Bob Marshall Wilderness Complex
Limits of Acceptable Change (LAC)

2003-2007 Monitoring Period Summary

Introduction:

Recreation management direction for the Bob Marshall Wilderness Complex (BMWC) directs managers to maintain certain recreation opportunities over time. In order to ascertain whether or not these objectives are being met managers, researchers and wilderness users (LAC task force) agreed on several key items or indicators of change that could be measured to assess the overall condition of the wilderness. The limited list of indicators is not intended to provide a comprehensive inventory of wilderness conditions, but rather to alert the manager that change is taking place. The indicators include both biophysical and social components. Each indicator has associated with it a standard that dictates at what point change becomes of concern.

The BMWC has been divided into four Opportunity Classes (OC) to provide a range of recreational experiences for wilderness visitors. The Opportunity Classes vary along a spectrum ranging from pristine; little used areas (OCI) to heavily used travel routes (OCIV). It is important to remember that all Opportunity Classes meet or exceed standards for wilderness set in the Wilderness Act and in Forest Service policy. Indicators of change remain constant across all Opportunity Classes. Standards on the other hand, vary from one Class to the next. Resource Areas have been delineated in the BMWC to aid in summarizing data across large landscapes.

The Bob Marshall Wilderness Complex, made up of the Great Bear, Scapegoat and Bob Marshall Wilderness Areas and has just completed the 4th Five-Year monitoring period; 2003-2007. The report that follows summarizes the monitoring completed and results of the analysis for this five-year period. Complex managers emphasized resource condition monitoring during this period and as a result completed a 94% inventory and re-inventory of all known sites. Additionally, site locations were field validated and database records were updated and verified.

Fire was a frequent visitor to the BMWC during the 2003-2007 period with over 250,000 acres affected to varying degrees. Significant area and trail closures due to the fire activity were common throughout the complex in 2003 and 2007. The summary of resource areas on the following page addresses generalized fire affects as they relate to LAC monitoring.

Enjoy!

Bob Marshall Wilderness Complex Resource Areas - Summary

**Note: all acreages and mileages rounded, all numbers from GIS spatial analysis, sites do not include nondiscernable sites, admin sites, approved stock handling sites or historic locations.*

Resource Area 1 – South Fork Flathead Spotted Bear RD – Flathead NF

Wilderness area: Bob Marshall Wilderness
Size: 538,000 acres
Approximate miles of trail within area: 570 miles
Number of current sites with impact rating-most recent survey: 425 sites
Approximate acreage within recent (2003-2007) fire perimeters: 106,150 acres
Number of current sites within recent fire perimeters: 116 sites
Miles of trail with recent fire perimeters: 148 miles

Resource Area 2 – Spotted Bear River Spotted Bear RD – Flathead NF

Wilderness areas: Bob Marshall Wilderness & Great Bear Wilderness
Size: 95,000 acres
Approximate miles of trail within area: 108 miles
Number of current sites with impact rating-most recent survey: 33 sites
Approximate area within recent (2003-2007) fire perimeters: 14,520 acres
Number of current sites within recent fire perimeters: 3 sites
Miles of trail with recent fire perimeters: 12 miles

Resource Area 3 – Middle Fork Flathead Hungry Horse & Spotted Bear RDs – Flathead NF

Wilderness areas: Great Bear Wilderness & Bob Marshall Wilderness
Size: 366,000 acres
Approximate miles of trail within area: 387 miles
Number of current sites with impact rating-most recent survey: 382 sites
Approximate area within recent (2003-2007) fire perimeters: 30,980 acres
Number of current sites within recent fire perimeters: 25 sites
Miles of trail with recent fire perimeters: 31 miles

Resource Area 4 – Rocky Mountain Front Rocky Mountain RD – Lewis and Clark NF

Wilderness areas: Bob Marshall Wilderness & Scapegoat Wilderness
Size: 386,000 acres
Approximate miles of trail within area: 458 miles
Number of current sites with impact rating-most recent survey: 264 sites
Approximate area within recent (2003-2007) fire perimeters: 73,850 acres
Number of current sites within recent fire perimeters: 82 sites
Miles of trail with recent fire perimeters: 100 miles

Resource Area 5 – Lincoln Lincoln RD – Helena NF

Wilderness area: Scapegoat Wilderness
Size: 84,000 acres
Approximate miles of trail within area: 98 miles
Number of current sites with impact rating-most recent survey: 81 sites
Approximate area within recent (2003-2007) fire perimeters: 6,970 acres
Number of current sites within recent fire perimeters: 2 sites
Miles of trail with recent fire perimeters: 9 miles

Resource Area 6 – Seeley Lake Seeley Lake RD – Lolo NF

Wilderness area: Scapegoat Wilderness
Size: 76,000 acres
Approximate miles of trail within area: 82 miles
Number of current sites with impact rating-most recent survey: 104 sites
Approximate area within recent (2003-2007) fire perimeters: 18,270 acres
Number of current sites within recent fire perimeters: 37 sites
Miles of trail with recent fire perimeters: 24 miles

SOCIAL CONDITIONS

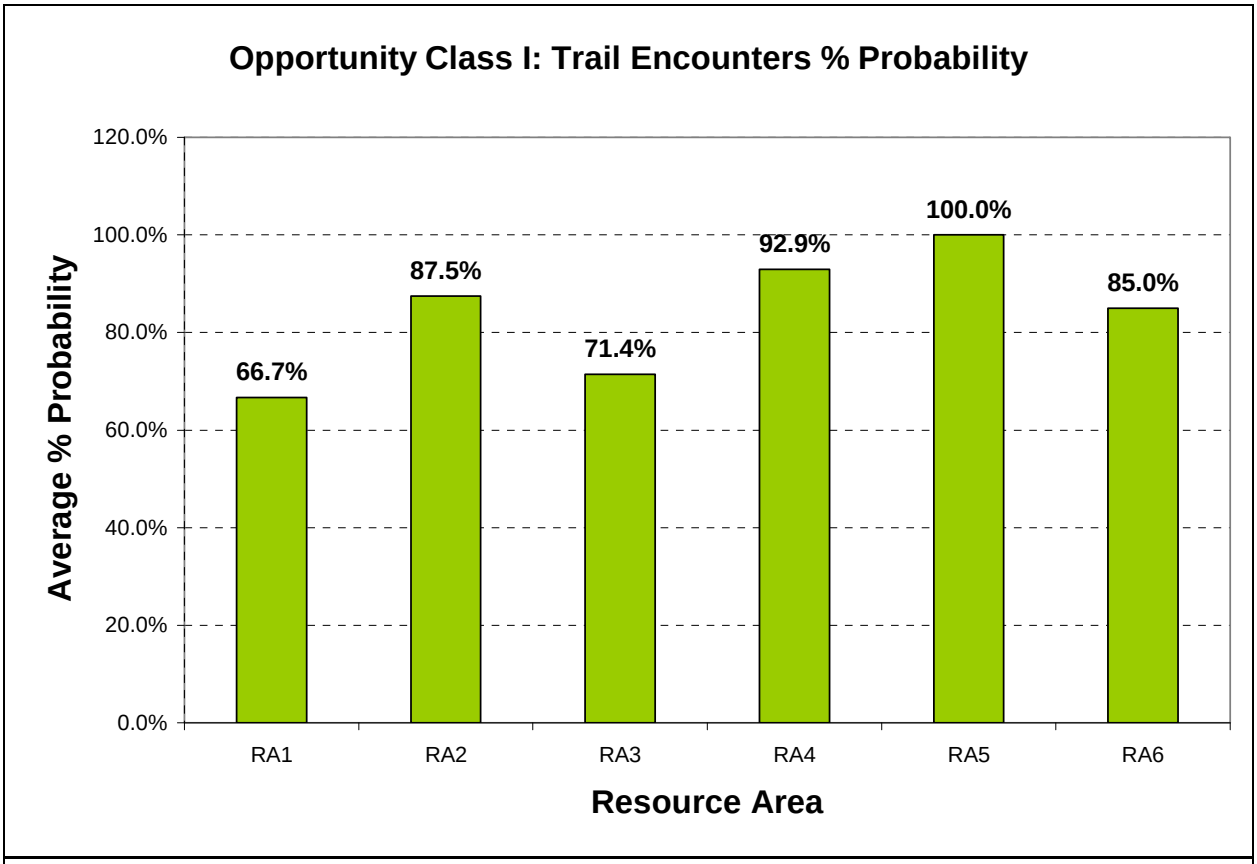
I. TRAIL ENCOUNTERS

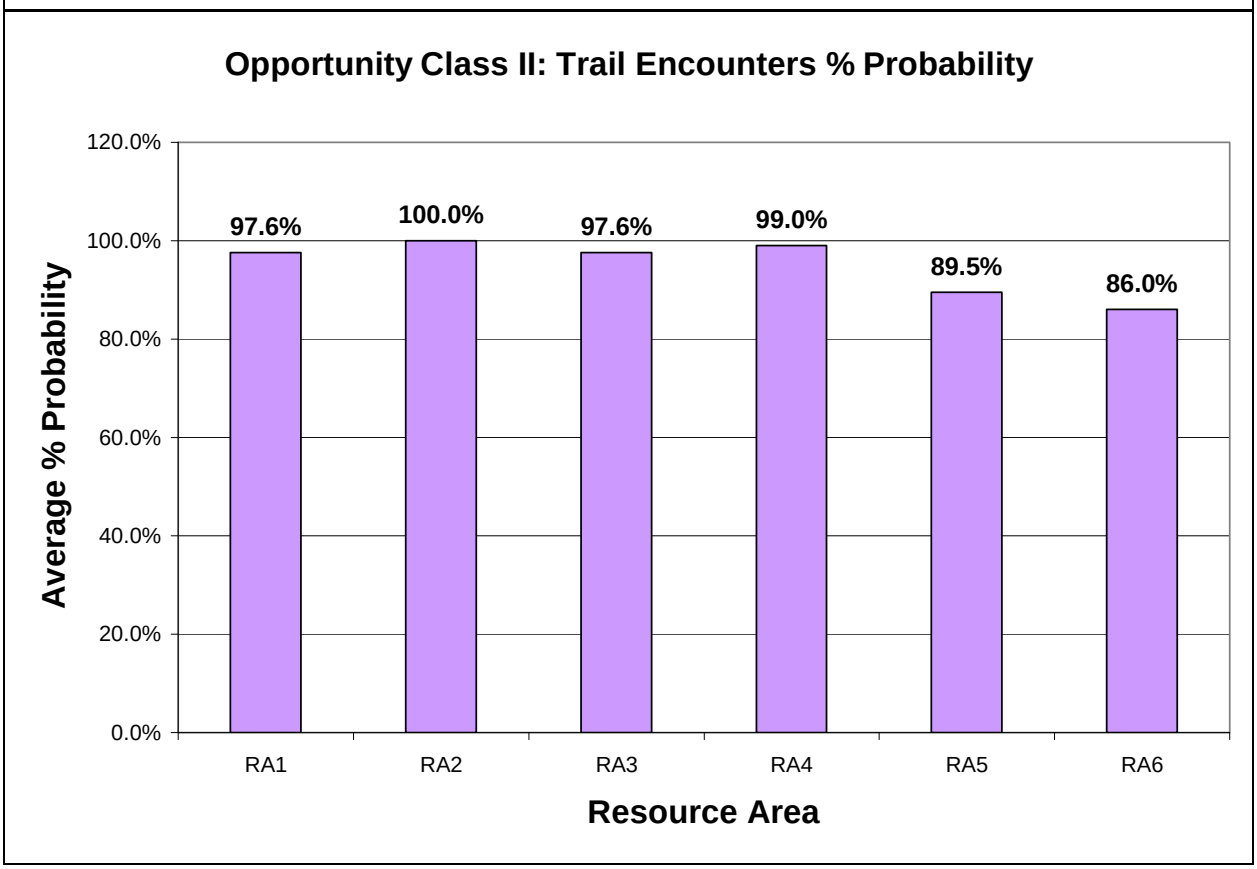
A. **Indicator: Number of Trail encounters with other parties**
B. **Standard:**
- **OCI – 80% probability of 0 encounters per day**
- **OCII – 80% probability of 1 or fewer encounters per day**
- **OCIII – 80% probability of 3 or fewer encounters per day**
- **OCIV – 80% probability of 5 or fewer encounters per day**

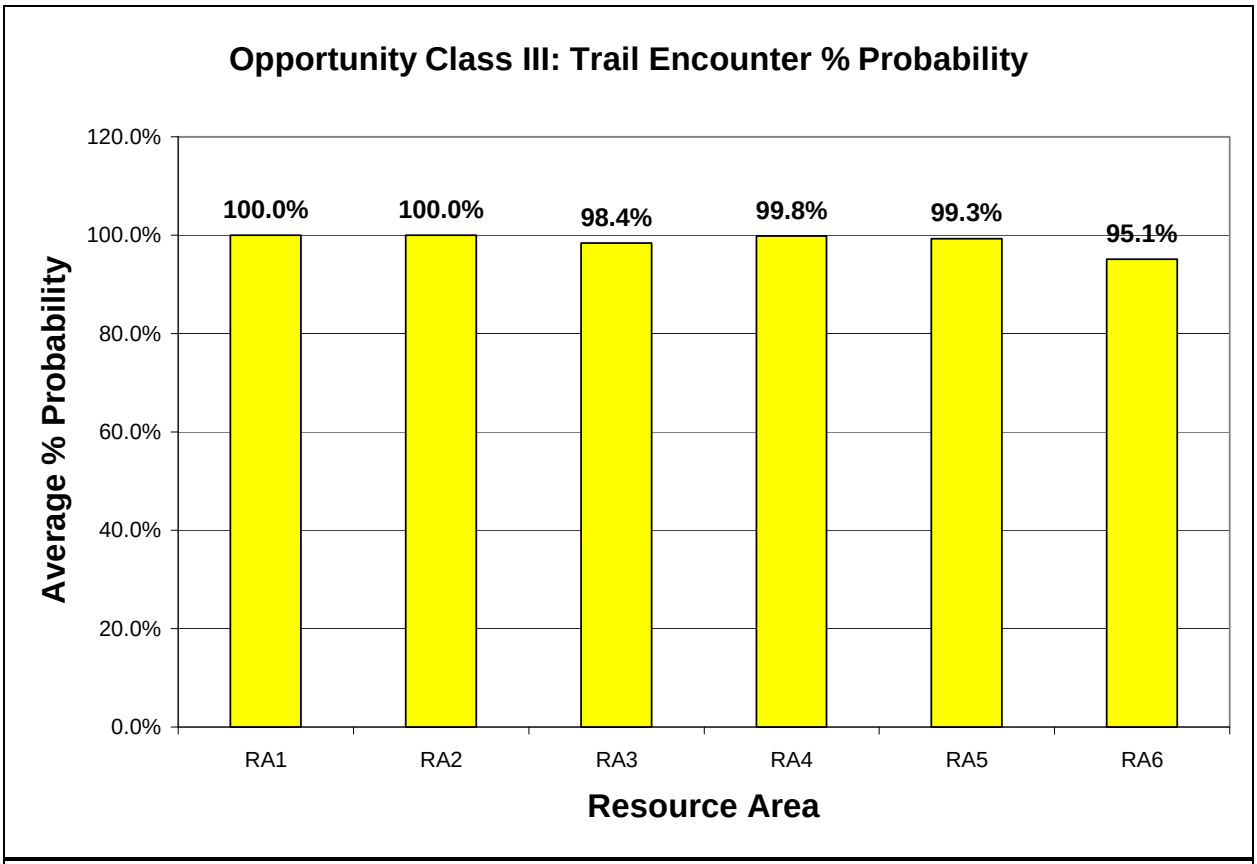
C. **Monitoring Results – Complex-wide by Resource Area:**

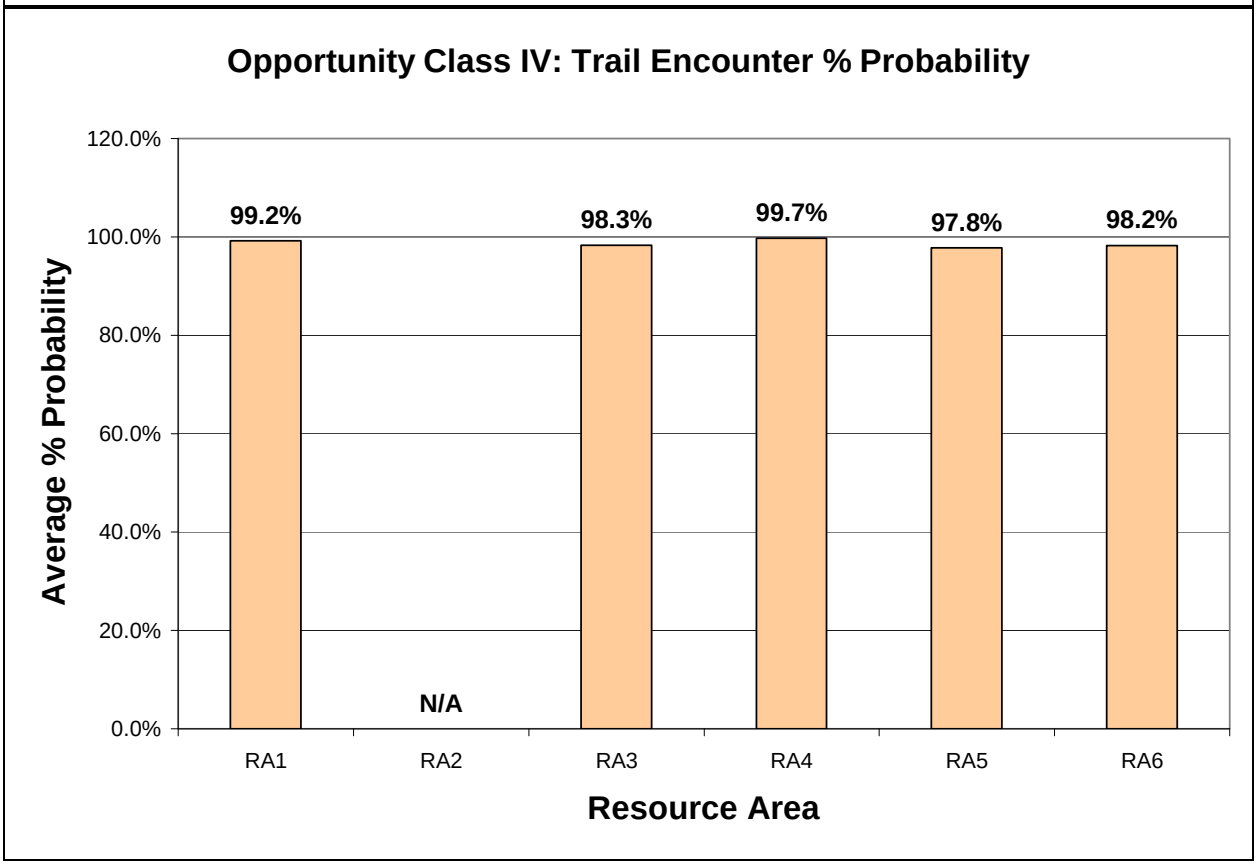
Resource Area	OC	# of Days Monitored	# of Days over Standard	Average % Probability
1	I	21	7	66.7%
	II	42	1	97.6%
	III	61	0	100.0%
	IV	244	2	99.2%
2	I	8	1	87.5%
	II	9	0	100.0%
	III	14	0	100.0%
3	I	28	8	71.4%
	II	42	1	97.6%
	III	187	3	98.4%
	IV	175	3	98.3%
4	I	99	7	92.9%
	II	296	3	99.0%
	III	649	1	99.8%
	IV	698	2	99.7%
5	I	2	0	100.0%
	II	38	4	89.5%
	III	142	1	99.3%
	IV	181	4	97.8%
6	I	40	6	85.0%
	II	43	6	86.0%
	III	41	2	95.1%
	IV	221	4	98.2%
BMWC Totals	I	198	29	85.4%
	II	470	15	96.8%
	III	1094	7	99.4%
	IV	1519	15	99.0%

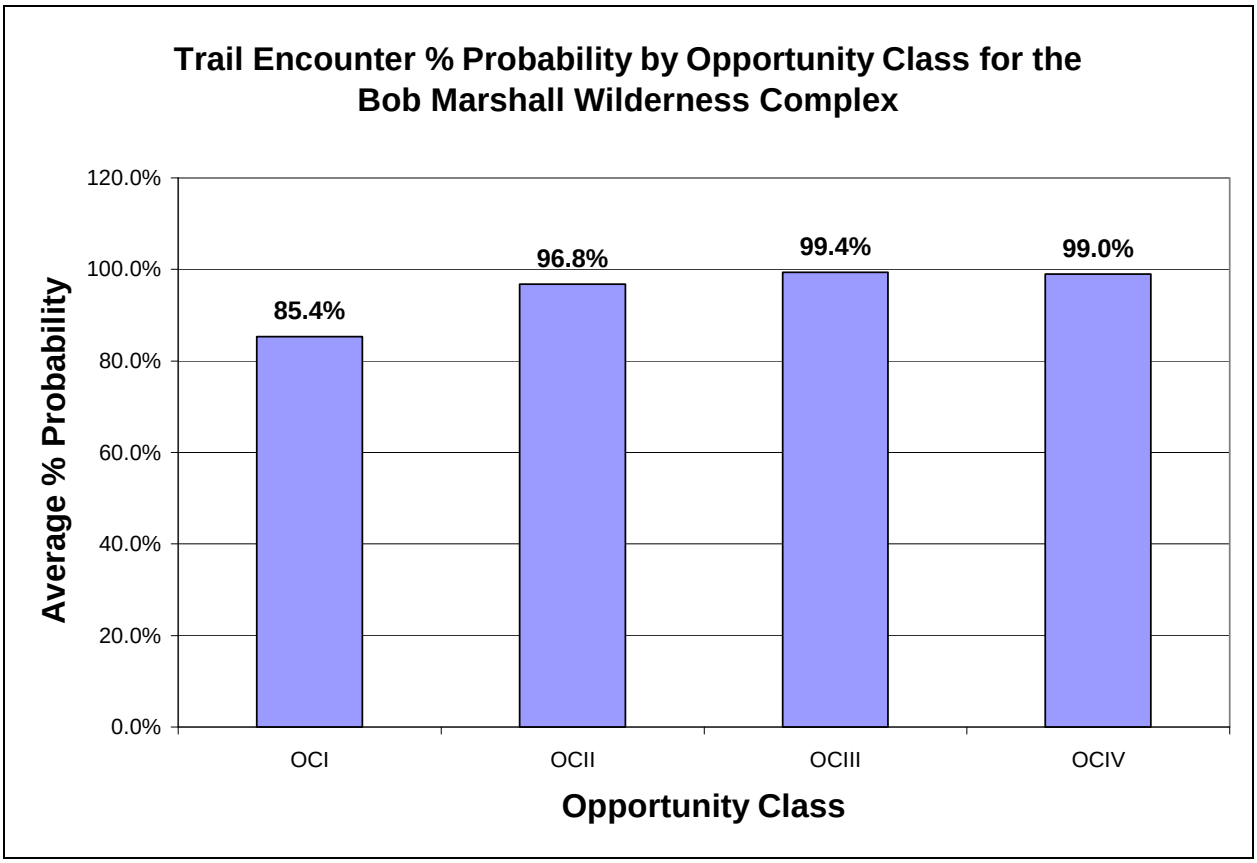
D. Charts:


Opportunity Class I: Trail Encounters % Probability
Average % Probability
120.0%
100.0%
80.0%
60.0%
40.0%
20.0%
0.0%
66.7%
87.5%
71.4%
92.9%
100.0%
85.0%
RA1
RA2
RA3
RA4
RA5
RA6
Resource Area


Opportunity Class II: Trail Encounters % Probability
Average % Probability
120.0%
100.0%
80.0%
60.0%
40.0%
20.0%
0.0%
97.6%
100.0%
97.6%
99.0%
89.5%
86.0%
RA1
RA2
RA3
RA4
RA5
RA6
Resource Area


Opportunity Class III: Trail Encounter % Probability
120.0%
100.0%
80.0%
60.0%
40.0%
20.0%
0.0%
Average % Probability
100.0%
100.0%
98.4%
99.8%
99.3%
95.1%
RA1
RA2
RA3
RA4
RA5
RA6
Resource Area


Opportunity Class IV: Trail Encounter % Probability
120.0%
100.0%
80.0%
60.0%
40.0%
20.0%
0.0%
Average % Probability
99.2%
N/A
98.3%
99.7%
97.8%
98.2%
RA1
RA2
RA3
RA4
RA5
RA6
Resource Area


Trail Encounter % Probability by Opportunity Class for the Bob Marshall Wilderness Complex
120.0%
100.0%
80.0%
60.0%
40.0%
20.0%
0.0%
Average % Probability
85.4%
96.8%
99.4%
99.0%
OCI
OCII
OCIII
OCIV
Opportunity Class

II. CAMPSITE ENCOUNTERS

A. Indicator: Number of other parties camped within site or continuous sound of an occupied site.

B. Standard:

- **OCI – 80% probability of 0 parties per day**
- **OCII – 80% probability of 0 parties per day**
- **OCIII – 80% probability of 1 or 0 parties per day**
- **OCIV – 80% probability of 3 or fewer parties per day**

C. Monitoring Results – Complex-wide by Resource Area

Resource Area	OC	# of Occupied Campsites Monitored	Camp Encounters over Standard	Average % Probability
1	I	0	0	N/A
	II	0	0	N/A
	III	0	0	N/A
	IV	3	0	100.0%
2	I	0	0	N/A
	II	0	0	N/A
	III	0	0	N/A
3	I	0	0	N/A
	II	0	0	N/A
	III	7	0	100.0%
	IV	0	0	N/A
4	I	1	0	100.0%
	II	9	1	88.9%
	III	28	1	96.4%
	IV	172	1	99.4%
5	I	0	0	N/A
	II	8	3	62.5%
	III	19	1	94.7%
	IV	18	0	100.0%
6	I	1	0	100.0%
	II	6	0	100.0%
	III	9	0	100.0%
	IV	26	0	100.0%
BMWC Totals	I	2	0	100.0%
	II	23	4	82.6%
	III	63	2	96.8%
	IV	219	1	99.5%

RESOURCE CONDITIONS

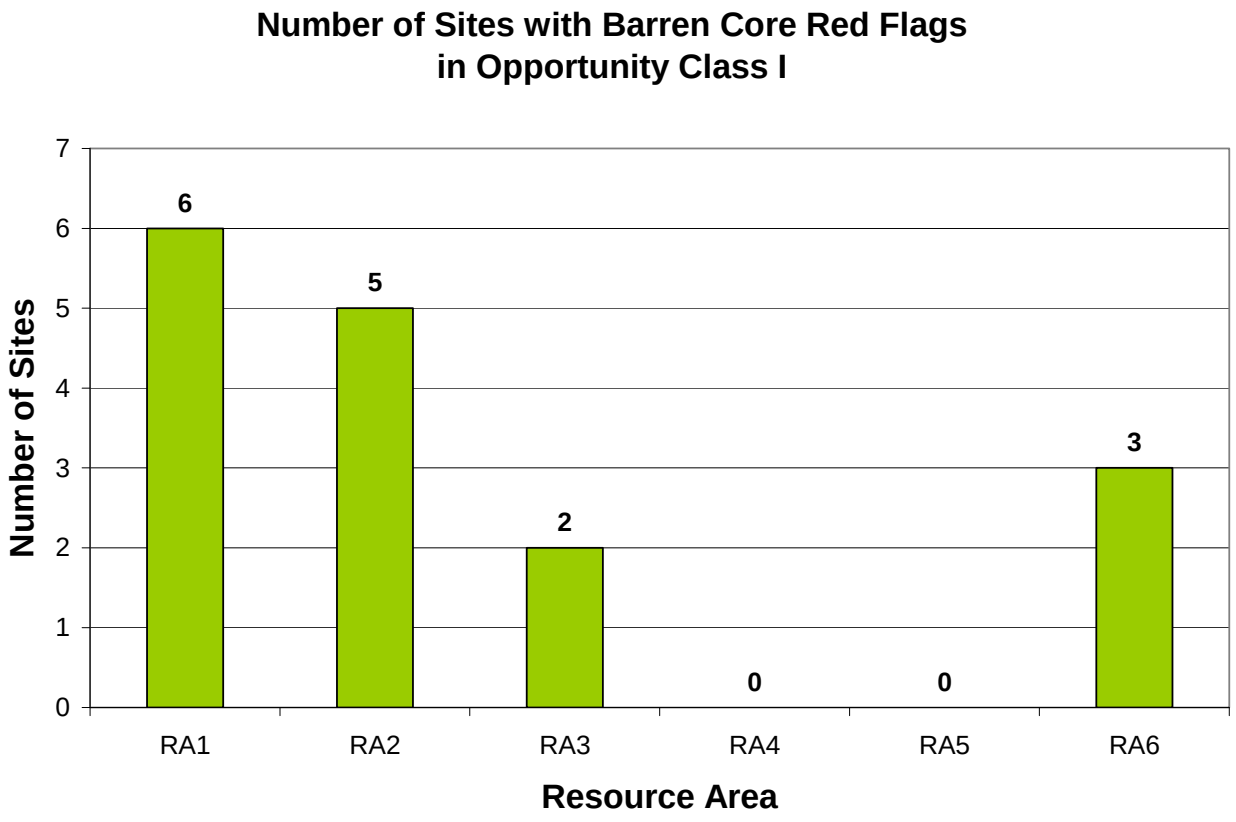
III. BARREN CORE AND HIGHLY IMPACTED SITES

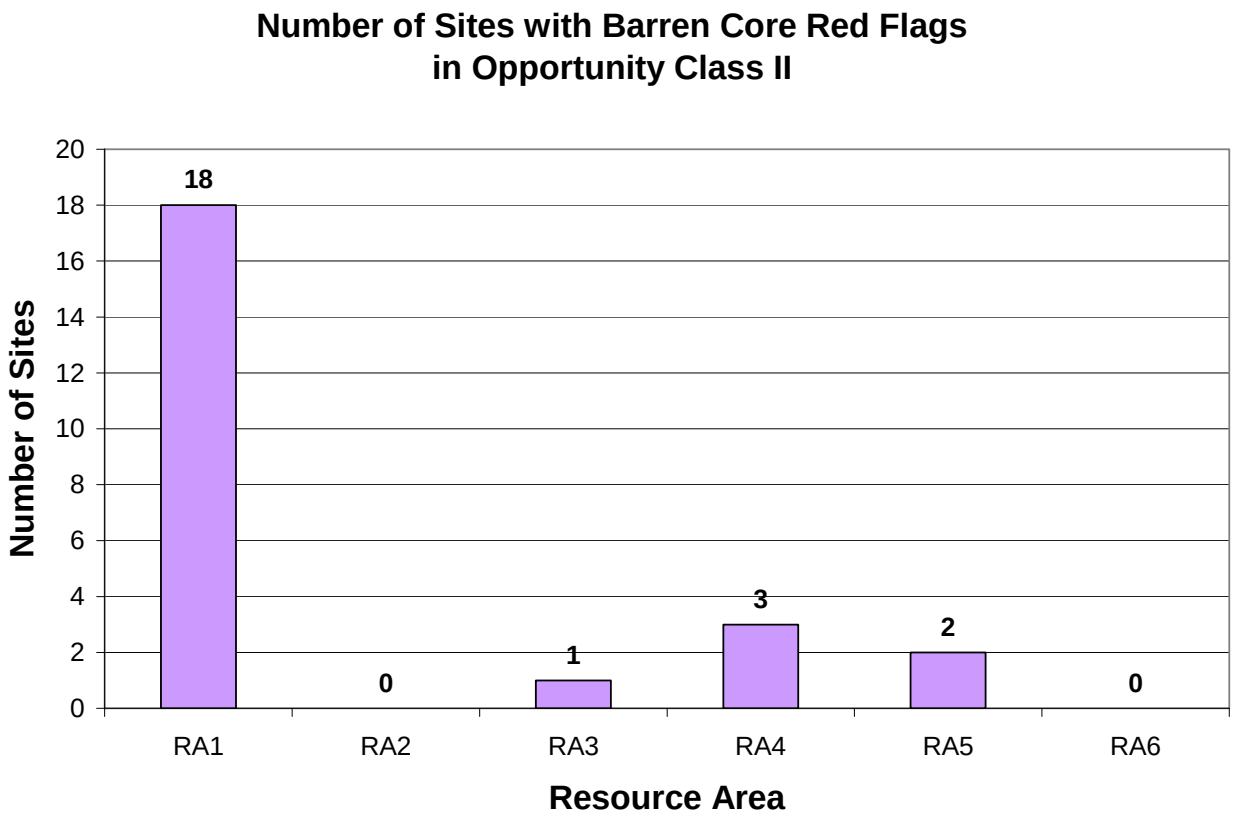
A. **Indicator: Area of Barren Core** (Square feet of area void of vegetation)
B. **Standard:**
- **OCI – 100 sq ft of barren core permitted per site**
- **OCII – 500 sq ft of barren core permitted per site**
- **OCIII – 1000 sq ft of barren core permitted per site**
- **OCIV – 2000 sq ft of barren core permitted per site**

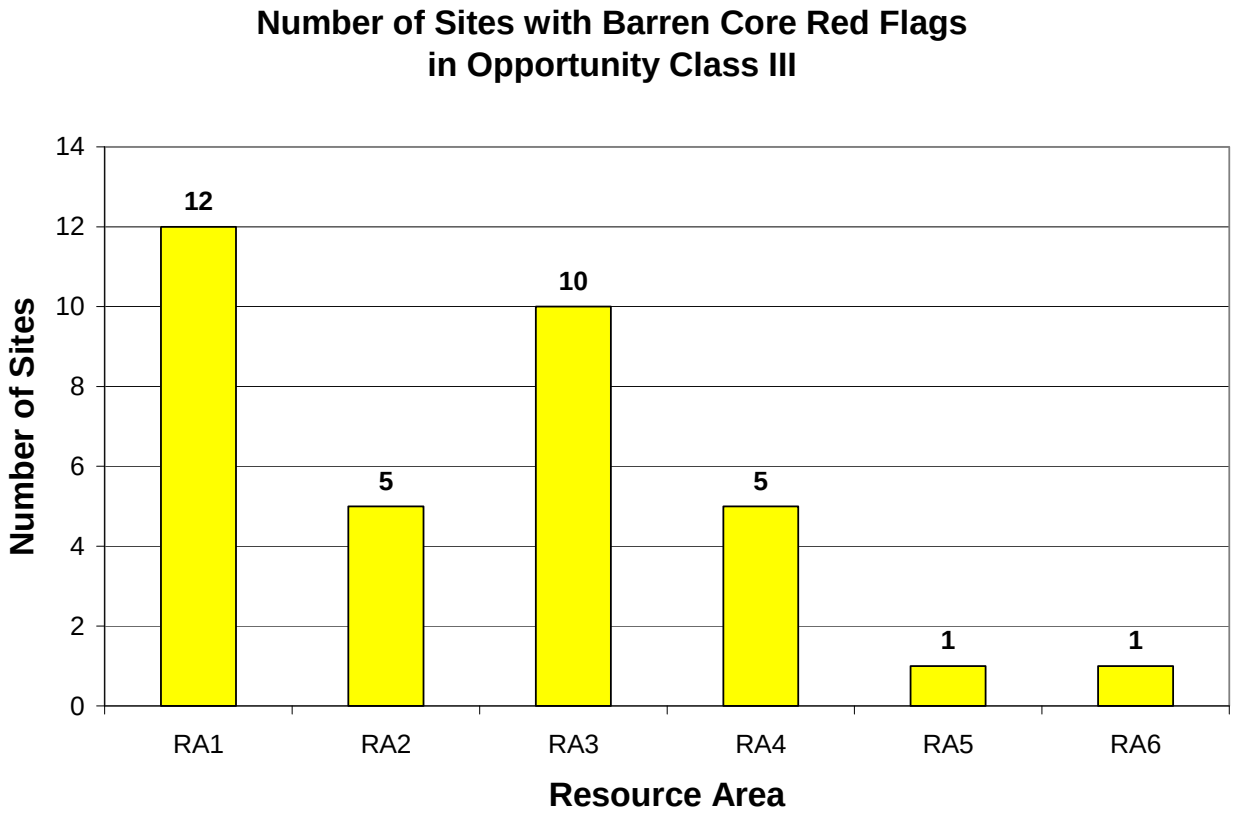
C. **Monitoring Results – Complex-wide by Resource Area**

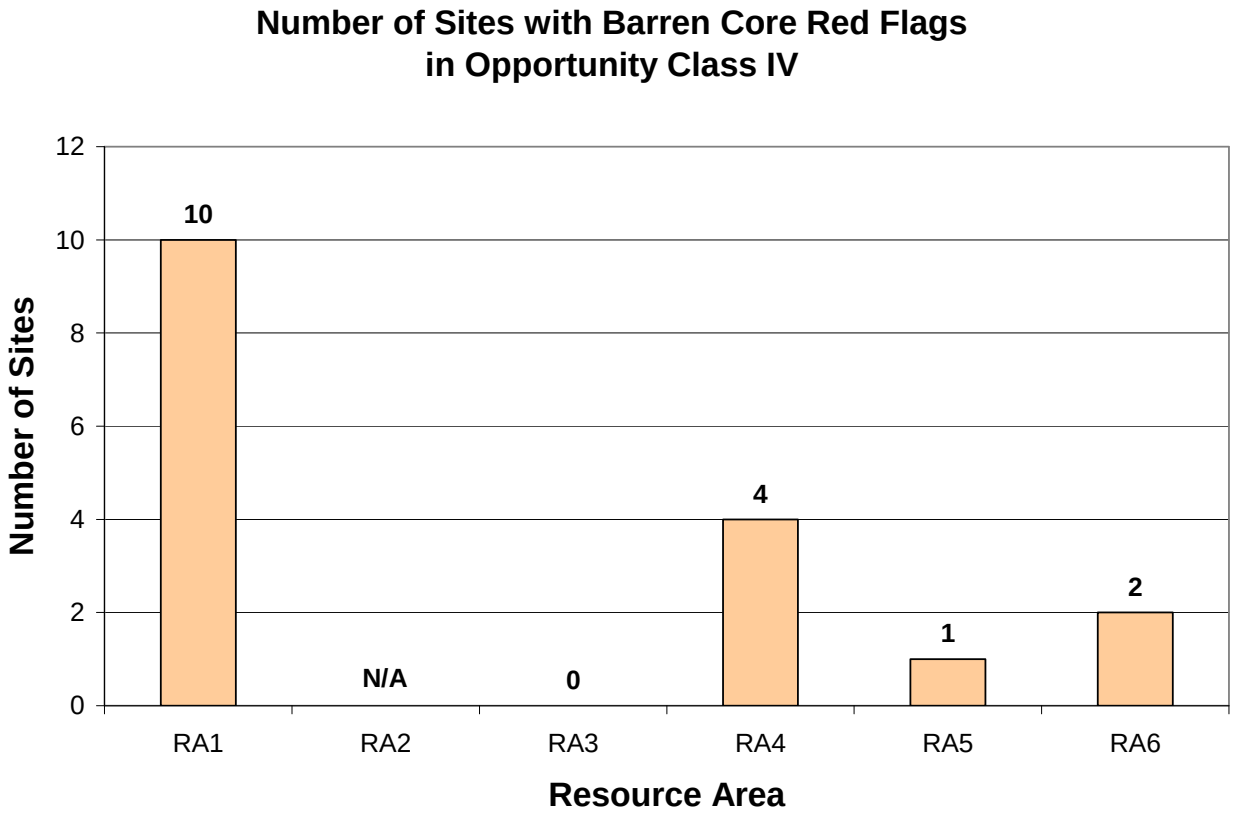
RA	OC	# Sites Monitored	# of Sites with High Index Rating	# of Sites with Barren Core Red Flags
1	I	36	2	6
	II	117	18	18
	III	160	22	12
	IV	397	55	10
2	I	17	2	5
	II	12	3	0
	III	26	7	5
3	I	23	2	2
	II	30	0	1
	III	239	24	10
	IV	32	1	0
4	I	4	0	0
	II	35	5	3
	III	112	10	5
	IV	114	11	4
5	I	2	0	0
	II	19	5	2
	III	40	7	1
	IV	25	13	1
6	I	13	1	3
	II	12	0	0
	III	12	2	1
	IV	76	6	2
BMWC	I	95	7	16
Totals	II	225	31	24
	III	589	72	34
	IV	644	86	17

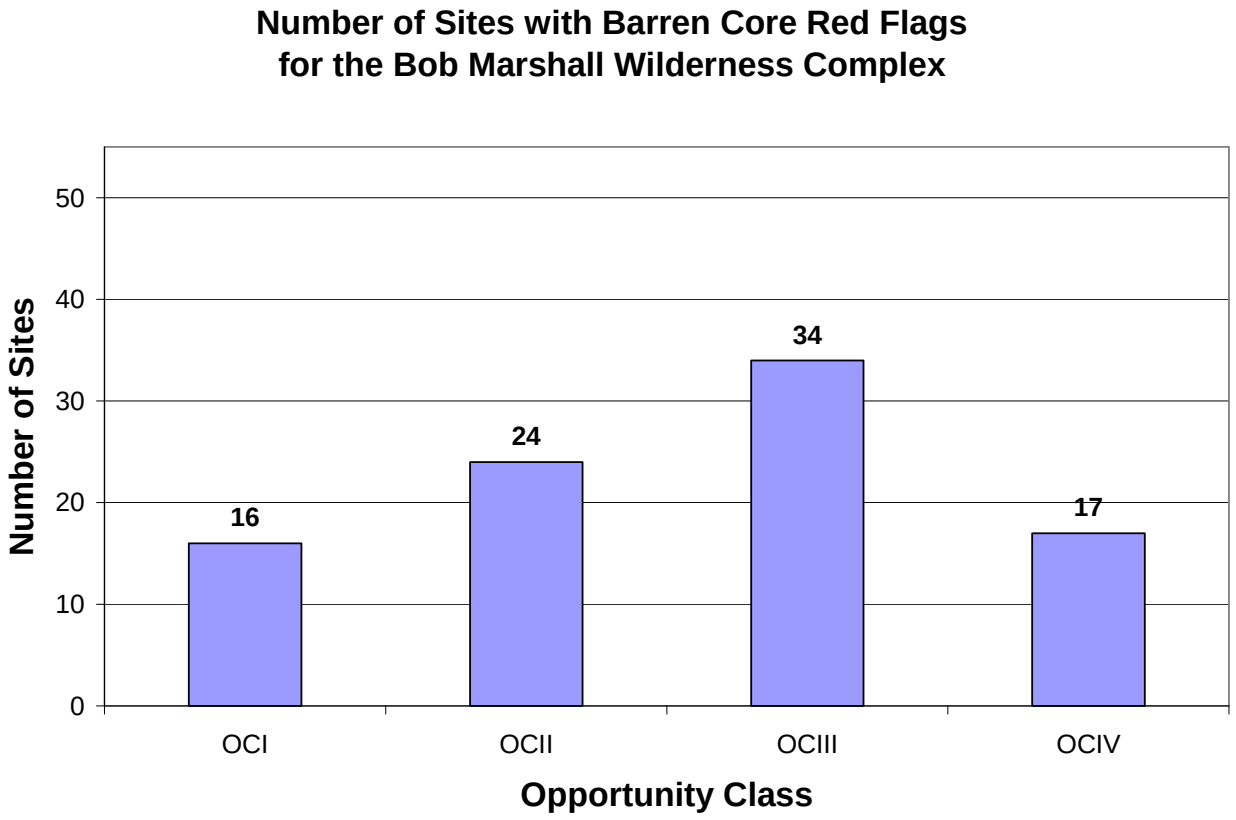
D. Charts


Number of Sites with Barren Core Red Flags
in Opportunity Class I
Number of Sites
0
1
2
3
4
5
6
7
6
5
2
0
0
3
RA1
RA2
RA3
RA4
RA5
RA6
Resource Area


Number of Sites with Barren Core Red Flags
in Opportunity Class II
Number of Sites
0
2
4
6
8
10
12
14
16
18
20
18
0
1
3
2
0
RA1
RA2
RA3
RA4
RA5
RA6
Resource Area


Number of Sites with Barren Core Red Flags
in Opportunity Class III
Number of Sites
14
12
10
8
6
4
2
0
12
5
10
5
1
1
RA1
RA2
RA3
RA4
RA5
RA6
Resource Area


Number of Sites with Barren Core Red Flags
in Opportunity Class IV
Number of Sites
12
10
8
6
4
2
0
10
N/A
0
4
1
2
RA1
RA2
RA3
RA4
RA5
RA6
Resource Area


Number of Sites with Barren Core Red Flags
for the Bob Marshall Wilderness Complex
Number of Sites
50
40
30
20
10
0
16
24
34
17
OCI
OCII
OCIII
OCIV
Opportunity Class

IV. DENSITY OF HUMAN IMPACTED SITES PER 640 ACRE AREA

A. Indicator: Number of human impacted sites permitted per 640 acre area

B. Standard:

- **OCI – 1 permitted**
- **OCII – 2 permitted**
- **OCIII – 3 permitted**
- **OCIV – 6 permitted**

C. Monitoring Results for areas over Standard – Complex-wide by Resource Area:

General Locations in Resource Area 1	OC	# of sites in 640 acre areas
Lena Peak	I	2
Marshall Mountain	I	2
Woodward Lake	I	3
Big Knife Lakes	II	3
George Lake	II	6
Lena Lake	II	3
Lick Lake	II	3
Picture Lake	II	4
Upper Bartlett Creek	II	3
Basin Creek	III	4
Brushy Park	III	4
Cabin Creek	III	6
Hahn Cabin	III	6
Mid White River	III	6
Pyramid Lake	III	5
Sunburst Lake	III	8
Youngs/ Big Slide	III	4
Alloy Creek/ Danaher	IV	7
Bar Creek	IV	10
Big Prairie	IV	9
Black Bear Cabin	IV	8
Black Bear Creek	IV	9
Butcher Point	IV	9
Camp Creek Confluence	IV	12
Kelly Point	IV	20
Lower White River	IV	7

IV. DENSITY OF HUMAN IMPACTED SITES PER 640 ACRE AREA (cont.)

General Locations in Resource Area 1 (cont.)	OC	# of sites in 640 acre area
Mouth of Limestone Creek	IV	13
Mouth of the S. Fk of the White River	IV	13
Necklace Lakes	IV	13
Salmon Forks Cabin	IV	10
White River Confluence	IV	12

General Locations in Resource Area 2	OC	# of sites in 640 acre area
Mid Dean Creek	I	2
Shadow Lake	I	2
Upper Silvertip Creek	I	2
Pentagon Creek Forks	II	3
Pentagon Cabin	III	6

General Locations in Resource Area 3	OC	# of sites in 640 acre area
Mid Dolly Varden	I	4
Upper Dolly Varden	I	2
Upper Grouse Creek	I	2
Dean Lake/ Switchback Pass	II	9
Trilobite Peak	II	5
Moose Lake	II	3
Beaver Lake	III	9
Big River Meadows	III	9
Grizzly Park	III	9
Lower Cox Creek	III	5
Mouth of Trail Creek	III	4
Three Forks	III	6
Upper Strawberry Creek	III	5
Stanton Lake	III	4
Marion Lake	III	4
Spruce Park	III	7
Tranquil Basin	III	6
Elk Lake	III	5
25 Mile/Castle Creek	III	4
Castle Lake	III	6
Granite Creek	III	6

IV. DENSITY OF HUMAN IMPACTED SITES PER 640 ACRE AREA (cont.)

General Locations in Resource Area 4	OC	# of sites in 640 acre area
Lake Levale	II	4
Whitetail Cr. (Grassy Hills)	II	3
Lower Bruce Cr.	II	3
S. Fk Birch Cr. (Crazy Cr.)	III	4
Wrong Creek Area (Wrangle Cr.)	III	5
My Lake	III	5
Head of Moose Creek	III	5
Cabin Creek Cabin Area	III	6
Bear Lake	III	7
Upper W. Fk. Sun (Burnt Creek)	III	4
Upper W. FK Sun (Grizzly Gulch)	III	6
Upper W. Fk Sun (Indian Creek)	III	5
Lower Dearborn River (Wilderness Boundary)	III	5
N. Fk. Sun (Gates Park Pack Bridge)	IV	8
N. Fk Sun (Sulphur Cr / Grouse Cr.)	IV	10
N. Fk. Sun (Cabin Cr.)	IV	9
N. Fk. Sun (Glenn Cr. / Circle Cr.)	IV	7
S. Fk Sun (Windfall Cr.)	IV	7
S. Fk Sun (Pretty Prairie)	IV	8
W. Fk. / S. Fk. Sun (Forks)	IV	8
W. Fk. Sun (Wapiti Creek.)	IV	8
W. Fk. Sun (Allen Meadows)	IV	7
W. Fk. Sun (Indian Meadows)	IV	13

General Locations in Resource Area 5	OC	# of sites in 640 acre area
Geo Unit 05-1-1, Valley of the Moon	II	5
Geo Unit 05-5-1, Lower E.FK. Meadow	II	4
Geo Unit 05-5-2, Alpine Park	II	3
Geo Unit 05-5-1, Meadow Lake	III	5
Geo Unit 05-7-1, Heart Lake	IV	9

General Locations in Resource Area 6	OC	# of sites in 640 acre area
Dwight Creek	I	4
Upper Dry Fork	I	5
Carmichael Cabin	III	7
North Fork Falls/East Fork	IV	7
North Fork Cabin	IV	11
Dry Fork	IV	10

V. DENSITY OF HUMAN IMPACTED SITES-HIGH or MODERATE RATINGS PER 640 ACRE AREA

A. Indicator: **Number of human impacted sites permitted above a particular condition class index per 640 acres**

B. Standard:

- **OCI – No moderately or highly impacted sites per 640 acres**
- **OCII – No more than (1) moderately impacted site and (0) highly impacted sites per 640 acre area**
- **OCIII - No more than (2) moderately impacted site and (0) highly impacted sites per 640 acre area**
- **OCIV - No more than (3) moderately impacted site and (1) highly impacted sites per 640 acre area**

C. Monitoring Results for areas over standard – Complex-wide by Resource Area:

General Locations in Resource Area 1	OC	# of Moderately Impacted sites	# of Highly Impacted sites
Lena Peak	I	1	1
Marshall Mountain	I	1	0
Minaret Peak	I	1	0
Otis Creek	I	1	0
Snow Lake	I	1	0
Woodward Lake	I	1	2
Upper S. Fk of the White River	I	1	0
Ayres Creek	II	0	1
Big Knife Lakes	II	2	0
Camp Creek Pass	II	0	1
Doctor Lake	II	2	0
Feline Creek	II	0	1
George Lake	II	2	3
Koessler Lake	II	1	1
Lena Lake	II	2	1
Lick Lake	II	2	0
Lion Creek Pass	II	1	1
Mid Marshall Creek 1 (upper)	II	2	0
Mid Marshall Creek 2 (lower)	II	0	1
Pagoda Creek	II	0	1

V. DENSITY OF HUMAN IMPACTED SITES-HIGH or MODERATE RATINGS PER 640 ACRE AREA (cont.)

General Locations in Resource Area 1 (cont.)	OC	# of Moderately Impacted sites	# of Highly Impacted sites
Picture Lake	II	2	1
Stadium Creek	II	0	1
Upper Bartlett Creek	II	1	2
Upper Holbrook Creek	II	0	1
Babcock Creek Confluence	III	1	1
Basin Creek	III	2	2
Below Hole in the Wall	III	3	0
Brushy Park	III	0	3
Cabin Creek	III	2	2
Hahn Cabin	III	3	1
Jenny Creek	III	2	1
Juliet Creek	III	1	1
Lone Butte	III	1	1
Lower Youngs Creek	III	1	1
Mid Gorge Creek	III	0	1
Mid Little Salmon Creek	III	0	1
Mid White River	III	5	0
Molly Creek	III	1	1
Mouth of Marshall Creek	III	3	0
Pyramid Lake	III	2	1
Sunburst Lake	III	6	2
Sunburst Trail Junction	III	1	1
Youngs/ Big Slide	III	1	3
Stadler/Hoadley Pass	III	0	1
Bar Creek	IV	4	4
Big Prairie	IV	6	0
Black Bear Cabin	IV	4	2
Black Bear Creek	IV	4	1
Brownie Creek	IV	0	2
Butcher Point	IV	5	1
Camp Creek Confluence	IV	3	5
Gordon Ford	IV	2	3

V. DENSITY OF HUMAN IMPACTED SITES-HIGH or MODERATE RATINGS PER 640 ACRE AREA (cont.)

General Locations in Resource Area 1 (cont.)	OC	# of Moderately Impacted sites	# of Highly Impacted sites
Head of Big Salmon Lake	IV	0	3
Kelly Point	IV	6	8
Mid Creek	IV	4	0
Mouth of Ayres Creek	IV	5	0
Mouth of Limestone Creek	IV	8	3
Mouth of the S. Fk of the White River	IV	7	3
Necklace Lakes	IV	10	2
Salmon Forks Cabin	IV	4	1
Shaw Cabin	IV	1	2
White River Confluence	IV	4	3

General Locations in Resource Area 2	OC	# of Moderately Impacted sites	# of Highly Impacted sites
Mid Dean Creek	I	2	0
Shadow Lake	I	2	0
Upper Silvertip Creek	I	0	1
Hart Lake	I	1	0
Pentagon Creek Forks	II	2	0
Dean Falls	III	2	1
Mouth of Dean Creek	III	0	2
Pentagon Cabin	III	3	3
Upper Spotted Bear River	III	1	1
Mouth of Wall Creek	III	2	1

V. DENSITY OF HUMAN IMPACTED SITES-HIGH or MODERATE RATINGS PER 640 ACRE AREA (cont.)

General Locations in Resource Area 3	OC	# of Moderately Impacted sites	# of Highly Impacted sites
Argosy Creek	I	0	1
North Creek	I	0	1
Porter Creek	I	1	0
Upper Grouse Creek	I	0	1
Upper West Fork Schafer Creek	I	1	0
Dean Lake/ Switchback Pass	II	6	0
Trilobite Peak	II	2	0
Whistler Creek	II	2	0
Beaver Lake	III	5	1
Big River Meadows	III	3	5
Gooseberry Cabin	III	1	1
Grizzly Park	III	6	0
Lower Cox Creek	III	2	1
Mid Clack Creek	III	0	1
Morrison Creek	III	1	1
Sabido Cabin	III	0	1
Three Forks	III	5	0
Upper Strawberry Creek	III	3	0
West Fork Schafer Creek	III	0	1
Winter Creek	III	3	0
Stanton Lake	III	2	2
Marion Lake	III	2	1
Spruce Park	III	5	0
Tranquil Basin	III	3	1
Elk Lake	III	0	3
25 Mile/Castle Creek	III	2	2
Castle Lake	III	5	1
Granite Creek	III	4	0
Schafer Work Center	IV	4	0
Scott Lake	IV	5	0

V. DENSITY OF HUMAN IMPACTED SITES-HIGH or MODERATE RATINGS PER 640 ACRE AREA (cont.)

General Locations in Resource Area 4	OC	# of Moderately Impacted sites	# of Highly Impacted sites
Tr. #227 Ellis Cr.	I	1	0
Head of Cave Creek	I	1	0
Middle Fk. Birch Creek	II	2	0
Upper Bruce Creek	II	1	1
Lower Bruce Creek	II	2	0
Lake Levale	II	2	2
Ahorn Cr. (Pearl Basin)	II	2	0
Upper S. Fk. Sun River	II	0	1
Whitetail Creek (Grassy Hills)	II	1	1
S. Fk. Birch Cr. (Lake Cr.)	III	1	1
S, Fk Birch Cr. (Crazy Cr.)	III	2	1
Wrong Creek Area	III	3	1
Upper Route Cr. (Nesbit Cr.)	III	3	0
Lower Route Cr. (10 Mile Park)	III	3	0
My Lake	III	3	1
Head of Moose Creek	III	4	1
Cabin Creek Cabin Area	III	4	0
Bear Lake	III	4	1
W. Fk. Sun River (Indian Cr.)	III	3	0
Elbow Pass / Straight Creek	III	0	1
Halfmoon Park	III	1	1
Lower Dearborn (Wilderness Boundary)	III	4	1
N. Fk. Sun (Gates Park Pack Bridge)	IV	8	0
N Fk Sun (Rock Cr.)	IV	5	0
N. Fk. Sun (Sulphur Cr. / Grouse Cr.)	IV	10	0
N. Fk. Sun (Cabin Cr.)	IV	8	1
N. Fk. Sun (Circle Cr. / Glenn Cr.)	IV	6	0
Lower N. Fk. Sun (Whiskey Cr.)	IV	4	0
S. Fk. (Pretty Prairie)	IV	5	3
S. Fk. Sun (Windfall Cr.)	IV	6	1
W. Fk. / S. Fk. Sun Confluence (Forks)	IV	5	0
W. Fk. Sun (Wapiti Cr.)	IV	6	0
W. Fk. Sun (Allen Meadows)	IV	5	1
W. Fk. Sun (Indian Meadows)	IV	7	4

V. DENSITY OF HUMAN IMPACTED SITES-HIGH or MODERATE RATINGS PER 640 ACRE AREA (cont.)

General Locations in Resource Area 5	OC	# of Moderately Impacted sites	# of Highly Impacted sites
Geo Unit 05-1-1	II	4	1
Geo Unit 05-2-1	II	3	0
Geo Unit 05-5-2	II	3	0
Geo Unit 05-5-2	II	0	1
Geo Unit 05-5-1	III	3	1
Geo Unit 05-2-1: 640 acre circle crosses OC boundary	III & II	2	1
Geo Unit 05-7-1	IV	7	2

General Locations in Resource Area 6	OC	# of Moderately Impacted sites	# of Highly Impacted sites
Dwight Creek	I	2	0
Upper Dry Fork	I	3	1
Sarbo Creek	I	1	0
North Fork/Sarbo	II	2	0
Cooney Creek	II	2	0
Cabin Creek	II	2	0
Mid Cabin Creek	II	0	1
Theodore Creek	III	0	1
Carmichael Cabin	III	4	1
North Fork Cabin	IV	5	1
Dry Fork	IV	5	1

VI. Noxious Weed Summary

Preventing the introduction and spread of Noxious Weeds is a major land management issue for the Forest Service in the Bob Marshall Complex. Monitoring of noxious weeds is not an inventory item outlined in the 1987 LAC Plan for the BMWC, however, managers feel inventory and monitoring is important and partially fills the requirement for tracking "***Range Conditions***" as called for in the 1987 Plan.

There is little doubt that noxious weeds are being transported and are spreading in the Complex. By the summer of 2008, all districts will have active programs mapping, treating, and monitoring weed infestations. Each district currently has developed individual methods for mapping and monitoring. It is our goal to complete a complex-wide invasive weed inventory, which includes mapping weed populations and entering data about these populations in our corporate data storage system, before the end of the upcoming 5-year monitoring period.

The Noxious Weeds present in the Complex includes Spotted Knapweed, Oxeye Daisy, Musk and Bull Thistle, Hounds-Tongue, Yellow and Dalmatian Toadflax, Yellow Hawkweed, St. Johnswort, Leafy Spurge, Burdock and Canada Thistle. These weeds are present in varying degrees with infestations near high water tables being of the most concern. All species are currently being managed with "eradication" as our goal. Canada Thistle is one exception to the eradication rule. The explosion of this species across the landscape, particularly in the aftermath of recent fires, has made the goal of "reducing spread" a more realistic endeavor. Generally, herbicide or mechanical treatment of Canada Thistle will be conducted along trails and in campsites only. Biological control will be employed in areas away from trails and campsites.

Monitoring and treatment efforts will increase during the next 5-year monitoring period. Education of all wilderness users regarding the identification and methods to reduce spread will continue to be a top priority in our formal and day-today education efforts in the Bob Marshall Complex.

VII. Management Summary

This is a summary of management in the last five year monitoring period. The BMWC has been monitoring for 20 years or four five year periods. Monitoring to standard has been difficult due to declining budgets and large fires. The decreased budgets has caused managers to choose either monitoring or management actions. In most cases managers choose to monitor to complete the data collection for five-year period. The increased presence of large fires in the complex has caused managers to direct more funding to reconstruct trails and trail structures affected by fire and do less monitoring in that season.

Many of the areas of concern were areas of concern in the previous five year monitoring period. The concerns, management and proposed management actions are consistent throughout the complex. Increased use in some areas of the Wilderness has caused increased both social and resource impacts. The preferred management response in the complex to social and resource impacts is education and visitor contacts for all resource areas and opportunity classes. Site rehabilitation is used to address resource impacts, decrease the impact rating and bring a site into standard. In some areas site naturalization is used to achieve a non-discernable (NOND) impact rating and reduce the number of sites in an area.

A brief summary of each district below provides a look at the complex management responses. The management responses are consistent through the complex.

Management Summary (cont.)

Hungry Horse has a situation in which trails in OC-I are easily accessible from the trailhead. The use of these trails has increased and trail encounters are not within standards. The management response is to increase of Wilderness Rangers patrols, educate, and direct use to other similar areas. Part of the education proposal is to provide Leave No Trace (LNT) at camping areas and trailheads. New river regulations will be in effect for 2008-09 and these are expected to help improve site impacts in the river corridor. Human waste containment will address improper waste disposal and the use of fire pans will reduce the number of fire rings in the river corridor. Continue monitoring to determine what and how much affect the new regulations have. It was noted that only slight changes, increase or decrease, have occurred in all indicators. Most use is occurring in OC-III.

On the Rocky Mountain District the areas of concern will be used to prioritize management activities in the next five years. 73,850 acres of the district have burned in the last five years and 82 of the 246 camping sites are within the burned areas. Approximately 100 miles of trail are also within the burned areas. Noxious weed inventory and treatment is a priority. Stock impacts are also increasing in some areas; minimum impact stock handling techniques will be a priority in visitor contacts. Other management options are signing sites informing visitors of proper stock containment techniques and designating stock containment areas. Rehabilitate sites, in all OC, to reduce impacts and naturalize sites to a NOND rating to reduce the number of sites in a 640 acre area in to standard.

Seeley Lake District met standards for encounters in all OC. Fires in the last five year period did have an effect on sites and trails in the Wilderness. The effects of the 2007 fires on sites and trails are still not fully known. Many of the areas of concern in the previous five year period are the same as in this period. The preferred management in all OC areas is education and contacts. Some sites are recovering naturally as a result of the 1988 Canyon Creek Fire. Snags and blow down are making some sites inaccessible and/or difficult to use. Weeds continue to be a primary focus, locating and treating infestations. Areas where weeds have been treated are monitored to determine if treatment has been successful. Yellow Toadflax is invading and is one of the most difficult to treat; only partial success has been accomplished. Some of the treated sites are within the Conger fire; the fire area will be monitored for old and new infestations.

Lincoln District met standards for encounters in all OC. Some areas of concern showed a slight improvement and a few showed some decline in conditions in this five year period. The areas of concern are primarily the same as in the previous periods. The designated stock areas, hitch rails, are working well to contain the stock impacts. In most areas the campsites near the stock areas have lower impact ratings. Another designated stock area is being considered, where stock impacts are increasing barren core and tree damage. Education and visitor contacts are the primary management tools in all OC. Other management is rehabilitating sites to reduce impacts and decrease the number of sites in some areas. Weeds location and treatment is a priority. The Helena Weeds EIS was signed in 2007 and will allow us to chemically treat weeds in the Wilderness for the first time. Prior to this we were restricted to pulling weeds in the Wilderness. In the past weeds were only sprayed at trailheads and along the trails leading into the Wilderness.

Spotted Bear Ranger District has focused on completing inventory on the nearly 700 campsites in Resource Areas 1, 2 and portions of 3. Our areas of concern deal primarily with barren core and campsite density that are out of standard, and weed populations. Social data was not consistently collected during the current sampling period due to fire related trail issues and our focus on campsite inventory. Our intention is to increase social monitoring in the coming monitoring period. Many of our areas of concern are concentrated in the South Fork river corridor and are due to campsite impacts and weed infestations. We continue to develop and expand our river

ranger program to help spread *Leave No Trace* messages to floaters. Our efforts with outfitters to reduce the amount of stock camping in the river corridor have made a noticeable, positive, change. A strong wilderness weed program will continue to be a major emphasis. A primary goal of these efforts will be to limit the spread of knapweed to areas outside the river corridor. We will be focusing management actions on our areas of concern, looking for effective ways to reduce impacts and bring these areas back into standard. Examples will range from increased visitor contact, education efforts and campsite naturalization, to setting up seasonal high lines.

The airstrip at Schafer Meadows has standards for aviation activity. Total flights should not exceed 550 annually and daily flights should not exceed 5 per day on 90% of days. During this 5 year period, the standard for total flights was not exceeded. Days with more than 5 flights were less than 90% briefly during peak river running season.

In summary all districts are approaching issues consistently and are choosing education and visitor contacts and the preferred course of action. Declining budgets and large fire impacts on resources have forced managers to direct funds to correct resource damage and not monitor to standard. The preferred response to social and resource impacts in the complex is an increased Wilderness Ranger presence.

VIII. Successes and Lessons Learned

Managers of the Bob Marshall Wilderness Complex (BMWC) have had the opportunity to observe and evaluate the overall effectiveness of the implementation of past LAC management actions over time. Some of the past management actions implemented have been successful at reducing impacts on the ground while other actions have caused unexpected results that have actually led to a degradation in overall resource condition in some locations. In the future, managers should try and use those methods that have worked in the past and learn from our mistakes. This section of the monitoring report will outline a few examples of actions that have worked well and others that have not.

1) <u>Education / Enforcement:</u>

All managers in the BMWC feel there is a significant positive value in having a consistent field presence in the form of experienced Wilderness Rangers making one-on-one visitor contacts with the public and our commercial outfitters. These field contacts serve to remind Wilderness users there is an expectation from our agency that they treat the resource with the respect it deserves.

While most visitor contacts in the BMWC are informative and educational by design, there are those few contacts with individuals each season who do not respond well to polite, educational messages. At times, these contacts can evolve from informal conversations to a need to enforce established wilderness regulations with more formal authority. A good Wilderness Ranger knows how to make the most of their educational contacts with the public, only having to take on the role of an enforcer of regulations as a last resort.

Direct, professional, polite, informative, visitor contacts along the trail or on the river during the day or at a campsites in the evening, provide our best opportunities as managers to educate the public about the value of wilderness and the best ways to protect this fragile resource. Placing a high priority on funding personnel to do this important field work during the summer and fall hunting seasons is crucial to the future success of management of the BMWC.

Lessons Learned (cont.)

2) <u>Plan ahead and prepare for potential shifts in visitor use.</u>

During the past 5 year monitoring period the BMWC has experienced significant shifts in the patterns of visitor use due to fire activity. By being proactive and trying to anticipate where and how Wilderness use patterns might shift after a fire, managers can be better prepared to handle increased pressure from the public in popular locations that have not been impacted by fire. One of the ways that managers have been successful in managing increased visitor use pressure has been to proactively direct users to more durable campsites through informational signing and during office or field contacts with users planning their trips. Trails that previously were lightly used may see significantly increased use levels after fire has impacted adjacent areas. Because of this, managers need to look ahead and adjust priorities when planning trail reconstruction and heavy maintenance projects to deal with anticipated shifts in visitor use.

3) <u>Encourage the proper Leave-No-Trace principles for camping.</u>

Resource impacts can be greatly reduced in popular areas by encouraging future users to camp at highly impacted sites. At first glance, this concept may seem to be a backwards approach, but research of campsite impacts over time have shown that approximately 90% of the resource impact to a previously unused location is caused in the first 4 nights of use when a site is used by a large stock party. Conversely, the use of an existing highly impacted site by a similar size stock party will actually lead to far less of an increase in resource damage, essentially because you can't cause much more hurt to a site that already has a high level of impact. In the past, it was common to instruct our Wilderness Rangers to encourage the public to camp at unused or lightly used sites in popular areas. As a result of this policy, we found that we were, in fact, greatly increasing the overall level of resource impact to a given location over time.

These are the basic LNT principles when it comes to minimizing your camping impacts:

A) Always camp on the most durable surfaces possible.
B) Camp only at existing, heavily impacted sites in highly popular areas.
C) Camp (1 night only) at previously unused sites in remote, lightly used OC I locations.
D) In all locations try to avoid camping at those sites that are just starting to show signs of camping impact.

4) <u>Closing campsites can lead to a net increase in resource impact.</u>

In the past, it was common practice in the BMWC to temporarily close campsites to public use for Wilderness "rehabilitation" purposes when monitoring revealed resource impacts had increased beyond a certain point. In most cases, this failed policy has not led to an improvement in resource condition, but in fact, has caused a significant increase in overall resource impact in some areas. Most highly impacted campsites get this way for one simple reason; people like to camp in that location. If we take the opportunity away from users to camp at an existing site in a popular area of the Wilderness, those campers don't go away, they just establish new places to camp in the vicinity of the site we displaced them from.

In one extreme example of this situation, the public established 5 new sites in an area because managers prevented them from using their favorite established highly impacted campsite. Within about 5 years of the implementation of the closure, the collective square footage of the impacted

Lessons Learned (cont.)
camp area and barren core area devoid of vegetation at the new sites was ten fold what the closed site ever had. Learning from this example and others, managers have moved away from the policy of closing popular sites to use in most cases.

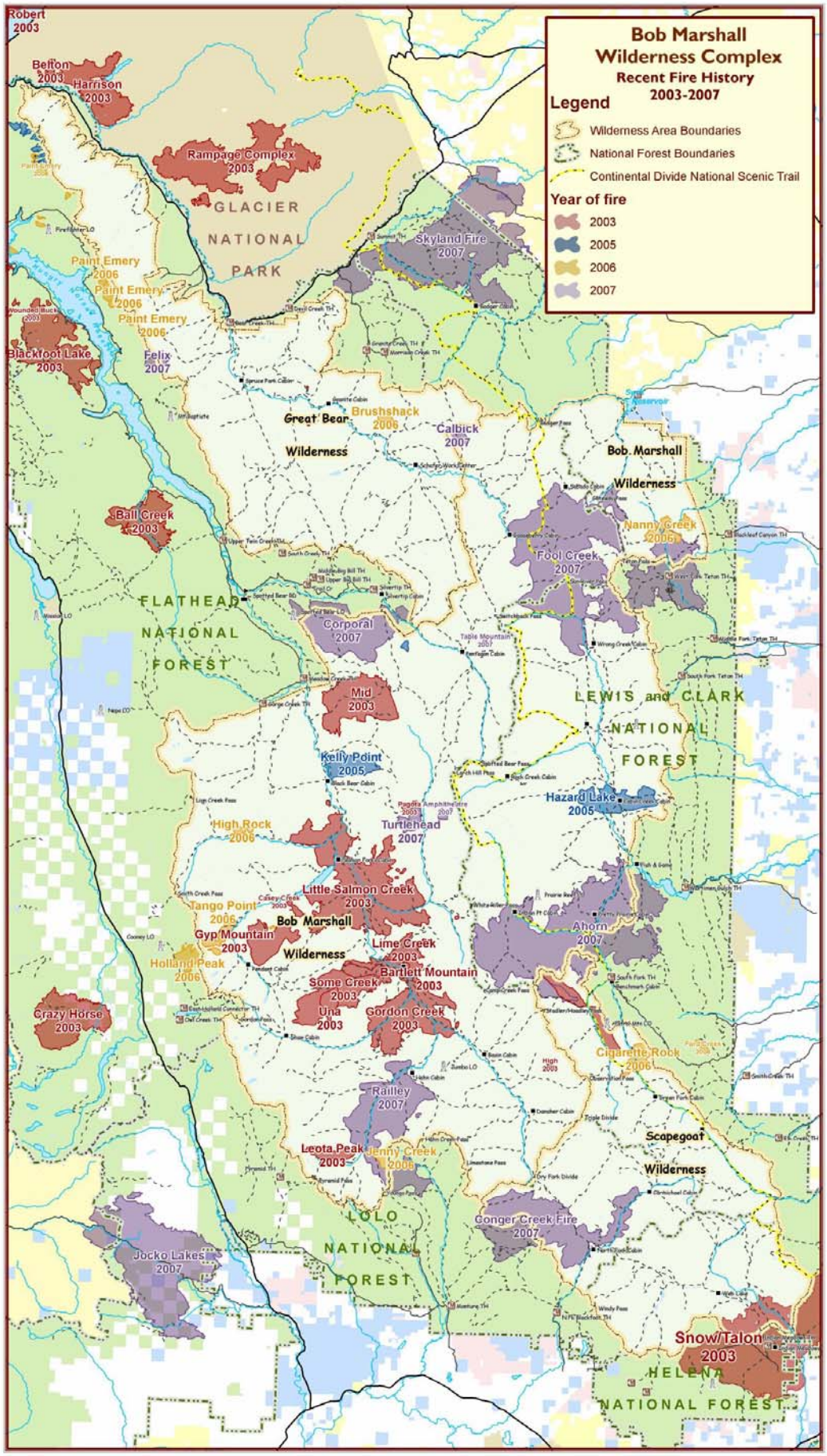
Current thinking is to focus campsite rehabilitation efforts on reducing the future expansion of the square footage of a site and on naturalizing existing resource damage around the site perimeter, while still allowing the public to use the core camping area. This type of management does not force users to create new sites in an area they have come to camp. The public can continue to use their favorite sites and rangers can work with users to help try and reduce the impacts to the perimeter.

5) Coordination among Outfitter/Guide Permittees

We have been actively working with Outfitters to minimize overlap of itineraries. This reduces the likelihood of outfitted parties being at the same place at the same time. When these efforts are successful, the positive effects are two fold, the stress on the resource is reduced and the quality of the experience for the visitor in enhanced. We have seen conditions stabilize in some high use locations and the quality of the experience improve. Most outfitters are more than willing to work with us in this effort.

6) Stock Holding Facilities

We have identified a few locations where resource damage has occurred as a result of increased or prolonged stock holding in sensitive areas. We have constructed temporary hitch rail or high-lines in some of these areas. The goal is to encourage stock holding in more durable areas and reducing spread of resource damage. These efforts have be successful in most applications, especially when the stock holding facility is easy for the stock user to find and is in a location that meets their needs (close to the attraction they are visiting, and within sight or sound of where they will be spending their time). In cases where one or both of these elements are lacking, the facility is generally not used. It is critical that these facilities be developed in locations that provide for stock users needs.


Bob Marshall
Wilderness Complex
Recent Fire History
2003-2007
Legend
Wilderness Area Boundaries
National Forest Boundaries
Continental Divide National Scenic Trail
Year of fire
2003
2005
2006
2007
Robert 2003
Belton 2003
Harrison 2003
Rampage Complex 2003
GLACIER NATIONAL PARK
Skyland Fire 2007
Paint Emery 2006
Paint Emery 2006
Paint Emery 2006
Blackfoot Lake 2003
Felix 2007
Great Bear Wilderness
Brushshack 2006
Calbick 2007
Bob Marshall Wilderness
Ball Creek 2003
Nanny Creek 2006
Fool Creek 2007
FLATHEAD NATIONAL FOREST
Corporal 2007
Mid 2003
LEWIS and CLARK NATIONAL FOREST
Kelly Point 2005
Hazard Lake 2005
High Rock 2006
Turtlehead 2007
Little Salmon Creek 2003
Tango Point 2006
Bob Marshall Wilderness
Gyp Mountain 2003
Lime Creek 2003
Ahorn 2007
Holland Peak 2006
Bartlett Mountain 2003
Some Creek 2003
Una 2003
Gordon Creek 2003
Crazy Horse 2003
Cigarette Rock 2006
Railley 2007
Scapegoat Wilderness
Leota Peak 2003
Jenny Creek 2006
Gonger Creek Fire 2007
LOLO NATIONAL FOREST
Jocko Lakes 2007
Snow/Talon 2003
HELENA NATIONAL FOREST