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**SNOWMOBILING IN MAINE: ECONOMIC CONTRIBUTIONS AND  
REGISTERED MAINE GUIDES**

By

Ian Hathaway

B.S. University of Maine, 2017

A THESIS

Submitted in Partial Fulfillment of the  
Requirements for the Degree of  
Master of Science  
(in Forest Resources)

The Graduate School  
The University of Maine  
May 2020

Advisory Committee:

Jessica Leahy, Professor of Forest Resources, Co-Advisor

Mindy S. Crandall, Assistant Professor of Forest Management and Economics, Co-Advisor

Caroline Noblet, Associate Professor of Economics

**SNOWMOBILING IN MAINE: ECONOMIC CONTRIBUTIONS AND  
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By Ian Hathaway

Thesis Co-Advisors: Drs. Jessica Leahy and Mindy Crandall

An Abstract of the Thesis Presented  
in Partial Fulfillment of the Requirements for the  
Degree of Master of Science  
(in Forest Resources)  
May 2020

Snowmobiling has been a popular winter pastime in Maine for decades. During the 2018-2019 snowmobiling season, nearly 85,000 snowmobiles were registered in Maine by both residents and non-resident snowmobile riders. While registrations show how many snowmobile owners are riding in Maine, an increasing part of the sport is now in rentals, which allows new or intermittent snowmobile riders to participate in the activity while avoiding the high price of modern machines. Another aspect of snowmobiling involves hiring Registered Maine Guides, by both renters and snowmobile owners, to lead tours. The Registered Maine Guide program standardizes the licensing procedure for all snowmobile guides who operate in Maine alongside these rental businesses. This research project examined two aspects of snowmobiling from different perspectives in order to elucidate the economic contribution of the sport, and the potential role of renters and guides in supporting the sport in the future. First, the research team used a system of mail surveys to collect data on how snowmobilers contribute to the Maine economy by measuring how snowmobilers spend money on snowmobile related purchases. This data was compiled to find the average spending per-snowmobile and subsequently multiplied by

the number of registered snowmobiles in the state during the 2018-2019 season. Indirect and induced effects of this spending was calculated using Economic Impact Analysis for Planning (IMPLAN) software. The combination of the direct, indirect, and induced effects of the spending showed that snowmobiling contributed approximately \$606 million to the Maine economy during the 2018-2019 season. Second, the research team used intercept surveying, and interviews with snowmobile renters and Maine Snowmobile Guides, to determine how the Maine Guide program affects renters' perceptions of snowmobile guides in the state. This revealed a support for a standardized certification system for guides in Maine, but also showed a lack of knowledge of the program among renters, and a desire for increased efforts from the state to disseminate information about the program from Maine Guides interviewed.

## **ACKNOWLEDGEMENTS**

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**CHAPTER 1**  
**THE ECONOMIC CONTRIBUTION OF SNOWMOBILING**  
**TO THE MAINE ECONOMY**

**1.1 Introduction**

This report provides an estimate of the overall contribution snowmobiling activity made to the Maine economy during the 2018-2019 snowmobiling season. Maine has not taken an extensive evaluation of snowmobiling since 1998 when a similar economic impact report was prepared by the University of Maine Department of Economics and Policy in collaboration with the State of Maine Snowmobile Program and authored by Stephen Reiling, Matthew Kotchen, and Alan Kezis. During the data collection period of the 1998 Maine Snowmobiling Survey, New Hampshire residents with snowmobiles registered in New Hampshire were permitted to snowmobile in Maine without obtaining a Maine registration. Since then, Maine has changed its requirements such that all snowmobiles used in the state must have a Maine registration. Between 1998 and today (2019), snowmobiling in Maine has changed significantly, including advancements in snowmobile technology and gear, the mix of in- and out-of-state riders, and the popularity of different riding activities such as backcountry riding. Data used to calculate the economic contribution were collected through a questionnaire sent to a representative sample of snowmobilers with snowmobiles registered in the state of Maine. In addition to economic contribution information, this report also provides summary information from the questionnaire on snowmobiler sociodemographic information and opinions on snowmobiling related issues, such as backcountry riding, satisfaction with Maine's snowmobiling tourism infrastructure, and the Registered Maine Guide program as it relates to snowmobiling.

## **1.2 Methodology**

In order to create an accurate estimate of the total economic contribution that snowmobiling generates within the State of Maine, a questionnaire was sent to a random sample of snowmobilers with snowmobiles registered with the state during the 2018-2019 snowmobiling season. The survey collected data on spending within the state which could be attributed to snowmobiling as well as basic demographics and opinions on snowmobiling related issues. The spending information from the survey was compiled into resident and non-resident groups and analyzed by the IMPLAN (Impact Planning Analysis) software which estimated how the snowmobiling dollars were recirculated within the state. Summary statistics on sociodemographic information, belief statements, and activity types were tabulated in IBM's SPSS statistics software.

### **1.2.1 Survey and Sampling Techniques**

This research followed the methodology used in Reiling, Kotchen, and Kezis's 1998 report, *An Economic Evaluation of Snowmobiling in Maine* in order to yield comparable results. Some questions were updated to make the survey relevant to snowmobiling today. Some opinion related questions were also replaced to reflect the current issues affecting snowmobiling in Maine now.

### **1.2.2 Questionnaire Description**

The questionnaire was comprised of five sections (Appendix A). Section one related to the snowmobile rider's past snowmobiling activities and included information on when they first began snowmobiling in Maine, how often they had gone in the past, volunteering for local clubs or the MSA, and activities and opinions related to Registered Maine Guides. Section two

pertained to the rider's current snowmobiling activities in Maine during the 2018- 2019 season. Respondents indicated the number of trips they took and what types of trips they were, where they rode in and out of Maine, and who rode with them. Section three asked respondents to provide, through Likert scale responses, their opinions on backcountry riding in Maine as it related to the landowner-snowmobiler interactions, and the effects that it could have on the natural environment. Section four asked questions on snowmobiling spending and the riders' opinions on the areas in which they rode. This section asked riders to focus their responses on a snowmobiling trip taken closest to a specified date between mid-December and mid-April (the approximate start and end of the snowmobiling season), generated randomly for each survey recipient using Excel, and printed on the front of the survey. This created a spending profile for a given trip based on the length (in days) over which it took place. The questionnaire prompted the rider to indicate where the trip took place, how many members of their household took part, how many snowmobiles they brought, and how and where they spent money during the trip. All reported spending was considered snowmobiling related. Section five asked respondents to answer questions about snowmobiling activity related to a specified snowmobile, indicated by a registration number printed on the front of the survey. This included questions about any gear, parts, labor, or accessories attributed to that particular snowmobile. It also asked whether or not the snowmobile was purchased that year, and for how much; if a trailer had been purchased that year, and if so for how much; and if the trailer was made by a Maine company. Respondents were also asked to report estimates of spending outside the state or online to help track the amount of money which could potentially be captured by instate retailers in the future. Section six asked for basic sociodemographic information on age, gender, ownership of assets, and income levels.



### 1.2.3 Sampling

Of the total 87,165 registered snowmobiles in the state of Maine during the 2018-2019 snowmobiling season, 61,661 were registered by Maine residents and 25,504 registered by non-resident riders. Non-resident riders are those riders who have a primary residence outside of Maine and pay non-resident registration fees. Second home ownership by non-residents is analyzed later in this report. Snowmobiles registered to a business were not included in the sample. In order to receive enough responses to support a 95% confidence interval for the estimate, four hundred returned and completed surveys were needed from both the resident and non-resident groups. To receive this sample, the research team anticipated a response rate of 33% and sent out 1,200 surveys to a random sample from each group (resident and non-resident; 2,400 total). The State of Maine Department of Inland Fisheries and Wildlife provided the list of all snowmobiles registered in Maine during the 2018-2019 snowmobiling season. The survey sample was obtained by assigning a unique random number to each registration so that each registration in the two groups has an equal chance of being selected (e.g. 1,200 selected from the 61,661 resident and 1,200 from the 25,504 non-resident). Contact information was examined to remove any instances of multiple surveys being sent to the same household. Removed participants were replaced randomly. The survey mailing administration followed the Dillman Tailored Design Method for surveys (Dillman et. al, 2014). Surveys were initially sent with an invitation letter, an informed consent document, and a prepaid envelope to return the survey. The initial mailing took place in late May 2019 after the 2018-2019 season had come to an end. Approximately two weeks after the first mailing, a reminder post card was sent to every registered snowmobiler who had been selected to participate in the study. As surveys were received, the registration numbers printed on the front were used to remove the participant from

the reminder mailing list. A replacement survey was sent to all those in the survey pool who had not yet returned a survey approximately three weeks after the reminder post card was sent. The replacement survey included all the same components as the initial mailing, but the invitation letter included a link and QR code providing an option to take the survey online.

#### **1.2.4 Responses**

The response rate over all was 899 useable surveys (37.5%). Several questionnaires (N=5) were unusable due to not being filled out at all, filled out in an unusable manner, or being damaged beyond use before being returned. Of the questionnaires returned 421 (46.8%) were from resident registrations while 478 (53.2%) were from non-resident registrations from 16 states (Massachusetts, Rhode Island, New Hampshire, Vermont, Connecticut, New Jersey, New York, Pennsylvania, Virginia, Georgia, Florida, Alabama, Ohio, Michigan, Illinois, and Texas). Reported totals of resident and non-resident averages are weighted based on the total number of resident and non-resident snowmobiles registered in the state of Maine during the 2018-2019 snowmobiling season. For example, if a resident spent an average of \$1.00 on snowmobile clothing per snowmobile over the course of the season and there were 61,661 snowmobiles registered by residents during the season, the estimated spending for the season by resident snowmobilers on snowmobile clothing would be \$61,661.

### **1.3 Results**

#### **1.3.1 Sociodemographic Characteristics**

The average age, household size, education level, and income of snowmobilers for resident riders and out-of-state riders is shown in Table 1.1-1.4.

### 1.3.1.1 Age

The average of resident riders' age obtained by the survey was 54 years old. All participants who filled out the questionnaire were at least 18 years of age. The average age of non-resident riders age was 53 years old. The percent of respondents in each age bracket is displayed in Table 1.1.

Table 1.1 Age of Survey Respondents

<b>Age Bracket</b>	<b>Resident (N=394)</b>	<b>Non-Resident (N=448)</b>
<b>18-19</b>	1.0%	0.7%
<b>20-29</b>	5.3%	4.5%
<b>30-39</b>	9.6%	11.2%
<b>40-49</b>	17.8%	15.8%
<b>50-59</b>	28.9%	38.4%
<b>60-69</b>	25.4%	23.2%
<b>70-79</b>	9.6%	5.1%
<b>80-89</b>	2.3%	1.1%

### 1.3.1.2 Household Size

Resident households of snowmobile riders averaged 2.66 members while non-resident households averaged 2.83 members. They survey did not ask for respondents to specify the number of children who were members of the households. The percent of respondents residing in households with various numbers of members is shown in Table 1.2.

Table 1.2 Number of Household Members

<b>Household Members</b>	<b>Resident (N=395)</b>	<b>Non-Resident (N=448)</b>
<b>1</b>	10.6%	7.6%
<b>2</b>	48.6%	45.3%
<b>3</b>	13.7%	16.7%
<b>4</b>	20.0%	19.9%
<b>5</b>	5.6%	7.6%
<b>6 or more</b>	1.5%	2.9%

Resident households of snowmobile riders averaged 2.66 members while non-resident households averaged 2.83 members.

### 1.3.1.3 Education Level

The questionnaire asked for education level in terms of six categories: some high school but no degree, high school degree or equivalent (e.g. GED), some college but no degree, associate degree, bachelor’s degree, or graduate degree. The average education level for both residents and non-residents was just above some college but no degree, although slightly higher percentages of non-residents had completed a college degree. Table 1.3 below displays the percent of respondents who indicated each education level by residents and non-residents.

Table 1.3 Education Level

<b>Education Level</b>	<b>Resident (N=394)</b>	<b>Non-Resident (N=448)</b>
<b>Some high school but no</b>	2.5%	1.8%
<b>High school degree or equivalent (e.g. GED)</b>	34.0%	33.3%
<b>Some college but no degree</b>	21.8%	22.3%
<b>Associate degree</b>	16.5%	14.1%
<b>Bachelor’s degree</b>	17.5%	20.1%
<b>Graduate degree</b>	7.6%	8.5%

The most frequent answer about education level for both residents and non-residents was “high school degree of equivalent”, as shown in Table 1.3.

### 1.3.1.4 Income

Income levels were assessed in the survey instrument through 11 income brackets in increments of \$10,000 (from \$0-\$59,999), increments of \$20,000 (from \$60,000 to \$119,999), and separate brackets of \$120,000-\$149,999 and \$150,000 or more. Table 1.4 shows the percent of respondents in each income bracket option on the questionnaire.

Table 1.4 Income Levels

<b>Income Bracket (per year)</b>	<b>Residents (N=369)</b>	<b>Non-Residents (N=420)</b>
<b>Less Than \$10,000</b>	0.8%	0.0%
<b>\$10,000-\$19,999</b>	2.7%	0.0%
<b>\$20,000-\$29,999</b>	5.1%	0.5%
<b>\$30,000-\$39,999</b>	5.1%	1.2%
<b>\$40,000-\$49,999</b>	7.0%	2.4%
<b>\$50,000-\$59,999</b>	8.9%	3.3%
<b>\$60,000-\$79,999</b>	14.6%	11.0%
<b>\$80,000-\$99,999</b>	14.1%	8.3%
<b>100,000-\$119,999</b>	11.7%	12.9%
<b>\$120,000-\$149,999</b>	12.7%	16.9%
<b>\$150,000 or more</b>	17.1%	43.6%

The median income for residents was in the \$80,000-\$99,999 / year bracket and the median income for non-residents was in the \$120,000-\$149,999 / year bracket. This indicates that in general, non-resident snowmobilers are coming from households with greater incomes than those of resident snowmobilers.

### 1.3.1.5 Internet Access

Most survey respondents had access to computers and the internet. The percent of riders who have access to a computer, access to the internet via computer, or access to the internet via smartphone is provided in Table 1.5.

Table 1.5 Internet Access

<b>Category</b>	<b>Resident</b>	<b>Non-Resident</b>	<b>Average</b>
<b>Personal Computer (% Yes)</b>	90.1%	94.4%	92.4%
<b>Internet Access (% Yes)</b>	96.4%	96.1%	96.2%
<b>Smartphone Internet Access (% Yes)</b>	85.4%	93.1%	89.5%

### 1.3.1.6 Camp or Second Home Ownership in Maine

The percent of residents and non-residents who own a camp or second home in Maine is shown in Table 1.6.

Table 1.6 Camp or Second Home Ownership

<b>Property</b>	<b>Resident</b>	<b>Non-Resident</b>
<b>Maine Camp or Second Home (% Yes)</b>	37.4%	36.4%

Of residents, 37.4% indicated that they owned a camp or second home in Maine. Of nonresidents, 36.4% indicated that they owned a camp or second home in Maine. Based on the number of registered snowmobiles, this indicates that approximately 22,300 residents and 9,150 non-residents own some form of camp or second home in the state. This question on the survey instrument did not ask if the homes were used primarily or exclusively for snowmobiling.

Only five sociodemographic characteristics were directly comparable between the 1998 Maine Snowmobiling Survey and this report. Those characteristics are listed in Table 1.7.

Table 1.7 Sociodemographic Comparisons 1998-2019

<b>Characteristic</b>	<b>Resident 1998</b>	<b>Resident 2019</b>	<b>Non-Resident 1998</b>	<b>Non-Resident 2019</b>
<b>Gender (% Male)</b>	86.8	87.6	92.2	93.1
<b>Average Age</b>	42.8	54	41.1	53
<b>Average Number of People in Household</b>	3.1	2.7	3.0	2.8
<b>Average Education (years)</b>	12.8	>12	13.3	>12
<b>Personal Computer Access (% yes)</b>	43.7	91.1	49.5	94.4
<b>Internet Access (% yes)</b>	31.9	96.4	43.8	96.1

### 1.3.2 Respondents' Snowmobiling History in Maine Riding History

The percent of respondents (resident and non-resident) who began snowmobiling in Maine in each specified time period are displayed in Figure 1.1 and Figure 1.2.

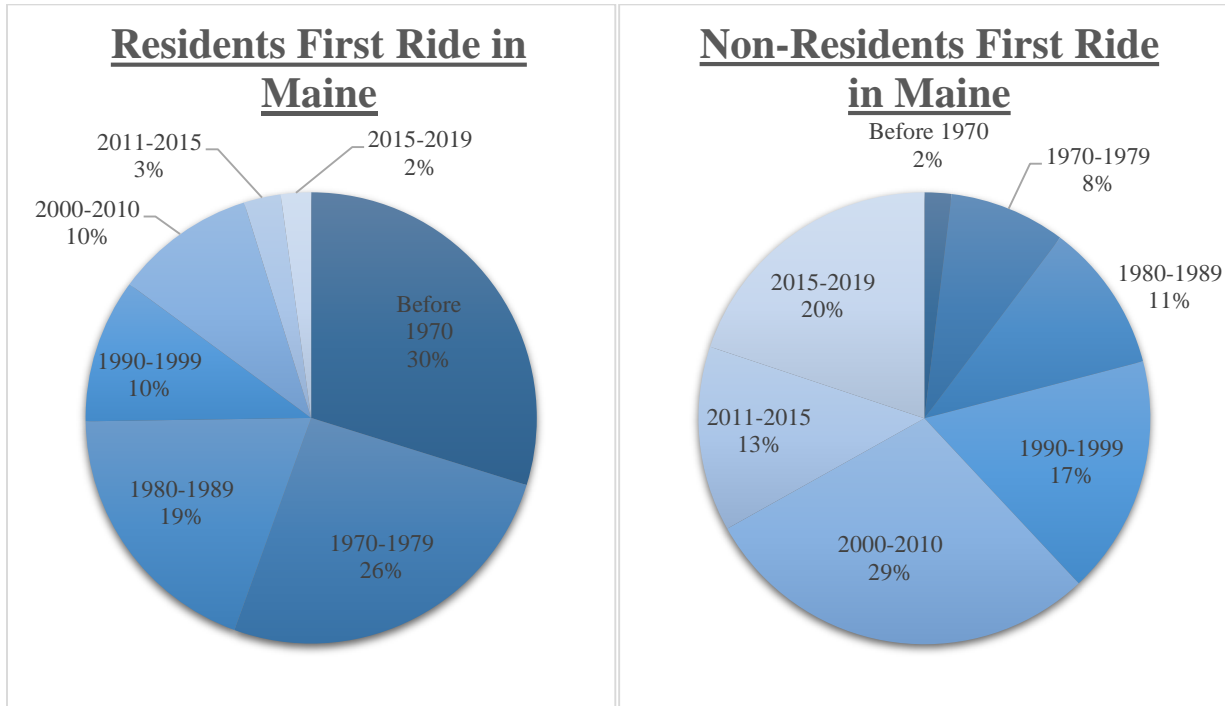


Figure 1.1 Timing of First Rides in Maine for Residents and Non-Residents

The majority of resident snowmobilers took their first ride in Maine before 1979 while the majority of non-residents began snowmobiling in Maine after 1990. Resident and non-resident riders were also asked how frequently they have snowmobiled in Maine after their first time snowmobiling in Maine (Figure 1.2).

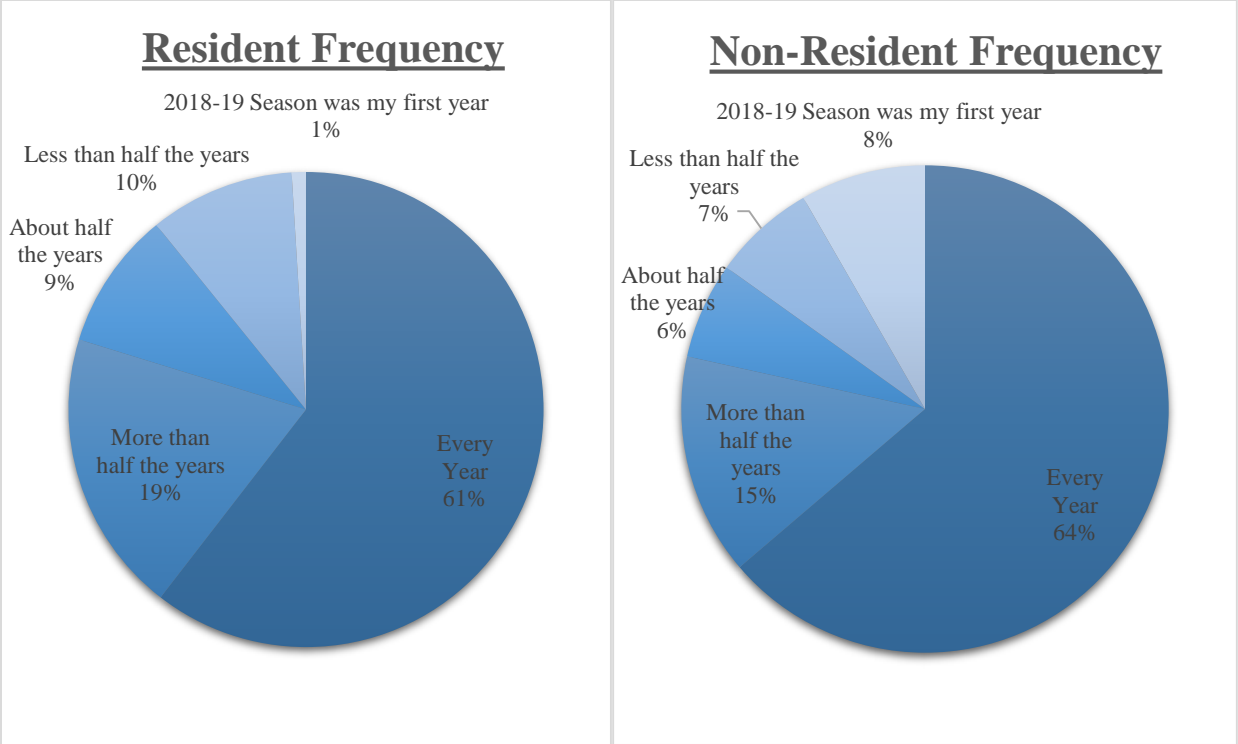


Figure 1.2 Riding Frequency of Residents and Non-Residents Snowmobilers

Maine remains a popular snowmobiling destination for both residents and non-residents, most of whom snowmobiled in Maine either every year or more than half the years since their first snowmobile trip in the state (80% of residents and 79% of non-residents).

**1.3.3 Snowmobile Club and Volunteering History**

The percent of respondents who indicated whether or not they had been members of the Maine Snowmobiling Association (MSA) or a Maine snowmobile club, and if they had volunteered for the MSA or a Maine snowmobile club during the 2018-19 season, is shown in Table 1.8.



Table 1.8 Snowmobile Club Membership & Volunteering History

<b>Question</b>	<b>Resident</b>	<b>Non-Resident</b>
<b>Member of Maine Snowmobile Club (2018-19)</b>	50%	40%
<b>Member of a Maine Snowmobile Club (Ever)</b>	69%	49%
<b>Member of the MSA (2018-19)</b>	42%	34%
<b>Member of the MSA (Ever)</b>	55%	40%
<b>Volunteered for the MSA or Snowmobile Club (Ever)</b>	49%	16%
<b>Volunteered for the MSA or Snowmobile Club (2018-19)</b>	24%	8%

Fewer non-residents are members of Maine snowmobile clubs and the MSA than resident snowmobilers. This could be due to non-residents spending less time overall in Maine and only coming during the snowmobile season to ride.

Approximately 24% of residents indicated that they volunteered during the 2018-2019 season. The average resident volunteer hours were 39.3 hours per person with a range of 1 hour to 200 hours. Only 8% of non-residents volunteered. Their average volunteer hours were also lower (13.3 hours per person, with a range of 1 hour to 60 hours). This is likely due to most volunteering duties such as trail maintenance taking place in the off season and living away from Maine making it difficult for non-residents to participate. A common response for non-resident riders as to why they did not volunteer or volunteer more was that they “lived too far away”. Using the registration data to extrapolate these findings, residents donated approximately 562,000 volunteer hours during the 2018-2019 snowmobiling season and non-residents donated approximately 27,000 volunteer hours for a total of 589,000 volunteer hours.

### **1.3.4 Household Characteristics**

The number of snowmobiles per household as well as the number of riders per household is shown in Table 1.9.

Table 1.9 Number of Snowmobiles and Snowmobilers by Household

<b>Category</b>	<b>Resident</b>	<b>Non-Resident</b>
<b>Number of Snowmobiles per Household</b>	2.3	2.4
<b>Number of Snowmobile Riders per Household</b>	2.4	2.5

The average number of snowmobiles per household registered in Maine for residents was 2.3 snowmobiles and 2.4 snowmobiles for non-residents. Respondents reported averages of 2.4 members of resident households participating in snowmobiling activities, with non-residents averaging 2.5 riders per households.

### **1.3.5 Miles Traveled by Snowmobile in Maine**

Displayed in Table 1.10 are the average number of miles traveled by snowmobile (per snowmobile) and the average number of snowmobile trips further than 100 miles from the primary residence of the snowmobile owner.

Table 1.10 Miles Traveled by Snowmobile

<b>Category</b>	<b>Resident</b>	<b>Non-Resident</b>
<b>Average Miles Ridden</b>	780	973
<b>Average Number of 100+ Mile Trips</b>	3.2	4.0

Non-residents are riding a greater distance on average in Maine than residents and took slightly more trips than residents in which they traveled 100 miles or more from their home or primary location in Maine.

### 1.3.6 Snowmobiling Frequencies

#### 1.3.6.1 Total Snowmobiling Days

Survey respondents were asked how many total days they snowmobiled in Maine during the 2018-19 season. Figure 1.3 below shows the response frequencies for both in and out of state riders.

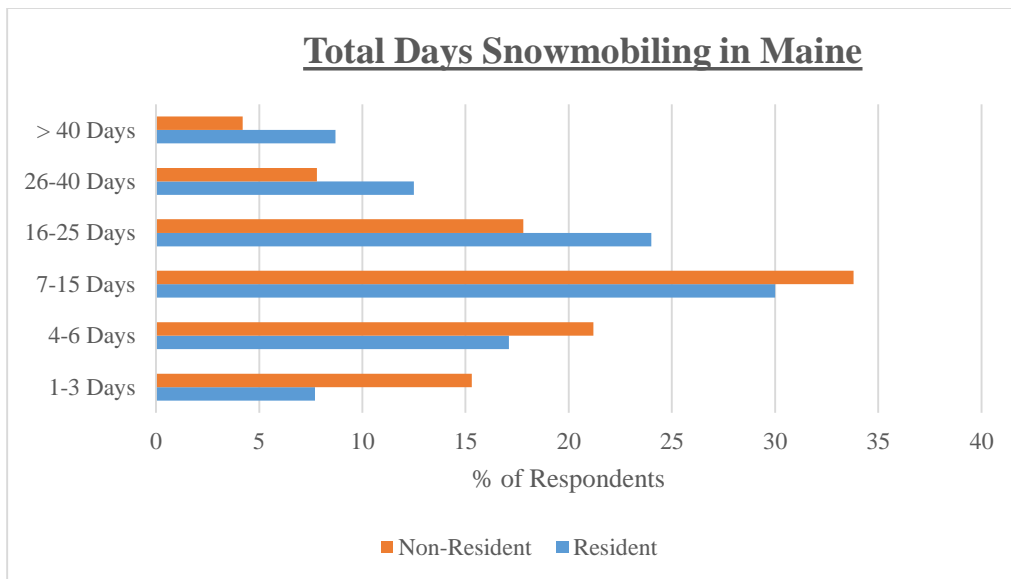


Figure 1.3 Total Days Spent Snowmobiling in Maine 2018-2019

Non-residents had fewer total days snowmobiling in Maine, with most (over 70%) of respondents snowmobiling 15 days or less in 2018-2019. In contrast, almost 9% of residents snowmobiled more than 40 days over the course of the season.

#### 1.3.6.2 Overnight Trips

Survey respondents were also asked how many overnight trips they participated in during the 2018-19 snowmobile season. Figure 1.4 below shows the response frequencies for both resident and non-resident riders.

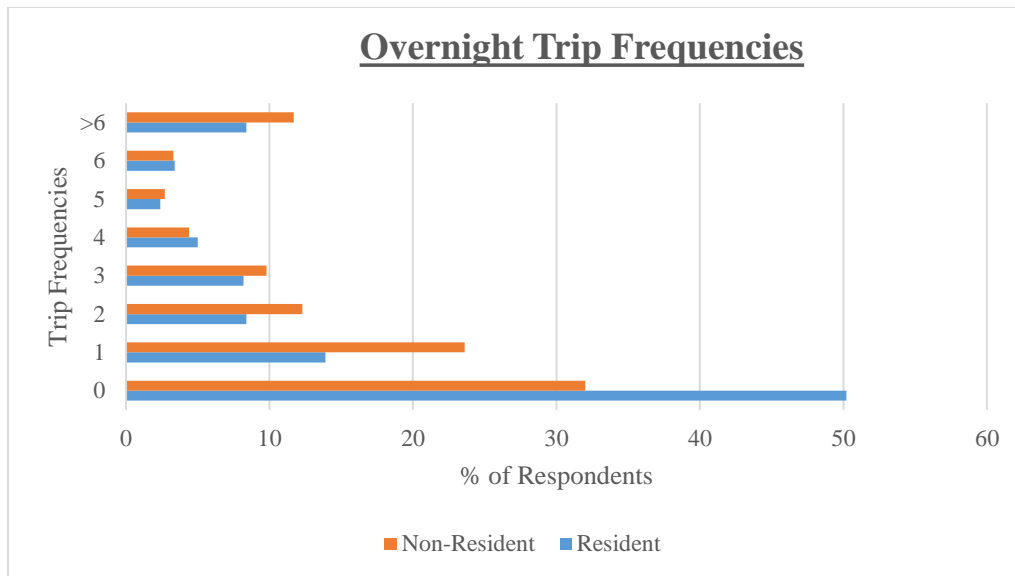


Figure 1.4 Number of Overnight Trips (of any length)

Not surprisingly, non-residents take overnight snowmobiling trips more often than residents. This is likely due to residents’ ability to snowmobile from, and back to, their own homes in a single day.

### 1.3.6.3 Miles Traveled by Snowmobile

Residents traveled on average 780 miles in Maine over the course of the season and non-residents traveled 973 miles on average. Using registration data to extrapolate this, residents traveled approximately 46.5 million miles in Maine by snowmobile, and non-residents traveled approximately 24.5 million miles in Maine.

In the 2018-2019 season, both residents and non-residents reported to have ridden about the same amount in Maine compared to a typical year.

### 1.3.6.4 Snowmobiling Use

Survey participants were asked what kinds of activities they utilized their snowmobiles for during the 2018-19 snowmobiling season. They were given nine common options as well as

an “other” option which asked for respondents to specify the activity. The percent of survey respondents who participated in each activity is displayed in Figure 1.5.

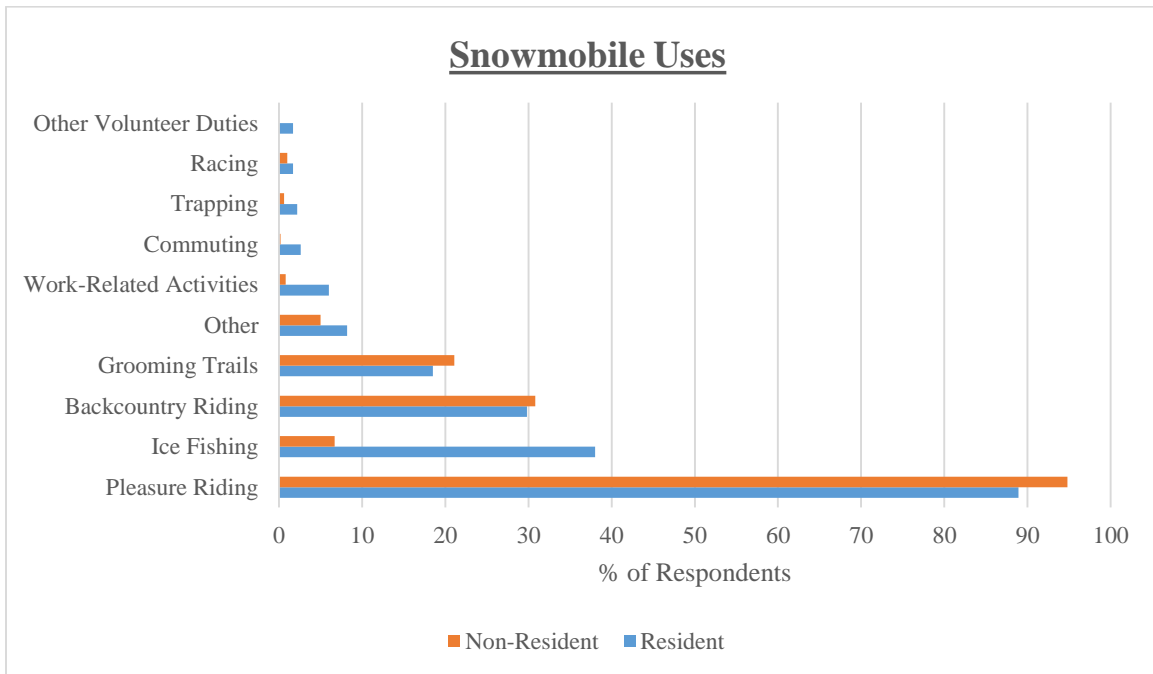


Figure 1.5 Snowmobile Uses

Snowmobiles are used in Maine predominantly for pleasure riding. The second most common use by residents is for ice fishing. A much smaller proportion of non-residents use their snowmobiles to participate in ice fishing. About one third of riders also use their snowmobiles for backcountry riding. About one fifth of residents and non-residents use their snowmobiles to help groom trails. Uses for snowmobiles in Maine specified by survey respondents in the “Other” category were: hunting, trail maintenance other than grooming, maple sap collection, and accessing remote camps.

### 1.3.6.5 Snowmobiling Groups

Survey participants were asked to specify the types of groups they snowmobiled with during the 2018-19 season. Figure 1.6 below displays the percent of respondents who reported riding with each type of group.

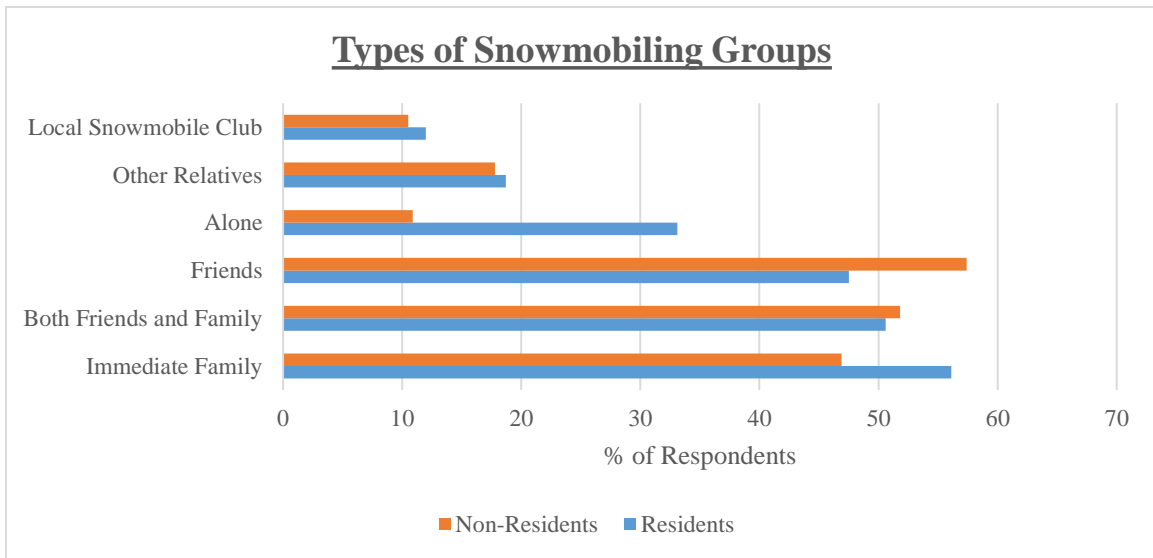


Figure 1.6 Types of Snowmobiling Groups

Non-residents are much less likely to snowmobile alone than resident snowmobilers. This could be due to the fact that non-resident snowmobilers are less likely to travel alone to the state to ride, or unfamiliarity with the area leading to less desire to ride alone.

### 1.3.6.6 Snowmobiling Locations in Maine

Survey respondents were asked to report spending relating to one trip they took during the 2018-19 snowmobiling season. The trip was specified as the trip that had taken place closest to a random date printed on the front of the survey. They were also asked to indicate where this trip took place using a map of tourism regions in Maine (Figure 1.7).

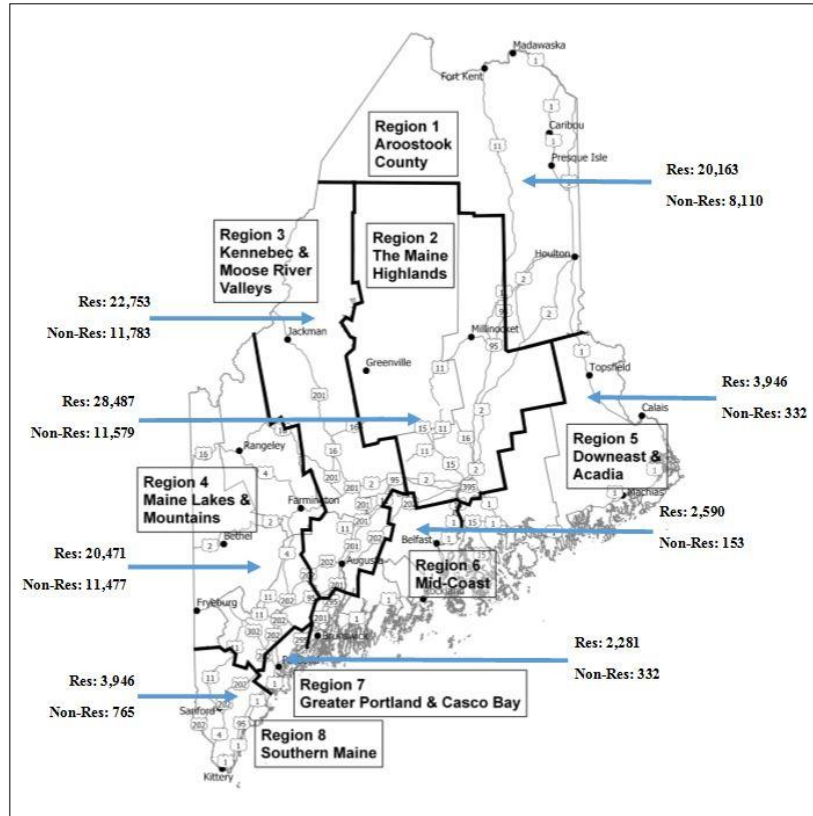


Figure 1.7 Map of Tourism Regions in Maine

Figure 1.7 displays the estimated number of total snowmobilers in each region during 2018-2019, based on the number of survey respondents indicating that they rode in each region during their specified trip. The percent of respondents who answered that they had rode in each region was applied to the total number of registrations. Table 1.11 shows what percent of trips took place in these areas. The percentages total over 100% as many snowmobile trips crossed the boundaries of these areas.

Table 1.11 Trip Locations of Randomly Selected Trip

<b>Region</b>	<b>Resident</b>	<b>Non-Resident</b>
<b>The Maine Highlands</b>	46.2%	45.4%
<b>Kennebec and Moose River Valleys</b>	36.9%	46.2%
<b>Maine Lakes &amp; Mountains</b>	33.2%	45.0%
<b>Aroostook County</b>	32.7%	31.8%
<b>Downeast &amp; Acadia</b>	6.4%	1.3%
<b>Southern Maine</b>	6.4%	3.0%
<b>The Mid Coast</b>	4.2%	0.6%
<b>Greater Portland and Casco Bay</b>	3.7%	1.3%

Based on the average number of extended trips and length of extended trips in days, the estimated number days of snowmobile traffic was projected into each region. Each snowmobile day represents a single snowmobile visiting this region for some of or the entirety of a day. The results of the snowmobile day extrapolation are seen in Table 1.12. While the total number of snowmobile days was 696,120 for residents and 443,260 for non-residents, the total number of days displayed in Table 1.12 is greater than these figures as snowmobilers may have visited more than one region in a day.

Table 1.12 Snowmobile Days by Region

<b>Region</b>	<b>Resident</b>	<b>Non-Resident</b>
<b>The Maine Highlands</b>	321,608	201,240
<b>Kennebec and Moose River Valleys</b>	256,868	204,786
<b>Maine Lakes &amp; Mountains</b>	231,112	199,467
<b>Aroostook County</b>	227,632	140,957
<b>Downeast &amp; Acadia</b>	44,551	5,762
<b>Southern Maine</b>	44,551	13,297
<b>The Mid Coast</b>	29,237	2,660
<b>Greater Portland and Casco Bay</b>	25,757	5,762



### 1.3.6.7 Snowmobiling Outside of Maine

Survey respondents indicated whether they had snowmobiled outside the state of Maine during the 2018-19 snowmobiling season. Table 1.13 shows the portion of snowmobilers who rode outside of the state of Maine and for those who did, how many miles on average they rode in other locations.

Table 1.13 Snowmobiling Activity outside Maine by Registered Maine Snowmobilers

<b>Category</b>	<b>Resident</b>	<b>Non-Resident</b>
<b>Snowmobiled outside of Maine</b>	6.5%	43.8%
<b>Snowmobile Exclusively in Maine</b>	93.5%	56.2%
<b>Miles snowmobiled outside of Maine by those who did</b>	876	844

Of residents, 6.5% noted that they had snowmobiled outside of the state and 43.8% of non-residents had as well. While only a small portion of Maine resident snowmobilers ride outside of Maine, slightly more than half (56.2%) of non-resident Maine snowmobilers rode exclusively in Maine. Residents indicated they had traveled to New Hampshire, Vermont, Massachusetts, Connecticut, Quebec, New Brunswick, Colorado, and Oregon to snowmobile. Non-Residents indicated that they had traveled to each of these locations as well (excluding Colorado and Oregon), and had also traveled to Rhode Island, Pennsylvania, New York, Ontario, Illinois, Michigan, Wisconsin, and Montana. For those who did snowmobile outside of Maine, residents rode an average of 876 miles outside the state and non-residents rode an average of 844 miles outside the state. The most common place that Maine registered snowmobile owners rode outside of Maine was New Hampshire.

## 1.4 Snowmobile Rider Opinions

### 1.4.1 Guided Snowmobile Tours

Maine Guides are available for hire by snowmobilers in several locations throughout the state, through snowmobile rental locations or private guiding businesses. Of resident survey respondents, 2% indicated that they had ever hired a Maine Guide to lead a snowmobile excursion, and less than 1% had hired one during the 2018-19 snowmobiling season. Of non-resident survey participants, 3% reported that they had hired a Maine Guide to lead a snowmobile excursion at some point, and 1% had hired a Maine Guide during the 2018-19 snowmobiling season. All respondents were asked seven statements about tours led by Maine Guides and asked to rate their agreement with each statement using a scale from 1 to 5 corresponding with “strongly disagree” to “strongly agree”, respectively. The closer the number is to five, the more agreement with the statement among respondents. Table 1.14 reports the average score for each statement.

Table 1.14 Statements about Maine Guide-led Snowmobile Tours

Statement	Resident (Mean)	Non-Resident (Mean)
I would experience new areas and routes that I would not have ventured on without a Maine Guide.	2.83	2.95
I would be able to safely snowmobile in backcountry conditions because of a Maine Guide.	2.78	3.05
I would feel safer with a Maine Guide leading the tour.	2.63	2.55
A Maine Guide would increase my ability to navigate the trails.	2.62	2.64
A Maine Guide would increase my knowledge of acceptable riding practices.	2.51	2.54
I would be a more confident snowmobiler with a Maine Guide.	2.42	2.46
A Maine Guide would increase my riding enjoyment.	2.33	2.34

1= Strongly Disagree, 2=Disagree, 3= Neither Agree nor Disagree, 4=Agree, 5= Strongly Agree

The average response by residents for all statements fell between 2 (Disagree) and 3 (Neither agree nor disagree). The average response for non-residents for six of the seven statements fell in the same range. The two statements that had the highest average scores were “I would experience new areas and routes that I would not have ventured on without a Maine Guide” and “I would be able to safely snowmobile in backcountry conditions because of a Maine Guide.” This indicates that riders with registered snowmobiles might be most likely to hire a guide to take advantage of a Guide’s knowledge of the extensive Maine snowmobile trail systems or to ensure safety in a difficult backcountry setting.

#### **1.4.2 Backcountry Riding**

Survey participants were asked to indicate their level of agreement with several statements relating to backcountry riding and backcountry activities in Maine. Participants were given the option to score each statement with the 1-5 Likert scale corresponding with “strongly disagree” to “strongly agree”, respectively. Table 1.15 and Table 1.16 below show the average responses for both resident and non-resident snowmobilers in Maine.

Table 1.15 Backcountry Riding Opinions

Statements on Backcountry Riding	Resident	Non-Resident
Backcountry riding should be allowed on public land.	3.98	3.95
Backcountry riders should have written permission to ride on private lands.	3.16	3.41
Backcountry riding should only be allowed in designated areas.	3.03	3.33
Backcountry riders should be required to take a land-owner relations course.	2.89	3.19
Backcountry riders should be required to have insurance for search and rescues.	2.76	3.12
Backcountry riders should be required to take a backcountry-specific safety course.	2.49	2.97
Backcountry riding should not be allowed on private land.	2.46	2.61
Backcountry riders should be required to use a Maine Guide.	1.96	2.18

1= Strongly Disagree, 2=Disagree, 3= Neither Agree nor Disagree, 4=Agree, 5= Strongly Agree

There was strong support for allowing backcountry riding on public lands. Among other policy options, requiring written permission was the most favored.

Table 1.16 Backcountry Activity Opinions

Statements on Backcountry Activity	Resident	Non-Resident
I have noticed an increase in backcountry riding.	3.49	3.46
I am concerned backcountry riding may lead to a loss of public access to private land.	3.49	3.67
Backcountry riding damages new growth in forest land.	2.90	2.96
Backcountry riding is harmful to wildlife.	2.37	2.53
Backcountry riding is dangerous.	2.85	2.99

1= Strongly Disagree, 2=Disagree, 3= Neither Agree nor Disagree, 4=Agree, 5= Strongly Agree

Although snowmobilers have noticed an increase in backcountry riding and are worried about backcountry riding leading to a loss of access to private lands, riders do not agree that backcountry riding is harmful to wildlife, as shown by Table 1.16. Both residents and non-residents on average neither agree nor disagree with the statements that backcountry riding damages new growth in forest lands and that backcountry riding is dangerous.

### 1.4.3 Trail Conditions, Accommodations, & Infrastructure

When asked about a specific trip, survey respondents were asked to evaluate the conditions of the infrastructure, conditions of the trails, and accommodations they encountered on their trip. Table 1.17, below, shows the average score from 1 to 5 corresponding to “very dissatisfied” to “very satisfied” respectively, with statements ordered from most satisfaction to least satisfaction for residents.

Table 1.17 Opinions on Accommodations for Snowmobile Riding in Maine

Factor	Resident	Non-Resident
Scenery/natural beauty of area	4.40	4.63
Trail width	4.12	3.93
Trail grooming	4.03	4.15
Trailside services (gas, food, restrooms, etc.)	4.03	3.88
Variety of terrains	3.95	4.23
Number of other people on trails	3.79	3.96
Proximity to populated areas	3.78	3.94
Availability of lodging	3.73	3.90
Trail signing (Trail numbers, distance, hazard signs)	3.69	3.66
Vehicle parking	3.68	3.58
Availability of regional trail maps	3.67	3.89
Courtesy of other riders	3.47	3.78
Amount of law enforcement on trails	3.46	3.76
Nightlife and entertainment	3.44	3.58
Quality of highway used to travel to trail	3.38	3.73
Availability of unmaintained trails	3.38	3.40
Club houses along trail	3.32	3.45

1= Very Dissatisfied, 2=Dissatisfied, 3= Neither Satisfied nor Dissatisfied, 4=Satisfied, 5= Very Satisfied

Every factor was rated by both residents and non-residents between either “neither satisfied nor dissatisfied” and “satisfied” or between “satisfied” and “very satisfied.” The highest rated factor for both residents and non-residents was the “Scenery/natural beauty of area.” In general, non-residents were more satisfied with all elements listed; the only exceptions were in vehicle parking, trailside services, and trail width.

#### 1.4.4 Other Recreation Activities Engaged in by Maine Snowmobilers

Survey participants were asked what other types of outdoor activities they participated in during the period of April 15, 2018 to April 14, 2019. Table 1.18 shows the percent of respondents who participated in each activity, ordered from most to least among residents.

Table 1.18 Other Recreation Activities Engaged in by Maine Snowmobilers

<b>Activity</b>	<b>Residents</b>	<b>Non-Residents</b>
<b>Fishing</b>	69%	44%
<b>Walking/Hiking</b>	68%	56%
<b>Hunting</b>	59%	28%
<b>Swimming</b>	54%	49%
<b>Motor boating</b>	53%	43%
<b>Canoeing/Kayaking</b>	53%	40%
<b>Gardening</b>	53%	20%
<b>Camping</b>	49%	29%
<b>Observing/Photographing Wildlife or Nature</b>	37%	24%
<b>Golf</b>	20%	23%
<b>Downhill Skiing</b>	17%	18%
<b>Mountain Biking</b>	13%	15%
<b>Jet Skiing</b>	12%	15%
<b>X-Country Skiing</b>	8%	4%
<b>Bicycle Touring</b>	6%	6%
<b>Horseback Riding</b>	4%	2%
<b>Sailing</b>	4%	3%
<b>Windsurfing</b>	1%	0%

Table 1.18 indicates that the most popular outdoor activities besides snowmobiling among non-residents (>50% participation) was walking/hiking. The most popular outdoor activities other than snowmobiling among residents (>50% participation) are fishing, walking/hiking, motor boating, hunting, swimming, canoeing/kayaking, and gardening. Maine resident snowmobilers report participating in a greater diversity of outdoor activities than non-resident snowmobilers.

## 1.5 Snowmobiling Related Spending

### 1.5.1 Trip Related Expenses

Section four of the questionnaire was used to calculate trip-related expenses. Respondents were asked to record their spending for a single trip. This trip was the trip taken closest to a random date printed on the front of the questionnaire. The first question asked about trip length (# of days) for the randomly chosen trip. The question was phrased “How many days was the snowmobile outing closest to the date specified on the front of this survey?” Unfortunately, and despite pretesting, this question seemed to be interpreted by some to mean how many days *from* the date on the front of the survey was your *last* trip. We assumed this because many respondents entered trip lengths of more than two weeks and some trip lengths of over 60 days. These trip lengths were assumed to be unreasonable estimates and a result of a misinterpretation of the question. This happened in 130 of the 899 cases. To correct these answers any respondent with a trip length of under two weeks was separated and an estimate of the gas usage per day was taken from these respondents. This estimate was then applied to the respondents who indicated a trip length greater than two weeks to create a new estimated trip length. These estimated trip lengths and number of trips were also compared to the total days respondents snowmobiled in Maine during the 2018-2019 season as a final check. The average adjusted result for number of trips and average trip length, along with number of trip days, is displayed in Table 1.19.

Table 1.19 Number of Trips and Trip Length

Category	Residents	Non-Residents
Number of Trips	3.21	3.96
Average Trip Length (days)	3.34	4.39
Number of Trip Days	10.72	17.38

Non-residents tend to take more long snowmobile trips on average and snowmobile for a longer period of time. The average number of days spent on snowmobiling trips for residents was 10.7 days, and for non-residents it was 17.4 days. Respondents were also asked to report spending on a specific trip. The breakdown of spending by residents and non-residents for the full 2018-2019 season and for each snowmobiling day is shown in Table 1.20.

Table 1.20 Trip-Related Spending per Snowmobile for the 2018-2019 Season

<b>Expenditure Category</b>	<b>Resident per year</b>	<b>Non-Resident per year</b>	<b>Resident per day</b>	<b>Non-Resident per day</b>
<b>Gasoline/Oil for Snowmobile</b>	\$437.11	\$640.62	\$40.77	\$36.85
<b>Gasoline/Oil for Tow Vehicle</b>	\$309.85	\$563.95	\$28.90	\$32.44
<b>Restaurant/Lounge Purchases</b>	\$294.52	\$842.45	\$27.47	\$48.46
<b>Grocery/Alcohol Purchases</b>	\$220.97	\$407.32	\$20.61	\$23.43
<b>Overnight Accommodations</b>	\$194.39	\$1,097.82	\$18.13	\$63.15
<b>Snowmobile Rentals</b>	\$18.87	\$18.08	\$1.76	\$1.04
<b>Guides/Tour Packages</b>	\$1.50	\$2.96	\$0.14	\$0.17
<b>Repairs Performed during Trip</b>	\$44.17	\$103.96	\$4.12	\$5.98
<b>Tolls and Entrance Fees</b>	\$10.94	\$73.19	\$1.02	\$4.21
<b>Souvenirs and Entertainment</b>	\$17.37	\$88.49	\$1.62	\$5.09
<b>Clothing Purchases during Trip</b>	\$48.03	\$99.96	\$4.48	\$5.75
<b>Miscellaneous Purchases</b>	\$24.55	\$102.92	\$2.29	\$5.92
<b>Other Purchases</b>	\$11.04	\$224.26	\$1.03	\$12.90
<b>Total</b>	<b>\$1,633.30</b>	<b>\$4,265.96</b>	<b>\$152.34</b>	<b>\$245.39</b>

Using the spending per snowmobile per year estimates, the spending in each category was multiplied by the total number of registrations for residents and non-residents separately. Total trip related expenses for residents was calculated to be approximately \$101 million for the 59,620 resident registered snowmobiles, and \$109 million for the 25,131 non-resident registered snowmobiles. Although non-residents account for less than one third of total registrations, non-



residents spent considerably more per snowmobile in almost every category and take a similar number of extended trips when they traveled to Maine to ride. Spending per year for all residents and non-residents is displayed in Table 1.21.

Table 1.21 Total Spending on snowmobile Trips

<b>Expenditure Category</b>	<b>Resident per year</b>	<b>Non-Resident per year</b>
<b>Gasoline/Oil for Snowmobile</b>	\$26,952,731	\$16,338,249
<b>Gasoline/Oil for Tow Vehicle</b>	\$19,105,566	\$14,382,979
<b>Restaurant/Lounge Purchases</b>	\$18,160,204	\$21,485,794
<b>Grocery/Alcohol Purchases</b>	\$13,625,111	\$10,388,200
<b>Overnight Accommodations</b>	\$11,985,602	\$27,998,925
<b>Snowmobile Rentals</b>	\$1,163,522	\$461,107
<b>Guides/Tour Packages</b>	\$92,553	\$75,373
<b>Repairs Performed during Trip</b>	\$2,723,700	\$2,651,363
<b>Tolls and Entrance Fees</b>	\$674,314	\$1,866,595
<b>Souvenirs and Entertainment</b>	\$1,070,969	\$2,256,762
<b>Clothing Purchases during Trip</b>	\$2,961,693	\$2,549,387
<b>Miscellaneous Purchases</b>	\$1,513,901	\$2,624,761
<b>Other Purchases</b>	\$680,925	\$5,719,495
<b>Total</b>	<b>\$100,710,793</b>	<b>\$108,798,991</b>

### 1.5.2 Snowmobile Purchase Expenses

Data on snowmobile purchases was drawn from section five of the questionnaire in which respondents were asked if they purchased the snowmobile identified on the front of the survey during the 2018-2019 season. Table 1.22 shows the total estimated spending based on the average cost of a snowmobile in each category and extrapolated the amount based on the percent of respondents who indicated a purchase and the total number of resident and non-resident snowmobilers.

Table 1.22 Snowmobile Purchase Expenses (All Sales)

<b>Snowmobile Purchase Type</b>	<b>Resident</b>	<b>Non-Resident</b>
<b>New Purchase</b>	\$40,718,412	\$56,682,380
<b>Used Purchase (Dealer)</b>	\$4,197,878	\$3,683,910
<b>Used Purchase (Private Sale)</b>	\$12,968,738	\$14,159,011
<b>Total</b>	<b>\$57,885,028</b>	<b>\$74,525,301</b>

As Table 1.22 indicates, although there are fewer non-resident snowmobilers in Maine than resident snowmobilers, non-residents purchase snowmobiles at a greater frequency, and in the cases of private sales and new sales, spend more on the snowmobiles they are acquiring. A breakdown of purchase frequencies and average costs of new and used snowmobiles can be seen in Table 1.23.

Table 1.23 Snowmobile Purchase Statistics

<b>Snowmobile Purchase Type</b>	<b>Resident % Purchased</b>	<b>Resident Average Cost</b>	<b>Non-Resident % Purchased</b>	<b>Non-Resident Average Cost</b>
<b>New Purchase</b>	13.8%	\$11,585	17.4%	\$12,773
<b>Used Purchase (Dealer)</b>	3.8%	\$5,673	2.0%	\$7,222
<b>Used Purchase (Private Sale)</b>	18.0%	\$2,731	11.5%	\$4,827

### 1.5.3 Trailer Purchase Spending

As with snowmobile purchases in Table 1.22, total spending on snowmobile trailers was calculated by estimating the average spending on new, used (dealer), and used (private) trailer sales reported by respondents for both resident and non-resident riders. This was then extrapolated to find the total spending based on the percentage of respondents who indicated they purchased a trailer in each sale category and the total percentage of respondents as part of the total registered snowmobiles. Table 1.24 shows the estimated total spending on trailers in Maine during the 2018-2019 season.

Table 1.24 Trailer Purchase Expenses (All Sales)

<b>Trailer Purchase Type</b>	<b>Resident</b>	<b>Non-Resident</b>
<b>New Purchase</b>	\$22,661,196	\$7,580,088
<b>Used Purchase (Dealer)</b>	\$1,613,052	\$1,130,677
<b>Used Purchase (Private Sale)</b>	\$7,929,130	\$644,885
<b>Total</b>	<b>\$32,203,378</b>	<b>\$9,355,650</b>

Unlike spending on snowmobiles, residents spend significantly more on trailers in Maine than non-resident snowmobilers. Residents spend significantly more on person to person private used-trailer sales than non-residents. Of new trailer purchases by residents, 64.7% were manufactured in Maine and 70.6% of trailers purchased by non-residents were manufactured in Maine. Trailer manufacturers in Maine include Alcom, On the Road, and Mission Trailers. The breakdown of purchase frequencies of both new and used trailers and the average costs in each category can be seen in Table 1.25.

Table 1.25 Trailer Purchase Statistics

<b>Trailer Purchase Type</b>	<b>Resident % Purchased</b>	<b>Resident Average Cost</b>	<b>Non-Resident % Purchased</b>	<b>Non-Resident Average Cost</b>
<b>New Purchase</b>	5.7%	\$6,089	1.5%	\$1,685
<b>Used Purchase (Dealer)</b>	1.2%	\$2,180	0.7%	\$6,333
<b>Used Purchase (Private Sale)</b>	7.3%	\$1,670	4.2%	\$7,076

#### **1.5.4 Snowmobile Maintenance, Accessories, & Insurance Spending**

Section five of the survey asked survey participants to indicate spending related to the specific snowmobile identified on the cover of the questionnaire. The average spending per snowmobile for each category was found (for residents and non-residents separately) and multiplied by the total number of registrations in each resident/non-resident group. Table 1.26 shows the total spending in each category relating to snowmobile maintenance, accessories,

insurance, and registration for both snowmobiles and trailers. Insurance for non-residents was not included because non-residents are more likely purchasing insurance in their state of residence.

Table 1.26 Maintenance Spending outside of Trip-Related Spending

<b>Spending Category</b>	<b>Resident / snowmobile</b>	<b>All Resident Annual Spending</b>	<b>Non-Resident / Snowmobile</b>	<b>All Non-Resident Annual Spending</b>
<b>Snowmobile service start/end</b>	\$151.55	\$9,344,725	\$129.03	\$3,290,781
<b>Snowmobile Insurance</b>	\$134.72	\$8,306,970	\$0.00	\$0
<b>Snowmobile Accessories</b>	\$89.40	\$5,512,493	\$74.91	\$1,910,505
<b>Snowmobile / Trailer Registration</b>	\$82.51	\$5,087,649	\$147.28	\$3,756,229
<b>Expendable parts</b>	\$70.15	\$4,325,519	\$64.74	\$1,651,129
<b>Snowmobile Repairs (Parts)</b>	\$60.60	\$3,736,657	\$31.87	\$812,812
<b>Snowmobile Repairs (Labor)</b>	\$35.36	\$2,180,333	\$30.08	\$767,160
<b>Performance parts</b>	\$22.71	\$1,400,321	\$17.56	\$447,850
<b>Other Maintenance Repairs</b>	\$22.08	\$1,361,475	\$8.08	\$206,072
<b>Snowmobile Storage</b>	\$15.80	\$974,244	\$14.66	\$373,889
<b>Total</b>	<b>\$684.88</b>	<b>\$42,230,386</b>	<b>\$620.41</b>	<b>\$13,216,428</b>

While residents were shown in Table 1.26 to spend significantly less on extended trips, they are spending almost four times as much on maintenance and accessories in Maine due to the greater number of resident registered snowmobiles, but also spending slightly more on average per snowmobile. As this is their primary residence, it is likely residents are having most repairs performed close to home when not participating in a snowmobile trip.

### 1.5.5 Rider Accessories and Clothing Purchases

The survey asked in section five for the respondent to report spending on accessories and clothing for the primary rider of the snowmobile identified on the cover of the questionnaire. The research team assumed a one-to-one ratio of riders to snowmobiles and extrapolated the spending based on the number of registered snowmobiles.

Table 1.27 Primary Rider Accessory Spending

<b>Spending Category</b>	<b>Resident</b>	<b>Non-Resident</b>
<b>Snowmobile Clothing</b>	\$7,631,165	\$2,246,647
<b>Helmets</b>	\$4,836,072	\$1,216,541
<b>Specialty Items</b>	\$2,327,086	\$779,402
<b>Other Items</b>	\$792,960	\$225,455
<b>Total</b>	<b>\$15,587,284</b>	<b>\$4,468,046</b>

Residents are spending significantly more on snowmobile clothing and rider accessories than non-resident snowmobilers. Again, non-resident snowmobilers may be more likely to purchase equipment closer to home unless it is immediately necessary for an active snowmobiling trip.

## 1.6 Economic Contribution

### 1.6.1 Marginal Direct Spending

Survey results shown above are useful for estimating the direct expenditures and contributions that snowmobiling has in the state of Maine. To incorporate the value of the recirculation of money in the economy that occurs due to snowmobiling, IMPLAN was used with assistance from Megan Bailey of the Margaret Chase Smith Policy Center. Input information came directly from survey results and allowed IMPLAN to calculate the indirect and induced effects of the total gross spending on goods and services. IMPLAN uses input on total

gross spending, and based on the profit margins of individual businesses, calculates what each dollar spent contributes to the state through indirect and induced effects. Indirect effects are the business taxes, wages, and purchase of goods paid by the recipient of the direct spending, while induced effects arise from the spending of these dollars by households and other businesses. This additional value generated or “multiplier” is added to capture the total economic contribution. Multipliers are applied to the marginal spending and show how much effect individual sectors have on the greater economy. Table 1.28 compares the total gross spending related to snowmobiling calculated from the survey and the marginal spending value input into IMPLAN that was used to calculate how the money will recirculate within the state of Maine.

When calculating indirect and induced effects IMPLAN automatically accounted for the trailer manufacturing industry within the state as a percent of overall trailer sales. To have included Maine manufactured trailer sales separately would be double counting the spending.

Table 1.28 Total Expenses Placed into Sectors and Spending Margins

<b>Economic Sector / Expenditure Type</b>	<b>Gross Spending</b>	<b>IMPLAN Margins</b>
<b><u>Retail-Motor Vehicle and Parts Dealers:</u> Snowmobile Sales, Trailer Sales, Expendable Parts, Performance Parts, Snowmobile Repairs (Parts)</b>	\$150,641,882	\$28,170,032
<b><u>Retail-Gasoline Stores:</u> Gasoline/Oil for Snowmobiles and Tow Vehicles</b>	\$76,779,524	\$10,921,628
<b><u>Hotels and Motels:</u> Overnight Accommodations</b>	\$39,984,528	\$39,984,526
<b><u>Household:</u> Private Snowmobile and Trailer Sales</b>	\$35,701,765	\$34,793,529
<b><u>Retail-Clothing and Clothing Accessories Stores:</u> Clothing Purchased During Trip, Snowmobile Clothing, Helmets, Specialty Items, Other Clothing Purchases</b>	\$25,566,411	\$11,709,416

Table 1.28 Total Expenses Placed into Sectors and Spending Margins (Continued)

<b>Economic Sector / Expenditure Type</b>	<b>Gross Spending</b>	<b>IMPLAN Margins</b>
<b><u>Food and Beverage Stores: Grocery and Alcohol Purchases</u></b>	\$24,013,311	\$6,699,714
<b><u>Automotive Repair and Maintenance: Repairs Performed During Trip, Service at Start/End of Season, Snowmobile Repairs, Other Snowmobile Related Repair</u></b>	\$22,525,609	\$22,525,609
<b><u>Full-Service Restaurants: ½ Restaurant Purchases</u></b>	\$19,822,999	\$19,822,999
<b><u>Limited Service Restaurants: ½ Restaurant Purchases</u></b>	\$19,822,999	\$19,822,999
<b><u>Other Retail Stores: ½ Souvenirs, Gifts and Entertainment, Other Trip Expenses, Misc. Trip Expenses</u></b>	\$12,202,948	\$5,857,415
<b><u>Other State Government Enterprises: Maine Turnpike Tolls and Land Entrance Fees, Snowmobile Registration</u></b>	\$11,384,787	\$11,384,797
<b><u>Insurance Agencies: Insurance (Resident Only)</u></b>	\$8,306,970	\$8,306,970
<b><u>Retail-Sporting Goods, Hobby, Musical Instrument and Book Stores: Snowmobiling Accessories</u></b>	\$7,422,998	\$3,095,390
<b><u>Other Amusement and Recreation Industries: ½ Souvenirs, Gifts and Entertainment</u></b>	\$1,663,866	\$1,663,866
<b><u>Automotive Equipment Rental and Leasing: Snowmobile Rentals</u></b>	\$1,624,629	\$1,624,629
<b><u>Warehousing and Storage: Snowmobile Storage</u></b>	\$1,348,132	\$1,348,132
<b><u>Other Support Services: Guides and Tour Packages</u></b>	\$167,926	\$167,925
<b>Total</b>	<b>\$458,981,285</b>	<b>\$227,899,576</b>

Table 1.28 shows several major sectors in which the marginal spending is much less than the gross spending. This is due to leakages, or circumstances in which the money being spent is sent directly out of the state economy. For example, the “Motor Vehicle and Parts Dealers” sector drops from nearly \$147 million to \$27.5 million because most snowmobiles and snowmobile parts are manufactured and purchased from out-of-state companies and only resold

within Maine for a marginal upcharge. This is the case with many retail sectors unless the retail goods are being manufactured within the state.

The economic contribution of snowmobiling to the state of Maine, including gross spending, as well as indirect and induced effects calculated by the IMPLAN software, are shown in Table 1.29.

Table 1.29 Indirect Effects, Induced Effects, and Total Contribution

<b>Economic Sector / Expenditure Type</b>	<b>Gross Spending</b>	<b>Indirect and Induced Effects</b>	<b>Total</b>
<b>Retail-Motor Vehicle and Parts Dealers</b>	\$150,641,882	\$1,585,845	\$148,531,382
<b>Retail-Gasoline Stores</b>	\$76,779,524	\$516,221	\$74,806,180
<b>Hotels and Motels</b>	\$39,984,528	\$154,717	\$39,329,234
<b>Households</b>	\$35,701,765	\$0	\$34,793,529
<b>Retail-Clothing and Clothing Accessories Stores</b>	\$25,566,411	\$702,739	\$25,535,551
<b>Food and Beverage Stores</b>	\$24,013,311	\$1,337,353	\$24,715,111
<b>Automotive Repair and Maintenance</b>	\$22,525,609	\$1,363,076	\$23,237,734
<b>Full-Service Restaurants</b>	\$19,822,999	\$2,137,408	\$21,450,527
<b>Limited Service restaurants</b>	\$19,822,999	\$2,537,124	\$21,840,821
<b>Other Retail Stores</b>	\$12,202,948	\$522,173	\$12,483,619
<b>Other State Government Enterprises</b>	\$11,384,787	\$253,156	\$11,358,906
<b>Insurance Agencies</b>	\$8,306,970	\$5,104,339	\$12,985,364
<b>Retail-Sporting Goods, Hobby, Musical Instrument and Book Stores</b>	\$7,422,998	\$298,946	\$7,504,314
<b>Other Amusement and Recreation Industries</b>	\$1,663,866	\$362,284	\$1,983,195
<b>Automotive Equipment Rental and Leasing</b>	\$1,624,629	\$555,753	\$2,121,734
<b>Warehousing and Storage</b>	\$1,348,132	\$1,802,626	\$3,068,284
<b>Other Support Services</b>	\$167,926	\$450,287	\$602,952
<b>Additional Effects</b>		\$127,848,416	\$124,762,446
<b>Totals Economic Contribution</b>	<b>\$458,981,285</b>	<b>\$147,532,463</b>	<b>\$606,513,748</b>



Indirect and induced effects listed in Table 1.29 represent all other economic sectors which experienced impacts but did not benefit from direct spending related to snowmobiling. Examples of sectors that were affected without experiencing direct spending include equipment food and equipment supply industries, agricultural businesses, electric power transmission and distribution companies, and all other connected to the network of exchanges which stem from snowmobiling. The total economic contribution of snowmobiling to the Maine economy during the 2018-2019 season when accounting for gross direct spending and the indirect and induced effects of marginal direct spending is **\$606 million dollars**. A summary of all spending per snowmobile for the 2018-2019 season in each category organized by sector is available in Table 1.30.

Table 1.30 Spending Per Snowmobile for All Sectors

<b>Sector</b>	<b>Resident</b>	<b>Non-Resident</b>
<b>Retail: Gasoline Stores</b>		
Gasoline/Oil Snowmobile	\$437.11	\$640.62
Gasoline/Oil Tow Vehicle	\$309.85	\$563.95
Sector Total	<b>\$746.96</b>	<b>\$1,204.57</b>
<b>Full-Service Restaurants</b>		
50% Restaurant/Lounge Purchases	\$147.26	\$421.23
<b>Limited Service Restaurants</b>		
50% Restaurant/Lounge Purchases	\$147.26	\$421.23
<b>Retail: Food and Beverage Stores</b>		
Grocery and Alcohol Purchases	\$220.97	\$407.32
<b>Hotels and Motels, including Casino Hotels</b>		
Overnight Accommodations	\$194.38	\$1,097.82
<b>Automotive equipment rental and leasing</b>		
Snowmobile Rentals	\$18.87	\$18.08
<b>Other Support Services</b>		
Guides and Tour Packages	\$1.50	\$2.96
<b>Automotive Repair and Maintenance</b>		
Repairs performed during the trip on your snowmobile	\$44.17	\$103.96
Snowmobile service start/end of season	\$151.55	\$129.03
Snowmobile repairs (Labor)	\$35.36	\$30.08
Other Snowmobile Related Repair	\$22.08	\$8.08
Sector Total	<b>\$253.16</b>	<b>\$271.15</b>
<b>Other State Government Enterprises</b>		
Maine Turnpike tolls and Land Entrance fees	\$1.02	\$4.21

Table 1.30 Spending Per Snowmobile for All Sectors (Continued)

<b>Sector</b>	<b>Resident</b>	<b>Non-Resident</b>
Snowmobile Registration	\$82.51	\$147.28
<b>Sector Total</b>	<b>\$83.53</b>	<b>\$151.49</b>
<b>Retail: Clothing and Clothing Accessories Stores</b>		
Clothing purchased during trip	\$48.03	\$99.96
Snowmobile Clothing	\$123.76	\$88.09
Helmets	\$78.43	\$47.70
Specialty Items	\$37.74	\$30.56
Other Clothing Purchases	\$12.86	\$8.84
<b>Sector Total</b>	<b>\$300.82</b>	<b>\$275.15</b>
<b>Warehousing and Storage</b>		
Snowmobile Storage	\$15.80	\$14.66
<b>Other Retail Stores</b>		
50% Souvenirs, gifts and entertainment	\$8.68	\$44.24
Trip Other	\$11.04	\$224.26
Trip Misc.	\$24.55	\$102.92
<b>Sector Total</b>	<b>\$44.27</b>	<b>\$371.42</b>
<b>Other Amusement and Recreation Industries</b>		
50% Souvenirs, gifts and entertainment	\$8.68	\$44.24
<b>Retail: Sporting Goods, Hobby, Musical Instrument and Books Stores</b>		
Snowmobiling Accessories	\$89.40	\$74.91
<b>Retail: Motor vehicle and parts dealers</b>		
New Snowmobile Sales	\$660.36	\$2,222.49
Used Snowmobile Sales, Dealer	\$68.08	\$144.44
New Trailer Sales	\$367.51	\$297.21
Used Trailer Sales, Dealer	\$26.16	\$44.33
Expendable parts	\$70.15	\$64.74
Performance parts	\$22.71	\$17.56
Snowmobile Repairs (Parts)	\$60.60	\$31.87
<b>Sector Total</b>	<b>\$1,275.57</b>	<b>\$2,822.65</b>
<b>Households</b>		
Private Snowmobile Sales	\$210.32	\$555.17
Private Trailer Sales	\$128.59	\$25.29
<b>Sector Total</b>	<b>\$338.91</b>	<b>\$580.46</b>
<b>Insurance Agencies</b>		
Snowmobile Insurance	\$134.72	

## 1.6.2 Employment

IMPLAN software also provides information on employment based on the sectors that direct spending occurs in. The direct spending which occurs due to snowmobiling activity in

Maine supports 2,279 jobs directly and 3,339 jobs total within the state (including induced and indirect jobs). Table 1.31 below shows the sectors which benefit directly by way of job creation as a result of snowmobiling. Job estimates are created by IMPLAN based on the amount of money spent in each sector.

Table 1.31 Employment as a Result of Snowmobiling Activity in Maine

<b>Sector</b>	<b>Direct Jobs</b>
<b>Full-service restaurants</b>	377
<b>Hotels and motels, including casino hotels</b>	376
<b>Retail - Motor vehicle and parts dealers</b>	251
<b>Automotive repair and maintenance, except car washes</b>	249
<b>Limited-service restaurants</b>	214
<b>Retail - Miscellaneous store retailers</b>	194
<b>Retail - Gasoline stores</b>	183
<b>Retail - Clothing and clothing accessories stores</b>	146
<b>Retail - Food and beverage stores</b>	102
<b>Retail - Sporting goods, hobby, musical instrument and book stores</b>	62
<b>Insurance agencies, brokerages, and related activities</b>	45
<b>Other state government enterprises</b>	33
<b>Other amusement and recreation industries</b>	27
<b>Warehousing and storage</b>	13
<b>Automotive equipment rental and leasing</b>	5
<b>Other Support Services</b>	2
<b>Total</b>	<b>2,279</b>

Direct employment primarily occurs in the hotel and motel, restaurant, and retail sectors, and the state government. Indirect and induced employment accounted for an additional 1,060 jobs in Maine but were spread across too many sectors to display in this report. The majority of indirect and induced jobs were contained in three sectors, real estate, maintenance and repair, and construction of nonresidential structures (approximately 11% total).

## 1.7 Direct Gross Spending Comparisons 1998-2019

Spending in 2019 compared to spending reported in the 1998 study has changed dramatically, as seen in Table 1.32. Displayed are both the spending reported by the 1998 study and the amount adjusted for inflation to 2019 dollars. The inflation rate from 1996 (when the original study was conducted) and 2019 amounted to 164%, meaning \$1 in 1996 had the buying power of \$1.64 in 2019.

Table 1.32 1998 Spending vs. 2019 Spending

<b>Economic Sector</b>	<b>Total Expenses 1998</b>	<b>Total Expenses 1998 (Inflated)</b>	<b>Total Expenses 2019</b>
<b>Dealers and Service Stations</b>	\$73,837,291	\$121,093,157	\$244,177,328
<b>Repair and Service</b>	\$9,931,494	\$16,287,650	\$23,612,524
<b>Wholesale and Retail</b>	\$11,191,359	\$18,353,829	\$30,361,518
<b>Insurance</b>	\$4,432,000	\$7,268,480	\$8,306,970
<b>Eating and Drinking Establishments</b>	\$6,952,941	\$11,402,823	\$39,645,998
<b>Food Stores</b>	\$4,474,201	\$7,337,690	\$24,013,311
<b>Non-Profit and Clubs</b>	\$1,191,133	\$1,953,458	Not Accounted
<b>Recreation Services</b>	\$407,568	\$668,412	\$1,792,555
<b>Hotels and Motels</b>	\$4,788,743	\$7,853,539	\$39,984,528
<b>Government</b>	\$1,971,390	\$3,233,080	\$11,384,787
<b>Households</b>	\$33,036,551	\$54,179,944	\$35,701,765
<b>Total</b>	<b>\$152,487,621</b>	<b>\$249,632,060</b>	<b>\$458,981,284</b>

During the 1995-1996 there were 69,000 registered snowmobiles in Maine, 6,500 of which were registered by non-residents. In 2018-2019 there were over 87,000 registered snowmobiles in Maine with approximately 25,000 registered by non-residents. Some of the main factors relating to the greater spending in 2019 are an over 300% increase in out of state registrations and the rising costs of big-ticket items such as snowmobiles, which are frequently purchased in Maine. Modern standards for economic contribution studies attempt to exclude any expenditures which might be considered double counting. Because we have already incorporated

the registration fees and other taxes that snowmobile riders pay, it is not appropriate to include club funding in the analysis since much of that funding comes from the State, tracing its origins to the original registration fees and taxes.

### 1.7.1 Total Contribution Comparison

The economic contributions snowmobiling made to the Maine economy during the 1995-1996 and 2018-2019 snowmobiling seasons are see in Table 1.33. The 1998 Economic Evaluation of Snowmobiling in Maine report did not list the indirect and induced effects by sector, only the marginal spending by sector, thus only total contributions for each season are listed.

Table 1.33 Total Contribution Comparison

	<b>1995-1996 Season</b>	<b>1995-1996 Season (in \$2018)</b>	<b>2018-2019 Season</b>
<b>Total Economic Contribution</b>	\$226 Million	\$366 Million	\$606 Million

Accounting for inflation, the total contribution of snowmobiling to the Maine economy during the 1995-1996 season was \$366 million (in 2018 dollars). This rose to \$606 million during the 2018-2019 snowmobiling season, an increase of 66%.

### 1.8 Additional Thoughts for Policy Makers and Stakeholders

Snowmobiling is a significant contributor to the Maine economy. Its growth over the last twenty years has helped boost the winter season tourism in many rural areas of the state. While the industry overall has shown growth, the demographic of residents and non-residents is aging, and the younger generations are not participating in the activity as much as they once did. This could be due to the staggering costs snowmobiles and snowmobiling gear. As a snowmobile was

once affordable on the pay of a teenager's summer job, today, the need to acquire financing for a snowmobile is present for many adults. In addition, the lack of young people participating in the activity effects the number of able-bodied participants to help with the volunteer upkeep of the snowmobile trails and clubs in Maine. Perhaps the key to procuring more young volunteers and riders is to incentivize the work with a reduced cost to enter the activity.

If the state of Maine or the snowmobile clubs and Maine Snowmobile Association worked to provide used sleds at an affordable price or discount to those young riders who made exceptional effort to volunteer and maintain the thousands of miles of trails in the state, perhaps more young people would see entry as an option.

In addition, the non-resident snowmobile riders may continue to climb as areas south of Maine see warmer winters with fewer inches of snowfall. This could propel continued growth in the industry, but without more young able bodied Mainers becoming involved, the crew of volunteers will shrink, and the asset to the Maine economy that is its snowmobile trail system, will shrink as well.

## CHAPTER 2

### MAINE GUIDES AND THEIR IMPACTS ON SNOWMOBILE RENTERS

#### 2.1 Introduction

Professional outdoor guiding has played an instrumental role in the tourism industry since the earliest recorded forms of commercial tourism arose during the 17<sup>th</sup> century, the time in which the Grand Tour took place (Cohen, 1985). Although having deep roots in the history of tourism, the guiding process and outcomes of guided tours have received less attention than other areas within the tourism field. Tourism research has examined economic and ecological impacts, innovation, and issues of sustainability. Tourism studies of late have expanded to include fields such as eTourism, ecotourism, and sports tourism (Chen, Weiler, & Black, 2018). However, guide research remains an emerging sub-field where interest in the guide and how guides shape the experiences had by tour participants are investigated (Chen et al., 2018; Rokenes, Schumann, & Rose, 2015).

Previous studies of guides have shown that they create value by using their specialized knowledge of an activity to facilitate positive experiences while avoiding negative ones. This value is translated into positive perceptions of the guide within tourist clients (Rantala & Valkonen, 2011; Rokenes et al., 2015). As tourism participation expands, the role of tour guides may also grow, opening new channels in which to study guides and the guided experience (Chen et al., 2018; Priest & Gass, 2005). Chen, Weiler and Black's 2018 analysis of scholarly research into tour guiding over the last thirty-six years calls for an increase of research into tour guiding, but makes no mention of any past research into a state-sponsored guide registration and testing program, which exist in areas of the United States.

Leadership qualities are often used to define the guides role within the tour. Leadership is, “the process of influencing others to work towards achieving a goal” (Stern, 2018, p. 164). The goal of a guided tour may range from learning about the environment, to experiencing something thrilling, but the guide as a leader is there to facilitate the group’s collective goal. Cohen’s seminal literature *The Tourist Guide* (1985) asserts that within a tourist guide, the leadership sphere is comprised of an instrumental component and a social component, which govern the accomplishment of physical tour goals and mediate social interactions during the process respectively, creating a well-rounded and enjoyable tour experience (Cohen, 1985). This breakdown is expanded upon by Rokenes, Schumann and Rose’s *Art of Guiding in Nature-Based Adventure Tourism* (2015) in which the dimensions of a guide’s value are broken into instrumental, educational, relational, choreographic, and environmental (Rokenes et al., 2015). These breakdowns may be used to study how a guide creates value within themselves through possessing desirable characteristics, and how they translate that value into being seen as an effective leader of the tour.

Maine stands as a unique environment for the study of guided tourism. Maine relies on a thriving tourist industry to help support its economy, especially given the decline of manufacturing industries within the last several decades (Vail, 2002). In addition to a significant tourist economy, the Registered Maine Guide program serves as a state-run standard for all guides-for-hire within the state. These factors allow for an examination of important factors influencing tourists’ decisions to hire guides, and how those factors may be linked to leadership qualities and perceptions of a state-sponsored program through which outdoor recreation guides must be tested.



## **2.2 Background**

### **2.2.1 Guiding in Maine**

To receive compensation for guiding a recreation tour in Maine in almost any activity, Maine law requires the guide to have obtained a license from the Registered Maine Guide program. This program requires that the guide applicant submit to a federal background check and maintain up-to-date CPR and first aid certifications. In addition, the guide candidate is tested in person on their knowledge of their specific activity, as well as general knowledge of the Maine outdoor environment. The testing procedure includes a written examination and an oral examination administered by two veteran Maine Guides. This program creates a standard for all recreation guides in the state and requires different licenses and testing procedures for different types of activities including hunting, fishing, tidewater fishing, sea kayaking, whitewater rafting, and general recreation.

A search of academic databases for journal articles on guiding returned no results relating to the Maine guide program. This study will expand knowledge on the perceptions of guides through the lens of a state-wide certification program and determine the expectations tour participants have of their guides, the guide qualities they value, and how the state-sponsored program affects their perceptions of their guide.

### **2.2.2 Snowmobiling in Maine**

Snowmobiling in Maine is a significant industry in the winter months. While much of the state experiences an off-season, rural towns and communities along the Interconnected Trail System (ITS) act as support hubs and destinations for tens of thousands of snowmobilers from in and out of the state. These snowmobilers utilize the over 2,500 miles of ITS trails (maintained by

the state) for dedicated use by snowmobiles along with thousands of miles of additional club trails. In addition to providing safe and interesting terrain on which to ride, these trails, maintained by the Maine Snowmobile Association and local snowmobile clubs, also keep snowmobilers off the private lands on which they lack permission to ride (Vail, 2002). This built capital on top of the natural capital makes Maine an exceptional destination for snowmobilers who wish to visit or make their home within the state.

Attributed to the businesses and infrastructure available to riders, snowmobiling has significant potential to stimulate the Maine economy during the snowmobiling season. The Economic Contribution of Snowmobiling in Maine Report included in chapter one of this thesis details that snowmobiling contributed \$606 million in direct, indirect, and induced effects during the 2018-2019 snowmobiling season. Previously, an economic contribution of snowmobiling study was completed in 1998 and estimated that snowmobiling was responsible for nearly \$226 million (\$353 million in 2019 dollars) in economic activity (Reiling, Kotchen, & Kezis, 1998). While the report captures snowmobile owners, these economic contributions do not include rental companies, which have emerged between study dates. Renters are likely to be newer entrants to the outdoor recreation activity and worthy of study. The role of snowmobiling to winter economies of many rural communities in Northern Maine is significant and may be growing.

## **2.3 Literature Review**

### **2.3.1 Evolution of Tour Guiding**

Tourist guiding is a relatively recent sub-topic of tourism studies. Early work defined guide responsibilities as shepherding and marshalling tourists, and imparting information while

leading the tour participants (Holloway, 1981), and was focused primarily on coach tours, in which a tour leader and driver were the main facilitators of the guided tour experience. This analysis of the tour guide's role was limited, but it did begin to expand upon the roles and responsibilities tour guides held in their profession. It further established that guides saw a wide range of knowledge on their subjects was necessary to be perceived as a professional in their field (Holloway, 1981). Cohen expanded the discussion on the role of the modern tour guide and how it evolved as tourism expanded throughout the world. His work focused on guides' roles as both pathfinders and mentors, breaking down the physical and mental areas of tour guiding (Cohen, 1985). Cohen proposed that guides operate using two spheres of knowledge: a leadership sphere and a mediatory sphere. Within the leadership sphere are components of providing direction and access, while maintaining a level of control over a tour group. This sphere also contained elements of social management, including responsibility for the integration and morale of the group. The mediatory sphere concentrated on the knowledge imparted on tour groups and the process of imparting that knowledge (Cohen, 1985).

Tourism guides assume multiple roles and have a multitude of responsibilities with regard to creating a valuable experience for clients (Weiler & Black, 2001). Tour guides and tour leaders are seen as having a significant effect on the perceptions of a tour experience as a whole, and may enhance the experience for participants through channels such as interpretation, safety reassurance, and route and direction choices (Mossberg, 1995; Rantala & Valkonen, 2011; Rokenes et al., 2015). Guides are increasingly expected to have extensive knowledge of their field which goes above and beyond the physical setting and safety monitoring of tour parties (Rokenes et al., 2015). While tour guides were once seen as providers of information, they are now being viewed as brokers of experience-centered tourism, creating memorable and

entertaining experiences for clients (Weiler & Black, 2015). The expanding roles of tourist guides has created a call for additional research into tour guiding specifically, and the outcomes guides produce compared to traditional non-guided tourism activities (Chen et al., 2018).

### **2.3.2 Expectations in Tour Guiding Research**

As tourism and tour guiding have human dimensions such as interpersonal interaction and how perceptions influence quality and retention of tourists within activities, both quantitative and qualitative studies have merit within the field of tourism research (Walle, 1997). Limited attention has been paid to the complexities of tour guiding in comparison to the full scope of tourism study. Thus, there is an opportunity to study tour guiding and tourist guides and add to the growing sub-field of tour guiding research. The increasing accessibility to niche outdoor experiences has expanded the expectations that tourists have of their guides (Chen et al., 2018). Reviewers of tourism literature specific to guiding have also argued for the continuation and increase in the amount of theory integration into the sub-field, as the ties to theory could help expand the theories themselves and garner additional support for tour guiding research across new fields (Black, Weiler, & Chen, 2019). Integration of theory would also help examine the complexities related to guiding and provide channels for both qualitative and quantitative assessment of the sub-field.

Tour guiding quality has also been a subject of recent research, as the roles and responsibilities of guides are continually reviewed and expanded upon. Increased use of certification programs could help reassure clients of their guides qualifications and create a standard of professionalism within tour guiding industries. Government requirement of certification programs testing guides on their skills and abilities would also increase professionalism in the industry (Black & Ham, 2005; Black & Weiler, 2005).

### 2.3.3 Leadership Theory

Leadership theory is a wide-ranging idea which can be tailored to many contexts and situations. Leaders may work in vastly different ways depending on the situation in which they are acting. Marc Stern's *Social Science Theory for Environmental Stability* defines leaders as, "those who can create direction, alignment, and commitment within a group of people toward a specific goal" (Stern, 2018, p. 164). Stern elaborates on this by proposing a number of traits a good leader may possess, including: trustworthiness, self-confidence, flexibility, and ability to make decisions with limited data (Stern, 2018).

Leadership theories have been applied to the field of outdoor recreation primarily through the field of outdoor adventure leadership and the leadership skills of outdoor educators within adventure programming and beyond. Effective outdoor leadership requires a combination of skills including but not limited to technical, safety, environmental, organization, instructional, communication, and decision-making (Priest & Gass, 2005). These outdoor skill requirements mirror those proposed by Cohen for effective guides (Cohen, 1985). Skill categories for outdoor leaders have been repeatedly organized and analyzed to determine which skills are appropriate for creating the most effective outdoor leaders in different situations (Brymer & Gray, 2006; W. B. Shooter, 2008; W. Shooter, Sibthorp, & Paisley, 2009; Smith & Penny, 2010). Transformational leadership has been proposed as an important sub-theory within leadership theory that applies to outdoor leadership (Brymer & Gray, 2006; Hayashi & Ewert, 2006; Smith & Penny, 2010). Transformational leaders are those who prioritize the development of self during their time as a leader (Brymer & Gray, 2006). Fostering a sense of self within a group is important for both outdoor leaders and tour guides who wish to create a memorable experience for those participating in the tour.

## 2.4 Research Objectives

This study is to be the first academic research into the Maine Guide Program and its effects on the recreation guiding industry in Maine. Focusing on rental snowmobile tours led by Maine Guides, the objectives are made to reflect aspects of the guiding processes and outcomes which could be generalized to a greater portion of the recreation guiding community. The four objectives sought to examine the reasoning for hiring a Maine Guide, how the Maine Guide program effects client perceptions of guides, leadership qualities as they relate to Maine Guides, and to expand upon backcountry snowmobiling research explored in chapter one of the report.

1. To determine what factors snowmobile renters consider when deciding whether or not to hire a Registered Maine Guide to lead their snowmobile tour;
2. To determine what leadership-related qualities snowmobile renters look for in guides and, for those who did hire a guide, whether or not their Registered Maine Guide possessed them;
3. To assess whether knowledge of the Registered Maine Guide program affects the renter's preferences for leadership-related traits in Registered Maine Guides, and for those who did hire a guide, whether or not their Registered Maine Guide possessed those leadership-related traits;
4. To evaluate factors that influence level of support among snowmobile renters for backcountry snowmobiling policies based on prior backcountry riding experience and sociodemographic characteristics.

## **2.5 Methodology: Renter Survey**

### **2.5.1 Research Approach**

The data collection for this study was focused on obtaining information from snowmobile renters, both those who had hired guides and those who had not, directly after their rental riding experiences. The survey took no more than 15 minutes to complete in order to encourage higher survey participation rates among renters. The quantitative questionnaire and qualitative interview helped provide numerical data and case-specific information for this study.

### **2.5.2 Survey Mode**

The survey consisted of a short four-page questionnaire of predominantly Likert-scale response questions and an additional short (5-10 minutes) semi-structured interview allowing the participant to elaborate on some of the specific experiences they had during the guided or non-guided tour. The survey instrument and interview prompts are included in Appendix D. Table 2.1 below presents categories of questions that appeared on the questionnaires for both guided and non-guided renters.

Table 2.1 Questionnaire Information Categories

Guided Renters	Non-guided Renters
<ul style="list-style-type: none"> <li>● Demographics and experience.</li> <li>● Perceptions of the Maine Guide leading the tour (desired/fulfilled outcomes and perceived leadership qualities).</li> <li>● Why they chose to hire a Guide.</li> <li>● Knowledge of the Registered Maine Guide program after the tour.</li> <li>● Opinions on backcountry snowmobiling policy in Maine.</li> </ul>	<ul style="list-style-type: none"> <li>● Demographics and experience.</li> <li>● Desired outcomes and desired leadership qualities of a Maine Guide</li> <li>● Why they chose not to hire a guide.</li> <li>● Knowledge of the Registered Maine Guide program after the rental.</li> <li>● Opinions on backcountry snowmobiling policy in Maine.</li> </ul>

The semi-structured interview followed the administering of the questionnaire and included several specific prompts. It then allowed the renter to expand on anything related to the tour or the guide which they felt was not covered in the questionnaire and was worth conveying about their experience. This interview was recorded and transcribed and took no more than five minutes.

### 2.5.3 Recruitment and Data Collection

Guides available on-location at the businesses in which renter interviews were being conducted were asked to participate. In addition, contact information from the Maine Professional Guide Association (MPGA) website was utilized to find any guide listed as leading



snowmobiling tours in the state. All guides listed were contacted via email and asked to participate. Those Maine Guides contacted by email were sent an invitation letter to participate in the research on March 2, 2020, and those who did not reply were sent a follow-up email one week later on March 9, 2020. Three Maine Guides participated through the businesses at which the renter interviews took place. Two Maine Guides participated following an email using information collected from the MPGA website.

#### **2.5.4 Data Analysis**

The qualitative interviews of the Maine Snowmobile Guides were analyzed for recurring themes and general opinions about the Maine Guide program, and the skills and leadership-qualities required to lead snowmobile tours in the state of Maine. Each question was analyzed across all interviews to compare answers and identify common themes among Maine Guides interviewed. Recordings of interviews were transcribed by the Otter.ai software and edited for correctness.

### **2.6 Methodology: Guide Interviews**

#### **2.6.1 Research Approach**

To supplement the perspectives of the snowmobile renters, Maine Recreation Guides with a history of leading snowmobile tours were interviewed about their experiences guiding snowmobile tours and their perceptions of the Maine Guide program. This enabled comparison of knowledge of the program between the guides and the renters, to collect information on the complexities of leading snowmobile tours, and to examine how snowmobile guides in Maine feel about the state-mandated guide certification process.

## **2.6.2 Survey Mode**

The interviews took place either in-person or over the phone and the interviews were focused on four major areas of questioning: demographic information, opinions on the Maine Guide program, experiences leading snowmobile tours in Maine, and skills and leadership qualities as they relate to the Maine Guide program. The interview prompts are available in Appendix E. Interviews averaged approximately twenty minutes although they ranged from ten minutes to thirty-five minutes. The interviews were recorded using a handheld recording device.

## **2.6.3 Recruitment and Data Collection**

Guides available on-location at the businesses in which renter interviews were being conducted were asked to participate in the Maine Guide interview segment of this research. In addition, contact information from the Maine Professional Guide Association (MPGA) website was utilized to find any guide listed as leading snowmobiling tours in the state. All guides listed were contacted via email and asked to participate. Three Maine Guides were contacted through the businesses at which the renter interviews took place. Eight Maine Guides were contacted by email using information collected from the MPGA website. Those Maine Guides contacted by email were sent an invitation letter to participate in the research on March 2, 2020, and those who did not reply were sent a follow-up email one week later on March 9, 2020.

## **2.6.4 Data Analysis**

The qualitative interviews of the Maine Snowmobile Guides were analyzed for recurring themes and general opinions about the Maine Guide program, and the skills and leadership-qualities required to lead snowmobile tours in the state of Maine. Each question was analyzed across all interviews to compare answers and find common ideals among Maine Guides

interviewed. Recordings of interviews were transcribed by the Otter.ai software and edited for correctness.

## 2.7 Results

### 2.7.1 Demographics of Renters Surveyed

The state of Maine experienced an unusual winter during the 2019-2020 snowmobiling season. Record low snowfall and a resulting early end to the snowmobiling season, along with the emerging COVID-19 pandemic crisis, created a difficult situation for snowmobile renters (and researchers). Due to these factors, the number of snowmobile renters surveyed was 25, which was significantly less than anticipated at the beginning of this study. Twelve of the renters surveyed participated in guided trips and 13 of the renters surveyed participated in trips in which they did not hire a guide. Two of the guided renter participants were recruited through the participating businesses' mailing lists of previous clients; they completed the survey online about their most recent snowmobile tour led by a Maine Guide. The following table displays the demographic information of each group, guided renters and non-guided renters, separately. This is not a large enough sample to extrapolate to all snowmobile renters in the state of Maine but does provide information on the renters who participated in this particular study.

Table 2.2 Renter Demographics

<b>Demographic Identifier</b>	<b>Non-guided</b>	<b>Guided</b>
<b>Gender (% Male)</b>	75	85
<b>Average Age (Years)</b>	38	41
<b>Median Education Level</b>	Some College	Associate Degree
<b>Maine Resident (% Yes)</b>	0	8

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the emerging COVID-19 pandemic crisis, created a difficult situation for snowmobile renters (and researchers). Due to these factors, the number of snowmobile renters surveyed was 25, which was significantly less than anticipated at the beginning of this study. Twelve of the renters surveyed participated in guided trips and 13 of the renters surveyed participated in trips in which they did not hire a guide. Two of the guided renter participants were recruited through the participating businesses' mailing lists of previous clients; they completed the survey online about their most recent snowmobile tour led by a Maine Guide. The following table displays the demographic information of each group, guided renters and non-guided renters, separately. This is not a large enough sample to extrapolate to all snowmobile renters in the state of Maine but does provide information on the renters who participated in this particular study.

Table 2.2 shows that the majority of renters polled in this study were male. On average the guided renters were slightly older, slightly more educated, and were slightly more likely to be Maine Residents.

### 2.7.2 Sled Ownership

Although the survey participants were by definition renters, the questionnaire did ask about current and past snowmobile ownership (Table 2.3). Most renters had never owned a snowmobile despite many indicating that they had participated in snowmobile trips over multiple previous years. Only one guided renter indicated that they owned a snowmobile currently, and one renter from the non-guided group indicated that they had owned a snowmobile in the past.

Table 2.3 Snowmobile Ownership

<b>Snowmobile Ownership</b>	<b>Non-Guided N=12</b>	<b>Guided N=13</b>
<b>Currently Own a Snowmobile</b>	0	8%
<b>Used to Own a Snowmobile</b>	8%	0
<b>Never Owned a Snowmobile</b>	92%	92%

### 2.7.3 Riding History

The questionnaire asked about the renter’s previous experiences riding and renting snowmobiles (Table 2.4). The number of first-time snowmobile riders in the non-guided group was almost twice as many as the guided group, but non-guided renters on average had rented a snowmobile in Maine on over three times as many trips as guided renters had. Although many non-guided renters were riding for the first time, many had participated in snowmobiling before and indicated taking more snowmobile trips in the past than the guided renters, indicating a greater experience level on average among this group. While guided renters had begun snowmobiling earlier, non-guided renters had gone more frequently since their first trip. The number of guided renters who indicated that this was not their first time riding a snowmobile was exceeded by the number who had answered “yes” to the question: “Have you ever ridden a snowmobile in another state or Canadian province?” This indicates the question may have been misunderstood by those guided renters completing the survey.

Table 2.4 Snowmobile Riding History

	<b>Non-Guided</b>	<b>Guided</b>
<b>First Time Riding (%)</b>	42	69
<b>Number of Maine Snowmobile rentals</b>	5.58	1.46
<b>Average Number of Maine Guide Led Trips</b>	0.08	1.38
<b>Years Since First Snowmobiling Trip</b>	4	2
<b>Snowmobiled in Other State / Prov. (% Yes)</b>	33	53
<b>Years Snowmobiled</b>	7	8

While the majority of guided snowmobile renters reported snowmobiling during five or fewer seasons, one guided renter reported snowmobiling during 58 seasons. This data point was omitted from the average reported in Table 2.4 due to it being a significant outlier.

### 2.7.4 Knowledge of the Maine Guide Program

Two questions were used to gauge how familiar renters were with the Maine Guide program, and how that knowledge influenced their decision whether or not to hire a Maine Guide to lead their snowmobile excursion. The questions were worded as follows: “Prior to your trip today, rate your knowledge of the Maine Guide program. For instance, this could include knowing that the State of Maine requires all recreation guides to submit to background checks and be tested on their expertise.” and “Did knowledge of the Maine Guide program affect your decision to hire (or not hire) a Maine Guide to lead your snowmobile trip today?”. The results for both questions are seen in Table 2.5.

Table 2.5 Knowledge of the Maine Guide Program

<b>Knowledge of the Maine Guide Program</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>Mean</b>
Non-Guided	90%	10%	0%	0%	0%	0.10
Guided	46.2%	30.8%	7.7%	7.7%	7.7%	1.00
<b>Effect of Knowledge on Decision to hire a Maine Guide</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>Mean</b>
Non-Guided	100%	0%	0%	0%	0%	0.00
Guided	53.8%	7.7%	30.8%	7.7%	0%	0.92

Level of Knowledge Scale: 0=Not at all knowledgeable, 1=Slightly knowledgeable, 2=Somewhat knowledgeable, 3= Moderately knowledgeable, 4=Extremely knowledgeable.

Effect of Knowledge Scale: 0=No effect, 1= Slight effect, 2=Somewhat of an effect, 3=Moderate effect, 4=Extreme effect.

Both guided and non-guided renters indicated that they had little to no knowledge of the Maine Guide program. Renters also indicated that their level of knowledge about the program had, on average, little to no effect on their decision to hire a guide. As the knowledge level was low, it is understandable that it had a very low effect.

### **2.7.5 Opinions on Maine Guides**

Both guided and non-guided renters were asked about their opinions on Maine Guides through a series of Likert scale questions. The first set of questions asked about the expected effects a Maine Guide would have on the renter during the tour. The results of this set are seen in Table 2.6. The second set of questions asked the renter what qualities they would personally look for in a registered Maine Guide. The results of this set are seen in Table 2.7.

Table 2.6 Renter Perceptions of Maine Guides

Statement	1	2	3	4	5	Mean
<b>I would feel safer with a Maine Guide leading the tour.</b>						
Non-Guided	25%	33.3%	16.7%	8.3%	16.7%	2.58
Guided	0%	0%	0%	30.8%	69.2%	4.69
<b>A Maine Guide would increase my ability to navigate the trails.</b>						
Non-Guided	25%	16.7%	8.3%	33.3%	16.7%	3.00
Guided	0%	0%	7.7%	7.7%	84.6%	4.77
<b>A Maine Guide would increase my knowledge of acceptable riding practices.</b>						
Non-Guided	25%	25%	16.7%	33.3%	0%	2.58
Guided	0%	0%	0%	30.8%	69.2%	4.69
<b>A Maine Guide would increase my riding enjoyment.</b>						
Non-Guided	33.3%	16.7%	33.3%	16.7%	0%	2.33
Guided	0%	0%	7.7%	30.8%	61.5%	4.54
<b>I would experience new areas and routes that I would not have ventured on without a Maine Guide.</b>						
Non-Guided	25%	8.3%	33.3%	16.7%	16.7%	2.92
Guided	0%	7.7%	7.7%	15.4%	69.2%	4.46
<b>I would be able to safely snowmobile in backcountry conditions because of a Maine Guide.</b>						
Non-Guided	25%	25%	8.3%	33.3%	8.3%	2.75
Guided	0%	7.7%	0%	30.8%	61.5%	4.46
<b>I would be a more confident snowmobiler with a Maine Guide.</b>						
Non-Guided	27.3%	18.2%	18.2%	27.3%	9.1%	2.73
Guided	0%	0%	0%	38.5%	61.5%	4.62

1=Strongly Disagree, 2=Disagree, 3=Neither Agree Nor Disagree, 4=Agree, 5=Strongly Agree

While guided renters tended to agree or strongly agree with most statements about the positive impacts a Maine Guide could have on their snowmobile renting experience, most renters



who chose not to hire a guide felt indifferent about the statements. The guided and non-guided renters both tended to agree most with the statement “A Maine Guide would increase my ability to navigate the trails”.

Table 2.7 Guide Qualities Looked for

<b>I prefer a snowmobile guide who...</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>Mean</b>
<b>...feels genuine concern for the tour participants.</b>						
Non-Guided	9.1%	0%	9.1%	54.5%	27.3%	3.91
Guided	0%	0%	0%	23.1%	76.9%	4.77
<b>...has the skills necessary to lead a safe snowmobile tour.</b>						
Non-Guided	9.1%	0%	9.1%	54.5%	27.3%	3.91
Guided	0%	0%	0%	23.1%	76.9%	4.92
<b>...is able to adapt to the changing needs of the group.</b>						
Non-Guided	9.1%	0%	0%	54.5%	36.4%	4.09
Guided	0%	0%	0%	23.1%	76.9%	4.77
<b>...is able to make the best trip-related decisions for the group.</b>						
Non-Guided	9.1%	0%	0%	63.6%	27.3%	4.00
Guided	0%	0%	0%	15.4%	84.6%	4.85
<b>...is trustworthy.</b>						
Non-Guided	9.1%	0%	0%	45.5%	36.4%	4.00
Guided	0%	0%	0%	7.7%	92.3%	4.92
<b>...demonstrates emotional stability throughout the tour.</b>						
Non-Guided	9.1%	0%	0%	45.5%	45.5%	4.18
Guided	0%	0%	0%	15.4%	84.6%	4.85

1=Strongly Disagree, 2=Disagree, 3=Neither Agree nor Disagree, 4=Agree, 5=Strongly Agree

All statements about the qualities looked for in a snowmobile guide were on average agreed to or strongly agreed to by both guided and non-guided renters. Guided renters tended to favor each quality a bit more than non-guided renters, but all traits were considered important for a guide leading snowmobile tours.

## 2.7.6 Opinions of Renter’s Specific Maine Guide

Renters who hired a Maine Guide to lead their tour were asked to rate their level of agreement with the statements listed in Table 2.7 when it came to the Maine Guide who led their trip. Table 2.8 displays how these specific Maine Guides fit the qualities.

Table 2.8 Guide Qualities Fulfilled

<b>My Maine Guide...</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>Mean</b>
<b>...felt genuine concern for the tour participants.</b>	0%	0%	0%	30.8%	69.2%	4.69
<b>...had the skills necessary to lead a safe snowmobile tour.</b>	0%	0%	0%	7.7%	92.3%	4.92
<b>...was able to adapt to the changing needs of the group.</b>	0%	0%	0%	15.4%	84.6%	4.85
<b>...was able to make the best trip-related decisions for the group.</b>	0%	0%	0%	15.4%	84.6%	4.85
<b>...was trustworthy.</b>	0%	0%	0%	7.7%	92.3%	4.92
<b>...demonstrated emotional stability throughout the tour.</b>	0%	0%	0%	7.7%	92.3%	4.92

1=Strongly Disagree, 2=Disagree, 3=Neither Agree Nor Disagree, 4=Agree, 5=Strongly Agree

The Maine Guides who led the survey participants on their guided snowmobile excursions either met or exceeded the renters’ expectations for nearly every quality. The qualities that were exceeded were: ability to adapt to the changing needs of the group, and emotional stability. This shows that the renters perceived the tours they participated in were safe and high-quality.

## 2.7.7 Opinions on Backcountry Related Issues

Renters (both guided and non-guided) were asked to provide their opinions on several backcountry-related issues facing the state of Maine today. These questions were the same as included in the mail survey sent to registered snowmobilers in Maine used to generate the economic contribution information (Chapter 1). Table 2.9 compares the overall renter opinions to

the opinions of resident and non-resident snowmobilers in the state of Maine. While renters agreed less that backcountry riders should be required to use a Maine Guide, they felt more strongly that backcountry riders should be required to take a backcountry-specific safety course and that backcountry riders should be required to have insurance for search and rescues.

Table 2.9 Backcountry Riding Opinions

<b>Statement</b>	<b>Non-Guided Renter</b>	<b>Guided Renter</b>	<b>Resident</b>	<b>Non-Resident</b>
<b>Backcountry riding should not be allowed on private land.</b>	3.58	2.62	3.98	3.95
<b>Backcountry riders should have written permission to ride on private lands.</b>	4.00	3.08	3.16	3.41
<b>Backcountry riding should be allowed on private land.</b>	2.58	3.23	3.03	3.33
<b>Backcountry riding should only be allowed in designated areas.</b>	4.17	3.62	2.89	3.19
<b>Backcountry riders should be required to use a Maine Guide.</b>	2.25	2.85	2.76	3.12
<b>Backcountry riders should be required to take a backcountry specific safety course.</b>	3.92	3.46	2.49	2.97
<b>Backcountry riders should be required to take landowner relations course.</b>	3.08	3.00	2.46	2.61
<b>Backcountry riders should be required to have insurance for search and rescues.</b>	3.00	3.23	1.96	2.18
<b>I have noticed an increase in backcountry riding.</b>	2.82	3.00	3.49	3.46
<b>I am concerned backcountry riding may lead to a loss of public access to private land.</b>	2.67	2.92	3.49	3.67
<b>Backcountry riding damages new growth in forest land.</b>	3.18	3.00	2.90	2.96
<b>Backcountry riding is harmful to wildlife.</b>	2.92	2.46	2.37	2.53
<b>Backcountry riding is dangerous.</b>	2.92	2.77	2.85	2.99

## 2.8 Renter Supplementary Interview Results

The supplementary renter interview asked renters to elaborate on some of the questions asked in the questionnaire. The following section summarizes answers by question.

### **“Why are you renting today?”**

Most renters stated that they wanted to enjoy the winter weather, ride with friends or family who owned snowmobiles, or try a new winter activity. The rental market thus caters to a variety of snowmobilers, from those who are interested in trying something new, to those who participate in that activity regularly but do not have the resources or interest in owning a snowmobile and associated personal gear.

### **“What was the most important reason you chose to hire (or not hire) a Maine Guide to lead your trip today?”**

Responses from renters who did not hire a guide fell into one of the following broad categories:

1. Did not know there was the option of hiring a Maine Guide to lead the trip.

*“I didn't know you could hire one.”*

*“lack of knowledge biggest didn't... didn't really know we could.”*

2. Had extensive experience riding snowmobiles already.

*“I've been snowmobiling since I was six years old.”*

3. Were already snowmobiling with experienced riders.

*“We just went with our parents and they know the area.”*

*“Because he knew he's up here all the time riding (friend), and so he, he knows, they know the tracks inside and out, the trails rather.”*

*“Had someone with experience going with me.”*

*“We just went with our parents and they know the area”*

*“Because I was with people who knew the area had I not been with them, I would have definitely hired a guide.”*

4. Enjoyed the personal freedom of making trip related decisions themselves.

*“Because I like to do what I want.”*

*“For me, I think it's it depends on you know, how fast you want to go where you want to go. I think the freedom of being able to kind of go on your own, rather than if it was a group tour, or if it was, you know, one on one tour.*

*That's it. The reason why we didn't do a guided tour.”*

*“Just wanted to get out and enjoy being free with a snowmobile with my daughter.”*

The most common answer for those who did not hire a guide was that the renters were riding with other snowmobilers who were experienced and could lead the way. In one case a renter explicitly stated that if they had not been accompanied by an experienced rider, they would have hired a Maine Guide to ride with them and lead the trip.

The vast majority of renters who hired a guide to lead their snowmobile trip asserted that they hired the Maine Guide to navigate the trails and prevent the group from becoming lost in the

Maine woods. Renters also felt they would be able to better enjoy the experience with the security of a Maine Guide leading the way and making the decisions about where to go.

*“Because I knew that not being from Maine and not knowing the area, it's better for me just to rent the guide and get straight to the trail and, and not have to think about it.”*

*“We hired a Maine Guide so that way we could just, you know not have to worry about getting lost.”*

Nine of the twelve guided renters interviewed mentioned in their responses that they hired a guide because they were concerned with getting lost or being unable to navigate the trails. Based on these responses, Maine Snowmobile Guides are hired predominantly to take advantage of their navigation skills and experience with the trail system. A concern for safety was emphasized less than the concern for navigation expertise.

**“How do you feel the certification and registration of guides through the Maine Guide program affects the quality of guides within the state?”**

While many guided and non-guided renters felt they were unable to comment on this question due to lack of knowledge about the Maine Guide program, 17 of the 25 survey participants responded in favor of some type of certification system. The following quote from a renter who did not use a guide echoed the general idea of many of the other respondents.

*“I definitely think that there should be some sort of certification process. Being familiar with the trails, being familiar with the needs of beginning snowmobilers, to more advanced snowmobilers. I mean, as somebody that's an educator, I'm a teacher... I know that personally from that standpoint... I*

*wouldn't be qualified to do what I do in my job if I didn't have... background knowledge of... not only my subject matter, but also what are the needs of the people that I'm going to be taking care of."*

A renter from a previous year expressed how the presence of the Maine Guide program may impact the guides themselves.

*"With a rigorous program comes a desire to serve. Maine Guide training is a rigorous program."*

**"What leadership related qualities would you expect from a Maine Guide?"**

The most commonly used term in the answers to this question was "knowledgeable". Renters expected the Maine Guides to have knowledge on a number of subjects including: terrain and land navigation, snowmobile operation and maintenance, and snowmobiling related safety.

*"Someone who's an experienced snowmobiler someone who's experienced with familiar with the landscape and surroundings of trails someone who is understands the safety aspects of snowmobiling that type of stuff"*

*"Someone who's definitely an extrovert and will go out of the way to make sure everybody is good because being as a first experience was kind of like weird for me but, I was, I had a lot of fun so it was okay."*

Additional terms used to express the leadership qualities renters expected from a Maine Guide were: "extrovert", "professional", "friendly", "personable", and "experienced".

**“Would you describe any situations you encountered on your snowmobile trip that were made better (or could have been) by the presence of a Maine Guide?”**

Non-guided renters expressed very few situations in which they felt a Maine Guide would have made their experience better. Three non-guided renters felt they could have used a little help navigating the trails and determining what all the trail markings indicated. Two separate renters encountered a somewhat difficult terrain navigation issue and expressed that having a Maine Guide to warn them about the impending difficulty or lead them away from it would have made their experience slightly better.

Guided renters mostly expressed that they felt much more comfortable with a guide making all the navigation decisions which freed the renters to enjoy the riding itself with fewer burdens.

*“Well, just the fact that, you know, I didn't have to do the thinking on this trip. It was just, you know, straight out, follow him and, and move on and really get more. Probably more time, quality time on the snowmobile would be the biggest thing.”*

*“The entire trip. Every aspect, from trip planning to equipment rental to every single moment on the trails... all of it! Could not, or would not have ever attempted without a guide.”*

One guided renter fell off their snowmobile two times and appreciated that the guide was there to right their sled and get them resituated on the trail.



**“How do Maine’s snowmobile trails differ from other states you have sledded in?”**

Most of the renters surveyed had never snowmobiled in a state other than Maine, but for those who had, all participants indicated that the trails in Maine were of equivalent quality, or a better quality than those in other locations.

*“I think the biggest thing is, like some of the trail markings were better in here, on, on the trails here and I think so. And from what I remember, and I think the grooming has been, is better. The grooming is a lot better on the trails, at least for what we've done today is better than what we've ridden in New Hampshire.”*

**“How does your perception of the Maine Guide differ from guiding programs in other states?”**

Almost all survey participants expressed that they had little basis to compare the Maine Guide program to guiding programs in other states. The lack of knowledge about the Maine Guide program shown in Table 2.5 may have contributed to this inability to compare.

**2.9 Results: Guide Interviews**

**2.9.1 Demographic Information**

Five Maine Guides participated in the guide-specific interviews; all were male and ranged in age from 35 to 71. All had at least nine years of experience leading snowmobilers. Three of the five were recruited during the snowmobile renter survey period; they had led some of the snowmobile renters who participated in the survey. Two of the guides responded to the call for participants via email after their contact information was obtained from the MPGA

website. All of the participating guides held Maine Guide licenses in the Recreation category but additional licenses held included Whitewater, Hunting, Fishing, and Master Maine Guide status.

## **2.9.2 Personal Opinions on the Maine Guide Program**

### **2.9.2.1 Positive Aspects of the Maine Guide Program**

Each of the Maine Guides interviewed expressed positive feelings towards the Maine Guide program, stating that it raised the level of safety for those who choose to hire a Maine Guide to facilitate their experiences recreating in Maine. As one participant stated, the Maine Guide registration and testing process is good not only for the consumer of the guide services, but also creates better experiences overall which has a positive effect on the state economy.

*“A lot of people that live up here and have lived all their lives up here, the, the venturing out into the outdoors is not an uncommon situation whatsoever. I mean, that's, that's their life. That's their livelihood. And as far as registering is concerned, that basically proves to the state that that particular person is capable of safely leading any kind of an outdoor oriented trip or activity with a good degree of safety and is able to let people have an experience which they will enjoy and come back and partake in over and over again, which means more money coming into the state, more jobs being supported, and more activities being, being enhanced and offered.”*

*-Maine Guide, Age 71, March 10, 2020*

Another Maine Guide explained how the Maine Guide licensing process can create a guide who is more invested in the activity. The testing and test preparation classes often include

information on historical and natural aspects of Maine which can help create a better experience for guide clients in the state.

*“Well, I think it gives the public a safer experience and a broader experience and...a richer experience might be the right word, rather than just snowmobiling or just rafting or whatever it is they might do with somebody that guides them in other states. I would like to think that guides in Maine are weaving in some history and nature and environmental kind of education along with whatever activity they're doing with the customers in the woods or on the water... I think that's a benefit to Maine, the state of Maine as well because it I think it helps tourism in that people come here and get a richer outdoor experience than what they might get somewhere else.”*

*-Maine Guide, Age 60, February 29, 2020*

All guides expressed similar opinions about how the Maine Guide program assures a level of accountability among guides and creates a guide who invests more time and interest in becoming a guide rather than a situation in which the process to become a guide is less rigorous.

### **2.9.2.2 Negative Aspects of the Maine Guide Program**

Only one of the Maine Guides interviewed felt there was nothing wrong with the Maine Guide program. The other four mentioned issues with the program along with suggestions on how the state could improve it. Several of the Maine Guide participants explained that the State of Maine government could improve follow-up with guides and work to be more involved in the ongoing guide work in the state.

*“...it's a direct reflection of the state, and that brings it back to the state where the state should be more involved. Anybody can become a Maine Guide, but not everybody can guide, that's the big thing. We've got to be a people person. There's so much more to guiding than just having that answer, for that gratification. And I think that's where the state should be a little more involved.”*

*-Maine Guide, Age 52, March 9, 2020*

Other guides expressed that the program could be better funded to help improve the follow-up or provide state run classes to ready guide candidates for the Maine Guide exam process. One Maine Guide also explained that it could potentially create strain on small businesses looking for guides because the testing process creates a delay for people who may be qualified to guide in the state, but have not yet sat for their exam.

In addition, four of the five Maine Guides interviewed felt that the newly implemented federal background checks were an important part of the Maine Guide program, but as one participant explained, additional involvement from the state could improve the public opinion of guides when incorporating the background checks. One guide had the following to say when asked how he felt about the background check implementation.

*“I think it's a really good idea. I just wish that, as we've talked about before, that the state of Maine would educate the public, particularly out-of-staters, about... why hiring a guide in Maine is a better experience for the public because they have the background check and because they've been tested with oral and written tests, and It's not just a matter of going down to the town hall*

*and paying 30 bucks to become a guide like it is in so many other states. But yeah, I think it's a good [thing], background checks. A little bit of a hassle, but yeah, I think it's worthwhile. It's just that I don't think the public is going to know the difference.”*

*-Maine Guide, Age 60, February 29, 2020*

This brings to light the point that while Maine Guides put in a lot of effort to register and be tested by the state, more could be done to promote the high standards for Guide licensing in Maine when advertising the recreation industry, especially to non-resident tourists.

Although all guides saw the value in the federal background checks for Maine Guides, one guide explained his perspective as a lifetime Maine resident who had spent time working with the impoverished areas of Maine and how the background checks may be detrimental to livelihoods of Maine residents in rural areas.

*“I get why they do it. But when I was in college, I did a study for FEMA and a lot of the people over there I found in Washington County, which is 20% poverty rate, were convicted felons or what have you, which I mean, some people would argue just the opposite, like, great, that's what they're for. But to me, I kind of found that a lot of these people found their way, you know what I mean, through the guide organization, which I thought was really cool back then. And then when this new restriction came in... I was kind of worried for those guys to be honest, because some of them were the nicest, most upstanding people that turned their life around, because society wouldn't do*

*anything for them, you know, so they got into the guiding world and now, I don't know if they're, you know, if their licenses are in jeopardy or not.”*

*-Maine Guide, Age 35, March 1, 2020*

The aforementioned guide’s opinion varied from the collective group of guides interviewed but brought up an important point that may be shared among others in the greater Maine Guide community.

**“How do you believe the Maine Guide program compares to guide services in other states which may not require guide certification?”**

Responding to this question, most guides expressed that they did not have enough experience with guides or guiding in other states to comment on other programs. However, the Maine Guides interviewed most often expressed that they were in favor of our state certification system.

*“...it's definitely better to have the guides licensed than not. It shows a degree of certification, responsibility... the list goes on and on and on.... I think it's very good that Maine has that, and I think that if anybody is going to guide at any state in the union, they should be qualified stewards. Absolutely.”*

*-Maine Guide, Age 52, March 9, 2020*

This particular guide reiterated the point that the certification system allows the state to semi-regulate those recreation guides who act as stewards for the history and culture of the state.

### 2.9.3 Experiences Guiding Snowmobilers

The following section presents the responses of the Maine Guides interviewed to questions about their experiences leading snowmobile tours in the state of Maine. Several questions about the Maine Guides perceptions of client motivations to hire guides were posed.

**“What percentage of your clients are aware of the Maine requirement for all recreation guides to be certified through the Maine Guide program?”**

Guides interviewed expressed that either very few or none of the clients who hired Maine Guides to lead snowmobile tours were familiar with the requirement that Guides be certified. This speaks to the point many of the guides were making when they stated that they wanted the state to be more involved in getting information to tourists about how the Maine Guide program is an asset to the state of Maine. Guides had the following to say.

*“I have, I have no idea, ...pick a number”*

*-Maine Guide, Age 71, March 10, 2020*

*“Unless you tell them, they don't know”*

*-Maine Guide, Age 52, March 9, 2020*

*“I think zero to tell you the truth, because I always I always explain it to them...before we do a final contract or you know, a verbal contract, I always tell them... it's my it's my, my job to keep them safe and should we...come to an impasse...while we're out, I'm always [going to] go towards the side of safety and then I explained to them that...I won't put my guides license at risk for you know, for anything...a lot people, people have no idea of you know what it is*

*and I think, I think that goes back to the funding and all that with for the guides license...I think they would, people would use guides a lot more if they understood what it was.”*

*–Maine Guide, Age 53, March 4, 2020*

*“I don't think one has. I usually at some point in my guiding now just an afternoon guide trip with somebody. We might not get around to discussing that. But certainly anybody that rides with me for a day, definitely two days. I make a point to bring that up in hopes that will help them motivate them to come back to Maine later on”*

*-Maine Guide, Age 60, February 29, 2020*

*“I would say few to none, you know, truthfully.”*

*–Maine Guide, Age 35, March 1, 2020*

These statements from each Maine Guide interviewed highlight the major information gap between Maine Guides and those who hire recreation guides within the state of Maine. In the Maine Guides’ opinions, there is not enough information available to the general public about what sets recreation guiding in Maine apart from other states.

**“For what reasons have recreationists told you they hire snowmobile guides?”**

For this question, guides all responded that they are most often hired to facilitate a smooth trip in which the clients did not have to worry about the navigation aspect of guiding and are able to enjoy an enhanced feeling of safety. The Maine Guides interviewed expressed that snowmobiling can be a difficult activity due to the complexities of both the machines and the



trail system in the state of Maine. The sentiments of the guides were well summarized by two guides in particular who had the following to say.

*“...a lot of it is just to take the navigation out so they can kick back, relax and enjoy the ride quite literally... That's really the biggest piece you know, they just they don't want to spend time looking at a map. They don't want to waste 10/15 minutes at an intersection, trying to figure out which one they're at, and that sort of thing. We can literally just enjoy the experience and not worry about it. Ironically, we definitely, probably the second most popular is, 'take me around and get me comfortable. I'm riding for two or three days.' And most of the time they'll hire [a] guide again, just because they don't, they don't get comfortable because they're enjoying the trip so much.”*

*-Maine Guide, Age 35, March 1, 2020*

*“Safety is one and probably efficiency is the other. They don't want to take the time to figure out the routes and the timing and what stops are worthwhile and where to try to go have lunch and am I going to run out of fuel. So even people that are pretty experienced in the woods I've had hire, hire me or other guides, just because they want the day to go more smoothly.”*

*-Maine Guide, Age 60, February 29, 2020.*

These guides explain that a Maine Guide can contribute to the enjoyment of a snowmobile excursion simply by taking control of the most common, and most difficult aspects of a snowmobile trip in Maine. Even experienced snowmobilers may hire a guide simply to help them make the most of the trip.

#### 2.9.4 Skills and Leadership Qualities

The final section of the Maine Guide interview asked questions about the skills and leadership qualities required to become a Maine Guide and lead snowmobile tours in the state of Maine.

##### **“What type of preparation does it take to lead a snowmobile tour?”**

While all guides explained that the preparation to lead a snowmobile tour in Maine included the basics (planning routes, maintaining snowmobiles, having emergency gear), many of the guides also work to know the clients before they ever get on a snowmobile. This allows them to provide the best snowmobile experience they can to each tour group.

*“Well, one is know your client. That's very important. I mean, there's a big difference between 20 somethings and 60 somethings...and that that will dictate how... It depends on their itinerary, what it is that they're looking for, what the experiences that they want. And it varies from every single client. I find it depends on the client. So I think the biggest thing really is interview your client know your client, and then prep for what it is.”*

*–Maine Guide, Age 52, March 9, 2020*

This summary of knowing how to cater to each client showed a shared sentiment among all of those interviewed that guiding is more than simply having the technical knowledge to get from point A to point B on a snowmobile. It includes taking extra care to provide the best experience a Maine Guide can.

**“What specific skills are required to lead a snowmobile tour?”**

All guides expressed that the most important skills needed to lead snowmobile tours revolved around basic snowmobile repair, knowledge of the activity and the area, navigation skills, minor medical training, and people skills. The answers to this question somewhat echoed what the Maine Guides had said about trip planning. Having a solid plan with the skills needed to build and adapt that plan due to changing conditions was mentioned by every interviewed Maine Guide at some point during the interview.

**“What leadership qualities are needed to guide snowmobile tours?”**

The Maine Guides expressed a number of leadership qualities necessary to provide a safe and enjoyable experience for snowmobile riders in Maine. Select quotes in which specific leadership qualities are mentioned are provided below. Some qualities were mentioned exactly, and some may be derived by context. Specifically mentioned qualities are underlined in each quote. Key qualities included diligence, resourcefulness, adaptability, communication, and providing continued motivation.

*“Well, you definitely need to be resourceful. It's no question about that because you may not have what you need and you might need to make something work. I mean, diligence to some extent, as well.”*

*–Maine Guide, Age 35, March 1, 2020*

*“...you have to lead the people and keep them moving along you can't just let them drive the train otherwise it's [going to] be a slow painful day at least for*

*some of the people in the group and you may not even get home because some of them move like move like snails.”*

*–Maine Guide, Age 60, February 29, 2020*

*“...leadership is the ability to...make a group of people... do whatever you need them to do, in an effective manner. So, it's the being able to brief, being able to explain to people, being able to think on the fly. I'm retired military guy, so I always use what we call the MDMP the military decision making process. So you always...have a plan and you're right to your plan. But something could be thrown into the mix to where you have to alter your plan and, being able to do that safely and convey that to the group. What you're doing, why you're doing it, those types of things.”*

*–Maine Guide, Age 53, March 4, 2020*

*“If you show weakness, just like anything else, they're going to run amok. So you've got to learn, you got to really know how to stand your ground, how to manage people. I have a very strong background in management, managing people pretty much my whole life. I think that's a very important thing for any Guide to have before they even go into guiding. It's how to manage people correctly. That's a huge, huge thing. And there are a lot of people out there that just do not know how to do that.”*

*–Maine Guide, Age 52, March 9, 2020*

In addition, some guides emphasized managerial skills, explained in terms such as being a solid manager or being stern but personable. Managerial qualities may encompass a number of other leadership related qualities, but some interviewees emphasized the importance of knowing how to lead a group in many settings, being a strong judge of character, and having general people skills.

*“Well, I guess I guess I would say that you have to be a people person. And you have to, you have to be able to communicate...you got to be able to size up people, if you will, and know that they're either going to be a good, good follow directions type of people, or if you're going to have to have to be a little more firm with them...you don't want a grumpy old guy that's [going to] take somebody out that really doesn't care about his people, or care about the safety of his people. That comes first and foremost, I think, and if he can't operate in that direction, you got no business guiding or working with the public.”*

*–Maine Guide, Age 71, March 10, 2020*

**“What leadership qualities do you believe were tested on the Maine Guide exam?”**

The Maine Guides interviewed felt that the oral examination in the testing procedure was the real test of leadership ability. Each guide provided a unique take on this part of the process but all shared the theme that the test administrators were evaluating how one’s personality would fit as a Maine Guide.

*“I think that when you're working with the testing wardens or whenever they kind of look to you as, as how are you? How are you going? How, what is your*

*personality type? And are you, are you comfortable in working with people?  
Can your teaching abilities impart the knowledge to those people that may  
need to have?"*

*–Maine Guide, Age 71, March 10, 2020*

This guide took his test long enough ago that he was tested by a warden who he felt judged his character and ability to educate the tour participants. The following quote derived from a discussion about the current Maine Guide oral examination in which two wardens or seasoned Maine Guides test your navigation and emergency scenario skills.

*"I think it's good because the whole point of that exercise is to see whether or not you can be easily shaken up. Because the two wardens can shake you up and doubt your decision making. It's going to be a worst-case scenario, when you've got a bunch of clients that tried to do the same thing. They're constantly questioning your leadership and your decision making. You don't hold your ground good, bad or indifferent. Doesn't matter. You're solid as a rock. You'll manage if you're not you get shaken, shaken up at all. And I know that's why they do it. They're trying to get to see you know, I think are they [going to] get flustered? Are [they going to] question themselves are they doubting themselves?"*

*–Maine Guide, Age 52, March 9, 2020*

This guide felt that the testing procedure was meant to push the candidate to remain calm and lead the test administrators through the proper procedure in an emergency scenario. He felt that this test of level-headedness was the section of the test that evaluated leadership quality.

**“How do you believe the Maine Guide program affects the quality of Maine Guide leadership?”**

While there were some mixed feelings about how the Maine Guide program affects the average quality of leadership among the guide community, no respondent felt it had negative effects on the overall leadership of Maine Guides. The eldest Maine Guide interviewed had strong feelings about this question and expressed them with the following quote.

*“I believe it enhances it to a significant degree. It lends credibility to the guide to the guide as part of a profession. Any, you know, very much like a, a, an electrician. You wouldn't want somebody coming into your house wiring your house. If he wasn't a certified electrician. You wouldn't want a plumber coming into your house, if you didn't have some kind of a license to do that. As far as, as far as guides are concerned, that falls into that same category. You wouldn't, you wouldn't want to have somebody take you out into the woods if they didn't know how to read a compass in order to get you back. You know those kinds of things. When you start certifying guides, you lend credibility to the profession. And when you lend credibility to the profession, you are able to attract people that come up, spend money in the area, spend money for food, lodging, gasoline, and enhance the experience of the outdoor activity that you're providing via hunting, fishing, snowmobiling, whatever those credibility is, is the key factor here.*”

*And I think more and more people recognize that it is in fact a bona fide profession, which deserves credibility from the general public and other authorities, then that's what you're, what, that's what we as guides are trying to accomplish.”*

*-Maine Guide, Age 71, March 10, 2020*

This guide’s answer seemed to summarize the general sentiment from the five Maine Guides interviewed during this study. Although there are a number of things that could be improved about the Maine Guide program, it has an overall positive impact on the profession of recreation guiding in Maine.

## **2.10 Discussion**

### **2.10.1 Factors Considered when hiring a Maine Guide**

Renters who hired a Maine Guide to lead their snowmobile tours indicated that their motivations for hiring a guide were to increase their feelings of safety and help them navigate the complex Maine snowmobile trail system. Guides interviewed agreed that they are hired most often to take control of the aspects of the experience most people may worry about. Snowmobile renters feel much more at ease and are able to enjoy the tour to a greater extent when confident that their group leader is able to show them an enjoyable experience and get them home safely, according to the Maine Guides interviewed.

For those renters who did not hire a Maine Guide to lead their snowmobile trip, the most common factors were the desire for personal freedom to make their own trip-related decisions along the way, and the lack of need for a guide of any sort as the snowmobiles were being rented for the purpose of riding with experienced snowmobilers. This shows an increased desire for



independence in the non-guided renters who went alone, and a feeling that their guidance and navigation needs were already being met for those who went with experienced riders. This shows, in many cases, that when the need for a navigator is met by an experienced snowmobiler, renters who are new to the activity feel they do not need a guide, making this the most common reason for hiring or not hiring a guide among this group of survey participants.

The value of a guide is created by their specialized knowledge which can be used to create positive experiences for the client by avoiding negative ones (Roekns et.al, 2015; Rentala & Valkonen, 2011). These Maine Guides were seen by renters as having value primarily through their knowledge of the land and snowmobiling, their navigation abilities, and to a lesser extent, their knowledge of the safety precautions to take when snowmobiling.

For the limited day-long and half-day trips which the surveyed renters were participating in, Maine Guides were most commonly used to provide direction and ensure safety among the renters who hired them. The presence of the Maine Guide certification program itself had very little influence on the decision to hire a guide, likely due to renters' limited knowledge of the program and its standards. While access to guides for specific outdoor experiences has expanded clients' expectations for recreation guides (Chen et. al, 2018), Maine Guides hired by participants in this study were hired for only a few purposes and renters took for granted that they would have the skills they expected because they were working as a recreation guide.

### **2.10.2 Knowledge of the Maine Guide Program**

Although most snowmobile renters surveyed in this study had very little knowledge of the Maine Guide program, and this knowledge had very little impact on their decision to hire a Maine Guide to lead their snowmobile tour, almost all surveyed agreed that a certification

system should be in place to allow only qualified guides to lead snowmobile tours in the state of Maine. As certification systems can help reassure clients of their guides qualifications and level of professionalism (Black & Ham, 2005; Black & Weiler, 2005), this level of agreement from renters that certification system should be in place for snowmobile guide in Maine shows support for a system like the Maine Guide program from this group of snowmobile renters.

Guides interviewed indicated that they were disappointed in the lack of involvement in the Maine Guide program by the state beyond the testing procedure. This shows that Maine Guides and renters alike could benefit substantially from an information campaign in which the state is able to make more information readily available to tourists about what sets Maine Guides apart from guides in other states or areas. For snowmobiling, it may be most effective to emphasize the ability of Guides to help in navigation and safety and provide a more relaxing experience for the riders. This increase in public knowledge could lead to greater hire rates of Maine Guides as the majority of renters supported the idea of a state-sponsored guide certification system, but did not know that there was already one in place in Maine. This could lead to increased support for the small businesses owned by Maine Guides and lending more credibility to the profession in the eyes of the client. Some of the Maine Guides interviewed also asserted that the program could benefit from more state involvement in which the state reassesses that the registered Maine Guides are continuing to conduct safe and enjoyable tours, and are being effective stewards for the state of Maine.

### **2.10.3 Leadership Related Qualities**

Renters emphasized that important leadership related qualities that they would look for in a Maine Guide were extroversion, being professional and personable, and experience. These qualities mainly focused on the customer interaction component of the guiding experience.

Leadership, when defined as “those who can create direction, alignment, and commitment within a group of people toward a specific goal” (Stern, 2018, pg164) shows that these components of a tour cannot be achieved without the ability to interact with the guided clients and communicate the common goal of the group. In this case the common goal was often a snowmobiling experience in which the clients were assured of their safety and direction. This is understandable as many who recreate look for a guide to facilitate a fun or enjoyable experience. Renters indicated that they valued traits of genuine concern, skillfulness, adaptability, competent decision making, trustworthiness, and emotional stability in a guide, and of those who hired a guide, a majority found their tour either met or exceeded their expectations. These traits align with the traits of a good leader emphasized through leadership theory: trustworthiness, self-confidence, flexibility, and ability to make decisions with limited data (Stern, 2018).

Maine Guides who were interviewed emphasized similar qualities as essential to guiding: resourcefulness, diligence, ability to motivate, adaptability, and being personable. The Maine Guides frequently referenced qualities that related to the safety aspects of the tour, showing an emphasis on a safe tour above all else. They also mentioned that being personable is an important aspect, but seemed to value safety as highly, if not higher, likely due to the emphasis on safety skills in the Maine Guide exam. These skills which the Maine Guides felt were necessary to lead these tours also aligned with effective outdoor leadership skills presented in the literature. These included technical, safety, environmental, organization, instructional, communication, and decision-making skills. Those skills most emphasized by the Maine Guides interviewed were their technical ability, safety-oriented mindset, organizational and planning skills, communication skills, and decision-making abilities. The alignment of renters’ perceptions of their Maine Guides and the skills and abilities the Maine Guides interviewed

found important support the assertion that the Maine Guide certification likely contributes to an effective leader's mindset and tests the skills necessary to lead effectively.

A study on longer Maine Guide led trips in which greater goals of team-building or self-discovery are emphasized may be an important next step for research into the Maine Guide program and may be a more effective platform to study Transformational Leadership theory as it relates to the Maine Guide program.

#### **2.10.4 Backcountry Opinion Questions**

In many cases, both guided and non-guided snowmobile renters tended to express opinions on backcountry issues in Maine similar to those of registered snowmobile riders. There were several issues in which the guided and non-guided renters deviated from each other, or from the registered snowmobile riders surveyed as part of chapter 1.

In terms of pre-backcountry riding policies, rental snowmobile riders were more likely than registered snowmobilers to support requirements for backcountry riders to take a backcountry specific safety and landowner relations course, and carry insurance for search and rescues. This could stem from the safety videos and insurance policies renters are required to participate in before they are given access to the rental snowmobiles. Limited snowmobiling experience could also create more cautious snowmobile riders.

Snowmobile renters tended to be less concerned with backcountry riding leading to a loss of access to public lands. Due to renters' lack of knowledge of the Maine Guide program and the majority of renters surveyed being non-residents, it is likely that renters also do not have full knowledge of how private landowners provide access to their land for recreation in Maine. This could lead to the lack of concern for this specific issue by snowmobile riders.

## **2.11 Conclusions**

While snowmobile renters who participated in this survey overwhelmingly supported the idea of a certification system for recreation guides in the state of Maine, there was a dearth of knowledge among renters about the Registered Maine Guide program already in place, and it hardly factored into any of the renters' decisions to hire a Maine Guide to lead their snowmobile tour.

The Maine Guides interviewed would like to see the state become more involved in the Maine Guide program and become more active distributors of information on the program. The Maine Guide participants believe that this certification system has a positive effect on the quality of recreation guides within the state, but the state could go further to improve oversight of the certified guides and help promote guiding in the state.

While guided renters experienced quality leadership and professionalism from their guides, the lack of knowledge prior to the trips certainly is not helping Maine Guides promote their small businesses. Maine Guides believe the Maine Guide examination process provides a system by which guide candidates can prove their leadership abilities, skills, and professionalism. However, an increased effort to disseminate information about the program by the state, these aspects of the Maine Guide could lead to improved perceptions of Maine Guides by potential clients in Maine.

## **2.12 Future Research**

### **2.12.1 Additional Snowmobiling Data**

Due to the lack of snow and the COVID-19 pandemic sweeping the world, the research period for this study was limited in the beginning and cut short. This led to fewer surveys being collected than originally expected. Thus, this study does not have a large enough sample size to extrapolate the findings across all snowmobile renters in Maine. If this project were to continue using the same survey instrument, it could be possible to obtain a large enough sample that the data could be used to better the snowmobile rental industry in the state of Maine.

### **2.12.2 Expansion into Other Activities**

This survey instrument (excluding backcountry opinion questions) could be adapted to fit almost any of the other activities in Maine for which a Maine Guide may be hired. Maine Guides lead tours kayaking, canoeing, hiking, camping, and many other outdoor excursions in which clients rent gear from outfitters. This survey format could be used to study Maine Guides on longer trips, larger groups, and different settings. Having a variety of activities and situations could provide a better look at why Maine Guides are hired in a more general sense.

### **2.12.3 Maine Guide Information Dissemination**

This data could be expanded upon in either the snowmobiling rental industry or other Maine Guide led activities to determine where the information about the Maine Guide program is the least available. This could help target information or advertising campaigns that could increase potential clients' perceptions of the Maine Guide program in the places and activities that need it the most.

### **2.13 Additional Thoughts for Policy Makers and Stakeholders**

The Maine Guide program is an asset which is not being presented well enough for snowmobile renters to notice it. While many small Maine Guide businesses make an effort to highlight their unique and exceptional credentials, activity advertising and directories, such as visitmaine.com, make no mention of why being a Maine Guide is any different than being a recreation guide in most other states.

The most valuable information gleaned from the snowmobile renter and Maine Guides interviews in this study was that support for guide certification systems exists, guides appreciate the system in place, and the links to the knowledge of the program for tourists are lacking.

Advertising for the program could be as simple as a short passage explaining the testing and registration procedures, and the display of the Maine Guide badge insignia, which conveys the feeling of professionalism, on any commercial, brochure, website, or other mode of information dissemination on tourism activities in Maine.

A well-executed and wide spread information campaign could; increase tourism in Maine, increase satisfaction with tourist experiences in Maine, and/or increase revenue for the thousands of Maine Guides and Maine Guide-run businesses in Maine. As recreation tourism grows in the state, having a well-advertised collective of guiding professionals will help keep recreationists safe, happy, and returning to relive their exceptional Maine adventures.

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APPENDIX A:

MAINE SNOWMOBILING SURVERY

MAINE SNOWMOBILING  
SURVEY, 2018-2019



Registration: \_\_\_\_\_

Trip Date: \_\_\_\_\_

Conducted by:   
School of Forest Resources

# Section One

*In this section we are interested in learning about some of your past snowmobiling activities in Maine.*

1. About when was the first time you went snowmobiling in **Maine**? (CHECK ONE BOX)

- |                                       |                                       |
|---------------------------------------|---------------------------------------|
| <input type="checkbox"/> Before 1970  | <input type="checkbox"/> 2000 TO 2009 |
| <input type="checkbox"/> 1970 TO 1979 | <input type="checkbox"/> 2010 TO 2014 |
| <input type="checkbox"/> 1980 TO 1989 | <input type="checkbox"/> 2015 TO 2019 |
| <input type="checkbox"/> 1990 TO 1999 |                                       |

2. Since the first time you went snowmobiling in **Maine**, about how often have you snowmobiled in **Maine**? (CHECK ONE BOX)

- EVERY YEAR
- MORE THAN HALF THE YEARS
- ABOUT HALF THE YEARS
- LESS THAN HALF THE YEARS
- 2018-19 SEASON WAS MY FIRST YEAR

3. Were you a member of a **Maine** snowmobile club during the 2018-19 season? (CHECK ONE BOX)

- YES
- NO

4. Have you ever been a member of a **Maine** snowmobile club? (CHECK ONE BOX)

- YES
- NO

5. Were you a member of the **Maine Snowmobile Association (MSA)** during the 2018-19 season? (CHECK ONE BOX)

- YES
- NO

6. Have you ever been a member of the **MSA**? (CHECK ONE BOX)

- YES
- NO

7. Have you ever volunteered for a **Maine** snowmobile club or **MSA**? (CHECK ONE BOX)

- YES
- NO

8. What would encourage you to begin volunteering or volunteer more? (EXPLAIN BELOW)

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9. Did you volunteer for a **Maine** snowmobile club or **MSA** in the 2018-19 season? (CHECK ONE BOX)

- YES → PLEASE ANSWER QUESTION 9a and 9b
- NO → PLEASE SKIP TO QUESTION 10

9a. How many hours did you volunteer in the 2018-19 season? (FILL IN THE BLANK)

\_\_\_\_\_ HOURS

9b. Was this more, the same or fewer hours than a typical year? (CHECK ONE BOX)

- MORE HOURS
- THE SAME NUMBER OF HOURS
- FEWER HOURS

10. What was the most important reason why you volunteered or did not volunteer for a **Maine** club or the **MSA**? (EXPLAIN BELOW)

---

---

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11. Have you ever hired a registered Maine Guide to lead a snowmobile trip, or participated in a snowmobile trip a Maine Guide led? (CHECK ONE BOX)

- YES
- NO

11a. Did you hire a Maine Guide to lead a snowmobile trip during the 2018-19 snowmobiling season? (CHECK ONE BOX)

- YES
- NO

11b. Please indicate whether you agree or disagree with the following statements about snowmobiling trips led by registered Maine Guides. (CIRCLE ONE NUMBER FOR EACH ITEM)

Topic	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
I would feel safer with a Maine Guide leading the tour.	1	2	3	4	5
A Maine Guide would increase my ability to navigate the trails.	1	2	3	4	5
A Maine Guide would increase my knowledge of acceptable riding practices.	1	2	3	4	5
A Maine Guide would increase my riding enjoyment.	1	2	3	4	5
I would experience new areas and routes that I would not have ventured on without a Maine Guide.	1	2	3	4	5
I would be able to safely snowmobile in backcountry conditions because of a Maine Guide.	1	2	3	4	5
I would be a more confident snowmobiler with a Maine Guide.	1	2	3	4	5

## Section Two

*In this section we are interested in some of your current snowmobiling activities in Maine. Some questions in this section relate only to the snowmobile with the registration number printed on the front of this survey.*

12. How many of the operating snowmobiles owned by you and other people living in your household were registered **in Maine** for the 2018-19 snowmobiling season? (CHECK ONE BOX)

- |                                |                                      |
|--------------------------------|--------------------------------------|
| <input type="checkbox"/> ONE   | <input type="checkbox"/> FOUR        |
| <input type="checkbox"/> TWO   | <input type="checkbox"/> FIVE        |
| <input type="checkbox"/> THREE | <input type="checkbox"/> SIX OR MORE |

13. **Including yourself**, how many members of your household went snowmobiling at least once in Maine during the 2018-19 season? (CHECK ONE BOX)

- |                                |                                      |
|--------------------------------|--------------------------------------|
| <input type="checkbox"/> ONE   | <input type="checkbox"/> FOUR        |
| <input type="checkbox"/> TWO   | <input type="checkbox"/> FIVE        |
| <input type="checkbox"/> THREE | <input type="checkbox"/> SIX OR MORE |

14. On about how many total days did you snowmobile **in Maine** during the 2018-19 season? (CHECK ONE BOX)

- |                                    |  |
|------------------------------------|--|
| <input type="checkbox"/> 1-3 DAYS  | <input type="checkbox"/> 16-25 DAYS        |
| <input type="checkbox"/> 4-6 DAYS  | <input type="checkbox"/> 26-40 DAYS        |
| <input type="checkbox"/> 7-15 DAYS | <input type="checkbox"/> MORE THAN 40 DAYS |

15. How many overnight trips (in which you did not return to your own home) did you take in **Maine** during the 2018-19 season? (CHECK ONE BOX)

- |                          |       |                          |               |
|--------------------------|-------|--------------------------|---------------|
| <input type="checkbox"/> | NONE  | <input type="checkbox"/> | FOUR          |
| <input type="checkbox"/> | ONE   | <input type="checkbox"/> | FIVE          |
| <input type="checkbox"/> | TWO   | <input type="checkbox"/> | SIX           |
| <input type="checkbox"/> | THREE | <input type="checkbox"/> | MORE THAN SIX |

16. About how many miles did you ride a snowmobile in **Maine** during the 2018-19 snowmobiling season? (FILL IN THE BLANK)

\_\_\_\_\_ MILES IN MAINE

17. How many snowmobile trips did you take in **Maine** in which you traveled 100 miles or more from your primary residence during the 2018-19 season? (FILL IN THE BLANK)

\_\_\_\_\_ TRIPS

18. Compared to a typical year, which statement best describes the amount of snowmobiling you did in **Maine** during the 2018-19 snowmobiling season? (CHECK ONE BOX)

- I SNOWMOBILED A LOT MORE IN MAINE DURING 2018-19 THAN IN A TYPICAL YEAR
- I SNOWMOBILED A LITTLE MORE IN MAINE DURING 2018-19 THAN IN A TYPICAL YEAR
- I SNOWMOBILED ABOUT THE SAME AMOUNT IN MAINE DURING 2018-19 THAN IN A TYPICAL YEAR
- I SNOWMOBILED A LITTLE LESS IN MAINE DURING 2018-19 THAN IN A TYPICAL YEAR
- I SNOWMOBILED A LOT LESS IN MAINE DURING 2018-19 THAN IN A TYPICAL YEAR

19. For what purposes did you snowmobile in **Maine** during the 2018-19 snowmobiling season? (CHECK ALL THAT APPLY)

- PLEASURE RIDING
- BACKCOUNTRY RIDING
- RACING
- GROOMING TRAILS
- ICE FISHING
- TRAPPING
- WORK-RELATED ACTIVITIES
- COMMUTING TO / FROM WORK OR SCHOOL
- OTHER VOLUNTEER DUTIES (E.G. FIREFIGHTING)
- OTHER (PLEASE SPECIFY) \_\_\_\_\_

20. What type of groups did you personally snowmobile with in Maine during the 2018-19 snowmobiling season? (CHECK ALL THAT APPLY)

- ALONE, JUST ME
- MEMBERS OF MY IMMEDIATE FAMILY
- OTHER RELATIVES
- LOCAL SNOWMOBILE CLUB MEMBERS
- FRIENDS
- BOTH FRIENDS AND FAMILY MEMBERS
- OTHER (please specify)

\_\_\_\_\_

21. Did you go snowmobiling in another state or Canadian province during the 2018-19 snowmobiling season? (CHECK ONE BOX)

- YES → PLEASE ANSWER QUESTIONS 22 AND 23
- NO → SKIP TO QUESTION 24

22. Other than Maine, where did you go snowmobiling during the 2018-19 snowmobiling season? (CHECK ALL THAT APPLY)

- |  |   |
|--|---|
| <input type="checkbox"/> NEW HAMPSHIRE | <input type="checkbox"/> NEW YORK               |
| <input type="checkbox"/> VERMONT       | <input type="checkbox"/> QUEBEC                 |
| <input type="checkbox"/> MASSACHUSETTS | <input type="checkbox"/> NEW BRUNSWICK          |
| <input type="checkbox"/> CONNECTICUT   | <input type="checkbox"/> ONTARIO                |
| <input type="checkbox"/> RHODE ISLAND  | <input type="checkbox"/> OTHER (Please Specify) |
| <input type="checkbox"/> PENNSYLVANIA  | _____   |

23. About how many miles did you snowmobile outside Maine during the 2018-19 snowmobiling season? (FILL IN THE BLANK)

\_\_\_\_\_ MILES SNOWMOBILED OUTSIDE MAINE

## Section Three

*In this section, we are interested in your opinions about backcountry snowmobiling in Maine. Backcountry snowmobiling can be considered any snowmobiling off of developed trails, but often takes place on lands that are isolated, undeveloped, remote and difficult to access.*

24. Please indicate whether you agree or disagree with the following statements about backcountry snowmobile riding in Maine. (CIRCLE ONE NUMBER FOR EACH STATEMENT)

Topic	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
Backcountry riding should not be allowed on private land.	1	2	3	4	5
Backcountry riders should have written permission to ride on private lands.	1	2	3	4	5
Backcountry riding should be allowed on public land.	1	2	3	4	5
Backcountry riding should only be allowed in designated areas.	1	2	3	4	5
Backcountry riders should be required to use a Maine Guide.	1	2	3	4	5
Backcountry riders should be required to take a backcountry-specific safety course.	1	2	3	4	5
Backcountry riders should be required to take a land-owner relations course.	1	2	3	4	5
Backcountry riders should be required to have insurance for search and rescues.	1	2	3	4	5

25. Please indicate whether you agree or disagree with the following statements about backcountry snowmobiling activity in Maine. (CIRCLE ONE NUMBER FOR EACH STATEMENT)

Topic	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
I have noticed an increase in backcountry riding.	1	2	3	4	5
I am concerned backcountry riding may lead to a loss of public access to private land.	1	2	3	4	5
Backcountry riding damages new growth in forest land.	1	2	3	4	5
Backcountry riding is harmful to wildlife.	1	2	3	4	5
Backcountry riding is dangerous.	1	2	3	4	5



## Section Four

*In this section we are interested in your snowmobile outing in Maine closest to the date marked on the front of this survey, during which you stayed overnight away from home or snowmobiled more than 100 miles from your permanent home.*



26. Using the map above, please indicate all the regions in Maine where you and/or members of your household snowmobiled during the outing closest to the date on the front of this survey. (CHECK ALL THAT APPLY)

<input type="checkbox"/> AROOSTOOK COUNTY
<input type="checkbox"/> THE MAINE HIGHLANDS
<input type="checkbox"/> KENNEBEC AND MOOSE RIVER VALLEYS
<input type="checkbox"/> MAINE LAKES & MOUNTAINS
<input type="checkbox"/> DOWNEAST & ACADIA
<input type="checkbox"/> THE MID-COAST
<input type="checkbox"/> GREATER PORTLAND AND CASCO BAY
<input type="checkbox"/> SOUTHERN MAINE

27. How many days was the snowmobile outing closest to the date specified on the front of this survey? (FILL IN THE BLANK)

\_\_\_\_\_ Days

28. For this question, please indicate your level of satisfaction for each of the factors as they relate to the snowmobile outing closest to the date specified on the front of this survey.  
(CIRCLE ONE NUMBER FOR EACH FACTOR)

Factor	Very Dissatisfied	Dissatisfied	Neither Agree nor Disagree	Satisfied	Very Satisfied
Availability of regional trail maps	1	2	3	4	5
Trail grooming	1	2	3	4	5
Trail signing (trail numbers, distance, hazard signs)	1	2	3	4	5
Trail width	1	2	3	4	5
Vehicle parking	1	2	3	4	5
Trailside services (gas, food, restrooms etc.)	1	2	3	4	5
Proximity to populated areas	1	2	3	4	5
Variety of terrains	1	2	3	4	5
Scenery/natural beauty of area	1	2	3	4	5
Number of other people on trails	1	2	3	4	5
Availability of lodging	1	2	3	4	5
Nightlife and entertainment	1	2	3	4	5
Amount of law enforcement on trails	1	2	3	4	5
Courtesy of other riders	1	2	3	4	5
Quality of highway used to travel to trail	1	2	3	4	5
Club houses along trail	1	2	3	4	5
Availability of unmaintained trails	1	2	3	4	5

29. How many members of **your household** participated in the snowmobile outing closest to the date specified on the front of this survey?

(CHECK ONE BOX)

- |                                |                                      |
|--------------------------------|--------------------------------------|
| <input type="checkbox"/> ONE   | <input type="checkbox"/> FOUR        |
| <input type="checkbox"/> TWO   | <input type="checkbox"/> FIVE        |
| <input type="checkbox"/> THREE | <input type="checkbox"/> SIX OR MORE |

30. How many snowmobiles from **your household** were used during the snowmobile outing closest to the date specified on the front of this survey? (CHECK ONE BOX)

- |                                |                                      |
|--------------------------------|--------------------------------------|
| <input type="checkbox"/> ONE   | <input type="checkbox"/> FOUR        |
| <input type="checkbox"/> TWO   | <input type="checkbox"/> FIVE        |
| <input type="checkbox"/> THREE | <input type="checkbox"/> SIX OR MORE |

31. Please report expenditures related to the specific trip defined above for all members of your household who participated in the snowmobile outing closest to the date specified on the front of this survey while also keeping in mind the following. **Only report expenses made in Maine.** Do not report expenses for snowmobiling trips **outside of Maine**. If you drove to Maine from outside the state to snowmobile, only report expenses made in **Maine**.

(FILL IN EACH BLANK. RECORD A ZERO IF YOUR HOUSEHOLD HAD NO EXPENSE FOR A CATEGORY)

Expenditure Category	Amount Spent in Maine
Gasoline/oil for your snowmobile	\$
Gas/other expenses for tow vehicle	\$
Restaurant/lounge purchases	\$
Grocery/Alcohol purchases (supermarket, convenience store, rest stops)	\$
Overnight accommodations (motel, cabin, etc.)	\$
Snowmobile rentals	\$
Guides/tour packages	\$
Repairs performed during the trip on your snowmobile	\$
Maine Turnpike tolls & state land entrance fees	\$
Souvenirs, gifts, entertainment	\$
Clothing purchased during trip	\$
Miscellaneous expenses (PLEASE SPECIFY) _____	\$
_____	
Other trip-related expenses (PLEASE SPECIFY) _____	\$
_____	

## Section Five

*In this section we are interested in some information about the snowmobile that was registered for use in Maine for the 2018-19 season, under your name, with the Maine registration number identified on the cover of this questionnaire. Please remember that all the questions in this section are based on the use of the snowmobile identified above, even if you were not the primary user.*

32. Did you purchase (new or used) or take possession of the snowmobile identified on the cover page in Maine between April 15, 2018 and April 14, 2019? (CHECK ONE BOX)

- YES, I PURCHASED IT NEW → PLEASE ANSWER QUESTION 32a
- YES, I PURCHASED IT USED FROM A DEALER → PLEASE ANSWER QUESTION 32a
- YES, I PURCHASED IT USED IN A PRIVATE SALE → PLEASE ANSWER QUESTION 32a
- NO → SKIP TO QUESTION 33

32a. Not including the value of your trade in (if any), about how much did you pay for the snowmobile identified on the cover page? (FILL IN THE BLANK)

\$ \_\_\_\_\_

33. In this question we are interested in all expenditures made in Maine for snowmobile maintenance, repairs, accessories and storage of the snowmobile identified above during the period of April 15, 2018 and April 14, 2019. Please do not include other types of expenses, such as trip-related expenses reported above or clothing expenses to be reported later. Again, remember we are only interested in expenditures made in Maine for the snowmobile identified above during the period of April 15, 2018 to April 14, 2019. **DO NOT INCLUDE ONLINE PURCHASES FROM COMPANIES OUTSIDE OF MAINE.** (FILL IN EACH BLANK. RECORD A ZERO IF YOUR HOUSEHOLD HAD NO EXPENSE FOR A CATEGORY)

EXPENDITURE CATEGORY	Amount Spent In Maine
Snowmobile service at start/end of season	\$
Expendable parts (sparkplugs, belts, etc.)	\$
Performance parts (clutches, etc.)	\$
Snowmobile repairs (parts) not reported in Section 4	\$
Snowmobile repairs (labor)	\$
Snowmobile storage	\$
Snowmobile accessories (covers, saddle/tank bags, ski skins, studs, carbides, mirrors, etc.)	\$
Snowmobile insurance (yearly payment)	\$
Registration (snowmobile and trailer)	\$
Other expenses related to maintenance, repairs and accessories PLEASE SPECIFY _____	\$

34. In this question, we are interested in items purchased in **Maine** specifically for snowmobiling for the **primary rider** of the snowmobile identified on the cover of this survey during the period of April 15, 2018 to April 14, 2019. Such items include snowmobile clothing, helmets, and gloves purchased in **Maine** between April 15, 2018 and April 14, 2019. **DO NOT INCLUDE PURCHASES MADE OUTSIDE MAINE OR ONLINE PURCHASES FROM COMPANIES OUTSIDE THE STATE OF MAINE. (FILL IN EACH BLANK. RECORD A ZERO IF YOUR HOUSEHOLD HAD NO EXPENSE FOR A CATEGORY)**

Expenditure Category	Amount Spent in
Snowmobile clothing (suits, pants, coats, boots, gloves, etc.)	\$
Helmets	\$
Specialty items (balaclavas, face masks, gauntlets, helmet lenses, lens defogger, communicators, etc.)	\$
Other items purchased by/for primary rider	\$

35. Did you purchase a trailer in **Maine** between April 15, 2018 and April 14, 2019? (CHECK ONE BOX)

- I PURCHASED A NEW TRAILER → PLEASE ANSWER QUESITON 35a & 35b
- I PURCHASED A USED TRAILER FROM A DEALER→ PLEASE ANSWER QUESITONS 35a & 35b
- I PURCHASED A USED TRAILER IN A PRIVATE SALE→ PLEASE ANSWER QUESITONS 35a & 35b
- NO, I DID NOT PURCHASE A TRAILER → SKIP TO QUESTION 36

35a. Not including the value of your trade-in (if any), about how much did you pay for the trailer? (FILL IN THE BLANK)

\$ \_\_\_\_\_

35b. Was your trailer made by one of the following **Maine** companies: Alcom, On the Road, Mission Trailers? (CHECK ONE BOX)

- YES
- NO

36. For this question, please consider any snowmobile-related purchases you made between April 15, 2018 and April 14, 2019 in another state or online from companies based **outside of Maine**. Do not include any purchases made within the state, or online from companies **from Maine**. (PLEASE FILL IN THE BLANK FOR **EVERY** CATEGORY. IF THERE WAS NO EXPENSE IN A CATEGORY, PLEASE RECORD A ZERO)

<b>Expenditure Category</b>	<b>Outside of Maine</b>	<b>Online</b>
Snowmobiling clothing (suits, pants, coats, boots, gloves, etc.)	\$	\$
Helmets	\$	\$
Specialty items (balaclavas, face masks, gauntlets, helmet lenses, lens defogger, communicators, etc.)	\$	\$
Parts for maintenance (spark plugs, fuel filters, etc.)	\$	\$
Personal gear (helmets, gloves, jackets, etc.)	\$	\$
Sled accessories (covers, mirrors, saddle bags, etc.)	\$	\$
Other (PLEASE SPECIFY) _____	\$	\$

## Section Six

*In this last section we would like to ask some questions about your background to help us compare your answers to those of other people.*

37. What is your age? (FILL IN THE BLANK)

\_\_\_\_\_ YEARS OLD

38. Are you? (CHECK ONE BOX)

- MALE
- FEMALE
- PREFER NOT TO SAY

39. What is your five-digit Zip Code? (FILL IN THE BLANKS)

\_\_\_\_\_

40. How many people, **including yourself**, live in your household? (CHECK ONE BOX)

- ONE
- TWO
- THREE
- FOUR
- FIVE
- SIX OR MORE

41. How many years of school have you completed? (CHECK ONE BOX)

- SOME HIGH SCHOOL BUT NO DEGREE
- HIGH SCHOOL DEGREE OR EQUIVALENT (E.G. GED)
- SOME COLLEGE BUT NO DEGREE
- ASSOCIATE DEGREE
- BACHELOR DEGREE
- GRADUATE DEGREE

42. Do you have a personal computer in your home? (CHECK ONE BOX)

- YES → PLEASE ANSWER QUESTION 42a
- NO → SKIP TO QUESTION 43

42a. Do you have access to the internet on your home computer? (CHECK ONE BOX)

- YES
- NO

43. Do you own a smart phone capable of accessing the internet? (CHECK ONE BOX)

- YES
- NO

44. Do you own a camp or second home in **Maine** used (at least in part) for snowmobiling purposes? (CHECK ONE BOX)

- YES
- NO

45. Which of the following outdoor activities other than snowmobiling did you participate in between April 15, 2018 and April 14, 2019? (CHECK ALL THAT APPLY)

- |   |  |
|---|--|
| <input type="checkbox"/> FISHING                                    | <input type="checkbox"/> CANOEING/KAYAKING |
| <input type="checkbox"/> WALKING/HIKING                             | <input type="checkbox"/> JET SKIING        |
| <input type="checkbox"/> WINDSURFING                                | <input type="checkbox"/> X-COUNTRY SKIING  |
| <input type="checkbox"/> MOTORBOATING                               | <input type="checkbox"/> DOWNHILL SKIING   |
| <input type="checkbox"/> HUNTING                                    | <input type="checkbox"/> CAMPING           |
| <input type="checkbox"/> MOUNTAIN BIKING                            | <input type="checkbox"/> SAILING           |
| <input type="checkbox"/> BYCICLE TOURING                            | <input type="checkbox"/> GOLF              |
| <input type="checkbox"/> HORSEBACK RIDING                           | <input type="checkbox"/> GARDENING         |
| <input type="checkbox"/> SWIMMING                                   |  |
| <input type="checkbox"/> OBSERVING/PHOTOGRAPHING WILDLIFE OR NATURE |  |

46. Please check the response that comes closest to your total household income before taxes in 2018. (CHECK ONE BOX)

- |   |   |
|---|---|
| <input type="checkbox"/> LESS THAN \$10,000   | <input type="checkbox"/> \$60,000 TO \$79,999   |
| <input type="checkbox"/> \$10,000 TO \$19,999 | <input type="checkbox"/> \$80,000 TO \$99,999   |
| <input type="checkbox"/> \$20,000 TO \$29,999 | <input type="checkbox"/> \$100,000 TO \$119,999 |
| <input type="checkbox"/> \$30,000 TO \$39,999 | <input type="checkbox"/> \$120,000 TO \$149,999 |
| <input type="checkbox"/> \$40,000 TO \$49,999 | <input type="checkbox"/> \$150,000 OR MORE      |
| <input type="checkbox"/> \$50,000 TO \$59,999 |   |

If you have any other comments or concerns about snowmobiling in **Maine**, please use the space provided below to explain.

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**Thank you for completing the Maine Snowmobiling Survey. Your response will provide valuable information for the snowmobiling community in Maine.**

**Please return this survey using the postage paid envelope provided with this mailing.**

**APPENDIX B:**

**TOURIST SATISFACTION RATINGS BY REGION**

Aroostook County

280/899 Respondents

Factor	Very Dissatisfied	Dissatisfied	Neither Satisfied Nor Dissatisfied	Satisfied	Very Satisfied
Availability of regional trail maps	4	17	33	139	86
Trail grooming	2	13	17	145	100
Trail signing (Trail numbers, distance, hazard signs)	12	31	33	145	58
Trail width	1	9	20	161	89
Vehicle parking	1	11	96	118	48
Trailside services (gas, food, restrooms, etc.)	0	13	31	154	81
Proximity to populated areas	1	60	154	62	277
Variety of terrains	0	1	27	168	84
Scenery/natural beauty of area	0	0	8	98	174
Number of other people on trails	0	7	42	174	55
Availability of lodging	0	6	47	146	78
Nightlife and entertainment	2	3	123	111	38
Amount of law enforcement on trails	3	11	89	129	46
Courtesy of other riders	3	40	50	146	39
Quality of highway used to travel to trail	6	22	73	135	43
Club houses along trail	2	17	114	106	40
Availability of unmaintained trails	0	16	140	90	29

The Maine Highlands

398/899 Respondents

Factor	Very Dissatisfied	Dissatisfied	Neither Satisfied Nor Dissatisfied	Satisfied	Very Satisfied
Availability of regional trail maps	7	42	54	207	88
Trail grooming	2	22	34	229	108
Trail signing (Trail numbers, distance, hazard signs)	15	56	50	209	65
Trail width	1	13	31	259	93
Vehicle parking	1	19	121	196	52
Trailside services (gas, food, restrooms, etc.)	0	18	55	233	91
Proximity to populated areas	0	3	107	226	60
Variety of terrains	0	3	53	242	100
Scenery/natural beauty of area	0	0	8	158	231
Number of other people on trails	1	10	68	255	61
Availability of lodging	0	14	105	201	76
Nightlife and entertainment	2	15	194	146	35
Amount of law enforcement on trails	7	19	129	196	46
Courtesy of other riders	5	50	84	210	46
Quality of highway used to travel to trail	13	33	109	194	48
Club houses along trail	1	26	204	132	33
Availability of unmaintained trails	2	15	224	120	32

Kennebec and Moose River Valleys

360/899 Respondents

Factor	Very Dissatisfied	Dissatisfied	Neither Satisfied Nor Dissatisfied	Satisfied	Very Satisfied
Availability of regional trail maps	5	44	52	190	68
Trail grooming	3	23	24	206	103
Trail signing (Trail numbers, distance, hazard signs)	13	50	48	192	56
Trail width	3	14	32	238	72
Vehicle parking	1	11	142	155	41
Trailside services (gas, food, restrooms, etc.)	0	15	48	219	78
Proximity to populated areas	0	6	96	211	45
Variety of terrains	0	2	41	228	88
Scenery/natural beauty of area	0	0	12	139	207
Number of other people on trails	2	14	66	232	44
Availability of lodging	0	6	92	200	59
Nightlife and entertainment	0	10	168	152	26
Amount of law enforcement on trails	3	8	131	175	41
Courtesy of other riders	4	52	91	173	39
Quality of highway used to travel to trail	12	29	108	176	35
Club houses along trail	2	30	198	111	18
Availability of unmaintained trails	0	15	211	111	20

Maine Lakes and Mountains

343/899 Respondents

Factor	Very Dissatisfied	Dissatisfied	Neither Satisfied Nor Dissatisfied	Satisfied	Very Satisfied
Availability of regional trail maps	6	51	44	173	68
Trail grooming	2	22	24	181	112
Trail signing (Trail numbers, distance, hazard signs)	10	51	47	165	69
Trail width	3	14	35	215	76
Vehicle parking	2	19	144	119	49
Trailside services (gas, food, restrooms, etc.)	1	16	56	185	84
Proximity to populated areas	0	5	96	174	66
Variety of terrains	0	2	44	202	95
Scenery/natural beauty of area	0	0	11	140	191
Number of other people on trails	4	10	72	213	42
Availability of lodging	0	6	105	165	62
Nightlife and entertainment	1	10	162	122	42
Amount of law enforcement on trails	7	19	111	162	42
Courtesy of other riders	8	50	78	163	42
Quality of highway used to travel to trail	7	32	114	152	37
Club houses along trail	3	31	197	89	20
Availability of unmaintained trails	2	16	207	90	25

Downeast and Acadia

32/899 Respondents

Factor	Very Dissatisfied	Dissatisfied	Neither Satisfied Nor Dissatisfied	Satisfied	Very Satisfied
Availability of regional trail maps	1	3	3	13	12
Trail grooming	0	1	3	14	14
Trail signing (Trail numbers, distance, hazard signs)	1	4	5	16	6
Trail width	0	2	2	20	8
Vehicle parking	0	2	8	15	7
Trailside services (gas, food, restrooms, etc.)	0	4	5	15	8
Proximity to populated areas	0	0	9	18	5
Variety of terrains	0	0	5	15	12
Scenery/natural beauty of area	0	0	0	17	15
Number of other people on trails	0	1	5	20	6
Availability of lodging	0	1	9	12	10
Nightlife and entertainment	0	0	16	10	6
Amount of law enforcement on trails	0	0	9	16	7
Courtesy of other riders	0	2	3	20	7
Quality of highway used to travel to trail	3	5	6	14	4
Club houses along trail	0	1	12	14	5
Availability of unmaintained trails	0	0	16	12	4

The Mid-Coast

20/899 Respondents

Factor	Very Dissatisfied	Dissatisfied	Neither Satisfied Nor Dissatisfied	Satisfied	Very Satisfied
Availability of regional trail maps	2	0	5	10	3
Trail grooming	0	1	2	12	5
Trail signing (Trail numbers, distance, hazard signs)	0	2	3	12	3
Trail width	0	0	4	13	3
Vehicle parking	0	1	8	8	3
Trailside services (gas, food, restrooms, etc.)	0	0	4	14	2
Proximity to populated areas	0	0	5	14	1
Variety of terrains	0	0	3	15	2
Scenery/natural beauty of area	0	0	0	7	13
Number of other people on trails	0	0	1	16	3
Availability of lodging	0	1	6	10	3
Nightlife and entertainment	0	1	8	10	1
Amount of law enforcement on trails	0	1	6	13	0
Courtesy of other riders	0	2	2	14	2
Quality of highway used to travel to trail	0	2	5	12	1
Club houses along trail	0	2	13	5	0
Availability of unmaintained trails	0	2	10	7	1

Greater Portland and Casco Bay

21/899 Respondents

Factor	Very Dissatisfied	Dissatisfied	Neither Satisfied Nor Dissatisfied	Satisfied	Very Satisfied
Availability of regional trail maps	2	2	6	10	1
Trail grooming	0	0	2	14	5
Trail signing (Trail numbers, distance, hazard signs)	0	2	3	9	7
Trail width	0	0	4	13	4
Vehicle parking	0	1	9	7	2
Trailside services (gas, food, restrooms, etc.)	0	1	5	12	3
Proximity to populated areas	0	0	8	12	0
Variety of terrains	0	0	3	14	3
Scenery/natural beauty of area	0	0	0	10	10
Number of other people on trails	0	1	2	16	1
Availability of lodging	0	0	8	11	1
Nightlife and entertainment	0	0	11	9	0
Amount of law enforcement on trails	1	0	7	13	0
Courtesy of other riders	0	1	4	14	2
Quality of highway used to travel to trail	0	1	8	12	0
Club houses along trail	0	0	12	7	1
Availability of unmaintained trails	0	0	12	6	2



Southern Maine

38/899 Respondents

Factor	Very Dissatisfied	Dissatisfied	Neither Satisfied Nor Dissatisfied	Satisfied	Very Satisfied
Availability of regional trail maps	1	6	6	20	4
Trail grooming	1	1	1	22	13
Trail signing (Trail numbers, distance, hazard signs)	0	4	7	21	5
Trail width	0	3	6	23	5
Vehicle parking	0	2	15	14	3
Trailside services (gas, food, restrooms, etc.)	0	0	8	22	7
Proximity to populated areas	0	0	12	22	2
Variety of terrains	0	0	6	26	4
Scenery/natural beauty of area	0	0	1	16	19
Number of other people on trails	1	0	4	26	5
Availability of lodging	0	0	12	18	5
Nightlife and entertainment	0	0	23	10	3
Amount of law enforcement on trails	1	4	8	16	9
Courtesy of other riders	0	4	14	16	3
Quality of highway used to travel to trail	1	3	20	9	4
Club houses along trail	1	3	20	9	4
Availability of unmaintained trails	0	1	25	8	1

**APPENDIX C:**

**OPINIONS ON MAINE GUIDES AND BACKCOUNTRY RIDING**

Maine Guide Opinions

Statement	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
I would feel safer with a Maine Guide leading the tour.	166	188	255	92	41
A Maine Guide would increase my ability to navigate the trails.	163	218	269	146	44
A Maine Guide would increase my knowledge of acceptable riding practices.	167	238	293	104	35
A Maine Guide would increase my riding enjoyment.	214	237	302	61	23
I would experience new areas and routes that I would not have ventured on without a Maine Guide	144	172	221	240	54
I would be able to safely snowmobile in backcountry conditions because of a Maine Guide.	124	157	283	216	52
I would be a more confident snowmobiler with a Maine Guide.	196	226	303	85	31

## Backcountry Riding

Statement	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
Backcountry riding should be allowed on public land.	213	221	252	118	55
Backcountry riders should have written permission to ride on private lands.	102	121	226	268	156
Backcountry riding should only be allowed in designated areas.	35	30	163	344	293
Backcountry riders should be required to take a land-owner relations course.	101	129	263	257	119
Backcountry riders should be required to have insurance for search and rescues.	299	283	235	37	19
Backcountry riders should be required to take a backcountry-specific safety course.	173	180	274	189	57
Backcountry riding should not be allowed on private land.	122	128	292	249	82
Backcountry riders should be required to use a Maine Guide.	144	154	273	208	95

## Backcountry Activity

Statement	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
I have noticed an increase in backcountry riding.	10	54	403	321	85
I am concerned backcountry riding may lead to a loss of public access to private land.	25	71	288	344	144
Backcountry riding damages new growth in forest land.	76	201	366	169	61
Backcountry riding is harmful to wildlife.	139	308	340	42	23
Backcountry riding is dangerous.	10	54	403	321	85
I have noticed an increase in backcountry riding.	25	71	288	344	144

**APPENDIX D:**

**RENTER SURVEY AND INTERVIEW PROMPTS**

Maine Snowmobile Renter Survey

1. Have you ever ridden a snowmobile before your trip today? (CHECK ONE BOX)
  - YES
  - NO
  
2. On how many snowmobile trips to Maine, including your trip today, have you rented a snowmobile? (FILL IN THE BLANK)  
 \_\_\_\_\_ trips
  
3. Please indicate whether you agree or disagree with the following statements about snowmobile trips led by registered Maine Guides. (CIRCLE ONE NUMBER FOR EACH ITEM)

Statement	Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
I would feel safer with a Maine Guide leading the tour.	1	2	3	4	5
A Maine Guide would increase my ability to navigate the trails.	1	2	3	4	5
A Maine Guide would increase my knowledge of acceptable riding practices.	1	2	3	4	5
A Maine Guide would increase my riding enjoyment.	1	2	3	4	5
I would experience new areas and routes that I would not have ventured on without a Maine Guide.	1	2	3	4	5
I would be able to safely snowmobile in backcountry conditions because of a Maine Guide.	1	2	3	4	5
I would be a more confident snowmobiler with a Maine Guide.	1	2	3	4	5

4. Please indicate whether you agree or disagree with the following statements based on what you personally would look for in a registered Maine Guide. (CIRCLE ONE NUMBER FOR EACH STATEMENT)

I prefer a snowmobile guide who...	Strongly Agree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
...feels genuine concern for the tour participants.	1	2	3	4	5
...has the skills necessary to lead a safe snowmobile tour.	1	2	3	4	5
...is able to adapt to the changing needs of the group.	1	2	3	4	5
...is able to make the best trip-related decisions for the group.	1	2	3	4	5
...is trustworthy.	1	2	3	4	5
...demonstrates emotional stability throughout the tour.	1	2	3	4	5

5. How many times have you participated in a snowmobile trip led by a Maine Guide (FILL IN THE BLANK)?  
 \_\_\_\_\_ trips
6. Did you, or someone in your party, hire a Maine Guide to lead your trip today (CHECK ONE BOX)?
- YES
- NO
7. Prior to your trip today, rate your knowledge of the Maine Guide Program. For instance, this could include knowing that the State of Maine requires all recreation guides to submit to background checks and be tested on their expertise (CIRCLE ONE ANSWER)?
- |                             |                           |                           |                             |                            |
|-----------------------------|---------------------------|---------------------------|-----------------------------|----------------------------|
| Not at all<br>knowledgeable | Slightly<br>knowledgeable | Somewhat<br>knowledgeable | Moderately<br>knowledgeable | Extremely<br>knowledgeable |
| <input type="checkbox"/>    | <input type="checkbox"/>  | <input type="checkbox"/>  | <input type="checkbox"/>    | <input type="checkbox"/>   |
8. Did knowledge of the Maine Guide program effect your decision to hire (or not hire) a Maine Guide to lead your snowmobile trip today? (CIRCLE ONE ANSWER)
- |                          |                          |                          |                          |                          |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| No<br>effect             | Slight<br>effect         | Somewhat<br>of an effect | Moderate<br>effect       | Extreme<br>effect        |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
9. If a Maine Guide led your trip today, please indicate to what degree your Maine Guide possessed the following characteristics. If a Maine Guide did not lead your tour, please skip to this question. (CIRCLE ONE ANSWER FOR EACH QUESTION)

My Maine Guided...	Strongly Agree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
...felt genuine concern for the tour participants.	1	2	3	4	5
...was the skills necessary to lead a safe snowmobile tour.	1	2	3	4	5
...was able to adapt to the changing needs of the group.	1	2	3	4	5
...was able to make the best trip-related decisions for the group.	1	2	3	4	5
...was trustworthy.	1	2	3	4	5
...demonstrated emotional stability throughout the tour.	1	2	3	4	5

10. Backcountry snowmobiling is riding which takes place off of groomed snowmobile trails. Have you ever ridden a snowmobile in the backcountry with or without a Maine Guide? (CHECK ONE BOX)
- YES, WITH A MAINE GUIDE
- YES, WITHOUT A MAINE GUIDE
- YES, WITH AND WITHOUT A MAINE GUIDE
- NO, I HAVE NEVER RIDDEN IN THE BACKCOUNTRY

11. Please indicate whether you agree or disagree with the following statements about backcountry snowmobile riding in Maine. (CIRCLE ONE NUMBER FOR EACH STATEMENT)

Topic	Strongly Agree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
Backcountry riding should not be allowed on private land.	1	2	3	4	5
Backcountry riders should have written permission to ride on private lands.	1	2	3	4	5
Backcountry riding should be allowed on private land.	1	2	3	4	5
Backcountry riding should only be allowed in designated areas.	1	2	3	4	5
Backcountry riders should be required to use a Maine Guide.	1	2	3	4	5
Backcountry riders should be required to take a backcountry-specific safety course.	1	2	3	4	5
Backcountry riders should be required to take landowner relations course.	1	2	3	4	5
Backcountry riders should be required to have insurance for search and rescues.	1	2	3	4	5
I have noticed an increase in backcountry riding.	1	2	3	4	5
I am concerned backcountry riding may lead to a loss of public access to private land.	1	2	3	4	5
Backcountry riding damages new growth in forest land.	1	2	3	4	5
Backcountry riding is harmful to wildlife.	1	2	3	4	5
Backcountry riding is dangerous.	1	2	3	4	5

12. Are you? (CHECK ONE BOX)

- MALE       FEMALE       PREFER NOT TO SAY

13. What is your age? (FILL IN THE BLANK)

\_\_\_\_\_ YEARS OLD

14. How many years of school have you completed? (CHECK ONE BOX)

- SOME HIGH SCHOOL BUT NO DEGREE  
 HIGH SCHOOL DEGREE OR EQUIVALENT (E.G. GED)  
 SOME COLLEGE BUT NO DEGREE  
 ASSOCIATE DEGREE  
 BACHELOR DEGREE  
 GRADUATE DEGREE

15. Are you a Maine Resident? (CHECK ONE BOX)
- YES
  - NO
16. How many years have you snowmobiled? (FILL IN THE BLANK)
- \_\_\_\_\_ YEARS
17. Do you currently own, or have you ever owned a snowmobile? (CHECK ONE BOX)
- YES, I CURRENTLY OWN A SNOWMOBILE
  - YES, I USED TO OWN A SNOWMOBILE BUT DO NOT NOW
  - NO I HAVE NEVER OWNED A SNOW MOBILE
18. Have you ever ridden a snowmobile in another state or Canadian province? (CHECK ONE BOX)
- YES
  - NO
19. For how many years have you been going snowmobiling? (CHECK ONE BOX)
- \_\_\_\_\_ YEARS

### Post-Questionnaire Interview

Thank you for filling out the questionnaire. Do not write on questions 13-16. Please return this questionnaire to the survey provider for a short interview based on questions 13-16.

20. Why are you renting today?
21. What was the most important reason you chose to hire (or not hire) a Maine Guide to lead your trip today?
22. How do you feel the certification and registration of guides through the Maine Guide Program effects the quality of guides within the state?
23. What leadership-related qualities would you expect from a Maine Guide?
24. Would you describe any situations you encountered on your snowmobile trip that were made better (or could have been) by the presence of a Maine Guide?
- 25a. How do Maine's snowmobile trails differ from other states you have sledged in?
- 25b. How does your perception of the Maine Guide differ from guiding programs in other states?



**APPENDIX E:**  
**GUIDE INTERVIEW PROMPTS**

- Demographic

- o What is your age?
- o What is your gender?
- o What Maine Guide Licenses have you held?
- o How many years have you held a Maine Guide License?
- o For how many years have you been guiding snowmobile tours?

- Maine Guide Program Opinions

- o What do you feel (if any) are the positive aspects of the Maine Guide program?
- o What do you feel (if any) are the negative aspects of the Maine Guide program?
- o How do you feel about the recently implemented requirement for Maine Guide candidates to undergo background checks?

- Experiences

- o What percentage (approximately) of your clients are aware of the Maine requirement for all recreation guides to be certified through the Maine Guide program?
- o For what reasons have recreationists told you they hire snowmobile guides?
- o What percentage of your clients do you believe would be unable to snowmobile safely, or would not choose to participate in the activity, without a guide?
- o How do you believe the Maine Guide program compares to guide services in other states which may not require guide certification?

- Skills and Leadership

- o What type of preparation does it take to lead a snowmobile tour?
- o What specific skills are required to lead a snowmobile tour?
- o What leadership qualities are needed to guide snowmobile tours?
- o What leadership qualities do you believe were tested on the Maine Guide exam?
- o How do you believe the Maine Guide program affects the quality of Maine Guide leadership?

## **BIOGRAPHY OF THE AUTHOR**

Ian Hathaway was born in Harpswell, Maine and graduated from the Maine School of Science and Mathematics in 2013. Ian earned his degree in Parks, Recreation, and Tourism from the University of Maine in 2017. Ian became a Maine Sea Kayaking Guide in 2017 and spent three years guiding out of Castine, Maine. He is also an Eagle Scout. He is a candidate for the Master of Science degree in Forest Resources from the University of Maine in May 2020.