

Pennsylvania's Snowmobile Riders and their Needs

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Statewide Snowmobile Users Survey

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Executive Summary

A survey of registered snowmobile owners in Pennsylvania was conducted during the spring of 2005. Over 1,400 riders were queried as to their socio-demographic profile, attitudes, activities, expenditures, and snowmobiling needs.

The demographic profile of the snowmobiling audience indicates that for many this is a white, rural, family activity. The age distribution of riders was bimodal, with a primary peak in the 40 to 49 year range, but a secondary peak in the 10 to 15 year range. Over 40% of the riders were women. Over 70% of the respondents had annual family incomes over \$50 thousand. Half of the respondents had over 20 years of riding experience.

Trail and leisure riding was an important snowmobile activity to over 90% of the audience. Sport riding and aggressive recreational riding were also common, but very few riders reported participating in racing or other competitive activities. The number one activity while riding recreationally was spending time with family and friends, reinforcing the family nature of this activity.

While relatively few of the riders had completed a snowmobile safety course (16%), 90% of those that had rated it as good or excellent. Younger riders were much more likely to have taken safety courses (over 30% of those between 10 and 20 years of age). Overturns were a common accident; 41% of the respondents reported at least one incident in their past. Other incidents were less common; 25% reported a collision with an obstacle and 6% with another vehicle. Accident rates for other household members were lower, but it's not clear that the respondents had complete information about these events.

The needs of the snowmobiling public center around trail conditions. Maintenance, grooming, and snow alongside roads were three of the top five features important to snowmobile owners. Also of chief concern were trail systems allowing riders to string together miles of trails across many ownerships. The remaining top five features were enhancement of trail systems and access to secondary roads. In response to a similar question, riders rated trail grooming and PA Game Commission riding opportunities as having the greatest needs. Next came Rails to Trails riding, DCNR riding, and riding opportunities on private land.

The importance of extended trail systems to the snowmobiling experience may help explain the large proportion of snowmobile owners who were members of a snowmobile club or organization. When compared to the ATV riding audience, such membership was much more common, perhaps owing to the relative importance of cooperative trail networks and maintenance sponsored by the organizations. The disparity may also reflect the relatively shorter period of time such organizations have had to form for the ATV audience.

Most riders were satisfied or very satisfied with their snowmobiling experience in Pennsylvania (63%). Trail grooming, maintenance, and general conditions were the chief complaints of those with negative satisfaction.

Reported problems and conflicts were low. However, trespassing and riding in illegal areas were identified as a problem by 46% of the respondents. Excessive speed was another problem identified by 43% of the respondents.

Snowmobile riders spent large sums of money on their activity. Much of this was in pursuit of snow and extensive trail networks. The average respondent took 9.0 day trips within Pennsylvania and another 4.3 day trips out-of-state. They also reported 3.6 overnight trips within the state and another 3.0 overnight trips out-of-state. The average owner reported 224 gallons of in-state fuel purchases to transport and ride their sleds. They also purchased another 202 gallons out-of-state for the same purpose. In addition to gasoline, they also spent significant amounts on food, lodging, and ancillary trip expenditures for a total of \$350 per in-state trip and \$933 per out-of-state trip. In addition, respondents reported annual expenditures of over \$4,000 on sleds and \$750 on associated equipment.

The use of snowmobile registration funds to groom public trails received overwhelming support. Support of the use of funds to groom private trails received somewhat less support. Club members were more likely to support the latter, perhaps reflecting the access to private trails available to club members. Riders indicated that they were willing to pay an average of \$40 for a seasonal pass and \$10 for a daily pass to a riding facility. There was no significant difference between willingness to pay for public versus private facilities. Three-quarters were willing to pay higher registration fees if the money went toward developing public trails. Two-thirds would support an increase to improve riding opportunities on private lands.

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Introduction

Background

Snowmobiling is an important winter activity in Pennsylvania, with over 46,000 sleds registered in the Commonwealth. Act 68 of 2001 amended Chapter 77 of the Pennsylvania Vehicle Code to allow the Department of Conservation and Natural Resources (DCNR) to better regulate the use of all terrain vehicles (ATVs) and snowmobiles in Pennsylvania. In conjunction with this, the Snowmobile and ATV Advisory Committee (SAAC) was created to advise DCNR on snowmobile and ATV recreation.

A recent survey of ATV owners highlighted the diversity of opinion about the needs of that group (Lord et al. 2004). This study will parallel the ATV study to determine the needs of registered snowmobile owners in Pennsylvania. A study by Raffield and Guerrisi (2000) identified the economic impact of snowmobiling in Pennsylvania, via a survey of members of the Pennsylvania State Snowmobiling Association. The results of this current study will be compared to these two previous efforts.

Current riding opportunities

Pennsylvania contains over 3,000 miles of publicly available snowmobile trails and joint use roads. These include 1,976 miles of joint use roads in State Forests (DCNR Bureau of Forestry 2005), over 280 miles of trails and joint use roads in State Parks (DCNR Bureau of State Parks 2006), 377 miles of joint use roads in State Game Lands (PA Game Commission 2005), and 366 miles of trails and joint use roads in the Allegheny National Forest (ANF 2005).

Objectives

In order to better understand and manage snowmobile usage in the Commonwealth, the SAAC contracted with Penn State's School of Forest Resources to survey registered snowmobile owners. The survey was designed to ascertain the views and attitudes of snowmobile owners as to the recreational needs of snowmobile riders in Pennsylvania. In addition, demographic data was collected to characterize this audience. A further goal of the survey was to maintain statistical reliability down to eight tourism promotion

regions in the state (Appendix A). Finally, a comparison of the needs and attitudes of snowmobile owners with ATV owners would be presented.

Procedures

Survey design

A survey was created by Penn State in consultation with DCNR and SAAC (see Appendix C). A random selection of registered snowmobile riders were contacted by mail using a modified Dillman protocol (Dillman 1978). A six-page survey accompanied by a letter explaining the study and a pre-addressed, postage paid return envelope was sent to 3,000 registered snowmobile owners using a mailing list provided by DCNR during the third week of April, 2005. Two weeks later, a postcard reminder was sent to all those who had not responded. This was followed two weeks later by another mailing of the survey, another letter, and a return envelope to those who had yet to respond. Data collection was cut off approximately one month after the third mailing.

Results

Pennsylvania's snowmobile riders

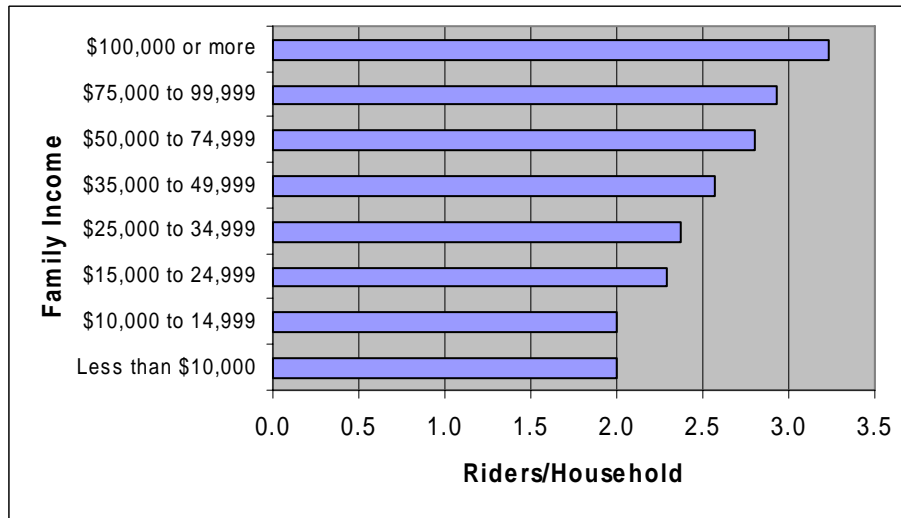
A total of 1,410 usable surveys were obtained by this procedure. Of the original 3,000 addresses, only 81 were returned as undeliverable. A response rate of 48% was obtained, net of the undeliverable addresses. The high response rate and low number of undeliverable addresses were credited to the direct interest in snowmobiling needs of the target audience and in the quality of the mailing list as provided by DCNR.

In addition to reporting on the average response to the survey, the results are presented by region, gender, age, education, household income, and membership in a snowmobiling organization where the differences are both significant and substantive.

Number of snowmobiles and riders

The average snowmobile household had 2.5 snowmobiles and 2.8 riders. Households where the respondent was a member of a snowmobile organization had more snowmobiles on the average (2.8 sleds), as did those where the respondent was a woman (3.1 sleds). Households where the respondent was a snowmobile club member also had significantly more riders (3.0 people). There was also a general trend to have more riders in households with higher incomes (Figure 1).

Figure 1. Riders per household in Pennsylvania, by family income (2005).

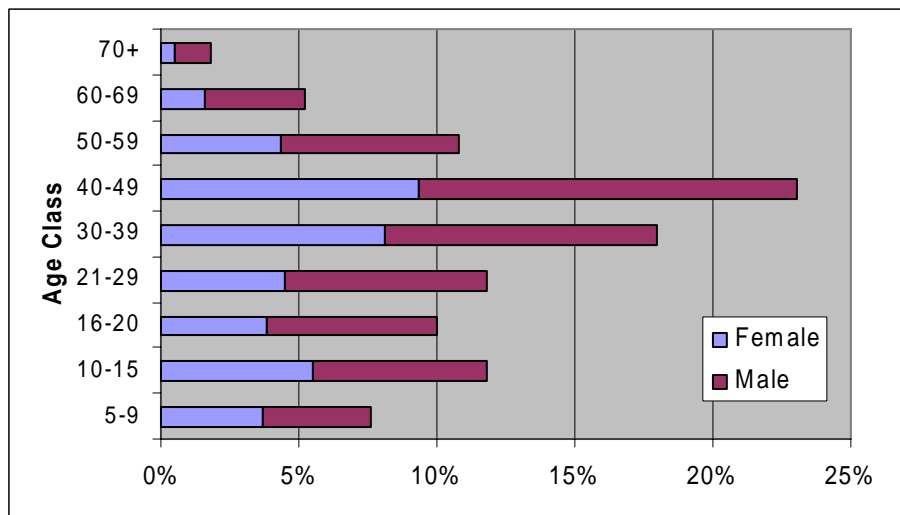


Demographics

Age/Gender profile

Snowmobile owners tend to be rural, white, males. Just under 1% of the respondents indicated a race other than white. Over 92% of the respondents indicated their gender as male. In contrast, respondents indicated that over 40% of household riders were female. Rider ages ranged from five years old to over 70. The median age was in the 30 to 39 year range. The large number of riders between 5 and 15 years as well as the number of female riders are indicative of the family orientation of many participants (Figure 2).

Figure 2. Gender of snowmobile riders in Pennsylvania, by age class (2005).



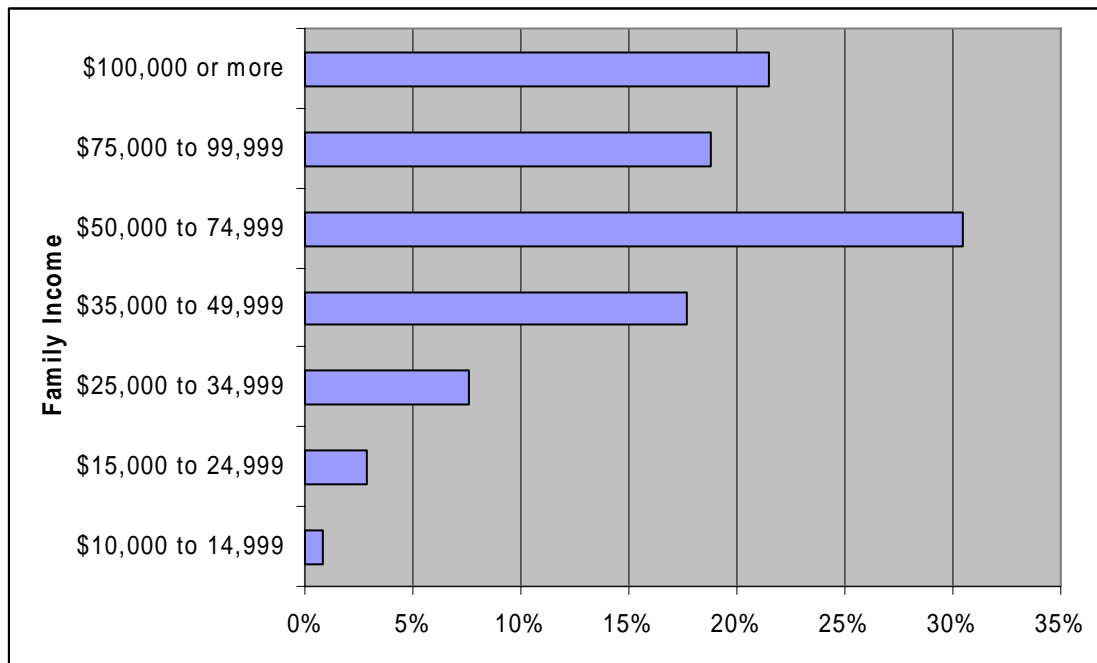
Regional breakdown

Eighty-six percent of the respondents indicated that they live in the Commonwealth.¹ The majority of the respondents classified where they live as rural (63%). Sizable numbers reported suburban residences (19%) or lived in towns (14%).

Education and income

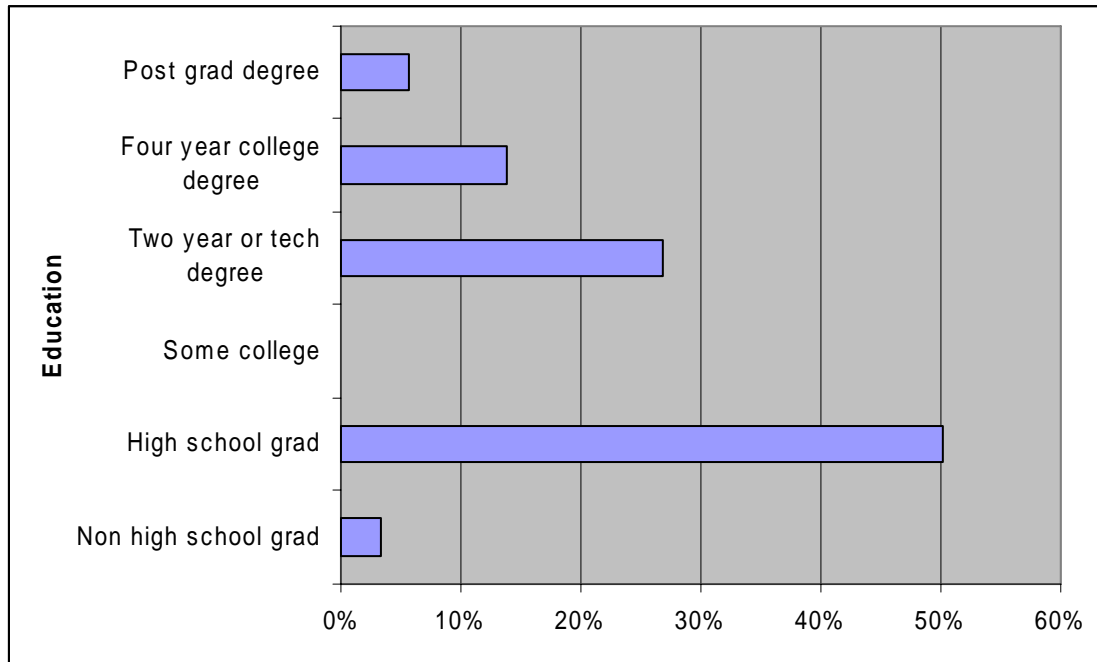
Over 70% of the respondents had family incomes over \$50,000 per year (Figure 3). The largest cohort was the \$50,000 to \$75,000 range (30%), followed by families with incomes over \$100,000 per year (21%). Half of the registered owners had a high school degree, but no further education (Figure 4). Over eighty percent had not obtained a college degree.

Figure 3. Family income of snowmobile riders in Pennsylvania (2005).



¹ The Commonwealth requires all snowmobiles used in the Pennsylvania, unless registered in a state with reciprocity, to have a Pennsylvania registration.

Figure 4. Educational attainment of snowmobile owners in Pennsylvania (2005).

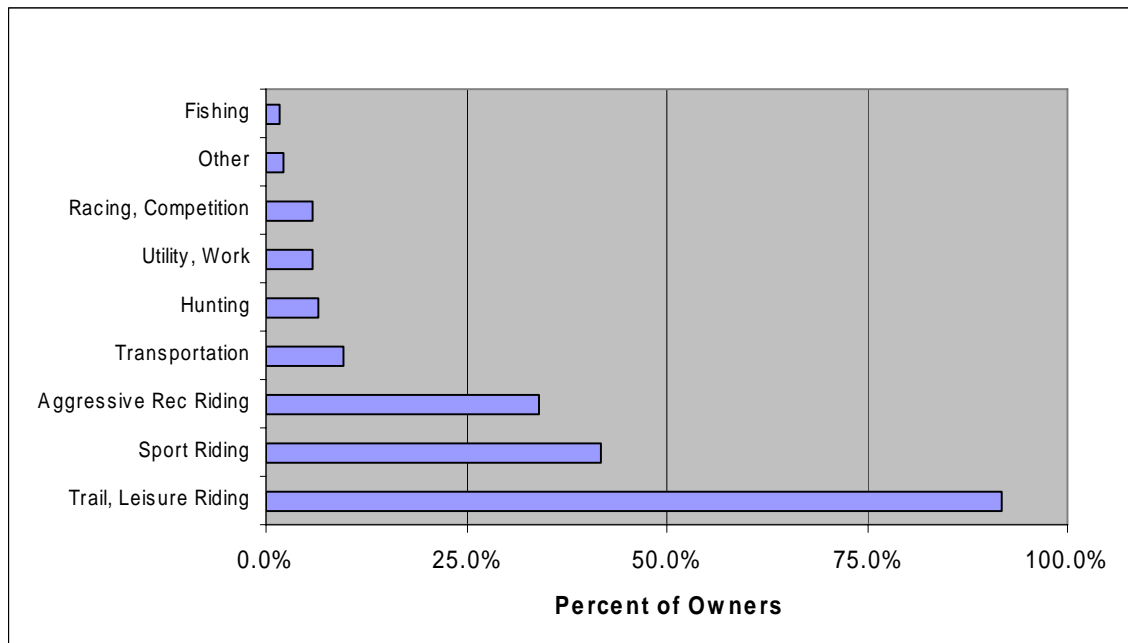


Rider Activities

Snowmobile activities

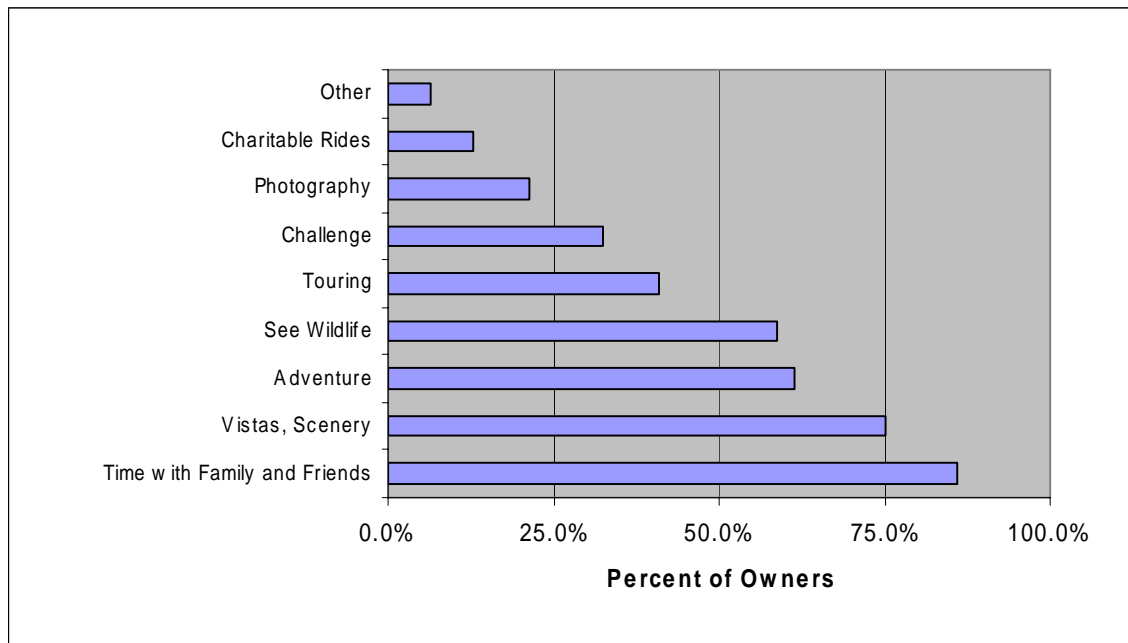
Snowmobile owners were asked to indicate the activities for which snowmobiles were used in their households. Trail and leisure riding was the principal activity, identified by 92% of the respondents (Figure 5). Sport riding (42%) and aggressive recreational riding (34%) were the next most common activities. However, racing or competition was only selected by 6% of the audience. Relatively few used their sleds to facilitate hunting (6%) or fishing (2%). A small but significant percentage used their machines for transportation (10%) or for utility or work functions (6%).

Figure 5. Use of snowmobiles in respondent households (2005).



When asked to describe their recreational riding, a broad variety of purposes were revealed (Figure 6). Spending time with family and friends was the number one recreational activity (86%) of respondents, reinforcing the family nature of this activity as identified in the age profile above. Viewing vistas and scenery was the number two recreational activity (75%), followed by adventure (61%) and wildlife viewing (59%). Other activities included touring (41%), challenge riding (33%), photography (21%), and charitable rides (13%).

Figure 6. Recreational uses of snowmobiles in Pennsylvania (2005).



Other activities

When asked what other types of recreational activities they participated in, 64% of the respondents reported their involvement in hunting, 50% fishing, 49% scenic driving, 48% ATV riding, 47% camping, and 40% boating. Fewer riders were involved with hiking (28%), wildlife viewing (23%), biking (21%), 4-wheel driving (21%) or off-road motorcycling (17%).

Miles of riding

Because of the influence of annual snowfall on the amount of riding in which a snowmobile owner may partake, the mileage for the prior three winters was obtained and averaged. The median for this average mileage was 450 miles per year. One-quarter of the respondents rode an average of 200 miles or less per year. Another quarter of registered snowmobile owners rode between 200 and 450 miles per year. The next quarter reported between 450 and 900 miles per year on the average. The last quarter of owners indicated that they rode an average of 900 or more miles per year.

Years of experience

Half the riders had 20 years or more of snowmobiling experience and one-quarter of the respondents had 30 years or more of experience. Of the remainder, one-quarter had between 8 and 20 years of experience and the remaining quarter had 8 years or less of riding in their background.

Snowmobile organizations

Almost half of the respondents were members of some snowmobiling club or organization. Over 30% were members of the Pennsylvania State Snowmobiling Association (PSSA). Of those who were not PSSA members, 35% indicated that they were unaware of the organization. A further 17% stated that they had no reason to join. A smaller number (6%) said that they had never been asked to join, perhaps indicating that they might be so inclined if asked.

In addition to PSSA, many other snowmobile clubs and organizations existed. Over 32% of the respondents were a member of one or more of these other clubs. Chief among them were the God's Country Black Forest (9.7%), NEP Sno-Trails (6.3%), Laurel Highland Snowmobile Club (5.9%). In many cases, these groups were themselves members of PSSA.

Favorite riding areas in PA

Respondents were asked to indicate their favorite riding areas. Logically, their favorite destinations varied according to the region in which they resided. The results are somewhat complicated by the use of local names for certain areas. Overall, the Allegheny National Forest was a key destination for snowmobiling in Pennsylvania, with riders from three of the eight regions placing it at the top of their list (Table 1 through Table 8). The Pennsylvania Grand Canyon was also an important destination, appearing in first or second place in three of the eight lists. A variety of state parks appear on many lists, though these would be jumping off points for other trail systems. In the Philadelphia region, respondents reported their own land as the number one riding place, reflecting the limited opportunities in this area of the state. Other important areas were dictated by the region of the respondent (Laurel Highlands in the Laurel Highlands Region, NEP Sno-Trails in the Pocono Region, and the Black Forest area in the Valleys of the Susquehanna Region).

Table 1. Favorite sledding areas of riders from the Allegheny National Forest Region (2005).

ANF	21%
PA Grand Canyon	6%
SB Elliot State Park	6%
Coudersport	4%
Parker Dam State Park	4%
Susquehannock State Forest	3%
Denton Hill	2%

Table 2. Favorite sledding areas of riders from the Lake Erie Region (2005).

ANF	24%
Erie County	9%
Corry	4%
Wattsburg	4%
Pymatuning State Park	3%
Own Land	2%
Kinzua Area	2%
Warren	2%

Table 3. Favorite sledding areas of riders from the Hershey/Gettysburg/Dutch Country Region (2005).

PA Grand Canyon	9%
North Central Snowmobile Trails	4%
Private Land	4%
R B Winter State Park	4%
Cross Fork	3%
Bald Eagle State Forest	3%
Germainia	3%
Potato city	3%
Susquehannock State Forest	3%
Black Forest	3%

Table 4. Favorite sledding areas of riders from the Laurel Highlands/Southern Alleghenies Region (2005).

Laurel Highlands	11%
Laurel Mountain	9%
ANF	8%
SB Elliot State Park	7%
SGL	3%
Gallitzen State Forest	3%
Own Land	2%
Sproul State Forest	2%
Seven Springs	2%
Forbes State Forest	2%

Table 5. Favorite sledding areas of riders from the Philadelphia and its Countryside/Lehigh Valley (2005).

Own Land	7%
Promise Land	6%
Hickory Run State Park	6%
Potato city	4%
Pecks Pond	4%
Pocono Mts.	4%

Table 6. Favorite sledding areas of riders from the Pittsburgh Region (2005)

ANF	34%
Laurel Highlands	11%
Moraine State Park	4%
Laurel Mountain	3%
PA Grand Canyon	2%
Seven Springs	2%
Forbes State Forest	2%
Erie County	2%
Kane	2%

Table 7. Favorite sledding areas of riders from the Pocono Mountains/Endless Mountains Region (2005).

NEP Sno-Trails	6%
PA Grand Canyon	4%
SGL	4%
Forest City	4%
Montrose	4%
Coudersport	3%
Promise Land	3%
Rail to Trails	3%

Table 8. Favorite sledding areas of riders from the Valleys of the Susquehanna Region (2005).

Black Forest	13%
Bald Eagle State Forest	8%
R B Winter State Park	8%
Mile Run	4%
PA Grand Canyon	2%
Coudersport	2%
Private Land	2%
Half Way Dam	2%

Safety

Among all riders in the households, 16% had completed a safety class. The greatest completion rates for a course were in the age groups 10-15 (32%) and 16-20 (31%). The rest of the household age groups had 15% or less completing a safety course.

The quality of safety classes was ranked good to excellent, with 2% of those having completed a course indicated the class was poor, 8% indicating the class was fair, 51%

indicating the class was good, and 39% indicating the class was excellent. Although small, there was a significant difference between organization (93%) and non-organization (86%) members ranking a course good or excellent.

When asked if a safety course should be required, 55% of the respondents indicated no and 45% indicated yes. There was a significant difference between members and non members of a snowmobile organization. Fifty percent of organization members and 41% of non members favored required safety courses. There was also a significant difference in attitude by age. Agreement that safety courses should be required increased with age. The highest agreement was 64% by people over 70; the lowest was 11% by people 16-20 years old. There were significant differences across regions. People in Pittsburgh (52%) and Philadelphia (49%) were the most supportive of safety courses, those in the Susquehanna (35%) the least. Agreement about required safety courses was about even for men and women.

When asked about their willingness to pay for a safety course, 72% of the respondents indicated no and 28% indicated yes. The mean amount respondents were willing to pay was \$22.62. There was a significant difference between organization members (34% yes) and non members (23% yes), and between women (42% yes) and men (27% yes) in willingness to pay. Willingness to pay was consistently low across regions, but, while remaining low, increased with age and income (no greater than 40% agreement in any respondent category).

When questioned about accidents, 41% of the respondents indicated they had overturned, 29% indicated a household member had overturned; 25% indicated they had collided with an obstacle, 18% indicated that a household member had collided with an obstacle; 6% indicated they had collided with another vehicle, 4% indicated that a household member had collided with another vehicle; 3% indicated they had an accident while loading or unloading, and 2% indicated that a household member had an accident while loading or unloading.

Overturns were the number one accident with 41% of respondents reporting one. There were significant differences between organizational members (44% yes) and non members (39% yes) and between males (44% yes) and females (25% yes). There were no significant differences across regions. Overturns remained fairly high across ages, with 49% of 21-29 year olds and 46% of people over 70 reporting one. When considering household members, 29% of riders had overturned and there was again a significant difference between organizational members (32% yes) and non members (26% yes). There was no significant difference between men (29% yes) and women (29% yes). For household members, overturns significantly increased with age, and people over 70 had the largest reported percentage (43%) of reported overturns.

Twenty-five percent of respondents reported a collision with an obstacle. There was not a significant difference between organizational members and non members, although members reported more collisions. Males and females had about the same rate for this type of accident (35% each). There were significant differences across regions with 39%

of Erie and 34% of Pocono respondents, and 20% of Philadelphia and 14% of HGD respondents reporting a collision. Again, age class was significant in this question. Collisions decreased with age with 44% of 16- 20 year olds and 18% of people over 70 reporting one. When considering household members, 18% of riders were reported to have collided with an obstacle. There was a significant difference between organizational members (23% yes) and non members (13% yes) and between men (35% yes) and women (23% yes). Differences in regions were also significant, Pittsburgh (25% yes) and Laurel Highlands (23% yes) had the highest reported household collisions, compared to ANF (13% yes) and HGD (12% yes). For this question, age was not significant. All ages had about the same chance (18%) of colliding with an obstacle.

Six percent of respondents reported colliding with another vehicle. There was not a significant difference between organizational members and non members, although members reported more collisions. Males and females had about the same rate for this type of accident. There was no significant difference across regions. Again, age class was significant in this question and collisions decreased with age with 33% of 16- 20 year olds and 0% of people over 70 reporting one. Four percent of household members were reported to have collided with another vehicle. There was no significant difference between organizational members and non members, between men and women, or between regions. For households, age was again significant. Collisions with another vehicle increased with age with 14% of 16-30 year olds having a reported accident, and 30% of 60–69 year olds.

Needs

The heart of the survey inquired into the rider's assessment of the trail and facility needs facing snowmobile riders in the Commonwealth.

Trail amenities

Respondents were asked to indicate the importance they attached to a menu of trail features. Ranked on a scale from 1 (very unimportant) to 5 (very important), maintenance of existing trails led the list with an average ranking of 4.65 for members of riding organizations and 4.50 for non members (Table 9). Also ranked as very important were five allied features: enhance trail system (4.59 members and 4.33 non members); trail grooming (4.56 members and 4.32 non members); access to secondary roads (4.44 members and 4.26 non members); snow along side of road (4.40 members and 4.23 non members); and construct new trails (4.32 members and 4.11 non members). Clearly, trail maintenance and availability was of primary importance to registered snowmobile owners.

Table 9. Ranking of snowmobile trail features on a scale of 1 to 5.

Maintenance existing trails	4.57
Enhancement of trail systems	4.45
Trail grooming	4.42
Access to secondary roads	4.34
Snow along side of roads	4.23
Construct new trails	4.21
Access to services	4.07
Access to pipelines	4.06
Increase maps and signs	3.98
Increased safety	3.68
Increased law enforcement	2.79

A second tier of features of importance included access to services (4.07); access to pipelines (4.06); increased maps and signage (3.98), and increased safety (3.68). Increased law enforcement was rated as marginally unimportant (2.79).

When considering age, there were significant differences of interest. For constructing new trails agreement decreased with age (4.53 for 21- 29 year olds and 3.73 for people over 70). Agreement with access to pipelines also decreased with age (4.37 for 21-29 year olds and 3.68 for people over 70). Agreement with increased law enforcement increased with age (2.36 for 21-29 year olds and 3.13 for people over 70.) There were also significant differences of interest when considering gender. Women (3.25) agreed more than men (2.75) that law enforcement should be increased and women (3.97) agreed more than men (3.66) that trail safety should be increased.

Trail length

When asked about the importance of short (<50 miles), medium (50 to 125 miles), and long (>125 miles) trails, medium length opportunities were ranked as important or very important by 83% of the respondents, while long trails (68%) and short trails (62%) received somewhat less support. Club members were more likely to view medium and long trails as important than non members. Regionally, residents of Philadelphia were the least likely to rate medium length trails as important, while those from the Pittsburgh region were the most likely.

Ride characteristics

Registered snowmobile owners were asked to rate the importance of several other riding characteristics. Trails close to home received the most support (74% important or very important), reflecting the geographic concentration of opportunities in the state. Next in importance were weekend opportunities with multiple trails available from a central place (67%), followed by day trips (56%) and finally by multiple day excursions using a variety of lodging locations (34%). Less than half the respondents indicated a

willingness to use multiple-use trails. This seems to be related to the desire for groomed trails that would be marred by shared use.

Club members were less likely to want trails close to home and day-trip opportunities than non members. Conversely, members preferred multiple day excursions and weekend opportunities more than did non members. Some regional differences were also observed. Riders from the Philadelphia, Pittsburgh, and the Hershey/Gettysburg/Dutch Country regions were less likely to indicate that day trips and rides close to home were important. These shorter opportunities were more important to riders from the Allegheny National Forest, Erie, Pocono, and Susquehanna Regions.

Features

Respondents were asked to evaluate 26 snowmobile features as needing increase, needing improvement, or adequate. A complete set of responses by region is provided in Appendix B.

Needing increase

Registered snowmobile owners' principal desire was for more riding opportunities. An increase in trail availability was the number one need, with 65% of the respondents agreeing (Table 10). On a similar vein, increases were sought for riding opportunities on Rails to Trails (57% agreeing), PA Game Lands (55%), private land (54%), DCNR lands, and the Allegheny National Forest (49%) all ranked high. Increases in medium trails (50 to 125 miles) were more important (54% agreeing) than long trails (45%) and short trails (45%). Trailhead restrooms were also highly ranked as needing to be increased (47%).

Table 10. Features most needing increase.

<i>Feature</i>	Agreeing
Trail availability	57%
Rails to Trails riding	56%
PA Game Commission riding	55%
Medium trails	54%
Riding on private land	54%
DCNR riding	54%
Allegheny National Forest riding	49%
Trailhead restrooms	47%
Long trails	45%
Short trails	45%
Info available on Internet	43%
Trail access	40%
Trailhead loading	40%
Safe riding for youth	39%
Trail signing	39%
Trail map availability	39%

Further down the list of features needing increase was a series of informational requests: Information on the Internet (43%), trail signing (39%), and trail map availability (39%).

Increased trail availability was most requested by residents of the Pocono Region (68%). Riders living in the Susquehanna Region were less likely to view availability as a need (48%). Pocono Region riders were also most likely to request more DCNR riding opportunities (64%) and Allegheny National Forest opportunities (61%). The desire for more snowmobiling opportunities was also expressed more often by club/organization members.

In terms of trail length, club members were more likely to request long trails (48%) than non members (43%). Conversely, short trails were more sought by non members (47%) than members (42%). Medium trails (50 to 125 miles) were consistently ranked higher by both club members and non members (54 and 55% respectively).

Trailhead restrooms were more likely to be requested by younger riders and women. There was also a tendency for riders with lower family incomes to request more trailhead restrooms. The desire for information on the Internet was highest among residents of the Erie Region (58%).

Needing improvement

When asked to identify which snowmobile trail features were most in need of improvement, many of the same characteristics were cited (Table 11). With the exception of trail conditions and trail grooming, the number of people noting a need for improvement was generally lower than the number requesting an increase in provision. This can be interpreted as meaning that people were satisfied with the quality of what was available, but wanted more.

Table 11. Features most needing improvement.

<i>Features</i>	<i>Agreeing</i>
Trail condition	58%
Trail grooming	54%
Trail signing	38%
Trail map availability	31%
Trail design	29%
PA Game Commission riding	28%
DCNR riding	28%
Riding on private land	26%
Allegheny National Forest riding	26%
Long trails	26%
Rails to Trails riding	26%
Trail access	25%
Trail availability	22%
Medium trails	21%
Info available on Internet	20%
Short trails	20%

Trail condition and trail grooming were the features most often identified as needing to be improved (58% and 54% respectively).

Improvements were also identified as needed for trail signing (38%) and trail map availability (31%). Trail design was cited as needing improvement by 29% of the respondents.

Riding opportunities on State Game Lands (28%), DCNR lands (28%), private lands (26%), and on the Allegheny National Forest (26%) were also cited for improvement by significant numbers of respondents.²

Trail condition improvements were most often cited by riders living in the Pittsburgh Region (66%). Pittsburgh residents were also most likely to cite a need for improved trail grooming (62%).

Improved trail design was cited most often by those living in the Erie Region (38%) and least often by riders from the Susquehanna Valley Region (19%). There was also a general trend for club members and riders with lower family incomes to be more likely to identify trail design as needing improvement. Club members were also more likely to see a need for improving trail signing.

² The similarity in these numbers, may be due, in part, to the inability of riders to distinguish between the ownership of the open spaces where they ride.

Adequate

The number of people responding that snowmobile features were adequate provides an opportunity to take a positive look at snowmobiling in Pennsylvania.

Policing and enforcement were felt to be adequate by 73% of snowmobile owners (Table 12). Most registered snowmobile owners also felt that race courses had been adequately provided (69%). The status of campground areas at trailheads were okay with most people (54%), probably due to the limited number of snowmobile riders camping versus staying in a warm hotel.

Table 12. Snowmobiling features considered as adequate.

<i>Features</i>	Agreeing
Policing, enforcement	73%
Race courses	69%
Safe riding for adults	64%
Snowmobile dealer education	63%
Safety of riding areas	60%
Environmental stewardship	56%
Campground areas trailhead	54%
Safety and etiquette info	51%
Emergency response	49%
Safe riding for youth	48%

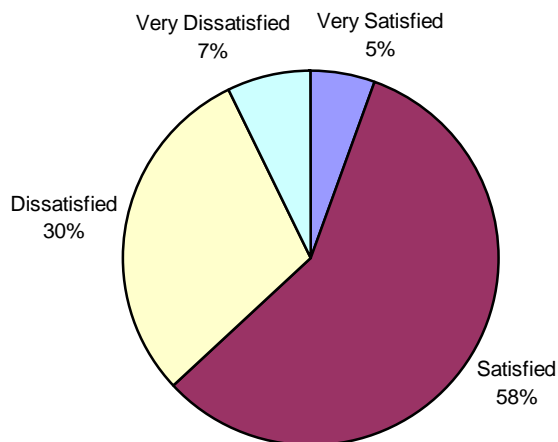
Many of the need items associated with snowmobiling safety and education were evaluated as adequate by the majority of respondents: safe riding courses for adults (64%), snowmobile dealer education (63%), safety of riding areas (60%), environmental stewardship (56%), and safety and etiquette information (51%). Two others, emergency response and safe riding courses for youth were considered as adequate by just under half the respondents (49% and 48% respectively).

Two of the features considered as adequate by most respondents nevertheless showed significant variation across regions. The adequacy of policing ranged from a high of 86% in the Laurel Highlands, to lows of 66% in Philadelphia and 61% in the Pocono region. Environmental stewardship was considered adequate by 66% of the riders living in the Susquehanna region and 64% of those living in the Allegheny National Forest region. In contrast, less than half of those living in the Erie and Philadelphia regions felt that policing was adequate (44% and 49% respectively).

Satisfaction

Pennsylvania's snowmobile riders expressed general satisfaction with their snowmobiling experience in the state (Figure 7). Almost two-thirds of registered snowmobile owners indicated that they were satisfied or very satisfied with snowmobiling in Pennsylvania. Negative opinions were expressed by 37% of the owners.

Figure 7. Overall satisfaction with Snowmobiling in Pennsylvania.



Trail grooming, maintenance, and general conditions were cited by 28% of those with negative experiences. Lack of trails and trail network access was identified as a problem by an additional 24%. Others cited snow conditions (5%), trail length (3%), and lack of conveniently located trails (2%).

Satisfaction varied significantly by region; ranking highest among those living in the Susquehanna Valley Region and lowest for those living in the Pocono Region (Table 13). Significant differences were not observed for any other socio demographic group.

Table 13. Average satisfaction levels, by region (1=strongly dissatisfied, 4=strongly satisfied).

<i>Region</i>	
ANF	2.63
Pocono	2.43
Philadelphia	2.51
Erie	2.51
Laurel Highlands	2.63
HGD	2.65
Pittsburgh	2.69
Susquehanna	2.78

Problems and conflicts

Respondents were asked to indicate their agreement about a menu of possible problems or issues facing snowmobile riders in Pennsylvania. These were ranked on a scale from 1 (strongly disagree) to 5 (strongly agree) and broken into two groups safety/comfort problems and riding problems.

When asked about the severity of 10 safety/comfort problems the following responses were provided in order of agreement: trespass, an average of 3.39 or 46% in agreement; riding in illegal areas, 3.36 or 46%; excessive speed, 3.28 or 43%; riding under influence, 3.1 or 38%; failure to comply with rules and regulations, 3.0 or 32%; irresponsible riding, 2.98 or 32%; too many rules, 2.66 or 21%; lack of parent supervision, 2.47 or 18%; too much noise, 2.33 or 15%; and environmental degradation, 2.14 or 14%. In general, there is weak agreement with these stated problems.

Table 14. Ranking of snowmobile problems on a scale of 1 to 5.

Trespass	3.4
Riding in illegal areas	3.4
Excessive speed	3.3
Riding under influence	3.1
Failure to comply with rules	3.0
Irresponsible riding	3.0
Too many rules	2.7
Lack of parent	2.5
Too much noise	2.3
Environmental degradation	2.1

When asked about the severity of four riding problems the following responses were provided in order of agreement: snow plowing on open roads, 3.53 or 55%; ATVs on snowmobile trails, 2.93 or 35%; cost of insurance, 2.86 or 30%, crowding, 2.65 or 22%; and availability of insurance, 2.47 or 21%. Again, there is weak agreement for these problem areas, except for snowplowing, where the agreement is moderate.

When looking at significant differences in problems, organization members vs. non-organization members had significant, but not substantial differences for a number of categories (e.g., 3.2 for members and 3.0 for non members for riding under the influence and 3.1 for members and 3.0 for non members for irresponsible riding). The differences in attitudes between men and women were not significant for these questions. When looking at regions, there was a significant difference in crowding. Pittsburgh was highest with a 2.6 agreement and Erie was lowest with a 2.1 agreement. Age had the most substantial significant relationships. Although there was not strong agreement for every problem by age, younger people agreed much less than older. For agreement with trespass (2.7 for 16-20 and 3.8 for people over 70); riding in illegal areas (2.6 for 16-20 and 3.5 for people over 70); excessive speed (2.7 for 16-20 and 3.5 for people over 70);

riding under the influence (2.1 for 16-20 and 3.4 for people over 70); failure to comply with rules (2.1 for 16-20 and 3.4 for people over 70); irresponsible riding (2.1 for 16 to 20 and 3.2 for people over 70); lack of parent supervision (2.1 for 16 to 20 and 2.8 for people over 70); too much noise (1.9 for 16 to 20 and 2.8 for people over 70), and environmental degradation (1.9 for 16 to 20 and 2.7 for people over 70), agreement increased with age. Agreement with the availability of liability insurance increased with both education and income.

When asked to indicate the most important problems facing snowmobiling in an open-ended question, the following responses were provided: grooming of trails, 44%; lack of trails, 26%; access to food and lodging 17%; plowing of roads, 11%; poor trail signs, 10%; lack of interconnected trails 8%; reckless driving, speeding 8%; land owner, 5%; lack of access to state lands, 4%; more parking, 4%; lack of training, 1%; skiers on trails, 1%; emergency assistance, less than 1%; and hunters, less than 1%.

When asked if they had ever been involved in a significant conflict with another person who was not a snowmobile rider, respondents indicated the following: none or nothing, 59%; conflict with landowner, 9%; landowner with gun, 5%; conflict with ATV, 3%; conflict with skier, 2%; and conflict with hunter, 1%.

When asked what they would do if they came upon another person on the trail, respondents indicated the following.

Dog Sled- 45% would slow down, 33% would stop, 21% would shut off , and 4% would maintain speed.

X-Country Skier- 82% would slow down, 33% would stop, 21% would shut off, and 9% would maintain speed.

Hiker- 86% would slow down, 12% would stop, 7% would shut off, and 1% maintain speed.

Tourism and economic impacts

Information source

Word of mouth was cited by 68% of respondents as their best source of information on where to ride their snowmobile. Only 22% of snowmobile owners indicated that they found the Internet to be the best information source. Far fewer turned to the PSSA (4%) or to snowmobile dealers (2%). As an information source, PSSA was only slightly higher among club members (7%) than it was for the general public. The Internet was somewhat more significant for younger riders (Figure 8) and those from wealthier households (Figure 9).

Figure 8. Use of the Internet for riding information by age class (2005).

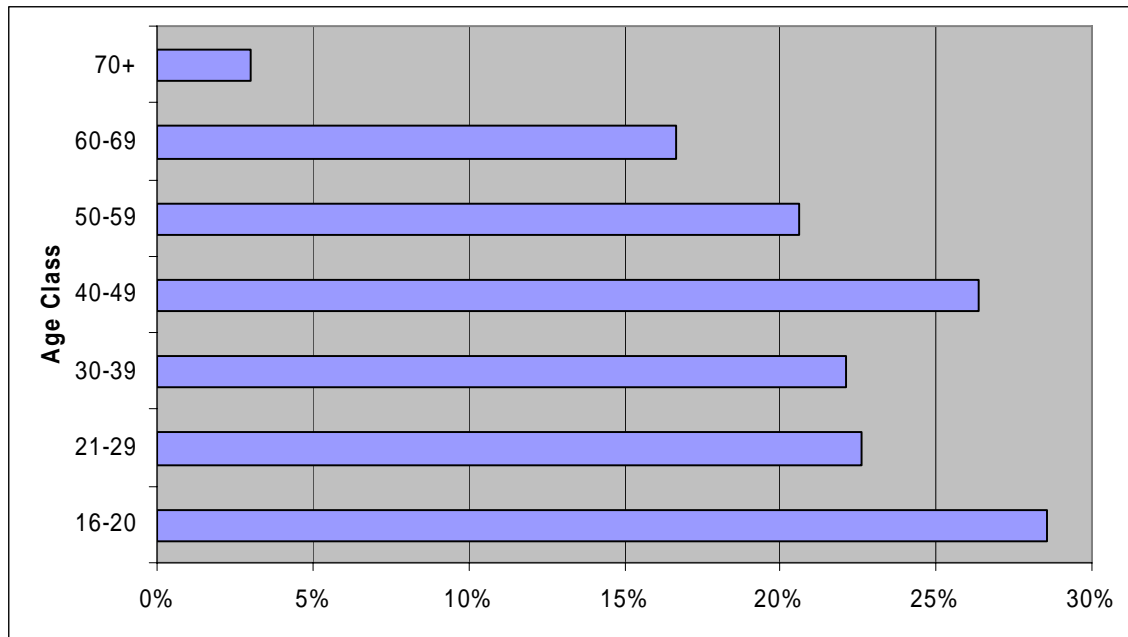
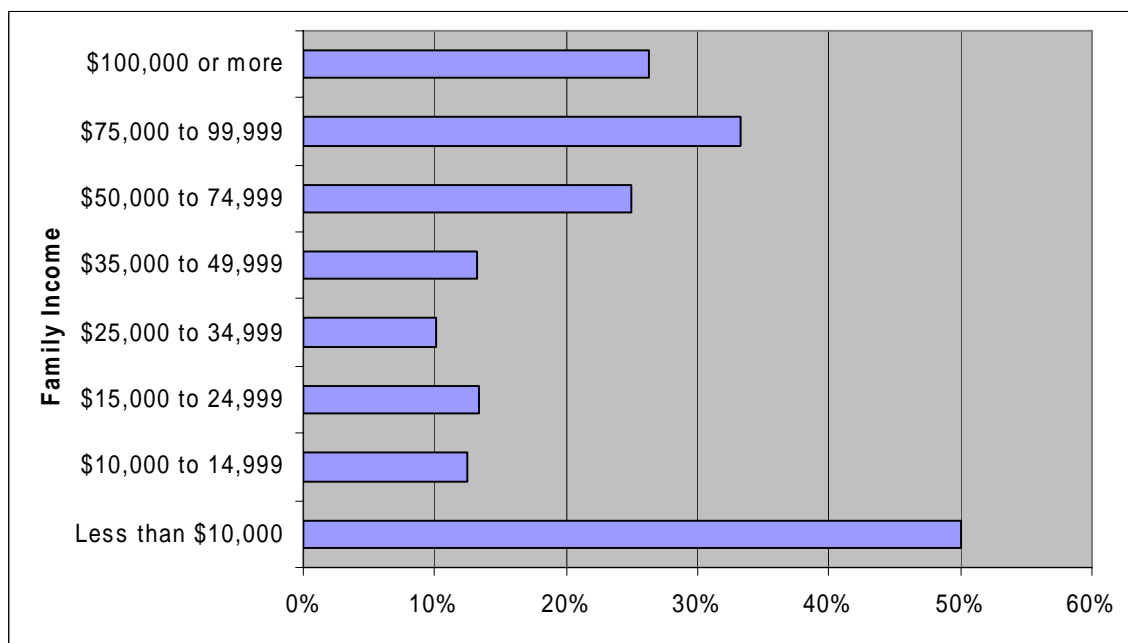
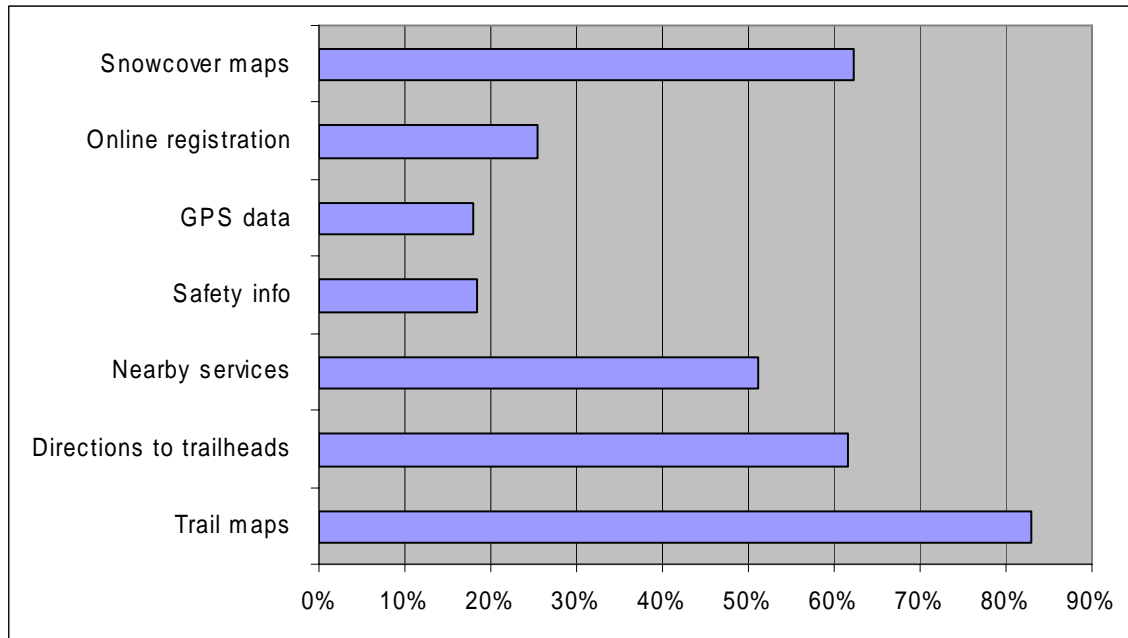


Figure 9. Use of the Internet for riding information by family income (2005).



When asked what kinds of information they would like to see available on the Internet, trail maps were most requested (83%), followed by directions to trailheads (62%) and snow cover maps (62%) (Figure 10). Over half of the respondents (51%) also indicated that information on nearby services would be a useful Internet feature. Not attracting quite as much attention was online registration (26%), safety information (19%), and GPS data (18%).

Figure 10. Snowmobiling information users would like to see on the Internet (2005).



Snowmobile trips

The snowmobile owners were queried as to the number of day and overnight trips over 50 miles, that they took, both in- and out-of-state. The average respondent took 9.0 day trips in Pennsylvania and another 4.3 day trips out-of-state. They also reported 3.6 overnight trips in the state and 3.0 overnight trips out-of-state. Club members were more likely to take trips of any type than were non members. Younger riders were more likely to take trips in Pennsylvania, than were older riders.

Snowmobile trips differed significantly by region. Day trips in Pennsylvania were highest for those living in the ANF (13.6 trips/year), Laurel Highlands (10.6 trips/year), Pocono (10.5), and Susquehanna (10.2) Regions. Overnight trips in the Commonwealth were highest for those living in Erie (4.2 trips/year), Hershey/Gettysburg/Dutch Country (3.6), Laurel Highlands (3.2 trips/year), and Pittsburgh (3.2 trips/year) Regions. Day trips out-of-state were highest for those living in the Erie (7.9 trips/year), Pocono (6.2 trips/year), and ANF (5.4 trips/year) Regions. Overnight out-of-state trips were most common in the Erie (4.8 trips/year), Philadelphia (4.0 trips/year), and Pocono (3.9 trips/year) Regions.

The out-of-state location people were most likely to travel to depended upon the region of the state and the opportunities close to the border, plus a general tendency to head further north to better snow cover. New York was the top destination for riders from all regions of Pennsylvania (Table 15). Riders from the ANF Region most often visited New York (74%), followed by Ontario (10%). Those from the Erie Region chose New York (54%), Michigan (18%), and Ontario (16%). For snowmobile owners living in the Hershey/Gettysburg/Dutch Country Region, New York was the principal destination (68%), followed by Quebec (15%), and Maine (12%). Respondents from the Laurel Highlands indicated that they most often visited New York (40%), Michigan (24%), Ontario (12%), and Maine (10%). Philadelphia riders chose New York (68%) and Ontario (15%). Respondents residing in the Pittsburgh Region traveled to New York (50%), Michigan (19%), and Quebec (10%). Those living in the Pocono Region were strongly inclined to visit New York (80%). Those living in the Susquehanna Valley indicated that they were most likely to visit New York (55%), Maine (22%), and Quebec (12%).

Table 15. Common snowmobiling destinations for overnight stays (2005)

State	ANF	Erie	HGD	Laurel Highlands	Philadelphia	Pittsburgh	Pocono	Susquehanna	Total
New York	74%	54%	68%	40%	68%	50%	80%	55%	62%
Michigan	5%	18%	2%	24%	0%	19%	1%	2%	9%
Quebec, Canada	5%	2%	15%	7%	15%	10%	5%	12%	9%
Maine	3%	2%	12%	10%	7%	8%	4%	22%	7%
Ontario, Canada	10%	16%	2%	12%	3%	8%	1%	4%	7%
Vermont	0%	0%	0%	0%	2%	0%	5%	0%	1%
New Hampshire	3%	2%	0%	2%	0%	0%	0%	2%	1%

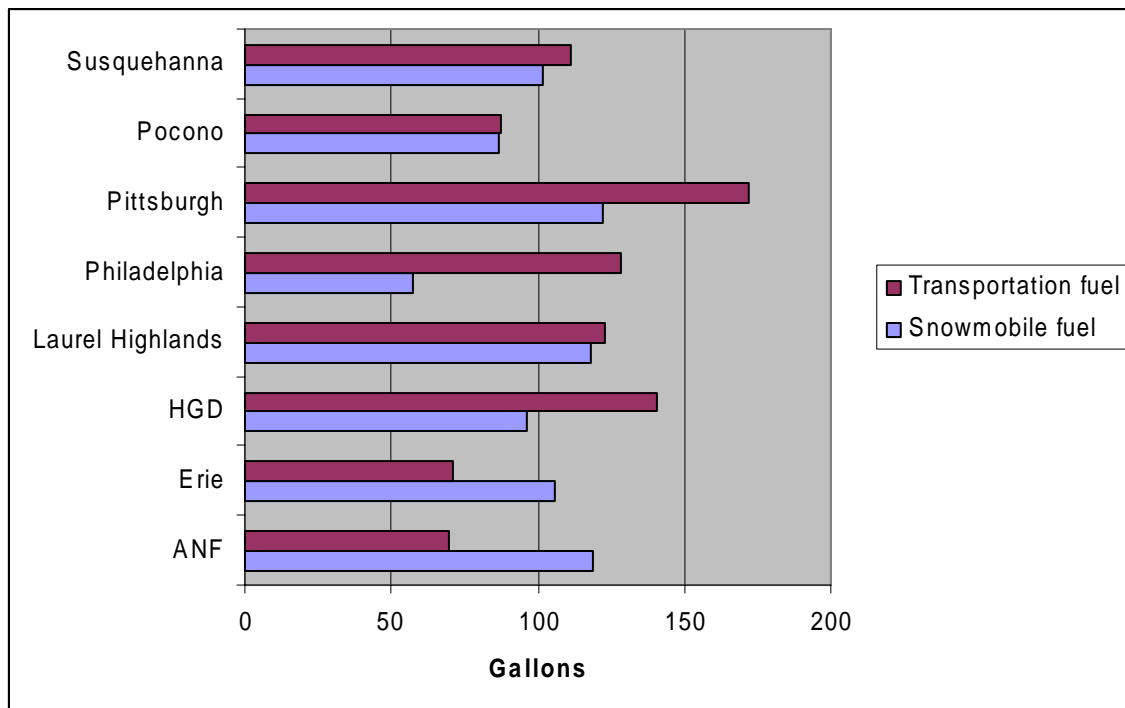
Gasoline

Registered snowmobile owners reported significant purchases of fuel to transport and ride their sleds. The average owner indicated that, on an average year, they purchased 101 gallons a fuel to operate their snowmobile in Pennsylvania. They also purchased 113 gallons for the purposes of transporting their machines. Those taking out-of-state trips reported purchasing 84 gallons of snowmobile fuel outside of the Commonwealth. They also bought 118 gallons outside of the state to transport their sleds.

As might be expected, members of snowmobile clubs and organizations spent considerably more for fuel than did non members. Club members purchased 131 gallons to operate their machines and another 133 gallons to transport them in Pennsylvania. For non members, these figures were 77 and 96 gallons respectively. Club members reporting out-of-state trips showed a similar pattern, purchasing 112 gallons of snowmobile fuel and 149 gallons to transport their sleds while outside of Pennsylvania. Non members had significantly lower averages for out-of-state fuel purchases (56 gallons of snowmobile fuel and 86 gallons for transportation).

Regionally, folks from the Philadelphia Region purchased the least to operate their sleds in the state (57 gallons) (Figure 11). The highest Pennsylvania fuel utilization were the residents of the Pittsburgh (122 gallons), ANF (119 gallons), and Laurel Highlands (118 gallons) Regions. In terms of purchases to transport their sleds, the order is somewhat different. The smallest amounts for transporting snowmobiles were in the ANF (69 gallons) and Erie (71 gallons) Regions. The largest amounts were purchased by snowmobile owners living in the Pittsburgh Region (172 gallons).

Figure 11. Fuel used to transport and operate snowmobiles in Pennsylvania (2005).



Economic significance

Snowmobile owners spend considerable money pursuing their activity (Table 16). The typical trip within Pennsylvania involved \$350 in expenditures. This included \$83.75 for snowmobile fuel and \$71.36 for other transportation. Maintenance and repairs of \$57.70 were reported for the average trip. Food and lodging costs were \$68.03 and \$37.09 respectively.³ Fees for riding areas average \$15.02 and other miscellaneous costs came to \$17.50 per trip. When combined with the number of trips over 50 miles, each snowmobile owner is estimated to have spent nearly \$4,400 per year while snowmobiling in Pennsylvania.

³ The lodging expense is an average for all trips, either single day or overnight.

Table 16. Snowmobile trip expenditures on trips over 50 miles from home (2005).

<i>Expense</i>	<i>PA Trip</i>	<i>Out-of-state</i>
Gasoline or oil for snowmobile	\$83.75	\$166.13
Gasoline or oil for vehicle	\$71.36	\$175.31
Repairs or maintenance	\$57.70	\$64.52
Food	\$68.03	\$185.99
Lodging	\$37.09	\$248.27
Fees	\$15.02	\$76.29
Other	\$17.50	\$16.23
Total	\$350.44	\$932.74

Expenditures for out-of-state trips were significantly higher; averaging over \$930 per trip (Table 16). Snowmobile fuel expenses average \$166.13 per trip. Transportation expenses added another \$175.31 to the cost of each trip. Repairs and maintenance expenditures average \$64.52 per trip. Food and lodging averaged \$185.99 and \$248.27 respectively. Travelers spent another \$76.29 on entrance fees and out-of-state registrations. Additional miscellaneous costs added \$16.23 to the total trip costs. Snowmobile riders who reported making out-of-state trips are estimated to spend an average of over \$6,700 on this activity.

When asked how much their household has spent in the past year on snowmobiles and associated equipment, those responding averaged \$4,174 on sleds and \$749 on equipment. As might be expected, members of snowmobile clubs spent more on the average (\$5,058 on sleds and \$919 on equipment) than did non members (\$3,386 on sleds and \$593 on equipment). On the average, 58% of households purchased a new snowmobile every 1 to 5 years (Table 17).

Table 17. How often were snowmobiles purchased?

Rarely/never	12%
Every year or less	4%
1 to 5 years	58%
5 to 10 years	9%
Other	17%

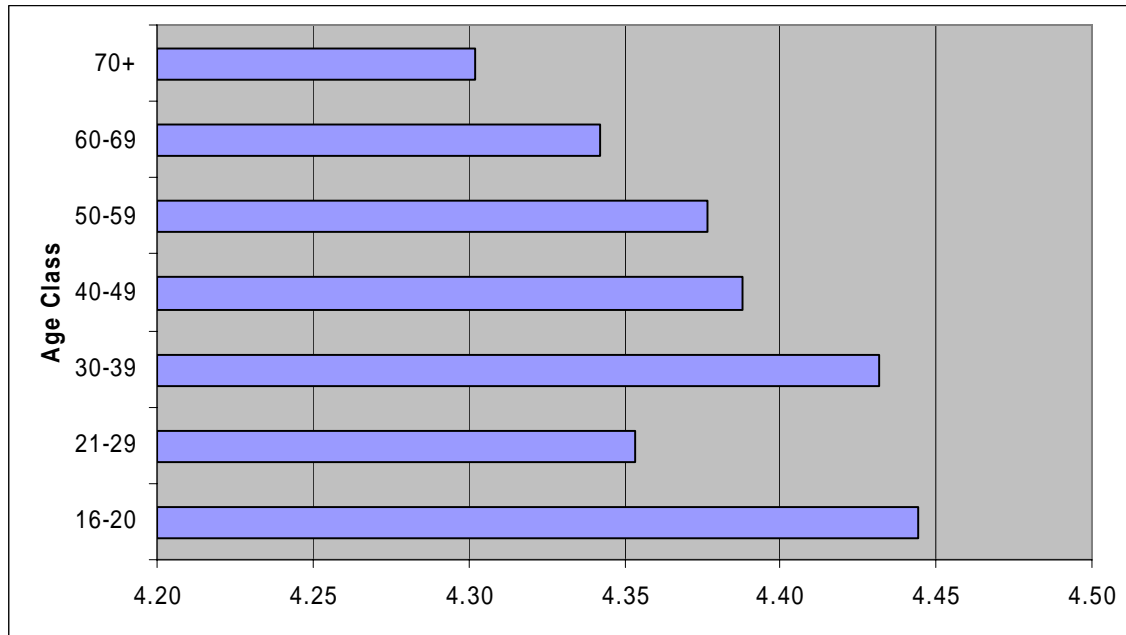
Policy

Funding issues

The respondents were asked to indicate their opinion on several funding questions. The question of using registration funds to purchase and operate groomers on public trails received broad support (an average of 4.4 on a five-point scale). Less than 5% of the respondents disagreed with this proposition, while 83% were in agreement. The use of

registration funds for grooming public trails was stronger among club members (4.6) and among younger riders (Figure 12).

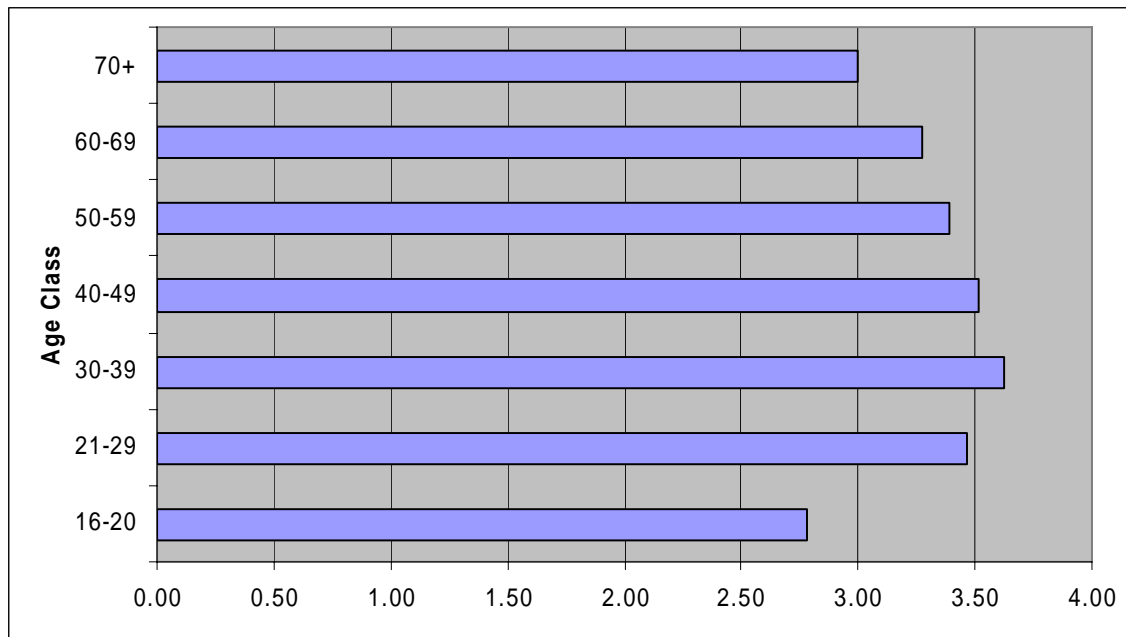
Figure 12. Support for using registration funds to purchase and operate groomers on public trails, by age class (2005).



The use of public funds to purchase and operate groomers on private trails received less support (3.1 on a five-point scale). However, even on this question, there were more riders supporting the idea (44%) than not (36%). This proposition received significantly stronger support among club members (3.5) versus non club members (2.8), perhaps reflecting the access of club members to private trails.

Over half the respondents were in agreement with using registration funds to develop trails on private property, while one out of four disagreed. The average level of agreement of this proposition was 3.4 on a five-point scale. Agreement was higher among club members (3.8 versus 3.2 for non members). There was also a general trend for younger riders to support the proposition (Figure 13).

Figure 13. Support for using registration funds to develop trails on private property, by age class (2005).



Willingness to pay

When asked how much they were willing to pay for a pass to a riding facility, there was a remarkable consistency between the answers. Respondents reported a willingness to pay \$39 for a seasonal pass to a public facility and \$41 for a seasonal pass to a private facility. Willingness to pay for a daily pass was \$10 for a public facility and \$11 for a private facility. There were no statistical differences between the various socio-demographic segments of snowmobile owners.

Increased registration fees

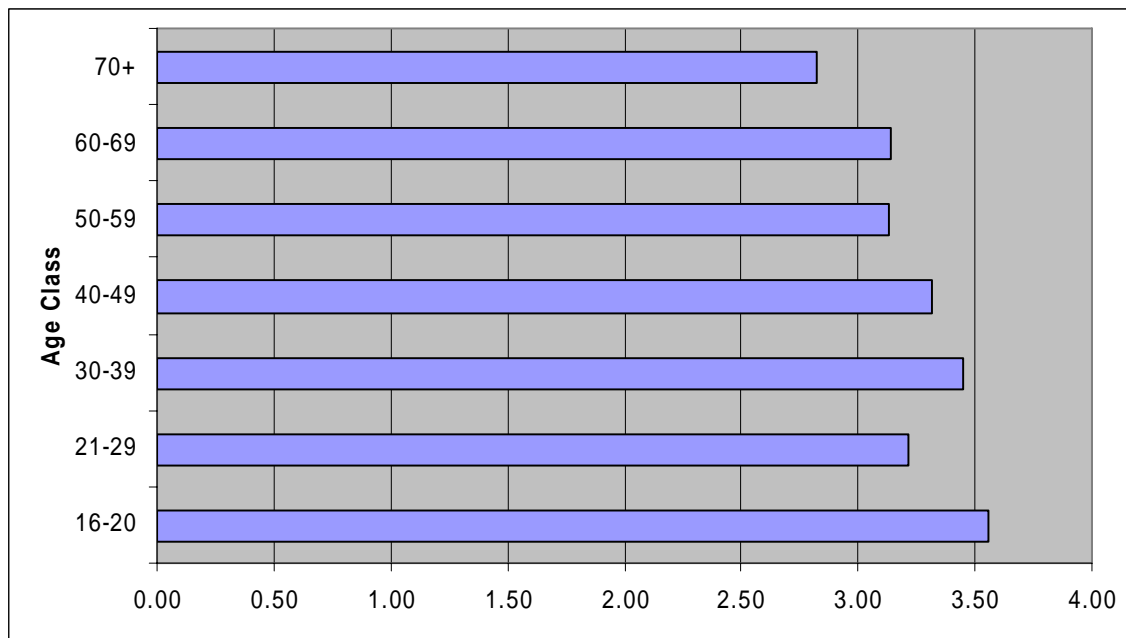
Respondent seemed to be in general agreement with an increase in registration fees to provide better snowmobile riding opportunities. Almost three-quarters (74%) were willing to support such an increase to improve public riding opportunities. Two-thirds would support an increase to improve riding opportunities on private property.

Volunteerism

The respondents were asked about their willingness to participate in education, patrol, trail maintenance, or trail grooming at a public snowmobile trail. (They were also told that they would not be contacted.) Over 43% indicated a willingness to volunteer, while 28% indicated that they would not be interested in such an opportunity. Club members were more likely to be willing to volunteer; 57% said they were willing to volunteer, while only 19% were opposed. In contrast, non club members were slightly less likely to

volunteer (33%) than not volunteer (35%). More men indicated that they would volunteer (44% willing, 26% unwilling) than women (34% willing, 40% unwilling). There was a slight tendency for younger respondents to be willing to volunteer (Figure 14). Regionally, snowmobile owners who were residents of Pittsburgh (51%), Erie (49%) and the Laurel Highlands (48%) were most willing to volunteer. Willingness to volunteer was significantly lower among owners from Philadelphia (33%) and the Hershey, Gettysburg/Dutch Country region (37%).

Figure 14. Willingness to volunteer at public snowmobile trails, by age class (2005).



Conclusions

Summary

The demographic profile of the snowmobiling audience indicates that for many this is a white, rural, family activity. The age distribution of riders was bimodal, with a primary peak in the 40 to 49 year range, but a secondary peak in the 10 to 15 year range. Over 40% of the riders were women. Over 70% of the respondents had annual family incomes over \$50 thousand. Half of the respondents had over 20 years of riding experience.

Trail and leisure riding was an important snowmobile activity to over 90% of the audience. Sport riding and aggressive recreational riding were also common, but very few riders reported participating in racing or other competitive activities. The number one activity while riding recreationally was spending time with family and friends, reinforcing the family nature of this activity.

While relatively few of the riders had completed a snowmobile safety course (16%), 90% of those that had rated it as good or excellent. Younger riders were much more likely to have taken safety courses (over 30% of those between 10 and 20 years of age). Overturns were a common accident; 41% of the respondents reported at least one incident in their past. Other incidents were less common; 25% reported a collision with an obstacle and 6% with another vehicle. Accident rates for other household members were lower, but it is not clear that the respondents had complete information about these events.

The needs of the snowmobiling public center around trail conditions; maintenance, grooming, and snow alongside roads were three of the top five features important to snowmobile owners. Also of chief concern are trail systems allowing riders to string together miles of trails across many ownerships. The remaining top five features were enhancement of trail systems and access to secondary roads. In response to a similar question, riders rated trail grooming and PA Game Commission riding opportunities as having the greatest needs. Next came Rails to Trails riding, DCNR riding, and riding opportunities on private land.

The importance of extended trail systems to the snowmobiling experience may help explain the large proportion of snowmobile owners who were members of a snowmobile club or organization. When compared to the ATV riding audience, such membership was much more common, perhaps owing to the relative importance of cooperative trail networks and maintenance sponsored by the organizations. The disparity may also reflect the relatively shorter period of time such organizations have had to form for the ATV audience.

Most riders were satisfied or very satisfied with their snowmobiling experience in Pennsylvania (63%). Trail grooming, maintenance, and general conditions were the chief complaints of those with negative satisfaction.

Reported problems and conflicts were low. However, trespassing and riding in illegal areas were identified as a problem by 46% of the respondents. Excessive speed was another problem identified by 43% of the respondents.

Snowmobile riders spent large sums of money on their activity. Much of this was in pursuit of snow and extensive trail networks. The average respondent took 9.0 day trips within Pennsylvania and another 4.3 day trips out-of-state. They also reported 3.6 overnight trips within the state and another 3.0 overnight trips out-of-state. The average owner reported 224 gallons of in-state fuel purchases to transport and ride their sleds. They also purchased another 202 gallons out-of-state for the same purpose. In addition to gasoline, they also spend significant amounts on food, lodging, and ancillary trip expenditures for a total of \$350 per in-state trip and \$933 per out-of-state trip. In addition, respondents reported annual expenditures of over \$4,000 on sleds and \$750 on associated equipment.

The use of snowmobile registration funds to groom public trails received overwhelming support. Support of the use of funds to groom private trails received somewhat less

support. Club members were more likely to support both propositions, perhaps reflecting the greater access to private trails available to club members. Riders indicated that they were willing to pay an average of \$40 for a seasonal pass and \$10 for a daily pass to a riding facility. There was no significant difference between willingness to pay for public versus private facilities. Three-quarters were willing to pay higher registration fees if the money went toward developing public trails. Two-thirds would support an increase to improve riding opportunities in private lands.

Comparison to the ATV survey

This study parallels a previous study of ATV riders in Pennsylvania (Lord, et al. 2004). There were many similarities between the two groups. The demographics of each group indicated that riding was largely a white, rural, family activity. Trail availability and maintenance were important to each, though the ATV audience was also concerned with acquiring new trails, while snowmobile riders focused on maintaining trail networks.

The desired trail amenities for snowmobile riders, such as maintenance and provision of trails, was very similar to ATV riders. Attitudes towards increased law enforcement for the two riding groups were the same. Snowmobile riders reported less conflict on trails than ATV riders, no doubt owing to fewer people using trails in the winter.

As with the ATV riders, there were significant differences between members and non members of snowmobile organizations in terms of safety, amenities, and problems. In both cases, the data reinforce that organizational members ride more, are more active, desire more, and ride more aggressively. One important difference between the two recreational groups is that almost half of snowmobile riders were members of an organization, while only 8% of ATV riders belonged to a formal group. Consequently, there is less worry about snowmobile organization members being atypical when representing the total recreation audience.

Snowmobile riders completed safety courses at about the same rate as ATV riders, which was fairly low for both. For snowmobile riders, there is a trend of more younger riders completing safety courses, which will eventually impact the amount of older riders who have completed one. There is slightly higher agreement by ATV riders that a safety course should be required. Agreement with a required safety course increased with age and organizational membership for both snowmobile and ATV riders. For both snowmobile and ATV riders who had taken safety courses, the majority rated them good to excellent. Both snowmobile and ATV riders were willing to pay high amounts for safety classes, but organizational members in both groups were willing to pay more than non members.

Overturns were the number one accident reported by both snowmobile and ATV riders, but snowmobile riders (41%) reported more than ATV riders (29%). For both sports younger age classes have more accidents and agree less with problems such as (riding under the influence and noise) than older riders.

Comments on the 2000 Pennsylvania State Snowmobile Association Study

Raffield and Guerrisi (2000) surveyed the membership of the Pennsylvania State Snowmobile Association to determine the economic impact and general characteristics of snowmobile riding in Pennsylvania. Perhaps the largest limitation of their study came from limiting their sample to PSSA members. As has been demonstrated in multiple times in this current study, members of snowmobile clubs and organizations differ from non members in their dedication to snowmobiling. This effects their opinions on policy questions, their perceptions of the needs of snowmobiling in the state, and the amount of money they spend in pursuit of snowmobiling.

Recommendations

Snowmobile owners expressed a strong interest in extensive trails systems. Dual use roads and trail networks across a variety of ownerships are critical to their sport. DCNR and other state agencies should endeavor to provide linkages across state land, where such linkages will enhance the connectivity of existing trail systems.

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Appendix A – Tourism Promotion Regions

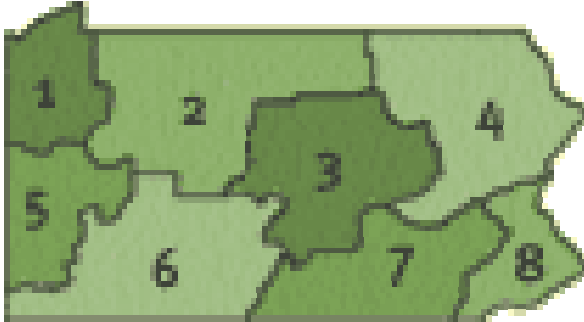


Table 18. Tourism promotion regions

<i>Short Name</i>	<i>TPA region</i>
1 Erie	Lake Erie Region
2 ANF	Allegheny National Forest Region
3 Susquehanna	Valleys of the Susquehanna
4 Pocono	Pocono Mountains/Endless Mountains
5 Pittsburgh	Pittsburgh Region
6 Laurel Highlands	Laurel Highlands/Southern Alleghenies
7 HGD	Hershey/Gettysburg/Dutch Country
8 Philadelphia	Philadelphia and its Countryside/Lehigh Valley

Appendix B – Regional Needs

Table 19. Snowmobile trail features considered adequate, by region (significant regional differences in black).

<i>Adequate</i>	<i>ANF</i>	<i>Erie</i>	<i>HGD</i>	<i>Laurel Highlands</i>	<i>Philadelphia</i>	<i>Pittsburgh</i>	<i>Pocono</i>	<i>Susquehanna</i>	<i>All Owners</i>
Policing, enforcement	74%	70%	78%	86%	66%	73%	61%	74%	73%
Race courses	76%	64%	72%	68%	64%	72%	67%	74%	69%
Safe riding for adults	60%	63%	71%	69%	67%	58%	54%	66%	64%
Snowmobile dealer education	63%	62%	69%	62%	63%	59%	53%	73%	63%
Safety of riding areas	62%	64%	63%	63%	61%	64%	52%	60%	60%
Environmental stewardship	64%	44%	59%	60%	49%	57%	54%	66%	56%
Campground areas trailhead	53%	50%	56%	50%	60%	58%	52%	56%	54%
Safety and etiquette info	54%	42%	52%	61%	51%	53%	41%	54%	51%
Emergency response	45%	50%	56%	46%	51%	53%	48%	45%	49%
Safe riding for youth	45%	40%	51%	52%	53%	49%	36%	48%	48%
Trail design	50%	33%	58%	53%	38%	51%	35%	58%	47%
Trailhead loading	42%	41%	50%	47%	42%	41%	38%	32%	43%
Info available on Internet	48%	19%	43%	45%	32%	35%	26%	41%	37%
Short trails	37%	24%	42%	35%	29%	35%	32%	45%	35%
Trail access	28%	34%	41%	39%	33%	40%	19%	42%	35%
Trailhead restrooms	30%	37%	36%	38%	28%	35%	35%	30%	35%
Trail map availability	34%	26%	35%	37%	26%	29%	29%	31%	31%
Long trails	31%	27%	28%	32%	27%	29%	18%	28%	29%
Allegheny National Forest riding	25%	20%	25%	27%	35%	18%	23%	22%	25%
Medium trails	24%	19%	27%	29%	21%	19%	20%	27%	24%
Trail signing	25%	20%	18%	26%	28%	29%	21%	22%	24%
Trail availability	19%	20%	23%	22%	14%	20%	12%	32%	21%
Trail condition	18%	16%	24%	22%	26%	15%	20%	23%	21%
Riding on private land	18%	13%	19%	23%	21%	18%	17%	26%	20%
DCNR riding	17%	14%	22%	23%	24%	11%	12%	17%	19%
Rails to Trails riding	21%	10%	20%	13%	21%	11%	25%	17%	18%
PA Game Commission riding	17%	13%	20%	16%	22%	14%	11%	18%	16%
Trail grooming	15%	16%	16%	19%	19%	8%	18%	12%	16%

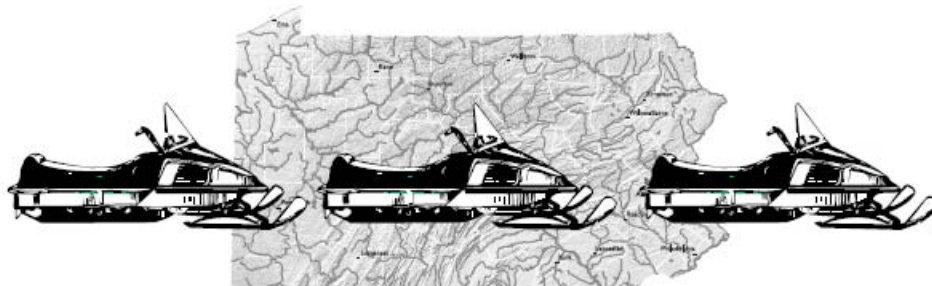
Table 20. Snowmobile trail features needing to be improved, by region (significant regional differences in black).

<i>Needing Improvement</i>	<i>ANF</i>	<i>Erie</i>	<i>HGD</i>	<i>Laurel Highlands</i>	<i>Philadelphia</i>	<i>Pittsburgh</i>	<i>Pocono</i>	<i>Susquehanna</i>	<i>All Owners</i>
Trail condition	59%	62%	52%	61%	57%	66%	57%	57%	58%
Trail grooming	52%	56%	50%	51%	53%	62%	49%	60%	54%
Trail signing	43%	37%	42%	32%	37%	38%	39%	39%	38%
Trail map availability	28%	31%	31%	29%	34%	36%	32%	26%	31%
Trail design	30%	38%	22%	27%	30%	30%	36%	19%	29%
PA Game Commission riding	28%	33%	28%	29%	23%	30%	28%	27%	28%
DCNR riding	27%	32%	24%	26%	22%	38%	24%	25%	28%
Riding on private land	25%	30%	27%	19%	28%	29%	24%	23%	26%
Allegheny National Forest riding	28%	29%	26%	24%	21%	36%	16%	22%	26%
Long trails	21%	31%	26%	22%	27%	29%	33%	23%	26%
Rails to Trails riding	20%	30%	23%	32%	20%	31%	22%	26%	26%
Trail access	38%	20%	21%	23%	26%	20%	33%	23%	25%
Trail availability	25%	21%	19%	21%	29%	21%	20%	20%	22%
Medium trails	25%	26%	21%	21%	15%	25%	22%	16%	21%
Info available on Internet	16%	24%	21%	15%	26%	29%	22%	12%	20%
Short trails	20%	25%	19%	19%	20%	17%	23%	17%	20%
Safety of riding areas	17%	22%	17%	17%	18%	17%	25%	17%	19%
Trailhead restrooms	14%	14%	17%	14%	28%	20%	20%	17%	18%
Trailhead loading	13%	16%	19%	19%	20%	20%	21%	15%	18%
Safety and etiquette info	19%	21%	20%	14%	17%	17%	19%	11%	17%
Emergency response	21%	12%	13%	18%	10%	18%	21%	17%	17%
Safe riding for youth	15%	16%	14%	9%	9%	15%	17%	10%	13%
Campground areas trailhead	11%	11%	12%	11%	11%	10%	12%	9%	12%
Environmental stewardship	6%	13%	15%	11%	17%	13%	12%	6%	12%
Snowmobile dealer education	11%	15%	9%	14%	10%	10%	12%	5%	11%
Policing, enforcement	12%	10%	7%	4%	10%	10%	11%	10%	9%
Safe riding for adults	10%	12%	7%	8%	7%	12%	9%	7%	9%
Race courses	6%	7%	6%	9%	6%	6%	7%	5%	8%

Table 21. Snowmobile trail features needing to be increased, by region (significant regional differences in black).

<i>Needing Increase</i>	<i>ANF</i>	<i>Erie</i>	<i>HGD</i>	<i>Laurel Highlands</i>	<i>Philadelphia</i>	<i>Pittsburgh</i>	<i>Pocono</i>	<i>Susquehanna</i>	<i>All Owners</i>
Trail availability	56%	59%	58%	56%	57%	59%	68%	48%	57%
Rails to Trails riding	59%	60%	57%	55%	59%	58%	53%	56%	56%
PA Game Commission riding	55%	54%	52%	56%	55%	56%	62%	55%	55%
Medium trails	51%	55%	52%	50%	64%	56%	58%	57%	54%
Riding on private land	58%	57%	54%	58%	50%	54%	60%	51%	54%
DCNR riding	56%	54%	54%	51%	55%	52%	64%	58%	54%
Allegheny National Forest riding	47%	51%	49%	49%	44%	46%	61%	56%	49%
Trailhead restrooms	56%	49%	46%	48%	44%	45%	45%	53%	47%
Long trails	48%	43%	46%	46%	47%	43%	49%	49%	45%
Short trails	43%	51%	40%	46%	51%	48%	46%	38%	45%
Info available on Internet	36%	58%	36%	39%	43%	37%	52%	47%	43%
Trail access	34%	45%	38%	39%	42%	39%	48%	35%	40%
Trailhead loading	44%	43%	31%	35%	38%	39%	41%	52%	40%
Safe riding for youth	40%	44%	35%	39%	38%	36%	46%	42%	39%
Trail signing	32%	43%	40%	42%	36%	32%	39%	40%	39%
Trail map availability	38%	43%	34%	35%	40%	34%	39%	43%	39%
Emergency response	34%	38%	32%	36%	40%	29%	31%	39%	34%
Campground areas trailhead	36%	39%	32%	39%	29%	32%	36%	35%	34%
Environmental stewardship	30%	44%	26%	29%	34%	30%	34%	28%	32%
Safety and etiquette info	27%	37%	28%	25%	32%	30%	40%	34%	31%
Trail grooming	33%	28%	34%	29%	28%	30%	33%	28%	30%
Safe riding for adults	30%	25%	22%	22%	26%	30%	37%	27%	27%
Snowmobile dealer education	25%	23%	22%	25%	27%	30%	35%	22%	26%
Trail design	20%	29%	19%	20%	31%	19%	30%	23%	24%
Race courses	18%	29%	21%	23%	30%	22%	26%	21%	23%
Trail condition	23%	22%	24%	17%	17%	19%	23%	19%	21%
Safety of riding areas	22%	14%	20%	20%	21%	18%	23%	23%	21%
Policing, enforcement	14%	20%	14%	10%	24%	17%	29%	17%	18%

Appendix C – The Survey Form



Pennsylvania Snowmobile Users Survey

In this first set of questions we would like to learn about snowmobile use in your household.

1. How many snowmobiles are in your household? _____

2. How many people in your household have participated in snowmobile activities within the last 12 months? _____

3. How many riders in your household are in the following age groups:

Age	Number of Riders		Completed Safe Riding Course		Age	Number of Riders		Completed Safe Riding Course	
	Female	Male	Female	Male		Female	Male	Female	Male
5 - 9	___	___	___	___	40 - 49	___	___	___	___
10 - 15	___	___	___	___	50 - 59	___	___	___	___
16 - 20	___	___	___	___	60 - 69	___	___	___	___
21 - 29	___	___	___	___	70 +	___	___	___	___
30 - 39	___	___	___	___					

4. If someone in your household has completed a safe riding course, please rate the value of the course by circling the appropriate answer.

Poor Fair Good Excellent

5. Do you think riders 16 years of age and older should be required to complete a safe riders course? Yes No

a. Would you be willing to pay for an adult safe rider course? Yes No

b. If yes, how much? _____

6. How would you describe the use of snowmobiles in your household (check all that apply)?

- Hunting Fishing Utility/work Racing/competition
 Trail/leisure riding Sport riding Aggressive recreational riding
 Transportation Other (Specify) _____

a. Why do you ride your snowmobile recreationally (check all that apply)?

- Vistas/scenery See wildlife Time with family and friends Charitable rides
 Challenge Adventure Photography Touring
 Other (Specify) _____

7. Approximately how many miles did you ride a snowmobile in Pennsylvania during the '04 - '05 season _____; '03 - '04 season _____; '02 - '03 season _____?

a. How many years have you been riding snowmobiles? _____

b. Are you a member of the Pennsylvania State Snowmobile Association (PSSA)? Yes No

c. If no, why not? _____

d. Are you a member of any other snowmobile organization or club? Yes No

e. If yes, which ones? _____

8. To help better plan for trail development and maintenance please indicate your two favorite areas for snowmobile riding in Pennsylvania. (Please circle whether the area is public or private.)

1. _____ public private 2. _____ public private
 Located in _____ County Located in _____ County

9. Have you or a member of your household ever been involved in any of the following while riding a snowmobile?

	You	Household Member
a. Collision with an obstacle (tree, rocks, etc.)	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
b. Collision with another vehicle	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
c. Overturn	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
d. Accident while loading/unloading	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
e. Other _____	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No

In the next set of questions we would like to learn about your attitudes towards trails and trail needs.

10. On a scale of 1 to 5 where 1 indicates **Very Unimportant** and 5 indicates **Very Important**, please circle the number that best describes your attitudes towards the following snowmobile trail needs.

	Very Unimportant				Very Important
	↓	↓	↓	↓	↓
a. Construct new trail systems	1	2	3	4	5
b. Enhance/expand existing trail systems	1	2	3	4	5
c. Maintain existing trails	1	2	3	4	5
d. Trail grooming	1	2	3	4	5
e. Provide support facilities such as trailhead parking and restrooms	1	2	3	4	5
f. Access to secondary roads to link trails	1	2	3	4	5
g. Access to services? (food, fuel, lodging, repairs)	1	2	3	4	5
h. Access to pipelines and utility right-of-ways	1	2	3	4	5
i. Increase law enforcement at riding areas	1	2	3	4	5
j. Increase maps, signage, and other educational materials	1	2	3	4	5
k. Increase trail safety	1	2	3	4	5
l. Snow left along sides of plowed joint use roads	1	2	3	4	5
m. Other (Specify) _____	1	2	3	4	5

11. From the following list of snowmobile trail and riding opportunities, please rank on a scale of 1 to 5 where 1 indicates **Very Unimportant** and 5 indicates **Very Important**.

	Very Unimportant				Very Important
	↓	↓	↓	↓	↓
a. Long interconnected trails (125 miles or more)	1	2	3	4	5
b. Medium trails 50 to 125 miles	1	2	3	4	5
c. Short trails less than 50 miles	1	2	3	4	5

In the next set of questions we would like to learn about your attitudes toward snowmobile riding.

12. On a scale of 1 to 5 where 1 indicates **Strongly Disagree** and 5 indicates **Strongly Agree**, please circle the number that best describes your preferred riding characteristics.

	Strongly Disagree					Strongly Agree
	↓	↓	↓	↓	↓	↓
a. I desire multiple day excursions, riding for miles and staying in different places along the way	1	2	3	4	5	
b. I desire weekend opportunities where I can camp or stay in a nearby motel, riding multiple trails from the same location	1	2	3	4	5	
c. I desire a place where I can arrive in the early morning and spend the day, but I am not interested in staying overnight	1	2	3	4	5	
d. I desire a place close to home where I can ride a couple of hours when I have the time	1	2	3	4	5	
e. I would be willing to use multiple-use trails and share trails with ATVs and x-country skiers	1	2	3	4	5	

13. On a scale of 1 to 5 where 1 indicates **Strongly Disagree** and 5 indicates **Strongly Agree**, please circle the number that best describes your attitude towards these snowmobile issues.

	Strongly Disagree					Strongly Agree
	↓	↓	↓	↓	↓	↓
a. I would be willing to volunteer to assist in education, patrol, trail maintenance, or trail grooming at a public snowmobile trail (you will not be contacted)	1	2	3	4	5	
b. Snowmobile registration funds should be used to purchase and operate groomers for public trails	1	2	3	4	5	
c. Snowmobile registration funds should be used to purchase and operate groomers on private trails	1	2	3	4	5	
d. Snowmobile registration funds should be used to develop trails on private property	1	2	3	4	5	

In the following questions we would like to learn about your attitudes towards snowmobile areas and features.

14. Please rate your overall satisfaction with snowmobiling opportunities in Pennsylvania by circling the answer that best corresponds with your response.

Very Dissatisfied Dissatisfied Satisfied Very Satisfied

a. Please describe why in the least amount of words possible:

15. From the following list of snowmobile riding features, please check those that you think are adequate, should be increased, or should be improved: (skip the feature if you have no opinion).

Adequate	Should be Increased	Should be Improved		Adequate	Should be Increased	Should be Improved	
Trail availability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Environmental Stewardship/ Tread Lightly information	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Trail access	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Information available on the internet	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Trail design	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Safe riding courses for youth	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Long trails (>125 mi)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Safe riding courses for adults	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Short trails (<50 miles)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Policing, enforcement of rules and regulations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Medium trails (50-125 miles)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Snowmobile dealer education on safety and laws	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Race courses	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Emergency response/medical aid on trails	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Trail condition	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Rails to Trails riding opportunities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Trail grooming	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Pennsylvania Game Commission riding opportunities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Safety of riding areas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Allegheny National Forest riding opportunities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Campground areas at or near trailhead	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	DCNR riding opportunities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Trailhead restrooms	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Riding opportunities on private land	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Trailhead loading/unloading areas/facilities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
Trail signing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
Trail map availability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
Safety and etiquette information	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				

16. From the following list, please indicate on a scale of 1 to 5 where 1 indicates **Strongly Disagree** and 5 indicates **Strongly Agree** your opinion about whether each is a problem facing snowmobile use in Pennsylvania.

	Strongly Disagree				Strongly Agree
	↓	↓	↓	↓	↓
a. Trespassing	1	2	3	4	5
b. Riding in illegal areas.....	1	2	3	4	5
c. Excessive speed on trails.....	1	2	3	4	5
d. Too much noise	1	2	3	4	5
e. Riding under the influence of alcohol or drugs	1	2	3	4	5
f. Failure to comply with rules and restrictions	1	2	3	4	5
g. Too many rules and regulations	1	2	3	4	5
h. Environmental degradation/damage	1	2	3	4	5
i. Irresponsible/dangerous/reckless riding.....	1	2	3	4	5
j. Snow plowing on open snowmobile roads	1	2	3	4	5
k. ATVs on snowmobile trails	1	2	3	4	5
l. Crowding, too many people and machines	1	2	3	4	5
m. Lack of parent supervision of youth riders.....	1	2	3	4	5
n. Availability of liability insurance	1	2	3	4	5
o. Cost of liability insurance	1	2	3	4	5
p. Other (Specify) _____	1	2	3	4	5

16a. What is the best time of day to do trail grooming for safety and/or durability of trails? (please check best time)

- Morning Afternoon Evening/After Dark

17. If you come upon another person on the trail what do you do (Please circle the appropriate answer)?

- a. Dog sleds 1) Maintain speed, 2) Slow down, 3) Stop, or 4) shut off snowmobile
 b. X-country skier 1) Maintain speed, 2) Slow down, 3) Stop, or 4) shut off snowmobile
 c. Hiker 1) Maintain speed, 2) Slow down, 3) Stop, or 4) shut off snowmobile

18. In the least amount of words possible, please describe the three largest problems, other than lack of snow, affecting your snowmobile experience in Pennsylvania. For each problem please provide a short idea for a solution.

Most Important Problems	Solution
a. _____	a. _____
b. _____	b. _____
c. _____	c. _____

19. While riding an snowmobile, if you have ever been involved in a significant conflict with another person who was not an snowmobile rider, please describe the conflict in as few of words as possible.

In the next set of questions we would like to learn about the impact snowmobile riders have on Pennsylvania tourism. Please provide your best estimate for each question.

20. What is your best source of information about where to ride your snowmobile?

- Internet Word-of-mouth Dealers PSSA Other _____

a. What types of information would you like to see on the Internet (check all that apply)?

- Trail Maps Directions to trailheads Nearby services Safety information
 GPS data Link to on-line registration Snowcover maps

21. Approximately how many different day trips and overnight trips, over 50 miles, do you make in the average year to ride snowmobiles?

- a. Day Trips: ___ in Pennsylvania ___ out of state state or province traveled to most often: _____
 b. Overnight Trips: ___ in Pennsylvania ___ out of state state or province traveled to most often: _____

22. Please give your best estimate of the **total gallons** of gasoline you purchased for your snowmobile in an average year.

_____ Number of gallons of gasoline purchased in Pennsylvania

_____ Number of gallons of gasoline purchased out-of-state

a. Please give your best estimate of the **total gallons** of gasoline you purchased to transport and/or travel to your snowmobile riding destinations in an average year.

_____ Number of gallons of gasoline purchased in Pennsylvania

_____ Number of gallons of gasoline purchased out-of-state

23. Please give your best estimate of the dollar amount you spent on the following items while on your last snowmobile trip over 50 miles.

In Pennsylvania

- a. Gasoline/oil (for snowmobile) _____
- b. Gasoline (car/truck) _____
- c. Repairs/Maintenance _____
- d. Food _____
- e. Lodging _____
- f. Fees _____
- g. Other _____

Out-of State

- a. Gasoline/oil (for snowmobile) _____
- b. Gasoline (car/truck) _____
- c. Repairs/Maintenance _____
- d. Food _____
- e. Lodging _____
- f. Fees _____
- g. Other _____

24. In the last year, what is your best estimate of the amount of money spent in your household on purchasing snowmobiles \$ _____ and equipment \$ _____.

a. How often do you purchase a new snowmobile? _____

	Public	Private
25. a. How much would you be willing to pay for a <i>seasonal pass</i> to a riding facility?	_____	_____
b. How much would you be willing to pay for a <i>daily pass</i> to a riding facility?	_____	_____
c. Would you support an increased registration fee to provide for better snowmobile riding opportunities?	_____	_____

Finally, we need to ask some questions about your household. This information is strictly confidential.

26. When not riding your snowmobile, what other recreational activities do you participate in (check all that apply)?

- | | | | |
|--|--|---|--|
| <input type="checkbox"/> Camping | <input type="checkbox"/> Hiking | <input type="checkbox"/> Biking/Mountain Biking | <input type="checkbox"/> Watching Wildlife/Birds |
| <input type="checkbox"/> Hunting | <input type="checkbox"/> Fishing | <input type="checkbox"/> Boating/Canoeing | <input type="checkbox"/> Four-Wheel Driving |
| <input type="checkbox"/> Scenic Drives | <input type="checkbox"/> Off-Road Motorcycling | <input type="checkbox"/> ATV riding | <input type="checkbox"/> Other _____ |

27. How would you describe where you live?
(please circle the appropriate answer)
City Suburb Town Rural

32. Are you Hispanic or Latino? Yes No

28. In what county do you live? _____

a. What is your zip code? _____

33. What is the highest grade level of schooling you have completed?

- Non-high school graduate
- High school graduate
- Two-year or tech degree
- Four-year college degree
- Post-graduate degree

29. What is your gender? Male Female

30. In what year were you born? (please write in year)

34. What is your best estimate of total family income before taxes? (Confidentiality is guaranteed)

- | | |
|--|--|
| <input type="checkbox"/> less than \$10,000 | <input type="checkbox"/> \$35,000 - \$49,999 |
| <input type="checkbox"/> \$10,000 - \$14,999 | <input type="checkbox"/> \$50,000 - \$74,999 |
| <input type="checkbox"/> \$15,000 - \$24,999 | <input type="checkbox"/> \$75,000 - \$99,999 |
| <input type="checkbox"/> \$25,000 - \$34,999 | <input type="checkbox"/> \$100,000+ |

31. What is your ethnic background?

- White
- African American
- American Indian or Alaskan Native
- Asian
- Native Hawaiian or Other Pacific Islander
- Other _____