

Oregon Non-Motorized Trail Participation and Priorities

Report in support of the 2015-2024 Oregon Trails Plan

Conducted by Oregon State University for the Oregon Parks and Recreation Department

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Executive Summary

In preparation for the 2015-2024 Oregon Trails Plan, the Oregon Parks and Recreation Department contracted with Oregon State University to conduct surveys of Oregon residents regarding their participation in four categories of trail-related recreation: non-motorized trail, non-motorized boating, motorized (ATV / OHV), and snowmobile recreation. Each survey was designed to elicit information on current use patterns (amount, location, and type of use), user experiences and preferences, and the economic contribution of the recreation activity. This report provides the results of the non-motorized trail survey.

Trails were defined as linear routes (not including roads and sidewalks) used for recreation, commuting, and other purposes. They can be narrow or wide, and of any surface, such as dirt, asphalt, wood, woodchip, gravel, or beach / sand. The questionnaire covered non-motorized use of trails anywhere in Oregon, including those “near respondent homes and those further away.”

The project involved both a probability sample and a convenience sample. The probability sample included all respondents in 2013-2017 Oregon Statewide Comprehensive Outdoor Recreation Plan (SCORP) data file who engaged in one or more of a set of non-motorized trail activities, excluding a small number removed from the sample for use in the boater survey.

For the convenience sample, 102 clubs (user groups) in Oregon associated with the above activities were contacted and asked to encourage survey participation via e-newsletters, Facebook posts, and other avenues. The questionnaire link also was disseminated electronically via posts by other groups, such as Travel Oregon.

The probability sample response rate of 41% included 28% for those engaging in trail use in the past year (1,377 respondents) and 13% for those who did not engage. An additional 2,015 respondents are in the convenience sample. Data were weighted based on age and gender distributions in the SCORP sample of non-motorized trail users.

The report includes further analysis of demographic data from the SCORP 2011 survey. Relative to all Oregonians, trail users tend to be younger, more highly educated, and with higher income. They are less ethnically diverse. These patterns also exist for the current trail probability sample relative to all Oregonians.

Walking / hiking was the most popular trail activity with respect to both participation frequency and participation rate. The average walking / hiking frequency across all trail users was 38.5 days in the past year. The sub-category of walking / running with a dog off-leash had the next highest frequency (11.2 days).

Almost all (96% across all trail users) engaged in walking / hiking. Walking / running on ocean beaches had the next highest participation rate (66%).

The number of hours per day spent on trails varied across activities engaged in, with backpacking and horseback riding having the highest percentage of people spending six or more hours engaging, and running having the highest percentage of people spending an hour or less. Likewise, the self-evaluated activity level (low, medium, or vigorous) varied, with biking on singletrack trails and running being the activities with the highest percentage at the vigorous activity level, and walking / running on an ocean beach having the greatest percentage at the low activity level. Eleven percent of respondents use recreation-oriented trails to walk or bicycle to work.

Almost all respondents (98%) took at least one trail-related day trip, and 81% took at least one multi-day trip in the past year (12 months). Multi-day trips are defined as those involving an overnight stay away from home, even if the respondent only used trails one day during the trip. Among “typical trips,” 60% of day trips were within 30 miles of home while two-thirds of multi-day trips were more than 60 miles from home. Travel parties were larger for multi-day trips, but two persons was most common for both trip types. The majority of multi-day trips were two or three days in length.

Respondents reported their single favorite among a set of listed activities, including three sub-categories within walking / running. Almost half (48%) chose walking / hiking not on an ocean beach and not involving a dog. The next most common activities were walking / running on an ocean beach (10%) and walking / running with an off-leash dog (7%).

Respondents then answered several questions specifically with respect to their favorite activity. Regarding proximity, quality, and variety of trails, the majority of respondents indicated they were somewhat or very satisfied; satisfaction with variety tended to be lower than for the other two aspects. There were high ratings (80% or higher somewhat and very satisfied combined) for some aspects of some activities, but opportunities for improvement remain for other aspects and activities. The majority of respondents indicated that opportunities to engage in their favorite activity have not changed or increased in the past 10 years.

Preferred trail surface varies somewhat by favorite activity, but dirt was the most common preferred surface for all activities other than biking on hard surface trails. There was greater variability with respect to preferred trail length; the majority of walkers and runners preferred lengths of one to five miles, while those engaging in backpacking, biking (singletrack or hard surface), and horseback riding tended to prefer lengths of six or more miles. Preferred trail difficulty was asked with respect to both trails within the community and outside the community. Moderate, varied trails were preferred by the majority of respondents, with interest in challenging trails being greater for trails outside one’s community. Singletrack bikers were more likely than others to prefer challenging trails.

Several questions were asked regarding preferences for responding to crowding or conflict. Respondents preferred creating new trails to reduce crowding, where it exists, rather than letting existing trails remain crowded. This was especially true for singletrack bikers. The potential for additional financial and environmental costs due to creating new trails was noted, so preferences for new trails presumably reflected a high value for quality trail experiences.

A similar trade-off was presented for shared and separate trails in cases of conflict, with separate trails potentially leading to fewer trails for each activity and/or additional financial and environmental costs to create new trails. Preferences varied across encountered activity, but, in general, preferences for trail separation were not very strong. There was some preference for separate trails in the case of inline skating, singletrack biking, and horseback riding; preferences were essentially neutral for walking / running with a dog off-leash and cross-country skiing with a dog off-leash; there was some preference for shared trails in the case of snowshoeing.

Across all respondents, there was support for trail widening, but less support (below neutral) for one-way designation as tools to reduce crowding and conflict. That relationship occurred for all favorite activity categories except singletrack biking. For that activity, respondents were more supportive of one-way designation (though still only neutral on average) than of trail widening.

With respect to priorities for additional trails, trails for walking / hiking were the highest priority for both inside and outside one’s community. Trails for hard surface biking were the next highest priority for inside, while trails for backpacking were the next highest priority for outside one’s

community. A related question included priorities for additional trails and maintenance over the next 10 years, with repair of major trail damage being the highest priority.

Word of mouth was the most frequent source of when seeking information about trails, followed by agency websites and printed maps.

Respondents were asked, based on their trail use in the past 12 months, how important they felt each of several issues was on trails in Oregon. The ability to experience the natural environment was most important, followed by more trail information on the internet.

Trail user expenditure varied across regions and trip types (e.g., day trips versus multi-day trips). There are an estimated 162 million annual trail activity user days by Oregon residents in the state. Combined with trail survey expenditure data, this level of participation in non-motorized trail activities led to an estimated \$2.1 billion in expenditure across the state. In turn, this expenditure contributed 21,730 jobs, \$1.0 billion in value added, and \$672 million in labor income. When out-of-state visitors are included, the estimated amounts increase to 24,340 jobs, \$1.2 billion in value added, and \$753 million in labor income.

Statewide expenditure and economic contribution also was estimated for walking / hiking, biking on unpaved trails, and horseback riding; there were insufficient observations for other activities. Walking / hiking was estimated to generate \$1.1 billion in expenditure, which led to 13,280 jobs, \$574 million in value added, and \$365 million in labor income. Mountain biking was estimated to generate \$83 million in expenditure, which led to 1,090 jobs, \$48 million in value added, and \$31 million in labor income. Horseback riding was estimated to generate \$58 million in expenditure, which led to 590 jobs, \$24 million in value added, and \$16 million in labor income.

1. Introduction

1.1. Background

In preparation for the 2015-2024 Oregon Trails Plan, the Oregon Parks and Recreation Department (OPRD, Oregon State Parks) contracted with Oregon State University (OSU) to conduct surveys of Oregon residents regarding their participation in four categories of trail-related recreation: non-motorized trail, non-motorized boating, motorized (ATV / OHV), and snowmobile recreation. Each survey was designed to elicit information on current use patterns (amount, location, and type of use), user experiences and preferences, and the economic contribution of the recreation activity.

This report provides the results of the non-motorized trail questionnaire. For this questionnaire, trails were defined as linear routes (not including roads and sidewalks) used for recreation, commuting, and other purposes. They can be narrow or wide, and of any surface, such as dirt, asphalt, wood, woodchip, gravel, or beach / sand. The questionnaire covered non-motorized use of trails anywhere in Oregon, including those “near respondent homes and those further away.”

The sample design was developed to derive information at the regional level. In some cases, multiple rural regions are combined to achieve an adequate sample size. In this report, all references to trails and trail users refer to non-motorized trails and users.

1.2. Data presentation

For ease of reading, numbers are rounded in this report; this may lead to some counts and percentages not summing to expected amounts. All averages in this report are means rather than medians. There are “missing values” for many variables. For example, some people did not answer the income question. Percentages shown in this report are “valid percentages” unless otherwise noted. Valid percentages adjust for missing values and total 100.

Exclusion of missing values also leads to discrepancies. For example, there were 2,015 completes in the convenience sample (Table 1.1), but only 1,876 had an identified region of residence. Table 1.2 only includes the latter respondents.

The paper (mail) version of the questionnaire is included in Appendix 4. In presenting results, reference is made to question numbers in the paper version (e.g., Q17). Results by region of residence are shown graphically in the body of the report and/or in tabular form in Appendix 1. Note that region of residence and region of trail activity reflect respondent reports based on maps presented with the questionnaire; reporting errors are possible.

For ease of reading, neither p-values nor effect sizes are presented for the bivariate analyses in this report (e.g., differences across regions for a given survey question). Readers should keep in mind that some regional variability will be due to the sampling error that is inherent in surveys (see Section 1.4), rather than to actual differences across regions.

1.3. Survey methodology

The survey involved both probability and convenience samples. The probability sample included all respondents in the 2013-2017 Oregon Statewide Comprehensive Outdoor Recreation Plan (SCORP) data file who engaged in one or more of the following activities:¹

¹ A small number (less than 10%) of these SCORP trail respondents were removed from this sample so they could be sent the boater questionnaire.

- Walking on local trails or paths
- Walking / day hiking on non-local trails or paths
- Long-distance hiking (backpacking)
- Jogging or running on trails or paths
- Bicycling on paved trails
- Bicycling on unpaved trails
- Horseback riding
- Cross-country / nordic skiing / skijoring on groomed trails
- Cross-country / nordic skiing / skijoring on ungroomed trails or off designated trails
- Snowshoeing

The probability sample was complemented by a convenience sample. For the convenience sample, 102 clubs (user groups) in Oregon associated with the above activities were contacted and asked to encourage survey participation via e-newsletters, Facebook posts, and other avenues. The questionnaire link also was disseminated electronically via posts by other groups, such as Travel Oregon. Results for the convenience sample are presented in Appendix 2.

Each person in the probability sample (recipient) was sent the following correspondence:

- A “pre-letter” from OPRD explaining the reason for the survey and encouraging participation.
- An invitation letter from OSU, with the URL for the online questionnaire and a postage-paid reply postcard for those preferring to complete the questionnaire in traditional paper format. Paper questionnaires were sent to those returning the postcard.
- A reminder letter and reply postcard from OSU, sent to recipients who had not completed the online questionnaire or returned their postcard within approximately one week.
- A reminder letter from OSU, with the URL for the online questionnaire, as well as a copy of the paper questionnaire and postage-paid reply envelope, sent to recipients who had not completed the questionnaire within approximately three weeks.

For households with more than one adult trail user, the invitation letter requested that the adult trail user with the most recent birthday complete the questionnaire.

The questionnaire was developed in collaboration with OPRD and the project planning advisory committee.² A pre-test was conducted with 300 persons from the probability sample, following the process described above. The questionnaire was revised and conducted with the remaining persons in the probability sample, as well as with the convenience sample.

Response rates are shown in Table 1.1 below. The probability sample response rate of 41% (the 28% who responded and had used trails + the 13% who responded but had not used trails in the past 12 months) is good by current survey standards, especially considering the long median

² The advisory committee included Jennifer Boardman (City of Central Point), Jerry Davis (Jerry Davis Consulting), Nancy Enabnit (RTP Committee Member), Karen Ford (Hood River Valley Park & Recreation District), Zach Jarrett (BLM), Steve Jorgenson (Bend Park & Recreation District), Jonathan Maus (BikePortland), Lake Strongheart McTighe (METRO), Annie McVay (City of Redmond), Ellen Minichiello (Klamath Outdoor School), Bruce Ronning (Bend Park & Recreation District, retired), Robert Spurlock (METRO), Jenna Stanke (Jackson County), Ryan Stee (City of Lake Oswego), Laura Svendsgaard (ORTAC), Jim Thayer (ORTAC), Bruce Thomas (trail advocate, Woodburn).

online completion time of 25 minutes. This rate does not include a substantial number of persons who completed part of the questionnaire but were removed from the sample as only partial completes. It does include persons who completed a majority of the questionnaire, despite leaving some questions unanswered.

Table 1.1. Sample and response rates		
	Probability	Convenience
Initial sample	4,910	
Eligible (undeliverables removed)	4,887	
Responded, did not use trails (non-motorized) in past 12 months	650	121
Percent of eligible	13%	
Responded, used trails in past 12 months	1,377	2,015
Percent of eligible	28%	

For the probability sample, 56% of the questionnaires were completed online and 44% in paper format.

Figure 1.1 shows the planning regions across the state, and Table 1.2 shows the number of respondents by region.

Figure 1.1. Map of planning regions

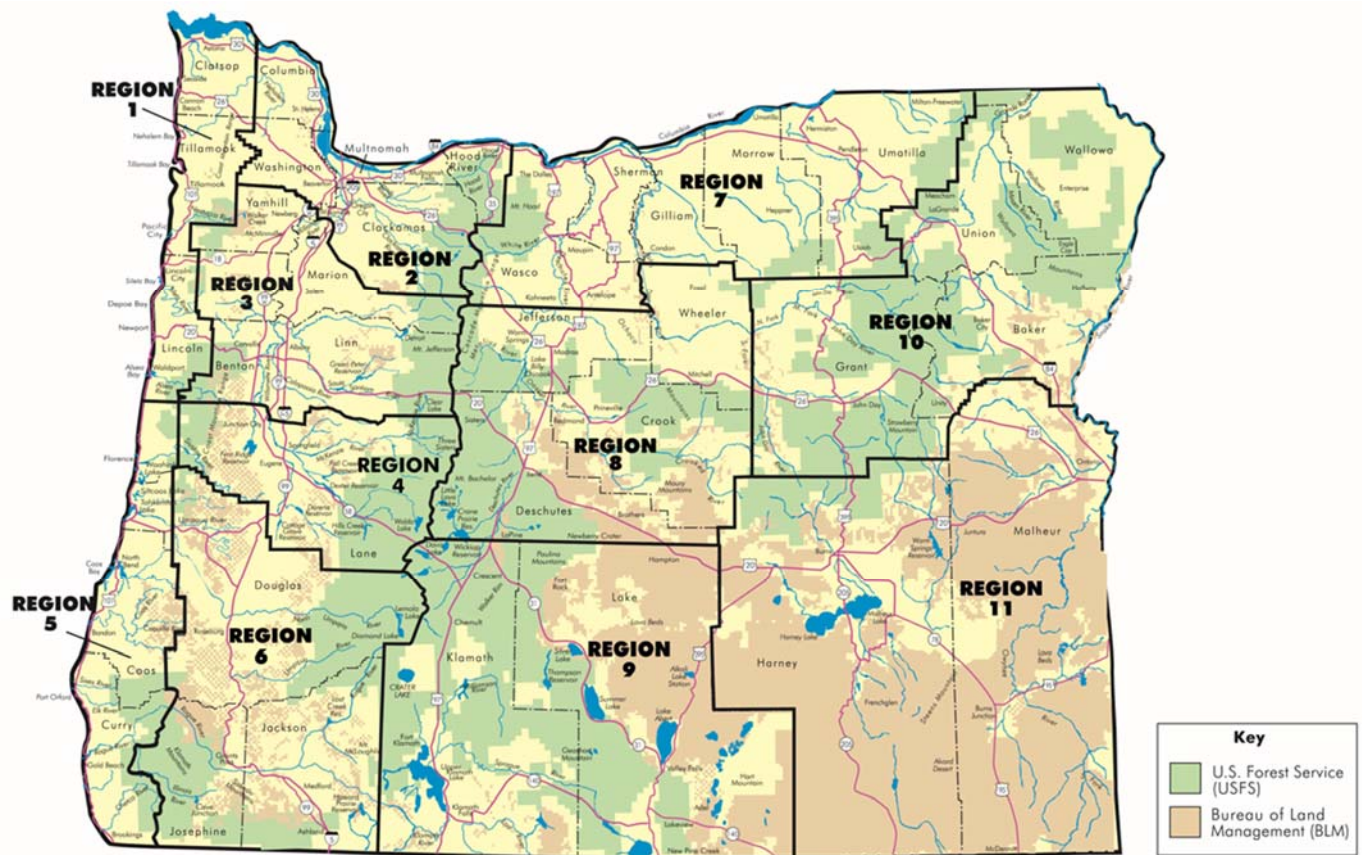


Table 1.2. Number of responses by region weighted			
Region	Probability	Convenience	Total
1	165	43	208
2	225	585	810
3	277	264	541
4	46	160	206
5	72	33	105
6	98	138	236
7	114	13	127
8	135	571	706
9	64	26	90
10	149	42	191
11	32	1	33
Total	1,377	1,876	3,253

Region of residence is self-reported in the questionnaire (Q18), using a provided map. For the probability sample, mailing address was used to identify the region of residence for the approximately 10% of respondents who did not self-report. This was not possible for the convenience sample, hence the smaller total in Table 1.2 than in Table 1.1.

The few out-of-state respondents in the convenience sample were excluded from the analysis. Due to the small number of observations, Region 11 was combined with Region 9 to form a single region (Region 9+11). Samples sizes for some other regions, notably Region 4 and Region 5, remain small. Some caution should be used when interpreting results for those regions individually.

1.4. Maximizing data accuracy

The goal of surveys such as this one is to use a sample (limited number of respondents) to obtain information on the population (everyone of interest, in this case all non-motorized trail users resident in Oregon). Because only a portion of the population is sent a questionnaire, and not all recipients complete the questionnaire, this type of data collection is susceptible to various sources of error.

This survey administration addressed the four main sources of error in the following ways:

- Coverage error was addressed through the use of the SCORP sampling frame for the probability sample.
- Sampling error was addressed through a reasonably-large sample size.
- Measurement error was addressed through an extensive questionnaire development, review, and pre-test process.
- Non-response error was addressed by maximizing response rates via multiple mailings, as well as by weighting on age and gender.

Non-response error arises when those who complete the questionnaire (respondents) differ from those who do not (non-respondents) on a variable of interest. This potential error jeopardizes conclusions about the population based on responses in the sample.

Data were weighted in this sample based on age and gender distributions in the weighted SCORP sample of non-motorized trail users. Weights were calculated based on the characteristics of the probability sample, but they also were applied to the convenience sample.

Weighting was limited to two variables due to small (fewer than 10 observations) cell sizes for computing more complex weighting patterns, such as age by gender by region. Given the nature of the SCORP address list, data from low-population counties are over-represented relative to their proportion of the statewide population. This affects statewide results, but it has less effect on results by region.

Weighting can reduce error, but the potential for some error is inevitable. Calls to non-respondents suggest there may be some avidity bias, with respondents being more likely to engage in trail recreation (and more frequently) than is the case for non-respondents. However, such phone-based non-response checks are imperfect reference points due to the difficulty in reaching recipients, especially young recipients, by phone.

1.5. SCORP demographic profiles

Results from the survey conducted for the 2013-2017 Oregon Statewide Comprehensive Outdoor Recreation Plan (SCORP) provide additional information and a reference point for the current trail survey results. This section includes demographic profiles from SCORP.

Respondents indicated whether they engaged in the following activities in 2011:

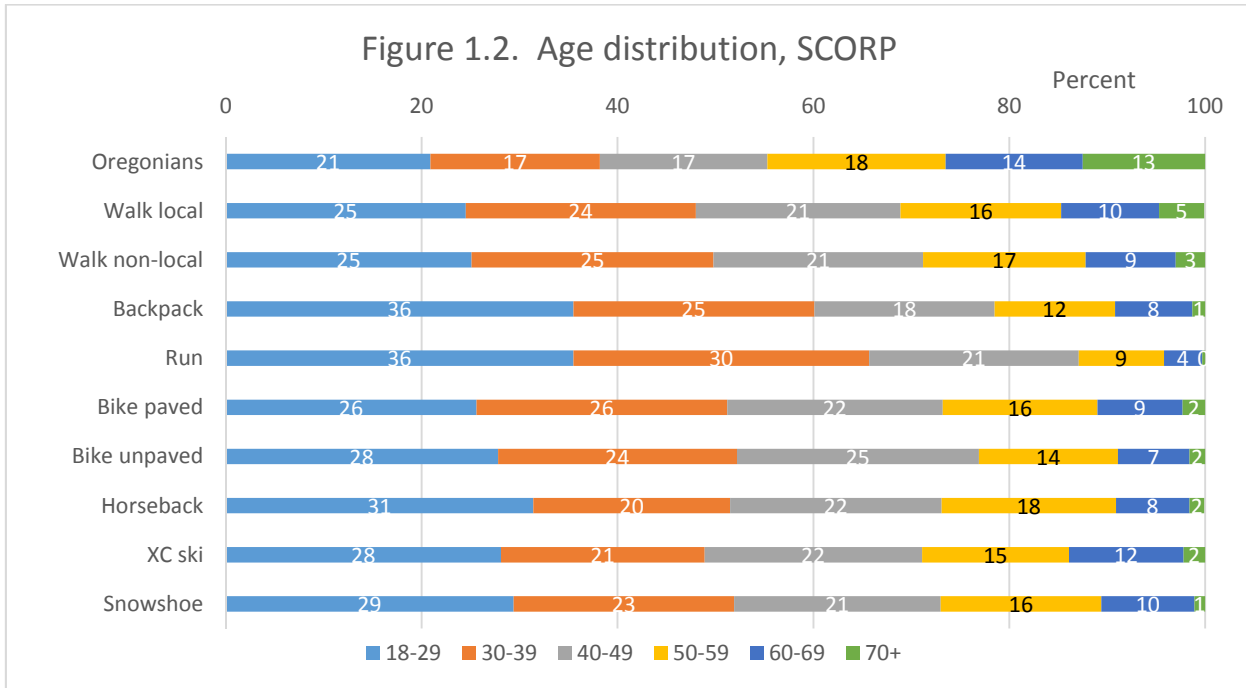
- Walking on local trails or paths
- Walking / day hiking on non-local trails or paths
- Long-distance hiking (backpacking)
- Jogging or running on trails or paths
- Bicycling on paved trails
- Bicycling on unpaved trails
- Horseback riding
- Cross-country / nordic skiing / skijoring on groomed trails
- Cross-country / nordic skiing / skijoring on ungroomed trails or off designated trails
- Snowshoeing

For this SCORP analysis, the two cross-country skiing categories (groomed and ungroomed) are grouped together into the XC ski category.

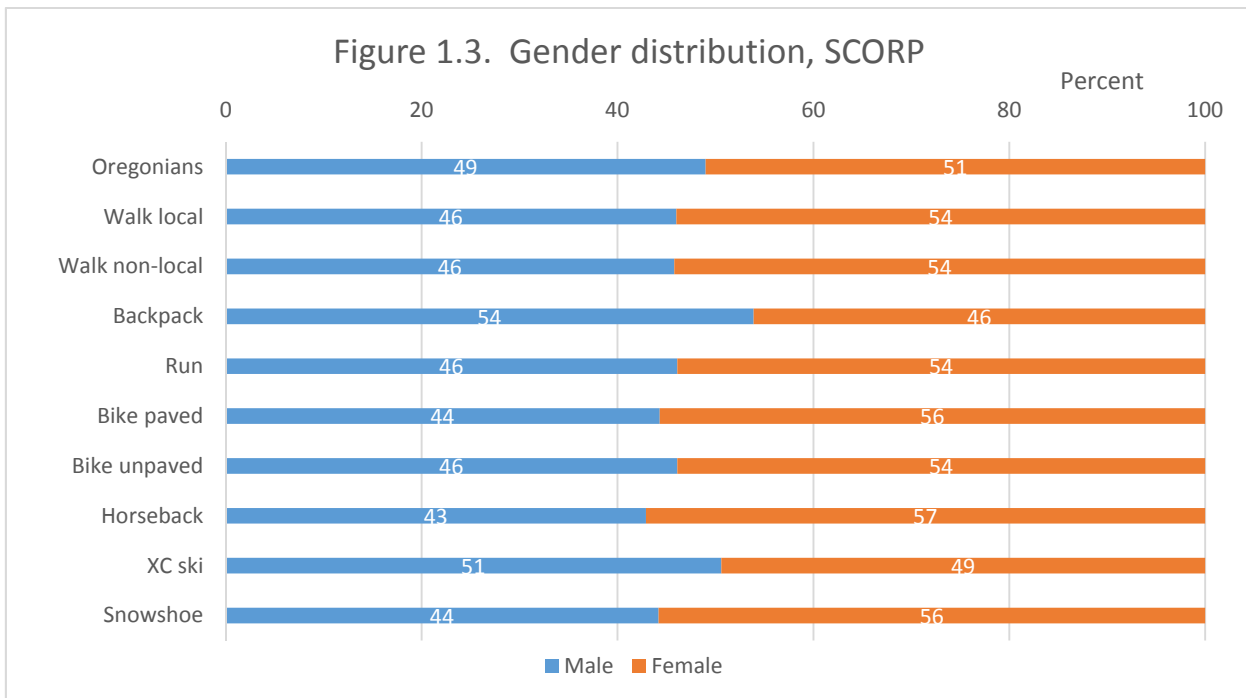
Figure 1.2 shows 2011 age distributions for Oregonians as a whole and for participants in each activity. An individual may “appear” across multiple categories, based on the activities participated in. All results in this section are from the SCORP survey and are weighted in the same manner as in the SCORP report.³

³ Rosenberger, R. and K. Lindberg. 2012. Oregon Resident Outdoor Recreation Demand Analysis. Report to the Oregon Parks and Recreation Department. Available at http://www.oregon.gov/oprd/PLANS/docs/scorp/2013-2018_SCORP/2013-2017-SCORP_App_C.pdf

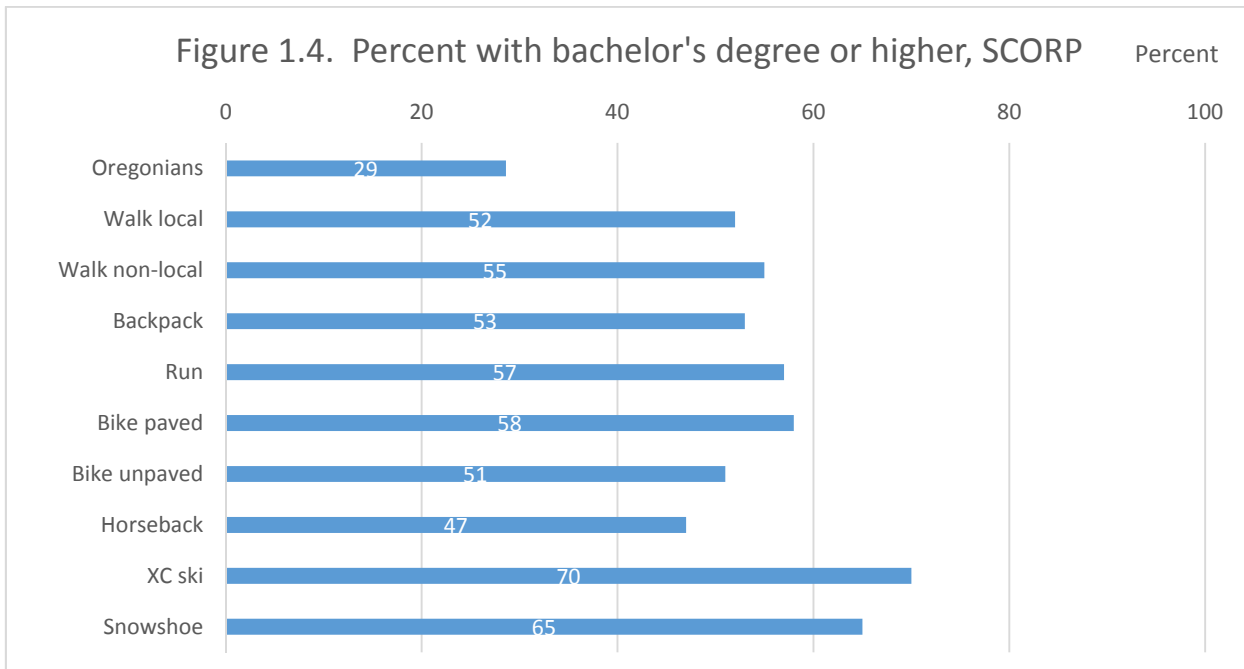
As expected, older Oregonians are less likely to engage in trail activities, with walking on local trails or paths and cross-country skiing having the highest representations of older age groups. Conversely, backpacking and running have the highest proportions of younger age groups.



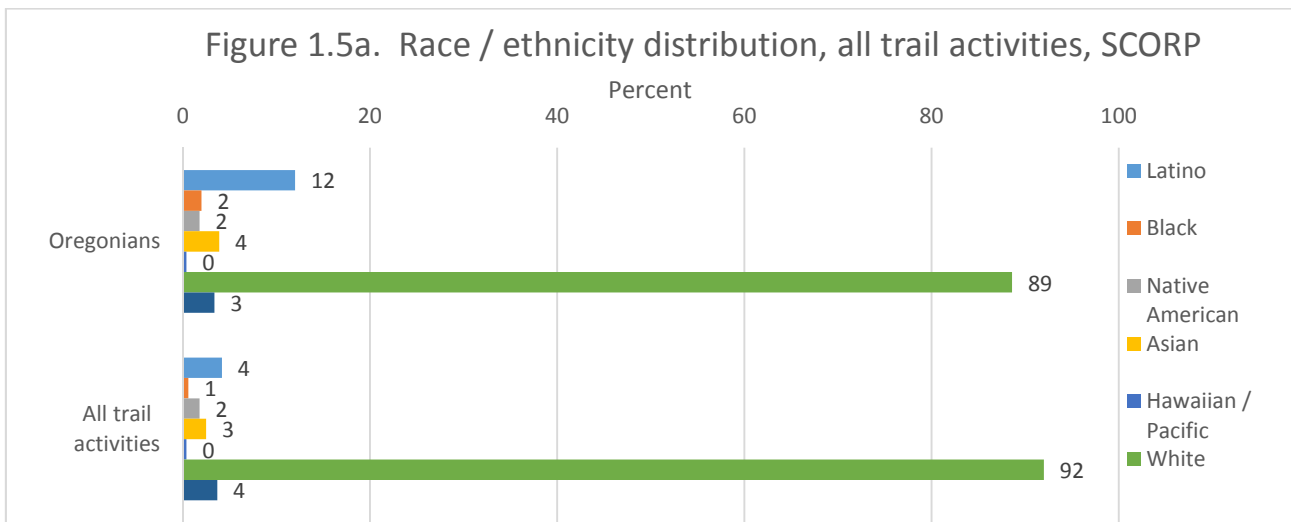
As shown in Figure 1.3, the gender distribution across activities is reasonably close to the balance in the population as a whole, though women are noticeably more common than men in horseback riding, snowshoeing, and biking on paved trails. Women are less common than men in backpacking.



Trail users tend to be more highly educated than Oregonians as whole, especially for cross-country skiers and snowshoers (Figure 1.4).



With respect to race and ethnicity, minorities are under represented among trail users (Figure 1.5a and Figure 1.5b). However, the small number of minorities in the SCORP sample suggests these results should be treated with some caution. Studies specifically focused on race / ethnicity participation provide a richer understanding of participation differences. Note that respondents could select multiple races, and that Latino / non-Latino was asked separately, following the US Census approach.



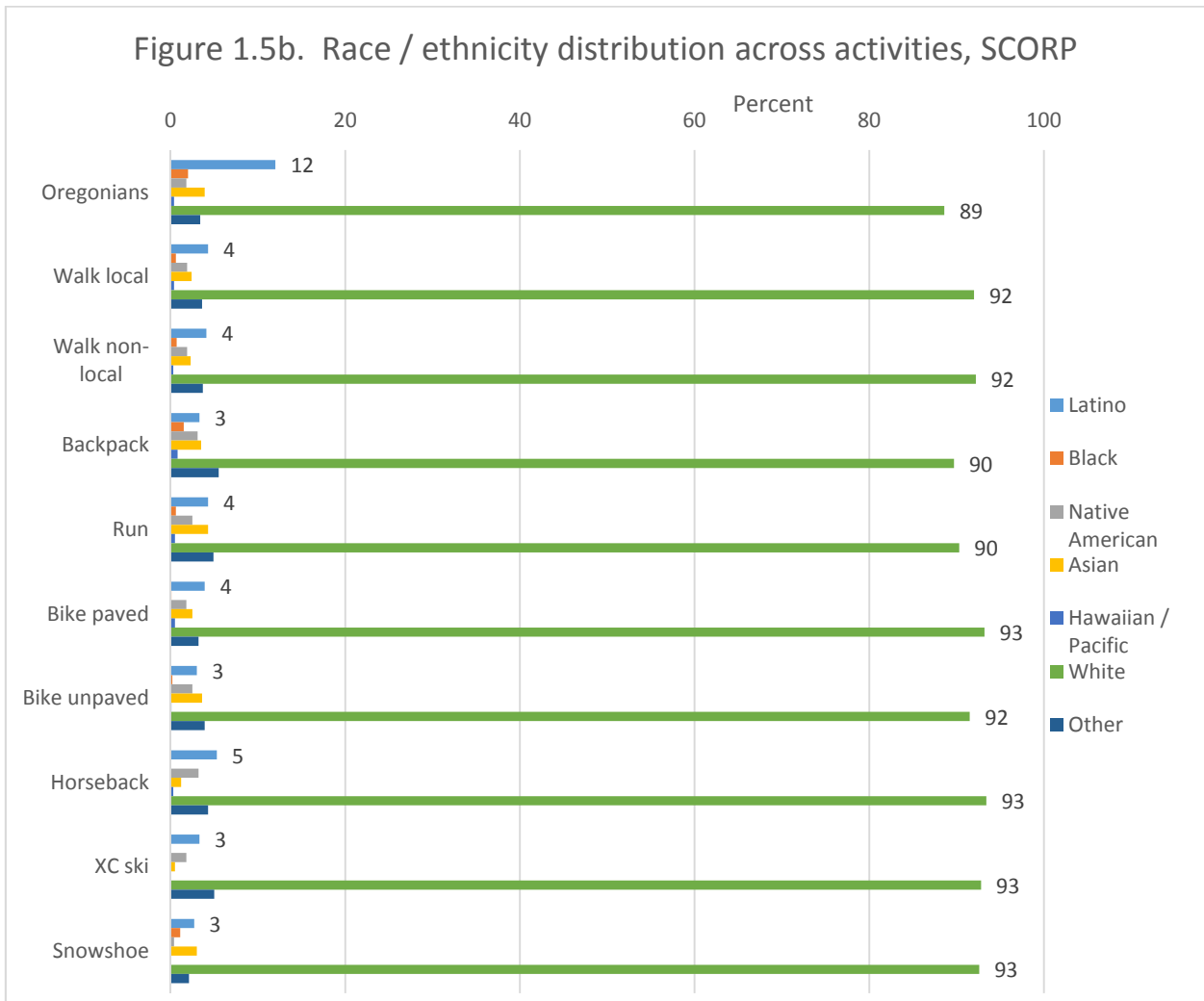
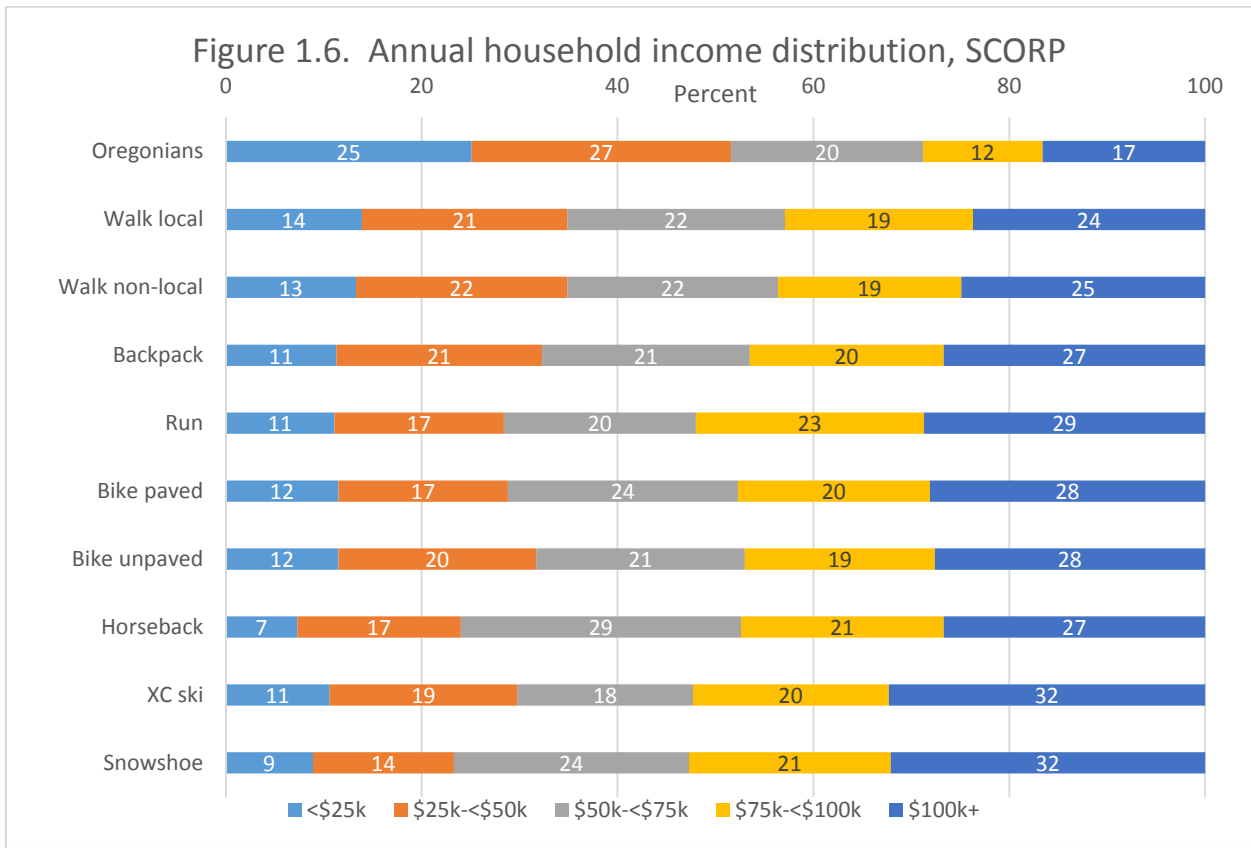


Figure 1.6 presents household annual income distribution, with trail users having higher income levels than Oregonians overall. This is especially true for cross-country skiing and snowshoeing, but is also true for other activities.



1.6. Trail probability sample demographics

This section presents demographic results from the current trail survey probability sample. Within that sample, 46% of respondents were male, 54% female (Q36). Figure 1.7 shows the age distribution for all adult Oregonians (2013) and for respondents in the probability sample (Q35). Trail use occurs across all ages, though it is particularly high among young people and declines in the older age categories.

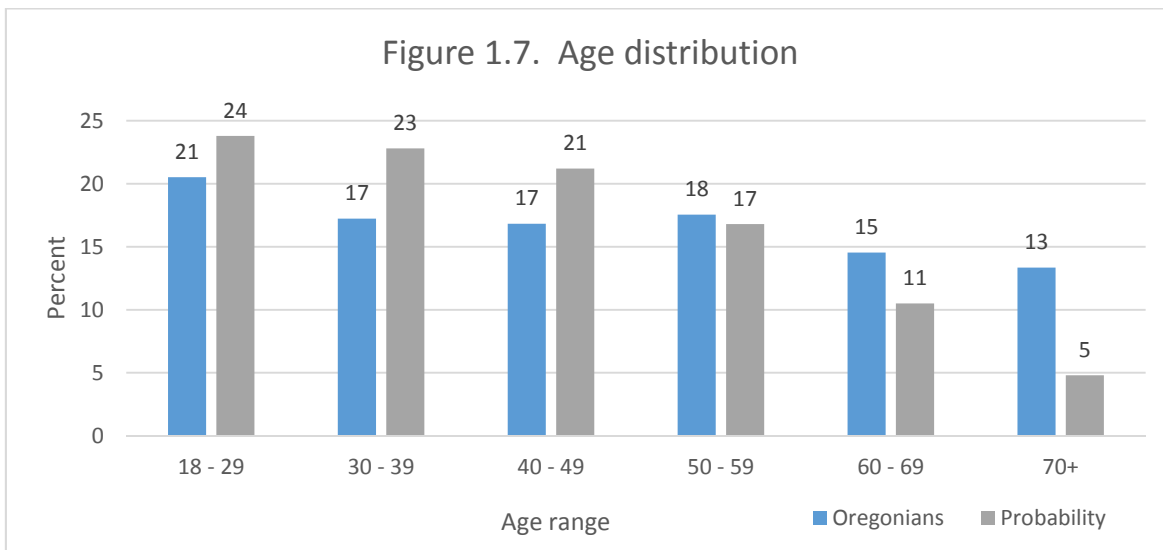
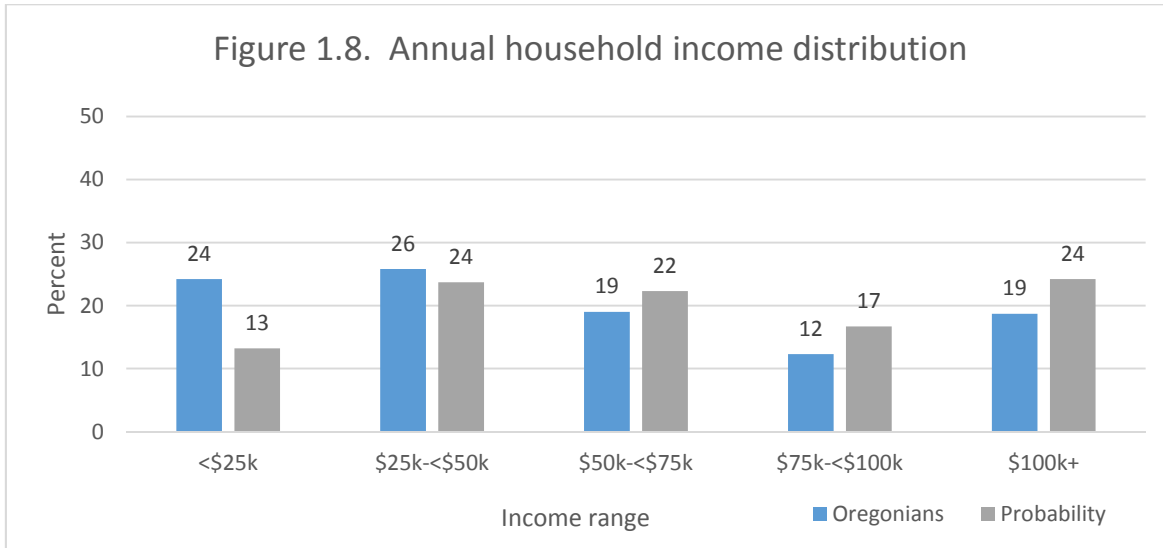


Figure 1.8 shows the distribution of annual household pre-tax income for Oregonians (2013) and trail users (Q39). Trail users tend to have a higher income level than Oregonians as a whole.

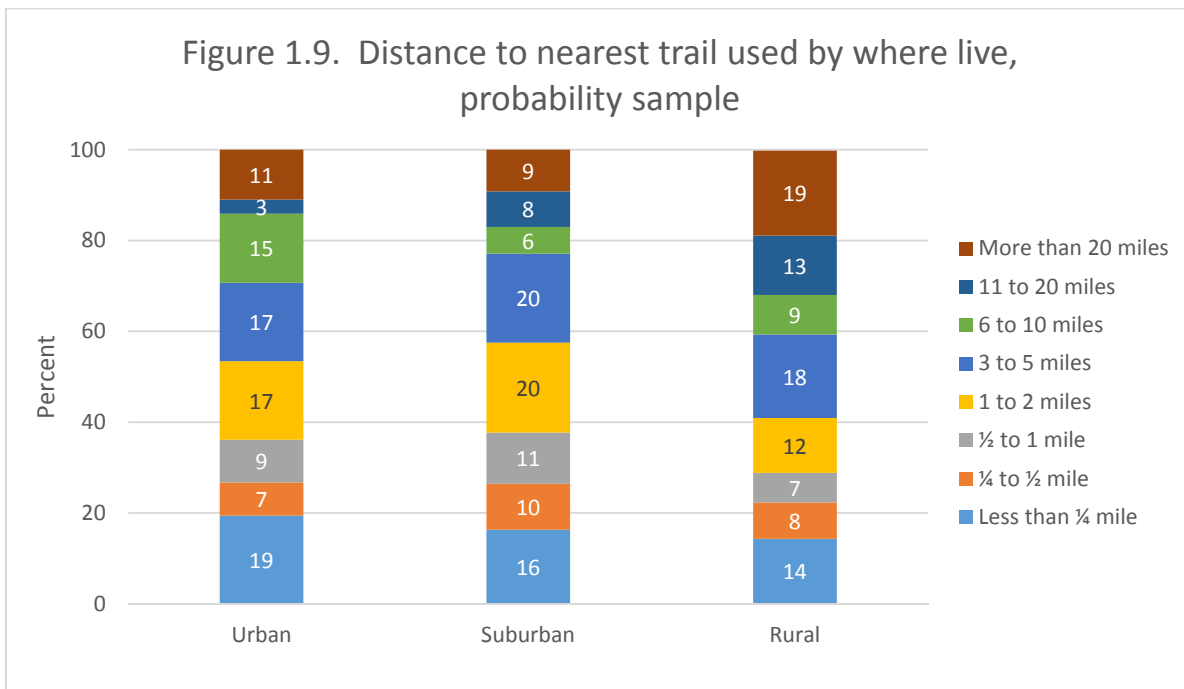
Figure 1.8. Annual household income distribution



Only four percent of respondents reported that they identified as Latino (Q37). Almost all (95%) reported they identified as white, with 2% reporting American Indian, 1% Asian, less than 1% African American, less than 1% Native Hawaiian, and 3% "some other race"; respondents could select multiple categories, so the total is greater than 100% (Q38). Relative to the Oregon population as a whole, minorities are under-represented among trail users.

Figure 1.9 shows distance to nearest trail used (Q34) by self-reported type of area in which respondents live (Q33). Residents in rural areas are less likely to have trails within a quarter mile of where they live and more likely to have nearest trails more than 20 miles away.

Figure 1.9. Distance to nearest trail used by where live, probability sample



2. Activity days, participation, and trip characteristics

2.1. Activity days by county and region

Table 2.1 presents estimated activity days by county and region, separated into the following categories:

- Walking on local trails or paths
- Walking / day hiking on non-local trails or paths
- Long-distance hiking (backpacking)
- Jogging or running on trails or paths
- Bicycling on paved trails
- Bicycling on unpaved trails
- Horseback riding
- Cross-country (XC) / nordic skiing / skijoring on groomed trails
- Cross-country (XC) / nordic skiing / skijoring on ungroomed trails or off designated trails
- Snowshoeing

Days are by location of use (county in which the trail activity occurred) and are rounded to the nearest hundred. Blank cells reflect 1,000 or fewer activity days.

Some recreation activities involve licenses / permits or equipment that must be registered (e.g., hunting, fishing, OHV riding, and snowmobiling). For those activities, license / permit and vehicle registration counts provide a good foundation for estimating use. For other activities, large general population surveys, such as those conducted for SCORP processes, provide the best foundation. Given the inevitable potential for error in survey measurement, a conservative approach is used here. In recent years, both Oregon and Washington State completed general population surveys for their respective SCORP processes.⁴ For each of the non-motorized trail activities included in this report, estimated user days from the Oregon SCORP and Washington SCORP (applied to the Oregon population base) were compared, and the smaller of the two estimates was used. Extrapolation was used when the Washington SCORP activity categories did not fully match the Oregon SCORP categories.

Coastal Lane and Douglas counties were included in Region 5 in the current trail survey. However, these counties were not "split" in the Oregon SCORP survey, so Table 2.1 presents coastal results within the regions that include the main part of each county (Region 4 for Lane, Region 6 for Douglas).

⁴ The Oregon SCORP survey is referenced above in footnote 3. The Washington SCORP survey is: Responsive Management. 2012. Results of general population survey in support of the development of the Washington State comprehensive outdoor recreation plan.

Table 2.1. Estimates of activity days by county where occurred

	Walk local	Walk non-local	Backpack	Run	Bike paved	Bike unpaved	Horseback	XC groomed	XC ungroomed	Snowshoe
Clatsop	987,700	541,600	93,200	364,900	181,000	43,100	43,200			
Lincoln	798,300	939,900	8,500	165,700	24,200	31,000	20,100			
Tillamook	584,500	589,900	55,800	34,100	22,800	33,500	21,000			
Region 1	2,370,500	2,071,400	157,500	564,600	228,000	107,700	84,300			
Clackamas	4,331,900	2,401,900	244,400	1,521,200	361,500	178,500	509,300	110,400	102,000	196,700
Columbia	718,100	112,000	8,000	279,300	109,600	138,200	60,200	2,400		
Hood River	538,000	933,600	99,000	254,200	107,700	171,000	16,100	169,400	83,700	183,900
Multnomah	20,380,700	4,075,700	121,000	11,248,600	4,552,200	2,496,100	19,400	11,300		30,900
Washington	8,263,400	1,584,000	168,100	4,830,300	1,459,800	566,400	147,800	500		
Region 2	34,232,100	9,107,300	640,600	18,133,600	6,590,700	3,550,100	752,900	294,000	185,700	411,400
Benton	4,380,100	1,822,900	70,600	3,479,500	1,833,100	275,800	57,400		1,600	1,900
Linn	1,696,100	392,000	18,600	337,700	354,200	86,700	24,900	8,600	14,100	3,900
Marion	4,324,400	1,304,600	105,000	502,700	490,700	121,500	187,700	9,400	3,600	15,300
Polk	740,800	185,700	1,200	193,700	59,900	24,200	18,000			
Yamhill	1,270,100	94,700	700	185,200	185,900	51,300	44,500			
Region 3	12,411,400	3,799,900	196,000	4,698,800	2,923,700	559,500	332,400	18,000	19,300	21,100
Lane	6,075,500	1,889,300	294,500	2,174,800	2,207,900	509,700	62,500	89,700	99,100	186,100
Region 4	6,075,500	1,889,300	294,500	2,174,800	2,207,900	509,700	62,500	89,700	99,100	186,100
Coos	1,313,800	758,100	18,600	230,300	174,200	86,800	91,300			
Curry	568,600	199,300	12,200	121,300	26,100	42,200	34,900			
Region 5	1,882,500	957,500	30,900	351,600	200,300	129,000	126,100			
Douglas	1,267,700	412,900	90,800	442,000	195,300	28,300	89,100	1,200	6,300	7,000
Jackson	3,405,500	1,444,900	491,900	1,091,400	850,400	274,400	154,100	47,300	56,700	23,600
Josephine	859,600	271,500	39,200	445,900	170,600	85,200	5,400		1,800	7,200
Region 6	5,532,900	2,129,300	621,900	1,979,300	1,216,300	387,900	248,600	48,500	64,800	37,800
Gilliam	23,600									
Morrow	63,900	30,600	1,200	32,100	10,900	4,900	9,900			
Sherman	15,600						5,600			
Umatilla	781,100	158,000	13,400	130,600	68,900	34,500	104,900	1,100	4,300	9,100
Wasco	278,900	168,600	6,500	75,500	83,200	25,000	39,800			9,700
Region 7	1,163,100	357,200	21,100	238,200	163,000	64,500	160,200	1,100	4,300	18,800
Crook	220,700	72,600	11,300	47,100	27,200	11,800	39,600		4,400	1,000
Deschutes	6,809,900	1,985,400	374,200	2,660,600	2,368,900	518,600	1,868,500	330,600	218,600	203,400
Jefferson	230,500	232,900	46,900	88,300	43,100	27,500	25,100		2,800	5,100
Wheeler		17,500								
Region 8	7,261,100	2,308,300	432,400	2,795,900	2,439,300	557,900	1,933,300	330,600	225,800	209,500
Klamath	1,130,600	368,900	106,700	743,600	174,900	171,500	61,100	10,700	19,500	73,500
Lake	120,800	62,400	4,300	23,900	4,700	12,000	27,300		1,500	2,600
Region 9	1,251,400	431,300	111,000	767,500	179,700	183,500	88,400	10,700	20,900	76,100
Baker	372,300	184,100	25,400	133,200	61,300	22,700	91,700	17,800	8,300	33,200
Grant	123,100	673,400	13,200	47,400	6,100	1,300	13,200		1,200	
Union	424,100	219,700	68,600	108,500	118,800	71,100	106,100	12,600	11,200	33,700
Wallowa	136,200	89,600	65,400	26,900	2,900	6,800	80,300		8,300	6,500
Region 10	1,055,700	1,166,800	172,600	316,100	189,000	101,900	291,400	30,400	29,100	73,300
Harney	85,900	98,600	6,600	17,500		16,100	38,100		2,500	
Malheur	225,500	72,500	10,500	154,900	12,000	19,200	321,600			
Region 11	311,500	171,000	17,100	172,400	12,000	35,300	359,700		2,500	
State total	73,547,700	24,389,100	2,695,300	32,192,800	16,349,900	6,187,100	4,439,900	823,000	651,500	1,034,900

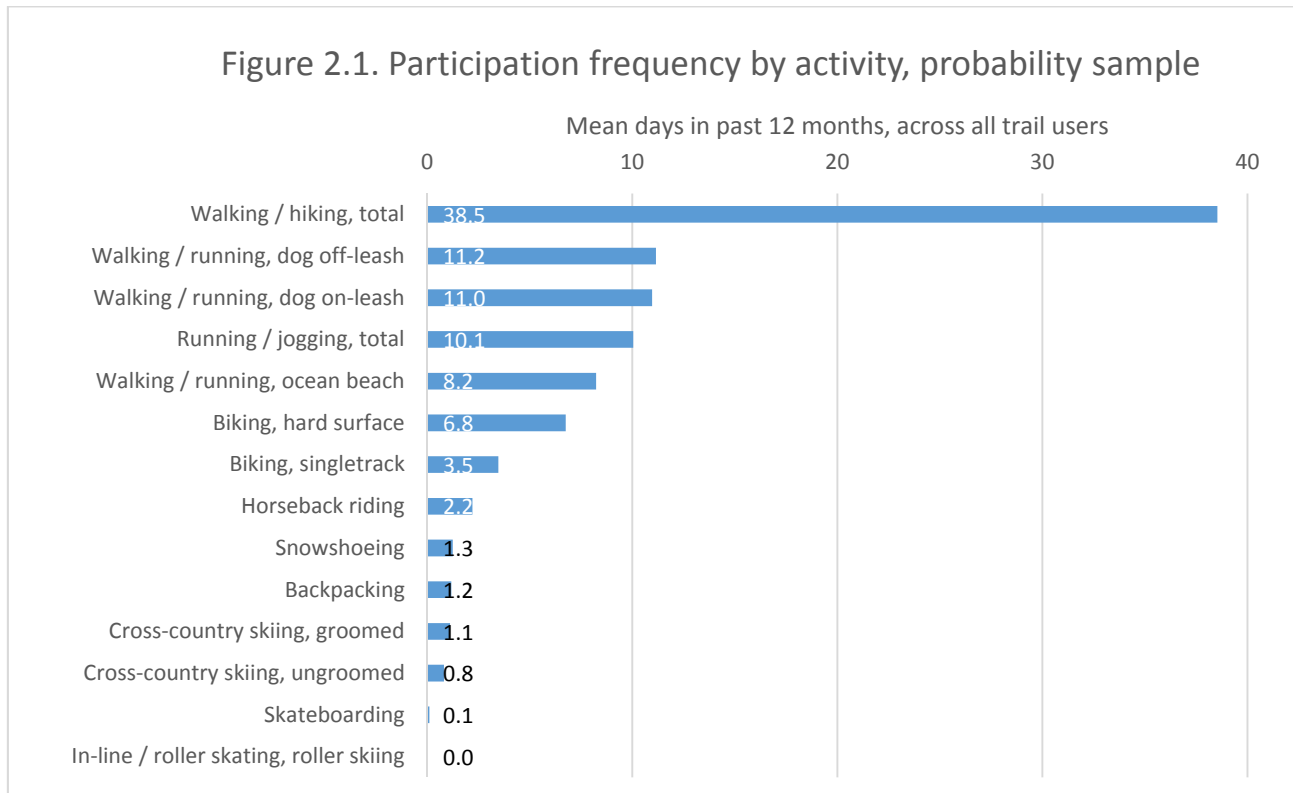
Across all activities, there were an estimated 162,311,200 activity days in Oregon in the reference year of 2011. Note that SCORP and the current trail survey data are subject to the inherent

sources of potential error described in Section 1.4, including the potential for inaccurate reporting of the county in which trail activity occurred.

Also note that the SCORP and current trail survey estimates are based on surveys of Oregon residents and do not include trail use in Oregon by non-residents. The US Forest Service National Visitor Use Monitoring (NVUM) program provides one reference point for estimating the balance of Oregon resident versus non-resident trail use in Oregon. Across all national forest units in Oregon, there are an estimated 2.62 million non-motorized trail visits annually. Of these, 76% are visits by Oregon residents and 24% by non-residents. However, the majority of the user occasions in this trail analysis likely occur on trails in or near communities rather than in more distant national forests. The recent Washington State economic analysis provides estimates of activity days in local parks, with non-residents representing approximately 11% of use.⁵ Non-resident trail use across the activities in this report likely fall within the 11% to 24% range, with the lower end used here to be conservative.

2.2. Trail survey participation across activities

Trail survey respondents reported how many days they participated in various activities on trails in Oregon during the past 12 months (Q1). As shown in Figure 2.1, the activity with the most frequent participation is walking / hiking, with the “total” category for walking including days participating in sub categories. The sub categories include walking and/or running on ocean beaches, with a dog on-leash, and with a dog off-leash. A given walking or running occasion may fall into none, one, two, or all three of these sub categories.



⁵ See Table 7 and Table 17 in Briceno, T. and G. Schundler. 2015. Economic Analysis of Outdoor Recreation in Washington State. Earth Economics, Tacoma, WA. Available at: <http://www.rco.wa.gov/documents/ORTF/EconomicAnalysisOutdoorRec.pdf>

Figure 2.2 shows the participation rate by activity – the percentage of respondents who engaged in each activity at least once in the past 12 months. Almost everyone (96%) engaged in walking / hiking at least once. Two-thirds of respondents walked specifically on an ocean beach at least once. Different ordering between Figure 2.1 and 2.2 reflects participation frequency. For example, more people walk on an ocean beach than walk their dog on-leash (Figure 2.2). However, those who walk their dog on-leash do so more frequently than those who walk on an ocean beach, which leads to a higher average number of days for on-leash walking (Figure 2.1).

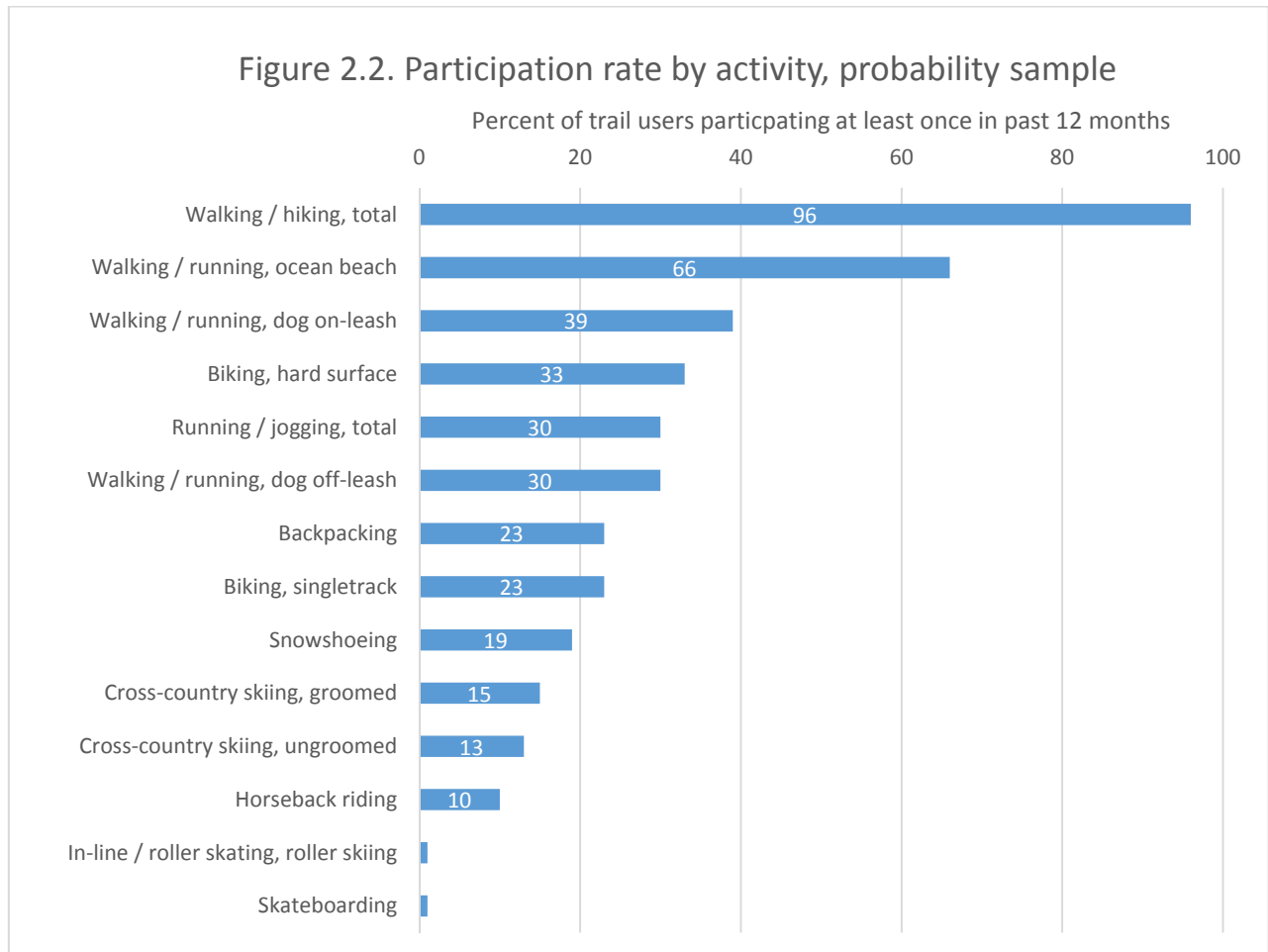


Figure 2.3 shows hours per day spent on trails while engaging in each activity (Q4). Backpacking and horseback riding involves the highest percentage of people with six or more hours while engaging. Running has the highest percentage of people with an hour or less, followed by walking / running with dog on-leash and biking on hard surface trails.

Figure 2.3. Hours per day engaged by activity, probability sample

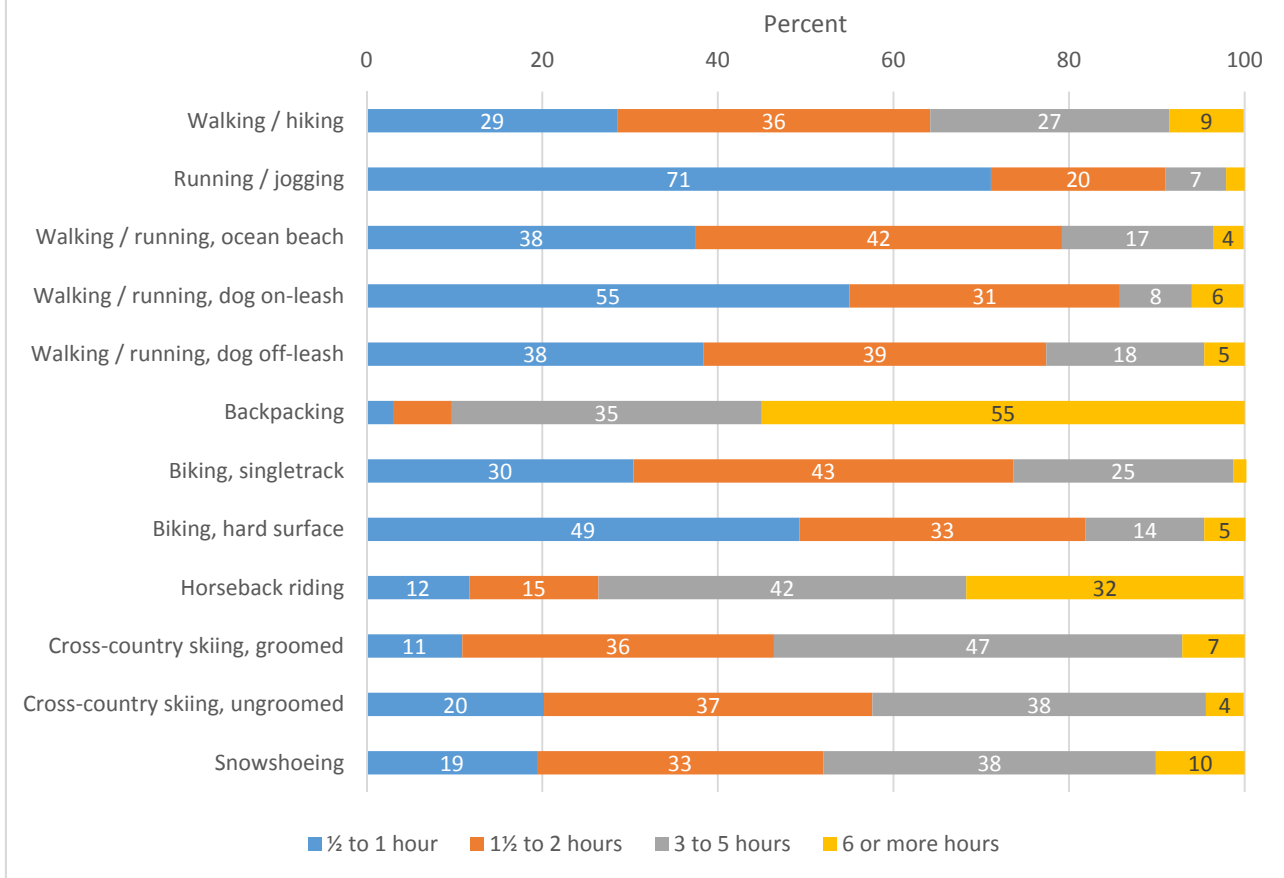
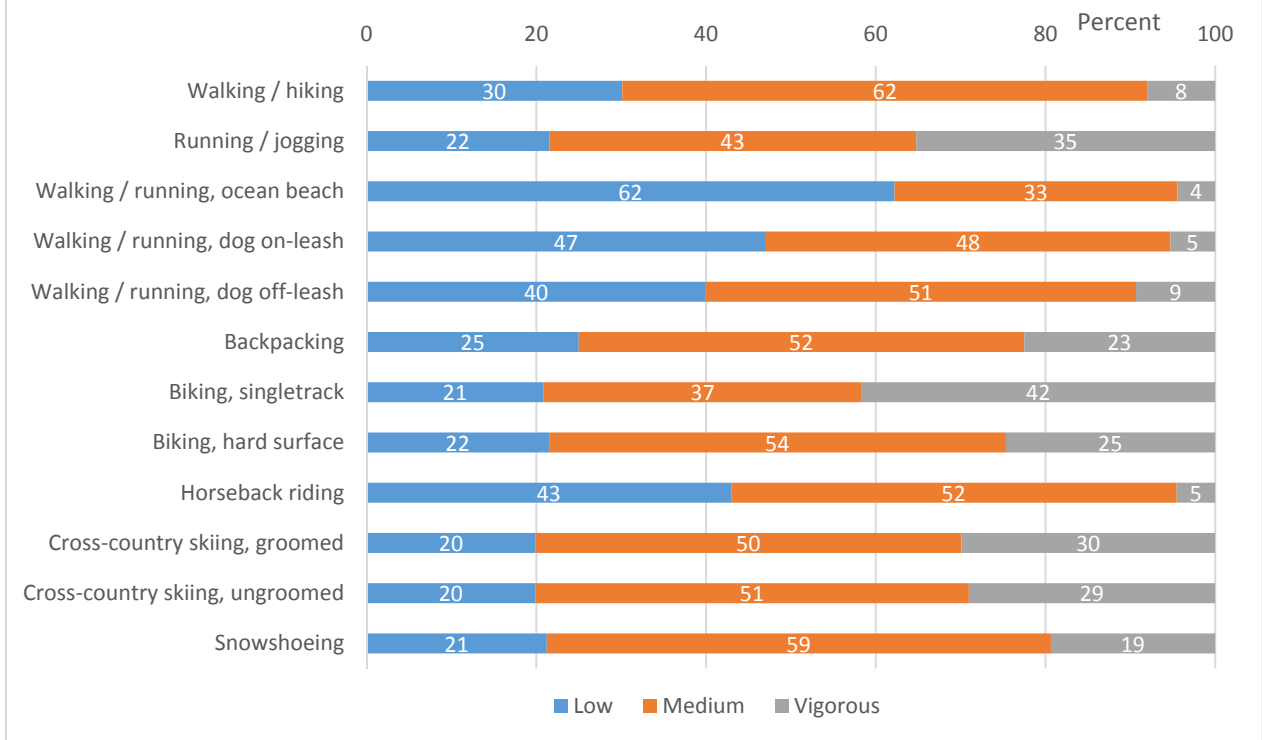


Figure 2.4 shows activity level while engaging in each activity on trails (Q4). These were self-evaluated levels using the following guidelines presented in the questionnaire:

- Low – for example, walking or bicycling at a slow pace.
- Medium – for example, walking or bicycling at a moderate pace.
- Vigorous – for example, jogging, walking, or bicycling at a vigorous pace, breaking a sweat, heart beating rapidly.

Biking on singletrack trails and running were the activities with the highest percentage at the vigorous activity level, while walking / running on an ocean beach had the highest percentage at the low activity level.

Figure 2.4. Self-evaluated activity level by activity, probability sample



Two percent of respondents reported they need a mobility assistive device when using trails (Q2), with the most common type of device being canes and walking sticks.

Eleven percent of respondents use recreation-oriented trails to walk or bicycle to work (Q3), with Figure 2.5 showing differences across regions. The highest percentage is in Region 4 (Lane County), but keep in mind the relatively small number of observations from this region.

Figure 2.5. Use of recreation trails to walk or bike to work, probability sample

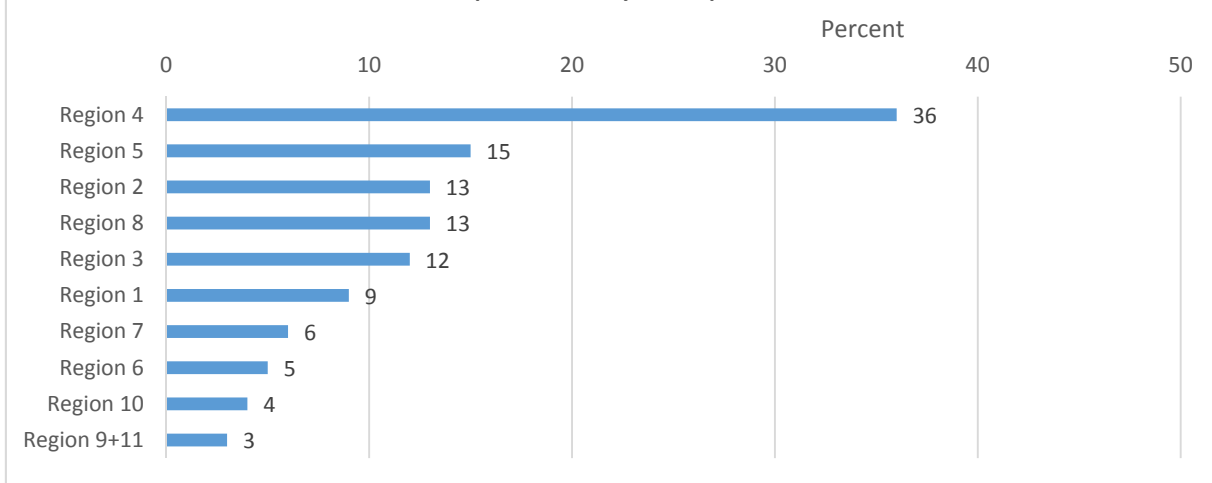
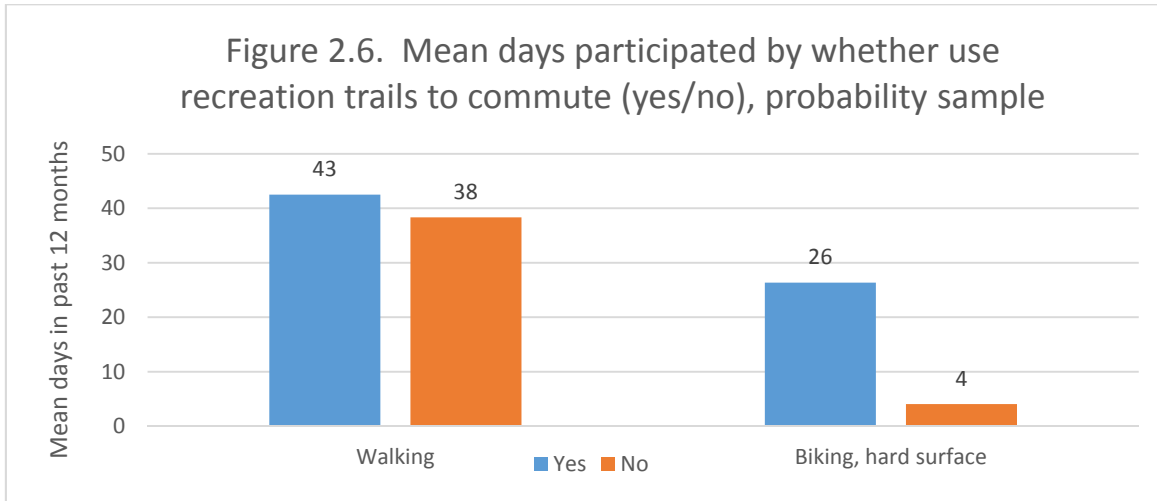


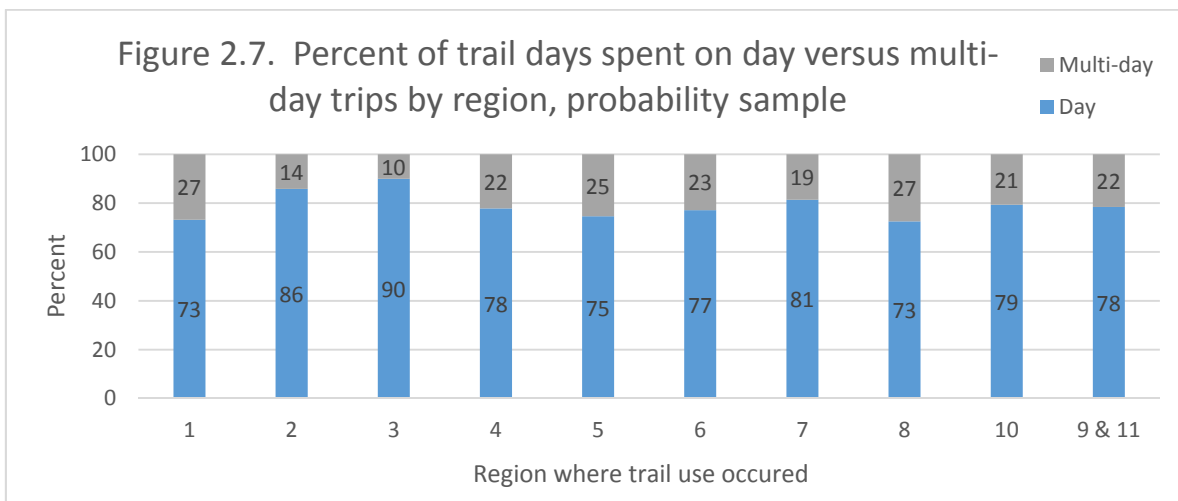
Figure 2.6 shows average number of days participated in walking and biking on hard surface trails by whether respondent uses recreation trails to walk or bike to work. Results suggest that some of the walking occasions and many of the hard surface biking occasions reflect commuting use of trails.



2.3. Day trip and multi-day trip characteristics

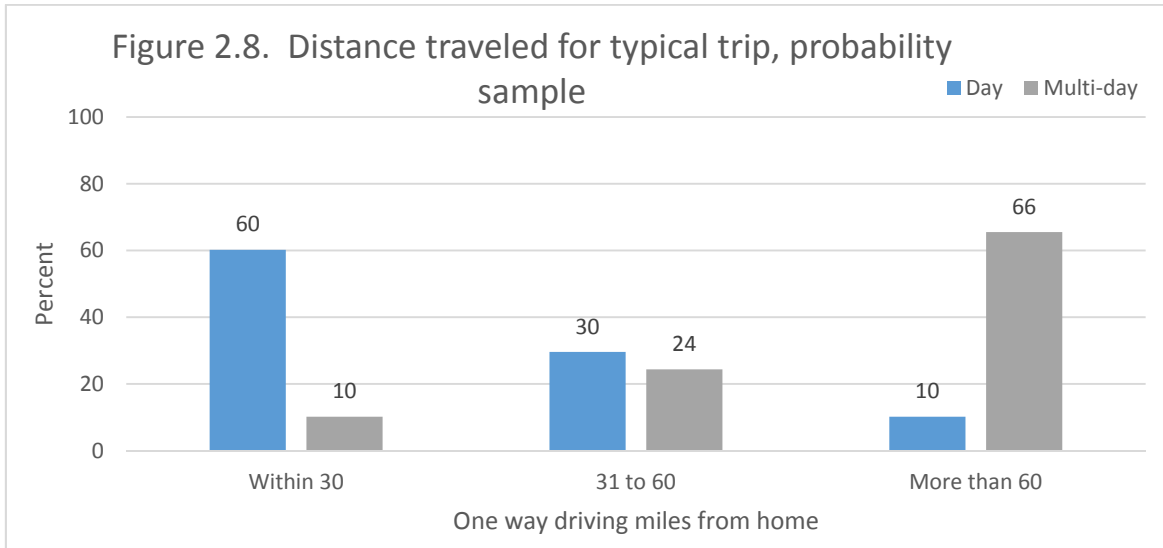
Almost all respondents (98%) took at least one trail-related day trip and 81% took at least one multi-day trip in the past year (12 months). Multi-day trips are defined as those involving an overnight stay away from home, even if the respondent only used trails one day during the trip. The day versus multi-day distinction is used in presenting results in this section as well as in estimating economic contribution in Section 4.

Figure 2.7 shows the percentage of trail days in each region that involved day trips versus multi-day trips (Q19). The percentages are similar across regions, though the northern Willamette Valley is particularly dominated by day use; this is not surprising given the large residential population in that area.



The following results are for the "typical" day and multi-day trips, defined as the single location where respondents most often engaged in each type of trail activity trip in the past 12 months.

Figure 2.8 indicates that 60% of day trips are within 30 miles of home while two-thirds of multi-day trips were more than 60 miles from home (Q22 and Q27).



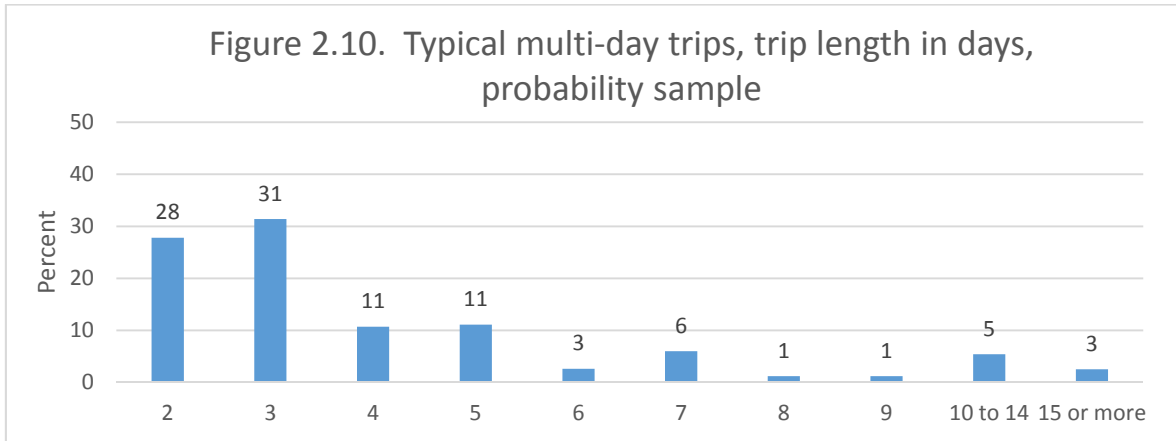
The remaining results in this section and in section 4 (expenditure and economic significance) are based on travel parties. The National Visitor Use Monitoring (NVUM) approach to outliers was followed here, with observations excluded if reported travel party was eight or more persons, length of stay was more than 30 days, total expenditure was \$500 or more per night (per day for day trips), or sporting goods expenditure was \$500 or more.⁶ In addition, respondents were excluded if they indicated that their confidence in their expenditure reporting was below five on a 0 to 10 scale, where 5 = Somewhat confident (this was not asked in the mail questionnaire). Exclusion was "listwise" across the set of questions within each type of trip. For example, if one of the above conditions was met for multi-day trips, the respondent does not appear in the results for any of these questions within the multi-day trip analysis.

Figure 2.9 shows number of persons in travel party for day and multi-day trips (Q23 and Q29). Travel parties are larger for multi-day trips, but two persons is most common for both trip types.



⁶ White, E.M., D.B. Goodding, and D.J. Stynes. 2013. Estimation of national forest visitor spending averages from National Visitor Use Monitoring: round 2. Gen. Tech. Rep. PNW-GTR-883. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station.

Figure 2.10 shows number of days for multi-day trips (Q28). As a reminder, this includes trip days that did not involve trail use.

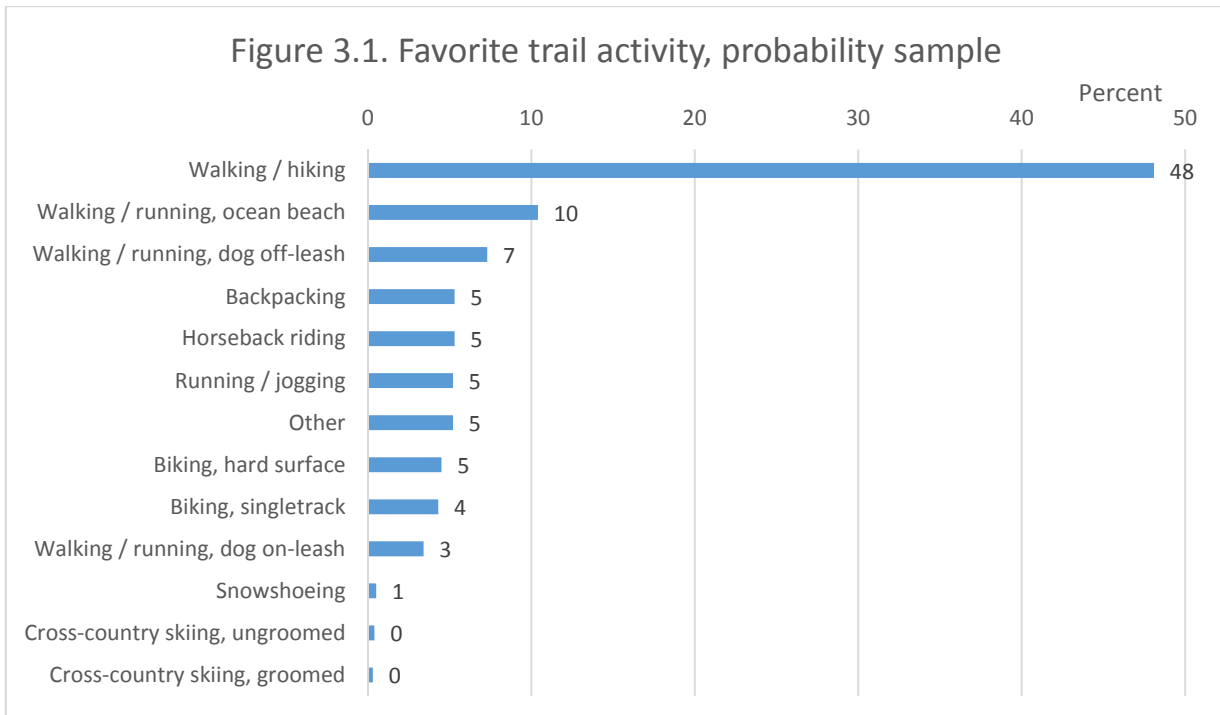


3. Favorite activity, trail preferences, and priorities

3.1. Favorite activity and trail preferences

Respondents reported their favorite among the listed trail activities (Q5), then reported trail preferences for that activity.

As shown in Figure 3.1 walking / hiking is the favorite activity for almost half the respondents. Note that respondents could choose only one activity and that the walking / running sub categories were presented as separate activities in this question. Thus, the 48% who chose walking / hiking presumably reflect people whose favorite activity is walking / hiking not on an ocean beach and not involving a dog.

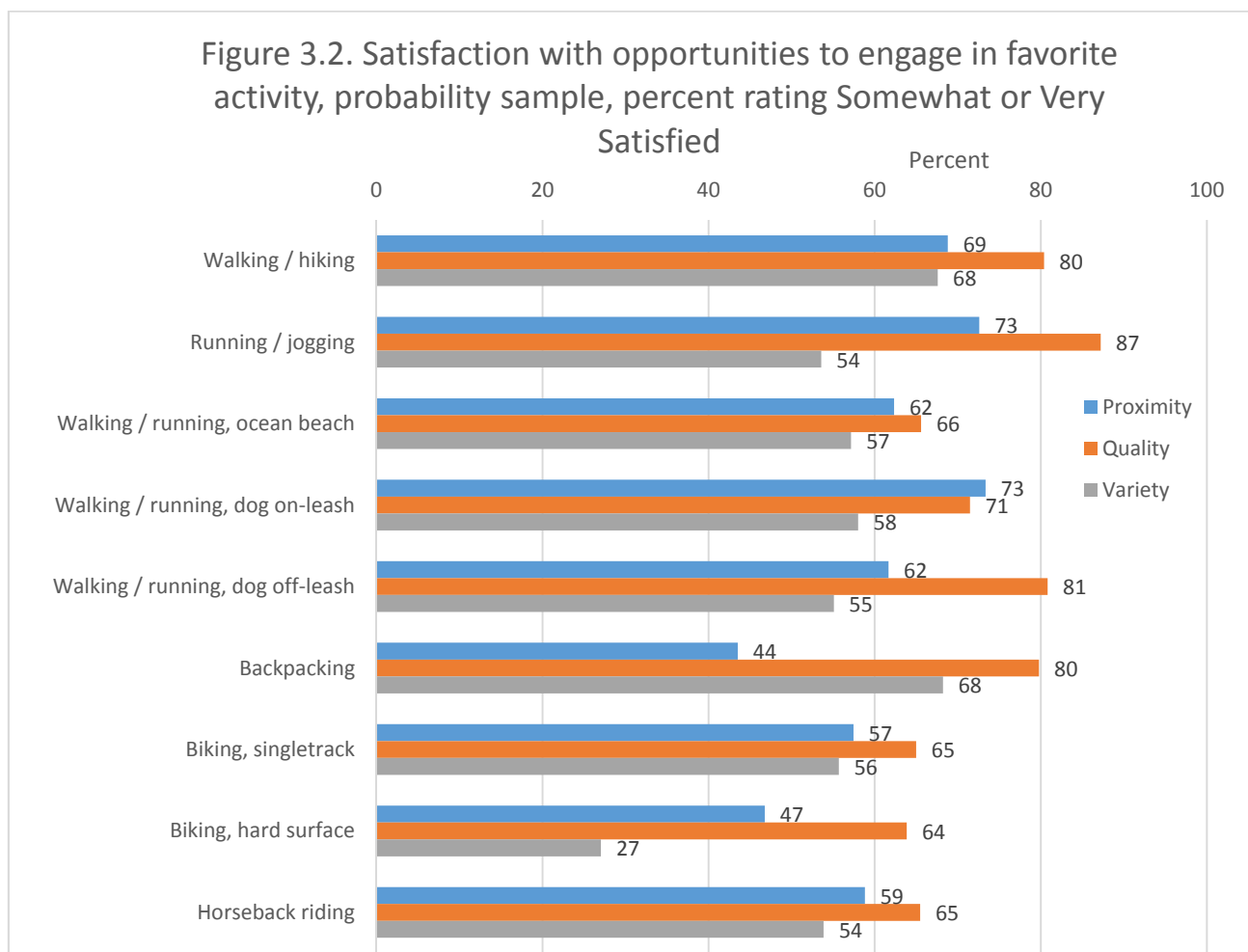


There were fewer than 10 respondents in the probability sample who indicated that each of the winter trail activities was their favorite. No respondent indicated that inline skating or skateboarding was their favorite. Therefore, these categories are omitted from the following “by favorite activity” analyses. In addition, walking / running on an ocean beach is omitted from trail surface, length, and difficulty results.

Figure 3.2 shows satisfaction with three aspects of trail opportunities for engaging in their favorite activity (Q6). The aspects were described as follows:

- Proximity – you can access trails for this activity near your home.
- Quality – the trails are well-suited to the experience you seek.
- Variety – you can access multiple trails.

Across all activities, the percent somewhat or very satisfied (4 or 5 on the 1 to 5 scale) is highest for quality and lowest for variety. There were high ratings (80% or higher) for some aspects of some activities, but opportunities for improvement remain for other aspects and activities.



Respondents then indicated whether opportunities to engage in their favorite activity have decreased, not changed, or increased in the past 10 years (Q7), with results shown in Figure 3.3. In general, increased opportunities outweighed decreased opportunities.

Figure 3.3. Change in opportunities to engage in favorite activity in past 10 years, probability sample

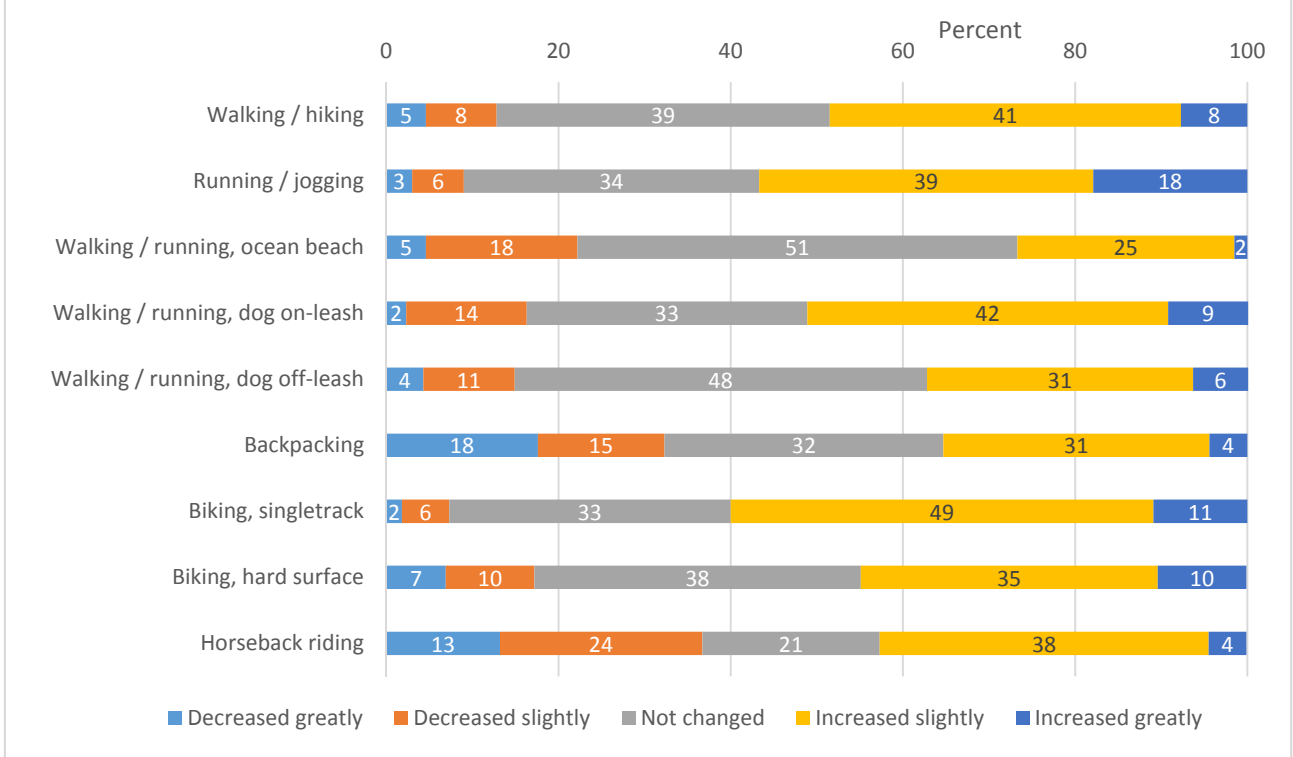
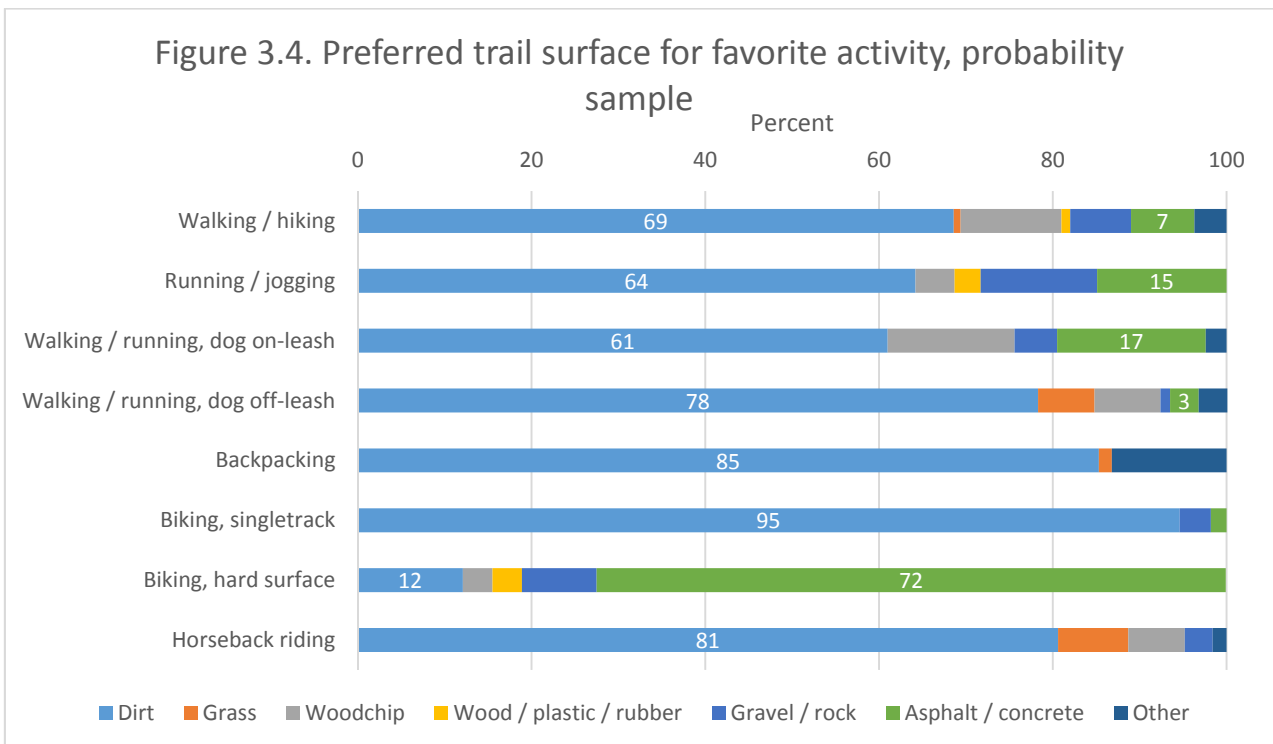
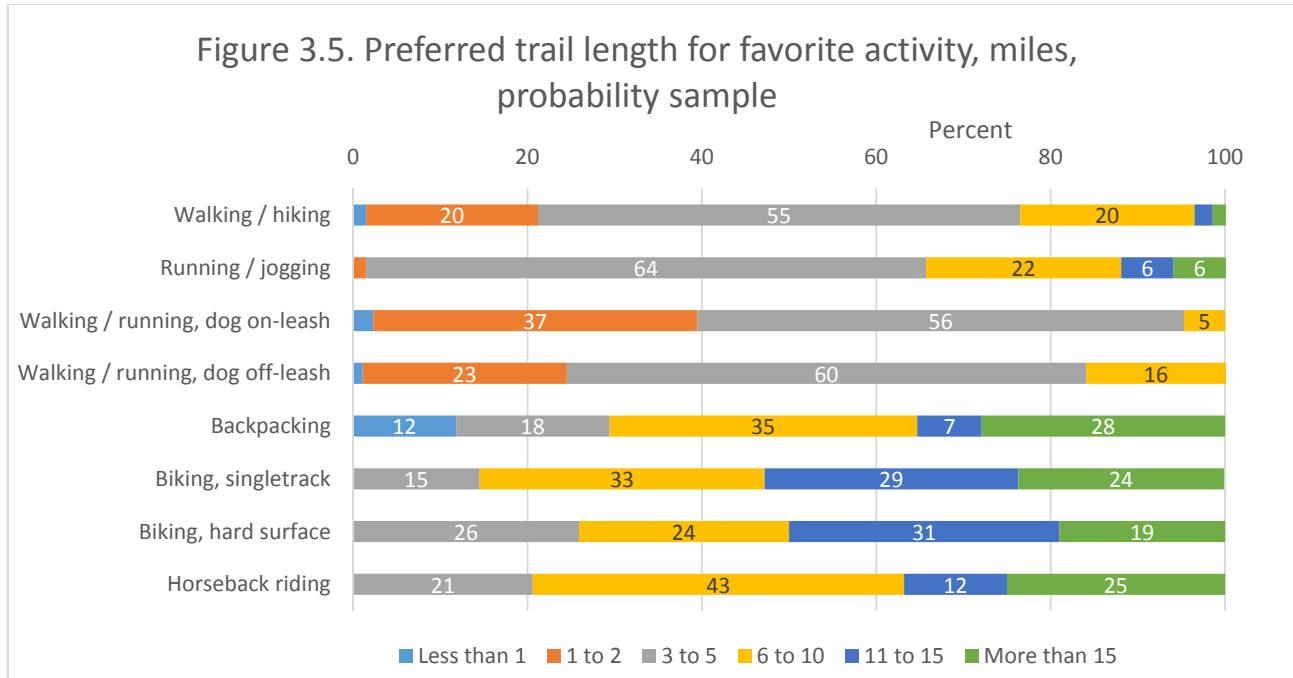


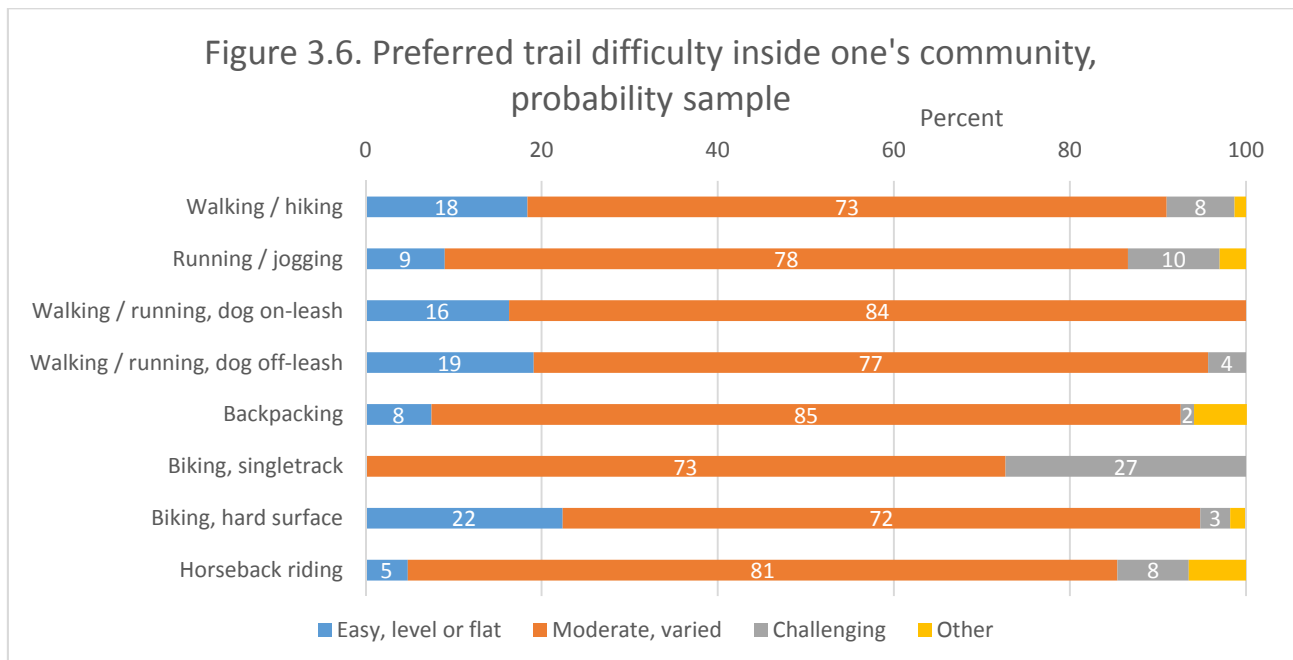
Figure 3.4 shows preferred trail surface by favorite activity, excluding walking / running on ocean beaches (Q8). Dirt is the preferred surface for all activities other than biking on hard surface trails.

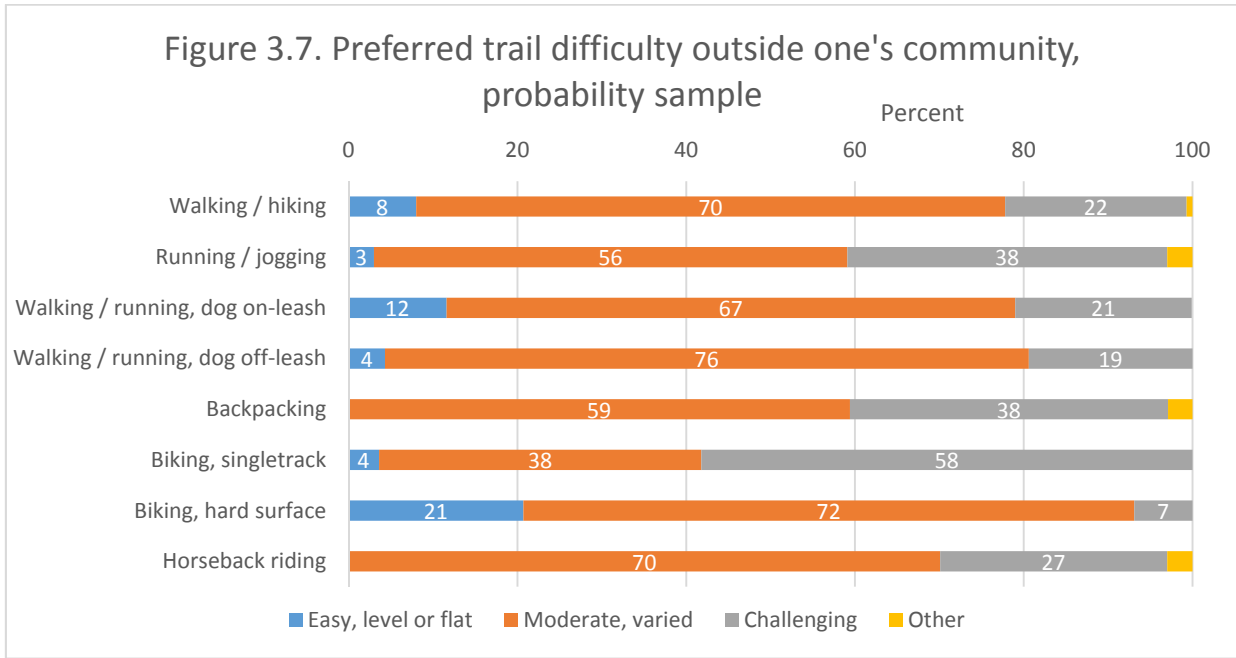


Preferred trail length is illustrated in Figure 3.5 (Q9). The majority of walkers and runners preferred lengths of one to five miles, while those engaging in backpacking, biking (singletrack or hard surface), and horseback riding tend to prefer lengths of six or more miles. The preference of some backpackers for lengths less than one mile was unexpected; one possible explanation may be parents camping with children.



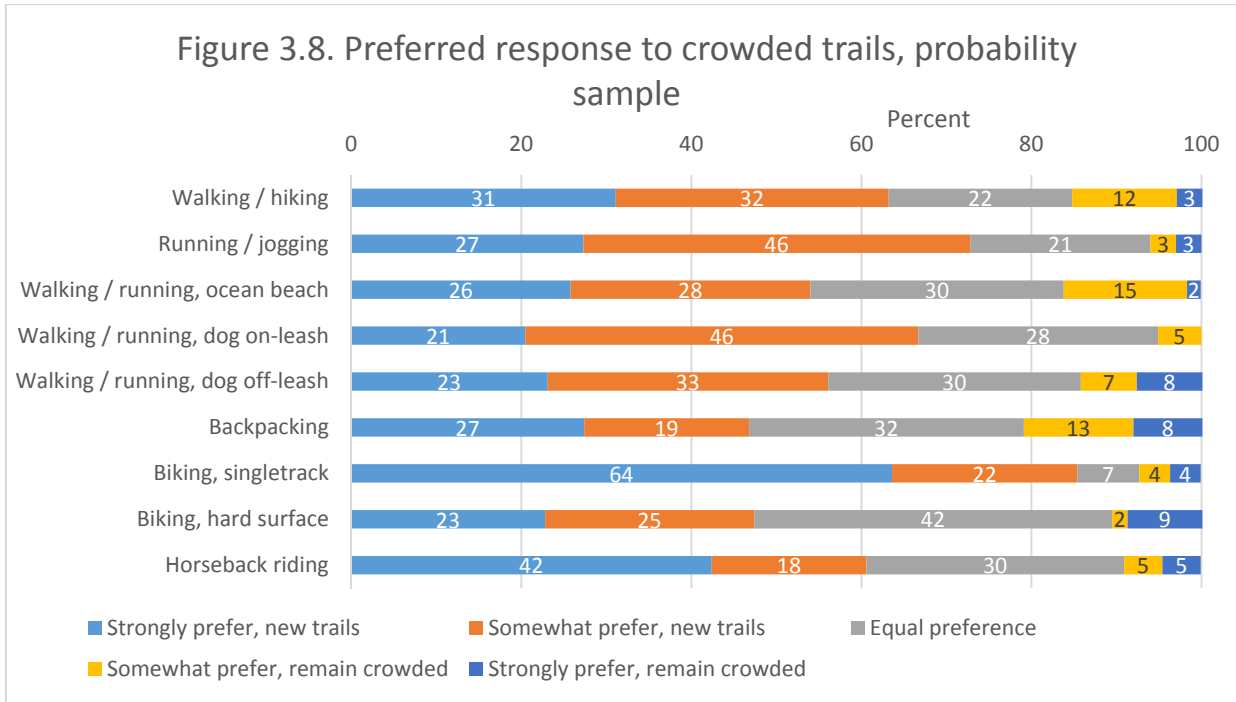
Preferred trail difficulty was asked with respect to trails both within the community and outside the community (Q10 and Q11), with results in Figure 3.6 and Figure 3.7. Moderate, varied trails were preferred by most respondents, with interest in challenging trails being greater for trails outside one's community. Singletrack bikers were more likely than others to prefer challenging trails.





3.2. Trail management preferences

Several questions were asked regarding preferences for responding to crowding or conflict. Figure 3.8 indicates that respondents generally prefer creating new trails to reduce crowding, where it exists, rather than letting existing trails remain crowded (Q13). This is especially true for singletrack bikers. The potential for additional financial and environmental costs due to creating new trails was noted, so preferences for new trails presumably reflect a high value for quality trail experiences.



A similar trade-off was presented for shared and separate trails in cases of conflict, with separate trails potentially leading to fewer trails for each activity and/or additional financial and

environmental costs to create new trails (Q14). Figure 3.9 shows preferred responses to conflict, with 1 being a strong preference for shared trails to 5 being a strong preference for separate trails. Mean ratings are presented. Respondents are grouped into favorite activity on the vertical axis, as in other figures in this section. The last (bottom) group is all respondents combined.

The activities being evaluated are shown by bar colors. Across all respondents (bottom set of bars), there was some preference for separate trails in the case of inline skating, singletrack biking, and horseback riding (colored bars extend beyond the neutral point of 3). Preferences were essentially neutral for walking / running with a dog off-leash and cross-country skiing with a dog off-leash. There was some preference for shared trails in the case of snowshoeing.

These results illustrate variation across encountered activities, and separate trails will be a priority for some trail users and in some contexts. Results in Appendix 2 (Figure A.3.9 and A.3.14) suggest somewhat stronger support for separation in some contexts among the actively-engaged trail users in the convenience sample. Nonetheless, overall preferences for trail separation were not very strong (see also Figure 3.14, where the lowest priority was limiting trails to one activity to reduce conflict).

Using walking / hiking as an example favorite activity, respondents in that category preferred separate trails for inline skating, singletrack biking, and, to a lesser extent, horseback riding (blue, orange, and yellow bars extend to the right of 3). Respondents in that category slightly preferred separate trails for walking / running with an off-leash dog. They preferred shared trails for snowshoeing (tan bar extends to the left of 3).

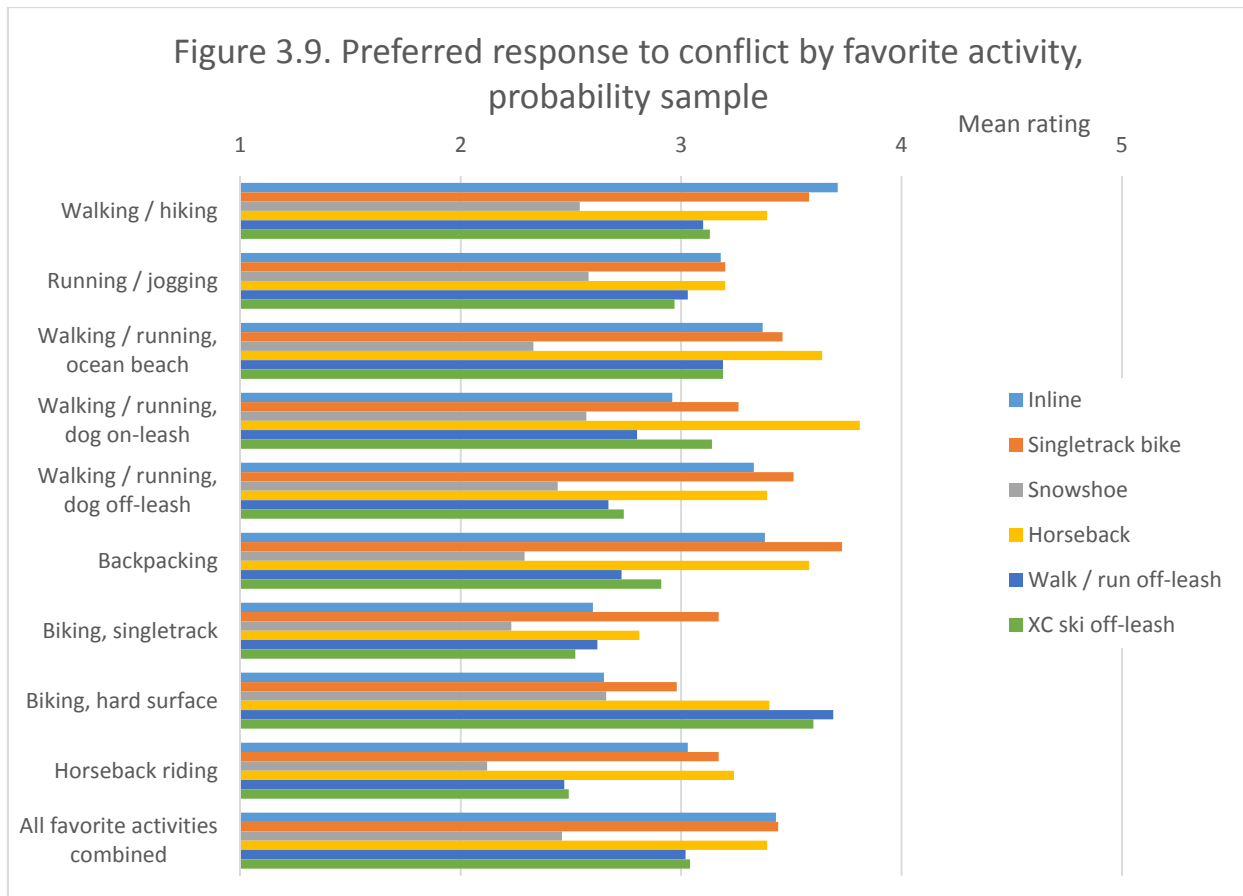
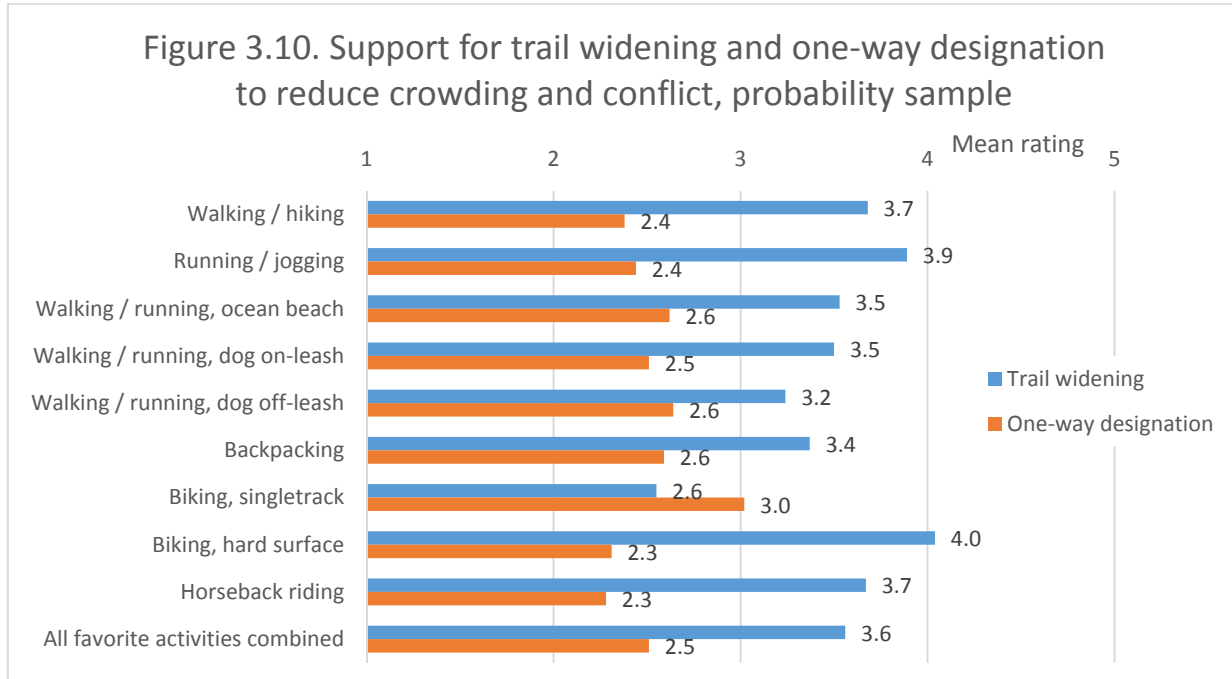


Figure 3.10 presents preferences for trail widening and one-way designation as tools to reduce crowding and conflict (Q15), with means on a scale of 1 being strongly oppose to 5 being strongly support. Across all respondents (bottom category), there was support for trail widening, but less support (below neutral) for one-way designation. That relationship occurred for all favorite activity categories except singletrack biking. For that activity, respondents were more supportive of one-way designation (though still only neutral on average) than of trail widening.



3.3. Priorities for trails and facilities

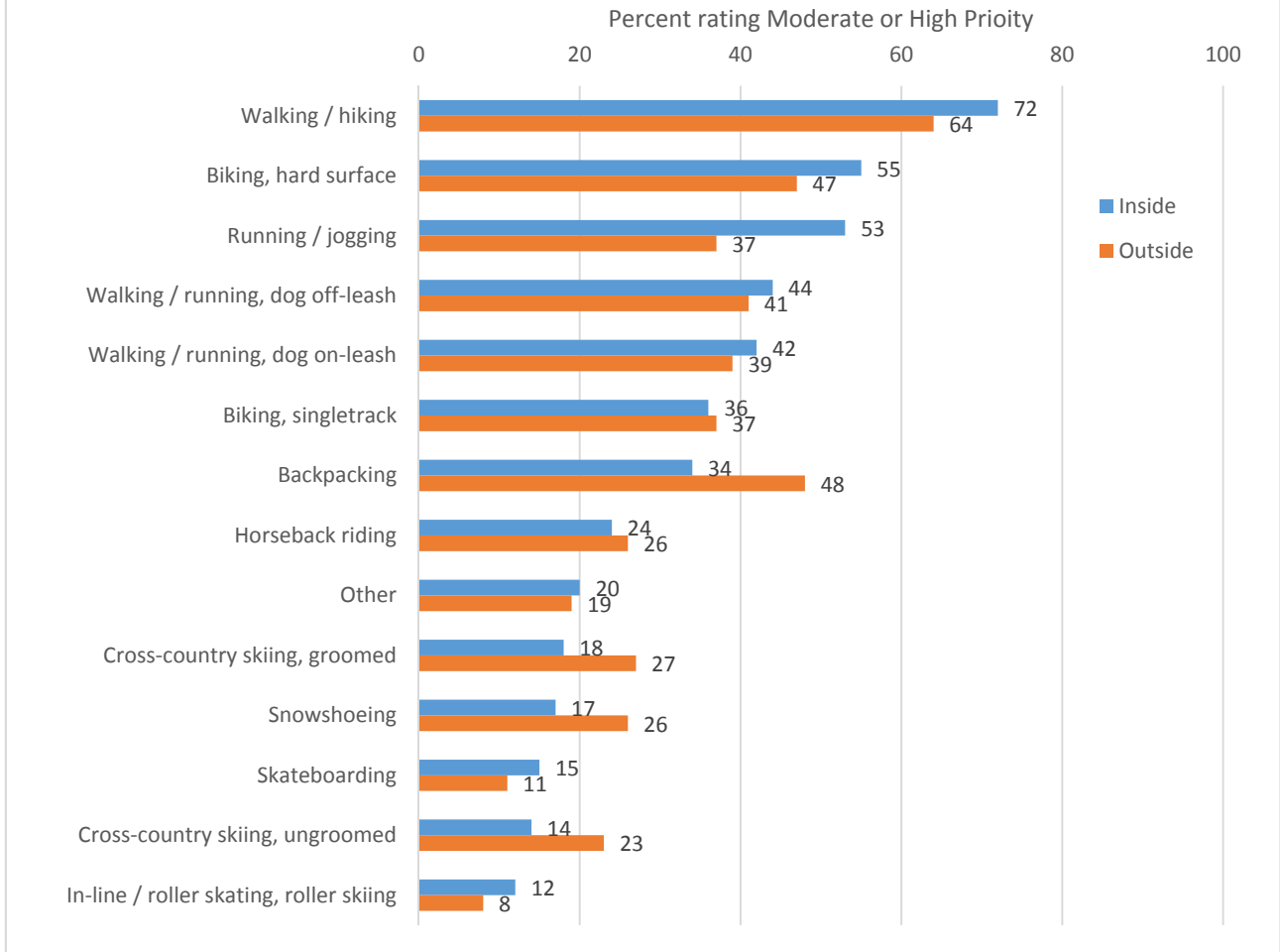
Figure 3.11 shows priorities for additional trails, separately for inside and outside one’s community (Q12). As a reminder, results by region are presented in Appendix 1.

Trails for walking / hiking were the highest priority for both locations. Trails for hard surface biking were the next highest priority for inside, while trails for backpacking were the next highest priority for outside one’s community.

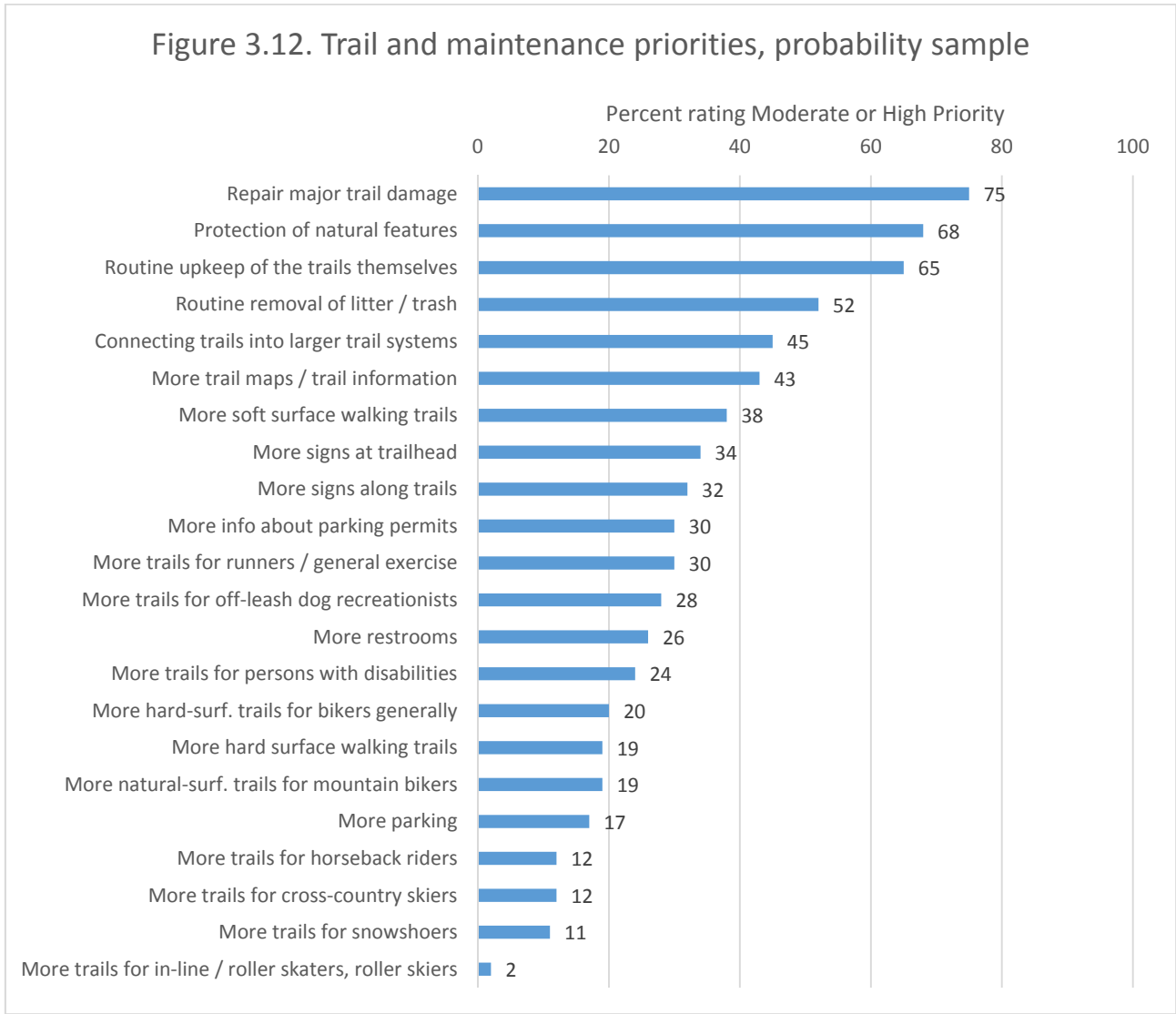
Some results were unexpected, such as noticeable respondent priorities for backpacking and winter trail activities inside the community. Though “inside” and “outside” were differentiated in previous questions (Q10 and Q11), there may have been some confusion, and results should be interpreted with that in mind.

Despite this caveat, for most activities, a higher priority was placed on trails inside the community over trails outside.

Figure 3.11. Priority for additional trails, probability sample, inside and outside community (sorted by inside)



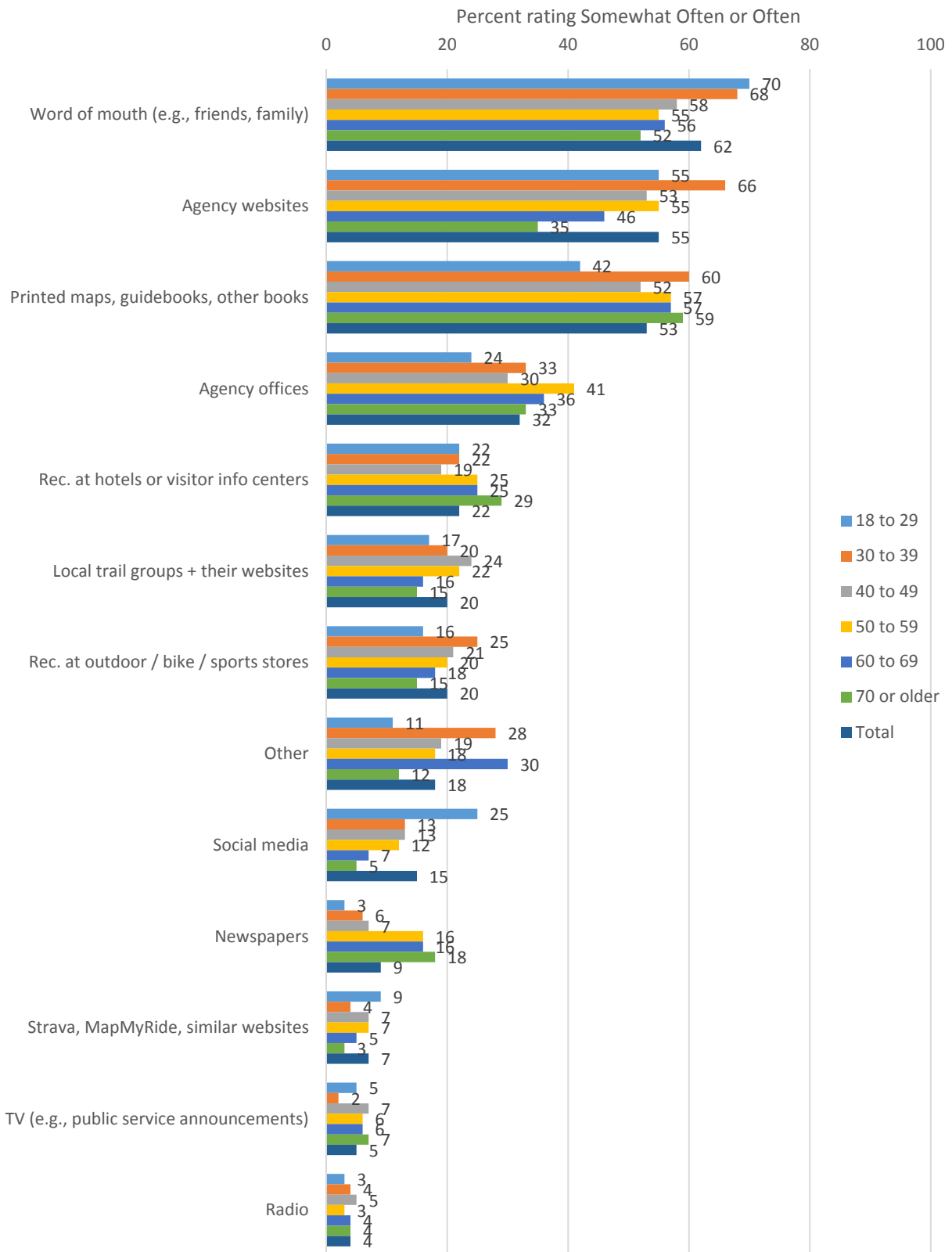
Priorities for additional trails and maintenance are shown in Figure 3.12, based on Q16 (“please share your priorities for trails in Oregon over the next 10 years, keeping in mind limited funding and land). Repair of major trail damage was the highest priority.



3.4. Information sources

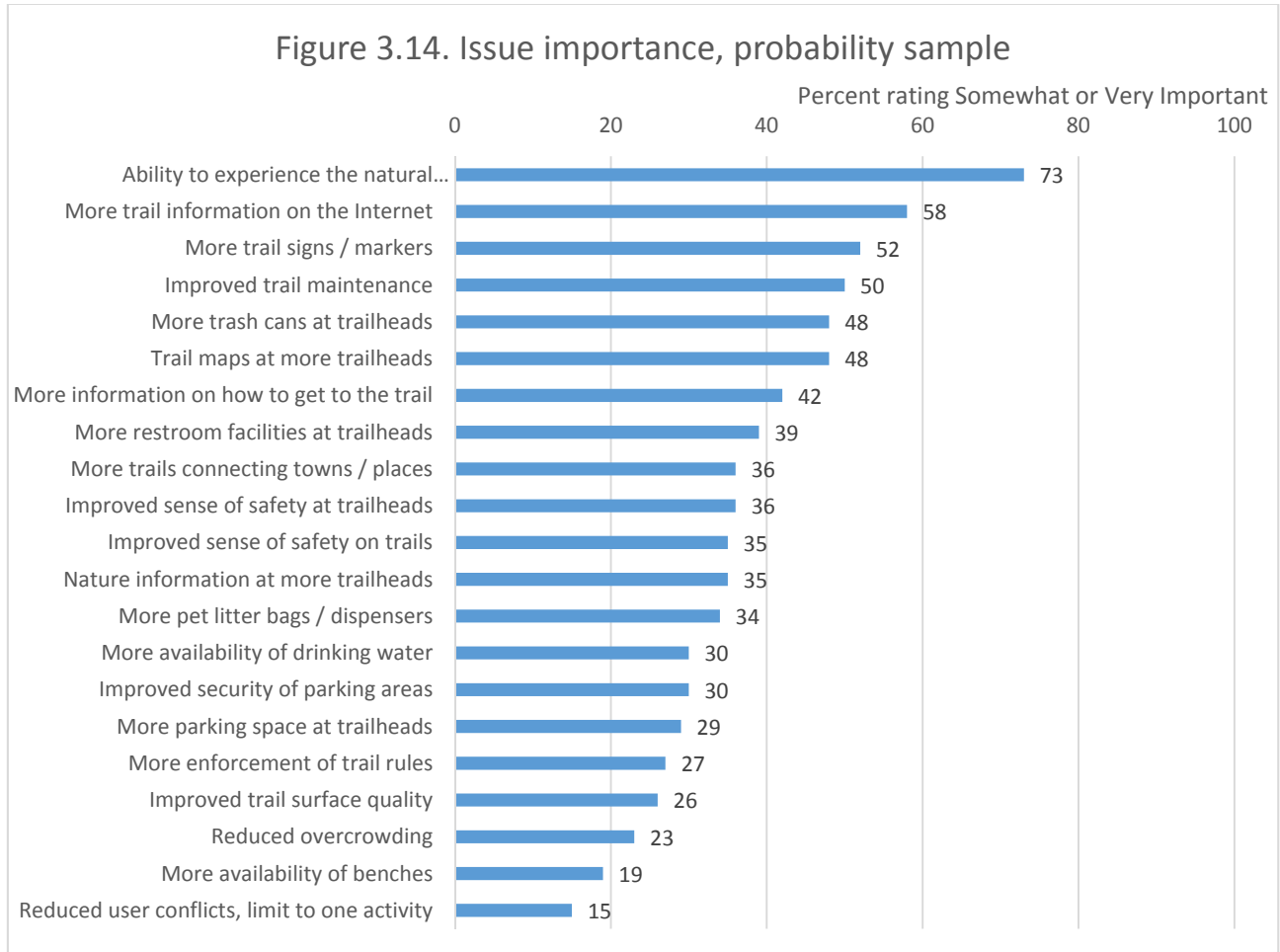
Figure 3.13 illustrates information sources utilized when seeking information about trails (Q17) by age of respondent, sorted by Total (all ages combined). Word of mouth is the most frequent source of information. As expected, there is some variation by age. For example, those in younger age categories are more likely than those in older age categories to use word of mouth and social media. Conversely, those in older age categories are more likely to use newspapers.

Figure 3.13. Information sources by age, probability sample



3.5. Issue importance

Respondents were asked (Q32), based on their trail use in the past 12 months, how important they felt each of several issues was on trails in Oregon. The ability to experience the natural environment was most important (Figure 3.14), followed by more trail information on the internet.



4. Expenditure and economic contribution

This section outlines trail user expenditure, based on the "typical trips" described in Section 2.3. Note that this expenditure is only associated with travel, not with equipment purchased outside of trips nor other non-trip expenditure (e.g., purchase and care of horses). Expenditure and economic contribution reflect trail use by both local (to the trail location) and non-local Oregon residents.

As noted in Section 2.3, these results are based on travel parties. The National Visitor Use Monitoring (NVUM) approach to outliers was followed here, with observations excluded if reported travel party was eight or more persons, length of stay was more than 30 days, total expenditure per travel party was \$500 or more per night (per day for day trips), or sporting goods expenditure per travel party was \$500 or more.⁷ In addition, respondents were excluded if they indicated that their

⁷ White, E.M., D.B. Goodding, and D.J. Stynes. 2013. Estimation of national forest visitor spending averages from National Visitor Use Monitoring: round 2. Gen. Tech. Rep. PNW-GTR-883. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station.

expenditure reporting was below five on a 0 to 10 certainty scale, where 5 = somewhat confident (this was not asked in the mail questionnaire). Exclusion was "listwise" across the set of questions within each trip type. For example, if one of the above conditions was met for multi-day trips, the respondent does not appear in the results for any of these questions within the multi-day trip analysis.

Three reference points were used for expenditure reported on this trip: US Forest Service NVUM survey results, Oregon State Parks survey results, and results of a recent Washington State economic analysis.⁸ The current trail survey expenditure results were significantly higher than these reference points, especially for day visitors. Therefore, they were scaled down to maintain a conservative approach. The relative distribution across expenditure categories follows current trail survey results, but total expenditure was adjusted to match the following. For local day visitors, an average of the Oregon State Parks and Washington local parks expenditure was used (average spending in NVUM and state parks was similar). For the other three categories (see Table 4.1), an average of NVUM and state parks estimates was used. "Local" refers to trail use within 60 driving miles of home.

Table 4.1 shows expenditure (adjusted) and other characteristics for the current probability sample and the NVUM reference point. The probability sample data reflect Oregon residents using trails in Oregon. For expenditure, the NVUM data reflect national averages for in-state and out-of-state visitors in the hiking / biking activity category (Table 3 in White and Stynes 2010⁹). Both probability sample and NVUM expenditure data are dollars per party per trip, amounts spent within 50 miles (for the trail survey, within 50 miles of the trail location; for NVUM, within 50 miles of the on-site survey location). The NVUM data were inflation adjusted from 2007 to 2014.

The NVUM persons per party and nights per trip data reflect Oregon resident non-motorized trail users on national forests in Oregon.

Table 4.1. Expenditure and party size, probability sample and NVUM reference point				
	Local day trips	Local multi-day trips	Non-local day trips	Non-local multi-day trips
<i>Expenditure, \$ per party per trip</i>				
Probability sample, adjusted	21	163	48	379
NVUM, national, hiking / biking	24	171	57	539
<i>Persons per party</i>				
Probability sample	2.5	3.3	3.2	3.1
NVUM, Oregon resident non-motorized trail users	2.5	2.8	2.8	3.0
<i>Nights per trip</i>				
Probability sample		3.2		3.2
NVUM, Oregon resident non-motorized trail users		2.9		3.8

⁸ Briceno, T. and G. Schundler. 2015. Economic Analysis of Outdoor Recreation in Washington State. Earth Economics, Tacoma, WA. Available at:

<http://www.rco.wa.gov/documents/ORTF/EconomicAnalysisOutdoorRec.pdf>

⁹ White, E.M. and D.J. Stynes. 2010. Updated spending profiles for national forest recreation visitors by activity. Report under Joint Venture Agreement # 10-JV-11261955-018.

Table 4.2 presents expenditure by destination region and trip type. Expenditure per person per day is calculated by dividing total expenditure in each region by the number of user days in the region. Note that the sample size for some regions was small after removal of outliers, especially for multi-day trips, which are less common than day trips. Therefore, some regions were combined for calculation of per person per day expenditure. Specifically, expenditure averages for each of the regions in pairs 2 and 3, 4 and 6, and 7 and 10 reflect the average across both regions in each pair (e.g., expenditure for Region 2 and for Region 3 is the average of the two).

Activity days are from Table 2.1. Regional expenditure is the product of expenditure per person per day and activity days, with total by region reflecting the sum of values in the Day and Multi-day columns.

Region	Trail survey, expenditure, \$ per person per day		Activity days			Regional expenditure (millions of dollars)		
	Day	Multi-day	Total	Day	Multi-day	Total	Day	Multi-day
1	7	33	5,584,100	4,087,600	1,496,400	79	30	49
2	12	18	73,898,400	63,416,400	10,482,000	927	736	191
3	12	18	24,980,100	22,464,400	2,515,800	306	261	46
4	8	21	13,589,100	10,580,000	3,009,100	144	81	63
5	11	38	3,677,900	2,745,300	932,600	66	31	35
6	8	21	12,267,300	9,457,200	2,810,100	131	72	59
7	8	16	2,191,500	1,782,600	408,900	21	14	7
8	11	22	18,494,100	13,412,900	5,081,200	264	150	114
10	8	16	3,426,100	2,718,900	707,200	33	22	12
9 & 11	14	45	4,202,700	3,295,600	907,100	87	46	41
Total			162,311,300	133,960,900	28,350,400	2,058	1,442	616

Note that expenditure per day for multi-day trips is based on overall trip expenditure and trip length, including days that did not involve trail use. However, activity days and regional expenditure reflect days engaged in trail use.

Coastal Lane and Douglas counties are included in Region 5 in the expenditure per person per day figures in Table 4.2, but are included in the main part of each county (Region 4 for Lane, Region 6 for Douglas) in the activity day and economic contribution calculations in this section. This treatment reflects the SCORP regional grouping as well as the county-based availability of IMPLAN data for the contribution analysis.

Note that the above calculations only reflect the contribution of Oregon residents. Non-residents who engage in non-motorized trail use in Oregon contribute additional amounts to regional economies. The magnitude of this additional contribution is unknown, but can be estimated from external data sources, as described in Section 2.1. Non-resident trail use across the activities in this report likely fall within the 11% to 24% range, with the lower end used here to be conservative. Thus, the statewide contribution of non-resident trail users is estimated as an additional 12% of the estimates provided in Table 4.2 above and Table 4.5 below (11% / 89% = 12%).

The expenditure of non-motorized trail users by region was “run” through the IMPLAN input-output model to estimate “multiplier effects” of money flowing through the local economy. To illustrate, assume that a hiker, mountain biker, or equestrian eats lunch at Restaurant X in Region 8. In

order to provide the lunch, Restaurant X hires employees and purchases food that is then prepared for customers. Food is an input purchased from another business, and this process generates indirect effects. Wages paid to employees generate induced effects, because those employees spend a portion of their income in the local economy (perhaps by eating at Restaurant Y or shopping at Supermarket Z). Additional information on input-output and its application for this analysis is provided in Appendix 3.

Table 4.3 shows the expenditure breakdown across categories and trip type, in dollars per person per day. Expenditure categories were as follows:

- Hotel, motel, condo, cabin, B&B, or other lodging except camping
- Camping (RV, tent, etc.)
- Restaurants, bars, pubs
- Groceries
- Gas and oil
- Other transportation
- Park / forest entry, parking, or recreation use fees
- Recreation and entertainment, including guide fees
- Sporting goods
- Other expenses, such as souvenirs

For multi-day visitors, expenditure on hotels, which includes other non-camping lodging, appears low. However, it reflects an average across all multi-day trail users, including those that do not stay in hotels.

	Day	Multi-day
Hotel	0.00	5.12
Camping	0.00	1.93
Restaurants	2.63	4.47
Groceries	1.89	4.19
Gas	3.80	6.00
Other transportation	0.01	0.07
Recreation fees	0.55	0.66
Recreation + guiding	0.22	0.68
Sporting goods	0.83	0.84
Other	0.28	0.76
Total	10.22	24.71

Table 4.4 shows the results of the multiplier analysis, by region. The columns are as follows:

- Employment, full-time or part-time jobs supported.
- Labor income, which includes employee compensation (including wages, salaries, and benefits) and proprietary income (including self-employment income).
- Value added, which includes labor income, rents, profits, and indirect business taxes.
- Output, which is the dollar value of goods and services sold.

Note that much travel-related expenditure is on retail items, with only the retail margin included in this analysis. As a result, output may be lower than expenditure, despite the multiplier effect.

Table 4.4. Multiplier effects of non-motorized trail user trip expenditure, by region; employment in jobs, other measures in dollars				
Region	Employment	Labor Income	Value Added	Output
1	850	22,620,000	36,427,000	63,722,000
2	9,590	342,059,000	513,083,000	829,943,000
3	3,060	84,563,000	130,398,000	217,566,000
4	1,540	44,591,000	70,169,000	117,209,000
5	780	16,810,000	28,119,000	49,461,000
6	1,450	40,154,000	64,205,000	111,020,000
7	240	5,031,000	8,166,000	14,368,000
8	2,930	87,508,000	139,629,000	236,213,000
10	400	7,181,000	12,771,000	23,352,000
9 & 11	920	21,931,000	35,349,000	62,896,000
Total	21,730	672,448,000	1,038,317,000	1,725,751,000

Statewide, non-motorized trail use by Oregon residents supports 21,730 jobs, \$672 million in labor income, and \$1.0 billion in value added. Inclusion of out-of-state trail users is estimated to add another 12%. Table 4.5 shows the statewide total for in-state trail users from Table 4.4, together with estimated contribution from out-of-state trail users.

Table 4.5. Multiplier effects of non-motorized trail user trip expenditure, out-of-state trail users included; employment in jobs, other measures in dollars				
Origin	Employment	Labor Income	Value Added	Output
In-state	21,730	672,448,000	1,038,317,000	1,725,751,000
Out-of-state	2,610	80,694,000	124,598,000	207,090,000
Combined	24,340	753,142,000	1,162,915,000	1,932,841,000

Appendix 1. Results by region, probability sample

This appendix includes tables of selected results by region, sorted by values in the Total (statewide) column. Read down the column for each region. Table numbers match figure numbers in the body of the text. Because not all results shown in the figures are presented by region, table numbering is not continuous.

As a reminder, some regions have more observations than others, with larger numbers of observations leading to tighter confidence intervals (greater confidence that these sample values match the values for all trail users in the region). Regions 2 and 3 have the largest number of observations, while Region 4 has the smallest number of observations.

Table 3.11a. Priority for additional trails, <u>inside</u> one's community, percent rating Moderate or High Priority											
	1	2	3	4	5	6	7	8	9+11	10	Total
Walking / hiking	70	76	72	56	78	75	78	77	64	65	72
Biking, hard surface	62	59	49	76	56	54	58	53	53	49	55
Running / jogging	48	54	63	33	30	51	39	56	60	47	53
Walking / running, dog off-leash	51	49	39	21	45	57	18	61	53	42	44
Walking / running, dog on-leash	47	40	40	18	41	56	33	55	47	43	42
Biking, singletrack	45	47	30	22	46	25	30	45	35	35	36
Backpacking	35	36	28	16	42	40	49	33	32	35	34
Horseback riding	30	27	13	5	11	27	44	35	22	30	24
Other	24	37	10	0	36	27	11	8	29	17	20
Cross-country skiing, groomed	20	16	4	6	20	22	14	48	25	35	18
Snowshoeing	17	17	7	11	18	20	11	40	18	31	17
Skateboarding	35	10	14	4	28	23	12	10	14	16	15
Cross-country skiing, ungroomed	21	13	4	8	21	20	7	24	20	35	14
In-line / roller skating, roller skiing	25	7	12	4	10	8	7	15	12	18	12

Table 3.11b. Priority for additional trails, outside one's community, percent rating Moderate or High Priority

	1	2	3	4	5	6	7	8	9+11	10	Total
Walking / hiking	71	69	60	92	62	81	77	53	53	53	64
Biking, hard surface	40	48	49	76	37	54	71	34	38	37	48
Running / jogging	55	53	43	52	51	36	49	40	34	62	47
Walking / running, dog off-leash	41	47	38	14	45	59	23	53	46	30	41
Walking / running, dog on-leash	43	44	39	15	36	55	37	44	33	30	39
Biking, singletrack	42	37	46	26	20	36	26	43	37	23	37
Backpacking	39	43	33	43	45	15	36	43	27	44	37
Horseback riding	27	32	14	20	30	18	30	34	42	37	27
Other	26	23	20	35	21	28	38	36	21	30	26
Cross-country skiing, groomed	24	29	21	27	30	19	21	24	37	34	26
Snowshoeing	26	26	15	20	33	11	17	20	35	41	23
Skateboarding	12	40	20	0	36	21	8	9	10	20	19
Cross-country skiing, ungroomed	26	10	11	4	25	6	9	0	11	8	11
In-line / roller skating, roller skiing	16	4	6	4	13	6	4	14	14	8	8

	1	2	3	4	5	6	7	8	9+11	10	Total
Repair major trail damage	79	77	73	72	84	70	68	74	88	67	75
Protection of natural features	83	77	70	74	54	61	46	67	70	54	68
Routine upkeep of the trails themselves	72	60	63	63	82	65	67	62	73	64	65
Routine removal of litter / trash	65	49	51	64	63	46	38	52	62	52	52
Connecting trails into larger trail systems	43	46	49	75	41	43	42	36	42	44	45
More trail maps / trail information	44	35	51	51	34	42	45	39	41	38	43
More soft surface walking trails	33	39	42	53	38	37	33	43	27	28	38
More signs at trailhead	32	33	38	26	29	33	30	31	42	36	34
More signs along trails	35	33	36	21	23	26	33	30	34	27	32
More info about parking permits	36	34	26	43	33	32	27	25	36	31	30
More trails for runners / general exercise	29	38	27	36	27	11	29	45	38	15	30
More trails for off-leash dog recreationists	20	25	24	14	48	38	15	35	52	27	28
More restrooms	20	35	28	49	26	15	20	17	27	18	26
More trails for persons with disabilities	24	28	16	32	25	21	20	25	49	12	24
More hard-surf. trails for bikers generally	17	31	21	34	21	21	7	18	19	11	20
More hard surface walking trails	18	26	16	25	13	10	11	27	23	11	19
More natural-surf. trails for mountain bikers	14	24	17	37	30	13	13	17	18	14	19
More parking	14	23	15	21	9	21	12	20	18	14	17
More trails for horseback riders	9	13	6	1	11	19	26	18	13	13	12
More trails for cross-country skiers	3	14	9	24	4	3	6	25	13	18	12
More trails for snowshoers	4	14	9	23	11	8	8	15	14	12	11
More trails for in-line / roller skaters, roller skiers	1	2	1	0	5	1	2	5	1	5	2

Table 3.13. Information sources, percent reporting Somewhat Often or Often

	1	2	3	4	5	6	7	8	9+11	10	Total
Word of mouth (e.g., friends, family)	67	61	62	91	54	55	66	66	47	65	62
Agency websites	57	60	61	32	53	47	55	46	60	47	55
Printed maps, guidebooks, other books	51	53	53	37	52	67	53	53	44	59	53
Agency offices	39	36	19	28	39	34	37	25	41	49	32
Rec. at hotels or visitor info centers	33	26	13	15	42	22	17	18	49	15	22
Local trail groups + their websites	21	23	24	33	16	10	10	25	12	16	20
Rec. at outdoor / bike / sports stores	19	26	17	41	13	8	21	25	17	20	20
Other	16	28	18	0	10	28	3	34	22	6	19
Social media	13	12	14	2	7	13	16	23	30	10	15
Newspapers	13	5	8	8	14	8	8	12	7	10	9
Strava, MapMyRide, similar websites	5	11	9	2	5	3	4	5	6	1	7
TV (e.g., public service announcements)	4	3	2	2	2	12	10	7	7	3	5
Radio	6	4	1	0	11	3	4	2	11	3	4

Table 3.14. Issue importance, percent rating Somewhat or Very Important

	1	2	3	4	5	6	7	8	9+11	10	Total
Ability to experience the natural environment	77	78	77	76	65	83	53	74	71	64	73
More trail information on the Internet	52	53	69	68	27	70	40	67	56	43	58
More trail signs / markers	58	53	53	67	36	52	59	47	40	51	52
Improved trail maintenance	50	43	53	32	44	45	51	55	52	54	50
More trash cans at trailheads	63	44	46	48	55	62	50	42	55	38	48
Trail maps at more trailheads	54	44	55	51	35	50	49	42	42	39	48
More information on how to get to the trail	51	40	49	36	26	56	37	35	40	30	42
More restroom facilities at trailheads	41	42	38	60	43	37	47	34	37	30	39
More trails connecting towns / places	44	42	32	40	51	26	30	40	41	27	36
Improved sense of safety at trailheads	53	47	32	28	31	38	28	33	36	27	36
Improved sense of safety on trails	43	41	34	41	34	38	29	41	36	19	35
Nature information at more trailheads	52	35	39	19	32	41	26	25	26	37	35
More pet litter bags / dispensers	49	34	38	23	41	37	29	34	27	23	34
More availability of drinking water	31	30	33	48	29	17	43	24	24	27	30
Improved security of parking areas	44	39	29	28	27	27	26	29	26	22	30
More parking space at trailheads	31	30	30	45	16	33	31	26	25	20	29
More enforcement of trail rules	30	29	25	30	21	20	30	26	39	16	27
Improved trail surface quality	39	24	26	21	25	18	33	30	35	13	26
Reduced overcrowding	16	27	23	14	15	20	21	36	24	16	23
More availability of benches	27	17	16	24	30	21	31	10	20	11	19
Reduced user conflicts, limit to one activity	20	16	11	18	13	19	8	22	21	7	15

Appendix 2. Convenience sample results

This appendix presents selected results for the convenience sample alongside those from the probability sample, with figure numbering mirroring that in the main report (e.g., Figure A.1.7 is the convenience sample parallel to Figure 1.7).

The “by activity” figures reflect results for the probability and convenience samples combined, presented for a sub-set of favorite activities (see Section 3.1 for additional results across favorite activities).

Appendix 2.1. Expenditure and economic contribution by activity

This section includes estimates of the annual statewide expenditure and economic contribution for specific activities, notably walking, biking on unpaved trails, and horseback riding. There were insufficient observations to estimate expenditure for other activities. Readers interested in the economic contribution of various forms of bicycling can refer to a 2013 study conducted for Travel Oregon;¹⁰ that study used a different analytical approach, so results are not directly comparable to the results presented here.

The number of user occasions is based on the following categories shown in Table 2.1:

- Walking on local trails or paths and Walking / day hiking on non-local trails or paths
- Bicycling on unpaved trails
- Horseback riding

Expenditure reflects amount reported for “typical trips.” These trips may involve participation in multiple activities (Q21 and Q26). Therefore, favorite activity (Q5) was used to identify expenditure patterns across activities. The following favorite activities were analyzed:

- Walking / hiking (including beach and dog sub-categories)
- Biking, singletrack
- Horseback riding

There was a good match between favorite activities and the activity(ies) engaged in on typical day trips, with 96% of “favorite = walking” respondents engaging in walking during their typical day trip, 95% of “favorite=biking, singletrack” respondents engaging in mountain biking, and 97% of “favorite=horseback riding” respondents engaging in horseback riding.

The connection between favorite activity and activity(ies) engaged in on typical multi-day trips is less strong: 82% for walking, 78% for singletrack biking, and 82% for horseback riding. This limitation should be considered when interpreting results.

The analysis used the same methodology as in Section 4, but was linked to activities based on the above approach, and it included expenditure patterns from the probability and convenience samples combined. The convenience sample presumably reflects “engaged” trail users and thus is not fully representative of the Oregon population of trail users as a whole. However, inclusion of convenience sample data is needed to achieve sufficient sample size for this analysis by activity.

“Typical trip” characteristics were used to estimate expenditure patterns and amounts across all trips. Likewise, they were used to allocate total days (Q19) across local versus non-local trips. For

¹⁰ See http://www.deanrunyan.com/doc_library/bicycletravel.pdf

example, all trail days on day trips were allocated to local day trips for respondents who indicated that they traveled fewer than 60 miles for their typical day trip. This approach was used due to the difficulty of asking respondents to classify every trail day in the past year by day versus multi-day trips, region where trail use occurred, and whether the activity occurred within 60 miles of their home.

Table A.4.2a shows trail survey expenditure across activity and trip types, as well as the allocation of days across each trip type. Patterns of expenditure and allocation of days across trip types were similar across the three activities, with some exceptions. For example, non-local day trail users with biking on singletrack as their favorite activity tend to spend more than those with walking or horseback riding as their favorite activity. In addition, trail users with horseback riding as their favorite activity tend to spend more days on multi-day trips, relative to those with walking or singletrack biking as favorite activities.

	Expenditure, \$ per person per day				Percent of total trail days within activity			
	Local		Non-local		Local		Non-local	
	Day	Multi-day	Day	Multi-day	Day	Multi-day	Day	Multi-day
Walking / hiking	8	14	15	30	80%	4%	6%	10%
Biking, singletrack	10	17	24	29	76%	3%	8%	12%
Horseback riding	11	15	14	23	74%	7%	5%	14%

Table A.4.2b shows annual statewide activity days (from Table 2.1) across activity and trip types.

	Local		Non-local		Total
	Day	Multi-day	Day	Multi-day	
Walking / hiking	77,995,400	3,745,300	5,958,100	10,238,000	97,936,800
Biking, singletrack	4,715,300	188,100	517,400	766,200	6,187,100
Horseback riding	3,263,400	319,500	244,000	613,000	4,439,900

Table A.4.2c shows annual statewide expenditure across activity and trip types.

	Local		Non-local		Total
	Day	Multi-day	Day	Multi-day	
Walking / hiking	619	51	90	303	1,063
Biking, singletrack	45	3	12	22	83
Horseback riding	36	5	3	14	58

Table A.4.4 shows the annual economic contribution by activity and metric.

Activity	Employment	Labor Income	Value Added	Output
Walking / running	13,280	365,295,000	574,020,000	972,100,000
Biking, singletrack	1,090	30,850,000	47,937,000	82,169,000
Horseback riding	590	15,839,000	24,397,000	40,396,000

Appendix 2.2. General results

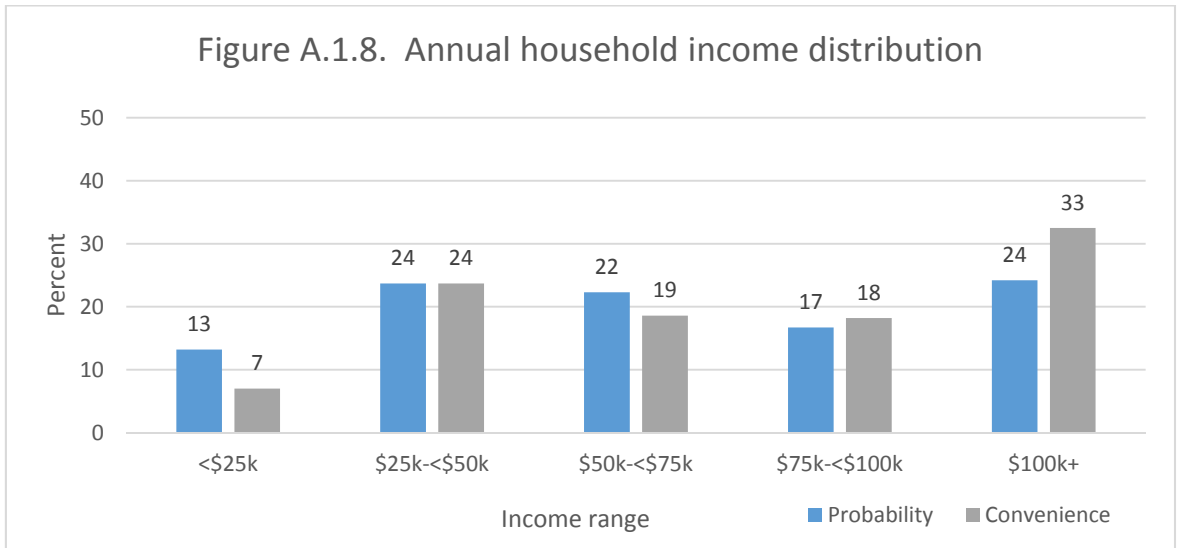
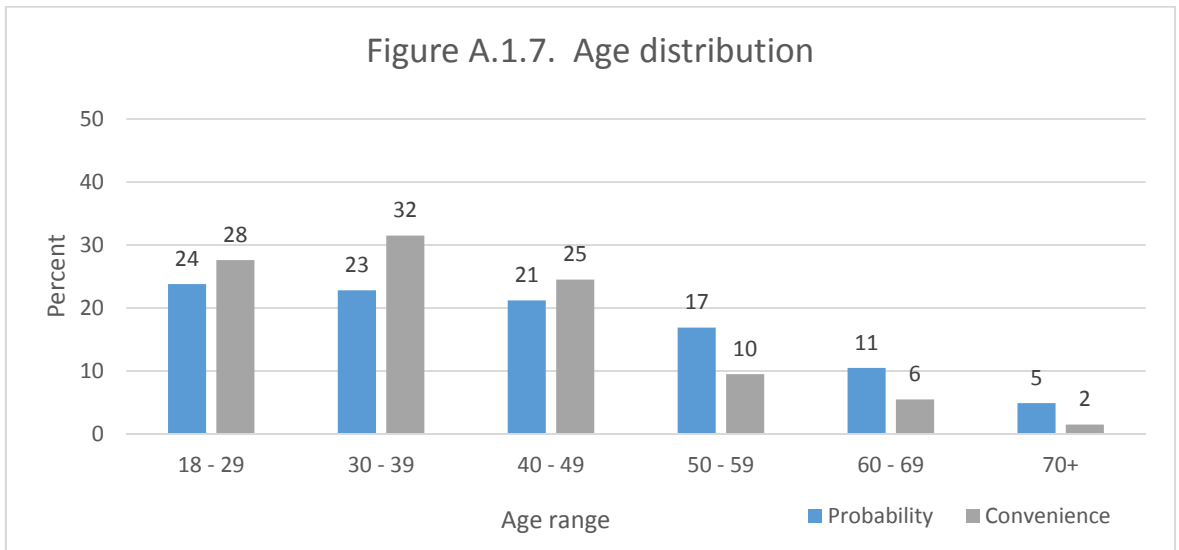


Figure A.1.9. Distance to nearest trail used

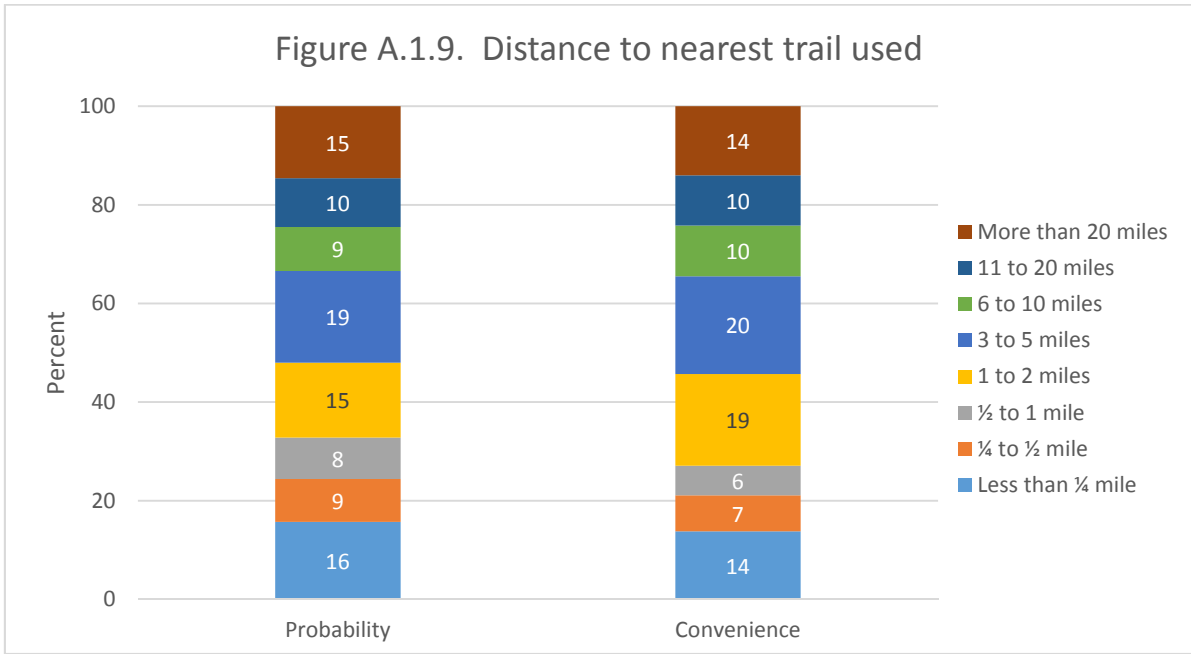


Figure A.2.1. Participation frequency by activity

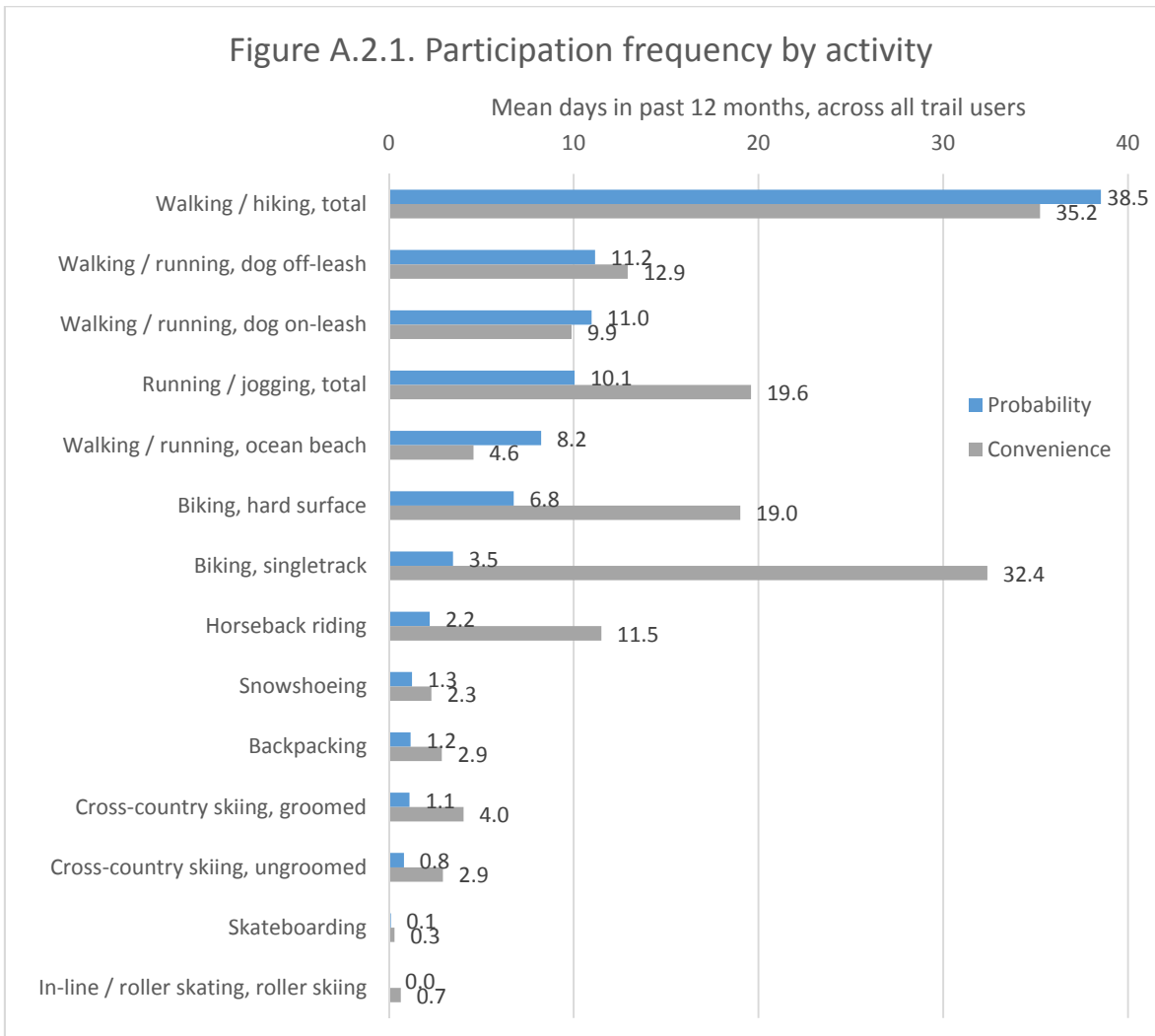


Figure A.2.2. Participation rate by activity

Percent of trail users participating at least once in past 12 months

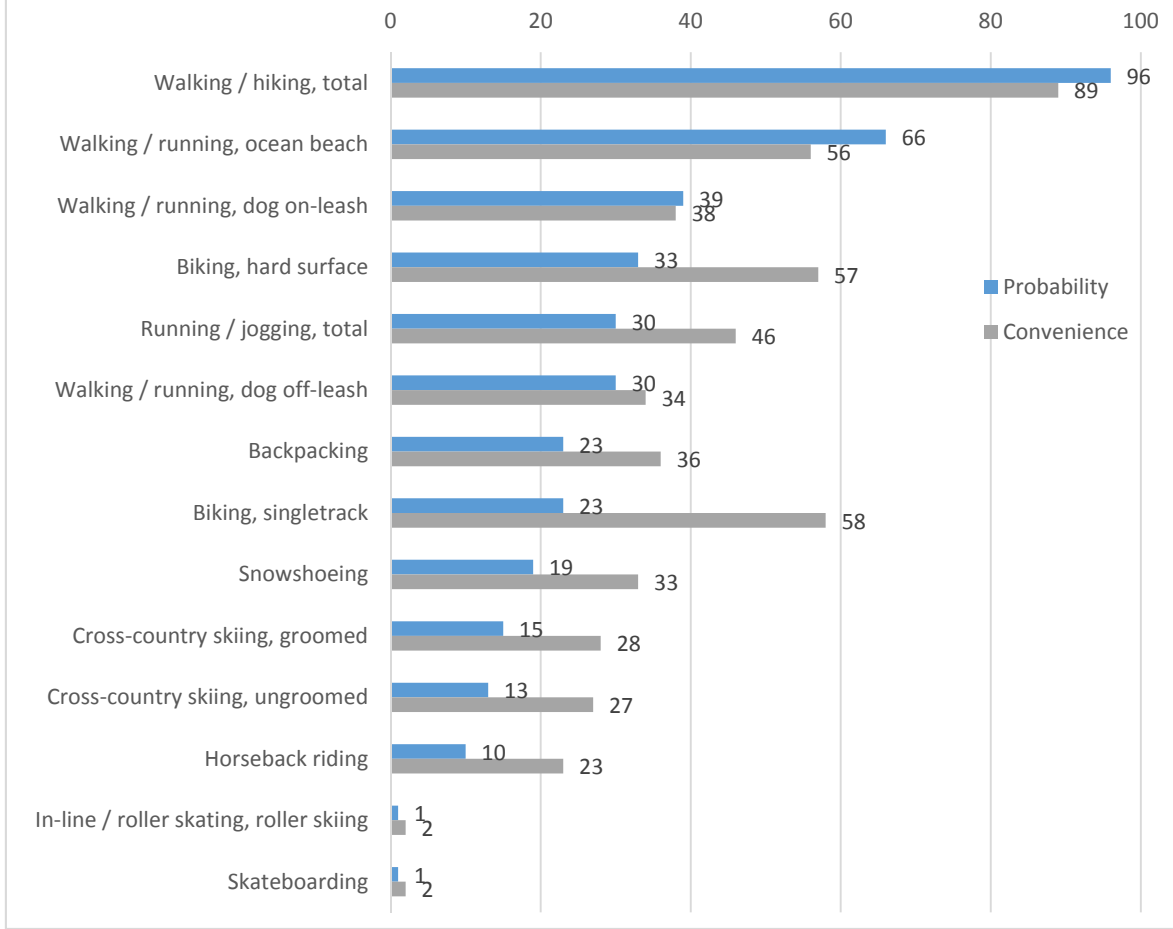


Figure A.3.1. Favorite trail activity

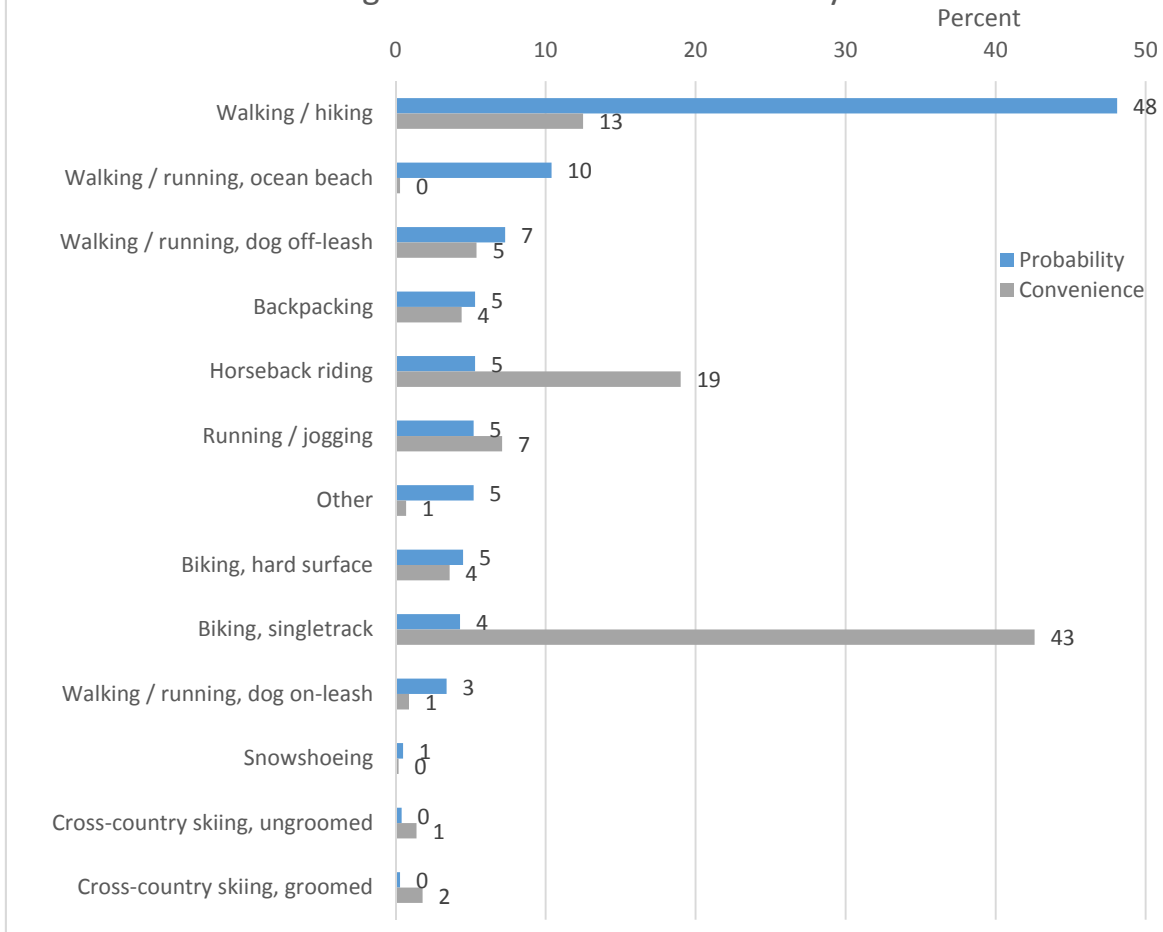


Figure A.3.2. Satisfaction with opportunities to engage in favorite activity

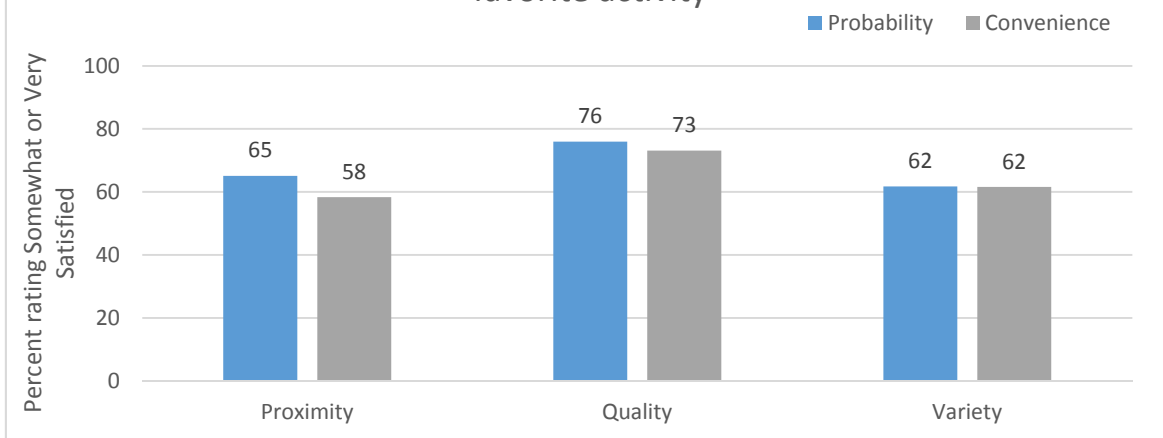


Figure A.3.3. Change in opportunities to engage in favorite activity in past 10 years

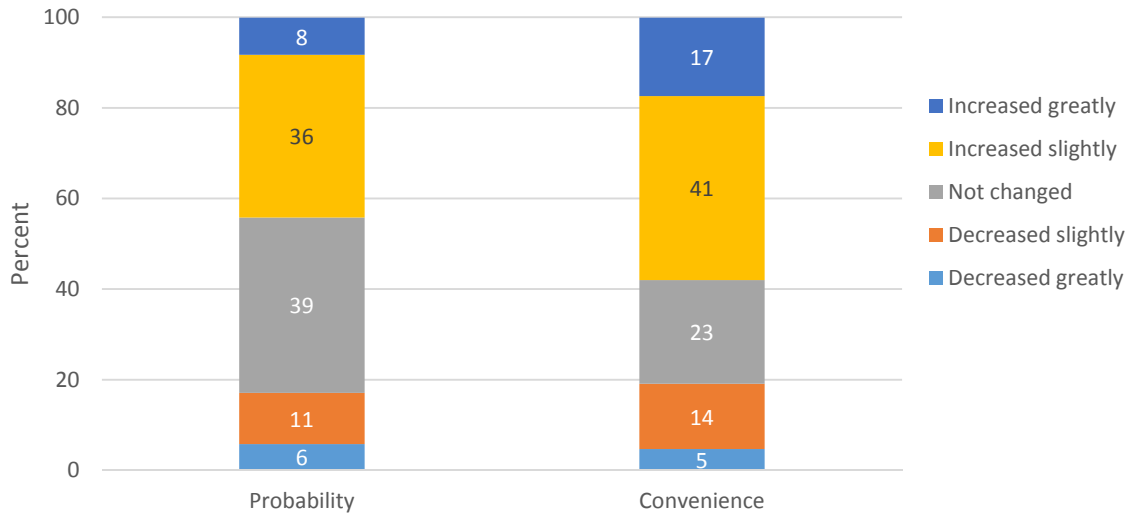
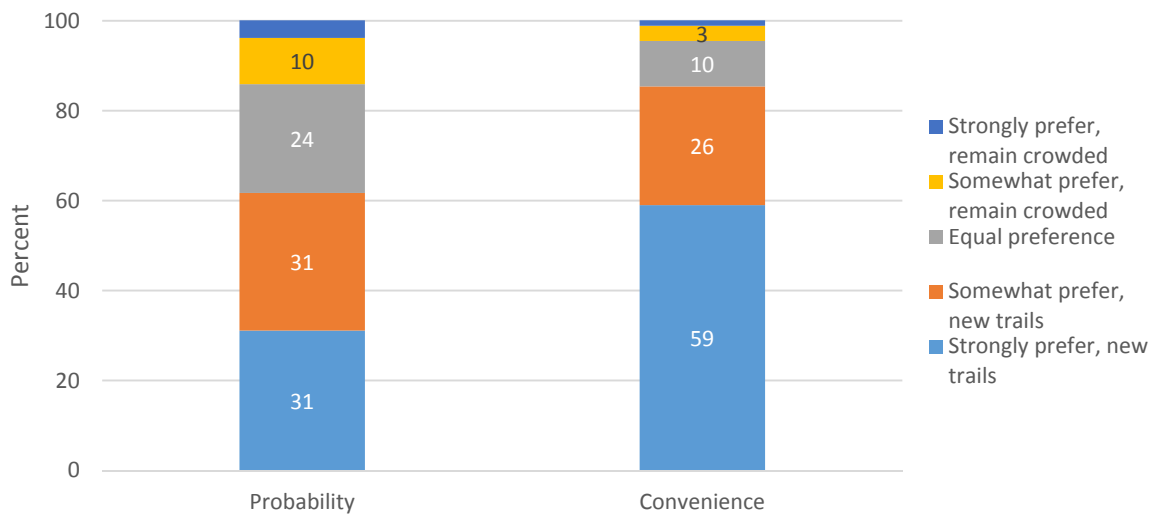


Figure A.3.8. Preferred response to crowded trails



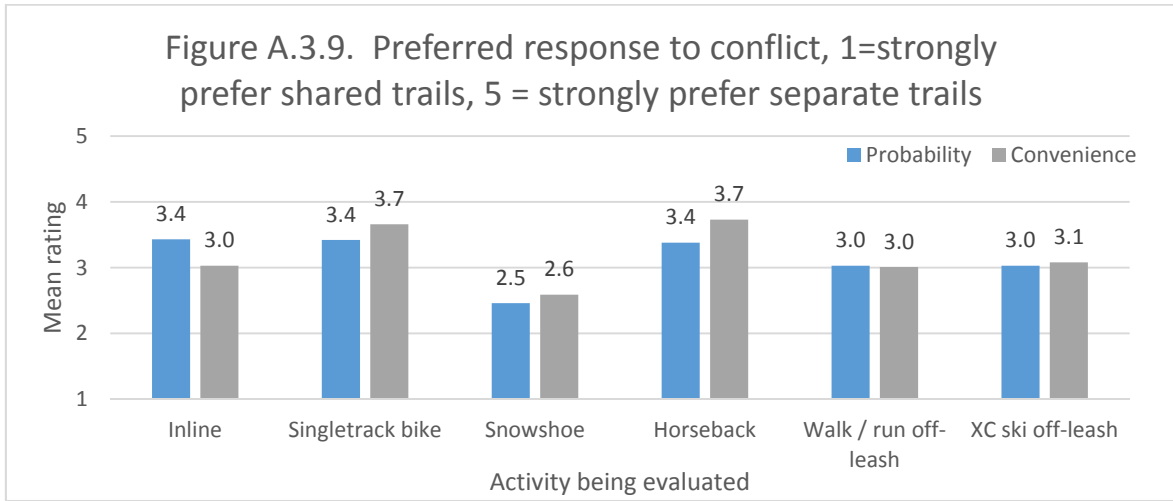


Figure A.3.11a. Priorities for types of additional trails (vertical axis) by favorite activity, inside community, probability and convenience samples combined

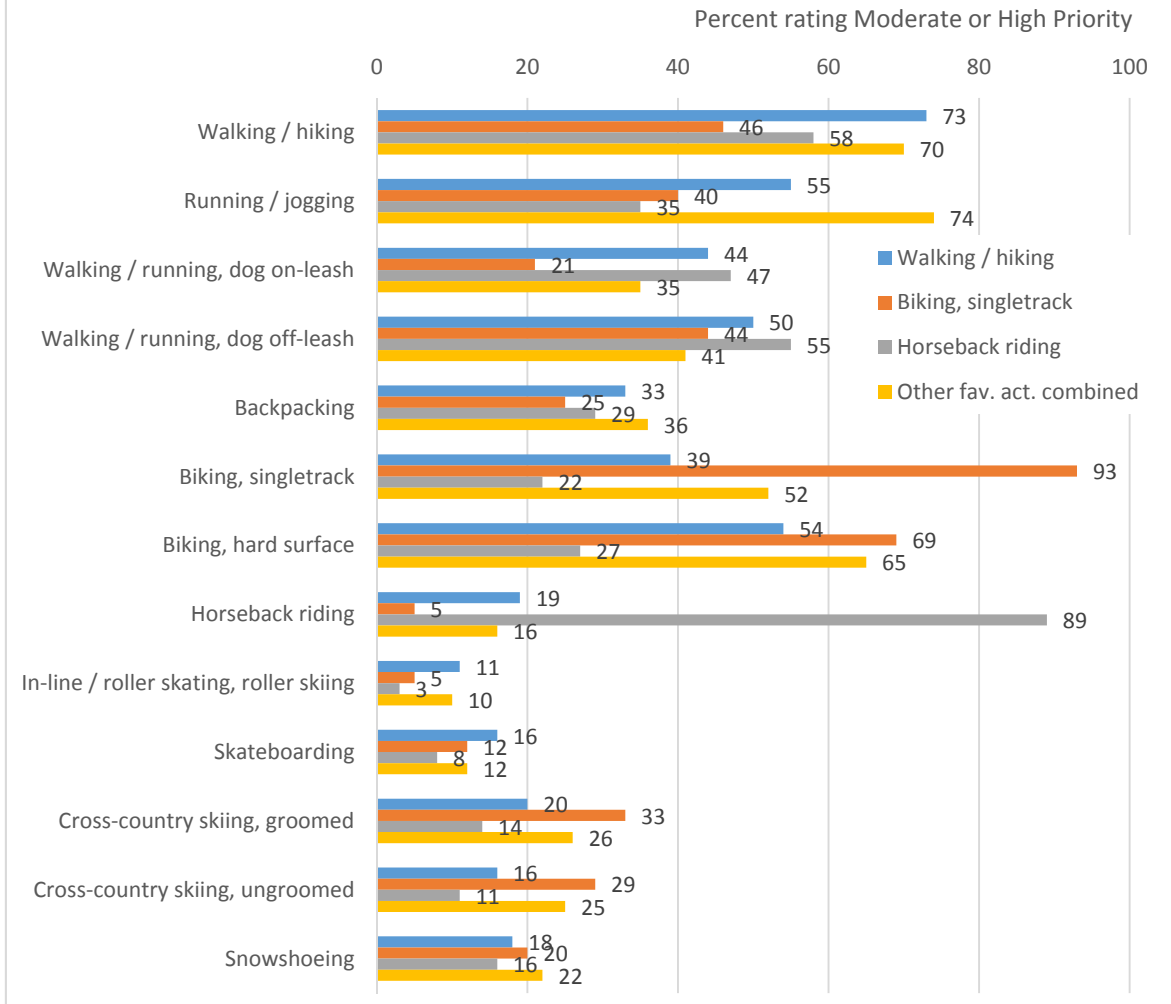


Figure A.3.11b. Priorities for types of additional trails (vertical axis) by favorite activity, outside community, probability and convenience samples combined

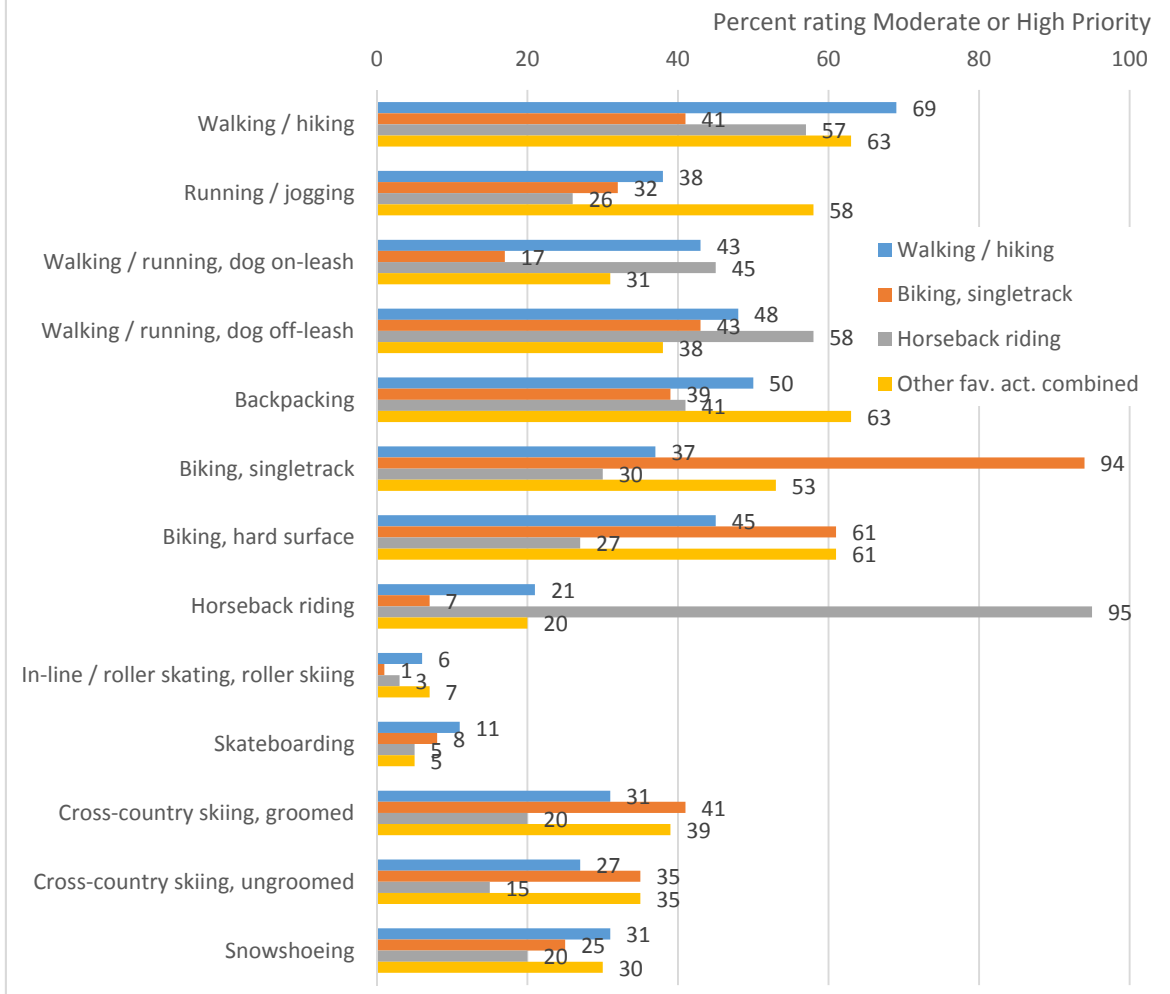


Figure A.3.12a. Trail and maintenance priorities

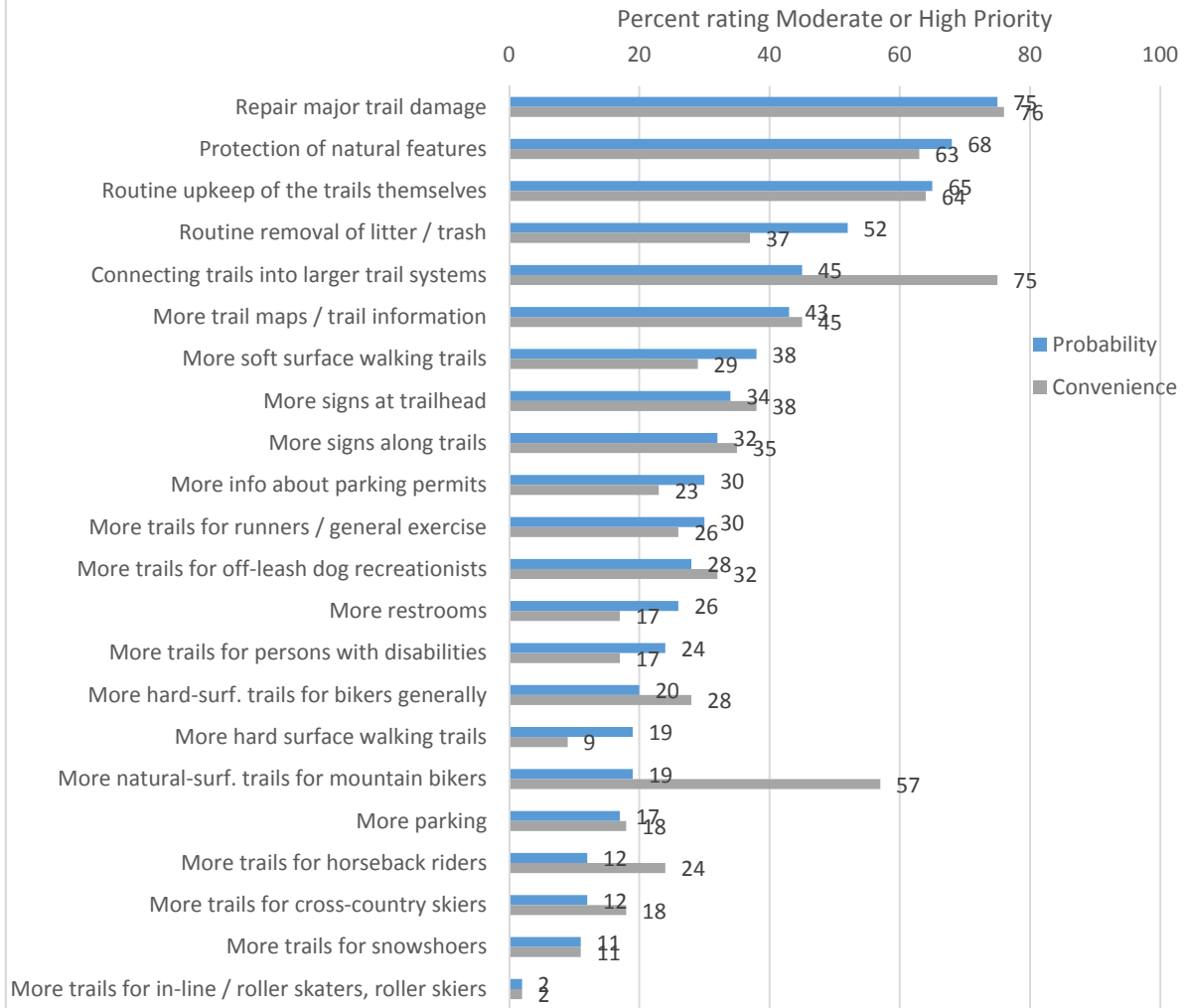


Figure A.3.12b. Trail and maintenance priorities by favorite activity, probability and convenience samples combined

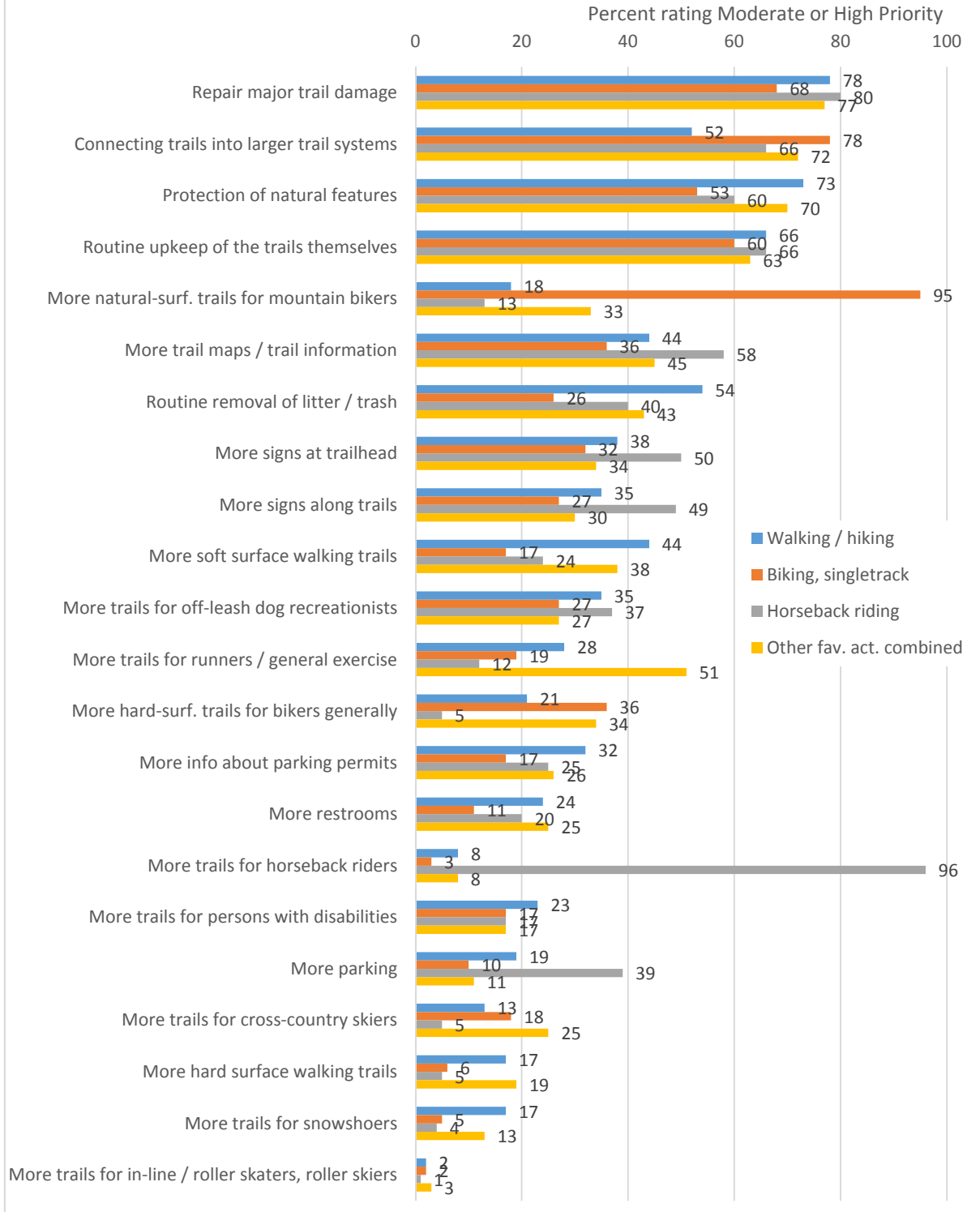


Figure A.3.13a. Information sources

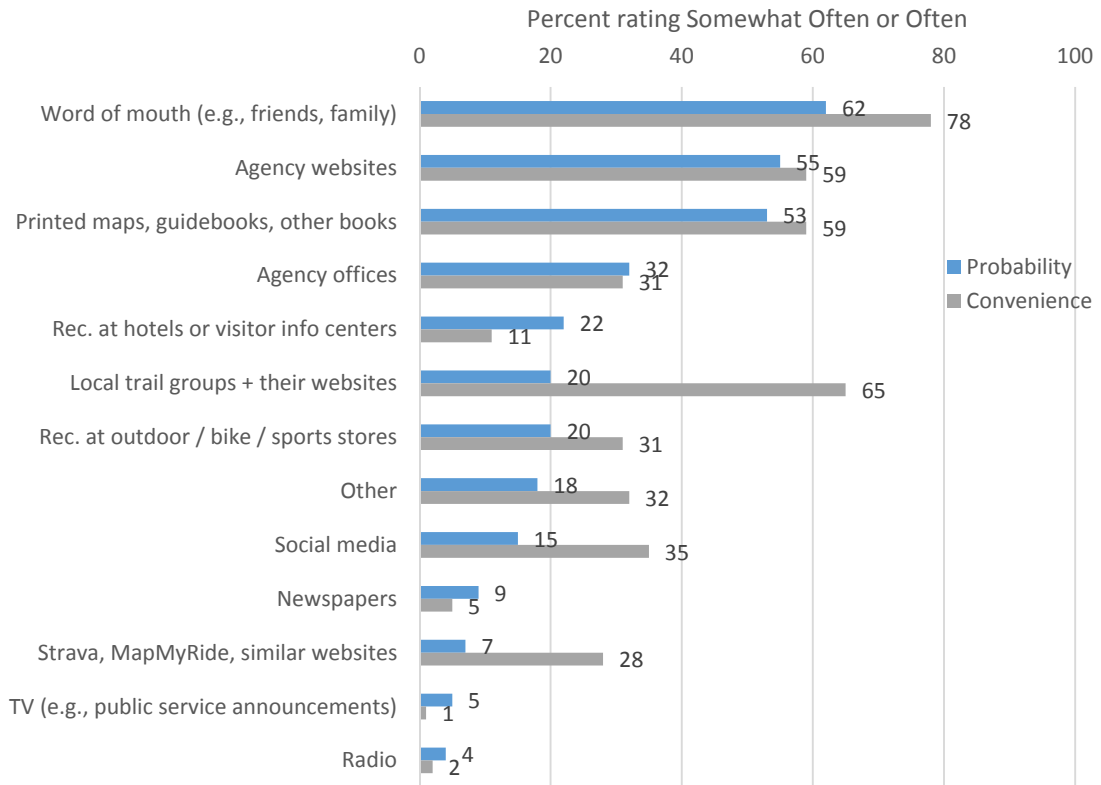


Figure A.3.13b. Information sources, by activity, probability and convenience samples combined

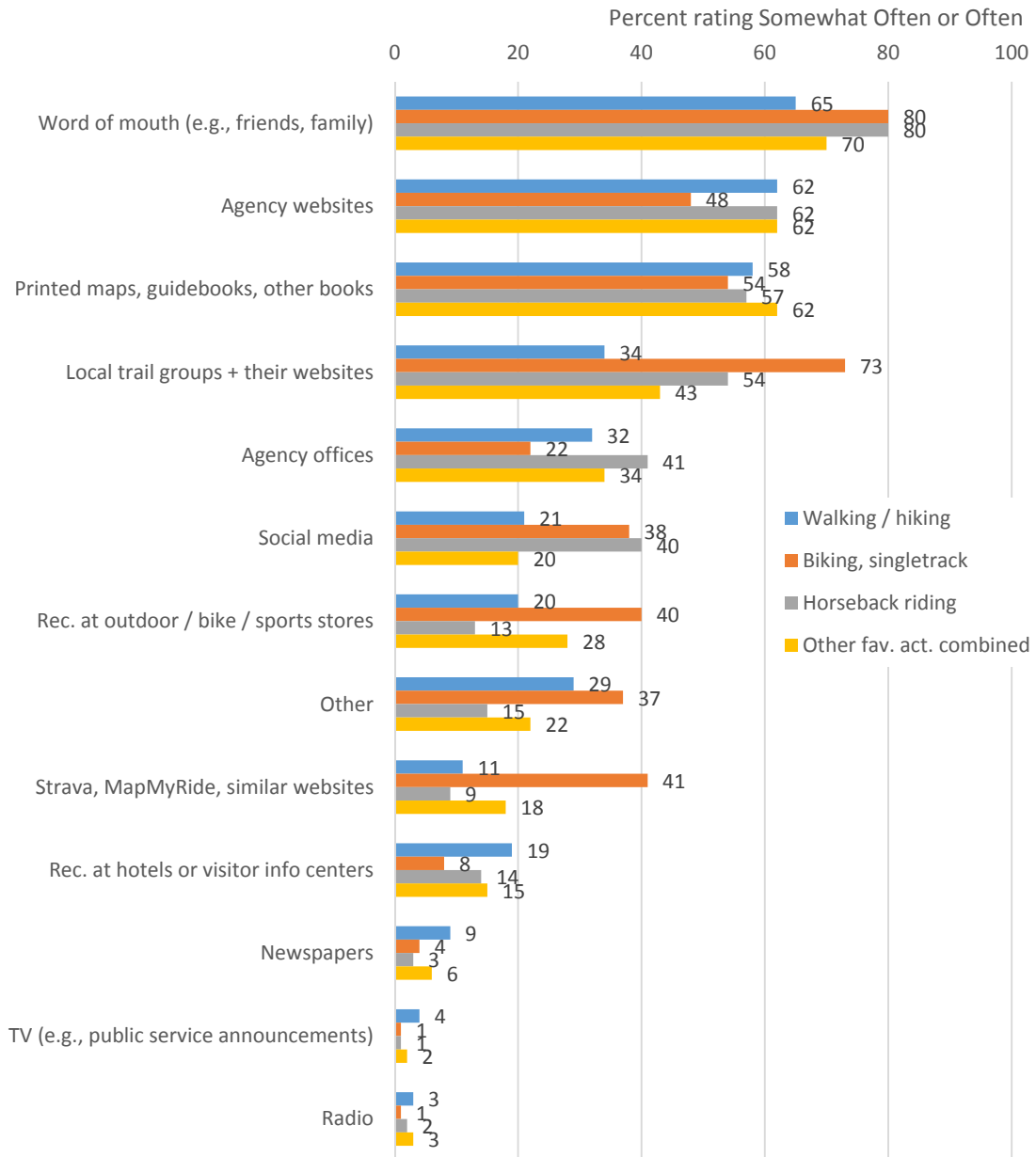


Figure A.3.14a. Issue importance

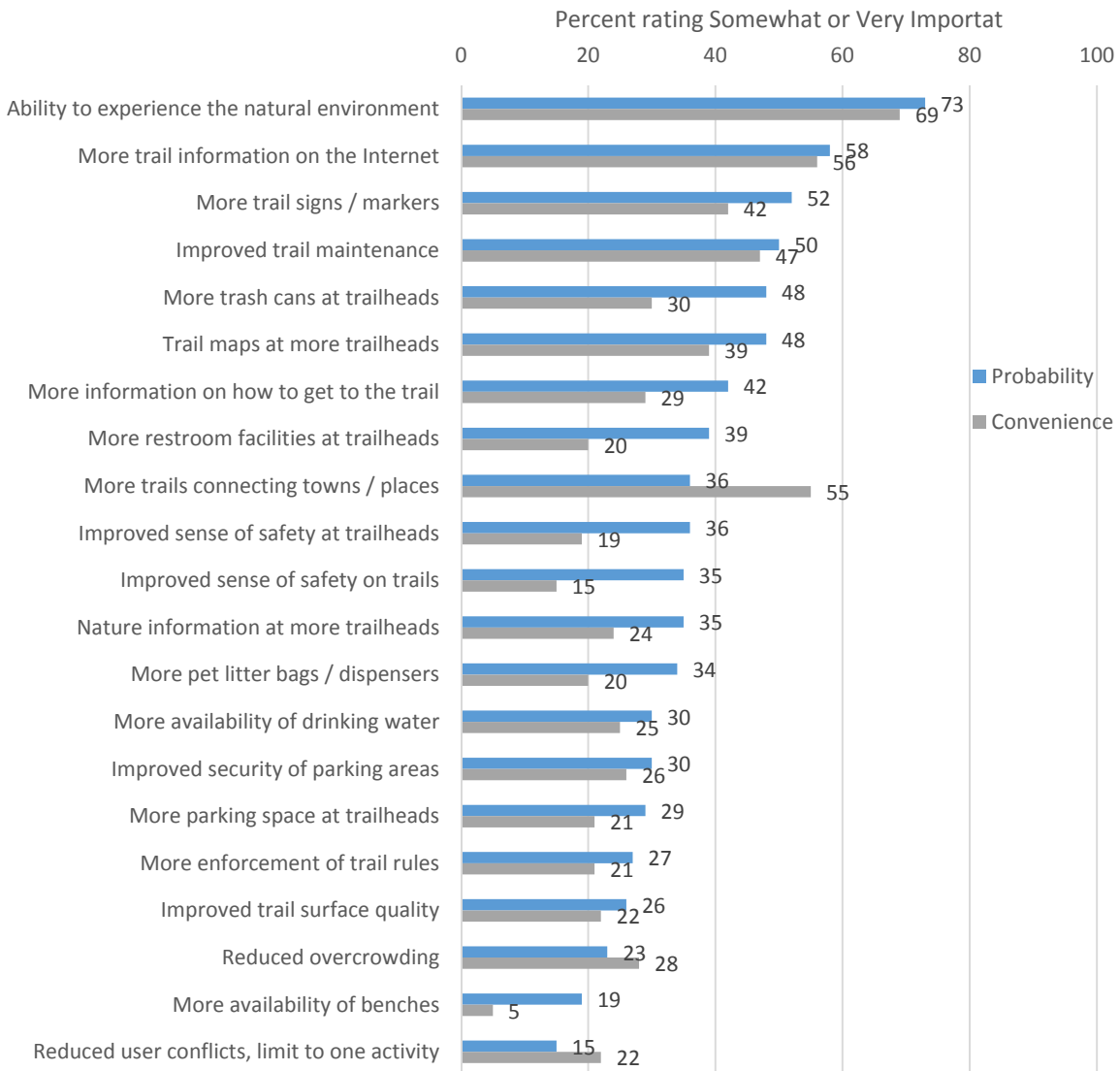
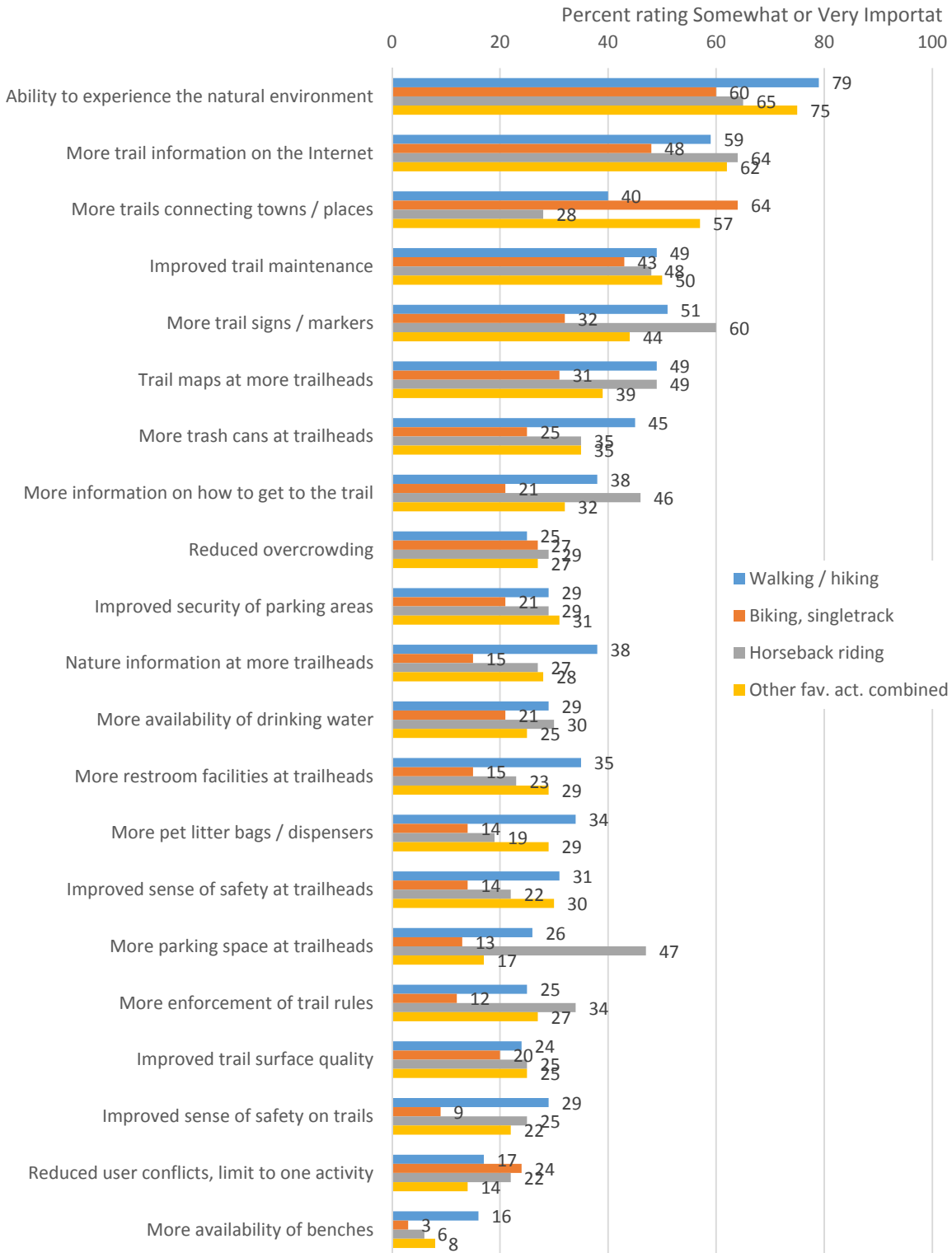


Figure A.3.14b. Issue importance, by activity, probability and convenience samples combined



Appendix 3. Calculation of economic contribution

The following steps were used in estimating the economic contribution of expenditure by non-motorized trail users.

1. An IMPLAN model was created for each region, with 2012 economic structure data. Because IMPLAN data is at the county level, coastal Lane and Douglas counties were included the main part of each county (Region 4 for Lane, Region 6 for Douglas).
2. IMPLAN default values were used and Type SAM multipliers were created. These multipliers treat households as endogenous and thus include induced effects.
3. An impact scenario was created by allocating visitor expenditure into relevant IMPLAN categories (bridging). Spending in the groceries, gas and oil, and miscellaneous categories was treated as retail expenditure and margined.
4. Impact estimates were generated. Impact results are shown in 2014 dollars.

Input-output analysis assumptions

IMPLAN is based on input-output (IO) analysis and is widely used to estimate the economic contribution of tourism, recreation, and other activities. The IO approach involves several assumptions. These assumptions generally are not met in their entirety, but IO (and IMPLAN in particular) provides a good balance between practicality and accuracy. That is particularly true in cases, such as the present, in which the impact being evaluated is a small proportion of the overall study area economy. In such cases, non-linearities can be reasonably approximated with the linear relationships inherent in IO. IO assumptions include the following.

1. All businesses within each sector produce a single, homogeneous product or service; the input procedures used in the production process are identical.
2. An increase of production will lead to purchase of inputs in the proportions shown in the technical coefficients matrix. In technical terms, the production function is linear and homogeneous. This assumption restricts economies of scale; IO analysis assumes a business always will use the same proportion of inputs regardless of how much it grows.
3. When households are included in the analysis (as is done for this analysis), their spending patterns (consumption functions) also are assumed to be linear and homogeneous.
4. The structure of the economy will not change. Many input-output models, including the one used here, are static in nature. They are based on data from a single year, in this case 2012. Dramatic structural changes in the economy would mean the relationship between expenditure and impact would be different in future years.
5. When IO is used to estimate the effect of changes in final demand (as in the present case), there must be unemployed resources available to be brought into the sector as inputs.

Appendix 4. Survey instrument (mail version)

The mail questionnaire is reproduced below. The online version included substantially the same content.

What are your priorities for Oregon non-motorized trails?



Please Complete This Survey and Return It As Soon As Possible

Your Input Helps Inform Future Trail Opportunities

Thank You for Your Participation



This research survey, and each question in it, is voluntary. Your responses will be confidential – they will only be reported as part of larger groups. We do not anticipate any direct risks or benefits in completing the survey. The survey takes approximately 15 to 30 minutes to complete, depending on your recreation patterns.

If you have any questions about the survey, please contact Principal Investigator Kreg Lindberg at 541-322-3126 or by e-mail at kreg.lindberg@osucascades.edu. If you have any questions about your rights as a survey participant, please contact the OSU Institutional Review Board (IRB) Human Protections Administrator at 541-737-8008 or by e-mail at IRB@oregonstate.edu

v2

For this survey, trails are linear routes (not including roads and sidewalks) used for recreation, commuting, and other purposes. They can be narrow or wide, and of any surface, such as dirt, asphalt, wood, woodchip, gravel, or beach / sand.

This survey focuses on your non-motorized use of trails anywhere in Oregon, including those near your house and those further away. Please answer with respect to your use of trails during the past 12 months – October 2013 through September 2014.

If you did not recreate on any trails in Oregon during the past 12 months, please tick this box , skip the remaining questions, and return the survey in the postage-paid envelope.

1. For each of the following non-motorized activities, please write in the number of days you participated in the activity on trails in Oregon during the past 12 months. Any portion of a day counts as a full day. Examples:

If you walked on trails in Oregon once per week, you would write 52 days.

If you mountain biked on trails in Oregon twice per month, you would write 24 days.

For cross-country skiing and snowshoeing only: The 2013-2014 season had unusually low snow. For this survey, please answer with respect to your activities during the "average" season over the past five seasons.

Activity	Days participated <u>on trails</u> in Oregon during the past 12 months
1. Walking (includes hiking) – on trails, <u>not</u> on sidewalks or roads	
2. Running / jogging – on trails, <u>not</u> on sidewalks or roads	
3. Of all walking + running days combined, days on an <u>ocean beach</u>	
4. Of all walking + running days combined, days with a dog <u>on-leash</u>	
5. Of all walking + running days combined, days with a dog <u>off-leash</u>	
6. Backpacking (involves overnight along / near trail)	
7. Biking on singletrack trails (narrow natural / soft surface)	
8. Biking on hard surface trails (wider dirt, gravel, or paved routes with little or no automobile use – but <u>not</u> sidewalks)	
9. Horseback riding on trails	
10. In-line skating (roller blading), roller skating, or roller skiing – on trails, <u>not</u> on sidewalks or roads	
11. Skateboarding – on trails, <u>not</u> on sidewalks, on roads, or at skateparks	
12. Cross-country skiing on <u>groomed</u> trails (average days over past five seasons)	
13. Cross-country skiing on <u>ungroomed</u> trails (average days over past five seasons)	
14. Snowshoeing (average days over past five seasons)	
15. Other (please describe)	

2. Do you have need for a mobility assistive device when using trails (wheelchair, walker, cane, etc.)?

- Yes – please write in the type of device: _____
- No

3. Do you ever use recreation-oriented trails to walk or bicycle to work? Please tick one box.

- Yes
- No

4. How long do you engage in the activity, on average for each day you participate on trails in Oregon? For each of the activities you engaged in during the past 12 months, please write hours to the nearest half hour (e.g., ½ hour, 1 hour, 1½ hours, 2 hours).

Then circle to indicate whether your activity level typically is:

- L is for **low** (for example, walking or bicycling at a slow pace); or
- M is for **medium** (for example, walking or bicycling at a moderate pace); or
- V is for **vigorous** (for example, jogging, walking, or bicycling at a vigorous pace, breaking a sweat, heart beating rapidly).

Activity	Average time spent per day <u>on trails</u> when participating	Activity level <u>on trails</u> typically is (circle one)
1. Walking (includes hiking)	_____ hour(s)	L M V
2. Running / jogging	_____ hour(s)	L M V
3. Walking + running specifically on an <u>ocean beach</u>	_____ hour(s)	L M V
4. Walking + running specifically with a dog <u>on</u> -leash	_____ hour(s)	L M V
5. Walking + running specifically with a dog <u>off</u> -leash	_____ hour(s)	L M V
6. Backpacking (involves overnight along / near trail)	_____ hour(s)	L M V
7. Biking on singletrack trails (narrow natural / soft surface)	_____ hour(s)	L M V
8. Biking on hard surface trails (wider dirt, gravel, or paved routes with little or no automobile use)	_____ hour(s)	L M V
9. Horseback riding	_____ hour(s)	L M V
10. In-line skating (roller blading), roller skating, or roller skiing	_____ hour(s)	L M V
11. Skateboarding	_____ hour(s)	L M V
12. Cross-country skiing on <u>groomed</u> trails	_____ hour(s)	L M V
13. Cross-country skiing on <u>ungroomed</u> trails	_____ hour(s)	L M V
14. Snowshoeing	_____ hour(s)	L M V
15. Other (please describe)	_____ hour(s)	L M V

5. Of the trail activities listed in Question 4 above, which one is your favorite? Please write the number (listed in the table above) or the name of your favorite activity.

6. How dissatisfied or satisfied are you with opportunities to engage in your favorite trail activity in Oregon with respect to each of the following characteristics? Circle one number for each.

	Very dissatisfied				Very satisfied
Proximity – you can access trails for this activity near your home	1	2	3	4	5
Quality – the trails are well-suited to the experience you seek	1	2	3	4	5
Variety – you can access multiple trails	1	2	3	4	5

7. In the past 10 years, would you say opportunities to engage in your favorite trail activity in Oregon have decreased, not changed (stayed the same), or increased? Please tick one box.

- Decreased greatly Decreased slightly Not changed Increased slightly Increased greatly

8. For your favorite trail activity, what is your preferred trail surface? Please tick one box.

- Dirt Boardwalk, wood, plastic, or rubber Asphalt or concrete
 Grass Gravel or rock Snow
 Woodchip Other (please describe) _____

9. For your favorite trail activity, what is your preferred trail length? Please tick one box.

- Less than 1 mile 3 to 5 miles 11 to 15 miles
 1 to 2 miles 6 to 10 miles More than 15 miles

10. For engaging in your favorite trail activity in your community (within your town or city) what is your preferred trail difficulty? Please tick one box.

- Easy, level or flat Challenging, with steep or uneven terrain
 Moderate, varied, with some ups and downs Other (please describe) _____

11. For engaging in your favorite trail activity outside your community (e.g., state parks, national forests, and other public lands) what is your preferred trail difficulty? Please tick one box.

- Easy, level or flat Challenging, with steep or uneven terrain
 Moderate, varied, with some ups and downs Other (please describe) _____

12. Which activities would you prioritize with respect to creation of new trail opportunities in Oregon in the next 10 years? These would be additional opportunities that do not detract from current opportunities. This includes trails for recreation, commuting, and other purposes.

For each activity, please circle one number to reflect your priority – separately for additional trail opportunities in your community and outside your community. If a priority is not selected for an activity, we'll assume additional trails for that activity are not a priority for you.

Example: If you feel that more walking trails is a high priority in your community, but only a slight priority outside your community, you would circle 4 in the first column and 2 in the second column.

Activity <u>on trails</u> in Oregon	Priority for additional trails in Oregon 1 = not a priority, 2 = slight priority, 3 = moderate priority, 4 = high priority							
	In your community				Outside your community			
Walking (includes hiking)	1	2	3	4	1	2	3	4
Running / jogging	1	2	3	4	1	2	3	4
Walking + running specifically with a dog <u>on</u> -leash	1	2	3	4	1	2	3	4
Walking + running specifically with a dog <u>off</u> -leash	1	2	3	4	1	2	3	4
Backpacking (involves overnight along / near trail)	1	2	3	4	1	2	3	4
Biking on singletrack trails (narrow natural / soft surface)	1	2	3	4	1	2	3	4
Biking on hard surface trails (wider dirt, gravel, or paved routes with little or no automobile use)	1	2	3	4	1	2	3	4
Horseback riding	1	2	3	4	1	2	3	4
In-line skating (roller blading), roller skating, or roller skiing	1	2	3	4	1	2	3	4
Skateboarding	1	2	3	4	1	2	3	4
Cross-country skiing on <u>groomed</u> trails	1	2	3	4	1	2	3	4
Cross-country skiing on <u>ungroomed</u> trails	1	2	3	4	1	2	3	4
Snowshoeing	1	2	3	4	1	2	3	4
Other (please describe)	1	2	3	4	1	2	3	4

13. If trails are crowded, recreation providers may need to choose between the following:

- Create new trails to reduce crowding, which may involve additional financial and environmental costs; or
- Let existing trails remain crowded, which may diminish user experiences.

Please tick one box to indicate your preferred response when trails are crowded.

Strongly prefer creating new trails

Somewhat prefer creating new trails

Equal preference

Somewhat prefer letting existing trails remain crowded

Strongly prefer letting existing trails remain crowded

14. Some activities, such as walking and running, often co-exist easily on a given trail. Other activities may co-exist less easily with summer trail uses such as walking or winter trail uses such as cross-country skiing.

If recreation providers are to meet community needs for diverse trail opportunities, they may need to choose between providing the following:

- Separate trails. This may lead to fewer trails for each activity and / or to the additional financial and environmental costs of creating new trails; or
- Shared trails. This may involve user education and enforcement of appropriate behavior, but co-existence challenges may persist.

With respect to each of the following activities do you prefer separate or shared trails? Please circle one number for each activity.

	Strongly prefer <u>shared</u> trails			Strongly prefer <u>separate</u> trails	
In-line skating, roller skating, roller skiing, or skateboarding	1	2	3	4	5
Biking on singletrack trails (narrow natural / soft surface)	1	2	3	4	5
Snowshoeing	1	2	3	4	5
Horseback riding	1	2	3	4	5
Walking or running with a dog off-leash	1	2	3	4	5
Cross-country skiing with a dog off-leash	1	2	3	4	5

15. Managers may widen trails or designate them as one-way to reduce crowding and conflict across activities.

- Trail widening makes it easier to pass other trail users, but may negatively affect those preferring narrow "singletrack" trails.
- One-way designation reduces interaction between trail users, but may reduce options by preventing "out and back" or "reverse loop" trail use.

Do you oppose or support each of these options for reducing crowding and conflict? Circle one number for each.

Option	Strongly oppose			Strongly support	
Trail widening	1	2	3	4	5
One-way designation	1	2	3	4	5

16. Now please share your priorities for trails in Oregon over the next 10 years, keeping in mind limited funding and land. For each action, circle one number to indicate how high a priority that action is for you.

Action	Low priority need			High priority need	
	1	2	3	4	5
Routine removal of litter / trash	1	2	3	4	5
Routine upkeep of the trails themselves	1	2	3	4	5
Repair major trail damage	1	2	3	4	5
Connecting trails into larger trail systems	1	2	3	4	5
Protection of natural features, including wildlife habitat	1	2	3	4	5
More restrooms	1	2	3	4	5
More parking	1	2	3	4	5
More signs at trailhead	1	2	3	4	5
More signs along trails	1	2	3	4	5
More trail maps / trail information	1	2	3	4	5
More information about required parking permits	1	2	3	4	5
More soft surface walking trails	1	2	3	4	5
More hard surface walking trails	1	2	3	4	5
More trails for persons with disabilities	1	2	3	4	5
More natural-surface trails for mountain bikers	1	2	3	4	5
More hard-surface trails for bikers generally	1	2	3	4	5
More trails for runners / general exercise	1	2	3	4	5
More trails for in-line skaters (roller bladers), roller skaters, or roller skiers	1	2	3	4	5
More trails for horseback riders	1	2	3	4	5
More trails for off-leash dog recreationists	1	2	3	4	5
More trails for cross-country skiers	1	2	3	4	5
More trails for snowshoers	1	2	3	4	5

17. When you seek information about trails in or outside your community, how often do you obtain information from each of the following sources? Please circle one number for each source.

Information source	Frequency				
	Never	Sometimes	Often		
Word of mouth (e.g., friends, family)	1	2	3	4	5
Social media (e.g., Facebook, Twitter, Instagram)	1	2	3	4	5
Local trail groups, including their websites	1	2	3	4	5
Strava, MapMyRide, and similar websites	1	2	3	4	5
Agency websites (e.g., local park and recreation departments)	1	2	3	4	5
Agency offices (e.g., local park and recreation departments)	1	2	3	4	5
Brochures or staff recommendations at hotels / motels or tourist / visitor information centers	1	2	3	4	5
Brochures or staff recommendations at outdoor / bike / sporting goods stores	1	2	3	4	5
TV (e.g., public service announcements)	1	2	3	4	5
Newspapers	1	2	3	4	5
Radio	1	2	3	4	5
Printed maps, guidebooks, and other travel or trail-related books	1	2	3	4	5
Other (please describe)	1	2	3	4	5

18. There are 11 regions in Oregon shown on the enclosed map. Please indicate in which of the 11 regions you lived during the past 12 months (if you moved across regions, indicate the region where you lived the most days during that period). Write in one number between 1 and 11.

In the past 12 months, I lived in region _____

19. Below, please write the number of days you engaged in trail activities during the past 12 months in each of the regions (1 through 11) shown on the map. Any portion of a day counts as a full day.

In the first column, write the number of trail "day trips" you took in the region, such as using trails in a nearby park after work or on weekend mornings.

In the second column, write the number of days you used a trail while on overnight trips away from home, regardless of whether the reason for the trip was trail-related.

Assume you live in the Example region and walked and biked on trails near home for 24 days in the past twelve months. You also took a week-long trip in the region to visit family, and hiked on trails 3 days during that week. In the Example row, you would write 24 in the first column and 3 in the second column.

Region	Day trips	Days using trails away from home – <u>involved</u> overnight stays
Example	24	3

Please indicate your days using trails in the rows and columns below

Region	Day trips	Days using trails away from home – <u>involved</u> overnight stays
Region 1		
Region 2		
Region 3		
Region 4		
Region 5		
Region 6		
Region 7		
Region 8		
Region 9		
Region 10		
Region 11		

Think about your "typical" day trip. This would be to the one location where you most often engaged in trail activity during the past 12 months, when this did not involve an overnight stay away from home – for example, after work or on weekend mornings.

Locations are where you use trails, such as a nearby park with trails or a national forest trailhead.

If you did not engage in trail activity on day trips during the past 12 months, please skip to Question 25.

20. In which of the 11 Oregon regions was the location of your typical day trip to engage in trail activity? It may be the same as the region you live in. Write in one number.

My typical day trip was in region _____ (write one number between 1 and 11)

21. What trail activity did you engage in during your typical day trip? Write in the activity (or activities).

During my typical day trip, I engaged in _____

22. How far away was the location for your typical day trip, in one-way miles from your home? Tick one box.

- Within 30 driving miles 31 to 60 driving miles More than 60 driving miles

23. How many people usually were in your travel party for your typical day trip? This includes everyone who traveled in the same vehicle with you to the trail location. Write in the number of people, including yourself.

If you traveled to the trail location without using a vehicle (for example, walking or biking), your travel party is everyone from your household, including yourself, who traveled to the trail location together.

_____ person(s)

24. On this typical day trip, how much money did you and other members of your party combined spend within 50 miles of the location? If the typical trip is a short trip near your home, it is possible that you spent little or no money. Write in the amount for each item, rounding off to the nearest dollar.

Item	Amount spent by everyone in travel party within 50 miles of the location
Hotel, motel, condo, cabin, B&B, or other lodging <u>except camping</u>	\$
Camping (RV, tent, etc.)	\$
Restaurants, bars, pubs	\$
Groceries	\$
Gas and oil	\$
Other transportation	\$
Park / forest entry, parking, or recreation use fees	\$
Recreation and entertainment, including guide fees	\$
Sporting goods	\$
Other expenses, such as souvenirs	\$
Total	\$

- I don't recall my trip spending
 I don't want to report my trip spending

Now please tell us more about your "typical" multi-day trip. This would be to the one location where you most often engaged in trail activity during the past 12 months, while on overnight trips away from home – even if you only used trails one day (or part of a day) during the trip.

If you did not engage in trail activity on multi-day trips during the past 12 months, please skip to Question 31.

25. In which of the 11 Oregon regions was the location of your typical multi-day trip that included engaging in trail activity? It may be the same as the region you live in. Write in one number.

My typical multi-day trip was in region _____ (write one number between 1 and 11)

26. What trail activity did you engage in during your typical multi-day trip? Write in the activity (or activities).

During my typical multi-day trip, I engaged in _____

27. How far away was the location for your typical multi-day trip, in one-way miles from home? Tick one box.

- Within 30 driving miles 31 to 60 driving miles More than 60 driving miles

28. On this typical multi-day trip, how many days did you spend within 50 miles of the location? Write in the number of days, including the days you didn't engage in trail activity during the trip.

_____ days on my typical multi-day trip

29. How many people usually were in your travel party for your typical multi-day trip? This includes everyone who traveled in the same vehicle with you on the trip. Write in the number of people, including yourself.

_____ person(s)

30. On this typical multi-day trip, how much money did you and other members of your travel party spend within 50 miles of the location? Write in the amount for each item, rounding off to the nearest dollar.

Item	Amount spent by everyone in travel party within 50 miles of the location
Hotel, motel, condo, cabin, B&B, or other lodging <u>except camping</u>	\$
Camping (RV, tent, etc.)	\$
Restaurants, bars, pubs	\$
Groceries	\$
Gas and oil	\$
Other transportation	\$
Park / forest entry, parking, or recreation use fees	\$
Recreation and entertainment, including guide fees	\$
Sporting goods	\$
Other expenses, such as souvenirs	\$
Total	\$

- I don't recall my trip spending
 I don't want to report my trip spending

31. Do you oppose or support each of the following? Circle one number for each.

	Strongly oppose		Strongly support		
Restrict (not allow) access for your favorite trail activity in some areas to <u>reduce conflict with other recreationists</u>	1	2	3	4	5
Restrict (not allow) access for your favorite trail activity in some areas to <u>reduce impacts on the environment</u>	1	2	3	4	5

32. Based on your trail use in the past 12 months, how important do you feel each of the following is on trails in Oregon? Circle one number for each issue.

Issue	Not important		Very important		
Controlling overcrowding on trails	1	2	3	4	5
Single use-trails to avoid user conflicts	1	2	3	4	5
Ability to experience the natural environment	1	2	3	4	5
Trails connecting towns / public places	1	2	3	4	5
Trail maintenance	1	2	3	4	5
Availability of drinking water	1	2	3	4	5
Availability of benches	1	2	3	4	5
Restroom facilities at trailheads	1	2	3	4	5
Trash cans at trailheads	1	2	3	4	5
Pet litter bags and dispensers at trailheads	1	2	3	4	5
Information about getting to the trail	1	2	3	4	5
Parking space at trailheads	1	2	3	4	5
Security of parking areas	1	2	3	4	5
Sense of safety at trailheads	1	2	3	4	5
Sense of safety on trails	1	2	3	4	5
Trail maps at trailheads	1	2	3	4	5
Trail information on the Internet	1	2	3	4	5
Enforcement of trail rules	1	2	3	4	5
Trail surface quality	1	2	3	4	5
Nature / wildlife information at trailheads / trails	1	2	3	4	5
Trail signs (directional and distance markers, and level of difficulty)	1	2	3	4	5

Please turn over – there are a few last questions on the back.

33. Would you describe the area where you live as urban, suburban, or rural? Please tick one box.

- Urban
- Suburban
- Rural

34. How far do you live from the nearest trail that you use? Please tick one box.

- | | | |
|---|--|---|
| <input type="checkbox"/> Less than ¼ mile | <input type="checkbox"/> 1 to 2 miles | <input type="checkbox"/> 11 to 15 miles |
| <input type="checkbox"/> ¼ to ½ mile | <input type="checkbox"/> 3 to 5 miles | <input type="checkbox"/> 16 to 20 miles |
| <input type="checkbox"/> ½ to 1 mile | <input type="checkbox"/> 6 to 10 miles | <input type="checkbox"/> More than 20 miles |

35. How old are you? Please tick one box.

- | | | |
|-----------------------------------|-----------------------------------|--------------------------------------|
| <input type="checkbox"/> 18 to 29 | <input type="checkbox"/> 40 to 49 | <input type="checkbox"/> 60 to 69 |
| <input type="checkbox"/> 30 to 39 | <input type="checkbox"/> 50 to 59 | <input type="checkbox"/> 70 or older |

36. What is your gender? Please tick one box.

- Female
- Male

37. Are you of Hispanic, Latino, or Spanish origin? Please tick one box.

- Yes
- No

38. Please tick one or more of the following categories that best describes your race.

- | | |
|---|--|
| <input type="checkbox"/> Black / African American | <input type="checkbox"/> Native Hawaiian or other Pacific Islander |
| <input type="checkbox"/> American Indian or Alaska Native | <input type="checkbox"/> White |
| <input type="checkbox"/> Asian | <input type="checkbox"/> Some other race |

39. What is your household's total annual income before taxes? Include income for all persons that regularly live in your household and all sources of income – salary, pensions, interest or dividends, and all other sources. Please tick one box.

- | | | |
|---|---|---|
| <input type="checkbox"/> Less than \$10,000 | <input type="checkbox"/> \$25,000 to \$34,999 | <input type="checkbox"/> \$75,000 to \$99,999 |
| <input type="checkbox"/> \$10,000 to \$14,999 | <input type="checkbox"/> \$35,000 to \$49,999 | <input type="checkbox"/> \$100,000 to \$149,999 |
| <input type="checkbox"/> \$15,000 to \$24,999 | <input type="checkbox"/> \$50,000 to \$74,999 | <input type="checkbox"/> \$150,000 or more |