values were lower in residents priorities.

- The public in general does not support the outfitting industry over the traditional uses of the forest, however, there are sufficient numbers of neutral responses that could be swayed in either direction depending upon the communication messages.
- Residents remain very sensitive to the loss of forestry jobs and seem to have limited support of aesthetic values, at least for resort residents, and even wildlife values when specifically asked to consider trade-off issues.
- Central area residents held consistently stronger attitudes than western residents toward protecting view-sheds in terms of issues of cutting in sight of communities, highways and resorts.
- The public seems to share a great deal of uncertainty about the future sustainability of the forested lands on the Island.
- At present the WNMF has limited credibility outside the western region for communicating messages about forestry management. The government has less credibility within western and central regions of the Island. The Pulp and Paper Industry have the lowest credibility for delivering forest-related messages to the general public. Interestingly, the PAA has the best credibility with residents but are not the decision-makers on forest issues posing a challenging dilemma for managers on whether to use them or not to assist in communicating messages.
- Those residents directly involved in timber activities had the same direction in attitude as other residents but on several items were statistically significantly different than residents in the strength of that attitude. For example those directly involved in timber activities were less likely to agree that clear-cutting has had negative impacts and more likely to believe that clear-cutting is a beneficial forest management practice.
- Residents directly involved in timber activities did not hold as strong aesthetic values of forests (e.g. view-shed issues) as other residents. These timber activity residents were also less likely to support the outfitting industry over forestry issues.

- Residents who derived income from non-timber activities could be described as more protection-oriented than residents, pro-outfitting industry, less concerned about forestry jobs, and holding stronger views for the various values of the forest that are non-timber oriented. In many ways their views are even stronger than those involved directly in timber activities but clearly in the opposing direction.
- Females did differ from males in the strength of their attitudes across several items tending to be less negative toward the forestry industry. Females also had significantly lower mean knowledge scores than their male counterparts. On many items females did not express a clear opinion on the issue choosing neutral rather than agreeing or disagreeing.
- In general residents have negative beliefs about the current condition of the forests on the Island. Large percentages feel forestry regulations are not well-enforced and many would like to see better enforcement of domestic woodcutters. Perceptions are of a dwindling wood supply that has residents believing there is little hope for the forestry industry in the province.

1.0 Introduction

With the announcement that the mill in Stephenville, NL will close and that one of the machines used in central Newfoundland's mill will no longer be used, media attention has focused on the state of forest management in the province. There has been discussion about job losses, the sustainability of the industry and the perceived uncertain future of forests on the island portion of the province. The discussion within the media, various interest groups, government, and the general public has been plagued with misperceptions about the status of the forest industry, and the lack of any clear understanding of the public values and priorities for the Island's forests. In addition, issues of land tenure and lease agreements that will expire in the near future, changing regulations focusing management on issues of non-timber values such as biodiversity and species at risk, and an increased awareness by the public of forests as aesthetic landscapes and places for recreation, have provided the necessary impetus for a government's desire to learn more about public attitudes toward and beliefs about forests and forest management.

At a time when government is realizing the importance of managing resources for the entire resource constituency rather than just a vocal minority, it becomes imperative to have scientific data on this human component of the forest management equation. This human dimensions research study is an example of information feedback, a public involvement approach that can offer managers quantitative representative data of public attitudes toward the forestry issue. While a research study, by identifying public opinions in a systematic way, and by including all the written additional comments in this report, this research allows managers the opportunity to continue to listen and to learn about Island resident's views on forestry issues facing the province, thus implementing a representative public involvement approach.

2.0 Purpose and Objectives

The overall purpose of this human dimension in forest management research study is to provide a better understanding of public attitudes, beliefs and priorities toward forests and forest management on the island portion of the province of Newfoundland and Labrador. More specifically, two samples were randomly selected to be representative of western Newfoundland and central Newfoundland. Residents living in provincial forest management districts 14, 15 and 16 comprised the western Newfoundland region while residents of districts 5, 8, 9 and 10 made up the central region. The specific objectives of the study were:

- To identify public attitudes toward the current state of the forests on the island portion of the province,
- To examine public perceptions of the sustainability of the forest industry on the island portion of the province, and determine whether the public believes management is improving or becoming worse,
- To establish where possible trends in public attitudes and beliefs by comparing responses to items from this study directly with previous studies using the same or similar items,
- To explore the public's perception of who (i.e., Kruger, Abitibi or Crown) is managing the forests better,
- To assess public knowledge about forests and forest management regulations and explore possible relationships between knowledge and attitudes,
- To document public perceptions of the impact, if any, forest management has on wildlife and streams,
- To explore issues surrounding domestic wood cutting and public perceptions of possible impacts of such activities,
- To provide managers with a better understanding of the public priorities regarding the use of forests on the island portion of the province,
- To explore the nature and extent of aesthetic values toward the forest that may exist within the resident population,
- To identify the nature of behavioral conflicts that may exist by exploring issues of credibility of various interest groups involved in forest management issues in the province.

As one can see from the long list of specific objectives, this human dimension in forest management study takes a comprehensive look at forest management issues within the Island. While there has been research on public attitudes toward forests and forest management issues in the past, previous studies have not addressed to the same degree all these issues in one study.

3.0 Methods

Data were collected through a mail-out questionnaire sent to a random sample of residents proportional to population to be representative of two regions, a western region and a central region. Households were randomly selected from the current telephone directories for central (communities within districts 5, 8, 9 and 10) and western (communities within districts 14, 15 and 16) regions on the Island. Potential respondents over 18 years of age living within the same household were considered eligible and formed the sampling frame. Each randomly selected household was then contacted by telephone; the actual potential respondent within the household was selected using the next birthday rule. The individual over 18 years of age in the household whose birthday was coming up next was asked to participate in the study. These individuals were then mailed a questionnaire (Appendix 1) and a self-addressed stamped envelope to encourage the return of the questionnaire. After approximately one week all individuals were then sent a postcard follow-up (Appendix 2) thanking the resident for returning the questionnaire and encouraging them to complete it if they had not already done so. No other follow-up procedures were used to increase the response rate.

Topics for the questionnaire were initially discussed through a facilitated workshop involving individuals from provincial government and Western Newfoundland Model Forest (WNMF). Items were then developed based upon this discussion and the review of items used in previous studies. The questionnaire was designed over several months and several iterations based on the feedback from provincial government and WNMF individuals and continual review of the literature. The final questionnaire was printed in green on two legal size sheets on both sides in a booklet format. A cover letter outlining the nature of the study, explaining that responses were confidential, and a contact number and name of the author was incorporated as the first page of the booklet.

Providing a telephone contact on the questionnaire has been shown to help increase the response rate even though rarely people contact the project director. There were a few respondents, however, who did call regarding the study. For example, one woman called to explain that her

husband after agreeing to complete the questionnaire had left the province and she did not feel competent to address forest issues as “he is the one involved in the outdoors and cuts wood”. Others called concerned that they did not know very much about the forests and forest management and did not feel that their responses would be very useful suggesting that someone else should be contacted instead. These people were reminded that the study was about their opinions on forest issues whether neutral, positive or negative, and were encouraged still to respond. It may be fair to assume that those individuals who upon receiving the questionnaire failed to return it may have believed their knowledge about forests and forest management was too low to offer a perceived useful response. In fact, a few questionnaires were returned with a note stating exactly this.

About the questionnaire

The questionnaire was one of the longest administered in the province on natural resource management issues. It consisted of 83 closed-ended items so to address the multiple objectives and achieve the broad goal of providing a comprehensive understanding of public attitudes toward forests and forest management issues in the province. Attitudes are defined as having four main components:

- Affective – feelings of liking or disliking an object
- Cognitive – beliefs about an object or issue that may or may not be true
- Behavioral intention – how one would behave in a certain situation
- Behavior – actual behavior measuring what someone has done, or verbal behavior what someone states they have done. Verbal versus overt behavior is not necessarily consistent.

Understanding that people try to keep all components of attitude consistent, it is important to identify and document each aspect of attitude where possible within a human dimensions study so to truly address the goal of understanding public attitudes toward the issue. The questionnaire consisted of sections mainly focused on the affective and cognitive aspects of attitude, however, certain management oriented items did begin to address what the public may support or oppose,

thus exploring behavioral intention. There were two items that addressed actual behavior asking respondents about their direct involvement in the forestry industry.

The questionnaire began by having respondents describe the current state of the forests on the island by circling a number from one to ten positioned between a series of opposite adjectives (e.g., unsustainable – sustainable). This semantic differential scale is often used in social science research to explore the affective (i.e., emotional aspect) component of attitude. As it is important to begin a questionnaire with easier questions for the respondent to answer, the first item began with these eight opposite adjective items.

The next section of the questionnaire began to build on the first section by exploring in more depth public attitudes and perceptions of wood supply on the island and perceptions of whether forest management was getting worse, remaining the same, or improving. This part of the questionnaire consisted of 14 items. For the first ten items, respondents were asked to respond to a statement along a five-point Likert scale; the scale ranged from strongly disagree to strongly agree and included a neutral response to address the concern of creating attitudes toward an issue, rather than documenting existing attitudes. While some researchers have utilized a seven-point scale including “moderately disagreeing” and “moderately agreeing” to increase the variance in responses, for this study a five-point scale was considered acceptable. Questions 11 to 14 addressed the nature of sustainability of the forest. Respondents stated their perceptions of management in Newfoundland and Labrador compared to other parts of Canada. In addition, residents were asked whether they believed Kruger, Abitibi or the Crown was doing a better job of managing the forest within the province in terms of managing the best for jobs, biodiversity, marten habitat, sustainable forest harvest, general forest health and recreation.

To address the cognitive component of attitude, seven statements were given to respondents where they were asked to state whether they believed the statement to be generally true, generally false, or not sure. A “not sure” response is included to minimize guessing, thus ensuring a more accurate representation of knowledge. A knowledge score was developed based upon these items by allocating a score of one for a correct response and considering an incorrect response and not sure response as zero. Knowledge scores were then compared between the

western and central region and later used to explore the importance of knowledge in influencing attitudes.

After the knowledge section, respondents were asked about their perceptions of the impact of clear-cutting, domestic wood harvesting and forestry in general on wildlife and streams. There was also an item regarding enforcement of regulations and whether there should be limits on domestic wood harvesting. This part of the questionnaire consisted of eight items.

The largest part of the questionnaire focused on understanding public attitudes toward management priorities for the forests on the island portion of the province. Residents were asked their opinions on 33 different items in this section. Respondents were asked to rank various purposes of the forest on a ten-point scale, as well as agree or disagree with statements that set up trade-off questions between jobs and various other uses of the forest including outfitting, watershed, and wildlife issues. This section also included issues regarding aesthetic values or view-sheds around resorts, highways and communities.

To examine issues of potential behavioral conflicts in forest management, respondents were asked to assess the credibility of various organizations including the provincial government, Western Newfoundland Model Forest (WNMF), Pulp and Paper Industry and the Protected Areas Association of Newfoundland and Labrador (PAA). Comparisons were made between the western and central regions to offer managers advice on what groups would be the best messengers to deliver key forestry messages to each group of residents.

The final section of the questionnaire included variables such as gender and age to allow for comparison of the sample to the population. These variables are also often important in predicting and understanding the nature of attitudes on natural resource management issues. The last two items were used to determine whether the respondent or a member of their immediate family derived income directly from timber activities or non-timber activities. One might hypothesize that the attitudes and beliefs of those directly benefiting from the forest may be different than those with no direct connection to the forest.

Respondents were thanked at the end of the questionnaire for their time. Being such a long and fairly complex questionnaire it would have taken on average approximately 15 – 20 minutes to complete. Additional comments were welcomed, however, given the length of the questionnaire it was not anticipated to receive a lot of extra comments. It was quite encouraging that 12% (n=50) of the western region returned questionnaires with additional comments and slightly more comments came from the central region (14% or n=66 had comments). Given the number of people that took the time to write additional comments, call long distance to express their concern about their own capacity to offer “useful” answers, and the overall acceptable response rate (to be discussed in the next section) to the long mail-back questionnaire, these factors alone offer a sense of the importance of the forestry issue to the residents of the Island. Several individuals included long letters clearly stating their views of how bad they believed the current state of the forests were in on the Island. These additional comments will be incorporated where possible throughout the results section of the report and appear in Appendix 3.

4.0 Results

Response rates

Due to the nature of the sampling for the western and central region, 833, and 862 acceptances over the telephone to complete the questionnaire respectively were obtained. For the western region there were 11 questionnaires that were returned as non-deliverable while for the central region there were 19. Central did return more questionnaires (n=466) than western (n=429) producing a response rate of 55% compared to 52%. Additional questionnaires (15 from western and 12 from central) have been received prior to the completion of this study, however, a decision was made to no longer enter new data and thus were not included in this analysis. If these were included, response rates would slightly increase to 54% for western and 57% for central; overall results would not be dramatically affected. In contacting the households in the western region and particularly in the Stephenville area there were several individuals who had no willingness at all to even listen about the study and upon hearing it was about the forests hung up almost immediately. While refusal rates are always higher in larger urban centers and the western region does contain Corner Brook, the western region has also been exposed most recently to job losses in Corner Brook and the announcement of the closure of the Stephenville mill. These factors may explain the lower response rate for the western region. This being said, a response rate of greater than 50% from the general public rather than a special interest group, in a mail-back questionnaire with 83 items, and only one postcard follow-up is excellent. Sample sizes are sufficiently large for results and conclusions to be accurate 19 times out of 20, plus or minus 5%, and be representative of each region.

About the sample

Most respondents to the questionnaire were male. Approximately 61% of respondents in the western region were male and an even larger percentage (71%) of respondents were male in the central region sample. The socio-demographic characteristics of the population of these regions while not exactly 50-50 are much closer to an equal distribution of genders than the sample for this study. The study sample has over sampled males and under sampled females. This

phenomenon is similar to other human dimension studies done in the province that have focused upon activities that are traditionally male-oriented (e.g., moose management). It is interesting that although the “next birthday rule” should produce an equal number of males and females that upon receiving the questionnaire many households have the male complete the questionnaire. Comments received by telephone were almost all women who were concerned that they knew very little about forests and forest management and who felt someone else should be contacted who would be more knowledgeable. In addition, incomplete returned questionnaires often accompanied by a note were mainly from women or elderly men stating the same comments.

Ages of respondents from the two regions were similar. Most respondents were between 46 and 65 years of age. Only 14% of respondents were under 36 years of age (Table 1). When comparing gender and age of respondents, females who responded to the questionnaire tended to be between 36 and 55 years of age (Table 2).

In 2000, Bonnell (2000) found that nearly 22% of respondents or their immediate family derived an income from timber activities on forested lands. Today, approximately 13% of the western region and 15% of the central region residents responded “yes” to the question: “Do you or any of your immediate family derive income from timber activities (pulpwood or sawlog cutting, selling of firewood, etc) on forested land?” These 126 individuals (Table 3) in total may have different attitudes and beliefs than the other respondents to the questionnaire. Where such differences exist, these are highlighted in the results section. This reduction in people in the industry may be the beginning or continuation of a decline seen in the industry. Slightly less (approximately 10% of respondents or their immediate family members) derive income from non-timber activities such as selling of rabbits or berries, guiding or trapping on forested land (Table 4). Bonnell (2000) found the same percentage of residents in his earlier study.

Table 1: Age of respondents

	What is your age?						Total
	18-25	26-35	36-45	46-55	56-65	over 65	
Western Region	14 3.3%	46 10.9%	84 20.0%	106 25.2%	115 27.3%	56 13.3%	421 100.0%
Central Region	9 2.0%	53 11.5%	91 19.7%	100 21.7%	132 28.6%	76 16.5%	461 100.0%
Total	23 2.6%	99 11.2%	175 19.8%	206 23.4%	247 28.0%	132 15.0%	882 100.0%

Table 2: Gender

		Are you female or male?		Total
		female	male	
What is your age?	18-25	12 52.2%	11 47.8%	23 100.0%
	26-35	39 39.4%	60 60.6%	99 100.0%
	36-45	69 39.7%	105 60.3%	174 100.0%
	46-55	73 36.0%	130 64.0%	203 100.0%
	56-65	65 26.7%	178 73.3%	243 100.0%
	over 65	32 25.0%	96 75.0%	128 100.0%
	Total		290 33.3%	580 66.7%

Table 3: Do you or any of your immediate family derive income from timber activities (pulpwood or sawlog cutting, selling of firewood, etc.) on forested land?

	Do you or any of your immediate family derive income from timber activities (pulpwood or sawlog cutting, selling of firewood, etc.) on forested land?			Total
	Yes	No	Not sure	
Western Region	55 13.1%	360 85.9%	4 1.0%	100.
Central Region	71 15.3%	386 83.2%	7 1.5%	100.
Total	126 14.3%	746 84.5%	11 1.2%	100.

Table 4: Do you or any of your immediate family derive income from non-timber activities (selling of rabbits or berries, guiding, trapping, etc.) on forested land?

	Do you or any of your immediate family derive income from non-timber activities (selling of rabbits or berries, guiding, trapping, etc.) on forested land?			Total
	Yes	No	Not sure	
Western Region	39 9.3%	378 89.8%	4 1.0%	421 100.0%
Central Region	49 10.6%	410 88.4%	5 1.1%	464 100.0%
Total	88 9.9%	788 89.0%	9 1.0%	885 100.0%

Perceptions of the current state of the forests on the Island

There were no statistically significant differences at $p = 0.05$ across any of the attitudinal items regarding the current state of the forests between residents of central and western region. For the most part, residents across the semantic differential scale seemed somewhat inconsistent in their responses. For example, mean scores ranged from 5.04 to 6.39 even though items were often reversed (Figure 1). Respondents felt strongest about logging destroying habitat (e.g., mean scores of 6.39 and 6.32 for western and central regions respectively), that the forests were unhealthy (e.g., 6.03 and 5.91) and that the current state of the forests was ugly (e.g., 5.78 and 5.85). However, most respondents still believed the forest was sustainable as the mean scores of 5.75 and 5.62 suggest, yet low mean scores of 5.22 and 5.04 resulted from responses suggesting the perception that the forests are only barely considered managed well. Figures 2 to 9 illustrate the various strengths of responses across the opposite adjective scale by the two regions. There is no significant difference between the two regions across these items.

Most residents in both regions believe forests on the island are sustainable with the largest percentages found in categories 5, 6, 7 and 8 along the ten-point scale (Figure 2). Slightly more residents in the central part of the Island (18.3%) than the western region (15.1%) stated a 1, 2 or 3 clearly indicating their view that the current state of the forests on the Island are unsustainable. Mean scores were 5.75 and 5.62 for western and central residents respectively.

When asked whether the forests were managed badly or managed well across the same ten-point scale most residents responded 4, 5 or 6 indicating levels of uncertainty or doubt that the forests are clearly being managed well. Approximately 22% of western and 26% of central residents indicated 1, 2 or 3 suggesting views that the forests are managed badly. In contrast approximately 15% responded 8, 9 or 10. Mean scores were 5.22 and 5.04 for western and central residents respectively (Figure 3).

The strongest negative opinions of the current state of the forests on the Island were demonstrated by 36% of residents in both regions indicating 8, 9 or 10 clearly stating that they felt habitat was destroyed rather than created by the current forest management (Figure 4). An

Figure 1: Attitudes towards current state of the forests

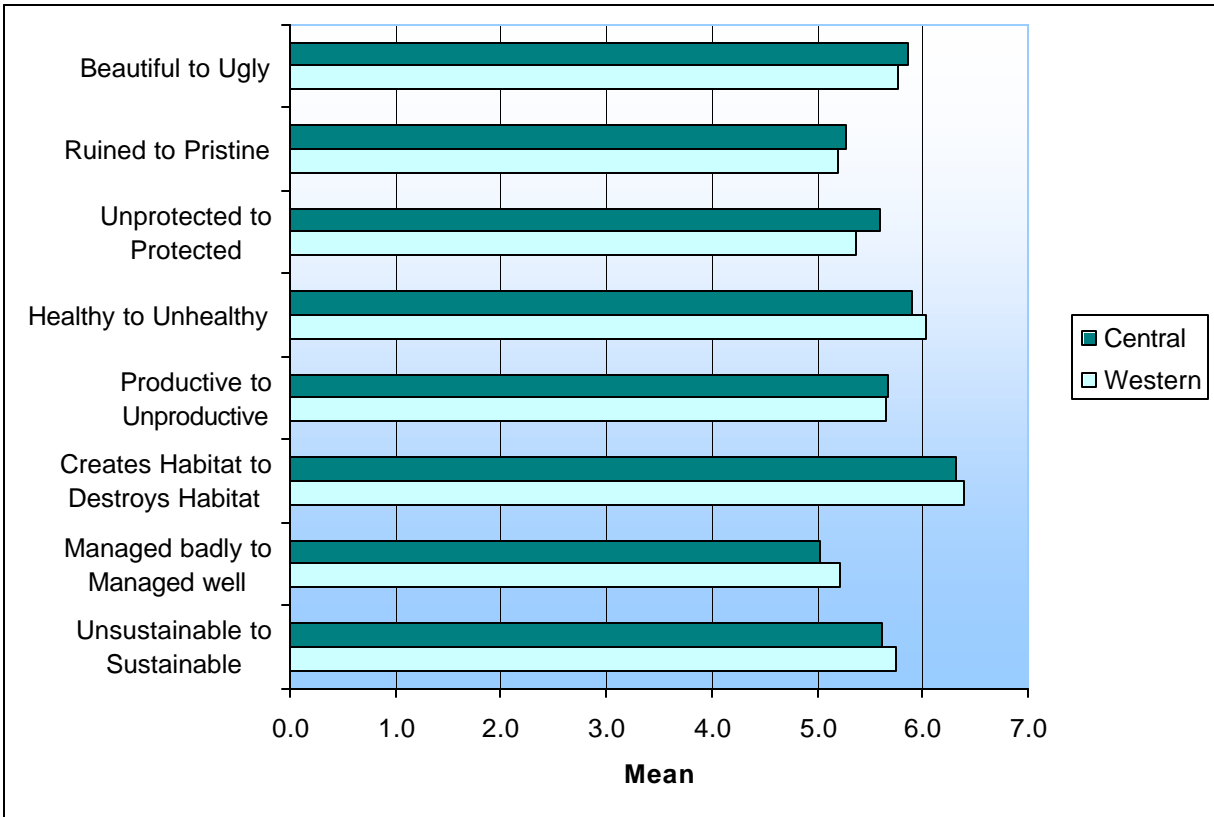


Figure 2: Percentage of responses by region, sustainable to unsustainable

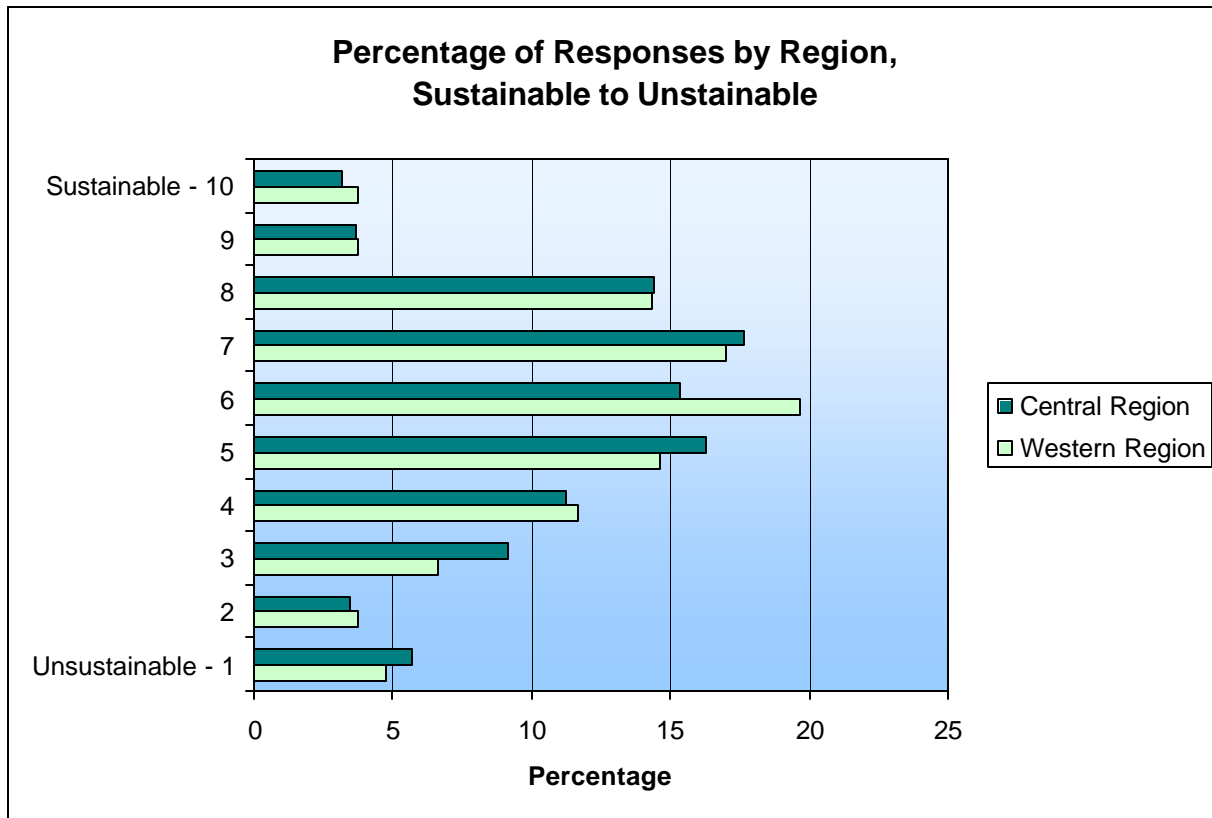


Figure 3: Percentage of Responses by Region, Managed Badly to Managed Well

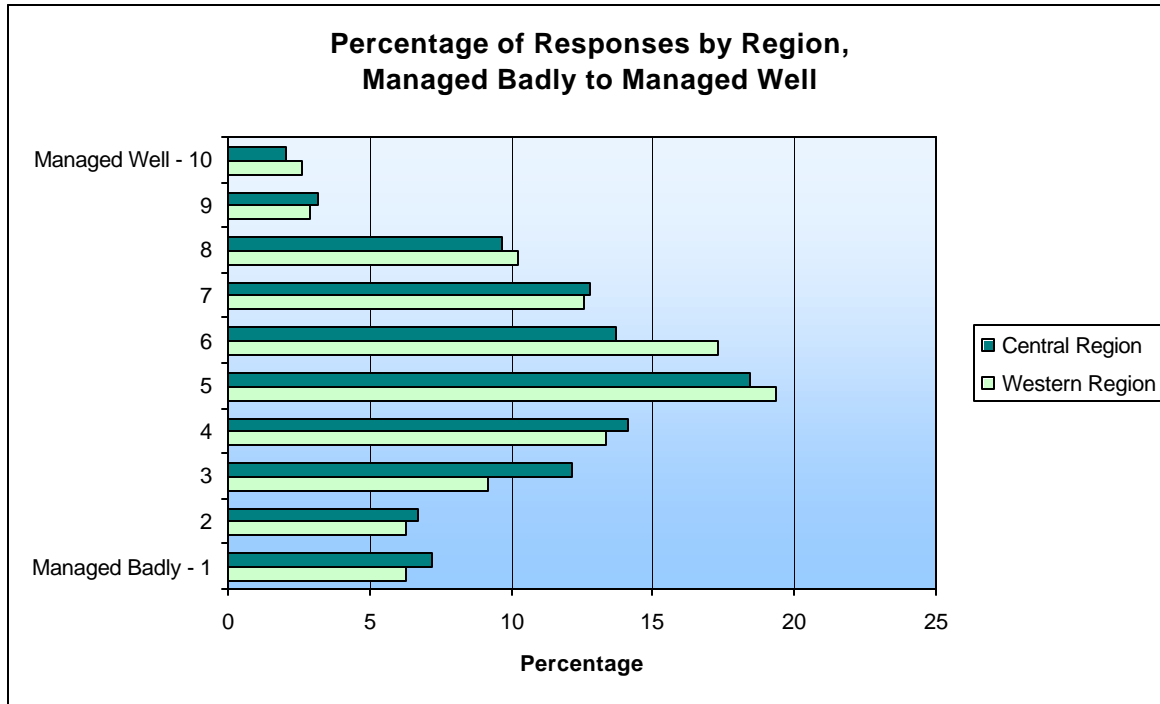
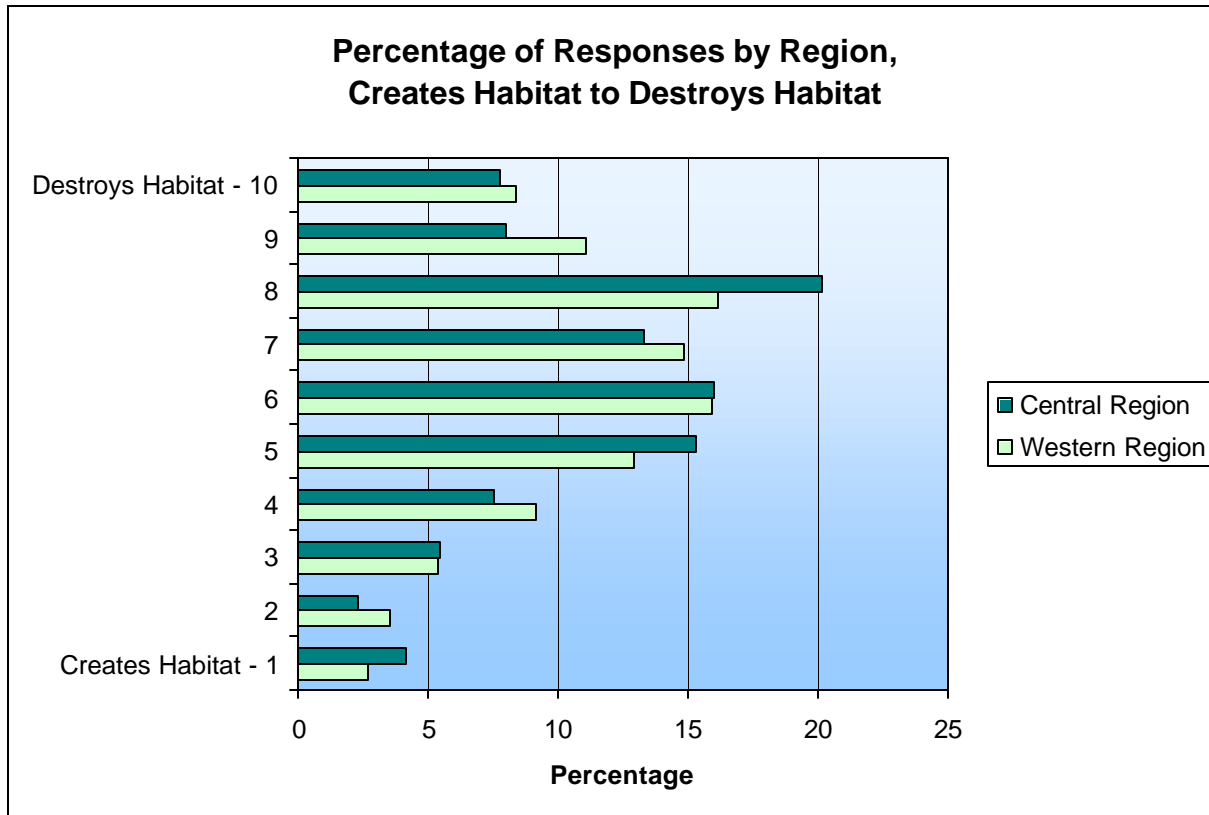


Figure 4: Percentage of Responses by Region, Creates Habitat to Destroys Habitat



additional 45% approximately from both regions stated 5, 6 or 7. In contrast, only 12% stated 1, 2 or 3 indicating their belief that habitat was created by the current state of forest management. Mean scores were 6.39 and 6.32 for western and central residents respectively.

Approximately 55% of Island residents from both regions believed the forests were unproductive indicating 5, 6 or 7 on the ten-point semantic differential scale (Figure 5). An additional 17% of western residents and 20% of central residents stated 8, 9 or 10. Approximately 25% of residents indicated a value under 5. Mean scores were 5.65 and 5.67 for western and central regions respectively.

Strong negative attitudes toward the current state of the forests were also evident from most respondents believing the forests were unhealthy (Figure 6). Approximately 26% of residents from both regions indicated 8, 9 or 10 on a scale from one to ten going from healthy to unhealthy. An additional 32% responded 6 or 7. Mean scores for the scale were the second highest of these opposite adjective items at 6.03 for western and 5.91 for central residents.

Despite the strong negative attitudes demonstrated by responses to many of the previous items, approximately 50% of respondents believed forests were protected indicating 6, 7, 8, 9 or 10 in their responses (Figure 7). Approximately 35% stated responses below 5. Central region residents were slightly more positive than western residents in believing forests were protected. Mean scores were 5.38 and 5.60 for western and central regions respectively.

Respondents did not hold strong opinions on whether the forests today were ruined or pristine as evident by the mean scores that were close to 5.0 (5.20 for western and 5.27 for central). Western residents were more likely to believe that forests were ruined and less pristine than central residents (Figure 8), however only 48% of central residents and 45% of western residents indicated 6, 7, 8, 9, or 10 on the scale thus supporting that the forests were more pristine than ruined.

Figure 5: Percentage of Responses by Region, Productive to Unproductive

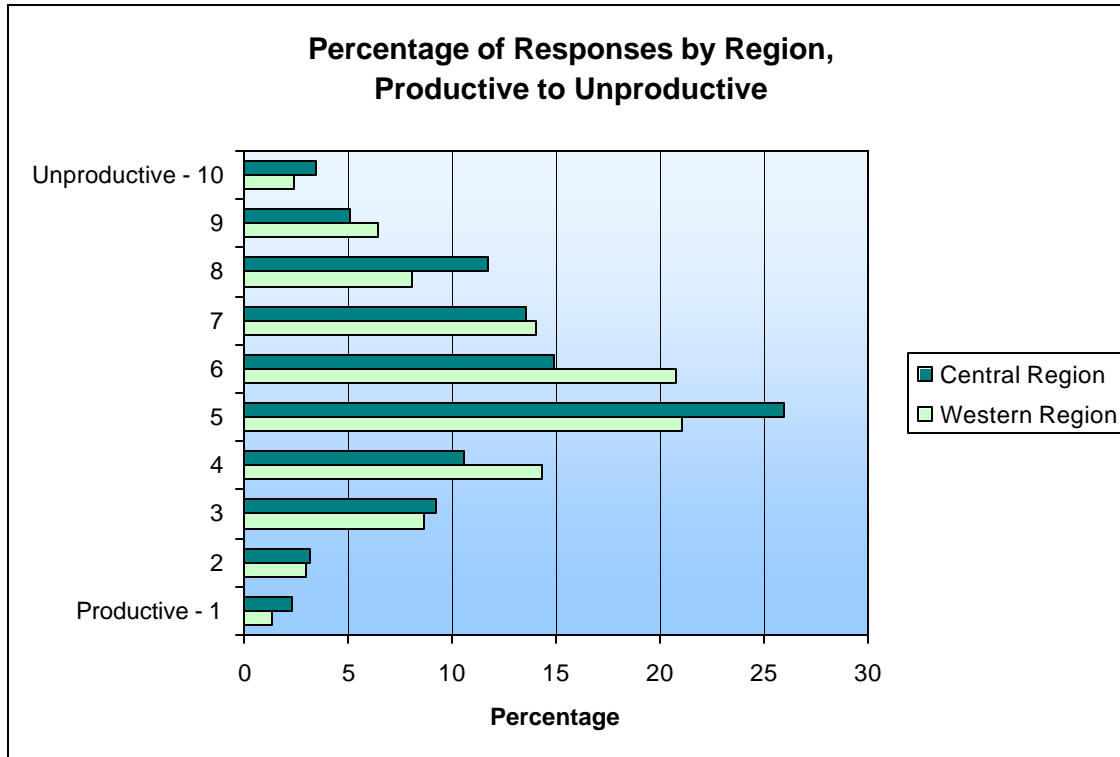


Figure 6: Percentage of Responses by Region, Healthy to Unhealthy

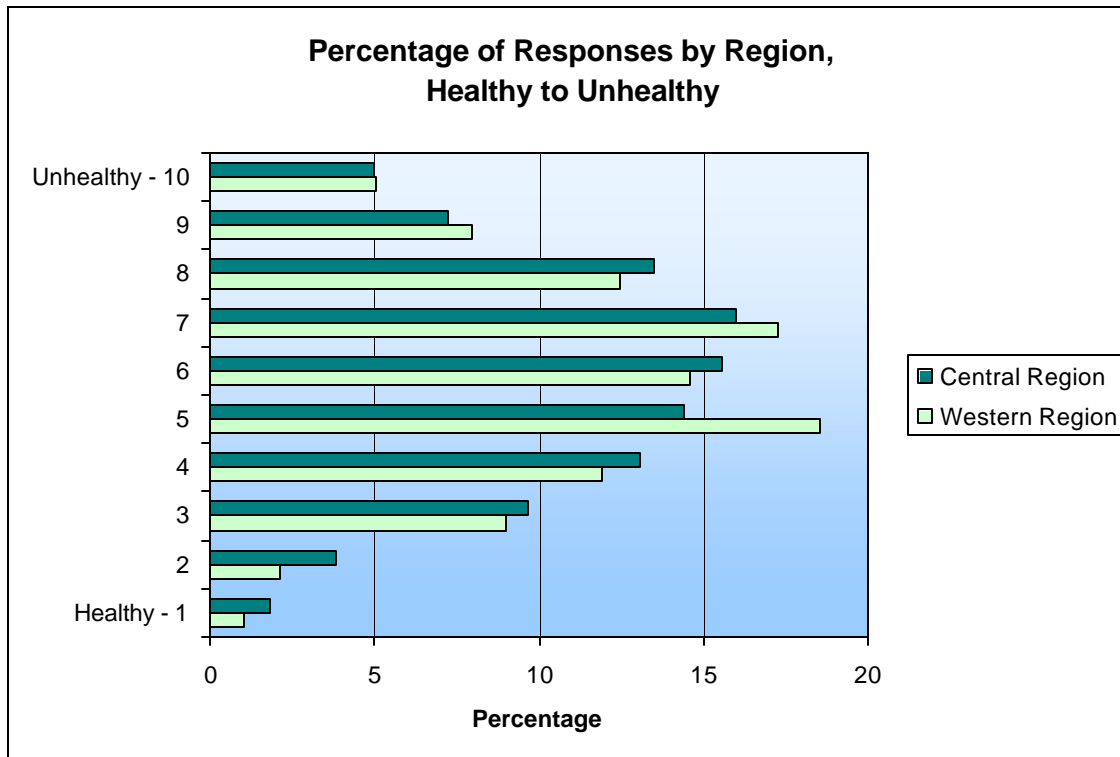


Figure 7: Percentage of Responses by Region, Unprotected to Protected

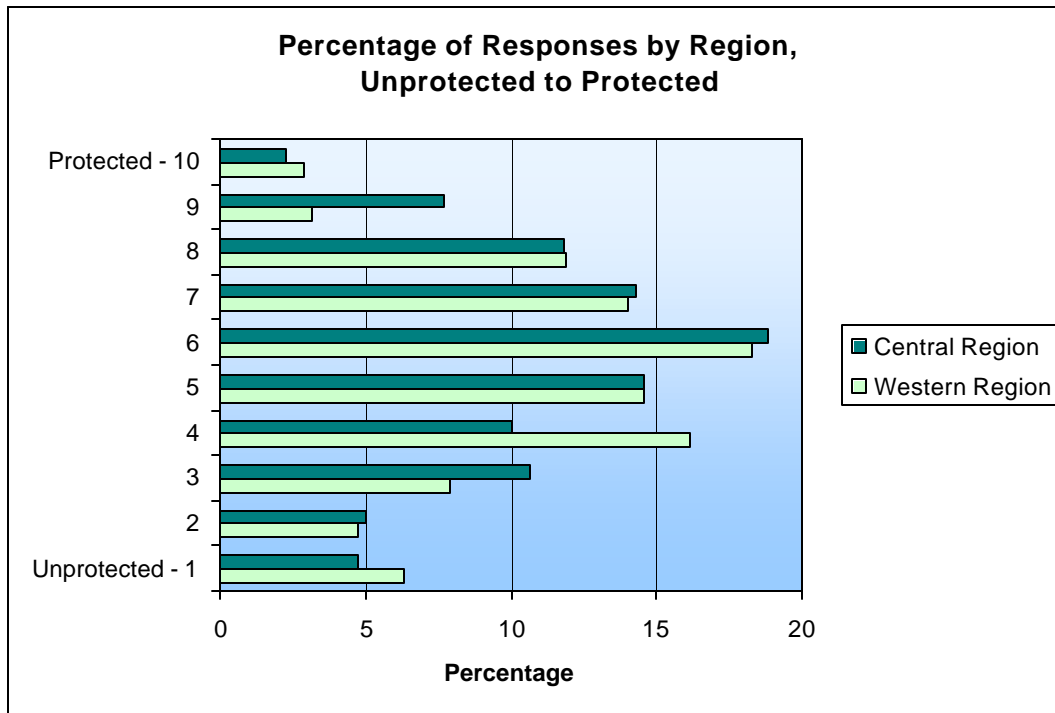
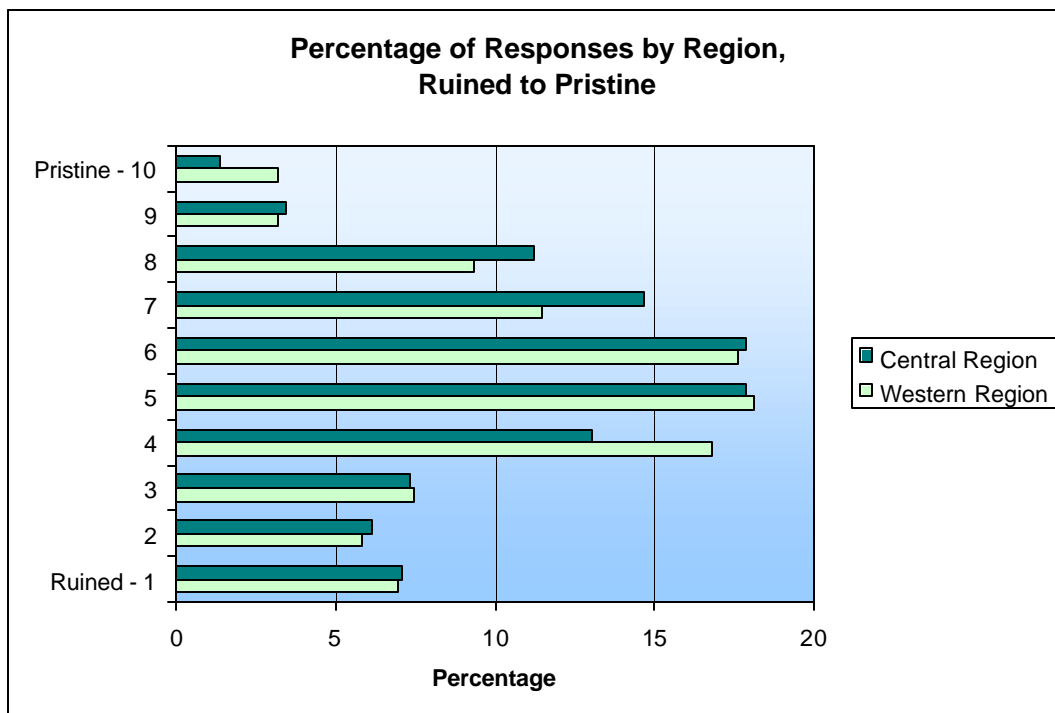


Figure 8: Percentage of Responses by Region, Ruined to Pristine



In contrast to the previous item, approximately 57% of residents in both regions indicated 6, 7, 8, 9 or 10 feeling that the forests today were more ugly than beautiful on the island. A large percentage (approximately 30%) responded strongly expressing views by circling 8, 9 or 10 (Figure 9). Mean scores were one of the more extremes within the semantic differential scale; central residents had a mean score of 5.85 while western residents had a mean score of 5.78.

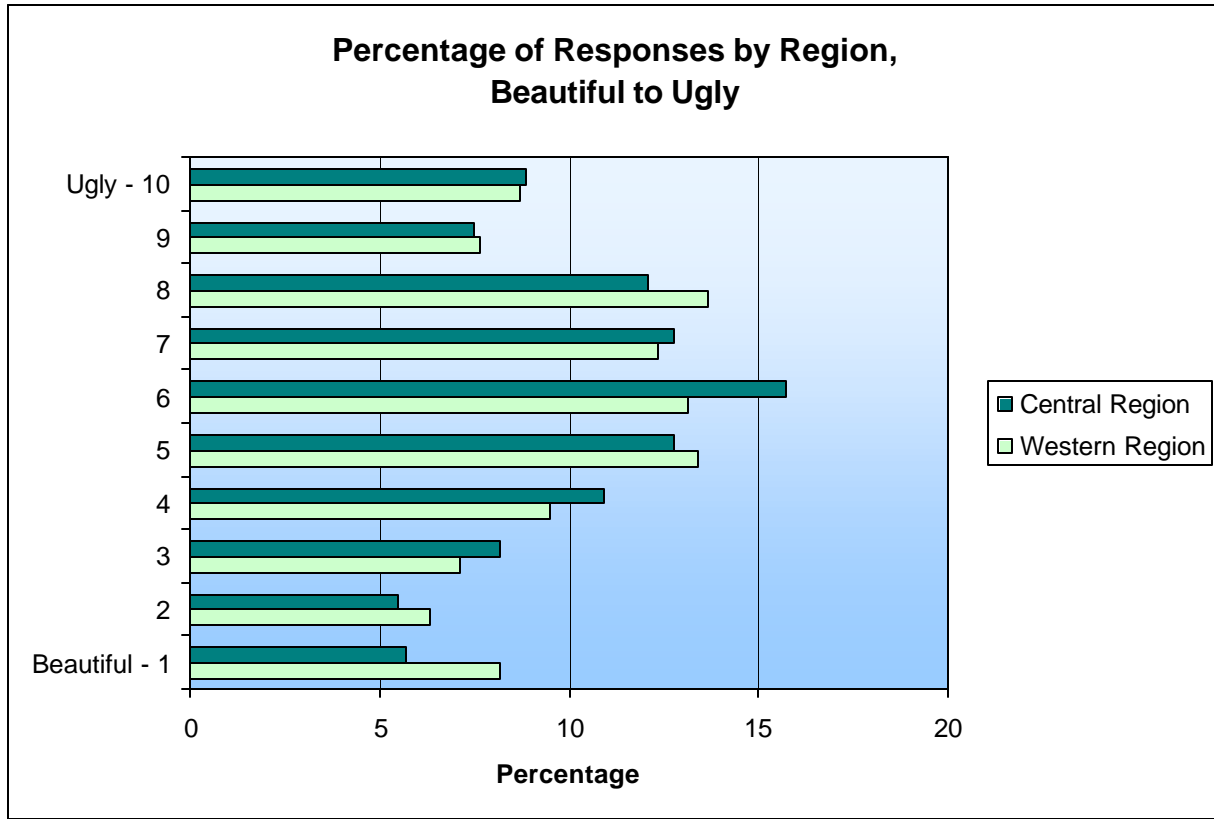
The semantic differential or opposite adjectives scale offers an initial assessment of residents perceptions of the current state of the forests on the island portion of Newfoundland and Labrador. There were no statistically significant differences between central and western residents across these initial eight items. While central residents tended to feel the forests were less sustainable, less managed well, more unproductive and more ugly than perceived by western residents, opinions were similar across the two regions. Western residents were more likely to see the current state of forests as destroying habitat, unhealthy, less protected and more ruined than their central counterparts.

Perceptions of available wood supply

This next section presents the results of attitudinal items that were based on the Likert response set format (e.g., strongly disagree to strongly agree). These results build directly upon the initial exploration of the affective component of attitude discussed earlier. The difference in this section from the previous one is quite clear. Respondents are now asked to respond to specific statements about their attitudes and these results help provide a better understanding of public attitudes toward the current state of the forests on the island portion of the province. It also becomes easier to distinguish public attitudes toward forest management issues; in general, public attitudes in western and central regions of the island portion of the province appear quite negative.

Most western residents (56%) and central residents (61%) disagreed in some way with the statement: “The island portion of the province still has plenty of forests”. Only 28% of western residents and 26% of central residents agreed with the statement. It is interesting to note that

Figure 9: Percentage of Responses by Region, Beautiful to Ugly



most people did express an opinion on the issue with relatively few individuals stating neutral (Table 5).

Approximately 54% of central residents and 49% of western residents disagreed to some degree with the statement: “Current forestry management is ensuring there will be adequate supplies of wood for future uses” (Table 6). Only 25% of respondents agreed with the statement. On another item focusing on wood supply for future uses, most respondents in western (68%) and in central (66.5%) disagreed to some degree with the statement: “There is sufficient wood on the Island for all users including paper mills, sawmills, and domestic firewood cutters.” In human dimensions research, the direction of agreement or disagreement is interesting but also the strength of agreement or disagreement is important to understand. Approximately 24% of western residents and 19% of central residents “strongly disagreed” with the statement regarding sufficient wood existing on the island for the various users suggesting stronger formed attitudes toward this issue than others discussed so far (Table 7). In comparison to a previous study focused on opinions of western Newfoundlanders toward sustainable forest management that used the same item, Bonnell (2000) found that 51% of respondents felt that there was insufficient wood on the Island to support the paper mills, sawmills, and domestic firewood cutters. In a relatively short period of time this belief has become much stronger amongst western residents, now at 68%.

Perceptions of the amount of wood available for future uses and diverse interest groups is also linked with people’s perception of viability of the forest mill operations on the island portion of the province. Approximately 50% of residents in both regions agreed to some degree with the statement: “There are not enough trees left on the Island to sustain two mills in the province”. It is interesting to note that a large percentage of residents (approximately 30%) were neutral (Table 8).

While uncertain about the possible management implications if there is insufficient wood left on the island portion of the province, residents clearly believe there is not enough wood left to support all the users. There is no longer the belief from the general public that the forests are

endless resources; in fact residents seem resolved to accept that there will not be enough forests for the future.

Table 5: The Island portion of the province still has plenty of forests.

	The Island portion of the province still has plenty of forests.					Total
	Strongly disagree	Disagree	Neither	Agree	Strongly agree	
Western Region	61 15.1%	166 41.2%	63 15.6%	107 26.6%	6 1.5%	403 100.0%
Central Region	67 14.5%	216 46.9%	57 12.4%	112 24.3%	9 2.0%	461 100.0%
Total	128 14.8%	382 44.2%	120 13.9%	219 25.3%	15 1.7%	864 100.0%

Table 6: Current forestry management is ensuring there will be adequate supplies of wood for future uses.

	Current forestry management is ensuring there will be adequate supplies of wood for future uses.					Total
	Strongly disagree	Disagree	Neither	Agree	Strongly agree	
Western Region	52 12.8%	147 36.2%	107 26.4%	93 22.9%	7 1.7%	406 100.0%
Central Region	49 10.6%	198 43.0%	93 20.2%	119 25.8%	2 .4%	461 100.0%
Total	101 11.6%	345 39.8%	200 23.1%	212 24.5%	9 1.0%	867 100.0%

Table 7: There is sufficient wood on the Island for all users including paper mills, sawmills, and domestic firewood cutters.

	There is sufficient wood on the Island for all users including paper mills, sawmills, and domestic firewood cutters.					Total
	Strongly disagree	Disagree	Neither	Agree	Strongly agree	
Western Region	99 24.4%	177 43.6%	61 15.0%	62 15.3%	7 1.7%	406 100.0%
Central Region	89 19.3%	217 47.2%	67 14.6%	79 17.2%	8 1.7%	460 100.0%
Total	188 21.7%	394 45.5%	128 14.8%	141 16.3%	15 1.7%	866 100.0%

Table 8: There are not enough trees left on the Island to sustain two mills in the province.

	There are not enough trees left on the Island to sustain two mills in the province.					Total
	Strongly disagree	Disagree	Neither	Agree	Strongly agree	
Western Region	13 3.2%	83 20.4%	114 28.1%	148 36.5%	48 11.8%	406 100.0%
Central Region	8 1.8%	85 18.6%	135 29.6%	179 39.3%	49 10.7%	456 100.0%
Total	21 2.4%	168 19.5%	249 28.9%	327 37.9%	97 11.3%	862 100.0%

Perceptions of sustainable forestry management

Residents from central and western Newfoundland were mainly undecided on whether forest management has been better in the past five years (Table 9). The most common response from residents in both regions was neutral to the statement: “Over the past five years there has been better forest management on the Island”. Approximately 38% of residents stated neutral to this statement. On a positive note, nearly 40% of residents in both regions agreed to some degree with the statement. These results are slightly higher than those found in Bonnell’s (2000) study (35% agreed) but comparable. In contrast, however, approximately 22% of western residents and 24% of central residents disagreed with the statement while six years ago, Bonnell (2000) found a stronger percentage of disagreement (31%) amongst western residents.

Most residents do believe that forest management is sustainable to some degree on the Island. The results are almost identical to the study from Bonnell (2000). Approximately 23% of residents stated that forest management was unsustainable and approximately 20% of residents were not sure. The most common response was somewhat sustainable. Given the clear differences in public perceptions of available wood supply today versus in 2000 when Bonnell (2000) completed his study, it is interesting that perceptions of how sustainable forest management is on the Island has not changed (Figure 10).

Most residents (51%) felt that forest management on the Island was about the same (Table 10). On a positive note, more people thought that management was getting better (28%) than getting worse (approximately 21%). No significant differences existed between central and western residents in their attitudes on this item. When asked about how forest management practices on the Island compared to those found in the rest of Canada, many respondents (42% western residents and 47% central residents) did not offer a response choosing “not sure”. The next most common response was to suggest that Newfoundland and Labrador were no better or no worse than other provinces (Table 11). Only two residents (0.4%), who were from the central region, stated that NL had the best forest management in Canada. Results were consistent with Bonnell’s (2000) earlier study where he found that 7% of western residents placed the province’s

Figure 10: Forest management on the Island is or is not sustainable

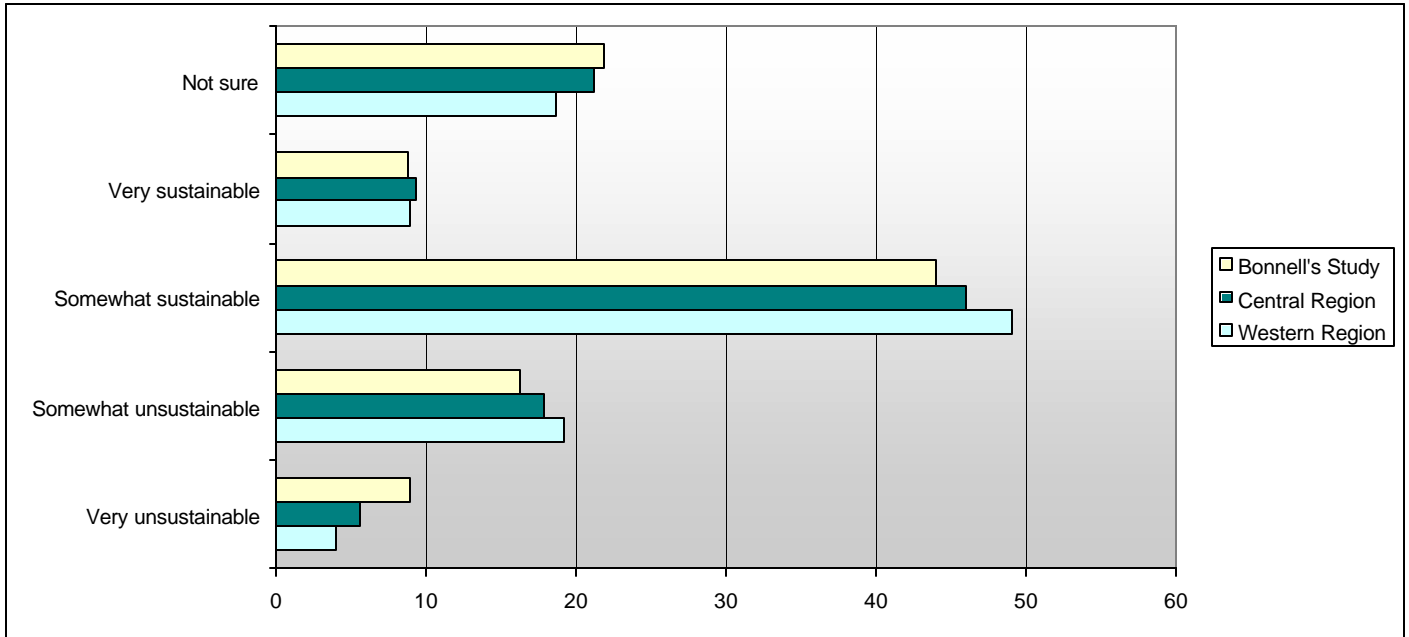


Table 9: Over the past five years there has been better forest management on the Island.

	Over the past five years there has been better forest management on the Island.					Total
	Strongly disagree	Disagree	Neither	Agree	Strongly agree	
Western Region	17 4.2%	71 17.6%	153 38.0%	150 37.2%	12 3.0%	403 100.0%
Central Region	14 3.1%	93 20.4%	168 36.9%	168 36.9%	12 2.6%	455 100.0%
Total	31 3.6%	164 19.1%	321 37.4%	318 37.1%	24 2.8%	858 100.0%

Table 10: Forest management on the Island is getting worse, about the same, getting better

	Forest management on the Island is:			Total
	getting worse	about the same	getting better	
Western Region	87 21.7%	201 50.1%	113 28.2%	401 100.0%
Central Region	92 20.2%	233 51.1%	131 28.7%	456 100.0%
Total	179 20.9%	434 50.6%	244 28.5%	857 100.0%

Table 11: In your opinion, how do forest management practices on the Island compare with the rest of Canada?

	How do forest management practices on the Island compare with the rest of Canada?						Total
	NL has the worst forest management in Canada	NL is one of the worst provinces in forest management	NL is no better or no worse than other provinces	NL is one of the best provinces in forest management	NL has the best forest management in Canada	Not sure	
Western Region	19 4.7%	64 15.8%	131 32.4%	20 5.0%	0 .0%	170 42.1%	404 100.0%
Central Region	21 4.6%	71 15.5%	132 28.9%	18 3.9%	2 .4%	213 46.6%	457 100.0%
Total	40 4.6%	135 15.7%	263 30.5%	38 4.4%	2 .2%	383 44.5%	861 100.0%

management among the best in Canada, 33% felt the province was no better or no worse than other provinces, and 19% felt the province was among the worse in the country.

Who are perceived as the best managers of the forests?

The next few items explore with residents on whose lands they feel the forest is best managed. The concept however needs to be further defined in terms of best managed for what? Several ideas are considered: best managed for sustaining jobs, for biodiversity, for Newfoundland marten habitat, for sustainable forest harvest, for general forest health, and for recreation. In addition, the issue of enforcement of forestry regulations is examined. Finally two items that focus on long-term access to a stable wood supply and issues of control are considered within this section.

Approximately 50% of residents disagreed with the statement: “Forestry regulations are well-enforced”(Table 12). A considerable percentage of respondents were neutral (24% for western residents and 21% for central residents). Approximately 28% of residents in both regions believed that forest regulations are well-enforced. This negative perception of successful enforcement of regulations may be one of the reasons behind negative perceptions toward overall forest management.

A large majority of residents (approximately 83%) agreed or strongly agreed that long-term access to a stable wood supply is necessary for the survival of the forest industry (Table 13). However, over 70% of residents felt that too much of the forest on the Island is controlled by the pulp and paper companies. Approximately 11% of western residents disagreed while only 7% of central residents held the same view (Table 14).

Most residents in both regions stated “not sure” when asked to consider on whose lands the forest was best managed for various attributes. The lowest uncertainty was still quite high at 44% expressed by the western region across the issues of Newfoundland marten habitat and recreation. Central area residents expressed the highest uncertainty (73%) across the issue of biodiversity. Of those residents who did choose either Abitibi, Kruger or the Crown as the best

Table 12: Forestry regulations are well-enforced.

	Forestry regulations are well-enforced.					Total
	Strongly disagree	Disagree	Neither	Agree	Strongly agree	
Western Region	36 8.9%	161 39.7%	98 24.1%	105 25.9%	6 1.5%	406 100.0%
Central Region	42 9.2%	186 40.5%	98 21.4%	125 27.2%	8 1.7%	459 100.0%
Total	78 9.0%	347 40.1%	196 22.7%	230 26.6%	14 1.6%	865 100.0%

Table 13: Long-term access to a stable wood supply is necessary for the survival of the forest industry.

	Long-term access to a stable wood supply is necessary for the survival of the forest industry.					Total
	Strongly disagree	Disagree	Neither	Agree	Strongly agree	
Western Region	15 3.7%	20 5.0%	35 8.7%	217 53.7%	117 29.0%	404 100.0%
Central Region	17 3.7%	17 3.7%	38 8.3%	260 57.0%	124 27.2%	456 100.0%
Total	32 3.7%	37 4.3%	73 8.5%	477 55.5%	241 28.0%	860 100.0%

Table 14: Too much of the forest on the Island is controlled by the pulp and paper companies.

	Too much of the forest on the Island is controlled by the pulp and paper companies.					Total
	Strongly disagree	Disagree	Neither	Agree	Strongly agree	
Western Region	14 3.5%	31 7.7%	75 18.6%	181 44.9%	102 25.3%	403 100.0%
Central Region	6 1.3%	28 6.2%	88 19.4%	223 49.2%	108 23.8%	453 100.0%
Total	20 2.3%	59 6.9%	163 19.0%	404 47.2%	210 24.5%	856 100.0%

manager, the Crown was clearly considered the best manager across all issues except for sustaining jobs; approximately 26% of western residents felt Kruger was the best manager compared to only 14% who believed the Crown was better for sustaining jobs. Central area opinions on the jobs issue was less clear, with 11% suggesting Kruger, 12% suggesting Abitibi, and 14% suggesting the Crown were the best managers for sustaining jobs. And while there was still greater support for the Crown as the best manager on the issue of providing a sustainable forest harvest, percentages of support from western residents for Kruger were strong (Figure 11).

Knowledge about the forests

Figure 12 illustrates the percentage of correct responses for western and central residents across the seven knowledge items. Not sure responses were offered to reduce guessing although for most items residents did not use this response to a great degree believing they knew the correct response. In reality, knowledge levels were extremely low; there were only two items where more than 50% of the residents identified the correct response. Most residents in both regions understood that forests on the Island need to be regularly thinned, and most residents understood that the law requires that a buffer of trees be left along rivers and streams.

Less than 2% correctly identified that the statement: “To ensure a sustainable forest on the Island, trees must be replanted” was generally false. Perhaps more disturbing for resource managers is the fact that 95% of western residents and 97% of central residents believed the statement was generally true. Less than 11% of residents correctly identified that the statement: “Clear-cutting is the most common practice of forest management on the Island” was generally false. Most residents believed the answer was “generally true”. Very few western residents (12%) and central residents (8%) correctly identified that there was no law requiring a buffer around outfitting camps. More than 50% of central residents believed that there was a required buffer while only 36% of western residents believed there was a required buffer; the remaining residents from western (52%) and central (42%) indicated “not sure”. Only 16% of western residents and 19% of central residents correctly identified that the statement: “Trees are being cut in Labrador because there are not enough trees left on the island” was generally false.

Figure 11: On whose lands is the forest best managed?

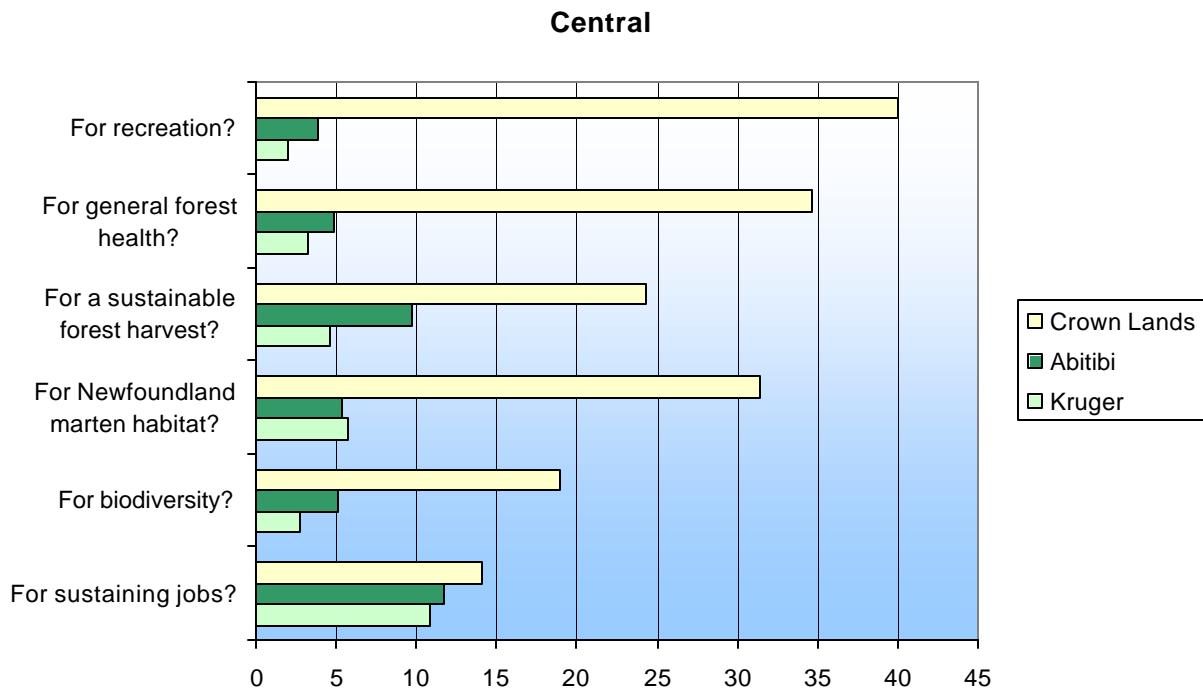
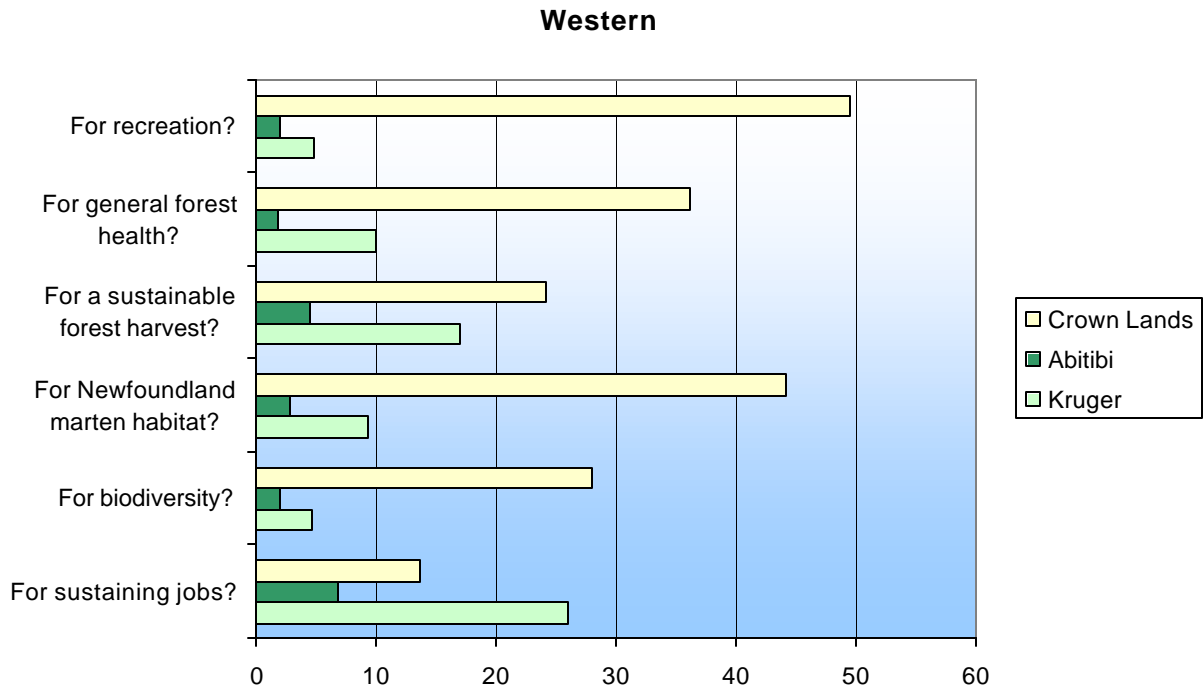
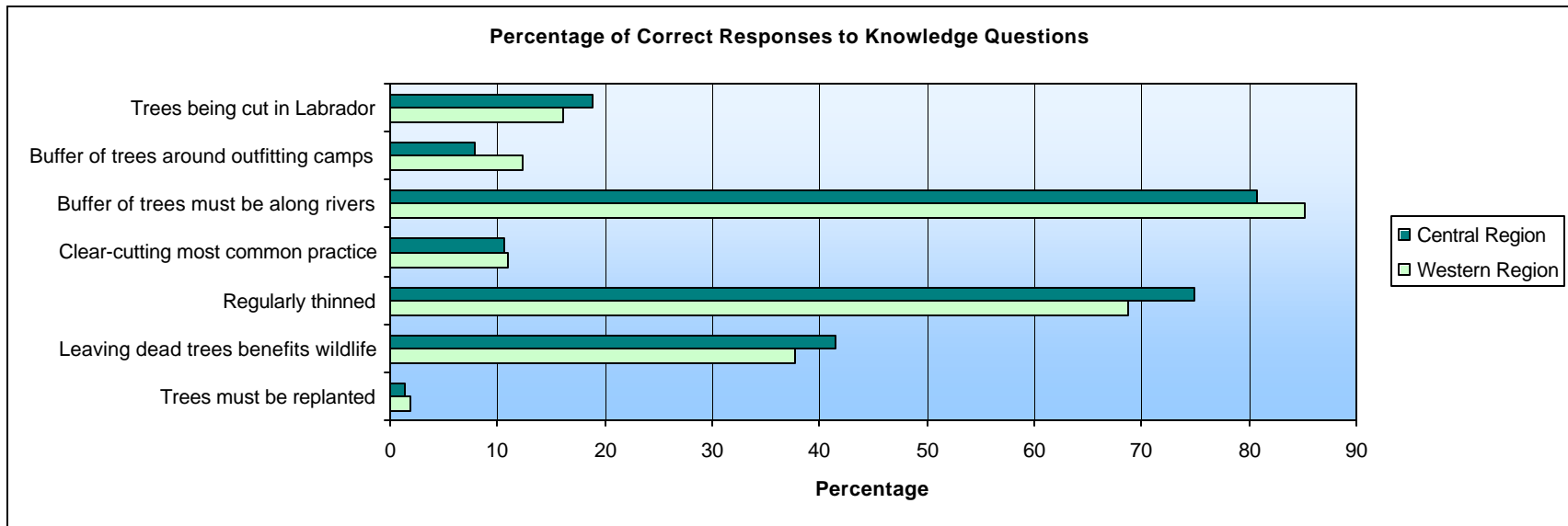


Figure 12: Percentage of Correct Responses to Knowledge Questions



Approximately 45% of residents from both regions believed the above statement to be true and approximately 37% stated they were “not sure”. On a positive note compared to the other knowledge items where percent of correct responses was extremely low, approximately 38% of western residents and 42% of central residents did correctly identify that leaving a few dead trees standing in a clear-cut benefits wildlife. Nearly 40% of western residents and 35% of central residents however, did believe the statement to be false.

A knowledge score was calculated for western and central region residents by allocating a score of one for each correct response and a score of zero for incorrect and not sure responses. Knowledge scores were then divided by seven, the total number of items to obtain a score that could range from 0.0 indicating no questions answered correctly to 1.0 that would represent all questions were answered correctly. Mean knowledge scores for western and central region residents were low at 0.33 and 0.35 respectively. A t-test did reveal that central region residents had a statistically significantly higher knowledge score at $p = 0.048$ than western residents. This being said knowledge levels are extremely low; a mean of 0.5 would indicate only half of the items were correct and these scores were significantly lower. These results would suggest that similar educational efforts and messages could be delivered to each group.

Perceptions of impacts of forestry

Most respondents (approximately 64%) in both regions believe too many trees are being cut in the forests on the Island (Table 15). Less than 15% of respondents disagreed with the statement: “Too many trees are being cut in the forests on the Island”. Residents are equally divided in their opinions on whether clear-cutting is a suitable harvesting method for some areas. Approximately 47% of western residents disagreed in some way and 36% agreed, however, 18% of western residents strongly disagreed while only 4% strongly agreed with the practice. Central residents were even more equally divided in their views. Just over 43% of central residents disagreed with clear-cutting but 42% agreed; once again though the strength of the opinion indicates that 16% strongly disagreed while only 3% strongly agreed (Table 16). If managers simply consider the direction of the attitudes they may draw conclusions that residents are equally divided on the issue and it may be reasonably easy to swing the balance but by examining the strength of the

Table 15: Too many trees are being cut in the forests on the Island.

	Too many trees are being cut in the forests on the Island.					Total
	Strongly disagree	Disagree	Neither	Agree	Strongly agree	
Western Region	9 2.2%	45 11.1%	94 23.2%	201 49.5%	57 14.0%	406 100.0%
Central Region	1 .2%	62 13.7%	98 21.6%	234 51.7%	58 12.8%	453 100.0%
Total	10 1.2%	107 12.5%	192 22.4%	435 50.6%	115 13.4%	859 100.0%

Table 16: Clear-cutting is a suitable harvesting method for some areas.

	Clear-cutting is a suitable harvesting method for some areas.					Total
	Strongly disagree	Disagree	Neither	Agree	Strongly agree	
Western Region	73 18.1%	116 28.7%	70 17.3%	129 31.9%	16 4.0%	404 100.0%
Central Region	71 15.6%	125 27.5%	68 14.9%	177 38.9%	14 3.1%	455 100.0%
Total	144 16.8%	241 28.1%	138 16.1%	306 35.6%	30 3.5%	859 100.0%

attitudes it is clear that attitudes against clear-cutting are much stronger than those in support of the practice. This being said, responses to a similar item focused on clear-cutting are quite different. Approximately 50% of central and western residents agreed to some degree with the statement: “Clear-cutting in some situations is a beneficial forest management practice” (Table 17).

To this point in the study attitudes toward forestry issues have not been statistically significantly different between residents of central and western Island residents. This changes however, when we consider attitudes toward the impacts of clear-cutting. Western residents are significantly more in agreement than central residents with the statement: “Clear-cutting in the province has been directly responsible for increased flooding in areas”. T-test results indicate that the mean score of western residents (3.68) is significantly higher than central residents (3.42) at $p < 0.001$. Nearly 63% of western residents agreed with the statement to some degree compared to 51% of central residents; it is important to note that more central residents indicated neutral than western residents (Table 18). Western residents were also significantly more in their agreement than central residents to the statement: “Clear-cutting in the province has lead to an increase in silting of streams”. Mean item score for western residents was 3.83 compared to 3.66 from central residents; t-test results identified this to be a statistically significant difference in mean scores at $p = 0.004$. More than 71% of western residents agreed to the above statement compared to 64% of central residents (Table 19).

Most residents in western and central believe that forestry roads have led to an increase in poaching on the Island. Less than 20% of residents disagreed with the statement (Table 20).

Perceptions about domestic users and domestic woodcutting issues

Strong support exists from residents of western and central regions of the Island regarding limits on the amount of wood that can be cut for domestic use. Approximately 20% of residents disagreed with the statement: “There should be limits on the amount of wood that can be cut for domestic use” (Table 21). However, only 6% of those residents expressed strong disagreement to the statement. Residents held mixed opinions toward the statement: “There are not enough areas

Table 17: Clear-cutting in some situations is a beneficial forest management practice.

	Clear-cutting in some situations is a beneficial forest management practice					Total
	Strongly disagree	Disagree	Neither	Agree	Strongly agree	
Western Region	29 6.9%	70 16.7%	107 25.5%	201 47.9%	13 3.1%	420 100.0%
Central Region	23 5.0%	98 21.2%	110 23.8%	221 47.8%	10 2.2%	462 100.0%
Total	52 5.9%	168 19.0%	217 24.6%	422 47.8%	23 2.6%	882 100.0%

Table 18: Clear-cutting in the province has been directly responsible for increased flooding in areas.

	Clear-cutting in the province has been directly responsible for increased flooding in areas.					Total
	Strongly disagree	Disagree	Neither	Agree	Strongly agree	
Western Region	9 2.1%	52 12.3%	96 22.7%	174 41.2%	91 21.6%	422 100.0%
Central Region	13 2.8%	72 15.7%	140 30.5%	176 38.3%	58 12.6%	459 100.0%
Total	22 2.5%	124 14.1%	236 26.8%	350 39.7%	149 16.9%	881 100.0%

Table 19: Clear-cutting in the province has led to an increase in silting of streams.

	Clear-cutting in the province has led to an increase in silting of streams					Total
	Strongly disagree	Disagree	Neither	Agree	Strongly agree	
Western Region	7 1.7%	19 4.5%	95 22.5%	219 51.9%	82 19.4%	422 100.0%
Central Region	12 2.6%	32 7.0%	120 26.1%	232 50.4%	64 13.9%	460 100.0%
Total	19 2.2%	51 5.8%	215 24.4%	451 51.1%	146 16.6%	882 100.0%

Table 20: Forestry roads have led to an increase in poaching on the Island.

	Forestry roads have led to an increase in poaching on the Island					Total
	Strongly disagree	Disagree	Neither	Agree	Strongly agree	
Western Region	11 2.6%	72 17.1%	96 22.9%	177 42.1%	64 15.2%	420 100.0%
Central Region	15 3.3%	69 15.0%	91 19.7%	222 48.2%	64 13.9%	461 100.0%
Total	26 3.0%	141 16.0%	187 21.2%	399 45.3%	128 14.5%	881 100.0%

Table 21: There should be limits on the amount of wood that can be cut for domestic use.

	There should be limits on the amount of wood that can be cut for domestic use					Total
	Strongly disagree	Disagree	Neither	Agree	Strongly agree	
Western Region	26 6.2%	59 14.0%	53 12.6%	230 54.5%	54 12.8%	422 100.0%
Central Region	23 5.0%	76 16.6%	41 9.0%	258 56.3%	60 13.1%	458 100.0%
Total	49 5.6%	135 15.3%	94 10.7%	488 55.5%	114 13.0%	880 100.0%

on the Island where you can go and cut trees for your own firewood” (Table 22). Approximately 35% of western residents agreed to some degree with the statement while another 35% disagreed to the statement. A relatively large percentage of residents were neutral suggesting the public may not have thought a lot about the issue. No differences in attitudes were found between central and western residents across this item.

There are mixed feelings amongst the general public about the impact, if any, of domestic woodcutting on habitat loss for wildlife and vegetation impacts near streams and rivers (Table 23). A large percentage of residents (47%) disagreed with the statement: “Domestic wood harvesting is resulting in habitat loss for wildlife”. Approximately 30% of western residents and 33% of central residents however, did agree with the statement. There were also a relatively large percentage of neutral responses suggesting attitudes are still forming about this issue. Residents were also asked their perceptions about whether domestic users cut areas close to rivers and streams that have been left by industry for buffer zones. Residents were very divided on this issue, almost equally into thirds where a third agreed, one third disagreed, and another third were neutral (Table 24). Such results suggest that residents could be influenced by communication messages targeted to these areas where the large neutral responses suggest attitudes are still forming on the issue.

Domestic woodcutting issues have received limited attention by government and industry. Most residents believe that there should be better enforcement of domestic woodcutters (Table 25). Such results may suggest the time is ripe for discussion of domestic woodcutting issues with all the various interest groups.

Understanding management priorities

The largest section in the questionnaire focused on understanding public priorities within the forests on the island portion of the province. Respondents were asked to explore the issues of outfitting camps, view-sheds, resort development, job opportunities and wildlife protection by responding along a strongly disagree to strongly agree Likert five-point scale. In addition, one item asked respondents to rate how important various purposes of the forest should be along a

Table 22: There are not enough areas on the Island where you can go and cut trees for your own firewood.

	There are not enough areas on the Island where you can go and cut trees for your own firewood.					Total
	Strongly disagree	Disagree	Neither	Agree	Strongly agree	
Western Region	14 3.5%	127 31.8%	120 30.1%	108 27.1%	30 7.5%	399 100.0%
Central Region	18 4.0%	144 31.9%	122 27.1%	131 29.0%	36 8.0%	451 100.0%
Total	32 3.8%	271 31.9%	242 28.5%	239 28.1%	66 7.8%	850 100.0%

Table 23: Domestic wood harvesting is resulting in habitat loss for wildlife.

	Domestic wood harvesting is resulting in habitat loss for wildlife.					Total
	Strongly disagree	Disagree	Neither	Agree	Strongly agree	
Western Region	48 11.5%	146 34.8%	100 23.9%	97 23.2%	28 6.7%	419 100.0%
Central Region	48 10.4%	169 36.7%	90 19.6%	122 26.5%	31 6.7%	460 100.0%
Total	96 10.9%	315 35.8%	190 21.6%	219 24.9%	59 6.7%	879 100.0%

Table 24: Domestic users cut areas close to rivers and streams that have been left by industry for buffer zones.

	Domestic users cut areas close to rivers and streams that have been left by industry for buffer zones.					Total
	Strongly disagree	Disagree	Neither	Agree	Strongly agree	
Western Region	24 5.7%	115 27.4%	156 37.1%	98 23.3%	27 6.4%	420 100.0%
Central Region	38 8.2%	130 28.2%	154 33.4%	110 23.9%	29 6.3%	461 100.0%
Total	62 7.0%	245 27.8%	310 35.2%	208 23.6%	56 6.4%	881 100.0%

Table 25: There should be better enforcement of domestic wood cutters.

	There should be better enforcement of domestic wood cutters.					Total
	Strongly disagree	Disagree	Neither	Agree	Strongly agree	
Western Region	16 3.8%	52 12.4%	71 16.9%	223 53.2%	57 13.6%	419 100.0%
Central Region	11 2.4%	77 16.7%	76 16.5%	227 49.3%	69 15.0%	460 100.0%
Total	27 3.1%	129 14.7%	147 16.7%	450 51.2%	126 14.3%	879 100.0%

ten-point scale where 1 was not important and 10 was extremely important. This section begins with the results of this rating or prioritization exercise.

Mean scores for all the various purposes listed of the forest were greater than six suggesting that all purposes of the forest were seen as important to some degree. Residents of central and western regions both ranked the various values of the forest in the same identical order, however, there were two items where the mean scores were statistically significantly different from each other. These two items were scenic beauty and saw logs; specific results will be discussed shortly.

Figure 13 presents the mean scores for each forest value for each region. The highest mean score and first priority according to the residents is the use of the forest for wildlife. Mean scores for western residents was 8.99 and for central residents 8.94. The top five priorities for residents were clearly non-consumptive and nature-oriented values of the forest. After wildlife, the next important values were scenic beauty, protection of watersheds, wilderness preservation, and plants. Mean scores for each of these values were over 8. The mean score for scenic beauty for western residents of 8.84 was statistically significantly higher than the mean score of 8.58 for central residents at $p = 0.048$. Lighter consumptive activities of recreation and berries were ranked sixth and seventh, followed by hunting/outfitting. Only for the last three items did the mean score for central residents exceed the mean for western residents. Having the forest for a place for firewood ranked ninth, pulp and paper tenth, and finally saw logs. The saw logs mean score of 6.62 for central residents was statistically significantly higher than the western resident mean score of 6.21 at $p=0.006$.

Figure 14 presents the percentage of respondents indicating 9 or 10 on the scale from not important (1) to extremely important (10). Residents believe that wildlife should be the top priority and use of the Island's forest. More than 75% of western residents and 72% of central residents ranked this value either 9 or 10. More than 50% of residents ranked scenic beauty, protection of watersheds and wilderness preservation 9 or 10 on the scale clearly indicating such values are extremely important. And while 48% of western residents ranked plants 9 or 10, just

Figure 13: Mean Scores by Region, Priorities for use of the Island's Forests

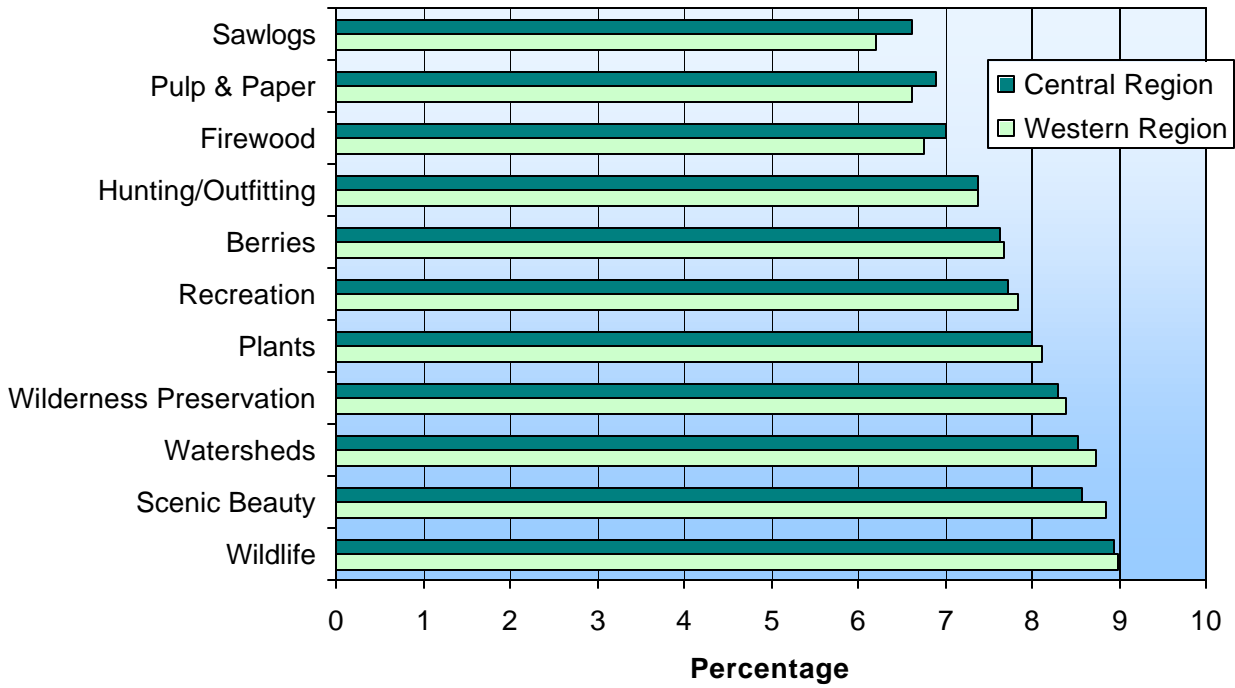
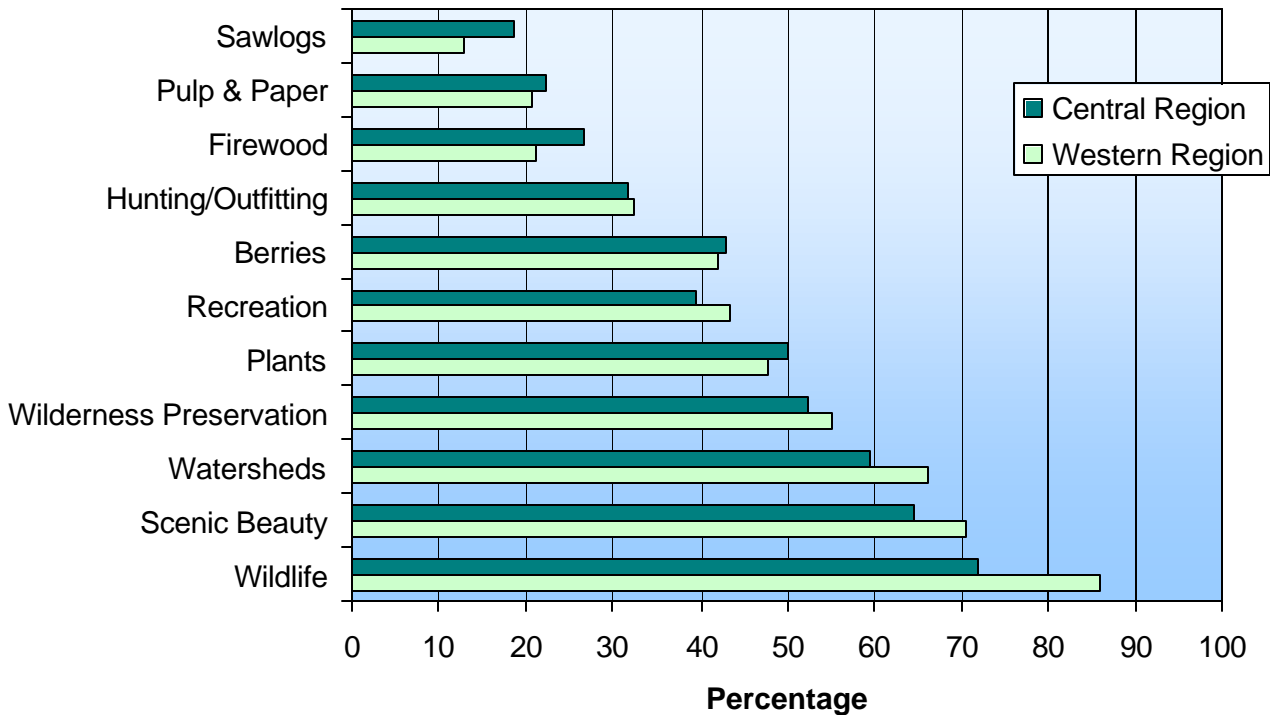


Figure 14: Percentage of Responses by Region, Indicating 9 or 10 for Priorities for use of the Island's Forests



over 50% of central residents stated 9 or 10 for plants. The remaining values of the forest while highly ranked did not receive more than 50% stating 9 or 10.

Understanding the relationship between outfitting and forestry issues

Outfitting and forestry issues were explored through several items. Most residents (more than 60%) from both regions disagreed to some degree with the statement: “It is impossible to use forests for both outfitting purposes and industry woodcutting”. Only 20% of residents believed there was no room to accommodate both in the forest (Table 26). Most residents in western (59%) and central (64%) disagreed to some degree with the statement: “It is more important to protect outfitters and the areas they need than to provide forest industry jobs” (Table 27). Less than 15% agreed to the statement. Approximately 45% of residents agreed to some degree with the statement: “There should be at least a five km buffer of trees left around outfitting camps” (Table 28), although less than 10% strongly disagreed and a large percentage of residents (34%) were neutral. The results from these three items suggest that the public does not support the outfitting industry over the traditional uses of the forest.

A large percentage of residents (48%) disagreed with the statement: “There is more money to be made in outfitting than forestry on the Island”. Less than 10% of residents agreed and a large percentage (approximately 42%) were neutral (Table 29). Most residents in central (61%) and in western (55%) disagreed to some degree with the statement: “There are more jobs in the outfitting industry than in the forestry industry on the island” (Table 30). Consistent with the other items, few residents believed that outfitting was more important than the forestry industry on the Island but a large number of residents were neutral. While both regions’ residents disagreed with the statement about jobs, central residents were statistically significantly different at $p = 0.027$ in their opinions on this item from their western counterparts and held stronger disagreement to the item (e.g., mean score for western residents was 2.46 and for central residents 2.35).

Many western residents (48.5%) and central residents (43%) believed that there are still plenty of wilderness areas left on the Island for the outfitting industry. The mean score for western

Table 26: It is impossible to use forests for both outfitting purposes and industry woodcutting.

	It is impossible to use forests for both outfitting purposes and industry woodcutting.					Total
	Strongly disagree	Disagree	Neither	Agree	Strongly agree	
Western Region	54 12.8%	199 47.3%	78 18.5%	74 17.6%	16 3.8%	421 100.0%
Central Region	47 10.3%	247 54.0%	79 17.3%	71 15.5%	13 2.8%	457 100.0%
Total	101 11.5%	446 50.8%	157 17.9%	145 16.5%	29 3.3%	878 100.0%

Table 27: It is more important to protect outfitters and the areas they need than to provide forest industry jobs.

	It is more important to protect outfitters and the areas they need than to provide forest industry jobs.					Total
	Strongly disagree	Disagree	Neither	Agree	Strongly agree	
Western Region	46 10.9%	201 47.6%	118 28.0%	51 12.1%	6 1.4%	422 100.0%
Central Region	65 14.2%	227 49.6%	98 21.4%	55 12.0%	13 2.8%	458 100.0%
Total	111 12.6%	428 48.6%	216 24.5%	106 12.0%	19 2.2%	880 100.0%

Table 28: There should be at least a five km buffer of trees left around outfitting camps.

	There should be at least a five km buffer of trees left around outfitting camps.					Total
	Strongly disagree	Disagree	Neither	Agree	Strongly agree	
Western Region	14 3.3%	68 16.1%	144 34.0%	157 37.1%	40 9.5%	423 100.0%
Central Region	14 3.0%	83 18.0%	158 34.3%	164 35.7%	41 8.9%	460 100.0%
Total	28 3.2%	151 17.1%	302 34.2%	321 36.4%	81 9.2%	883 100.0%

Table 29: There is more money to be made in outfitting than forestry on the Island.

	There is more money to be made in outfitting than forestry on the Island.					Total
	Strongly disagree	Disagree	Neither	Agree	Strongly agree	
Western Region	26 6.5%	164 41.1%	170 42.6%	35 8.8%	4 1.0%	399 100.0%
Central Region	41 9.2%	178 39.7%	184 41.1%	44 9.8%	1 .2%	448 100.0%
Total	67 7.9%	342 40.4%	354 41.8%	79 9.3%	5 .6%	847 100.0%

Table 30: There are more jobs in the outfitting industry than in the forestry industry on the Island.

	There are more jobs in the outfitting industry than in the forestry industry on the Island.					Total
	Strongly disagree	Disagree	Neither	Agree	Strongly agree	
Western Region	26 6.5%	194 48.7%	148 37.2%	28 7.0%	2 .5%	398 100.0%
Central Region	47 10.4%	226 50.2%	151 33.6%	25 5.6%	1 .2%	450 100.0%
Total	73 8.6%	420 49.5%	299 35.3%	53 6.3%	3 .4%	848 100.0%

residents (3.23) was statistically significantly higher at $p = 0.047$ than the mean score for central residents (3.10). Similar to other items there were a relatively large percentage of neutral responses; in this case approximately 30% were neutral (Table 31).

In an interesting sign of support for the outfitting industry, most residents (51%) did disagree with the statement: “If the forestry industry needs more wood to protect jobs than tree cutting should be allowed to take place closer to outfitting camps”. Once again however, there are a large percentage of neutral responses (Table 32). It seems residents have not developed strong attitudes toward the issues of outfitting and forestry. In general, there seems to be little concern for the possible impacts of the forestry industry on the outfitting industry and a general belief that enough space exists on the Island for both to occur. The public will not make this topic a political issue unless influenced by persuasive messages one way or the other. The large percentage of neutral responses toward these outfitting issues does however create an opportunity for those wishing to influence the public and thus create new attitudes toward the issue.

Understanding the importance of forestry jobs to residents

Residents from central and western regions identified clearly earlier that the highest priority for the use of the forests was for wildlife (refer back to Figure 13 or Figure 14). This commitment to wildlife as a priority, however, wanes when asked specifically about the trade-off between jobs and wildlife. A large percentage of residents from western (44%) and central (37%) did agree to the statement: “It is more important to protect wildlife than to provide forest jobs”. Western residents were statistically significantly ($p = 0.047$) more in agreement with a mean score of 3.31 than their central counterparts with a mean score of 3.19. There were though very large percentages of neutral responses. Approximately 35% of western residents and nearly 40% of central residents did not express an opinion on the issue (Table 33). Slightly more than 20% of residents disagreed with the statement clearly indicating that forestry jobs came first over wildlife.

Table 31: There are still plenty of wilderness areas left on the Island for the outfitting industry.

	There are still plenty of wilderness areas left on the Island for the outfitting industry.					Total
	Strongly disagree	Disagree	Neither	Agree	Strongly agree	
Western Region	19 4.8%	71 17.8%	115 28.9%	185 46.5%	8 2.0%	398 100.0%
Central Region	18 4.0%	111 24.7%	129 28.7%	188 41.9%	3 .7%	449 100.0%
Total	37 4.4%	182 21.5%	244 28.8%	373 44.0%	11 1.3%	847 100.0%

Table 32: If the forestry industry needs more wood to protect jobs than tree cutting should be allowed to take place closer to outfitting camps.

	If the forestry industry needs more wood to protect jobs than tree cutting should be allowed to take place closer to outfitting camps.					Total
	Strongly disagree	Disagree	Neither	Agree	Strongly agree	
Western Region	27 6.8%	176 44.0%	118 29.5%	76 19.0%	3 .8%	400 100.0%
Central Region	22 4.9%	208 46.5%	119 26.6%	90 20.1%	8 1.8%	447 100.0%
Total	49 5.8%	384 45.3%	237 28.0%	166 19.6%	11 1.3%	847 100.0%

Table 33: It is more important to protect wildlife than to provide forest jobs.

	It is more important to protect wildlife than to provide forest jobs.					Total
	Strongly disagree	Disagree	Neither	Agree	Strongly agree	
Western Region	10 2.4%	77 18.3%	149 35.4%	141 33.5%	44 10.5%	421 100.0%
Central Region	9 2.0%	99 21.7%	180 39.5%	134 29.4%	34 7.5%	456 100.0%
Total	19 2.2%	176 20.1%	329 37.5%	275 31.4%	78 8.9%	877 100.0%

Residents remain though with very strong attitudes toward protecting buffers along rivers and streams, however this item was not stated as directly as a trade-off between jobs and leaving buffers. Approximately 90% of residents agreed, and many of those strongly agreed, with the statement: “There should be large buffers of trees left along rivers and streams”(Table 34). It would be useful to explore through focus groups this issue further with residents. What do residents mean by “large buffers”? And would this extremely strong support for buffers remain if directly set up as a trade-off with forestry jobs? Such qualitative exploration of the results can only be achieved by asking respondents about the “why” behind their responses.

Consistent with the strong support for protecting buffers around rivers and streams, residents also believe strongly that protecting the forests is extremely important. Approximately 80% of residents disagreed to some degree with the statement: “Protecting jobs in the forest industry is more important than protecting the forest itself” (Table 35). Less than 5% of residents agreed with the statement. Given the reduced support from residents when asked specifically about wildlife and jobs, this overwhelming support for protecting the forests seems surprising, yet consistent with earlier feelings toward the various non-consumptive values of the forest.

When residents were asked their attitudes toward creating recreational opportunities in forests than providing jobs from cutting the area, approximately 40% of residents indicated neutral (Table 36). Slightly more residents (approximately 31%) disagreed than agreed (approximately 29%) with the statement: “More effort should be put into providing recreational opportunities in forests than providing forest jobs from cutting the area”. The diversity of responses to the item suggests the lower importance of recreational values of the forests compared to nature-oriented values mentioned earlier. Recreational values were not a high priority in the ranking question; these results are consistent with those stated previously by residents.

When asked to balance forestry jobs against protecting views for resort residents the public was equally divided in their support and opposition. While slightly more western residents (36%) disagreed than agreed (33%) with the statement: “It is more important to cut trees and keep forest jobs on the Island than protect a view for resort residents”, central residents were exactly split on

Table 34: There should be large buffers of trees left along rivers and streams.

	There should be large buffers of trees left along rivers and streams					Total
	Strongly disagree	Disagree	Neither	Agree	Strongly agree	
Western Region	4 .9%	10 2.4%	32 7.6%	212 50.1%	165 39.0%	423 100.0%
Central Region	6 1.3%	12 2.6%	30 6.5%	253 55.1%	158 34.4%	459 100.0%
Total	10 1.1%	22 2.5%	62 7.0%	465 52.7%	323 36.6%	882 100.0%

Table 35: Protecting jobs in the forest industry is more important than protecting the forest itself.

	Protecting jobs in the forest industry is more important than protecting the forest itself.					Total
	Strongly disagree	Disagree	Neither	Agree	Strongly agree	
Western Region	93 23.3%	224 56.1%	62 15.5%	14 3.5%	6 1.5%	399 100.0%
Central Region	100 22.2%	267 59.3%	65 14.4%	15 3.3%	3 .7%	450 100.0%
Total	193 22.7%	491 57.8%	127 15.0%	29 3.4%	9 1.1%	849 100.0%

Table 36: More effort should be put into providing recreational opportunities in forests than providing forest jobs from cutting the area.

	More effort should be put into providing recreational opportunities in forests than providing forest jobs from cutting the area.					Total
	Strongly disagree	Disagree	Neither	Agree	Strongly agree	
Western Region	10 2.5%	111 27.8%	160 40.1%	101 25.3%	17 4.3%	399 100.0%
Central Region	10 2.2%	134 29.7%	178 39.5%	116 25.7%	13 2.9%	451 100.0%
Total	20 2.4%	245 28.8%	338 39.8%	217 25.5%	30 3.5%	850 100.0%

the issue (Table 37). Once again, large percentages of neutral responses suggest that residents do not have strong viewpoints on this issue.

Most western residents (56%) and even more central residents (66%) disagreed to some degree with the statement: “There are many job opportunities in the province’s forest industry for young people” (Table 38). Central residents were statistically significantly ($p < 0.001$) more negative about job prospects than their western counterparts with a mean score of 2.32 compared to 2.56. This is interesting given that the west coast experienced a mill closure during the implementation of the questionnaire. The central region also did experience job losses with closure of one of the main machines in the mill in Grand Falls-Windsor. Despite this perception that there are not many job opportunities in the province’s forest industry, a large percentage of western residents (41%) and central residents (36%) stated they would still encourage their son or daughter to study forestry at university. There were many residents who were neutral (Table 39). A focus group discussion with residents may help to provide a better understanding of this response that appears contradictory to the previous item. Perhaps residents feel there are forestry job opportunities in other parts of Canada.

Understanding the relationship of resort development and forestry issues

Residents were quite divided in their opinions on the impacts of resort development versus clear-cutting, however, a statistically significant difference ($p = 0.023$) in attitudes exists between central and western residents. Central residents were more likely to disagree (mean score of 2.89) than western residents (mean score of 3.04) with the statement: “Development of resorts in forested areas is more damaging than clear-cutting”. A large number of residents, however, have not formed strong attitudes either way on the issue as evident by the large percentage (approximately 33%) of neutral responses (Table 40).

A large percentage of residents (approximately 66%) disagreed to some degree with the statement: “Forest companies should be allowed to cut areas in sight of resorts”. Less than 15% of residents agreed with the statement (Table 41). This apparent concern for the view-shed, however, disappears as seen earlier when the trade-off between forestry jobs and a view is

Table 37: It is more important to cut trees and keep forest jobs on the Island than protect a view for resort residents.

	It is more important to cut trees and keep forest jobs on the Island than protect a view for resort residents.					Total
	Strongly disagree	Disagree	Neither	Agree	Strongly agree	
Western Region	31 7.8%	110 27.8%	124 31.4%	106 26.8%	24 6.1%	395 100.0%
Central Region	28 6.2%	138 30.5%	121 26.8%	146 32.3%	19 4.2%	452 100.0%
Total	59 7.0%	248 29.3%	245 28.9%	252 29.8%	43 5.1%	847 100.0%

Table 38: There are many job opportunities in the province's forest industry for young people.

	There are many job opportunities in the province's forest industry for young people.					Total
	Strongly disagree	Disagree	Neither	Agree	Strongly agree	
Western Region	43 10.8%	182 45.5%	93 23.3%	72 18.0%	10 2.5%	400 100.0%
Central Region	76 16.9%	219 48.6%	94 20.8%	58 12.9%	4 .9%	451 100.0%
Total	119 14.0%	401 47.1%	187 22.0%	130 15.3%	14 1.6%	851 100.0%

Table 39: I would encourage my son or daughter to study forestry at university.

	I would encourage my son or daughter to study forestry at university.					Total
	Strongly disagree	Disagree	Neither	Agree	Strongly agree	
Western Region	19 4.8%	73 18.3%	143 35.8%	149 37.3%	15 3.8%	399 100.0%
Central Region	25 5.5%	95 21.1%	169 37.5%	144 31.9%	18 4.0%	451 100.0%
Total	44 5.2%	168 19.8%	312 36.7%	293 34.5%	33 3.9%	850 100.0%

Table 40: Development of resorts in forested areas is more damaging than clear-cutting.

	Development of resorts in forested areas is more damaging than clear-cutting					Total
	Strongly disagree	Disagree	Neither	Agree	Strongly agree	
Western Region	21 5.3%	105 26.4%	130 32.7%	119 30.0%	22 5.5%	397 100.0%
Central Region	25 5.6%	146 32.6%	147 32.8%	115 25.7%	15 3.3%	448 100.0%
Total	46 5.4%	251 29.7%	277 32.8%	234 27.7%	37 4.4%	845 100.0%

Table 41: Forest companies should be allowed to cut areas in sight of resorts.

	Forest companies should be allowed to cut areas in sight of resorts.					Total
	Strongly disagree	Disagree	Neither	Agree	Strongly agree	
Western Region	73 18.3%	189 47.4%	79 19.8%	52 13.0%	6 1.5%	399 100.0%
Central Region	67 14.9%	237 52.5%	97 21.5%	48 10.6%	2 .4%	451 100.0%
Total	140 16.5%	426 50.1%	176 20.7%	100 11.8%	8 .9%	850 100.0%

considered (refer back to Table 37). The Island public remains very sensitive to the loss of forestry jobs and seems to have limited support of aesthetic values, at least for resort residents.

Aesthetic values for residents

Additional items further explored residents' attitudes toward view-sheds. Most residents from western (66%) and central (73%) disagreed with the statement: "Forest companies should be allowed to cut in sight of highways" (Table 42). On another item, central residents (mean score 2.04) held statistically significantly ($p = 0.043$) more positive attitudes than western residents (mean score 2.17) when it came to protecting views in sight of communities. Nearly 81% of central residents and more than 71% of western residents disagreed to some degree with the statement: "Forest companies should be allowed to cut in sight of communities" (Table 43). Figure 15 illustrates the percent of disagreement with cutting areas in sight of communities, highways and resort developments. Although these issues have become very real issues recently within western parts of the Island (e.g., cutting blocks being seen from the community of Pasadena, pressure to cut near the Humber Valley resort, pressure to cut along the TCH near Corner Brook), central area residents held consistently stronger attitudes than western residents toward these issues of cutting in sight of communities, highways and resorts.

Attitudes toward protecting areas from logging

The last few items in this large section exploring management priorities from the public's perspective focused on the importance of having areas free of forestry. Most residents (55% from western and 51% from central) agreed to some degree with the statement: "A tree left standing is worth more in this province than a tree cut down" (Table 44). Less than 15% agreed with the statement; a large percentage of central and western residents were neutral in their response.

Strong support exists from almost all residents to have forested areas on the Island where no cutting of any kind is permitted. Over 87% of western residents and nearly 84% of central residents agreed, many strongly agreeing, with the statement: "There should be forested areas on

Table 42: Forest companies should be allowed to cut in sight of highways.

	Forest companies should be allowed to cut in sight of highways.					Total
	Strongly disagree	Disagree	Neither	Agree	Strongly agree	
Western Region	94 23.5%	169 42.3%	52 13.0%	76 19.0%	9 2.3%	400 100.0%
Central Region	92 20.4%	236 52.4%	47 10.4%	68 15.1%	7 1.6%	450 100.0%
Total	186 21.9%	405 47.6%	99 11.6%	144 16.9%	16 1.9%	850 100.0%

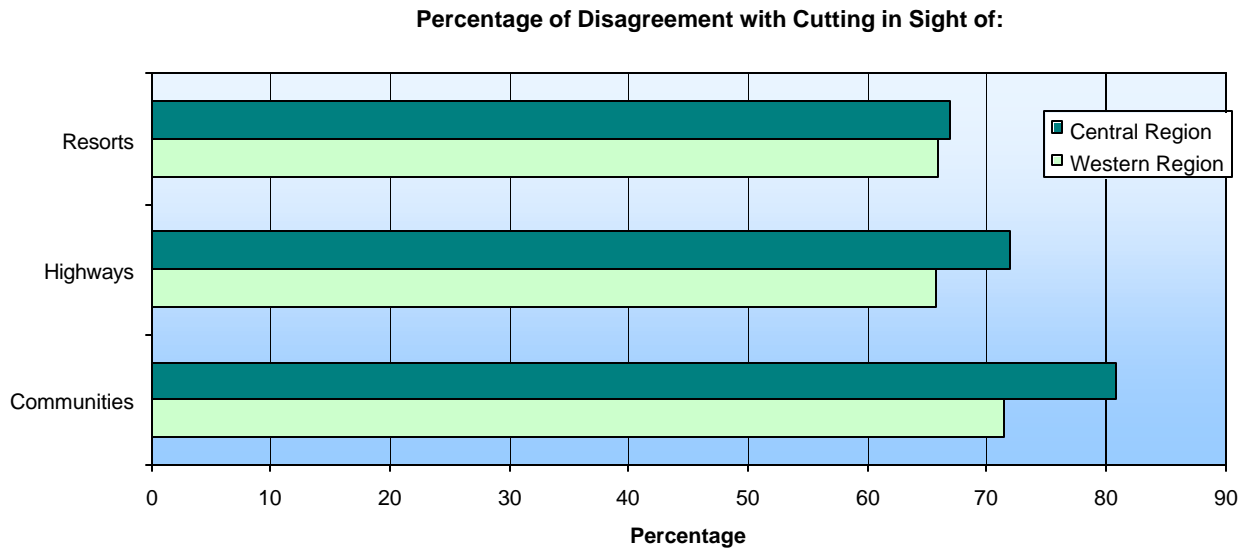
Table 43: Forest companies should be allowed to cut in sight of communities.

	Forest companies should be allowed to cut in sight of communities.					Total
	Strongly disagree	Disagree	Neither	Agree	Strongly agree	
Western Region	106 26.4%	181 45.1%	59 14.7%	49 12.2%	6 1.5%	401 100.0%
Central Region	116 25.8%	248 55.1%	42 9.3%	40 8.9%	4 .9%	450 100.0%
Total	222 26.1%	429 50.4%	101 11.9%	89 10.5%	10 1.2%	851 100.0%

Table 44: A tree left standing is worth more in this province than a tree cut down.

	A tree left standing is worth more in this province than a tree cut down.					Total
	Strongly disagree	Disagree	Neither	Agree	Strongly agree	
Western Region	6 1.5%	47 11.8%	126 31.7%	178 44.8%	40 10.1%	397 100.0%
Central Region	5 1.1%	65 14.5%	150 33.5%	186 41.5%	42 9.4%	448 100.0%
Total	11 1.3%	112 13.3%	276 32.7%	364 43.1%	82 9.7%	845 100.0%

Figure 15: Percentage of Disagreement with Cutting in Sight of:



the Island where no cutting of any kind is allowed” (Table 45). Just over 8% of central residents disagreed with the statement compared to just over 4% of western residents.

Managers discuss the levels of uncertainty and risk when making decisions about natural resources. The public seems also to share a great deal of uncertainty about the future sustainability of the forested lands on the Island. Even after prioritizing values of the forest and making trade-offs between jobs and scenery and other uses, many residents were neutral when asked to respond to the statement: “Present logging is too great to sustain the forest for other values and uses” (Figure 16). Approximately 43% of western residents and 47% of central residents did agree to some degree with the statement.

Understanding behavioral conflicts

Understanding public attitudes toward forestry management issues provides insight to managers who wish to make decisions representative of the concerns of the residents they represent. However, to resolve conflicts and to build better partnerships between people and decision-makers, information must be given to the public. Human dimension approaches that involve listening to community concerns need to be implemented. For this more active human dimensions approach to be taken, it is necessary for managers to understand what credibility their organization has with the public. Sending the wrong messenger to deliver the right message will lead to further conflict and challenges.

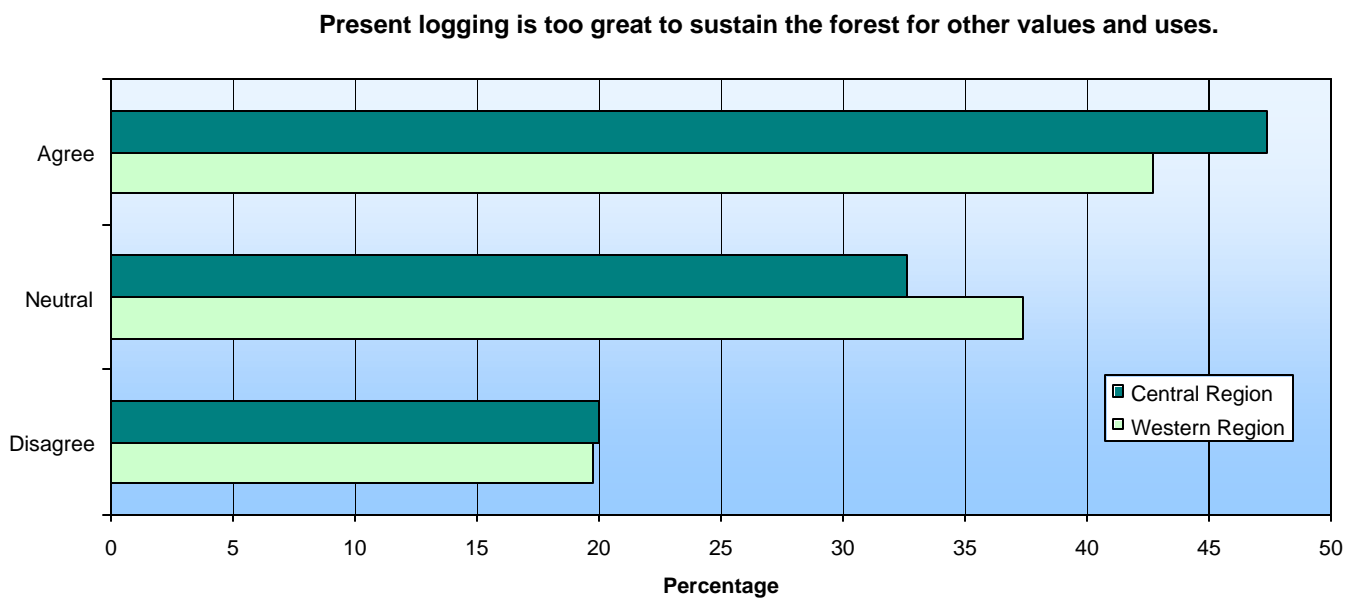
Credibility of four interest groups was assessed; these groups were the Government of Newfoundland and Labrador, the Western Newfoundland Model Forest (WNMF), the Pulp and Paper Industry, and the Protected Areas Association of Newfoundland and Labrador (PAA). Residents were asked what, if anything, they would believe on forestry management given to them by these groups. Residents could respond believe nothing (0%), believe a little (25%), believe about half (50%), believe most (75%), and believe all (100%).

The interest group with the highest credibility with western residents and central residents was the Protected Areas Association. Approximately 60% of central area residents stated they would believe most or all of the forestry information if provided by the PAA. The next closest was 45%

Table 45: There should be forested areas on the Island where no cutting of any kind is allowed.

	There should be forested areas on the Island where no cutting of any kind is allowed.					Total
	Strongly disagree	Disagree	Neither	Agree	Strongly agree	
Western Region	5 1.3%	12 3.0%	34 8.5%	218 54.5%	218 32.8%	400 100.0%
Central Region	5 1.1%	32 7.1%	36 8.0%	240 53.5%	136 30.3%	449 100.0%
Total	10 1.2%	44 5.2%	70 8.2%	458 53.9%	267 31.4%	849 100.0%

Figure 16: Present logging is too great to sustain the forest for other values and uses.



of central residents would believe the WNMF, 36% would believe the Government of NL, and only 16% of central residents would believe 75% or more of what the pulp and paper industry may say (Figure 17).

On a positive note for the WNMF, for western area residents the WNMF had statistically significantly higher credibility than for central residents ($p < 0.001$). There were no significant differences between central and western residents across any of the other groups. Most western residents (55%) would believe most of the forestry information provided by WNMF and PAA. Only 33% of western residents would believe most of the information from the Government of NL, and 14% of western residents would believe most or all of the information from the pulp and paper industry. Most residents (approximately 52%) from both regions would believe little to nothing of information distributed by the pulp and paper industry. Approximately 23% of western residents would believe little to nothing from the government and 22% of central residents would believe little to nothing from the WNMF. Further results from the perceptions of credibility by western residents and central residents of the various organizations can be found in Figure 18.

The implications of these findings are quite clear. At present the WNMF has limited credibility outside the western region for communicating messages about forestry management. The government has less credibility within western and central regions of the Island. The Pulp and Paper Industry have the lowest credibility for delivering forest-related messages to the general public. Interestingly, the PAA has the best credibility with residents but are not the decision-makers on forest issues posing a challenging dilemma for managers on whether to use them or not to assist in communicating messages.

Does deriving income from timber activities influence attitudes?

Approximately 13% of western residents and 15% of central residents derive income or a member of their immediate family derives income from timber activities (e.g., pulpwood or saw log cutting, selling of firewood, etc.) on forested lands. As discussed earlier these numbers are down from those documented by Bonnell in 2000. In this section, these individuals have been

Figure 17: Percent of residents that would believe most or all

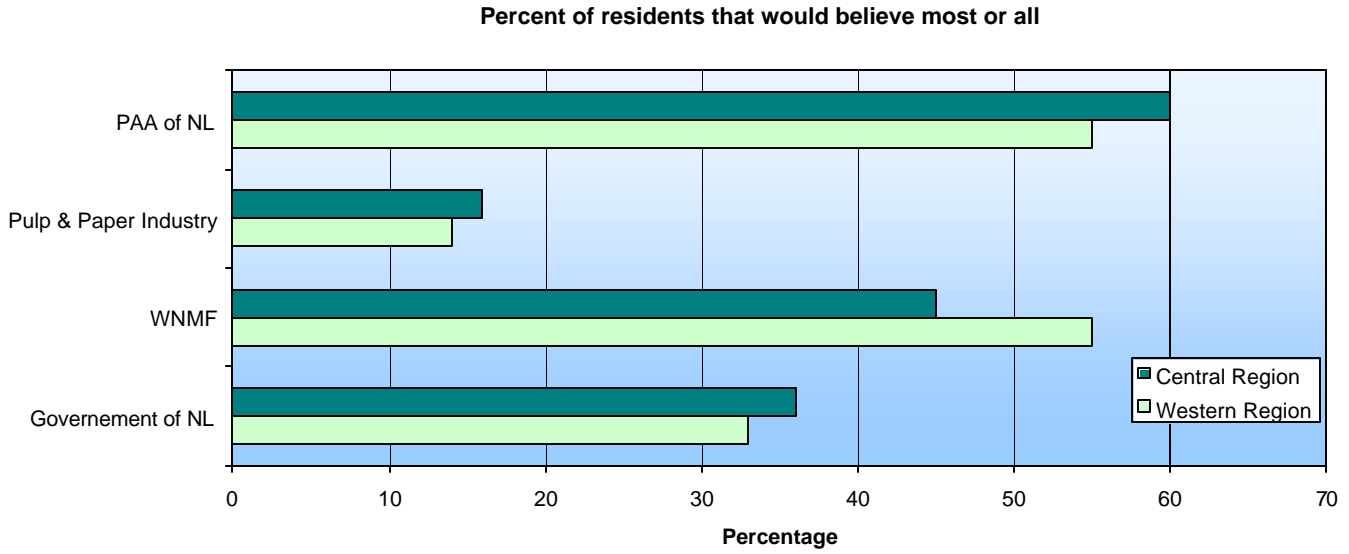
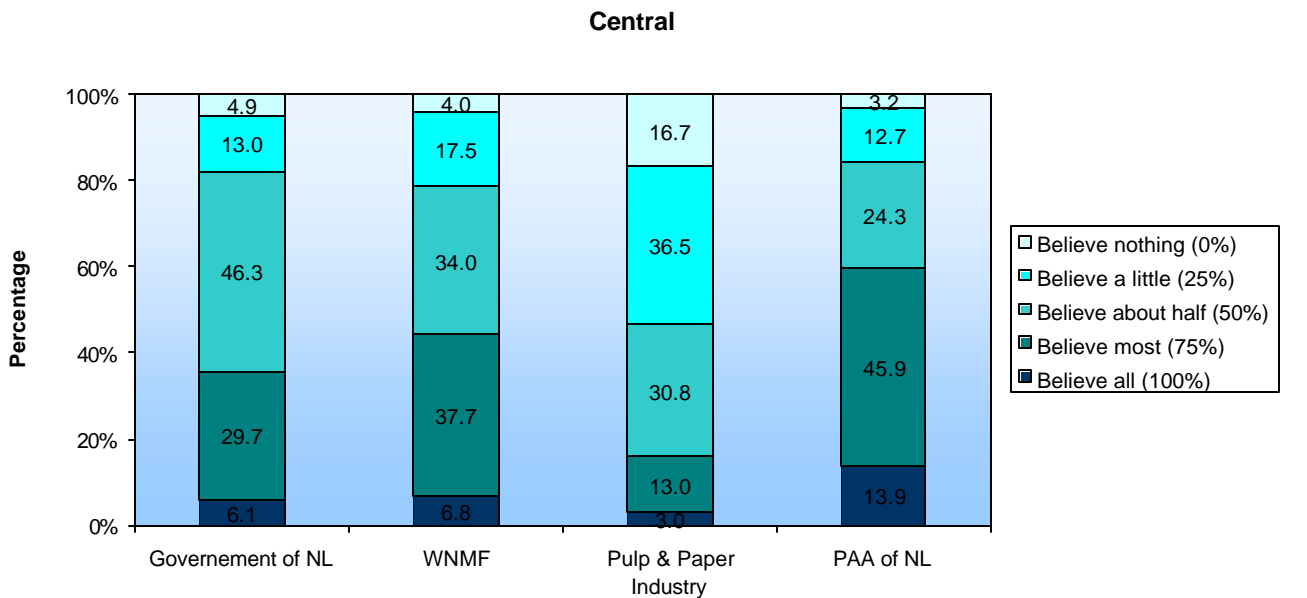
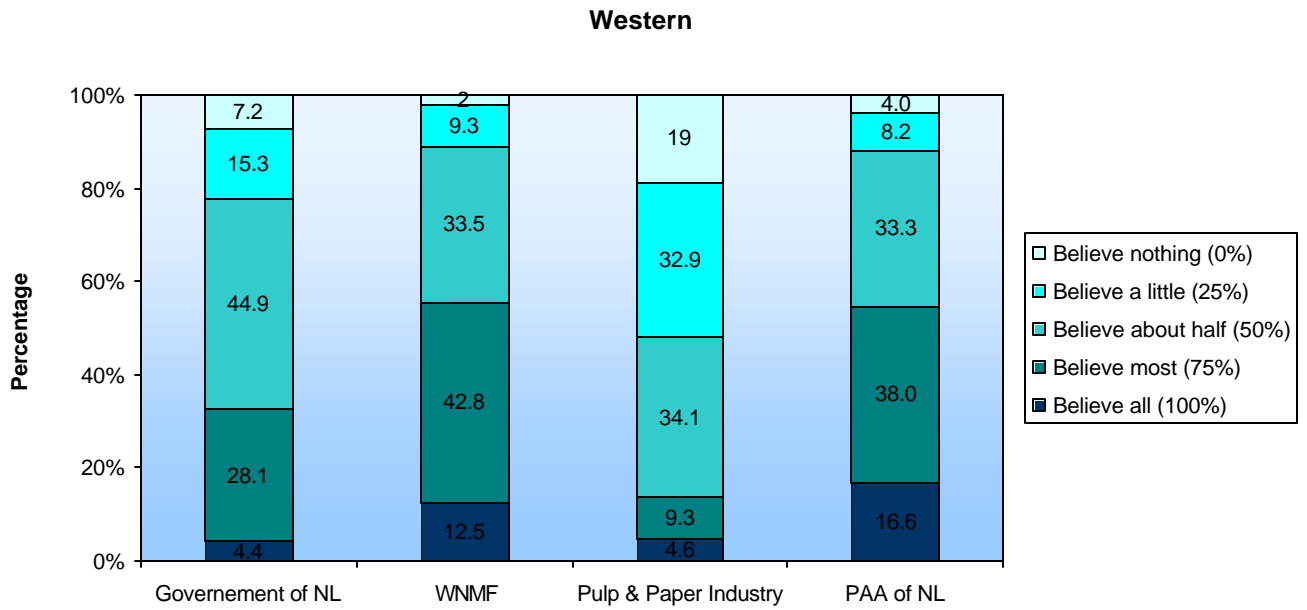


Figure 18: Of the following groups that could give you information about forest management in Newfoundland and Labrador, how much, if any would you believe?



grouped together (n=126) and their responses compared against all other residents using a series of t-tests, testing for significant differences at $p = 0.05$ in their responses to each item. Only those items where attitudes were statistically significantly different from residents not involved in timber activities are discussed. For discussion purposes people who work and gain income directly from timber activities will be labeled TAP (timber activity people) in comparison with the rest of the residents.

TAP believed that the current state of the forests were significantly more sustainable on a scale of 1 to 10 where 1 is unsustainable and 10 sustainable. The mean score of 6.10 was significantly higher than the resident's mean score of 5.63 at $p = 0.033$. There were, however, no other significant differences across the semantic differential scale describing the current state of forests on the Island. TAP were more likely to agree with the statement: "Clear-cutting is a suitable harvesting method for some areas" than other residents with a mean score of 3.02 compared to 2.78 ($p = 0.046$). Those involved in the timber industry were also less likely to agree (TAP mean score of 3.40; residents 3.67 at $p = 0.006$) that too many trees are being cut in the forests on the Island. TAP also believed more strongly than residents that forest management was getting better on the Island (TAP mean score of 2.32, residents 2.03, $p < 0.001$). This item was on a three-point scale where 1.0 is getting worse, 2.0 about the same and 3.0 getting better. There were no significant differences in knowledge scores of TAP versus residents but as mentioned previously knowledge scores were low amongst most residents.

Consistent with previous feelings that suggest clear-cutting is seen not as negatively by TAP compared to other residents, those involved in timber activities were less in agreement than other residents (mean score of 3.31 compared to 3.59, $p = 0.011$) with the statement: "Clear-cutting in the province has been directly responsible for increased flooding in areas". While most individuals involved in timber activities still agreed that forestry roads have led to an increase in poaching on the Island, their mean score was significantly lower at 3.34 than the residents score 3.56 ($p = 0.047$). TAP were also more likely to agree (mean score of 3.40 compared to resident's mean score of 3.21, $p = 0.041$) that clear-cutting in some situations is a beneficial forest management practice. While most residents disagreed with the statement: "Domestic users cut

areas close to rivers and streams that have been left by industry for buffer zones”, those involved in timber activities tended to agree (TAP mean score = 3.12, residents = 2.91, $p = 0.037$).

While there were no significant differences between residents and those involved in timber activities across the ranking of various values of the forest, there were many significant differences across specific items regarding view-shed issues or aesthetic values and outfitting issues. TAP were in agreement that development of resorts in forested areas is more damaging than clear-cutting, although most residents disagreed. Mean scores for TAP were 3.15 and for residents 2.93: t-test revealed a statistically significant difference in mean scores at $p = 0.022$. While most of those involved in timber activities did disagree with forest companies being allowed to cut areas in sight of resorts, highways, and communities, they were significantly less in disagreement than residents (Table 46). Aesthetic values were not as strong for those residents involved in timber activities on forested lands.

Those residents involved in timber activities consistently were more pro-forestry and more against benefits to the outfitting industry than residents (Table 47). Their attitudes in most cases were still in the same direction as residents but the strength of their views was greater. For example, TAP tended to agree significantly more than residents with the statement: “ There are still plenty of wilderness areas left on the island for the outfitting industry”. The largest significant difference in attitudes occurred on the item: “If the forestry industry needs more wood to protect jobs than tree cutting should be allowed to take place closer to outfitting camps”. Those that derived income from timber activities were almost neutral (mean score of 2.90) compared to residents who were clearly in disagreement (mean score of 2.61); this difference was highly significant at $p = 0.001$.

Protecting forestry jobs and valuing jobs over protecting the forest were other items that resulted in significant differences. Those involved in timber activities disagreed less strongly than residents (TAP mean score = 2.16, residents = 1.99, $p = 0.029$) with the statement: “ Protecting jobs in the forest industry is more important than protecting the forest itself”. While both groups did agree that a tree left standing is worth more in this province than a tree cut down, mean

Table 46: Comparison of mean scores between residents and those involved in timber activities across view-shed issues.

	TAP	Residents	Significance
Forest companies should be allowed to cut in sight of highways.	2.48	2.28	p=0.046
Forest companies should be allowed to cut in sight of resorts.	2.65	2.23	p<0.001
Forest companies should be allowed to cut in sight of communities.	2.39	2.06	p=0.002

Table 47: Comparison of mean scores between residents and those involved in timber activities across outfitting issues.

	TAP	Residents	Significance
There is more money to be made in outfitting than forestry on the Island.	2.35	2.57	p=0.005
There are more jobs in the outfitting industry than in the forestry industry on the Island.	2.21	2.42	p=0.004
There are still plenty of wilderness areas left on the Island for the outfitting industry.	3.33	3.13	p=0.031
If the forestry industry needs more wood to protect jobs than tree cutting should be allowed to take place closer to outfitting camps.	2.90	2.61	p=0.001

scores for TAP were 3.20 compared to 3.51 for residents ($p < 0.001$) indicating significantly less support for the statement.

Those who derive income from timber activities tend to share the same attitudes as residents as evident by responses in the same direction across issues of sustainability, clear-cutting and outfitting issues. As human dimensions researchers we are not only interested in the direction of attitudes but also the strength and it is in this regard that there are significant differences. For example, while residents and TAP agree that present logging is too great to sustain the forest for other values and uses, residents are significantly stronger in their support of the statement (mean score 3.35) than residents who derive income from timber activities (mean score 3.15) at $p = 0.048$.

The last significant difference between these two groups is found with the perceived credibility of the pulp and paper industry. While residents would believe little information if offered by the industry with a mean score of 2.44, TAP were willing to accept more information from the pulp and paper industry (mean score of 2.76 and $p = 0.002$). This suggests that to reach these stronger viewpoints it could be useful for the industry to deliver some of these messages, but one must still consider mean credibility scores for all other organizations still remained higher even for these timber activity individuals.

Does deriving income from non-timber activities influence attitudes?

Approximately 10% of the sample ($n=88$) indicated that they derived income from non-timber activities. Similar to the analysis above, these residents were directly compared across all items using t-tests against the rest of the sample. There were many statistically significant differences in attitudes of these non-timber activity residents (NTAR) from other residents. These NTAR could be described as more protection-oriented than residents, pro-outfitting industry, less concerned about forestry jobs, and holding stronger views for the various values of the forest that are non-timber oriented. In many ways their views are even stronger than those involved directly in timber activities but clearly in the opposing direction. This is evident by the increased significance levels of the differences. For example, regarding potential impacts of clear-cutting

in increasing flooding in areas and increasing silting of streams NTAR had significantly stronger attitudes than residents (Table 48). Again, it is important to remember that the attitudes remain in the same direction as the general public but in this case they are stronger negative attitudes toward forestry practices.

On only the issue of domestic woodcutting was non-timber activity residents less positive than residents, however, both groups do not feel that habitat loss occurs because of domestic wood harvesting. While residents tended to be more towards neutral on the issue of whether domestic wood harvesting is resulting in habitat loss for wildlife (mean score of 2.83), NTAR had a significantly smaller mean score of 2.53 ($p = 0.020$) suggesting a stronger disagreement with the statement. There was also less agreement from NTAR (mean score of 3.36) than residents (mean score of 3.63, $p = 0.035$) with the statement: “There should be better enforcement of domestic wood cutters”.

In terms of management priorities those residents deriving income from non-timber activities held significantly stronger views than residents across several outfitting items. Consistently NTAR attitudes were less concerned about forestry jobs and more concerned about environment and issues that would benefit the outfitting industry (Table 49). In two cases (e.g., attitudes toward wilderness availability and providing recreational opportunities), their attitudes were in a different direction than those of residents. For example, NTAR did not believe there is still plenty of wilderness areas left (mean score of 2.90 compared to resident’s mean score of 3.19, $p = 0.008$). Non-timber activity residents were also much more supportive of creating recreational opportunities (mean score of 3.29 compared to 2.95, $p = 0.001$) than their resident counterparts.

Residents who derived income from non-timber activities held statistically significantly stronger attitude scores than residents across all values of the forest except as a source for pulp and paper, saw logs, and as a place for protection of watersheds. The most highly significant differences were between mean scores on wilderness preservation, recreation and plants (Table 50).

Table 48: Comparison of mean scores between residents and those involved in non-timber activities across possible impacts of clear-cutting.

	NTAR	Residents	Significance
Clear-cutting in the province has been directly responsible for increased flooding in areas.	3.88	3.51	p=0.001
Clear-cutting in the province has led to an increase in silting of streams.	3.99	3.72	p=0.008

Table 49: Comparison of mean scores between residents and non-timber activity residents across outfitting issues.

	NTAR	Residents	Significance
It is more important to protect outfitters and the areas they need than to provide forest industry jobs.	2.73	2.38	p=0.001
There should be at least a five km buffer of trees left around outfitting camps.	3.58	3.29	p=0.008
More effort should be put into providing recreational opportunities in forests than providing forest jobs from cutting the area.	3.29	2.95	p=0.001
There are still plenty of wilderness areas left on the Island for the outfitting industry.	2.90	3.19	p=0.008
It is more important to protect wildlife than to provide forest jobs.	3.55	3.22	p=0.004
There should be large buffers of trees left along rivers and streams.	4.44	4.19	p=0.004

Table 50: Comparison of mean scores between residents and those who derive income from non-timber activities across key values for the use of the Island's forest.

	NTAR	Residents	Significance
Wilderness preservation	9.00	8.28	p<0.001
Recreation	8.48	7.73	p=0.001
Plants	8.70	8.00	p<0.001
Wildlife	9.34	8.93	p=0.006
Firewood	7.45	6.84	p=0.015
Berries	8.18	7.60	p=0.027
Scenic beauty	9.11	8.66	p=0.007
Hunting/outfitting	7.92	7.33	p=0.019

Do males and females have the same attitudes toward forestry issues?

As mentioned earlier, there were considerably less females who participated in the study than males. Many females may have felt their male counterparts could respond “better” to the items as traditionally the men are in the woods. This is supported by several telephone calls from women suggesting that the questionnaire be sent to a male or the fact that more males completed the questionnaire even though the next birthday rule should have assured a more equal representation of males and females in the sample. The females who did respond were statistically significantly younger in age than their male counterparts ($p < 0.001$). Females also scored significantly lower on the forest knowledge score than their male counterparts; the female mean knowledge score was 0.3042 while males had a mean knowledge score of 0.3598, highly statistically significantly different at $p < 0.001$. This being said both groups had very low knowledge scores. Females were more likely than males to indicate a “not sure” response across knowledge items but also on items regarding who managed the forests the best. Across most attitudinal items, females shared the same attitudes as males but on several items their attitudes were statistically significantly different in strength but not direction. On three items, however, females did have statistically significantly different attitudes than males. These results of various t-test analysis comparisons between males and females are highlighted in this section.

Across the semantic differential scale (i.e., opposite adjectives scale) used to assess attitudes toward the current state of forests on the Island, females were more likely than males to believe the forests were sustainable ($p = 0.026$) and less likely to see the forest as ugly ($p = 0.003$). While males tended to believe the forests were managed badly, in contrast, females believed the forests were managed well ($p = 0.005$). This latter item illustrated the first documented difference in direction of attitude between males and females; the previous items were differences in the strength of the attitude (Table 51).

Females were less likely to disagree than their male counterparts that the island portion of the province still has plenty of forests ($p < 0.001$), and less likely to disagree that forestry regulations are well-enforced ($p = 0.001$). While males quite strongly believed that too much of the forest on

Table 51: Comparison of mean scores between males and females across semantic differential items.

	Females	Males	Significance
Unsustainable to sustainable.	5.92	5.56	p=0.026
Managed badly to managed well.	5.41	4.95	p=0.005
Beautiful to Ugly	5.45	6.02	p=0.003

the Island was controlled by the pulp and paper companies (Table 52), females were significantly less in their strength of agreement ($p < 0.001$). While females hold the same attitudes as their male counterparts, they seem to feel the current situation of forestry management is not as negative holding less strong beliefs about forestry issues. This is consistent with the observation that females tended to respond “not sure” or “neutral” to more items than males.

Regarding impacts of clear-cutting, females tended to have not as strong attitudes against the impacts of clear-cutting as males. For example, females were less likely to agree that clear-cutting had caused increased flooding ($p = 0.006$) and increased silting of streams ($p = 0.001$). However, in an interesting switch of direction of attitudes from their male counterparts, females were more likely to agree that domestic wood harvesting is resulting in habitat loss for wildlife ($p < 0.001$) while most males tended to disagree (Table 53). Perhaps male domestic woodcutters do not want to admit to any possible impacts that they themselves may be doing.

Females also differed from males in the strength of their attitudes toward various issues regarding the outfitting industry. In general, they tended to be not as strongly against the forestry industry. For example, females were less likely to disagree that it is impossible to use forests for both outfitting purposes and industry woodcutting than their male counterparts ($p = 0.002$), and less likely to disagree that it is more important to protect outfitters and the areas they need than to provide forestry industry jobs ($p = 0.005$). However, females more strongly supported leaving buffers around outfitting camps than their male counterparts, ($p = 0.031$) but were less strong in their support of buffers around rivers and streams ($p = 0.017$). This may suggest that females believe more strongly than males that there is room for outfitting and forestry to coexist on the landscape (Table 54). Females were also less likely to disagree with the statements:

“There is more money to be made in outfitting than forestry on the Island”,

“There are more jobs in the outfitting industry than in the forestry industry on the Island.”

Table 52: Comparison of mean scores between males and females across current state of the forests and regulations items.

	Females	Males	Significance
The island portion of the province still has plenty of forests	2.81	2.41	p<0.001
Forestry regulations are well-enforced.	2.87	2.63	p=0.001
Too much of the forest on the island is controlled by the pulp and paper companies	3.64	3.96	p<0.001

Table 53: Comparison of mean scores between males and females across impacts of forestry practices.

	Females	Males	Significance
Clear-cutting in the province has been directly responsible for increased flooding in areas.	3.42	3.61	p=0.006
Clear-cutting in the province has led to an increase in silting of streams.	3.60	3.82	p=0.001
Domestic wood harvesting is resulting in habitat loss for wildlife.	3.04	2.68	p<0.001

Table 54: Comparison of mean scores between males and females across outfitting and forestry issues.

	Females	Males	Significance
It is impossible to use forests for both outfitting purposes and industry woodcutting	2.63	2.41	p=0.002
It is more important to protect outfitters and the areas they need than to provide forestry industry jobs.	2.54	2.35	p=0.005
There should be large buffers of trees left along rivers and streams.	4.13	4.26	p=0.017
There should be at least a 5km buffer of trees left around outfitting camps.	3.42	3.27	p=0.031

Female mean attitude scores of 2.74 and 2.61 were statistically significantly different from male mean scores of 2.45 and 2.30, both at $p < 0.001$, for the above items respectively.

When asked to assess their priority values of the forest females held similar attitudes as males across all the values. However, females were less strong in their priority values for recreation ($p = 0.042$), for protection of watersheds ($p < 0.001$), and for saw logs ($p = 0.008$) than male respondents (Table 55). While female residents had no significant difference from male residents in their attitudes toward view-shed issues where forest companies could cut in sight of resorts or communities, females did hold significantly less strong attitudes against allowing forestry companies to cut in sight of highways than their male counterparts (female mean score = 2.40, male mean score = 2.23, $p = 0.034$).

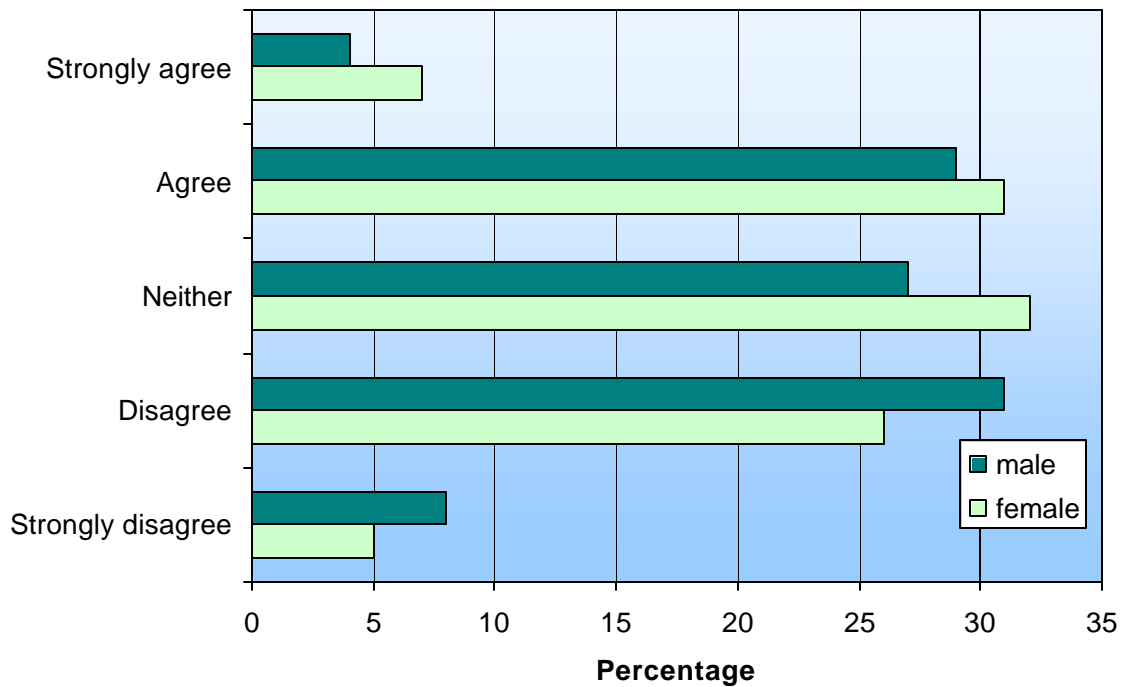
Once again illustrating the more positive attitudes by females than males toward forestry jobs and forestry issues, females were likely to agree to the statement: “It is more important to cut trees and keep forest jobs on the Island than protect a view for resort residents” (Figure 19). Females had a mean score of 3.09 tending to be neutral to agreeing with the statement while males with a mean score of 2.90 tended to disagree with the statement. This was a significant difference in mean scores ($p = 0.011$). Finally, females were less likely to agree (mean score of 3.15) than males (mean score of 3.40) that present logging is too great to sustain the forest for other values and uses ($p < 0.001$).

Overall, females hold similar attitudes as males across most forestry issues. Differences between the genders mainly lie in the strength of attitudes. Males tend to have formed their opinions on forestry issues and thus are more willing to agree or disagree with the various issues. Females, on the other hand, are not necessarily more positive toward the forestry industry than males, but tend to be more neutral, which when mean scores are calculated make it appear that they are less extreme in their viewpoints across certain items. For managers, female residents have significantly lower knowledge scores and are less committed to their views suggesting that communication efforts could be tailored differently to females than for males.

Table 55: Comparison of mean scores between males and females across priority values of the forest.

	Females	Males	Significance
As a place for recreation	7.55	7.87	p=0.042
As a place for protection of watersheds.	8.27	8.80	p<0.001
As a place for saw logs	6.15	6.57	p=0.008

Figure 19: It is more important to cut trees and keep forest jobs on the Island than protect a view for resort residents.



5.0 Implications of the Results

Implications of the results

While forest management issues are different within the central part of the Island compared to the western part of the Island, it is interesting to document that public attitudes between the two regions are very similar. There are more significant differences however, in attitudes of those who derive income from timber activities (pulpwood or saw log cutting, selling of firewood, etc.) on forested lands and general residents. Perhaps even more interesting are the large number of statistically significant differences in attitudes between residents who derive their income from timber activities and those who derive their income from non-timber activities. Managers must consider each of these groups separately when working toward solutions to the complex forestry issues facing the Island.

In general residents have negative beliefs about the current condition of the forests on the Island. Large percentages feel forestry regulations are not well-enforced and many would like to see better enforcement of domestic woodcutters. Perceptions are of a dwindling wood supply that has residents believing there is little hope for the forestry industry in the province. Few parents believe jobs are available for young people in the province in the industry. One gentleman added to his questionnaire in discussing the current state of the forests: “she’s gone b’y, bottom’s fell out of her, just like the fishery”. In 2000, Bonnell (2000) documented in a similar study on forestry issues 51% of residents believing that there was not sufficient wood for all uses; in this study a large increase has occurred. More than 68% of residents believe that there is not enough wood for all the users.

Knowledge levels remain extremely low, especially about the need, or more correctly, lack of need to replant trees on the Island. While residents are concerned about forestry impacts or potential impacts, they also remain very sensitive to forestry jobs as an issue. The best example of this sensitivity for jobs was seen with the support to protect a view for resort residents but when specifically placed as a forestry job loss, support vanished and attitudes were equally

divided. Many questions resulted in neutral responses suggesting possible lack of knowledge and unformed attitudes about many forestry issues. These neutral responses are the items that lend themselves most to persuasive messages.

While those residents who derive an income from non-timber activities showed strong support for the outfitting industry, for the most part residents were either neutral, or more supportive of the forestry industry. At present, the public will not drive outfitting issues onto a political decision-making scale unless influenced by persuasive messages. Given the large number of neutral responses a targeted educational and awareness program on the issues of outfitting could create new attitudes toward this issue.

While male residents have formed their attitudes toward many forest issues, female residents remain quite undecided in their opinions. Targeting a communication strategy that is gender specific could be useful to creating a more informed public on forestry issues. Many female residents have not formed strong opinions on forestry issues.

Societal values of the forest appear to be changing from the traditional view of a forest for timber and forestry jobs to one that includes nature-oriented and ecosystem services values. The public is much more concerned today with values of the forest such as wildlife, wilderness preservation, scenery and plants, even more so than recreational values. Managers need to maintain these values in the forest while sustaining forestry jobs.

This study has documented the “what” in terms of “what people think”, thus providing insights for managers on forest management issues. A qualitative approach possibly using focus group discussions with these groups of people could offer potential to help understand the “why” behind the statements. Of particular interest could be focus groups involving those who derive income from timber-activities, individuals who derive income from non-timber activities, and gender specific groups. Such discussions could explore the common ground between interest groups and provide further understanding of this human dimension of forestry management.

References

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Questionnaire

Understanding Forest Management Issues

Dear Resident:

Thank you very much for recently agreeing over the telephone to participate in this study and for taking a few minutes to answer these questions about your feelings toward various forest management issues on the island portion of the province. The Government of Newfoundland and Labrador in cooperation with the Western Newfoundland Model Forest are interested in your opinions and have hired an independent firm to conduct the study to ensure your views are clearly understood and reported.

Please answer all the questions as completely as possible and return the questionnaire today or tomorrow please in the postage paid envelope provided. I encourage you to voice your opinions whether for, against or neutral to forestry management on the island; your views are important and will help guide future management decisions. Your answers will be grouped with those of others. All individual responses are strictly confidential.

If you have any questions about the study, please do not hesitate to contact me at (709) 437-6780. Your assistance with this project is greatly appreciated.

Thank you for your help.

Sincerely,

Dr. Alistair Bath, Project Coordinator

The first few questions ask about your feelings about the current state of the forests on the island portion of the province.

1. Given the following adjectives that could be used to describe the current state of the forests on the Island, on a scale of 1 to 10 circle the number that you feel best represents your views.

Unsustainable	1	2	3	4	5	6	7	8	9	10	Sustainable
Managed badly	1	2	3	4	5	6	7	8	9	10	Managed well
Creates habitat	1	2	3	4	5	6	7	8	9	10	Destroys habitat
Productive	1	2	3	4	5	6	7	8	9	10	Unproductive
Healthy	1	2	3	4	5	6	7	8	9	10	Unhealthy
Unprotected	1	2	3	4	5	6	7	8	9	10	Protected
Ruined	1	2	3	4	5	6	7	8	9	10	Pristine
Beautiful	1	2	3	4	5	6	7	8	9	10	Ugly

On a scale of 1 to 5 where 1 is strongly disagree, 2 is disagree, 3 is neither agree nor disagree, 4 is agree and 5 is strongly agree, please circle the number that best represents your view.

1. The island portion of the province still has plenty of forests.
1) strongly disagree 2) disagree 3) neither agree nor disagree 4) agree 5) strongly agree
2. Forestry regulations are well-enforced.
1) strongly disagree 2) disagree 3) neither agree nor disagree 4) agree 5) strongly agree
3. Current forestry management is ensuring there will be adequate supplies of wood for future uses.
1) strongly disagree 2) disagree 3) neither agree nor disagree 4) agree 5) strongly agree

There is sufficient wood on the Island for all users including paper mills, sawmills, and domestic firewood cutters.

1) strongly disagree 2) disagree 3) neither agree nor disagree 4) agree 5) strongly agree

4. Long-term access to a stable wood supply is necessary for the survival of the forest industry.

1) strongly disagree 2) disagree 3) neither agree nor disagree 4) agree 5) strongly agree

5. Too much of the forest on the Island is controlled by the pulp and paper companies.

1) strongly disagree 2) disagree 3) neither agree nor disagree 4) agree 5) strongly agree

6. There are not enough trees left on the Island to sustain two mills in the province.

1) strongly disagree 2) disagree 3) neither agree nor disagree 4) agree 5) strongly agree

7. Clear-cutting is a suitable harvesting method for some areas.

1) strongly disagree 2) disagree 3) neither agree nor disagree 4) agree 5) strongly agree

8. Too many trees are being cut in the forests on the Island.

1) strongly disagree 2) disagree 3) neither agree nor disagree 4) agree 5) strongly agree

9. Over the past five years there has been better forest management on the Island.

1) strongly disagree 2) disagree 3) neither agree nor disagree 4) agree 5) strongly agree

10. How sustainable do you think forest management is on the Island?

1) Very unsustainable 2) Somewhat unsustainable 3) Somewhat sustainable 4) Very sustainable 5) Not sure

11. Forest management on the Island is:

a) getting worse b) about the same c) getting better

12. In your opinion, how do forest management practices on the Island compare with the rest of Canada? (Please circle one of the responses below).

- a) NL has the worst forest management in Canada.
- b) NL is one of the worst provinces in forest management in Canada.
- c) NL is no better or no worse than other provinces in its forest management
- d) NL is one of the best provinces in forest management in Canada.
- e) NL has the best forest management in Canada
- f) Not sure

13. In your opinion, on whose lands is the forest best managed?

	Kruger	Abitibi	Crown Lands	Not Sure
a) For sustaining jobs	1	2	3	4
b) For biodiversity	1	2	3	4
c) For Newfoundland marten habitat	1	2	3	4
d) For a sustainable forest harvest	1	2	3	4
e) For general forest health	1	2	3	4
f) For recreation	1	2	3	4

The next few questions ask about your beliefs about the forests on the island portion of the province.

	Generally True	Generally False	Not Sure
1. To ensure a sustainable forest on the Island, trees must be replanted.	1	2	3
2. Leaving a few dead trees standing in a clear-cut benefits wildlife.	1	2	3
3. Forests on the Island need to be regularly thinned.	1	2	3
4. Clear-cutting is the most common practice of forest management on the Island.	1	2	3
5. By law, a buffer of trees must be left along rivers and streams.	1	2	3
6. By law, a buffer of trees must be left around outfitting camps.	1	2	3
7. Trees are being cut in Labrador because there are not enough trees left on the Island.	1	2	3

These next few questions ask about your attitudes toward possible impacts of forest management.

Please indicate whether you strongly disagree (1), disagree (2), neither disagree nor agree (3), agree (4) or Strongly agree (5) with the following statements:

1. Clear-cutting in the province has been directly responsible for increased flooding in areas.
1) strongly disagree 2) disagree 3) neither agree nor disagree 4) agree 5) strongly agree
2. Clear-cutting in the province has led to an increase in silting of streams.
1) strongly disagree 2) disagree 3) neither agree nor disagree 4) agree 5) strongly agree
3. Forestry roads have led to an increase in poaching on the Island.
1) strongly disagree 2) disagree 3) neither agree nor disagree 4) agree 5) strongly agree

4. There should be limits on the amount of wood that can be cut for domestic use.
1) strongly disagree 2) disagree 3) neither agree nor disagree 4) agree 5) strongly agree
5. Domestic wood harvesting is resulting in habitat loss for wildlife.
1) strongly disagree 2) disagree 3) neither agree nor disagree 4) agree 5) strongly agree
6. Domestic users cut areas close to rivers and streams that have been left by industry for buffer zones.
1) strongly disagree 2) disagree 3) neither agree nor disagree 4) agree 5) strongly agree
7. Clear-cutting in some situations is a beneficial forest management practice.
1) strongly disagree 2) disagree 3) neither agree nor disagree 4) agree 5) strongly agree
8. There should be better enforcement of domestic wood cutters.
1) strongly disagree 2) disagree 3) neither agree nor disagree 4) agree 5) strongly agree

These next few questions ask about your priorities regarding use of the forests.

1. It is impossible to use forests for both outfitting purposes and industry woodcutting.
1) strongly disagree 2) disagree 3) neither agree nor disagree 4) agree 5) strongly agree
2. It is more important to protect outfitters and the areas they need than to provide forest industry jobs.
1) strongly disagree 2) disagree 3) neither agree nor disagree 4) agree 5) strongly agree
3. It is more important to protect wildlife than to provide forest jobs.
1) strongly disagree 2) disagree 3) neither agree nor disagree 4) agree 5) strongly agree
4. There should be large buffers of trees left along rivers and streams.
1) strongly disagree 2) disagree 3) neither agree nor disagree 4) agree 5) strongly agree
5. There should be at least a five km buffer of trees left around outfitting camps.
1) strongly disagree 2) disagree 3) neither agree nor disagree 4) agree 5) strongly agree

6. Forests can be used for a variety of purposes. Please indicate your views on a scale of 1 to 10 where 1 is not important to 10 is extremely important what the priorities should be for use of the Island's forests.

- | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|----|
| As a place for wilderness preservation | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| As a source for pulp and paper | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| As a place for recreation | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| As a place for protection of watersheds | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| As a place for plants | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| As a place for sawlogs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| As a place for wildlife | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| As a place for firewood | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| As a place for berries | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| As a place for scenic beauty | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| As a place for hunting/outfitting | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |

7. Development of resorts in forested areas is more damaging than clear-cutting.
1) strongly disagree 2) disagree 3) neither agree nor disagree 4) agree 5) strongly agree
8. Forest companies should be allowed to cut areas in sight of resorts.
1) strongly disagree 2) disagree 3) neither agree nor disagree 4) agree 5) strongly agree
9. Forest companies should be allowed to cut in sight of highways.
1) strongly disagree 2) disagree 3) neither agree nor disagree 4) agree 5) strongly agree
10. Forest companies should be allowed to cut in sight of communities.
1) strongly disagree 2) disagree 3) neither agree nor disagree 4) agree 5) strongly agree

11. It is more important to cut trees and keep forest jobs on the Island than protect a view for resort residents.
1) strongly disagree 2) disagree 3) neither agree nor disagree 4) agree 5) strongly agree
12. There are many job opportunities in the province's forest industry for young people.
1) strongly disagree 2) disagree 3) neither agree nor disagree 4) agree 5) strongly agree
13. I would encourage my son or daughter to study forestry at university.
1) strongly disagree 2) disagree 3) neither agree nor disagree 4) agree 5) strongly agree
14. More effort should be put into providing recreational opportunities in forests than providing forest jobs from cutting the area.
1) strongly disagree 2) disagree 3) neither agree nor disagree 4) agree 5) strongly agree
15. There is more money to be made in outfitting than forestry on the Island.
1) strongly disagree 2) disagree 3) neither agree nor disagree 4) agree 5) strongly agree
16. There are more jobs in the outfitting industry than in the forestry industry on the Island.
1) strongly disagree 2) disagree 3) neither agree nor disagree 4) agree 5) strongly agree
17. A tree left standing is worth more in this province than a tree cut down.
1) strongly disagree 2) disagree 3) neither agree nor disagree 4) agree 5) strongly agree
18. Protecting jobs in the forest industry is more important than protecting the forest itself.
1) strongly disagree 2) disagree 3) neither agree nor disagree 4) agree 5) strongly agree
19. There are still plenty of wilderness areas left on the Island for the outfitting industry.
1) strongly disagree 2) disagree 3) neither agree nor disagree 4) agree 5) strongly agree
20. If the forestry industry needs more wood to protect jobs than tree cutting should be allowed to take place closer to outfitting camps.
1) strongly disagree 2) disagree 3) neither agree nor disagree 4) agree 5) strongly agree
21. There should be forested areas on the Island where no cutting of any kind is allowed.
1) strongly disagree 2) disagree 3) neither agree nor disagree 4) agree 5) strongly agree

22. There are not enough areas on the Island where you can go and cut trees for your own firewood.
1) strongly disagree 2) disagree 3) neither agree nor disagree 4) agree 5) strongly agree
23. Present logging is too great to sustain the forest for other values and uses.
1) strongly disagree 2) disagree 3) neither agree nor disagree 4) agree 5) strongly agree

Of the following groups that could give you information about forest management in Newfoundland and Labrador (NL), how much, if any, would you believe, where :

1 = Believe nothing(0%) 2= believe a little (25%) 3=believe about half (50%)
4 = believe most (75%) 5 = believe all (100%)

Government of NL	1	2	3	4	5
Western Newfoundland Model Forest	1	2	3	4	5
Pulp and Paper Industry	1	2	3	4	5
Protected Areas Association of NL	1	2	3	4	5

These last few questions help us learn how representative the sample of residents in this study are to the characteristics of residents in the province.

Are you: a) female b) male

Are you: a) 18-25 b) 26-35 c) 36-45 d) 46-55 e) 56-65 f) over 65

Do you or any of your immediate family derive income from timber activities (pulpwood or sawlog cutting, selling of firewood, etc.) on forested land?

a) Yes b) No c) Not sure

Do you or any of your immediate family derive income from non-timber activities (selling of rabbits or berries, guiding, trapping, etc.) on forested land?

a) Yes b) No c) Not sure

Thank you for your time. We would be happy to receive any additional comments.

Postcard Follow-Up

Understanding Forest Management Issues

Thank you

Dear Resident:

Thank you very much for voicing your opinions on forest management issues, and for returning your questionnaire. Your help is greatly appreciated.

If you haven't yet completed the questionnaire, please do so today and put it in the self-addressed stamped envelope provided. I still need your response. It is very important we hear back from everyone who agreed to fill out the questionnaire.

Thank you for your help.

Dr. Alistair Bath

Appendix 3

Extra Comments at End of Questionnaire

I hike on a regular basis in Western NL. In areas, where the paper companies are cutting the beauty has been completely destroyed. Fallen trees are left in piles and just rot away.
I think politics plays a role and/or influence the final decisions made re Kruger, Abitibi, sawmills, prov. gov't, model forest, recreation and preservation of our forests.
Need to plant more trees on the Port-au-Port Pen and the rest of the Island. Firewood limited! Have a nice day.
With respect to post mismanagement of our forests I hope future changes do not swing to totalitarian quashing of certain groups rights, desires and heeds as an effort towards correction.
This questionnaire is too long questions should be shorter and SIMPLER and more to the point.
It all goes back to conservation management - planning, limits, <u>replanting</u> for future <u>enforcement</u> for all users.
The forest should be for all!
I love the outdoors. Never have I thought so much, never have I realized my own existence so much, been so much alive, been so much myself.as in those walking in the woods. I remember the benefits such as walking, moving my spirit, moving my body, activating and animating my thoughts, perceptions, feelings and imagination, of just being out in the woods enjoying a good days walk. I was in back of Hughes Brook with a friend and seen what clear cutting I believe has done to the woods. I was made sick and felt ashamed to see what was done to the environment.
In our area there seems to be a lot of wood being cut for firewood in areas that are supposed to be off limits.
Difficult questions to answer without a knowledge of forestry issues or terminology
The mill (paper industry) should be made to <u>mulch</u> all harvested areas to speed up decay and then do planting verses natural regeneration which is taking too long. Forests should be cut back from the highway to make the highways safer for traveling (moose more visible)
All residents of NL should help to maintain our forest and preserve our wildlife in return
I really don't know that much re forests just what I read in newspaper and see on TV.
Our forests should be healthy enough, if managed properly, to accommodate all stakeholders who want to benefit from our forests.
I believe more silver culture should be done by everyone. Even if someone cuts trees for firewood. It should be replanted by new trees!
Comment to Question #6: Cutting too close to buffer zones: I've seen in a lot of places where buffers have been cut too close to the rivers, streams, lakes, ponds, etc. I think one of the biggest problems is there is an easier access by use of old logging roads left behind by industries such as Kruger, Abitibi and private logging companies (sawmills). Now I'm starting to see roads being blocked off.

I think this is a start in the right direction to help this occurrence from happening. P.S. I hope this helps you with your study.
Outfitting camps should be kept back In the wilderness, however, some are being built closer to the communities. The gov. should stop this right now before hunting privileges are taken away from the local hunters.
Not enough areas you are allowed to cut firewood
Good forest management is not only a necessity for Newfoundland, but for the wood!
The government of NL should take lessons from the province of Nova Scotia
I'm concerned that our forests will not survive its present rate of destruction by logging companies. Too much wood is cut and left to rot in the forests.
Hughes Brook woods roads are not in safe conduction and the wood truck drivers are very selfish when they drive this road
More reforestation would <u>probably</u> help the survival of both industries and wildlife. Stop the clear cutting and plant trees where logging takes place.
Forests need to be replaced as they are removed. If they replant as fast as they cut it then the forestry's future would be much brighter. Cut one tree plant one tree, makes a lot of sense!
The #1 problem in NF – snowmobile and quads
Trees in the lower Humber river valley are more valuable to the government in a vertical position rather than horizontal (cut)
Thanks for the opportunity to participate. Have a great day.
A managed forest is of <u>less</u> value than a virgin forest. Clear cutting should be banned. NO CUTTING trees within view of the highways, towns or resorts. This would KILL TOURISM in Eastern Nfld.
My husband worked in the woods as a logger for 27 years. This year he had to go to Ft. St. John B.C. for work. He is 46.
We need more tree planting. This province appears to be in last place in replenishing the forest by planting young trees.
(In answer to the question of immediate family driving income from timber activities: Not now; they got laid off in Stephenville.
You are 40 years late with this survey.
I live in Stephenville, and before the mill closed here logs were shipped in. This tells me that there is no source of logs left in this area. That is a problem for me because there are no trees left here.
There should only be clear cut areas if there is a disease or fest's destroying the forest. Berry brushes should never be cut under any circumstances because it is a food source for people and animals.
If forest management practices where commonly uses, i.e. replanting, thinning, then the concern of the forest, resources and wildlife habitats being destroyed would not be true.
Most of your questions were not really addressing the major concerns for people like me who believe in sustainability of resources and maximizing forestry outputs. The pulp and paper industry is DEAD all around the world. All they are doing is killing our forest, destroying our scenic countryside and leaving their mark in the woods rather than in the communities where their mills are located. We should be thankful if they all shut down so that we can start some real sustainable industries out of our forest. Paper is the lowest end product for our trees. We need more, higher level industries related to forest as well as not-forest products. I am a

Mikmaq who travels this land for upwards of 8-10 days at a time (mostly on the West Coast and central). What the paper companies especially Abitibi, have done to our beautiful country is terrible. I could go on but I'm running out of paper! Regards.
Hunters coming in from outside our province should be <u>stopped</u> .
Good luck with your study. I come from three generations of loggers.
Land that has been clear cut should not be protected from being cabin area because of replanting. I believe cabin owners for the most part would take part in preserving the newly planted trees.
Make paper companies clean up their garbage, oil cans, barrels, etc. Also pick up all timber that is left in the forest.
The state of our present forest (shortage for mills, firewood etc) is a direct result of the big paper companies influence and the reluctance of past governments to do anything about it. Thank you.
Larger buffers around ponds, lakes and bogs
Thank you for allowing me to fill out your study sheet. I found a few of the questions very grey in areas of understanding and I have a few questions where I would like to explain my answers. Section 2, Question 3 Domestic cutting should be looked at. No doubt about it. There are cutters that will slash everything in their path instead of cutting just trees that are useable. Trees that have to be removed should be taken home and burned with the rest of the cutters wood. Perhaps it can be treated like the by catch of the fisherpeople. Section 4, Questions 4, 5 and 8 Domestic wood cutters are only going to cut enough wood to get them through the heating season. Everyone knows that leftover wood will rot the same as any other living plant. Getting the wood you need is hard enough without working to get wood you will not use. New growth is just as essential for wildlife as old growth. New growth will take the place of a cut tree. Section 5, Questions 1 and 3 Selective cutting is a vital part of forestry management. Both domestic cutters and pulp cutters should be using it. The forest is such a renewable product. Clear cutting should never be an option!!!. Regards.
I'd like to see more <u>selective</u> cutting. Horses could be used to log areas on both sides of main roads in NL and TCH. Cut all tress over 10 inches in butt.
Forest lands should be privatized and managed by owners.
This is a sad commentary that we did not begin reforestation earlier. Too much of the forest is allowed to be clear-cutted. There need to be sustainable growth. Review NB's policies. Thanks for the opportunity.

I spent 42 years in the harvesting sector. From my view the most thing needed is reforestation and commercial thinning.
Personal use cutters – areas where they are cutting should be cleaned up more and <u>all</u> cut trees should be removed from side (no matter how small).
I don't think government stop residents of a community from cutting wood in their areas. Just to please pulp mills and saw mills. Especially when trees only a limited supply.
We are cabin owners. We always enjoyed the forest both in remote areas and accessible areas all year round. The hunting and woodcutting was not important compared to just being there.
I have seen places where logs are cut, one log is taken and the rest of the tree is left to rot.
As a resident of Fogo Island There are a lot of those questions I am not very familiar with. As for Fogo Island if the trend continues domestic cutting it won't be long until thee won't be much forest left here.
We burn wood and there is no shortage of people selling firewood. Is there a way to know if they are harvesting legally? Thomas Howe Forest is under utilized and underfunded as education/recreation forest.
Most of the time when my answer was neither agree nor disagree, I gave that answer because I didn't have the appropriate information or knowledge to make an informed decision.
Forest should be managed for all values not just the harvesting of forestry and wildlife. Are you an outfitter?? Seems so.
Comment to Q5 on Priorities: For what reason? If you apply this to summer cottages as well there will be no forest left to harvest. Outfitters do not usually hunt near their camps.
Cut one, plant two
This province needs to do selective cutting more so than clear cutting. We should also look at how things are done in Europe
Hope we done this as well as we could. Thank you.
Response to how much if any would you believe of the following: “Don't think any of those would be honest with me.”
1. Forests should be managed wisely. Jobs are important so this needs a lot of consideration. I live in a paper town and I feel, and actually know that I can not cut saw logs in the Grand Falls-Windsor area. I believe this to be unfair because I have worked all of my life and I pay my share of taxes. I believe strongly that recreational vehicles should be treated as any other motor vehicle. Children should not be allowed to drive them no matter what. Public education is important regarding the use and value of forests. This should be ongoing. We need to be reminded all the time. If people have a say in how we use the forests and are treated with respect it allows for a workable partnership which could be as good as nitrogen for the forests. We are all stewards whether we know it or not. I think the young have a lot of concern for the environment.
A well managed forest should provide for all aspects mentioned here. It is greed on the park of the major industries that causes things to not work. I think when the larger companies work more, ignore them or let them move on. Someone else will come along and thrive on what these greedy companies are not satisfied with. We have (had) a great forest, that we should have no problem seeking to companies other then Kruger, and Abitibi. Maybe more of our resources should go onto the lumber industry anyway. You can't buy a decent piece of

lumber here. Jobs should be created there to replace pulp and paper jobs.
Paper companies should be forced to plant a tree to replace every one that they cut down.
I think that the average 'NL citizen,' like myself, needs to be better informed about the forest industry. I.e. accurate/current unbiased statistics and information
The forest must be used wisely by all users. There should be more tree planting as we cut an area. Only use what is sustainable
More trees should be grown to replace ones being cut. Every one cut, plant one.
There are a lot of broad questions on this survey, however the key ingredient to sustaining any forest is the planting of young trees. I feel not enough is being done in this areas.
These days, the main issue surrounding forestry is not management, but rather, the economic feasibility of pulp and paper industries.
Big problem with paper companies – they can waste wood but the public can't use it for firewood.
My husband worked with Abitibi Price for forty two years, until retirement
Silvaculture hopefully will some day catch up to what's been taken. With Stevensville Mill gone wood should become more sustainable.
Too many small saw mills or mobile saw mill machines on this Island.
It's not difficult, forestry is a renewable resource, the silviculture program/output has to match the harvesting practices. If past activities did not replace tree for tree, then silviculture has to outpace harvesting to make up the deficit!!
The forest is a very important resource and it's needs careful management to ensure sustainability. Tree harvesters cause environmental damage and are helping deplete our forested areas in record time.
There are too many small mills. There should be two saw mills owned by the paper companies under the same union that the loggers have
Cutting back on big machines in the forest would protect the forest floor by leaving it to chain saws.
We could learn a lot from B.C.
I think some of the questions were very poor and don't reflect a 2006 approach to sustainable forestry where we need to look at accommodating all users. Harvesting wood cuts maybe 1/100 th of the forest that can be harvested at only one time. The forest is growing then for another 75-100 years. Why are all the questions so exclusive of each other. The forest that is cut grows back unless one creates farms or resorts.
I think small forestry businesses should be allowed to get their share as to keep men in their own province for work.
My husband and I did the best we could. There were some questions we didn't understand.
In our household we use firewood as a source of heat. But we do not abuse our forest industry. We think that heavy machinery destroys our forestry.
More works needs to be done to protect our forest and natural environment.
More tree planting needs to be done by company who cuts for pulp wood
The 1961 Bonavista North forest fire destroyed 100's of areas forest etc after which it should have been reforested immediately. But most areas had to start on its own. A sad neglect.
Tree planting has not been carried out for as long as it should have and only softwood tree planting is not smart for healthy forests – only paper companies.
I don't know of any disrespectful domestic wood cutters – most respect laws and environment.

I feel that excessive clear cutting and not enough variety – reforestation has major impact on micro-environments, watershed reductions, flash flooding and will have long-term effects on wildlife due to lack of shelter and food supplies.

- 1) If you want sustainable harvests to remain, low impact logging should be introduced. Clear-cutting should be stopped.
- 2) When trees are harvested the whole tree should be utilized. Tops and some limbs left in the wood are too big.
- 3) Trees are felled and left to rot.
- 4) Create a “touch a tree” program! If you cannot touch two trees by reaching then the tree should not be cut, especially for domestic cutting purposes. This will result in an automatic thinning process i.e. right now a whole clump of birch is cut, one tree should be left by lane for seeding. If one tree is standing by itself it should not be cut.
- 5) Everyone using the forests should be made aware and required to not pollute. Travellers, fishers, trappers and harvesters leave cans, bottles, containers, pools of oil, garbage etc. along roads, trails, campsites, worksites, waterways and ice fishing holes. These people should be educated, policed, and prosecuted if necessary. All wardens should be as concerned about pollution as enforcement of game and wildlife laws. Zero pollution, zero tolerance should be the policy.
- 6) After anybody has been in an area for any reason it should be inspected to ensure all trees were properly harvested and utilized and no pollution of any kind is evident.

I don't know enough about NF forest to make many educated answers!

I don't think there is near enough silver culture, especially in areas where the mill were cutting. I believe there was plenty of replanting in the late 70's and early 80's. Then it almost stopped.

I don't believe in taking from one aspect of forestry, to give to another. I believe every aspect is important. I don't think there is enough replanting of trees. I believe this is the greatest danger to our forest. I think management of what we have is good in most areas. We need more replanting

Clean up the mess after cutting such as oils, tires etc. Replant soon after cutting has stopped in the area. Clear cutting is messy, ugly, and has an effect on everybody!!

After doing this survey I wish I was better informed about forestry management and issues.

I answered to the best of my ability, forest management, I know very little.

In regards to domestic wood cutting. I think that when you purchase a permit, the permit holder should pick on a located area to cut his or her wood, and when finishes the area should be checked to see if proper channels were taken to the approved guidelines of the cutting permit. If at all possible the person cutting in that area should be given seedlings to be transplanted back in that area and if this is done by the individual a refund of the permit amount and possibly a bonus amount to give incentive. Thanks.

In Central, the cut-overs are in a mess. There are many people I know that gets their firewood from cut-overs. These people clean up the cut-overs. The loggers should have to clean up after logging in an area. Also, the paper company should have to plant a tree for every one they cut. Thanks.

Paper companies own too much by way of timber rights and haven't done enough in the past (i.e. reforestation, thinning, etc.) to look after their resources.

1. Paper companies and outfitters can live in harmony and for some species even complement each other.

<ol style="list-style-type: none"> 2. Our forest resources are sustainable if properly managed. 3. All segments of society, paper companies, sawmills, outfitters and domestic firewood cutters deserve the right to partake in the use of this renewable resource. 4. Provincial Gov. should take a stronger lead in managing this resource for the benefit of everyone. 5. Most of the domestic wood cutting where I live (GFW) is done in areas already logged. Domestic wood cutting in the outports has a small (minimal) impact on habitat loss for wildlife.
<p>To sustain our forests, they have to be better managed, and additional government funding should be provided to do this.</p>
<p>The problem with clear cutting and logging is that contractors get paid for pulp wood and then the firewood cutter has to buy his wood off him also. There is nothing left for him except green pulp wood to cut.</p>
<p>The forests of NL have been here for millions of years. It is up to us to keep them in good health for the benefit of the entire planet. It is one of our greatest assets.</p>
<p>Policy and management style are less of a problem than enforcement and justice for all concerned.</p>
<p>There is in all likely hood no full cost accounting done with regard to clear cutting. Nobody seems to relate the cost of the decline in salmon populations in any way to clear cutting. The cost to the people getting economic benefit from salmon or other plant and animal species affected by clear cutting does not show up as a cost to the clear cutter.</p>
<p>Clear cutting is ecosystem destruction. The most wasteful way to use our forest has to be as pulp. Letting trees grow to much larger sizes to be selectively harvested and used a slumber has to be able to, in the long run, produce more value from the tree itself in addition to the value economic and aesthetic produced in having a fully functioning ecosystem. The challenge is in bridging the decades required for the full restoration of the ecosystem. The solution is in al likely hood in small scale users being given access and responsibility for the health and sustainability of small portions of forest ecosystem.</p>
<p>In my opinion, pulp and paper mills and not domestic or logging operations in this province is the main cause of forest devastation.</p>
<p>One of the main issues that is not covered in your survey is the concern of crown land in municipalities. These lands being in the municipal boundaries and planning areas should be passed over to communities to reap benefits, both financially and economically. This issue gives municipalities control over cutting for both domestic and commercially. If municipalities were given control they would be able to control water shed areas, reap benefits for sole of property and allow development that may not normally happen.</p>
<p>It is time to wake up and smell the roses; it'll soon be too late! Darkness is coming fast!</p>
<p>Reforestry, I think should be top priority. I think if managed properly forest could sustain "recreation," and industry and "wildlife"</p>
<p>In my opinion too much forest has been destroyed by pulp and paper companies. But given the opportunity outfitters would take over what is left leaving very little for the residents.</p>
<p>When talking about NL forests, it's a big issue. The pulp and paper companies are consuming too much of the forest not only the trees but also the land. Personally I am an active guide in NL and I have few over a lot the island of NL. In some places it is not a pretty sight, lack of replantation is a big factor. My opinion pulp and paper companies have no</p>

respect for the forest. Go in and cut the trees and leave is their motto. As for enforcement, it's a joke. After forestry workers obtain a few years at enforcement, they get lazy like a lot of government employees. Enforcement employees should take their jobs seriously. The forests will stay forever if left alone but pulp and paper mills are killing them.
There are at least 3 local people that cut 300 to 400 metres sq. every year to sell <u>openly</u> . The forestry appears to do nothing about this?
I do not have sufficient information or knowledge to be able to respond to many of the questions with any degree of authority.
Moderation is the better way to keep a sustainable forestry industry.
Planting trees should be doubled three for every one cut. Have wind breaks of scrub timber as often as possible.
I've only been living back in NL for the past four years so a lot of my answers are guessed!
Plant more trees
When I started fishing - 25 years ago – the salmon rivers had a lot more water. Now they are low. They are cutting pulp right down to the rivers – no buffer zone.
If the paper mills can get wood off the island then they should. Give our forest a break.
It's sad to see areas cut, while driving along highway. I know it has to be done. I think old rotten wood, lying around, only helps to rot good wood. Thank you.
Areas from Indian Bay to Wesleyville, domestic woodcutting should be able to expand into central of Bonavista North
We lives on the South west coast. We haven't got a stick of wood here to be seen.
I suggest there should be more reforestation by the pulp and paper mills. Also by loggers who cut and sell logs commercially more enforcement of reforestation necessary.
Re: Question 13: Previous Page: Why would I discourage? Because those who have no relative or friend connection in Dept. of Forestry have no change of getting a job!
Don't think I've been very helpful, but found it quite interesting!
<p>Just a few comments on this survey. I think this is long overdue. There is lots to be said about our forest and how it is managed.</p> <p>I spent a good many of my earlier years as a logger when Bowaters were cutting wood and there was very little waste. As they were strict on the size of tops and small trees. If the tree was too small for pulp wood we did not cut that tree.</p> <p>Our method of cutting in those days left the forest well manned with the limbs and tops from the trees. So you were sure of a good crop of trees in a few years. All in all the loggers respected the forest.</p> <p>Today there is a different way to logging. A complete destruction a person can't hardly walk over the cutover. The planting of trees today is just a shadow of what should be planted.</p> <p>The cutting of fire wood should not be carried out without a permit, and strictly enforced. When I was cutting firewood I always obtained a permit from Bowaters. And these permits should be strictly enforced. If we don't have enough forest rangers hire on some more.</p> <p>It's very heart breaking to travel up in the country and look out over the country. It's a real disaster. So very different than when I was a woodsman.</p> <p>Rules have to be enforced strictly. I still do some berry picking and spend hours looking out over the forest and walking the woods.</p> <p>This many not help but it's the way that I think about our forests. Thank you. If you</p>

want to contact me for any reason don't hesitate. (Gave name, address and phone number

Thank you for the invitation to respond to your study. As a long time resident of the Humber Valley, I was especially interested in your questions pertaining to resorts. If resorts, such as those recently established here on the west coast, are proven to be viable, then they will without a doubt rival, if not exceed, the pulp and paper industries economic importance. These resorts bring not only high value infrastructure but also the economic spending of new residents.

The future of our forests should be managed in such a way as to promote nature. The number and size of future resort developments should be carefully decided with every effort made to protect the natural environment. In conjunction with the past and present developments in the Humber Valley, the establishment of a wildlife reserve on the north side of the Trans Canada highway between the mouth of the Humber River and the eastern end of Deer Lake would be appropriate.

This area is now populated in such a way as to already preclude legal hunting by firearm so a ban on hunting through the creation of a wildlife reserve would have little impact on human activity. The Humber Valley Wildlife Reserve would be a symbol of the future direction of forest management.