

Bob Marshall Wilderness Complex 2004 Visitor Study

Technical Appendices

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Appendix 1: Descriptive tables and statistical test results

Tables are listed in the same order as section one of this report.

Visitor Characteristics

Age:

Table 1a. Average age of adult BMWC visitors*

Mean (n=358)	43.5 years
Standard deviation	14.46

*data are from completed onsite questionnaires

Table 1b. Average age of adult visitors, split by length of stay*

	Day visitors (n=117)	Overnight visitors (n=241)
Mean	44 years	43 years
Standard deviation	13.99	14.7

*data are from completed onsite questionnaires
t(356)=.532, p=.595

Table 1c. Average age of adult visitors, split by use of outfitter*

	Outfitted (n=92)	Non-outfitted (n=266)
Mean	49.5	41.5
Standard deviation	11.95	14.7

*data are from completed onsite questionnaires
t(356)=4.671, p=.000

Table 1d. Average age of adult visitors, split by season of use*

	Summer (n=299)	Fall (n=59)
Mean	43.7	42.7
Standard deviation	14.79	12.72

*data are from completed onsite questionnaires
t(356)=.478, p=.633

Table 1e. Average age of adult visitors, split by mode of travel*

	Hike (n=196)	Horseback (n=122)
Mean	40.1	46.7
Standard deviation	15.07	12.12

*data are from completed onsite questionnaires
 $t(316)=4.103$, $p=.000$

Sex:

Table 2a. Sex of visitors (n = 408)*

Percent male	71.1
Percent female	28.9

*Data are from onsite questionnaire

Table 2b. Sex of visitors, split by length of stay*

	Day visitors (n=139)	Overnight visitors (n=287)
Percent male	66.2	73.5
Percent female	33.8	26.5

$F(1)=2.497$, $p=.115$

*Data are from onsite questionnaire

Table 2c. Sex of visitors, split by use of outfitter use*

	Outfitted (n=96)	Non-outfitted (n=329)
Percent male	71.9	70.8
Percent female	28.1	29.2

$F(1)=.026$, $p=.873$

*Data are from onsite questionnaire

Table 2d. Sex of visitors, split by season of use*

	Summer (n=346)	Fall (n=81)
Percent male	68.5	81.5
Percent female	31.5	18.5

F(1)=1.168, **p=.017**

*Data are from onsite questionnaire

Table 2e. Sex of visitors, split by mode of travel*

	Hike (n=212)	Horseback (n=174)
Percent male	70.8	70.7
Percent female	29.2	29.3

F(1)=.002, p=.961

*Data are from onsite questionnaire

Education:

Table 3a. Education level of visitors*

Education level (n=364)	Percent of visitors
Less than high school diploma	4
High school diploma	14
Some college	20
Four year college degree	31
Some graduate school	31

*Data are from onsite questionnaire

Table 3b. Mean education level of visitors (years)*

Mean (n=595)	15.59 years
Standard deviation	2.54

*Data are from onsite questionnaire

Table 3c. Mean education level of visitors (years), split by length of stay*

	Day visitor (n=120)	Overnight visitor (n=243)
Mean	16.08	15.35
Standard deviation	2.44	2.56

t(362)=2.618, **p=.009**

*Data are from onsite questionnaire

Table 3d. Average education level of visitors (years), split by use of outfitter*

	Outfitted (n=92)	Non- outfitted (n=272)
Mean	15.83	15.51
Standard deviation	2.63	2.51

t(362)=1.043 , p=.297

*Data are from onsite questionnaire

Table 3e. Average education level of visitors (years), split by season of use*

	Summer (n=305)	Fall (n=59)
Mean	15.68	15.14
Standard deviation	2.58	2.33

t(362)=1.477, p=.141

*Data are from onsite questionnaire

Table 3f. Average education level of visitors (years), split by mode of travel*

	Hike (n=203)	Horseback (n=121)
Mean	15.98	14.63
Standard deviation	2.37	2.59

T(322)=4.790, **p=.000**

*Data are from onsite questionnaire

Place of residence:

Table 4a. Place of residence*

Place of Residence	Percentage of respondents (n=424)
Montana	62.5
States east of Rocky Mountains	18.5
Washington, Oregon	9.5
Mountain States (except Montana)	5.6
California	3.7
Foreign	.1

*Data are from onsite questionnaire

Table 4b. Place of residence, split by length of stay*

Place of Residence	Day visitor (n=138)	Overnight visitor (n=286)
Montana	59.8	68.8
States east of Rocky Mountains	21.3	12.3
Washington, Oregon	8	12.3
Mountain States (except Montana)	5.6	5.1
California	5.2	.7
Foreign	0	.7

*Data are from onsite questionnaire

$X^2(5)=14.287$, $p=.014$

Table 4c. Place of residence, split by use of outfitter*

Place of Residence	Outfitted (n=97)	Non-outfitted (n=329)
Montana	28.9	72.3
States east of Rocky Mountains	40.2	11.9
Washington, Oregon	14.4	8.2
Mountain States (except Montana)	4.1	6.1
California	12.4	1.2
Foreign	0	.3

*Data are from onsite questionnaire
 $X^2(5)=84.205, p=.000$

Table 4d. Place of residence split by season of use*

Place of Residence	Summer (n=344)	Fall (n=80)
Montana	60.8	71.3
States east of Rocky Mountains	18.9	17.5
Washington, Oregon	10.2	6.3
Mountain States (except Montana)	6.1	2.5
California	3.8	2.5
Foreign	.3	0

*Data are from onsite questionnaire
 $X^2(5)=4.354, p=.500$

Table 4e. Place of residence split by mode of travel*

Place of Residence	Hiker (n=212)	Horseback (n=173)
Montana	63.2	64.7
States east of Rocky Mountains	17	22.5
Washington, Oregon	11.8	4.0
Mountain States (except Montana)	5.7	5.2
California	1.9	3.5
Foreign	.5	0

*Data are from onsite questionnaire
 $X^2(5)=10.195, p=.070$

Table 5a. Type of place of residence

	Where respondents live now (n=281)	Where respondents lived most of their life before age 18 (n=279)
On a farm	14.0	20.8
Rural or small town (under 1,000 population)	17.1	12.8
Town (1,001-5,000 population)	11.9	14.7
Small city (5,001-50,000 population)	26.2	24.5
Medium city (50,001-1 million)	24.6	18.1
Large city (over 1 million)	6.1	9.1

Membership in clubs:

Table 6. Percentage of visitors with membership in conservation or outdoor recreation clubs

Percent with club membership (n=280)	37.6
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Previous experience:

Table 7a. Percentage of BMWC visitors with previous experience in BMWC*

Percentage with previous experience in BMWC (n=370)	65
If experienced, mean number of times visited previously (n=232)**	21.59
If experienced, median number of times visited previously (n=232)	6

*Data are from onsite questionnaire

**outliers in this response heavily influenced this mean

Table 7b. Percentage of BMWC visitors with previous experience in BMWC, split by length of stay*

	Day visitor	Overnight visitor
Percentage with previous experience in BMWC	64.4 (n=119)	66.4 (n=250)
If experienced, mean number of times visited previously**	39.45 (n=73)	13.42(n=159)
If experienced, median number of times visited previously	5.6 (n=73)	6 (n=159)

*Data are from onsite questionnaire

**outliers in this response heavily influenced mean

F(1)=.126, p=.723

Table 7c. Percentage of BMWC visitors with previous experience in BMWC, split by use of outfitter*

	Outfitted	Non-Outfitted
Percentage with previous experience in BMWC	50 (n=94)	70 (n=277)
If experienced, mean number of times visited previously**	7.21 (n=47)	25.2 (n=185)
If experienced, median number of times visited previously	14 (n=47)	6.91(n=185)

*Data are from onsite questionnaire

**outliers in this response heavily influenced mean

F(1)=12.856, **p=.000**

Table 7d. Percentage of BMWC visitors with previous experience in BMWC, split by season of use*

	Summer	Fall
Percentage with previous experience in BMWC	63.3 (n=311)	72.9 (n=59)
If experienced, mean # of times visited previously**	22.82 (n=189)	16.17 (n=43)
If experienced, median # of times visited previously	6 (n=189)	9 (n=43)

*Data are from onsite questionnaire

**outliers in this response heavily influenced mean

F(1)=2.019, p=.156

Table 7e. Percentage of BMWC visitors with previous experience in BMWC, split by mode of travel*

	Hike	Horseback
Percent with previous experience in BMWC	66.3 (n=202)	64.6 (n=127)
If experienced, mean # of times visited previously**	29.04(n=129)	13.55 (n=79)
If experienced, median # of times visited previously	6 (n=129)	6 (n=79)

*Data are from onsite questionnaire

**outliers in this response heavily influenced mean

F(1)=.073, p=.787

Table 7f. Previous experience in any Wilderness

Percentage of respondents who had been to any Wilderness before this trip (n=287)	90.8%
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Table 7g. Average visitor age at time of first Wilderness visit

Age (n=242)	21.1 years
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Table 7h. Number of visits to Wilderness in past 12 months made by BMWC visitors

Mean number of visits (n=280)	4.79 visits
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Table 7i. Number of days spent in Wilderness in past 12 months by BMWC visitors

Mean number of days (n=276)	11.78 days
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Visit Characteristics

Party size:

Table 8a. Party size

Mean number of people per party (n=286)	4.63
1 person	3.2
2-4 people	64.3
5-7 people	18.1
8-10 people	5.1
11-15 people	9.2

--Percentage of total parties with indicated number of people

Table 8b. Party size, split by length of stay

	Day visitors (n=98)	Overnight visitors (n=188)
Mean number of people per party	2.88	5.54
Standard deviation	1.31	3.97
1 person	6.2	1.6
2-4 people	89.7	51.6
5-7 people	2.1	26.3
8-10 people	2.1	6.5
11-15 people		14.0

--Percentage of total parties with indicated number of people
t(284)=6.426, p=.000

Table 8c. Party size, split by use of outfitter

	Outfitted (n=60)	Non-outfitted (n=225)
Mean number of people per party	9.22	3.43
Standard deviation	4.13	2.09
1 person	4.0	0
2-4 people	77.3	13.8
5-7 people	14.2	32.8
8-10 people	2.7	15.5
11-15 people	1.8	37.9

--Percentage of total parties with indicated number of people
t(283)=15.036, p=.000

Table 8d. Party size, split by season of use

	Summer (n=247)	Fall (n=39)
Mean number of people per party	4.45	5.78
Standard deviation	3.22	5.06
1 person	2.8	5.4
2-4 people	65.0	62.2
5-7 people	19.1	10.8
8-10 people	5.3	2.7
11-15 people	7.7	18.9

--Percentage of total parties with indicated number of people
t(284)=2.187, p=.030

Table 8e. Party size, split by mode of travel

	Hike (n=154)	Horseback (n=120)
Mean number of people per party	3.3	6.18
Standard deviation	2.08	4.29
1 person	4.6	1.7
2-4 people	82.4	45.4
5-7 people	11.1	23.5
8-10 people	0	10.9
11-15 people	2.0	18.5

--Percentage of total parties with indicated number of people
t(272)=7.301, p=.000

Type of group:

Table 9. Type of traveling group

Type of group	Percent of groups (n=283)
Family	41.4
Friends (unrelated)	32.9
Family & Friends	21.2
Club or organization	.2
Other*	4.5

*"Other" was made up primarily of strangers on the same guided trip

Mode of travel:

Table 10a. Mode of travel*

Mode of travel	Total (n=453)
Hike	49.6
Horseback	41.5
Hike with packstock	1.6
Raft	7.2
Other	<1

--Percentage of total individual visits

*Data are from onsite questionnaire

Table 10b. Mode of travel, split by length of stay*

Mode of travel	Day visitor (n=154)	Overnight visitor (n=298)
Hike	80.5	33.6
Horseback	19.5	53.0
Hike with packstock	0	2.3
Raft	0	11.1
Other	<1	<1

--Percentage of total individual visits

F(1)=81.573, p=.000**

*Data are from onsite questionnaire

*ANOVA test compared hikers and horseback riders

Table 10c. Mode of travel, split by use of outfitter*

Mode of travel	Outfitted (n=97)	Non-outfitted (n=342)
Hike	2.1	64.3
Horseback	62.9	33.9
Hike with packstock	1.0	1.8
Raft	34.0	0
Other	0	<1

--Percentage of total individual visits

F(1)= 104.702, p=.000**

*Data are from onsite questionnaire

**ANOVA test compared hikers and horseback riders

Table 10d. Mode of travel, split by season of use*

Mode of Travel	Summer (n=371)	Fall (n=81)
Hike	53.1	33.3
Horseback	36.1	66.7
Hike with packstock	1.9	0
Raft	8.9	0
Other	<1	<1

--Percentage of total individual visits

F(1)=18.948, **p=.000****

*Data are from onsite questionnaire

**ANOVA test compared hikers and horseback riders

Number of livestock:

Table 11a. Number of livestock in groups that used livestock

Number of livestock	Total (n=139)
Mean	11.03
Standard deviation	8.68
1-2 livestock	7
3-5 livestock	37
6-10 livestock	33
11-15 livestock	5
16-20 livestock	4
20 or more livestock	14

--Percentage of total visitor groups using livestock

Table 11b. Number of livestock in groups that used livestock, split by length of stay

Number of livestock	Day visitor (n=18)	Overnight visitor (n=120)
Mean	3.49	12.18
Standard deviation	1.44	8.75
1-2 livestock	20	6
3-5 livestock	67	25
6-10 livestock	13	26
11-15 livestock	0	11
16-20 livestock	0	12
20 or more	0	20

--Percentage of total visitor groups using livestock

t-test, t(137)= - 4.240 **p=.000**

Table 11c. Number of livestock in groups that used livestock, split by use of outfitter

Number of livestock	Outfitted (n=44)	Non-outfitted (n=79)
Mean	18.4	5.47
Standard deviation	7.61	3.88
1-2 livestock	0	14
3-5 livestock	5	50
6-10 livestock	16	26
11-15 livestock	15	7
16-20 livestock	24	2
20 or more	40	1

--Percentage of total visitor groups using livestock

t-test, $t(137) = -13.193, p = .000$

Table 11d. Number of livestock in groups that used livestock, split by season of use

Number of livestock	Summer (n=110)	Fall (n=34)
Mean	10.99	10.46
Standard deviation	8.24	9.64
1-2 livestock	8	6
3-5 livestock	28	33
6-10 livestock	22	32
11-15 livestock	12	4
16-20 livestock	13	7
20 or more	17	18

--Percentage of total visitor groups using livestock

t-test, $t(142) = .314, p = .754$

Activities:

Table 12a. Activities participated in

Activity	Total (n=288)
Hike	69.7
Photography	63.6
Fish	52.6
Nature Study	30.2
Swim	21.8
Other	6.4*
Hunt	10.5
Raft	7.2
Mtn climb	0

--Percentage of visitors participating in each activity

*Other was made up primarily of respondents who counted horseback riding as an activity.

Table 12b. Activities participated in, split by length of stay

Activity	Day visitor (n=98)	Overnight visitor (n=191)	Between groups ANOVA test result
Hike	77.8	66	F(1)=3.349, p=.068
Photography	53.5	68.9	F(1)=5.978, p=.015
Fish	43.4	57.1	F(1)=6.800, p=.010
Nature Study	38	26.4	F(1)=3.565, p=.060
Swim	5.1	30.1	F(1)=27.159, p=.000
Other*	5.1	7.3	F(1)=.488, p=.485
Hunt	1	15.2	F(1)=10.379, p=.001
Raft	0	10.7	F(1)=12.145, p=.001
Mtn climb	0	0	NA

--Percentage of visitors participating in each activity

*Other was made up primarily of respondents who counted horseback riding as an activity.

Table 12c. Activities participated in, split by use of outfitter

Activity	Outfitted (n=61)	Non-outfitted (n=226)	Between groups ANOVA test result
Hike	53.3	73.6	F(1)=8.492, p=.004
Photography	70	61.7	F(1)=1.604, p=.206
Fish	70	48.3	F(1)=7.633, p=.006
Nature Study	28.3	30.3	F(1)=.139, p=.710
Swim	40	17	F(1)=13.931 p=.000
Other*	3.3	7.5	F(1)=1.525, p=.218
Hunt	10.7	8.9	F(1)=6.343, p=.012
Raft	35	.4	F(1)=107.80, p=.000
Mtn climb	0	0	NA

--Percentage of visitors participating in each activity

*Other was made up primarily of respondents who counted horseback riding as an activity.

Table 12d. Activities participated in, split by season of use

Activity	Summer (n=246)	Fall (n=49)	Between groups ANOVA test result
Hike	74.9	44.9	F(1)=19.144, p=.000
Photography	67.2	44.9	F(1)=9.317, p=.002
Fish	52.9	51	F(1)=.041, p=.840
Nature Study	34.4	8.2	F(1)=12.819, p=.000
Swim	26	0	F(1)=17.129, p=.000
Other	7.3	0	F(1)=3.915, p=.049
Hunt	1.6	57.1	F(1)=229.167, p=.000
Raft	8.5	0	F(1)=4.574, p=.033
Mtn climb	0	0	NA

--Percentage of visitors participating in each activity

*Other was made up primarily of respondents who counted horseback riding as an activity.

Table 12e. Activities participated in, split by mode of travel

Activity	Hike (n=154)	Horse (n=123)	Between groups ANOVA test result
Hike	NA	40.6	NA
Photography	63.8	62.3	F(1)=.640, p=.424
Fish	45.1	51.8	F(1)=7.749, p=.006
Nature Study	40.1	20.2	F(1)=12.085, p=.001
Swim	21.1	14.9	F(1)=.018, p=.895
Other*	3.8	8.5	F(1)=2.598, p=.108
Hunt	1.3	25.2	F(1)=23.560, p=.000
Raft	.7	0	F(1)=20.177, p=.000
Mtn climb	0	0	NA

--Percentage of visitors participating in each activity

*Other was made up primarily of respondents who counted horseback riding as an activity.

Length of stay:

Table 13a. Length of stay in nights*

	Total (n=445)
Mean stay in nights	3.28
Standard deviation	3.29
0	34.5
1	6.1
2	5.0
3	10.5
4	5.0
5	15.0
6	8.4
7	6.3
8-10	8.4
11-14	.7
15 or more	<1

--Percentage of individual visits for each number of nights

*Data are from onsite questionnaire

Table 13b. Length of stay in nights, split by use of outfitter*

	Outfitted (n=96)	Non- Outfitted (n=340)
Mean stay in nights	6.3	2.5
Standard deviation	1.92	3.12
0	0	43.5
1	0	7.9
2	0	6.1
3	1.3	13.4
4	7.6	4.3
5	35.3	9.2
6	27.7	3.1
7	7.6	6.1
8-10	20.6	5.3
11-14	0	1
15 or more	0	<1

--Percentage of individual visits for each number of nights

t-test, $t(435) = 11.413$, $p = .000$

*Data are from onsite questionnaire

Table 13c. Length of stay in nights, split by season of use*

	Summer (n=364)	Fall (n=81)
Mean stay in nights	2.9	4.8
Standard deviation	2.95	4.19
0	36	27.9
1	6.7	3.5
2	5.6	2.0
3	9.4	15.4
4	5.2	4.0
5	17.6	3.0
6	10.2	0
7	4.0	16.4
8-10	5.0	23.9
11-14	0	4
15 or more	<1	0

--Percentage of individual visits for each number of nights

t-test, t(443)= 11.413, **p=.000** *Data are from onsite questionnaire

Table 13d. Length of stay, split by mode of travel*

	Hike (n=222)	Horseback (n=182)
Mean stay in nights	1.63	4.7
Standard deviation	2.32	3.47
0	55.6	15.9
1	7.8	5.5
2	7.7	2.7
3	9.8	13.1
4	2.3	5.3
5	8.8	21.9
6	2.6	9.4
7	1.6	11.4
8-10	3.8	12.7
11-14	0	1.8
15 or more	0	<1

--Percentage of individual visits for each number of nights

t-test, t(402)= 10.674, **p=.000** (between groups ANOVA on mean)

*Data are from onsite questionnaire

Outfitter use:

Table 14a. Outfitter use*

Percentage of total visits with outfitter (n=439)	21.9%
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*Data are from onsite questionnaire

Table 14b. Outfitter use, split by length of stay*

	Day visitor (n=149)	Overnight visitor (n=289)
Percent outfitted	0	33.3

F(1)=10.918, p=.000

*Data are from onsite questionnaire

Table 14c. Outfitter use, split by season of use*

	Summer (n=358)	Fall (n=82)
Percent outfitted	21.5	24.4

F(1)=.344, p=.558

*Data are from onsite questionnaire

Table 14d. Outfitter use, split by mode of travel*

	Hike (n=222)	Horseback (n=177)
Percent outfitted	.8	34.8

F(1)=104.702, p=.000

*Data are from onsite questionnaire

Table 14e. Type of outfitter use (n=61)

Fully Outfitted	76.5
Spot Pack	23.5

--Percentage of visitors who were on outfitted trips

Encounters:

Table 15a. Mean number of groups encountered per day by visitors to BMWC

Mean number of all types of groups encountered per day	2.27 (n=266)
Standard deviation	2.51
Mean number of large groups (more than 10 people) encountered per day	0.16 (n=285)
Standard deviation	0.43
Mean number of horse or livestock groups encountered per day	0.92 (n=285)
Standard deviation	1.43

Table 15b. Mean number of groups encountered per day by BMWC visitors, split by length of stay

	Day visitors	Overnight visitors	t test for equality of means result
Mean number of all types of groups encountered per day	3.91(n=90)	1.43 (n=176)	t(264)=8.595, p=.000
Standard deviation	2.79	1.87	
Mean number of large groups (more than 10 people) encountered per day	.17 (n=97)	.15 (n=188)	t(283)=.314, p=.754
Standard deviation	.5	.4	
Mean number of horse or livestock groups encountered per day	1.23 (n=97)	.76 (n=188)	t(283)=2.652, p=.008
Standard deviation	2.15	.82	

Table 15c. Mean number of groups encountered per day by BMWC visitors, split by season of use

	Summer	Fall	t test for equality of means result
Mean number of all types of groups encountered per day	2.43 (n=229)	1.28 (n=36)	T(264)=2.593, p=.010
Standard deviation	2.61	1.44	
Mean number of large groups (more than 10 people) encountered per day	.18 (n=244)	.03 (n=41)	t(283)=2.042, p=.042
Standard deviation	.46	.15	
Mean number of horse or livestock groups encountered per day	.96 (n=244)	.68 (n=41)	t(283)=1.171, p=.243
Standard deviation	1.51	.78	

Table 15d. Mean number of groups encountered per day by BMWC visitors, split by mode of travel

	Hike	Horse	t test for equality of means result
Mean number of all types of groups encountered per day	2.81 (n=141)	1.61 (n=114)	t(253)=3.829, p=.000
Standard deviation	2.69	2.2	
Mean number of large groups (more than 10 people) encountered per day	.16 (n=150)	.14 (n=123)	t(271)=.427, p=.669
Standard deviation	.46	.39	
Mean number of horse or livestock groups encountered per day	.82 (n=151)	1.02(n=122)	t(271)=1.116, p=.265
Standard deviation	1.06	1.83	

Visitor Attitudes

Reactions to encounters:

Table 16a. Visitor reactions to the number of other people encountered in BMWC

Reaction	Percent reporting (n=286)
Saw way too few	.3
Saw too few	2.0
About right	54.2
Saw too many	20.8
Saw way too many	2.4
Did not matter to me one way or the other	20.3
Do not remember	<1

Campsite conditions:

Table 17a. Percentage of respondents reporting that crowding was a problem in the places they visited

Percent reporting crowding as a problem (n=287)	14%
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Table 17b. Percentage of overnight visitors reporting preferred number of groups camped within sight or sound of them

Number of groups	Percent (n=178)
0 groups	83.0
1 group	14.1
2 groups	.7
3 or more groups	2.2

Table 17c. Percentage of overnight visitors reporting preferred number of groups camped within sight or sound, split by use of outfitter

Number of groups	Outfitted (n=58)	Non-outfitted (n=121)
0 groups	82.8	82.6
1 group	15.5	14.0
2 groups	0	.8
3 or more groups	1.7	2.5

F(1)=.425, p=.515

Table 17d. Percentage of overnight visitors reporting preferred number of groups camped within sight or sound, split by season of use

	Summer (n=153)	Fall (n=25)
0 groups	84.3	76.0
1 group	13.7	16.0
2 groups	.7	0
3 or more groups	1.3	8.0

F(1)=.3.169, p=.077

Table 17e. Percentage of overnight visitors reporting preferred number of groups camped within sight or sound, split by mode of travel

Number of groups	Hike (n=73)	Horseback (n=93)
0 groups	94.5	75.3
1 group	5.5	19.4
2 groups	0	1.1
3 or more groups	0	4.3

F(1)=10.085, p=.002

Table 17f. Ability to find campsite with preferred number of other campers within site or sound

Frequency of ability	Percentage of overnight visitors reporting (n=177)
Always	62.3
Usually (at least ½ time)	31
Sometimes	4.1
Never	2.5

Table 17g. Percentage of overnight visitors who camped near the Middle or South Fork Flathead Rivers

	Percentage of campers camped near rivers (n=280)
Middle Fork Flathead River	3.7
South Fork Flathead River	28.6

Table 17h. Percentage of overnight visitors who passed up an available campsite because they didn't like the condition it was in (n=186)

Percent	15.9
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Table 17i. Reasons for passing up campsite

Reasons	Percent of overnight visitors who passed up a campsite because of its condition (n=34)
Horse manure	25.3
Bare ground or dust, exposed tree roots, erosion of the soil, etc.	25.3
Other*	22.7
Grazing for horses scarce	15.9
Litter	12.3
Cut or damaged trees	8.8
Evidence of human waste	7.1
Old campfire remains, rock fire rings, etc.	5.3
Firewood scarce	3.5

*There was no dominant theme in the “other” category

List of campsites that were passed up because of its condition:

Along the Sun River (many reports), along Gordon Creek, east of Baldy Bear Creek on S side of Rock Creek, , Salmon Forks, Near Benchmark trailhead, Youngs Creek on the South Fork of the Flathead, the point at Hodag Flats, Near Indian Meadows.

Perceived change in area quality:

Table 18a. Perceived change in area quality by repeat visitors

	Total (n=182)
Percent reporting that quality is “Better”	12.8
Percent reporting that quality is “About the same”	74.9
Percent reporting that quality is “Worse”	12.2

Table 18b. Perceived change in area quality by repeat visitors, split by length of stay

	Day Visitors (n=62)	Overnight Visitors (n=119)
Percent reporting that quality is "Better"	8.1	15.1
Percent reporting that quality is "About the same"	85.5	69.7
Percent reporting that quality is "Worse"	6.5	15.1

F(1)=.042, p=.838

Table 18c. Perceived change in area quality by repeat visitors, split by use of outfitter

	Outfitted (n=34)	Non-Outfitted (n=148)
Percent reporting that quality is "Better"	11.8	12.8
Percent reporting that quality is "About the same"	76.5	74.3
Percent reporting that quality is "Worse"	11.8	12.8

F(1)=.025, p=.874

Table 18d. Perceived change in area quality by repeat visitors, split by season of use

	Summer (n=151)	Fall (n=30)
Percent reporting that quality is "Better"	11.3	20
Percent reporting that quality is "About the same"	75.5	73.3
Percent reporting that quality is "Worse"	13.2	6.7

F(1)=2.342, p=.128

Table 18e. Perceived change in area quality by repeat visitors, split by mode of travel

	Hike (n=93)	Horseback (n=84)
Percent reporting that quality is "Better"	9.7	16.7
Percent reporting that quality is "About the same"	80.6	69
Percent reporting that quality is "Worse"	9.7	14.3

F(1)=.221, p=.639

Immediately after the question about perceived change in area quality, visitors were asked what if anything seemed different. Here is the list of responses:

1. more people, more dying trees (drought?)
2. the Biggs fire helped thin jack pines
3. extensive fire damage from the gates park fire of 88
4. there is evidence of too many people on horseback and the associated damage
5. more moisture this year a few more people
6. vast burn areas some recovering, others don't seem to be - time will tell. seen no bears or fishers this time
7. the need for fire is becoming increasingly evident
8. burn areas very slow to recover (trees, Vegetation) too much trash from humans left on trails and campsites
9. Lots of fire damage
10. We caught more and bigger fish just after the fire
11. More people there fishing
12. Nothing but the natural regeneration from fire
13. Over the years trails have been relocated out of wet areas reducing horse damage (eg morrison cr trail)
14. More people wider trail, fewer animals
15. More snow
16. More rain made the river flats and hillside green. the river was up also.
17. Lots more people
18. More cars and people
19. More cars on weekends
20. Site is cleaner, visitors seem to have an interest in keeping that area free of litter
21. the amount of burned area
22. the '88burn at gates park has been re-burned in several places - this greatly improved both the accessibility of the area and the scenic nature or the area along with improved wildlife viewing
23. More signage (small, discrete, unobtrusive) telling others how to treat wilderness (pack it in pack it out) don't shortcut switchbacks etc.

24. Private parties using horses are having a big negative impact. Large areas where they picket horses are being de-vegetated
25. More people, Less grass (pasture), trail signs fallen down
26. trails seem more rutted and rocky than my last trip, no fish
27. less people
28. Meadow Creek had a trailhead host
29. Camp areas looked pretty used
30. there are more people with more degradation of delicate campsites
31. More burn area, more deadfall, more grass
32. My first visits to this area were in the early 70's. obviously , population pressures have increased since then. the area appears to casual observation to be holding up all right in response, but I am concerned about increased motor traffic on (holland) lake
33. More people, more packers, more life
34. Previous visit in 98 so forest fire remnants were new and different. Also saw many more horse packers
35. the trails are not opened up or improvements on them are not being maintained
36. Never saw areas ravaged by fires before
37. less people this year
38. trail to black bear deeply worn, muddy
39. the impact by the hundreds of horses
40. More traffic
41. More roads and trails closed, more people in the concentrated areas
42. Camp areas looked pretty used
43. forest fire damage. Streams in great shape/fishing was great (Sf of flathead above salmon cr
44. Horse users seem more aware of their camping and horse feed/care habits, more small plane traffic (especially close to benchmark)
45. one hellva fire that got away! However I am in favor of let burn policies
46. more hikers/backpackers, about the same number of horseback people
47. More air traffic, including helicopters servicing fire lookouts on the wilderness boundary
48. Better grazing, fewer people
49. fishing was great, good re-growth in burn areas trail in good shape
50. the vegetation is recovering after the fire
51. the trails are almost impassable, lots of down trees
52. more people each time I come
53. the trails seemed like they were better kept
54. trails inside are better maintained than 80's and 90's

Source of information:

Table 19a. Source of pre-trip information about BMWC

Source	Percent who obtained information from source (n=288)
Obtained info from other source*	58.8
Read a guidebook	20.8
Did not obtain any info before trip	19
Visit to Forest Service office	14.5
Telephone to Forest Service office	10.3
View a Forest Service Internet site	14.4
View a non-Forest Service Internet site	8.5
E-mail a Forest Service office	.8
Write a Forest Service office	.6

*Other was predominantly made up of those who obtained information from friends or a map.

Table 19b. Percentage of visitors reporting how well Forest Service-provided information met their needs (n=265)

Percent reporting that Forest Service info met their needs "very well"	50.8
Percent reporting that Forest Service info met their needs "fairly well"	36.8
Percent reporting that Forest Service info met their needs "not very well"	7.4
No opinion	5.1

Desirability of management actions:

Table 20a. Desirability of trail management actions (listed in rank order by level of undesirability) (n=283)

Management Action	Undesirable	Don't care	Desirable	Desirable in more heavily used parts of Wilderness, but not in more lightly used parts
A few trees blown down across the trail, maybe 1 or 2 per mile	35	48	13	3
Signs along the trail explaining natural features or early history	34	21	31	13
Use of chain saws by the administrators to clear trails of trees	23	27	41	7
Bridges over creeks where hikers could get their feet wet	23	36	25	16
Low standard trails (somewhat like a game trail--narrow, grade varies, winding, not the shortest route)	22	29	45	4
Leaving some areas with no trails	17	13	66	4
High standard trails (wide, steady grades, fairly straight)	12	14	32	42
Bridges over rivers that are dangerous for hikers to wade or for horses to ford	4	7	75	15

Table 20b. Desirability of campsite management actions (listed in rank order by level of undesirability)

Management Action	Undesirable	Don't care	Desirable	Desirable in more heavily used parts of Wilderness, but not in more lightly used parts
Burying unburnable trash	76	4	19	2
Cemented rock fireplaces with metal grates	71	15	5.5	8.6
Split log picnic tables at campsites	62	19	11	8
Prohibiting camping within 200 feet of lakes, Wild and Scenic Rivers, or streams	40	12	38	10
Pole corrals at campsites for horses	38	28	21	13
Outhouses (pit toilets)	37	28	19	17
Prohibiting wood fires where dead wood is scarce	34	21	36	10
Small, loose rock fireplaces (fire rings)	30	25	34	11
Encouraging visitors to remove fire rings and all evidence of campfires when breaking camp	19	20	57	4
Expect campers to use only dead wood on the ground for campfires	18	12	65	5
A detailed, accurate map	1	10	87	1.6

Table 20c. Desirability of visitor management actions (listed in rank order by level of undesirability)

Management Action	Undesirable	Don't care	Desirable	Desirable in more heavily used parts of Wilderness, but not in more lightly used parts
Issue trip permits so visitors could only camp each night in the area assigned to them*	72	11	8	9
Closing some areas to use by horse parties*	37	14	45	4
Mandatory human waste pack out policy for boaters on the river*	30	22	41	8
Require all visitors to register when entering*	29	33	36	3
Limiting the size of parties to 12 people*	19	18	57	6
Restricting the number of visitors to an area if it is being used beyond capacity*	18	8	64	10
Allow visitors to catch fish to eat in the Wilderness but not to bring out*	13	21	63	3
Rangers in the backcountry*	7	29	56	9
A guidebook to the Wilderness*	5	29	64	2
Packing unburnable garbage back out of the Wilderness*	3	2	92	3

* Indicates management actions identified as important by Forest Service

Table 20d. Desirability of resource management actions (listed in rank order by level of undesirability)

Management Action	Undesirable	Don't care	Desirable	Desirable in more heavily used parts of Wilderness, but not in more lightly used parts
Eliminating grazing by visitors' horses (require carrying horse feed)*	44	22	21	14
A natural fishery-no stocking and barren lakes left barren*	29	28	40	3
Natural forest fires started by lightning*	12	20	66	2

* Indicates management actions identified as important by Forest Service

High / Low Points

Visitors were asked to list the high points of their trip and the low points. The most common responses are as follows:

Highs:

Solitude, scenery, isolation, fishing, views, natural beauty, the Chinese wall, quiet, animals, wildflowers, and hiking to the top of mountains.

Lows:

Having to leave, horse manure, bad weather, muddy trails, downed trees, seeing a lot of people, not seeing wildlife, and mosquitoes.

Other Comments

At the end of the survey, respondents were given space to write any comments they had. The responses are as follows:

1. I'm not convinced that I should assume manager ignited fires will restore the natural role of fire within wilderness. I was under the assumption that fires that started naturally in wilderness were permitted to burn anyway. That's "natural" no need for manager ignited fires.
2. Nature knows best how to take care of itself. fire is nature's way of shedding its skin. Playing god in the forest is getting us into trouble. LET IT BURN. I've been going into the BM for 5 years. I fish for a week every year. I don't feel that my

- presence has had any neg. effect. I respect the country and others that use it. I do hope that any user decisions are based on "good solid natural science" and not some "left wing emotional Bull Shit".
3. Grad student at trailhead, I think his name was Josh?.. Doing a great job. Very personable, knowledgeable, and helpful.
 4. Our wilderness area and the wilderness study areas are a vast national treasure. They should remain intact. Motorized vehicles and the extraction industries (gas coal, oil, timber) should be banned from our wilderness areas, wilderness study areas and the entire rocky mountain front. "in the end our society will be defined not only by what we create, but by what we refuse to destroy" by john sawmill.
 5. please try to keep the beautiful wilderness in the public's hands and for the good of all, not a few select rich people
 6. Bob Marshall is one of the most beautiful places on earth. I feel very blessed to have backpacked in it for all these years
 7. We have visited BM GB and SG wilderness areas because they are true wilderness. I thank people in Montana and the USA for protecting these areas from development (of any kind). Future Americans should have the right to enjoy these same areas for the same reasons. Thanks for this survey and the people who cared enough to find out what visitors to these areas think.
 8. I feel I do not know enough about management ignited prescribed fires. I have not read enough about them to be either pro or con. I do know the fishing on the North fork of the Blackfoot improved a lot after the fire in that area. Most people think of fire as being negative. I have only read a little about its possible effects.
 9. Long live wilderness, hands off, George Bush!
 10. Keep the wilderness areas, wild and for horses. I love wilderness no matter where they are. I'm glad there were people with foresight. People like George Bush are so stupid, it makes me wonder about the human race. People as a whole can be so stupid and very short sighted. Anyway, good luck.
 11. I am very concerned about and opposed to any oil and gas exploration on the rocky mountain front. It is much more important for our country to develop alternative energy than to destroy an ecologically important wild area.
 12. I think the Bob is remaining a great place for outdoor recreation.
 13. Don't change a thing!
 14. Personally I really enjoy recreating in recently burned areas of wilderness, to me, this is not a deterrent. Additionally these burns improve habitat for most species and wildlife. the ungulates I hunt (deer and elk) are helped by having access to burned areas in conjunction with older growth. Ideally (in my mind and from what I know as a MSU fish and wildlife graduate) the desired forest has various succession stages from young to old growth. it seems like lately the Bob Marshall wilderness complex has been getting too much fire in too short of a time frame.
 15. Let natural fires burn as they have in the last recent years. Its just beautiful in the bob. Protect the bldgs and bridges
 16. I sincerely hope that future visitors enjoy this wilderness half as much as I did. It was truly a life changing experience. thank you for your work and good luck with the study

17. I am against man prescribed burns in the wilderness. Let nature take care of it. We waste too much valuable timber resource outside the wilderness to prescribed burns that burn more than was planned. I know what I am talking about having over 40 years in the woods
18. Hope you aren't spending much of our tax dollars on this survey. Better used for signs especially at the trailhead and on trail maintenance.
19. Barbless hooks should be mandatory to minimize the damage to the large number of fish that are caught and released.
20. Allow the wilderness to manage itself through natural fire. Decrease horse use in areas as it is too high impact.
21. By choosing to visit BMW in late July, we know we would encounter other parties. However, we found the very large parties with enough gear/supplies that took up an entire field - I'm speaking about guided fishing outfits- to be excessive. I feel like they are removing the sense of wilderness by having too much gear and too many tents piled high with stuff.
22. Even though the Bob is home to the outfitters horses, they should not be allowed to roam freely where they may disrupt a camp in the middle of the night. It is disrespectful and may upset the campers.
23. I thought being in the wilderness was so great and to see the mountains and everything was great. I would like to do a trip like this again
24. I think the bob is a treasure. It is wonderful to have it in our back yard. I also think there needs to be more people doing work on trails etc. and less people doing management. The more they try to manage it the worse it becomes. I do not like restrictions put on when and where you are allowed to go.
25. This was my first trip to a wilderness area, before this trip, I didn't understand the difference between wilderness on the hand and nat'l parks/forests on the other. I wish we could explore for oil/gas in wilderness areas, but I now understand why that would be difficult. I need to think and reconcile my opinions/feelings on this question. Big problem, uncut logs on the trails. Suggest using chain saws for f weeks each year to clear the trails. This would save tax payer money and make visits more enjoyable.
26. We travel to the bob most summers (unless fires keep us out) and love every experience we have had. We take new people each year in hopes they will also enjoy the outdoors.
27. I disagree with the idea of destroying the rock fire rings in the higher use areas, there are certainly places where people will camp repeatedly, leave the ring for the next campers, this would result in some well used campsites, but less impact on the rest of the surrounding wilderness area. I would much rather see a rock fire ring, as opposed to t5 turned over dirt pits.
28. I understand that there are maintenance and preservation concerns associated with wilderness areas like this. However, as expressed on the previous page. I would hope that those concerns could be addressed in ways that would allow visitors to get out in the wilderness without having every move limited in some way. Such as Glacier, expensive, tedious to plan, and frustrating to follow that plan down to every site visited, etc.
29. The bob is a great place, I don't want to see regulations get too heavy handed.

30. Had a great experience. Enjoy places that are minimally developed. Natural fires are good and create a variety of interesting forests. No new development in wilderness.
31. I had a great time, keep up the great work!
32. I feel strongly that the FS should not micro manage wilderness areas. In addition, I am vehemently opposed to any more restrictions on what I believe is a birth right to US citizens- access to wilderness areas.
33. I have been packing in to the wilderness areas of Montana for 42 years. I would hate to see the Gov put any restrictions on this activity. I believe the Bob as wee as other areas are used less now than ever before by private horse users!
34. I found the section of this survey concerned with wildfire/controlled burns rather hard to answer. If any prescribed fires of controlled burns were initiated it would no longer be wilderness.
35. Wilderness areas are my favorite places on earth! Better than national parks. fires started in or that burn into them should burn freely
36. The keys to protecting wilderness are: 1. reduce unnecessary consumption of natural resources, 2. reduce population (human), 3. establish more meaningful connections between people and nature
37. I really enjoy this area NF Blackfoot it must stay catch and release, probably should have catch and release on bull trout in this area, keep up the good work FS.
38. I appreciate efforts towards well maintained trails. I love the off trail experience most. I appreciate efforts towards ethical camping, minimal trace. I hate regulation that keeps me out or regulates where I camp. I love above tree line and off trail where rangers don't go. I want rangers to keep abusive camping in check.
39. Too much horse manure everywhere we went. It completely filled the trails and smelled at our camps and brought flies.
40. At the trail head (meadow creek) the volunteer Laird Snider was very friendly and well informed to help all people in the camp.
41. Laird Snider at meadow creek was exceptionally courteous and quite informative, he came across as a good man.
42. As a transplant from Jackson, Wyo. I very much enjoy the small numbers of people in the back country. I think small controlled burns are a good idea. I would rather see controlled grazing rather than weed infested feed being packed in. As a long time guide I think Montana's backcountry is awesome.
43. Wilderness is of great but understated economic value to Montana, that is why I choose to live here spending most of my vacation time in the wilderness and spend a lot of money on wilderness related equipment. Especially horse related.
44. I feel very strongly that we have a high responsibility to future generations to preserve the wildness of the few places in America where there is true untrammelled wilderness, roadless, un-mechanized, undeveloped.
45. Maintain less used trails a little better, but leave everything else the way it is.
46. The time I spent in the wilderness was an unforgettable experience. It truly puts one with nature.
47. I saw a lynx drinking from the NF Blackfoot!, Regulations are for people that shouldn't be in the woods.

48. The Bob turned out to be the place that it became obvious that hikers and horse people have significant differences. Most of the trails looked way over used by horses not boots. they were difficult if not impossible to walk. We even saw horseman with his stock string out side by side in a meadow.
49. I believe that the forest service like many govt. agencies has too much bureaucracy-money is wasted on building, paperwork, vehicles etc, need more grass roots people in the field and less college educated types making decisions. All officials ought to start - be required to be in the woods without the luxuries of places like big prairie ranger station so they know first hand how it is to hike or have pack stock like ordinary folks. Spend more money on trail maintenance so less used areas would be more accessible.
50. It is important that wilderness excursions remain wild with the impression that civilization and its by products are escaped by entering a wilderness area. Many people understand this and recreate with a conscience commensurate with healthy wilderness lands. Education before folks enter wilderness is way more effective that trying to control them once they are already there.
51. I think natural fires should be allowed to burn. Perhaps even if man caused, it is a natural process we may not ee the benefits of in our lifetimes. Wilderness should be wilderness... protected not heavily managed, thanks for this survey.
52. Good access can be accomplished without compromising wilderness character. There are too many trails that are seldom if ever cleared for horse access. More cleared trails spreads out the use - away from some possibly over used areas.
53. The bob, the way it is now is perfect; nothing should be changed. May favorite place in the world!
54. I have experienced the Bob Marshall as a fresh beginner with only minimal experience with horses at age 30. My 17 years experience since then has given me a large overview of the wilderness issues.
55. I trust those in power will honor the public trust and to maintain wild resources. thanks for your efforts.
56. It is always a great experience in the bob. I think the FS does a good job at management of resources.
57. I believe that I enjoy wilderness as wilderness. Part of that is feeling free with all the needs and uses of wilderness this is harder to do. Care should be taken in crafting regulation not to ruin "free". All users of wilderness need to acknowledge and respect other users. Hikers private livestock users and outfitters. all need to not complain about the others. if a hiker complains about an outfitter using the same trail. I would suggest comparing it to hiking down to plateau point at grand canyon. A hiker can't even get a non mule urine breath on that wilderness trail.
58. Log more don't waste timber on fires.

Appendix 2. Sampling Schedule and numbers contacted at each site

Sample block dates	Week day (WD) or week end (WE) sampling block	Planned sample site	Nat'l Forest	Ranger District	Number contacted at sampled site
<i>Summer</i>					
June 18-20	WE	S.F. Flathead River (Meadow Creek)	Flathead	Spotted Bear	11
June 21-24	WD	Indian Meadows	Helena	Lincoln	4
June 28-July 1	WD	Benchmark	L & C	Augusta	24
July 2-4	WE	Gibson Reservoir	L & C	Augusta	17
July 5-7	WD	Headquarters Pass	L & C	Rocky Mtn.	49
July 12-15	WD	North Fork Blackfoot River	Lolo	Seeley Lake	19
July 16-18	WE	Pyramid Pass	Lolo	Seeley Lake	12
July 19-21	WD	Bear Creek	Flathead	Hungry Horse	1
July 26-29	WD	S.F. Flathead River (Meadow Creek)	Flathead	Spotted Bear	33
July 30-Aug 1	WE	Owl Creek	Flathead	Swan	28
Aug 2-Aug 4	WD	Owl Creek	Flathead	Swan	11
Aug 9-12	WD	Benchmark	L & C	Augusta	47
Aug 16-19	WD	Beaver Creek	Flathead	Spotted Bear	7
Aug 20-22	WE	Morrison Creek	Lolo	Seeley Lake	2
Aug 23-25	WD	Headquarters Pass	L & C	Rocky Mtn.	4
Aug 30-Sept 2	WD	Benchmark	L & C	Augusta	11
Sept 3-5	WE	Indian Meadows	Helena	Lincoln	25
Sept 6-8	WD	North Fork Blackfoot River	Lolo	Seeley Lake	29
<i>Fall</i>					
Sept 13-16	WD	S.F. Flathead River (Meadow Creek)	L & C	Spotted Bear	9
Sept 17-19	WE	Beaver Creek	Flathead	Spotted Bear	2
Sept 20-23	WD	Pyramid Pass	Lolo	Seeley Lake	10
Sept 27-30	WD	Owl Creek	Flathead	Swan	5
Oct 1-3	WE	North Fork Blackfoot	Lolo	Seeley	4

				Lake	
Oct 4-6	WD	Monture Creek	Lolo	Seeley Lake	7
Oct 11-14	WD	Gibson Reservoir	L & C	Augusta	6
Oct 15-17	WE	Benchmark	L & C	Augusta	2

Appendix 3. Non Response Bias Checks

Table 1. Non-response bias check test results

Variable	Between groups ANOVA test result
Use of outfitter	F(1)=1.115, p=.283
Length of stay	F(1)=.103, p=.749
Mode of travel	F(1)=.011, p=.918
Previous experience in BMWC	F(1)=.794, p=.373
Education level	F(1)=.720, p=.732

Appendix 4. 2003 versus 2004 Fire Time Period Comparisons

In this section, information is shown only for figures appearing in Section 2 of this report. All other information can be found in either Appendix 1 of this report (for 2004) or in the final report for 2003.

Visitor Characteristics:

In all cases, for basic visitor characteristics, overall comparisons between the years and fire time period comparisons yielded no significant differences, overall comparisons are shown below.

Age, overall 2003 and 2004 comparison

2003 average age (n=590)	43.77
2004 average age (n=358)	43.53

$t(946)=.251, p=.802$

Sex, overall 2003 and 2004 comparison

	2003 (n=601)	2004 (n=426)
Percent male	68.7	71.1
Percent female	31.3	28.9

$F(1)=.684, p=.408$

Highest grade completed, overall 2003 and 2004 comparison

2003 average (n=595)	15.29
2004 average (n=364)	15.59

$t(956)=1.774, p=.076$

Place of residence, overall 2003 and 2004 comparison

Place of Residence	2003 (n=138)	2004 (n=286)
Montana	64.8	62.4
States east of Rocky Mountains	17.3	18.4
Washington, Oregon	8.6	9.6
Mountain States (except Montana)	5.0	5.6
California	2.7	3.8
Foreign	1.7	.2

$X^2(4, CA \text{ and foreign pooled})=1.069, p=.899$

Previous experience, overall 2003 and 2004 comparison

	2003	2004	
Percentage with previous experience in BMWC	59.9 (n=601)	65.0 (n=369)	F(1)=2.447, p=.118
If experienced, mean number of times visited previously**	11.09 (n=594)	13.80(n=362)	t(955)=.817, p=.414
If experienced, median number of times visited previously	2.0 (n=594)	2.0(n=362)	

** Outliers heavily influenced the means

Visit Characteristics:

With all questions regarding visit characteristics, a significant difference in overall comparison between the years was also accompanied by significant differences for the ‘during fire’ time period. ‘Pre fire’ and ‘after fire’ time periods did not show significant differences. Visit characteristics that showed significant differences are shown below. Those that showed significant differences were also tested for differences between three factors; length of stay, use of outfitter, and mode of travel.

Mode of travel, overall 2003 vs 2004

Percentage of respondents	2003 (n=534)	2004 (n=413)
Hike	65.5	54.5
Horseback	34.5	45.5

$X^2(1)=11.952$, **p=.001**

Mode of travel, during fire period comparison

Percentage of respondents	During fire 2003 (n=309)	During fire 2004 (n=160)
Hike	64.7	35.3
Horseback	35.3	59.1

$X^2(1)=23.384$, **p=.000**

Mode of travel, split by length of stay, during fire period comparison

Percentage of respondents	During fire 2003	During fire 2004	
Day visitors	N=131	N=45	
Hike	79.4	60.0	
Horseback	20.6	40.0	$X^2(1)=6.617$, p=.017
Overnight visitors	N=152	N=115	
Hike	52.0	33.6	
Horseback	48.0	66.1	$X^2(1)=8.659$, p=.003

Mode of travel, split by use of outfitter, during fire period comparison

Percentage of respondents	During fire 2003	During fire 2004	
Non-Outfitted	N=247	N=110	
Hike	70.9	57.3	
Horseback	29.1	42.7	$X^2(1)=6.314,$ p=.012
Outfitted	N=36	N=49	
Hike	22.2	4.1	
Horseback	77.8	95.9	$X^2(1)=6.579,$ p=.010

Average number of livestock taken, overall 2003 and 2004 comparison

2003 average (n=179)	7.53
2004 average (n=144)	10.86

t(321)=4.096, **p=.000**

Average number of livestock taken, during fire period comparison

During fire 2003 average (n=96)	5.73
During fire 2004 average (n=60)	11.91

t(154)=5.253, **p=.000**

Average number of livestock taken, split by length of stay, during fire period comparison

	During fire 2003	During fire 2004	
Day visitors	3.14 (n=28)	3.49 (n=14)	t(40)=.642, p=.525
Overnight visitors	6.81 (n=68)	14.37 (n=46)	t(112)=5.336, p=.000

Average number of livestock taken, split by use of outfitter, during fire period comparison

	During fire 2003	During fire 2004	
Non-outfitted	4.69 (n=80)	4.75 (n=31)	t(109)=.088, p=.930
Outfitted	10.91 (n=16)	19.46 (n=29)	t(43)=3.321, p=.002

Activities participated in, overall 2003 and 2004 comparison

Percentage of respondents participating in activity	2003	2004	
Fish	41.9 (n=454)	52.7 (n=296)	$X^2(1)=8.492$, p=.004

Activities participated in, during fire period comparison

Percentage of respondents participating in activity	During fire 2003	During fire 2004	
Fish	30.8 (n=247)	51.9 (n=106)	$X^2(1)=14.172$, p=.000

Activities participated in, split by length of stay, during fire period comparison

Percentage of respondents	During fire 2003	During fire 2004	
Day visitors	N=106	N=32	
Fish	30.2	56.3	$X^2(1)=7.226$, p=.007
Overnight visitors	N=142	N=76	
Fish	31.0	50.0	$X^2(1)=7.627$, p=.006

Activities participate in, split by use of outfitter, during fire period comparison

Percentage of respondents	During fire 2003	During fire 2004	
Non-outfitted	N=220	N=75	
Fish	28.6	50.7	$X^2(1)=12.057$, p=.001
Outfitted	N=28	N=33	
Fish	46.4	54.5	$X^2(1)=.399$, p=.527

Activities participated in, split by mode of travel, during fire period comparison

Percentage of respondents	During fire 2003	During fire 2004	
Hike	N=142	N=48	
Fish	23.9	47.9	$X^2(1)=9.818,$ p=.002
Horseback	N=80	N=58	
Fish	42.5	55.2	$X^2(1)=2.164,$ p=.141

Average length of stay in nights, overall 2003 and 2004 comparison

2003 average (n=598)	2.20
2004 average (n=445)	3.28

t(1041)=5.720, **p=.000**

Average length of stay in nights, during fire period comparison

During fire 2003 average (n=315)	2.37
During fire 2004 average (n=160)	3.81

t(473)=4.942, **p=.000**

Average length of stay in nights, split by use of outfitter, during fire period comparison

	During fire 2003	During fire 2004	
Non-outfitted	2.22 (n=277)	2.39 (n=110)	t(386)=.538, p=.591
Outfitted	3.46 (n=37)	6.95 (n=50)	t(85)=7.182, p=.000

Average length of stay in nights, split by mode of travel, during fire period comparison

	During fire 2003	During fire 2004	
Hike	1.54 (n=183)	2.48 (n=65)	t(247)=2.773, p=.006
Horseback	3.13 (n=100)	4.69 (n=94)	t(192)=2.954, p=.004

Percentage of visitors using outfitter, overall 2003 and 2004 comparison

	2003	2004	
Outfitted	14.0 (n=601)	21.9 (n=439)	$X^2(1)=11.038,$ p=.001

Percentage of visitors using outfitter, during fire period comparison

	During fire 2003	During fire 2004	
Outfitted	11.8 (n=314)	31.2 (n=160)	$X^2(1)=26.803,$ p=.000

Percentage of visitors using outfitter, split by length of stay, during fire period comparison

Percentage of respondents	During fire 2003	During fire 2004	
Day visitors	N=140	N=45	
Outfitted	5.7	0	$X^2(1)=3.859,$ p=.048
Overnight visitors	N=174	N=116	
Outfitted	16.7	43.1	$X^2(1)=24.542,$ p=.000

Percentage of visitors using outfitter, split by mode of travel, during fire period comparison

Percentage of respondents	During fire 2003	During fire 2004	
Hike	N=183	N=65	
Outfitted	4.4	3.1	$X^2(1)=.208,$ p=.649
Horseback	N=100	N=94	
Outfitted	28.0	50.0	$X^2(1)=9.889,$ p=.002

Average number of encounters, overall 2003 and 2004 comparison

	2003	2004	
All Groups	4.16 (n=450)	5.53 (n=291)	t(739)=3.709, p=.000
Groups over 10	.39 (n=451)	.62 (n=292)	t(741)=2.135, p=.033
Groups with livestock	1.92 (n=448)	3.07 (n=293)	t(740)=4.895, p=.000

Average number of encounters, during fire period comparison

	During fire 2003	During fire 2004	
All Groups	3.76 (n=245)	5.15 (n=106)	t(349)=2.814, p=.005
Groups over 10	.32 (n=245)	.68 (n=106)	t(349)=2.287, p=.023
Groups with livestock	1.66 (n=245)	3.33 (n=106)	t(349)=4.976, p=.000

Average number of encounters per day, split by mode of travel, during fire period comparison

	During fire 2003	During fire 2004	
Hike	N=141	N=47	
Average groups per day	2.26	2.05	t(185)=.588, p=.557
Horseback	N=79	N=58	
Average groups per day	1.43	1.60	t(135)=.499, p=.618

Average number of encounters per day, split by use of outfitter, during fire period comparison

	During fire 2003	During fire 2004	
Non-outfitted	N=218	N=74	
Average groups per day	1.98	2.28	t(289)=1.034, p=.302
Outfitted	N=28	N=32	
Average groups per day	1.19	.65	t(58)=1.857, p=.068

Average number of encounters per day, split by length of stay, during fire period comparison

	During fire 2003	During fire 2004	
Day visitor	N=104	N=31	
Average groups per day	3.16	3.38	t(133)=.429, p=.669
Overnight visitor	N=141	N=75	
Average groups per day	.96	1.12	t(214)=1.081, p=.281

Visitor attitudes:

Questions that showed significant differences are shown below. In all cases, these questions showed significant differences across all three fire time periods, indicating that visitor attitudes for these questions had changed from 2003 to 2004. The overall 2003 and 2004 comparisons are below.

Cemented rock fireplaces with metal grates

	2003 (n=439)	2004 (n=290)
Undesirable	59.7	71.0
Don't care	20.0	15.2
Desirable	10.3	5.5
Desirable in more heavily used parts but not lightly used parts.	10.0	8.3

$X^2(3)=11.044$, **p=.011**

Small, loose rock fireplaces (fire rings)

	2003 (n=437)	2004 (n=290)
Undesirable	22.9	29.3
Don't care	29.1	25.9
Desirable	42.6	33.4
Desirable in more heavily used parts but not lightly used parts.	5.5	11.4

$X^2(3)=14.898$, **p=.002**

Natural forest fires started by lightning

	2003 (n=432)	2004 (n=288)
Undesirable	27.8	11.5
Don't care	22.9	20.1
Desirable	48.6	66.7
Desirable in more heavily used parts but not lightly used parts.	.7	1.7

$X^2(3)=34.045$, **p=.000**

Prohibiting wood fires where dead wood is scarce

	2003 (n=443)	2004 (n=287)
Undesirable	26.4	34.1
Don't care	19.2	21.3
Desirable	50.6	34.8
Desirable in more heavily used parts but not lightly used parts.	3.8	9.8

$X^2(3)=23.506$, **p=.000**

Eliminating grazing by visitors' horses (require carrying feed)

	2003 (n=445)	2004 (n=289)
Undesirable	35.5	45.0
Don't care	26.1	21.1
Desirable	31.2	20.1
Desirable in more heavily used parts but not lightly used parts.	7.2	13.8

$X^2(3)=21.837$, **p=.000**

Appendix 5 Onsite Questionnaire

Wilderness Visitor Study 2004

0596-0108

OMB#

1. Have you visited this Wilderness area before?

No

Yes If Yes, about how many times? _____

2. Are you aware of the fires that occurred in or around the Bob Marshall last year?

Yes

No → *Go to next page (question 5)*

Unsure → *Go next page (question 5)*

3. Did those fires affect your plans to visit The Bob *last year* (2003)?

No → *Go to next question (question 4)*

Yes

If Yes, then HOW did the fires affect your plans ?

4. Did the 2003 fires affect your plans to visit The Bob *this year* (2004)?

No → *Go to next page (question 5)*

Yes

If Yes, then HOW did the fires affect your plans ?

5. How important were each of the following factors in choosing *a specific area to visit this year* ?

	Not Important	Somewhat Important	Very Important
Natural place, lack of human evidence	1	2	3
Remoteness, solitude	1	2	3
Scenic beauty	1	2	3
Quality hunting	1	2	3
Quality fishing	1	2	3
Recent occurrence of wildland fires	1	2	3
Test outdoor skills	1	2	3
Familiarity, been there before	1	2	3
A new area, variety	1	2	3
A friend or family member suggested it	1	2	3

6. What year were you born? _____

7. What is the highest year of school you have completed? (**circle number**)

Elementary School	High School	College	Graduate
1 2 3 4 5 6 7 8	9 10 11 12	13 14 15 16	17 18 19 or more

Please provide your name and address so that we may send you a follow-up questionnaire regarding your trip and your ideas about the Wilderness and its management. Your opinions are important. This information will be kept strictly confidential. Your personal information will be destroyed after we receive your completed questionnaire.

Name: _____

Mailing Address: _____

City, State, Zip code: _____

THANK YOU!

Group Summary

Trailhead: _____

Date: _____

Time of Contact: _____

Direction of travel :

Entering

Leaving

Going into / coming from Wilderness ?

Yes

No

Not clear

Length of stay:

Day Use only

Overnight → Number of nights: _____

Outfitted:

Yes

No

Gender composition :

Male :

Female :

Type of group:

Hikers

Horseback riders

Hikers w/ pack animals

Paddlers

Number of stock :

Number of non-sampled group members: _____

Reason for non-sampling: Under 16 Outfitter Other

Qnr# _____

Comments: _____

Appendix 6. Mail-Return Questionnaire