MT SCORP

Behavioral Risk Factor Surveillance System: Outdoor Recreation and Resident Health

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Executive Summary

The Behavioral Risk Factor Surveillance System (BRFSS) provides state-based data on health and risk behaviors among adults. Several supplemental outdoor recreation related questions were included in the 2011 questionnaire to assist with the State Comprehensive Outdoor Recreation Plan process. In addition, similar questions were asked in 2002 and 2006 and utilized for comparison in this analysis, although changes in sampling design from 2006 to 2011 prevent direct comparison..

Demographics

- Montanans are an aging population with over 47 percent above the age of 50.
- 65 percent of Montana households had no children.
- Majority of the respondents identified their race as white.

Outdoor Recreation Variables

- The top primary outdoor recreation activity was walking followed by backpacking/hiking, fishing, hunting, and gardening/yard work
- Montanans indicated they spent around 5 times a week working on the ranch/farm and working with animals (both activities were identified as outdoor recreation based on open-ended responses).
- Respondents spent an average of 4 days per week walking
- Of the activities Montanans wish they could do more of, fishing and backpacking/hiking were the most frequently cited
- The major constraint for not participating in recreation was lack of time followed by physical disability and poor health
- The greatest facility need was swimming related, followed by bicycling on road and walking
- The most important outdoor recreation concern in the County was need for facilities followed by lack of funding and inadequate access
- There has been an increase in walking participation from 2002 to 2011
- Hunting, golfing, horseback riding, and downhill skiing have all seen decreased participation since 2002
- Constraints have changed since 2002 with cost constraints increasing and time constraints decreasing over time
- Bicycling on the road has increased as a facility need since 2002 and swimming areas have decreased as a facility need since 2002
- Inadequate access to recreation and lack of funding is a growing area of concern for residents

Related Health Variables

- In Montana, the number of individuals reporting they have diabetes or are obese has increased since 2002
- Respondents reported they are less physically active than in 2006 and 2002
- Those with arthritis ranked walking, gardening and fishing as their top primary outdoor recreation activity
- Those with diabetes ranked walking, hunting, and gardening as their top primary outdoor recreation activity
- Those who were considered obese ranked walking, fishing, and hunting as their top primary outdoor recreation activity

Demographics and outdoor recreation variables

- Males ranked walking, hunting, and hiking as their top primary outdoor recreation activity.
- Females ranked walking, hiking, and gardening as their top primary outdoor recreation activity.

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Introduction

The Behavioral Risk Factor Surveillance System (BRFSS) has provided state-based data on health risk behaviors among adult residents since 1984, thanks to cooperation between Montana and the US Centers for Disease Control and Prevention (CDC). BRFSS collects data on residents' health, behaviors, and demographic information. In Montana, residents are also asked about their outdoor recreation behaviors, constraints, and concerns. This report summarizes these outdoor recreation responses and explores relationships among outdoor recreation characteristics, health factors, and demographic information.

Results from this survey will be used to assist MT State Park managers in development of the State Comprehensive Outdoor Recreation Plan (SCORP). A goal of SCORP is to identify outdoor recreation trends, needs, and issues that will help direct Montana's use of the Land Water Conservation Fund dollars that are allocated to the state. Most SCORPs address the demand for and supply of recreation resources (local, state and federal) within a state, identify needs and new opportunities for recreation improvements and set forth an implementation program to meet the goals identified by its citizens and elected leaders.

Methods

BRFSS was a cross-sectional, continuous random digit dial telephone survey of Montana households (MT DPHHS 2013). Phone numbers were selected randomly and verified as private working numbers. Only one adult (i.e., age 18 or older) per household was asked to participate in the survey. Respondents were asked questions about behaviors and factors related to preventable chronic diseases, injury, infectious diseases, other health topics, and general demographic information such as age, gender, and race (MT DPHHS 2013). In addition to these core CDC questions, Montana residents were asked supplemental questions regarding outdoor recreation behaviors, constraints, and concerns. Surveys were administered each month using a questionnaire developed in cooperation with the CDC; data were aggregated and weighted by the CDC and returned to Montana at year's end for analysis.

All personal and identifiable information, including phone numbers, were removed from the data prior to analysis; respondent confidentiality is paramount. Data are presented and analyzed in aggregate form, ensuring no individual's responses can be traced back to a particular person.

Several weighting schemes are used with BRFSS data to account for probability of telephone number selection, the number of adults in each household, the number of telephones in each household (including non-coverage of houses without telephones), and non-response (MT DPHHS 2013). Beginning in 2011, an iterative proportion fitting procedure (raking) was used to post-stratify data based on several demographic variables and the incorporation of cell phones to the (traditionally land-line only) sampling design (MT DPHHS 2011). Results are presented with "response frequency" (i.e., raw number of respondents) and "weighted percent" (i.e., weighted estimate of frequency within the population). Standard errors are provided for all weighted percentages.

Results were analyzed using IBM SPSS Statistics 21 with the Complex Samples module. For 2011 data, strata = "@_STSTR," cluster = "@_psu," sample weight = "@_LLCPWT," and sampling design was "with replacement." For 2006 and 2002 data, strata, cluster, and sampling design were the same, but sample weight = "@_FINALWT." NOTE: Due to the sampling design changes implemented in 2011 (i.e., incorporation of cell phones), trends and relational comparisons among current and previous years' data (e.g., 2002, 2006) were not possible. Previous years' weighted results are presented with this caveat.

Results

Demographics

BRFSS tracks many demographic variables for Montana residents. Below are a summary statistics for demographic variables that relate to outdoor recreation. Other demographics are available at the Montana BRFSS website (http://www.brfss.mt.gov/). Estimates are provided for 2006 and 2002; however, direct comparisons are not possible due to changes in sampling design between 2006 and 2011.

Age

Montanans are an older and aging population (Table 1). Nearly half of adult Montanans are 50 years of age or older (47%), with just under one third of the population aged 50 to 64 years and nearly one fifth aged 65 years or older. Approximately one sixth of adult Montanans are 40 to 49 years old (16%) and another one sixth (16%) are 30 to 39 years old. About one fifth (19.8%) are 18 to 29 years old.

Mean age in 2011 was 47.94 (SE = 0.270). While direct comparisons are not possible due to sampling design changes between 2006 and 2011, mean age increased slightly over the 2006 estimate of 46.06 (SE = .408); the estimate is 2002 was 46.69.

Table 1: Age distribution of Montanans in 2011, 2006, and 2002

Age	2011 Response Frequency	2011 Wt %	2006 Wt %	2002 Wt %
<18	*59*	0.6%	0.9%	1.0%
18-20	*217*	6.3%	6.9%	5.5%
21-24	*302*	6.6%	7.0%	7.5%
25-29	*464*	6.9%	6.5%	7.3%
30-39	*1,034*	16%	16%	16%
40-49	*1,400*	16%	18%	22%
50-64	*3,518*	28%	27%	23%
65+	*3,271*	19%	18%	18%
TOTAL	*10,265*	100%	100%	100%

Race

Racial diversity is low in Montana (Table 2). Two thirds of Montanans describe themselves as 'White' (66%), slightly over one sixth describe themselves as 'American Indian or Alaskan Native' (17%). Only 4.5 percent describe themselves as 'Black;' four percent describe themselves as 'Other.' Not all categories were included across all years; native 'Hawaiian/Pacific Islander' was not included in 2006 or 2002; 'Asian' was not included in 2002. Many respondents chose to not answer this question thus limiting sample size and analysis of outdoor recreation variables by race[1].

[1] Very low percentages (i.e., <0.05%) are often displayed as zeros (0.0%) in tables while empty cells (i.e., no response or where n=0) are indicated with a dash ("-").

Table 2: Race distribution of Montanans in 2011, 2006, and 2002

Race	2011 Response Frequency	2011 Wt %	2006 Wt %	2002 Wt %
White	*154*	66%	66%	66%
Black	*4*	4.5%	4.8%	12%
Asian	*3*	0.9%	1.8%	-
Native Hawaiian/Pacific Islander	*3*	2.2%	-	-
American Indian, Alaska Native	*58*	17%	3.9%	15%
other	*10*	4.0%	7.8%	1%
don't know	*6*	2.6%	5.9%	7%
refused	*6*	2.7%	10%	1%
TOTAL	*244*	100%	100%	100%
BLANK	*10,021*		(n=61)	(n=44)

Gender

Gender distribution in Montana is essentially even, with statistically equivalent estimates of males and females (Table 3). This distribution has remained unchanged from 2006 and 2002.

Table 3: Gender distribution of Montanans in 2011, 2006, and 2002

Gender	2011 Response Frequency	2011 Wt %	2006 Wt %	2002 Wt %
Male	*4,407*	49.7%	49.4%	49.2%
Female	*5,858*	50.3%	50.6%	50.8%
TOTAL	*10,265*	100%	100%	100%

Children in household

The majority of households in Montana, nearly two thirds (65%), do not have children (Table 4). The majority of households with children have one or two children (13% each). Having three children is less common (5.7%), having four children even less so (2.1%), and having five or more children is rare (0.9%). These distributions have remained essentially unchanged from 2006 and 2002.

Table 4: Distribution of number of children per Montana household in 2011, 2006, and 2002

Chilrdren	2011 Response Frequency	2011 Wt %	2006 Wt %	2002 Wt %
None	*7,630*	65%	61%	62%
One	*985*	13%	15%	15%
Two	*966*	13%	15%	14%
Three	*406*	5.7%	5.8%	5.3%
Four	*149*	2.1%	2.1%	2.1%
Five or more	*73*	0.9%	1.6%	1.1%
TOTAL	*10,209*	100%	100%	100%
BLANK	*56*			

Outdoor recreation variables

Eight outdoor recreation questions were added to the Montana BRFSS. These included:

- What was the primary outdoor recreational activity you participated in during the past 12 months? (Fixed categories with open-ended "other")
    - How often did you participate in this outdoor activity in the past 12 months?
- Are there any outdoor recreational activities you would like to have participated in during the past twelve months, but did not? (Yes, No)
    - What is the top outdoor recreational activity you would like to have participated in during the past 12 months? (Fixed categories with open-ended "other")
    - What was the primary reason you were not able to participate in this activity?
- Which ONE type of outdoor recreational activity in YOUR COUNTY do you feel is in the greatest need of additional facilities or sites? (Fixed categories with open-ended "other")
- What do you think is the single most important outdoor recreational issue or concern facing YOUR COUNTY today? (Fixed categories with "other")
- Sometimes people with physical disability are prevented from participating in outdoor recreation because of conditions, lack of facilities, facilities violate ADA, or lack of transportation. Has this happened to you in Montana in the last five years? (Yes, No)

"Other" categories for "primary outdoor recreation activity," "desired outdoor recreation activity," and "greatest facility or site need in County by recreational activity" were re-coded into existing categories or into new categories. New categories included "Backpacking *and* hiking," "Gardening/Yard work," "Snow sports (e.g., general skiing, snowboarding, snowshoeing, and sledding)," "Working with animals (e.g., dogs, horses)," "Cutting wood/firewood," "Ranching/Farming," "Climbing (rock and ice)," and "Frisbee (e.g., disc golf, ultimate Frisbee). An additional category, "OTHER (Family/Kids related)," was added to the "greatest facility or site need in County by recreational activity" variable to capture a substantial number of responses. Raw response frequency and predicted frequency of response in the general population of MT household residents are presented below.

Primary outdoor recreation activity

Respondents were asked "what was the primary outdoor recreational activity you participated in during the past 12 months" and asked to choose from a closed-ended list of activities. Responses in the 'other' category were re-coded and included in existing categories or used to create new categories. New categories included "Backpacking *and* hiking," "Gardening/Yard work," "Snow sport (e.g., general skiing, snowboarding, snowshoeing, and sledding)," "Working with animals," "Cutting wood/firewood," "Ranching/Farming," "Climbing (rock and ice)," "and Frisbee (e.g., disc golf, ultimate Frisbee).

Table 5 provides estimates of the percentage of Montanans identifying each activity as their *primary* activity along with standard errors (SE) of those estimates, mean age of participants, and the SE of age estimates. Low percentages do not indicate lack of participation in the activity among Montanans; rather they indicate few Montanans chose that activity as their *primary* outdoor recreation endeavor. Mean age estimates are provided for each activity along with standard errors (SE) of those estimates.

The plurality of Montanans (24.5%) chose walking as their primary outdoor recreation activity. Backpacking and hiking was second with 11.9 percent. Fishing (8.2%) and hunting (7.2%) were third and fourth, respectively. The fifth most popular primary outdoor recreation activity was gardening/yard work.

Mean age among those who chose walking as their primary outdoor recreation activity was 52 years. Mean for backpacking/hiking was slightly younger at 40 years; hunting and fishing averaged approximately 50 years (48 and 50, respectively). Those who chose gardening/yard work as their primary outdoor recreation activity were slightly older at 58 years.

Respondents were asked how often they participated in their *primary* outdoor recreation activity (Table 6). Results indicated that the most frequent primary outdoor recreation activity was ranching/farming (mean = 5.3 times/week) followed by working with animals (mean = 4.9 times/week). Walking was the third most frequent primary outdoor recreation activity (mean = 4.0 times/week), followed by jogging/running (mean = 3.2 times/week) and gardening/yard work (mean = 3.1 times/week). Those who chose mountain biking as their primary outdoor recreation activity participated in the activity rather frequently (mean = 2.9 times/week).

Table 5: Popularity of primary outdoor recreation activities with mean age of participants

Primary Activity	Response Frequency	Weighted Percent	Weighted SE	Age (Mean)	Age (SE)
Walking	*2,188*	24.5%	0.7%	52	0.6
Backbacking/Hiking	*778*	11.9%	0.6%	40	0.8
Fishing	*636*	8.2%	0.4%	50	0.9
Hunting	*539*	7.2%	0.4%	48	0.9
Gardening/Yard work	*611*	6.2%	0.4%	58	1.2
Snowsports (skiing, snowboarding, sledding)	*283*	4.3%	0.4%	43	1.2
Camping	*302*	4.0%	0.3%	44	1.4
Golf	*382*	3.7%	0.3%	52	1.4
Bicycling-Road	*218*	3.2%	0.3%	42	1.4
Jogging/Running	*160*	3.0%	0.3%	35	1.4
OTHER (specify)	*205*	2.8%	0.3%	44	2.0
Swimming	*169*	2.8%	0.4%	38	2.1
Horseback riding	*219*	2.5%	0.3%	45	1.9
OHV (4x4, motorcycles)	*163*	1.9%	0.2%	45	1.8
Bicycling-Mountain	*91*	1.5%	0.2%	40	1.7
Basketball	*63*	1.4%	0.2%	29	1.7
Baseball or softball	*80*	1.2%	0.2%	39	1.9
Boating-Non-motorized	*95*	1.2%	0.2%	45	2.5
Boating-Motorized	*97*	1.2%	0.2%	44	2.1
Snowmobiling	*64*	0.9%	0.2%	38	2.7
Football	*28*	0.9%	0.2%	27	2.2
Soccer	*30*	0.8%	0.2%	26	1.8
Ranching/Farming	*54*	0.7%	0.2%	51	3.5
Cutting wood/firewood	*42*	0.6%	0.1%	46	5.0
Volleyball	*24*	0.5%	0.2%	36	3.2
Frisbee	*17*	0.5%	0.2%	27	3.0
Climbing	*20*	0.4%	0.1%	39	3.4
Playground activities	*22*	0.3%	0.1%	41	3.0
Skateboarding/rollerblading	*7*	0.3%	0.1%	26	4.5
Recreational shooting	*25*	0.3%	0.1%	44	7.7
Working with animals	*22*	0.2%	0.1%	59	4.7
Tennis	*19*	0.2%	0.1%	42	5.5
Picnicking	*26*	0.2%	0.0%	58	5.2
Boating-Sailing	*8*	0.2%	0.1%	30	4.6
Rodeo	*16*	0.2%	0.1%	46	6.3
Bird Watching	*7*	0.1%	0.0%	64	4.5
Ice skating	*4*	0.1%	0.0%	39	5.1
Windsurfing	*2*	0.0%	0.0%	29	7.2
Fitness course activities	*1*	0.0%		52	-
Sub-Total	*7,717*	100.0%			
Missing	*2,548*				
TOTAL	*10,265*				

Table 6: Frequency of primary outdoor recreation activity on a per week basis

Activity	Times/Week	Times/Week (SE)
Ranching/Farming	5.3	1.08
Working with animals	4.9	0.76
Walking	4.0	0.11
Jogging/Running	3.2	0.25
Gardening/Yard work	3.1	0.25
Bicycling-Mountain	2.9	0.34
Skateboarding/rollerblading	2.7	0.79
Basketball	2.6	0.48
Bicycling-Road	2.6	0.25
Boating-Sailing	2.5	1.31
Horseback riding	2.5	0.22
OTHER (specify)	2.5	0.30
Soccer	2.3	0.42
Ice skating	2.1	0.44
Climbing	2.1	0.67
Cutting wood/firewood	2.0	0.39
Playground activities	1.9	0.27
Football	1.9	0.33
Golf	1.9	0.14
Tennis	1.8	0.38
OHV (4x4, motorcycles)	1.7	0.24
Baseball or softball	1.6	0.21
Swimming	1.6	0.22
Frisbee	1.4	0.27
Rodeo	1.3	0.27
Backbacking/Hiking	1.3	0.09
Bird Watching	1.3	0.58
Fishing	1.2	0.11
Recreational shooting	1.1	0.39
Windsurfing	1.0	0.03
Hunting	1.0	0.08
Snowmobiling	1.0	0.20
Snowsports (skiing, snowboarding, sledding)	0.9	0.08
Volleyball	0.9	0.37
Boating-Motorized	0.8	0.17
Boating-Non-motorized	0.7	0.10
Camping	0.4	0.08
Picnicking	0.3	0.16
Fitness course activities	0.2	-

Desired outdoor recreation activities

Respondents were asked "are there any outdoor recreation activities you would like to have participated in during the past 12 months, but did not?" (Table 7). Results indicated nearly two thirds of Montanans (62.2%) did not have outdoor recreation activity interests that were unfulfilled. Still, results showed over one third of Montanans (37.8%) desired to participate in outdoor recreation activities, but did not have the opportunity.

Those who indicated an unfulfilled desire to participate in outdoor recreation activities were asked in which activities they would have liked to have participated (Table 8). Fishing topped this list (10.9%) followed by backpacking/hiking (10.0%) and hunting (6.3%). There was also some interested in participating in snowsports (6.0%) and swimming (5.5%).

Mean age for would-be participants varied by activity (Table 8). Those wanting to fish, backpack/hike, or hunt were all in their late 40s or early 50s (51, 46, and 47 years, respectively); while those wanting to participate in snowsports were younger, on average (38 years).

Reasons for non-participation in outdoor recreation activities (Table 9) included lack of time (30.5%), other[2] (23.5%), physical disability (14.5%), and cost (10.9%). While time and cost constraint results were consistent with the outdoor recreation literature, the physical disability constraint among Montanans was high. Similarly, poor health (7.6%) was rated higher as a constraint than what has been found in other studies.

Table 7: Desired outdoor recreation activities, yes/no responses

Response	Response Frequency	Response Percent	Weighted Percent	Weighted SE	Age (Mean)	Age (SE)
Yes	*3,366*	*35.9%*	37.8%	0.8%	46.1	0.46
No	*6,003*	*64.1%*	62.2%	0.8%	49.4	0.37
Sub-Total	*9,369*	*100%*	100%			
Missing	*896*					
TOTAL	*10,265*					

[2] There was no open-ended 'other' follow-up for this question, so responses in this category could not be recoded or detailed.

Table 8: Popularity of desired outdoor recreation activities with mean age of would-be participants

Activity	Response Frequency	Weighted Percent	Weighted SE	Age (Mean)	Age (SE)
Fishing	*352*	10.9%	.9%	51	1.2
Backpacking/Hiking	*343*	10.0%	.8%	46	1.5
Hunting	*188*	6.3%	.7%	47	2.0
Snowsports (skiing/snowboarding/sledding)	*165*	6.0%	.7%	38	1.6
Swimming	*199*	5.5%	.6%	43	2.6
Camping	*164*	5.5%	.6%	44	1.5
Walking	*229*	5.1%	.5%	61	1.8
Cutting wood/firewood	*174*	5.0%	.5%	43	1.6
OTHER (specify)	*132*	4.7%	.7%	43	2.8
Golf	*185*	4.3%	.5%	57	1.9
Boating-non-motorized	*115*	4.1%	.6%	40	2.1
Climbing	*135*	4.1%	.5%	47	2.2
Bicycling-road	*137*	4.0%	.5%	50	1.7
Horseback riding	*113*	3.2%	.4%	49	1.9
Bicycling-mountain	*70*	3.0%	.5%	41	2.0
Boating-motorized	*107*	2.9%	.4%	39	1.7
Baseball or softball	*64*	2.5%	.5%	42	2.6
Jogging/Running	*75*	2.2%	.4%	41	2.8
Snowmobiling	*56*	1.6%	.3%	46	2.7
OHV (4x4, motorcycles)	*40*	1.5%	.3%	46	3.2
Basketball	*23*	1.3%	.4%	33	2.9
Tennis	*44*	1.0%	.2%	46	4.4
Gardening/Yardwork	*33*	.8%	.2%	58	2.8
Skateboarding/rollerblading	*13*	.7%	.2%	27	1.7
Soccer	*14*	.7%	.2%	27	3.2
Football	*13*	.6%	.2%	35	4.5
Frisbee	*5*	.6%	.4%	21	1.8
Volleyball	*22*	.6%	.2%	41	6.5
Recreational shooting	*14*	.4%	.1%	44	4.3
Ice skating	*15*	.3%	.1%	57	5.0
Rodeo activities	*10*	.2%	.1%	71	7.5
Boating-sailing	*9*	.2%	.1%	60	3.9
Picnicking	*6*	.1%	.0%	67	6.2
Bird watching	*3*	.1%	.0%	55	3.5
Playground activities	*2*	.0%	.0%	40	8.1
Fitness course activities	*1*	.0%	.0%	58	0.0
Working with animals	*1*	.0%	-	78	-
Sub-Total	*3,271*	100%			
Missing	*6,994*				
TOTAL	*10,265*				

Table 9: Reasons for lack of participation in outdoor recreation activities and mean age for respondents

Reason	Response #	Weighted %	Weighted SE	Age (Mean)	Age (SE)
Advanced age	*49*	1.3%	.3%	72	3.4
Congestion and crowding	*1*	0.0%	.0%	52	-
Cost	*246*	10.9%	1.0%	37	1.3
Lack of child care	*41*	2.0%	.4%	34	1.1
Lack of facilities (e.g., ball fields, tennis courts, hiking trails)	*57*	1.4%	.3%	50	4.1
Lack of information (knowledge of activity, directions to facilities)	*2*	0.2%	.1%	29	9.9
Lack of landscape features (e.g., no local lakes, no beaches, etc.)	*10*	0.4%	.2%	38	8.7
Lack of other participants	*49*	1.6%	.4%	45	3.6
Lack of personal equipment	*88*	2.8%	.4%	45	1.8
Lack of skill	*12*	0.6%	.3%	34	5.5
Lack of time	*889*	30.5%	1.3%	41	0.7
Physical disability	*555*	14.5%	.9%	55	1.0
Poor environmental conditions (lack of fish, game, water levels)	*56*	1.0%	.2%	41	3.5
Poor facility conditions (facilities are old, in disrepair, dangerous)	*5*	0.1%	.1%	32	8.9
Poor health	*306*	7.6%	.7%	56	2.1
Safety concerns	*33*	1.1%	.3%	54	3.3
OTHER reason not listed	*822*	23.5%	1.1%	47	0.9
None	*13*	0.4%	.2%	52	4.7
Sub-Total	*3,234*	100%			
Missing	*7,031*				
TOTAL	***10,265***				

Greatest facility or site need within County by outdoor recreation activity

Respondents were asked "which ONE type of outdoor recreation activity in YOUR COUNTY do you feel is in the greatest need of additional facilities or sites?" and asked to choose from a closed-ended list of activities (Table 10). Responses in the 'other' category were re-coded and included in existing categories or used to create new categories. New categories included "Backpacking *and* hiking," "Gardening/Yard work," "Snow sport (e.g., general skiing, snowboarding, snowshoeing, and sledding)," "Working with animals," "Cutting wood/firewood," "Ranching/Farming," "Climbing (rock and ice)," "Frisbee (e.g., disc golf, ultimate Frisbee)," and "Other (Family/Kid related).

Swimming facilities topped the needs list (14.4%) followed by road bicycling (13.2%) and walking (9.9%). Despite efforts to recode responses, 'other' remained the fourth highest response (7.7%). Mean age for those who indicated these top facility or site needs did not vary substantively (Table 10).

Table 10: Greatest facility or site need within respondents' County by outdoor recreation activity and mean age of respondents

Need	Response Frequency	Weighted Percent	Weighted SE	Age (Mean)	Age (SE)
Swimming	*719*	14.4%	.8%	49	0.9
Bicycling-road	*453*	13.2%	.8%	47	1.0
Walking	*444*	9.9%	.7%	52	1.3
OTHER (specify)	*280*	7.7%	.7%	45	1.9
Fishing	*175*	5.0%	.6%	50	2.0
OHV (4x4, motorcycles)	*94*	3.4%	.4%	40	1.9
Bicycling-mountain	*111*	3.3%	.4%	43	1.8
Camping	*134*	3.2%	.4%	50	1.7
Baseball or softball	*99*	3.1%	.4%	43	2.4
Hunting	*96*	3.0%	.4%	47	2.1
Backpacking/Hiking	*116*	2.9%	.4%	46	2.1
Golf	*86*	2.8%	.4%	40	2.7
Skateboarding/rollerblading	*70*	2.3%	.4%	39	2.2
Soccer	*51*	2.3%	.5%	34	2.6
Basketball	*70*	2.3%	.4%	34	2.2
OTHER (Family/Kids related)	*82*	2.2%	.3%	49	2.7
Tennis	*83*	2.1%	.4%	44	3.0
Climbing	*66*	2.1%	.4%	41	2.7
Ice skating	*71*	1.9%	.3%	45	3.4
Recreational shooting	*40*	1.6%	.4%	41	2.5
Playground activities	*55*	1.4%	.2%	45	2.8
Snowsports (skiing/snowboarding/sledding)	*41*	1.2%	.3%	39	3.6
Frisbee	*27*	1.2%	.3%	33	2.9
Football	*19*	1.0%	.4%	32	5.9
Snowmobiling	*21*	.9%	.3%	37	5.1
Cutting wood/firewood	*31*	.9%	.3%	47	4.2
Jogging/Running	*28*	.8%	.2%	38	3.4
Boating-non-motorized	*24*	.7%	.2%	44	3.2
Horseback riding	*31*	.7%	.2%	46	2.9
Boating-motorized	*29*	.7%	.2%	47	3.0
Working with animals	*21*	.6%	.2%	48	3.1
Rodeo activities	*18*	.3%	.1%	39	6.8
Volleyball	*8*	.3%	.2%	31	5.5
Fitness course activities	*8*	.1%	.1%	39	4.3
Picnicking	*7*	.1%	.0%	59	7.3
Gardening/Yard work	*6*	.1%	.0%	64	3.8
Bird watching	*2*	.1%	.1%	64	8.3
Boating-sailing	*2*	.0%	.0%	59	4.0
Ranching/Farming	*2*	.0%	.0%	39	15.5
Sub-Total	*3,720*	100%			
Missing	*6,545*				
TOTAL	*10,265*				

Most important outdoor recreation issue or concern in County

Respondents were asked "what do you think is the single most important outdoor recreation issue or concern facing YOUR COUNTY today?" and asked to choose from a closed-ended list of issues and concerns (Table 11).

Top concern among Montanans was 'other' (34.8%)[3]. The top listed issue or concern was the 'need for facilities (e.g., ball fields, tennis courts, hiking trail)' (13.2%).The second most common issue or concern was 'lack of funding' (11.3%) followed by 'inadequate access' (10.8%). The mean age of respondents by issue or concern did not vary substantively (Table 11).

Table 11: Outdoor recreation issues and concerns within respondents' County and mean age of respondents

Concern	Response Frequency	Weighted Percent	Weighted SE	Age (Mean)	Age (SE)
Need for facilities (e.g., ball fields, tennis courts, hiking trails)	*907*	13.2%	.6%	46	0.8
Lack of funding	*798*	11.3%	.6%	48	0.9
Inadequate access	*563*	10.8%	.6%	45	1.0
Poor facility conditions (facilities are old, in disrepair, dangerous)	*237*	4.4%	.5%	45	1.6
Congestion and crowding	*206*	4.1%	.4%	45	1.3
Inappropriate behavior of outdoor enthusiasts	*172*	3.2%	.4%	46	2.3
Commercial use (Guides and outfitters)	*72*	1.3%	.2%	43	2.7
Non-resident use (Out-of-staters)	*73*	1.2%	.2%	45	2.5
Other	*2,099*	34.8%	.9%	47	0.6
None	*1,003*	15.8%	.7%	51	0.9
Sub-Total	*6,130*	100%			
Missing	*4,135*				
TOTAL	*10,265*				

Frequency of outdoor recreation activity constraint, within past five years, due to conditions, lack of facilities, non-ADA compliance, or lack of transportation

Respondents were asked, 'sometimes people with physical disability are prevented from participating in outdoor recreation because of conditions, lack of facilities, facilities violate ADA, or lack of transportation – has this happened to you in Montana in the last five years?' and given the option of choosing from three responses: yes; yes, but the respondent was not the disabled person; or no (Table 12).

The vast majority of respondents indicated they had not experienced constraints to outdoor recreation activities due to conditions, lack of facilities, ADA violations, or lack of transportation (92.3%). However, a few respondents had experienced constraints due to these factors (5.8%) or had been with others who were constrained by them (1.9%). Mean age did not differ among those who had experienced disability constraints, those who been with others who experienced disability constraints, or those who had not experienced disability constraints (Table 12).

[3] There was no open-ended 'other' follow-up for this question, so responses in this category could not be recoded or detailed.

Table 12: Constraints on outdoor recreation activities due to conditions, lack of facilities, ADA violations, or lack of transportation and mean age of respondents

Response	Response Frequency	Weighted Percent	Weighted SE	Age (Mean)	Age (SE)
Yes	*583*	5.8%	.4%	50	1.2
Yes, but the respondent was not the disabled individual	*169*	1.9%	.2%	46	2.1
No	*8,495*	92.3%	.4%	48	0.3
Sub-Total	*9,247*	100%			
Missing	*1,018*				
TOTAL	*10,265*				

Longitudinal comparison

Outdoor recreation variables have been included in the BRFSS for several years. Unfortunately, direct comparisons between 2011 and previous years' results are not possible due to changes in sampling design between the 2006 and 2011[4]. With this caveat in mind, predicted population statistics are presented here for years 2011, 2006, and 2002. Note: open-ended responses to the 'other' category were not recoded for all previous years thus, for these tables, the expanded and additional categories are excluded and 'other' responses remain as 'other.'

Primary outdoor recreation activity for 2002, 2006, 2011

Few shifts in primary outdoor recreation activity have been seen over the past 10 years (Table 13). The top three activities have remained walking, fishing, and hunting. Camping has remained popular as well, while golf has seen a recent decrease in popularity. Most other activities have not had dramatic shifts in popularity.

Frequency by activity was coded differently in 2002 and 2006 than in 2011; however, general comparisons among frequency of participation in primary outdoor recreation activity shows little shift over time (Table 14). Across all years, the plurality of respondents participates in their primary recreation activity two to four times per week.

[4] Sampling protocols were revised to include cell phone users; weighting schemes were updated to incorporate new inclusion probabilities based on cell phone and land-line phone use ratios.

Table 13: Popularity of primary outdoor recreation activities for 2002, 2006, and 2011

Activity	2011 Response Frequency	2011 Wt %	2006 Wt %	2002 Wt %
Walking	*2,184*	20.6%	29.3%	19.9%
Fishing	*626*	6.8%	6.2%	7.0%
Hunting	*529*	6.0%	6.9%	6.5%
Camping	*298*	3.3%	3.2%	3.3%
Golf	*381*	3.1%	4.5%	4.7%
Bicycling,street	*216*	2.6%	2.5%	2.5%
Swimming	*163*	2.3%	1.5%	2.0%
Horseback riding	*215*	2.0%	2.4%	2.8%
Downhill skiing/ snowboarding	*96*	1.3%	1.4%	2.1%
Bicycling--mountain	*88*	1.1%	1.0%	2.6%
Basketball	*62*	1.1%	1.1%	1.7%
Jogging	*55*	1.0%	3.2%	1.6%
Off Highway (4X4, motorcycles)	*93*	0.9%	0.9%	1.1%
Baseball or softball	*58*	0.8%	1.1%	1.0%
Snowmobiling	*64*	0.8%	0.7%	0.9%
Boating: motorized	*75*	0.7%	0.7%	1.5%
Soccer	*30*	0.6%	0.8%	0.4%
Cross country skiing	*47*	0.6%	0.4%	0.4%
Football	*25*	0.6%	1.0%	0.5%
Volleyball	*24*	0.4%	0.3%	0.3%
Boating: non-motorized	*33*	0.4%	0.2%	0.9%
Playground activities	*22*	0.3%	0.2%	0.1%
Skateboarding/rollerblading	*6*	0.2%	0.2%	0.3%
Backpacking	*12*	0.2%	1.0%	1.9%
Tennis	*19*	0.2%	0.3%	0.5%
Boating: sailing	*8*	0.1%	0.0%	0.2%
Picnicking	*25*	0.1%	0.1%	0.3%
Rodeo activities	*15*	0.1%	0.2%	0.2%
Recreational shooting	*5*	0.1%	0.0%	0.0%
Bird watching	*6*	0.1%	0.1%	0.0%
Windsurfing	*2*	0.0%	0.0%	0.0%
Ice skating	*2*	0.0%	0.0%	0.1%
Fitness course activities	*1*	0.0%	0.1%	0.0%
OTHER (specify)	*2,232*	25.5%	18.4%	17.7%
None	*1,558*	1.5%	0.9%	1.7%
Don't know/Not sure	*152*	14.3%	8.5%	9.8%
Refused	*12*	0.2%	0.7%	3.5%
TOTAL	*9,439*	100%	100%	100%
BLANK	*826*			

Table 14: Frequency of participation in primary outdoor recreation activities for 2002, 2006, and 2011

FREQUENCY	2011 Response Frequency	2011 Wt %	2006 Wt %	2002 Wt %
Less than once/month	*1,280*	16%	11%	14%
Once to Twice/month	*994*	14%	12%	14%
Twice/month to once/week	*1,325*	19%	22%	21%
Two to four times/week	*2,368*	33%	38%	35%
Five to seven times/week	*1,192*	14%	17%	15%
More than once/day	*262*	3%	1%	0%
TOTAL	7,421	100%	100%	100%
BLANK/Unusable	2,844			

Desired outdoor recreational activities, 2002, 2006, 2011

There has been no change over time in the proportion of respondents who wish to participate in outdoor recreation activities but are unable (Table 15).

Table 15: Desire to participate in outdoor recreation activities (yes/no) for 2002, 2006, and 2011

Wanted OR Activity?	2011 Response Frequency	2011 Wt %	2006 Wt %	2002 Wt %
Yes	3,366	38%	38%	37%
No	6,003	62%	61%	59%
Don't Know	50	1%	1%	1%
Refused	11	0%	0%	4%
TOTAL	9,430	100%	100%	100%
BLANK	835			

Of those respondents who indicate an unfulfilled desire to participate in outdoor recreation activities, the activities desired have shifted only slightly over time (Table 16). Constraints to fishing have consistently topped the list while constraints to hunting have increased in recent years. Other commonly constrained activities over the years have included camping, swimming, walking, and downhill skiing or snowboarding.

Respondents' primary reasons for not participating in outdoor recreation activities have shifted over time (Table 17). Time constraints eased between 2002 and 2006 and have continued to do so in recent years. Conversely, cost constraints, which had remained steady between 2002 and 2006 (7% for both years), have recently increased (11%). Frequencies of responses within other constraint categories remain too low for meaningful comparisons.

Table 16: Desired outdoor recreation activities for 2002, 2006, and 2011

Activity	2011 Response Frequency	2011 Wt %	2006 Wt %	2002 Wt %
Fishing	*338*	10%	10%	8%
Hunting	*176*	6%	4%	5%
Camping	*164*	5%	6%	5%
Swimming	*196*	5%	6%	4%
Walking	*222*	5%	4%	4%
Downhill skiing/ snowboarding	*170*	5%	5%	9%
Golf	*185*	4%	5%	4%
Bicycling--street	*135*	4%	4%	3%
Horseback riding	*110*	3%	4%	3%
Bicycling--mountain	*69*	3%	3%	3%
Cross country skiing	*105*	3%	3%	4%
Baseball or softball	*42*	2%	2%	2%
Boating: motorized	*63*	2%	1%	2%
Snowmobiling	*56*	2%	1%	1%
Basketball	*23*	1%	1%	1%
Boating: non-motorized	*29*	1%	1%	4%
Tennis	*44*	1%	1%	1%
Backpacking	*24*	1%	2%	3%
Off Highway (4X4, motorcycles)	*21*	1%	1%	1%
Soccer	*14*	1%	1%	1%
Skateboarding/rollerblading	*12*	1%	1%	0%
Jogging	*28*	1%	1%	2%
Football	*11*	1%	1%	1%
Volleyball	*21*	0%	1%	1%
Ice skating	*13*	0%	0%	0%
Rodeo activities	*9*	0%	0%	0%
Boating: sailing	*7*	0%	0%	0%
Picnicking	*5*	0%	0%	0%
Bird watching	*3*	0%	0%	0%
Playground activities	*2*	0%	0%	0%
Fitness course activities	*1*	0%	0%	0%
OTHER (specify)	*973*	31%	26%	19%
None	*33*	1%	1%	5%
Don't know/Not sure	*55*	1%	2%	1%
Refused	*3*	0%	0%	1%
TOTAL	*3,362*	100%	100%	100%
BLANK	*6,903*			

Table 17: Constraints to outdoor recreation activities for 2002, 2006, and 2011

Reason	2011 Response Frequency	2011 Wt %	2006 Wt %	2002 Wt %
Advanced age	*49*	1%	2%	1%
Congestion and crowding	*1*	0%	0%	0%
Cost	*246*	11%	7%	7%
Lack of child care	*41*	2%	1%	2%
Lack of facilities (e.g., ball fields, tennis courts, hiking	*57*	1%	2%	3%
Lack of information (knowledge of activity, directions to facilities)	*2*	0%	0%	0%
Lack of landscape features (e.g., no local lakes, no	*10*	0%	1%	1%
Lack of other participants	*49*	2%	2%	3%
Lack of personal equipment	*88*	3%	4%	4%
Lack of skill	*12*	1%	0%	0%
Lack of time	*889*	30%	34%	40%
Physical disability	*555*	14%	12%	10%
Poor environmental conditions (lack of fish, game,	*56*	1%	3%	2%
Poor facility conditions (facilities are old, in disrepair,	*5*	0%	0%	0%
Poor health	*306*	8%	6%	4%
Safety concerns	*33*	1%	1%	1%
OTHER reason not listed	*822*	23%	23%	19%
None	*13*	0%	1%	1%
Don't know/Not sure	*32*	1%	1%	0%
Refused	*3*	0%	0%	0%
TOTAL	*3,269*	100%	100%	100%
BLANK	*6,996*			

Concerns and facility/site needs within County

Outdoor recreation facility or site needs within respondents' County were coded differently in 2002 preventing comparison. Results from 2006 and 2011 indicate little change (Table 18). Perceived needs for swimming facilities may have decreased slightly while cycling needs (e.g., bike paths and/or lanes) have increased slightly. As direct comparisons are not possible between 2006 and 2011, it is impossible to say with certainty whether or not these shifts are statistically significant.

Table 18: Greatest facility or site need in respondents' County by outdoor recreation activity for 2002, 2006, and 2011

Activity	2011 Response Frequency	2011 Wt %	2006 Wt %	2002 Wt %
Swimming	*684*	5.5%	6.4%	-
Bicycling--street	*377*	4.3%	3.9%	-
Walking	*359*	3.2%	3.5%	-
Fishing	*166*	1.9%	1.7%	-
Bicycling--mountain	*109*	1.3%	2.4%	-
Camping	*131*	1.3%	1.7%	-
Hunting	*90*	1.2%	0.8%	-
Golf	*86*	1.1%	1.3%	-
Baseball or softball	*86*	1.1%	1.1%	-
Soccer	*50*	0.9%	0.8%	-
Basketball	*69*	0.9%	1.3%	-
Skateboarding/rollerblading	*59*	0.8%	0.9%	-
Tennis	*76*	0.8%	0.7%	-
Off Highway (4X4, motorcycles)	*54*	0.7%	1.8%	-
Playground activities	*51*	0.5%	1.3%	-
Ice skating	*48*	0.5%	1.1%	-
Cross country skiing	*50*	0.5%	0.8%	-
Snowmobiling	*21*	0.4%	0.5%	-
Downhill skiing/ snowboarding	*29*	0.3%	0.5%	-
Football	*18*	0.3%	0.7%	-
Horseback riding	*24*	0.2%	0.7%	-
Boating: motorized	*23*	0.2%	0.3%	-
Rodeo activities	*18*	0.1%	0.4%	-
Volleyball	*8*	0.1%	0.1%	-
Boating: non-motorized	*12*	0.1%	0.2%	-
Jogging	*6*	0.1%	0.4%	-
Recreational shooting	*4*	0.1%	0.4%	-
Fitness course activities	*8*	0.1%	0.5%	-
Picnicking	*7*	0.0%	0.1%	-
Backpacking	*4*	0.0%	1.0%	-
Bird watching	*2*	0.0%	0.1%	-
Boating: sailing	*2*	0.0%	0.1%	-
OTHER (specify)	*989*	11.5%	0.0%	-
None	*1,466*	15.7%	17.5%	-
Don't know/Not sure	*4,169*	43.3%	39.5%	-
Refused	*62*	0.6%	5.7%	-
TOTAL	*9,417*	100%	100%	-
BLANK	*848*			

Outdoor recreation concerns within respondents' County have not changed substantially over time (Table 19). The need for facilities (e.g., ball fields, tennis courts, hiking trails) has consistently topped the list each year. Lack of funding and inadequate access have consistently been the second and third most popular concerns.

Table 19: Outdoor recreation concerns within respondents' county for 2002, 2006, and 2011

Concern	2011 Response Frequency	2011 Wt %	2006 Wt %	2002 Wt %
Need for facilities (e.g., ball fields, tennis courts, hiking trails)	*907*	8.8%	9.8%	9.5%
Lack of funding	*798*	7.5%	5.8%	5.4%
Inadequate access	*563*	7.2%	6.3%	6.2%
Poor facility conditions (facilities are old, in disrepair, dangerous)	*237*	2.9%	2.6%	2.8%
Congestion and crowding	*206*	2.7%	3.5%	3.2%
Inappropriate behavior of outdoor enthusiasts	*172*	2.2%	1.6%	2.7%
Commercial use (Guides and outfitters)	*72*	0.8%	1.0%	1.6%
Non-resident use (Out-of-staters)	*73*	0.8%	0.5%	0.5%
Other	*2,099*	23.2%	21.3%	21.0%
None	*1,003*	10.5%	38.4%	37.5%
Don't know/Not sure	*3,199*	32.6%	8.1%	5.0%
Refused	*80*	0.8%	1.1%	4.7%
TOTAL	*9,409*	100%	100%	100%
BLANK	*856*			

Frequency of activity constraint, within past five years, due to conditions, lack of facilities, non-ADA compliance, or lack of transportation

Constraints to outdoor recreation activities due to conditions, lack of facilities, ADA violations, or lack of transportation have remained consistently low over time (Table 20).

Concern	2011 Response Frequency	2011 Wt %	2006 Wt %	2002 Wt %
Yes	*583*	5.8%	6.9%	4.0%
Yes, but the respondent was not the disabled individual	*169*	1.9%	0.0%	3.8%
No	*8,495*	91%	98%	87%
Don't know/Not sure	*144*	1.2%	1.3%	1.4%
Refused	*9*	0.1%	0.9%	4.0%
TOTAL	*9,400*	100%	100%	100%
BLANK	*865*			

Related health variables

Certain health variables are related to outdoor recreation. BRFSS respondents were asked about their health, including arthritis (including rheumatoid arthritis, gout, lupus, or fibromyalgia), diabetes, height and weight – used to calculate body mass index (BMI), and leisure time physical activity (LTPA). Below are the summary statistics for these variables from 2002, 2006, and 2011, although direct comparisons across years are not possible due to sampling design changes between 2006 and 2011. Comparisons with outdoor recreation variables follow.

Over a quarter of Montanans suffer from some type of arthritic condition, including rheumatoid arthritis, gout, lupus, or fibromyalgia (Table 20). Arthritis was not considered by the 2006 or 2002 BRFSS.

Table 20: Frequency of arthritis (including rheumatoid arthritis, gout, lupus, or fibromyalgia) in Montana

Response	2011 Response Frequency	2011 Wt %	2006 Wt %	2002 Wt %
yes	*3,493*	26%	-	-
no	*6,697*	73%	-	
don't know	*72*	1%	-	-
refused	*3*	0%	-	-
TOTAL	*10,265*	100%	-	-

Less than one tenth of Montanans (8%) suffer from diabetes, with an additional one percent having been told they were diabetic during pregnancy (Table 21). An additional one percent of Montanans are pre-diabetic or borderline. While the frequency of diabetes remained constant from 2002 to 2006, it seems to have increased slightly in 2011, although direct comparisons are not possible.

Table 21: Frequency of diabetes, pre-diabetes, and borderline diabetes in Montana

Response	2011 Response Frequency	2011 Wt %	2006 Wt %	2002 Wt %
yes	*1,020*	8%	6%	6%
yes, female told only during pregnancy	*76*	1%	1%	1%
no	*8,979*	90%	92%	94%
no, pre-diabetes or borderline	*176*	1%	1%	0%
don't know/not sure	-	0%	0%	0%
TOTAL	*10,251*	100%	100%	100%
BLANK	*14*			

Body mass index (BMI) is a calculated value based on mass (kg) divided by height squared (m^2). A BMI of less than 18.5 is considered underweight; a BMI of 18.5 to 24.9 is considered normal; a BMI of 25 to 29.9 is considered overweight; and a BMI of 30 or more is considered obese. Respondent BMIs were calculated based on their reported height and weight (Table 22). While the plurality of Montanans have a normal BMI (38%), over one third of Montanans are overweight (36%) and a quarter of Montanans are obese (25%). Only one percent of Montanans are underweight. The proportion of 'normal weight' Montanans has decreased steadily since 2002.

The proportion of 'overweight' Montanans remained constant from 2002 to 2006, but appears to have decreased slightly in 2011. The proportion of 'obese' Montanans increased from 19 percent in 2002 to 21 percent in 2006 and increased again, somewhat dramatically, to 25 percent in 2011.

Table 22: Distribution of Montanans by body mass index (BMI)

Response	2011 Response Frequency	2011 Wt %	2006 Wt %	2002 Wt %
Underweight	*161*	1%	-	-
Normal Weight	*3,481*	38%	41%	43%
Overweight	*3,740*	36%	38%	38%
Obese	*2,500*	25%	21%	19%
TOTAL	*9,882*	100%	100%	100%
BLANK	*383*			

BRFSS respondents were also asked to report their leisure time physical activity (LTPA) in categories of 'had physical activity or exercise in the last 30 days' or 'no physical activity or exercise in the last 30 days' (Table 23). The majority of Montanans (74%) had physical activity in the past 30 days, but over a quarter of Montanans (26%) had not. The proportion of Montanans without LTPA in the past 30 days stayed constant from 2002 to 2006 (at 19%), but seems to have increased in 2011, although direct comparisons are not possible.

Table 23: Frequency of leisure time physical activity (LTPA) in Montana

Response	2011 Response Frequency	2011 Wt %	2006 Wt %	2002 Wt %
Had physical activity or exercise in last 30 days	*7,307*	74%	81%	81%
no physical activity of exercise in last 30 days	*2,532*	26%	19%	19%
TOTAL	*9,839*	100%	100%	100%
BLANK	*426*			

Crosstabs of outdoor recreation variables by demographics and related health variables

Primary outdoor recreation activity varied slightly by gender and by parental status (Table 23). Top outdoor recreation activities for males were, in decreasing order of preference: walking (14.5%), hiking (12.9%), backpacking/hiking (12.6%), and fishing (12.3%). Top outdoor recreation activities for females were, in decreasing order of preference: walking (34.9%), backpacking/hiking (11.2%), gardening/yard work (8.6%), and camping (4.7%). Top outdoor recreation activities for parents were, in decreasing order of preference: walking (18.3%), backpacking/hiking (13.1%), hunting (7.5%), and fishing (6.6%).

Table 24: Primary outdoor recreation activity by gender and parental status

Primary Activity	Male (Wt %)	Rank (Male)	Female (Wt %)	Rank (Female)	Parent (Wt %)	Rank (Parent)
Walking	14.5%	1	34.9%	1	18.3%	1
Backbacking/Hiking	12.6%	3	11.2%	2	13.1%	2
Hunting	12.9%	2	1.3%	14	7.5%	3
Fishing	12.3%	4	3.9%	7	6.6%	4
Camping	3.3%	8	4.7%	4	5.1%	5
Snowsports (skiing, snowboarding, sledding)	4.8%	6	3.9%	8	4.9%	6
Swimming	1.5%	16	4.1%	5	4.9%	7
Jogging/Running	3.0%	9	3.0%	11	4.6%	8
Gardening/Yard work	3.9%	7	8.6%	3	4.1%	9
OTHER (specify)	2.4%	12	3.3%	10	3.5%	10
Bicycling-Road	2.4%	11	3.9%	6	3.4%	11
Basketball	2.0%	14	.7%	20	2.6%	12
Horseback riding	1.4%	18	3.5%	9	2.4%	13
Golf	5.4%	5	1.9%	12	2.2%	14
OHV (4x4, motorcycles)	2.6%	10	1.2%	15	1.7%	15
Boating-Motorized	1.0%	22	1.4%	13	1.6%	16
Football	1.6%	15	.2%	31	1.6%	17
Baseball or softball	1.5%	17	1.0%	16	1.5%	18
Bicycling-Mountain	2.1%	13	.8%	19	1.5%	19
Boating-Non-motorized	1.4%	19	1.0%	17	1.4%	20
Soccer	1.0%	21	.5%	25	1.4%	21
Snowmobiling	1.3%	20	.5%	22	1.0%	22
Volleyball	.2%	31	.8%	18	0.7%	23
Ranching/Farming	.9%	23	.5%	23	0.7%	24
Playground activities	.1%	33	.5%	24	0.7%	25
Skateboarding/rollerblading	.4%	27	.1%	33	0.7%	26
Boating-Sailing	.3%	29	.0%	39	0.4%	27
Frisbee	.7%	24	.3%	28	0.4%	28
Cutting wood/firewood	.7%	25	.6%	21	0.4%	29
Recreational shooting	.4%	28	.2%	32	0.3%	30
Tennis	.1%	32	.2%	30	0.2%	31
Climbing	.5%	26	.3%	29	0.2%	32
Rodeo	.2%	30	.1%	34	0.2%	33
Picnicking	.0%	37	.3%	26	0.1%	34
Ice skating	.0%	36	.1%	35	0.0%	35
Bird Watching	.1%	34	.0%	37	0.0%	36
Working with animals	.1%	35	.3%	27	0.0%	37
Fitness course activities	-	39	.0%	38	0.0%	38
Windsurfing	-	38	.1%	36	-	39
Sub-Total	100%		100%		100%	

Primary outdoor recreation activities varied based on health variables (Table 25). Walking was, by far, the top activity for those Montanans with arthritis (32.3%) and diabetes (35.5%) and who are obese (29.6%). For those with arthritis, the next most popular primary outdoor recreation activities were, in decreasing order of preference: gardening/yardwork (9.8%), fishing (9.6%), and backpacking/hiking (8.6%). For those with diabetes, the next most popular primary outdoor recreation activities were, in decreasing order of preference: hunting (11.2%), gardening/yard work (10.3%), and fishing (9.2%). For obese Montanans, the next most popular primary outdoor recreation activities were, in decreasing order: fishing (9.3%), hunting (9.1%), and gardening/yard work (8.3%).

Table 25: Primary outdoor recreation activities by health variables

Primary Activity	Arthritis %	Rank (Arthritis)	Diabetes %	Rank (Diabetes)	Obese %	Rank (Obese)
Walking	32.3%	1	35.5%	1	29.6%	1
Gardening/Yard work	9.8%	2	10.3%	3	8.3%	4
Fishing	9.6%	3	9.2%	4	9.3%	2
Backbacking/Hiking	8.6%	4	4.2%	7	6.6%	5
Hunting	8.3%	5	11.1%	2	9.1%	3
Camping	5.2%	6	5.4%	6	5.2%	6
Golf	4.2%	7	5.6%	5	5.0%	7
OTHER (specify)	3.7%	8	2.0%	9	2.6%	9
Snowsports (skiing, snowboarding, sledding)	2.7%	9	0.6%	19	2.5%	10
Horseback riding	2.4%	10	2.0%	10	2.4%	11
Bicycling-Road	2.3%	11	1.8%	11	1.8%	13
OHV (4x4, motorcycles)	1.9%	12	2.1%	8	2.1%	12
Swimming	1.9%	13	1.0%	14	3.1%	8
Boating-Non-motorized	0.9%	14	0.7%	15	0.7%	21
Bicycling-Mountain	0.8%	15	0.5%	21	1.1%	18
Baseball or softball	0.6%	16	0.4%	22	1.0%	19
Ranching/Farming	0.6%	17	1.7%	12	1.0%	20
Cutting wood/firewood	0.6%	18	0.6%	18	0.6%	23
Skateboarding/rollerblading	0.4%	19	-	34	-	38
Snowmobiling	0.4%	20	0.1%	29	0.6%	24
Boating-Motorized	0.4%	21	1.5%	13	1.2%	15
Picnicking	0.4%	22	0.1%	30	0.2%	30
Working with animals	0.4%	23	0.6%	17	0.3%	27
Jogging/Running	0.4%	24	0.7%	16	0.6%	22
Recreational shooting	0.3%	25	0.3%	24	0.2%	29
Basketball	0.2%	26	0.5%	20	1.2%	16
Climbing	0.1%	27	0.2%	28	0.2%	32
Volleyball	0.1%	28	0.1%	31	0.1%	34
Bird Watching	0.1%	29	0.3%	27	0.2%	28
Frisbee	0.1%	30	0.3%	23	0.3%	26
Tennis	0.1%	31	0.3%	26	0.2%	31
Football	0.1%	32	0.3%	25	1.3%	14
Rodeo	0.1%	33	0.1%	33	0.1%	35
Playground activities	0.1%	34	0.1%	32	0.4%	25
Boating-Sailing	0.1%	35	0.0%	35	0.1%	36
Windsurfing	0.0%	36	-	36	-	39
Fitness course activities	0.0%	37	-	37	0.0%	37
Soccer	-	38	-	38	1.1%	17
Ice skating	-	39	-	39	0.1%	33
Sub-Total	100%		100%		100%	

The desire for participation in outdoor recreation activities varied by gender, parental status, and health variables (Table 26). Males tended to be more constrained (40.6%) than females (35.1%); those with arthritis were the most constrained (41.4%), followed by parents (41.0%), diabetics (38.4%), and the obese (37.6%).

Table 26: Desire for participation in outdoor recreation activities by gender, parental status, and health variables

Group	Yes	No
Female	35.1	64.9
Male	40.6	59.4
Arthritic	41.4	58.6
Diabetic	38.4	61.6
Obese	37.6	62.4
Parent	41.0	59.0

The desired outdoor recreation activities varied by gender, parental status, and health variables (Tables 27 and 28). Males were most interested in fishing, hunting, and backpacking. Females were most interested in backpacking, walking, and swimming. Parents were most interested in backpacking, fishing, and snowsports. Those with arthritis were most interested in fishing, walking, and backpacking. Those with diabetes were most interested in fishing, backpacking, and walking. Those who were obese were most interested in fishing, backpacking, and hunting.

Table 27: Desired outdoor recreation activities by gender and parental status

Primary Activity	Males (Wt %)	Rank (Male)	Females (Wt %)	Rank (Female)	Parent (Wt %)	Rank (Parent)
Backpacking/Hiking	7.9%	3	12.4%	1	9.8%	1
Fishing	17.2%	1	3.7%	11	9.1%	2
Snowsports (skiing/snowboarding/sledding)	5.4%	6	6.6%	4	7.7%	3
Camping	5.0%	7	6.0%	6	7.5%	4
Cutting wood/firewood	4.9%	8	5.1%	8	6.0%	5
Hunting	10.7%	2	1.3%	20	5.9%	6
OTHER (specify)	6.2%	4	3.2%	12	5.6%	7
Swimming	2.9%	13	8.4%	3	4.3%	8
Climbing	3.5%	10	4.8%	10	4.1%	9
Boating-motorized	3.4%	11	2.4%	16	3.8%	10
Walking	1.7%	18	9.1%	2	3.7%	11
Jogging/Running	1.6%	20	2.8%	13	3.5%	12
Boating-non-motorized	2.9%	12	5.5%	7	3.4%	13
Horseback riding	1.6%	19	5.0%	9	3.3%	14
Basketball	1.3%	21	1.2%	21	2.8%	15
Bicycling-road	2.1%	16	6.2%	5	2.7%	16
Golf	5.8%	5	2.6%	15	2.7%	17
Bicycling-mountain	4.0%	9	2.0%	17	2.4%	18
Baseball or softball	2.3%	15	2.7%	14	2.2%	19
Snowmobiling	2.4%	14	.8%	25	2.1%	20
Frisbee	.7%	24	.4%	27	1.4%	21
Tennis	.5%	27	1.5%	19	1.0%	22
Soccer	1.1%	22	.2%	30	1.0%	23
Football	1.1%	23	-	36	.9%	24
Recreational shooting	.6%	26	.1%	32	.6%	25
Volleyball	.1%	30	1.1%	22	.6%	26
OHV (4x4, motorcycles)	1.9%	17	1.0%	23	.5%	27
Ice skating	.1%	29	.5%	26	.4%	28
Skateboarding/rollerblading	.6%	25	.9%	24	.4%	29
Gardening/Yardwork	.1%	33	1.6%	18	.3%	30
Boating-sailing	.1%	32	.3%	28	.2%	31
Rodeo activities	.2%	28	.2%	29	.1%	32
Playground activities	-	37	.1%	33	.1%	33
Fitness course activities	-	36	.0%	35	.0%	34
Picnicking	.0%	34	.2%	31	-	35
Bird watching	.1%	31	.1%	34	-	36
Working with animals	.0%	35	-	37	-	37
Total	100%		100%		100%	

Table 28: Desired outdoor recreation activities by health variables

Primary Activity	Arthritis (Wt %)	Rank (Arthritis)	Diabetes (Wt %)	Rank (Diabetes)	Obese (Wt %)	Rank (Obese)
Fishing	13.4%	1	18.8%	1	13.8%	1
Backpacking/Hiking	9.4%	3	11.4%	2	8.3%	2
Hunting	7.4%	4	9.6%	4	7.9%	3
Walking	9.6%	2	10.0%	3	7.5%	4
Swimming	5.4%	7	6.8%	5	6.5%	5
Camping	4.5%	8	4.0%	9	6.2%	6
Bicycling-road	2.7%	13	6.2%	6	5.4%	7
Boating-non-motorized	2.5%	14	1.3%	18	4.6%	8
OTHER (specify)	5.9%	6	5.7%	8	4.4%	9
Golf	6.3%	5	5.9%	7	4.3%	10
Cutting wood/firewood	3.3%	12	2.2%	14	3.8%	11
Snowsports (skiing/snowboarding/sledding)	3.3%	11	1.4%	16	3.7%	12
Horseback riding	4.0%	10	3.1%	10	3.6%	13
Boating-motorized	2.3%	17	3.1%	11	3.0%	14
OHV (4x4, motorcycles)	1.7%	20	1.4%	15	2.9%	15
Bicycling-mountain	2.5%	15	.1%	26	2.4%	16
Baseball or softball	1.9%	18	2.5%	12	1.9%	17
Jogging/Running	2.4%	16	.5%	20	1.8%	18
Climbing	4.4%	9	2.3%	13	1.8%	19
Snowmobiling	1.8%	19	1.4%	17	1.6%	20
Tennis	.9%	22	.3%	22	.9%	21
Gardening/Yardwork	1.6%	21	.6%	19	.8%	22
Basketball	.2%	27	.2%	24	.7%	23
Soccer	.0%	35	0%	35	.5%	24
Football	.1%	31	0%	32	.5%	25
Volleyball	.7%	23	.2%	25	.3%	26
Skateboarding/rollerblading	0%	37	0%	37	.3%	27
Boating-sailing	.2%	26	0%	28	.2%	28
Picnicking	.2%	29	0%	30	.1%	29
Ice skating	.5%	24	.5%	21	.1%	30
Frisbee	.1%	33	.3%	23	.1%	31
Rodeo activities	.2%	28	0%	29	.1%	32
Playground activities	.1%	32	0%	33	.0%	33
Fitness course activities	.0%	34	0%	34	.0%	34
Recreational shooting	.3%	25	.1%	27	.0%	35
Bird watching	.2%	30	0%	31	0%	36
Working with animals	.0%	36	0%	36	0%	37
Total	100%		100%		100%	

The reason for having not participated in desired outdoor recreation variables varied slightly by gender, parental status, and health variables (Table 28). Note: respondents indicating 'other' were not provided an opportunity to provide further details. Males were most constrained by time, other, and cost. Females were most constrained by time, other, and physical disability. Parents were most constrained by time, other, and cost. Those with arthritis were most constrained by physical disability, other, and time. Those with diabetes were most constrained by physical disability, other, and time. Obese respondents were most constrained by time, other, and physical disability.

Table 29: Reasons for non-participation by gender, parental status, and health variables

Reason	Males (Wt %)	Females (Wt %)	Parent (Wt %)	Arthritis (Wt %)	Diabetes (Wt %)	Obese (Wt %)
Lack of time	34.3%	26.3%	39.4%	14.9%	10.8%	26.3%
OTHER reason not listed	22.1%	25.0%	22.9%	20.4%	20.5%	19.9%
Cost	12.7%	8.9%	13.2%	6.8%	7.1%	13.1%
Physical disability	12.1%	17.1%	8.1%	31.8%	27.3%	18.6%
Poor facility conditions (facilities are old, in disrepair, dangerous)	7.4%	.3%	.1%	.0%	.0%	.1%
Lack of personal equipment	2.5%	3.1%	2.1%	2.5%	2.8%	3.7%
Lack of other participants	1.5%	1.7%	1.1%	.9%	.8%	.9%
Advanced age	1.5%	1.0%	.3%	2.4%	6.3%	.7%
Lack of child care	1.4%	2.6%	4.4%	.6%	.0%	2.3%
Safety concerns	.9%	1.3%	1.1%	.7%	1.1%	.5%
Lack of facilities (e.g., ball fields, tennis courts, hiking trails)	.9%	2.0%	.8%	1.6%	.8%	2.0%
Lack of skill	.8%	.3%	.8%	.3%	-	1.7%
Poor environmental conditions (lack of fish, game, water levels)	.8%	1.3%	.5%	.8%	.8%	.6%
Lack of information (knowledge of activity, directions to facilities)	.4%	-	-	-	-	-
Lack of landscape features (e.g., no local lakes, no beaches, etc.)	.3%	.5%	.7%	.8%	-	.1%
None	.3%	.6%	.1%	.2%	1.7%	.8%
Congestion and crowding	-	.1%	-	-	-	-
Poor health	-	7.7%	4.3%	15.4%	20.1%	8.7%
Total	100%	100%	100%	100%	100%	100%

Respondents were asked what was the most important facility or site need in their County; their responses varied very slightly by gender, parental status, and health variable (Tables 30 and 31). The 'other' categories were expanded as described above (page 12). Males considered their County's top needs to be for road cycling, swimming, and other while females considered their County's top needs to be swimming, road cycling, and walking. Parents considered swimming, road cycling, and other as their County's top needs. Those with arthritis considered the top facility or site needs to be swimming, walking, and road cycling. Those with diabetes considered the top facility or site needs to be swimming, walking and fishing. Those obese considered the top facility or site needs to be swimming, road cycling, and walking.

Table 30: Primary facility or site need in respondents' County by outdoor recreation activity and gender, parental status, and health variables

Need	Males (Wt %)	Rank (Males)	Females (Wt %)	Rank (Females)	Parent (Wt %)	Rank (Parents)
Swimming	8.4%	2	20.5%	1	16.1%	1
Bicycling-road	11.2%	1	15.1%	2	13.4%	2
OTHER (specify)	8.1%	3	7.3%	4	8.6%	3
Walking	5.5%	5	14.5%	3	6.2%	4
Baseball or softball	2.9%	12	3.2%	6	4.3%	5
Soccer	3.4%	11	1.3%	19	4.0%	6
Basketball	2.8%	14	1.8%	16	3.4%	7
Fishing	7.7%	4	2.1%	13	2.9%	8
Backpacking/Hiking	2.1%	17	3.6%	5	2.8%	9
OTHER (Family/Kids related)	1.6%	22	2.7%	8	2.7%	10
Camping	3.4%	10	3.1%	7	2.7%	11
Tennis	2.4%	15	1.9%	14	2.6%	12
Bicycling-mountain	4.0%	9	2.5%	10	2.5%	13
OHV (4x4, motorcycles)	5.2%	7	1.6%	17	2.5%	14
Skateboarding/rollerblading	2.3%	16	2.4%	11	2.5%	15
Hunting	5.4%	6	0.5%	28	2.3%	16
Golf	4.2%	8	1.5%	18	2.3%	17
Playground activities	1.0%	27	1.8%	15	2.2%	18
Recreational shooting	2.8%	13	0.3%	32	2.0%	19
Football	1.7%	20	0.4%	31	2.0%	20
Ice skating	1.2%	24	2.6%	9	2.0%	21
Climbing	1.9%	18	2.3%	12	1.9%	22
Snowmobiling	1.4%	23	0.4%	30	1.4%	23
Frisbee	1.8%	19	0.7%	24	1.2%	24
Snowsports (skiing/snowboarding/	1.6%	21	0.9%	20	1.1%	25
Cutting wood/firewood	1.1%	25	0.6%	25	0.7%	26
Horseback riding	0.7%	30	0.7%	23	0.7%	27
Boating-motorized	0.9%	28	0.5%	27	0.6%	28
Boating-non-motorized	1.0%	26	0.4%	29	0.6%	29
Jogging/Running	0.9%	29	0.8%	22	0.5%	30
Volleyball	0.0%	39	0.6%	26	0.5%	31
Rodeo activities	0.5%	31	0.1%	36	0.3%	32
Working with animals	0.4%	32	0.8%	21	0.1%	33
Picnicking	0.0%	36	0.2%	33	0.1%	34
Fitness course activities	0.1%	34	0.1%	35	0.1%	35
Bird watching	0.0%	38	0.1%	34	0.1%	36
Boating-sailing	0.0%	35	0.0%	38	0.0%	37
Gardening/Yard work	0.1%	33	0.0%	37	0.0%	38
Ranching/Farming	0.0%	37	0.0%	39	0.0%	39
Total	100%		100%		100%	

Table 31: Facility and site needs in respondents' County by outdoor recreation activities and health variables

Need	Arthritis %	Rank (Arthritis)	Diabetes %	Rank (Diabetes)	Obese %	Rank (Obese)
Swimming	16.3%	1	18.5%	1	15.5%	1
Walking	13.6%	2	15.5%	2	10.0%	3
Bicycling-road	12.0%	3	6.1%	5	11.9%	2
OTHER (specify)	9.1%	4	10.0%	4	6.8%	5
Fishing	7.1%	5	12.4%	3	7.0%	4
Camping	4.2%	6	3.4%	9	3.9%	8
OHV (4x4, motorcycles)	3.9%	7	1.2%	15	4.4%	7
Hunting	3.8%	8	5.0%	6	4.7%	6
Backpacking/Hiking	3.4%	9	3.7%	7	3.5%	9
OTHER (Family/Kids related)	3.2%	10	1.0%	19	2.7%	11
Bicycling-mountain	2.5%	11	0.8%	21	1.5%	18
Baseball or softball	2.4%	12	3.6%	8	2.6%	12
Skateboarding/rollerblading	2.3%	13	2.3%	10	2.1%	17
Recreational shooting	1.9%	14	2.1%	12	2.1%	16
Ice skating	1.9%	15	1.0%	18	1.0%	23
Golf	1.7%	16	1.0%	16	2.5%	13
Playground activities	1.4%	17	2.2%	11	1.4%	19
Tennis	1.2%	18	2.1%	13	2.2%	14
Climbing	0.9%	19	0.5%	27	0.9%	25
Volleyball	0.9%	20	0.0%	33	0.0%	37
Basketball	0.7%	21	0.6%	26	1.4%	20
Boating-non-motorized	0.7%	22	0.9%	20	0.3%	30
Horseback riding	0.7%	23	0.0%	34	0.3%	31
Soccer	0.6%	24	1.0%	17	3.1%	10
Cutting wood/firewood	0.6%	25	0.8%	22	0.7%	27
Snowsports (skiing/snowboarding/sledding)	0.5%	26	0.2%	30	1.0%	22
Boating-motorized	0.5%	27	0.5%	28	1.3%	21
Snowmobiling	0.3%	28	0.1%	32	0.4%	29
Picnicking	0.3%	29	-	35	0.2%	34
Working with animals	0.3%	30	0.8%	23	0.9%	24
Frisbee	0.2%	31	1.3%	14	0.9%	26
Jogging/Running	0.2%	32	0.7%	24	0.5%	28
Fitness course activities	0.2%	33	-	36	0.0%	36
Gardening/Yard work	0.1%	34	0.2%	29	0.2%	32
Rodeo activities	0.1%	35	0.1%	31	0.1%	35
Football	0.1%	36	0.6%	25	2.1%	15
Ranching/Farming	0.0%	37	-	37	-	38
Bird watching	-	38	-	38	0.2%	33
Boating-sailing	-	39	-	39	-	39
Total	100%		100%		100%	

Respondents were also asked what their top outdoor recreation concern was in their County; their responses varied very slightly by gender, parental status, and health variables (Table 32). Besides the 'other' category, which topped all lists, males considered the top issues or concerns to be none, inadequate access, and need for facilities; females and those with arthritis both considered the top issues or concerns to be none, need for facilities, and lack of funding. Those with diabetes considered the top issues or concerns to be lack of funding, none, and need for facilities. Those obese considered the top issues or concerns to be lack of funding, need for facilities, and none.

Table 32: Top outdoor recreation issue or concern in respondents'' County by gender, parental status, and health variables

Concern	Males (Wt %)	Females (Wt %)	Parent (Wt %)	Arthritis (Wt %)	Diabetes (Wt %)	Obese (Wt %)
Commercial use (Guides and outfitters)	1.5%	1.0%	1.6%	1.0%	.4%	1.5%
Congestion and crowding	4.0%	4.2%	3.8%	3.8%	1.8%	3.0%
Inadequate access	14.5%	6.8%	11.3%	10.5%	7.6%	11.8%
Inappropriate behavior of outdoor enthusiasts	3.5%	2.9%	3.8%	4.3%	3.5%	2.9%
Lack of funding	8.6%	14.1%	11.3%	11.6%	16.9%	14.0%
Need for facilities (e.g., ball fields, tennis courts, hiking trails)	10.8%	15.8%	16.2%	13.6%	15.1%	13.8%
Non-resident use (Out-of-staters)	1.5%	.9%	.8%	.8%	1.1%	1.7%
Poor facility conditions (facilities are old, in disrepair, dangerous)	4.1%	4.7%	4.6%	4.1%	5.6%	4.9%
Other	35.9%	33.5%	34.1%	35.8%	31.9%	34.0%
None	15.5%	16.0%	12.5%	14.7%	16.1%	12.3%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Access limitations due to lack of disability facilities and/or transportation varied substantively by gender, parental status, and health variables (Table 33). Males and females are both experienced relatively low levels of disability-related constraints (5.7% and 6.0%, respectively). Parents experienced over double the frequency of disability-related constraints than the general public (12.0%). Those with arthritis experienced nearly three times the frequency of disability-related constraints than the general public (15.3%). Those with diabetes experienced slightly more disability-related constraints than the general public (8.6%). Those obese experienced less disability-related constraints than the general public (4.8%).

Table 33: Access limitations due to lack of disability facilities and/or transportation

Response	Males (Wt %)	Females (Wt %)	Parent (Wt %)	Arthritis (Wt %)	Diabetes (Wt %)	Obese (Wt %)
Yes	5.7%	6.0%	12.0%	15.3%	8.6%	4.8%
Yes, but the respondent was not the disabled individual	1.2%	2.6%	1.9%	2.2%	1.9%	2.3%
No	93.1%	91.4%	86.1%	82.5%	89.5%	92.9%
Total	100%	100%	100%	100%	100%	100%

Regional comparisons

Outdoor recreation variables were compared across Montana health planning regions (Figure 1)[5]. Primary outdoor recreation variables varied only slightly by region. Primary outdoor recreation activities in the eastern region were walking, fishing, hunting and gardening/yard work. Primary outdoor recreation activities in the north central region were walking, hunting, backpacking/hiking, and fishing. Primary outdoor recreation activities in the south central region were walking, fishing, backpacking/hiking, and hunting. Primary outdoor recreation activities in the southwest were walking, backpacking/hiking, fishing, and hunting. Primary outdoor recreation activities in the northwest region were walking, backpacking/hiking, gardening/yard work, and fishing.

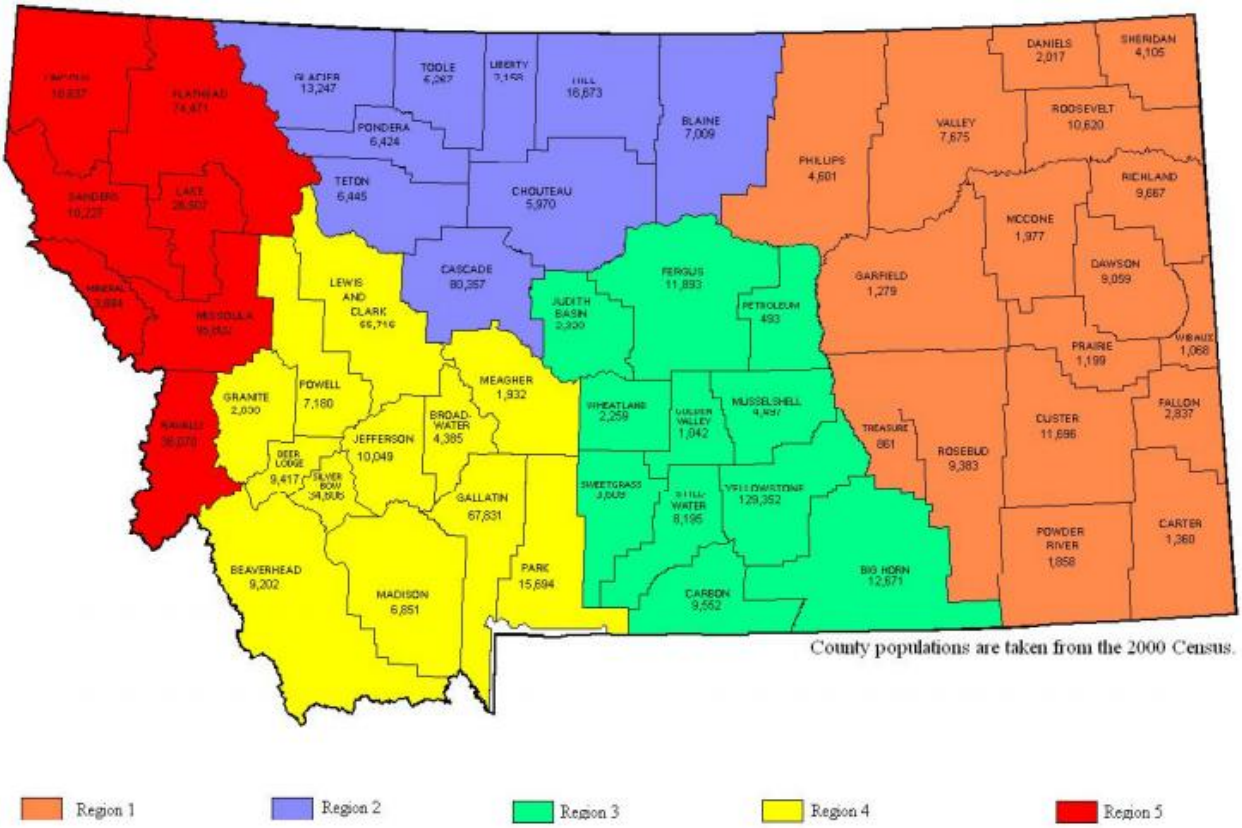

Figure 1: Montana health planning regions

[5] The BRFSS sampling design prevents analysis by FWP regions

Table 34: Primary outdoor recreation activity by MT health planning regions

Rank	Eastern	North Central	South Central	Southwest	Northwest
1	Walking (26.8%)	Walking (25.1%)	Walking (27.9%)	Walking (21.9%)	Walking (24.1%)
2	Fishing (11.5%)	Hunting (8.7%)	Fishing (7.9%)	Backpacking/ Hiking (14.4%)	Backpacking/ Hiking (15.0%)
3	Hunting (9.3%)	Backpacking/ Hiking (8.7%)	Backpacking/ Hiking (7.6%)	Fishing (10.2%)	Gardening/Yard work (6.8%)
4	Gardening/Yard work (8.0%)	Fishing (8.6%)	Hunting (6.5%)	Hunting (7.5%)	Fishing (6.1%)
5	Golf (5.9%)	Gardening/Yard work (7.7%)	Gardening/Yard work (6.0%)	Snowsports (6.2%)	Hunting (6.0%)
6	Other (4.7%)	Camping (6.3%)	Bicycling-Road (5.2%)	Gardening/Yard wok (4.7%)	Snowsports (5.7%)
7	Backbacking/ Hiking (3.8%)	Golf (3.8%)	Golf (4.3%)	Camping (4.2%)	Other (3.8%)
8	Swimming (3.4%)	Jogging/Running (3.1%)	Camping (3.7%)	Golf (3.7%)	Camping (3.4%)
9	Horseback riding (2.9%)	Swimming (3.0%)	Jogging/Running (3.5%)	Horseback riding (2.9%)	Swimming (3.1%)
10	Jogging/Running	Snowsports (2.9%)	Swimming (2.7%)	Jogging/Running (2.9%)	Bicycling-Road (3.1%)

The frequency of unfulfilled desires to participate in outdoor recreation activities varied by MT health planning regions (Table 35). Unfulfilled desire to participate in outdoor recreation activities was lowest in the eastern region (30.9%), approximately equal in the north central and south central regions (about 35%), slightly higher in the southwest region (38.2%), and highest in the northwest (42.3%)

Table 35: Desire to participate in outdoor recreation activities by MT health planning regions

	Eastern	North Central	South Central	Southwest	Northwest
Yes	30.9%	35.1%	34.9%	38.2%	42.3%
No	69.1%	64.9%	65.1%	61.8%	57.7%

The outdoor recreation activities desired by Montanans varied slightly by MT health planning regions (Table 36). These activities were: fishing, walking, and baseball/softball in the eastern region; fishing, hunting, and backpacking/hiking in the north central region; fishing backpacking/hiking, and camping in the south central region; backpacking/hiking, fishing, and snowsports in the southwest region; and backpacking/hiking, fishing, and snowsports in the northwest region.

Table 36: Desired outdoor recreation activities by MT health planning regions

Rank	Eastern	North Central	South Central	Southwest	Northwest
1	Fishing (11.7%)	Fishing (11.2%)	Fishing (15.3%)	Backpacking/ Hiking (12.8%)	Backpacking/ Hiking (11.0%)
2	Walking (8.3%)	Hunting (9.9%)	Backpacking/ Hiking (8.0%)	Fishing (7.8%)	Fishing (10.9%)
3	Baseball/ Softball (8.1%)	Backpacking/ Hiking (8.0%)	Camping (7.9%)	Snowsports (6.9%)	Snowsports (7.7%)
4	Golf (7.5%)	Walking (6.9%)	Hunting (7.9%)	Other (6.8%)	Hunting (5.8%)
5	Swimming (7.4%)	Swimming (6.8%)	Swimming (6.4%)	Camping (5.6%)	Cutting wood/ firewood (5.5%)
6	Other (7.1%)	Camping (6.3%)	Walking (5.5%)	Climbing (5.4%)	Climbing (4.8%)
7	Hunting (5.0%)	Bicycling-road (4.7%)	Golf (5.3%)	Cutting wood/ firewood (5.3%)	Walking (4.8%)
8	Jogging/Runnin g (4.8%)	Other (4.5%)	Bicycling-road (4.4%)	Swimming (4.9%)	Swimming (4.7%)
9	Cutting wood/ firewood (4.8%)	Snowsports (4.4%)	Cutting wood/ firewood (4.2%)	Boating-non-motorized	Bicycling-mountain (4.6%)
10	Bicycling-road (3.7%)	Cutting wood/firewood	Horseback riding (4.0%)	Golf (4.6%)	Bicycling- Road (4.5%)

Reasons for non-participation in desired outdoor recreation activities varied only slightly by MT health planning regions (Table 37). These reasons were: other, time, and physical disability in the eastern region; other, time, and cost in the north central region; time, other, and physical disability in the south central, southwest, and northwest regions.

Table 37: Reasons for non-participation in desired outdoor recreation activities by MT health planning region

Rank	Eastern	North Central	South Central	Southwest	Northwest
1	Other (29.5%)	Other (31.1%)	Lack of time (32.3%)	Lack of time (34.9%)	Lack of time (29.3%)
2	Lack of time (24.6%)	Lack of time (27.0%)	Other (24.3%)	Other (22.5%)	Other (20.4%)
3	Physical disability (14.4%)	Cost (11.6%)	Physical diability (13.0%)	Physical disability (15.3%)	Physical disability (15.7%)
4	Lack of facilities (6.6%)	Physical disability (11.3%)	Cost (10.0%)	Cost (10.0%)	Cost (12.1%)
5	Cost (5.8%)	Poor health (6.4%)	Poor health (8.4%)	Poor health (6.4%)	Poor health (8.8%)

Primary outdoor recreation facility or site needs varied by MT health planning region (Table 38). These needs were swimming, walking, and baseball/softball in the eastern region; other, walking, and swimming in the north central region; road cycling, swimming, and walking in the south central and southwest regions; and swimming, road cycling, and walking in the north west region.

Table 38: Primary outdoor recreation facility or site need in respondents' County by MT health planning region

Rank	Eastern	Northcentral	South Central	Southwest	North west
1	Swimming (20.6%)	Other (10.9%)	Bicycling-road (15.4%)	Bicycling-road (15.2%)	Swimming (15.4%)
2	Walking (11.8%)	Walking (10.3%)	Swimming (15.1%)	Swimming (13.3%)	Bicycling-road (13.6%)
3	Baseball/ Softball (7.8%)	Swimming (9.4%)	Walking (9.4%)	Walking (11.6%)	Walking (8.5%)
4	Other (7.2%)	Bicycling-road (9.1%)	Other (6.8%)	Other (7.1%)	Other (7.4%)
5	Fishing 6.4%)	Fishing (7.2%)	Fishing (6.2%)	Hunting (3.8%)	Fishing (5.1%)
6	Camping (5.8%)	Baseball/ Softball (6.1%)	Hunting (4.9%)	Bicycling-mountain (3.6%)	Bicycling-mountain (4.2%)
7	Basketball (5.6%)	Golf (5.4%)	Golf (3.6%)	OHV (3.6%)	OHV (4.1%)
8	Bicycling-road (5.1%)	Camping (4.7%)	Soccer (3.5%)	Backpacking/ Hiking (3.4%)	Skateboarding (3.6%)
9	Backpacking/ Hiking (3.2%)	Other (family/ kids) (3.4%)	OHV (3.1%)	Golf (3.4%)	Backpacking/ Hiking (3.5%)
10	Hunting (3.1%)	Tenniz (3.2%)	Baseball/ Softball (3.1%)	Camping (3.3%)	Camping (3.3%)

Primary outdoor recreation issue or concern varied slightly by MT health planning regions (Table 39). These issues/concerns were: none, need for facilities, and lack of funding in the eastern region; none, lack of funding, and need for facilities in the north central region; need for facilities, none, and lack of funding in the south central region; none, need for facilities, and inadequate access in the southwest region; and none, inadequate access, and lack of funding in the northwest region.

Table 39: Primary outdoor recreation issue or concern within respondents' County by MT health planning region

Concern	Eastern	North Central	South Central	Southwest	Northwest
Need for facilities (e.g., ball fields, tennis courts, hiking trails)	16.9%	12.8%	17.4%	13.7%	10.1%
Lack of funding	12.4%	15.5%	12.3%	8.6%	10.7%
Inadequate access	7.1%	8.4%	10.5%	11.5%	12.1%
Poor facility conditions (facilities are old, in disrepair, dangerous)	3.4%	4.7%	7.4%	3.9%	3.5%
Non-resident use (Out-of-staters)	2.1%	1.4%	1.9%	1.0%	.7%
Inappropriate behavior of outdoor enthusiasts	2.0%	2.1%	3.3%	4.2%	3.3%
Congestion and crowding	1.2%	2.4%	3.5%	5.1%	4.9%
Commercial use (Guides and outfitters)	1.0%	1.3%	1.5%	1.0%	1.4%
Other	34.9%	33.8%	27.6%	36.1%	37.5%
None	19.0%	17.7%	14.6%	15.0%	15.8%
Total	100%	100%	100%	100%	100%

The frequency of disability related constraints to outdoor recreation activities did not vary substantively by MT health planning regions (Table 40). Approximately five to seven percent of Montanans in all regions have experienced disability related constraints. Another two percent of Montanans across all regions had been with someone who experienced disability related constraints.

Table 40: Frequency of disability related constraints to outdoor recreation activities by MT health planning region

Constrained	Eastern	North Central	South Central	Southwest	Northwest
Yes	6%	7%	5%	5%	6%
Yes, but the respondent was not the disabled individual	2%	2%	2%	2%	2%
No	93%	91%	93%	93%	92%

Discussion

The BRFSS has provided state-based data on health risk behaviors among adult residents and has included several outdoor recreation related questions. The benefit of the BRFSS data is the ability to generalize the findings to all of Montana residents. Results for the BRFSS data revealed findings consistent with other research being conducted for the SCORP effort.

The top primary recreation activities for Montanans are as expected with walking and backpacking/hiking being the most popular. Other popular activities include fishing, hunting and gardening/yard work. It was interesting that residents felt ranching/farming and working with pets as an outdoor recreation activity.

Montanans indicated they wanted to fish, hunt, hike/backpack more than they currently do. Reasons for not doing this activity more often include lack of time, cost, disability and poor health. Time and cost are often cited as major constraints to participating in outdoor recreation across the country. In Montana, disabilities and poor health top of the list suggesting there may be accessibility issues across the state.

Residents rated facility needs, lack of funding and inadequate access as the most important concerns for outdoor recreation in their county. Facility needs and inadequate access may be related to the constraints of poor health and disabilities. Montana managers should continue to examine the programs and facilities to be sure they are inclusive of persons with disabilities. In addition, close to 50 percent of respondents were over the age of 50; Montanans are aging and they may be feeling like there are inadequate services and facilities to meet their needs.

Other top facilities needs are swimming, bicycling and walking facilities. It is not specified what type of swimming facility (pool vs. lake) but we assume there is a need for more pools. Walking and bicycle paths are also important to residents. This is consistent with other studies conducted for SCORP (2013-2018) in that residents and managers are interested in providing more opportunities for walking and biking. These activities are relatively accessible to all Montanans and could be a way to keep the aging population healthy in the next decade.

Examining activities across three panels (2002, 2006, and 2011) indicate some activities are changing in participation. It is important to note that the sampling design changed between 2006 and 2011 and direct comparisons cannot be made. Activities that are decreasing are golf, horseback riding, downhill skiing, and hunting; activities with associated costs. Based on the major constraints, we know Montanans are citing cost as a major reason for not participating in outdoor recreation. In addition, we know cost has increased since 2002 as a primary reason for non-participation and may be playing a role in which activities residents are choosing to participate in.

In the analysis of the health related variables, results indicate that people with diabetes and those who are obese are increasing in the population. Findings suggest that those who have arthritis, diabetes or are obese cite walking as their primary activity. All three of these groups also wish they could fish more than they currently do. In addition, these groups cite their disability and poor health as a major constraint at a higher rate than those without arthritis, diabetes or who are not obese.

Gender and parental status comparisons also yielded small differences. Male's top activities were walking, hunting and hiking/backpacking compared to their female counterparts who cited walking, hiking/backpacking

and gardening. Those who were parents indicated their top activities were walking, hiking/backpacking and hunting as their top activities.

Overall, the findings from this BRFSS analysis suggest that residents are interested in continuing doing their primary activity of walking and would like to see more facilities to accommodate their activity. Other results suggest that Montana residents are getting older and their health may be declining. Managers should be cognizant of this and continue to provide programs and facilities that accommodate this population. Findings from BRFSS compliment and reaffirm the results from the other studies conducted for SCORP (2013-2018).