

University of Wisconsin – Madison/Extension  
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# **The Economic Impacts of Active Silent Sports Enthusiasts:**

## **A Case Study from Northern Wisconsin**

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# The Economic Impacts of Active Silent Sports Enthusiasts: A Case Study from Northern Wisconsin

## Executive Summary

Outdoor recreation and its ties to tourism demand are key components of the multifunctional rural landscape found throughout the Lake States. This is particularly true in northern Wisconsin, which is endowed with both abundant natural amenities (forest, water and recreational assets) and receptive community retail and service sectors. Broadly defined, outdoor recreational pursuits span a variety of activities.

In this report we outline results of an applied research project focused on the subset of outdoor recreationists known as “active silent sports enthusiasts” and their relationship to local communities in northern Wisconsin. We define the active silent sports enthusiast as someone who had participated in at least one cross country skiing, biking or running event during the course of one year. Our case study includes events that took place during 2012 in Ashland, Bayfield and Sawyer Counties of northern Wisconsin. Our research methods involved a year-long sequence of surveys administered using event registration lists.



Having gathered information related to trip and user characteristics, expenditure patterns, user preferences and demographic information, our intent with this report is to synthesize results for use by development and recreation planners, and others in their pursuit to improve the quality, availability, and community impact of these recreational opportunities in the region. A snapshot of key findings include:

- From the events surveyed, about 95 percent of the roughly 26,700 event participants were nonresidents of Ashland, Bayfield and Sawyer Counties. These nonresidents and their trip-related expenditures provided external private sector stimulus to the local economies within the three county region of northern Wisconsin.



- During the 2012 calendar year, we estimate that approximately 56,500 individual trips were made by nonresidents of Ashland, Bayfield and Sawyer Counties to this northern Wisconsin region to participate in silent sports activities (cross country skiing, mountain biking, and running).
- Nonresident event participants made an average of 4.2 trips to Ashland, Bayfield and Sawyer Counties annually and spent an average of 2.4 nights in the area per trip. This same group, on average, participated in 1.8 organized events during 2012 within the study area.



- Some demographic highlights of survey respondents included the following:
  - 88% had a bachelor's degree or higher;
  - 50% were between ages of 30 and 50;
  - 89% reported annual household incomes of at least \$50,000;
  - 70% identified their occupation as professional and managerial trades.
- With respect to recreational amenities, nonresident event participants reported relatively high importance and satisfaction levels for event organization, trail signage, quality and type of trail surface, and facility cleanliness. Less well-rated yet important recreational amenities included restroom accessibility.
- With respect to tourism amenities, nonresident event participants reported relatively higher importance and satisfaction with local overnight accommodations, equipment repair, and eating & drinking establishments, but low satisfaction yet high importance with local cell service and Wi-Fi availability.
- On average, the active silent sports enthusiasts we surveyed reported spending about \$468 per trip with about \$260 of this spending taking place locally within Ashland, Bayfield and Sawyer Counties.
- When we annualize this average expenditure pattern, results suggest that nonresident visitors to the counties spent approximately \$26.4 million (in 2012) in total trip spending.
- Roughly \$14.7 million in private sector stimulus was infused directly within Ashland, Bayfield or Sawyer Counties by nonresident silent sports enthusiasts.

- Trip spending by nonresident silent sports enthusiasts in 2012 supported more than 222 jobs within Ashland, Bayfield and Sawyer Counties.
- This same amount of annual trip spending supports roughly \$6.4 million in labor income, the majority of this originating within the Accommodations, Food Services, and Retail Trade sectors of the local economy.

## Acknowledgements

This ongoing project has been made possible through the help of several individuals throughout the state. The authors would like to recognize Ron Bergin for his contributions to this study and express gratitude to the UW-Extension Community, Natural Resources and Economic Development Program area for Team funds that supported this work. Further, we are grateful for generous financial support provided by the American Birkebeiner Ski Foundation, Hayward Lakes Visitor and Convention Bureau, Chequamegon Area Mountain Bike Association and Chequamegon Fat Tire Festival.



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# **The Economic Impacts of Active Silent Sports Enthusiasts:**

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### **1. INTRODUCTION**

Outdoor recreation and its ties to tourism demand are key components of multiple use rural landscapes found throughout the Lake States. This is particularly true in northern Wisconsin, which is endowed with both abundant natural amenities (forest, water and recreational assets) and receptive community retail and service sectors. Broadly defined, outdoor recreational pursuits span a variety of activities. In this report we outline results of an applied research project that focuses on the subset of recreationists known as “active silent sports enthusiasts” and their relationship to local communities in Ashland, Bayfield and Sawyer Counties of northern Wisconsin.

There is a continual need to test, interpret and more fully understand the social and economic consequences of recreational use and its impacts on nearby communities. During the past half century, our understanding of how recreational resources are integrated within the development of rural communities has grown with a particular interest in parks, trails and related publicly provided open spaces (Howe, et al. 1997; Garvin 2001; Crompton 2001). In Wisconsin, there has been continual applied research to address issues associated with economic impacts of recreation and tourism at the community level, examples of which can be found in an initially compiled annotated bibliography by Haines et al. (1998) and in a searchable on-line database most recently updated by Donaldson et al. (2010). These studies have addressed the variety of specific tourism types that include festivals, events & attractions, and the various types of relevant outdoor recreation pursuits including camping, fishing/hunting, park visitation and trail use (c.f. Cooper et al. 1979; Olson et al. 1999; Marcouiller et al. 2002; Kazmierski et al. 2009; Carper et al. 2013). In addition, developing trend assessments



for various recreational user groups is often the focus of regular exercises conducted for statewide recreation planning purposes (c.f. WDNR 2012, MNDNR 2008; MDNR 2003), but these often fail to develop usable profiles (demographic, expenditures, etc.) of specific user groups.<sup>1</sup>

With specific reference to silent sports enthusiasts, local economic impacts have taken on increased importance given intensified demands for the development of public open-space corridors (Rails to Trails 1996, 2008), increased inter-use recreational competition (Marcouiller et al. 2008), the rise of second homeowners as important local demand drivers (Berard and Trechter 2007) and general tendencies for increased community dependence on tourism as a source of income (Keith, et al. 1996; English et al. 2000; Reeder and Brown 2005). These tangible economic benefits are wide-ranging and include the stimulating effects of visitor spending on local retail and service sector activity (Tribe 2005; Vanhove 2005). Estimating this expenditure-driven local economic effect of outdoor recreationists has been the focus of several recent applied research projects (c.f. Carleyolsen et al 2005; Kazmierski et al. 2009; Donaldson et al. 2011; Carper et al. 2013; Hoogasian et al. 2013) and provides one aspect of this applied research.

Understanding recreation (and tourism) from the perspective of its ability to generate local income remains as a key research need. This need is particularly acute in regions marked by resource-dependency. For example, in the northern parts of Minnesota, Wisconsin and Michigan, resource-extractive sectors (forestry, agriculture, mining and related manufacturing) represent important traditional economic mainstays that are in transition due to global competition, regional comparative advantage and environmental concerns. There exists a continual need to examine the expansion of tourism due to the generally less diverse nature of resource-dependent economies and general shifts in income being experienced locally (Bowe et al. 2004; Bowe and Marcouiller 2007).

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<sup>1</sup> SCORP trends are typically highly aggregated and do not develop specific attribute characteristics of user groups. In particular, the recent Lake States SCORPs identified as reference materials do not develop usable profiles of the various active silent sports enthusiasts that are the focus of this applied research.

## 1.1 Review of Relevant Literature

Silent sports can be defined in many ways; most often referring to any type of non-motorized outdoor recreation activity. More active and competitive types of silent sports include skiing, bicycling, running and kayaking. It can also include non-sport leisure activities such as birding, bow-hunting, hiking, camping and canoeing. According to the Wisconsin Department of Natural Resources, various types of traditional silent sports such as biking and hiking are forecast to experience sustained demand, while others such as climbing can expect increased demand (Wisconsin DNR, 2012). In addition, demand for silent sports in general is forecast to increase as the Wisconsin population ages (*ibid*).

Research related to silent sports has been conducted on several fronts. Many early studies dealt with the environmental impact of development for various types of silent sports activities (Holden, 1999; Raemaeker, 1991; Holden, 2000). In particular they address the concern that development to facilitate silent sports would undermine other environmental pull factors of the regional natural amenity base within which these activities take place. Later studies measured tourism demand for outdoor recreation often in combination with an applied case study to test results (Siderelis and Moore, 1995; Fix and Loomis, 1997; 1998; Curtis, 2002). Often applied research has focused on trip and user characteristics and visitor spending profiles for later use in an economic model (*c.f.* Jackson, et. al. 2005; Steinback, 1999; Stynes et. al. 1998). Regional economic models using appropriate and accepted scientific methods (e.g. input-output analysis, econometric and/or hybrid approaches) are typically constructed with descriptive statistics on user characteristics as up-front stimulus used to measure impacts within a given region.

Other research has focused on nature-based attractions such as state and national parks and their ability to draw silent sports enthusiasts. Many of these have looked at tourism demand and spending patterns to see how they differ among groups based on the spatial arrangement of visitor origins (Lee and Han. 2002). Others focus on these

amenities' ability to draw visitors simply by virtue of their provision of places to partake in silent sports activities (Cooper and Cangelosi, 1985; Stynes and Sun, 2001; 2002; 2003; Cooper, et. al. 1979).

Finally, there is ample literature on silent sports activities such as skiing, mountain biking, kayaking and other activities in the Lake States. Often these studies begin as geographically specific applied research projects with a survey method to measure user profiles and trip spending (Gray, et. al, 1989; Cooper, et. al. 1979; Carper, et. al. 2013; Schwecke, et. al 1989; Chapin, 2012). These articles are particularly relevant to our work because they take place in the same geographical region and we can contextualize our method and findings with theirs.

## **1.2 Objectives and Problem Statement**

This applied research was undertaken to provide a better understanding of the active silent sports enthusiast. Our objectives were multi-faceted and included the (1) development of user profiles for general marketing efforts, (2) integration of user perceptions regarding locally available amenities and services for improved local public decision-making, and (3) estimation of economic ties and local economic impacts associated with expenditures of active silent sports enthusiasts.

The applied research problems that we addressed were broadly related to recreation management, leisure science and amenity-driven rural development. With regard to recreation and leisure science, specific questions included the following. Who are the "active silent sports enthusiasts" that recreate in northern Wisconsin? What aspects of the local amenity base motivate visitation and how do differing uses interact? How familiar are active silent sports enthusiasts with other recreational opportunities present locally? How repetitive are their visits? When during the year do visits occur and how is this related to receipts that flow to local business owners? How can the needs of the active silent sports enthusiast be better integrated into local economic development efforts? The specific economic problems we address involve the development of

accurate current estimates about the economic impacts of silent sports in northern Wisconsin. Specifically, what is the measurable external economic stimulus of silent sports in Ashland, Bayfield and Sawyer Counties and how does this impact the local economy in terms of jobs and income? These are the questions that provide us focus with specific reference to the social and economic impacts of active silent sports enthusiasts as one of many stakeholder interests in the natural resource base.

### **1.3. Methods and Data Used**

To answer these questions, we collected primary survey data from silent sports event registrants. The survey was administered in digital form using sample email distribution lists and a Qualtrics survey web-form. Survey instruments were developed for (1) residents of the three counties and (2) non-resident visitors (those who did not reside in the three county region). Several drafts of the survey instruments used were pre-tested with the final screen-shot version for non-residents displayed as Appendix A. This survey was administered during the 2012 calendar year to participants of 12 silent sports events held in Ashland, Bayfield and Sawyer Counties (see Appendix B). Details of survey design, administration, dataset cleaning and analysis are found in a companion report (Hoogasian 2013).

The survey was administered to a total of roughly 12,700 participants. We received valid responses from almost 4,000 nonresidents and over 200 residents for a response rate of roughly 33 percent for nonresidents and 37 percent for residents. Given our interest in the two subgroups of resident and non-resident active silent sports enthusiasts, we analyzed the dataset using these two primary cross-tabular categories. Tests for statistical significance comparing means and categorical differences were done using appropriate t, F, and Chi squared tests. While disaggregated results suggest some statistical differences between resident and non-resident responses, we simplify the presentation by presenting summary statistics for the entire respondent population. Further analysis and disaggregated results can be obtained from the authors.

The development of summary descriptive statistics matched with response characteristics allowed for an expansion of trip expenditures to annual spending levels. These annualized spending levels were applied to an economic model of the Ashland, Bayfield and Sawyer county region to estimate regional economic impacts. This input-output model was developed specifically for this project using IMPLAN 3.0 software and county-level data aggregated to include all three counties. A more complete description of regional economic modeling using input-output analysis is summarized in Appendix C.

Following this introduction, the report is organized into two subsequent sections. First we summarize our results into subsections that focus on (1) demographic information, (2) trip characteristics, (3) user preferences, and (4) expenditure patterns with resulting regional economic impacts. We then conclude with a section that summarizes the work and develops both relevant policy implications and further research needs.

## **2. RESULTS**

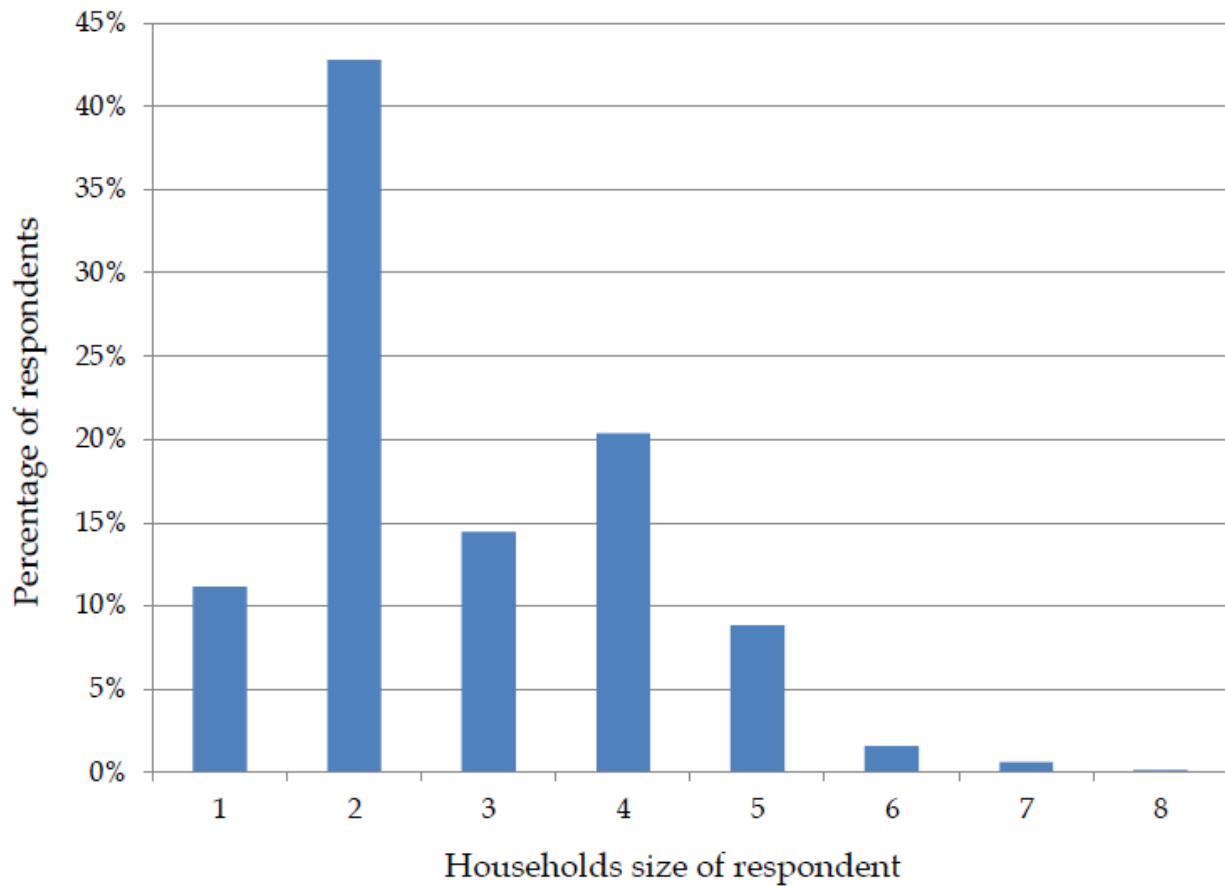
We begin this section with a summary of the survey results using simple descriptive statistics. Further statistical analysis of the dataset is ongoing; interested readers are referred to the authors for more detail.

### **2.1 Demographic Characteristics**

Descriptive results for demographic characteristics of our sample of silent sports events during 2012 involved respondent age, gender, educational attainment, occupation and average annual household income before taxes. We also collected data on household size. These characteristics help us better understand who participates in the silent sports events held in northern Wisconsin. While not surprising, these

characteristics provide context to regional perceptions, impacts and leisure activities of this specific form of outdoor recreation.

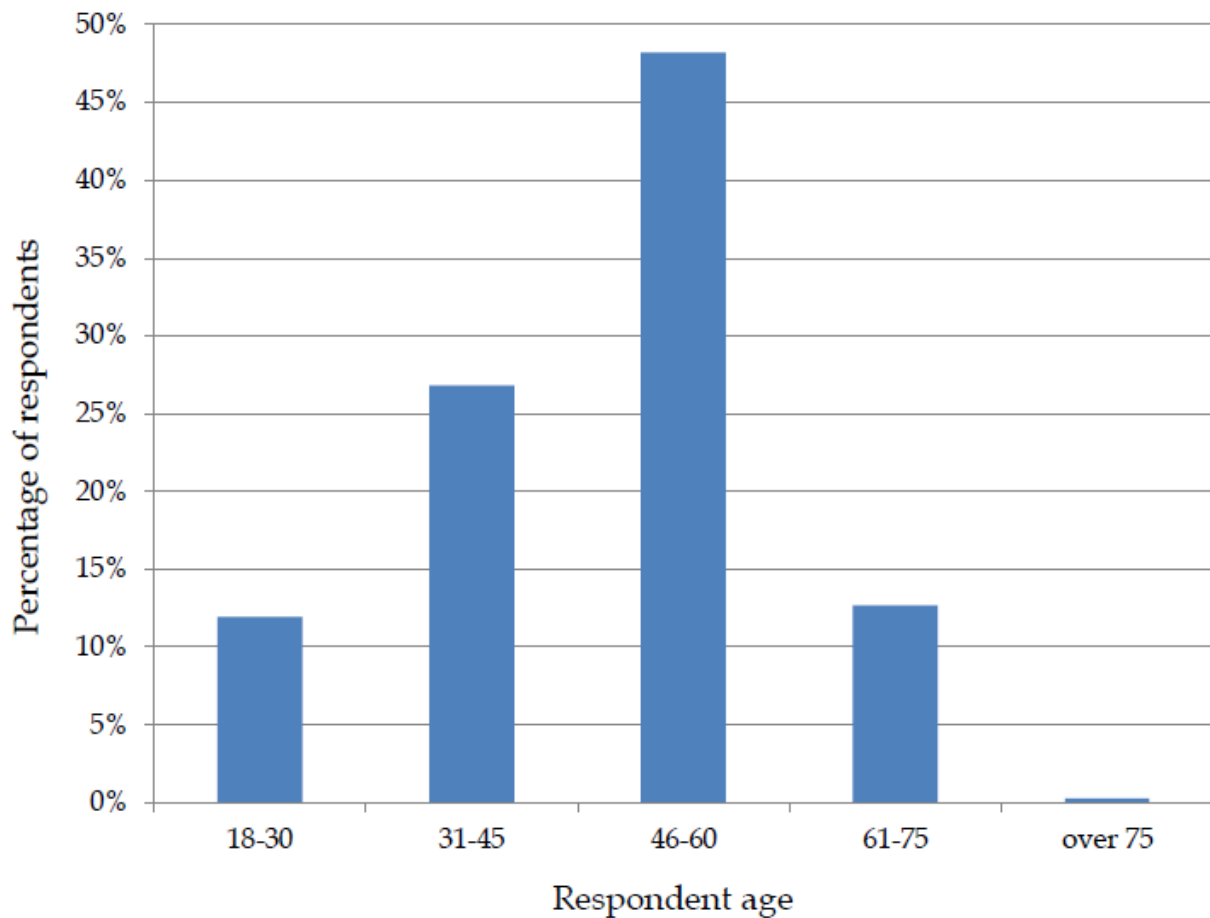
Results of our survey suggest that the average household size of nonresident silent sports enthusiasts of northern Wisconsin was roughly 2.8. The frequency of responses for household size is summarized in Figure 1 below.



**Figure 1.** Household size in number of individuals of survey respondents in percent of total responses (2012 survey results; n = 140 resident, 2445 nonresident).

The majority of our respondents were males. The gender profile of respondents for both resident and nonresident participants were statistically significant at the  $p < .05$  level. Among residents approximately 59% were male and 41% were female. This was even more pronounced among nonresidents where results suggest that 72% were male and 28% were female.

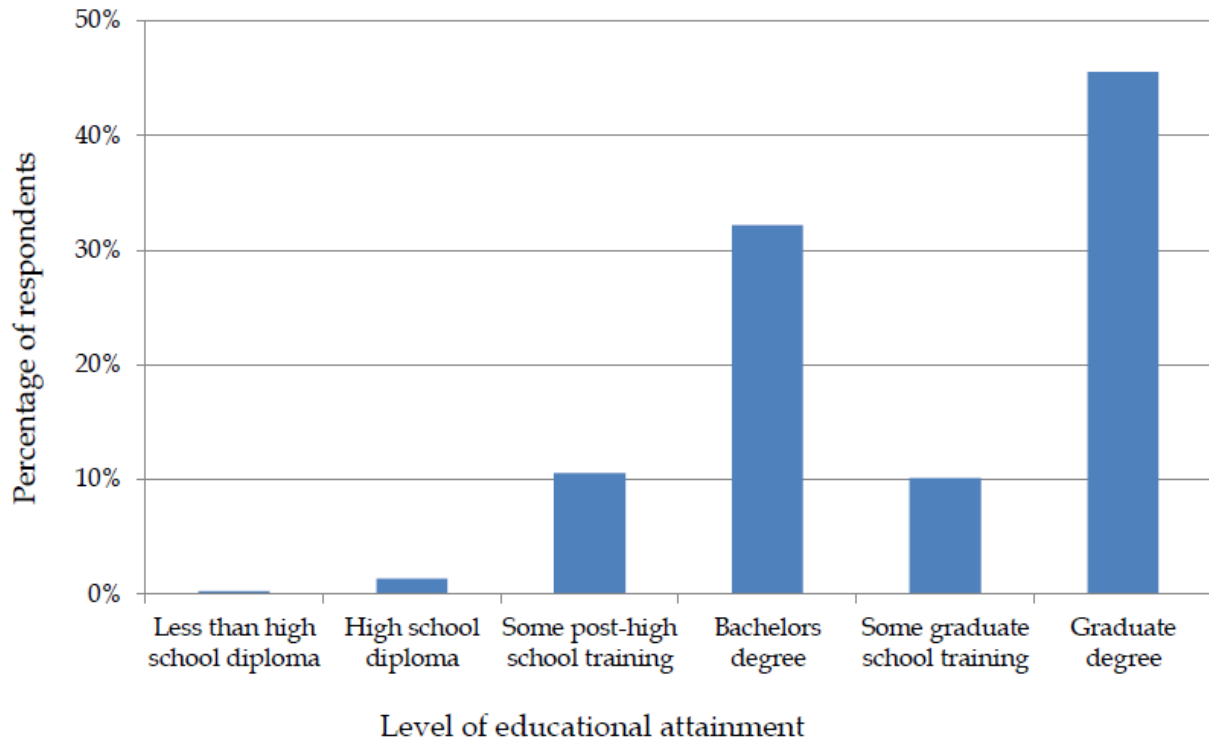
The median age of respondents was 32 for residents and 30 for nonresidents. Our t-tests (at the  $p < .05$  level) suggested a statistical difference between groups. Residents tended to be older than nonresidents. Our survey administration accounted for a minimum respondent age of 18 years old. Our oldest respondent was 88 years old. Silent sports enthusiasts appear to include middle and older-aged individuals with a considerable number of our respondents indicating ages between 40 and 65. Results are summarized in Figure 2 below.



**Figure 2.** Age of respondents (2012 survey results; resident  $n = 141$ , nonresident  $n = 2431$ ).

Results of the survey suggested that the participants responding to this effort had generally more formal education when compared to the overall population.

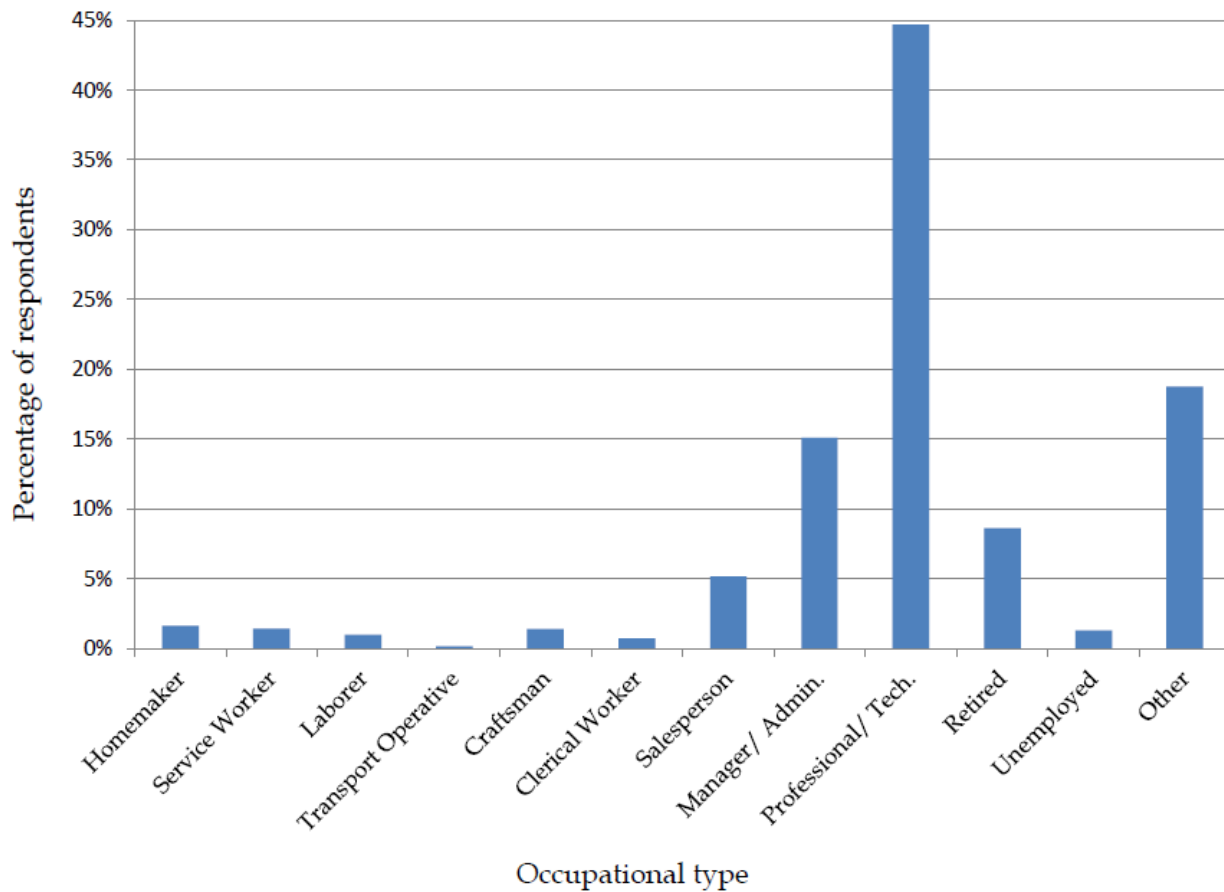
Overall, more than 85% of respondents had an educational attainment of a bachelor's degree or higher. A summary of the educational attainment of respondents is found in Figure 3.



**Figure 3.** Educational attainment of survey respondents (2012 survey results; resident n = 141, nonresident n = 2441).

The silent sports enthusiasts that we encountered in this survey effort were largely employed in white collar occupations. The overwhelming majority of respondents, both resident and nonresident, listed their occupation as among the professional and technical trades. Other listed categories of employment included administrator and manager, retired and "other". Some forms of employment listed under "other" included educators, business owners, students, writers and soldiers. The proportions of respondents by occupational category are summarized in Figure 4.



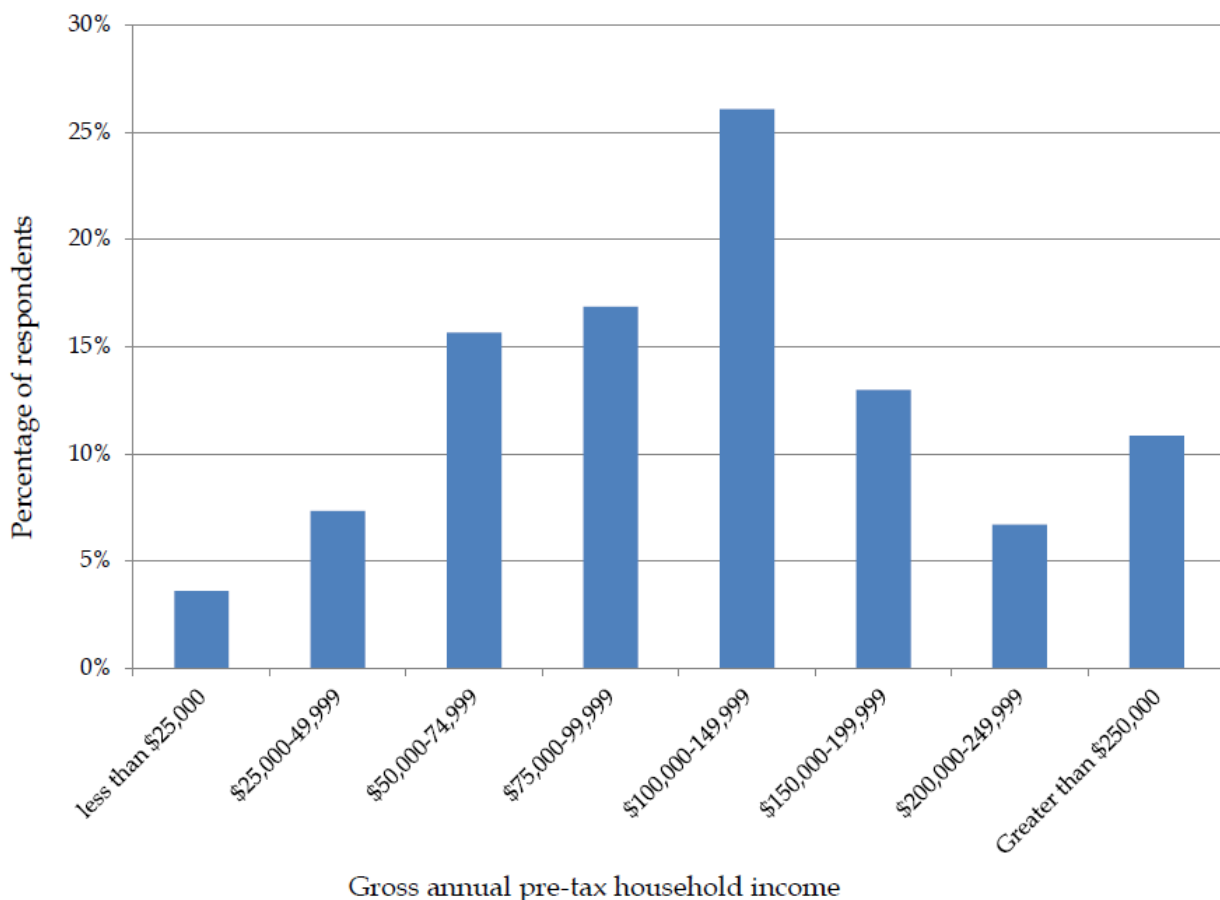


**Figure 4.** Occupational category of survey respondents (2012 survey results, resident n = 140, nonresident n = 2429).

The majority (68 percent) of resident respondents had employment within Ashland, Bayfield or Sawyer Counties while another 21 percent of resident respondents reported being retired. Nearly all nonresident respondents (99 percent) reported that their location of employment was outside of Ashland, Bayfield or Sawyer Counties. The remaining 1 percent were business or work-related occupations within the area but did not have primary residence within this region.

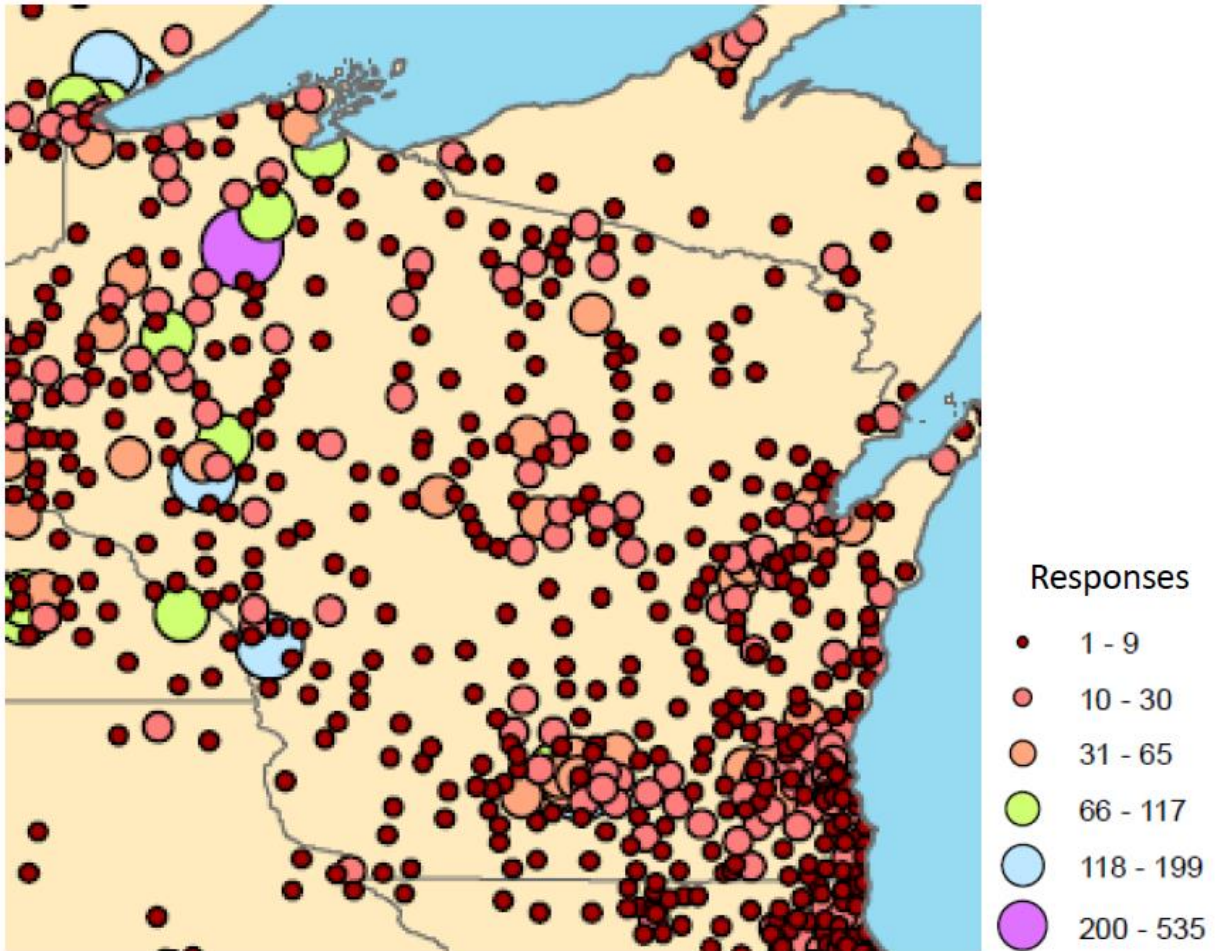
The silent sports enthusiasts encountered in our study had average incomes that were higher than both the regional and statewide average per capita income levels, with a majority of respondents reporting pre-tax household incomes of over \$50,000 per year. Roughly 80 percent of resident respondents and 89 percent of non-residents identified

their pre-tax household income as greater than \$50,000 per year. About 5 percent of resident respondents and 4 percent of nonresidents reported making less than \$25,000 per year. At the other end of the scale, roughly 6 percent of residents and 11 percent of nonresidents reported pre-tax household incomes of more than \$250,000 per year. Using mid-points of ranges, we calculated average pre-tax household incomes. Doing so, the average pre-tax household income of nonresident respondents exceeded resident respondents. The average pre-tax household income for resident respondents was \$93,000 per year while nonresident respondents reported average pre-tax household incomes of \$128,000 per year. The income distribution for those who responded to the survey is summarized in Figure 5.



**Figure 5.** Annual pre-tax household income of survey respondents by category (2012 survey results; resident n = 134, non-resident n = 2,309).

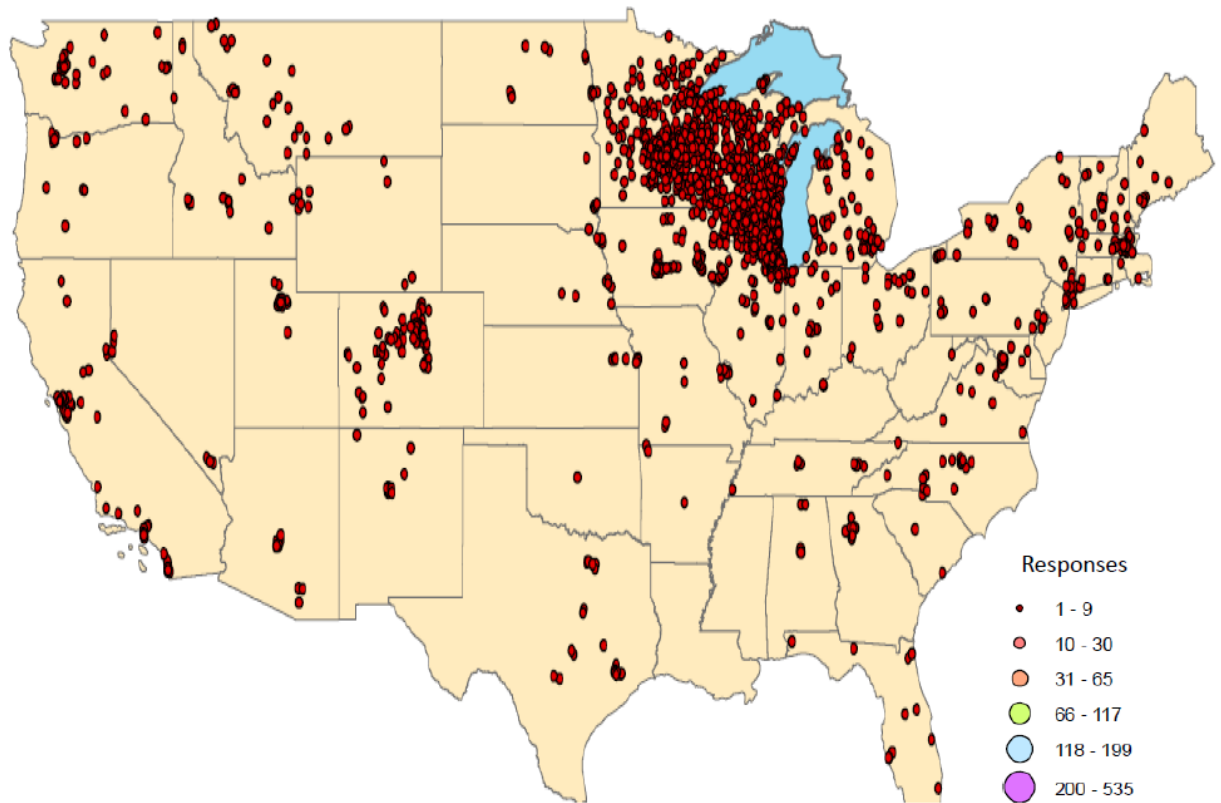
A majority of survey respondents originated within the three Lake States of Minnesota, Wisconsin, and Michigan. A graphical summary of respondent origins based on zip code is shown in Figure 6.



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**Figure 6.** Origin of respondents in Wisconsin and surrounding regions.

This said, many of these events drew participants from all over the world. The distribution of respondents who originated in the lower 48 United States is shown in Figure 7.

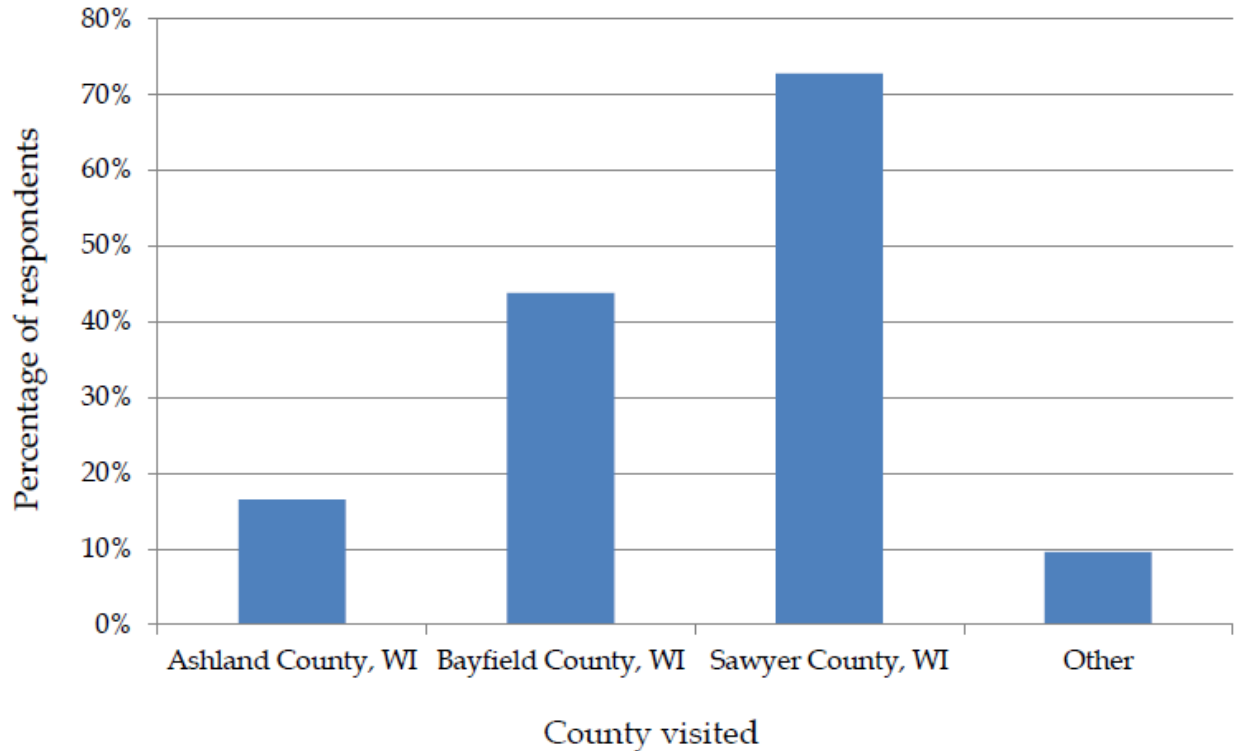


**Figure 7.** Origin of respondents in the lower 48 United States.

## 2.2 Trip Characteristics

Primarily gathered to better understand the nature of active silent sports enthusiasts, trip characteristics are also valuable for developing context to understand user preferences and expenditure patterns. Not surprising, trip destination for respondents was nearly completely within the three counties studied with very little “pass-through” visitation. The most frequently responded specific destination was Sawyer County. Again, this is not surprising given that the American Birkebeiner (located within Sawyer and southern Bayfield Counties) comprised the largest number of survey responses. The relative breakdown of county destinations is summarized in Figure 8. Note from this figure that respondents who identified the “other” category were either pass-through visitors or multiple destination visitors. Response included

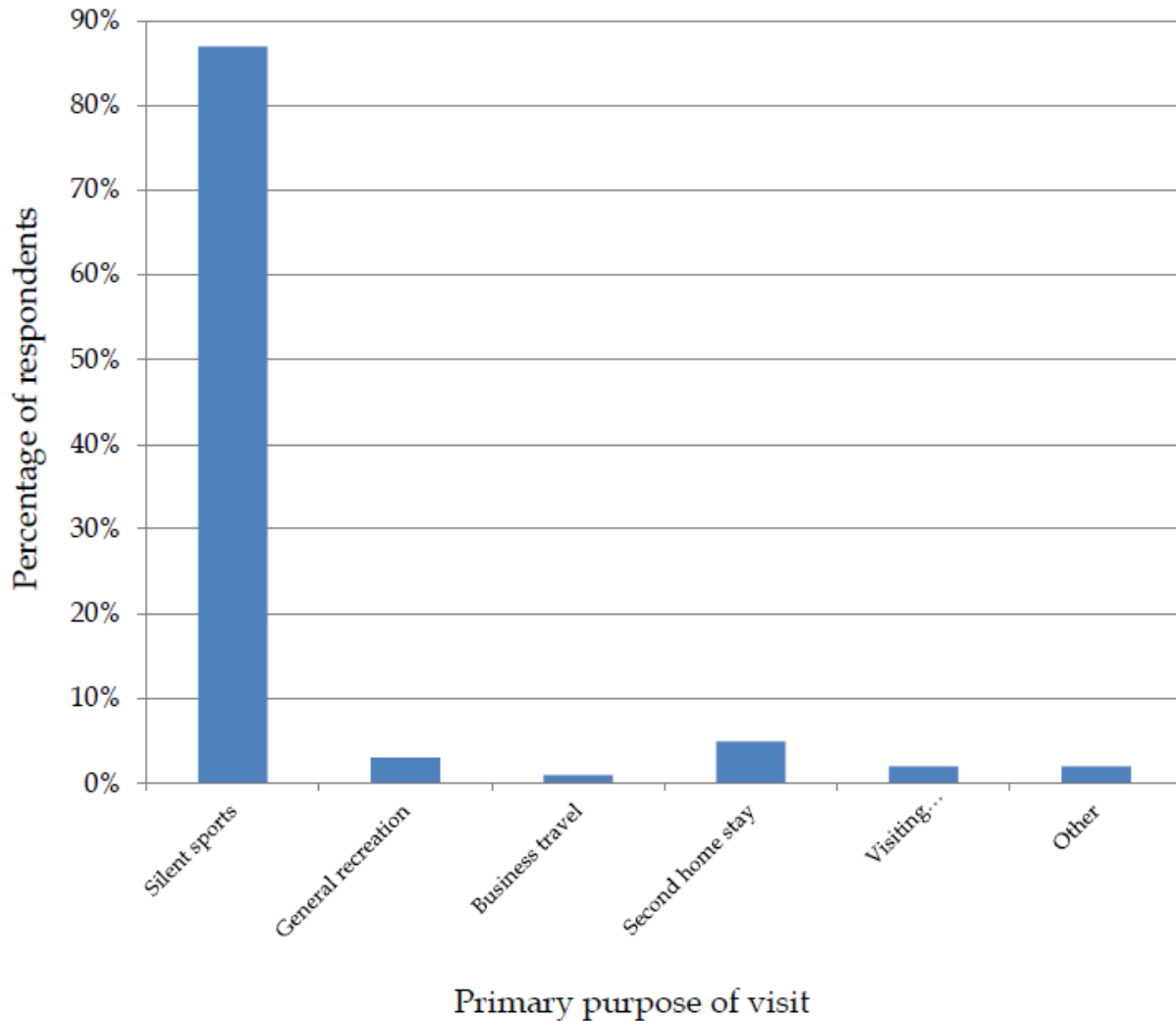
many of the surrounding destination regions and others nearby metropolitan areas such as Minneapolis, Madison, and Milwaukee. A handful of respondents listed counties in other states such as Michigan, Montana, Vermont and Minnesota. Some Wisconsin counties that occurred frequently included Iron, Rusk, Marathon, Price, Polk, Sauk, Dane, Eau Claire, Burnett and Washburn.



**Figure 8.** County visited on most recent trip – multiple responses possible (2012 survey results; resident n = 174, nonresident n = 3454).

Given our selection procedure (email lists from participant event registration), it was not surprising that most (87 percent) respondents had primary motivations for travel to the area related specifically to participate in silent sports activities. The remaining 13 percent can be accounted for as companion event spectators, local second homeowners, or leisure travelers. Individuals who listed other reasons as the primary purpose of their most recent visit potentially participated in an event as a secondary part of their trip, or traveled for social or family reasons, to shop, vacation, spend time

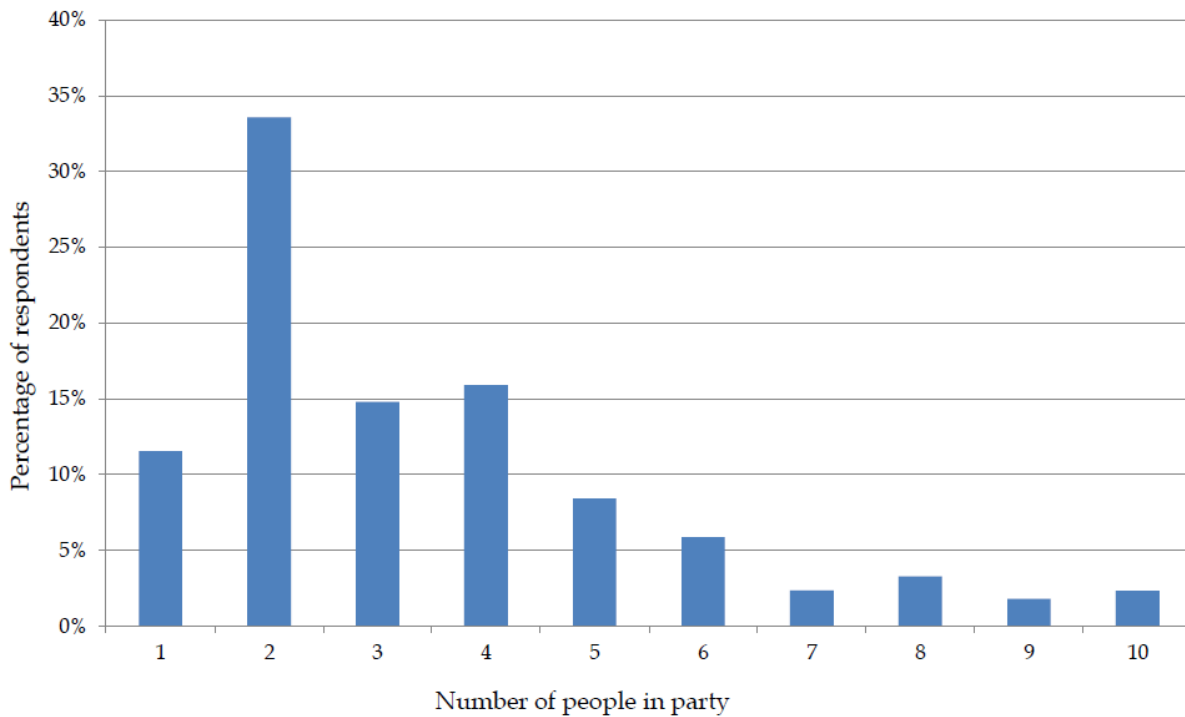
at a second home, take part in various hobbies or training for a sports activity. Indeed, there were some participants of silent sports events whose silent sports activity was secondary to the primary purpose of their visit. A response summary for the primary purpose of the trip is outlined in Figure 9.



**Figure 9.** Primary purpose of most recent visit to the Ashland, Bayfield, and Sawyer County region for nonresident respondents (2012 survey results; n = 3488).

Party characteristics provided a distinguishing factor that was important in expansion estimation. The average party size of respondents was more than 3 people per party. For residents, this was 2.85 and for nonresidents, 3.5. The average number of

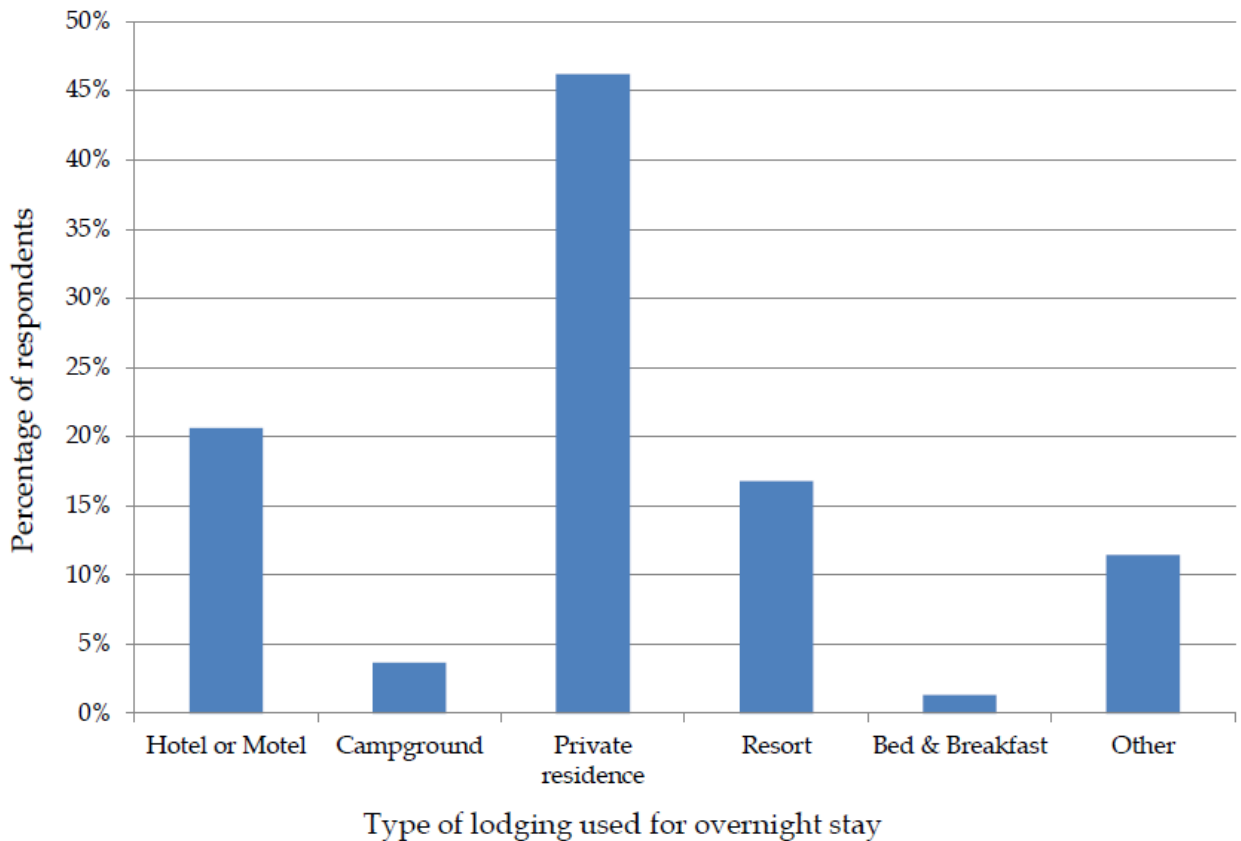
children (less than 18 years of age) in the party was just under 0.5 (with no significant differences between groups). When focusing on nonresident parties, an average of 2.85 members participated in silent sports. Average nonresident party size, as noted above was 3.5 thus we can conclude that a large proportion of these parties had at least one member that did not participate in silent sports. The distribution of party size for the sample of respondents to our survey is summarized in Figure 10.



**Figure 10.** Number of people in party on most recent trip (2012 survey results)

In general, most nonresidents to the region stayed at least one night in the area. While there were many daytrippers with responses to the number of nights stayed of zero, the maximum number of trip overnights was 20 for nonresidents. Averages for nonresidents were 2.36 nights. While 84 percent of residents reported being day-trippers, only 10% of nonresidents reported the same. The vast majority of those using lodging services in the area were nonresidents.

In addition to the number of nights stayed for residents and nonresidents we were interested in understanding the location of their overnight stay. More than 45 percent of nonresidents indicated that they spent time overnight at a private residence; a number that will be revisited in our discussion below on second home owners. Other popular overnight locations included hotels, motels, campgrounds and resorts. Items listed under other were many and typically included some sort of nontraditional lodging arrangement with friends, church camps or event related dormitories. Lodging types listed under other included various forms not covered by our question such as private rental agreements, church and event specific dormitories, staying with friends or family, time share and sleeping in one’s automobile. A response summary for lodging type is found in Figure 11.



**Figure 11.** Type of lodging used on most recent trip (2012 survey results; resident n = 38, nonresident n = 3204).



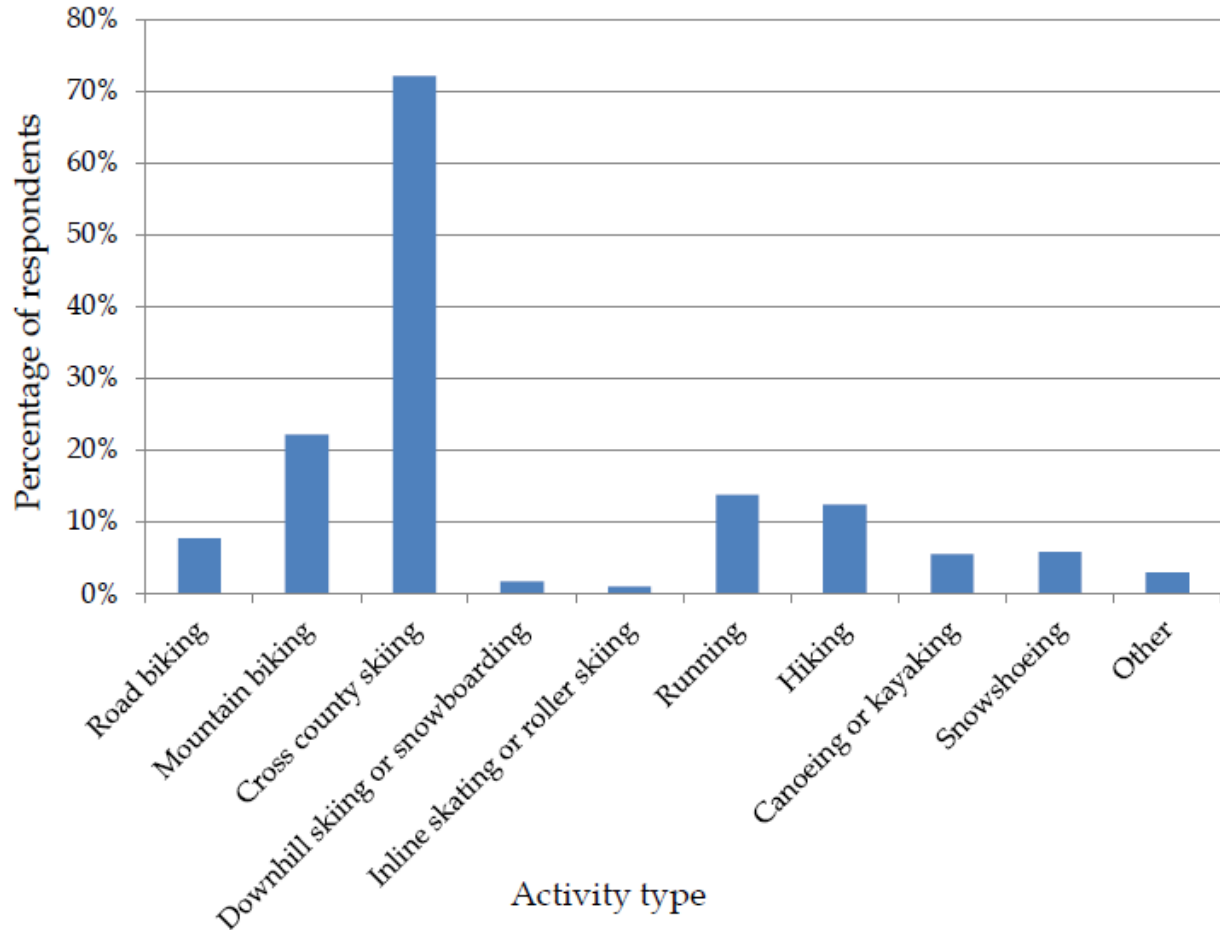
Note that more than 45 percent of respondents indicated that they stayed at a private residence on their most recent trip to the region. Roughly 10 percent, however, reported being second homeowners. There are several explanations for this that could include private rental arrangements and staying with friends and family.

One final aspect of trip characteristics, number of trips taken to this region per year, was important in expanding estimates to an annual basis. This was specific to nonresident participants and is useful for understanding trip frequency of our user group but also to derive total silent sports population for the purpose of expanding our data to an estimate of annual visitation. On average we found that nonresidents took 4.15 trips to the region within the past year. A primary source of information about trip characteristics is actual event or events participated in by residents and nonresidents. From this question we were able to derive not only which events respondents completed, but also the average number of events for both groups. On average, residents participated in 4.10 events while nonresidents participated in 1.83 events.

### **2.3 Involvement in Silent Sports**

To better understand the extent to which participants undertook silent sports activities and to develop more context into the role of silent sports activities in local quality-of-life we asked residents about their annual silent sports participation. This question specifically requested a number of days participants took part in various silent sports activities. Our goal was to understand the frequency of their participation. Responses ranged from 0 to 350 with an average at about 70 days. The silent sports activity distribution of respondents is summarized in Figure 12. Note from this Figure that our sample of silent sports enthusiasts did indeed participate in active silent sports throughout the year and could easily be characterized as being “avid” silent sports enthusiasts. Not surprising since we had a high number of samples from the cross country ski events (e.g. American Birkebeiner) and running events, cross country skiing

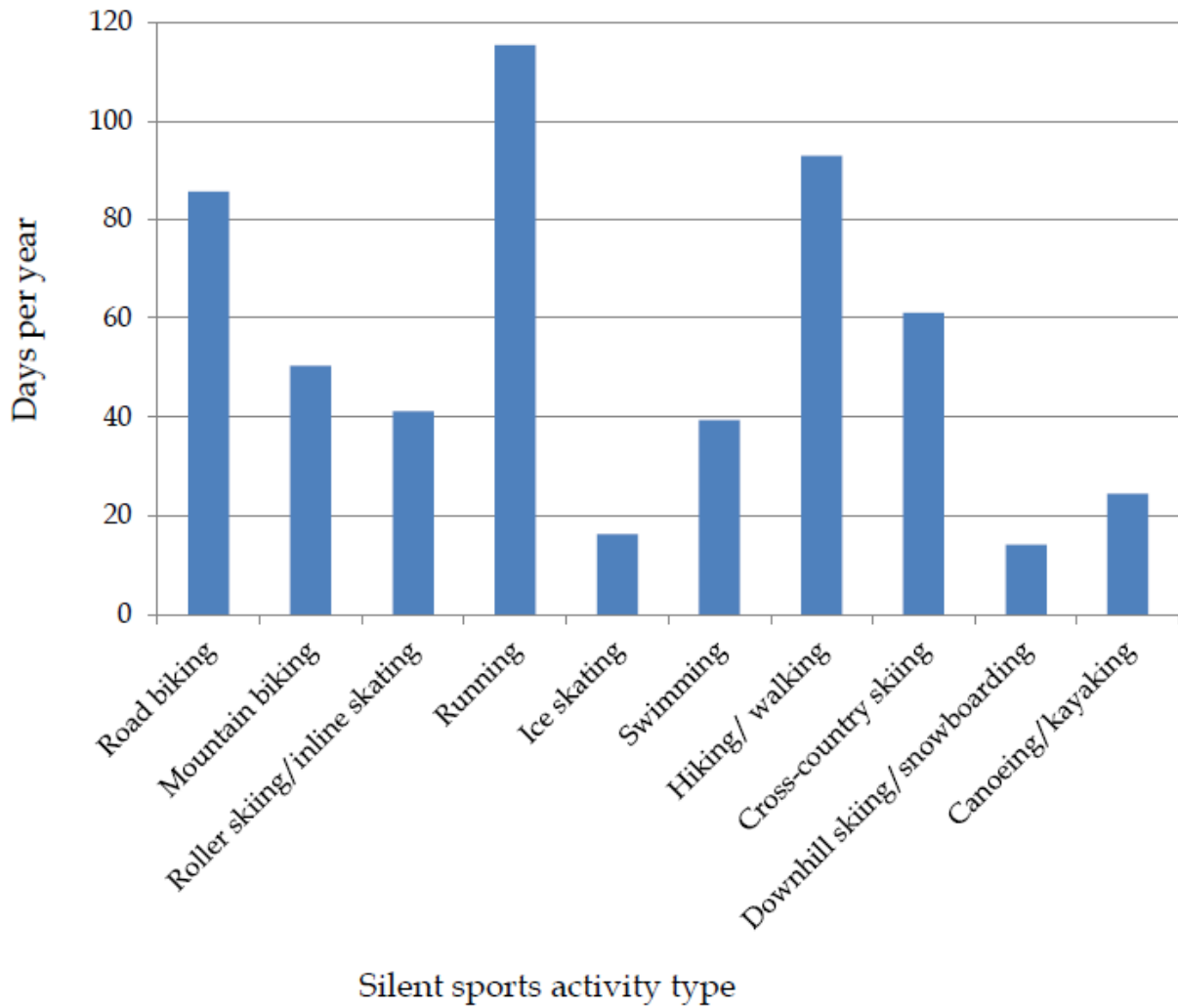
and running were the most often indicated silent sports activities in which respondents partook.



**Figure 12.** Distribution of silent sports activities throughout the year in percent of respondents indicating each activity – multiple responses possible (2012 survey results 5,310 responses from 3,652 respondents).

From this baseline, we then were interested in the daily amount of activity by activity type. This is summarized in Figure 13. Note that this Figure represents the number of days those who responded to each activity partook in that activity. This is a different perspective than that presented in Figure 10; namely this focuses on the number of days people who selected each activity reported doing each activity. From this, we see that our respondents who were runners, on average, run nearly 120 days per year. Perhaps

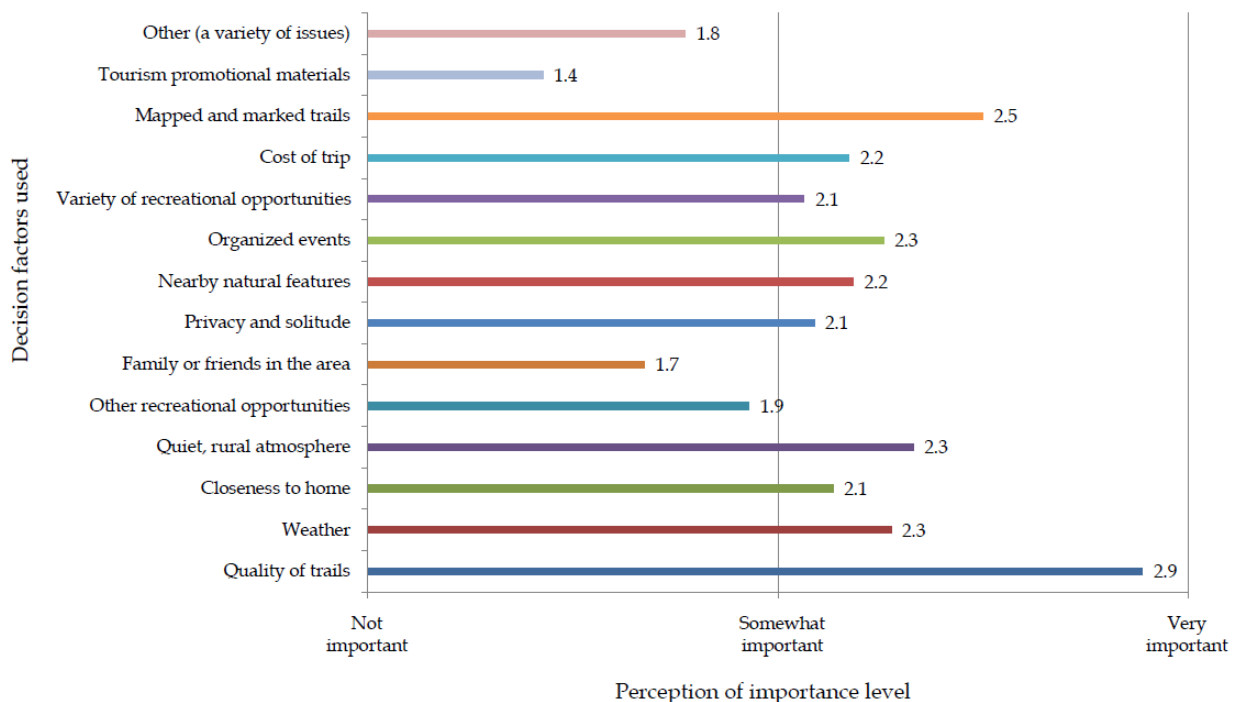
most surprising since the winter season can be fairly short (December through March), respondents who indicated that they cross-country skied, on average, did so over 60 times per year. Indeed, respondents who were cross country skiers did tend to be very active and “avid” cross country skiers. This was particularly true for resident cross country skiers and is also indicative of the relatively longer winter season in these three counties.



**Figure 13.** Number of days per year in which respondents to activity reported being active by activity (2012 survey results)

## 2.4 Local Attributes Important to Silent Sports Enthusiasts

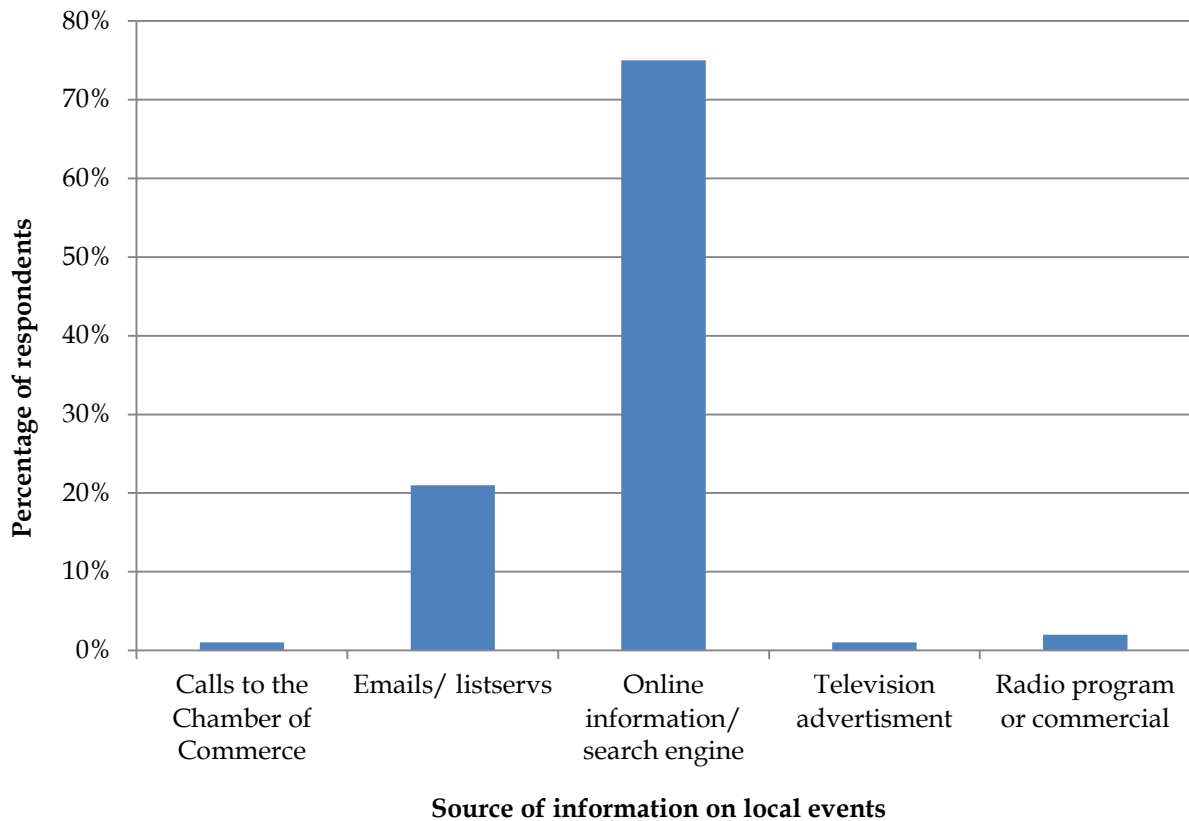
Perceptions of local amenities and quality-of-life attributes can be used to assist in local planning efforts. Further, these perceptions when framed into motivations to recreate speak to involvement characteristics unique to silent sports enthusiasts. For example, nonresident event participants are motivated to visit this region for a multitude of recreational and tourism characteristics specific to the region. Further, many residents of this region have chosen to remain in this region because of important local recreational and quality-of-life attributes. The question then focuses on which attributes can be viewed as most important and how can local planners prioritize their efforts on improving local conditions. To address this informational need, respondents were provided a variety of motivation attributes and asked to reflect on their perceived level of importance with these attributes. Responses to these attributes are summarized in Figure 14.



**Figure 14.** Importance of various factors when deciding where to recreate (2012 survey results; resident n = 152, nonresident n = 2631).

Note that this question allowed a respondent to rate attributes on a scale of not important (1) to very important (3). From this Figure, note that quality of trails and their markings as well as quiet rural atmosphere ranked the highest while tourism promotional materials and family and friends in the area were rated as the least important attributes in deciding where to recreate.

For informational planning purposes, we had interests in how event participants learned about the local region in which they recreated. Responses are summarized in Figure 15. Note from this Figure that the internet served as the primary source of information regarding local events while calls to the chamber of commerce were used the least.



**Figure 15.** Source of information used by nonresident respondents (2012 survey results of nonresidents only; n = 2529).

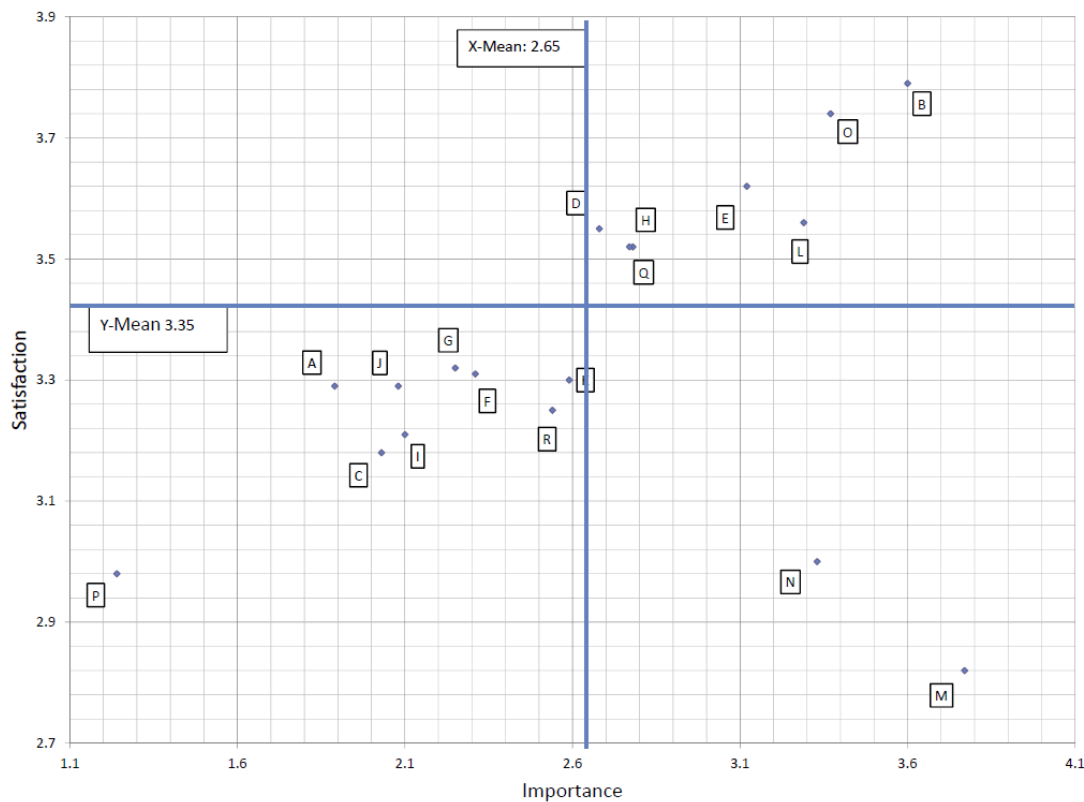
In an attempt to better understand how silent sports enthusiasts viewed individual recreation-related amenities, we collected response data that dealt with how important certain aspects of the recreational surroundings were to their trail use. The intent of this was to elicit user perceptions of both the recreational sites themselves and their surrounding set of tourism activities found within nearby communities. Our approach here was to develop understanding of the multi-dimensional attributes of both “importance” and “performance” (or how satisfied users were with the local provision) of each characteristic. Within the literature, this approach is known as Importance-Performance Analysis (or IPA). At its core, IPA identifies salient qualitative features and asks respondents to rate product attributes in terms of how important they were to the overall experience and how well they were performed to attain their intended outcome (Fletcher, et al. 1992; Hammitt, et al. 1996). This type of analysis allows us to array, in a relative fashion, the importance of various recreational attributes while simultaneously assessing the relative performance, or effectiveness, with which attributes are provided by recreation managers or the local community within which the recreational site is located.

Our assessment of silent sports enthusiasts was done for two unique amenity service attributes that included (1) local tourism and business services and (2) site specific recreational elements.<sup>2</sup> Overall, these two sets of IPA results from residents and nonresidents were collected which did not show significant difference. Thus, our presentation in Figures 16 and 17 are based on responses from non-residents. Interpretation of IPA results is simplified by differentiating the four quadrants constructed using grand means for importance and performance, or satisfaction (denoted by the solid blue lines). For our presentation, we use the analogous term “satisfaction” rather than “performance” due to the need to present a more understandable survey instrument. Of particular interest are the patterns of response

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<sup>2</sup> While these specific amenity service groupings are similar to previous studies (c.f. Fletcher et al. 1992; Hammitt et al. 1996; Marcouiller et al. 2002; Kazmierski et al 2009), these categories were developed specifically for this project and were included in a prioritization process that was largely based on local informational needs.

that place characteristics in the upper right quadrant (high importance and high satisfaction). These are clearly items that are both important and well performed and can be noted as relative “success” characteristics. The other interesting quadrant to note is the lower right-hand quadrant (high importance and low satisfaction). With respect to the silent sports enthusiasts we encountered, these could be noted as relative “failures” for this visitor group as they represent characteristics that are more important but generally less well-performed.



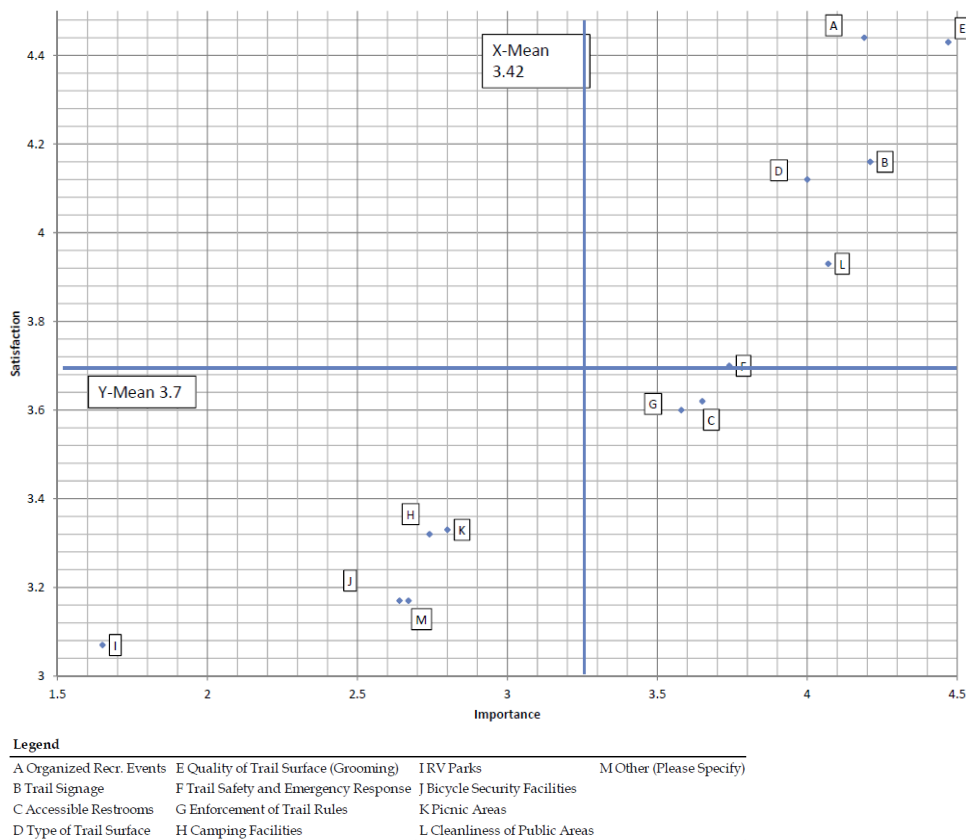
- Legend**
- |             |                     |                    |                 |                       |
|-------------|---------------------|--------------------|-----------------|-----------------------|
| A Fast Food | E Brew pubs         | I Amusements       | M Cell service  | Q Community festival  |
| B Sit down  | F Recreation rental | J Handcraft stores | N Wifi          | R Other (Please list) |
| C Take out  | G Hardware store    | K Music/ Entert.   | O Sporting good |                       |
| D Taverns   | H Equipment repair  | L Hotels/ Motels   | P Gambling      |                       |

**Figure 16.** Average Importance and Performance (Satisfaction) Responses to Local Tourism and Business Services – Nonresident Respondents (2013 survey results; n = 2301).

Note from these Figures that, overall, results suggest that site specific recreation elements were more apt to be important as compared to local tourism and business

services (based on grand means). Less clarity existed in generalizing about how respondents viewed the performance of these characteristic groups (grand means exhibited less difference). The results to these IPA metrics are displayed in scatter plots that place each attribute in importance and performance space. The legend below each figure identifies the items contained therein. Local tourism and business service IPA results of nonresidents is summarized in Figure 16.

Note from Figure 16 that categories within this group including sit down restaurants, sporting goods sales and equipment repair, hotels/motels, and brew pubs were identified as local successes (high importance and high performance). Further, areas of priority concern as identified by respondents to our survey noted that wifi and cell phone access was both very important and not well-performed locally. Thus, priority areas of future planning need can focus on attributes of priority concern.



**Figure 17.** Average Importance and Performance (Satisfaction) Responses to Site Specific Recreational Elements – Nonresident Respondents (2012 survey results; n = 2200).



The second set of IPA results focused on local attributes specific to the site where the recreational activity took place. Again, given the avidness of this specific set of silent sports enthusiasts, it is not surprising that these tended to be more important, as a whole, when compared to local tourism and business services. Again, we present the IPA results for site specific recreational elements nonresidents in Figure 17. Note from this Figure that successes (high importance and high satisfaction) were found for elements that included organized recreational events, quality and type of trail surfaces, trail signage, cleanliness of public areas, trail safety and emergency response. Elements that could be prioritized for improvement included accessible restrooms and enforcements of trail rules.

## **2.5 The Economic Impacts of Trip-related Expenditures**

A key informational need of the applied research reported here was to understand the local economic linkages between silent sports enthusiasts and business activity occurring in local communities of the three county region. The specific aspect of economic impact addressed involves where and to what extent respondents spend money in local businesses while on their most recent trip combined with information provided on number of trips to the region and characteristics of these trips. In this way, we can begin to develop an understanding of how silent sports enthusiasts impact local businesses and the underlying economic structure of Ashland, Bayfield and Sawyer Counties.

Respondents were asked to recall their expenditures for both the most recent trip to this region and for a broader estimate of total recreational equipment spending during the previous year. Certainly, important caveats to this questioning involve an ability to recall how much was spent. While trip spending recall was done much closer in time to when respondents completed the written survey (within two weeks of the trip), their spending patterns during the past year should be considered as gross estimates given the length of time needed to recall annual expenditures.

Also, it must be noted that for purposes of economic impact, we apply a private-sector stimulus and demand driven approach to estimating regional change resulting from silent sports enthusiast spending. In particular, what matters to the stimulus and demand driven approach are new dollars injected into the economy from outside. Therefore, we focus our primary attention on money spent locally by non-resident silent sports enthusiasts.

Expansion of individual spending patterns to total regional estimates of spending was done using the expansion techniques discussed in Appendix A. Namely, expansion was done based upon total trips made to this region. A descriptive summary of non-resident responses and the expansion to annual spending parsed by the amount of local spending is summarized in Table 1.

**Table 1.** Individual Nonresident Trip-related Expenditures for Most Recent Trip to the Ashland, Bayfield and Sawyer County Region, Annual Expansion, Percent Spent Locally, and an Estimate of Local Demand Shock for Use in Input-output Models (2012 survey results)

<b>Spending Category</b>	<b>Individual Expenditure (in USD)</b>	<b>Annualized Expenditure (in USD)</b>	<b>Local Percent (in %)</b>	<b>Local Expenditure (in USD)</b>	<b>Annualized Local Expenditure (in USD)</b>
Lodging	\$143	\$8,058,000	50%	\$71.27	<b>\$4,029,000</b>
Groceries	\$52	\$2,943,000	59%	\$30.71	<b>\$1,736,000</b>
Restaurants	\$69	\$3,894,000	68%	\$46.83	<b>\$2,647,000</b>
Gasoline and Automobile	\$56	\$3,139,000	57%	\$31.65	<b>\$1,789,000</b>
Recreation & Amusement	\$6	\$351,000	11%	\$0.68	<b>\$39,000</b>
Miscellaneous retail	\$34	\$1,921,000	32%	\$10.88	<b>\$615,000</b>
Event fees	\$100	\$5,663,000	68%	\$68.13	<b>\$3,851,000</b>
Other	\$8	\$465,000	3%	\$0.25	<b>\$14,000</b>
<b>Totals*:</b>	<b>\$468</b>	<b>\$26,434,000</b>		<b>\$260</b>	<b>\$14,720,000</b>

\* may not sum to total due to rounding

Note from this table that trip-related spending occurs from the respondents' point of origin and only a portion of their total trip spending occurred in the local three county region. Thus, for purposes of estimating local economic impacts, only the last column

in Table 1, that which sums to 14.7 million dollars, is used in local impact assessment. This represents the total amount of private sector stimulus injected into the regional economy between January and December (inclusive) of 2012.

Average individual nonresident spending patterns of the silent sports enthusiasts studied, as summarized in Table 1, suggest that spending is heavily focused on retail items. In particular, relatively larger shares of spending are done in restaurants and taverns, grocery and liquor stores, and gasoline retailers. The local businesses catering to these demands include restaurants and drinking establishments, grocery stores, gas service stations and convenience stores. Also, given the specific events that serve as key travel motivators, event fees play prominently in nonresident spending patterns. Note from this Table that average levels of individual spending are roughly \$468 per trip with roughly \$260 of this spent locally within Ashland, Bayfield or Sawyer Counties.

The economic structure of a region is a key determinant in the extent to which economic impacts that result from this private sector stimulus are felt locally. The communities found within Ashland, Bayfield, and Sawyer Counties vary widely in economic structure. Rural communities such as Cable, Washburn, and Winter tend to have relatively fewer local retail and service businesses in which trail users can spend their money when compared to Hayward and Ashland, . While specific community impacts and their relative differences are important, the ability to estimate regional impacts remains at the county-level (for our purposes a combined Ashland, Bayfield and Sawyer County region). It is important to further point out that Ashland, Bayfield and Sawyer Counties, when compared to other regions across the Lake States, exist as fairly rural in their economic characteristics. Rural counties tend to have fewer local linkages for intermediate purchased inputs, or those items needed to produce the items that are sold locally. Micropolitan and metropolitan regions such as Duluth/Superior, Eau Claire and the Chippewa Valley or the Twin Cities of Minneapolis and St. Paul, Minnesota tend to be relatively more robust and diverse economies with a much broader array of local retail and service businesses and a commensurately higher amount of locally available intermediate purchased inputs. In general, smaller and less

diverse regional economies are relatively more dependent on the outside for the items sold by local retail and service businesses. Conversely, larger, more diverse regional economies tend to be more self-contained. Hence, multiplier impacts tend to be larger as the economic structure of a region becomes more diverse.

The economic stimulus of dollars spent by nonresident silent sports enthusiasts tends to be quite modest relative to the overall economic structure of the three county region. For instance, in 2010, Ashland, Bayfield and Sawyer Counties had a total population of about 48,000 people and approximately 26,600 paid employees. The local economy generally lacks diversity, and centers largely on public sector employment, manufacturing, healthcare, social services and retail trade. It is home to rich natural amenities including the Nicolet-Chequamegon National Forest, many lakes and streams as well as the Lake Superior seashore. Located less than 2 hours from the Twin Cities, the area draws visitors from out of state in addition to those from urban areas in Wisconsin. In this region during 2010, the average household income was roughly \$72,400 and, in total, personal income was \$1,487 million (IMPLAN 3.0 2013). For contrast, the total amount of trip spending of non-resident silent sports enthusiasts generated roughly \$15 million in local business receipts.

To reiterate, the estimation of economic impacts resulting from silent sports enthusiasts focuses on the infusion of dollars into the communities within the region. Total local trip related expenditures made by nonresident silent sports enthusiasts are identified by local business sectors sensitive to travel expenditures in the previously described Table 1. When we apply these dollars to the input-output model of Ashland, Bayfield and Sawyer Counties, the multiplier effect of inter-industry purchases generates indirect impacts and the increased income of households drives induced impacts. These impacts for trip spending are summarized for various economic characteristics in Tables 2 with the top ten local industry sectors affected summarized in Table 3.

**Table 2.** Economic Impact of Nonresident Silent Sports Enthusiast Trip Spending in Ashland, Bayfield and Sawyer Counties (2013 USD based on private sector stimulus identified in last column of Table 1; IMPLAN 3.0)

Impact Type	Employment*	Labor Income**	Total Value Added**	Output**
Direct Effect	173.1	\$4,753,000	\$6,316,000	\$11,621,000
Indirect Effect	21.9	\$757,000	\$1,303,000	\$2,441,000
Induced Effect	27.3	\$895,000	\$1,594,000	\$2,622,000
<b>Total Effect</b>	<b>222.3</b>	<b>\$6,405,000</b>	<b>\$9,214,000</b>	<b>\$16,684,000</b>

\* in total number of jobs, may not sum to total due to rounding

\*\* in 2012 USD, may not sum to total due to rounding

Note that the roughly 15 million dollars of private sector stimulus resulted in roughly 11.6 million in direct stimulus. This diminished amount is due to retail margining associated with many of the sectors into which the specific patterns of non-resident visitors spending occurred. A good example of this is reflected in purchases made for gasoline. Local stimulus of this type of spending focuses only on the retail margin of gasoline purchases. This is generally a very low proportion (as low as 6 percent), particularly in regions that do not contain oil production, gasoline refineries, and wholesale gasoline distributors. Thus, 11.6 million in local direct effect resulted in roughly 16.6 million in indirect and induced impact. This 1.41 output multiplier is realistic for this particular three-county region and includes inter-industry transactions and regional income driven consumption increases. To reiterate, the extent of multiplier impacts result from the relative diversity of each regions' economic structure.

A quick note on the difference between output and income (in aggregate, also known as value added). Output is the total result of all economic activity and is analogous to gross regional product, gross state product, and gross national product. In other words, it is the total accounting for all regional production. Income, or value added, is defined as the value of the region's business output minus the value of all inputs purchased from other firms. It is therefore analogous to the "profit" or income generated locally. Value added includes a combination of employee compensation,

proprietor’s income (“business profit”), other property type income, and indirect business taxes paid to governments.

The infusion of private sector spending resulting from nonresident visitors affects a limited set of local business groups. The top ten sectors affected by this type of spending and their respective local economic impacts are summarized in Table 3. These sectors are listed according to standard categories and include the traditionally defined tourism sectors and event organizers (found within the category entitled “civic, social, professional, and similar organizations”).

**Table 3.** Top 10 Local Economic Sectors Affected by Nonresident Silent Sports Enthusiast Trip Spending in Ashland, Bayfield and Sawyer Counties (2013 USD based on private sector stimulus identified in last column of Table 2; IMPLAN 3.0)

Description	Total Employment	Total Labor Income	Total Value Added	Total Output
Food services and drinking places	56.5	\$988,857	\$1,404,074	\$3,024,821
Civic, social, professional, and similar organizations	52.8	\$2,303,401	\$2,323,864	\$3,909,755
Hotels and motels, including casino hotels	47.8	\$1,036,277	\$1,851,804	\$4,040,761
Retail Stores - Food and beverage	11.3	\$311,813	\$505,731	\$571,109
Retail Stores - Sporting goods, hobby, book and music	7.8	\$135,048	\$222,198	\$251,835
Retail Stores - Gasoline stations	5.8	\$167,717	\$274,043	\$313,911
Real estate establishments	4.5	\$35,692	\$264,279	\$369,303
Services to buildings and dwellings	2.2	\$43,754	\$60,206	\$128,948
Monetary authorities and depository credit intermediation activities	1.7	\$87,100	\$181,233	\$382,505
Offices of physicians, dentists, and other health practitioners	1.6	\$124,622	\$132,857	\$225,721

It is interesting to note from Tables 2 and 3 that the amount of trip-related money spent in host communities by silent sports enthusiasts had broader impacts on the economic structure of these three counties. This money had the effect of generating a broad amount of business activity within the regions.

### 3. SUMMARY, CONCLUSIONS, AND POLICY IMPLICATIONS

This collaborative two-year project was developed to better understand both silent sports enthusiasts and their local economic impacts. We were motivated by the informational needs of development practitioners, recreation planners, and locally elected officials in their pursuit to improve the quality, availability, and community impact of these recreational opportunities in Northern Wisconsin.

We examined the characteristics of silent sports event participants during 2012 using an on-line survey administered to participants of 12 specific events using registration lists. Our analysis of descriptive results is summarized in this report. Further, we used these descriptive results to estimate the total amount of local private-sector stimulus infused into this region by the spending patterns of non-local event participants. This stimulus was then applied to an input-output model of the regional economy to estimate economic impacts measured in jobs and income.

Initially, the intent of the research team was to capture economic impacts and user characteristics of silent sports participants in Ashland, Bayfield, and Sawyer Counties of northwestern Wisconsin. As we began the project, we realized that collecting the data on all silent sports users was beyond our capacity in terms of time and resources. Thus, the event participation registration lists provided a fairly effective way to capture rich information on a slice of total silent sports usage in the region. The data will provide users of this study and recreational policy makers a foundation for making some informed assumptions around a variety of public recreation issues and opportunities while understanding that the findings related to “event” participants understate the overall economic impacts due to understandings that a large portion of silent sports participants may not participate in “organized” events. In addition, since the American Birkebeiner is the largest event and participants were sampled early during the year, the data likely reflects a bias toward cross country skiing and that event.

Results of this study provided several insights and reinforced anecdotal evidence of the positive economic contributions of silent sports to the overall regional economy. Specifically, results of this work suggest that about 95 percent of the roughly 26,700 event participants were nonresidents of Ashland, Bayfield and Sawyer Counties. These nonresidents and their trip-related expenditures provided external private sector stimulus to the local economies within the three county region of northern Wisconsin. During the 2012 calendar year, we estimated that approximately 56,500 individual trips were made by nonresidents of Ashland, Bayfield and Sawyer Counties to this northern Wisconsin region to participate in silent sports activities (cross country skiing, mountain biking, and running). Nonresident event participants made an average of 4.2 trips to Ashland, Bayfield and Sawyer Counties annually and spent an average of 2.4 nights in the area per trip. This same group, on average, participated in 1.8 organized events during 2012 within the study area.

Some demographic highlights of survey results suggested that 88% of respondents had a bachelor's degree or higher and that 50% were between ages of 30 and 50. Further, 89% reported annual household incomes of at least \$50,000 and 70% identified their occupation as professional and managerial trades.

With respect to recreational amenities, nonresident event participants reported relatively high importance and satisfaction levels for event organization, trail signage, quality and type of trail surface, and facility cleanliness. Less well-rated yet important recreational amenities included restroom accessibility. With respect to tourism amenities, nonresident event participants reported relatively higher importance and satisfaction with local overnight accommodations, equipment repair, and eating & drinking establishments, but low satisfaction yet high importance with local cell service and Wi-Fi availability.

With respect to private sector economic stimulus, on average, the active silent sports enthusiasts we surveyed reported spending about \$468 per trip with about \$260 of this spending taking place locally within Ashland, Bayfield and Sawyer Counties. When we annualize this average expenditure pattern, results suggest that nonresident



visitors to the counties spent approximately \$26.4 million (in 2012) in total trip spending. Roughly \$14.7 million in private sector stimulus was infused directly within Ashland, Bayfield or Sawyer Counties by nonresident silent sports enthusiasts.

When assessing the economic impact of this stimulus, results of this work suggest that trip spending by nonresident silent sports enthusiasts in 2012 supported more than 222 jobs within Ashland, Bayfield and Sawyer Counties. This same amount of annual trip spending supports roughly \$6.4 million in labor income, the majority of this originating within the Accommodations, Food Services, and Retail Trade sectors of the local economy.

These study results have several tangible uses. Data collected can be used to inform public policy dialogue and decisions on the development of additional recreational trails and opportunities. They can guide marketing decisions to open up new audiences and expand entrepreneurial opportunities to the more than 26,000 annual visitors who already have a strong connection and brand awareness to the area. Local tourism organizations can further develop targeted marketing approaches that increase non-event visitation and visitation conversion rates. For example: What are the implications of most of the non-resident users staying in private homes and using means other than chamber websites to access information.

While the dataset is rich, there are several unanswered questions and potential linkages that would lend to further analysis and reflection. For instance:

- What are the intrinsic benefits to the communities themselves from recreational development and hosting silent sports events? Are there strong correlations to active lifestyles, local leadership development, social capital, volunteer development, organizational capacity building, or community cultural and social opportunities.
- How are the silent sports users connected to other types of local development beyond trip and event spending? (Along the American Birkebeiner corridor in, Sawyer County there are three significant recreational housing developments

attracting residents with active outdoor recreation lifestyles and interests. There are also several local businesses augmenting in store sales with catalog/internet to silent sports visitors.)

- How do silent sports events and users contribute to overall brand awareness and positive regional regional identity beyond the visitors themselves?
- How characteristic and generalizable are silent sports event participant users when compared or contrasted to those who visit to engage in silent sports but don't participate in organized recreational events?

This study was undertaken to provide insights and critical reflection to better inform regional stakeholders, development practitioners, recreation planners, organizations, and communities as they develop policies and strategies to best utilize the abundant natural amenities present in Northern Wisconsin. In doing so, we hope to improve understanding and contribute to the long-term economic growth and prosperity of the region.

#### LITERATURE CITED

- Berard, D. and D. Trechter. 2007. *Non-resident Property Owners and their Impact on Sawyer County Businesses*. Sawyer County Development Corporation, Hayward, WI: UWEX Sawyer County.
- Bowe, S.A. and D.W. Marcouiller. 2007. Natural resources and the tourism-timber tradeoff: Issues of regional dependency and economic diversity. *Forest Policy and Economics* 9: 653-670.
- Bowe, S.A., D.W. Marcouiller, and M.D. LaBissoniere. 2004. Regional dependence and location of the wood products sector in the Northeastern United States: Unique attributes of an export-based industry. *Wood and Fiber Science* 36(2): 161-173.
- Carleyolsen, S, T..Meyer, J. Rude, I. Scott. 2006. *Measuring the Economic Impact and Value of Parks, Trails and Open Space in Jefferson County Accounting for Current and Future Scenarios*. Planning Workshop report available online at <http://www.urpl.wisc.edu/academics/workshop/jefferson%20county/team1/JCEconfinal.pdf>
- Carper, C., J. Guth, E. Kakde, D. Marcouiller, P. Ohlrogge, and L. Wolfe. 2013. *Motorized Outdoor Recreation and Tourism Development within Trailside Communities*. Monograph G3569. Madison, WI: Board of Regents of the University of Wisconsin System.

- Chapin, S. 2012. Economic impact of silent sports. A regional case study. Northwoods Summit. Retrieved from: <http://www.northwoodssummit.com/Silent-Sports.pdf>
- Cooper, R. and D. Cangelosi. 1985. *1983 Summer Day User Survey*. Madison, WI: Department of Natural Resources, Recreation Resources Center, University of Wisconsin-Extension.
- Cooper, R., S. Sadowske and M. Kantor. 1979. *Winter Recreation Visitor Study Wisconsin 1979*. Madison, WI: Upper Great Lakes Regional Commission.
- Crompton, J.L. 2001. *Parks and Economic Development*. Planning Advisory Service Report Number 502. Chicago, IL: American Planning Association.
- Curtis, J.A. 2002. Estimating the demand for trout angling in northern Scotland. *The Economic and Social Review* 33(2): 319-332.
- Donaldson, J., A. Chraca, and D. Marcouiller. 2010. *Tourism and Community Development: Resources and Applied Research Clearinghouse*. Available online at: <http://www.wisc.edu/urpl/people/marcouiller/projects/clearinghouse>
- Donaldson, J., B. Kazmierski, and D.W. Marcouiller. 2011. *Local Economic Impacts of Golfing: A Case Study of the Luck Golf Course in Polk County, Wisconsin*. Extension Report 11-01, Department of Urban and Regional Planning, University of Wisconsin - Madison/Extension.
- English, D.B.K., D.W. Marcouiller, and H.K. Cordell. 2000. Tourism dependence in rural America: Estimates and effects. *Society and Natural Resources* 13(3): 185-202.
- Fix, P. and J. Loomis. 1998. Comparing the economic value of mountain biking estimated using revealed and stated preference. *Journal of Environmental Planning and Management* 41(2): 227-236.
- Fix, P. and J. Loomis. 1997. The economic benefits of mountain biking at one of its meccas: an application of the travel cost method to mountain biking in Moab, Utah. *Journal of Leisure Research* 29(3): 342-352.
- Fletcher, J.E., R.A. Kaiser, and S. Groger. 1992. An assessment of the importance and performance of park impact fees in funding park and recreation infrastructure. *Journal of Park and Recreation Administration* 10(3): 75-87.
- Garvin, A. 2001. *Parks, Recreation, and Open Space: A 21st Century Agenda*. Planning Advisory Service Report. Chicago, IL: American Planning Association.
- Gray, J., F. Li and S. Hamilton. 1989. *1988-1989 Wausau Ski Study*. Madison, WI: Recreation Resources Center, University of Wisconsin-Extension.
- Haines, A., D.W. Marcouiller, N.R. Sumathi, and A. Anderson. 1997. *Regional Economic Impact Assessments: An Annotated Bibliography of Selected Wisconsin Studies*. Staff Paper Number 97.3; Center for Community Economic Analysis, UW-Extension, Madison, WI.
- Hammitt, W.E., R.D. Bixler, and F.P. Noe. 1996. Going beyond importance-performance analysis to analyze the observance-influence of park impacts. *Journal of Park and Recreation Administration* 14(1): 45-62.
- Holden, A. 2000. Winter tourism and the environment in conflict: The case of Cairngorm, Scotland. *International Journal of Tourism Research* 2(4): 247-260.

- Holden, A. 1999. High impact tourism: A suitable component of sustainable policy? The case of downhill skiing development at Cairngorm, Scotland. *Journal of Sustainable Tourism* 7(2): 97-107.
- Hoogasian, A. 2013. *Deriving the Exogenous Shock of Active Silent Sports Enthusiasts to the Local Economy of Ashland, Bayfield and Sawyer Counties, WI*. Professional Project Report March 27, 2013. Madison, WI: UW-Madison Department of Urban and Regional Planning.
- Hoogasian, A., T. Winnett, and D.W. Marcouiller. 2013. *A Country Music Festival and its Local Community Impacts: The Case Study of Country Thunder 2012 and Kenosha County, Wisconsin*. Extension Report 13-01, Department of Urban and Regional Planning, University of Wisconsin - Madison/Extension.
- Howe, J., McMahan, E., and L. Propst. 1997. *Balancing Nature and Commerce in Gateway Communities*. Washington, D.C.: Island Press.
- IMPLAN 3.0. 2013. 2009 County dataset and combined Ashland/Sawyer/Bayfield County model (available from the authors)
- Jackson, J., M. Houghton, R. Russell and P. Triandos. 2005. Innovations in measuring economic impacts of regional festivals: A do-it-yourself kit. *Journal of Travel Research* 43(May): 360-367.
- Kazmierski, B, M. Kornmann, D. Marcouiller, and J. Prey. 2009. *Trails and Their Gateway Communities: A Case Study of Recreational Use Compatibility and Economic Impacts*. Research Monograph G3860, Board of Regents, University of Wisconsin System - Cooperative Extension: Madison, Wisconsin.
- Keith, J., C. Fawson, and T. Chang. 1996. Recreation as an economic development strategy: Some evidence from Utah. *Journal of Leisure Research* 28(2): 96-107.
- Lee, C.K. and S.Y. Han. 2002. Estimating the use and preservation values of National Parks' tourism resources using a contingent valuation method. *Tourism Management* 23: 531-540.
- Marcouiller, D., E. Olson, and J. Prey. 2002. *State Parks and their Gateway Communities: Development and Recreation Planning Issues in Wisconsin*. Monograph G3987, Board of Regents of the University of Wisconsin System, Madison, WI.
- Marcouiller, D.W., I. Scott and J. Prey. 2008. Outdoor recreation planning: A comprehensive approach to understanding use interaction. *CAB Reviews: Perspectives in Agriculture, Veterinary Science, Nutrition and Natural Resources* 3(90): 1-12.
- Michigan Department of Natural Resources (MDNR). 2003. 2003 - 2007 Michigan Comprehensive Outdoor Recreation Plan. East Lansing, MI: MDNR.
- Minnesota Department of Natural Resources (MNDNR). 2008. Adapting to Change: Minnesota's 2008-2012 State Comprehensive Outdoor Recreation Plan. St. Paul, MN: MNDNR.
- Olson, E., D.W. Marcouiller, and J. Prey. 1999. *Recreational user groups and their leisure characteristics: Analysis for the Statewide Comprehensive Outdoor Recreation Planning (SCORP) process*. PR447 - WDNR, Madison, WI and Staff Paper 98.4 - Center for

- Community Economic Development, University of Wisconsin - Extension, Madison, WI. 74 pages. Penaloza 1988
- Raemaekers, J. 1991. Piste control: the planning and management of Scottish ski centres. *Planner* 77(37): 6-8
- Rails to Trails Conservancy. 1996. Economic Benefits of Trails and Greenways. *Trails and Greenways Clearinghouse*. Rails to Trails Conservancy: Washington, D.C. [www.trailsandrails.org].
- \_\_\_\_\_. 2008. Creating a Nationwide Network available online at <http://www.railtrails.org/index.html>
- Reeder R.J. and D.M. Brown. 2005. *Recreation, Tourism, and Rural Well-Being*. Economic Research Report #7. USDA-ERS: Washington, DC.
- Shaffer, R., S. Deller, and D.W. Marcouiller. 2004. *Community Economics: Linking Theory and Practice*. Ames: Blackwell.
- Schwecke, T. P., D. Sprehn, S. Hamilton and J. Gray. 1989. *A Look at Visitors on Wisconsin's Elroy-Sparta Bike Trail*. Madison, WI: Recreation Resources Center, University of Wisconsin-Extension.
- Siderelis, C. and R. Moore. 1995. Outdoor recreation net benefits of rail-trails. *Journal of Leisure Research* 27(4): 344-359.
- Steinback, S.R. 1999. Regional economic impact assessments of recreational fisheries: An application of the IMPLAN modeling system to marine party and charter boat fishing in Maine. *North American Journal of Fisheries Management* 19: 724-736.
- Stynes, D. and Y.Y. Sun. 2001. *Economic Impacts of Michigan Downhill Skiers and Snowboarders, 2000-01*. East Lansing, MI: Department of Park, Recreation & Tourism Resources, Michigan State University
- Stynes, D. and Y.Y. Sun. 2002. *Economic Impacts of Selected National Parks; Update to Year 2001*. East Lansing, MI: Department of Park, Recreation & Tourism Resources, Michigan State University.
- Stynes, D. and Y.Y. Sun. 2003. *Impacts of Visitor Spending on Local Economy: Pictured Rocks National Lakeshore, 2001*. East Lansing, MI: National Park Service, Department of Park, Recreation and Tourism Resources, Michigan State University.
- Stynes, D., C. R. Nelson and J. A. Lynch. 1998. *State and Regional Economic Impacts of Snowmobiling in Michigan*. East Lansing, MI: Department of Park, Recreation & Tourism Resources, Michigan State University
- Tribe, J. 2005. *The Economics of Recreation, Leisure, and Tourism*. Oxford, UK: Elsevier.
- Vanhove, N. 2005. *The Economics of Tourism Destinations*. Oxford, UK: Elsevier.
- Wisconsin Department of Natural Resources (WDNR). 2012. *Outdoor Recreation in Wisconsin: The 2011-2016 Wisconsin Statewide Comprehensive Outdoor Recreation Plan*. PR-027-2012, WDNR Bureau of Parks and Recreation: Madison, WI.

## Appendix A. Sample Survey Instrument Used

(Non-resident survey screenshots shown from Qualtrics; pull-down menus and hyperlinks not shown)

About your recreational participation in Ashland, Bayfield or Sawyer County.

1. From the options below please select the Counties in which you **most recently** participated in **silent sports**.

Click on the county name for a map if you are unsure of the area.

- [Ashland County, WI](#)
- [Bayfield County, WI](#)
- [Sawyer County, WI](#)
- Other (Please List)

2. What was the primary purpose of your **most recent** visit?

- To participate in silent sports
- General recreation
- Business
- Spend time at a second home
- Visiting friends and relatives
- Other (Please List)

3. How many people including yourself were in your travel party?

People

4. How many in your travel party were below the age of 18?

People

5. How many nights did you stay in the immediate area?

Nights

6. If you stayed overnight, what type of lodging did you use?

- Hotel/ Motel
- Campground
- Private residence
- Resort
- Bed & Breakfast
- Other (Please list)

7. Do you own a second home in Ashland, Bayfield or Sawyer County?

- Yes
- No

8. On your **most recent** visit how many members of your immediate party including yourself participated in silent sports activities?

Members

**9. Please check all of the silent sports activities you or your party members participated in on your most recent visit to Ashland, Bayfield or Sawyer County.**

- Road Biking
- Mountain Biking
- Cross County Skiing
- Downhill Skiing
- Snowboarding
- Inline Skating/ Roller Skiing
- Running/ Trail Running
- Hiking
- Canoeing/ Kayaking
- Snowshoeing
- Other (Please List)

**10. During the past 12 months, how many trips did you make to Ashland, Bayfield or Sawyer County to participate in silent sports activities?**

Trips

**11. Please select from the following list all of the events in which you participated during the past 12 months.**

- Cable Area Off Road Classic
- Apple Blossom Run
- Spider Lake Run 10k-2mi Run/Walk
- CAMBA Festival of Trails
- Inland Sea Kayak Symposium
- Superior Vistas Bike Tour
- Apostle Islands Inline Race
- Musky Fest Musky & Minnow Run
- CARE 5/10k Run/ Walk
- Lake Superior SUP & Kayak Festival
- Bike Northwoods Tour
- Chequamegon Bay Sprint Triathlon
- Lumberjack Run
- Grand View Firehouse 50
- Seeley Lions Pre-Fat
- Herbster Bark Point 10k/ 5k Run/Walk
- CAMBA Fat Tire Tour
- Chequamegon Fat Tire Festival
- Birkie Trail Run
- Libery Fall Century Bike Tour
- Whistle Stop Marathon/Half Marathon
- Seely Hills Classic
- Seely Hills Classic
- Birkie Trail Tour
- Lions Pre Birkie
- North End Classic
- Book Across the Bay
- American Birkebeiner

**Page II.**

**Recreational Spending: The following questions pertain to travel-related spending to visit Ashland, Bayfield, or Sawyer Counties and their communities.**

**12. On your most recent trip to Ashland, Bayfield and/or Sawyer County to participate in silent sports, how much money did you personally spend in the following categories?**

Lodging (hotel, motel, bed & breakfast)	\$ 0
Groceries/ Liquor	\$ 0
Restaurants/ Drinks	\$ 0
Gas/ Auto Service	\$ 0
Recreation (golf, amusements, attractions, gambling, etc)	\$ 0
Other retail (gifts, souvenirs, clothing)	\$ 0
Event Registration and Trail User Fees	\$ 0
Other (Please Specify) <input type="text"/>	\$ 0
<b>Total</b>	<b>\$ 0</b>

**13. Referring to the previous question, what percentage of this spending took place in Ashland, Bayfield and/or Sawyer Counties?**

% . Lodging (hotel, motel, bed & breakfast)

% . Groceries/ Liquor

% . Resaurants/ Drinks

% . Gas/ Auto Service

% . Recreation (golf, amusements, attractions, gambling, etc)

% . Other retail (gifts, souvenirs, clothing)

% . Event registration and trail user fees

% . Other (Please Specify)

**14. During the past 12 months, how much did you personally spend in the following categories anywhere in the world?**

Travel expenses for silent sports (lodging, food and transportation)	\$ 0
Skiing equipment and supplies	\$ 0
Paddling equipment and supplies	\$ 0
Biking equipment and supplies	\$ 0
Inline skating and/or roller skiing equipment and supplies	\$ 0
Other silent sports equipment (Please List) <input type="text"/>	\$ 0
Event registration and trail user fees	\$ 0
<b>Total</b>	<b>\$ 0</b>



**15. Referring to the previous question, what percentage of this spending took place in Ashland, Bayfield and/or Sawyer County (note, this question relates to spending during the past 12 months)?**

% . Travel expenses for silent sports (lodging, food and transportation)

% . Skiing equipment and supplies

% . Paddling equipment and supplies

% . Biking equipment and supplies

% . Inline skating and/or roller skiing equipment and supplies

% . Other silent sports equipment (Please List)

% . Event registration and trail user fees

**Page III.**  
**About your overall silent sports participation.**

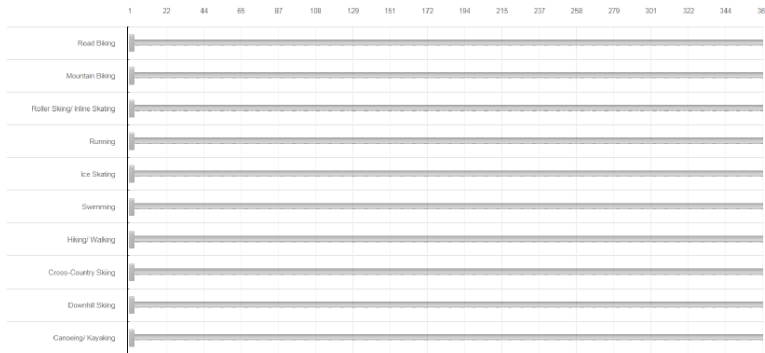
**16. How important do you consider following factors to be when deciding where to recreate in silent sports?**

	Not Important	Somewhat Important	Very Important
Quality of trails	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Weather	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Closeness to home	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Quiet, rural atmosphere	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other recreational opportunities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Family or friends in the area	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Privacy and solitude	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Nearby natural features	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Organized events	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Variety of recreational opportunities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cost of trip	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mapped and marked trails	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tourism promotional materials	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (Please Specify) <input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**17. On your last trip to Ashland, Bayfield or Sawyer County which of the following served as a source of information on local events?**

- Calls to the Chamber of Commerce
- Emails/ listservs
- Online information/ search engine
- Television advertisement
- Radio program or commercial

**18. How many days per year do you participate in the following silent sports activities anywhere in the world? (Move slider to select between 1 and 365).**



**Page 4.**

**Your perceptions about local tourism and recreational amenities.**

**19. Please examine the following services found in Ashland, Bayfield and Sawyer County. Please indicate the level of importance you associate with each service and your level of satisfaction with how it is provided.**

	Level of Importance					Level of Satisfaction				
	Not at all important	Somewhat Unimportant	Neutral	Important	Very Important	Very Unsatisfied	Somewhat Unsatisfied	Neutral	Satisfied	Very Satisfied
Fast-Food Restaurants	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sit-Down Restaurants	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Take-Out Restaurants	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Taverns	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Brew Pubs/ Microbreweries	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Recreational Equipment Rentals	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hardware Stores	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Equipment Repair Shops	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Amusements	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Handcrafts/ Souvenirs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Music and Entertainment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hotels/ Motels/ B&Bs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cell Service	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Wifi	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sporting Goods Stores	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Gambling	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Community Festivals	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (Please Specify)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

20. Please examine the following recreational elements in Ashland, Bayfield or Sawyer County. Please indicate the level of importance you associate with each element and your level of satisfaction with how it is provided.

	Level of Importance					Level of Satisfaction				
	Not at all Important	Somewhat Unimportant	Neutral	Important	Very Important	Very Unsatisfied	Somewhat Unsatisfied	Neutral	Satisfied	Very Satisfied
Organized Recreational Events	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Trail Signage	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Accessible Restrooms	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Type of Trail Surface	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Quality of Trail Surface (Grooming)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Trail Safety and Emergency Response	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Enforcement of Trail Rules	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Camping Facilities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
RV Parks	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Bicycle Security Facilities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Picnic Areas	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cleanliness of Public Areas	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (Please Specify) _____	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

21. What is the likelihood you will visit Ashland, Bayfield or Sawyer County again?

- Very Likely
- Likely
- Undecided
- Somewhat Unlikely
- Unlikely
- Very Unlikely

**Page 5.**  
**Demographic information**

22. How many people live at your household?

23. What is your gender?

- Male
- Female

24. Please select your age from the pull down menu.

25. How many years of school did you complete?

- Less than 12
- High School Diploma
- Some post-high school training
- Bachelors degree
- Some graduate school training
- Graduate degree

**26. If you are employed, what is your occupation?**

- Homemaker
- Service Worker
- Laborer
- Transport Equipment Operative
- Craftsman
- Clerical Worker
- Salesperson
- Manager/ Administrator
- Professional/ Technical Worker
- I'm retired
- I'm unemployed
- Other (Please Specify)

**27. Is your place of employment in Ashland, Bayfield or Sawyer County?**

- Yes
- No

**28. Please select the amount that most accurately estimates your household income level (pre-tax and current).**

- less than \$25,000
- \$25,000-49,999
- \$50,000-74,999
- \$75,000-99,999
- \$100,000-149,999
- \$150,000-199,999
- \$200,000-249,999
- Greater than \$250,000

**Page VI.**

**Thank You For Your Assistance!**

Information about this survey can be obtained locally by contacting the following UW-Extension Educators:

Ashland County - Tom Wojciechowski: [tom.wojciechowski@ces.uwex.edu](mailto:tom.wojciechowski@ces.uwex.edu)

Bayfield County - Tim Kane: [timothy.kane@ces.uwex.edu](mailto:timothy.kane@ces.uwex.edu)

Sawyer County - Dave Berard: [david.berard@ces.uwex.edu](mailto:david.berard@ces.uwex.edu)

## Appendix B. Characteristics of 2012 Events

**Table B1.** Event population and response summary

2012 Event	Participants sampled			Responses	
	Total	Nonresident	Resident	Nonresident	Resident
CAMBA	121	83	9	18	1
Musky Fest	429	115	41	12	4
Lumberjack	108	32	32	6	5
Seeley PreFat	288	39	5	9	1
Chequa. Fat-Tire	2888	2494	76	409	14
Seeley Hills Classic	460	69	5	17	1
Birkie Trail Tour	649	587	49	173	17
Lions PreBirkie	989	645	42	135	7
North End Classic	241	115	19	32	7
Birkiebeiner	10468	7259	222	1352	55
Birkie Trail Run	972	620	57	129	11
CXC/ Telemark	56	37	7	9	3
<b>Totals</b>	<b>17669</b>	<b>12095</b>	<b>564</b>	<b>2301</b>	<b>126</b>

## Appendix C. Regional economic models used to estimate local economic impact

To develop estimates of the local economic impacts associated with active silent sports enthusiasts, estimates of individual spending (once expanded to represent total visits), were used as initial stimuli for local businesses. Input-output models were constructed for the study region using a recent 2009 county-level MicroIMPLAN datasets for Ashland, Bayfield and Sawyer Counties (IMPLAN 3.0 2013). In calculating the demand shock, 2012 spending levels were taken into account in the use of a sector-specific deflator to convert to match the dataset. All reports reflect results inflated back to a common 2013 reporting year using sector-specific inflation rates. A total multiplier approach was used in running the impact models. The full description of input-output modeling as a standard method used to develop estimates of regional economic impacts is beyond the scope of this report but readily available in standard textbooks on the topic (Shaffer et al. 2004; Chapter 15).

For the assessment of economic impacts resulting from silent sports enthusiast spending, non-local use expenditures were allocated to seven specific industrial sectors. Each sector into which expenditures were allocated is represented by unique 3 to 6 digit NAICS codes and is specific to the sector structure of IMPLAN 3.0 software.<sup>3</sup> Expenditure categories, IMPLAN sectors, and respective NAICS codes are summarized in Table C.1. Estimated total expenditures and the amount spent locally were summarized. Only the local portion of expenditures that occurred within the Ashland, Bayfield and Sawyer counties' regional economy were used as the demand shock for input-output modeling.

Standard categories of economic impacts included *output* (or the aggregate impact on regional economic activity), *value added* or *income* (that portion of total output that accrues locally), and *employment* (total numbers of jobs created) locally.<sup>4</sup> The county-level input-output model used to calculate total impacts estimated multiplier effects measured as direct, indirect, and induced impacts. These are uniquely calculated and reported for output, income, and employment. Direct effects include respective portions of the amount initially injected into the regional economy (non-local spending in the region). Indirect effects relate to inter-industry transactions resulting from the

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<sup>3</sup> While we recognize that this method of expenditure allocation could miss some sectoral groupings and/or overly simplifies the manner in which spending relates to local business receipts, we are confident that these potential problems are minor. The approach represents a valid technique used to estimate the local supply-side shocks associated with visitor spending found in other tourism impact studies.

<sup>4</sup> Output includes all economic activity related to visitor spending including intermediate purchased inputs, income or value added, and imported inputs. Income most clearly reflects the impacts felt by local residents and includes four components: (1) employee compensation, (2) proprietor's income, (3) other property income, and (4) indirect business taxes. Employment measures total jobs created and includes full-time, part-time and seasonal jobs.

initial demand shock (direct effects). Induced effects include the increase in local income resulting from the direct and indirect effects and their subsequent effects on local consumption.

**Table C.1** Respective industrial sectors for expenditure patterns used to estimate regional economic impacts (IMPLAN sectors and respective 3-5 digit NAICS codes in which expenditures were allocated).

Expenditure Category:	IMPLAN Sector NAICS Code	
Convenience - retail	324	445
Gas - retail	326	447
Shopping - retail	329	452
Other - retail	330	453
Rental	363	5322*
Gaming	409	7139*
Entertainment	410	713*
Lodging (hotels, motels, bed & breakfasts, camping)	411	72111/72112
Food and drinking places (restaurants)	413	722

\* some exceptions are employed by IMPLAN 3.0; detailed queries are best referred to the authors.

The extent of these round-by-round “multiplier” effects will depend on fundamental characteristics of the regional economy. In general, larger and more diverse regional economies will exhibit higher levels of economic multiplier effects. Conversely, smaller and less diverse regional economies will exhibit relatively lower multiplier effects. These economic multiplier generalizations reflect alternative levels of regional economic “leakage” and “capture”. They relate to regional export/import balances that differ by region. In general, the Ashland, Bayfield, and Sawyer County region is a relatively small and less diverse rural economy that lies in close proximity to the Duluth/Superior, Wausau, Chippewa Falls, and Green Bay metropolitan areas.