

New Brunswick provincial survey on hunting in 2015

*A portrait of the characteristics,
opinions and motivations of
hunters in New Brunswick, as well
as their hunting and spending
habits.*



Final Report

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FOREWORD

This report seeks to shed light on the segment of New Brunswick population who hunt for recreation. In their own way, hunters contribute to the enhancement of forest wildlife as well as the economic and cultural diversification of the province.

Notwithstanding the large number of hunters and the past and present importance of hunting in New Brunswick, little is known regarding the characteristics of hunters, their opinion on certain wildlife management topics, motivating factors as to why they hunt or even their contribution to the economy of the province. This data can support wildlife managers' decision-making and help guide management efforts. Furthermore, a better understanding of the hunting community can also guide the efforts of many actors involved in natural resources management such as hunting associations, the forestry industry or wildlife conservation agencies. As such, this report is a first step in the improvement of knowledge of the hunting population in New Brunswick.

The authors would like to thank the Government of New Brunswick for its financial contribution to the study. They also wish to thank Diane Landry, Jeff Levesque and Mathieu Roussel of the School of Forestry at the *Université de Moncton* for their help in the management of the project's logistics. Thank you to Richard Tardif who contributed to the launch of the internet site www.umce.ca/chasse. Thank you also to Michael Quartuch of Colorado Parks and Wildlife, for his judicious advice in the drafting of the questionnaire. Finally, we wish to sincerely thank all the hunters who participated in the study without whom this project would have been impossible.

Summary

Close to 10% of the eligible population of New Brunswick participates in hunting, but little is known about these hunters. For example, we know little of their hunting habits, what motivates them, the economic impact of hunting or their level of satisfaction as it pertains to hunting. This lack of information is significant in the face of a reduction in the sale of hunting permits since the '80s, specifically for white-tailed deer. Indeed, sales of white-tailed deer hunting permits dropped by 58% for residents and 95% for non-residents. The goal of this survey was to allow us to better understand the hunting community. In the fall of 2015, we invited New Brunswick hunters to participate in a survey on hunting and 401 responded.

The results demonstrated that the white-tailed deer, moose and small game seasons were those that interested New Brunswick hunters the most. This was reflected in the licence sales, the interest demonstrated by the survey participants as well as the number of days spent hunting during these seasons. Small game and deer are the two seasons for which hunters invest the most effort.

In terms of hunting habits, Crown lands are the most popular hunting locations for the majority. Private woodlots are also used and approximately 40% of hunters use them frequently even though they only represent 30% of the forested territory of the province.

In 2015, almost a third of respondents indicated their hunting trips did not involve spending a night away from home. Thus, the majority of respondents had gone on a hunting trip with at least one night away from home. Of those, the majority went on one to three trips, but we can see that only slightly more than a quarter of them used commercial accommodations, indicating that many hunters used hunting camps or campers for accommodations. Most respondents, 70%, travel more than 50 km to reach their hunting territory.

We found that in 2015, the average hunting-related expenditure per hunter in the province was \$7,560. This average was inflated by a small group of hunters who spent large sums for the purchase of significant equipment such as camps, campers and trucks. In order to focus our analysis, we divided respondents into 2 groups, those that spent less than \$10,000 (n=259) and those that spent more than \$10,000 (n=56). We observed that while the first group spent \$3,000 on average per hunter, the second group averaged \$28,700 in spending. This second amount appears quite high considering that in 2011,

only 18% of the provincial population had a family income greater than \$100,000 according to the last National Household Survey (Statistics Canada, 2017). Nonetheless, if we consider only the lesser of the two averages and extrapolate it to the total number of hunters in the province, we can estimate the value of expenses for hunting for the 2015 season to be around \$145 millions.

Our results demonstrated that 7% of the surveyed participants hunted outside of New Brunswick and that, on average, each hunter spent \$2,830 for those activities. The principal reasons chosen for hunting outside of the province were: there is higher quality hunting than in N.B., to experience a different type of hunting and, being invited by a group of friends.

Many elements motivate respondents to hunt. The 5 most important are: to make the most of nature, or of being outdoors, to spend time in nature with friends or family, for the excitement and the challenge that hunting gives, to escape from the stress of everyday life and to learn about wildlife and its habitat. It is interesting to note that bringing meat home ranked 8th on the list of motivators and to bring home a trophy was the least important motivator of all.

Generally speaking, respondents were satisfied with the hunting seasons. Nonetheless, the white-tailed deer season constituted an exception, and only 30% of the respondents that hunted in this season reported being satisfied and more than half were unsatisfied. On the other hand, a majority of the respondents were satisfied by the management of the firearms safety and hunter education course offered by the government and the roll out of the new electronic licencing system. However, many were unsatisfied with the elements linked to wildlife management, namely, monitoring the status of wildlife populations, the establishment of population objectives, and the maintenance of quality habitats to sustain healthy wildlife populations. In addition, a majority were unsatisfied with the manner in which the government responded to their concerns.

The majority of the respondents, 84%, were of the opinion that the forestry industry has too much control over wildlife habitat. Furthermore, a majority of 56% believed that there should be a greater number of forest conservation officers on the ground to protect wildlife. Interestingly, a large majority, 83%, believed that hunter associations were important to defend the rights and interests of hunters but only 43% are members of such associations. We also note that the participants in the survey did not consider that the relationship between the forestry industry and the associations was a positive one.

The majority of respondents stated that their first hunting experience was with small game before the age of 19. The average age for the first hunt was 16. Family, relatives and friends generally had a positive influence in introducing the respondents to hunting.

In the comments section, the respondents primarily expressed their concerns in regard to forest management and particularly the frequency of clear cutting, the use of herbicides, and the impact that these practices have on the quality of the habitat of the white-tailed deer. Many respondents are worried about the influence the forestry industry has on the government's decision making regarding forest management.

The vast majority of the respondents were non-Aboriginal, English-speaking males from New Brunswick. In fact, 99.5% of the survey participants were from New Brunswick, 92% were male and almost three out of four were English-speakers. The average age of the respondents was 46.6 years. They were of varied socio-economic status, and appeared wealthier and more educated than the average New Brunswick population.

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1. Introduction

Historically, recreational hunting has been an important activity for New Brunswick (Parker, 2004) and it is still a popular contemporary activity. According to the Department of Natural Resources of New Brunswick's large game report (DNRNB, 2016), more than 48,500 white-tailed deer hunting licences were purchased in 2015. For moose, there were over 63,000 requests, but only 4498 permits were issued. Furthermore, many Aboriginals also hunt. It may be harder to assess the number of native hunters as their ancestral rights give them the right to hunt without obtaining a permit (DAANB, 2011).

With an estimated population of over 756,000 (Statistics Canada, 2017a), 624,000 of whom are aged 15 and older (Statistics Canada, 2017b), we can estimate that more than 10% of the province's population has an interest in recreational hunting. We can therefore say that an important portion of New Brunswick's population still hunts today. By itself, the sale of large game licences contributed over \$2.8 million to the government coffers in 2013 (DNRNB, 2013). Nonetheless, the government has little information on the hunter population, their personal hunting expenditures, their hunting habits, their level of satisfaction with hunting or their sources of motivation for hunting.

Furthermore, licence sales for hunting white-tailed deer have declined in the last 30 years. Since the 80's, permit sales have gone down by 58% for residents of the province and almost 95% for non-residents (Figure 1).

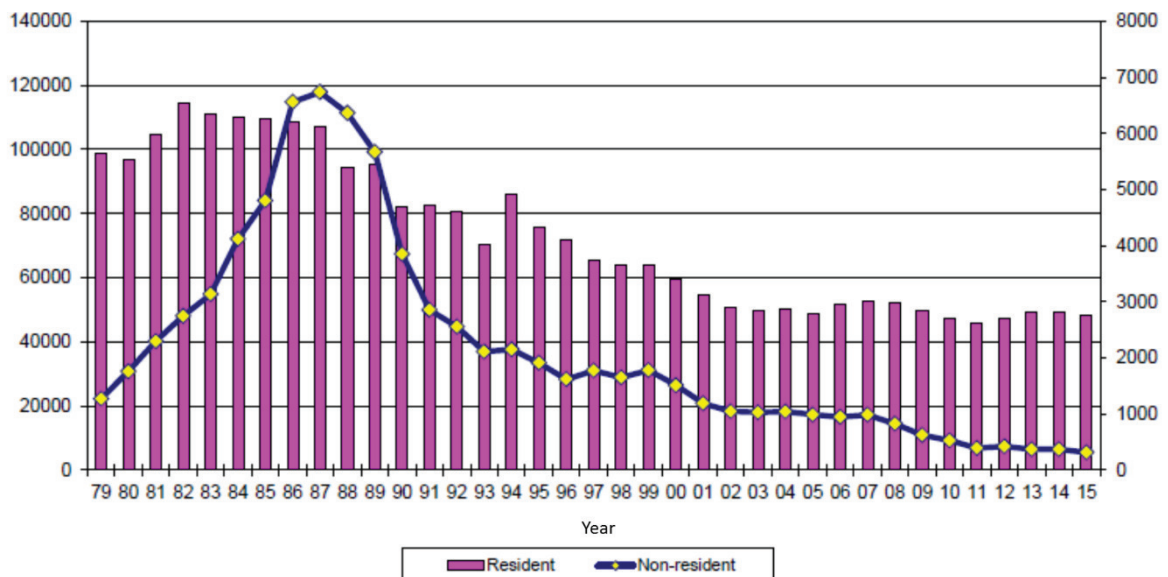


Figure 1. White-tailed deer hunting licence issuance in New Brunswick between 1979 and 2015 (Source: Big Game Harvest Report 2016, DNRNB)

It should be noted that white-tailed deer hunting was prohibited in the wildlife management areas of the northern part of the province from 1993 because of the population crash at the end of the '80s (DERDNB, 2017) and that this almost certainly impacted permit sales. Certain hunting areas have since been reopened, but the white-tailed deer population has not rebounded to its historical high (DERDNB, 2017).

Given the popularity of hunting in New Brunswick, the decrease in permit sales, and the lack of information on the hunters themselves, the latter needs further attention. A deeper knowledge of the hunting population could assist in creating more desirable outcomes for hunters and maintaining license sales all while supporting managers' decisions on hunting and other resource management issues.

1.2. Project Goals

The goal of this project is to gather reliable and up-to-date information on New Brunswick hunters. The objectives of the survey were the following:

- Describe the profile of the New Brunswick hunter
- Learn about hunting habits
- Measure the hunters' level of satisfaction regarding various elements linked to wildlife management, habitat management and hunting seasons
- Acquire knowledge on the opinion of the hunters on certain issues related to hunting
- Identify the motivating factors for hunting
- Estimate the economic value of recreational hunting for New Brunswick by determining the hunter's annual spending

2. Methodology

The target population for this survey was 2015 New Brunswick hunting licence holders aged 18 years or older. A randomized sampling was not possible since government managers could not provide us with a list of permit holders due to privacy issues. We therefore launched an information campaign and a website (www.umce.ca/chasse) to encourage hunters to sign up and participate in the survey either on the web or over the phone. Participants were asked for their preferred method to answer the survey: web, phone, or mail. The enrollment period ran from the middle of July to December 31, 2015; 504 people signed up to take part in the survey (Table 1).

Table 1. Potential survey participants

REGISTERED POTENTIAL PARTICIPANTS	ANGLOPHONES	FRANCOPHONES	TOTAL
INTERNET	311	98	409
MAIL	58	22	80
TELEPHONE	9	6	15
TOTAL	378	126	504

In January 2016, we invited all 504 people that had signed up to fill out the survey which was administered under Dillman (2008) principals. The internet version of the survey was created with Survey Monkey, and the telephone and mail versions used the same questions and a similar format. We received 401 valid surveys between January and April 2016 for a response rate of 79.5% (Table 2). Further details on the methodology are provided in Annex A.

Table 2. Participation rate

PARTICIPATIONS RATE	ANGLOPHONES	%	FRANCOPHONES	%	TOTAL	%
INTERNET	236	76%	86	88%	322	78,7%
MAIL	49	84%	20	91%	69	86,25%
TELEPHONE	6	67%	4	67%	10	66,7%
TOTAL	291	77%	110	87%	401	79,5%

3. Results

3.1. Preferred Game Species and Hunting Efforts

Not surprisingly, the most popular hunting licence in New Brunswick for the 2015 hunting season among the surveyed participants was the one that combined antlered white-tailed deer, small game, and varmints (groundhog, coyote, etc.): 90% of respondents held this permit (Figure 2). The bear hunting licence came in second with almost a quarter of the participants, while a fifth of the respondents obtained a licence for migratory birds. Only 8% of participants possessed solely a small game licence; this allows for hunting of ruffed grouse, spruce grouse and the snowshoe hare. As for moose (20%) and antlerless white-tailed deer (13%), these licences are controlled by a quota system; so, the results do not demonstrate the level of interest for these licences but rather how many participants had been selected to receive such a licence. The category “Others” at 8%, includes respondents that indicated having obtained a fur-trapping, hare snaring or guide licence.

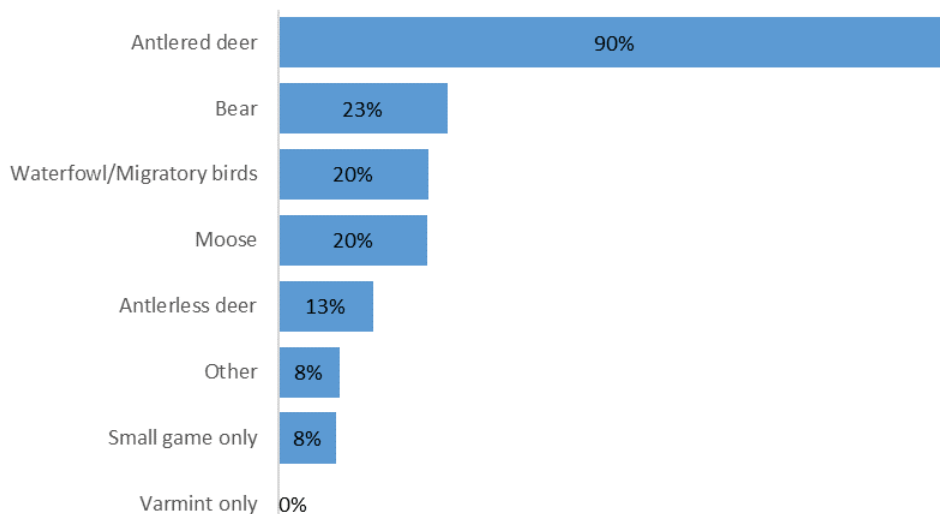


Figure 2. Hunting licences purchased by the respondents of the 2015 New Brunswick hunting survey (n=401)

**Note: The licence for antlered deer automatically allows hunting for small game and varmint. Licences for moose and antlerless deer are restricted by quotas and therefore not available for all the hunters who desired such a permit*

It is difficult to compare these results with the licence sale numbers published by the government, because the data of government managers only reflects the total number of licences sold, without taking into account those hunters who may purchase more than one type of licence. We nonetheless noticed some differences: firstly, in our group, 23% of our participants purchased a bear licence while that particular licence only accounted for 5% of the total sales for residents and 7% if we include non-

residents in 2015 (DNRNB 2016b). Secondly, 20% of the participants indicated having a moose licence when only 9% of total sales were for moose licences in 2015 (DNRNB, 2016b). Similarly, 8% reported having purchased a small game licence only but these licences represented 14% of yearly sales (DNRNB, 2016b). As for varmint, it was impossible to determine if certain participants bought that licence after the expiration of the white-tailed deer licence which also authorizes varmint hunting until the end of February. These results indicated that it is possible that we recruited a higher percentage of big game hunters in our survey than the actual proportion of these hunters in the province.

In order to minimize the impact of quotas in estimating the popularity of various game, we asked respondents which licences they had the most interest for, even if they did not purchase it. Based on the answers received, the deer family is the most popular: antlered white-tailed deer and moose tied at the top of the list both with 95% of hunters stating their interest for these game species (Figure 3). This is not surprising and matches the interest of hunters across North America where members of the deer family are most popular. (U.S. Department of the Interior, 2011). The small game licence comes in third with 91% of respondents.

Varmints, antlerless white-tailed deer and bear were mentioned by 73%, 57% and 56% of respondents respectively, with migratory game birds receiving 41%. This suggests that the white-tailed deer licence provides a cost-efficient option for hunters as three out of the four most popular game types are covered by this one licence. Generally speaking, it can be said that hunters have varied interest in terms of game even though they may not purchase a licence for every one of these animals in the same year.

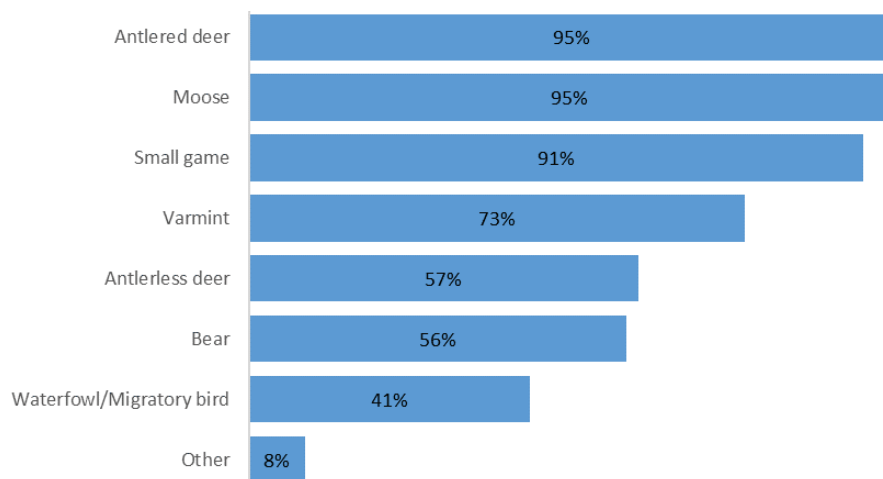


Figure 3. Proportion of hunters interested in various game (n=401)

Another means to determine hunters' interest level for various hunting seasons is to estimate the number of days spent hunting for different game. We refer to this calculation as the "hunting effort". When interpreting the results, it is important to keep in mind that various factors may influence the hunting effort such as regulations, length of season and the success rate of hunters. Nevertheless, this is an interesting variable that allows us to gauge the interests and the habits of hunters. The results indicate that a greater hunting effort (more hunting days) is spent on small game with an average of 14.1 hunting days per respondent. White-tailed deer is a close second with 12.4 hunting days on average per respondent, and bear hunters spent an average of 11.9 days hunting. Migratory game birds, nuisance animals and antlerless deer hunters invested 9.7, 9, and 8.9 days hunting respectively in 2015. Moose hunters only invested 3.3 days on average but the season is only 5 days long and the success rate is quite high, which shortens the hunt (DNRNB 2016).

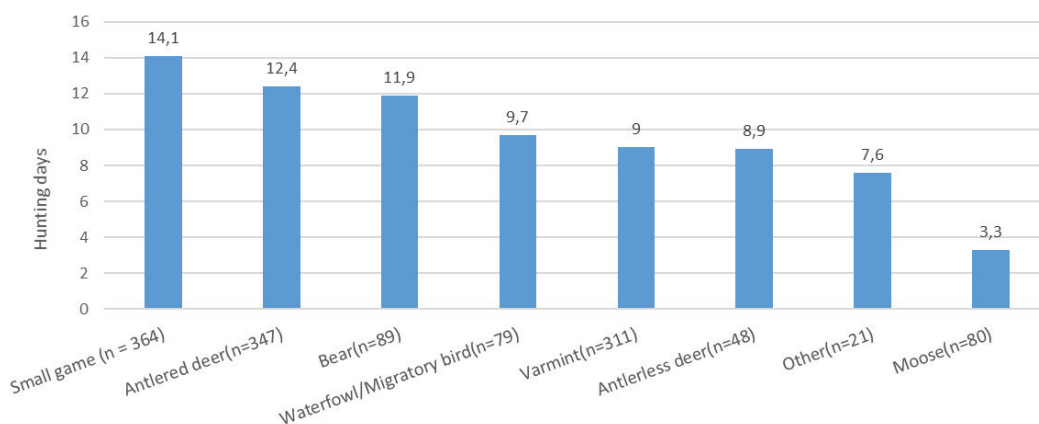


Figure 4. Average number of hunting days per hunter per game type in 2015.

According to Enck and Decker (1991), interest for hunting can potentially be created by bringing non-hunters and people without hunting licences along for a hunt. We therefore sought to determine the frequency with which hunters were accompanied by non-licence holders. We asked the participants in the survey if they were always, often, sometimes, rarely or never accompanied by non-hunting licence holders. According to the results obtained, hunters reported varied habits in terms of accompaniment. In fact, more than half (52%) are never or rarely accompanied by people that do not have a hunting licence while almost a third (32%) state that they are sometimes

accompanied and only 17% state being often or always accompanied by someone who does not possess a hunting licence. (Figure 5).

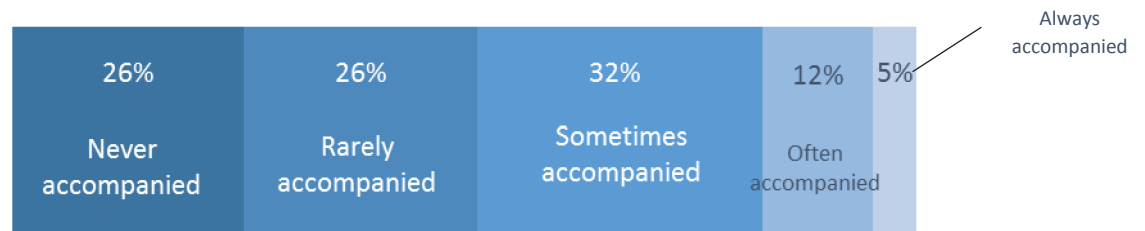


Figure 5. Proportion of hunters accompanied by non-licensed individuals. (n=399)

3.2. Hunting Territory Usage and Travel Habits

Research has demonstrated that access to hunting territory is an important issue for hunters (Adams, and. al., 2000; Woods, 1997; Swensson and Knight 1998). Indeed, limited access can be an important barrier for hunters and a source of conflict between them (Heberlein, 1992), as well as between hunters and land owners (Adams et al., 2000, Swenson and Knight 1998). With this in mind, it is important to better understand the usage of different types of hunting grounds by New Brunswick hunters. Our results show that Crown lands are the most used type of territory: 57% of the survey participants reported always or often using Crown lands for hunting in 2015 (Figure 6). Private woodlots were also reported as important. In fact, 39% of respondents indicated often or always hunting in woodlots which do not belong to their family. With such a large proportion of hunters using private lands which do not belong to anyone in their family circle, it is obvious that continued access to these lands is an important issue for the hunting community of New Brunswick. Land owners may post signs on their lands forbidding hunting, shooting, snaring or trapping within a designated perimeter using a system of red and yellow bands and discs. They may also use signs with printed words (DERDNC, 2016a). The colour yellow indicates that hunting is only allowed with the owner’s permission while the color red means hunting is forbidden to all – including the owner. Family owned woodlots were the least used type of hunting grounds and 55% of the respondents stated that they never or almost never use this type of territory for hunting. Nonetheless, almost a third of survey respondents (32%) used family land to hunt. Finally, about a quarter of the hunters reported hunting on land which belongs to the forest industry but almost half said they rarely or never used this type of territory. The majority of industrial freehold lands are in the Northern part of New Brunswick while the majority of its inhabitants are in the South; a potential explanation as to their low utilization rate. Furthermore, access to these territories

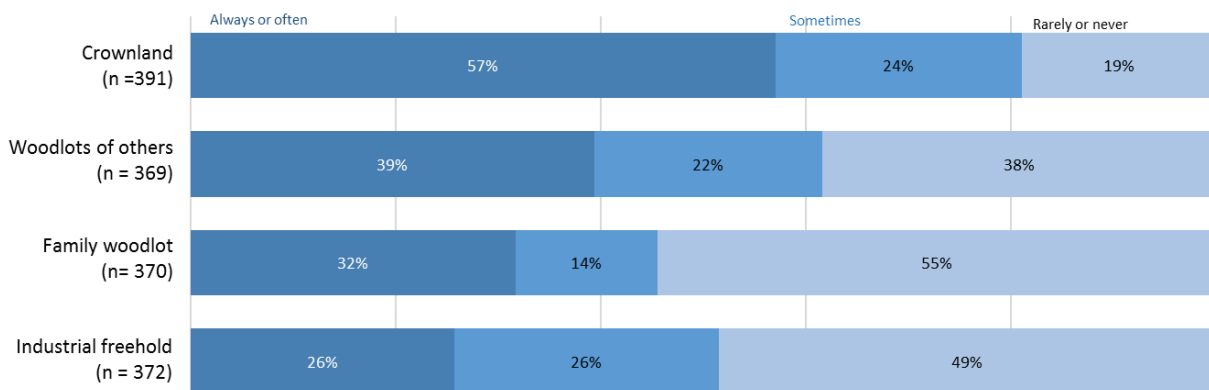


Figure 6. Relative usage of various types of territory for hunting in 2015

can be controlled by forestry companies. Depending on the case, hunters may have to pay a fee to gain access to the territory or take advantage of agreements that exist with local hunting and fishing associations.

In terms of travelling habits, we asked the survey participants to indicate on how many hunting trips they went in 2015. For the purpose of this study, we defined a hunting trip as an outing where the hunter spent one or more nights away from home. The results demonstrated that over two thirds of the respondents (68%), went on at least one hunting trip in 2015 (Figure 7). Looking at the data in detail, we found that 41% of the respondents took one to three trips in 2015, 17% took four to six trips and 11% went on more than 7 hunting trips. These results seemed to indicate that hunting trips are an integral part of New Brunswick hunters' habits.

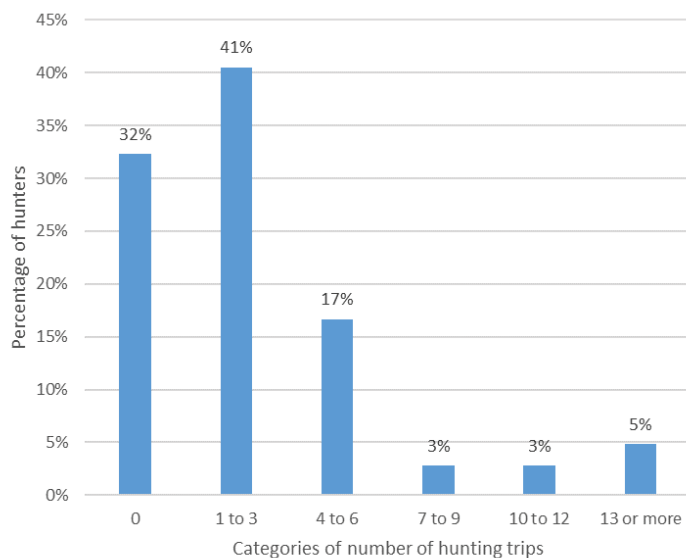


Figure 7. Proportion of hunters going on hunting trips (n=390)

Regardless of the high proportion of hunters going on trips, only 26% of them used commercial accommodations (such as hotels and hunting lodges) in 2015 (Figure 8). This could mean that a significant proportion of hunters used secondary personal lodging such as a hunting camp or a camper. Also, recognizing the camaraderie that links hunters together, it is also possible that hunters lodge with friends during such trips.

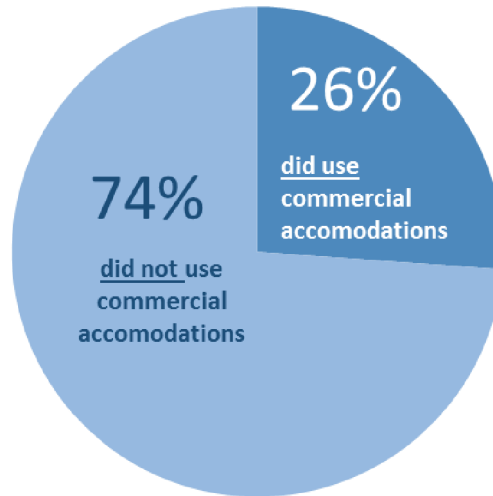


Figure 8. Proportion of hunters who used accommodations in 2015 (n=263)

According to the replies to our questions on travel distances to reach their hunting territory, 30% reported travelling less than 50 km (one way) to get to their destination while 28% travelled 50 to 100 km (Figure 9). The remaining 42% of respondents travelled more than 100 km to go hunting. Many factors can influence the choice of hunting grounds, specifically: access to it, habitat quality, game density, hunter density, and tradition (returning to the same area year after year). These factors can help us better understand how hunters are distributed across a given territory and partially explain the distances travelled by individuals to reach their hunting grounds.

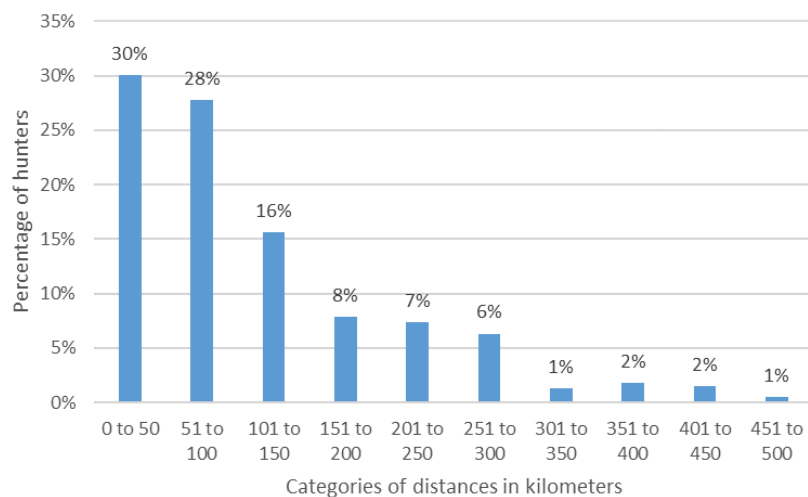


Figure 9. Distance travelled by hunters to reach their hunting ground. (n=396)

3.3. New Brunswick Hunters' Expenditures in 2015

Recreational hunting's contribution to the economy has become more and more recognized both in North America and throughout the world (Bauer and Giles, 2002; SOM, 2012; U.S. Department of the Interior, 2011). Not only can hunting become an important lever of the recreational and tourism industry (Canadian Commission on Tourism, 2012), it also stimulates the economy and contributes to job creation within the province through the investments and purchases made by resident hunters in the pursuit of the activity. As with any sector of the economy, it is important to follow the trends and estimate the level of expenditures of the hunters in order to better estimate the value of hunting's contribution to the provincial economy.

To do so, the survey included a section on hunting expenditures. Hunters were asked to indicate their expenses with regards to hunting activities in New Brunswick, according to four distinct categories; namely: travel and transportation, hunting firearms, bows and accessories, large equipment (camper, hunting lodge, ATV, etc.) and "other" which included items such as gear, clothing, accessories, bait and taxidermy.

Our results show that respondents spend considerable amounts to hunt. The average expenditure per hunter is \$7,560 annually. This average is much higher than estimates from other studies on hunter spending; for example, \$1,832 in a Quebec study and \$2,400 in a U.S. study, both with similar categories. The New Brunswick average appears very high due to a small number of respondents who spent significant amounts on large equipment. Indeed, we noticed that 11% of respondents claimed to have spent over \$10,000 in this category alone, which included hunting camps and vehicles (Figure 10). Almost two thirds of the total of all expenses listed by respondents in 2015 figured in this category (Figure 11).

While the vast majority of respondents (82%) spent less than \$10,000 on hunting during the year a minority (18%) spent more than that amount in 2015 (Figure 12). We therefore decided to separate these two groups of respondents. This distinction allowed us to estimate an average spending of \$3,000 for respondents in the lower category and \$28,700 of spending on average for the group that spent more than \$10,000 (Figure 13).

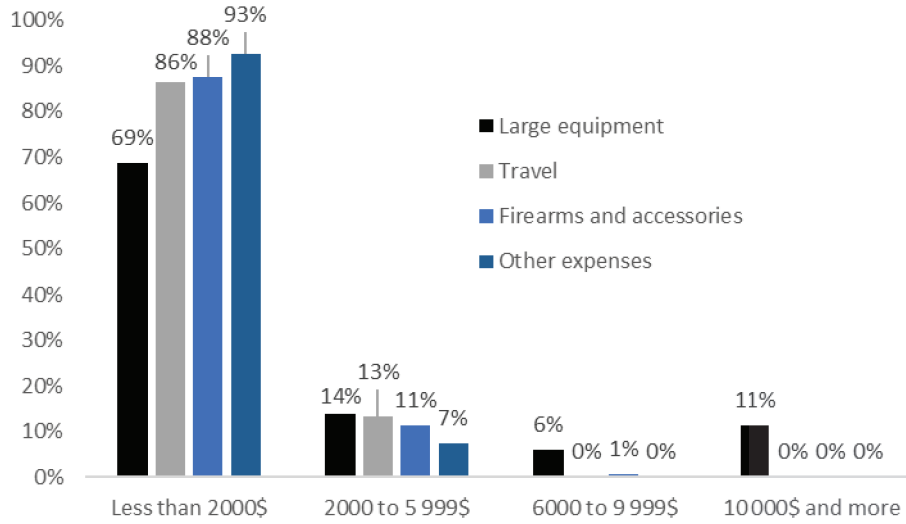


Figure 10. Proportion of hunters per amount spent in each category (n=315)

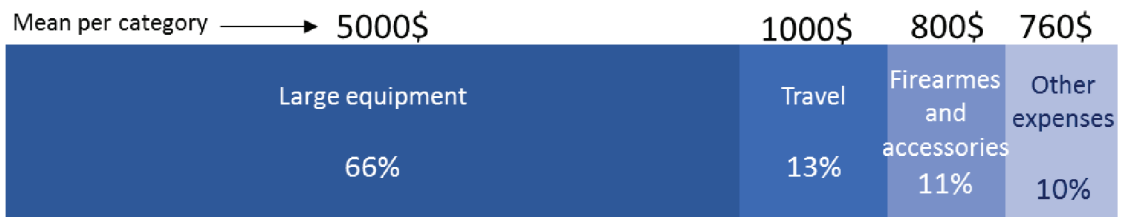


Figure 11. Proportions and averages of respondents' spending in each category (n=315)

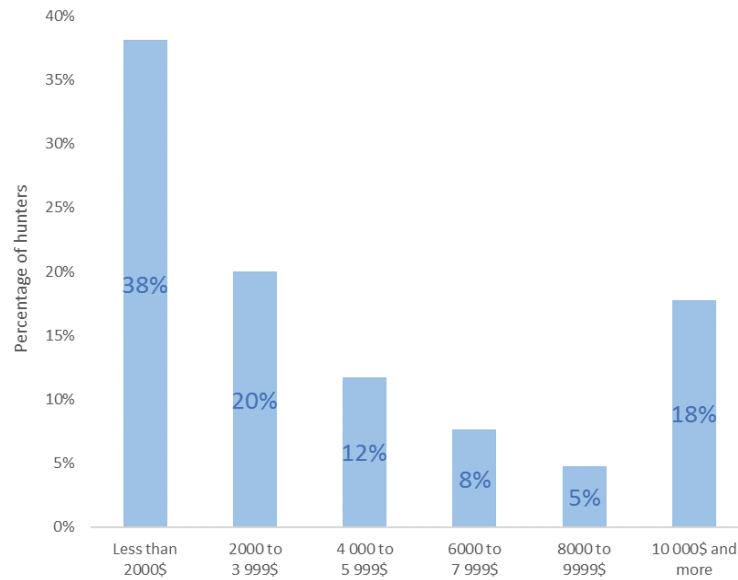


Figure 12. Proportion of respondents by total amount spent on hunting in 2015 (n=315)

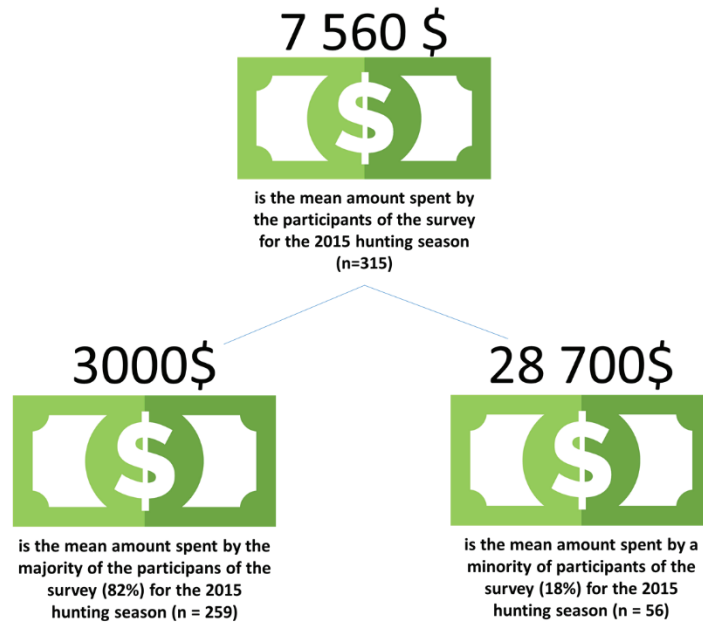


Figure 13. Averages of expenditures for the 2015 hunting season by respondents who spent less than \$10,000 (n=259), those which spent more than \$10,000 (n=56) and all respondents (n=315)

Source of image :www.flaticon.com

A closer look at the distribution of expenditures for respondents who spent less than \$10,000 revealed that “large equipment” is the most important category in terms of value, accounting for more than a third (34%) of total expenditures (Figure 14). Travel and transportation represented more than a quarter (27%) of expenditures, while the “other” and “firearms” categories were almost equal, representing 20% and 19% respectively of the total amount of spending. Even though the large equipment category had the greatest value, it is also the category in which the smallest number of participants actually spent anything. In fact, 29% of respondents declared not spending anything in this category. This percentage decreases to 2%, 4%, and 1% for Travel, Firearms and others, respectively.

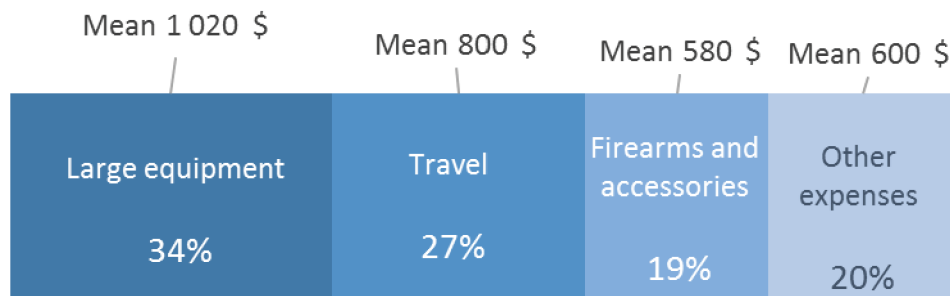


Figure 14. Proportions and averages of spending for each category of respondents having spent less than \$10,000 (n=259)

The distribution of spending for those having spent more than \$10,000 is very different. This group of respondents spent on average a greater amount in each category than the other group of respondents, who had a total spend of less than \$10,000 (Figure 15). The category “large equipment” considerably raises the average spend with an average of \$23,400 per respondent. This category of purchases also represents 82% of the average total spend. While the items that make up this category, such as hunting camps, campers, ATVs, and other vehicles are not annually recurring purchases, we can infer that a proportion of hunters purchase such equipment every year. These respondents were wealthy enough and passionate enough about hunting to invest such sums, especially in large equipment. Closer examination of the spend within this group showed that the majority (31) spent less than \$20,000 but a small number (8) stated spending over \$50,000 (Figure 16). This smaller group significantly raises the average.

Needless to say, hunters invest a lot of money in hunting; nonetheless, we must be careful in interpreting our results. It is possible that hunters having the means to invest significant sums in their hunting activities could be over represented in our study sample population. It is also possible that some individuals over estimated their expenditures which would also increase the average spend. As well, many hunting enthusiasts spend a considerable amount of money in the pursuit of this activity. It is possible that these enthusiasts would also be more likely to participate in a survey such as ours.

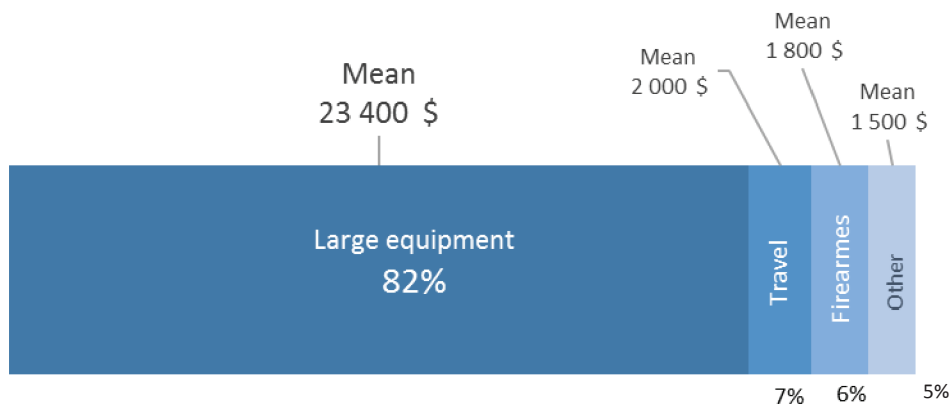


Figure 15. Proportion and spend averages for each category for hunters having spent more than \$10,000 (n=56)

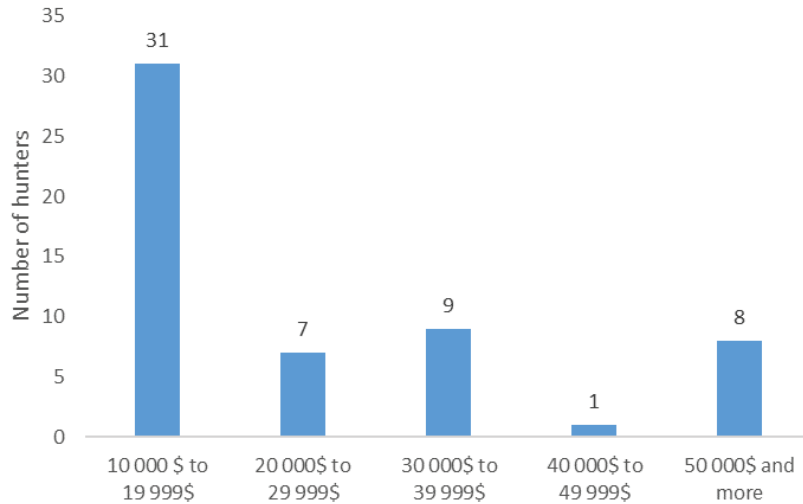


Figure 16. Distribution of respondents which spent more than \$10,000 for the 2015 hunting season, according to amount spent (n=56)

That being said, we can estimate a total expenditure value for the 2015 hunting seasons by taking the smaller average of the two groups; those that spent less than \$10,000. Extrapolating this value of \$3,000 per hunter over the 48,521 residents who purchased white-tailed deer hunting licences in 2015, we obtain a value of over 145 million dollars. This is obviously an important contribution for New Brunswick. We used white-tailed deer licence holders to estimate the economic value as it is the hunting season with the greatest number of licences sold, and because holders of other types of licences also often hold a white-tailed deer licence. By using solely the sale numbers for this hunting season, we avoid double counting hunters that might purchase multiple hunting licenses.

3.4. Out-of-Province Hunting

Hunters are mobile and many seek to experience hunting trips outside of New Brunswick. It is important to follow the trends of this phenomenon in order to determine the reasons for hunting outside of the province and estimate the potential loss of revenue. To that end, we asked participants to indicate if they had hunted outside of New Brunswick in 2015. Results indicated that 29 respondents (7% of participants) went hunting outside of the province (Figure 17). This percentage is half the American National Average, where the U.S. Department of the Interior (2011) found that 14% of hunters hunted outside of their state of residence in 2011. Respondents who went hunting outside of the province estimated having spent \$2,830 on average for the hunting trip (Figure 18). If this trend is constant across all 48,500 hunters, we can estimate that close to 3,400 of them went hunting outside of the province and spent close to \$9.6 million during their trips.

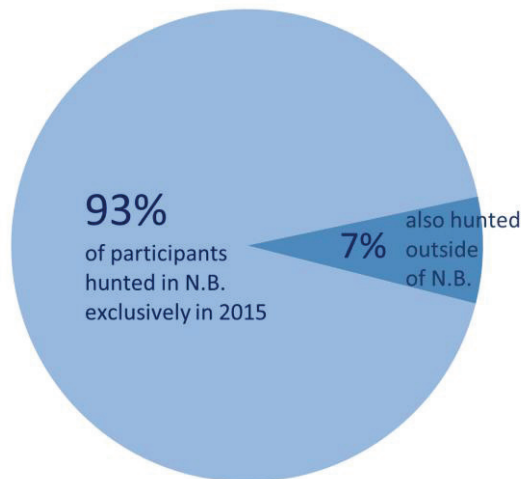


Figure 17. Percentage of hunters who went hunting outside of New Brunswick (n=398)



2830 \$

is the mean amount spent for hunting outside of the province.

Figure 18. Average expenditures of hunting trips outside of the province (n=25)

When asked about the reasons why they went hunting outside the province, we found that the two main reasons were the perception that there is higher quality hunting elsewhere than in N.B. (23/28) and to experience a different type of hunting (20/28). Hunting quality is therefore an important factor for these hunters. Half of the respondents (14/27) mentioned that invitation by friends have a significant influence on those that decide to go on such trips (Figure 19).

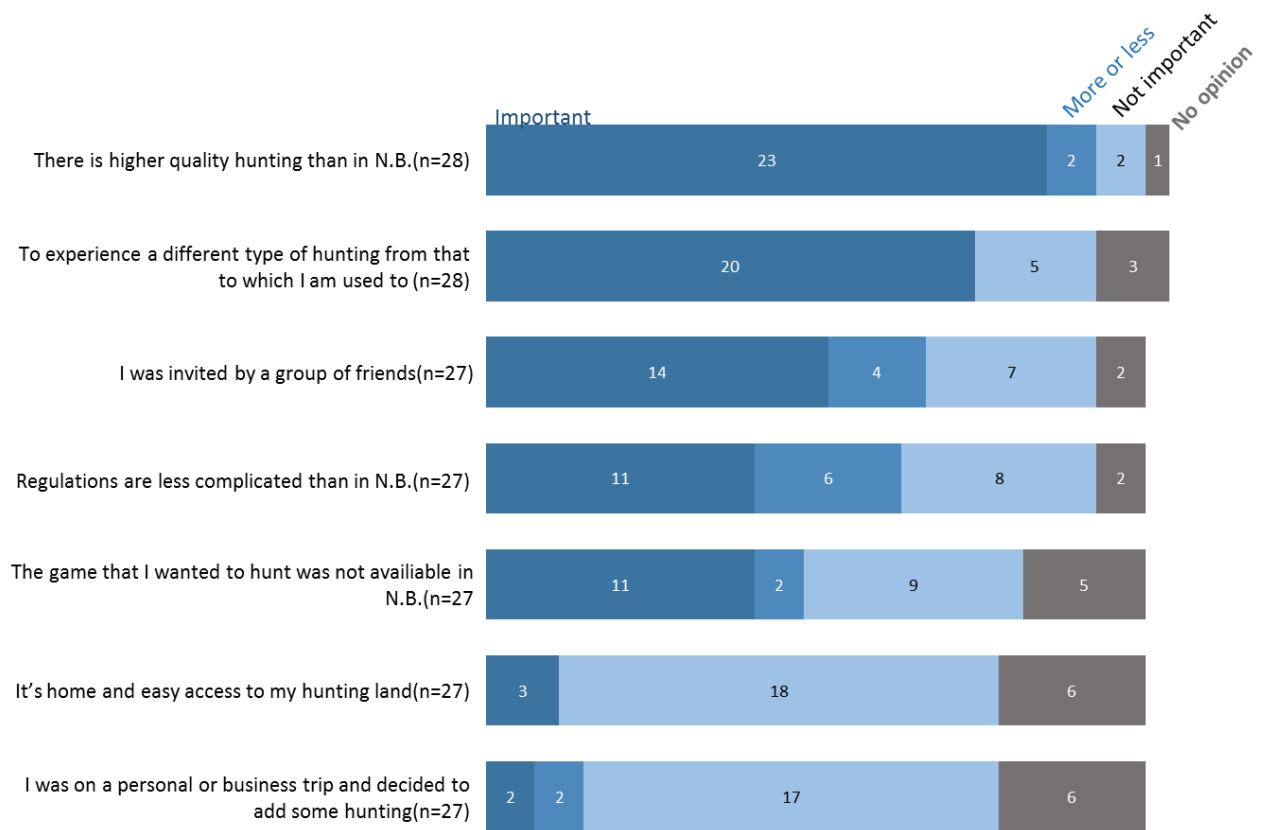


Figure 19. Reasons stated for going hunting outside of New Brunswick

3.5. Hunters' Motivating Factors

According to Allen (2009), a better understanding of the values, beliefs and attitudes of the public at large towards natural resources can allow managers to better define resource issues, which in turn will help them craft alternative and effective strategies to resolve those natural resource management issues. Schwartz (2006), indicates that values are one of the driving forces that motivates people. Thus, a better understanding of hunters' motivations can provide insight into their values and valuable information for managers.

Generally speaking, research on hunters throughout North America has shown that hunters practise this activity to appreciate nature, to release stress, to experience exciting moments provided by hunting with family and friends and to learn about nature and animal behaviour. (Daigle and Hrubes, 2002, Decker et al. 1980, Kennedy 1974). In the survey, we included questions on hunters' motivation in order to determine if the motivators of the participants in our survey were similar to those found in other studies performed elsewhere. Our results show that New Brunswick hunters have the same type of motivators. In fact, the five most important reasons cited for hunting were: to make the most of nature, or of being outdoors (95%), to spend time in nature with friends or family (90%), for the excitement and the challenge that hunting gives (86%), to escape from the stress of everyday life (84%) and to learn about wildlife and its habitat (81%) (Figure 20).

Results concerning meat and trophies are of particularly interesting. While 53% of respondents indicated that bringing meat home from the hunt is important, it was not amongst the most common motivators. Nonetheless, a successful hunt (i.e. bringing meat home), does have a positive influence on the satisfaction level of the hunter (Decker et al., 1980). The least common motivator was bringing home a trophy with only 23% of respondents stating it was important. Half of the respondents (50%) indicated it was not important. For white-tailed deer, some actors in the hunting community encourage hunters not to harvest young bucks so that they may become mature. This can be encouraged for various reasons, such as herd health and an increased hunting quality. But according to our results and in areas where doe hunting is prohibited, this message may have the potential to create friction between meat hunters and those who defend mature buck hunting only, which are typically considered to be a trophy animal amongst hunters. Non-hunters support hunting in a large proportion if the goal is for food. This support diminishes if the purpose of the hunt is trophy hunting (Heberlein, 2008).

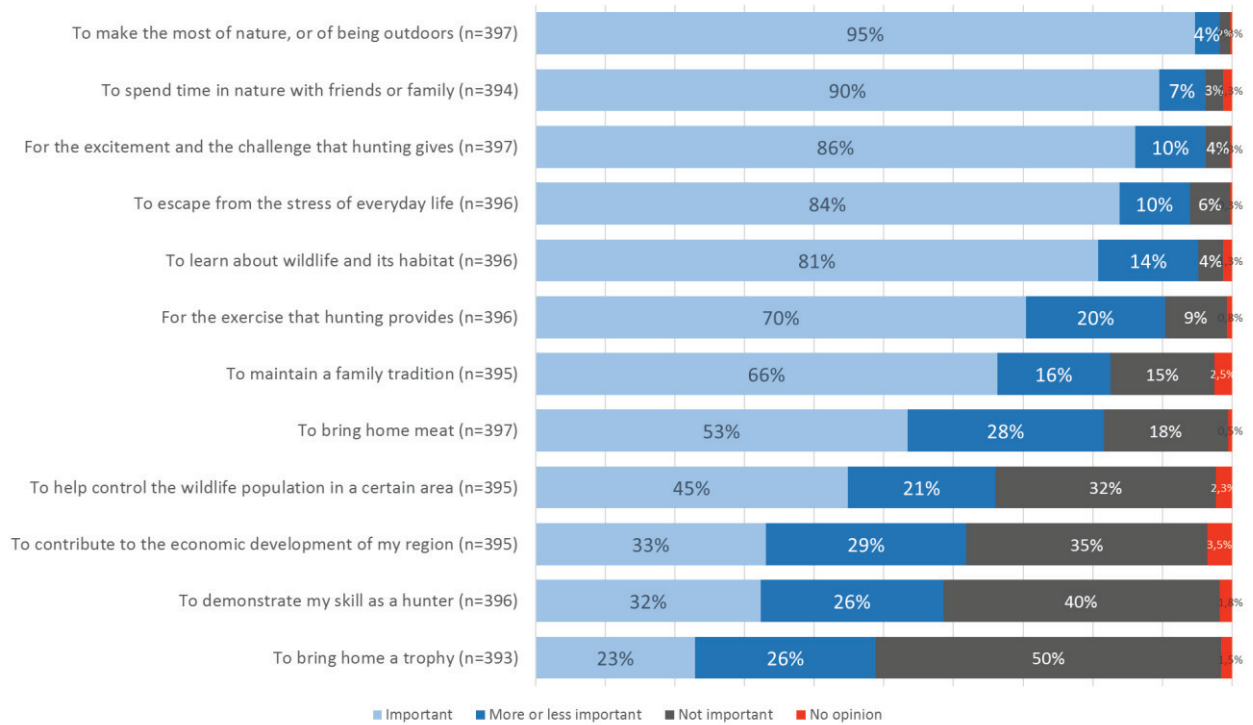


Figure 20. Relative importance of hunting motivators in 2015, according to respondents

3.6. Hunters' Satisfaction Levels and Opinions

It is important to monitor satisfaction levels amongst hunters. According to Larson et al. (2014), determining the satisfaction level of hunters can be of particular use to managers since it provides them with measurable feedback on hunting management. According to Hammitt et al. (1990), the goals of hunting season management should be to ensure the sustainability of the hunted game, to provide a quality hunting experience and also a high level of satisfaction on the part of the hunter. If a certain satisfaction threshold is not met, it would be important to probe further in order to determine the source of the lack of satisfaction.

It is not recommended to only pay attention to fully involved and outspoken hunters to establish the level of satisfaction. According to Johnson et al. (1993), this information must be combined with empirical data to obtain a full picture and to guide managers in their decision-making. In this survey, we recognized that participants were self-selected and therefore might be more motivated and have stronger opinions than the general hunting population. Nonetheless, previous research in New Brunswick has demonstrated that surveys are clearly the preferred tool for gaining information on public opinion regarding forestry issues (Nadeau et al., 2007).

3.6.1. Level of Satisfaction with Hunting Seasons

Participants were asked to indicate their level of satisfaction relating to various hunting seasons for which they held a licence and in which they participated. Our results show that the vast majority of hunters were satisfied with the migratory birds' season (81%), moose season (81%), bear season (79%) and small game season (77%) (Figure 21). Satisfaction levels were much lower when it came to white-tailed deer where only 30% of respondents were satisfied with the antlerless season and 29% were satisfied with the season for antlered deer.

These results are not necessarily surprising. Indeed, for many years now, the white-tailed deer population has been stagnant in New Brunswick (DERDNCB, 2016). Even though harvesting was not stated as a priority by the respondents to the survey, the thrill and excitement of the hunt were stated as sources of motivation by 86%. In order for it to be exciting, sign of game animals must be present. If many hunters have difficulty locating game, this would be a source of frustration. In fact, the success rate for white-tailed deer in 2015 was only 9% which made it the fifth worst success rate of the last 50 years according to the data from the Department of Energy and Resource Development (DERDNCB, 2017). The average success rate during this same period was 15%.

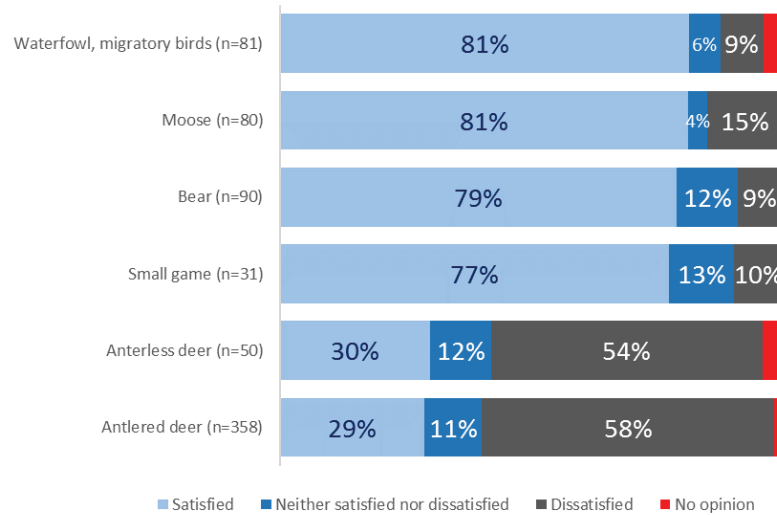


Figure 21. Respondents' satisfaction levels with regards to various hunting seasons in 2015

The same logic can be inferred when looking at the motivating factor of learning about wildlife and its habitat. Again, if game cannot be located, it is indeed difficult to gain knowledge and experience about the animal and its habitat. Being outdoors was also a motivating factor mentioned by our respondents and we noticed in our results that hunters were frustrated by the habitat modification brought on by industrial activity. It is therefore possible that white-tailed deer hunters' would wish to see certain types of wildlife habitat. If the type of habitat that the hunter is looking for is not present in the immediate hunting territory because of forest management activity, it might be a cause of frustration. This could also explain part of their low satisfaction level with their hunting season, because in addition to being unable to bring home game, the difficulty to find the preferred type of habitat for hunting might negatively influence the hunting experience.

3.6.2. Level of Satisfaction with Government for the management of wildlife issues

In New Brunswick, the Department of Energy and Resource Development (DERDNB) is responsible for managing hunting seasons and wildlife populations and, until 2013, the annual reports prepared by the Department described actions in relation to specific areas of responsibility (DNRNB 2013). We asked survey participants to rate their satisfaction for a series of statements based on seven responsibilities listed in the 2013 report. We also added 2 responsibilities to which the government has committed since 2013 – rolling out an electronic licence issuance program and taking account of the concerns of the population, especially hunters.

We noticed important differences in the level of satisfaction of respondents towards the manner in which the provincial government handles many of its responsibility (Figure 22). On the positive side, a majority of respondents were satisfied with the management of the firearms safety and hunter education program (72%) as well as the establishment of the new electronic hunting and fishing licence issuance system (e-licencing) (58%). Similarly, 44 % of respondents were satisfied with the application of wildlife and hunting laws—a percentage higher than those dissatisfied.

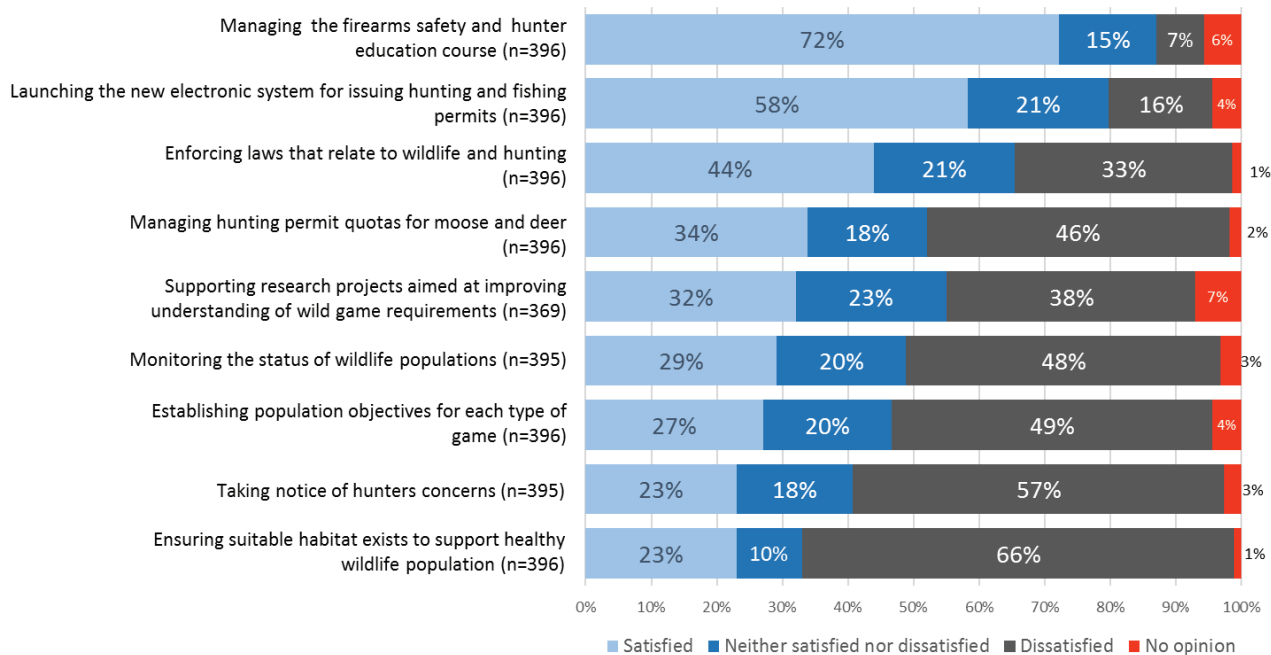


Figure 22. Levels of satisfaction of the respondents with regards to certain government responsibilities.

On the other hand, respondents did report a high level of dissatisfaction towards most of the responsibilities that were listed. Quota management for deer and moose were found satisfactory by 34% of respondents while 46% were dissatisfied. While the survey does not allow for the identification of the precise source of dissatisfaction, the quota system whereby a large number of hunters cannot hunt their game of choice no doubt has an effect on the satisfaction level of many of them. Indeed, our results showed that while 95% of the respondents were interested in hunting moose, only 20% obtained a licence. The same can be seen with antlerless white-tailed deer where 57% of respondents were interested but only 13% obtained a licence.

Responsibilities low on the satisfaction scale included: supporting research and development projects that aim to improve understanding of wildlife habitat requirements; monitoring the status of

wildlife populations; establishing population targets; and ensuring suitable habitat exists to support healthy wildlife populations throughout the province. Only 32% of respondents reported being satisfied by the efforts put forth by the government to maintain research projects, 29% were satisfied with the monitoring of wildlife populations, 27% were satisfied with the establishment of targets and less than a quarter (23%) are satisfied with the maintenance of suitable habitats to support healthy wildlife populations. These last statements reflect the hunters' perception as it pertains to the effort put forth by the government to manage the wildlife habitats and populations. However, it is important to mention that since 2016 (after this survey was conducted) the provincial government has been collaborating with the forestry industry and university researchers on a significant research project on white-tailed deer. Radio collars have been put on a number of deer in order to obtain information on their movements, determine mortality causes and to better understand the characteristics of their Deer Wintering Areas. It is therefore possible that this initiative will have an effect on hunters' perception in the future if findings lead to concrete actions. Only 23% of respondents felt satisfied by the level of attention their concerns received from the government whereas 57% were dissatisfied. This result highlighted the lack of interaction between the two stakeholders. The establishment of a robust interaction process between the various stakeholders involved in forestry issues has been a challenge for the government for many years despite previous attempts to establish better interaction systems (Select Committee on Wood Supply, 2004; Miller et Nadeau, 2017). It might be worthwhile to analyze current participation structures and determine means to improve information-sharing and establish a dialogue between the stakeholders related to hunting and the integration of hunters' preoccupations in the decision-making process of wildlife management.

3.6.3. Hunters' Opinions on Certain Wildlife Issues

We also measured hunters' opinions on other topics such as land access, hunting regulations and habitats. We asked hunters to indicate to which level they agreed with the statements found in Figure 23. Respondents were, for the most part, in agreement with statements that the forestry industry had too much control on habitat (84%) and with those indicating that hunting regulations were clear (63%) (Figure 23). Interestingly enough, only 23% of respondents believed there was a sufficient number of wildlife conservation officers on the ground, while 56% disagreed with that statement. We can therefore infer that a large proportion of hunters appreciate the presence of wildlife conservation officers in the woods and that a majority would like a greater number of them to ensure that regulations are followed.

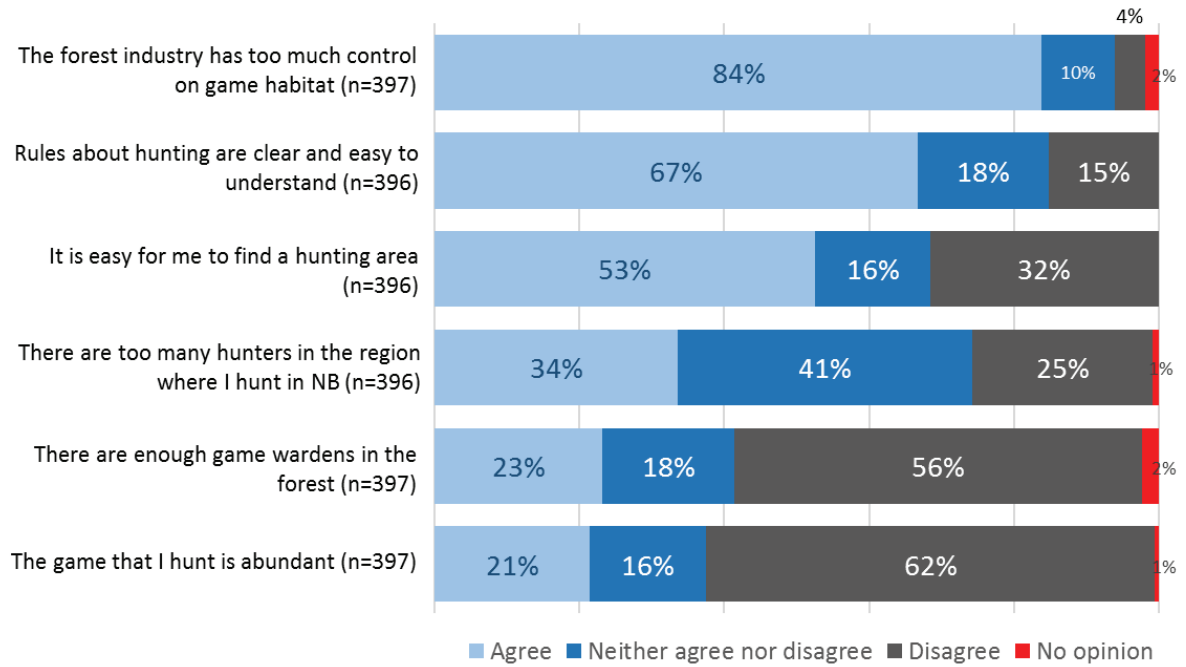


Figure 23. Respondents' opinions on certain statements pertaining to hunting, its control and habitats

3.7. Hunting Clubs and Associations

There are many clubs and associations in New Brunswick (<http://nbwildlifefederation.org>) that allow hunters to join, on a voluntary basis, based on geographic regions, preferred game or various other interests. These groups are recognized as the voice of hunters to the government and the forest industry, in addition to enabling hunters to network with one another. When the government or the industry wants to reach out to the hunters, it is often through such associations. We therefore sought to better understand the role of these clubs and associations as well as their influence on hunting management in New Brunswick. We surveyed both members and non-members; in fact, 57% of our participants were not members of any associations (Figure 24).



Figure 24. Percentage of hunting association members and non-members (n=385)

We asked respondents to indicate their level of agreement to a number of statements relative to the roles, efficiency and representativeness of hunting associations. Three results were particularly interesting. First, we noticed that 83% of respondents agreed that one of the main functions of hunting associations is to defend the rights and interests of hunters (Figure 25). However, only 47% of respondents believe that the associations represent them as hunters. So, while the hunters recognized the importance of the associations, a large percentage does not feel represented by them. The other important result was that only a small minority (18%) of respondents appeared to believe that the relationship between associations and the forestry industry is a good one. In fact, the largest number of respondents (45%) disagreed with this statement. These results hold important implications for associations representing hunters. Despite the fact that hunters recognize the importance of associations, a large proportion does not feel represented by them and the majority does not believe that a good collaboration exists between the associations and the forest industry.

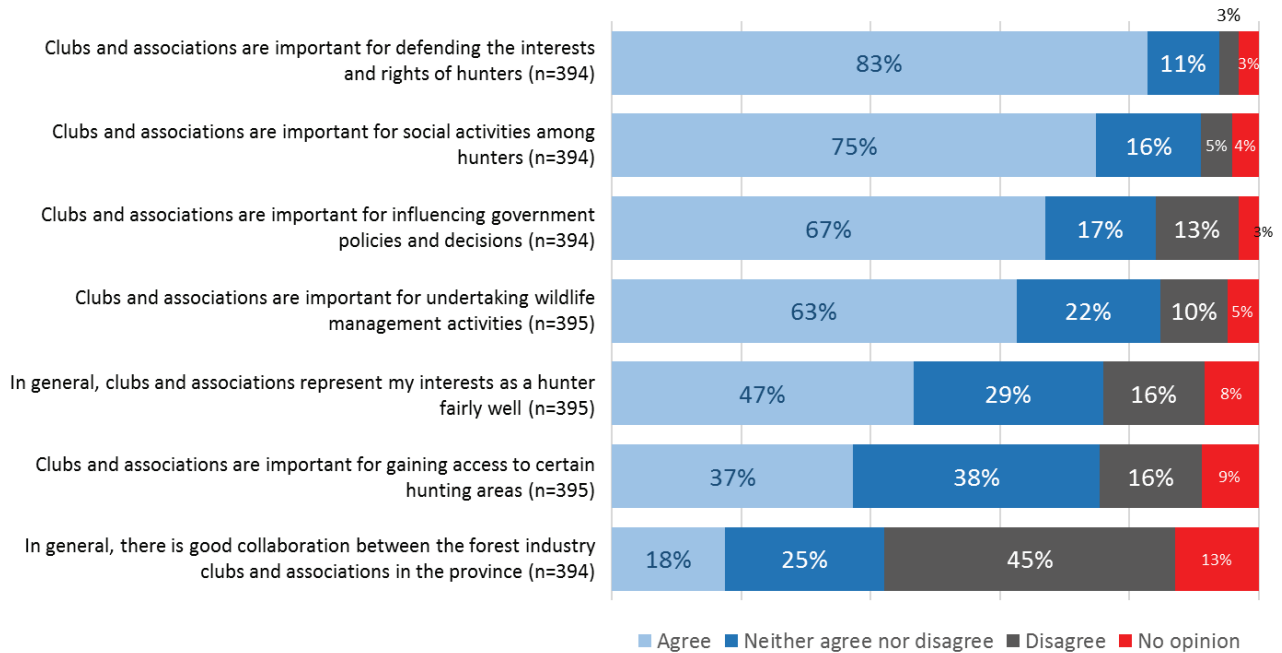


Figure 25. Respondents' opinions on associations' statements

Since the opinions come from members and non-members, we compared the results between the two groups and found significant differences. First, we noticed that there was a greater percentage of non-member respondents who indicated “no opinion” or “neither agree nor disagree” for each statement (Figure 26). It is not surprising that non-members have less knowledge of associations than members. Generally speaking, the percentage of member respondents that agree is greater for each statement. For example, 96% of member respondents indicated agreeing with the statement that the associations are important in defending the interests and rights of the hunters versus only 73% for non-members. Nonetheless, it is surprising that such a high proportion of non-members recognize the importance of the associations even though they choose not to join them; it might be that they don't identify with these associations. In fact, only 31% of non-members agreed with the statement that associations represent them well as hunters versus 66% for members. Finally, even though a slightly higher percentage of members thought the collaboration between associations and the forest industry was good (21% of members versus 15% of non-members), we noticed that a larger percentage (55%) disagreed with that statement versus 39% of non-members. It may be hypothesised that members were more involved in collaborative efforts with the forest industry than non-members are and thus their expectations were higher.

This information should be food for thought for groups who represent hunters. An important proportion of hunters are not members of the groups that defend their rights and generally do not identify with them. Nevertheless, the majority of respondents, both members and non-members, agree that associations are important for the defence of the rights and interests of hunters. For the government, these results highlight the need to reach out not only to the hunters' associations but also to the large number of unaffiliated hunters that do not necessarily identify with those associations.

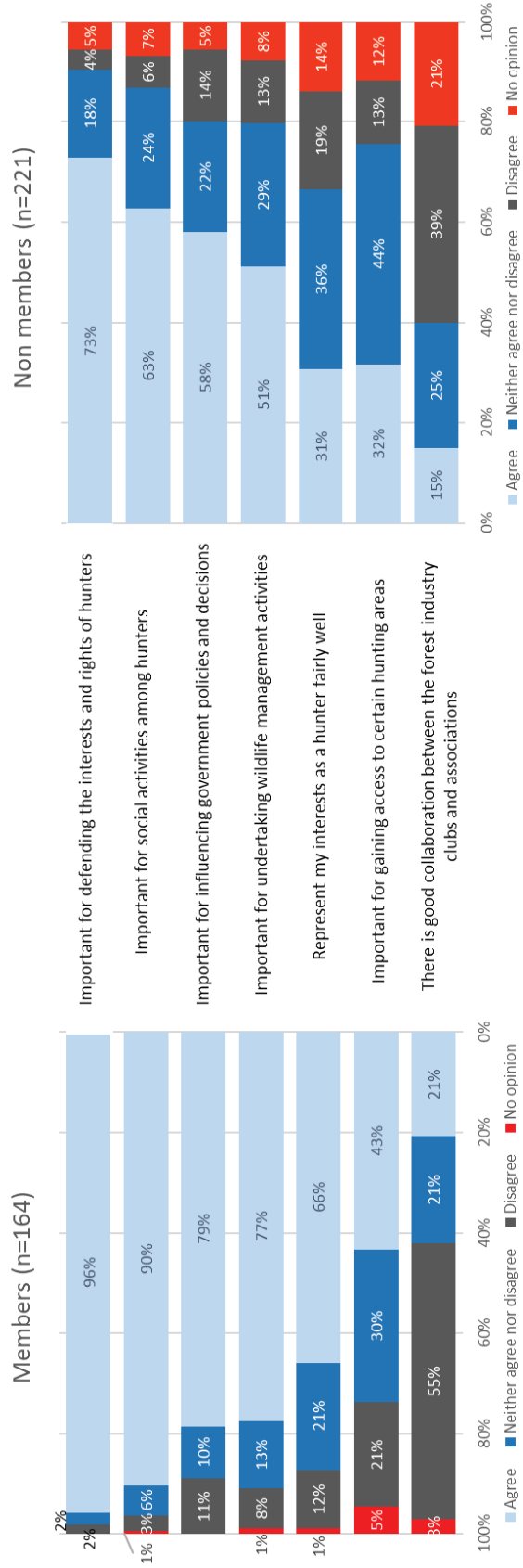


Figure 26. Comparative of opinions between association members and non members

3.8. Respondents' Introduction to Hunting

Generally speaking, most respondents were introduced to small game hunting before the age of 19, with family being a positive influence in the initiation process. In fact, 51% of respondents hunted before the age of 14 and 88% before the age of 19 (Figure 27); 83% indicated that they hunted small game on their first hunt (Figure 28). The average age for the first hunt was 15.7 years old while the median is at 14 years of age. The respondents also indicated that their immediate family (84%), extended family (80%) and friends (78%) had a positive influence in introducing them to hunting (Figure 29). These results are in line with that of other research projects, which examined the phenomena of how one becomes a hunter (Larson et al. 2014).

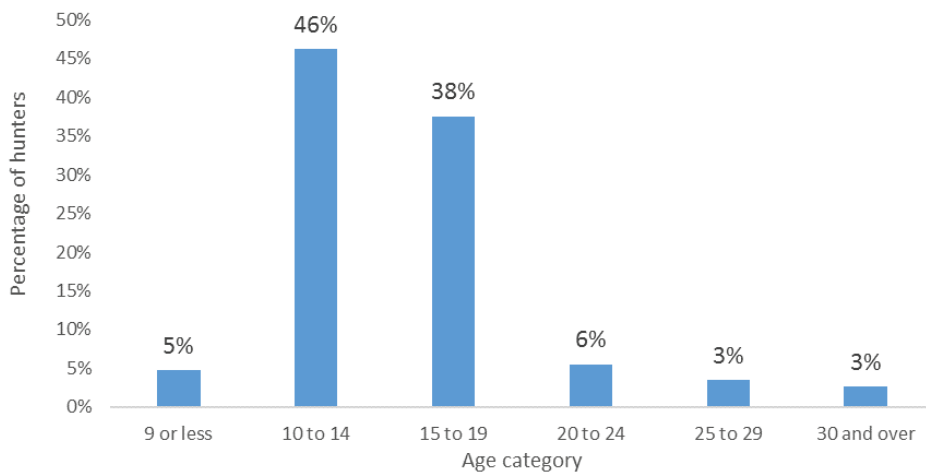


Figure 27. Percentage of respondents per age group at their first hunt (n = 381)

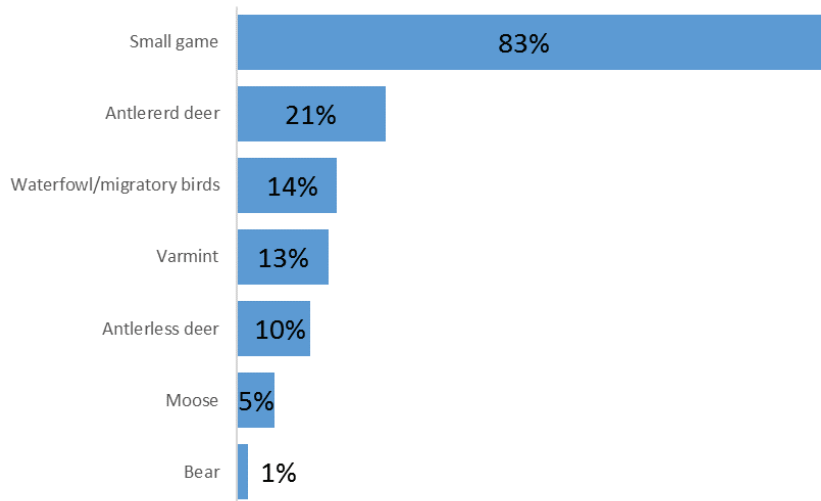


Figure 28. Percentage of respondents per game type in their first hunt

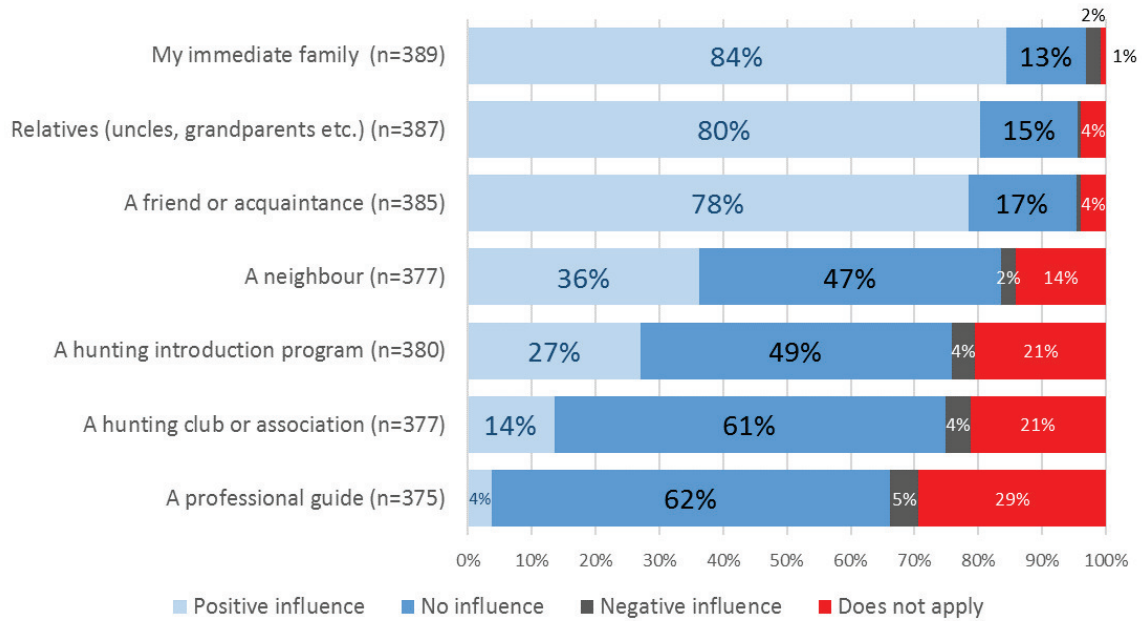


Figure 29. Sources of influence on respondents first hunt

We also compared the motivations identified by survey participants for their first hunt with motivations for the 2015 hunting season (Section 3.5) and found that these factors remained relatively stable over time. The top three motivators for the first hunt are the same as those identified for 2015, but in different ranking order (Figure 30). The greatest change in ranking of motivations was for getting away from stress: it ranked 4th for the 2015 season with 84% of respondents indicating it was an important motivator, while only 48% considered this to be important when they first started hunting. Getting away from stress is probably not as important for a teenager as it is for an adult. Another difference is the desire to prove one’s hunting abilities. This motivator came in second to last with 32% of respondents considering it important for the 2015 season, while 49% indicated it was important when they were first introduced to hunting.

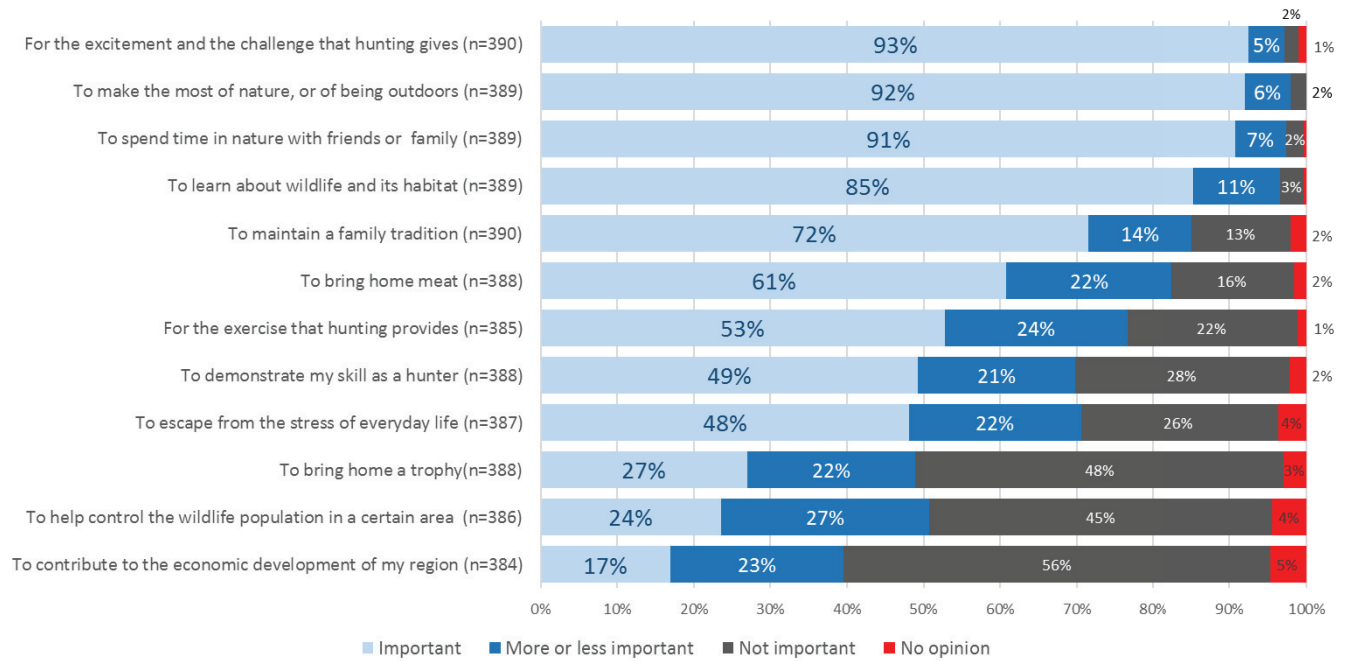


Figure 30. Motivating factors of respondents on their first hunt

3.9. In their own words

The last part of the survey contained an optional comment section for respondents. A total of 147 participants (37%) took the time to share their opinions on a variety of topics. A preliminary analysis revealed 38 different discussion topics, which we grouped under 4 major themes (Figure 31). One out of three comments touched on forest management, game was mentioned in 27% of comments, 23% of comments referred to the sociopolitical aspects of hunting, and 18% touched on hunting regulations. Overall, the comment section allowed an important proportion of hunters to express their concerns about the situation with white-tailed deer, the use of herbicides, the frequency of clear cutting in forest management, or the influence of the forest industry on government’s decision-making regarding forest management. From the point of view of the surveyed hunters, these factors negatively impact hunting quality.



Figure 31. Breakdown of themes found in the comments section of the survey

On the topic of forest management, respondents clearly indicated being concerned by the use of herbicides in forest management and by the frequency of clear-cutting (Figure 32). In fact, almost half of the comments, 101 of them (49%), related to one of these two topics. Among the other comments were statements about management of resources, wildlife habitat and food sources, plantations and Deer Wintering Areas. A common concern expressed throughout multiple comments on forest management was the maintenance of suitable habitats and of the impact of forest management on game, particularly the white-tailed deer.

I have great concerns with the current forestry practices in New-Brunswick and the impact they have on our ecosystem. I do not support the use of glyphosate on crown land in New-Brunswick.

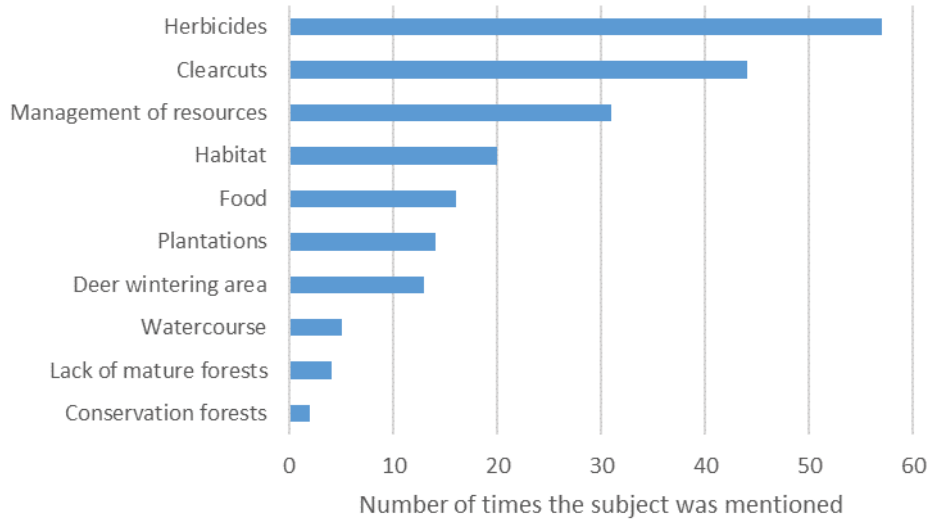


Figure 32. Number of comments per topic under the theme of forestry management in the comments section of the survey (n=206)

Figure 33 indicates the types of game mentioned in the comments. Clearly, the white-tailed deer is the species about which hunters are most worried. 72 of the 168 comments (43%) under the theme of wildlife were about deer. Moose came in second with 39 or 23% of the comments under this theme.

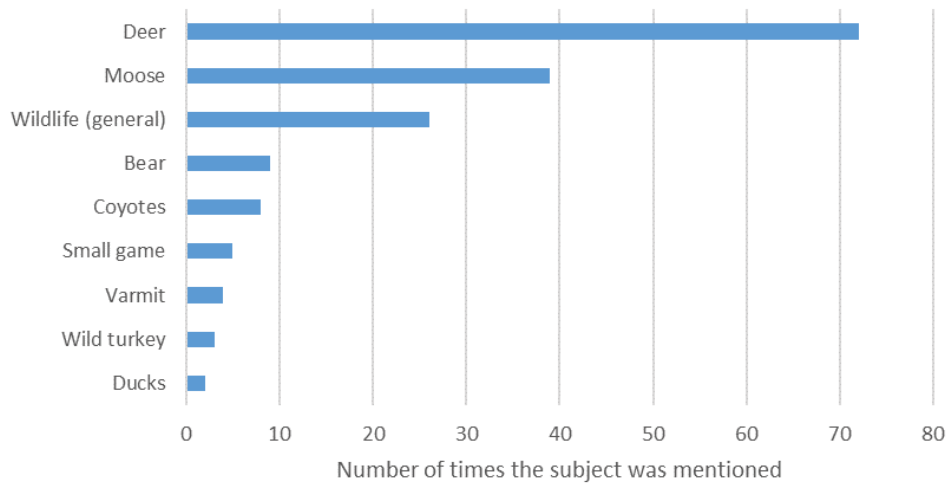


Figure 33. Number of comments per topic under the theme of wildlife in the comments section of the survey (n=168)

I am very concerned that our governments have caved in to big business. These big corporations have far to much influence...

As for the sociopolitical theme, hunters' concerns tend towards the perceived influence of the forest industry on government with 39 comments (27%) and the role of government in forest and hunting management with 32 comments (23%), as shown in figure 34. Respondents also left 29 comments (20%) on the finances of hunting, such as the economic contribution and expenses of hunters.

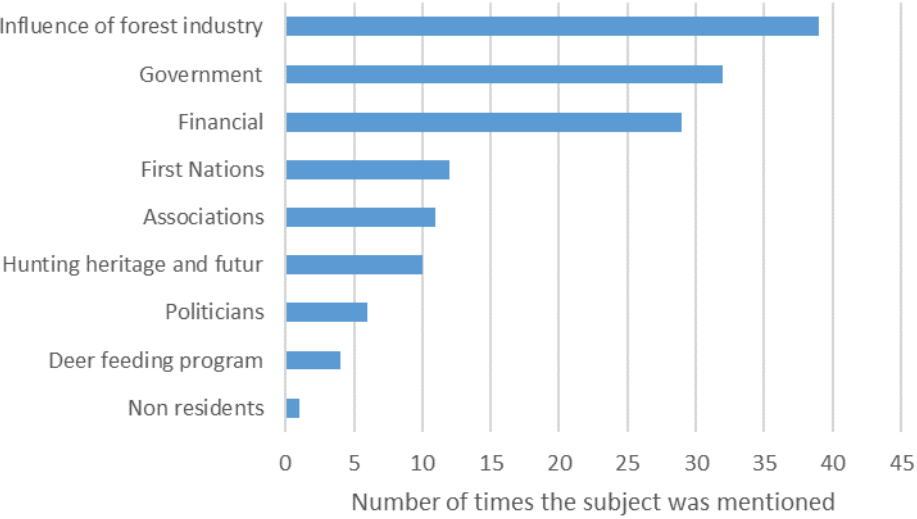


Figure 34. Number of comments per topic under the theme of sociopolitical issues in the comments section of the survey (n=144)

Hunting in this province is not only very important for our quality of life, but also very important for our economy. Our hunting and fishing clubs, provincial government and industry should continue to work together to keep this way of life healthy in to the future.

Finally, the theme of hunting regulation also received some attention from the respondents. The most frequent topic, with 24 comments under this theme, addressed hunting seasons (Figure 35).

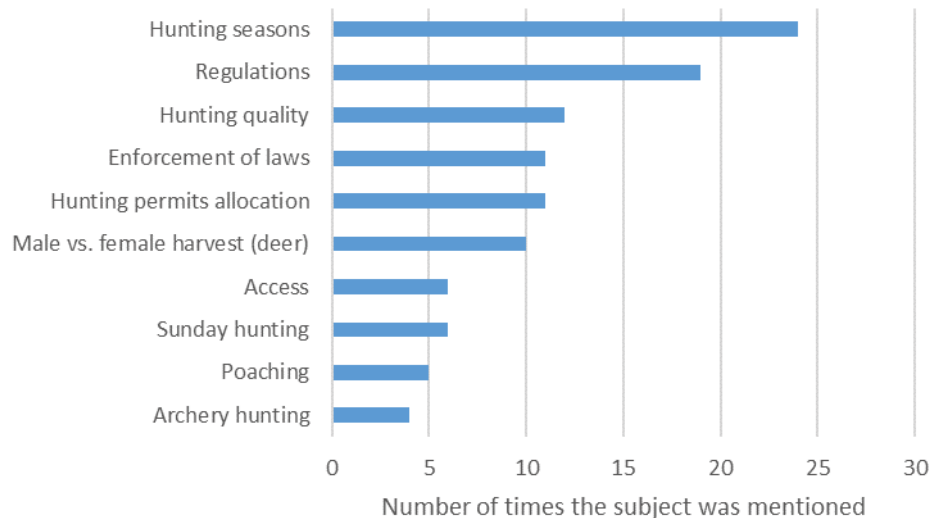


Figure 35. Number of comments per topic under the theme of hunting regulation in the comments section of the survey (n=108)

...We really need MORE ENFORCEMENT! ... Stiffer fines need to be given out to more poachers, and that takes more enforcement people. Hopefully surveys like this will shed some light on the situation. Listen to the people you survey. :)

I began hunting when I moved to Georgia. I was impressed how the DNR there promoted hunting to the whole family and stressed QDMA. I am very disappointed now living here at the age restrictions and the obvious lack of wildlife management vs. big timber. For hunting to be economically viable for NB, then younger generations must be encouraged to hunt and more emphasis on programs like QDMA.

3.10. Profile of the Respondents

The vast majority of the respondents were non-Aboriginal, Anglophone males from New Brunswick (Figure 36). In fact, results indicated that 92% of the survey participants were male and 8% were female. This gender proportion is in line with an American study that found that 11% of hunters were women (U.S. Department of the Interior, 2011). In terms of language, close to three quarters (73%) of the respondents were Anglophones while 27% of them were Francophones. Only 3% of respondents indicated being Aboriginal. Almost every respondent was from New Brunswick, one came from New York State and a second from another, unspecified, Atlantic province. This proportion is very similar to the actual licenses sold in 2015 where only 0.6% of deer license holders were non-resident.

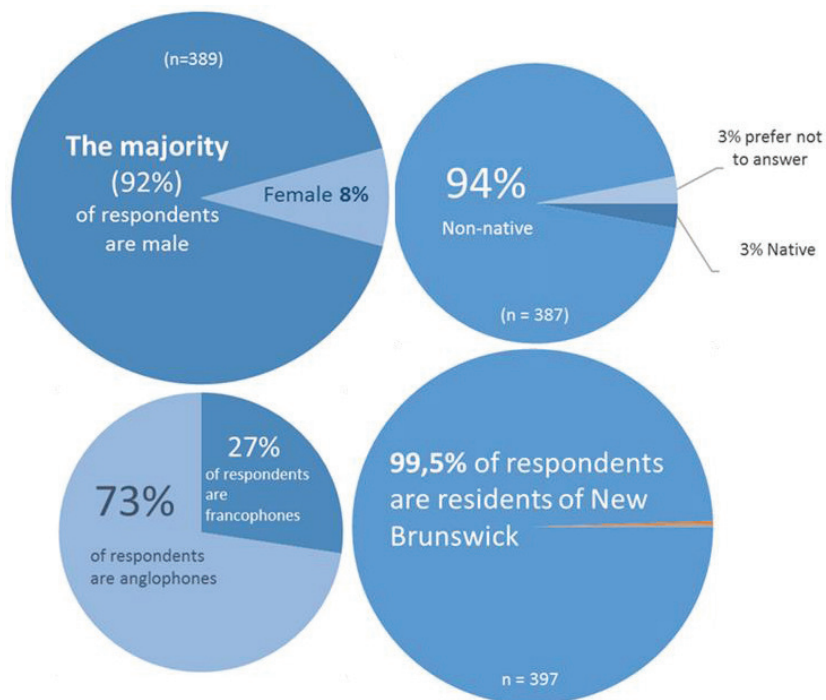


Figure 36. Profile of respondents to the 2015 New Brunswick provincial survey on hunting

The average age of the respondents was 46.6 years (Figure 37); 44% were between 25 and 44 years of age, 36% were between 45 and 64, and 15% were over the age of 65 (Figure 38). Only 5% were between the ages of 18 and 24 at the time of the survey. We restricted the age of the participants to 18 or older, which excluded younger hunters and may have had a slight impact on the answers for this age category.

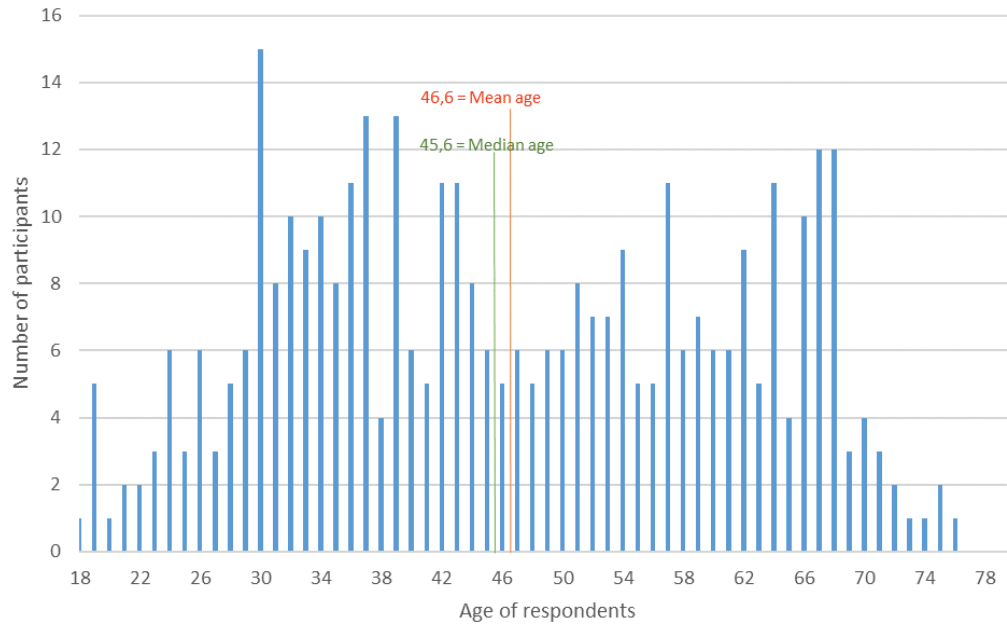


Figure 37. Age distribution of respondents

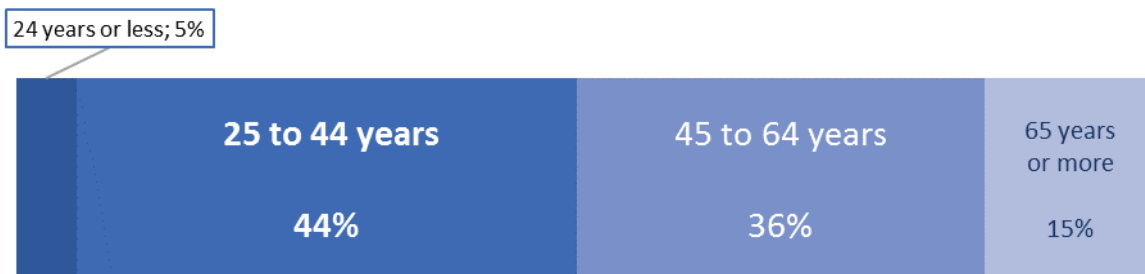


Figure 38. Distribution of age categories of participant expressed as percentage. (n=377)

Respondents were of varied socio-economic status. Even though we did not use the same salary ranges as Statistics Canada, it is possible to compare results from our participants to Federal Government data. In terms of annual family income¹, the largest group, 28% of respondents, could be found in the highest salary range of \$100,000 or more (Figure 39), compared to 18 % of the total population of New Brunswick according to Statistics Canada (2017c). By contrast, only 9% of the respondents reported an annual income of \$25,000 or less while Statistics Canada reports 26% of New Brunswickers who declared an annual family income of less than \$30,000 in the last National Household Survey in 2011 (Statistics Canada, 2017c). Two hypotheses would deserve to be further studied to

¹ In this case, family income means the total annual income of the respondent's family. We did not attempt to separate households in different category (single, married, with or without children, etc.). As such, the comparative statistics reflect the total number of households during New Brunswick's last census.

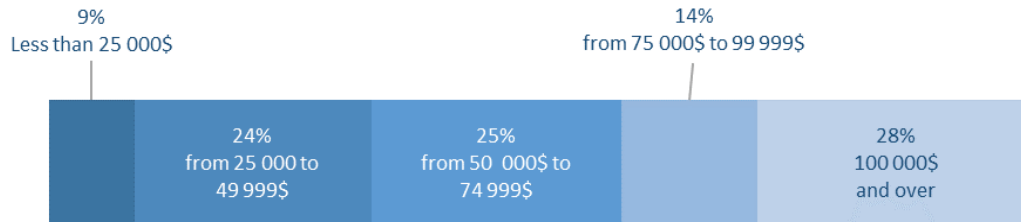


Figure 39. Percentage of respondents according to their declared annual income (n=379)

explain this imbalance. The first would be that hunting attracts more affluent families. The second hypothesis would be that our sample was biased by the fact that more affluent hunters were more likely to fill out surveys thereby artificially inflating the mean income.

In our sample, only 5% of respondents stated that they did not have a high school diploma (Figure 40). On the other hand, according to the last census by Statistics Canada (2017c) in 2006, 29% of New Brunswickers aged 15 and older had not received a high school diploma. Of course, these numbers include those currently enrolled who are in the process of completing their high school studies, but they only represent about 4% of the population that is 15 years old or older according to the Ministry of Education and Early Childhood Development (MEECD, 2016). There is also a significant difference in the number of respondents with post-secondary degrees compared with the provincial average as compiled by Statistics Canada. In our sample, 40% had a college degree and 26% were university graduates whereas Statistics Canada census numbers reported that only 28% and 16% of New Brunswickers have college and university degrees respectively. It is possible that hunting attracts people with better education than the average population. Nonetheless, it is equally possible that since this survey was self-administered, people with reading difficulties may have simply not taken part in this survey despite the option to take the survey by phone. Keeping in mind that literacy for people of working age is a problem in New Brunswick (Brink, 2006), it is possible that this generated a bias in favour of recruiting more educated respondents.

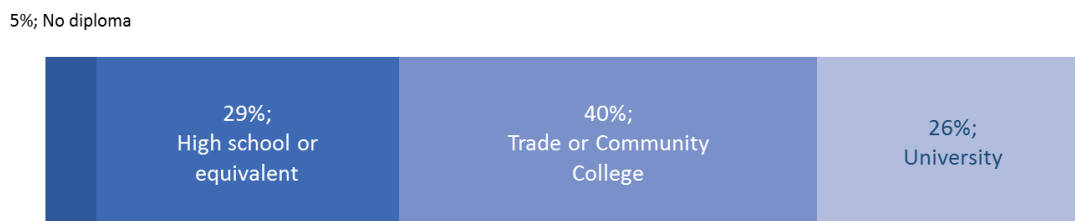


Figure 40. Distribution of respondents based on education level (n = 389)

4. Conclusion

This survey brought to light a number of findings. First, we have a better estimation of the expenses of hunters in New Brunswick. Contemporary hunting, and the passion it creates in individuals who hunt, result in hunters who spend considerable amounts. The average amount spent per hunter in 2015 was \$7,560, which is probably overstated because of a suspected bias whereby the participants to our survey were more affluent than most. This suspicion led us to examine two distinct groups of respondents: the majority that spent less than \$10,000 and the minority that spent more than \$10,000. Focusing on this majority group, we were able to establish that the average hunter spent \$3,000 per year. This in turn allowed us to estimate the total value of expenses for hunting in 2015 to be approximately 145 million dollars. Globally, we found that New Brunswick hunters are a segment of the population that contributes to the provincial economy and to the diversification of the forest sector. It seems that the majority of expenditures were related to the white-tailed deer and small game hunting seasons. In fact, licence sales, stated interests, and the number of days spent hunting demonstrate that the white-tailed deer and small game hunting seasons are very popular among New Brunswick hunters. Hunters also demonstrated significant interest for moose hunting, but the season is extremely short and few licences are issued, which limits hunters' ability to participate and the potential economic benefits.

The second major finding of this study was that the level of satisfaction of hunters with the white-tailed deer season was much lower than with other hunting seasons. This observation should be particularly interesting to wildlife management authorities. The white-tailed deer population has declined considerably since the 80s and this could be the source of dissatisfaction and, in turn, of declining licence sales for this game. Nonetheless, harvest is not the only factor that influences the hunter satisfaction and it may not be the most important. The concept of satisfaction with regards to hunting is multifaceted and many elements shape the quality of the hunting experience. Based on the motivation factors expressed by respondents in our survey, spending time outdoors in nature and experiencing the excitement and challenge that hunting gives were greater motivators than bringing meat home (harvest). Nonetheless, to experience this excitement brought on by hunting, the hunter must be presented with opportunities to harvest or, at the very least, see signs indicating the presence of game in order to feel this excitement. We suggest that this data be analyzed further in order to determine more specific factors that contribute to the motivation and satisfaction of white-tailed deer hunters.

Among these motivating factors, we also note that “spending time outdoors in nature” might not be satisfied. In fact, we found that, in the eyes of an important segment of the respondents, they considered that the forests were not properly managed to sustain quality habitat, thereby affecting wildlife. There seems to be a certain frustration among the hunting community with respect to the manner by which the forest industry manages wildlife habitat, especially that of the white-tailed deer. This was made evident by the results on the perceptions and opinions, as well as the comments provided by the respondents on the topics of government responsibility to maintain quality wildlife habitat and the forest industry’s influence on forest management. These results are particularly important considering that, according to this survey, the majority of individuals hunted more frequently on Crown lands than other areas. We can therefore conclude that Crown lands are very important to hunters. This might help explain why we received so many comments on forest management as well as on the influence forest industry has on forest management decision-making. These two groups, the hunters and the forestry industry, sometimes have different views on forest land utilization and therefore, different opinions on how forests should be managed. Nonetheless, it is important to mention that the majority of hunters who were licence holders were satisfied with other hunting seasons, namely moose, bear, and small game. They were also satisfied with the migratory birds’ season, even though it does not fall under the provincial government’s responsibility. Most hunters stated they were also satisfied with the management of the firearm safety/hunter education program offered by the government and agreed that hunting rules were easy to understand.

Most hunters agreed that hunting associations play an important role in the defence of their rights and interests despite the fact that more than half of the respondents were not members of such organizations. Generally speaking, members of associations attribute a more important role to associations than do non-members. In fact, a larger percentage of members than non-members believed that associations played an important role in influencing government. We also noted that less than a third of non-members felt represented by the associations compared to two thirds of members. It should be noted that even though hunters believe that the associations play an important role in defending their rights and interest, the majority of hunters stated that government decision-making did not take account of association input, and very few considered that good collaboration existed between the forest industry and hunting associations. These results have important implications for associations. On the one hand, hunters indicated that they considered associations important to defend their rights

and interests yet, on the other hand, these same hunters said they did not feel that the government and the forest industry took associations into account. This calls for reflection on the part of the hunting associations and other forest stakeholders as to the role of the hunting associations in New Brunswick, as well as the strategies that they have adopted and the means at their disposal to defend the rights and interests of their community.

A weakness in this study was the sampling approach whereby participants had to self-enroll to be selected for the survey. As such, it is possible that results were biased towards hunters who were more highly motivated than the average hunter in New Brunswick. We noticed that we had a greater percentage of bear and moose hunters in our pool of respondents than the hunting population at large. Furthermore, comparing the educational and revenue profiles of our respondents to provincial profiles suggests that we recruited individuals with a higher literacy level and a higher income. It would be beneficial to continue efforts to gather knowledge about hunters via different sampling methods. This additional data would supplement the information already gathered in this survey and increase the level of precision of the results, especially the estimation of hunters expenses. It is in fact our opinion that there is a need and great benefit to all stakeholders for a better understanding of the hunting community. By conducting surveys on a regular basis and revisiting the same survey questions every 5 years or so, it would enable tracking of trends and create information that would be useful to managers. The feasibility of such surveys has greatly increased with the arrival of the new e-licensing system. It would therefore be easier for government to sample a greater variety of hunters by using the Outdoor Card number all while keeping the anonymity of hunters. Most States in the United-States survey hunters on a regular basis and use this information to develop wildlife policy, hunting regulations, land management decisions and also hunting promotion and recruiting strategies. There would be benefit for New Brunswick in adopting a similar strategy.

The analysis of the first data collection is not completed. Further investigations will be performed in order to better understand the factors influencing the levels of satisfaction of the white-tailed deer hunters. This research will allow for the development of hunter typologies or classifications based on their motivating factors and thus identify the variables that influence the level of satisfaction of these sub-groups of hunters. We hope that this information will be useful to all stakeholders in order to improve the overall level of satisfaction of hunters.

5. References

- Adams, C. E., Wilkins, N., Cooke, J. L. 2000. A place to hunt: organizational changes in recreational hunting, using Texas as a case study. *Wildl. Soc. Bul.* 28 (4):788-796.
- Allen, Stewart D., Wickwar, Denise A., Clark, Fred P. Potts, Robert and Snyder, Stephanie A. 2009. Values, beliefs, and attitudes technical guide for Forest Service land and resource management, planning, and decision making. U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 112 p.
- Bauer, Johannes and Giles, Jack. 2002. Recreational hunting: An international perspective. *Wildlife Tourism Research Report Series: No. 13. Status Assessment of Wildlife. Tourism in Australia Series.* 130 p.
- Brink, Satya. 2006. Résultats en littérature au Nouveau-Brunswick; Répercussions des conclusions de l'EIACA 2003. Direction de la politique sur l'apprentissage. Gouvernement du Canada. (<http://fr.copian.ca/biblio/recherche/ialssnbf/ialssnbf.pdf>).
- Government of Canada publications Canadian Tourism Commission - Research and Evaluation. 2012. *Sport Fishing and Game Hunting in Canada. An Assessment on the Potential International Tourism Opportunity.* (on line). Available at http://publications.gc.ca/collections/collection_2013/ic/lu86-49-2012-eng.pdf. (accessed May 11th 2015).
- Daigle, J. J., Hrubec Ickajzen, D. 2002. A comparative study of beliefs, attitudes and values among hunters, wildlife viewers and other outdoor recreationists. *Human Dimensions of Wildlife.* 7: 1-19.
- Decker, D. J., Brown T. L., and Gutiérrez, R. J. 1980. Further insights into the multiple-satisfactions approach for hunter management. *Wild. Soc. Bull.* 8(4): 323-331.
- Department of Aboriginal Affairs. 2011. New Brunswick government policy on duty to consult. Aboriginal Affairs Secretariat. Province of New Brunswick.
- Department of Natural Resources of New Brunswick. 2013. Annual Report. 2012-2013.
- Department of Education and Early Childhood Development. 2016. Summary Statistics. School Year 2015-2016. Policy & Planning Division. Province of New Brunswick.
- Department of Energy and Resource Development. 2016. Big Game Harvest Report 2015. Fish and Wildlife Branch. Natural Resources Division. Province of New Brunswick.
- Department of Energy and Resource Development. 2016a. Hunting and Trapping. Fish and Wildlife Branch. Natural Resources Division. Province of New Brunswick.
- Department of Energy and Resource Development. 2016b. Natural Resources Division. Annual Report 2015-2016. Province of New Brunswick.

- Department of Energy and Resource Development. 2017. Big Game Harvest Report 2016. Fish and Wildlife Branch. Natural Resources Division. Province of New Brunswick.
- Dillman, D. A., Smyth, J.D., Christian, L.M. 2008. Internet, Mail, and Mixed-Mode Surveys: The Tailored Design Method. Published by John Wiley & Sons, Inc. Hoboken, New Jersey. 3rd edition. 512 p.
- Hammitt, W. E., McDonald, C. D., and Patterson, M. E. (1990). Determinants of multiple satisfaction for deer hunting. *Wild. Soc. Bull.* 18, 331–337.
- Heberlein, T. A. 1992. Reducing hunter perception of crowding through information. *Wild. Soc. Bull.* 20(4):372-374
- Heberlein, T. A. "Hunter Declines in North America and Europe: Causes, Concerns and Proposed Research." Colorado Pathways Conference lecture. Human Dimensions of Natural Resources Colorado State University. September 26th to October 2nd 2008.
- Johnson, K. N., Johnson, R. L., Edwards, D. K. and Wheaton, C. A. 1993. Public participation in wildlife management: opinions from public meetings and random surveys. *Wildl. Soc. Bull.* 21(3): 218-225.
- Kennedy, J. J. 1974. Attitudes and behavior of deer hunters in a Maryland forest. *The Journal of Wildlife Management.* 38(1):1-8.
- Larson, L. R., Stedman, R. C., Decker D. J., Siemer W.F. and Baumer M. S. 2014. Exploring the social habitat for hunting: toward a comprehensive framework for understanding hunter recruitment and retention. *Human Dimensions of Wildlife*, 19(2):105–122.
- Miller, L.F. et S. Nadeau. 2017. Participatory processes for public lands: Do provinces practice what they preach? *Ecology and Society* 22 (2):19.
- Murray, Derek. 2006. "Final Report Economic Evaluation of Hunting in Saskatchewan." Derek Murray Consulting Associates. Prepared for Saskatchewan Environment.
- Parker, Gerry. 2004. Men of the Autumn Woods. Non-Resident Big Game Hunting in New Brunswick. The Golden Years. 1885-1935. Privately published. Sackville. New Brunswick. 264 p.
- Schwartz, Shalom, H. 2006. Les valeurs de base de la personne : théorie, mesures et applications. *Revue française de sociologie* (Vol. 47), p. 929-968.
- Select Committee on Wood Supply. 2004. Final Report on Wood Supply in New Brunswick. Legislative Assembly of New Brunswick. First Session. Fifty fifth Legislature. September 2004. 46 p.
- SOM. 2012. Étude sur les chasseurs québécois en 2011. Rapport présenté au ministère des Ressources naturelles et de la Faune du Québec et à la Fédération des pourvoiries du Québec. 51 p.
- Statistics Canada. 2017a. Population per year, per province and territory (Number). Ottawa, Ontario. <http://www.statcan.gc.ca/tables-tableaux/sum-som/l01/cst01/demo02a-eng.htm> (accessed May 28 2017).

Statistics Canada. 2017b. Labour force characteristics, seasonally adjusted, by province (monthly) (Newfoundland and Labrador, Prince Edward Island, Nova Scotia, New Brunswick). Ottawa, Ontario. <http://www.statcan.gc.ca/tables-tableaux/sum-som/l01/cst01/lfs01a-eng.htm> (accessed May 28 2017).

Statistics Canada. 2017c. 2011 National Household Survey: Data tables. Household Income in 2010 (38), Household Type (9) and Selected Household Characteristics (18) for Private Households of Canada, Provinces, Territories, Census Metropolitan Areas and Census Agglomerations, 2011 National Household Survey: New Brunswick. Ottawa, Ontario. <http://www12.statcan.gc.ca/nhs-enm/2011/dp-pd/dt-td/Rp-eng.cfm?TABID=2&LANG=E&A=R&APATH=3&DETAIL=0&DIM=0&FL=A&FREE=0&GC=13&GID=1118300&GK=1&GRP=1&O=D&PID=107758&PRID=0&PTYPE=105277&S=0&SHOWALL=0&SUB=0&Temporal=2013&THEME=98&VID=0&VNAMEE=&VNAMEF=&D1=0&D2=0&D3=0&D4=0&D5=0&D6=0> (accessed February 17 2017).

Statistics Canada. 2017d. Population 15 years and over by highest degree, certificate or diploma, by province and territory (2006 Census) (Newfoundland and Labrador, Prince Edward Island, Nova Scotia, New Brunswick). Ottawa, Ontario. <http://www.statcan.gc.ca/tables-tableaux/sum-som/l01/cst01/educ41a-eng.htm>. (accessed February 17 2017).

Swensson, E. J., Knight, J. E. 1998. Identifying Montana hunter/rancher problems and solutions. *Journal of Range Management*. 51(4): 423-427

U.S. Department of the Interior, U.S. Fish and Wildlife Service, and U.S. Department of Commerce, U.S. Census Bureau. 2011 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation.

Woods, Michael. 1997. Researching rural conflicts: hunting, local politics and actor-networks. *Journal of Rural Studies*. 14(3): 321-340

6. Appendices

Appendix A

Methodology

Sampling

The target population for this survey was adults 18 years of age and older with a valid New Brunswick hunting licence for the 2015 hunting season. Given privacy laws in New Brunswick, it was impossible for government managers to provide us (as external researchers) with a list of licenced hunters from which we could have undertaken simple random sampling. Thus, the participants were selected by self-registration. [Non-probabilistic sampling—voluntary]

Information Campaign

In order to recruit participants, we disseminated information through an advertising campaign which began in late summer 2015. All information was provided in both official languages.

First, in collaboration with the Government of New Brunswick, we prepared and published an advertisement in the 2015 Hunting and Trapping Information Booklet. This booklet is provided to each licence holder upon purchase of the hunting licence. The advertisement provided information about the project and invited the licence holder to visit the website created for the project (www.umce.ca/chasse), or to call us for more information on registering for the database to potentially participate in the survey

Social media was also used, including the “NB Hunters” group on Facebook, to inform the general public and hunters about the project. Messages with a direct link to the project website were sent three times: July 23rd, September 28th, and November 4th of 2015.

At the same time, a personalized message was written and emailed on July 24th, August 13th, and October 21st to the province’s hunting and fishing association presidents and to outfitters, asking them to distribute the information among their members and their acquaintances. In the last message, we also asked for volunteers to help us distribute posters created for the project in the various communities throughout the province.

Finally, a press release was sent to the media on September 30th, and ads were placed in two provincial newspapers, the *Étoile* during the week of October 12th for the Francophone community and in the *Telegraph Journal* on Saturday, October 10th, for the Anglophone community.

Self-Enrollment

The aim of the information campaign was to direct interested people to the project’s website, or to contact us (by telephone, email or post) for further information. Once on the website, more information on the project was provided and licence holders were invited to indicate whether they wished to be included in the list of potential participants for the survey. By confirming his/her interest, the person was directed to a Survey Monkey website, where participants were asked to complete a short, five minute questionnaire to obtain the following information:

- Language of communication;
- NB Hunting Licence Number for the 2015 season, to verify eligibility;
- Type of hunting practised: small game, white-tailed deer, bear, moose, nuisance animals, other;
- Preferred means of participation—via internet, via mail or via telephone;

- Email address or telephone number;
- Mailing address, including postal code for residents of New Brunswick or the province/country of residence for non-resident.
- Confirmation that they were at least 18 years old.

The survey registration period ended in December 2015. Survey Monkey enabled us to build a list of potential participants. A unique code was generated by the system for each person registered in the database to ensure that there was only one entry per participant. Prizes, such as a Stihl chainsaw, a hunting stand and a hunting tent, were offered in order to encourage hunters to register. In total, 504 people registered to participate in the survey (Table).

Table - Potential Survey Participants Base

REGISTERED POTENTIAL PARTICIPANTS	ANGLOPHONES	FRANCOPHONES	TOTAL
INTERNET	311	98	409
MAIL	58	22	80
TELEPHONE	9	6	15
TOTAL	378	126	504

Administration of the Questionnaire and Participation Rate

Given that the number of enrollments was less than expected, all potential participants were invited to participate in the survey.

For the administration of the survey, Dillman’s (2008) principles were applied to maximize the response rate. First, twenty Canadian Tire gift certificates valued at \$20 each were offered randomly among all participants who returned the completed questionnaire. This was a different draw from the one that took place during the enrollment period. So, all those who returned the completed survey had a chance at winning a gift certificate.

For those who indicated a preference to participate via the Internet or by mail, a first invitation to participate was sent on January 26, 2016, and a reminder was sent on February 11th to those who did not respond to the first invitation. A second, and last, reminder was sent on February 26, 2016, to the remaining group. Those who applied to participate by mail received the invitation and the questionnaire with a pre-addressed, stamped envelope to return it and those who applied to participate via the Internet received an email with a participation number enabling them to answer the questionnaires directly online. At the last reminder by mail, a second copy of the questionnaire was sent to the participant.

For those who preferred to be contacted by telephone, we hired a person who was trained to read the questionnaire in a standardized manner to minimize potential bias. Telephone respondents were contacted between February 29 and March 10, 2016. Data collection by all methods started on January 26 and the last questionnaire was returned on April 13, 2016.

The comprehensive approach resulted in a good participation rate. A total of 414 surveys were returned, indicating a participation rate of 82%. 13 surveys returned or answered were rejected for a number of reasons, including: a return of the survey with virtually no response from participants, participants who had not hunted in 2015, or had no valid hunting licence for the 2015 hunting season and a duplicate. The usable rate participation was therefore 79.5%.

TAUX DE PARTICIPATIONS	ANGLOPHONES	%	FRANCOPHONES	%	TOTAL	%
INTERNET	236	76%	86	88%	322	78,7%
POSTE	49	84%	20	91%	69	86,25%
TÉLÉPHONE	6	67%	4	67%	10	66,7%
TOTAL	291	77%	110	87%	401	79,5%

Data Collection instrument (Questionnaire)

The Data Collection Instrument (Appendix B) was also developed following Dillman's (2008) principles in order to facilitate understanding of the questions and the self-administering of the questionnaire. The questions developed to meet the objectives of the survey were strongly inspired by similar studies that had already demonstrated conclusive results. The support of Michael Quartuch, a researcher specialized in the human dimensions of wildlife management, also helped to improve the questionnaire.

A preliminary version of the questionnaire was tested on a group of hunters in both French and English to ensure that there were no ambiguities with the questions or with how to fill out the questionnaire. The group's comments were taken into account when creating the final version of the questionnaire that was used to survey New Brunswick hunters.

The questionnaire was submitted to the Moncton University's Human Research Ethics Committee to ensure that it complied with the ethical standards of the National Research Councils (SSHRC, NSERC, CIHR)

Preservation of data

The information collected by the survey was recorded and preserved on Survey Monkey's servers. For respondents who completed the on-line questionnaire, data was automatically recorded. For those who responded by mail, the responses were transcribed to the on-line questionnaire once the paper questionnaires were received. The responses received by telephone were first copied to paper and then uploaded to the Survey Monkey server. Excel software was used to organize the raw data for statistical analysis.

Statistical Data Processing

In a survey where we sample a population, there are two types of possible errors that may influence the reliability of data: non-sampling errors, and sampling errors. Sampling errors can be estimated while non-sampling errors generally remain unknown.

Non-Sampling Errors

Errors not due to sampling are errors that appear in the data due to human error during the various stages of the survey. For example, non-sampling errors in this project may include:

- *Measurement errors*: For example, a misunderstanding of the question by the respondent; respondent supplies inaccurate information or the answer is not written correctly
- *Non-answer errors*: Respondent refused to provide data or skipped a question by mistake.
- *Processing errors*: These may include, for example, transcription of information errors or using a wrong code.

Sampling Errors

In the case of sampling errors, it is essentially the difference in the value of a variable that we obtained from the measured sample versus what we would have obtained if we had measured the total population using the same questionnaire, which we can consider to be the “true” value of the variable.

Several factors influence the sampling error, including sample size, variability of the characteristic being studied, and the sampling design used. In this case, a sample of 500 individuals out of a total population of about 60,000, which represents almost 1% of the population of interest. Also, sampling was voluntary, which can introduce a source of bias since a volunteer group may have been more homogeneous than if the sampling had been randomized.

The SPSS software was used to determine the standard error and the margin of error of the results presented.

Appendix B

The Survey

New Brunswick Hunting Study



UNIVERSITÉ DE MONCTON
CAMPUS D'EDMUNDSTON

École de foresterie

Please return your completed questionnaire in the enclosed envelope to:

École de foresterie, Université de Moncton, campus d'Edmundston
165, boulevard Hébert, Edmundston, Nouveau-Brunswick, E3V 2S8



We thank you for taking time out of your busy schedule to complete this survey, which is important for hunters in New Brunswick. As a hunter, your opinion counts and this study is a way of enabling hunters' voices to be heard. In filling out this survey, you are helping us to better understand the hunters' practices and their contribution to the economy, while also sharing your view of hunting in New Brunswick. This is your opportunity to demonstrate the economic and social importance of recreational hunting in our province.

This survey is being carried out by the Université de Moncton with the support of the Department of Natural Resources and collaboration from the Northern New Brunswick branch of the Quality Deer Management Association and the Canadian Forest Service. This information will help support better planning of recreational hunting in New Brunswick to strengthen management of wildlife populations, improve hunting experiences and ensure that young people are interested in hunting.

All information provided will be treated confidentially. Your name will not be recorded with the answers to your survey. We will prepare a report with a summary of all responses and statistical analyses, but this report will not contain any personal information about individual participants.

If you would like to receive a copy of the report or if you have any questions about this study, do not hesitate to contact us. Just send us a message at hunting@umce.ca or call us on 506 737-5184.

Stephen Wyatt

Professor

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Daniel Gautreau

Research student

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(506)737-5050 (poste 5244)

If you have any concerns about the ethics of this project or you wish to make a complaint, please contact the Faculty of graduate studies and research at the Université de Moncton (Édifice Taillon, Moncton, N.-B. E1A 3E9, **Telephone** : (506) 858-4310, **Email** : fesr@umoncton.ca. You may use english or french as you wish.

Useful definitions

To assist you in filling out the survey please refer to these definitions:

- **Hunt or hunting** implies that you are carrying a weapon with the goal of taking an animal.
- **2015 Hunting season** covers the period between March 1st and December 31st 2015.
- **A hunting day** means any day when you went hunting, even if it was just for an hour.
- **A hunting trip** means a period of one or more days when you spent the night away from your normal residence.

Your 2015 hunting season

1. Please tell us what licences you held for the 2015 hunting season in New Brunswick. Check [v] all the options that apply.

- | | |
|---|--|
| <input type="checkbox"/> Antlered deer | <input type="checkbox"/> Small game |
| <input type="checkbox"/> Anterless deer | <input type="checkbox"/> Waterfowl, migratory birds |
| <input type="checkbox"/> Moose | <input type="checkbox"/> Varmint (groundhog, coyote, etc.) |
| <input type="checkbox"/> Bear | <input type="checkbox"/> Other (please indicate) _____ |

2. Please tell us what types of hunting you are interested in. Check [v] all the options that apply, even if you did not hold a licence for this type of hunting in 2015.

- | | |
|---|--|
| <input type="checkbox"/> Antlered deer | <input type="checkbox"/> Small game |
| <input type="checkbox"/> Anterless deer | <input type="checkbox"/> Waterfowl, migratory birds |
| <input type="checkbox"/> Moose | <input type="checkbox"/> Varmint (groundhog, coyote, etc.) |
| <input type="checkbox"/> Bear | <input type="checkbox"/> Other (please indicate) _____ |

3. Please tell us, approximately, how many days did you hunt each of the following types of game in New Brunswick during the 2015 hunting season. Please indicate the number of days beside each type of game. If you did not hunt a type of game, please indicate 0. (**A hunting day** means any day when you went hunting, even if it was just for an hour).

Game	Number of days
Antlered deer	_____
Anterless deer	_____
Moose	_____
Bear	_____
Small game	_____
Waterfowl, migratory birds	_____
Varmint (groundhog, coyote, etc.)	_____
Other (please indicate)	_____

4. Thinking of your hunting days in New Brunswick during the 2015 hunting season, please tell us how often you hunted on each of the following types of land. Check [v] one option for each line.

		Never	Rarely	Sometimes	Often	Always
Crown lands	All the forests owned by the province of New Brunswick (e.g., conservation areas, and lands managed by the forest industry).	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄	<input type="checkbox"/> ₅
Private woodlot belonging to your family	Forests owned by you or by members of your family	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄	<input type="checkbox"/> ₅
Private woodlots belonging to others	Forests owned by individuals or families, other than yours.	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄	<input type="checkbox"/> ₅
Freehold	Forests owned by forest companies	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄	<input type="checkbox"/> ₅

5. Approximately, how many hunting trips did you make in New Brunswick during the 2015 hunting season? (A **hunting trip** means a period of one or more days when you spent the night away from your normal residence.)

_____ trip (s)

6. In 2015, what was the greatest distance (one-way) that you travelled between your normal residence and a hunting site in New Brunswick?

_____ km

7. In 2015, did you use accommodation services during your hunting trips in New Brunswick?

Yes No

8. In 2015, while hunting, how often were you joined by others who did not hold a hunting licence (e.g. Family, children, friends)? Check [v] one answer.

Never Rarely Sometimes Often Always

9. Thinking about your 2015 hunting season in New Brunswick, please indicate how important each of the following reasons was in your decision to go hunting. Check [v] one option for each line.

	Very important	Important	More or less important	Not very important	Not at all important	No opinion
To spend time in nature with friends or family	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄	<input type="checkbox"/> ₅	<input type="checkbox"/> ₆
To make the most of nature, or of being outdoors	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄	<input type="checkbox"/> ₅	<input type="checkbox"/> ₆
To maintain a family tradition	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄	<input type="checkbox"/> ₅	<input type="checkbox"/> ₆
To learn about wildlife and its habitat	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄	<input type="checkbox"/> ₅	<input type="checkbox"/> ₆
To escape from the stress of everyday life	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄	<input type="checkbox"/> ₅	<input type="checkbox"/> ₆
For the excitement and the challenge that hunting gives	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄	<input type="checkbox"/> ₅	<input type="checkbox"/> ₆
To bring home meat	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄	<input type="checkbox"/> ₅	<input type="checkbox"/> ₆
To bring home a trophy	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄	<input type="checkbox"/> ₅	<input type="checkbox"/> ₆
For the exercise that hunting provides	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄	<input type="checkbox"/> ₅	<input type="checkbox"/> ₆
To help control the wildlife population in a certain area	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄	<input type="checkbox"/> ₅	<input type="checkbox"/> ₆
To demonstrate my skill as a hunter	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄	<input type="checkbox"/> ₅	<input type="checkbox"/> ₆
To contribute to the economic development of my region	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄	<input type="checkbox"/> ₅	<input type="checkbox"/> ₆

10. Please tell us how important each of the following statements was in your decision to hunt in New Brunswick. Check [v] one option for each line.

	Very important	Important	More or less important	Not very important	Not at all important	No opinion
It's home and easy access to my hunting land	<input type="checkbox"/> _1	<input type="checkbox"/> _2	<input type="checkbox"/> _3	<input type="checkbox"/> _4	<input type="checkbox"/> _5	<input type="checkbox"/> _6
There is higher quality hunting than elsewhere	<input type="checkbox"/> _1	<input type="checkbox"/> _2	<input type="checkbox"/> _3	<input type="checkbox"/> _4	<input type="checkbox"/> _5	<input type="checkbox"/> _6
Regulations are less complicated than elsewhere	<input type="checkbox"/> _1	<input type="checkbox"/> _2	<input type="checkbox"/> _3	<input type="checkbox"/> _4	<input type="checkbox"/> _5	<input type="checkbox"/> _6
I was invited by a group of friends	<input type="checkbox"/> _1	<input type="checkbox"/> _2	<input type="checkbox"/> _3	<input type="checkbox"/> _4	<input type="checkbox"/> _5	<input type="checkbox"/> _6
The game that I wanted to hunt was not available elsewhere	<input type="checkbox"/> _1	<input type="checkbox"/> _2	<input type="checkbox"/> _3	<input type="checkbox"/> _4	<input type="checkbox"/> _5	<input type="checkbox"/> _6
I was on a personal or business trip and decided to add some hunting	<input type="checkbox"/> _1	<input type="checkbox"/> _2	<input type="checkbox"/> _3	<input type="checkbox"/> _4	<input type="checkbox"/> _5	<input type="checkbox"/> _6
To experience a different type of hunting from that to which I am used to.	<input type="checkbox"/> _1	<input type="checkbox"/> _2	<input type="checkbox"/> _3	<input type="checkbox"/> _4	<input type="checkbox"/> _5	<input type="checkbox"/> _6

11. Please tell us where you live? Check [v] one choice only.

- New Brunswick
- An Atlantic province other than New Brunswick
- Quebec
- The New England states of the USA (Maine, New Hampshire, Vermont, Rhode Island, Massachusetts, Connecticut)
- Other – please indicate (Province, State or Country) _____

12. Did you hunt outside New Brunswick between March 1st and December 31st 2015?

- Yes Please go to Question 13
- No Please go to Question 15

13. Please tell us how important each of the following statements was in your decision to hunt outside New Brunswick. Check [v] one option for each line.

	Very important	Important	More or less important	Not very important	Not at all important	No opinion
It's home and easy access to my hunting land	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄	<input type="checkbox"/> ₅	<input type="checkbox"/> ₆
There is higher quality hunting than in N.B.	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄	<input type="checkbox"/> ₅	<input type="checkbox"/> ₆
Regulations are less complicated than in N.B.	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄	<input type="checkbox"/> ₅	<input type="checkbox"/> ₆
I was invited by a group of friends	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄	<input type="checkbox"/> ₅	<input type="checkbox"/> ₆
The game that I wanted to hunt was not available in N.B.	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄	<input type="checkbox"/> ₅	<input type="checkbox"/> ₆
I was on a personal or business trip and decided to add some hunting	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄	<input type="checkbox"/> ₅	<input type="checkbox"/> ₆
To experience a different type of hunting from that to which I am used to.	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄	<input type="checkbox"/> ₅	<input type="checkbox"/> ₆

14. Please provide us with your best estimate of the amount that you spent while hunting outside New Brunswick between January 1st and December 31st 2015?

_____ \$

Your opinion

15. Please tell us how satisfied you are overall about the hunting season for each of the following game types in New Brunswick. Check [v] one option for each line.

	Totally satisfied	Somewhat satisfied	Neither satisfied nor dissatisfied	Somewhat dissatisfied	Totally dissatisfied	No opinion
Antlered deer	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄	<input type="checkbox"/> ₅	<input type="checkbox"/> ₆
Anterless deer	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄	<input type="checkbox"/> ₅	<input type="checkbox"/> ₆
Moose	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄	<input type="checkbox"/> ₅	<input type="checkbox"/> ₆
Bear	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄	<input type="checkbox"/> ₅	<input type="checkbox"/> ₆
Small game	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄	<input type="checkbox"/> ₅	<input type="checkbox"/> ₆
Waterfowl, migratory birds	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄	<input type="checkbox"/> ₅	<input type="checkbox"/> ₆
Varmint (groundhog, coyote, etc.)	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄	<input type="checkbox"/> ₅	<input type="checkbox"/> ₆

16. Please tell us how much you agree or disagree with each of the following statements. Check [v] one option for each line.

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	No opinion
The game that I hunt is abundant	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄	<input type="checkbox"/> ₅	<input type="checkbox"/> ₆
It is easy for me to find a hunting area	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄	<input type="checkbox"/> ₅	<input type="checkbox"/> ₆
There are too many hunters in the region where I hunt in NB	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄	<input type="checkbox"/> ₅	<input type="checkbox"/> ₆
The forest industry has too much control on game habitat	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄	<input type="checkbox"/> ₅	<input type="checkbox"/> ₆
There are enough game wardens in the forest	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄	<input type="checkbox"/> ₅	<input type="checkbox"/> ₆
Rules about hunting are clear and easy to understand	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄	<input type="checkbox"/> ₅	<input type="checkbox"/> ₆

17. The Department of Natural Resources has range of responsibilities for wildlife management in New Brunswick. Please indicate how satisfied you are in relation to each of the following roles and responsibilities of the Department of Natural Resources. Check [v] one option for each line.

	Totally satisfied	Somewhat satisfied	Neither satisfied nor dissatisfied	Somewhat dissatisfied	Totally dissatisfied	No opinion
Ensuring suitable habitat exists to support healthy wildlife population	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄	<input type="checkbox"/> ₅	<input type="checkbox"/> ₆
Enforcing laws that relate to wildlife and hunting	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄	<input type="checkbox"/> ₅	<input type="checkbox"/> ₆
Taking notice of hunters concerns	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄	<input type="checkbox"/> ₅	<input type="checkbox"/> ₆
Monitoring the status of wildlife populations	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄	<input type="checkbox"/> ₅	<input type="checkbox"/> ₆
Establishing population objectives for each type of game	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄	<input type="checkbox"/> ₅	<input type="checkbox"/> ₆
Managing hunting permit quotas for moose and deer	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄	<input type="checkbox"/> ₅	<input type="checkbox"/> ₆
Managing the firearms safety and hunter education course	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄	<input type="checkbox"/> ₅	<input type="checkbox"/> ₆
Launching the new electronic system for issuing hunting and fishing permits	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄	<input type="checkbox"/> ₅	<input type="checkbox"/> ₆
Supporting research projects aimed at improving understanding of wild game requirements	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄	<input type="checkbox"/> ₅	<input type="checkbox"/> ₆

18. Are you a member of a club or an association related to hunting or wildlife management?

Yes

No

19. Please tell us how much you agree or disagree with each of the following statements. Check [v] one option for each line.

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	No opinion
Clubs and associations are important for defending the interests and rights of hunters	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄	<input type="checkbox"/> ₅	<input type="checkbox"/> ₆
Clubs and associations are important for social activities among hunters	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄	<input type="checkbox"/> ₅	<input type="checkbox"/> ₆
Clubs and associations are important for influencing government policies and decisions	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄	<input type="checkbox"/> ₅	<input type="checkbox"/> ₆
Clubs and associations are important for gaining access to certain hunting areas	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄	<input type="checkbox"/> ₅	<input type="checkbox"/> ₆
Clubs and associations are important for undertaking wildlife management activities	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄	<input type="checkbox"/> ₅	<input type="checkbox"/> ₆
In general, there is good collaboration between the forest industry clubs and associations in the province	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄	<input type="checkbox"/> ₅	<input type="checkbox"/> ₆
In general, clubs and associations represent my interests as a hunter fairly well	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄	<input type="checkbox"/> ₅	<input type="checkbox"/> ₆

Your hunting expenses in 2015 in NB

20. In order to evaluate the economic importance of hunting activities in New Brunswick, we ask you to give us your best estimate of your expenses during your hunting activities in New Brunswick in 2015. Please include all your expenses from **January 1st to December 31st**. If you did not spend any money on a particular item, please write 0.

	Amount spent (\$ CAN)
Expenses related to hunting trips and in preparation for hunting in New Brunswick	
Transport (fuel, vehicle rental, air travel, etc.)	
Rental of equipment (ATV, vehicles, trailer etc.)	
Accommodation in hotel/motel, hunting camp, etc.	
Guide services	
Food and drink	
Expenses related to weapons	
Purchase and maintenance of firearms	
Ammunition and accessories for firearms (cleaning kits, targets, etc.)	
Purchase and maintenance of bows and crossbows	
Equipments and accessories for bows & crossbows (arrows, targets, case, etc.)	
Expenses related to the purchase or maintenance of your own major equipment	
Hunting camp in New Brunswick	
All-terrain vehicles (ATV, etc.)	
Boat	
Camping trailer, tent, etc.	
Pick-up (for hunting use)	
Private woodlot in New Brunswick (expenses related to management for hunting)	
Hunting dog (training, food, etc.)	
Other hunting expenses	
Equipment, clothing and accessories (binoculars, GPS, hunting camera, range-finder, etc.)	
Salt and baits (Apples, carrots, etc.)	
Hunting permit	
Membership of a hunting or wildlife club or association in New Brunswick	
Magazines, books, hunting films,	
Preparation of meat, taxidermy	
Others (please indicate)	

Your past experience as a hunter

21. Thinking of the first hunt of your life, please tell us your age at that time. (**Hunt or hunting** implies that you are carrying a weapon with the goal of taking an animal)

Age : _____years

22. Still thinking of your FIRST HUNT, what game did you hunt? *Check [v]* all the options that apply.

- | | |
|---|--|
| <input type="checkbox"/> Antlered deer | <input type="checkbox"/> Small game |
| <input type="checkbox"/> Anterless deer | <input type="checkbox"/> Waterfowl, migratory birds |
| <input type="checkbox"/> Moose | <input type="checkbox"/> Varmint (groundhog, coyote, etc.) |
| <input type="checkbox"/> Bear | <input type="checkbox"/> Other (please indicate) _____ |

23. Thinking of when you first began to hunt, please tell us what influence the following people or groups had on your decision to go hunting for the first time. Check [v] one option for each line.

	Very positive	Somewhat positive	No influence	Somewhat negative	Very negative	Does not apply
My immediate family	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄	<input type="checkbox"/> ₅	<input type="checkbox"/> ₆
Relatives (uncles, grandparents etc.)	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄	<input type="checkbox"/> ₅	<input type="checkbox"/> ₆
A friend or acquaintance	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄	<input type="checkbox"/> ₅	<input type="checkbox"/> ₆
A neighbour	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄	<input type="checkbox"/> ₅	<input type="checkbox"/> ₆
A hunting club or association	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄	<input type="checkbox"/> ₅	<input type="checkbox"/> ₆
A professional guide	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄	<input type="checkbox"/> ₅	<input type="checkbox"/> ₆
A hunting introduction program	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄	<input type="checkbox"/> ₅	<input type="checkbox"/> ₆

24. Still thinking of the first time that you went hunting, please indicate how important each of the following factors was in motivating you to go hunting. Check [v] one box on each line.

	Very important	Important	More or less important	Not very important	Not at all important	No opinion
To spend time in nature with friends or family	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄	<input type="checkbox"/> ₅	<input type="checkbox"/> ₆
To make the most of nature, or of being outdoors	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄	<input type="checkbox"/> ₅	<input type="checkbox"/> ₆
To maintain a family tradition	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄	<input type="checkbox"/> ₅	<input type="checkbox"/> ₆
To learn about wildlife and its habitat	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄	<input type="checkbox"/> ₅	<input type="checkbox"/> ₆
To escape from the stress of everyday life	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄	<input type="checkbox"/> ₅	<input type="checkbox"/> ₆
For the excitement and the challenge that hunting gives	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄	<input type="checkbox"/> ₅	<input type="checkbox"/> ₆
To bring home meat	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄	<input type="checkbox"/> ₅	<input type="checkbox"/> ₆
To bring home a trophy	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄	<input type="checkbox"/> ₅	<input type="checkbox"/> ₆
For the exercise that hunting provides	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄	<input type="checkbox"/> ₅	<input type="checkbox"/> ₆
To help control the wildlife population in a certain area	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄	<input type="checkbox"/> ₅	<input type="checkbox"/> ₆
To demonstrate my skill as a hunter	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄	<input type="checkbox"/> ₅	<input type="checkbox"/> ₆
To contribute to the economic development of my region	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄	<input type="checkbox"/> ₅	<input type="checkbox"/> ₆

Some information about you

25. Are you ...

Male

Female

26. Are you an Aboriginal person (Status Indian, non-Status Indian, Inuit or Métis)

Yes

No

I prefer not to answer

27. What is your age? _____

28. In 2015, what was your family income before taxes? Check (v) only one box below.

Less than 25 000 \$

Between 25 000 \$ and 49 999 \$

Between 50 000 \$ and 74 999 \$

Between 75 000 \$ and 99 999 \$

100 000 \$ ou more

29. What is the highest level of education that you have completed? Check (v) only one box below.

No diploma

High school diploma or equivalent

Certificat from a technical school or community college

Univesity degree

If you have any additional information to share with us, please use the space on the following page.

We are very grateful for the time that you have taken in filling out this survey.
Thanks very much!

Please return the survey form in the stamped address envelop that is included.

You will be able to consult the results of this survey in a report that will be available on-line on the web site of the Université de Moncton at the following address www.umce.ca/hunting You can also obtain a copy of the report by telephoning us at the following number (506) 737-5184.

Appendix C

Standard error and confidence intervals from the Mean

Standard error and confidence intervals of some of the results at a 95% confidence level.

	Estimated mean	Standard error	Lower value	Upper value
<i>Average number of hunting days per hunter per game type in 2015</i>				
Antlered deer	12,4	0,458	11,3	13,1
Antlerless deer	8,9	1,296	6,3	11,5
Moose	3,3	0,191	2,9	3,6
Bear	11,9	1,225	9,5	14,3
Small game	14,1	1,046	12,1	16,2
Waterfowl/migratory birds	9,7	1,309	7,1	12,4
Varmit	9,1	0,924	7,3	10,9
Other	7,6	2,192	3,05	12,19
Mean number of hunting trips	3,3	0,306	2,7	3,9
Mean distance travelled by hunters to reach their hunting ground	123	5,146	113	133
<i>Expenses</i>				
Out of province hunting	2830\$	450,24	1900\$	3760\$
<i>In province hunting</i>				
Total expenses	7560\$	850,67	5890\$	9240\$
Travel	1000\$	56,34	890\$	1115\$
Firearms and accessories	800\$	67,13	670\$	930\$
Large equipment	5000\$	789,55	3440\$	6550\$
Other expenses	760\$	43,88	680\$	850\$
<i>For those who spent less than 10 000\$</i>				
Total expenses	3000\$	151,83	2700\$	3300\$
Travel	800\$	46,44	710\$	890\$
Firearms and accessories	580\$	46,83	490\$	675\$
Large equipment	1020\$	98,86	825\$	1210\$
Other expenses	600\$	32,89	530\$	660\$
<i>Ceux qui ont dépensé 10 000\$ et plus</i>				
Total expenses	28 700\$	3586,03	21 500\$	35 900\$
Travel	2000\$	187,14	1580\$	2330\$
Firearms and accessories	1800\$	272,60	1270\$	2360\$
Large equipment	23 400\$	3510,70	16350\$	30430\$
Other expenses	1500\$	158,77	1200\$	1850\$
Age of the first hunting experience	15,7	0,250	15,2	16,2
Age of survey participants	46,6	0,750	45,2	48,1