PERCEIVED CONSTRAINTS BY NON-TRADITIONAL USERS ON THE MT. BAKER-SNOQUALMIE NATIONAL FOREST

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Abstract.—The purpose of this study was to investigate the constraints that non-traditional users face, along with the negotiation strategies that are employed in order to start, continue, or increase participation in recreation on a national forest. Non-traditional users were defined as respondents who were not Caucasian. Additionally, both constraints and negotiation strategies were examined to see if they predict participation for non-traditional users.

The study took place on the Mt. Baker-Snoqualmie National Forest in Washington, during the summer of 2005. A quantitative survey method was used, with a total of 235 surveys collected. More than half of the respondents were classified as non-traditional users.

The findings of the study suggest that non-traditional users were more constrained than traditional respondents. A majority of the significant constraints items were found in the structural domain, which are constraints items that can be influenced or changed by forest managers. Items related to information and awareness, along with cultural reasons, were significantly more constraining for non-traditional users. Although non-traditional users perceived more constraints than traditional users, the same results were not evident for the negotiation strategies. Overall, traditional users employed more strategies than non-traditional users.

1.0 INTRODUCTION

The Seattle, WA, metropolitan area lies within a short drive of the Mt. Baker-Snoqualmie National Forest, (MBSNF) which makes it a logical choice for outdoor recreation activities. This national forest provides a myriad of different recreation activities, from snow-based recreation to hiking and camping and more passive activities like sightseeing and picnicking. People from the entire region tend to gravitate toward Pacific Northwest national forests for recreation, resulting in nearly 34 million visits per year for the 19 national forests, and over 5 million visits to the two national forests near the Seattle area (US Forest Service 2004).

It has been noted in the recreation literature that non-traditional users (ethnic/racial minorities, persons with disabilities, etc.) may be overlooked by managers without a concerted effort to pursue these potential recreationists (Chavez 2001, Jackson 2000). Concerning racial and ethnic minorities, 13 percent of the U.S. population is of Hispanic/Latino ethnic background, over 12 percent is Black, and nearly 4 percent of the population is Asian-American (U.S. Bureau of the Census 2002). However, the proportion of Hispanic/Latinos in the Pacific Northwest is expected to double, from 4 percent of the population to 8 percent of the population between 2000 and 2010 (Chavez 2001). Although the Asian population is not expected to grow significantly in Oregon and Washington over the next 10 years, nearly half of the Asians in the U.S. (49%) reside in the western U.S. (U.S. Bureau of the Census 2002).

U.S. Forest Service officials from the MBSNF identified a need to understand the non-traditional users on the forest. Accordingly, a survey of visitors was conducted in the summer 2005 recreation season to identify visitor levels of participation and understand their perceived constraints. The main research question answered what leisure constraints items affected non-traditional users when trying to recreate on the forest.

Through the examination of constraints, researchers can better understand the factors, both internal and external, that influence participation in recreation (Jackson 2000). Jackson explains that understanding constraints within a particular sub-group, how they affect leisure and how

people adapt to them, is crucial for leisure researchers (p. 64). Understanding constraints helps managers and researchers understand other facets of recreation and leisure, including motivations, conflict, and satisfaction (Jackson 2000), which in turn improves the overall quality of services.

2.0 METHODS

Data for this study were collected as part of a larger study funded by the U.S. Forest Service (Pacific Northwest Region) to understand why some people visit national forests and why some do not. Specifically, the larger study examined both people who did recreate on the MBSNF (recreationists) and people who did not recreate on national forests (non-recreationists).

On-site interviews were conducted with 235 visitors over approximately 30 sampling days from May through August 2005. Forest Service managers provided a list of sites where non-traditional users typically recreated. From that list a systematic, random sampling method was used to determine days, dates, and times for surveys. Subjects were selected at random, using every third person or every third group in the recreation area.

The vast majority of the surveys were conducted at four major recreation areas, along with several lower-use sites. The four major survey locations were a blend of parking areas, trail heads, day-use, and scenic overlooks. By using these purposive sites, interviewers could locate non-traditional users that recreate on the MBSNF. If this method had not been used, the sample of respondents would have closely represented typical forest visitors over 93 percent of whom are Caucasian (U.S. Forest Service), 2002.

Leisure constraints were measured using a battery of 25 items patterned closely after the ones developed by Hudson (2000). These items fell under three domains: intrapersonal, interpersonal, and structural constraints. A series of independent sample t-tests and one analysis of variance were conducted to examine the difference in constraints items across socio-demographic variables. These variables included non-traditional/traditional users, gender, age and income.

3.0 RESULTS

3.1 Respondent Characteristics

Respondents were asked several socio-demographic questions including race/ethnicity, gender, age, income, and education. The results showed that over half of the respondents were male (56.%). Over a quarter of the respondents (27.9%) reported that they were between the ages of 18 to 30 years. A similar proportion (27.5%) were in the age groups of 31 to 40 and 41 to 50 (25.8%). Respondents who were 51 years or older accounted for one-fifth (18.9%) of the sample. The mean age of respondents was approximately 40 years of age (mean=39.79).

Regarding income, a large proportion of the respondents fell into the categories of $30,000 to $110,000 for total household income. Those who reported $70,001 to $110,000 (29%) made up the largest percentage of the sample, followed by $30,001 to $50,000 (23%) and $50,001 to 70,000 (22%). Respondents who earned under $30,000 accounted for 12 percent of the sample, while those who made over $110,000 made up 13 percent of the sample.

A vast majority of the respondents reported having a bachelor's degree or higher (80%). Respondents with a graduate or professional degree accounted for 41 percent of the sample, followed closely by those who had a bachelor's degree (39%). Respondents with an associate's degree or less made up 19 percent of the sample.

Over half (57%) of the respondents sampled were classified as non-traditional recreation users. Non-traditional users were those respondents who reported being of a racial or ethnic affiliation other than White/Caucasian. This category included respondents who reported they were of a racial group other than White, those of Hispanic or Latino ethnic origin, and respondents who reported being from a non-White/Anglo ethnic group but identified with the White/Anglo race category.

3.2 Constraints Differences

A series of independent sample t-tests was conducted to determine if there were significant differences in

Table 1.—Items used to measure constraints

Constraints Items	Major Reason	Minor Reason	Not a Reason	Mean
Intrapersonal Constraints				
Fear of the outdoors	<1.0	8.9	90.2	1.10
Poor health	2.6	11.9	85.5	1.17
Like to do other things for recreation	12.8	53.6	33.6	1.79
Fear of prejudice from other recreationists based on my racial/ ethnic identity	<1.0	3.8	95.3	1.05
I feel uneasy or not welcome at MBSNF	0	3.4	96.6	1.03
Interpersonal Constraints				
Don't have enough time because of family	13.2	24.7	62.1	1.51
Because of cultural reasons	.9	5.1	94.0	1.07
Don't have anyone to go with	6.4	26.4	67.2	1.40
Do not enjoy recreating with other people	1.7	8.1	90.2	1.11
People in my own cultural group don't accept my outdoor recreation activities	<1.0	6.0	93.2	1.07
Structural Constraints				
Have no way to get to there	6.0	9.8	84.3	1.22
Lack of information about recreation opportunities	6.8	30.2	63.0	1.44
MBS is too far away	6.8	25.1	67.2	1.38
MBS recreation areas are too crowded	5.1	32.8	62.1	1.43
Can't afford to go to the MBS to recreate	<1.0	6.0	93.2	1.07
People I want to go with can't afford to go	1.3	5.1	93.6	1.07
There is a lack of public transportation to MBSNF	6.0	14.0	80.0	1.26
Not aware of recreation opportunities on the MBSNF	4.7	22.1	73.2	1.31
Recreation opportunities that I like to participate in are not available on the MBSNF	2.1	10.2	87.7	1.14
Negative attitudes from FS employees or other recreation area employees	0	2.6	97.4	1.02
Areas are closed when I want to visit	2.1	11.5	86.4	1.16
Possible encounters with undesirable or dangerous animals and insects	1.3	19.1	79.6	1.22
Weather keeps me from recreating on MBSNF	10.6	50.6	38.7	1.72
Don't have enough time because of work or school	37.4	25.1	37.4	2.00
Because of recreation fees	3.4	12.3	84.3	1.19

Means based on a 3-point scale (1=major constraint; and 3= not a constraint)

the mean scores for the 25 constraints items across the traditional/non-traditional categories. The results showed nine significant mean score differences: six in the structural domain, two in the interpersonal domain, and one in the intrapersonal domain.

Six significant relationships were noted in the structural constraints domain, with two of these pertaining to information needs. Non-traditional respondents reported being more constrained than traditional users in each of these cases. *Lack of information about recreation opportunities* constrained non-traditional respondents (mean=1.59) significantly more then traditional users (mean=1.23) (t= -4.672, p<.001). Additionally, *not aware of recreation opportunities* was significantly more constraining for non-traditional recreationists (mean=1.18) than for traditional visitors (mean=1.41) (t=-3.268, p<.001).

Other significant structural domain items include *having no way to get there*, *recreation opportunities I like are not available*, *weather*, and *crowding*. Respondents who were in the non-traditional category reported being significantly more constrained (mean=1.30) than traditional users (mean=1.11) for the item *have no way to get there*, (t=-2.730, p<.01). Similarly, *recreation*

Table 2.—Results of comparisons of means of the significant constraints items with traditional and non-traditional respondents

Significant constraints items	Traditional	Non-traditional	Test of Significance (t)
Have no way to get to there	1.11	1.30	-2.730**
Lack of information about recreation opportunities	1.23	1.59	-4.672***
Because of cultural reasons	1.01	1.11	-2.776**
Poor health	1.10	1.23	-2.196*
Areas are too crowded when I want to visit	1.54	1.34	2.680**
People in my own cultural group don't accept my outdoor recreation activities	1.03	1.11	-2.132*
Not aware of recreation opportunities on the MBSNF	1.12	1.41	-3.268***
Recreation opportunities that I like to participate in are not available on the MBSNF	1.07	1.20	-2.502**
Weather keeps me from recreating on MBSNF	1.59	1.81	-2.636***

Means based on a 3-point scale (1=major constraint; and 3= not a constraint)
*= <.05; **= <.01; ***= <.001

opportunities that I like are not available was perceived to be more of a constraint for non-traditional respondents (mean=1.20) than for traditional respondents (mean=1.07) (t=-2.502, p<.01). Non-traditional subjects reported a higher mean score for *weather* (mean=1.81) as a constraint than traditional respondents (mean=1.59) (t=-2.636, p<.001).

The lone item that traditional respondents rated as more of a constraint was *areas are too crowded*. Traditional respondents reported a mean score of 1.54, while non-traditional users reported a mean score of 1.34 (t=-2.680, p<.01).

Within the interpersonal constraints domain, two significant differences were noted. Non-traditional respondents reported being slightly more constrained by *cultural reasons* (mean=1.11) than traditional recreationists (mean=1.01) (t=-2.776, p<.01). The item *my cultural group does not accept my activities* also showed higher mean scores for non-traditional respondents (mean=1.11) as compared to traditional respondents (mean=1.03) (t=-2.132, p<.05).

The single constraints item that showed significant differences across the traditional/non-traditional category within the intrapersonal constraints item was *poor health*. Respondents who fell in the non-traditional category were more likely to be constrained by *poor health* (mean=1.23) than those who were considered traditional users (mean=1.10). The t-test showed that this relationship was significant (t=-2.196, p<.05).

The independent samples t-test that examined gender differences resulted in three significant constraints items. The single interpersonal constraints item, *don't have anyone to go with*, was more of a constraint for females (mean=1.51) than males (mean=1.30) (t=-2.789, p<.001). Similar results were reported for the two structural constraints items. Females (mean= 1.33) were significantly more constrained than males (mean= 1.13) for the possibility of *encountering dangerous animals or insects* at the p<.001 level (t=-3.540). Additionally, females (mean=1.48) reported being more constrained by *areas being too far away* than males (mean=1.31) (t=-.2189, p<.05).

A one-way analysis of the variance was conducted for the age category, revealing four significant items. Three of the significant mean scores included items under the structural domain. Under the interpersonal domain the lone item showing significant differences was *not having enough time because of family*. Respondents between the ages of 31 and 40 (mean=1.70) reported being more constrained by the item than the other age groups. The age group 41 to 50 reported a mean score of 1.55, followed by 51 or older (mean=1.41), and 18 to 30 (mean=1.35) (F=2.98, p<.05).

Table 3.—Results of comparisons of means of the significant constraints items with gender

Significant constraints items	Male	Female	Test of Significance (t)
Don't have anyone to go with	1.30	1.51	-2.789***
MBS is too far away	1.31	1.48	-2.189*
Possible encounters with undesirable or dangerous animals and insects	1.13	1.33	-3.540***

Means based on a 3-point scale (1=major constraint; and 3= not a constraint)
*= <.05; **= <.01; ***= <.001

Table 4.—Results of comparisons of means of the significant constraints items with age

Significant constraints items	18-30	31-40	41-50	51 or older	f-value
Don't have enough time because of family	1.35	1.70	1.55	1.41	2.98*
Lack of information about recreation opportunities	1.63	1.51	1.30	1.18	6.479***
There is a lack of public transportation to MBSNF	1.41	1.32	1.13	1.07	5.009**
Not aware of recreation opportunities on the MBSNF	1.47	1.37	1.23	1.07	5.726***

Means based on a 3-point scale (1=major constraint; and 3= not a constraint)
*= <.05; **= <.01; ***= <.001

The significant constraints items under the structural domain were *lack of information about recreation opportunities*, *lack of public transportation*, and *not aware of recreation opportunities*. The first item was *lack of information about recreation opportunities*. Respondents aged 18 to 30 years (mean=1.63) were more constrained by the item when compared to those 51 years or older (mean=1.18) and those 41 to 50 years old (1.30) (F=6.479, p<.001). The items *lack of public transportation* and *not aware of recreation opportunities* showed similar differences across mean scores. Respondents who were between the ages 18 and 30 were more constrained by *lack of public transportation* (mean=1.41) than those who were 51 years or older (mean=1.07), 41 to 50 years old (mean=1.13), and 31 to 40 years old (mean=1.32) (F=5.009, p<.01).

The item *not aware of recreation opportunities* showed a similar relationship. Those who were 18 to 30 years of age were more constrained (mean=1.47), than those who were 51 years or older (mean=1.07), 41 to 50 years old (mean=1.23), and 31 to 40 years old (mean=1.37) (F=5.726, p<.001).

Scheffe's post-hoc analyses were conducted to further understand the differences in each of the four significant variables. For three of the constraints items (*lack of information, lack of public transportation,* and *not aware of opportunities*) a distinct pattern was revealed. Younger respondents were more constrained, and the constraints dropped in importance as age increased. The Scheffe's test for the item *no time because of family* did not reveal a distinct pattern.

A one-way analysis of variance test was conducted to identify significant mean scores in the income category, which revealed five significant mean score differences. Four of the significant differences were in the structural constraints domain and one was in the interpersonal constraints domain. The interpersonal constraints item *don't have anyone to go with* yielded significantly different mean scores. Those in the $30,000 to $50,000 income bracket reported being the most constrained by this item (mean=1.60), while those in the range of $70,000 to $110,000 were least constrained by the item (mean=1.19) (F=4.227, p<.01).

Within the structural constraints domain, respondents whose income fell in the category of $30,000 or less (mean=1.25) were more constrained by the item *people I want to go with can't afford to go*, while respondents in the over $110,000 category were not constrained by the

Table 5.—Results of comparisons of means of the significant constraints items with income

Significant constraints items	$30k or less	$31k- 50	$51k- 70	$71k- 110	Over $110k	f-value
Don't have anyone to go with	1.33	1.60	1.48	1.19	1.23	4.227**
People I want to go with can't afford to	1.25	1.06	1.04	1.03	1.00	3.143*
There is a lack of public transportation	1.58	1.45	1.16	1.12	1.03	6.198***
Not aware of recreation opportunities on the MBSNF	1.70	1.39	1.30	1.22	1.11	4.494**
Recreation opportunities that I like are not available	1.45	1.13	1.04	1.08	1.11	4.701***

Means based on a 3-point scale (1=major constraint; and 3= not a constraint)
*= <.05; **= <.01; ***= <.001

item (mean=1.00) (F= 3.143, p<.05). The constraints item *lack of public transportation* also showed significant differences across income brackets. As income increased, the respondents were less constrained by this item. Specifically, respondents in the $30,000 or less category reported being more constrained (mean=1.58) by this item, than those who reported income levels over $110,000 (mean=1.03) (F=6.198, p<.001).

A similar relationship was noted for the item *not aware of recreation opportunities*. Respondents whose income was less than $30,000 (mean=1.70) were more constrained than those who had higher incomes (F=4.494, p<.01). Lastly, the item *recreation opportunities that I like to participate in are not available on the MBSNF* showed significant difference in mean scores. Respondents in the $50,000 to $70,000 category (mean=1.04) were the least constrained by this item, while those in the $30,000 or less bracket (mean=1.45) were the most constrained (F= 4.701, p<.001).

The Scheffe's post-hoc analysis confirmed the existence of significant differences across the five income variables. Five post hoc tests were conducted, and a similar pattern was noted for four of the items. For the items *people I want to go with cannot afford to go, lack of public transportation, not aware of the opportunities*, and *the recreation opportunities that I like to do are not available*, the constraint dropped significantly as income increased. The post-hoc analysis for the item *don't have anyone to go with*, however, did not show a similar pattern. For this item, people in the middle income categories reported that these items were more of a constraint than either the lowest income respondents or the higher income respondents.

4.0 DISCUSSION

Although there has been a plethora of research on racial and ethnic groups and outdoor recreation, there is a limited number of studies that have focused on constraints to recreation and non-traditional users (Shinew & Floyd 2005). This study was aimed at understanding items that constrain non-traditional users from recreating more often.

The respondents of this study were not representative of those who generally recreate on the MBSNF (U.S. Forest Service 2002). A majority of the respondents were from urban areas and reported being in higher income brackets and with a bachelors degree or higher. Additionally, over half of the respondents were non-traditional.

It is clear that race and ethnicity play a large role in understanding what constrains certain people from recreating on this particular National Forest. Nine of the 25 constraints items showed significant differences when compared across the race/ethnicity categories. Some interesting findings were revealed when examining these differences. First, six of the nine significant constraints items fell under the structural domain. This in itself is not surprising, as there are 15 structural items compared to 5 intrapersonal items and 5 interpersonal items. However, three of the significant items within the structural domain were three highly significant items overall. These items included *lack of information*, *not aware of opportunities*, and *weather*. When looking at

these three items across the various socio-demographic variables, *lack of information* was also a significant item for the age variable, and *not aware of opportunities* was significant for both age and income, as well as race. *Weather* was a constraint only for the race/ethnicity variable.

This raises the stakes for management, as the items *lack of information* and *lack of opportunities* are both items that managers should be able to impact. Previous studies have shown that these items are often related to non-participation by non-traditional users, particularly for the race/ethnicity variable (Shinew & Floyd 2005). Also, these data show that these two items are impacting older people and people in lower income categories as well. Once again, this seems to indicate that managers need to focus on these items and develop strategies that will allow non-traditional users the opportunity to recreate, should they desire to do so.

The remaining constraints items that were significant across the race/ethnicity variable were *cultural reasons*, *lack of transportation*, *recreation opportunities that I like to participate in are not available*, *poor health*, *cultural reasons*, and *areas are crowded when I want to visit*. With the exception of the crowding variable, all of these items were significantly more constraining for non-traditional users than for traditional users. The item *poor health* was a constraint only for racial/ethnic minorities (ie., non-traditional users) and not any of the other socio-demographic groups. This variable was not significant across any other socio-demographic variable.

The question of why information and awareness variables continue to be more important for non-traditional users than traditional users remains unanswered. This discussion also reports that the items or things that constrain non-traditional users are distinctly different from those items that concern traditional users.

Speaking specifically to the role of constraints in non-traditional users' lives, two things were very apparent in this study. First, the non-traditional recreationists who were interviewed for this study had assimilated into the prevailing society of the Pacific Northwest. These subjects were part of the vast majority of recreationists in the Pacific Northwest who really enjoy hiking and recreating in the outdoors—regardless of their racial/ethnic backgrounds. It should be noted that many of the items that constrained people fell under the structural domain. These items may be things that resource managers can focus on, and affect changes within their communities. Transportation, for example, has long been listed as a constraint that limits people's ability to recreate on national forests.

A second obvious finding is that the respondents seemed not to perceive any sort of racial/ethnic discrimination as a constraint that impacted their recreation patterns. Items related to discrimination from natural resource managers, other recreationists, and even from within their own groups were not constraining factors.

Numerous differences were noted in the constraints faced by traditional and non-traditional users. And, as seen in the overall sample frequencies, most of the differences were in the structural domain. Virtually all of these differences showed that non-traditional users face very different barriers when attempting to recreate in a forest near the urban area in which they live. Forest users are not a homogenous group of people recreating, but there exist separate sub-groups whose needs are very different from the majority of recreationists on National Forests around the United States.

In conclusion, it is apparent that natural resource managers need to invest in understanding what constrains non-traditional users. As important is the fact that Forest Service managers are starting the process of understanding this particular user group. If National Forests are to remain relevant to the changing demographics of our nation, their managers will need to continue to understand and provide opportunities for all populations.

5.0 CITATIONS

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