

1997
STATE OF THE BACKCOUNTRY REPORT
INTRODUCTION

Glacier National Park represents the "core" of a large and relatively undisturbed natural area in the Northern Continental Divide region, known as the "Crown of the Continent" ecosystem. Glacier's 1,013,572 acre landscape includes 963,290 acres of proposed Wilderness (95% of the Park), 3,398 acres of potential Wilderness, and approximately 45,884 acres of undeveloped backcountry, all of which are currently managed as de-facto Wilderness.

Glacier's proposed Wilderness was originally recommended for inclusion into the National Wilderness System in 1974, and a Backcountry Management Plan was subsequently approved in 1975. The Backcountry Management Plan was revised in 1984 and is currently updated annually.

Primary responsibility for backcountry/proposed Wilderness Management in Glacier is delegated to the Wilderness Management Section in the Division of Resources Management.

This report has been prepared annually since 1993 by Glacier's Wilderness Management staff. It is intended to meet the following objectives:

1. Summarize current conditions, including use levels, management activities, resource inventory and monitoring efforts and results, condition of backcountry facilities, and backcountry management accomplishments for the calendar year 1997.
2. Document recommendations for 1998 management actions through analysis of 1997 data.

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1997

STATE OF THE BACKCOUNTRY REPORT

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Cover Photo: Ptarmigan Tunnel Trail
T.J. Hileman, circa 1930

SECTION 1 BACKCOUNTRY CAMPING USE SUMMARY

INTRODUCTION

The following information summarizes backcountry camping use statistics in Glacier National Park for the calendar year 1997. Data and comments are provided regarding total camper nights, designated campground use, undesignated camping, permit issuing stations, campground and trail closures, campground full nights, average nights camped per party, average party size and campground opening dates.

CAMPER NIGHTS

1. A total of 27,561 camper nights were recorded in 1997 (1 individual overnight stay = 1 camper night). This use marked a <1% decrease from the 27,806 camper nights recorded in 1996, and the third year in a row with a slight decline. However, 1997 use still accounted for the 7th highest number of camper nights ever recorded for Glacier National Park. 73% of the camper nights total occurred during the months of July and August.

2. Undesignated camping use totalled 1,243 camper nights in 1997 (total includes use in the Nyack-Coal Creek Camping Zone and winter camping season permits). This reflected a 14% increase from 1996. The greatest number of undesignated camper nights was recorded in the Lake McDonald Subdistrict (348).

Winter season camper nights increased by 5% in 1997. A detailed listing of 1997 undesignated campsite locations is available in the Wilderness Management Office.

3. The winter season/summer season breakdown (winter season is 11/20 to 5/1) in camper nights was as follows:

UNDESIGNATED CAMPING	1994	1995	1996	1997
Winter Permits Issued	99	81	65	79
Winter Camper Nights	462	402	307	324
Summer Permits Issued	179	220	178	127
Summer Camper Nights	829	718	781	919

4. Undesignated camping (camper nights) in the Nyack-Coal Creek Camping Zone decreased by 18% in 1997. This marked the third consecutive year that Nyack-Coal Creek Camping Zone use has declined. Use in this special camping zone breaks down as follows:

NYACK-COAL CREEK CAMPING ZONE	1994	1995	1996	1997
Undesignated Permits Issued	74	57	36	44
Undesignated Camper Nights	311	329	256	208

STOCK USE

Overnight stock use increased by 43% in 1997, with 178 stock use nights recorded (1 head of stock camped overnight = 1 stock use night). The most heavily used area for stock continued to be Belly River, with 98 stock use nights recorded, followed by the Lake McDonald Subdistrict with 24 stock use nights. The backcountry campground most frequently used by stock groups was Elizabeth Lake Head, with 37 stock use nights recorded.

CAMPGROUND STATISTICS

1. The ten most heavily used backcountry campgrounds (in camper nights) in 1996 and 1997 were as follows:

1996		1997	
1 - Gunsight Lake	1,274	1 - Gunsight Lake	1,310
2 - Elizabeth Lake foot	1,186	2 - Bowman Lake Head	1,236
3 - Bowman Lake head	1,069	3 - Elizabeth Lake foot	1,059
4 - Elizabeth Lake, head	824	4 - Kintla Lake head	747
5 - Belly River	813	5 - Elizabeth Lake head	736
6 - Kintla Lake, head	788	6 - Poia Lake	731
7 - Poia Lake	782	7 - Gable Creek	660
8 - Glenns Lake, foot	755	8 - Atlantic Creek	651
9 - Atlantic Creek	715	9 - Belly River	646
10- Lower Quartz Lake	688	10- Oldman Lake	645

2. A detailed breakdown of camper nights for each campground is attached on pages 1-8 through 1-10

3. Camper nights increased at the following campgrounds in 1997:

SUBDISTRICT/AREA	CAMPGROUNDS
North Fork	Adair, Boulder Pass, Bowman Lake head, Grace Lake, Logging Lake foot, Round Prairie (foot)
Lake McDonald	Camas Lake, Lake Ellen Wilson, Flattop, Sperry
Walton	Beaver Woman Lake, Coal Creek, Upper Nyack
Two Medicine	Cobalt Lake, No Name Lake, Oldman Lake, Two Medicine auto, Upper Two Medicine
St. Mary	Gunsight Lake, Otokomi Lake, Red Eagle foot, Red Eagle head, Reynolds Creek
Many Glacier	Many Glacier (auto)
Belly River	Glenns Lake head, Helen Lake, Mokowanis Lake
Goat Haunt	Hawksbill, Hole in the Wall

BACKCOUNTRY PERMIT STATISTICS

1. A total of 4,955 Backcountry Use Permits were issued in 1997. This marked an <1% increase from 1995, when 4,952 permits were issued. Apgar Visitor Center issued the majority of the permits at 53%. Waterton Lakes National Park personnel issued permits for Glacier National Park out of their visitor center for the second consecutive year. The major permit issuing stations were:

LOCATION	1994	1995	1996	1997
Apgar Visitor Center	51.4%	51.3%	51.7%	53.0%
Quarters # 3 Advanced Reservations				2.6%
St. Mary Visitor Center	25.0%	24.5%	24.1%	24.0%
Many Glacier Ranger Station	9.6%	9.5%	9.9%	7.9%
Two Medicine Ranger Station	6.7%	7.5%	6.7%	4.7%
Park Headquarters (winter)	2.9%	2.0%	2.9%	3.2%
Polebridge Ranger Station	1.9%	2.7%	1.7%	2.4%
Goat Haunt Ranger Station	1.2%	1.2%	0.6%	0.5%
Waterton Visitor Center	I -	I -	I 1.2%	I 1.1%

CAMPGROUND CLOSURES

1. There were 7 campground closures in 1997 which accounted for 108 closure days. All but one of these closures was based on bear activity and/or carcasses in the campground. This compares to 10 backcountry campground closures in 1996 which accounted for 94 closure days. The majority of these closures were due to bear activity. The new Gable Creek Campground (3 campsites) was opened for public use on June 20. This campground replaced the former Three Mile Campground which was destroyed by flooding in 1996.

Campground closure days were suspended at the beginning of the winter camping season (effective 11/20/97)

TRAIL CLOSURES

1. There were 28 trail closures in 1997 which accounted for 783 closure days. The most lengthy closure involved the Medicine Grizzly Lake Trail, which was closed for 150 days due to bear activity. A total of 14 of these closures were associated with bear activity and/or carcasses on the trail. An additional 7 closures were for stock use only, based on sensitive resource conditions, and 3 closures were based on hazardous snow conditions (Highline and Grinnell Glacier Trails).

This compares to 32 trail closures which accounted for 613 closure days in 1996. A total of 25 of these closures were due to bear activity, 5 were for stock only, and 2 were for hazardous snow conditions.

Trail closure days were suspended at the beginning of the winter camping season (effective 11/20/97).

CAMPGROUND FULL REPORT

1. The number of campground full nights decreased slightly in 1997, with 4 campgrounds full for 60 or more nights and 29 campgrounds full for 30 or more nights. Campgrounds with the most full nights in 1996 and 1997 were:

1996 Campground - Nights Full		1997 Campground - Nights Full	
1 - Belly River	- 89	1 - Gable Creek	65
2 - McDonald Lake	- 79	2 - Belly River	65
3 - Elizabeth Lake foot	- 66	3 - Arrow Lake	65
4 - Elizabeth Lake head	- 62	4 - McDonald Lake	65
5 - Cracker Lake	- 59	5 - Elizabeth Lake foot	58
6 - Snyder Lake	- 56	6 - Elizabeth Lake head	58
7 - Poia Lake	- 56	7 - Glenss Lake foot	55
8 - Slide Lake	- 56	8 - Cracker Lake	53
9 - Arrow Lake	- 55	9 - Gunsight Lake	52
10- Glenss Lake foot	- 54	10- Glenss lake head	52
Mokowanis Lake	- 54		

• All campgrounds were full for at least one night in 1997.

AVERAGE NIGHTS CAMPING AND AVERAGE PARTY SIZE

1. The average number of nights camping per party and the average party size remained consistent with the 10 year average. They were:

CATEGORY	1994	1995	1996	1997	10 Year Average 1988 - 1997
Average Nights Camping	2.16	2.12	2.16	2.13	2.17
Average Party Size	2.52	2.53	2.54	2.53	2.49

The predominant number of nights camping continued to be one night, with 44% of the camping parties doing so. The predominant party size continued to be two people, as 53.7% of the parties that size. The percentage of solo campers (14.31%) increased slightly in 1997, for the second consecutive year. Maximum allowable party size is set at 12 for designated campgrounds and 6 for undesignated campsites.

TRENDS

1. The following graph (page 1-7) reflects backcountry camper use (in camper nights) for the period of 1974 through 1997. As you can see, the overnight use levels have been moving generally upward since the mid-1980's, with slight declines in 1995, 1996 and 1997. While camper nights decreased by >1% in 1997 (from 1996), overnight camper use accounted for the 7th highest level since 1974 and approached the record level recorded in 1994. The primary factor that may have influenced 1997 use was a record winter snowpack and relatively late snowpack melt-out. Despite these factors, Glacier's backcountry appears to be at it's peak of popularity and demand for backcountry campsites during the summer months.

CAMPGROUND OPENING DATES

Glacier's designated backcountry campground opening dates are summarized in the following table:

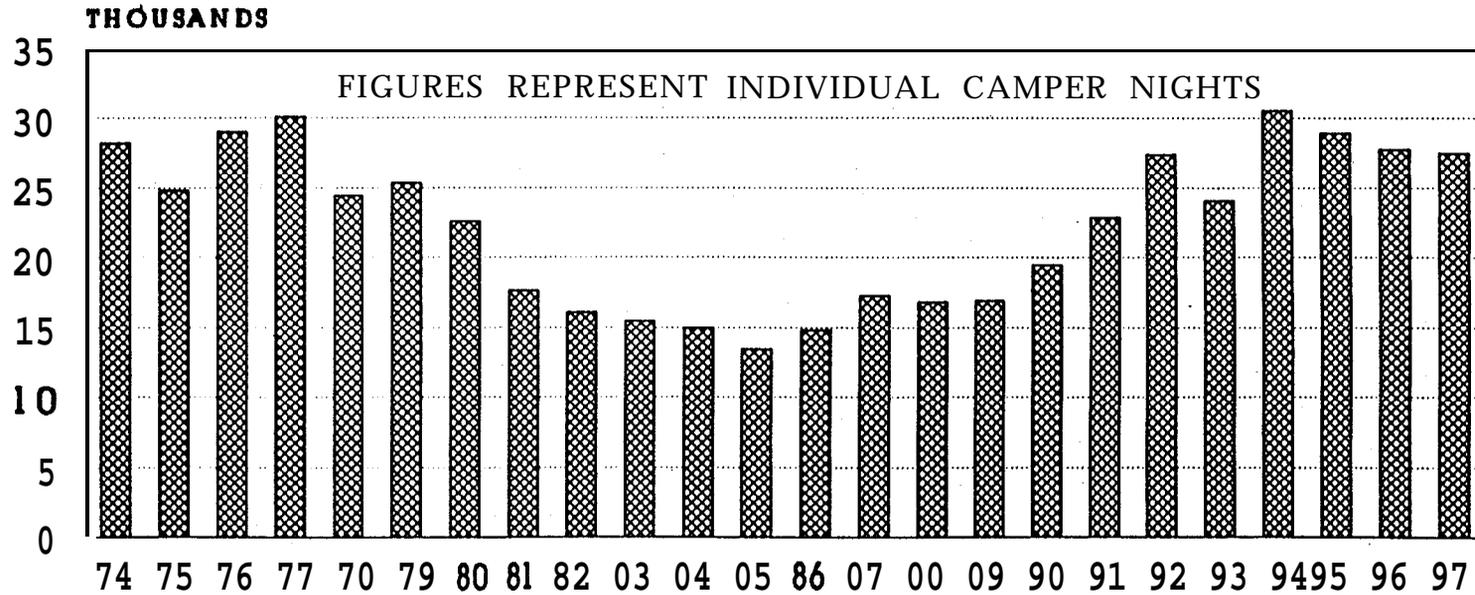
1997 OPENING DATES ❄️ DESIGNATED BACKCOUNTRY CAMPGROUNDS GLACIER NATIONAL PARK	
Adair 5/29 Akokala Lake 6/18 Boulder Pass 7/31 Bowman Lake head 5/29 Brown Pass 7/10 Grace Lake 6/12 Kintla Lake head 6/12 Logging Lake foot 5/29 Lower Quartz Lake 5/29 Quartz Lake 6/4 Round Prairie 6/25 Upper Kintla Lake 6/12 Arrow Lake 6/1 Camas Lake 7/10 Lake Ellen Wilson 7/10 Flattop 7/17 Granite Park 7/10 Lincoln Lake 6/27 McDonald Lake 5/29 Snyder Lake 6/21 Sperry 7/10 Beaver Woman Lake 7/17 Coal Creek 7/16 Harrison Lake 7/10 Lake Isabel 7/10 Lower Nyack 7/17 Ole Creek 6/4 Ole Lake 6/16 Park Creek 6/4 Upper Nyack 7/17 Upper Park Creek 6/25 Atlantic Creek 6/12 Cobalt Lake 7/31	Morning Star Lake 7/10 No Name Lake 7/15 Oldman Lake 7/10 Two Medicine CG 5/23 Upper Two Medicine Lake 7/10 Gunsight Lake 7/10 Otokomi Lake 7/10 Red Eagle Lake; ft. 6/4 Red Eagle Lake, head 6/4 Reynolds Creek 6/16 Cracker Lake 6/25 Many Glacier CG 5/23 Poia Lake 6/4 Slide Lake 6/4 Belly River 5/31 Cosley Lake 6/15 Elizabeth Lake foot 6/10 Elizabeth Lake head 6/10 Gable Creek 6/20 Glenss Lake foot 6/10 Glenss Lake head 6/10 Helen Lake 6/27 Mokowanis Junction 6/10 Mokowanis Lake 6/10 Fifty Mountain 7/31 Lake Francis 6/18 Goat Haunt Shelters 6/6 Hawksbill 6/18 Hole in the Wall 7/21 Lake Janet 6/18 Kootenai Lakes 6/3 Stoney Indian Lake 7/20 Waterton River 6/5

Dates indicated above note when each campground was placed into an "open" status (bare and dry), following the melt out of the winter snowpack in 1997.

BACKCOUNTRY CAMPER. USE

1974 THROUGH 1997

GLACIER NATIONAL PARK



TREND

BC CAMPER USE

01/08/1998

CAMPER - NIGHT REPORT

PAGE: 1

FROM: 01/01/1997 TO: 12/31/1997 NIGHTS: 365

	SITE NIGHTS			CAMPER NIGHTS			STOCK NIGHTS		
	ACTUAL	POSSIBLE	PERCENT	ACTUAL	POSSIBLE	PERCENT	ACTUAL	POSSIBLE	PERCENT
BELLY RIVER	261	1095	23.8	646	4380	14.7	0	0	0.0
COSLEY LAKE	252	1460	17.3	626	5840	10.7	12	2190	0.5
ELIZABETH LAKE. FT	430	1a25	23.6	1059	7300	14.5	4	0	0.0
ELIZABETH LAKE, HD	295	1460	20.2	736	5840	12.6	37	2190	1.7
GABLE CREEK	252	1095	23.0	660	4380	15.1	0	2190	0.0
GLENNS LAKE, FT	205	1095	18.7	508	5840	8.7	5	2920	0.2
GLENNS LAKE, HD	212	1095	19.4	566	4380	12.9	0	0	0.0
HELEN LAKE	94	730	12.9	211	2920	7.2	0	0	0.0
MOKWANIS JUNCTION	190	1460	13.0	487	7300	6.7	10	2920	0.3
MOKOWANIS LAKE	138	730	18.9	325	2920	11.1	0	0	0.0
BELLY RIVER UND.	23	1825	1.3	52	7300	0.7	0	0	0.0
BELLY RIVER	2352	13870	17.0	5876	58400	0.1	68	12410	0.5
FIFTY MOUNTAIN	235	1825	12.9	543	7300	7.4	4	2190	0.2
LAKE FRANCIS	121	730	16.6	311	2920	10.7	0	0	0.0
GOAT HAUNT SHELTERS	120	2555	4.7	286	10220	2.8	0	0	0.0
HAWKSBILL	98	730	13.4	227	2920	1.0	0	0	0.0
HOLE IN THE WALL	221	1825	12.1	539	7300	7.4	4	0	0.0
LAKE JANET	88	730	12.1	197	2920	6.7	0	2190	0.0
KOOTENAI LAKE	215	1460	14.7	510	5840	a.7	0	2190	0.0
STONEY INDIANLK	159	1095	14.5	394	4380	9.0	0	0	0.0
GOAT HAUNT UND.	29	1825	1.6	70	7300	1.0	0	0	0.0
WATERTON RIVER	157	1825	a.6	385	7300	5.3	0	2190	0.0
GOAT HAUNT	1443	14600	9.9	3462	58400	0.1	8	8760	0.1
ARROW LAKE	165	730	22.6	362	2920	12.4	14	2190	0.6
CAMAS LAKE	45	730	6.2	110	2920	3.8	0	0	0.0
Lx ELLEN WILSON	224	1460,	15.3	506	5840	8.7	0	2190	0.0
FLATTOP	137	1095	12.5	322	4380	7.4	0	2190	0.0
GRANITE PARK	260	1460	17.8	609	5840	10.4	0	0	0.0
LINCOLN LAKE	102	1095	9.3	233	4380	5.3	10	2920	0.3
MCDONALD LAKE	175	730	24.0	379	2920	13.0	0	0	0.0
SNYDER LAKE	240	1095	21.9	520	4380	11.9	0	2190	0.0
SPERRY	232	730	31.8	547	5840	9.4	0	0	0.0
MCDONALD UND.	144	1825	7.9	348	7300	4.0	0	0	0.0
MCDONALD	1724	10950	15.7	3936	46720	0.1	24	11680	0.2
CRACKER LAKE	225	1095	20.5	522	4380	11.9	0	0	0.0
MANY GLACIER	75	730	10.3	167	2920	5.7	0	0	0.0
POIA LAKE	306	1460	21.0	731	5840	12.5	6	3650	0.2
SLIDE LAKE	68	730	9.3	167	2920	5.7	0	2190	0.0
MANY GLACIER UND.	29	1825	1.6	62	7300	0.8	0	0	0.0
MANY GLACIER	703	5040	12.0	1649	23360	0.1	6	5840	0.1

FROM: 01/01/1997 TO: 12/31/1997 NIGHTS: 365

	SITS NIGHTS			CAMPER NIGHTS			STOCK NIGHTS		
	ACTUAL	POSSIBLE	PERCENT	ACTUAL	POSSIBLE	PERCENT	ACTUAL	POSSIBLE	PERCENT
ADAIR	79	1460	5.4	210	5840	3.6	0	2190	0.0
AKOKALA LAKE	40	1095	3.7	93	4380	2.1	0	0	0.0
BOULDER PASS	106	1095	9.7	240	4380	5.5	4	0	0.0
BOWMAN LAKE, HD	532	2190	24.3	1236	8760	14.1	0	3650	0.0
BROWN PASS	130	1095	11.9	324	4380	7.4	4	0	0.0
GRACE LAKE	66	1095	6.0	168	4380	3.8	0	0	0.0
KINTLA LAKE, HD	294	2190	13.4	747	8760	8.5	6	3650	0.2
LOGGING LAKE, FT	115	1095	10.5	261	4380	6.4	0	0	0.0
LONER QUARTZ LAKE	210	1460	14.4	506	5840	8.7	0	2190	0.0
QUARTZ LAKE, FT	175	1095	16.0	421	4380	9.6	0	0	0.0
ROUND PRAIRIE (FOOT)	16	365	4.9	38	4380	0.9	0	0	0.0
ROUND PRAIRIE (RIVER)	0	730	0.0	0	4380	0.0	0	0	0.0
NORTN FORK UND.	100	1825	5.5	238	7300	3.3	0	0	0.0
UPPER KINTLA LK	219	1460	15.0	559	5840	9.6	8	3650	0.2
NORTH FORK	2084	18250	11.4	5061	77380	0.1	22	15330	0.1
GUNSIGHT LAKE	542	2555	21.2	1310	10220	12.8	0	2190	0.0
OTOKOMI LAKE	171	1095	15.6	415	4380	9.5	0	0	0.0
RED EAGLE, IT	253	1460	17.3	592	5840	10.1	0	0	0.0
RED EAGLE, HD	220	1460	15.1	558	5840	9.6	0	3650	0.0
REYNOLDS CREEK	56	730	7.7	119	2920	4.1	0	2190	0.0
ST. MARY UND.	62	1825	3.4	138	7300	1.9	0	0	0.0
ST. MARY	1304	9125	14.3	3132	36500	0.1	0	8030	0.0
ATLANTIC CREEK	268	1460	18.4	651	5840	11.1	0	2190	0.0
COBALT LAKE	113	730	15.5	263	2920	9.0	0	0	0.0
MORNING STAR	148	1095	13.5	334	4380	7.6	0	0	0.0
NO NAME LK	200	1095	18.3	461	4380	10.5	0	0	0.0
OLDMAN LAKE	274	1460	16.8	645	5840	11.0	0	2190	0.0
TWO MEDICINE	38	1460	2.6	82	2920	2.8	0	0	0.0
UPPER TWO MED	181	1460	12.4	432	5840	7.4	0	0	0.0
TWO MEDICINE UND.	53	1625	2.9	105	7300	1.4	0	0	0.0
TWO MEDICINE	1275	10585	12.0	2973	39420	0.1	0	4380	0.0
BEAVER WOMAN LAKE	55	730	7.5	133	2920	4.6	4	3650	0.1
COAL CREEK	41	730	5.6	99	2920	3.4	0	3650	0.0
HARRISON LAKE	18	1095	1.6	50	4380	1.1	0	2190	0.0
LAKE ISABEL	58	730	7.9	152	2920	5.2	0	0	0.0
LOWER NYACK	24	730	3.3	56	2920	1.9	0	3650	0.0
OLE CREEK	93	1095	8.5	254	4360	5.1	4	2920	0.1
OLE LAKE	42	730	5.8	104	2920	3.6	3	2190	0.1
PARR CREEK	72	1095	6.6	178	4380	4.1	0	2190	0.0
NYACK WILDERNESS UND	69	3650	1.9	162	14600	1.1	3	0	0.0
UPPER NYACK	36	730	4.9	99	2920	3.0	0	3650	0.0

01/08/1998

CAMPER - NIGHT REPORT

PAGE: 3

FROM: 01/01/1997 TO: 12/31/1997 NIGHTS: 365

	SITE NIGHTS			CAMPER NIGHTS			STOCK NIGHTS		
	<u>ACTUAL</u>	<u>POSSIBLE</u>	<u>PERCENT</u>	<u>ACTUAL</u>	<u>POSSIBLE</u>	PHI =	<u>ACTUAL</u>	<u>POSSIBLE</u>	<u>PERCENT</u>
UPPER PARK CREEK	56	1095	5.1	127	4380	2.9	6	2190	0.3
WALTON UND.	25	1825	1.4	68	7300	0.9	0	0	0.0
WALTON	589	14235	4.1	1472	56940	0.0	20	26260	0.1
GRAND TOTAL	11474	97455	11.8	27561	397120	6.9	148	92710	0.2

SECTION 2

WINTER BACKCOUNTRY USE

INTRODUCTION

In December of 1994, winter use registration boxes were constructed and installed at key winter use trailheads and access points, in an effort to quantify levels of winter recreational use in Glacier National Park. Data was collected for the duration of Glacier's 1997 winter camping season, which officially extended from November 20 through April 30.

WINTER USE

A total of 949 parties and 2,565 individuals voluntarily registered in 1997. The most popular trailhead was at the road closure of the Going to the Sun Highway located at the head of Lake McDonald. The Autumn Creek Trail from Marias Pass to U.S. Hwy. # 2 also continues to be popular, as was the **Camas** Road. The average party size was 2.7. A limited effort to calibrate the percentage of parties registering indicated that less than 50% chose to register (subsequent monitoring indicates even a lower % of compliance with registration). **Day** recreational use makes up the majority of these use figures.

Overnight winter backcountry camping use is summarized in Section 1 on page 1-1.

The following winter recreational use data was collected in 1997:

West Lakes District

Total number of registered parties = 889

Total number of individuals = 2,444

Average party size: 2.75

Polebridae Entrance Winter Use Data:

Number of parties registered: 82

Total individuals: 211

Average party size: 2.44

Most popular destinations (parties registered):

Big Prairie: 25

Bowman Lake: 34

Covey Meadow: 2

Hidden Meadow: 3

Inside NF Rd. south: 8

Kintla: 2

Other: 6

Ford Creek: 1

Tepee Flats: 1

Logging Creek

No data received for 1997

Kintla Creek

No data received for 1997

Quarter Circle Bridge

Number of parties registered: 52

Total individuals: 142

Average party size:

Most popular destinations (parties registered):

Apgar lookout: 20

Flathead Ranger Station: 6

Quarter Circle Bridge: 12

Unknown: 14

Camas Road (south) Winter Use Data:

Number of parties registered: 74

Total individuals:

Average party size: 2.30

Most popular destinations:

Fish Creek: 83

Up and back: 37

McGee Meadow: 32

Rocky Point: 19

Apgar Mt.: 1

Unknown: 21

Going to the Sun Road (head of Lake McDonald) Winter Use Data:

Number of parties registered: 379

Total individuals: 1,044

Average party size: 2.75

Most popular destinations:

Avalanche CG and picnic area: 104

Up Road and/or unknown: 176

McDonald Falls and Sacred Dancing Cascades: 31

Avalanche Lake: 37

Moose Country: 5

Trail of the Cedars: 8

Johns Lake: 3

Loop: 10

Mineral Creek: 1

Kelly Camp Road (head of Lake McDonald) Winter Use Data:

Number of parties: 99

Total individuals: 270

Average party size:

Most popular destinations:

Other/Unknown: 37

up the road: 33

Trout Lake: 2

Lake McDonald CG: 1

McDonald Creek Loop: 21

Mt. Stanton: 2

Apgar: 2

Avalanche: 2

Sperry Trailhead Winter Use Data:

Number of parties: 36
Total individuals: 94
Average party size:
Most popular destinations:
 Snyder Lake: 7
 Sperry: 4
 Mt. Brown area: 9
 Fish Lake: 4
 Up trail: 6
 Sperry Glacier: 1
 Unknown: 3

Walton Ranaer Station Winter Use Data:

Number of parties: 44
Total individuals: 116
Average party size:
Most popular destinations:
 Ole Creek: 26
 Scalplock Lookout Trail: 11
 Unknown: 5
 Park Creek: 1
 Fielding: 1

Fielding Trailhead Winter Use Data:

No data received for 1997

Autumn Creek Trail (Marias Pass) Winter Use Data:

Number of parties registered: 124
Total individuals: 374
Average party size:
Most popular destinations (number of parties):
 Autumn Creek/Hwy. # 2: 63
 Three Bears Lake: 9
 Little Dog: 3
 Krumholz: 3
 Firebrand: 1
 Unknown: 10
 Up trail: 26
 Moose Hill: 5
 Blacktail Hills: 4

Hudson Bay District

Total number of registered parties = 60

Total number of individuals = 121

Average party size = 2

Lubec Trailhead Winter Use Data:

Number of parties: 1

Total individuals: 5

Average party size: 5

Most popular destinations:

Calf Robe: 1

Autumn Creek Trail (East Glacier)

Number of parties registered: 16

Total number of individuals: 45

Average party size:

Most popular destinations (number of parties):

Lubec: 2

Squaw Ridge/Peak: 6

Unknown: 8

Two Medicine Road

Number of parties registered: 14

Total number of individuals: 18

Average party size:

Most popular destinations:

Two Medicine: 6

Running Eagle Falls: 1

Park Boundary: 3

Unknown: 4

Red Eagle Lake Trailhead Winter Use Data:

Number of parties registered: 20

Total individuals: 34

Average party size:

Most popular destinations:

Up trail: 8

Beaver Ponds: 1

St. Mary Lake: 10

Meadows: 1

St. Maw Ranger Station Trailhead

Number of registered parties: 4

Total individuals:

Average party size:

Most popular destinations:

Elk Loop: 2

Divide Creek: 1

W o o d s : 1

Goina to the Sun Hiahway (St. Mary) Winter Use Data:

No Data received for 1997

Many Glacier Road

Number of parties registered: 5

Total individuals: 13

Average party size:

Most popular destinations:

Many Glacier Valley: 5

SECTION 3

VOLUNTARY CLIMBER REGISTRATION

INTRODUCTION

The following table summarizes the number of climbing parties that utilized Glacier's Voluntary Climber Registration Form in 1997. Bark visitors attempting climbing trips are encouraged, but not required, to complete this form prior to departure, and to check in upon return.

Completion of this form does not "guarantee" immediate rescue in the event of a climbing accident. It does provide the Wilderness Management office with very helpful and interesting data regarding the location and level of off-trail use in Glacier

The following trends were observed in 1997:

1. The total number of registered climbing parties increased from 216 in 1996 to 314 in 1997.
2. The total number of registered climbers increased from 584 in 1996 to 729 in 1997.
3. The percentage of parties who checked back in upon completion of their climbing trip was 74% in 1995, 73% in 1996 and 64% in 1997..
4. The average climbing party size remained fairly stable, with 2.44 in 1993, 2.44 in 1994, 2.6 in 1995, 2.7 in 1996 and in 2.32 in 1997.
5. The top three peaks climbed by registered climbers in 1997 were:
 - 1) Reynolds Mountain (148 climbers)
 - 2) Oberlin Mountain (127 climbers)
 - 3) Mount Cannon (46 climbers)

The top three peaks climbed by registered climbers in 1996 were:

- 1) Reynolds Mountain (105 climbers)
- 2) Oberlin Mountain (100 climbers)
- 3) Mount Cleveland (54 climbers)

6. Ice climbing gained in popularity, particularly in the Avalanche Lake basin and upper Snyder Creek basin (Mt. Brown and Mt. Edwards). At least one article was published in Snow and Ice Magazine regarding the ice climbing in the Avalanche Lake basin icefalls.

REGISTRATION DATA

The following tables summarize the 1997 registration data for each peak:

MOUNTAIN	NUMBER OF PARTIES	NUMBER OF CLIMBERS	# PARTIES CHECKED IN
Ahern	1	2	0
Allen	2	4	1
Altyn	4	8	2
Apikuni	1	2	1
Appistoki	1	2	1
Avalanche Lake head (ice)	2	4	2
Bearhat	8	17	6
Bishops Cap	2	6	1
Blackfoot	2	3	1
Brown	3	9	0
Cataract	1	2	1
Cathedral	1	2	0
Cannon	11	46	9
Chief	3	4	1
Clements	7	16	5
Cleveland	18	40	11
Curley Bear	1	2	1
Dragons Tail	1	3	1
Despair	1	2	0
Edwards	2	4	0
Ellsworth	2	4	0
Garnder Point	1	2	1
Geduhn	1	4	0
Goat Mt.	3	5	1
Going to the Sun	3	3	2
Gould	5	9	3
Grinnell Point	2	4	1
Gunsight	3	3	3

MOUNTAIN	NUMBER OF PARTIES	NUMBER OF CLIMBERS	# PARTIES CHECKED IN
Heavens	2	6	0
Heavy Runner	2	4	2
Henry	2	4	0
Iceberg Peak	2	4	1
Ipasha	1	2	0
Jackson	14	27	7
James	2	5	0
Kinnerly	1	2	1
Kintla	4	11	1
Kintla West (9430)	1	2	1
Kupunkamint	1	2	1
Little Chief	1	2	1
Lonafellow	2	4	1
Long Knife	2	4	1
Loaan	5	10	4
Mahtapi	2	2	2
Merritt	8	19	5
Norris	1	2	1
Numa	1	2	0
Oberlin	37	127	29
Painted Teepee	1	2	1
Phillips	1	2	0
Pieaan	7	12	5
Pinchot	1	4	1
Pollock	11	19	9
Rainbow	2	4	0

MOUNTAIN	NUMBER OF PARTIES	NUMBER OF CLIMBERS	PARTIES CHECKED IN
Reuter	1	2	1
Reynolds	61	148	56
Rising Wolf	2	6	2
Rockwell	2	7	0
Running Rabbit	1	2	0
Sinopah	2	4	1
Siyeh	7	14	5
Stanton	4	9	2
Split	1	2	1
Stimson	6	13	1
St. Nicholas	2	6	1
Thunderbird	1	5	0
Triple Divide	2	3	1
Vaught	2	5	0
Vulture	3	5	1
White Calf	1	2	1
GRAND TOTALS	114	729	202

SUMMIT REGISTER DATA

The following information was collected when summit registers were checked by Park personnel during the 1997 field season:

MOUNTAIN	DATE CHECKED	NUMBER OF CLIMBERS SIGNED IN
Altyn Mountain	6/15/97	0 registered, register broken
Mt. Jackson	7/4/97	12 individual registered in 1997
Mt. Wynn	8/30/97	0 parties registered
Mt. Merritt	8/11/97	2 parties, 4 people registered
Mt. Merritt	9/6/97	4 parties, 13 people resistered

SECTION 4 BACKCOUNTRY CONCESSION USE SUMMARY

INTRODUCTION

Concession and Commercial Use License guide/outfitter operations accounted for the following backcountry use in Glacier National Park in 1997:

1. Glacier Wilderness Guides

This company had the only concessions contract to conduct overnight and day use backcountry hikes during the summer season (May 1 - November 20). They were also permitted by the U.S. Forest Service to conduct guided float trips on the Middle Fork and North Fork of the Flathead Wild and Scenic Rivers. Glacier Wilderness Guides recorded a 1% increase in camper nights and a 11% decrease in day use in 1997. Monthly business (excludes river use) broke down as follows:

TIME PERIOD	CAMPER NIGHTS (excludes guides)	DAY USE (HIKERS) (excludes guides)
May	0	0
June	105	98
July	349	851
August	418	1,077
September	65	299
October	0	168
TOTALS	937	2,493

2. Muleshoe Outfitters

This company had the only concessions contract to conduct day use horseback trips. They were authorized to operate in the Many Glacier, Lake McDonald and Apgar areas. They were also authorized to pack in supplies for backcountry campers (subject to approval on a case by case basis). Muleshoe Outfitters recorded a 3% decrease in horseback riders in 1997.

Muleshoe Outfitters accounted for the following use in 1997:

TIME PERIOD	LOCATION	DAY USE (RIDERS)
June 1996	Many Glacier	567
	Lake McDonald	781
	Apgar	0
July 1996	Many Glacier	1,765
	Lake McDonald	1,544
	Apgar	371
August 1996	Many Glacier	1,700
	Lake McDonald	1,788
	Apgar	0
September 1996	Many Glacier	133
	Lake McDonald	295
	Apgar	0
Total.....		8,944

Muleshoe Outfitters provided 14 pack trips to Granite Park Chalet in 1997.

3. Glacier Park Ski Tours

Rusty Wells Had a commercial use license to conduct overnight and day use cross country ski tours. His winter operations increased by 89%, accounting for the following use:

TIME PERIOD	CAMPER NIGHTS	DAY TRIPS/PEOPLE (includes guide)
February 1997	6	7/45
March 1997	0	5/20
December 1997	0	2/9
TOTALS	6	14 TRIPS/74 PEOPLE

4. Izaak Walton Inn Ski Tours

Had a commercial use license to conduct day use cross country ski tours, Their winter operations increased by 65% in 1997, accounting for the following use:

TIME PERIOD	# TRIPS/# PEOPLE (includes guides)
January 1997	7 trips/33 people
February 1997	10 trips/51 people
March 1997	11 trips/111 people
April 1997	4 trips/14 people
November 1997	2 trips/12 people
December 1997	9 trips/52 people
TOTALS	43 TRIPS/273 PEOPLE

5. River Outfitters .

The following river rafting outfitters had commercial use permits administered by the U.S. Forest Service to float the Flathead Wild and Scenic River system along the Park's southern and western boundary in 1997:

OUTFITTER NAME	PERMITTED FOR
Glacier Raft Company	North Fork and Middle Fork
Glacier Wilderness Guides	North Fork and Middle Fork
Great Northern Raft Company	Middle Fork of the Flathead
Wild River Adventures	North Fork and Middle Fork

In addition, the Flathead Lutheran Bible Camp (389 service days) and Glacier Presbyterian Camp (60 service days) led float trips under an Institutional Outfitter permit.

Commercial outfitter use decreased by 8% in 1997: Individual guide outfitters accounted for the following use in 1997 (1 service day = 1 client for part or all of a day):

OUTFITTER	NORTH FORK OF THE FLATHEAD	MIDDLE FORK OF THE FLATHEAD
Glacier Wilderness Guides/ Montana Raft Company	195 service days	6,609 service days
Northwest Voyageurs	33 service days	3,380 service days
Great Northern Raft Company	0 service days	9,929 service days
Glacier Raft Company	181 service days	13,649 service days
TOTAL SERVICE DAYS	409	33,567

UNAUTHORIZED OUTFITTING AND GUIDING

The following backcountry guide/outfitters reportedly conducted and/or advertised unauthorized business operations in the backcountry of Glacier National Park in the past four years:

NAME OF BUSINESS	DATE CONTACTED	DISPOSITION
Western Leisure Salt Lake City, Utah	1997	Suspected of leading hiking trips, written and warned
Sun Trek Tours Santa Rosa, CA.	1997 1995 1994	Suspected of leading hiking and camping trips. Written and warned.
Walking Tours Vancouver, WA.	1997	Written and warned.
Victor Emmanuel Nature Tours	1996	Written and warned
Flathead Lutheran Bible Camp Lakeside, MT.	1997 1996	Observed hiking and camping in Park. Written and advised of regulations.
Timberline Bicycle Tours, co.	1996	Reportedly led hiking trips in Park, advised this jeopardizes permit
Owl Research Institute Missoula, MT.	1996	Advertised birding/hiking trip for 1997. Written and advised of regulations
American Adventures Culver City, CA.	1996	Advertised hiking trips. Written and advised of regulations
Walking the World Fort Collins, CO.	1996 1997	Advertised hiking/camping trips. Written and advised of regulations

Outwest Adventures Missoula, MT.	7/95	They called and were advised of regulations
Willards Adventure Club Barrie, Ontario, Canada	8/94	Contacted guiding a group in the backcountry. Written and warned.
Bear Creek Guest Ranch Essex, MT.	8/93	Cited and convicted for operating a business without a permit
Tim Leaf Trek America Gardina, CA	1993	written and warned after he advertised trips in Glacier
Overland Student Travel Williamstown, MA.	1993	written and warned after receiving a complaint from another company
Jerry Frate Western Horizons Novato, CA.	1993	written and warned
Bill Evans Sojourns of Discovery San Louis Obispo. CA.	1993	written and warned
Atalante Lyon, France	1993	written and warned
Malmstrom Air Force Base	8/93	Warned by the USFS for guiding youth groups on the Middle Fork W&S River

TRENDS

The Glacier Wilderness Guides and Muleshoe Outfitters recorded minor decreases in business while Glacier Park Ski Tours and Izaak Walton Inn recorded substantial increases in business in 1997. Commercial Outfitter use on the Wild and Scenic River corridors also recorded a slight decrease.

There were no violation notices issued in 1997 for illegal outfitting or guiding, although several businesses were contacted in the field and subsequently warned by the Concessions Office, and/or had advertisements which prompted a warning letter from the Concessions Office. It is suspected that illegal guiding and outfitting is occurring on an occasional basis.

SECTION 5

WILDERNESS MANAGEMENT PROGRAM

ROLE AND FUNCTION STATEMENT

GLACIER NATIONAL PARK

INTRODUCTION

In April of 1992, the Division of Resources Management at Glacier National Park was re-organized and the Wilderness Management Section was formed with the expressed intent to improve Glacier's **Backcountry/Wilderness** Management program. The objectives of the Wilderness Management Section are outlined in the following role and function statement:

ROLE AND FUNCTION STATEMENT (WILDERNESS MANAGEMENT SECTION)

This section of the Division of Resources Management, headed by the Wilderness Manager, has the prime responsibility of ensuring that the values of the park backcountry, proposed Wilderness, and segments of the **Flathead** Wild and Scenic River adjacent to the Park, are perpetuated. This will be done by a systematic monitoring of selected indicators that will enable **managers** to recognize change or incipient deterioration in these values primarily as a result of visitor use. Management actions related to changes in park policy or regulations will be based on evaluations of gathered information that record deviations from desired environmental, managerial or social conditions. This section has the responsibility for directly gathering, or coordinating the gathering of this information, with interdivisional assistance, from a **variety** of sources including patrol, visitors, data records and personnel from other park divisions.

Field patrols will be coordinated with the other sections of the unit for trail maintenance, restoration and rehabilitation projects and project identification. Unit personnel will also cooperate in implementing divisional goals for bear management, fire protection and search and rescue. This section will also be involved in various park planning efforts and will be specifically responsible for the Wilderness Implementation Schedule that will be prepared annually to lay out the yearly goals and objectives of the section.

1997 PROGRAM FUNDING

The Wilderness Management Section was funded at \$229,300 in 1997. Approximately 94% of this total was for personal services. The program operated with 3 permanent staff members and a cadre of seasonal employees (see staffing and organization charts). The Wilderness **Management** program also supervised the Backcountry Fee Demonstration program, which was funded at \$60,000 in 1997. In addition, a total of \$4,458 were received through donations to the Backcountry Preservation Fund, and a total of \$4,400 was donated by the Glacier National Park Associates in sponsorship of the Walton Backcountry Ranger Intern position.

WILDERNESS MANAGEMENT SECTION

DIVISION OF RESOURCES MANAGEMENT

ROGER SEMLER
WILDERNESS MANAGER
GS-025-11, 1434-028

KYLE JOHNSON
WEST LAKES BC COORD
GS-025-09, 1434-018

- **CHUCK CAMERON**
L.K. MCD. BC RANGER
GS-025-05, 1434-562
- **DAVE BENNETTS**
WALTON BC RANGER
GS-025-05, 1434-606
- **ALLEN MOORE**
WALTON BC RANGER
GS-025-05, 1434-604
- **JUSTIN IVARY**
WALTON BC INTERN
GS-025-03, 1434-607
- **ROGER FARMER**
LEAD APGAR BC VUA
GS-303-05, 1434-548
- **CRISTI HERREN**
APGAR BC VUA
GS-SOS-04, 1434-538
- **RAYMOND CUNAN**
APGAR BC VUA
GS-303-04, 1434-552
- **LUCY COLEMAN**
APGAR BC VUA
GS-303-04, 1434-551

MAU RA LONGDEN
HUDSON BAY BC COORD
GS-025-09, 1434-802

- **STEVEN PRATHER**
LEAD BELLY RIVER RGR
GS-025-05, 1434-567
- **SHANE MCCARTHY**
BELLY RIVER BC RANGER
GS-025-05, 1434-573
- **MARGARET CABLE**
GOAT HAUNT BC RANGER
GS-025-05, 1434-623
- **DAVE SHEA**
MANY GLACIER BC RANGER
GS-025-05, 1434-682
- **PAUL AUSTIN**
ST. MARY BC RANGER
GS-025-05, 1434-628
- **KATJA MOCNIK**
TWO MED BC RANGER
GS-025-05, 1434-624
- **EDWARD DELMOLINO**
BELLY RIVER SCA
- **KAREN SHEELY**
ST. MARY BC VUA
GS-303, 1434-571
- **DANIEL ROY**
ST. MARY BC VUA
GS-SOS-04, 1434-577

1997 ORGANIZATIONAL CHART

**Seasonal Personnel Requirements - 1997 Field Season
Wilderness Management Section - Glacier National Park
Backcountry Ranger Program: Account # 1434-0001-PZB**

Position Number	Position Title	Pay Grade	EOD Date	COB Date	Committed To
1434-562	Lake McDonald Backcountry Ranger	GS-025-05	5/4	9/30	Chuck Cameron
1434-567	Belly River Area Supervisor	GS-025-06	5/4	9/30	Steve Prather
1434-573	Belly River Backcountry Ranger	GS-025-05	5/25	9/20	Shane McCarthy
n/a	Belly River SCA Resource Assistant	n/a	5/25	8/16	Ed Delmolino
1434-582	Many Glacier Backcountry Ranger	GS-025-05	5/18	9/30	Dave Shea
1434-604	Walton Backcountry Ranger	GS-025-05	5/25	9/20	Allen Moore
1434-605	Walton Backcountry Ranger	GS-025-05	5/18	9/30	Dave Bennetts
1434-607	Walton Backcountry Intern	GS-025-03	5/25	8/16	Justin Ivary
1434-623	Goat Haunt Backcountry Ranger	GS-025-05	5/25	9/30	Suzanne Cable
1434-624	Two Medicine Backcountry Ranger	GS-025-05	5/18	9/30	Katja Mocnik
1434-626	St. Mary Backcountry Ranger	GS-025-05	5/25	9/27	Paul Austin

**Seasonal Personnel Requirements - 1998 Field Season
Wilderness Management Section - Glacier National Park
Backcountry Ranger Program: Account # 1434-0001-P2B**

Position Number	Position Title	Pay Grade	HOD Date	COB Date	Committed To
1434-562	Lake McDonald Backcountry Ranger	GS-025-05	5/10	9/30	Steve Prather
1434-567	Belly River Lead Backcountry Ranger	GS-025-05	5/3	9/30	Tracey Wiese
1434-573	Belly River Backcountry Ranger	GS-025-05	5/17	9/30	Shane McCarthy
n/a	Belly River SCA Resource Assistant	n/a	5/17	8/8	Christopher Bellino
1434-582	Many Glacier Backcountry Ranger	GS-025-05	5/3	9/30	Dave Shea
1434-604	Walton Backcountry Ranger	GS-025-05	5/17	9/30	Allen Moore
1434-605	Walton Backcountry Ranger	GS-025-05	5/10	9/30	Dave Bennetts
1434-607 donation acct.	Walton Backcountry Intern	GS-025-03	5/17	8/8	tba
1434-623	Goat Haunt Backcountry Rower	GS-025-05	5/17	9/30	Suzanne Cable
1434-624	Two Medicine Backcountry Ranger	GS-025-05	4/26	9/30	Katja Mocnik
1434-626	St. Mary Backcountry Ranger	GS-025-05	5/3	9/30	Bruce Carter

**Seasonal Personnel Requirement - 1998 Field Season
Wilderness Management Section - Glacier National Park
Backcountry Fee Demonstration Program: Account # 1430-8002-V8Z**

Position Number	Position Title	Pay Grade	EOD	COB	Committed To:
1434-548	Lead Apgar Backcountry WA	GS-303-05	3/29	10/31	Justin Ivary
1434-538	Apgar Backcountry WA	GS-303-04	4/26	9/30	Janie Lundy
1434-551	Apgar Backcountry WA	GS-303-04	6/7	8/22	Zac Perry
1434-552	Apgar Backcountry WA	GS-303-04	5/24	9/26	Amy Cassel
1434-538a	Apgar Backcountry WA	GS-303-04	5/24	9/12	Kristie Connolly
1434-538b	Apgar Backcountry WA	GS-303-04	6/7	9/5	Dan Smiley
1434-571	St. Mary Backcountry WA	GS-303-04	5/10	9/30	Karen Sheely
1434-577	St. Mary Backcountry WA	GS-303-04	5/17	9/26	Ed Delmolino
1434-571a	Two Medicine Backcountry WA	GS-303-04	5/24	9/12	Dan Roy
1434-571b	Many Glacier Backcountry WA	GS-303-04	5/24	9/26	Joseph Thompson

SECTION 6

WILDERNESS MANAGEMENT SECTION TRAINING

INTRODUCTION

This section summarizes Wilderness Management related training courses and activities in which Glacier National Park personnel participated in 1997:

WILDERNESS MANAGEMENT TRAINING COMPLETED

The following training sessions specific/ and or related to Wilderness Management were conducted in Glacier National Park and/or attended by Wilderness Management Section personnel in 1997:

Subject	Personnel Attending
NEPA Workshop Glacier N.P. 24 hours, 1/28-30, 1997	Potter, Semler, Johnson
Arch View Computer Program Training Glacier N.P. 24 hours, 4/22-24, 1997	Potter, Semler, Johnson
Annual NPS Inter-regional Wilderness Management Workshop North Cascades N.P., WA. 24 hours, 4/97	Semler
Annual Backcountry Permit System Training Glacier N.P. 32 hours, 4/29-5/2, 1997	Semler, Johnson, all Backcountry VUA's
Avalanche Rescue Training Glacier N.P. 8 hours, 5/13/97	Johnson*
Standards for Survival (Fire Suppression) Training Glacier N.P. 8 hours, 5/14/97	Johnson
FLETC Resource Protection Training Glacier N.P. 40 hours, 5/19-23, 1997	Semler, Johnson
Annual NPS In-service Law Enforcement Refresher Glacier N.P. 40 hours, 6/2-6, 1997	Semler, Johnson, Cameron, Prather
Annual Bear Management Training Glacier National Park 24 hours, 6/9-11, 1997	Semler, Johnson, all BC Rangers

Hazard Tree Training Glacier N.P. 16 hours, 10/22-23 , 1997	Semler, Johnson
National Interagency Leave No Trace. Coordinators Workshop Zion National Park, Utah 24 hours. 11/97	Semler
'Access Fund Public Lands workshop Boulder Colorado 11/97	Longden*
Leave No Trace Inc. Board of Directors Meeting Boulder, Colorado 24 hours. 11/97	Semler

* denotes instructor or facilitator

SECTION 7 WILDERNESS EDUCATION OUTREACH EFFORTS

INTRODUCTION

Public and employee education and outreach is considered an important component of wilderness protection and management efforts in Glacier National Park. Glacier's program includes public information disseminated at three major Visitor Centers (Apgar, St. Mary and Logan Pass), four secondary Ranger Stations/Backcountry Permit Centers (Many Glacier, Two Medicine, Goat Haunt and Polebridge Ranger Stations and Waterton Townsite Visitor Center), in-park employee training and orientation, off-site education, trailheadbulletinboards, Park site bulletins and handouts, Glacier Natural History Association publications, and Ranger contacts in the field.

VISITOR CENTERS AND RANGER STATIONS

Backcountry Use Permits are issued at Visitor Centers and Ranger Stations, predominantly by Interpretation Division personnel. In 1997, a total of 4,952 Backcountry Use Permits were issued (for overnight camping in the Backcountry). Apgar Visitor Center issued 51.7% of the permits, followed by St. Mary Visitor Center with 24.1 %, Many Glacier Ranger Station with 9.9%, Two Medicine Ranger Station with 6.7%, and other locations throughout the Park issued the remaining permits.

The Backcountry Use Permit system incorporates a computerized system which helps with the management of backcountry campground use quotas and provides other helpful trip planning information (mileage, elevation changes, specific restrictions, trail and campground status and conditions, etc.)

IN PARK EMPLOYEE TRAINING AND ORIENTATION

In 1997, continued efforts were made to involve Park employees in wilderness management related education and orientation efforts. The following activities were completed:

Subject/Presentation	Audience	Presented by
Leave No Trace Program Update Wilderness Management Workshop North Cascades N.P. 1 hour, 4/97	NPS - Intermountain and Pacific West Region Wilderness Managers	Semler
Backcountry Management and Permit System 30 minutes, 4/15-16/97	Ranger/Warden Meeting, Glacier N.P.	Semler
Annual Backcountry Ranger Training (Belly River) 40 hours, 5/97	all Backcountry Rangers, Glacier N.P.	Semler, all and BC Rangers

Discussed Backcountry Management, Backcountry Permits and Leave No Trace 1 hour, 6/97	1997 Interpretation Division Training, Glacier N.P.	Semler
Backcountry Management Orientation 2 hours, 6/97	Many Glacier Subdistrict staff, Glacier N.P.	Semler, Longden
Backcountry Management Orientation 2 hours, 6/97	West Lakes Subdistrict staff, Glacier N.P.	Semler
Backcountry/Bear Management Orientation 45 minutes, 6/97	Annual Bear Management Training, Glacier N.P.	Semler
Backcountry Management Orientation 3 hours, 6/97	North Fork Subdistrict staff, Glacier N.P.	Semler
Annual Superintendent's Hike 7/22-24/97	Superintendent and invited guests, Glacier N.P.	Johnson
National Parks Foundation Board of Directors Hike 9/21-22/97	NPF Board of Directors, visiting Glacier N.P.	Johnson, Semler, Moses

PUBLIC OUTREACH

The following public outreach efforts were conducted in 1997:

Subject/Presentation	Audience	Presenter
Leave No Trace Outreach, 3 days, 1/97	National Outdoor Retailers Show, Salt Lake City, UT.	Semler
Backcountry Management and Stock Use in Glacier N.P., 4 hours, 1/29/97	Backcountry Horsemanship of the Flathead Meeting, Columbia Falls, MT.	Potter, Johnson
Leave No Trace Presentation 5/9/97	Family Forestry Expo, Columbia Falls, MT.	Johnson
Leave No Trace Trainers Workshop 24 hours, 5/97	Parks Canada", Jasper N.P. , Alberta	Semler
Backcountry Management and Stock Use in Glacier N.P., 4 hours, 5/8/97	Backcountry Horsemen of the Flathead Meeting, Columbia Falls, -MT.	Potter, Johnson
Leave No Trace Presentation 6/21/97	Backcountry Horsemen of the Flathead, Volunteer Day, Glacier N.P.	Johnson

Leave No Trace Program Review	Leave No Trace, Inc. Board of Directors, Fall Meeting, Boulder, CO.	Semler
Leave No Trace Program Update and Workshop Facilitation November 4-6, 1997	Interagency Leave No Trace Coordinators Meeting, Zion N.P., Utah	Semler

PARK PUBLICATIONS AND INFORMATIONAL HANDOUTS

The following Park publications and informational handouts associated with Backcountry Management which are available to the public were updated in 1997. This involved a joint effort from both Wilderness Management and Interpretation Division personnel:

- * Backcountry Camping Guide
- * Backcountry Trip Planner
- * Camping in Undesignated Campsites handout
- * Winter Backcountry Camping handout
- * Advance Reservation System Information and Application Handout

The following in-park guidelines for employee use were updated in 1997:

- * Backcountry Permit Writing Guidelines
- + Backcountry Ranger Handbook
- * Wilderness Implementation Schedule
- * Backcountry Law Enforcement Guidelines
- * Backcountry Ranger Guidelines

The following new in-park guidelines for employee use were developed in 1997:

- * Backcountry Facility Use Guidelines
- * Backcountry Permit Handbook

BACKCOUNTRY VIDEO

In 1997, the following Backcountry Permit issuing stations were equipped to display the 8 minute long Backcountry Camping video: Apgar Visitor Center, St. Mary Visitor Center, Many Glacier Visitor Center, Two Medicine Ranger Station, Polebridge Ranger Station, and Waterton Visitor Center (Canada). This video is in need of updating and plans are underway to initiate this project.

BACKCOUNTRY PATROLS

Visitor contacts made in the field by backcountry patrol Rangers continue to serve as a primary means of disseminating information and advice regarding backcountry safety, wilderness protection, and Leave No Trace **wildland** ethics. Backcountry Rangers assigned to the Wilderness Management Section are provided training in this all important service during the annual Backcountry Ranger Training.

Providing information regarding safe hiking and camping practices in Grizzly bear country continues to be a central theme with all backcountry patrols. An increased emphasis has also been placed on practicing and promoting acceptable Leave No Trace Outdoor Skills and Ethics.

VOLUNTEER IN PARKS PROGRAM

The following volunteer groups and individuals performed valuable service projects in Glacier's backcountry in 1997:

Project	Name of group or individuals	# of volunteers
Logging Ranger Station: Building Restoration, Campground Opening Preparation, Logging Creek and Quartz Creek Trail maintenance	Glacier National Park Associates	38 (300 project hours)
Ole Creek Trail: Downfall clearing, brush removal, drain maintenance May 1997	Over-the-Hill-Gang	20 (160 project hours)
Highline Trail: Tread snow and clear rocks from June 1997	Over-the-Hill-Gang	18 (144 project hours)
Flathead Ranger Station Trail: clearing and maintenance 1 day, June 1997	Backcountry Horsemens of the Flathead	14 (112 project hours)
Loneman Lookout Trail clearing and maintenance 2 days, July 1997	Bengston, McDonald and Hileman family	8
Belly River Area: trail trad work, trail brushing, stained Ranger Station, rehabilitated campsites at Elizabeth Lake foot CG 3 weeks, July 1997	Student Conservation Association	8 students, 2 leaders approx. 1,200 project hours)
Ole Creek Trail: tread maintenance, brushing, bog bridge construction August 1997	Sierra Club	12 (480 project hours)
Ford Cabin: clean and stain August 1997	Glacier National Park Associates	3 (24 project hours)
Kishenehn Creek Trail: clear trails and brush around Kishenehn Patrol Cabin August 1997	Glacier National Park Associates	4 (128 project hours)
Logging Lake Trail: construct turnpike, remove old walkway August 1997	Sierra Club	12 (480 project hours)

Kintla Patrol Cabin: stain and rodent proof cabin, brush trail to cabin August 1997	Glacier National Park Associates	5 (160 project hours)
Transport SCA Crew and Volunteers from Trailhead and Airport	Jackie Wildgen, Glacier National Park Associates	1 (36 project hours)

SECTION 8 BACKCOUNTRY PATROL SUMMARY

INTRODUCTION

Backcountry patrols are a fundamental part of Glacier's Wilderness Management Program. In addition to the specific tasks and assignments outlined in the Wilderness Implementation Schedule (WIS), backcountry patrols involve the following routine and repetitive responsibilities:

1. Assistance to backcountry visitors, with an emphasis on wilderness education and Leave No Trace **wildland** ethics.
2. Monitoring trail and campground conditions and updating the computerized trail and campground status reporting system.
3. Monitoring the presence and condition of required backcountry signing at trailheads, campgrounds and along the trail system, and replacing signs as necessary.
4. Inventory and monitoring of backcountry resource impacts and non-compliance for inclusion into a **parkwide** database.
5. Backcountry Use Permit compliance checks.
6. Clean up and pack out of litter and refuse.
7. Obliteration and rehabilitation of illegal campfires and other resource impacts.
8. Inventory and monitoring of exotic vegetation infestations.
9. Minor levels of routine trail maintenance.
10. Maintenance and repairs of backcountry campground facilities.
11. Documentation of important wildlife observations.
12. Providing routine first aid services.
13. Performing law enforcement functions (commissioned personnel only).
14. Performing routine bear management actions (**posting/deposting** trails, patrolling closed areas, monitoring bear activity, etc.)

LAKE McDONALD SUBDISTRICT:		
Arrow Lake CG	0	2
Camas Lake CG	0	1
Flattop CG	0	0
Granite Park CG	0	0
Lake Ellen Wilson	0	0
Lake McDonald CG	0	0
Lincoln Lake	0	3
Snyder Lake CG	0	0
Sperry CG	0	0
Mineral Creek Patrol Cabin	1	0
Granite Park Patrol Cabin	0	10
Sperry Patrol Cabin	0	2
Packers Roost	0	0
Logan Creek Patrol Cabin	1	0
Fifty Mtn Spike camp	0	1
Granite Park Chalet	0	2

WALTON AREA:		
Beaver Woman Lake CG	0	3
Coal Creek CG	0	0
Lake Isabel CG	0	0
Lower Nyack CG	0	0
Lower Park Creek	0	0
Ole Creek CG	0	0
Ole Lake CG	0	4
Upper Nyack CG	0	0
Upper Park Creek CG	0	0
Upper Nyack Cabin	0	5
Lower Nyack Cabin	0	3
Coal Creek Cabin	0	6
Harrison Lake Cabin	0	7
Upper Park Creek Cabin	0	13
Lower Park Creek Cabin	0	7
Fielding Cabin	0	0
TWO MEDICINE SUBDISTRICT:		
Atlantic Creek CG	0	5
Cobalt Lake CG	0	2
Morning Star Lake CG	0	2
No Name Lake CG	0	1
Oldman Lake CG		5
Lonely Lake undesignated	0	1
Cut Hank Gypsy undesignated	0	1
Two Medicine Patrol Cabin	4	0
Cut Bank Ranger Station	0	0
Pray Shelter	0	0
saddle between Razorback and Triple Divide Peak undesignated	0	1

ST. MARY SUBDISTRICT:		
Gunsight Lake CG	0	8
Otokomi Lake CG	0	6
Red Eagle Lake foot CG	0	3
Red Eagle Lake head CG	0	4
Reynolds Creek CG	0	1
Blackfoot Basin undesignated	0	
Gunsight Lake Spike Camp	0	1
Almost a Dog Pass undesignated	0	1
Red Eagle Meadows undesignated	0	1
Saddle between Razoredge Mt. and Triple Divide Peak undesignated	0	2
Baring Creek Patrol Cabin	0	0
MANY GLACIER SUBDISTRICT:		
Cracker Lake CG	0	2
Poia Lake CG	0	4
Slide Lake CG/Cabin	0	7
Many Glacier Ranger Station	2	0

BELLY RIVER AREA:		
Belly River CG	0	3
Elizabeth Lake foot CG	0	4
Elizabeth Lake head CG	0	4
Cosley Lake CG	0	4
Gable Creek CG	0	1
Glenns Lake foot CG	0	3
Glenns Lake head CG	0	6
Helen Lake CG	0	2
Mokowanis Jct. CG	0	7
Mokowanis Lake CG	0	1
Red Gap Spike Camp undesignated	0	2
North Fork Belly River undesignated	0	1

GOAT HAUNT SUBDISTRICT:		
Lake Francis CG	0	3
Lake Janet CG	0	2
Hawksbill CG	0	2
Fifty Mt. CG	0	3
Hole in the Wall CG	0	2
Kootenai Lakes CG	0	1
Stoney Indian Lake CG	0	1
Goat Haunt R.S.	0	
Kootenai Cabin	0	1
Pass Creek Cabin	0	3

RIVER PATROLS

Management of the **Flathead** Wild and Scenic River system adjacent to Glacier's western and southern boundary is a responsibility jointly shared by the U.S. Forest Service and National Park Service, with the USFS serving as the lead agency.

In 1997, the Hungry Horse Ranger District of the **Flathead** National Forest funded a seasonal River Ranger position. That position was capably filled by USFS employee Laurie Fisher, who conducted a number of river patrols which involved Limits of Acceptable Change monitoring, river clean up, public education, exotic vegetation surveys and river condition monitoring. NPS personnel from the North Fork, Lake McDonald, and Walton areas also contributed to Glacier's river patrol effort. The following river patrols were conducted (by both agencies) in 1997:

SECTION OF RIVER	# OF PATROLS	RIVER MILES PATROLLED
Upper North Fork	30	372
Lower North Fork	5	60
Upper Middle Fork (Bear Cr. - Essex)	4	18
Lower Middle Fork	18	226
Total	57	676

The annual **Flathead** Wild and Scenic River Management Report is included in Section 19.

SECTION 9

BACKCOUNTRY SEARCH AND RESCUE AND EMERGENCY OPERATIONS SUMMARY

INTRODUCTION

Glacier National Park's backcountry provides a full spectrum of risks and challenges inherent with **wildland** recreational activities and primitive wilderness experiences. Park interpretive programs, informational handouts, and trailhead signing provide a continual reminder that one must be willing to accept those risks when they venture into the backcountry.

The combination of rugged terrain, friable sedimentary rock strata, swift and cold water, ever changing weather conditions and of course, grizzly bear habitat, all contribute to the potential for complex and sometimes tragic backcountry emergencies. Despite these factors, Glacier generally experiences relatively few serious accidents in the backcountry, however, 1997 was a very active year.

Park personnel responded to 34 search and rescue incidents in 1997. The types of SAR incident responses ranged from checking trailheads for overdue visitors to major search and rescue efforts.

The most active month was July (**13 SAR's**). The next most active months, in descending order, were: August (**9**), June (**5**), September (**4**), and February (**1**), May (**1**), November (**1**)..

Again this year, the most active SAR category seemed to be "injured or stranded while hiking" (23 injured, 1 stranded). There were two river-related incidents, one climbing incident and one BASE jumping incident. Again this year, there were no horse-related accidents requiring a SAR effort.

The most complex SAR missions in 1997 included: the search for a solo day hiker lost in the Lincoln Creek area for 6 days; the search for and recovery of two climbers suffering fatal injuries in a fall on Rainbow Peak; and the rapid rescue of a BASE jumper hung up on the North face of Mt. Siyeh. Other significant incidents included: the all-night winter evacuation of a bad knee injury victim off Otokomi Mountain and the rapid evacuation of a cardiac patient in crisis on the St. Mary Falls Trail.

There were two incidents involving concession employees in 1997. The Truszkowski Search (**\$138,360.00**) and the Claasen Search (**\$146.34**). Concession employee incidents accounted for 74% of all 1997 GNP SAR mission costs (**\$188,696.67**). There were four incidents involving Park employees (off duty). The Wright Evacuation (**\$1,794.70**); the Rainbow Peak recovery (**\$16,364.39**); the Adams Search (**\$2,581.88**); and the **Eischeid Rescue** (**\$497.83**). Park employees accounted for 11% of all GNP SAR mission costs. Together, **concession employees and Park employees** involved in GNP **SAR** incidents accounted for 84% **of all GNP SAR costs (\$159,753.14)**.

There were only a few minor injuries sustained this year in GNP SAR operations during nearly 6,000 hours logged by searchers and rescuers working in hazardous environments and conditions.

1997 INCIDENT SUMMARY

Type	# Incidents	# Injured/ill	# Fatalities	# Non-injury
Hiking	24	15	2	13
skiing	1	1	0	0
Climbing	1	0	2	0
Boating	1	0	0	5
Swimming	0	0	0	0
Scuba	0	0	0	0
Vehicle	1	0	0	1
Aircraft	1	1	0	2
stock	0	0	0	0
Mutual Aid	3	3	1	1
Unfounded	0	0	0	0
Other	2	1	0	2
Total	34	21	5	24
Saves	7	7		

1997 COST SUMMARY

NPS Programmed	Hours: 2,087.0	cost: \$32,534.56
NPS Un-programmed	Hours: 3,850.75	cost: \$98,150.13
Non-NPS	Hours: 57.0	cost: \$570.00
Total	Hours: 5,994.75	Cost: \$131,254.69

SEARCH AND RESCUE MISSIONS

The following information summarizes search and rescue incidents which occurred in Glacier National Park in 1997:

Date	Incident Name	Subdistrict	Type of Incident
2/13/97	Wright Evacuation	SM	Researcher fell on snow, injured knee on Otokomi Mt., required carryout
5/24/97	Regnier Evacuation	LM	Hiker fractured ankle on South Boundary Trail, required wheeled litter evacuation
6/15/97	Assist Flathead county so	LM	Rafting accident on Middle Fork of the Flathead River, tree fell on raft, serious injuries
6/23/97	Eley Search	LM	Solo day hiker lost for 6 days in the Lincoln Creek area, walked out
6/23/96	Davis Search	SM	Response to missing person report at Rising Sun, located subject
6/23/97	Raberstein Evacuation	BR	Horse evacuation of ill hiker on the Belly River Trail
6/26/97	Preusser Search	MG	Response to report of overdue hikers, subjects walked out
7/4/97	Rainbow Peak Recovery	NF	Two off duty Park employees fell to their deaths during a snow/ice the north side of Rainbow Peak
7/5/97	Truskowski Search	TM	Extensive search for missing concession employee (on a day climb) in the Two Medicine area, subject not found
7/5/97	Schmidt Evacuation	LM	Horse evacuation of serious ankle injury from Lincoln Lake
7/7/97	Assist Waterton Park	BR	Search for mentally handicapped man
7/13/97	Sisk Evacuation	SM	Slipped while hiking, injured ankle, ALERT evacuation from Gunsight Lake
7/20/97	Pricard Search	NF	Search for overdue bicyclist, found at Polebridge Townsite
7/28/97	Bennett Evacuation	LM	Horse evacuation of patient with sprained ankle from Snyder Lake
7/28/97	Knipp Evacuation	GH	Horse evacuation of ill person from Stoney Indian Lake Campground

Date	Incident Name	Subdistrict	Type of Incident
7/29/97	Feiten Evacuation	NF	Injured while hiking on Bowman Lake Trail, boat evacuation
7/29/97	Daehler Evacuation	TM	Hiker fell near Pitimakin Pass, lacerated knee, wheeled litter evacuation
7/29/97	Terhaar Search	TM	Search initiated for overdue hikers on extended backcountry itinerary
7/30/97	Apple Evacuation	LM	Wheeled litter evacuation of ill person from the Avalanche Lake Trail
7/31/97	Davis Evacuation	LM	ALERT evacuation of ill hiker from Lincoln Pass
8/1/97	Adams Search	MG	Search for Park employees overdue from a climb of Mt. Wilbur
8/4/97	Kasten Assist	MG	Response to report of visitor suffering heat exhaustion at Cracker Lake
8/6/97	Assist Flathead county so	LM	Search for victims of capsized canoe on Middle Fork of the Flathead River. one fatality
8/7/97	Tewhey Evacuation	BR	Spilled boiling water on hands at Cosley Lake CG, horse evacuation
8/23/97	Ickes Assist	LM	Fell on the Avalanche Lake Trail, lacerated knee, assisted visitor in hike out
8/27/97	Dean Assist	LM	Fell on Highline Trail, lacerated knee and head, assisted visitor in hike out
8/30/97	Houser Evacuation	SM	Fell on wet rocks on the Siyeh Pass Trail, injure knee, wheeled litter evacuation
8/31/97	Eischeid Evacuation	LM	Park employee stranded on Mt. Jackson, helicopter evacuation
8/31/97	Mauldin Search	NF	Search for overdue float group on Bowman Creek
9/1/97	Dokken Recovery	GH	Climber fell to his death descending Mt. Cleveland, Waterton N.P. short-haul used
9/14/97	Lewandowski Evacuation	SM	Critically ill cardiac patient on the St. Mary Falls Trail, wheeled litter evacuation

Date	Name of Incident	Subdistrict	Type of Incident
9/14/97	Claassen Search	MG	Possible distress signals on Grinnell Point area, concession employee
9/24/97	Kauffman Rescue	MG	Stranded, injured BASE jumper on North face of Mt. Siyeh, technical evacuation
11/5/97	Shattuck Search	LM	Initial response to report of overdue hikers, arrived home during search

LM = Lake McDonald Subdistrict
SM = St. Mary Subdistrict
MG = Many Glacier Subdistrict
TM = Two Medicine Subdistrict
BR = Belly River Area
GH = Goat Haunt Subdistrict

Information provided by Charlie Logan, SAR Coordinator

WILDLIFE MANAGEMENT ACTIONS

There were no bear-inflicted human injuries in Glacier's backcountry in 1997. Bear Management actions accounted for 9 backcountry campground and 25 trail closures. There were also and 23 "grizzly frequenting" postings on trails which lasted an average of 5 weeks each. There were no major bear relocation operations.

There was 1 mountain lion danger "posting."

SECTION 10

BACKCOUNTRY LAW ENFORCEMENT SUMMARY

INTRODUCTION

The following data summarizes backcountry law enforcement actions which resulted in the issuance of a Violation Notice, Courtesy Tag, or verbal warning in 1997:

VIOLATION NOTICES

A total of 74 Violation Notices were issued for offenses occurring in Glacier's backcountry in 1997. This equals the number issued in 1996.

The Lake McDonald Subdistrict recorded the highest number of **VN's** issued in a given area with a total of 20. The Belly River Area and St. Mary Subdistrict followed with 15 **VN's** each.

The top 5 offenses which resulted in the issuance of a Violation Notice in 1997 included:

1. Failure to obtain a backcountry use permit/camping in undesignated area:
18
2. Violation of terms of backcountry use permit (includes off itinerary):
15
3. Pets in the backcountry: 10
3. Improper food storage: 9
5. Bicycles/wheeled vehicles in the Backcountry: 6

COURTESY TAGS/WARNINGS

A total of 79 Courtesy Tags/Courtesy Warning were issued for offenses occurring in Glacier's backcountry in 1997. This marks a 20% increase over 1996, when 66 Courtesy Tags/Warnings were issued.

The Lake McDonald Subdistrict accounted for 26 Courtesy Tags/Warnings in 1997, followed by the St. Mary Subdistrict with 19.

The top 5 offenses which resulted in the issuance of a Courtesy Tag/Warning in 1997 included:

1. Violation of terms of backcountry use permit: 19
2. Failure to obtain a backcountry use permit/camping in undesignated **areas**:
18
3. Entering closed areas: 14
4. Improper food storage: 13
5. Pet in Backcountry: 11

VERBAL WARNINGS

Verbal warnings are frequently issued to visitors who engage in minor resource violations in Glacier's backcountry. The focus of verbal warnings is one of education, with an emphasis on explaining to the visitor how a particular regulation may protect park resources and/or provide for visitor safety. There were 82 verbal warnings recorded in 1997, the most common offenses were:

1. Violation of Terms of Backcountry Permit/Camping Off Itinerary:
18 offenses
2. Improper Food Storage: 21 offenses
3. Failure to Obtain a Backcountry Permit/Camping in Undesignated Sites:
14 offenses

REASONS FOR OFFENSES

Backcountry Rangers are instructed to ascertain and document the "reason" for each offense, as stated by the violator. This information can be very helpful in regard to identifying measures to reduce backcountry non-compliance. The following information summarizes the primary reasons given by violators:

TYPE OF OFFENSE	VIOLATORS REASONS
Violation of Terms of BC Permit/Off Permit Itinerary	medical reason, blisters, injuries
	bugs at Brown Pass CG, didn't want to stay there
	ran out of time - poor trip planning
	poor trip planning - didn't get undesignated camping handout for Nyack-Coal Creek
	fatigue - poor trip planning
	didn't think it would matter if they spent one more day at Beaver Woman Lake CG
	blisters
	sore knee
	extreme weather
	intentional
	itinerary too difficult - poor planning
	medical reasons

Violation of Terms of BC Permit/Off Itinerary	weather conditions
	intentional - couldn't get preferred itinerary
	bad weather
	couldn't reach destination - poor planning - too difficult of an itinerary
	wanted to shorten hike on last day - intentional
	mix up - had two permits - turned the wrong one back in
	didn't read signs - were at wrong campsite
	bad weather
	started a day late - poor planning
	stayed an extra night - intentional
	blisters .
	late off Pinchot - didn't think it would matter due to lack of lots of people in area
	started trip a day late
	desired campground was full - planned to stay there anyway
crowded backcountry campgrounds - traded permits with another party	
Failure to Obtain BC Permit/Camping Outside of Designated Areas	couldn't find anyone at Polebridge Ranger Station
	received bad info at Sprague Creek CG
	sick child in party
	had permit for site, but both sites were already occupied
	taxied to Bowman Lake - no Ranger on duty
Failure to Obtain BC Permit/Camping Outside of Designated Areas	from Whitefish - didn't bother to stop at Park HQ for permit (winter season)
	rushed in the Visitor Center - it was closing
	didn't bother
	thought they could get a permit at Lake McDonald Ranger Station

Failure to obtain BC Permit/Camping Outside of Designated Areas	no one at Polebridge Ranger Station to get a permit from
	didn't know you needed a permit to camp on Park side of North Fork Flathead River
	didn't bother - CG's are too dangerous to camp in and too dirty
Entering Closed Area - Bowman Lake Eagle Closure	didn't know about closure
	didn't know about closure or see signs
Failure to Properly Store Food	not equipped to properly hang food
	didn't understand regulations
	"should have known better"
	party left in a hurry - failed to clean up
	pack with food left unattended due to poor communication and carelessness
	lack of information
	didn't understand regulations
	forget to hang food pack
	rainy weather and large group using food hanging device
	day climbing - left pack with food unattended
Improper Food Storage	raining - didn't want to get wet
	placed fresh fish and meat in plastic bag in creek to keep cool - negligence
	didn't realize that they had to hang food during the day while out exploring
	thought is was OK to boil water in tent - also had food in tent
	didn't realize food storage regs applied along the Park side of the North Fork Flathead River
	poor supervision of Boy Scout Troop
	poor supervision of Scout Troop
	didn't want to carry full 'packs up mountain - left them trailside

Improper Food Storage	didn't realize that food storage applied to areas outside of campgrounds
	full packs with food and garbage left unattended trailside - while party took short day hike
	weren't informed at VC that they needed rope
	forget and left food bag behind at campground
	left food in unattended pack to do day climb on Rising Wolf
	ignorance of bears and hiking in grizzly country
Pets in Backcountry	didn't see sign at trailhead
	didn't know what to do with dogs otherwise
	didn't see signs
	no respect for pet regulation
	didn't know regulation existed - been going to Harrison Lake with dogs for years
	no sign posted at Logan Pass
Fires in Undesignated Sites	no respect for fire regulations
	didn't realize that the regulation existed on the Park side of the North Fork Flathead River
	didn't want to stay in designated campground where fires were permitted
	thought other campers would bring a stove to borrow
Litter/Leaving Refuse	forgot to pack it out
Stock violations, llamas (grazing)	Unable to tie llamas up tight on the hitchrail, needed long lead lines. Also disrespectful of our stock regs due to their own selfishness
Fishing Violations	didn't have copy of regulations/policies

BACKCOUNTRY CAMPGROUND OCCUPANCY COMPLIANCE

During the 1993 through 1997 field season, a random sampling of campgrounds was conducted in which the actual number of permitted parties in the backcountry reservation system was compared to the **actual number** of permitted parties occupying the campground. From a sample size of 339 nights in various campgrounds, it was determined that our reserved campsite occupancy rate is approximately 84%. In 1997, 112 nights were sampled, with a 92% occupancy rate.

SUMMARY TABLES

All Violations Notices, Courtesy Tags and Verbal Warnings issued in 1997 are summarized in the following tables, by type of offense and location:

NORTH FORK SUBDISTRICT:					
TYPE OF OFFENSE	LOCATION	No SUSPECTS	VIOLATION NOTICES	COURTESY TAGS/ WARNINGS	VERBAL WARNINGS
Failure to Obtain Backcountry Use Permit	Bowman Lake Head CG	0	0	0	0
	Quartz Lake CG	0	0	2	0
	Kintla Lake head	0	0	0	1
	Kintla Lake	0	0	0	0
Violation of Terms of BC Permit/Off Itinerary	Boulder Pass CG	0	0	1	1
	Bowman Lake head CG	0	0	1	0
	Brown Pass CG	0	0	0	1
	Logging Lake CG	0	0	0	1
	Quartz Lake CG	0	0	0	2
	Logging Ft CG	0	0	0	1

Improper Food Storage	Kintla Lake head CG	0	0	1	0
	Kintla Lake CG	0	0	0	2
	Grace Lake CC	0	0	0	1
	Logging Lake CG	0	0	0	1
	Quartz Lake CG	0	0	0	1
	Kintla Lake head CG	0	0	0	1
	Bowman Lake head CG	0	0	0	1
	Lower Quartz Lake CG	0	0	0	2
Fires in Undesignated Areas	Lower Quartz Lake CG	0	1	0	0
Pets in the Backcountry	Polebridge R.S. winter	0	0	1	0
	Inside NF Road: Polebridge - Kintla	0	0	2	0
Stock in Campsites	Quartz Lake CG	0	0	2	1
Fishing in closed area	Upper Kintla	0	0	0	1
Fishing closed season	Bowman	0	0	0	1

LAKE MCDONALD SUBDISTRICT:					
TYPE OF OFFENSE	LOCATION	NO SUSPECTS	VIOLATION NOTICES	COURTESY TAGS / WARNINGS	VERBAL WARNINGS
Failure to Obtain a Backcountry Use Permit and Clamping in an Undesignated Area	Avalanche Trail end Lake	0	1	0	0
	Granite Park CG	0	1	0	0
	Lake McDonald CG	0	0	3	0
	Sperry Trail and CG	0	0	1	0
	Lake McDonald	0	0	1	0
	Snyder Lake CG	0	1	3	0
	Lake Ellen Wilson CG	0	1	0	0
	base of Mt. Stanton	0	1	2	0
Violation of Terms of Permit/Off Itinerary	Snyder Lake CG	0	0	1	1
	Arrow Lake CG	0	0	0	1
	Lincoln Lake CG	0	0	2	0
Improper Food Storage	Lake Ellen Wilson CG	0	0	0	1
	Highline Trail	0	0	2	0
	Granite Park CG	0	0	2	4
	Arrow Lake CG	0	0	1	0
	Snyder Lake CG	0	1	1	0

Firearm in Backcountry	Arrow Lake	0	2	0	0
	Granite Park	0	0	0	0
Preservation of Natural Features	Kelly camp area - Antler Collecting	0	1	1	0
	Avalanche Lake - Mushroom Picking	0	0	0	1
Bicycle or wheeled vehicle in the Backcountry	Avalanche Lake Trail	0	1	0	1
	Loop Trail	0	1	0	0
	Lincoln Lake Trail	0	1	0	0
	Apgar Mt. Trail	0	2	0	0
	McDonald Lake CG	0	1	0	0
	Rocky Point	0	0	0	0
	Sperry	0	0	0	1
Fire in undesignated area	Arrow Lake	0	0	0	0
	Avalanche Lake	0	0	2	0
	Granite Park CG	0	1	0	0
Entering Closed Area	Highline Trail	0	0	1	0
	Oberlin Bend (Jones Flats)	0	0	0	3
Littering	Loop	0	0	0	1
Cutting Switchbacks	Jones Flats	0	2	0	0
Air Delivery - Illegal Aircraft Landing	McDonald Lake	0	1	0	0

Pet in Backcountry	Highline Trail	0	0	2	0
	Loop Trail	0	0	0	2
	Avalanche Lake	0	0	0	0
	Avalanche Lake Trail	0	3	3	0
	Trail of the Cedars	0	0	0	0
	Lincoln Creek	0	0	0	1
	GTS Road - winter	0	0	1	0
	Rocky Point	0	0	0	1

WALTON AREA:

TYPE OF OFFENSE	LOCATION	NO SUSPECTS	VIOLATION NOTICES	COURTESY TAGS/ WARNINGS	VERBAL WARNINGS
Pets in the Backcountry	Fielding Trail	0	1	0	0
Camping in Undesignated area	Ole Creek	0	0	0	1
Violation of Terms of BC permit/ Off interary	Beaver Woman CG	0	0	0	1
	Buffalo Woman	0	0	0	1
	Lower Park CG	0	0	0	1
Improper Food Storage	Coal Creek CG	0	0	0	1
	Ole Creek CG	0	0	0	1
Attempt to Take Simulated Wildlife - Decoy	Shields Creek	0	1	0	0

TWO MEDICINE SUBDISTRICT:

TYPE OF OFFENSE	LOCATION	NO SUSPECTS	VIOLATION NOTICES	COURTESY TAGS/ WARNINGS	VERBAL WARNINGS
Failure to Obtain a BC Permit	Morning Star CG	1	0	0	0
	Cut Bank Trail	0	0	0	1
Violation of Terms and Conditions of Backcountry Use Permit	Atlantic Creek CG	0	0	0	1
	Dawson P a s s	0	0	0	1
	No Name CG	0	0	0	1
Improper Food Storage	Atlantic Creek CG	0	0	0	1
	Boat Dock at head of Two Med Lake	0	2	0	0
	No Name Lake CG	0	0	1	0
	Upper Two Medicine CG	0	1	0	0
Livestock Trespass	Lubec Trailhead	1	0	0	0
	near Cut Bank R.S.	1	0	0	0
Pets in the Backcountry	Scenic Point Trail	0	1	0	0
	Two Medicine Valley	0	1	0	0
	Running Eagle Falls	0	0	1	0
Entering Closed Area	Medicine Grizzly Lake Trail	2	0	0	0

ST. MARY SUBDISTRICT:

TYPE OF OFFENSE	LOCATION	NO SUSPECTS	VIOLATION NOTICES	COURTESY TAGS / WARNINGS	VERBAL WARNINGS
Fail to Obtain BC Permit/Camping in Undesignated Area	Preston Park	0	0	1	0
	Reynolds Creek CG	0	1	0	2
	near Jackson Glacier overlook	0	0	0	1
	Gunsight Lake CG	0	0	0	6
	Red Eagle Lake Trail	0	1	0	0
	Otokomi Lake CG	0	0	0	1
Violation of Terms of BC Permit	Red Eagle Lake foot CG	0	1	1	3
	Reynolds Creek CG	0	4	0	0
	Otokomi Lake CG	0	0	1	0
	Gunsight Lake CG	0	0	0	1
Pets in the Backcountry	Hidden Lake	0	3	0	1
	Hidden Lake overlook	0	0	0	1
Improper Food Storage	Hidden Lake	0	0	0	1
	Reynolds Creek CG	0	0	2	0
	Red Eagle Lake Trail	0	0	1	0
	Red Eagle Lake foot CG	0	0	0	1
	Red Eagle Lake head CG	0	0	0	1

Shortcutting switchbacks	Baring Basin	0	0	0	1
Bicycle in Backcountry	Gunsight Pass Trail	1	0	0	0
	Red Eagle Lake Trail	1	0	0	0
Fire in Backcountry	Red Eagle Lake head CG	0	0	0	1
	Red Eagle Lake Trail	0	1	0	0
Fishing in Closed Area	Hidden Lake outlet	0	0	1	0
Air Delivery - Illegal BASE Jumping	Mt. Siyeh	0	1	0	0
Entering Closed Area	Hidden Lake Trail	0	1	1	0
	Reynolds Creek Drainage	0	0	4	0
	Logan Pass/ Clements snow use area	0	0	8	0

MANY GLACIER SUBDISTRICT:

TYPE OF OFFENSE	LOCATION	No SUSPECTS	VIOLATION NOTICES	COURTESY TAGS/ WARNINGS	VERBAL WARNINGS
Pail to Obtain BC Permit/Camping in Undesignated Area	Cracker Lake	0	0	0	1
	Swiftcurr. Lookout	0	2	0	0
	Grinnell Glacier	0	3	0	0
	Poia Lake CG	1	0	0	0
Improper Food Storage	Iceberg Trail	0	1	0	0
Disturbing Wildlife	Iceberg Lake	0	0	1	0
Pets in the Backcountry	Swiftcurr. Pass Trail	0	0	1	0
Littering	Iceberg Lake	0	0	0	1
Livestock Trespass	Poia Lake	0	0	0	1
	Swiftcurr. Ridge	0	0	0	1
Entering a Closed Area	Grinnell Glacier	0	4	0	0

BELLY RIVER AREA:					
TYPE OF OFFENSE	LOCATION	NO SUSPECTS	'VIOLATION 'NOTICES	COURTESY TAGS / 'WARNINGS	VERBAL WARNINGS
Hunting - Elk Poaching	Lee Creek	2	0	0	0
Livestock Trespass	Lee Creek	0	0	0	1
Improper Food Storage	Mokowanis Lake CG	0	3	0	0
Pets in the Backcountry	Belly River Trail	0	1	0	0
Failure to Obtain BC Permit and Camping in Undesignated Area	On trail near Belly River R.S.	0	4	1	0
	Elizabeth lake foot CG	0	0	4	0
Violation of Terms of BC Permit (includes off itinerary)	On trail near Belly River R.S.	0	1	3	0
	Elizabeth Lake foot CG	0	3	3	3
	Belly River CG	0	1	3	1
	Cosley Lake CG	0	1	0	0
	Mokowanis Junction CG	0	1	0	0
	Mokowanis Lake CG	0	1	0	0

GOAT HAUNT AREA:					
TYPE OF OFFENSE	LOCATION	NO SUSPECTS	VIOLATION NOTICES	COURTESY TAGS/ WARNINGS	VERBAL WARNINGS
Failure to Obtain BC Use Permit and Camping in Undesignated Area	Boulder Pass Trail	0	1	0	0
	Waterton Lake	0	1	0	0
	Waterton River CG	0	0	1	0
Violation of Terms of BC Permit (includes off-itinerary)	Boulder Pass CG	0	0	0	1
	Waterton River Valley	0	1	2	0
	Lake Francis C G	0	0	1	1
	Kootenai Lakes CG	0	0	1	0
	Pass Creek Cabin	0	0	1	0
	Fifty Mt. CG	0	1	0	0
	Stoney Indian Lake	0	0	1	1
Preservation of Natural Features - Antler Collecting	Kootenai Lakes	0	1	0	0
Improper Food Storage	Waterton River CG	0	0	0	1
	Fifty Mt. CG	0	0	1	0
	Stoney Indian Lake CG	0	1	1	0

SECTION 11

BACKCOUNTRY RESOURCE IMPACT SUMMARY

INTRODUCTION

The following tables summarize, by individual Subdistrict or Area, the backcountry resource impacts observed and documented during the 1997 field season. Backcountry patrol rangers documented this data on a standard backcountry patrol report format and the data was subsequently entered into a computerized database for retrieval and analysis. Types of impacts monitored included: human waste, illegal fires, litter, vegetation damage/erosion, and low flying aircraft noise.

IMPACT TOTALS

The total number of impacts documented (excluding data collected from annual backcountry campground evaluations) in each impact category included:

Human waste - 31

Illegal Fires - 35

Litter - 1,967

Vegetation Damage/erosion (including cattle trespass) - 71

Low Flying Aircraft Noise - 215

PROBLEM AREAS

Analysis of this impact data revealed the following problem/concern areas:

Human waste

The total number of occurrences documented in 1997 was much higher than in 1996. Human waste disposal continues to be a problem in high day use areas where toilets are not available. A strong message regarding **leave no trace wildland** ethics in regard to human waste disposal must continue to be emphasized. Preston Park represents the area of greatest concern in 1997; with a dozen occurrences of improperly disposed of human waste documented.

Illesal fires

The number of documented occurrences decreased in 1997 for the second year in a row. The North Fork Subdistrict recorded the highest total for the second consecutive year with 11. The Lake McDonald Subdistrict followed with a total of 7.

Litter

Litter continues to be a problem along the trails leading to **most** of our designated "high day use areas." Despite the fact that **most** trailheads to these areas have garbage cans, small pieces of litter along the trail are common. Continued problem areas include the Hidden Lake Trail and Logan Pass area, the trails in the Two Medicine Valley, the Avalanche Lake Trail and the **Highline**

high volume of litter occurrences with 543.

Vegetation Damage/erosion

The totals in this category stayed the about same in 1996. Problem areas in this category were widely dispersed and generally related to areas which received substantial stock use, and/or designated "high day use" areas. Impacts in designated campgrounds were no recorded in this category (see Backcountry Campground Evaluations, Section 12). Cattle trespass and the vegetation impacts associated with this situation continue to be a concern on the east side of the Park, particularly in the Two Medicine and Many Glacier areas. Switchback cutting was identified as a significant problem on the Scenic Point Trail.

Low flying aircraft noise

Aircraft overflights continues to represent a very important issue in the management of Glacier National Park. Many individuals feel that low flying helicopters constitute a significant impact upon natural quiet and wilderness solitude. The number of low flying aircraft reported in 1997 decreased substantially from 1996. It is believed that this was at least in part due to poor documentation in some areas of the Prk. Data collected in this category appears to support the contention that low flying aircraft are affecting the natural quiet of Glacier's backcountry. In 1997, Glacier has received approximately 12 written complaints regarding aircraft overflight noise and its effect upon solitude and Wilderness values. In addition, over 90% of the respondents to the on-going General Management Plan who addressed aircraft overflights favored a complete ban on all commercial overflights. Areas with particularly high number of low flying aircraft included: Logan Pass, Harrison Lake, the Highline Trail, Gunsight Lake and Pass area.

NORTH FORK SUBDISTRICT:		
Type of Impact	Location	Occurrences
Human Waste	Kintla Lake Beach	1
	Akokala Lake CG	1
	Round Prairie CG	1
	Bowman Lake CG	1
Illegal Fires	Boulder Pass CG	1
	Kintla Creek Delta	1
	Round Prairie CG and trail	2
	Quartz Lake CG	1
	Akokala Lake Campground	1
	Logging Lake foot	1
	Lower Quartz Lake Campground	2
	Logging Lake Campground	1
	Boulder Pass CG	1
Vegetation Damage	Quartz Lake CG	2
	Hidden Meadow	1

Litter	'Kintla Lake Head CG	59
	Quartz Lake CG	24
	Lower Quartz Lake CG	81
	Logging Lake CG	33
	Grace Lake CG	13
	Brown Pass CG	8
	Bowman Lake Head CG	50
	Boulder Pass CG	29
	Akokala Lake CG	15
	Adair CG	22
	Upper Kintla Lake CG	42
	Brown Pass Trail foot - head of Bowman Lake	16
	Round Prairie	14
	Kintla head cabin	1
	Logging Lake trail	3
	Hole-in-the-Wall Campground	5
	Quartz Creek trail	2
	Numa L.O. trail	2
	Logging Head Cabin	3
	Logging Foot Cabin	14
	Logging trail	22
	Hidden Meadow trail and area	7
	Quartz Lake trail	14
Lower Quartz Lake trail	13	
Akokala lake Trail	8	
Boulder Pass Trail Head Kintla to Head Bowman	28	
Boulder Pass Trail Foot Kintla to Head Kintla	15	
Low Flying Aircraft Noise	Boulder Pass Trail Head of Kintla to Head of Bowman	2
	Foot of Kintla to Head of Kintla	8
	Near Gyrfalcon Lake	5

LAKE McDONALD SUBDISTRICT:		
TYPE OF IMPACT	LOCATION	OCCURRENCES
Vegetation Damage	Lake McDonald Trail	1
	Huckleberrv L.O. Trail	1
	Loop Trail	1
Vegetative Damage	Granite Park area	1
Human Waste	Flattop CG	1
	Apgar L.O. trail	3
	Swiftcurrent Pass Trail	2
	Boundary Trail	4
Illegal Fires	Trout Lake Foot	1
	Lincoln Lake CG	1
	Camas Lake CG	2
	Snyder Lake CG	3
Litter	Sperry CG	5
	Granite Park CG	2
	Arrow Lake CG	6
	Snyder Lake CG and area	9
	McDonald Lake CG and shoreline	14
	Camas Lake CG	3
	Avalanche Lake	22
	Flattop CG	1
	Loop Trail	8
	Avalanche Lake Trail	31
	Sperry Trail	27
	Apgar L.O. trail	3
	West Lakes to Arrow Lake	10
	Swiftcurrent Pass trail	2
	Boundary Trail	4
	Highline Trail to Granite Park	15
Howe Lake Trail and Area	1	
Low flying aircraft noise	Mt Brown	3
	Avalache Lake	1

WALTON AREA:		
TYPE OF IMPACT	LOCATION	OCCURRENCES
Litter	Upper Nyack CG	4
	Ole Lake CG	2
	Ole Creek CG	25
	Harrison Lake CG	15
	Fielding Trail	3
	Autumn Creek Trail	2
	Park Creek Trail	5
	Firebrand Pass	3
	Harrison Trail	10
	Scalplock Trail	1
	Lower Nvack CG	11
	Upper Park CG	10
	Lower Park CG	30
	Coal Creek CG	1
	Isabel Lake CG	2
	Harrison Lake Cabin	1
	Coal Creek Cabin	1
	Ole Creek Trail	2
Beaver Woman Lake CG	8	
Low flying aircraft noise	Nyack Creek	7
	Ole Creek Trail	5
	Harrison Lake Trail	33
	Boundary Trail	2

TWO MEDICINE SUBDISTRICT:

TYPE OF IMPACT	LOCATION	OCCURRENCES
Human Waste	Upper Two Medicine CG	1
	Medicine Grizzly Lake Trail	1
Illegal Fires	Cobalt Lake CG	3
	Atlantic Creek CG	1
	Upper Two Med CG	1
Litter	No Name Lake CG	12
	Atlantic Creek CG	3
	Oldman Lake CG	11
	Cobalt Lake CG	11
	Upper Two Medicine Lake CG	13
	Morning Star CG	7
	South Shore Trail	3
	Paradise Point Area	12
	Running Eagle Falls	137
	Cobalt Lake Trail	3
	Firebrand Pass Trail	2
	North Shore Trail	7
	Pray Shelter to Upper Two Medicine Lake	4
	No Name Lake to Dawson Pass	1
	Twin Falls	1
	Dawson Psss to Pitimakin Pass	1
	Triple Divide Pass Trail	11
	Drv Fork Vallev	9
	Cut Bank to Morning Star Lake	2
	Autumn Creek Trail	1
Aster Park Trail	1	

Vegetation damage/erosion	Cut Bank Trailhead to Triple Divide Pass Trail	3 social trails
	Appistoki Falls Areauth Shore Trail	2 social trails
	Cobalt Lake Trail foot bridges	1 social trail
	Running Eagle Falls Area	5 social trails
	Scenic Point Trail	8 switchback cuts
	Firebrand Pass Trail	7 cattle trespass trails
	Lubec Trailhead Area aspen grove	2 cattle trespass areas
	Cobalt Lake Area	2 damaged vegetations
	Atlantic Creek CG	1 tent trench
	No Name CG	1 tent trench
Low Flying Aircraft	Upper Two Medicine Lake	1
	Oldman Lake CG	1

ST. MARY SUBDISTRICT:

TYPE OF IMPACT	LOCATION	OCCURRENCES
Human Waste	Preston Park Area	11
	Siyeh Bend/Jackson Glacier Overlook Trail Jct.	1
Illegal Fires	Otokomi Lake CG	1
	Red Eaale Lake foot CG	2
	Red Eagle Lake head CG	1
Litter	Reynolds Creek CG	16
	Otokomi Lake CG	18
	Gunsight Lake CG	67
	Red Eagle Lake foot CG	28
	Red Eagle Lake head CG	18
	Siyeh Pass	2
	Gunsight Pass Trail	15
	Gunsight Pass Shelter	7
	Preston Park	6
	Otokomi Lake Trail	7
	Red Eagle Lake Trail	18
	Sun Point Trail	12
	Virginia Falls	13
	St. Mary Falls	8
	Gunsight Lake Spike Camp	2
	Baring Basin	2
	Red Eaale Spike Camp	3
	Mt. Reynolds Climbing Route	4
	Triple Divide Peak	1
	Hidden Lake Trail	28
Low Flying Aircraft	Red Eagle Lake area	31
	Gunsrght Lake area (between Mt. Logan and Gunsight Pass)	62
	Hidden Lake	50

Vegetation damage/erosion	Baring Basin	3
	Gunsight Lake CG	3
	Mt. Reynolds climbing route	1
	Mt. Oberlin climbing route	1
	Hidden Lake switchbacks	4
	Sunrift Gorge	2
	Preston Park Area	6

MANY GLACIER SUBDISTRICT		
TYPE OF IMPACT	LOCATION	OCCURRENCES
Human Waste	Iceberg Lake Trail	1
	Iceberg Lake	1
Illegal Fires	Ptarmigan Lake	1
	Slide Lake CG	1
Vegetation Damage	Poia Lake	1
	Cracker Lake	1
	Cracker Lake Trail	1
	Swiftcurrent Ridge	1
	Slide Lake	1
	Lee Creek	1
	Iceberg Lake	1
Litter (note: this data was' inadequately documented in 1997 in the Many Glacier Subdistrict)	Grinnell Valley Trails	20+
	Swiftcurrent Valley Trails	20+
	Iceberg/Ptarmigan Trail	20+
	Cracker Lake Trail	20+
	Cracker Lake CG	10+
	Slide Lake	10+
	Josephine Lake (N. shore)	20+
	Poia Lake CG	10+

BELLY RIVER AREA:		
TYPE OF IMPACT	LOCATION	OCCURRENCES
Human Waste	Belly River CG	1
Illegal Fires	Mokowanis Lake CG	1
	Elizabeth Lake foot CG	2
Litter	Belly River CG	9
	Gable Creek CG	10
	Helen Lake CG	3
	Cosley Lake CG	83
	Glenns Lake foot CG	22
	Elizabeth Lake foot CG	29
	Elizabeth Lake head CG	8
	Glenns Lake head CG	25
	Mokowanis Jct. CG	23
	Mokowanis Lake CG	12
	Cosley Cutoff Trail	3
	Stoney Indian Pass Trail	5
	Ptarmigan Tunnel Trail	2
	Belly River Trail	15
	Mount Merritt	1
Dawn Mist Falls	3	
Vegetation Damage/erosion	Cosley Lake CG	1
	Cosley Lake outlet cable crossing	1
	Elizabeth Lake foot CG	2

GOAT HAUNT AREA		
TYPE OF IMPACT	LOCATION	OCCURRENCES
Illegal Fires	Stoney Indian Lake CG	1
	Fifty Mountain CG	1
	Lake Francis CG	1
Litter	Waterton Valley Trail	19
	North Boundary Trail	1
	Waterton Lakeshore Trail	2
	Stoney Indian Pass Trail	3
	Hole in the Wall CG	30
	Boulder Pass Trail	14
	Waterton River CG	12
	Kootenai Lakes CG	43
	Stoney Indian Lake CG	21
	Lake Francis CG	18
	Lake Janet	28
	Hawksbill CG	7
	Fifty Mountain CG	18
Vegetation Damase	Lake Janet CG	1
Low Flying Aircraft	Waterton Valley Trail	3
	Boulder Pass Trail at Thunderbird Pond	1

SECTION 12

BACKCOUNTRY CAMPGROUND EVALUATIONS

INTRODUCTION

Resource impacts and facility conditions in Glacier National Park's designated backcountry campgrounds were evaluated during the period of August 15 - September 15, 1997. A standardized evaluation and rating system (established in 1987) was used. Bare ground and vegetative cover measurements were taken using an 8 point transect method. This data **was** entered into a computerized data base and impacted areas were calculated in square feet.

A total of 62 designated backcountry campgrounds were evaluated in 1997, with the following findings:

FACILITY RATINGS

84% (53 of 63) of the backcountry campgrounds received a facility rating in the good category and 16% (10 of 63) received a facility rating of fair in 1997. No facilities received a poor rating in 1997.

This compares to 81% of the backcountry campgrounds with a **good** rating, and 19% with a fair rating in 1996. There were no facility ratings in the poor category in 1996, 1995, 1994 or 1993.

Maintenance of backcountry campground facilities (food hanging devices, toilets, hitchrails, signs, etc.) continued to be a high priority which was emphasized through the Wilderness Implementation Schedule (**WIS**).

IMPACT RATINGS

73% (46 of 63) of the the backcountry campgrounds received a resource impact rating of good and 27% (17 of 63) received a resource impact rating of fair in 1997. No campgrounds received an impact rating of poor in 1997.

This compares to 71% (50 of 62) of the backcountry campgrounds with resource impact rating in the good category, 29% (18 of 62) received an impact rating of **fair**, and 0 campgrounds received an impact rating of poor in 1996.

IMPACT CONCERNS

The following impact concerns were documented in our designated backcountry campgrounds. They indicate areas that received "severe" level ratings in the categories noted at more than one site measured within the campground:

CAMPGROUND	CONCERN AREAS
North Fork Subdistrict:	
Kintla Lake, head	n/a
Upper Kintla Lake	n/a
Boulder Pass	n/a
Brown Pass	n/a
Bowman Lake, head	Vegetative cover (food prep area),
Quartz Lake	n/a
Lower Quartz Lake	Vegetative cover (food prep and site # 3)
Akokala Lake	n/a
Logging Lake	Vegetative cover (food prep area and site #2)
Adair	n/a
Round Prairie	I n/a
Grace Lake	n/a
Lake McDonald Subdistrict:	
Arrow Lake	vegetative cover and bare ground
Camas Lake	n/a
Lake McDonald	Vegetative cover and root exposure
Lincoln Lake	n/a
Snyder Lake	n/a
Sperry	n/a
Lake Ellen Wilson	Bare ground, Vegetative cover, social trails
Flattop	Bare ground, Vegetative cover
Granite Park	Vegetative cover, bare ground

Walton Area:	
Harrison Lake	n/a
Lower Nyack	n/a
Upper Nyack	n/a
Beaver Woman Lake	Bare ground,, vegetative cover and root exposure
Coal Creek	Vegetative cover (food prep area)
Lower Park Creek'	n/a
Lake Isabel	Bare ground, Vegetative cover, (food prep area)
Upper Park Creek	n/a
Ole Creek	Bare ground, Vegetative cover (food prep area)
Ole Lake	Bare ground, Vegetative cover (food prep area)
Two Medicine Subdistrict:	
Upper Two Medicine Lake	None
Cobalt Lake	None
No Name Lake	None
Oldman L a k e	None
Morning Star Lake	Vegetative cover
Atlantic Creek	None
St. Mary Subdistrict:	
Otokomi Lake	None
Reynolds Creek	None
Gunsioht Lake	Vesetative cover
Red Eagle Lake, foot	Vegetative cover
Red Eagle Lake.. head	Vegetative cover

Many Glacier Subdistrict:	
Poia Lake	None
Cracker Lake	None
Slide Lake	None
Belly River Area:	
Belly River	Bare ground, Vegetative cover
Gable Creek	None
Cosley Lake	Bare ground
Glenns Lake, foot	None
Glenns Lake, head	None
Mokowanis Jct.	Bare ground, Vegetative cover
Mokowanis Lake	None
Elizabeth Lake, foot	None
Elizabeth Lake, head	None
Helen Lake	None
Goat Haunt Area:	
Waterton River	None
Lake Janet	None
Lake Francis	Vegetative cover, Bare ground (food prep area)
Hawksbill	None
Hole in the Wall	Bare ground, Vegetative cover
Kootenai Lakes	Bare ground, vegetative cover
Stoney Indian Lake	None
Fifty Mountain	Bare ground, vegetative cover

ANALYSIS

Glacier recorded 27,561 backcountry camper nights in 1997, the 7th highest recorded total in the history of the Park. This continued high level of use resulted in a lot of wear and tear on the backcountry campgrounds.

During July and August, many of the campgrounds were full every night and difficult to obtain. This situation led to occasional illegal use and/or parties off of itinerary, which overfilled campgrounds and often resulted in resource impacts (see Section 15: Backcountry Law Enforcement).

In 1995 the standards for campsite bare ground were increased from 100 sq. ft. to 225 sq. ft., to better accommodate modern tent designs. Standards for vegetative cover were also increased some. We developed a sliding scale when measuring bare ground and vegetative cover at food prep areas, food hanging devices and hitchrails. This allowed us to account for varying carrying capacities in the campgrounds.

Our "limits of acceptable change" standard for both the facility rating and impact rating is established at 80% of the campgrounds with a good rating and 20% of the campgrounds with a **fair** rating. These desired conditions were met for facility ratings in 1997 with 84% rating in the good category. The standard was not met for impact ratings, with 73% of the campgrounds rating good, compared to 71% in 1996, 74% in 1995 and 76% in 1994. This tends to illustrate a continued slow decline in the resource conditions of our campgrounds.

Efforts for repair and rehabilitation of sites and facilities which are out of compliance will be initiated through the 1998 Wilderness Implementation Schedule and the Centralized Resource Management Projects System (CRMPS) .

SUMMARIES

A summary table of the 1997 backcountry campground facility and impact ratings and a 5 year comparison table (1993-97) follows for your reference.

**BACKCOUNTRY CAMPGROUND EVALUATIONS
1997 SUMMARY**

NORTH FORK SUBDISTRICT:		
Campground	Facility Rating	Impact Rating
Kintla Lake, Head	34.0 - Good	1.16 - Good
Upper Kintla Lake	27.0 - Good	1.14 - Good
Boulder Pass *	32.5 - Good	1.10 - Good
Brown Pass	27.0 - Good	1.12 - Good
Bowman Lake, Head	36.0 - Good	1.30 - Good
Quartz Lake	27.0 - Good	1.29 - Good
Lower Quartz Lake	41.0 - Fair	1.28 - Good
Akokala Lake	32.0 - Good	1.10 - Good
Logging Lake	24.0 - Good	1.80 - Good
Round Prairie	28.5 - Good	1.00 - Good
Adair	38.5 - Fair	1.10 - Good
Grace Lake	44.0 - Fair	1.16 - Good
LAKE MCDONALD SUBDISTRICT:		
Campground	Facility Rating	Impact Rating
Arrow Lake	29.5 - Good	1.75 - Fair
Camas Lake	27.0 - Good	1.00 - Good
Lake McDonald *	24.0 - Good	1.70 - Fair
Lincoln Lake	32.5 - Good	1.20 - Good
Snyder Lake	36.0 - Good	1.13 - Good
Sperry *	33.0 - Good	1.91 - Fair
Lake Ellen Wilson	44.5 - Fair	1.64 - Good
Flattop	33.0 - Good	1.70 - Fair
Granite Park .	27.0 - Good	1.63 - Fair
Rating Legend	No Hitchrail * Good = 24-33 Fair = 33.1-53 Poor = 53.1-91 with Hitchrail Good = 27-36 Fair = 36.1-56 Poor = 57.1-100	Good = 1.0-1.5 Fair = 1.51-2.2 Poor = 2.21-3.0

WALTON AREA:		
Campground	Facility Rating	Impact Rating
Harrison Lake	27.0 - Good	1.29 - Good
Lower Nyack	36.0 - Good	1.00 - Good
Upper Nyack	27.0 - Good	1.31 - Good
Beaver Woman Lake	30.0 - Good	1.70 - Fair
Coal Creek	33.0 - Good	1.40 - Good
Lower Park Creek	29.0 - Good	1.20 - Good
Lake Isabel	32.0 - Good	1.30 - Good
Upper Park Creek	29.0 - Good	1.38 - Good
Ole Creek	27.0 - Good	1.20 - Good
Ole Lake	30.0 - Good	1.50 - Good
TWO MEDICINE SUBDISTRICT :		
Campground	Facility Rating	Impact Rating
Upper Two Medicine Lake *	31.0 - Good	1.29 - Good
Cobalt Lake *	37.0 - Fair	1.25 - Good
No Name Lake *	31.5 - Good	1.45 - Good
Oldman Lake	35.5 - Good	1.29 - Good
Morning Star Lake	26.5 - Good	1.50 - Good
Atlantic Creek	32.5 - Good	1.14 - Good
ST. MARY SUBDISTRICT:		
Campground	Facility Rating	Impact Rating
Otokomi Lake .	27.0 - Good	1.10 - Good
Revnolds Creek	34.5 - Good	1.25 - Good
Gunsight Lake	44.0 - Fair	1.50 - Good
Red Eagle Lake, Foot	38.0 - Fair	1.68 - Fair
Red Eagle Lake, Head	36.0 - Good	1.39 - Fair
Rating Legend	<u>no Hitchrail</u> Good = 24-33 Fair = 33.1-53 Poor = 53.1-91 <u>with Hitchrail</u> Good = 27-36 Fair = 36.1-56 Poor = 56.1-100	Good = 1.0-1.5 Fair = 1.51-2.2 Poor = 2.21-3.0

MANY GLACIER SUBDISTRICT:		
Campground	Facility Rating	Impact Rating
Poia Lake	30.0 - Good	1.36 - Good
Cracker Lake	30.0 - Good	1.20 - Good
Slide Lake	27.0 - Good	1.10 - Good
BELLY RIVER AREA:		
Campground	Facility Rating	Impact Rating
Belly River *	35.5 - Fair	2.20 - Fair
Cosley Lake	32.5 - Good	1.64 - Fair
Gable Creek	27.0 - Good	1.33 - Good
Glenns Lake, Foot	30.0 - Good	1.11 - Good
Glenns Lake, Head	29.0 - Good	1.45 - Good
Mokowanis Junction	31.5 - Good	1.91 - Fair
Mokowanis Lake	26.5 - Good	1.25 - Good
Elizabeth Lake, Foot	36.5 - Fair	1.33 - Fair
Elizabeth Lake, Head	27.0 - Good	1.54 - Fair
Helen Lake *	34.0 - Fair	1.06 - Good
GOAT HAUNT AREA:		
Campground	Facility Rating	Impact Rating
Waterton River	27.0 - Good	1.36 - Good
Lake Janet	126.0 - Good	1.25 - Good
Lake Francis	124.0 - Good	1.68 - Fair
Hawksbill *	24.0 - Good	1.50 - Good
Hole in the Wall *	31.5 - Good	2.04 - Fair
Kootenai Lakes	27.0 - Good	2.00 - Fair
Stonev Indian Lake *	24.0 - Good	1.30 - Good
Fifty Mountain	32.0 - Good	1.86 - Fair
Rating Legend	<u>no Hitchrail</u> Good = 24-33 Fair = 33.1-53 Poor = 53.1-91 <u>with Hitchrail</u> Good = 27-36 Fair = 36.1-56 Poor = 56.1-100	Good = 1.0-1.5 Fair = 1.51-2.2 Poor = 2.21-3.0

**BACKCOUNTRY CAMPGROUND EVALUATIONS
1993 - 1997 COMPARISONS**

NORTH PORK SUBDISTRICT?	Facility Rating					Resource Impact Rating				
	1997	1996	1995	1994	1993	1997	1996	1995	1994	1993
Campground										
Kintla Lake, Head	41.0	41.0	41.0	38.5	41.0	1.16	1.35	1.28	1.48	1.00
Upper Kintla Lake	27.0	29.5	34.0	27.0	38.0	1.14	1.39	1.45	1.55	1.06
Boulder Pass *	32.5	37.0	32.0	27.0	36.0	1.12	1.10	1.24	1.36	1.32
Brown Pass	27.0	30.0	41.0	35.0	34.0	1.12	1.35	1.40	1.60	1.61
Bowman Lake. Head	36.0	36.0	48.0	36.0	41.0	1.30	1.30	1.37	1.42	1.00
Quartz Lake	27.0	31.0	31.0	30.0	36.0	1.29	1.33	1.53	1.70	1.50
Lower Quartz Lake	41.0	43.0	43.0	41.5	42.0	1.28	1.28	1.37	1.62	1.06
Akokala Lake	32.0	32.0	35.5	27.0	27.0	1.00	1.16	1.20	1.26	1.00
Logging Lake	24.0	24.0	24.0	32.0	26.5	1.80	1.35	1.48	1.44	1.20
Round Prairie	28.5	28.5	29.5	n/a	n/a	1.00	1.0	1.00	n/a	n/a
Adair	38.5	29.5	33.5	35.5	44.0	1.10	1.17	1.40	1.57	1.02
Grace Lake	44.0	27.0	27.0	36.0	41.0	1.16	1.16	1.30	1.33	1.14

LAKE MCDONALD SUBDISTRICT2	FACILITY RATING					RESOURCE IMPACT RATING				
	1997	1996	1995	1994	1993	1997	1996	1995	1994	1993
Campground										
Arrow Lake	29.5	27.0	27.0	29.5	32.5	1.75	1.40	1.28	1.92	1.76
Camas Lake	27.0	27.0	34.0	44.0	51.0	1.00	1.00	1.08	1.48	1.16
Lake McDonald .	24.0	24.0	25.0	26.0	24.0	1.70	1.90	1.40	1.72	2.31
Lincoln Lake	32.5	29.5	27.0	40.0	31.0	1.20	1.25	1.48	1.63	1.10
Snyder Lake	36.0	27.0	31.0	29.0	32.0	1.13	1.08	1.13	1.76	1.27
Sperry .	33.0	29.5	27.0	32.0	33.0	1.91	1.58	1.60	2.00	1.55
Lake Ellen Wilson	44.5	31.0	31.0	49.0	37.0	1.64	1.17	1.45	1.82	1.22
Flattop	33.0	30.0	30.0	36.5	32.0	1.70	1.70	1.46	2.03	1.60
Granite Park .	27.0	124.0	128.0	33.0	26.5	1.63	1.58	1.33	1.70	1.55
WALTON 80-82	FACILITY RATING					IMPACT RATING				
Campground		1996	1995	1994	1993		1996	1995	1994	1993
Harrison Lake	27.0	32.5	27.0	31.5	33.0	1.29	1.30	1.50	1.60	1.27
Lower Nyack	36.0	30.0	35.0	30.0	44.5	1.00	1.00	1.06	1.20	1.00.
Upper Nyack	27.0	27.0	27.0	42.0	31.0	1.31	1.10	1.40	1.20	1.70
Beaver Woman Lake	30.0	30.0	129.5	36.5	29.0	1.70	1.75	1.88	1.72	1.88
Coal Creek	33.0	30.0	45.0	32.0	38.5	1.40	1.35	1.44	1.24	1.40
Lower Park Creek	29.0	27.0	27.0	31.5	132.5	1.20	1.04	1.26	1.26	1.11
Lake Isabel	32.0	30.0	35.5	32.0	37.5	1.30	1.45	1.40	1.60	1.32
Upper Park Creek	29.0	36.0	39.0	29.0	39.5	1.38	1.13	1.33	1.43	1.08
Ole Creek	27.0	27.0	29.0	52.5	38.0	1.20	1.30	1.33	1.53	1.03
Ole Lake	30.0	27.0	29.0	36.5	29.5	1.50	1.30	1.24	1.44	1.56

TWO MEDICINE SUBDISTRICT:	FACILITY RATING					IMPACT RATING				
	1997	1996	1995	1994	1993	1997	1996	1995	1994	1993
Campground										
Upper Two Medicine Lake .	31.0	24.0	30.0	34.0	28.0	1.29	1.30	1.66	2.00	1.93
Cobalt Lake .	37.0	45.0	40.5	31.5	34.0	1.25	1.50	1.65	1.75	1.65'
No Name Lake *	31.5	32.5	31.5	25.0	31.5	1.45	1.80	1.96	2.55	2.32
Oldman Lake	35.5	27.0	28.0	30.0	29.0	1.29	1.70	1.57	1.88	1.80
Morning Star Lake	26.5	30.5	36.0	26.5	32.0	1.50	1.50	1.96	2.24	1.80
Atlantic Creek	32.5	46.0	28.0	30.0	35.5	1.14	1.29	1.73	1.51	1.82
ST. MARY SUBDISTRICT:	FACILITY RATING					IMPACT RATING				
campground	1997	1996	1995	1994	1993	1997	1996	1995	1994	1993
Otokomi Lake *	27.0	33.5	24.0	30.0	31.5	1.10	1.10	1.28	1.84	1.64
Reynolds Creek	34.5	38.5	38.0	43.0	35.0	1.25	1.10	1.12	1.36	1.28
Gunsight Lake	44.0	42.0	35.0	41.0	36.0	1.50	1.30	1.25	1.72	1.34
Red Eagle Lake, Foot	38.0	38.5	37.5	41.5	37.0	1.68	1.80	2.28	2.45	2.02
Red Eagle Lake. Head	36.0	35.5	29.5	39.0	31.5	-1.39	1.60	1.71	2.31	1.94
MANY GLACIER SUBDISTRICT:	FACILITY RATING					IMPACT RATING				
campground	1997	1996	1995	1994	1993	1997	1996	1995	1994	1993
Poia Lake	30.0	30.0	32.0	35.5	29.5	1.36	1.10	1.22	1.83	1.70
Cracker Lake	30.0	34.0	24.0	30.0	36.5	1.20	1.40	1.12	1.65	1.50
Slide Lake	27.0	30.0	27.0	30.0	n/a	1.10	1.05	1.20	1.20	n/a

BELLY RIVER AREA:	FACILITY RATING					IMPACT RATING				
	1997	1996	1995	1994	1993	1997	1996	1995	1994	1993
Campground	1997	1996	1995	1994	1993	1997	1996	1995	1994	1993
Belly River •	35.5	35.5	26.5	24.0	24.0		2.20	1.63	2.03	2.03
Cosley Lake	32.5	36.5	27.0	27.0	33.0	1.64	1.54	1.34	2.04	1.94
Gable Creek	27.0	n/a	n/a	n/a	n/a	1.33				
Glenns Lake, Foot	30.0	33.0	33.0	27.0	39.0	1.11	1.20	1.11	1.48	1.65
Glenns Lake, Head	29.0	32.5	33.0	30.0	33.0	1.45	1.50	1.33	1.96	1.56
Mokowanis Junction	31.5	35.5	27.0	27.0	27.0	1.91	1.70	1.28	1.20	1.97
Mokowanis Lake	26.5	29.5	27.0	27.0	35.0	1.25	1.10	1.35	1.24	1.20
Elizabeth Lake, Foot	36.5	35.0	31.0	27.0	30.0	1.33	1.61	1.02	2.02	1.80
Elizabeth Lake, Head	27.0	27.0	27.0	27.0	27.0	1.54	1.80	1.20	1.94	1.73
Helen Lake *	34.0	24.0	27.0	132.0	124.0	1.06	1.06	1.20	1.94	1.10
GOAT HAUNT AREA:	FACILITY RATING					IMPACT RATING				
	1997	1996	1995	1994	1993	1997	1996	1995	1994	1993
Campground	1997	1996	1995	1994	1993	1997	1996	1995	1994	1993
Waterton River	27.0	27.0	33.0	27.0	27.0	1.36	1.30	1.15	1.55	1.45
Lake Janet	26.0	27.0	33.0	36.5	30.0	1.25	1.25	1.50	1.65	1.48
Lake Francis	24.0	27.0	41.5	27.5	29.0	1.68	1.60	1.46	2.04	2.04
Hawksbill *	24.0	24.0	24.0	43.0	30.0	1.50	1.40	1.35	1.40	1.65
Hole in the Wall *	31.5	27.0	30.0	28.0	29.0	2.02	1.60	1.91	2.51	2.22
Kootenai Lakes	127.0	27.0	27.0	27.0	33.0	2.00	1.80	1.80	2.20	2.13
Stoney Indian Lake *	24.0	24.0	26.5	30.0	124.0	1.30	1.10	1.55	1.36	1.36
Fifty Mountain	32.0	27.0	27.0	29.5	33.0	1.86	1.60	1.62	2.04	1.95

SECTION 13 UNDESIGNATED CAMPSITE INVENTORIES

INTRODUCTION

The following information summarizes the status of known undesignated camping areas which have been surveyed for resource impacts during the past five years:

UNDESIGNATED CAMPSITE INVENTORY - NORTH FORK SUBDISTRICT		
LOCATION	UTM'S	SITE CONDITIONS
Starvation trail and Kishenehn Creek junction 1996	691.0 E, 5428.0 N	Fire ring with evidence of camping area totalling 144 sq. ft. No other impacts.
South shore of Logging Lake 1992	713.5 E, 5403.0 N	Appears to be boat access site, fire scars present, 15 ft. from water, area impacted = 400 sq. ft., no barren core, litter present, 1 social trail, several limbed trees
Inlet to Quartz.Lake (head of lake) 1992	716.0 E, 1514.5 N	Boat access site, fire scars present, 25 ft. from water, area impacted = 144 sq. ft., no barren core, litter present, 1 social trail, site right on lakeshore
Pocket Creek Trail Crew Spike Camp (a) 1992	713.5 E, 5423.5 N	Trail access site, fire scars present, 110 ft. from water, food pole present, area impacted = 4225 sq. ft., barren core < 50 sq. ft., no litter present, minor stock damage to tree and ground
Boulder Pass Trail Crew Spike Camp 1996	710.0 E, 5427.0 N	Trail access site, 100 ft. from water, food pole present, area impacted = 3800 sq. ft., barren core < 50 sq. ft., no litter present, 1 social trail. Not use recently.
Cerulean Lake (a) 1992	n/a	Off trail access area, checked, no campsites
Pocket Creek Spike Camp (a) 1993	713.5 E, 5423.5 N	Visible from trail, 2 social trails with some barren core. 110 feet to water with 4100 sq. ft. of camp area.
Quartz Lake inlet area (a) 1995	705.3 E 5414.5 N	Illegal site at head of lake. 450 sq. ft. impacted with, <50 sq. ft. of barren core. Fire rings and nails in trees.

Quartz Lake inlet area (a) 1993	705.3 E, 5414.5 N	Litter and human waste found at site about 20 feet from water. Some barren core with loss of vegetative cover significant. Found on the N. side of inlet
Notch between Peabody and peak to the Northeast 1994	709.5 E, 5423.5 N	Open forest ridgetop, 250 feet to water (snow) , no evidence of fire rings, but found windblock screen made from rocks. Total area 14'x8' . <200 sq ft of Vegetation damage with 0 barren core
Cerulean Lake (a), 1995	715.3 E 5417.5 N	Undesignated site on lake shore. 120 sq. ft. impacted with no barren core. Some trash and toilet paper 40' from lake.
Dutch Lake 1995	285.2 E 5400.0 N	Old Campground. 100 sq. ft impacted with <50 sq. ft. barren core. Old fire grates and hitchrail.
Southern end of Sage Flats 1994	688.0 E, 5427.5 N	Open forest camp about 20'x25' found on floodplain. 35' to river, no fire rings. <200 sq ft of vegetation cover damage and 0 barren core
Round Prairie River Access 1994	694.0 E, 5415.0 N	Heavy litter and fire rings found at this site (16'x12'). 60' to river most likely on the flood plain. <200 sq ft of vegetation damage, 0 bare ground
Rainbow/Square Peak Basin 1992		Off trail access area, checked, no campsites located

UNDESIGNATED CAMPSITE INVENTORY - LAKE MCDONALD SUBDISTRICT

LOCATION	UTM'S	SITE CONDITIONS
Ahern Pass 1996	297.1 E, 5411.1 N	No significant camping impacts located, poor screening for campsites, no food hanging trees, 1 visible social trail in area.
Lincoln Creek Spike Camp 1996		200 ft to water, < 400 sq. ft of vegetation impact, two social trails, some litter.
Flattop Spike Camp 1996		Trail very overgrown. Impacts were not apparent.
Fifty Mountain Trail Crew Spike Camp 1994	289.5 E, 5414.1 N	Trail access site, approx. 200 ft. from water, food pole present, hitchrail present, area impacted = 100 sq. ft., barren core < 50 sq. ft., no social trails other than access trail, well off main trail
Cattle Queen Trail Crew Spike Camp 1994	294.1 E, 5410.9 N	Trail access site, 50 ft. from water, fire pit present, food pole present, hitchrail present, area impacted = 200 sq. ft., barren core > 100 sq. ft., no litter, no social trails, well off main trail

UNDESIGNATED CAMPSITE INVENTORY - LAKE MCDONALD SUBDISTRICT

LOCATION	UTM'S	SITE CONDITIONS
Ahern Pass 1996	297.1 E, 5411.1 N	No significant camping impacts located, poor screening for campsites, no food hanging trees, 1 visible social trail in area.
Lincoln Creek Spike Camp 1996		200 ft to water, < 400 sq. ft of vegetation impact, two social trails, some litter.
Flattop Spike Camp 1996		Trail very overgrown. Impacts were not apparent.
Fifty Mountain Trail Crew Spike Camp 1994	289.5 E, 5414.1 N	Trail access site, approx. 200 ft. from water, food pole present, hitchrail present, area impacted = 100 sq. ft., barren core < 50 sq. ft., no social trails other than access trail, well off main trail
Cattle Queen Trail Crew Spike Camp 1994	294.1 E, 5410.9 N	Trail access site, 50 ft. from water, fire pit present, food pole present, hitchrail present, area impacted = 200 sq. ft., barren core > 100 sq. ft., no litter, no social trails, well off main trail

UNDESIGNATED CAMPSITES - WALTON AREA		
LOCATION	UTM'S	SITE CONDITIONS
Pinnacle Mountain (Middle Fork Flathead River) 1992	304.4 E, 5358.7 N	River access site, 50 ft. from water, fire scars present, area impacted = 50 sq. ft., no barren core, toilet paper and litter present
Buffalo Woman Lake (a) 1997	309.3 E 5372.4 N	Popular undesignated site area. 64 sq. ft. impacted area. No barren core, some trash, toilet paper and litter.
Buffalo Woman Lake (b) 1997	309.1 E 5372.3 N	Popular Undesignated site. 200 sq. ft. impacted with 100 sq. ft. barren core.
Buffalo Woman Lake (c) 1997	309.3 E 5372.3 N	Popular undesignated site. 600 sq. ft. impacted. 100 sq.ft. barren core.
Nyack trail 1995	297.9 E 5372.1 N	Along trail, 50 sq. ft. impacted with some barren core. Litter and social trails. <100' to water.
Nyack Creek trail 1995	304.2 E 5377.9 N	Meadow near sulfur springs. 100 sq. ft. impacted with no barren core. (2 sites total)
Upper Nyack Meadows 1995	313.4 E 5376.4 N	Upper meadows on trail. 14,400 sq. ft. impacted with no barren core. social trails and trash. On stream bank.
Jackstraw Lake 1995	325.1 E 5364.4 N	No site found
Nyack Creek (Middle Fork Flathead River) 1992	293/0 E 5369.8 N	River access site, < 10 ft. from water, fire scar present, area impacted = 200 sq. ft. barren core < 50 sq. ft., no litter present, 2 social trails
Nyack Creek Trail Crew Spike Camp 1992	293.3 E, 5370.1 N	Trail access site, 60 ft. from water, no fire scars present, food pole present, no significant impact area, no litter present, 1 social trail
Old Dawson trail jct. 1995	313.5 E 5375.8 N	Old trail jct. 200 sq. ft. impacted, 100 sq. ft. barren. Trash and social trails. Tree scars from tied stock. Fire rina. 100' to water.
Upper Nyack Creek Trail Crew Spike Camp 1992	305.6 E, 5379.2 N	Trail access site, no fire scar, no food pole , minor impacts

Upper Park Creek Trail Crew Spike Camp 1992	314.6 E, 5359.0 N	Trail access site, 200 ft. from water, no fire scar present, area impacted = 500 sq. ft., barren core c 50 sq. ft., no litter, 3 social trails
Third Crossing of Coal Creek	311.9 E 5360.7 N	Impacted area about 100sq. ft. No other impacts.
Upper Coal Creek 1995	313.5 E 5368.4 N	Sixth crossing on Coal Cr. near old trail spike camp. 100 sq. ft. area, no core. Litter and fire ring. 200' to water.
Upper Coal Spike camp 1995	313.1 E 5368.3 N	New spike camp. Tent sites, hitchrail, food prep area, low rider.
Upper Coal Creek Trail Crew Spike Camp 1992	314.0 E 5369.0 N	Trail access site, 50 ft. from water, no fire scars, no food pole, impacted area = 400 sq. ft., barren core c 50 sq. ft., no litter, camp right on main trail
Beaver Woman Lake (a) 1995	309.8 E 5372.9 N	Campground area, 100 sq. ft. No barren core. Some trash and 1 social trail. 200' to Lake.
Beaver Woman Lake (b) 1995	309.8 E 5373.1 N	Campground area, 50 sq. ft. area with no barren core. 2 social trails. 100' to water.
Beaver Woman Lake (c) 1995	309.7 E 5373.0 E	Campground area, 50 sq. ft. with no barren core. 100' to water. 1 social trail.
Martha's Basin trail junction 1994, 1995, 1996 3 sites combined	311.1 E 5372.2 N	420 sq ft of vegetation damage with 200 sq ft of barren core. 20 ft to water with no other impacts.
Old Dawson Pass junction area	313.5 E 5375.8 N	200 sq ft of impacted area. No other impacts
Cut Bank Pass area 1994	all areas	no impacts found
Base of Mt. St. Nicholas 1992	n / a	Area checked, no campsite located

UNDESIGNATED CAMPSITES - TWO MEDICINE SUBDISTRICT

LOCATION	UTM'S	SITE CONDITIONS
Lonely Lakes 1997	324.5 E 5378.7 N	No impacts
Running Crane Lake 1997	321.6 E 5379.4 N	No impacts -
Katoya Lake 1996	319.3 E 5377.7 N	Fire rings x2, 30 ft to water, no recent impacts.
Saddle between Triple Divide and Razor Edge 1995	314.6 E 5382.2 N	No impacts. 72 sq.ft. of vegetation matted down.
Red Eagle Meadows 1995	307.0 E 5384.0 N	No impacts found. Great site potential.
Buttercup Park 1996	324.7 E 5366.5 N	No impacts found.
Lena Lake 1996	327.2 E 5363.8 N	No new impacts. Old fire scars. Trail cut out and used by stock, probably in 1995.
Cobalt Lake Trail Crew Spike Camp 1992	321.9 E, 5369.0 N	Trail access site, 250 ft. from water, no fire scars, food pole present, impacted area = 600 sq. ft., barren core < 50 sq. ft., no litter, 1 social trail
Morning Star Trail Crew Spike Camp 1992	319.2 E, 5382.2 N	Trail access site, 165 ft. from water, fire ring present, food pole present, impacted area = 3000 sq. ft., no barren core, litter present, 4 social trails. @ human waste pits used and filled in by Trail Crew (20 days in 1992)
No Name Trail Crew Spike Camp 1997	319.5 E, 5372.4 N	Trail access site, 125 ft. from water , no fire scars, food pole present , impacted area = 250 sq. ft., barren core 5-50 sq. ft., no litter. 1 social trail
Cut Bank Spike Camp 1997	319.3 E, 5381.5 N	164 ft to water. Food pole present. <400sq ft of vegetation damage and 5-50 sq ft of barren core. Litter and 5 social trails evident. 5' fire ring present. Low rider 90' from water-
No Name Spike Camp 1994, 1995, 1996	319.4 E, 5372.4 N	Low rider and food pole present. Total camp area of 450 sq ft with 5-50 sq ft of barren area. 2 social trails evident.

<p>Oldman Lake spike camp 1997</p>	<p>318.6 E, 5375.8 N</p>	<p>Low rider and food pole. Total camp of 250 sq ft with 5-50 sq ft of barren ground. A lot of junk found at site.</p>
<p>Oldman Lake Trail Crew Camp 1992</p>	<p>318.8 E, 5375.9 N</p>	<p>Trail access camp, 115 ft. from water, no fire scars, food pole present, impacted area = 900 sq. ft., barren core < 50 sq. ft., no litter, 2 social trail</p>

UNDESIGNATED CAMPSITES - ST. MARY SUBDISTRICT

LOCATION	UTM'S	SITE CONDITIONS
Jackson Glacier Basin 1996	301.0 E 5387.9 N	Large area surveyed with no visible impacts noted. One social trail into area.
Blackfoot Basin area 1996	309.2 E 5389.8 N	Large area surveyed with no visible impacts noted. One social trail into area
Red Eagle Creek Trail Crew Camp 1997	310.3 E, 5380.9 N	Trail access, 25 ft. from water, fire ring present, food pole present, impacted area = 500 sq. ft., barren core > 100 sq. ft., litter present, 3 social trails, slight axe damage to trees, very close to main trail, access trail is eroding creek bank.
Otokomi Lake (illegal site outside of campground) 1992	300.8 E, 5390.9 N	Trail access site, 200 ft. from water, fire scars present, impacted area = 100 sq. ft., no barren core, no litter. no social trails
Blackfoot Basin, lower lake 1995	303.2 E 5386.9 N	Two rock shelters found in area. No other impacts.
Gunsight Gypsy Camp 1997	300.8 E, 5389.4 N	Food cable, low rider, hitchrail, table and tool shed. 175' to water. >400 sq ft of vegetation damage with >100 sq ft of barren core, 2, social trails. Food prep area is spreading.
Red Eagle Glacier bench	307.3 E 5385.6 N	All area around this spot surveyed without finding any impacts
Twin Lakes Basin	299.4 E 5391.8 N	All areas surveyed. No impacts found.
Red Eagle Meadows 1994, 1995	307.0 E, 5387.1 N	No evidence of impacts found
Blackfoot Basin/ Almost-A-Dog Pass 1992	n/a	Checked in 1992, no campsites located

UNDESIGNATED CAMPSITES - MANY GLACIER SUBDISTRICT		
LOCATION	UTM'S	SITE CONDITIONS
Kennedy Creek Spike camp 1997	307.5 E 5414.1 N	One social trail, fire pit
Kennedy Lake 1996	303.0 E 5412. N	Minimal impacts
Natahki Lake 1996	304.2 E 5410.5 N	No impacts visible
Feather Plume Falls Trail Crew Camp 1997	301/7 E, 5304.0 N	Trail access site, 250 ft. from water, fire ring present, food pole present, log seats present, impacted area = 250 sq. ft., 5-50 sq. ft. barren core, no litter, 3 social trails, not used recently
Kennedy Lake 1994	302.9 E, 5412.2 N	Old site not used recently. 50 ft to water with a total camp not really distinguishable.
Ptarmigan Lake 1996	301.3 E, 5413.4 N	<200 sq ft of vegetation damage with no barren core. This appears-to be an old designated camp. Seems to be revegetating well. Mostly day use impacts.
Snow Moon/Falling Leaf 1997	305.5 E 5405.7 N	No other impacts other than trail.
Shangri-La 1997	300.3 E 5409.7 N	30 sq. ft. of impacted area. Fire rinss present . No other impacts
Poia Lake Trail Crew Spike Camp 1995	307.2 E, 5414.2 N	Trail access, 75 ft. from water, fire ring present, food pole present, impacted area = 500 sq. ft., barren core c 50 sq. ft., no litter, social trails, temporary pit toilet (filled in after use), used 5 days/season. 200 sq ft of vegetation damage.

UNDESIGNATED CAMPSITES - BELLY RIVER AREA		
LOCATION	UTM'S	SITE CONDITIONS
Sentinel Creek Spike Camp	302.7 E 5427.4 N	500 Sq. Ft impacted area. Food pole and est. sites <100' from water
North Fork of Belly River 1997	298.3 E 5429.7 N	Survey along the river corridor up to the falls. No camping impacts but evidence of access from Canada.
Miche Wabun Lake 1995	294.1 E 5426.6 N	No sign of human activity in the area. 400 sq. ft. of impacted area from old site.
Old Sun Drainage 1992	296.6 E, 5415.4 N	Off trail access, cirque basin, used by 2-3 Mt. Merritt climber per season, no visible impacts located
Red Gap Creek Trail Crew Camp 1 9 9 7	301.9 E, 5416.9 N	Trail access site, adjacent to water, fire scars present, food pole, privy, benches present, 1150 sq. ft., barren core, no litter, 1 social trail. No expansion.
Belly River Ranger Station Meadow 1992	301.5 E, 5423.2 N	Trail access site, 100 ft. from water, no fire scars, pit toilet nearby (at RS), impacted area = 800 sq. ft., no barren core, no litter, 1 social trail
Mokowanis Jct Gypsy camp 1997	293.5 E, 5418.8 N	Total camp area of 200 ft with 5-50 sq ft of barren core. 2 social trail evident and >200' to water. Fire ring and food pole
Red Gap Creek Gypsy camp 1994	301.9 E, 5416.9 N	50' to water with low rider and food pole present. >400 sq ft of vegetation impact with > 100 sq ft of barren ground.
Sue Lake Bench 1997	291.5 E, 5416.2 N	Off trail access area, alpine bench, abundant water sources, no visible impacts located

UNDESIGNATED CAMPSITES - GOAT HAUNT AREA

LOCATION	UTM'S	SITE CONDITIONS
50 Mtn spike camp 1997	289.8 E 5414.3 N	Hitchrail, food pole and privy. Impacts around the hitchrail with 75 sq. ft of barren core. Old fire pit. Low rider is full.
Southwest Bowl Mt Cleveland 1992	289.7 E, 5421.9 N	Off trail access site, along climbing route, 50 ft. from water, fire scars present, impacted area = 50 sq. ft., no barren core, litter present, toilet paper present, 1 social trail
North Bowl of Mt. Cleveland 1997	290.5 E 5421.9 N	No evidence of camping.
West Bowl of Mt. Cleveland 1992	289.8 E, 5421.9 N	Off trail access site, along climbing route, > 100 ft. from water, fire scar present, impacted area = 200 sq. ft., barren core = 24 sq. ft., litter present, no social trails.

SECTION 14

BACKCOUNTRY PIT TOILET SURVEY

INTRODUCTION

The following tables summarize the locations and general condition of the pit toilets located in Glacier's backcountry areas. This information was collected as part of our annual Backcountry Campground Evaluation process during the 1996 field season. Additional pit toilets located outside of designated backcountry campgrounds were also surveyed.

NORTH FORK SUBDISTRICT:				
LOCATION	TYPE OF STRUCTURE	CLOSEST DISTANCE TO WATER/ DOWNHILL DISTANCE TO WATER	HOLE DEPTH	CONCERNS/DEFICIENCIES
Boulder Pass campground	lowrider	600' / 600'	28 "	New in 1993
Upper Kintla Lake Campground	outhouse	250' / 250'	39"	New in 1993
Kintla Lake Campground	outhouse	110' / 110'	26 "	Evaluate proximity to water
Akokala Lake Campground	lowrider	195' / 195'	42"	New in 1993
Brown Pass Campground	lowrider	356' / 356'	25"	New in 1996
Bowman Lake (Hd) Campground	outhouse	115' / 115'	30"	Evaluate proximity to water
Quartz Lake Campground	outhouse	175' / 175'	36 "	Evaluate proximity to water
Lower Quartz Lake Campground	outhouse	110' / 110'	24 "	Evaluate proximity to water
Grace Lake Campground	lowrider	115' / 115'	10 "	Evaluate proximity to water
Adair Campground	outhouse	100' / 175'	43 "	Evaluate proximity to water
Logging Lake Campground	outhouse	190' / 190'	37"	New in 1993
Round Prairie Campground	composter	N/A	N/A	installed in 1995
Ford Patrol Cabin	outhouse	210' / 210'	55 "	(1996)
Kishenehn Patrol Cabin	outhouse	271' / 339'	53 "	(1996)
Bowman Lake Patrol Cabin	outhouse	210' / 210'	58 "	(1996)
Kintla Lake Patrol Cabin	outhouse	208' / 208'	52 "	(1996)
Kintla Lake Ranger Station	outhouse	203' / 203'	63 "	(1996)

Kintla Lake (Hd.) Patrol Cabin	outhouse	120' / 120'	23 "	Hitchrail is 50' to water (1994)
Quartz Lake Patrol Cabin	lowrider	184' / 184'	27 "	Need more screening (1996)
Logging Lake (Hd.) Patrol Cabin	outhouse	110' / 110'	60 "	Evaluate proximity to water. Corral is 130' to water (1996)
Logging Lake (Ft.) Patrol Cabin	low rider	108' / 108'	18 "	Evaluate proximity to water. Hitchrail is 85' to water. (1996)

LAKE MCDONALD SUBDISTRICT:				
LOCATION	TYPE OF STRUCTURE	CLOSEST DISTANCE TO WATER/ DOWNHILL DISTANCE TO WATER	HOLE DEPTH	CONCERNS/DEFICIENCIES
Flattop Campground	outhouse	225' / 225'	Full	RELOCATE
Camas Lake Campground	lowrider	105' / >200'	36"	New in 1996
Granite Park Campground	lowrider	450' / 450'	36"	Needs paint
Snyder Lake Campground	outhouse	97' / 150'	36 "	Evaluate proximity to water
Sperry Campground	outhouse	180' / 500'	Full	RELOCATE
Lake Ellen Wilson Campground	lowrider	300' / 300'	36"	new in 1995, needs lid and seat parts
Lincoln Lake	outhouse	200' / 200'	48 "	needs seat
McDonald Lake	outhouse	213' / 213'	48 "	
Arrow Lake	outhouse	270' / 270'	36"	
Avalanche Lake (womens)	outhouse	> 200' / > 200'	6'	(1994)
Avalanche Lake (mens)	outhouse	> 200' / > 200'	6'	(1994)
Granite Park Patrol Cabin	outhouse	100' / 200'	6'	(1994)
Logan Creek Patrol Cabin	outhouse	?	?	
Sperry Patrol Cabin	outhouse	300' / 300'	?	

WALTON AREA:				
LOCATION	TYPE OF STRUCTURE	CLOSEST DISTANCE TO WATER/ DOWNHILL DISTANCE TO WATER	HOLE DEPTH	CONCERNS/DEFICIENCIES
Harrison Lake	lowrider	300' / 300'	42"	
Harrison Cabin	outhouse	170' / 170'	60"	
Lower Nyack Campground	lowrider	200' / 200'	<6"	Monitor depth
Upper Nyack Cabin	outhouse	130' / 130'	60"	
Lower Nyack Cabin	outhouse	180' / 180'	36"	Need new roof shingles and 1x6's and repair hole in floor.
Upper Nyack Campground	lowrider	200' / 200'	60"	New in 1996
Beaver Woman Lake Campground	lowrider	250' / 250'	24"	
Coal Creek Campground	lowrider	225' / 225'	<6"	Monitor.
Coal Creek Cabin	outhouse	140' / 140'	60"	Evaluate proximity to water
Lake Isabel Campground	outhouse	210' / 210'	48"	
Upper Park Creek Campground	outhouse	90' / 90'	36"	Evaluate proximity to water
Lower Park Cr. Cabin	outhouse	150' / 150'	24"	
Lower Park Creek Campground	outhouse	200' / 200'	60"	New in 1994
Ole Creek Campground	lowrider	140' / 170'	42"	Evaluate proximity to water
Ole Lake Campground	outhouse	210' / 210'	60"	
Fielding Patrol Cabin	outhouse (2 hole)	90' / 90'	48"	Need new roof, structure poor shape

TWO MEDICINE SUBDISTRICT:				
LOCATION :	TYPE OF STRUCTURE	CLOSEST DISTANCE TO WATER/ DOWNHILL DISTANCE TO WATER	HOLE DEPTH	CONCERNS/DEFICIENCIES
Cobalt Lake Campground	outhouse	116' /116'	3'	
Upper Two Medicine Lake Campground	outhouse	217' /217'	3'	
No Name Lake Campground	outhouse	186' /186'	5'	New in 1993.
Oldman Lake Campground	outhouse	274' /274'	2'	
Morning Star Lake Campground	outhouse	190' /190'	4'	
No Name Spike camp	lowrider	210'	4.5'	
Cut Bank Gypsy Camp	lowrider	32'	5.5'	Too close to water
Atlantic Creek Campground	outhouse	285' /285'	4'	
Pray shelter	wood outhouse	400' /400'	2'	(1994) floor needs replaced

ST. MARY SUBDISTRICT:				
LOCATION	TYPE OF STRUCTURE	CLOSEST DISTANCE TO WATER/ DOWNHILL DISTANCE TO WATER	HOLE DEPTH	CONCERNS/DEFICIENCIES
Gunsight Lake Campground	outhouse	250' / 500'	4.5'	
Otokomi Lake Campground	wood outhouse	180' / 180'	2'	Replace structure - poor condition
Reynolds Creek Campground	lowrider	200' / 200'	6'	
Virginia Falls	metal outhouse	72' / 72'	5'	Too close to water - relocate.
Red Eagle Lake (HD>) Campground	outhouse	180' / 180'	3'	
Red Eagle Lake (Ft.1 Campground	wood outhouse	182' / 182'	3'	
Gunsight Gypsy camp	lowrider	<200'	6'	new in 1994
1913 Ranger Station	outhouse	800' / 800'	8'	Not evaluated in 1997
Red Eagle Spike Camp	lowrider	>200, / >200'	5'	Need to rodent proof
Baring Creek Patrol Cabin	outhouse	800' / 800'	6'	(1994)

MANY GLACIER SUBDISTRICT:				
LOCATION	TYPE OF STRUCTURE	CLOSEST DISTANCE TO WATER/ DOWNHILL DISTANCE TO WATER	HOLE DEPTH	CONCERNS/DEFICIENCIES
Cracker Lake Campground	metal outhouse	250'/250'	6'	
Poia Lake Campground	outhouse	200'/200'	4'	
Iceberg Lake	outhouse	125'/125'5'	5'	Needs new lid and hinges
Grinnell Lake (womens)	outhouse	150'/150'	4'	Both will need replacement soon
Grinnell Lake (mens)	outhouse	200'/200'	4'	
Oastler Shelter (#1) Womens	metal outhouse	100'/100'	4'	Pit is wet and swampy, evaluate proximity to water. (1994)
Oastler Shelter (#2) mens	metal outhouse	100'/100'	4'	Pit is wet and swampy, evaluate proximity to water. (1994)
Grinnell Glacier (womens)	outhouse	130'/130'	4'	relocated late in 1992
Grinnell Glacier (mens)	outhouse	200'/200'	4'	rodent proof
Ptarmigan Falls	outhouse	>200'	3'	
Lee Creek Patrol cabin	lowrider	240'	2'	Need to mark trail
Slide Lake Patrol Cabin	lowrider	30'	4'	Too close to water but has very low use
Slide Lake Campground	lowrider	84'/250'	5'	New in 1994

BELLY RIVER AREA:				
LOCATION	TYPE OF STRUCTURE	CLOSEST DISTANCE TO WATER/ DOWNHILL DISTANCE TO WATER	HOLE DEPTH	CONCERNS/DEFICIENCIES
Helen Lake Campground	lowrider	300' / 300'	4'	
Elizabeth Lake head CG	outhouse	200' / 200'	4'	
Elizabeth Lake foot CG #1	outhouse	200' / 200'	7'	
Elizabeth Lake foot CG #2	outhouse	200' / 200'	7'	
Mokowanis Lake Campground	lowrider	210' / 240'	5'	
Mokowanis Junction Campground	outrider	200' / 200'	3'	
Glenns Lake Head Campground	outhouse	200' / 200'	4'	
Glenns Lake Foot Campground	outhouse	150' / 150'	2.5'	
Cosley Lake CG #1	outhouse	240' / 240'	2'	
Cosley Lake CG #2	outhouse	240' / 240'	2'	
Belly River Campground	outhouse	12' / 130'	3'	

GOAT HAUNT AREA:				
LOCATION	TYPE OF STRUCTURE	CLOSEST DISTANCE TO WATER/ DOWNHILL DISTANCE TO WATER	HOLE DEPTH	CONCERNS/DEFICIENCIES
Fifty Mountain Campground	outhouse	200' / 220'	4'	Strong lean to structure
Hawksbill Campground	lowrider	335' / 335'	6'	
Hole-in-the-Wall Campground	lowrider	40' / 40'	2'	
Kootenai Lakes Campground	outhouse	230' / 255'	4'	
Lake Francis Campground	outhouse	300' / 300'	2'	
Lake Janet Campground	lowrider	245' / 245'	3'	
Stoney Indian Lake Campground	lowrider	150' / 150'	3'	
Waterton River Campground	outhouse	235' / 235'	6'	
Pass Creek Patrol Cabin	outhouse	100'	6'	
Kootenai Patrol Cabin	low rider	>200'	6'	

SECTION 15

BACKCOUNTRY EXOTIC VEGETATION SUMMARY

INTRODUCTION

The following computer print-outs summarize, by Subdistrict, the exotic vegetation infestations which are known to occur in Glacier's backcountry. The role of the Wilderness Management Section includes the documentation and treatment of exotic vegetation in the backcountry. Reports are given to each area regarding the previous years infestation and efforts are made to visit each site and treat the area accordingly before the plants mature or produce seeds. New reports are then filed to document the size and treatment given.

CONCERN AREAS:

The following areas within Glacier's backcountry have significant noxious weed infestations that are of major concern to park management:

<u>Location</u>	<u>Species</u>
- Upper North Fork River corridor	Oxeye Daisey
- Big Prairie and North Fork River corridor	Leafy Spurge
- Apgar Range	St. Johns Wort
- Middle Fork River corridor	St. Johns Wort, Spotted Knapweed
- Red Eagle Trail	Spotted Knapweed
- Two Medicine old RR right of way	Spotted Knapweed
- Elizabeth Lake head	Orange Hawkweed

PRIORITIES AND ACTIONS

The # 1 priority for Glacier National Park regarding noxious weeds is to prevent it's intrusion into the natural zone (**backcountry**). In 1997, all major trailheads were sprayed with herbicides (using Stinger) in an effort to prevent their spread into the natural zone. In addition, manual pulling and weed whipping was conducted on backcountry infestations, particularly in the Middle Fork and bio-control agents (insects) were introduced in several natural zone areas, including the Middle Fork of the **Flathead** River (**Nyack** Flats, near West Glacier), Big Prairie, Apgar Mountains (Flathead Ranger Station), **Camas** Firing Range, **Lubec**, Running Rabbit Mt.

The following print outs summarizing backcountry noxious weed infestations use these species codes:

Code **Common Plant Name**

- HIEAUR** - Orange **Hawkweed**
- CIRVUL - Canadian Thistle
- CENMAC** - Spotted Knapweed *
- LINVUL** - Butter and Eggs
- CHRLEU - Oxeye Daisey *
- HYPPER - St. Johns Wort (Goatweed) *
- EUPESU - Leafy Spurge *
- POTREC - Sulphur Cinquefoil
- TANVUL** - Common Tansy

* denotes category 1 noxious weeds as designed by the State of Montana and Glacier National Park.

Location Codes

- GH = Goat Haunt/Belly River Area
- MD = Lake McDonald Subdistrict
- MG = Many Glacier Subdistrict
- NF = North Fork Subdistrict
- SM = St. Mary Subdistrict
- TM = Two Medicine Subdistrict
- WL = Walton Area

Exotic Plant Baseline Infestation Inventory Report:
Natural Zone

SITE#	LOCATION	UTM-E	UTM-N	COMM	SPECIES	DATE	ACRE	SQFT	DEN
GH 1	HEAD OF ELIZABETH LAKE	3002	5418.7	SHR	HIEAUR	7/1/85	0.1	4356	HIG
GH 3	BOULDER PASS TRAIL	286.9	5426.3	MIX	CIRVUL	9/21/92	0	800	MOD
GH 5	PASS CREEK CABIN	288	5419.8	FOR	RUMCRI	9/15/93	0	20	LOW
GH 6	RIPRN AREA NR UPR KOOT LK	287.8	5423.8	GRA	CIRARV	8/3/95	10	435600	HIG
GH 7	KOOTENAI LKS CAMPGROUND	287.5	54232	GRA	RUMCRI	9/13/95	0	625	LOW
GH 7	KOOTENAI LKS CAMPGROUND	287.5	54232	GRA	CHRLEU	9/13/95	0	2000	MOD
M D 7	FLATTOP TRAIL	294.6	5403.1	FOR	CENMAC	6/10/87	0.2	6810	LOW
M D 7	FLATTOP TRAIL	294.6	5403.1	FOR	CHRLEU	7/21/93	0	424	MOD
M D 7	FLATTOP TRAIL	294.6	5403.1	FOR	TANVUL	9/21/87	0	10	LOW
M D 8	NW SHORE OF LK MCDONALD	284.1	5384.6	SHR	CENMAC	7/18/92	0	400	MOD
MD 17	ROCKY POINT	280.6	5381.8	MIX	POTREC	6/30/92	0	30	MOD
MD 17	ROCKY POINT	280.6	5381.8	MIX	CENMAC	8/1/95	0	10	LOW
MD 19	ARROW LAKE CAMPSITE	287.3	53982	FOR	CHRLEU	7/19/94	0	200	HIG
MD 20	HUCKLEBERRY L.O. TRAIL	719.9	5352.8	FOR	CHRLEU	7/24/94	0	1200	MOD
MD 21	CAMAS BR - BIG CK.	710	5388	GRA	CHRLEU	7/29/94	0	10	LOW
MD 21	CAMAS BR -BIG CK.	710	5388	GRA	CENMAC	7/29/94	1	43560	LOW
MD 22	BIG CK.-GT. NORTH. FLATS	710	5384.3	SHR	CENMAC	8/20/94	0	1900	LOW
MD 23	G.N.FLATS-GLACIER RIM.	713.3	5380	SHR	CENMAC	8/20/94	0.2	8000	LOW
MD 24'	GLAC. RIM-BLANKENSHIP BR.	715	5372	GRA	CENMAC	8/20/94	0	535	LOW
MD 25	W. GLAC.-BLANKENSHIP BR.	720	5375	SHR	CHRLEU	7/27/94	0	1500	MOD
MD 25	W. GLAC.-BLANKENSHIP BR.	720	5375	SHR	HYPPER	7/27/94	0.1	2800	HIG
MD 25	W. GLAC.-BLANKENSHIP BR.	720	5375	SHR	CENMAC	7/27/94	2.3	99300	MOD
MD 26	LINCOLN LAKE CAMPGROUND	295.4	5385.3	FOR	CHRLEU	8/9/95	0	2	LOW
MG 7	GRINNELL TRAILHEAD	304.2	5407.8	FOR	CENMAC	8/16/87	0	300	MOD.
MG 8	GRINNELL GLAC TRAILHEAD	303.4	5406.5	FOR	CENMAC	8/20/89	0	1	LOW
MG 9	REDROCK LAKE AREA	300.3	5407.9	FOR	LINVUL	7/14/92	0	100	LOW
MG 10	WINDMAKER CK. CROSSES TR	299.1	5407.1	MIX	LINVUL	7/4/93	0	500	HIG
NF 2	BIG PRAIRIE	695.8	5410.7	GRA	POTREC	8/9/91	25	108900	MOD
NF 2	BIG PRAIRIE	695.8	5410.7	GRA	EUPESU	7/1/89	45	196020	HIG
NF 2	BIG PRAIRIE	695.8	5410.7	GRA	CENMAC	9/15/89	0.1	4356	HIG
NF 2	BIG PRAIRIE	695.8	5410.7	GRA	CIRARV	9/11/95	0.1	5280	HIG
NF 9	OLD HORSE PASTURE	705.1	5411.6	GRA	CENMAC	9/15/89	1.8	78408	HIG
NF 9	OLD HORSE PASTURE	705.1	5411.6	GRA	CHRLEU	8/12/92	0	36	MOD
NF 9	OLD HORSE PASTURE	705.1	-5411.6	GRA	HYPPER	8/12/92	0	1	LOW
NF 14	ABANSULIV MEADOW ROADB	710.1	5396.1	FOR	HYPPER	9/15/89	0	12	MOD
NF 14	ABAN SULN MEADOW ROADB	710.1	5396.1	FOR	CENMAC	9/15/89	0.1	4356	MOD
NF 18	CAMAS CR:RIFLE RNG-NF RIV	712	5390.3	FOR	CENMAC	9/29/89	4	174240	HIG
NF 19	BOWMAN CR CMPGR	700	5407.1	FOR	CENMAC	9/1/87	0	15	LOW
NF 23	ABOVE CONFLUENCE OF BIGC	708.8	5387.4	GRA	CENMAC	7/29/87	4.3	189000	LOW
NF 24	DOWNSTREAMALONG RIVER	693	5414.5	BAR	CENMAC	8/1/89	0	100	LOW

SITE#	LOCATION	UTM-E	UTM-N	COMM	SPECIES	DATE	ACRE	SOFT	D E N
N F 25	BORDER-KISHENEHN CK.	687	5428	GRA	CHRLEU	7/7/94	1	43560	LOW
N F 26	KISHENEHN CK.-FORD CK.	692	5420	BAR	CHRLEU	7/7/94	1.5	67500	LOW
N F 27	FORD CK. TO POLEBR RS.	694.4	5410	SHR	CENMAC	7/7/94	3.5	151045	MOD
N F 27	FORD CK. TO POLEBR RS.	694.4	5410	SHR	HIEAUR	7/7/94	0	9	MOD
NF 27	FORD CK. TO POLEBR RS.	694.4	5410	SHR	CHRLEU	7/7/94	8	348480	LOW
N F 28	POLEBR R.S.-COAL CREEK	702	5400	GRA	CIRARV	7/29/94	0.1	2500	LOW
NF 28	POLEBR R.S.-COAL CREEK	702	5400	GRA	CHRLEU	7/29/94	0	150	LOW
N F 29	COAL CK. - CAMAS BRIDGE.	710.5	5390	BAR	CHRLEU	7/29/94	0	25	LOW
N F 29	COAL CK. - CAMAS BRIDGE.	710.5	5390	BAR	CENMAC	7/29/94	0	650	LOW
SM 8	SUN RIFT GORGE AREA	309	5394.7	FOR	CENMAC	7/5/89	0	450	HIG
SM 9	OTOKOMI L A K E T H	314.7	5396.6	FOR	CENMAC	8/1/87	0	10	LOW
SM 10	RED EAGLE TRAILHEAD SOUTH	320.5	5399.5	GRA	CENMAC	7/13/87	2	87120	HIG
SM 10	RED EAGLE TRAILHEAD SOUTH	320.5	5399.5	GRA	TANVUL	8/1/87	0	3	LOW
SM 10	RED EAGLE TRAILHEAD SOUTH	320.5	5399.5	GRA	CHRLEU	8/2/92	0	2	LOW
SM 11	VIRGINIA FALLS	300.7	5390.2	FOR	CHRLEU	9/3/92	0	12	MOD
TM 1	COBALT LK TO SHOULDER	320.6	5367.6	SHR	HYPPER	8/9/90	0.2	8712	HIG
TM 2	FIREBRAND (LUBEC) TRAILHD	331.2	5359.8	GRA	CENMAC	7/20/87	0.8	34125	HIG
TM 2	FIREBRAND (LUBEC) TRAILHD	331.2	5359.8	GRA	CHRLEU	7/15/94	0	40	LOW
TM 3	OLD RIGHT OF WAY	331.2	5359.8	BAR	CENMAC	0/16/92	12	522720'	HIG
w L 2	COAL CR TRAILHD	298.9	5365.4	GRA	HYPPER	8/5/90	0	75	HIG
WL 2	COAL CR TRAILHD	298.9	5365.4	GRA	HIEAUR	7/8/94	2	87120	LOW
w L 2	COAL CR TRAILHD	298.9	5365.4	GRA	CENMAC	7/4/87	0.2	9000	MOD
w L 2	COAL CR TRAILHD	298.9	5365.4	GRA	CHRLEU	7/16/92	6	261360	MOD
w L 4	OLE CREEK TRAIL	307	5350	GRA	CHRLEU	7/4/92	0	200	LOW
w L 4	OLE CREEK TRAJL	307	5350	GRA	HYPPER	9/21/87	0	480	LOW
WL 5	RECOVERED BURN AREA	311.7	5366.6	SHR	CHRLEU	7/14/94	0	3	LOW
w L 5	RECOVERED BURN AREA	311.7	5366.6	SHR	HIEAUR	7/16/87	0	3	LOW
WL 6	TRAILHEAD RIVER BAR	288	5375	SHR	CENMAC	8/8/87	0	300	LOW
W L 8	NYACK FORD	292.8	5368.7	MIX	HYPPER	7/16/92	60	261360	LOW
WL a	NYACK FORD	292.8	5368.7	MIX	CENMAC	8/8/87	40	174240	MOD
WL 8	NYACK FORD	292.8	5368.7	MIX	CHRLEU	7/16/92	80	348480	MOD
WL 9	JUNCTION LO TRAIL&BNDRY T	293.1	5370.5	GRA	CENMAC	7/7/94	24	104544	MOD
w L 9	JUNCTION LO TRAIL&BNDRY T	293.1	5370.5	GRA	HYPPER	8/8/87	0	3	LOW
w L 9	JUNCTION LO TRAIL&BNDRY T	293.1	5370.5	GRA	CHRLEU	7/26/93	0	50	LOW
WL 11	1.5 MI UP COAL CRK TRAIL	304.1	5366.2	GRA	HIEAUR	7/24/93	0	100	LOW
WL 11	1.5 MI UP COAL CRK TRAJL	304.1	5366.2	GRA	HYPPER	7/14/87	0.1	4000	MOD
WL 14	HARRISON CK BOUNDARY TRA	289.8	5374.7	FOR	CHRLEU	9/8/93	0	25	LOW
WL 14	HARRISON CK BOUNDARY TRA	289.8	5314.7	FOR	HYPPER	7/7/94	0	50	LOW
WL 14	HARRISON CK BOUNDARY TRA	289.8	5314.7	FOR	CENMAC	8/2/87	0	400	LOW
WL 15	118 MILE SW OF RNGR STATN	293.3	5368.4	FOR	CHRLEU	7/13/95	0	250	LOW
WL 15	1/8 MILE SW OF RNGR STATN	293.3	5368.4	FOR	CENMAC	7/30/87	40	174240	HIG
WL 15	118 MILE SW OF RNGR STATN	293.3	5368.4	FOR	VERTHA	7/3/89	0	1350	LOW

SITE#	LOCATION	UTM-E	UTM-N	COMM	S P E C I E S	DATE	ACRE	SOFT	DEN
WL 16	LINCOLN CREEK FORD	286.9	53752	FOR	CHRLEU	8/11/95	2.1	900000	Low
WL 16	LINCOLN CREEK FORD	286.9	53752	FOR	CENMAC	8/15/90	03	13068	HIG
WL 17	ABOUT 1 MI W OF LAKE	2913	5375.6	FOR	HYPPEP	8/17/90	0	1	LOW
WL 18	3/8 MI N OF PARK CR MOUTH	306.3	5354.4	FOR	CENMAC	7/22/92	6	261360	HIG
WL 18	3/8 MI N OF PARK CR MOUTH	3063	5354.4	FOR	HYPPEP	7/22/92	6	261360	HIG
WL 19	EOF PARK CR KONRIVER	306.5	5352.8	FOR	HYPPEP	7/22/92	7	304920	LOW
WL 19	EOF PARK CR KONRIVER	306.5	5352.8	FOR	CENMAC	7/22/89	10	435600	HIG
WL 20	CREEK FLOODPLAIN	306.5	5352.8	FOR	CENMAC	7/3/89	0	1124	LOW
WL 21	RIVER AT ESSEX CREEK	306.7	5350.4	FOR	HYPPEP	7/22/92	2	87120	MOD
WL 21	RIVER AT ESSEX CREEK	306.7	5350.4	FOR	CENMAC	7/1/89	0.1	4356	MOD
WL 23	S OF WALT RANGER STATION	306.8	5349.5	FOR	CENMAC	7/1/89	0.1	4356	MOD
WL 23	S OF WALT RANGER STATION	306.8	5349.5	FOR	HYPPEP	8/15/87	0	200	LOW
WL 27	PC TRAIL ABOVE RIVER BY PC	306.7	53533	FOR	HYPPEP	7/25/93	0	300	LOW
WL 27	PC TRAIL ABOVE RIVER BY PC	306.7	53533	FOR	CHRLEU	7/14/92	4	174240	HIG
WL 29	OLE CAMPGROUND	315.5	53532	MIX	CHRLEU	8/3/93	0	10	LOW
W-L 29	OLE CAMPGROUND	315.5	53532	MIX	CENMAC	7/20/92	0	750	LOW
WL 32	GRAVEL BAR NEAR GOATLICK	3093	5346.5	SHR	HYPPEP	7/15/92	02	8712	LOW
WL 32	GRAVEL BAR NEAR GOATLICK	309.3	5346.5	SHR	CENMAC	7/15/90	52	225000	MOD
WL 34	JCT OLE CR TR/BNDRY TRAIL	307.8	5350.8	FOR	CHRLEU	7/18/92	0	10	LOW
WL 35	STREAM 2 MILES FROM WALT N	3072	53522	FOR	CHRLEU	7/18/92	0	100	LOW
WL 36	2 MI IN FROM FIELDING	316.7	5352.1	MIX	CHRLEU	7/20/92	0	10	LOW
WL 36	2 MI IN FROM FIELDING	316.7	5352.1	MIX	HYPPEP	8/28/93	0	1	LOW
WL 37	FIELDING-COAL TRAIL	307.3	5361.6	FOR	HYPPEP	8/4/92	0	1000	LOW
WL 38	SITE 2 LOWER NYACK CG	299.6	5373.3	FOR	CENMAC	8/15/92	0	4	LOW
WL 38	SITE 2 LOWER NYACK CG	299.6	5373.3	FOR	CHRLEU	7/22/93	0	20	LOW
WL 43	PARK CK. FORD	311.3	53564	FOR	CHRLEU	9/14/93	0	100	LOW
WL 44	SCALPLOCK TRAIL	308.6	5351.2	FOR	HYPPEP	8/10/93	0	410	LOW
WL 44	SCALPLOCK TRAIL	308.6	5351.2	FOR	CHRLEU	7/23/94	0.2	8712	LOW
WL 46	BOUNDARY TRAIL	298.3	5315.3	FOR	HYPPEP	8/14/93	0	25	LOW
WL 48	PAOLA -BROWNS HOLE	304	5358.5	SHR	HYPPEP	8/5/94	0.8	33500	MOD
w L 48	PAOLA -BROWNS HOLE	304	5358.5	SHR	CHRLEU	8/5/94	0.1	4500	MOD
WL 48	PAOLA -BROWN'S HOLE	304	5358.5	SHR	CENMAC	8/5/94	3	131500	LOW
WL 48	PAOLA -BROWN'S HOLE	304	5358.5	SHR	CIRARV	8/5/94	0	1500	MOD
WL 49	BROWN'S HOLE- CASCADILLA	300	5363	SHR	CHRLEU	8/5/94	0	2050	LOW
WL 49	BROWN'S HOLE- CASCADILLA	300	5363	SHR	CENMAC	8/5/94	8.2	357000	MOD
WL 49	BROWN'S HOLE- CASCADILLA	300	5363	SHR	CIRARV	8/5/94	0	800	MOD
WL 49	BROWN'S HOLE- CASCADILLA	300	5363	SHR	HYPPEP	8/5/94	0.2	10800	LOW
WL 50	RR OVERPASS-LM COLN CK.	291	5373	GRA	CENMAC	8/3/94	12	522000	Low
WL 50	RR OVERPASS-LINCOLN CK.	291	5373	G M	HYPPEP	8/3/94	12	522720	LOW
WL 50	RR OVERPASS-LINCOLN CK	291	5373	GRA	CIRARV	8/29/95	0	625	LOW
WL 50	RR OVERPASS-LINCOLN CK	291	5373	GRA	CHRLEU	8/3/94	12	522720	LOW
WL 51	BEAR CK.-WALTON RS.	308.5	5347	BAR	CENMAC	9/6/95	8.5	370260	MOD

SITE#	LOCATION	UTM-E	UTM-N	COMM	SPECIES	DATE	ACRE	SQFT	DEN
WL 51	BEAR CK.-WALTON R.S.	308.5	5347	BAR	CIRARV	9/6/95	0	108	LOW
WL 51	BEAR CK.-WALTON RS.	308.5	5347	BAR	HYPPEP	9/6/95	13	56628	MOD
WL 52	WALTON R.S.-PAOLA CK.	305	5353	BAR	HYPPEP	8/28/95	0.8	34848	MOD
WL 52	WALTON R.S.-PAOLA CK.	305	5353	BAR	CENMAC	8/28/95	6.2	270072	MOD
WL 52	WALTON R.S.-PAOLA CK.	305	5353	BAR	CHRLEU	8/28/95	0	1000	LOW
WL 53	CASCADILLA CK.-RR OVERPAS	294.9	5365	BAR	CENMAC	8/29/95	33	143748	MOD
WL 53	CASCADILLA CK.-RR OVERPAS	294.9	5365	BAR	CHRLEU	8/29/95	15	653400	MOD
WL 53	CASCADILLA CK.-RR OVERPAS	294.9	5365	BAR	HYPPEP	8/29/95	15	653400	LOW
WL 53	CASCADILLA CK.-RR OVERPAS	294.9	5365	BAR	CIRARV	8/29/95	18	784080	MOD
w L 5 4	NEW #1	308.9	5350.4	SHR	HYPPEP	7/1/95	2.1	90000	MOD
WL 55	HEAD OF HARRISON LAKE	296.9	5378.6	FOR	CHRLEU	7/29/95	0	4'	LOW
WL 56	BDRY TR; 1.8 MI W OF HARR	289.5	5375.1	FOR	CHRLEU	7/29/95	0.7	30000	LOW
WL 56	BDRY TR; 1.8 MI W OF HARR	289.5	5375.1	FOR	HYPPEP	8/10/95	0	150	LOW
WL 56	BDRY TR; 1.8 MI W OF HARR	289.5	5375.1	FOR	CENMAC	8/10/95	0	150	LOW
WL 57	GRAVEL AREA ON OLE CREEK	3072	5350.7	BAR	CHRLEU	7/1/95	0.5	21780	MOD
WL 57	GRAVEL AREA ON OLE CREEK	3072	5350.7	BAR	HYPPEP	7/1/95	0	1	LOW
WL 57	GRAVEL AREA ON OLE CREEK	3072	5350.7	BAR	HIEAUR	7/1/95	0.5	20000	LOW
WL 57	GRAVEL AREA ON OLE CREEK	3072	5350.7	BAR	VERTHA	7/1/95	4.6	200000	LOW
WL 58	NEAR BRDGE ON SOLDREER STR	315.6	5353.9	FOR	CHRLEU	6/23/95	0	2.	LOW

SECTION 16 TRAIL MAINTENANCE SUMMARY

INTRODUCTION

The backcountry of Glacier National Park has approximately 735 miles of maintained trail. Most of these trails are in proposed wilderness areas and are managed with wilderness values in mind.

The trails maintenance staff is directly supervised by the Assistant Chief Ranger (Division of Resources Management). The trails staff consists of two District Trails Foremen, one on each side of the Park, and a Supervisory Animal Packer. The 1997 Seasonal staff included 33 (compared to 57 in 1996) trail crew personnel in 11 different subdistricts and areas.

Record setting snow depths caused many difficulties for trail maintenance crews as enormous snow drifts crushed walkways, bridges and rails. Fortunately, a relatively gradual runoff spared most trails from the washouts and scouring normally associated with large snowpacks.

Crews were smaller than in recent years, due to reduction, in "soft" money. However, all 735 miles of trail were maintained to some degree and a number of special projects were completed. New bridges were built at Pass Creek, Rockwell Creek, Allen Creek, Quartz Creek, Rubideau Creek and on the Lincoln Lake Trail. Major repairs were completed on eleven other bridges. The first phase of the replacement of the Hidden Lake walkway was begun in the fall and major walkway repair was completed at the head of Josephine Lake. Tread projects were completed in Belly River, on the Boulder Pass, Highline, Bowman Lake, and Flattop Mountain Trails.

Volunteers played an important part in maintaining trails this year. Organized groups included an SCA High School work group in Belly River, the Sierra Club at Logging Lake, the Glacier Park Associates for several projects and the **Over-the-Hill** Gang on the **Highline** and Ole Creek Trails.

Of the 735 miles of maintained trail in the backcountry, 44% are considered to be in good condition. 41% are considered to be fair condition and 15% are considered to be poor.

1997 TRAILS FEATURES INVENTORY

Trails Feature	Measure Units	Total Features
Unpaved trails	Miles	735
Trail snowfield (maintained)	Linear feet	21, 000 *
Trail signs	Each post	303 *
Trail bridges	Each	200 *
Trail walkways	Linear feet	18, 221 *
Non-Campground privies	Each	45
Stock ramps	Each	22
Hitchrails non-campground	Each	53
Corrals	Each	10
Drainage devices	Each	13, 423 *
Designated Backcountry Campgrounds:	Each	62
Trail Crew Work Camps	Each	18
Livestock- horses	Each	20
Livestock- mules	Each	41

WEST LAKES DISTRICT TRAIL REPORT
SUMMARY
FY 1997

BRIDGES;

1. Repaired - 7
2. New Construction - 3

Bridge work included:

Lake McDonald - Lincoln Creek Suspension Bridge, Mineral Creek Suspension Bridge, Crystal Ford Bridge, Rubideau Creek Bridge, Loop Trail/Chalet Creek Bridge

Walton - Ole Creek Suspension Bridge (approach)

TREAD (MAJOR)

1. Turnpikes - 801 feet
2. Check and fill - 1,870 feet

TREAD (MINOR):

1. Grading - 7,485 feet
2. Rocking - 18,740 feet
3. Snow Work - \$4,521 (Highline Trail)

NEW **TRAIL** CONSTRUCTION:

1. Re-route - 320 feet
2. New Trail - 0 feet

BRUSHING:

1. Power Brushing - 47,370 feet

CORDUROY:

1. Removed - 510 feet
2. Repaired - 109 feet
3. Constructed - 249 feet

NEW DRAINS:

1. Total - 71

TRAINING:

1. Blasters School
2. Chain Saw Safety and Maintenance
3. Bear Management
4. Red Card Certification and Refresher

HUDSON BAY DISTRICT TRAIL REPORT
SUMMARY
FY 1997

BRIDGES :

1. Complete reconstruction **12**
2. Repair 22
3. Dismantled 4

Bridges were completely reconstructed at the following locations:

Goat Haunt - Pass Creek, Stoney Indian Lake, Spring Creek

Belly River - Gable Creek I, Gros Ventre Creek, Mokowanis Campground

Many Glacier - Allen Creek

St. Mary - Curley Bear Creek, Rising Sun Creek West, Gunsight Lake Gypsy Camp

Two Medicine - Rockwell Falls, Bighorn Basin

TREAD REPAIR:

1. Major - 1,621 feet/.3 mile (includes turnpike, check and fill and wall work.
2. Minor - 7.45 miles
3. Snow Work - \$4,782 (Grinnell Glacier, Ptarmigan Tunnel, Hidden Lake Trail)

BRUSHING:

1. Power Brushing - 19,740 feet/3.74 miles
2. Hand Brushing - 4,638 feet/.87 miles

CORDUROY:

1. New.Rebuilt - 429 feet (head of Josephine Lake to Grinnell Lake)
2. Repaired - 7 feet

TRAINING:

1. Blasters School
2. Chain Saw Safety and Maintenance
3. Bear Management
4. Red Card Certification and Refresher

1997 TRAIL MAINTENANCE COSTS:

Hudson Bay District:

Trail opening - \$17,734
Snow work - \$5,409
Brushing - \$7,386
Routine tread work - \$24,279
Construction of new trail sections - \$314
Bridge work - \$30,095
Drain work - \$17,611
Boardwalkwork - \$13,308
Additional clearing - \$1,060

West Lakes District:

Trail opening - \$41,525
Snow work - \$4,521
Brushing - \$15,120
Routine tread work - \$21,766
Construction of new trail sections - \$1,422
Bridge work - \$12,271
Drain work - ?
Boardwalk work - \$9,311
Additional clearing - \$1,866

SECTION 17 WILDLAND FIRE SUMMARY

INTRODUCTION

Glacier's backcountry experienced a very low level of **wildland** fire activity in 1997. In total, approximately 6 acres burned. The following fire activity was recorded:

TYPE OF FIRE	LOCATION OF FIRE	ACRES BURNED
Lightning Natural Out	Flattop	.1
Lightning Natural Out	Granite Park	.1
Lightning Natural out	Adair Ridge	.1
Lightning Prescribed Natural	Peabody	5.0
Lightning Natural Out	Needmo	.1
Lightning Prescribed Natural	Salvage	.2
Lightning Suppression	Scalplock	.1
Lightning Natural Out	Dutch Ridge	.1
Lightning Natural Out	Anaconda	.1
Lightning Natural Out	Gauge	.1
Human Caused Suppression	Outbound	.1
Lightning Natural Out	Covey	.1
Lightning Natural Out	Lone Pine	.1
TOTALS	13	6.3

Glacier's **parkwide** fire history study was concluded this summer by Steve Barrett. His report with map are completed and available in the park library.

SECTION 18

LIMITS OF ACCEPTABLE CHANGE MONITORING NORTH FORK SUBDISTRICT

INTRODUCTION

The following information and attached table summarizes the "Limits of Acceptable Change" monitoring data collected in the North Fork Subdistrict during the 1997 field season as mandated in the North Fork Management Plan.

MONITORING GOALS

Monitoring goals for both social and resource indicators were established prior to the beginning of the field season. The resource indicator monitoring goal including conducting annual backcountry campground evaluations at each of the 12 designated backcountry campgrounds in the Subdistrict. This monitoring goal was met.

The following monitoring goals were established for social indicators:

<u>Zone</u>	<u>Monitorins Goal</u>	<u>Samples Collected</u>
Road	50 per segment; 150 total	185 total
Trail	75 samples; no segment less than 3x	110 total
Wilderness Remote	10 samples	12 total
Lake	30 samples: Bowman Lake	22 total
	10 samples: Kintla Lake	15 total

Monitoring goals were met for every segment except for the Bowman Lake.

DATA COLLECTION

The social indicator data was **collected** by backcountry patrol personnel using a pre-printed 4"x5" index card with appropriate data entry blocks. Detailed written monitoring instructions were provided.

The resource indicator data was collected by backcountry patrol personnel during the annual Backcountry Campground Evaluation (August 15 - Sept. 15).

CALCULATION OF CONDITIONS

The following criteria were followed when analyzing the data and comparing existing conditions to established standards:

Road Zone - The number of vehicle encounters per sample (patrol) was divided by the duration of the sample (patrol) and an encounters per hour was determined. This figure was compared to the standard of 5 vehicles per hour and each sample was determined to either meet or exceed the standard. The percentage of samples that met the standard per segment was compared to the 80% probability factor in determining if the standard was met for the segment.

Trail Zone - The number of parties encountered on the trail segment per sample (patrol) was divided by the duration of the sample and an encounters per hour was determined. This was compared to the standard of .375 encounters per sample hour (which was equivalent to the standard of 3 encounters per 8 hour day). This method was necessary to avoid inaccurate extrapolation for samples that were less than 8 hours in duration. The percentage of samples that met the standard per segment was compared to the 80% probability factor in determining if the standard was met for that segment.

Wilderness Remote Zone - The number of parties encountered in the Wilderness Remote Zone per sample (patrol) was divided by the duration of the patrol. This was compared to the standard of 0 encounters per sample hour (which was equivalent to the standard of 0 encounters per 8 hour day). The percentage of samples that met the standard was compared to the 80% probability factor in determining if the standard was met.

EXISTING CONDITIONS

Specific conditions for each indicator are outlined in the attached tables. Overall conditions are summarized as follows:

Social Indicators:

Road Zone - 0 of 3 segments met standard

Trail Zone - 1 of 8 segments met standard

Wilderness Remote Zone - standard was met

Resource Indicators:

Bare Ground in Backcountry Campgrounds - 44 of 45 campsites and 9 of 12 food prep areas met standard

Root Exposure Backcountry Campgrounds - 20 of 45 campsites and 5 of 12 food prep areas met standard

Social Trails in Backcountry Campgrounds - 38 of 45 campsites met standard

RECOMMENDATIONS

1. Re-evaluate the social indicators and standards and their applicability to overall management goals and objectives for the area.
2. Establish and implement an action plan in response to standards that are out of compliance.

LIMITS OF ACCEPTABLE CHANGE MONITORING SUMMARY - NORTH FORK SUBDISTRICT

INDICATOR	SEGMENT	STANDARD	CONDITION (* met standard)
A. Social Indicators:			
1. Parties encountered on trail per 8-hour day	Akokala Lake Trail	80% probability of no more than (3) encounters per 8-hour day.	2 of 8 samples (25%) met standard. Avg. per 8 hour day = 1.5
	Boulder-Brown Pass Trail	"	11 of 20 samples (55%) met standard. Avg. per 8 hour day = 2.8
	Bowman Lake Trail (foot-head of lake)	"	1 of 3 samples (33%) met standard = Avg. per 8 hour day = 8
	Kintla Lake Trail (foot-head of lake)	"	3 of 8 (38%) met standard. Avg. per 8 hour day = 7.71
	Logging Creek Trail (trailhead-Grace L.)	"	6 of 13 (46%) met standard. Avg. per 8 hour day = 5.6
	Numa Lookout Trail	"	2 of 4 samples (50%) met standard. Avg. per 8 hour day = 7
	Quartz Creek Trail	"	3 of 3 (100%) samples met standard. Avg. per 8 hour day = 0
	Quartz Lake Loop Trail	"	6 of 13 samples (46%) met standard. Avg. per 8 hour day = 3.29
1. Parties encountered off trail per 8-hour day	Wilderness Remote	80% probability of (0) encounters per 8-hour day.	13 of 13 samples (100%) met standard. Avg. per 8 hour day = 0

INDICATOR	SEGMENT	STANDARD	CONDITION
3. Vehicles encountered on road per hour	Bowman Lake Road (Polebridge RS - Bowman Lake)	80% probability of no more than (5) encounters per hour.	27 of 68 samples (40%) met standard. Avg. per hour = 7.7
	Kintla Lake Road (Polebridge RS - Kintla Lake)	80%	29 of 59 samples (49%) met standard. Avg. per hour = 4.7
	Inside North Fork Road (Polebridge RS-Dutch Creek)	"	33 of 55 samples (60%) met standard. Avg. per hour = 4.7
4. Boats encountered on lake	Bowman Lake	None established.	22 samples recorded 4.0 boats per sample hour
	Kintla Lake	None established	20 samples recorded 47. non-motorized boats (1.06 persample hour)
5. Litter occurrences on backcountry trails	Akokala Lake Trail	None established.	8 occurrences
	Boulder-Brown Pass Trail	"	28 occurrences
	Bowman Lake Trail (foot-head of lake)	"	16 occurrences
	Kintla Lake Trail (foot-head of lake)	"	15 occurrences
	Logging Creek Trail	"	22 occurrences
	Numa Lookout Trail	"	2 occurrences
	Quartz Creek Trail	"	13 occurrences
	Quartz Lake Loop Trail	"	14 occurrences
	Wilderness Remote	"	0 occurrences

1 INDICATOR	SEGMENT	STANDARD	CONDITION
Resource Indicators:			
1. Bare Ground	Adair Campground	225 sq. ft. per campsite, c 75 sq. ft. x number of campsites for food prep area	4 of 4 campsites met standard
	Akokala Lake Campground	"	3 of 3 campsites met standard
	Boulder Pass Campground	"	3 of 3 campsites met standard
	Bowman Lake Head Campground	"	6 of 6 campsites met standard
	Brown Pass Campground	"	3 of 3 campsites met standard
	Grace Lake Campground	"	3 of 3 campsites and food prep met standard
	Kintla Lake Head Campground	"	6 of 6 campsites and food prep met standard
	Logging Lake Campground	"	2 of 3 campsites met standard
	Lower Quartz Lake Campground	"	4 of 4 campsites met standard
	Quartz Lake Campground	"	3 of 3 campsites and food prep met standard
	Upper Kintla Lake Campground	"	4 of 4 campsites and food prep met standard
	Round Prairie Campground	"	3 of 3 campsites met standard
	Food Prep Areas	"	9 of 12 food prep areas met standard

INDICATOR	SEGMENT	STANDARD	CONDITION
2. Root Exposure	Adair Campground	2 or less per campsite	4 of 4 campsites met standard
	Akokala Lake Campground	"	3 of 3 campsites met standard
	Boulder Pass Campground	"	3 of 3 campsites met standard
	Bowman Lake Head Campground	"	2 of 6 campsites met standard
	Brown Pass Campground	"	3 of 3 campsites met standard
	Grace Lake Campground	"	1 of 3 campsites met standard
	Kintla Lake Head Campground	"	5 of 6 campsites met standard
	Logging Lake Campground	"	2 of 3 campsites met standard
	Lower Quartz Lake Campground	"	2 of 4 campsites met standard
	Quartz Lake Campground	"	1 of 3 campsites met standard
	Upper Kintla Lake Campground	"	4 of 4 campsites met standard
	Round Prairie Campground	"	3 of 3 campsites met standard
	Food Prep Areas	"	5 of 12 food prep areas met standard

3. Social Trails	Adair Campground	(1) social trail per campsite	4 of 4 campsites met standard
	Akokala Lake Campground	"	3 of 3 campsites met standard
	Boulder Pass Campground	"	3 of 3 campsites met standard
	Bowman Lake Head Campground	"	6 of 6 campsites met standard
	Brown Pass Campground	"	3 of 3 campsites met standard
	Grace Lake Campground	"	3 of 3 campsites met standard
	Kintla Lake Head Campground	"	6 of 6 campsites met standard
	Logging Lake Campground	(1) social trail per campsite	1 of 3 campsites met standard
	Lower Quartz Lake Campground	"	3 of 4 campsites met standard
	Quartz Lake Campground	"	3 of 3 campsites met standard
	Upper Kintla Lake Campground	"	4 of 4 campsites met standard
	Round Prairie Campground	"	3 of 3 campsites met standard

SECTION 19 FLATHEAD WILD AND SCENIC RIVER MANAGEMENT

INTRODUCTION

Glacier National Park is bounded on the west by the North Fork of the **Flathead** and on the south by the Middle Fork of the **Flathead** Wild and Scenic Rivers. Management of these river corridors is jointly shared between the Glacier National Park and **Flathead** National Forest, with the U.S.F.S. serving as the lead management agency. The following information summarizes river patrol accomplishments, guide/outfitter use, and significant management actions in 1997:

RIVER PATROLS

The following river patrols were conducted on the Wild and Scenic River system by U.S. Forest Service and NPS personnel in 1997:

Segment	# Patrols	River Miles
Upper North Fork (Canadian border to Big Creek)	30	372
Lower North Fork (Big Creek to Blankenship Bridge)	5	60
Upper Middle Fork (non- Wilderenss)	4	18
Lower Middle Fork (Essex to confluence of Middle Fork and South Fork)	18	226
TOTAL	57	676

RIVER GUIDE/OUTFITTER USE

River guide/outfitters and Institutions accounted for the following use in 1997:

OUTFITTER	NORTH FORK OF THE FLATHEAD	MIDDLE FORK OF THE FLATHEAD
Glacier Wilderness Guides/ Montana Raft Company	195 service days	6,609 service days
Northwest Voyageurs	33 service days	3,380 service days
Great Northern Raft Company	n/a	9,929 service days
Glacier Raft Company	181 service days	13,649 service days
Flathead Lutheran Bible Camp	389 service days	n/a
Glacier Presbyterian Church Camp	60 service days	n/a
TOTAL SERVICE DAYS	858	33,567

Commercial outfitter (including Institutional guiding) use on the North Fork of the **Flathead** reflected a 7% decrease from 1996, and commercial use on the Middle Fork reflected a 8% decrease from 1996.

RIVER MANAGEMENT ACTIONS

The following management actions were implemented in 1997:

1. A GS-5 seasonal River Ranger position was funded by the U.S.F.S. for 80 days. This position was capably filled by Laurie Fisher.
2. **One** Student Intern from the University of Montana was utilized by the U.S.F.S. to assist with the river management program.
3. A new river Limits of Acceptable Change monitoring form for each major river segment was developed and utilized in 1997. The form includes improved monitoring instructions.
4. An Experience Quality Index survey form was developed and implemented in 1997, in order to collect quality index data associated with Limits of Acceptable Change Standards.
5. A camping closure was initiated at West Glacier, on the Forest Service side of the river, upstream from the old bridge.

AGENCY CONTACTS

River management personnel participated in the following presentations, public contacts, and agency functions in 1997:

1. Glacier Raft Company and Montana Raft Company seasonal orientation (U.S.F.S. presentation by **Kraig Lang** and NPS presentation by Steve Frye).
2. River Management presentation to the Glacier Institute by Laurie Fisher.
3. Summer interpretive programs at private RV parks and campgrounds in the **Canyon** (several presentations by Laurie Fisher and Kraig Lang, U.S.F.S.).
4. Annual river outfitters close out meeting (attended by outfitters, U.S.F.S. and NPS personnel).
5. River Management presentation to Trout Unlimited by Kraig Lang.
6. Kraig Lang hosted law enforcement coordination float trips with U.S. Attorney's Office and Federal Special Agents.

1997 RIVER LAC MONITORING REPORT
North Fork of the Flathead River

Upper North Fork Management Unit (Canadian border to Big Creek):		
Indicator	Standard	Condition
1. Encounters per day with other float parties	80% Probability of encountering no more than (3) float parties on river per day	Monitored 30 days in 1997. There were 21 days with no encounters. Maximum float parties encountered on any one trip (3). All sampling days met standard. <u>STANDARD IS BEING MET</u>
2. Encounters per day with shore parties	80% Probability of encountering no more than (7) shore parties per day	Monitored 30 days in 1997. There were 6 days with no encounters. Maximum shore parties met on any one trip (7). All sampling days met standard. <u>STANDARD IS BEING MET</u>
3. Campsite conditions	No campsites with an impact index between 50-60. No more than 3 campsites with an impact index between 40-49.	14 campsites surveyed, none of these sites had a rating between 50-60. The highest impact recorded was 36, at Ford River Access. All samples met standard. <u>STANDARD IS BEING MET</u>
4. Experience Quality Index	No more than 20% of surveyed users at the lowest quality level. No less than 20% at the highest quality level	Survey conducted in 1997. Results pending.
5. Occurrences of litter	No more than one occurrence of litter visible from water craft per (2)miles of river or <u>20</u> occurrences	Monitored on 30 days in 1997. There were 9 days were no litter was found. Maximum litter occurrences found one trip (5). All sampling days met standard. <u>STANDARD IS BEING MET</u>

Indicator	Standard	Condition
6. Kilometers of shoreline with man made modifications in the background	No more than 5% decrease from 1982 in number of natural appearing kilometers	There are 70 kilometers of shoreline within the upper North Fork Management Unit. In 1997, 19 out of 70 kilometers had visible permanent human made modifications in the foreground. 73% of the shoreline remains unmodified.
7. Mechanical sounds heard from water craft	80% probability of hearing no more than (12) mechanical sound occurrences while floating per day	Monitored on 30 days in 1997. Maximum sounds heard on any one trip (0). All sampling days met standard. <u>STANDARD NOT MET</u>

Lower North Fork Management Unit (Big Creek - Blankenship Bridge) :

Indicator	Standard	Condition
1. Occurrences of litter	No more than one occurrence of litter visible from water craft per (3) miles of river or (6) litter occurrences	Monitored 5 days in 1997. 3 of 5 days met standard. Average for all trips (no more than 1 piece of litter per mile). 60% of float trips met standard <u>STANDARD NOT MET</u>
2. Campsite and day-use site conditions	No site with an impact index between 50-60. No more than 3 sites with an impact index between 40-49.	3 campsites surveyed, with no sites recording an index > 41. <u>STANDARD IS BEING MET</u>
3. Defacement of natural features	No more than one new occurrence of defacement per year	Monitored 5 days in 1997. No occurrences of defacement recorded. <u>STANDARD IS BEING MET</u>
4. Experience Quality Index	No more than 25% of surveyed users at lowest quality level	Survey conducted in 1997.

SECTION 20

1997 WILDERNESS IMPLEMENTATION SCHEDULE (WIS)

INTRODUCTION

The Wilderness Implementation schedule (WIS) serves as a written means of outlining annual backcountry management objectives and assignments in Glacier National Park. Backcountry patrol Rangers utilize the WIS as a guideline for daily project assignments and duties.

PROJECT LISTING

Projects and tasks are listed in the WIS (by Subdistrict or Area). They are compiled annually through analysis of Backcountry Campground Evaluations, end of the season reports, backcountry -patrol reports, and field inspections.

PROJECT CODES

Each project/assignment listed in the WIS has been assigned a code to enable Wilderness Management Section personnel to recognize the overall level of importance and priority of each assignment. Project codes are based on the following criteria:

Code 1 (Mandatory): Indicates a project with demonstrated life/safety considerations, and/or involving non-compliance with standards mandated in Glacier's Bear Management Plan. This priority code also includes all inventory and monitoring and resource management projects designated as annual goals by the Wilderness Manager as well as projects involving severe cases of resource degradation.

Code 2 (Moderate Priority): Indicates a project involving deficiencies which involve significant impact/degradation to natural resources, and/or work needed to correct serious cases of non-compliance with standards mandated in Glacier's Backcountry Management Plan and/or Backcountry and Wilderness Maintenance Standards.

Code 3 (Low Priority): Indicates a project involving deficiencies which demonstrate minor degrees of on-going impact/degradation to natural resources, with potential for accelerated resource damage, and/or work needed to correct minor cases of non-compliance with standards mandated in Glacier's Backcountry Management Plan and/or Backcountry and Wilderness Maintenance Standards.

COMPLETION DATES

The completion date and call number of the personnel responsible for project completion are listed in the far right column of the WIS.

Footnotes: projects which required consultation and coordination with the Resource Management/Reveg Crew (including annual CRMPS projects) are footnoted with an (*). Projects which required coordination with the Trail Crew are

footnoted with an (**).

COMPLETED WIS

A completed 1997 WIS for each area and Subdistrict in Glacier is kept on file in the Wilderness Management Office. The following WIS for the Walton Subdistrict is included to serve as an example of the format and content of a typical WIS.

1997 WILDERNESS IMPLEMENTATION SCHEDULE WALTON AREA

Management Activity	Location	Task/Assignment	Project Code	Completion Date/Call #
Provide Wilderness Management Training and Orientation	Park Headquarters	Conduct 4 hour Wilderness Management orientation session for all Visitor Protection personnel involved with backcountry patrols	1	Completed by all as required
	Park Headquarters and backcountry	Conduct annual Backcountry Ranger Training (5 days) for all personnel assigned to Wilderness Mgmt. Section	1	5/27-5/31 All
Inventory and monitor backcountry resource conditions and impacts	Beaver Woman Lake CG	Conduct annual backcountry campground evaluation	1	8/21 423,424
	Coal Creek Campground	"	1	8/22 423,424
	Harrison Lake Campground	"	1	8/25 424
	Lake Isabel Campground	"	1	9/6 423
	Lower Nyack Campground	"	1	9/9 424
	Lower Park Creek Campground	"	1	9/1 424
	Ole Creek Campground	"	1	8/27 423,424
	Ole Lake Campground	"	1	8/28 423
	Upper Nyack Campground	"	1	9/10 424
	Upper Park Creek Campground	"	1	9/6 423
	St. Nicholas area	Conduct undesignated campsite survey	3	
	Pinchot Creek area	"	3	
Implement Hazard Tree Management Plan	all backcountry campgrounds	survey all backcountry campgrounds for hazard trees	1	ONGOING

Manage Backcountry Sign System	all backcountry trails and campgrounds	remove all unnecessary backcountry signing (certain geographic features)	3	COMPLETE
	"	install new, updated signs as assigned	1	COMPLETE
	all backcountry campgrounds	install new version of the "Notice to Backcountry Campers"	1	COMPLETE
Visitor Use Management	all backcountry campgrounds	conduct backcountry campground occupancy survey (each night camped out)	2	COMPLETE
	Subdistrict wide	promote the use of the Voluntary Climber Registration Form at VC's, Ranger Stations, etc.	1	ONGOING
	S&district wide	collect summit register data from any mountain summit reached	2	ONGOING
Backcountry Permit System	Appar VC	all backcountry rangers will work at bc permit desk 1 x per month (June, July, Aug.), 2 hours minimum	1	COMPLETE
Vegetation Management	Subdistrict wide	document all backcountry and trailhead noxious weed infestations (use standard form)	1	COMPLETE
	Subdistrict wide	document all noxious weed eradication efforts (use standard form)	1	COMPLETE
	Subdistrict wide	assist with eradication of noxious weeds at designated locations	1	ONGOING
Wild and Scenic River Management	Middle Fork of the Flathead, W. Glacier - Blankenship	conduct thorough river corridor clean up effort	2	ONGOING
		remove all NPS boundary signs along the river corridor	3	ONGOING
		install NPS river message signs at appropriate river access locations	2	ONGOING
		monitor river LAC indicators on each float trip	1	ONGOING
Backcountry Law Enforcement	Subdistrict wide	non-commissioned bc rangers will document all non-compliance on bc visitor contact form	2	ONGOING

Backcountry Law Enforcement	Subdistrict wide	commissioned bc rangers will document violators stated reason for non-compliance	2	ONGOING
Bear Management	"	all bc rangers will attend the annual Bear Mgmt. Training	1	6/9 424, 425 6/11 423, 424
	"	all bc rangers will assist with bear management actions as assigned	1	ONGOING
Backcountry Facility Management	Coal Creek Campground	get bc map changed to show trail to water	2	7/31 423,424
	"	monitor food pole, change as needed, OK	2	7/16 424,425
	"	monitor toilet depth, needs replacement	1	7/16 424,425
	"	add log check to site #1	2	7/26&31 423,424
	"	flush stump and add fill to site #2	2	7/31 423,424
	"	level and remove stump at hitchrail	2	7/31 423,424
	"	add fill to food prep area	2	ONGOING
	"	delineate food prep area to slow expansion	2	ONGOING
	"	flag new site for toilet	2	7/22 423
	"	burried logs to delineate site 2	2	7/31 423,424
	"	reattached metal CG sign to post	1	7/31 423,424
	"	Install new version of Notice to BC campers	1	7/22 424
	Coal Creek Cabin	Pack in supplies as needed, return staple gun, new smoke alarm battery, variety of nails and screws, clean dish towels.	2	ONGOING 8/22,9/18,7/26 423,424
	"	R & R area	2	7/30 423, 424
	"	brush and build ciarn at TH	2	8/2 423,424
	Harrison Lake Campground	add fill to site # 1, monitor	2	ONGOING
	"	delineate food prep area; reduce total size. Use large rocks and logs	2	7/8 424,425
	"	install tent site marker for site 1	1	7/8 424, 425
"	install outhouse site marker	2	7/8 424, 425	

Backcountry Facility Management	"	install food pole site marker	2	7/8 424, 425
	"	reanhor fire grate	2	7/8 424, 425
	"	reset metal food prep area sign	2	7/8 424, 425
	"	remove rope from food cable	2	
	"	4 orange trail markers for food prep trees	2	
	"	build cairn at river crossing and TH	2	8/3 424
	Harrison Lake Cabin	Install new notice to BC campers sign	1	8/25 4 2 4
	"	Pack in seasonal supplies as needed, smoke alarm battery, clean dish towels	2	ONGOING 7/31 425
	"	R & R around cabin area	2	ONGOING
	"	New oilcloth for table	3	7/31 425
	"	New lock for cabin door	2	7/8 424, 425
	Lake Isabel Campground	level and enlarge site # 1, looks good	2	7/22 424, 425
	"	enlarge site # 2, add log check	2	7/22 424, 425
	"	delineate food area site to help with root exposure, monitor	2	7/1 424 7/22 424, 425
	"	reshore outhouse	2	7/22 424, 425
	"	reset CC map post	2	7/1 424
	"	install new outhouse site marker	2	7/22 424, 425
	"	replace rail on hitchrail	2	7/22 424, 425
	"	replaced manners sign with new version	2	7/22 424, 425
	"	new cribbing needed for outhouse, rotting	2	
	"	add fill, 10-20 bags, to site 2	2	
	Lower Nyack Campground	monitor toilet depth, replacement needed new site across access trail in same area	1	7/14 424,425 8/4 424
	"	enlarge site #1, add log check as needed	2	MONITOR
	"	delineate boundary of site	2	MONITOR

Backcountry Facility Management	"	delineate and fill site # 3	2	MONITOR
	"	level hitchrail and tighten or replace posts as needed	2	MONITOR
	"	reanchor fire grate	2	
	"	replaced manners sign with new version	1	8/4 424
	"	needs outhouse site marker	3	8/15 423
	"	install orange trail markers from gravel bar to TH	2	8/30 423
	Lower Nyack Campground	Tamp hitchrail posts	2	8/15 423
	"	Install new notice to BC campers sign	1	9/9 424
	Lower Nyack Cabin	pack in supplies as needed, smoke alarm battery, clean dish towels	2	8/4 424
	"	R & R around cabin	2	8/15 423
	"	needs new wood box	3	
	Lower Park Creek Campground	block social trail between site #2 and #3	2	6/30 424, 425
	"	delineate site # 4 to eliminate spread	2	6/30 424, 425
	"	retamp hitchrail posts	2	6/20 423
	"	replaced manners sign with new version	1	7/22 424, 425
	"	reanchor fire grate	2	
	Lower Park Creek Cabin	pack in supplies as needed, new smoke alarm battery, clean dish towels	2	7/21 All
	"	R & R around cabin	2	ONGOING
	"	reattach stovepipe elbow	2	6/25 423, 424
	Ole Creek Campground	lower manners sign and retamp	2	5/22 424, 6/26 423
	"	level and block site # 1	2	ONGOING
	"	delineate site # 2	2	ONGOING
	"	delineate and fill site # 3	2	ONGOING

Backcountry Facility Management	"	delineate food prep area	2	ONGOING
	"	reanchor fire grate	2	6/26 424
	"	reset food prep area sign	2	6/26 424
	"	repair low rider lid and seat	2	6/26 424
	"	level hitchrail area and rehab	2	7/18 423,425
	Ole Lake Campground	pull oxeye daisy around hitchraii	2	6/25 425, 7/29 none found
	"	limb trees around food cable	2	7/29 122, 425
	"	delineate site # 2, monitor	2	ONGOING
	Ole Lake Campground	delineate site # 1, monitor	2	ONGOING
	"	continue to rehab old food prep area, good	2	ONGOING
	"	replaced SE post of hitchrail	2	7/17 423
	"	remove crib wire from old rail, add to new	2	7/29 122, 425
	"	pack in cache		6/25 425
	"	limb and buck up tree along toilet access	2	6/25 425
	"	return sven saw to cache		
	"	install boot print sign behind site 2	2	
	Upper Nyack Campground	remove small fir tree and brush around hi tehrai l	2	
	"	delineate site # 1; fill as necessary	2	ONGOING
	Upper Nyack Cabin	pack in seasonal supplies as needed, new smoke alarm battery, clean dish towels, ant bomb	2	ONGOING 8/5 424
	"	clean and brush around cabin	2	ONGOING
	"	needs new wood box	3	
	Upper Park Campground	continue rehab work on old site, looks good	2	ONGOING
	"	level site 1, looks good	2	7/1 424

Backcountry Facility Management	"	level hitchrail area	2	7/1 424
	"	block social trail from site 1 to outhouse	2	7/1 424
	"	replaced manners sign with new version	2	7/22 424, 425
	Upper Park Cabin	pack in supplies as needed, new smoke alarm battery, clean dish towels, newspapers, board for wood box, matches	2	ONGOING 6/30 424 7/22 424, 425
	"	clean and brush around cabin	2	ONGOING
	"	cut and split firewood for winter		7/22 424, 425
	Beaver Woman campground	continue rehab on old site	2	7/15 424, 425
	"	delineate new site and protect as needed	2	8/21 4 2 4
	"	monitor food pole; replace as needed, ok	2	7/15 424, 425
	Beaver Woman campground	add duff layer to site # 1, grub access trail	2	8/21 4 2 4
	"	continue to rehab site at main junction	2	7/15 424, 425
	"	pack in cache	2	7/15 424, 425
	"	Install new lid for low rider	1	8/21 423,424
	"	Replace lid on hitchrail	2	8/21 423,424
	"	Install new sign board for manners sign	2	8/21 423,424
	"	Pack out cache	1	9/24 120
	Fielding Cabin	seasonal supplies as needed; smoke alarm battery	2	
		replace rail on hitchrail at TH	2	6/29 424, 425

SECTION 21 BACKCOUNTRY MANAGEMENT ACTIONS

INTRODUCTION

The following table summarizes significant backcountry management actions accomplished in Glacier National Park during 1997:

Element	Management Action
Backcountry and Resource Management Projects	Revised the Backcountry Campground evaluation form to include a sliding scale for bare ground and vegetative cover measurements in order to account for varying campground capacities
	Continued collection of "limits of acceptable change" data in the North Fork Subdistrict
	Completed Environmental Assessment for the proposed Gable Creek backcountry campground, with a finding of no significant impact
	Completed the construction of the new Gable Creek backcountry campground
	Eliminated one campsite at the Belly River Campground
	Designed a "flying squirrel resistant" food container for use at the Elizabeth Lake foot Campground
	Changed the policy regarding use of a designated campground in " winter " status to permit a maximum of one party and 6 persons
Backcountry Management Policies and Regulations	Continued the temporary closure of the Sperry Chalet due to sewage and safety considerations
	Continued implementing the seasonal closure for skiers and snowboarders in the Logan Pass area, in an effort to mitigate impacts to freshly emerging soil and vegetation
	Belton Chalets continued to operate the Granite Park Chalet with reduced overnight services (hut system)
	Re-instituted the Backcountry Preservation Fund in association with the Glacier Park Associates
	Continued issuing backcountry Use Permits out of Waterton Townsite (by Waterton Lakes NP personnel)

Backcountry Management Policies and Regulations	Continued to offer bear resistant food containers free of charge to undesignated camping parties
	Increased the standard for bare ground in tent sites at designated backcountry campgrounds to 225 sq. ft.
	modified policy regarding use of designated campgrounds in " winter " status during the summer season to allow for one party per night, and a maximum of 6 persons
Backcountry Fee Demonstration program	Established Glacier's first ever advance reservation system for Backcountry Use Permits (\$20)
	Transferred the responsibility for Backcountry Use Permit Issuance from the Division of Interpretation to the Wilderness Management Section
Backcountry Information and Handouts	Updated the " Backcountry Camping Guide" with improved text and updated regulations
	Updated the Undesignated Camping Handout to include a regulatory and campsite selection criteria checklist
Backcountry Management Operations	Continued the seasonal intern Backcountry Ranger position at Walton Ranger Station (filled by Justin Ivary) sponsored by the Glacier National Park Associates
	Updated the Backcountry Ranger Patrol Guidelines
	Updated the Backcountry Ranger Handbook
	Updated the Backcountry Campground Evaluation Form and Procedures
	Sent all seasonal Backcountry Rangers to the annual Bear Management Training/Certification
	Completed the fifth annual Glacier National Park "State of, the Backcountry Report"
	Conducted the fifth annual Backcountry Ranger Training (5 days)
	Hosted the fifth annual mid-season Backcountry Ranger meeting at St. Mary

1997 BACKCOUNTRY PRESERVATION FUND

The Glacier National Park Associates again sponsored the Backcountry Preservation Fund. They provided volunteer services to complete the annual mailing to Park visitors who expressed interest in the program. A total of \$4,458 were donated to this fund in 1997. The following is a summary of the actual and obligated expenditures from this fund:

1. Backcountry permit computer printers (5 Epeom LQ **870's**) - \$2,200. Purpose: These printers allowed our designated Backcountry Use Permit issuing stations to upgrade their capability to computer print their permits, thus speeding up and enhancing the permitting process for backcountry campers.
2. Bear Resistant Food Containers (12) - \$800. Purpose: These high impact plastic canisters will provide backcountry campers with approved permits for camping in undesignated campsites above or near timberline an improved means of legally storing food and garbage.
3. **Tyvek** paper Backcountry Use Permits (15,000) - \$1,458. Purpose: This 3 year supply of Backcountry Use Permits was printed on special **Tyvek** paper, which is tearproof and waterproof. The printing also incorporated an important regulatory and Leave No Trace checklist on the reverse side of the permit, which is discussed with each party obtaining a Backcountry Use Permit.

We would like to extend a special thanks to the Glacier National Park Associates, a "friends of Glacier" organization who provided logistical support for the Backcountry Preservation Fund, and to the generous park visitors who contributed.

GRANITE PARK AND SPERRY CHALETS

The following information summarizes the current status of the Granite Park and Sperry Chalets: Both Chalets remain closed to full services due to sewage, safety, and water system concerns. Granite Park Chalet was re-opened in 1996 for limited operations (i.e. as a hut system) operated by **Belton** Chalets. The hut system operation continued in 1997, providing overnight sleeping rooms. Visitors had to pack in their own sleeping bags and food, but were able to use Chalet cooking facilities..

Granite Park Chalet was served by two NPS maintenance workers on a rotational basis in 1997, plus the concessioner hut keeper(s). In 1997, the NPS completed window and door, revegetation, and composting toilet work. In 1998, the NPS will continue with a maintenance presence and the Chalet "hut system" will be operated by the Glacier Wilderness Guides. The NPS will conduct repairs of a load bearing ceiling joist and will be flying out (6-9 loads) human waste via helicopter. The sewage and water system must be funded and completed prior to re-opening of the Granite Park facility to historic operational levels.

Sperry Chalet continued to be closed to the public in 1997, for on-going contract rehabilitation and construction activity. Major work projects completed in 1997 included:

- Completion of the roof on the employee dorm,
- Repair of the dining room roof on the Chalet
- Rebuild of the kitchen deck at the Chalet
- Completion of first story deck on Chalet,
- Re-build of balcony decks on second story of Chalet
- Completion of new propane storage area underneath the deck
- Completion of the septic system
- Construction of the composting toilet (dry in and rock work)
- Completion of 1,200 square feet of revegetation.

The will approximately 16 contractor employees, a 2 person NPS construction crew, and 2 (rotating) NPS Resource Advisors working at the Sperry Chalet in 1998. The

SECTION 22

WILDLIFE, FISHERIES, ECOLOGY, AND SCIENCE

WILDLIFE

In 1997, 3 bald eagle nests were successful, producing 4 young (this productivity is down from recent years); there were ten bald eagle nesting territories in the park. There were only 4 unduplicated sightings of grizzly bear females with cubs of the year; this is the lowest number recorded since 1987. The thirteen in the Northern Continental Divide Ecosystem (NCDE) is also the lowest since 1987. There was good reproduction 2 years ago and lots of cubs will be out on their own next year. In the NCDE there were twelve mortalities, 4 of them females and 3 were train kills. There were no grizzly mortalities in Glacier National Park.

We also experienced no bear-inflicted human injuries in Glacier's backcountry. No bears were trapped and/or relocated in the park, but there were 3 grizzlies released in the park that were trapped outside the park (1 from the Lake Five area and 2 from the Blackfeet Indian reservation). Wolf pup production is **unknown**, though we believe pups were produced by the South **Camas** Pack and possibly by the reformed North **Camas** Pack. We trapped and radio-collared 1 wolf (a pup or yearling) during fall trapping and now have 1 active collar in each of the 2 packs (though the one in the South **Camas** Pack may fail or has failed).

Fifteen Harlequin ducks were captured and banded as part of an on-going cooperative effort with the Montana Natural Heritage Program. Only 2 broods of 9 young were observed on Upper **Mcdonald** Creek, plus one brood of 2 young on the **Waterton** River.

Other monitoring work included mountain goats in the Walton Goat Lick area, to determine number of goats and their response to floaters on the Middle Fork of the **Flathead** River and the monitoring of mountain sheep in the southeast section of the park.

FISHERIES

Glacier National park cooperated with the Blackfeet Tribe; the U.S. Fish and Wildlife Service; the Alberta Conservation Association; and the Blood Indian Tribe of Canada and **Waterton** Lakes National park, Canada in a project to determine bull trout movement and spawning in the Belly River and St. Mary River drainages. This project was partially funded by a National Park Service Challenge Cost share grant and built upon work done on bull trout genetics in 1996 and will continue in the St. Mary drainage in 1998. The park banned fishing in park waters containing only bull trout and instituted a catch and release program for bull trout on all other waters. A federal listing for bull trout in the Columbia River basin is expected in 1998.

ECOLOGY

Grants were obtained from the National Park Foundation (\$10,000) and the National Fish and Wildlife Foundation (\$5,000) to fund a flora manual for the park. The University of Utah has agreed to publish the manual.

Preliminary work was begun on the Whitebark Pine Project (funded in **FY98-2000**) to work out field protocols. Nearly 2,000 Whitebark pine seeds were collected and are in preparation for germination.

A search was conducted for **Botrychium** spp. in Big and Round Prairies, resulting in **1-3** new species records for the park and 1 potentially new species for science.

The ecologist coordinated researchers studying classification of alpine vegetation, recovery after trampling of alpine vegetation, forest gap response to edge in landscape, and Glacier Lily response to grizzly bears.

The park continued water quality monitoring through its agreement with the **Flathead** Basin Commission. A National park Service Challenge cost share grant helped with the cost of the analysis of water sampled from 3 backcountry lakes: Upper Dutch, Gyrfalcon and Cobalt. Bowman, Kintla, and McDonald lakes were monitored under the Clean Water 2000 program.

SCIENCE

A multi-park study describing the importance of Whitebark pine and related habitats to the ecology and long-term survival of grizzly bears in the Northern Rocky Mountains continued this year under the direction of Ms. Kate Kendall (**USGS-BRD**). Other parks involved in the study include Yellowstone and Grand Teton National parks. Three years of field investigations have been completed and 1 additional year of field surveys remain. A high elevation vegetation map for Glacier National park that includes Whitebark pine stands is currently in preparation. The map is based on data from field surveys processed through the park GIS system.

Preliminary studies were carried out in 1997 to test several experimental methods and survey techniques, many of which will be employed in a, park-wide investigation of grizzly bears set to begin next year. Funding was obtained for research to develop DNA "finger printing" techniques to identify and track the movements of individual bears throughout their park range. Hair and scat samples were tested and a survey design protocol was developed for use during implementation of the study in 1998.

Park Geographer Carl Key (**USGS/BRD**) completed a major manuscript describing park glaciers which will appear as a chapter in an Atlas of North American Glaciers, part of a worldwide series dealing with this subject.

Glacier National Park is one of ten U.S. National parks selected as a study site for global climate change research. The park program, being carried out under the direction of Dr. Dan Fagre, is recognized as a leading edge science effort that is producing extremely useful information.

Dr. Leo **Marnell** (Senior Park Scientist) published a paper describing the status and trends of cutthroat trout populations in Glacier National Park in 1997. A 4 year study of amphibians and reptiles in Glacier National Park culminated in 1997. Dr. **Marnell** published several manuscripts based on the results of these surveys this year. A seasonal biotechnician was hired in 1997 to conduct field studies aimed at developing a sampling protocol for implementation of a park-wide amphibian-monitoring program.

A manuscript was published describing the results of sediment paleolimnology research at Avalanche Lake. The research was principally a methodological investigation aimed at documenting the historical chronology of fish populations in remote lakes. Results from the study confirmed that the cutthroat trout populations in Avalanche Lake are indigenous to this water and were not introduced. Additional field studies were carried out on several other park lakes containing trout populations of unknown origin and the results are currently being analyzed.

SECTION 23

WILDERNESS MANAGEMENT RECOMMENDATIONS

INTRODUCTION

The following recommendations have been compiled (and paraphrased in some cases) from seasonal Backcountry Ranger "end of season" reports. Each recommendation was reviewed during the winter season by the Backcountry Coordinator, Wilderness Manager and Assistant Chief Ranger. A final or suggested disposition follows each recommendation in bold print:

BACKCOUNTRY MANAGEMENT OPERATIONS

1. Set up a policy explaining the shared responsibility for maintenance of the Middle Fork **SSC's** by all that use them. There has been some questions as to who is responsible for the maintenance of these cabins.

Agree. Currently routine maintenance the Middle Fork cabins are the responsibility of the West Lakes District Ranger. During the summer months the DR has allowed the Backcountry Coordinator to oversee the scheduling of use of the cabins. The DR is responsible for the maintenance of the cabins and then the overall administration of the cabins. We have always felt that the cabins, especially in the Middle Fork should be the responsibility of the Wilderness Management Unit. We will pursue this with the DR **for** the Middle Fork. It should also be noted that specialized maintenance or rehabilitation of the backcountry patrol cabins is the responsibility of Jack Polzin (Maintenance Div.)

2. The BC intern at Walton is valuable asset for all operations. This position should be maintained at all costs.

Agree. We have a commitment from the Glacier Park Associates to sponsor this position for 1998.

3. We have discussed the possibility of having one BC ranger doing the Nyack loop continuously. This would cause some logistic problems but maybe worth it to the resource.

Disagree. If we are having problems around the loop we will schedule more patrols. There are other areas that have significantly more problems which would we could more justify a full-time presence. (Fifty Mountain CG, for one)

4. I think that the Lake McDonald area needs two backcountry ranger positions. I know this is a matter of funding. **What** about a position that is funded by both our unit and the bear **team** budget. This positions duties could include the usual BC responsibilities of the **bear** team while being tied to the wilderness management unit through the WIS and **its** demands. In the event of an emergency involving wildlife, bear **team** duties would become the priority. The job share proposal take the burden off of both budgets to fund the entire position. This would also accomplish our desire **to** not duplicate patrols and to receive assistance on the WIS.

Agree. We have proposed ideas **like** this **to** the Chief Ranger but there is no funding at this time. **Weare** aware of the need for more help in the area and will continue to work **for** funding and housing especially at the head of the Lake.

5. Would like to pack out all perishable food items, including canned goods from the cabins. Too much food is being wasted and attracting rodents. Leave some freeze dried items and other emergency rations. Everyone using the cabins should pack in their own food, matches, toilet paper, fire starter, white gas and paper towels which would be the most efficient way to supply the cabins. Also, only have 2 sleeping bags in each cabin as apposed to 6 like some have now. There is not space for that many bags.

The backcountry patrol cabins are the DR responsibility. We also agree that the **cabins** should be stocked with only **emergency** rations, but we feel that they should also be **stocked** with cabin items like matches, toilet **paper**, fire starter, white **gas**, dish soap, dishes, cleaning supplies, and paper towels. In most areas, the cabins are stocked by the packers when they are going in empty to retrieve a trail crew or the such. They also **carry extra horse freed** so that BC rangers **or** others on stock patrol can carry the tools and equipment needed to complete large projects. This seems to be the most efficient **way** to supple the cabins. Please work with the BC coordinator in your district to help facilitate this
in your area.

6. Need to look into possible alternative funding sources to provide for high level of resource monitoring and resource management protection for the NFSD, which is a unique and important part of the Northern Rocky Mountains Ecosystem. This includes both backcountry and frontcountry resource management funding.

Disagree. There is a **parkwide** need for additional Wilderness Management and Resource Management personnel. The need is not specific to the North **Fork**.

7. would like to get away from glue and **trim pieces** on sign boards due to the attraction to wildlife from these items on signs.

Disagree. Most **of** the attraction we have seen is for rubbing on the signs. With the metal sign posts **smaller** animals can't climb and chew, but the bears seam to like to rub and bit at the signs. We are looking at eliminating the campground "manners" sign which would help somewhat.

8. Would like to see some mention of the simple fact that tin foil does not burn and needs to be packed out with other trash on the BC video.

Agree. This is emphasized in the Leave no Trace program.

9. Would like to see the removal of fire grates from the backcountry for a variety of reasons.

Agree. We have recommended this for 1998.

10. Would hope that the current problems at Round Prairie CG stop any future development of river **CG's**. Currently we have a CG which has hardly any river channel in front of it and the possibility of development right across the river on private land. **Most river** users are on the river for the river not where thy will camp at night. The walk-site has had many folks camping at the trail because they have not wanted a cg you can not drive to. I think it would be better to have a low volume of undesignated camping along the river than any new river **CGs**. The road to the trailhead is also getting trashed because it is so rutted that only a high clearance vehicle can stay off the vegetation on the side of the road.

Disagree. There are no plans **for** any future development anyplace in the North Fork. The river campground was established as a mitigation for closing two other campgrounds in the North Fork. Kyle Johnson canoed the North Fork river in late July last **year** and found adequate access to the CG. **Apparently** users **of** this CC are not getting all of the information necessary. This is a training item and

we will try to **make** sure everyone at Apgar and other permit/visitor centers **are** better informed. The camping that is occurring at the trailhead is a frontcountry management issue. The road issue is a Maintenance rather than Wilderness Management concern and should be routed through **the Maintenance** Division.

11. Trail status involving the mentioning of brush conditions was questioned by the wilderness management unit at headquarters this season with some status being removed without any communication with the North Fork personnel. Why? We also had some **other trail** status comments changed or removed without any discussion to why, some **of which** involved visitor safety issues.

Disagree. We sometimes have inconsistencies **parkwide** as to a variety of things one which can be the trail status entries. The **NF** area was the only area to report brushy conditions which were correct but not consistent parkwide. It would not be fair to the visitor to call the trail around Logging Lake brushy and say nothing **for** most of the Middle Fork. The Wilderness Management Section is developing and will emphasize uniform trail status reporting criteria for 1998.

12. Would prefer that if only one site opens up to summer conditions in a three site CG that the one site would be open to first come first serve for walk-in permits until conditions open up at least on more site.

Disagree. If areas open before the reservation date they will all be on a first come basis. If it is after the date and only two sites are open on a three site CG then they may be both reserved. That is the way the system works and it would not be fair to cancel a reservation for a site. They **are** entitled to that site as much or more than a walk-in person;

13. Make more training available to the backcountry rangers. This would include helicopter, SAR, sawyer, etc.

Disagree. Many of these types of training are not priorities for the Wilderness Management Unit. Our primary objectives are in the Backcountry, implementing our programs. We have to draw the line regarding low priority training that is not directly related to our primary objectives. Currently some BC rangers are scheduled for 14 days **of** training before the end of June. It is important that we keep these people in the field as much as possible.

14. Get one or **more** VIP/SCA to assist in the St. Mary area, perhaps even to be stationed at **Gunsight** Lake to take on the difficulties that persist there.

This would be great but why not just another BC ranger instead. It all comes down to funding. We could easily double our staff in most areas and still not have enough. We are interested in improving **our** base funding most **of** which goes into personal services, but current funding increases are not available.

15. Work **more** with other Subdistricts as well as other work units to gain **more** experience in other environments.

Disagree. This is basically training, which is good but at what cost. If you **are** looking to enhance your experience level and make yourself more marketable this will probably have to be done on your own time. We **have** a certain amount of time to complete numerous projects. If we need help in **other areas** for a project which is a priority we have and **will** detail personnel **from** other areas to assist.

16. Communicate with subdistricts when people from outside **the** district are going to be working and patrolling in the area to negate doubling of resources.

Agree. That is the way it is supposed to work. Unfortunately not everyone thinks that they have to "check in" when they go into the backcountry hence we

have a lot of doubling parkwide. Have your supervisor contact theirs when it happens and we will continue to try to **work** with other units.

17. It is very clear that more time needs to be spent with BC law enforcement at the seasonal law enforcement refresher. 95% of the frontcountry folks were not familiar with a BC permit enough to even know where or what to look for.

Agree. This is a training item and we will try to address it at the seasonal **LE** refresher.

18. The squirrel buckets worked well at Elizabeth CG. The only problem is size, They need to be bigger.

Agree. The size should not be a problem if folks are only hanging their food. We are going to try to work on the lid arrangement to make it more **user friendly**.

19. What are the chance of moving the weather station and the solar panels behind the cabin at Belly River so that they would be out of sight more.

Agree - Fire Xanagement personnel will attempt to relocate the weather station this spring when they go in and install the unit **for** the summer. This will be dependent on finding a suitable alternative location behind the Ranger Station. We will talk with the radio shop regarding the solar panel.

20. Epi pens need to be available to give to visitors should the need arrive.

Disagree - The **Park's EMS** Coordinator indicates that epi-pens can be obtained via prescription only. He would be able to do so for the Park, but feels that the likelihood of using them in the backcountry is very slight. The pens have a 2 year shelf life and cost approx. \$20.00. There have been no recorded instances in which a Ranger could have helped someone in the backcountry if they had one with them. Park visitors may carry their own, and it is OK to help a patient administer the injection if they ask for your help.

21. We need a short form for documenting non-compliance. A way to record incidents that are not enough to warrant a citation. It would make the collection of information easier for the noncommissioned ranger and give us better records on what's going on.

Disagree., We currently have a BC non-compliance form that is to be used by non-commissioned employees every time they encounter a person in a non-compliance situation. Sometimes this form is used as a follow-up by supervisors to issue citations. This form is discussed each year at Backcountry Ranger Training. It serves us well and we see now need to revise it.

22. Both positions in Belly River need to be commissioned.

Agree. We are finding that with the increased visitation that commissioned BC rangers would be a plus in a lot of areas. The expenses associated with background checks will influence **our** ability to add additional commissions.

23. The Belly River area needs an extra person. There were numerous instances where problems could **have** been eliminated relatively easy with an additional person. This is also a safety issue with solitary and bear management patrols.

Agree. This would be great but current funding levels do not allow **for** additional positions at Belly River. We could easily add additional Backcountry Rangers in all areas **of** the Park, but again, funding does not allow for this. The current **staff** of two Backcountry Rangers and one SCA has been adequate for the most part.

24. We need some continued training with firearms at the range.

Agree. This is always a problem. Remember that even if we had a week of firearms training that unless you work at it over the winter somehow, you will lose your comfort and confidence by the time you get back. We certainly won't be able to justify extensive training every year.

25. We need more hands-on field training with the weed program to identify and treat infestations.

Agree. Depending on the location of our training this season we can incorporate this into the training more.

26. There is an incredible wealth of information available to the public through our park naturalists and their programs. I would like to have work time available to attend some of the programs throughout the summer. This would be an effective way for BC rangers up to speed on the specific history, flora, geology etc. of the area.

Disagree. This is a great way to increase ones knowledge of the park but can only be justified on your own time.

27. Would strongly support a full-time volunteer at Goat Haunt to assist the BC ranger.

Agree. We would like to have an additional person to assist the Backcountry Ranger at this location. However, it is not always easy to find the right person for such an assignment and it does not come without some expense. In addition, the housing situation may not allow for an additional person at Goat Haunt this year.

28. I would like to see more discussion during the annual BC training for issues regarding the wilderness act and other wilderness related issues by non-park experts.

Agree. This would be' great and we have done this in-past years. **It** is a time management thing but if we get mostly returning folks we can explore more things if there is time and interest. We have invited Greg Kroll from the Arthur **Carhart** National Wilderness Training Center to the 1998 training for this very purpose.

BACKCOUNTRY MANAGEMENT POLICIES, GUIDELINES AND REGULATIONS

1. Clarify the policy regarding eating on the beach or other areas in designated campgrounds which are outside of the food prep area. Day hikers eat near campgrounds but campers are not supposed to. What is the policy on this.

The policy has been and will continue to be this. Campers and others must Prepare and consume food in the designated food prep.

2. Have visitors phone number as part of Backcountry Use Permit. This would allow easier contact later in time if a need arises.

Disagree. This may be intrusive to visitors and we rarely are in need of a phone number under these circumstances. Phone numbers can be obtained during law enforcement contacts.

3. Promote wilderness in terms of minimum tool use; use hand drills, hand saws and so forth. Have properly working tools of the sort available to use. Encourage other work units to use hand tools rather than automatically grabbing

the power tools.

Agree. We are developing a minimum requirement decision tree to help better guide our decisions regarding this matter. We will try to acquire some better hand tools also.

4. Address the large groups brought to sensitive areas by naturalists (possibly limit number).

Agree. We have had this discussion with the Division of Interpretation in the past. It is a serious problem that we are hoping they will address earnestly. **Backcountry** Concession day use group sizes are also a related **concern**.

5. When a trail is closed to stock for the public, do not allow the park to use stock on that trail. It sends a very mixed message to the public.

Agree. We need to address this issue internally. Unless we can utilize alternative access trails, the use of helicopters for administration reasons may increase.

6. For backcountry fees, don't make them more expensive for a family of four than a drive in campground. Yes they are more expensive to maintain but the public doesn't know that.

Disagree. The two types of use are vastly different and cannot be compared equally. The backcountry fee demonstration program is predicated on generating a profit. A fair but profit generating pricing scheme will be developed.

7. More LE commissions in the backcountry.

Agree. There seems to be an increased need associated with documented backcountry non-compliance. Availability of qualified personnel and the costs associated with background checks will influence our ability to address this issue. Keep in mind that commissioned Rangers are not the only personnel who can contribute to preventative law enforcement in the backcountry.

8. The reservation system seemed to work well. Most of the visitors I talked to liked it and **would not** have many problems with the \$4 user fee also.

Agree. We will implement an additional fee for backcountry camping in 1998.

9. Statistics for the state of the backcountry are not accurate. Law enforcement rangers and naturalists travel frequently in the BC and pick up litter but it is never reported. If this information is pertinent we need a system to document the information correctly.

Disagree. The statistic reflected in the "State of the Backcountry Report" reflect the impacts that were observed and documented. It does not say that it reflects everything out there. It is the responsibility to everyone in the Ranger Division to complete a backcountry patrol report form. If this is not occurring, it represents a supervisory problem. We are considering a different format for the backcountry patrol reports and reporting of impacts.

10. I have some concern with volunteers writing BC permits at Two Medicine. We had a turnover late in the season and the new folks had no training and were not familiar with the area. Recommend that permits be written by trained personnel only.

Agree. A GS-4 Visitor Use Assistant will be hired for backcountry permit issuance at Two Medicine in 1998. VIP's will still have to **cover** on their lieu days.

11. We need to clear up the tribal land permits for backcountry rangers and also the road to Cut Bank RS.

Agree. We are addressing this issue.

MAJOR MAINTENANCE AND RESOURCE MANAGEMENT PROJECTS

1. Need new low riders/outhouse (cribbing and hole) at Nyack, Coal, Sperry and **Flattop** campgrounds. Also, new cribbing at Isabel which may mean a new hole.

The Trail Crew is aware and we will work with them on these projects.

2. Wood boxes needed at both Nyack locations

We will work with the carpenter shop to try and make some kits up this winter.

3. We need to look at a relocation again at Isabel CG. We seem to be losing ground under those trees in the food prep area.

We will evaluate this next season and formulate a plan. One possible solution is to relocate the food prep area.

4. Eliminate fire pit at lower Park Creek CG. The browse lines and social trails are getting difficult to mitigate.

We can eliminate fires from a campground based on the amount of dead and down firewood available. The CG evaluation for Park shows we may seriously look at this proposal. Good documentation this next season one way or another is a must.

5. Add a BC CG where Lincoln Creek cabin is. This could open up some early BC trips into Walton area, as well as help facilitate other BC trips into Lake McDonald.

This has been suggested by the **GWGs** and others. Early season visitors to Lincoln Creek and the Walton subdistrict will **encounter** heavy downfall, dangerous high water crossings and campgrounds in winter status because we have not been able to visit the areas personally. We feel that there are other areas in the northern part **of** the Park that may be more conducive to early season visits, but will evaluate possible campground locations in the Lincoln Creek area this summer.

6. Consider changing the seat configuration on pit toilets in the backcountry. Go to a boxed in wooded seat with no metal involved. The metal cones are maintenance intensive and parts to repair are difficult to obtain.

Agree. This has been discussed and we hope to start making all new outhouses with this design.

7. Consider replacing the roofs of pit toilets with corrugated fiberglass roofing material. This material **is** waterproof, rot proof, lightweight to pack in, and allows natural light into an otherwise dark toilet. It also eliminates the need for asphalt roofing and 1x6 **underlayment** material.

This is an idea that has been thrown around for some time. **These** types of roofs may not hold up to snow loading, but we will give this idea some further consideration. In the mean time we plan to cut a round hole using a hole saw and then **screen** over it. This would allow for light to enter the structure.

8. Remove the treated lumber plank bridge from the John's Lake trail. A log bridge would suffice here, and treated lumber is inappropriate in the BC.

Agree with all aspects of this proposal but is not a priority at this funding level for trails.

9. Haul in a bunch of 2" gravel for the barn area at the head of the lake.

Project completed fall of 1997.

10. Put a pit toilet in Preston Park

Agree. This is a problem that we need to address. We plan to conduct the necessary compliance and install a pit toilet in this area in 1998.

11. Reroute trail by snowfield on Triple Divide Pass trail.

Agree. This will most likely be completed in 1998.

12. Reduce the number of campsites at **Gunsight** Lake.

Agree. The **number of** campsites at **Gunsight** was reduced by one a few years ago. Additional reductions have been discussed, but there are many mitigating factors that must be considered before we act. This issue will be addressed in an upcoming revision **of** the Backcountry Management Plan.

13. On the Cobalt Lake trail there is a well defined social trail that people use in spring before the bridges are in place. Would it be possible to re-route the trail so that it doesn't cross the creek.

We will have the Trail Crew take a look at this. There may not be a good re-route due to topographic limitations.

14. On the Atlantic Creek trail, one **mile** in from Cut Bank RS there is a small stream that flows all summer and muddies the area. People are crossing above it and creating severe root damage. Could a small log bridge be put in.

We will discuss this with the Trail Crew.

15. No Name Lake CG: Move food prep area to near food pole due to severe root exposure in present location. Rehab/revege area with **CRMPS** project.

Agree. We need to work on this area. We will submit this as a **CRMPS** project.

WILDERNESS MANAGER'S RECOMMENDATIONS

INTRODUCTION

The following recommendations regarding Glacier's Backcountry Management program are provided by the Wilderness Manager. They represent ideas and suggestions that I believe would enhance **wilderness values** and experiences, enhance resource protection, and improve the Park's overall Wilderness Management program.

WILDERNESS MANAGEMENT POLICIES AND GUIDELINES

1. Develop a minimum tool policy and decision tree for GNP that clearly establishes when, where, and why power tools and mechanical modes of transport can be used in our proposed Wilderness.
2. Establish criteria for closing high day use area access trails due to environmental reasons during early season melt out, when soil is saturated and vegetation is freshly emerging. It is during this time that resources are **most** vulnerable to impact. This would be similar to our "not available due to environmental conditions" status for designated campgrounds.
3. Improve our means of incorporating wilderness values (solitude, minimum tool, etc.) into our decision making process for potentially intrusive activities (research, aircraft use, fire suppression, etc.).
4. Develop defensible backcountry day use group size limits for all user groups (concessions, Glacier Institute, Naturalist hikes, general public, etc.)
5. Update the Backcountry and Wilderness Maintenance Standards to provide clearer criteria regarding the placement and installation of foot logs over small, non-hazardous stream crossings.
6. Develop criteria for seasonal closure of the Fifty Mountain meadows area during periods of high bear density in the fall.
7. Develop and implement an action plan which addresses the North Fork **LAC** standards that are currently out of compliance.
8. Eliminate **metal** fire grates at designated backcountry campgrounds which allow fires. These grates are a maintenance problem, safety hazard, and are inappropriate in bear country, as they may entice someone to cook odorous food directly on the grate.
9. Eliminate the "Notice to Backcountry Campers" sign which is posted in each designated backcountry campground. The information posted on them is repetitive and the additional sign and sign post are unnecessary facilities in proposed wilderness.
10. Develop criteria for the use and installation of the footprint/slash signs. They have proliferated in the backcountry to inappropriate levels.
11. Begin the process of identifying research needs (both resource and social) needed to support **the** future Backcountry Management Plan update.
12. Evaluate the effects on visitor solitude of NPS led naturalist hikes which utilize designated backcountry campgrounds as destinations. Research has shown that solitude in campsites is very important to backcountry visitors. I believe that we should not be leading large naturalist hike groups into these areas, or perhaps these campgrounds should be relocated.

13. Retrofit several bear resistant stock feed containers (aluminum) and establish a check out program for all stock users.
14. Modify the Compendium to authorize the use of bear resistant stock feed containers for stock parties.

BACKCOUNTRY MANAGEMENT OPERATIONS

1. Improve frequency and duration of backcountry patrol and law enforcement coverage at Fifty Mountain Campground.
2. Increase level of overnight backcountry patrols at designated campgrounds. Reduce the number of overnight patrols at places like Pass Creek Cabin, Slide Lake Cabin, etc. Continue to attain our WIS goal of camping out at least once per summer in each designated backcountry campground.
3. Improve safety and comfort of backcountry (class A field) uniform items by incorporating more effective fabrics, designs, and fit. This may require approval of non-R&R uniform items for use in Glacier. The most pressing need is for an improved backcountry patrol trouser.
4. Recruit a VIP to assist 1998 Backcountry Management Operations at Goat Haunt and St. Mary (Logan Pass Snow Management Area).
5. Continue to have qualified seasonal Backcountry Rangers assigned to the Wilderness Management Section attend the annual Bear Management Training.
6. Establish a more pro-active winter backcountry patrol program, possibly through the use of VIP's or SCA's.
7. Explore possibilities for obtaining cyclic maintenance funds for the Wilderness Management Section, for use on backcountrycampgroundimprovements and repairs. This cyclic funding should apply to campground maintenance, just as it applies to trail maintenance.
8. Encourage Trail Crews using the Red Gap Pass Gypsy Camp to walk down the main trail to a point at least 200 feet from the nearby creeks before seeking out an area for human waste disposal. The current spike camp location is sandwiched in between two major creeks, where there are no suitable human waste disposal areas,.

BACKCOUNTRY PERMIT SYSTEM/WILDERNESS EDUCATION/TRAINING

1. Work toward **securing funding** and resources to improve the Backcountry Camping video.
2. Invite a Greg **Kroll** (Arthur **Carhart** National Wilderness Training center) to speak at the 1998 Backcountry Ranger Training.
3. Seek a grant or other source of funding to develop and design a portable "wilderness skills trail" designed specifically for Glacier National Park. The objective of the "wilderness skills trail" would be to promote leave no trace **wildland** ethics, provide camping in bear country education, and educate the public about Glacier's backcountry camping **policies** and regulations, through various outreach efforts.
4. Develop and install a fixed "wilderness skills trail" adjacent to the new Backcountry Permit Center (quarters # 44).
5. Develop and install a "mock" backcountry campground for visitor education purposes, adjacent to the Apgar Backcountry Permit Center.

6. Promote the initiation of the trailhead bulletin board plan which will include the construction and installation of much needed new trailhead bulletin boards.

7. Evaluate the current hodge-podge of informational signing present in many of the "high day use" areas. Consider appropriateness of signing in the backcountry vs. the need to provide some sort of resource protection message. Evaluate ways and means to reduce impacts in "high day use areas" by providing improved educational messages (consider signs, trailhead bulletin boards, informational handouts, etc.)

8. To improve inter-divisional cooperation and communication, require all visitor protection personnel who engage in backcountry patrol work to attend a 2 hour backcountry management orientation session coordinated by the Wilderness Manager.

9. Develop a parkwide, interdivisional Leave No Trace educational strategy. This effort could include the following initiatives: short, succinct "Leave No Trace" message for future trailhead bulletin boards.

- Incorporate a "mandatory" Leave No Trace messages into all parkwide interpretive programs (hikes, campfire talks, etc).
- Develop a citizens Leave No Trace patrol program for designated high day use areas.
- provide Leave No Trace orientation to all appropriate employees
- continue to incorporate Leave No Trace educational messages into appropriate park site bulletins
- incorporate a Leave No Trace message into the TIS recording at major park entrances

10. Develop a Wilderness awareness orientation program for all employees of Glacier who deal with Wilderness Management related issues in one way or another.

11. Institute an annual Wilderness Manager's Hike (in September) in which a select group of local citizens and land management professionals are invited to participate in a first hand look and discussion regarding Backcountry Management in Glacier.

12. Assure that all seasonal Backcountry Rangers are introduced to the use of GPS devices.

13. Organize and coordinate a Arthur Carhart National Wilderness Training center sponsored Wilderness Management and Awareness Workshop for Glacier National Park. Target audience would be staff members (Rangers, Trails, Compliance, Interpretation, Fire Management, Resource Management, etc.) who have duties associated with Wilderness, minimum requirement, etc. Objective of course would be to heighten the entire staff's awareness of the Wilderness Act, Wilderness Management policies, minimum requirement considerations, etc. This course would be similar to several very successful workshops already conducted (Hawaii Volcanoes, Big Bend, Grand Canyon, Point Reyes, etc.), which have been coordinated by Greg Kroll, NPS representative.

BACKCOUNTRY MANAGEMENT PROJECTS

1. Close the Belly River Campground based on the fact that the toilet fails to comply with distance from water standards and the site floods regularly. Draft an EA to address the re-location of the three campsites eliminated.
2. Rehabilitate the closed Belly River Campground site.
3. Schedule Resource Management/Rehabilitation (**CRMPS**) projects at the following locations: Red Eagle Lake foot CG, Belly River CG, Akokala Lake CG, Boulder Pass CG, quarters # 44 construction site.
4. Complete mapping of all destination day use areas.
5. Make the following improvements at the Gable Creek Campground:
 - replace the low rider with an outhouse
 - install a stock feed hanging device adjacent to the hitchrail
 - clean up the slash around the hitchrail
 - relocate and improve the stock access trail to water
6. Install small screened windows in outhouses, to enhance interior lighting and improve visitors willingness to use them.
7. Install stock feed hanging devices near the hitchrail all popular stock use campgrounds.
8. Install a pit toilet in the Preston Park area', due to significant human waste problems and documented occurrences in the area near the Piegan **Pass/Siyeh** Pass Trail Junction..
9. Explore the possibility of procuring cyclic maintenance funding to augment the Backcountry Ranger work force, based on the justification of continued and backlogged Backcountry Campground maintenance.

RIVER MANAGEMENT

1. Work with the **U.S.F.S** to carefully examine the current river LAC indicators and standards for appropriateness and suitability, and initiate the river **user** quality survey called for in the river management guidelines.
2. Improve frequency and quality of wild and scenic river corridor patrols on the Middle Fork and lower North Fork of the **Flathead** River. Work to establish a seasonal River Patrol Ranger position in the Wilderness Management Section.
3. Assist with a joint NPS/USFS river management training in early summer of 1998.

CONCESSIONS MANAGEMENT

1. Eliminate the sale of soda pop and other non-traditional or historical refreshments at the Granite Park Chalet. Pop cans will lead to litter along the trail and pop is an ineffective means of hydration. Horse packing these inappropriate items to the Chalet also creates unnecessary pack stock traffic and impacts.
2. Require all Chalet guests to receive an orientation packet, including the basic backcountry regulations and safety advice. These visitors are entering our backcountry and staying overnight, but do not get any of the information that

overnight campers receive. This creates a potential safety and non-compliance concern.

3. Require all Chalet employees to attend an annual orientation in which specific backcountry regulations and policies are discussed. There are reports of Chalet employees providing inaccurate and inappropriate information to visitors.

4. Develop a policy to deal with the increasing number of "Institutional Guiding" activities that are being conducted under the auspices of an educational course.

5. Require at least one management level employee of the Glacier Wilderness Guides to attain a Master of Leave No Trace certification.

6. Do not authorize any additional Commercial Use Licenses for guided photography seminars or other day use business activities occurring in the backcountry. This issue is not just a Concessions Management issue, but also a Backcountry Management issue. Currently the approval process for these activities does take into account backcountry management considerations. Approval of additional business in the backcountry may negatively affect the desired future conditions for the backcountry. We need to incorporate this issue into the upcoming Backcountry Management Plan revision. I believe that the photography seminars are typically just a means of circumventing our limitations on backcountry guiding. In addition, I question whether these photography seminars are necessary and appropriate. One does not have to enter our backcountry to learn about photography. This type of activity is not even dependent on being in a National Park. **By authorizing** more businesses in the backcountry, we are risking the establishment of a "commercialized" atmosphere in the backcountry.

7. Explore the possibility of allowing GPI staff to issue Backcountry Permits to their seasonal employees on site. This would require someone on the GPI staff to be designated and trained to provide such a service.

1997
STATE OF THE BACKCOUNTRY REPORT
INTRODUCTION

Glacier National Park represents the "core" of a large and relatively undisturbed natural area in the Northern Continental Divide region, known as the "Crown of the Continent" ecosystem. Glacier's 1,013,572 acre landscape includes 963,290 acres of proposed Wilderness (95% of the Park), 3,398 acres of potential Wilderness, and approximately 45,884 acres of undeveloped backcountry, all of which are currently managed as de-facto Wilderness.

Glacier's proposed Wilderness was originally recommended for inclusion into the National Wilderness System in 1974, and a Backcountry Management Plan was subsequently approved in 1975. The Backcountry Management Plan was revised in 1984 and is currently updated annually.

Primary responsibility for backcountry/proposed Wilderness Management in Glacier is delegated to the Wilderness Management Section in the Division of Resources Management.

This report has been prepared annually since 1993 by Glacier's Wilderness Management staff. It is intended to meet the following objectives:

1. Summarize current conditions, including use levels, management activities, resource inventory and monitoring efforts and results, condition of backcountry facilities, and backcountry management accomplishments for the calendar year 1997.
2. Document recommendations for 1998 management actions through analysis of 1997 data.

Prepared and submitted by:

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Cover Photo: Ptarmigan Tunnel Trail
T.J. Hileman, circa 1930

SECTION 1 BACKCOUNTRY CAMPING USE SUMMARY

INTRODUCTION

The following information summarizes backcountry camping use statistics in Glacier National Park for the calendar year 1997. Data and comments are provided regarding total camper nights, designated campground use, undesignated camping, permit issuing stations, campground and trail closures, campground full nights, average nights camped per party, average party size and campground opening dates.

CAMPER NIGHTS

1. A total of 27,561 camper nights were recorded in 1997 (1 individual overnight stay = 1 camper night). This use marked a <1% decrease from the 27,806 camper nights recorded in 1996, and the third year in a row with a slight decline. However, 1997 use still accounted for the 7th highest number of camper nights ever recorded for Glacier National Park. 73% of the camper nights total occurred during the months of July and August.

2. Undesignated camping use totalled 1,243 camper nights in 1997 (total includes use in the Nyack-Coal Creek Camping Zone and winter camping season permits). This reflected a 14% increase from 1996. The greatest number of undesignated camper nights was recorded in the Lake McDonald Subdistrict (348).

Winter season camper nights increased by 5% in 1997. A detailed listing of 1997 undesignated campsite locations is available in the Wilderness Management Office.

3. The winter season/summer season breakdown (winter season is 11/20 to 5/1) in camper nights was as follows:

UNDESIGNATED CAMPING	1994	1995	1996	1997
Winter Permits Issued	99	81	65	79
Winter Camper Nights	462	402	307	324
Summer Permits Issued	179	220	178	127
Summer Camper Nights	829	718	781	919

4. Undesignated camping (camper nights) in the Nyack-Coal Creek Camping Zone decreased by 18% in 1997. This marked the third consecutive year that Nyack-Coal Creek Camping Zone use has declined. Use in this special camping zone breaks down as follows:

NYACK-COAL CREEK CAMPING ZONE	1994	1995	1996	1997
Undesignated Permits Issued	74	57	36	44
Undesignated Camper Nights	311	329	256	208

STOCK USE

Overnight stock use increased by 43% in 1997, with 178 stock use nights recorded (1 head of stock camped overnight = 1 stock use night). The most heavily used area for stock continued to be Belly River, with 98 stock use nights recorded, followed by the Lake McDonald Subdistrict with 24 stock use nights. The backcountry campground most frequently used by stock groups was Elizabeth Lake Head, with 37 stock use nights recorded.

CAMPGROUND STATISTICS

1. The ten most heavily used backcountry campgrounds (in camper nights) in 1996 and 1997 were as follows:

1996		1997	
1 - Gunsight Lake	1,274	1 - Gunsight Lake	1,310
2 - Elizabeth Lake foot	1,186	2 - Bowman Lake Head	1,236
3 - Bowman Lake head	1,069	3 - Elizabeth Lake foot	1,059
4 - Elizabeth Lake, head	824	4 - Kintla Lake head	747
5 - Belly River	813	5 - Elizabeth Lake head	736
6 - Kintla Lake, head	788	6 - Poia Lake	731
7 - Poia Lake	782	7 - Gable Creek	660
8 - Glenns Lake, foot	755	8 - Atlantic Creek	651
9 - Atlantic Creek	715	9 - Belly River	646
10- Lower Quartz Lake	688	10- Oldman Lake	645

2. A detailed breakdown of camper nights for each campground is attached on pages 1-8 through 1-10

3. Camper nights increased at the following campgrounds in 1997:

SUBDISTRICT/AREA	CAMPGROUNDS
North Fork	Adair, Boulder Pass, Bowman Lake head, Grace Lake, Logging Lake foot, Round Prairie (foot)
Lake McDonald	Camas Lake, Lake Ellen Wilson, Flattop, Sperry
Walton	Beaver Woman Lake, Coal Creek, Upper Nyack
Two Medicine	Cobalt Lake, No Name Lake, Oldman Lake, Two Medicine auto, Upper Two Medicine
St. Mary	Gunsight Lake, Otokomi Lake, Red Eagle foot, Red Eagle head, Reynolds Creek
Many Glacier	Many Glacier (auto)
Belly River	Glenns Lake head, Helen Lake, Mokowanis Lake
Goat Haunt	Hawksbill, Hole in the Wall

BACKCOUNTRY PERMIT STATISTICS

1. A total of 4,955 Backcountry Use Permits were issued in 1997. This marked an <1% increase from 1995, when 4,952 permits were issued. Apgar Visitor Center issued the majority of the permits at 53%. Waterton Lakes National Park personnel issued permits for Glacier National Park out of their visitor center for the second consecutive year. The major permit issuing stations were:

LOCATION	1994	1995	1996	1997
Apgar Visitor Center	51.4%	51.3%	51.7%	53.0%
Quarters # 3 Advanced Reservations				2.6%
St. Mary Visitor Center	25.0%	24.5%	24.1%	24.0%
Many Glacier Ranger Station	9.6%	9.5%	9.9%	7.9%
Two Medicine Ranger Station	6.7%	7.5%	6.7%	4.7%
Park Headquarters (winter)	2.9%	2.0%	2.9%	3.2%
Polebridge Ranger Station	1.9%	2.7%	1.7%	2.4%
Goat Haunt Ranger Station	1.2%	1.2%	0.6%	0.5%
Waterton Visitor Center	I -	I -	I 1.2%	I 1.1%

CAMPGROUND CLOSURES

1. There were 7 campground closures in 1997 which accounted for 108 closure days. All but one of these closures was based on bear activity and/or carcasses in the campground. This compares to 10 backcountry campground closures in 1996 which accounted for 94 closure days. The majority of these closures were due to bear activity. The new Gable Creek Campground (3 campsites) was opened for public use on June 20. This campground replaced the former Three Mile Campground which was destroyed by flooding in 1996.

Campground closure days were suspended at the beginning of the winter camping season (effective 11/20/97)

TRAIL CLOSURES

1. There were 28 trail closures in 1997 which accounted for 783 closure days. The most lengthy closure involved the Medicine Grizzly Lake Trail, which was closed for 150 days due to bear activity. A total of 14 of these closures were associated with bear activity and/or carcasses on the trail. An additional 7 closures were for stock use only, based on sensitive resource conditions, and 3 closures were based on hazardous snow conditions (Highline and Grinnell Glacier Trails).

This compares to 32 trail closures which accounted for 613 closure days in 1996. A total of 25 of these closures were due to bear activity, 5 were for stock only, and 2 were for hazardous snow conditions.

Trail closure days were suspended at the beginning of the winter camping season (effective 11/20/97).

CAMPGROUND FULL REPORT

1. The number of campground full nights decreased slightly in 1997, with 4 campgrounds full for 60 or more nights and 29 campgrounds full for 30 or more nights. Campgrounds with the most full nights in 1996 and 1997 were:

1996 Campground - Nights Full		1997 Campground - Nights Full	
1 - Belly River	- 89	1 - Gable Creek	65
2 - McDonald Lake	- 79	2 - Belly River	65
3 - Elizabeth Lake foot	- 66	3 - Arrow Lake	65
4 - Elizabeth Lake head	- 62	4 - McDonald Lake	65
5 - Cracker Lake	- 59	5 - Elizabeth Lake foot	58
6 - Snyder Lake	- 56	6 - Elizabeth Lake head	58
7 - Poia Lake	- 56	7 - Glenss Lake foot	55
8 - Slide Lake	- 56	8 - Cracker Lake	53
9 - Arrow Lake	- 55	9 - Gunsight Lake	52
10- Glenss Lake foot	- 54	10- Glenss lake head	52
Mokowanis Lake	- 54		

• All campgrounds were full for at least one night in 1997.

AVERAGE NIGHTS CAMPING AND AVERAGE PARTY SIZE

1. The average number of nights camping per party and the average party size remained consistent with the 10 year average. They were:

CATEGORY	1994	1995	1996	1997	10 Year Average 1988 - 1997
Average Nights Camping	2.16	2.12	2.16	2.13	2.17
Average Party Size	2.52	2.53	2.54	2.53	2.49

The predominant number of nights camping continued to be one night, with 44% of the camping parties doing so. The predominant party size continued to be two people, as 53.7% of the parties that size. The percentage of solo campers (14.31%) increased slightly in 1997, for the second consecutive year. Maximum allowable party size is set at 12 for designated campgrounds and 6 for undesignated campsites.

TRENDS

1. The following graph (page 1-7) reflects backcountry camper use (in camper nights) for the period of 1974 through 1997. As you can see, the overnight use levels have been moving generally upward since the mid-1980's, with slight declines in 1995, 1996 and 1997. While camper nights decreased by >1% in 1997 (from 1996), overnight camper use accounted for the 7th highest level since 1974 and approached the record level recorded in 1994. The primary factor that may have influenced 1997 use was a record winter snowpack and relatively late snowpack melt-out. Despite these factors, Glacier's backcountry appears to be at it's peak of popularity and demand for backcountry campsites during the summer months.

CAMPGROUND OPENING DATES

Glacier's designated backcountry campground opening dates are summarized in the following table:

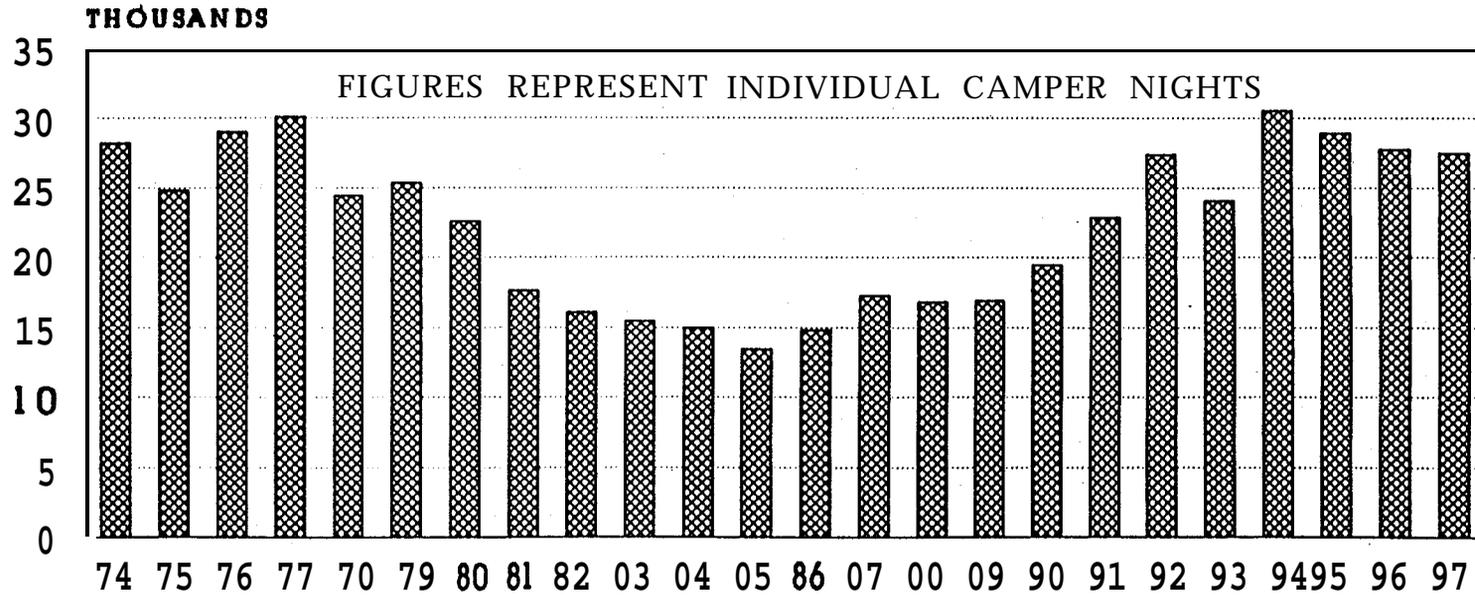
1997 OPENING DATES ❄️ DESIGNATED BACKCOUNTRY CAMPGROUNDS GLACIER NATIONAL PARK	
Adair 5/29 Akokala Lake 6/18 Boulder Pass 7/31 Bowman Lake head 5/29 Brown Pass 7/10 Grace Lake 6/12 Kintla Lake head 6/12 Logging Lake foot 5/29 Lower Quartz Lake 5/29 Quartz Lake 6/4 Round Prairie 6/25 Upper Kintla Lake 6/12 Arrow Lake 6/1 Camas Lake 7/10 Lake Ellen Wilson 7/10 Flattop 7/17 Granite Park 7/10 Lincoln Lake 6/27 McDonald Lake 5/29 Snyder Lake 6/21 Sperry 7/10 Beaver Woman Lake 7/17 Coal Creek 7/16 Harrison Lake 7/10 Lake Isabel 7/10 Lower Nyack 7/17 Ole Creek 6/4 Ole Lake 6/16 Park Creek 6/4 Upper Nyack 7/17 Upper Park Creek 6/25 Atlantic Creek 6/12 Cobalt Lake 7/31	Morning Star Lake 7/10 No Name Lake 7/15 Oldman Lake 7/10 Two Medicine CG 5/23 Upper Two Medicine Lake 7/10 Gunsight Lake 7/10 Otokomi Lake 7/10 Red Eagle Lake; ft. 6/4 Red Eagle Lake, head 6/4 Reynolds Creek 6/16 Cracker Lake 6/25 Many Glacier CG 5/23 Poia Lake 6/4 Slide Lake 6/4 Belly River 5/31 Cosley Lake 6/15 Elizabeth Lake foot 6/10 Elizabeth Lake head 6/10 Gable Creek 6/20 Glenss Lake foot 6/10 Glenss Lake head 6/10 Helen Lake 6/27 Mokowanis Junction 6/10 Mokowanis Lake 6/10 Fifty Mountain 7/31 Lake Francis 6/18 Goat Haunt Shelters 6/6 Hawksbill 6/18 Hole in the Wall 7/21 Lake Janet 6/18 Kootenai Lakes 6/3 Stoney Indian Lake 7/20 Waterton River 6/5

Dates indicated above note when each campground was placed into an "open" status (bare and dry), following the melt out of the winter snowpack in 1997.

BACKCOUNTRY CAMPER. USE

1974 THROUGH 1997

GLACIER NATIONAL PARK



TREND

BC CAMPER USE

01/08/1998

CAMPER - NIGHT REPORT

PAGE: 1

FROM: 01/01/1997 TO: 12/31/1997 NIGHTS: 365

	SITE NIGHTS			CAMPER NIGHTS			STOCK NIGHTS		
	ACTUAL	POSSIBLE	PERCENT	ACTUAL	POSSIBLE	PERCENT	ACTUAL	POSSIBLE	PERCENT
BELLY RIVER	261	1095	23.8	646	4380	14.7	0	0	0.0
COSLEY LAKE	252	1460	17.3	626	5840	10.7	12	2190	0.5
ELIZABETH LAKE. FT	430	1a25	23.6	1059	7300	14.5	4	0	0.0
ELIZABETH LAKE, HD	295	1460	20.2	736	5840	12.6	37	2190	1.7
GABLE CREEK	252	1095	23.0	660	4380	15.1	0	2190	0.0
GLENNS LAKE, FT	205	1095	18.7	508	5840	8.7	5	2920	0.2
GLENNS LAKE, HD	212	1095	19.4	566	4380	12.9	0	0	0.0
HELEN LAKE	94	730	12.9	211	2920	7.2	0	0	0.0
MOKWANIS JUNCTION	190	1460	13.0	487	7300	6.7	10	2920	0.3
MOKOWANIS LAKE	138	730	18.9	325	2920	11.1	0	0	0.0
BELLY RIVER UND.	23	1825	1.3	52	7300	0.7	0	0	0.0
BELLY RIVER	2352	13870	17.0	5876	58400	0.1	68	12410	0.5
FIFTY MOUNTAIN	235	1825	12.9	543	7300	7.4	4	2190	0.2
LAKE FRANCIS	121	730	16.6	311	2920	10.7	0	0	0.0
GOAT HAUNT SHELTERS	120	2555	4.7	286	10220	2.8	0	0	0.0
HAWKSBILL	98	730	13.4	227	2920	1.0	0	0	0.0
HOLE IN THE WALL	221	1825	12.1	539	7300	7.4	4	0	0.0
LAKE JANET	88	730	12.1	197	2920	6.7	0	2190	0.0
KOOTENAI LAKE	215	1460	14.7	510	5840	a.7	0	2190	0.0
STONEY INDIANLK	159	1095	14.5	394	4380	9.0	0	0	0.0
GOAT HAUNT UND.	29	1825	1.6	70	7300	1.0	0	0	0.0
WATERTON RIVER	157	1825	a.6	385	7300	5.3	0	2190	0.0
GOAT HAUNT	1443	14600	9.9	3462	58400	0.1	8	8760	0.1
ARROW LAKE	165	730	22.6	362	2920	12.4	14	2190	0.6
CAMAS LAKE	45	730	6.2	110	2920	3.8	0	0	0.0
Lx ELLEN WILSON	224	1460,	15.3	506	5840	8.7	0	2190	0.0
FLATTOP	137	1095	12.5	322	4380	7.4	0	2190	0.0
GRANITE PARK	260	1460	17.8	609	5840	10.4	0	0	0.0
LINCOLN LAKE	102	1095	9.3	233	4380	5.3	10	2920	0.3
MCDONALD LAKE	175	730	24.0	379	2920	13.0	0	0	0.0
SNYDER LAKE	240	1095	21.9	520	4380	11.9	0	2190	0.0
SPERRY	232	730	31.8	547	5840	9.4	0	0	0.0
MCDONALD UND.	144	1825	7.9	348	7300	4.0	0	0	0.0
MCDONALD	1724	10950	15.7	3936	46720	0.1	24	11680	0.2
CRACKER LAKE	225	1095	20.5	522	4380	11.9	0	0	0.0
MANY GLACIER	75	730	10.3	167	2920	5.7	0	0	0.0
POIA LAKE	306	1460	21.0	731	5840	12.5	6	3650	0.2
SLIDE LAKE	68	730	9.3	167	2920	5.7	0	2190	0.0
MANY GLACIER UND.	29	1825	1.6	62	7300	0.8	0	0	0.0
MANY GLACIER	703	5040	12.0	1649	23360	0.1	6	5840	0.1

01/08/1998

CAMPER NIGHT REPORT

PAGE: 2

FROM: 01/01/1997 TO: 12/31/1997 NIGHTS: 365

	SITS NIGHTS			CAMPER NIGHTS			STOCK NIGHTS		
	ACTUAL	POSSIBLE	PERCENT	ACTUAL	POSSIBLE	PERCENT	ACTUAL	POSSIBLE	PERCENT
ADAIR	79	1460	5.4	210	5840	3.6	0	2190	0.0
AKOKALA LAKE	40	1095	3.7	93	4380	2.1	0	0	0.0
BOULDER PASS	106	1095	9.7	240	4380	5.5	4	0	0.0
BOWMAN LAKE, HD	532	2190	24.3	1236	8760	14.1	0	3650	0.0
BROWN PASS	130	1095	11.9	324	4380	7.4	4	0	0.0
GRACE LAKE	66	1095	6.0	168	4380	3.8	0	0	0.0
KINTLA LAKE, HD	294	2190	13.4	747	8760	8.5	6	3650	0.2
LOGGING LAKE, FT	115	1095	10.5	261	4380	6.4	0	0	0.0
LONER QUARTZ LAKE	210	1460	14.4	506	5840	8.7	0	2190	0.0
QUARTZ LAKE, FT	175	1095	16.0	421	4380	9.6	0	0	0.0
ROUND PRAIRIE (FOOT)	16	365	4.9	38	4380	0.9	0	0	0.0
ROUND PRAIRIE (RIVER)	0	730	0.0	0	4380	0.0	0	0	0.0
NORTN FORK UND.	100	1825	5.5	238	7300	3.3	0	0	0.0
UPPER KINTLA LK	219	1460	15.0	559	5840	9.6	8	3650	0.2
NORTH FORK	2084	18250	11.4	5061	77380	0.1	22	15330	0.1
GUNSIGHT LAKE	542	2555	21.2	1310	10220	12.8	0	2190	0.0
OTOKOMI LAKE	171	1095	15.6	415	4380	9.5	0	0	0.0
RED EAGLE, IT	253	1460	17.3	592	5840	10.1	0	0	0.0
RED EAGLE, HD	220	1460	15.1	558	5840	9.6	0	3650	0.0
REYNOLDS CREEK	56	730	7.7	119	2920	4.1	0	2190	0.0
ST. MARY UND.	62	1825	3.4	138	7300	1.9	0	0	0.0
ST. MARY	1304	9125	14.3	3132	36500	0.1	0	8030	0.0
ATLANTIC CREEK	268	1460	18.4	651	5840	11.1	0	2190	0.0
COBALT LAKE	113	730	15.5	263	2920	9.0	0	0	0.0
MORNING STAR	148	1095	13.5	334	4380	7.6	0	0	0.0
NO NAME LK	200	1095	18.3	461	4380	10.5	0	0	0.0
OLDMAN LAKE	274	1460	16.8	645	5840	11.0	0	2190	0.0
TWO MEDICINE	38	1460	2.6	82	2920	2.8	0	0	0.0
UPPER TWO MED	181	1460	12.4	432	5840	7.4	0	0	0.0
TWO MEDICINE UND.	53	1625	2.9	105	7300	1.4	0	0	0.0
TWO MEDICINE	1275	10585	12.0	2973	39420	0.1	0	4380	0.0
BEAVER WOMAN LAKE	55	730	7.5	133	2920	4.6	4	3650	0.1
COAL CREEK	41	730	5.6	99	2920	3.4	0	3650	0.0
HARRISON LAKE	18	1095	1.6	50	4380	1.1	0	2190	0.0
LAKE ISABEL	58	730	7.9	152	2920	5.2	0	0	0.0
LOWER NYACK	24	730	3.3	56	2920	1.9	0	3650	0.0
OLE CREEK	93	1095	8.5	254	4360	5.1	4	2920	0.1
OLE LAKE	42	730	5.8	104	2920	3.6	3	2190	0.1
PARR CREEK	72	1095	6.6	178	4380	4.1	0	2190	0.0
NYACK WILDERNESS UND	69	3650	1.9	162	14600	1.1	3	0	0.0
UPPER NYACK	36	730	4.9	99	2920	3.0	0	3650	0.0

01/08/1998

CAMPER - NIGHT REPORT

PAGE: 3

FROM: 01/01/1997 TO: 12/31/1997 NIGHTS: 365

	SITE NIGHTS			CAMPER NIGHTS			P H I =	STOCK NIGHTS		
	<u>ACTUAL</u>	<u>POSSIBLE</u>	<u>PERCENT</u>	<u>ACTUAL</u>	<u>POSSIBLE</u>	<u>ACTUAL</u>		<u>POSSIBLE</u>	<u>PERCENT</u>	
UPPER PARK CREEK	56	1095	5.1	127	4380	2.9	6	2190	0.3	
WALTON UND.	25	1825	1.4	68	7300	0.9	0	0	0.0	
WALTON	589	14235	4.1	1472	56940	0.0	20	26260	0.1	
GRAND TOTAL	11474	97455	11.8	27561	397120	6.9	148	92710	0.2	

SECTION 2 WINTER BACKCOUNTRY USE

INTRODUCTION

In December of 1994, winter use registration boxes were constructed and installed at key winter use trailheads and access points, in an effort to quantify levels of winter recreational use in Glacier National Park. Data was collected for the duration of Glacier's 1997 winter camping season, which officially extended from November 20 through April 30.

WINTER USE

A total of 949 parties and 2,565 individuals voluntarily registered in 1997. The most popular trailhead was at the road closure of the Going to the Sun Highway located at the head of Lake McDonald. The Autumn Creek Trail from Marias Pass to U.S. Hwy. # 2 also continues to be popular, as was the **Camas** Road. The average party size was 2.7. A limited effort to calibrate the percentage of parties registering indicated that less than 50% chose to register (subsequent monitoring indicates even a lower % of compliance with registration). **Day** recreational use makes up the majority of these use figures.

Overnight winter backcountry camping use is summarized in Section 1 on page 1-1.

The following winter recreational use data was collected in 1997:

West Lakes District

Total number of registered parties = 889

Total number of individuals = 2,444

Average party size: 2.75

Polebridae Entrance Winter Use Data:

Number of parties registered: 82

Total individuals: 211

Average party size: 2.44

Most popular destinations (parties registered):

Big Prairie: 25

Bowman Lake: 34

Covey Meadow: 2

Hidden Meadow: 3

Inside NF Rd. south: 8

Kintla: 2

Other: 6

Ford Creek: 1

Tepee Flats: 1

Logging Creek

No data received for 1997

Kintla Creek

No data received for 1997

Quarter Circle Bridge

Number of parties registered: 52

Total individuals: 142

Average party size:

Most popular destinations (parties registered):

Apgar lookout: 20

Flathead Ranger Station: 6

Quarter Circle Bridge: 12

Unknown: 14

Camas Road (south) Winter Use Data:

Number of parties registered: 74

Total individuals:

Average party size: 2.30

Most popular destinations:

Fish Creek: 83

Up and back: 37

McGee Meadow: 32

Rocky Point: 19

Apgar Mt.: 1

Unknown: 21

Going to the Sun Road (head of Lake McDonald) Winter Use Data:

Number of parties registered: 379

Total individuals: 1,044

Average party size: 2.75

Most popular destinations:

Avalanche CG and picnic area: 104

Up Road and/or unknown: 176

McDonald Falls and Sacred Dancing Cascades: 31

Avalanche Lake: 37

Moose Country: 5

Trail of the Cedars: 8

Johns Lake: 3

Loop: 10

Mineral Creek: 1

Kelly Camp Road (head of Lake McDonald) Winter Use Data:

Number of parties: 99

Total individuals: 270

Average party size:

Most popular destinations:

Other/Unknown: 37

up the road: 33

Trout Lake: 2

Lake McDonald CG: 1

McDonald Creek Loop: 21

Mt. Stanton: 2

Apgar: 2

Avalanche: 2

Sperry Trailhead Winter Use Data:

Number of parties: 36
Total individuals: 94
Average party size:
Most popular destinations:
 Snyder Lake: 7
 Sperry: 4
 Mt. Brown area: 9
 Fish Lake: 4
 Up trail: 6
 Sperry Glacier: 1
 Unknown: 3

Walton Ranaer Station Winter Use Data:

Number of parties: 44
Total individuals: 116
Average party size:
Most popular destinations:
 Ole Creek: 26
 Scalplock Lookout Trail: 11
 Unknown: 5
 Park Creek: 1
 Fielding: 1

Fielding Trailhead Winter Use Data:

No data received for 1997

Autumn Creek Trail (Marias Pass) Winter Use Data:

Number of parties registered: 124
Total individuals: 374
Average party size:
Most popular destinations (number of parties):
 Autumn Creek/Hwy. # 2: 63
 Three Bears Lake: 9
 Little Dog: 3
 Krumholz: 3
 Firebrand: 1
 Unknown: 10
 Up trail: 26
 Moose Hill: 5
 Blacktail Hills: 4

Hudson Bay District

Total number of registered parties = 60

Total number of individuals = 121

Average party size = 2

Lubec Trailhead Winter Use Data:

Number of parties: 1

Total individuals: 5

Average party size: 5

Most popular destinations:

Calf Robe: 1

Autumn Creek Trail (East Glacier)

Number of parties registered: 16

Total number of individuals: 45

Average party size:

Most popular destinations (number of parties):

Lubec: 2

Squaw Ridge/Peak: 6

Unknown: 8

Two Medicine Road

Number of parties registered: 14

Total number of individuals: 18

Average party size:

Most popular destinations:

Two Medicine: 6

Running Eagle Falls: 1

Park Boundary: 3

Unknown: 4

Red Eagle Lake Trailhead Winter Use Data:

Number of parties registered: 20

Total individuals: 34

Average party size:

Most popular destinations:

Up trail: 8

Beaver Ponds: 1

St. Mary Lake: 10

Meadows: 1

St. Maw Ranger Station Trailhead

Number of registered parties: 4

Total individuals:

Average party size:

Most popular destinations:

Elk Loop: 2

Divide Creek: 1

W o o d s : 1

Goina to the Sun Hiahway (St. Mary) Winter Use Data:

No Data received for 1997

Many Glacier Road

Number of parties registered: 5

Total individuals: 13

Average party size:

Most popular destinations:

Many Glacier Valley: 5

SECTION 3

VOLUNTARY CLIMBER REGISTRATION

INTRODUCTION

The following table summarizes the number of climbing parties that utilized Glacier's Voluntary Climber Registration Form in 1997. Bark visitors attempting climbing trips are encouraged, but not required, to complete this form prior to departure, and to check in upon return.

Completion of this form does not "guarantee" immediate rescue in the event of a climbing accident. It does provide the Wilderness Management office with very helpful and interesting data regarding the location and level of off-trail use in Glacier

The following trends were observed in 1997:

1. The total number of registered climbing parties increased from 216 in 1996 to 314 in 1997.
2. The total number of registered climbers increased from 584 in 1996 to 729 in 1997.
3. The percentage of parties who checked back in upon completion of their climbing trip was 74% in 1995, 73% in 1996 and 64% in 1997..
4. The average climbing party size remained fairly stable, with 2.44 in 1993, 2.44 in 1994, 2.6 in 1995, 2.7 in 1996 and in 2.32 in 1997.
5. The top three peaks climbed by registered climbers in 1997 were:
 - 1) Reynolds Mountain (148 climbers)
 - 2) Oberlin Mountain (127 climbers)
 - 3) Mount Cannon (46 climbers)

The top three peaks climbed by registered climbers in 1996 were:

- 1) Reynolds Mountain (105 climbers)
- 2) Oberlin Mountain (100 climbers)
- 3) Mount Cleveland (54 climbers)

6. Ice climbing gained in popularity, particularly in the Avalanche Lake basin and upper Snyder Creek basin (Mt. Brown and Mt. Edwards). At least one article was published in Snow and Ice Magazine regarding the ice climbing in the Avalanche Lake basin icefalls.

REGISTRATION DATA

The following tables summarize the 1997 registration data for each peak:

MOUNTAIN	NUMBER OF PARTIES	NUMBER OF CLIMBERS	# PARTIES CHECKED IN
Ahern	1	2	0
Allen	2	4	1
Altyn	4	8	2
Apikuni	1	2	1
Appistoki	1	2	1
Avalanche Lake head (ice)	2	4	2
Bearhat	8	17	6
Bishops Cap	2	6	1
Blackfoot	2	3	1
Brown	3	9	0
Cataract	1	2	1
Cathedral	1	2	0
Cannon	11	46	9
Chief	3	4	1
Clements	7	16	5
Cleveland	18	40	11
Curley Bear	1	2	1
Dragons Tail	1	3	1
Despair	1	2	0
Edwards	2	4	0
Ellsworth	2	4	0
Garnder Point	1	2	1
Geduhn	1	4	0
Goat Mt.	3	5	1
Going to the Sun	3	3	2
Gould	5	9	3
Grinnell Point	2	4	1
Gunsight	3	3	3

MOUNTAIN	NUMBER OF PARTIES	NUMBER OF CLIMBERS	# PARTIES CHECKED IN
Heavens	2	6	0
Heavy Runner	2	4	2
Henry	2	4	0
Iceberg Peak	2	4	1
Ipasha	1	2	0
Jackson	14	27	7
James	2	5	0
Kinnerly	1	2	1
Kintla	4	11	1
Kintla West (9430)	1	2	1
Kupunkamint	1	2	1
Little Chief	1	2	1
Lonafellow	2	4	1
Long Knife	2	4	1
Loaan	5	10	4
Mahtapi	2	2	2
Merritt	8	19	5
Norris	1	2	1
Numa	1	2	0
Oberlin	37	127	29
Painted Teepee	1	2	1
Phillips	1	2	0
Pieaan	7	12	5
Pinchot	1	4	1
Pollock	11	19	9
Rainbow	2	4	0

MOUNTAIN	NUMBER OF PARTIES	NUMBER OF CLIMBERS	PARTIES CHECKED IN
Reuter	1	2	1
Reynolds	61	148	56
Rising Wolf	2	6	2
Rockwell	2	7	0
Running Rabbit	1	2	0
Sinopah	2	4	1
Siyeh	7	14	5
Stanton	4	9	2
Split	1	2	1
Stimson	6	13	1
St. Nicholas	2	6	1
Thunderbird	1	5	0
Triple Divide	2	3	1
Vaught	2	5	0
Vulture	3	5	1
White Calf	1	2	1
GRAND TOTALS	114	729	202

SUMMIT REGISTER DATA

The following information was collected when summit registers were checked by Park personnel during the 1997 field season:

MOUNTAIN	DATE CHECKED	NUMBER OF CLIMBERS SIGNED IN
Altyn Mountain	6/15/97	0 registered, register broken
Mt. Jackson	7/4/97	12 individual registered in 1997
Mt. Wynn	8/30/97	0 parties registered
Mt. Merritt	8/11/97	2 parties, 4 people registered
Mt. Merritt	9/6/97	4 parties, 13 people resistered

SECTION 4 BACKCOUNTRY CONCESSION USE SUMMARY

INTRODUCTION

Concession and Commercial Use License guide/outfitter operations accounted for the following backcountry use in Glacier National Park in 1997:

1. Glacier Wilderness Guides

This company had the only concessions contract to conduct overnight and day use backcountry hikes during the summer season (May 1 - November 20). They were also permitted by the U.S. Forest Service to conduct guided float trips on the Middle Fork and North Fork of the Flathead Wild and Scenic Rivers. Glacier Wilderness Guides recorded a 1% increase in camper nights and a 11% decrease in day use in 1997. Monthly business (excludes river use) broke down as follows:

TIME PERIOD	CAMPER NIGHTS (excludes guides)	DAY USE (HIKERS) (excludes guides)
May	0	0
June	105	98
July	349	851
August	418	1,077
September	65	299
October	0	168
TOTALS	937	2,493

2. Muleshoe Outfitters

This company had the only concessions contract to conduct day use horseback trips. They were authorized to operate in the Many Glacier, Lake McDonald and Apgar areas. They were also authorized to pack in supplies for backcountry campers (subject to approval on a case by case basis). Muleshoe Outfitters recorded a 3% decrease in horseback riders in 1997.

Muleshoe Outfitters accounted for the following use in 1997:

TIME PERIOD	LOCATION	DAY USE (RIDERS)
June 1996	Many Glacier	567
	Lake McDonald	781
	Apgar	0
July 1996	Many Glacier	1,765
	Lake McDonald	1,544
	Apgar	371
August 1996	Many Glacier	1,700
	Lake McDonald	1,788
	Apgar	0
September 1996	Many Glacier	133
	Lake McDonald	295
	Apgar	0
Total.....		8,944

Muleshoe Outfitters provided 14 pack trips to Granite Park Chalet in 1997.

3. Glacier Park Ski Tours

Rusty Wells Had a commercial use license to conduct overnight and day use cross country ski tours. His winter operations increased by **89%**, accounting for the following use:

TIME PERIOD	CAMPER NIGHTS	DAY TRIPS/PEOPLE (includes guide)
February 1997	6	7/45
March 1997	0	5/20
December 1997	0	2/9
TOTALS	6	14 TRIPS/74 PEOPLE

4. Izaak Walton Inn Ski Tours

Had a commercial use license to conduct day use cross country ski tours, Their winter operations increased by 65% in 1997, accounting for the following use:

TIME PERIOD	# TRIPS/# PEOPLE (includes guides)
January 1997	7 trips/33 people
February 1997	10 trips/51 people
March 1997	11 trips/111 people
April 1997	4 trips/14 people
November 1997	2 trips/12 people
December 1997	9 trips/52 people
TOTALS	43 TRIPS/273 PEOPLE

5. River Outfitters .

The following river rafting outfitters had commercial use permits administered by the U.S. Forest Service to float the Flathead Wild and Scenic River system along the Park's southern and western boundary in 1997:

OUTFITTER NAME	PERMITTED FOR
Glacier Raft Company	North Fork and Middle Fork
Glacier Wilderness Guides	North Fork and Middle Fork
Great Northern Raft Company	Middle Fork of the Flathead
Wild River Adventures	North Fork and Middle Fork

In addition, the Flathead Lutheran Bible Camp (389 service days) and Glacier Presbyterian Camp (60 service days) led float trips under an Institutional Outfitter permit.

Commercial outfitter use decreased by 8% in 1997: Individual guide outfitters accounted for the following use in 1997 (1 service day = 1 client for part or all of a day):

OUTFITTER	NORTH FORK OF THE FLATHEAD	MIDDLE FORK OF THE FLATHEAD
Glacier Wilderness Guides/ Montana Raft Company	195 service days	6,609 service days
Northwest Voyageurs	33 service days	3,380 service days
Great Northern Raft Company	0 service days	9,929 service days
Glacier Raft Company	181 service days	13,649 service days
TOTAL SERVICE DAYS	409	33,567

UNAUTHORIZED OUTFITTING AND GUIDING

The following backcountry guide/outfitters reportedly conducted and/or advertised unauthorized business operations in the backcountry of Glacier National Park in the past four years:

NAME OF BUSINESS	DATE CONTACTED	DISPOSITION
Western Leisure Salt Lake City, Utah	1997	Suspected of leading hiking trips, written and warned
Sun Trek Tours Santa Rosa, CA.	1997 1995 1994	Suspected of leading hiking and camping trips. Written and warned.
Walking Tours Vancouver, WA.	1997	Written and warned.
Victor Emmanuel Nature Tours	1996	Written and warned
Flathead Lutheran Bible Camp Lakeside, MT.	1997 1996	Observed hiking and camping in Park. Written and advised of regulations.
Timberline Bicycle Tours, co.	1996	Reportedly led hiking trips in Park, advised this jeopardizes permit
Owl Research Institute Missoula, MT.	1996	Advertised birding/hiking trip for 1997. Written and advised of regulations
American Adventures Culver City, CA.	1996	Advertised hiking trips. Written and advised of regulations
Walking the World Fort Collins, CO.	1996 1997	Advertised hiking/camping trips. Written and advised of regulations

Outwest Adventures Missoula, MT.	7/95	They called and were advised of regulations
Willards Adventure Club Barrie, Ontario, Canada	8/94	Contacted guiding a group in the backcountry. Written and warned.
Bear Creek Guest Ranch Essex, MT.	8/93	Cited and convicted for operating a business without a permit
Tim Leaf Trek America Gardina, CA	1993	written and warned after he advertised trips in Glacier
Overland Student Travel Williamstown, MA.	1993	written and warned after receiving a complaint from another company
Jerry Frate Western Horizons Novato, CA.	1993	written and warned
Bill Evans Sojourns of Discovery San Louis Obispo. CA.	1993	written and warned
Atalante Lyon, France	1993	written and warned
Malmstrom Air Force Base	8/93	Warned by the USFS for guiding youth groups on the Middle Fork W&S River

TRENDS

The Glacier Wilderness Guides and Muleshoe Outfitters recorded minor decreases in business while Glacier Park Ski Tours and Izaak Walton Inn recorded substantial increases in business in 1997. Commercial Outfitter use on the Wild and Scenic River corridors also recorded a slight decrease.

There were no violation notices issued in 1997 for illegal outfitting or guiding, although several businesses were contacted in the field and subsequently warned by the Concessions Office, and/or had advertisements which prompted a warning letter from the Concessions Office. It is suspected that illegal guiding and outfitting is occurring on an occasional basis.

SECTION 5

WILDERNESS MANAGEMENT PROGRAM

ROLE AND FUNCTION STATEMENT

GLACIER NATIONAL PARK

INTRODUCTION

In April of 1992, the Division of Resources Management at Glacier National Park was re-organized and the Wilderness Management Section was formed with the expressed intent to improve Glacier's **Backcountry/Wilderness** Management program. The objectives of the Wilderness Management Section are outlined in the following role and function statement:

ROLE AND FUNCTION STATEMENT (WILDERNESS MANAGEMENT SECTION)

This section of the Division of Resources Management, headed by the Wilderness Manager, has the prime responsibility of ensuring that the values of the park backcountry, proposed Wilderness, and segments of the **Flathead** Wild and Scenic River adjacent to the Park, are perpetuated. This will be done by a systematic monitoring of selected indicators that will enable **managers** to recognize change or incipient deterioration in these values primarily as a result of visitor use. Management actions related to changes in park policy or regulations will be based on evaluations of gathered information that record deviations from desired environmental, managerial or social conditions. This section has the responsibility for directly gathering, or coordinating the gathering of this information, with interdivisional assistance, from a **variety** of sources including patrol, visitors, data records and personnel from other park divisions.

Field patrols will be coordinated with the other sections of the unit for trail maintenance, restoration and rehabilitation projects and project identification. Unit personnel will also cooperate in implementing divisional goals for bear management, fire protection and search and rescue. This section will also be involved in various park planning efforts and will be specifically responsible for the Wilderness Implementation Schedule that will be prepared annually to lay out the yearly goals and objectives of the section.

1997 PROGRAM FUNDING

The Wilderness Management Section was funded at \$229,300 in 1997. Approximately 94% of this total was for personal services. The program operated with 3 permanent staff members and a cadre of seasonal employees (see staffing and organization charts). The Wilderness **Management** program also supervised the Backcountry Fee Demonstration program, which was funded at \$60,000 in 1997. In addition, a total of \$4,458 were received through donations to the Backcountry Preservation Fund, and a total of \$4,400 was donated by the Glacier National Park Associates in sponsorship of the Walton Backcountry Ranger Intern position.

WILDERNESS MANAGEMENT SECTION

DIVISION OF RESOURCES MANAGEMENT

ROGER SEMLER
WILDERNESS MANAGER
GS-025-11, 1434-028

KYLE JOHNSON
WEST LAKES BC COORD
GS-025-09, 1434-018

- **CHUCK CAMERON**
LK. MCD. BC RANGER
GS-025-05, 1434-562
- **DAVE BENNETTS**
WALTON BC RANGER
GS-025-05, 1434-606
- **ALLEN MOORE**
WALTON BC RANGER
GS-025-05, 1434-604
- **JUSTIN IVARY**
WALTON BC INTERN
GS-025-03, 1434-607
- **ROGER FARMER**
LEAD APGAR BC VUA
GS-303-05, 1434-548
- **CRISTI HERREN**
APGAR BC VUA
GS-SOS-04, 1434-538
- **RAYMOND CUNAN**
APGAR BC VUA
GS-303-04, 1434-552
- **LUCY COLEMAN**
APGAR BC VUA
GS-303-04, 1434-551

MAU RA LONGDEN
HUDSON BAY BC COORD
GS-025-09, 1434-802

- **STEVEN PRATHER**
LEAD BELLY RIVER RGR
GS-025-05, 1434-567
- **SHANE MCCARTHY**
BELLY RIVER BC RANGER
GS-025-05, 1434-573
- **MARGARET CABLE**
GOAT HAUNT BC RANGER
GS-025-05, 1434-623
- **DAVE SHEA**
MANY GLACIER BC RANGER
GS-025-05, 1434-682
- **PAUL AUSTIN**
ST. MARY BC RANGER
GS-025-05, 1434-628
- **KATJA MOCNIK**
TWO MED BC RANGER
GS-025-05, 1434-624
- **EDWARD DELMOLINO**
BELLY RIVER SCA

- **KAREN SHEELY**
ST. MARY BC VUA
GS-303, 1434-571
- **DANIEL ROY**
ST. MARY BC VUA
GS-SOS-04, 1434-577

1997 ORGANIZATIONAL CHART

**Seasonal Personnel Requirements - 1997 Field Season
Wilderness Management Section - Glacier National Park
Backcountry Ranger Program: Account # 1434-0001-PZB**

Position Number	Position Title	Pay Grade	EOD Date	COB Date	Committed To
1434-562	Lake McDonald Backcountry Ranger	GS-025-05	5/4	9/30	Chuck Cameron
1434-567	Belly River Area Supervisor	GS-025-06	5/4	9/30	Steve Prather
1434-573	Belly River Backcountry Ranger	GS-025-05	5/25	9/20	Shane McCarthy
n/a	Belly River SCA Resource Assistant	n/a	5/25	8/16	Ed Delmolino
1434-582	Many Glacier Backcountry Ranger	GS-025-05	5/18	9/30	Dave Shea
1434-604	Walton Backcountry Ranger	GS-025-05	5/25	9/20	Allen Moore
1434-605	Walton Backcountry Ranger	GS-025-05	5/18	9/30	Dave Bennetts
1434-607	Walton Backcountry Intern	GS-025-03	5/25	8/16	Justin Ivory
1434-623	Goat Haunt Backcountry Ranger	GS-025-05	5/25	9/30	Suzanne Cable
1434-624	Two Medicine Backcountry Ranger	GS-025-05	5/18	9/30	Katja Mocnik
1434-626	St. Mary Backcountry Ranger	GS-025-05	5/25	9/27	Paul Austin

**Seasonal Personnel Requirements - 1998 Field Season
Wilderness Management Section - Glacier National Park
Backcountry Ranger Program: Account # 1434-0001-P2B**

Position Number	Position Title	Pay Grade	HOD Date	COB Date	Committed To
1434-562	Lake McDonald Backcountry Ranger	GS-025-05	5/10	9/30	Steve Prather
1434-567	Belly River Lead Backcountry Ranger	GS-025-05	5/3	9/30	Tracey Wiese
1434-573	Belly River Backcountry Ranger	GS-025-05	5/17	9/30	Shane McCarthy
n/a	Belly River SCA Resource Assistant	n/a	5/17	8/8	Christopher Bellino
1434-582	Many Glacier Backcountry Ranger	GS-025-05	5/3	9/30	Dave Shea
1434-604	Walton Backcountry Ranger	GS-025-05	5/17	9/30	Allen Moore
1434-605	Walton Backcountry Ranger	GS-025-05	5/10	9/30	Dave Bennetts
1434-607 donation acct.	Walton Backcountry Intern	GS-025-03	5/17	8/8	tba
1434-623	Goat Haunt Backcountry Rower	GS-025-05	5/17	9/30	Suzanne Cable
1434-624	Two Medicine Backcountry Ranger	GS-025-05	4/26	9/30	Katja Mocnik
1434-626	St. Mary Backcountry Ranger	GS-025-05	5/3	9/30	Bruce Carter

**Seasonal Personnel Requirement - 1998 Field Season
Wilderness Management Section - Glacier National Park
Backcountry Fee Demonstration Program: Account # 1430-8002-V8Z**

Position Number	Position Title	Pay Grade	EOD	COB	Committed To:
1434-548	Lead Apgar Backcountry WA	GS-303-05	3/29	10/31	Justin Ivary
1434-538	Apgar Backcountry WA	GS-303-04	4/26	9/30	Janie Lundy
1434-551	Apgar Backcountry WA	GS-303-04	6/7	8/22	Zac Perry
1434-552	Apgar Backcountry WA	GS-303-04	5/24	9/26	Amy Cassel
1434-538a	Apgar Backcountry WA	GS-303-04	5/24	9/12	Kristie Connolly
1434-538b	Apgar Backcountry WA	GS-303-04	6/7	9/5	Dan Smiley
1434-571	St. Mary Backcountry WA	GS-303-04	5/10	9/30	Karen Sheely
1434-577	St. Mary Backcountry WA	GS-303-04	5/17	9/26	Ed Delmolino
1434-571a	Two Medicine Backcountry WA	GS-303-04	5/24	9/12	Dan Roy
1434-571b	Many Glacier Backcountry WA	GS-303-04	5/24	9/26	Joseph Thompson

SECTION 6

WILDERNESS MANAGEMENT SECTION TRAINING

INTRODUCTION

This section summarizes Wilderness Management related training courses and activities in which Glacier National Park personnel participated in 1997:

WILDERNESS MANAGEMENT TRAINING COMPLETED

The following training sessions specific/ and or related to Wilderness Management were conducted in Glacier National Park and/or attended by Wilderness Management Section personnel in 1997:

Subject	Personnel Attending
NEPA Workshop Glacier N.P. 24 hours, 1/28-30, 1997	Potter, Semler, Johnson
Arch View Computer Program Training Glacier N.P. 24 hours, 4/22-24, 1997	Potter, Semler, Johnson
Annual NPS Inter-regional Wilderness Management Workshop North Cascades N.P., WA. 24 hours, 4/97	Semler
Annual Backcountry Permit System Training Glacier N.P. 32 hours, 4/29-5/2, 1997	Semler, Johnson, all Backcountry VUA's
Avalanche Rescue Training Glacier N.P. 8 hours, 5/13/97	Johnson*
Standards for Survival (Fire Suppression) Training Glacier N.P. 8 hours, 5/14/97	Johnson
FLETC Resource Protection Training Glacier N.P. 40 hours, 5/19-23, 1997	Semler, Johnson
Annual NPS In-service Law Enforcement Refresher Glacier N.P. 40 hours, 6/2-6, 1997	Semler, Johnson, Cameron, Prather
Annual Bear Management Training Glacier National Park 24 hours, 6/9-11, 1997	Semler, Johnson, all BC Rangers

Hazard Tree Training Glacier N.P. 16 hours, 10/22-23 , 1997	Semler, Johnson
National Interagency Leave No Trace. Coordinators Workshop Zion National Park, Utah 24 hours. 11/97	Semler
'Access Fund Public Lands workshop Boulder Colorado 11/97	Longden*
Leave No Trace Inc. Board of Directors Meeting Boulder, Colorado 24 hours. 11/97	Semler

* denotes instructor or facilitator

SECTION 7 WILDERNESS EDUCATION OUTREACH EFFORTS

INTRODUCTION

Public and employee education and outreach is considered an important component of wilderness protection and management efforts in Glacier National Park. Glacier's program includes public information disseminated at three major Visitor Centers (Apgar, St. Mary and Logan Pass), four secondary Ranger Stations/Backcountry Permit Centers (Many Glacier, Two Medicine, Goat Haunt and Polebridge Ranger Stations and Waterton Townsite Visitor Center), in-park employee training and orientation, off-site education, trailheadbulletinboards, Park site bulletins and handouts, Glacier Natural History Association publications, and Ranger contacts in the field.

VISITOR CENTERS AND RANGER STATIONS

Backcountry Use Permits are issued at Visitor Centers and Ranger Stations, predominantly by Interpretation Division personnel. In 1997, a total of 4,952 Backcountry Use Permits were issued (for overnight camping in the Backcountry). Apgar Visitor Center issued 51.7% of the permits, followed by St. Mary Visitor Center with 24.1 %, Many Glacier Ranger Station with 9.9%, Two Medicine Ranger Station with 6.7%, and other locations throughout the Park issued the remaining permits.

The Backcountry Use Permit system incorporates a computerized system which helps with the management of backcountry campground use quotas and provides other helpful trip planning information (mileage, elevation changes, specific restrictions, trail and campground status and conditions, etc.)

IN PARK EMPLOYEE TRAINING AND ORIENTATION

In 1997, continued efforts were made to involve Park employees in wilderness management related education and orientation efforts. The following activities were completed:

Subject/Presentation	Audience	Presented by
Leave No Trace Program Update Wilderness Management Workshop North Cascades N.P. 1 hour, 4/97	NPS - Intermountain and Pacific West Region Wilderness Managers	Semler
Backcountry Management and Permit System 30 minutes, 4/15-16/97	Ranger/Warden Meeting, Glacier N.P.	Semler
Annual Backcountry Ranger Training (Belly River) 40 hours, 5/97	all Backcountry Rangers, Glacier N.P.	Semler, all and BC Rangers

Discussed Backcountry Management, Backcountry Permits and Leave No Trace 1 hour, 6/97	1997 Interpretation Division Training, Glacier N.P.	Semler
Backcountry Management Orientation 2 hours, 6/97	Many Glacier Subdistrict staff, Glacier N.P.	Semler, Longden
Backcountry Management Orientation 2 hours, 6/97	West Lakes Subdistrict staff, Glacier N.P.	Semler
Backcountry/Bear Management Orientation 45 minutes, 6/97	Annual Bear Management Training, Glacier N.P.	Semler
Backcountry Management Orientation 3 hours, 6/97	North Fork Subdistrict staff, Glacier N.P.	Semler
Annual Superintendent's Hike 7/22-24/97	Superintendent and invited guests, Glacier N.P.	Johnson
National Parks Foundation Board of Directors Hike 9/21-22/97	NPF Board of Directors, visiting Glacier N.P.	Johnson, Semler, Moses

PUBLIC OUTREACH

The following public outreach efforts were conducted in 1997:

Subject/Presentation	Audience	Presenter
Leave No Trace Outreach, 3 days, 1/97	National Outdoor Retailers Show, Salt Lake City, UT.	Semler
Backcountry Management and Stock Use in Glacier N.P., 4 hours, 1/29/97	Backcountry Horsemanship of the Flathead Meeting, Columbia Falls, MT.	Potter, Johnson
Leave No Trace Presentation 5/9/97	Family Forestry Expo, Columbia Falls, MT.	Johnson
Leave No Trace Trainers Workshop 24 hours, 5/97	Parks Canada, Jasper N.P., Alberta	Semler
Backcountry Management and Stock Use in Glacier N.P., 4 hours, 5/8/97	Backcountry Horsemen of the Flathead Meeting, Columbia Falls, -MT.	Potter, Johnson
Leave No Trace Presentation 6/21/97	Backcountry Horsemen of the Flathead, Volunteer Day, Glacier N.P.	Johnson

Leave No Trace Program Review	Leave No Trace, Inc. Board of Directors, Fall Meeting, Boulder, CO.	Semler
Leave No Trace Program Update and Workshop Facilitation November 4-6, 1997	Interagency Leave No Trace Coordinators Meeting, Zion N.P., Utah	Semler

PARK PUBLICATIONS AND INFORMATIONAL HANDOUTS

The following Park publications and informational handouts associated with Backcountry Management which are available to the public were updated in 1997. This involved a joint effort from both Wilderness Management and Interpretation Division personnel:

- * Backcountry Camping Guide
- * Backcountry Trip Planner
- * Camping in Undesignated Campsites handout
- * Winter Backcountry Camping handout
- * Advance Reservation System Information and Application Handout

The following in-park guidelines for employee use were updated in 1997:

- * Backcountry Permit Writing Guidelines
- + Backcountry Ranger Handbook
- * Wilderness Implementation Schedule
- * Backcountry Law Enforcement Guidelines
- * Backcountry Ranger Guidelines

The following new in-park guidelines for employee use were developed in 1997:

- * Backcountry Facility Use Guidelines
- * Backcountry Permit Handbook

BACKCOUNTRY VIDEO

In 1997, the following Backcountry Permit issuing stations were equipped to display the 8 minute long Backcountry Camping video: Apgar Visitor Center, St. Mary Visitor Center, Many Glacier Visitor Center, Two Medicine Ranger Station, Polebridge Ranger Station, and Waterton Visitor Center (Canada). This video is in need of updating and plans are underway to initiate this project.

BACKCOUNTRY PATROLS

Visitor contacts made in the field by backcountry patrol Rangers continue to serve as a primary means of disseminating information and advice regarding backcountry safety, wilderness protection, and Leave No Trace **wildland** ethics. Backcountry Rangers assigned to the Wilderness Management Section are provided training in this all important service during the annual Backcountry Ranger Training.

Providing information regarding safe hiking and camping practices in Grizzly bear country continues to be a central theme with all backcountry patrols. An increased emphasis has also been placed on practicing and promoting acceptable Leave No Trace Outdoor Skills and Ethics.

VOLUNTEER IN PARKS PROGRAM

The following volunteer groups and individuals performed valuable service projects in Glacier's backcountry in 1997:

Project	Name of group or individuals	# of volunteers
Logging Ranger Station: Building Restoration, Campground Opening Preparation, Logging Creek and Quartz Creek Trail maintenance	Glacier National Park Associates	38 (300 project hours)
Ole Creek Trail: Downfall clearing, brush removal, drain maintenance May 1997	Over-the-Hill-Gang	20 (160 project hours)
Highline Trail: Tread snow and clear rocks from June 1997	Over-the-Hill-Gang	18 (144 project hours)
Flathead Ranger Station Trail: clearing and maintenance 1 day, June 1997	Backcountry Horsemment of the Flathead	14 (112 project hours)
Loneman Lookout Trail clearing and maintenance 2 days, July 1997	Bengston, McDonald and Hileman family	8
Belly River Area: trail trad work, trail brushing, stained Ranger Station, rehabilitated campsites at Elizabeth Lake foot CG 3 weeks, July 1997	Student Conservation Association	8 students, 2 leaders approx. 1,200 project hours)
Ole Creek Trail: tread maintenance, brushing, bog bridge construction August 1997	Sierra Club	12 (480 project hours)
Ford Cabin: clean and stain Auaust 1997	Glacier National Park Associates	3 (24 project hours)
Kishenehn Creek Trail: clear trails and brush around Kishenehn Patrol Cabin August 1997	Glacier National Park Associates	4 (128 project hours)
Logging Lake Trail: construct turnpike, remove old walkway Ausust 1997	Sierra Club	12 (480 project hours)

Kintla Patrol Cabin: stain and rodent proof cabin, brush trail to cabin August 1997	Glacier National Park Associates	5 (160 project hours)
Transport SCA Crew and Volunteers from Trailhead and Airport	Jackie Wildgen, Glacier National Park Associates	1 (36 project hours)

SECTION 8 BACKCOUNTRY PATROL SUMMARY

INTRODUCTION

Backcountry patrols are a fundamental part of Glacier's Wilderness Management Program. In addition to the specific tasks and assignments outlined in the Wilderness Implementation Schedule (WIS), backcountry patrols involve the following routine and repetitive responsibilities:

1. Assistance to backcountry visitors, with an emphasis on wilderness education and Leave No Trace **wildland** ethics.
2. Monitoring trail and campground conditions and updating the computerized trail and campground status reporting system.
3. Monitoring the presence and condition of required backcountry signing at trailheads, campgrounds and along the trail system, and replacing signs as necessary.
4. Inventory and monitoring of backcountry resource impacts and non-compliance for inclusion into a **parkwide** database.
5. Backcountry Use Permit compliance checks.
6. Clean up and pack out of litter and refuse.
7. Obliteration and rehabilitation of illegal campfires and other resource impacts.
8. Inventory and monitoring of exotic vegetation infestations.
9. Minor levels of routine trail maintenance.
10. Maintenance and repairs of backcountry campground facilities.
11. Documentation of important wildlife observations.
12. Providing routine first aid services.
13. Performing law enforcement functions (commissioned personnel only).
14. Performing routine bear management actions (**posting/deposting** trails, patrolling closed areas, monitoring bear activity, etc.)

LAKE McDONALD SUBDISTRICT:		
Arrow Lake CG	0	2
Camas Lake CG	0	1
Flattop CG	0	0
Granite Park CG	0	0
Lake Ellen Wilson	0	0
Lake McDonald CG	0	0
Lincoln Lake	0	3
Snyder Lake CG	0	0
Sperry CG	0	0
Mineral Creek Patrol Cabin	1	0
Granite Park Patrol Cabin	0	10
Sperry Patrol Cabin	0	2
Packers Roost	0	0
Logan Creek Patrol Cabin	1	0
Fifty Mtn Spike camp	0	1
Granite Park Chalet	0	2

WALTON AREA:		
Beaver Woman Lake CG	0	3
Coal Creek CG	0	0
Lake Isabel CG	0	0
Lower Nyack CG	0	0
Lower Park Creek	0	0
Ole Creek CG	0	0
Ole Lake CG	0	4
Upper Nyack CG	0	0
Upper Park Creek CG	0	0
Upper Nyack Cabin	0	5
Lower Nyack Cabin	0	3
Coal Creek Cabin	0	6
Harrison Lake Cabin	0	7
Upper Park Creek Cabin	0	13
Lower Park Creek Cabin	0	7
Fielding Cabin	0	0
TWO MEDICINE SUBDISTRICT:		
Atlantic Creek CG	0	5
Cobalt Lake CG	0	2
Morning Star Lake CG	0	2
No Name Lake CG	0	1
Oldman Lake CG		5
Lonely Lake undesignated	0	1
Cut Hank Gypsy undesignated	0	1
Two Medicine Patrol Cabin	4	0
Cut Bank Ranger Station	0	0
Pray Shelter	0	0
saddle between Razorback and Triple Divide Peak undesignated	0	1

ST. MARY SUBDISTRICT:		
Gunsight Lake CG	0	8
Otokomi Lake CG	0	6
Red Eagle Lake foot CG	0	3
Red Eagle Lake head CG	0	4
Reynolds Creek CG	0	1
Blackfoot Basin undesignated	0	
Gunsight Lake Spike Camp	0	1
Almost a Dog Pass undesignated	0	1
Red Eagle Meadows undesignated	0	1
Saddle between Razoredge Mt. and Triple Divide Peak undesignated	0	2
Baring Creek Patrol Cabin	0	0
MANY GLACIER SUBDISTRICT:		
Cracker Lake CG	0	2
Poia Lake CG	0	4
Slide Lake CG/Cabin	0	7
Many Glacier Ranger Station	2	0

BELLY RIVER AREA:		
Belly River CG	0	3
Elizabeth Lake foot CG	0	4
Elizabeth Lake head CG	0	4
Cosley Lake CG	0	4
Gable Creek CG	0	1
Glenns Lake foot CG	0	3
Glenns Lake head CG	0	6
Helen Lake CG	0	2
Mokowanis Jct. CG	0	7
Mokowanis Lake CG	0	1
Red Gap Spike Camp undesignated	0	2
North Fork Belly River undesignated	0	1

GOAT HAUNT SUBDISTRICT:		
Lake Francis CG	0	3
Lake Janet CG	0	2
Hawksbill CG	0	2
Fifty Mt. CG	0	3
Hole in the Wall CG	0	2
Kootenai Lakes CG	0	1
Stoney Indian Lake CG	0	1
Goat Haunt R.S.	0	
Kootenai Cabin	0	1
Pass Creek Cabin	0	3

RIVER PATROLS

Management of the **Flathead** Wild and Scenic River system adjacent to Glacier's western and southern boundary is a responsibility jointly shared by the U.S. Forest Service and National Park Service, with the USFS serving as the lead agency.

In 1997, the Hungry Horse Ranger District of the **Flathead** National Forest funded a seasonal River Ranger position. That position was capably filled by USFS employee Laurie Fisher, who conducted a number of river patrols which involved Limits of Acceptable Change monitoring, river clean up, public education, exotic vegetation surveys and river condition monitoring. NPS personnel from the North Fork, Lake McDonald, and Walton areas also contributed to Glacier's river patrol effort. The following river patrols were conducted (by both agencies) in 1997:

SECTION OF RIVER	# OF PATROLS	RIVER MILES PATROLLED
Upper North Fork	30	372
Lower North Fork	5	60
Upper Middle Fork (Bear Cr. - Essex)	4	18
Lower Middle Fork	18	226
Total	57	676

The annual **Flathead** Wild and Scenic River Management Report is included in Section 19.

SECTION 9

BACKCOUNTRY SEARCH AND RESCUE AND EMERGENCY OPERATIONS SUMMARY

INTRODUCTION

Glacier National Park's backcountry provides a full spectrum of risks and challenges inherent with **wildland** recreational activities and primitive wilderness experiences. Park interpretive programs, informational handouts, and trailhead signing provide a continual reminder that one must be willing to accept those risks when they venture into the backcountry.

The combination of rugged terrain, friable sedimentary rock strata, swift and cold water, ever changing weather conditions and of course, grizzly bear habitat, all contribute to the potential for complex and sometimes tragic backcountry emergencies. Despite these factors, Glacier generally experiences relatively few serious accidents in the backcountry, however, 1997 was a very active year.

Park personnel responded to 34 search and rescue incidents in 1997. The types of SAR incident responses ranged from checking trailheads for overdue visitors to major search and rescue efforts.

The most active month was July (13 SAR's). The next most active months, in descending order, were: August (9), June (5), September (4), and February (1), May (1), November (1)..

Again this year, the most active SAR category seemed to be "injured or stranded while hiking" (23 injured, 1 stranded). There were two river-related incidents, one climbing incident and one BASE jumping incident. Again this year, there were no horse-related accidents requiring a SAR effort.

The most complex SAR missions in 1997 included: the search for a solo day hiker lost in the Lincoln Creek area for 6 days; the search for and recovery of two climbers suffering fatal injuries in a fall on Rainbow Peak; and the rapid rescue of a BASE jumper hung up on the North face of Mt. Siyeh. Other significant incidents included: the all-night winter evacuation of a bad knee injury victim off Otokomi Mountain and the rapid evacuation of a cardiac patient in crisis on the St. Mary Falls Trail.

There were two incidents involving concession employees in 1997. The Truszkowski Search (\$138,360.00) and the Claasen Search (\$146.34). Concession employee incidents accounted for 74% of all 1997 GNP SAR mission costs (\$188,696.67). There were four incidents involving Park employees (off duty). The Wright Evacuation (\$1,794.70); the Rainbow Peak recovery (\$16,364.39); the Adams Search (\$2,581.88); and the Eischeid Rescue (\$497.83). Park employees accounted for 11% of all GNP SAR mission costs. Together, **concession employees and Park employees** involved in GNP SAR incidents accounted for 84% of all GNP SAR costs (\$159,753.14).

There were only a few minor injuries sustained this year in GNP SAR operations during nearly 6,000 hours logged by searchers and rescuers working in hazardous environments and conditions.

1997 INCIDENT SUMMARY

Type	# Incidents	# Injured/ill	# Fatalities	# Non-injury
Hiking	24	15	2	13
skiing	1	1	0	0
Climbing	1	0	2	0
Boating	1	0	0	5
Swimming	0	0	0	0
Scuba	0	0	0	0
Vehicle	1	0	0	1
Aircraft	1	1	0	2
stock	0	0	0	0
Mutual Aid	3	3	1	1
Unfounded	0	0	0	0
Other	2	1	0	2
Total	34	21	5	24
Saves	7	7		

1997 COST SUMMARY

NPS Programmed	Hours: 2,087.0	cost: \$32,534.56
NPS Un-programmed	Hours: 3,850.75	cost: \$98,150.13
Non-NPS	Hours: 57.0	cost: \$570.00
Total	Hours: 5,994.75	Cost: \$131,254.69

SEARCH AND RESCUE MISSIONS

The following information summarizes search and rescue incidents which occurred in Glacier National Park in 1997:

Date	Incident Name	Subdistrict	Type of Incident
2/13/97	Wright Evacuation	SM	Researcher fell on snow, injured knee on Otokomi Mt., required carryout
5/24/97	Regnier Evacuation	LM	Hiker fractured ankle on South Boundary Trail, required wheeled litter evacuation
6/15/97	Assist Flathead county so	LM	Rafting accident on Middle Fork of the Flathead River, tree fell on raft, serious injuries
6/23/97	Eley Search	LM	Solo day hiker lost for 6 days in the Lincoln Creek area, walked out
6/23/96	Davis Search	SM	Response to missing person report at Rising Sun, located subject
6/23/97	Raberstein Evacuation	BR	Horse evacuation of ill hiker on the Belly River Trail
6/26/97	Preusser Search	MG	Response to report of overdue hikers, subjects walked out
7/4/97	Rainbow Peak Recovery	NF	Two off duty Park employees fell to their deaths during a snow/ice the north side of Rainbow Peak
7/5/97	Truskowski Search	TM	Extensive search for missing concession employee (on a day climb) in the Two Medicine area, subject not found
7/5/97	Schmidt Evacuation	LM	Horse evacuation of serious ankle injury from Lincoln Lake
7/7/97	Assist Waterton Park	BR	Search for mentally handicapped man
7/13/97	Sisk Evacuation	SM	Slipped while hiking, injured ankle, ALERT evacuation from Gunsight Lake
7/20/97	Pricard Search	NF	Search for overdue bicyclist, found at Polebridge Townsite
7/28/97	Bennett Evacuation	LM	Horse evacuation of patient with sprained ankle from Snyder Lake
7/28/97	Knipp Evacuation	GH	Horse evacuation of ill person from Stoney Indian Lake Campground

Date	Incident Name	Subdistrict	Type of Incident
7/29/97	Feiten Evacuation	NF	Injured while hiking on Bowman Lake Trail, boat evacuation
7/29/97	Daehler Evacuation	TM	Hiker fell near Pitimakin Pass, lacerated knee, wheeled litter evacuation
7/29/97	Terhaar Search	TM	Search initiated for overdue hikers on extended backcountry itinerary
7/30/97	Apple Evacuation	LM	Wheeled litter evacuation of ill person from the Avalanche Lake Trail
7/31/97	Davis Evacuation	LM	ALERT evacuation of ill hiker from Lincoln Pass
8/1/97	Adams Search	MG	Search for Park employees overdue from a climb of Mt. Wilbur
8/4/97	Kasten Assist	MG	Response to report of visitor suffering heat exhaustion at Cracker Lake
8/6/97	Assist Flathead county so	LM	Search for victims of capsized canoe on Middle Fork of the Flathead River. one fatality
8/7/97	Tewhey Evacuation	BR	Spilled boiling water on hands at Cosley Lake CG, horse evacuation
8/23/97	Ickes Assist	LM	Fell on the Avalanche Lake Trail, lacerated knee, assisted visitor in hike out
8/27/97	Dean Assist	LM	Fell on Highline Trail, lacerated knee and head, assisted visitor in hike out
8/30/97	Houser Evacuation	SM	Fell on wet rocks on the Siyeh Pass Trail, injure knee, wheeled litter evacuation
8/31/97	Eischeid Evacuation	LM	Park employee stranded on Mt. Jackson, helicopter evacuation
8/31/97	Mauldin Search	NF	Search for overdue float group on Bowman Creek
9/1/97	Dokken Recovery	GH	Climber fell to his death descending Mt. Cleveland, Waterton N.P. short-haul used
9/14/97	Lewandowski Evacuation	SM	Critically ill cardiac patient on the St. Mary Falls Trail, wheeled litter evacuation

Date	Name of Incident	Subdistrict	Type of Incident
9/14/97	Claassen Search	MG	Possible distress signals on Grinnell Point area, concession employee
9/24/97	Kauffman Rescue	MG	Stranded, injured BASE jumper on North face of Mt. Siyeh, technical evacuation
11/5/97	Shattuck Search	LM	Initial response to report of overdue hikers, arrived home during search

LM = Lake McDonald Subdistrict
SM = St. Mary Subdistrict
MG = Many Glacier Subdistrict
TM = Two Medicine Subdistrict
BR = Belly River Area
GH = Goat Haunt Subdistrict

Information provided by Charlie Logan, SAR Coordinator

WILDLIFE MANAGEMENT ACTIONS

There were no bear-inflicted human injuries in Glacier's backcountry in 1997. Bear Management actions accounted for 9 backcountry campground and 25 trail closures. There were also and 23 "grizzly frequenting" postings on trails which lasted an average of 5 weeks each. There were no major bear relocation operations.

There was 1 mountain lion danger "posting."

SECTION 10

BACKCOUNTRY LAW ENFORCEMENT SUMMARY

INTRODUCTION

The following data summarizes backcountry law enforcement actions which resulted in the issuance of a Violation Notice, Courtesy Tag, or verbal warning in 1997:

VIOLATION NOTICES

A total of 74 Violation Notices were issued for offenses occurring in Glacier's backcountry in 1997. This equals the number issued in 1996.

The Lake McDonald Subdistrict recorded the highest number of **VN's** issued in a given area with a total of 20. The Belly River Area and St. Mary Subdistrict followed with 15 **VN's** each.

The top 5 offenses which resulted in the issuance of a Violation Notice in 1997 included:

1. Failure to obtain a backcountry use permit/camping in undesignated area:
18
2. Violation of terms of backcountry use permit (includes off itinerary):
15
3. Pets in the backcountry: 10
3. Improper food storage: 9
5. Bicycles/wheeled vehicles in the Backcountry: 6

COURTESY TAGS/WARNINGS

A total of 79 Courtesy Tags/Courtesy Warning were issued for offenses occurring in Glacier's backcountry in 1997. This marks a 20% increase over 1996, when 66 Courtesy Tags/Warnings were issued.

The Lake McDonald Subdistrict accounted for 26 Courtesy Tags/Warnings in 1997, followed by the St. Mary Subdistrict with 19.

The top 5 offenses which resulted in the issuance of a Courtesy Tag/Warning in 1997 included:

1. Violation of terms of backcountry use permit: 19
2. Failure to obtain a backcountry use permit/camping in undesignated **areas**:
18
3. Entering closed areas: 14
4. Improper food storage: 13
5. Pet in Backcountry: 11

VERBAL WARNINGS

Verbal warnings are frequently issued to visitors who engage in minor resource violations in Glacier's backcountry. The focus of verbal warnings is one of education, with an emphasis on explaining to the visitor how a particular regulation may protect park resources and/or provide for visitor safety. There were 82 verbal warnings recorded in 1997, the most common offenses were:

1. Violation of Terms of Backcountry Permit/Camping Off Itinerary:
18 offenses
2. Improper Food Storage: 21 offenses
3. Failure to Obtain a Backcountry Permit/Camping in Undesignated Sites:
14 offenses

REASONS FOR OFFENSES

Backcountry Rangers are instructed to ascertain and document the "reason" for each offense, as stated by the violator. This information can be very helpful in regard to identifying measures to reduce backcountry non-compliance. The following information summarizes the primary reasons given by violators:

TYPE OF OFFENSE	VIOLATORS REASONS
Violation of Terms of BC Permit/Off Permit Itinerary	medical reason, blisters, injuries
	bugs at Brown Pass CG, didn't want to stay there
	ran out of time - poor trip planning
	poor trip planning - didn't get undesignated camping handout for Nyack-Coal Creek
	fatigue - poor trip planning
	didn't think it would matter if they spent one more day at Beaver Woman Lake CG
	blisters
	sore knee
	extreme weather
	intentional
	itinerary too difficult - poor planning
	medical reasons

Violation of Terms of BC Permit/Off Itinerary	weather conditions
	intentional - couldn't get preferred itinerary
	bad weather
	couldn't reach destination - poor planning - too difficult of an itinerary
	wanted to shorten hike on last day - intentional
	mix up - had two permits - turned the wrong one back in
	didn't read signs - were at wrong campsite
	bad weather
	started a day late - poor planning
	stayed an extra night - intentional
	blisters .
	late off Pinchot - didn't think it would matter due to lack of lots of people in area
	started trip a day late
	desired campground was full - planned to stay there anyway
crowded backcountry campgrounds - traded permits with another party	
Failure to Obtain BC Permit/Camping Outside of Designated Areas	couldn't find anyone at Polebridge Ranger Station
	received bad info at Sprague Creek CG
	sick child in party
	had permit for site, but both sites were already occupied
	taxied to Bowman Lake - no Ranger on duty
Failure to Obtain BC Permit/Camping Outside of Designated Areas	from Whitefish - didn't bother to stop at Park HQ for permit (winter season)
	rushed in the Visitor Center - it was closing
	didn't bother
	thought they could get a permit at Lake McDonald Ranger Station

Failure to obtain BC Permit/Camping Outside of Designated Areas	no one at Polebridge Ranger Station to get a permit from
	didn't know you needed a permit to camp on Park side of North Fork Flathead River
	didn't bother - CG's are too dangerous to camp in and too dirty
Entering Closed Area - Bowman Lake Eagle Closure	didn't know about closure
	didn't know about closure or see signs
Failure to Properly Store Food	not equipped to properly hang food
	didn't understand regulations
	"should have known better"
	party left in a hurry - failed to clean up
	pack with food left unattended due to poor communication and carelessness
	lack of information
	didn't understand regulations
	forget to hang food pack
	rainy weather and large group using food hanging device
	day climbing - left pack with food unattended
Improper Food Storage	raining - didn't want to get wet
	placed fresh fish and meat in plastic bag in creek to keep cool - negligence
	didn't realize that they had to hang food during the day while out exploring
	thought is was OK to boil water in tent - also had food in tent
	didn't realize food storage regs applied along the Park side of the North Fork Flathead River
	poor supervision of Boy Scout Troop
	poor supervision of Scout Troop
	didn't want to carry full 'packs up mountain - left them trailside

Improper Food Storage	didn't realize that food storage applied to areas outside of campgrounds
	full packs with food and garbage left unattended trailside - while party took short day hike
	weren't informed at VC that they needed rope
	forget and left food bag behind at campground
	left food in unattended pack to do day climb on Rising Wolf
	ignorance of bears and hiking in grizzly country
Pets in Backcountry	didn't see sign at trailhead
	didn't know what to do with dogs otherwise
	didn't see signs
	no respect for pet regulation
	didn't know regulation existed - been going to Harrison Lake with dogs for years
	no sign posted at Logan Pass
Fires in Undesignated Sites	no respect for fire regulations
	didn't realize that the regulation existed on the Park side of the North Fork Flathead River
	didn't want to stay in designated campground where fires were permitted
	thought other campers would bring a stove to borrow
Litter/Leaving Refuse	forgot to pack it out
Stock violations, llamas (grazing)	Unable to tie llamas up tight on the hitchrail, needed long lead lines. Also disrespectful of our stock regs due to their own selfishness
Fishing Violations	didn't have copy of regulations/policies

BACKCOUNTRY CAMPGROUND OCCUPANCY COMPLIANCE

During the 1993 through 1997 field season, a random sampling of campgrounds was conducted in which the actual number of permitted parties in the backcountry reservation system was compared to the **actual number** of permitted parties occupying the campground. From a sample size of 339 nights in various campgrounds, it was determined that our reserved campsite occupancy rate is approximately 84%. In 1997, 112 nights were sampled, with a 92% occupancy rate.

SUMMARY TABLES

All Violations Notices, Courtesy Tags and Verbal Warnings issued in 1997 are summarized in the following tables, by type of offense and location:

NORTH FORK SUBDISTRICT:					
TYPE OF OFFENSE	LOCATION	No SUSPECTS	VIOLATION NOTICES	COURTESY TAGS/ WARNINGS	VERBAL WARNINGS
Failure to Obtain Backcountry Use Permit	Bowman Lake Head CG	0	0	0	0
	Quartz Lake CG	0	0	2	0
	Kintla Lake head	0	0	0	1
	Kintla Lake	0	0	0	0
Violation of Terms of BC Permit/Off Itinerary	Boulder Pass CG	0	0	1	1
	Bowman Lake head CG	0	0	1	0
	Brown Pass CG	0	0	0	1
	Logging Lake CG	0	0	0	1
	Quartz Lake CG	0	0	0	2
	Logging Ft CG	0	0	0	1

Improper Food Storage	Kintla Lake head CG	0	0	1	0
	Kintla Lake CG	0	0	0	2
	Grace Lake CC	0	0	0	1
	Logging Lake CG	0	0	0	1
	Quartz Lake CG	0	0	0	1
	Kintla Lake head CG	0	0	0	1
	Bowman Lake head CG	0	0	0	1
	Lower Quartz Lake CG	0	0	0	2
Fires in Undesignated Areas	Lower Quartz Lake CG	0	1	0	0
Pets in the Backcountry	Polebridge R.S. winter	0	0	1	0
	Inside NF Road: Polebridge - Kintla	0	0	2	0
Stock in Campsites	Quartz Lake CG	0	0	2	1
Fishing in closed area	Upper Kintla	0	0	0	1
Fishing closed season	Bowman	0	0	0	1

LAKE McDONALD SUBDISTRICT:					
TYPE OF OFFENSE	LOCATION	NO SUSPECTS	VIOLATION NOTICES	COURTESY TAGS / WARNINGS	VERBAL WARNINGS
Failure to Obtain a Backcountry Use Permit and Clamping in an Undesignated Area	Avalanche Trail end Lake	0	1	0	0
	Granite Park CG	0	1	0	0
	Lake McDonald CG	0	0	3	0
	Sperry Trail and CG	0	0	1	0
	Lake McDonald	0	0	1	0
	Snyder Lake CG	0	1	3	0
	Lake Ellen Wilson CG	0	1	0	0
	base of Mt. Stanton	0	1	2	0
Violation of Terms of Permit/Off Itinerary	Snyder Lake CG	0	0	1	1
	Arrow Lake CG	0	0	0	1
	Lincoln Lake CG	0	0	2	0
Improper Food Storage	Lake Ellen Wilson CG	0	0	0	1
	Highline Trail	0	0	2	0
	Granite Park CG	0	0	2	4
	Arrow Lake CG	0	0	1	0
	Snyder Lake CG	0	1	1	0

Firearm in Backcountry	Arrow Lake	0	2	0	0
	Granite Park	0	0	0	0
Preservation of Natural Features	Kelly camp area - Antler Collecting	0	1	1	0
	Avalanche Lake - Mushroom Picking	0	0	0	1
Bicycle or wheeled vehicle in the Backcountry	Avalanche Lake Trail	0	1	0	1
	Loop Trail	0	1	0	0
	Lincoln Lake Trail	0	1	0	0
	Apgar Mt. Trail	0	2	0	0
	McDonald Lake CG	0	1	0	0
	Rocky Point	0	0	0	0
	Sperry	0	0	0	1
Fire in undesignated area	Arrow Lake	0	0	0	0
	Avalanche Lake	0	0	2	0
	Granite Park CG	0	1	0	0
Entering Closed Area	Highline Trail	0	0	1	0
	Oberlin Bend (Jones Flats)	0	0	0	3
Littering	Loop	0	0	0	1
Cutting Switchbacks	Jones Flats	0	2	0	0
Air Delivery - Illegal Aircraft Landing	McDonald Lake	0	1	0	0

Pet in Backcountry	Highline Trail	0	0	2	0
	Loop Trail	0	0	0	2
	Avalanche Lake	0	0	0	0
	Avalanche Lake Trail	0	3	3	0
	Trail of the Cedars	0	0	0	0
	Lincoln Creek	0	0	0	1
	GTS Road - winter	0	0	1	0
	Rocky Point	0	0	0	1

WALTON AREA:

TYPE OF OFFENSE	LOCATION	NO SUSPECTS	VIOLATION NOTICES	COURTESY TAGS/ WARNINGS	VERBAL WARNINGS
Pets in the Backcountry	Fielding Trail	0	1	0	0
Camping in Undesignated area	Ole Creek	0	0	0	1
Violation of Terms of BC permit/ Off interary	Beaver Woman CG	0	0	0	1
	Buffalo Woman	0	0	0	1
	Lower Park CG	0	0	0	1
Improper Food Storage	Coal Creek CG	0	0	0	1
	Ole Creek CG	0	0	0	1
Attempt to Take Simulated Wildlife - Decoy	Shields Creek	0	1	0	0

TWO MEDICINE SUBDISTRICT:

TYPE OF OFFENSE	LOCATION	NO SUSPECTS	VIOLATION NOTICES	COURTESY TAGS/ WARNINGS	VERBAL WARNINGS
Failure to Obtain a BC Permit	Morning Star CG	1	0	0	0
	Cut Bank Trail	0	0	0	1
Violation of Terms and Conditions of Backcountry Use Permit	Atlantic Creek CG	0	0	0	1
	Dawson P a s s	0	0	0	1
	No Name CG	0	0	0	1
Improper Food Storage	Atlantic Creek CG	0	0	0	1
	Boat Dock at head of Two Med Lake	0	2	0	0
	No Name Lake CG	0	0	1	0
	Upper Two Medicine CG	0	1	0	0
Livestock Trespass	Lubec Trailhead	1	0	0	0
	near Cut Bank R.S.	1	0	0	0
Pets in the Backcountry	Scenic Point Trail	0	1	0	0
	Two Medicine Valley	0	1	0	0
	Running Eagle Falls	0	0	1	0
Entering Closed Area	Medicine Grizzly Lake Trail	2	0	0	0

ST. MARY SUBDISTRICT:

TYPE OF OFFENSE	LOCATION	NO SUSPECTS	VIOLATION NOTICES	COURTESY TAGS / WARNINGS	VERBAL WARNINGS
Fail to Obtain BC Permit/Camping in Undesignated Area	Preston Park	0	0	1	0
	Reynolds Creek CG	0	1	0	2
	near Jackson Glacier overlook	0	0	0	1
	Gunsight Lake CG	0	0	0	6
	Red Eagle Lake Trail	0	1	0	0
	Otokomi Lake CG	0	0	0	1
Violation of Terms of BC Permit	Red Eagle Lake foot CG	0	1	1	3
	Reynolds Creek CG	0	4	0	0
	Otokomi Lake CG	0	0	1	0
	Gunsight Lake CG	0	0	0	1
Pets in the Backcountry	Hidden Lake	0	3	0	1
	Hidden Lake overlook	0	0	0	1
Improper Food Storage	Hidden Lake	0	0	0	1
	Reynolds Creek CG	0	0	2	0
	Red Eagle Lake Trail	0	0	1	0
	Red Eagle Lake foot CG	0	0	0	1
	Red Eagle Lake head CG	0	0	0	1

Shortcutting switchbacks	Baring Basin	0	0	0	1
Bicycle in Backcountry	Gunsight Pass Trail	1	0	0	0
	Red Eagle Lake Trail	1	0	0	0
Fire in Backcountry	Red Eagle Lake head CG	0	0	0	1
	Red Eagle Lake Trail	0	1	0	0
Fishing in Closed Area	Hidden Lake outlet	0	0	1	0
Air Delivery - Illegal BASE Jumping	Mt. Siyeh	0	1	0	0
Entering Closed Area	Hidden Lake Trail	0	1	1	0
	Reynolds Creek Drainage	0	0	4	0
	Logan Pass/ Clements snow use area	0	0	8	0

MANY GLACIER SUBDISTRICT:

TYPE OF OFFENSE	LOCATION	No SUSPECTS	VIOLATION NOTICES	COURTESY TAGS/ WARNINGS	VERBAL WARNINGS
Pail to Obtain BC Permit/Camping in Undesignated Area	Cracker Lake	0	0	0	1
	Swiftcurr. Lookout	0	2	0	0
	Grinnell Glacier	0	3	0	0
	Poia Lake CG	1	0	0	0
Improper Food Storage	Iceberg Trail	0	1	0	0
Disturbing Wildlife	Iceberg Lake	0	0	1	0
Pets in the Backcountry	Swiftcurr. Pass Trail	0	0	1	0
Littering	Iceberg Lake	0	0	0	1
Livestock Trespass	Poia Lake	0	0	0	1
	Swiftcurr. Ridge	0	0	0	1
Entering a Closed Area	Grinnell Glacier	0	4	0	0

BELLY RIVER AREA:					
TYPE OF OFFENSE	LOCATION	NO SUSPECTS	'VIOLATION 'NOTICES	COURTESY TAGS / 'WARNINGS	VERBAL WARNINGS
Hunting - Elk Poaching	Lee Creek	2	0	0	0
Livestock Trespass	Lee Creek	0	0	0	1
Improper Food Storage	Mokowanis Lake CG	0	3	0	0
Pets in the Backcountry	Belly River Trail	0	1	0	0
Failure to Obtain BC Permit and Camping in Undesignated Area	On trail near Belly River R.S.	0	4	1	0
	Elizabeth lake foot CG	0	0	4	0
Violation of Terms of BC Permit (includes off itinerary)	On trail near Belly River R.S.	0	1	3	0
	Elizabeth Lake foot CG	0	3	3	3
	Belly River CG	0	1	3	1
	Cosley Lake CG	0	1	0	0
	Mokowanis Junction CG	0	1	0	0
	Mokowanis Lake CG	0	1	0	0

GOAT HAUNT AREA:					
TYPE OF OFFENSE	LOCATION	NO SUSPECTS	VIOLATION NOTICES	COURTESY TAGS/WARNINGS	VERBAL WARNINGS
Failure to Obtain BC Use Permit and Camping in Undesignated Area	Boulder Pass Trail	0	1	0	0
	Waterton Lake	0	1	0	0
	Waterton River CG	0	0	1	0
Violation of Terms of BC Permit (includes off-itinerary)	Boulder Pass CG	0	0	0	1
	Waterton River Valley	0	1	2	0
	Lake Francis C G	0	0	1	1
	Kootenai Lakes CG	0	0	1	0
	Pass Creek Cabin	0	0	1	0
	Fifty Mt. CG	0	1	0	0
	Stoney Indian Lake	0	0	1	1
Preservation of Natural Features - Antler Collecting	Kootenai Lakes	0	1	0	0
Improper Food Storage	Waterton River CG	0	0	0	1
	Fifty Mt. CG	0	0	1	0
	Stoney Indian Lake CG	0	1	1	0

SECTION 11

BACKCOUNTRY RESOURCE IMPACT SUMMARY

INTRODUCTION

The following tables summarize, by individual Subdistrict or Area, the backcountry resource impacts observed and documented during the 1997 field season. Backcountry patrol rangers documented this data on a standard backcountry patrol report format and the data was subsequently entered into a computerized database for retrieval and analysis. Types of impacts monitored included: human waste, illegal fires, litter, vegetation damage/erosion, and low flying aircraft noise.

IMPACT TOTALS

The total number of impacts documented (excluding data collected from annual backcountry campground evaluations) in each impact category included:

Human waste - 31

Illegal Fires - 35

Litter - 1,967

Vegetation Damage/erosion (including cattle trespass) - 71

Low Flying Aircraft Noise - 215

PROBLEM AREAS

Analysis of this impact data revealed the following problem/concern areas:

Human waste

The total number of occurrences documented in 1997 was much higher than in 1996. Human waste disposal continues to be a problem in high day use areas where toilets are not available. A strong message regarding **leave no trace wildland** ethics in regard to human waste disposal must continue to be emphasized. Preston Park represents the area of greatest concern in 1997; with a dozen occurrences of improperly disposed of human waste documented.

Illesal fires

The number of documented occurrences decreased in 1997 for the second year in a row. The North Fork Subdistrict recorded the highest total for the second consecutive year with 11. The Lake McDonald Subdistrict followed with a total of 7.

Litter

Litter continues to be a problem along the trails leading to **most** of our designated "high day use areas." Despite the fact that **most** trailheads to these areas have garbage cans, small pieces of litter along the trail are common. Continued problem areas include the Hidden Lake Trail and Logan Pass area, the trails in the Two Medicine Valley, the Avalanche Lake Trail and the **Highline**

high volume of litter occurrences with 543.

Vegetation Damage/erosion

The totals in this category stayed the about same in 1996. Problem areas in this category were widely dispersed and generally related to areas which received substantial stock use, and/or designated "high day use" areas. Impacts in designated campgrounds were no recorded in this category (see Backcountry Campground Evaluations, Section 12). Cattle trespass and the vegetation impacts associated with this situation continue to be a concern on the east side of the Park, particularly in the Two Medicine and Many Glacier areas. Switchback cutting was identified as a significant problem on the Scenic Point Trail.

Low flying aircraft noise

Aircraft overflights continues to represent a very important issue in the management of Glacier National Park. Many individuals feel that low flying helicopters constitute a significant impact upon natural quiet and wilderness solitude. The number of low flying aircraft reported in 1997 decreased substantially from 1996. It is believed that this was at least in part due to poor documentation in some areas of the Prk. Data collected in this category appears to support the contention that low flying aircraft are affecting the natural quiet of Glacier's backcountry. In 1997, Glacier has received approximately 12 written complaints regarding aircraft overflight noise and its effect upon solitude and Wilderness values. In addition, over 90% of the respondents to the on-going General Management Plan who addressed aircraft overflights favored a complete ban on all commercial overflights. Areas with particularly high number of low flying aircraft included: Logan Pass, Harrison Lake, the Highline Trail, Gunsight Lake and Pass area.

NORTH FORK SUBDISTRICT:		
Type of Impact	Location	Occurrences
Human Waste	Kintla Lake Beach	1
	Akokala Lake CG	1
	Round Prairie CG	1
	Bowman Lake CG	1
Illegal Fires	Boulder Pass CG	1
	Kintla Creek Delta	1
	Round Prairie CG and trail	2
	Quartz Lake CG	1
	Akokala Lake Campground	1
	Logging Lake foot	1
	Lower Quartz Lake Campground	2
	Logging Lake Campground	1
	Boulder Pass CG	1
Vegetation Damage	Quartz Lake CG	2
	Hidden Meadow	1

Litter	'Kintla Lake Head CG	59
	Quartz Lake CG	24
	Lower Quartz Lake CG	81
	Logging Lake CG	33
	Grace Lake CG	13
	Brown Pass CG	8
	Bowman Lake Head CG	50
	Boulder Pass CG	29
	Akokala Lake CG	15
	Adair CG	22
	Upper Kintla Lake CG	42
	Brown Pass Trail foot - head of Bowman Lake	16
	Round Prairie	14
	Kintla head cabin	1
	Logging Lake trail	3
	Hole-in-the-Wall Campground	5
	Quartz Creek trail	2
	Numa L.O. trail	2
	Logging Head Cabin	3
	Logging Foot Cabin	14
	Logging trail	22
	Hidden Meadow trail and area	7
	Quartz Lake trail	14
Lower Quartz Lake trail	13	
Akokala lake Trail	8	
Boulder Pass Trail Head Kintla to Head Bowman	28	
Boulder Pass Trail Foot Kintla to Head Kintla	15	
Low Flying Aircraft Noise	Boulder Pass Trail Head of Kintla to Head of Bowman	2
	Foot of Kintla to Head of Kintla	8
	Near Gyrfalcon Lake	5

LAKE McDONALD SUBDISTRICT:		
TYPE OF IMPACT	LOCATION	OCCURRENCES
Vegetation Damage	Lake McDonald Trail	1
	Huckleberrv L.O. Trail	1
	Loop Trail	1
Vegetative Damage	Granite Park area	1
Human Waste	Flattop CG	1
	Apgar L.O. trail	3
	Swiftcurrent Pass Trail	2
	Boundary Trail	4
Illegal Fires	Trout Lake Foot	1
	Lincoln Lake CG	1
	Camas Lake CG	2
	Snyder Lake CG	3
Litter	Sperry CG	5
	Granite Park CG	2
	Arrow Lake CG	6
	Snyder Lake CG and area	9
	McDonald Lake CG and shoreline	14
	Camas Lake CG	3
	Avalanche Lake	22
	Flattop CG	1
	Loop Trail	8
	Avalanche Lake Trail	31
	Sperry Trail	27
	Apgar L.O. trail	3
	West Lakes to Arrow Lake	10
	Swiftcurrent Pass trail	2
	Boundary Trail	4
	Highline Trail to Granite Park	15
Howe Lake Trail and Area	1	
Low flying aircraft noise	Mt Brown	3
	Avalache Lake	1

WALTON AREA:		
TYPE OF IMPACT	LOCATION	OCCURRENCES
Litter	Upper Nyack CG	4
	Ole Lake CG	2
	Ole Creek CG	25
	Harrison Lake CG	15
	Fielding Trail	3
	Autumn Creek Trail	2
	Park Creek Trail	5
	Firebrand Pass	3
	Harrison Trail	10
	Scalplock Trail	1
	Lower Nvack CG	11
	Upper Park CG	10
	Lower Park CG	30
	Coal Creek CG	1
	Isabel Lake CG	2
	Harrison Lake Cabin	1
	Coal Creek Cabin	1
	Ole Creek Trail	2
Beaver Woman Lake CG	8	
Low flying aircraft noise	Nyack Creek	7
	Ole Creek Trail	5
	Harrison Lake Trail	33
	Boundary Trail	2

TWO MEDICINE SUBDISTRICT:

TYPE OF IMPACT	LOCATION	OCCURRENCES
Human Waste	Upper Two Medicine CG	1
	Medicine Grizzly Lake Trail	1
Illegal Fires	Cobalt Lake CG	3
	Atlantic Creek CG	1
	Upper Two Med CG	1
Litter	No Name Lake CG	12
	Atlantic Creek CG	3
	Oldman Lake CG	11
	Cobalt Lake CG	11
	Upper Two Medicine Lake CG	13
	Morning Star CG	7
	South Shore Trail	3
	Paradise Point Area	12
	Running Eagle Falls	137
	Cobalt Lake Trail	3
	Firebrand Pass Trail	2
	North Shore Trail	7
	Pray Shelter to Upper Two Medicine Lake	4
	No Name Lake to Dawson Pass	1
	Twin Falls	1
	Dawson Psss to Pitimakin Pass	1
	Triple Divide Pass Trail	11
	Drv Fork Vallev	9
	Cut Bank to Morning Star Lake	2
	Autumn Creek Trail	1
Aster Park Trail	1	

Vegetation damage/erosion	Cut Bank Trailhead to Triple Divide Pass Trail	3 social trails
	Appistoki Falls Areauth Shore Trail	2 social trails
	Cobalt Lake Trail foot bridges	1 social trail
	Running Eagle Falls Area	5 social trails
	Scenic Point Trail	8 switchback cuts
	Firebrand Pass Trail	7 cattle trespass trails
	Lubec Trailhead Area aspen grove	2 cattle trespass areas
	Cobalt Lake Area	2 damaged vegetations
	Atlantic Creek CG	1 tent trench
	No Name CG	1 tent trench
Low Flying Aircraft	Upper Two Medicine Lake	1
	Oldman Lake CG	1

ST. MARY SUBDISTRICT:

TYPE OF IMPACT	LOCATION	OCCURRENCES
Human Waste	Preston Park Area	11
	Siyeh Bend/Jackson Glacier Overlook Trail Jct.	1
Illegal Fires	Otokomi Lake CG	1
	Red Eaale Lake foot CG	2
	Red Eagle Lake head CG	1
Litter	Reynolds Creek CG	16
	Otokomi Lake CG	18
	Gunsight Lake CG	67
	Red Eagle Lake foot CG	28
	Red Eagle Lake head CG	18
	Siyeh Pass	2
	Gunsight Pass Trail	15
	Gunsight Pass Shelter	7
	Preston Park	6
	Otokomi Lake Trail	7
	Red Eagle Lake Trail	18
	Sun Point Trail	12
	Virginia Falls	13
	St. Mary Falls	8
	Gunsight Lake Spike Camp	2
	Baring Basin	2
	Red Eaale Spike Camp	3
	Mt. Reynolds Climbing Route	4
	Triple Divide Peak	1
	Hidden Lake Trail	28
Low Flying Aircraft	Red Eagle Lake area	31
	Gunsrght Lake area (between Mt. Logan and Gunsight Pass)	62
	Hidden Lake	50

Vegetation damage/erosion	Baring Basin	3
	Gunsight Lake CG	3
	Mt. Reynolds climbing route	1
	Mt. Oberlin climbing route	1
	Hidden Lake switchbacks	4
	Sunrift Gorge	2
	Preston Park Area	6

MANY GLACIER SUBDISTRICT:		
TYPE OF IMPACT	LOCATION	OCCURRENCES
Human Waste	Iceberg Lake Trail	1
	Iceberg Lake	1
Illegal Fires	Ptarmigan Lake	1
	Slide Lake CG	1
Vegetation Damage	Poia Lake	1
	Cracker Lake	1
	Cracker Lake Trail	1
	Swiftcurrent Ridge	1
	Slide Lake	1
	Lee Creek	1
	Iceberg Lake	1
Litter (note: this data was' inadequately documented in 1997 in the Many Glacier Subdistrict)	Grinnell Valley Trails	20+
	Swiftcurrent Valley Trails	20+
	Iceberg/Ptarmigan Trail	20+
	Cracker Lake Trail	20+
	Cracker Lake CG	10+
	Slide Lake	10+
	Josephine Lake (N. shore)	20+
	Poia Lake CG	10+

BELLY RIVER AREA:		
TYPE OF IMPACT	LOCATION	OCCURRENCES
Human Waste	Belly River CG	1
Illegal Fires	Mokowanis Lake CG	1
	Elizabeth Lake foot CG	2
Litter	Belly River CG	9
	Gable Creek CG	10
	Helen Lake CG	3
	Cosley Lake CG	83
	Glenns Lake foot CG	22
	Elizabeth Lake foot CG	29
	Elizabeth Lake head CG	8
	Glenns Lake head CG	25
	Mokowanis Jct. CG	23
	Mokowanis Lake CG	12
	Cosley Cutoff Trail	3
	Stoney Indian Pass Trail	5
	Ptarmigan Tunnel Trail	2
	Belly River Trail	15
	Mount Merritt	1
Dawn Mist Falls	3	
Vegetation Damage/erosion	Cosley Lake CG	1
	Cosley Lake outlet cable crossing	1
	Elizabeth Lake foot CG	2

GOAT HAUNT AREA		
TYPE OF IMPACT	LOCATION	OCCURRENCES
Illegal Fires	Stoney Indian Lake CG	1
	Fifty Mountain CG	1
	Lake Francis CG	1
Litter	Waterton Valley Trail	19
	North Boundary Trail	1
	Waterton Lakeshore Trail	2
	Stoney Indian Pass Trail	3
	Hole in the Wall CG	30
	Boulder Pass Trail	14
	Waterton River CG	12
	Kootenai Lakes CG	43
	Stoney Indian Lake CG	21
	Lake Francis CG	18
	Lake Janet	28
	Hawksbill CG	7
	Fifty Mountain CG	18
Vegetation Damase	Lake Janet CG	1
Low Flying Aircraft	Waterton Valley Trail	3
	Boulder Pass Trail at Thunderbird Pond	1

SECTION 12

BACKCOUNTRY CAMPGROUND EVALUATIONS

INTRODUCTION

Resource impacts and facility conditions in Glacier National Park's designated backcountry campgrounds were evaluated during the period of August 15 - September 15, 1997. A standardized evaluation and rating system (established in 1987) was used. Bare ground and vegetative cover measurements were taken using an 8 point transect method. This data **was** entered into a computerized data base and impacted areas were calculated in square feet.

A total of 62 designated backcountry campgrounds were evaluated in 1997, with the following findings:

FACILITY RATINGS

84% (53 of 63) of the backcountry campgrounds received a facility rating in the good category and 16% (10 of 63) received a facility rating of fair in 1997. No facilities received a poor rating in 1997.

This compares to 81% of the backcountry campgrounds with a **good** rating, and 19% with a fair rating in 1996. There were no facility ratings in the poor category in 1996, 1995, 1994 or 1993.

Maintenance of backcountry campground facilities (food hanging devices, toilets, hitchrails, signs, etc.) continued to be a high priority which was emphasized through the Wilderness Implementation Schedule (**WIS**).

IMPACT RATINGS

73% (46 of 63) of the the backcountry campgrounds received a resource impact rating of good and 27% (17 of 63) received a resource impact rating of fair in 1997. No campgrounds received an impact rating of poor in 1997.

This compares to 71% (50 of 62) of the backcountry campgrounds with resource impact rating in the good category, 29% (18 of 62) received an impact rating of **fair**, and 0 campgrounds received an impact rating of poor in 1996.

IMPACT CONCERNS

The following impact concerns were documented in our designated backcountry campgrounds. They indicate areas that received "severe" level ratings in the categories noted at more than one site measured within the campground:

CAMPGROUND	CONCERN AREAS
North Fork Subdistrict:	
Kintla Lake, head	n/a
Upper Kintla Lake	n/a
Boulder Pass	n/a
Brown Pass	n/a
Bowman Lake, head	Vegetative cover (food prep area),
Quartz Lake	n/a
Lower Quartz Lake	Vegetative cover (food prep and site # 3)
Akokala Lake	n/a
Logging Lake	Vegetative cover (food prep area and site #2)
Adair	n/a
Round Prairie	I n/a
Grace Lake	n/a
Lake McDonald Subdistrict:	
Arrow Lake	vegetative cover and bare ground
Camas Lake	n/a
Lake McDonald	Vegetative cover and root exposure
Lincoln Lake	n/a
Snyder Lake	n/a
Sperry	n/a
Lake Ellen Wilson	Bare ground, Vegetative cover, social trails
Flattop	Bare ground, Vegetative cover
Granite Park	Vegetative cover, bare ground

Walton Area:	
Harrison Lake	n/a
Lower Nyack	n/a
Upper Nyack	n/a
Beaver Woman Lake	Bare ground,, vegetative cover and root exposure
Coal Creek	Vegetative cover (food prep area)
Lower Park Creek'	n/a
Lake Isabel	Bare ground, Vegetative cover, (food prep area)
Upper Park Creek	n/a
Ole Creek	Bare ground, Vegetative cover (food prep area)
Ole Lake	Bare ground, Vegetative cover (food prep area)
Two Medicine Subdistrict:	
Upper Two Medicine Lake	None
Cobalt Lake	None
No Name Lake	None
Oldman L a k e	None
Morning Star Lake	Vegetative cover
Atlantic Creek	None
St. Mary Subdistrict:	
Otokomi Lake	None
Reynolds Creek	None
Gunsioht Lake	Vesetative cover
Red Eagle Lake, foot	Vegetative cover
Red Eagle Lake.. head	Vegetative cover

Many Glacier Subdistrict:	
Poia Lake	None
Cracker Lake	None
Slide Lake	None
Belly River Area:	
Belly River	Bare ground, Vegetative cover
Gable Creek	None
Cosley Lake	Bare ground
Glenns Lake, foot	None
Glenns Lake, head	None
Mokowanis Jct.	Bare ground, Vegetative cover
Mokowanis Lake	None
Elizabeth Lake, foot	None
Elizabeth Lake, head	None
Helen Lake	None
Goat Haunt Area:	
Waterton River	None
Lake Janet	None
Lake Francis	Vegetative cover, Bare ground (food prep area)
Hawksbill	None
Hole in the Wall	Bare ground, Vegetative cover
Kootenai Lakes	Bare ground, vegetative cover
Stoney Indian Lake	None
Fifty Mountain	Bare ground, vegetative cover

ANALYSIS

Glacier recorded 27,561 backcountry camper nights in 1997, the 7th highest recorded total in the history of the Park. This continued high level of use resulted in a lot of wear and tear on the backcountry campgrounds.

During July and August, many of the campgrounds were full every night and difficult to obtain. This situation led to occasional illegal use and/or parties off of itinerary, which overfilled campgrounds and often resulted in resource impacts (see Section 15: Backcountry Law Enforcement).

In 1995 the standards for campsite bare ground were increased from 100 sq. ft. to 225 sq. ft., to better accommodate modern tent designs. Standards for vegetative cover were also increased some. We developed a sliding scale when measuring bare ground and vegetative cover at food prep areas, food hanging devices and hitchrails. This allowed us to account for varying carrying capacities in the campgrounds.

Our "limits of acceptable change" standard for both the facility rating and impact rating is established at 80% of the campgrounds with a good rating and 20% of the campgrounds with a **fair** rating. These desired conditions were met for facility ratings in 1997 with 84% rating in the good category. The standard was not met for impact ratings, with 73% of the campgrounds rating good, compared to 71% in 1996, 74% in 1995 and 76% in 1994. This tends to illustrate a continued slow decline in the resource conditions of our campgrounds.

Efforts for repair and rehabilitation of sites and facilities which are out of compliance will be initiated through the 1998 Wilderness Implementation Schedule and the Centralized Resource Management Projects System (CRMPS) .

SUMMARIES

A summary table of the 1997 backcountry campground facility and impact ratings and a 5 year comparison table (1993-97) follows for your reference.

**BACKCOUNTRY CAMPGROUND EVALUATIONS
1997 SUMMARY**

NORTH FORK SUBDISTRICT:		
Campground	Facility Rating	Impact Rating
Kintla Lake, Head	34.0 - Good	1.16 - Good
Upper Kintla Lake	27.0 - Good	1.14 - Good
Boulder Pass *	32.5 - Good	1.10 - Good
Brown Pass	27.0 - Good	1.12 - Good
Bowman Lake, Head	36.0 - Good	1.30 - Good
Quartz Lake	27.0 - Good	1.29 - Good
Lower Quartz Lake	41.0 - Fair	1.28 - Good
Akokala Lake	32.0 - Good	1.10 - Good
Logging Lake	24.0 - Good	1.80 - Good
Round Prairie	28.5 - Good	1.00 - Good
Adair	38.5 - Fair	1.10 - Good
Grace Lake	44.0 - Fair	1.16 - Good
LAKE MCDONALD SUBDISTRICT:		
Campground	Facility Rating	Impact Rating
Arrow Lake	29.5 - Good	1.75 - Fair
Camas Lake	27.0 - Good	1.00 - Good
Lake McDonald *	24.0 - Good	1.70 - Fair
Lincoln Lake	32.5 - Good	1.20 - Good
Snyder Lake	36.0 - Good	1.13 - Good
Sperry *	33.0 - Good	1.91 - Fair
Lake Ellen Wilson	44.5 - Fair	1.64 - Good
Flattop	33.0 - Good	1.70 - Fair
Granite Park .	27.0 - Good	1.63 - Fair
Rating Legend	No Hitchrail * Good = 24-33 Fair = 33.1-53 Poor = 53.1-91 with Hitchrail Good = 27-36 Fair = 36.1-56 Poor = 57.1-100	Good = 1.0-1.5 Fair = 1.51-2.2 Poor = 2.21-3.0

WALTON AREA:		
Campground	Facility Rating	Impact Rating
Harrison Lake	27.0 - Good	1.29 - Good
Lower Nyack	36.0 - Good	1.00 - Good
Upper Nyack	27.0 - Good	1.31 - Good
Beaver Woman Lake	30.0 - Good	1.70 - Fair
Coal Creek	33.0 - Good	1.40 - Good
Lower Park Creek	29.0 - Good	1.20 - Good
Lake Isabel	32.0 - Good	1.30 - Good
Upper Park Creek	29.0 - Good	1.38 - Good
Ole Creek	27.0 - Good	1.20 - Good
Ole Lake	30.0 - Good	1.50 - Good
TWO MEDICINE SUBDISTRICT :		
Campground	Facility Rating	Impact Rating
Upper Two Medicine Lake *	31.0 - Good	1.29 - Good
Cobalt Lake *	37.0 - Fair	1.25 - Good
No Name Lake *	31.5 - Good	1.45 - Good
Oldman Lake	35.5 - Good	1.29 - Good
Morning Star Lake	26.5 - Good	1.50 - Good
Atlantic Creek	32.5 - Good	1.14 - Good
ST. MARY SUBDISTRICT:		
Campground	Facility Rating	Impact Rating
Otokomi Lake .	27.0 - Good	1.10 - Good
Revnolds Creek	34.5 - Good	1.25 - Good
Gunsight Lake	44.0 - Fair	1.50 - Good
Red Eagle Lake, Foot	38.0 - Fair	1.68 - Fair
Red Eagle Lake, Head	36.0 - Good	1.39 - Fair
Rating Legend	<u>no Hitchrail</u> Good = 24-33 Fair = 33.1-53 Poor = 53.1-91 <u>with Hitchrail</u> Good = 27-36 Fair = 36.1-56 Poor = 56.1-100	Good = 1.0-1.5 Fair = 1.51-2.2 Poor = 2.21-3.0

MANY GLACIER SUBDISTRICT:		
Campground	Facility Rating	Impact Rating
Poia Lake	30.0 - Good	1.36 - Good
Cracker Lake	30.0 - Good	1.20 - Good
Slide Lake	27.0 - Good	1.10 - Good
BELLY RIVER AREA:		
Campground	Facility Rating	Impact Rating
Belly River *	35.5 - Fair	2.20 - Fair
Cosley Lake	32.5 - Good	1.64 - Fair
Gable Creek	27.0 - Good	1.33 - Good
Glenns Lake, Foot	30.0 - Good	1.11 - Good
Glenns Lake, Head	29.0 - Good	1.45 - Good
Mokowanis Junction	31.5 - Good	1.91 - Fair
Mokowanis Lake	26.5 - Good	1.25 - Good
Elizabeth Lake, Foot	36.5 - Fair	1.33 - Fair
Elizabeth Lake, Head	27.0 - Good	1.54 - Fair
Helen Lake *	34.0 - Fair	1.06 - Good
GOAT HAUNT AREA:		
Campground	Facility Rating	Impact Rating
Waterton River	27.0 - Good	1.36 - Good
Lake Janet	126.0 - Good	1.25 - Good
Lake Francis	124.0 - Good	1.68 - Fair
Hawksbill *	24.0 - Good	1.50 - Good
Hole in the Wall *	31.5 - Good	2.04 - Fair
Kootenai Lakes	27.0 - Good	2.00 - Fair
Stonev Indian Lake *	24.0 - Good	1.30 - Good
Fifty Mountain	32.0 - Good	1.86 - Fair
Rating Legend	<u>no Hitchrail</u> Good = 24-33 Fair = 33.1-53 Poor = 53.1-91 <u>with Hitchrail</u> Good = 27-36 Fair = 36.1-56 Poor = 56.1-100	Good = 1.0-1.5 Fair = 1.51-2.2 Poor = 2.21-3.0

**BACKCOUNTRY CAMPGROUND EVALUATIONS
1993 - 1997 COMPARISONS**

NORTH PORK SUBDISTRICT?	Facility Rating					Resource Impact Rating				
	1997	1996	1995	1994	1993	1997	1996	1995	1994	1993
Campground										
Kintla Lake, Head	41.0	41.0	41.0	38.5	41.0	1.16	1.35	1.28	1.48	1.00
Upper Kintla Lake	27.0	29.5	34.0	27.0	38.0	1.14	1.39	1.45	1.55	1.06
Boulder Pass *	32.5	37.0	32.0	27.0	36.0	1.12	1.10	1.24	1.36	1.32
Brown Pass	27.0	30.0	41.0	35.0	34.0	1.12	1.35	1.40	1.60	1.61
Bowman Lake. Head	36.0	36.0	48.0	36.0	41.0	1.30	1.30	1.37	1.42	1.00
Quartz Lake	27.0	31.0	31.0	30.0	36.0	1.29	1.33	1.53	1.70	1.50
Lower Quartz Lake	41.0	43.0	43.0	41.5	42.0	1.28	1.28	1.37	1.62	1.06
Akokala Lake	32.0	32.0	35.5	27.0	27.0	1.00	1.16	1.20	1.26	1.00
Logging Lake	24.0	24.0	24.0	32.0	26.5	1.80	1.35	1.48	1.44	1.20
Round Prairie	28.5	28.5	29.5	n/a	n/a	1.00	1.0	1.00	n/a	n/a
Adair	38.5	29.5	33.5	35.5	44.0	1.10	1.17	1.40	1.57	1.02
Grace Lake	44.0	27.0	27.0	36.0	41.0	1.16	1.16	1.30	1.33	1.14

LAKE MCDONALD SUBDISTRICT2	FACILITY RATING					RESOURCE IMPACT RATING				
	1997	1996	1995	1994	1993	1997	1996	1995	1994	1993
Campground										
Arrow Lake	29.5	27.0	27.0	29.5	32.5	1.75	1.40	1.28	1.92	1.76
Camas Lake	27.0	27.0	34.0	44.0	51.0	1.00	1.00	1.08	1.48	1.16
Lake McDonald .	24.0	24.0	25.0	26.0	24.0	1.70	1.90	1.40	1.72	2.31
Lincoln Lake	32.5	29.5	27.0	40.0	31.0	1.20	1.25	1.48	1.63	1.10
Snyder Lake	36.0	27.0	31.0	29.0	32.0	1.13	1.08	1.13	1.76	1.27
Sperry .	33.0	29.5	27.0	32.0	33.0	1.91	1.58	1.60	2.00	1.55
Lake Ellen Wilson	44.5	31.0	31.0	49.0	37.0	1.64	1.17	1.45	1.82	1.22
Flattop	33.0	30.0	30.0	36.5	32.0	1.70	1.70	1.46	2.03	1.60
Granite Park .	27.0	124.0	128.0	33.0	26.5	1.63	1.58	1.33	1.70	1.55
WALTON 80-82	FACILITY RATING					IMPACT RATING				
Campground		1996	1995	1994	1993		1996	1995	1994	1993
Harrison Lake	27.0	32.5	27.0	31.5	33.0	1.29	1.30	1.50	1.60	1.27
Lower Nyack	36.0	30.0	35.0	30.0	44.5	1.00	1.00	1.06	1.20	1.00.
Upper Nyack	27.0	27.0	27.0	42.0	31.0	1.31	1.10	1.40	1.20	1.70
Beaver Woman Lake	30.0	30.0	129.5	36.5	29.0	1.70	1.75	1.88	1.72	1.88
Coal Creek	33.0	30.0	45.0	32.0	38.5	1.40	1.35	1.44	1.24	1.40
Lower Park Creek	29.0	27.0	27.0	31.5	132.5	1.20	1.04	1.26	1.26	1.11
Lake Isabel	32.0	30.0	35.5	32.0	37.5	1.30	1.45	1.40	1.60	1.32
Upper Park Creek	29.0	36.0	39.0	29.0	39.5	1.38	1.13	1.33	1.43	1.08
Ole Creek	27.0	27.0	29.0	52.5	38.0	1.20	1.30	1.33	1.53	1.03
Ole Lake	30.0	27.0	29.0	36.5	29.5	1.50	1.30	1.24	1.44	1.56

TWO MEDICINE SUBDISTRICT:	FACILITY RATING					IMPACT RATING				
	1997	1996	1995	1994	1993	1997	1996	1995	1994	1993
Campground										
Upper Two Medicine Lake .	31.0	24.0	30.0	34.0	28.0	1.29	1.30	1.66	2.00	1.93
Cobalt Lake .	37.0	45.0	40.5	31.5	34.0	1.25	1.50	1.65	1.75	1.65'
No Name Lake *	31.5	32.5	31.5	25.0	31.5	1.45	1.80	1.96	2.55	2.32
Oldman Lake	35.5	27.0	28.0	30.0	29.0	1.29	1.70	1.57	1.88	1.80
Morning Star Lake	26.5	30.5	36.0	26.5	32.0	1.50	1.50	1.96	2.24	1.80
Atlantic Creek	32.5	46.0	28.0	30.0	35.5	1.14	1.29	1.73	1.51	1.82
ST. MARY SUBDISTRICT:	FACILITY RATING					IMPACT RATING				
campground	1997	1996	1995	1994	1993	1997	1996	1995	1994	1993
Otokomi Lake *	27.0	33.5	24.0	30.0	31.5	1.10	1.10	1.28	1.84	1.64
Reynolds Creek	34.5	38.5	38.0	43.0	35.0	1.25	1.10	1.12	1.36	1.28
Gunsight Lake	44.0	42.0	35.0	41.0	36.0	1.50	1.30	1.25	1.72	1.34
Red Eagle Lake, Foot	38.0	38.5	37.5	41.5	37.0	1.68	1.80	2.28	2.45	2.02
Red Eagle Lake. Head	36.0	35.5	29.5	39.0	31.5	-1.39	1.60	1.71	2.31	1.94
MANY GLACIER SUBDISTRICT:	FACILITY RATING					IMPACT RATING				
campground	1997	1996	1995	1994	1993	1997	1996	1995	1994	1993
Poia Lake	30.0	30.0	32.0	35.5	29.5	1.36	1.10	1.22	1.83	1.70
Cracker Lake	30.0	34.0	24.0	30.0	36.5	1.20	1.40	1.12	1.65	1.50
Slide Lake	27.0	30.0	27.0	30.0	n/a	1.10	1.05	1.20	1.20	n/a

BELLY RIVER AREA:	FACILITY RATING					IMPACT RATING				
	1997	1996	1995	1994	1993	1997	1996	1995	1994	1993
Campground										
Belly River •	35.5	35.5	26.5	24.0	24.0		2.20	1.63	2.03	2.03
Cosley Lake	32.5	36.5	27.0	27.0	33.0	1.64	1.54	1.34	2.04	1.94
Gable Creek	27.0	n/a	n/a	n/a	n/a	1.33				
Glenns Lake, Foot	30.0	33.0	33.0	27.0	39.0	1.11	1.20	1.11	1.48	1.65
Glenns Lake, Head	29.0	32.5	33.0	30.0	33.0	1.45	1.50	1.33	1.96	1.56
Mokowanis Junction	31.5	35.5	27.0	27.0	27.0	1.91	1.70	1.28	1.20	1.97
Mokowanis Lake	26.5	29.5	27.0	27.0	35.0	1.25	1.10	1.35	1.24	1.20
Elizabeth Lake, Foot	36.5	35.0	31.0	27.0	30.0	1.33	1.61	1.02	2.02	1.80
Elizabeth Lake, Head	27.0	27.0	27.0	27.0	27.0	1.54	1.80	1.20	1.94	1.73
Helen Lake *	34.0	24.0	27.0	132.0	124.0	1.06	1.06	1.20	1.94	1.10
GOAT HAUNT AREA:	FACILITY RATING					IMPACT RATING				
	1997	1996	1995	1994	1993	1997	1996	1995	1994	1993
Campground										
Waterton River	27.0	27.0	33.0	27.0	27.0	1.36	1.30	1.15	1.55	1.45
Lake Janet	26.0	27.0	33.0	36.5	30.0	1.25	1.25	1.50	1.65	1.48
Lake Francis	24.0	27.0	41.5	27.5	29.0	1.68	1.60	1.46	2.04	2.04
Hawksbill *	24.0	24.0	24.0	43.0	30.0	1.50	1.40	1.35	1.40	1.65
Hole in the Wall *	31.5	27.0	30.0	28.0	29.0	2.02	1.60	1.91	2.51	2.22
Kootenai Lakes	127.0	27.0	27.0	27.0	33.0	2.00	1.80	1.80	2.20	2.13
Stoney Indian Lake *	24.0	24.0	26.5	30.0	124.0	1.30	1.10	1.55	1.36	1.36
Fifty Mountain	32.0	27.0	27.0	29.5	33.0	1.86	1.60	1.62	2.04	1.95

SECTION 13 UNDESIGNATED CAMPSITE INVENTORIES

INTRODUCTION

The following information summarizes the status of known undesignated camping areas which have been surveyed for resource impacts during the past five years:

UNDESIGNATED CAMPSITE INVENTORY - NORTH FORK SUBDISTRICT		
LOCATION	UTM'S	SITE CONDITIONS
Starvation trail and Kishenehn Creek junction 1996	691.0 E, 5428.0 N	Fire ring with evidence of camping area totalling 144 sq. ft. No other impacts.
South shore of Logging Lake 1992	713.5 E, 5403.0 N	Appears to be boat access site, fire scars present, 15 ft. from water, area impacted = 400 sq. ft., no barren core, litter present, 1 social trail, several limbed trees
Inlet to Quartz.Lake (head of lake) 1992	716.0 E, 1514.5 N	Boat access site, fire scars present, 25 ft. from water, area impacted = 144 sq. ft., no barren core, litter present, 1 social trail, site right on lakeshore
Pocket Creek Trail Crew Spike Camp (a) 1992	713.5 E, 5423.5 N	Trail access site, fire scars present, 110 ft. from water, food pole present, area impacted = 4225 sq. ft., barren core < 50 sq. ft., no litter present, minor stock damage to tree and ground
Boulder Pass Trail Crew Spike Camp 1996	710.0 E, 5427.0 N	Trail access site, 100 ft. from water, food pole present, area impacted = 3800 sq. ft., barren core < 50 sq. ft., no litter present, 1 social trail. Not use recently.
Cerulean Lake (a) 1992	n/a	Off trail access area, checked, no campsites
Pocket Creek Spike Camp (a) 1993	713.5 E, 5423.5 N	Visible from trail, 2 social trails with some barren core. 110 feet to water with 4100 sq. ft. of camp area.
Quartz Lake inlet area (a) 1995	705.3 E 5414.5 N	Illegal site at head of lake. 450 sq. ft. impacted with, <50 sq. ft. of barren core. Fire rings and nails in trees.

Quartz Lake inlet area (a) 1993	705.3 E, 5414.5 N	Litter and human waste found at site about 20 feet from water. Some barren core with loss of vegetative cover significant. Found on the N. side of inlet
Notch between Peabody and peak to the Northeast 1994	709.5 E, 5423.5 N	Open forest ridgetop, 250 feet to water (snow) , no evidence of fire rings, but found windblock screen made from rocks. Total area 14'x8' . <200 sq ft of Vegetation damage with 0 barren core
Cerulean Lake (a), 1995	715.3 E 5417.5 N	Undesignated site on lake shore. 120 sq. ft. impacted with no barren core. Some trash and toilet paper 40' from lake.
Dutch Lake 1995	285.2 E 5400.0 N	Old Campground. 100 sq. ft impacted with <50 sq. ft. barren core. Old fire grates and hitchrail.
Southern end of Sage Flats 1994	688.0 E, 5427.5 N	Open forest camp about 20'x25' found on floodplain. 35' to river, no fire rings. <200 sq ft of vegetation cover damage and 0 barren core
Round Prairie River Access 1994	694.0 E, 5415.0 N	Heavy litter and fire rings found at this site (16'x12'). 60' to river most likely on the flood plain. <200 sq ft of vegetation damage, 0 bare ground
Rainbow/Square Peak Basin 1992		Off trail access area, checked, no campsites located

UNDESIGNATED CAMPSITE INVENTORY - LAKE MCDONALD SUBDISTRICT

LOCATION	UTM'S	SITE CONDITIONS
Ahern Pass 1996	297.1 E, 5411.1 N	No significant camping impacts located, poor screening for campsites, no food hanging trees, 1 visible social trail in area.
Lincoln Creek Spike Camp 1996		200 ft to water, < 400 sq. ft of vegetation impact, two social trails, some litter.
Flattop Spike Camp 1996		Trail very overgrown. Impacts were not apparent.
Fifty Mountain Trail Crew Spike Camp 1994	289.5 E, 5414.1 N	Trail access site, approx. 200 ft. from water, food pole present, hitchrail present, area impacted = 100 sq. ft., barren core < 50 sq. ft., no social trails other than access trail, well off main trail
Cattle Queen Trail Crew Spike Camp 1994	294.1 E, 5410.9 N	Trail access site, 50 ft. from water, fire pit present, food pole present, hitchrail present, area impacted = 200 sq. ft., barren core > 100 sq. ft., no litter, no social trails, well off main trail

UNDESIGNATED CAMPSITE INVENTORY - LAKE MCDONALD SUBDISTRICT

LOCATION	UTM'S	SITE CONDITIONS
Ahern Pass 1996	297.1 E, 5411.1 N	No significant camping impacts located, poor screening for campsites, no food hanging trees, 1 visible social trail in area.
Lincoln Creek Spike Camp 1996		200 ft to water, < 400 sq. ft of vegetation impact, two social trails, some litter.
Flattop Spike Camp 1996		Trail very overgrown. Impacts were not apparent.
Fifty Mountain Trail Crew Spike Camp 1994	289.5 E, 5414.1 N	Trail access site, approx. 200 ft. from water, food pole present, hitchrail present, area impacted = 100 sq. ft., barren core < 50 sq. ft., no social trails other than access trail, well off main trail
Cattle Queen Trail Crew Spike Camp 1994	294.1 E, 5410.9 N	Trail access site, 50 ft. from water, fire pit present, food pole present, hitchrail present, area impacted = 200 sq. ft., barren core > 100 sq. ft., no litter, no social trails, well off main trail

UNDESIGNATED CAMPSITES - WALTON AREA		
LOCATION	UTM'S	SITE CONDITIONS
Pinnacle Mountain (Middle Fork Flathead River) 1992	304.4 E, 5358.7 N	River access site, 50 ft. from water, fire scars present, area impacted = 50 sq. ft., no barren core, toilet paper and litter present
Buffalo Woman Lake (a) 1997	309.3 E 5372.4 N	Popular undesignated site area. 64 sq. ft. impacted area. No barren core, some trash, toilet paper and litter.
Buffalo Woman Lake (b) 1997	309.1 E 5372.3 N	Popular Undesignated site. 200 sq. ft. impacted with 100 sq. ft. barren core.
Buffalo Woman Lake (c) 1997	309.3 E 5372.3 N	Popular undesignated site. 600 sq. ft. impacted. 100 sq.ft. barren core.
Nyack trail 1995	297.9 E 5372.1 N	Along trail, 50 sq. ft. impacted with some barren core. Litter and social trails. <100' to water.
Nyack Creek trail 1995	304.2 E 5377.9 N	Meadow near sulfur springs. 100 sq. ft. impacted with no barren core. (2 sites total)
Upper Nyack Meadows 1995	313.4 E 5376.4 N	Upper meadows on trail. 14,400 sq. ft. impacted with no barren core. social trails and trash. On stream bank.
Jackstraw Lake 1995	325.1 E 5364.4 N	No site found
Nyack Creek (Middle Fork Flathead River) 1992	293/0 E 5369.8 N	River access site, < 10 ft. from water, fire scar present, area impacted = 200 sq. ft. barren core < 50 sq. ft., no litter present, 2 social trails
Nyack Creek Trail Crew Spike Camp 1992	293.3 E, 5370.1 N	Trail access site, 60 ft. from water, no fire scars present, food pole present, no significant impact area, no litter present, 1 social trail
Old Dawson trail jct. 1995	313.5 E 5375.8 N	Old trail jct. 200 sq. ft. impacted, 100 sq. ft. barren. Trash and social trails. Tree scars from tied stock. Fire rina. 100' to water.
Upper Nyack Creek Trail Crew Spike Camp 1992	305.6 E, 5379.2 N	Trail access site, no fire scar, no food pole , minor impacts

Upper Park Creek Trail Crew Spike Camp 1992	314.6 E, 5359.0 N	Trail access site, 200 ft. from water, no fire scar present, area impacted = 500 sq. ft., barren core c 50 sq. ft., no litter, 3 social trails
Third Crossing of Coal Creek	311.9 E 5360.7 N	Impacted area about 100sq. ft. No other impacts.
Upper Coal Creek 1995	313.5 E 5368.4 N	Sixth crossing on Coal Cr. near old trail spike camp. 100 sq. ft. area, no core. Litter and fire ring. 200' to water.
Upper Coal Spike camp 1995	313.1 E 5368.3 N	New spike camp. Tent sites, hitchrail, food prep area, low rider.
Upper Coal Creek Trail Crew Spike Camp 1992	314.0 E 5369.0 N	Trail access site, 50 ft. from water, no fire scars, no food pole, impacted area = 400 sq. ft., barren core c 50 sq. ft., no litter, camp right on main trail
Beaver Woman Lake (a) 1995	309.8 E 5372.9 N	Campground area, 100 sq. ft. No barren core. Some trash and 1 social trail. 200' to Lake.
Beaver Woman Lake (b) 1995	309.8 E 5373.1 N	Campground area, 50 sq. ft. area with no barren core. 2 social trails. 100' to water.
Beaver Woman Lake (c) 1995	309.7 E 5373.0 E	Campground area, 50 sq. ft. with no barren core. 100' to water. 1 social trail.
Martha's Basin trail junction 1994, 1995, 1996 3 sites combined	311.1 E 5372.2 N	420 sq ft of vegetation damage with 200 sq ft of barren core. 20 ft to water with no other impacts.
Old Dawson Pass junction area	313.5 E 5375.8 N	200 sq ft of impacted area. No other impacts
Cut Bank Pass area 1994	all areas	no impacts found
Base of Mt. St. Nicholas 1992	n / a	Area checked, no campsite located

UNDESIGNATED CAMPSITES - TWO MEDICINE SUBDISTRICT

LOCATION	UTM'S	SITE CONDITIONS
Lonely Lakes 1997	324.5 E 5378.7 N	No impacts
Running Crane Lake 1997	321.6 E 5379.4 N	No impacts -
Katoya Lake 1996	319.3 E 5377.7 N	Fire rings x2, 30 ft to water, no recent impacts.
Saddle between Triple Divide and Razor Edge 1995	314.6 E 5382.2 N	No impacts. 72 sq.ft. of vegetation matted down.
Red Eagle Meadows 1995	307.0 E 5384.0 N	No impacts found. Great site potential.
Buttercup Park 1996	324.7 E 5366.5 N	No impacts found.
Lena Lake 1996	327.2 E 5363.8 N	No new impacts. Old fire scars. Trail cut out and used by stock, probably in 1995.
Cobalt Lake Trail Crew Spike Camp 1992	321.9 E, 5369.0 N	Trail access site, 250 ft. from water, no fire scars, food pole present, impacted area = 600 sq. ft., barren core < 50 sq. ft., no litter, 1 social trail
Morning Star Trail Crew Spike Camp 1992	319.2 E, 5382.2 N	Trail access site, 165 ft. from water, fire ring present, food pole present, impacted area = 3000 sq. ft., no barren core, litter present, 4 social trails. @ human waste pits used and filled in by Trail Crew (20 days in 1992)
No Name Trail Crew Spike Camp 1997	319.5 E, 5372.4 N	Trail access site, 125 ft. from water , no fire scars, food pole present , impacted area = 250 sq. ft., barren core 5-50 sq. ft., no litter. 1 social trail
Cut Bank Spike Camp 1997	319.3 E, 5381.5 N	164 ft to water. Food pole present. <400sq ft of vegetation damage and 5-50 sq ft of barren core. Litter and 5 social trails evident. 5' fire ring present. Low rider 90' from water-
No Name Spike Camp 1994, 1995, 1996	319.4 E, 5372.4 N	Low rider and food pole present. Total camp area of 450 sq ft with 5-50 sq ft of barren area. 2 social trails evident.

<p>Oldman Lake spike camp 1997</p>	<p>318.6 E, 5375.8 N</p>	<p>Low rider and food pole. Total camp of 250 sq ft with 5-50 sq ft of barren ground. A lot of junk found at site.</p>
<p>Oldman Lake Trail Crew Camp 1992</p>	<p>318.8 E, 5375.9 N</p>	<p>Trail access camp, 115 ft. from water, no fire scars, food pole present, impacted area = 900 sq. ft., barren core < 50 sq. ft., no litter, 2 social trail</p>

UNDESIGNATED CAMPSITES - ST. MARY SUBDISTRICT

LOCATION	UTM'S	SITE CONDITIONS
Jackson Glacier Basin 1996	301.0 E 5387.9 N	Large area surveyed with no visible impacts noted. One social trail into area.
Blackfoot Basin area 1996	309.2 E 5389.8 N	Large area surveyed with no visible impacts noted. One social trail into area
Red Eagle Creek Trail Crew Camp 1997	310.3 E, 5380.9 N	Trail access, 25 ft. from water, fire ring present, food pole present, impacted area = 500 sq. ft., barren core > 100 sq. ft., litter present, 3 social trails, slight axe damage to trees, very close to main trail, access trail is eroding creek bank.
Otokomi Lake (illegal site outside of campground) 1992	300.8 E, 5390.9 N	Trail access site, 200 ft. from water, fire scars present, impacted area = 100 sq. ft., no barren core, no litter. no social trails
Blackfoot Basin, lower lake 1995	303.2 E 5386.9 N	Two rock shelters found in area. No other impacts.
Gunsight Gypsy Camp 1997	300.8 E, 5389.4 N	Food cable, low rider, hitchrail, table and tool shed. 175' to water. >400 sq ft of vegetation damage with >100 sq ft of barren core, 2, social trails. Food prep area is spreading.
Red Eagle Glacier bench	307.3 E 5385.6 N	All area around this spot surveyed without finding any impacts
Twin Lakes Basin	299.4 E 5391.8 N	All areas surveyed. No impacts found.
Red Eagle Meadows 1994, 1995	307.0 E, 5387.1 N	No evidence of impacts found
Blackfoot Basin/ Almost-A-Dog Pass 1992	n/a	Checked in 1992, no campsites located

UNDESIGNATED CAMPSITES - MANY GLACIER SUBDISTRICT		
LOCATION	UTM'S	SITE CONDITIONS
Kennedy Creek Spike camp 1997	307.5 E 5414.1 N	One social trail, fire pit
Kennedy Lake 1996	303.0 E 5412. N	Minimal impacts
Natahki Lake 1996	304.2 E 5410.5 N	No impacts visible
Feather Plume Falls Trail Crew Camp 1997	301/7 E, 5304.0 N	Trail access site, 250 ft. from water, fire ring present, food pole present, log seats present, impacted area = 250 sq. ft., 5-50 sq. ft. barren core, no litter, 3 social trails, not used recently
Kennedy Lake 1994	302.9 E, 5412.2 N	Old site not used recently. 50 ft to water with a total camp not really distinguishable.
Ptarmigan Lake 1996	301.3 E, 5413.4 N	<200 sq ft of vegetation damage with no barren core. This appears-to be an old designated camp. Seems to be revegetating well. Mostly day use impacts.
Snow Moon/Falling Leaf 1997	305.5 E 5405.7 N	No other impacts other than trail.
Shangri-La 1997	300.3 E 5409.7 N	30 sq. ft. of impacted area. Fire rinss present . No other impacts
Poia Lake Trail Crew Spike Camp 1995	307.2 E, 5414.2 N	Trail access, 75 ft. from water, fire ring present, food pole present, impacted area = 500 sq. ft., barren core c 50 sq. ft., no litter, social trails, temporary pit toilet (filled in after use), used 5 days/season. 200 sq ft of vegetation damage.

UNDESIGNATED CAMPSITES - BELLY RIVER AREA		
LOCATION	UTM'S	SITE CONDITIONS
Sentinel Creek Spike Camp	302.7 E 5427.4 N	500 Sq. Ft impacted area. Food pole and est. sites <100' from water
North Fork of Belly River 1997	298.3 E 5429.7 N	Survey along the river corridor up to the falls. No camping impacts but evidence of access from Canada.
Miche Wabun Lake 1995	294.1 E 5426.6 N	No sign of human activity in the area. 400 sq. ft. of impacted area from old site.
Old Sun Drainage 1992	296.6 E, 5415.4 N	Off trail access, cirque basin, used by 2-3 Mt. Merritt climber per season, no visible impacts located
Red Gap Creek Trail Crew Camp 1997	301.9 E, 5416.9 N	Trail access site, adjacent to water, fire scars present, food pole, privy, benches present, 1150 sq. ft., barren core, no litter, 1 social trail. No expansion.
Belly River Ranger Station Meadow 1992	301.5 E, 5423.2 N	Trail access site, 100 ft. from water, no fire scars, pit toilet nearby (at RS), impacted area = 800 sq. ft., no barren core, no litter, 1 social trail
Mokowanis Jct Gypsy camp 1997	293.5 E, 5418.8 N	Total camp area of 200 ft with 5-50 sq ft of barren core. 2 social trail evident and >200' to water. Fire ring and food pole
Red Gap Creek Gypsy camp 1994	301.9 E, 5416.9 N	50' to water with low rider and food pole present. >400 sq ft of vegetation impact with > 100 sq ft of barren ground.
Sue Lake Bench 1997	291.5 E, 5416.2 N	Off trail access area, alpine bench, abundant water sources, no visible impacts located

UNDESIGNATED CAMPSITES - GOAT HAUNT AREA

LOCATION	UTM'S	SITE CONDITIONS
50 Mtn spike camp 1997	289.8 E 5414.3 N	Hitchrail, food pole and privy. Impacts around the hitchrail with 75 sq. ft of barren core. Old fire pit. Low rider is full.
Southwest Bowl Mt Cleveland 1992	289.7 E, 5421.9 N	Off trail access site, along climbing route, 50 ft. from water, fire scars present, impacted area = 50 sq. ft., no barren core, litter present, toilet paper present, 1 social trail
North Bowl of Mt. Cleveland 1997	290.5 E 5421.9 N	No evidence of camping.
West Bowl of Mt. Cleveland 1992	289.8 E, 5421.9 N	Off trail access site, along climbing route, > 100 ft. from water, fire scar present, impacted area = 200 sq. ft., barren core = 24 sq. ft., litter present, no social trails.

SECTION 14 BACKCOUNTRY PIT TOILET SURVEY

INTRODUCTION

The following tables summarize the locations and general condition of the pit toilets located in Glacier's backcountry areas. This information was collected as part of our annual Backcountry Campground Evaluation process during the 1996 field season. Additional pit toilets located outside of designated backcountry campgrounds were also surveyed.

NORTH FORK SUBDISTRICT:				
LOCATION	TYPE OF STRUCTURE	CLOSEST DISTANCE TO WATER/ DOWNHILL DISTANCE TO WATER	HOLE DEPTH	CONCERNS/DEFICIENCIES
Boulder Pass campground	lowrider	600' / 600'	28 "	New in 1993
Upper Kintla Lake Campground	outhouse	250' / 250'	39"	New in 1993
Kintla Lake Campground	outhouse	110' / 110'	26 "	Evaluate proximity to water
Akokala Lake Campground	lowrider	195' / 195'	42"	New in 1993
Brown Pass Campground	lowrider	356' / 356'	25"	New in 1996
Bowman Lake (Hd) Campground	outhouse	115' / 115'	30"	Evaluate proximity to water
Quartz Lake Campground	outhouse	175' / 175'	36 "	Evaluate proximity to water
Lower Quartz Lake Campground	outhouse	110' / 110'	24 "	Evaluate proximity to water
Grace Lake Campground	lowrider	115' / 115'	10 "	Evaluate proximity to water
Adair Campground	outhouse	100' / 175'	43 "	Evaluate proximity to water
Logging Lake Campground	outhouse	190' / 190'	37"	New in 1993
Round Prairie Campground	composter	N/A	N/A	installed in 1995
Ford Patrol Cabin	outhouse	210' / 210'	55 "	(1996)
Kishenehn Patrol Cabin	outhouse	271' / 339'	53 "	(1996)
Bowman Lake Patrol Cabin	outhouse	210' / 210'	58 "	(1996)
Kintla Lake Patrol Cabin	outhouse	208' / 208'	52 "	(1996)
Kintla Lake Ranger Station	outhouse	203' / 203'	63 "	(1996)

Kintla Lake (Hd.) Patrol Cabin	outhouse	120' / 120'	23 "	Hitchrail is 50' to water (1994)
Quartz Lake Patrol Cabin	lowrider	184' / 184'	27 "	Need more screening (1996)
Logging Lake (Hd.) Patrol Cabin	outhouse	110' / 110'	60 "	Evaluate proximity to water. Corral is 130' to water (1996)
Logging Lake (Ft.) Patrol Cabin	low rider	108' / 108'	18 "	Evaluate proximity to water. Hitchrail is 85' to water. (1996)

LAKE MCDONALD SUBDISTRICT:				
LOCATION	TYPE OF STRUCTURE	CLOSEST DISTANCE TO WATER/ DOWNHILL DISTANCE TO WATER	HOLE DEPTH	CONCERNS/DEFICIENCIES
Flattop Campground	outhouse	225' / 225'	Full	RELOCATE
Camas Lake Campground	lowrider	105' / >200'	36"	New in 1996
Granite Park Campground	lowrider	450' / 450'	36"	Needs paint
Snyder Lake Campground	outhouse	97' / 150'	36 "	Evaluate proximity to water
Sperry Campground	outhouse	180' / 500'	Full	RELOCATE
Lake Ellen Wilson Campground	lowrider	300' / 300'	36"	new in 1995, needs lid and seat parts
Lincoln Lake	outhouse	200' / 200'	48 "	needs seat
McDonald Lake	outhouse	213' / 213'	48 "	
Arrow Lake	outhouse	270' / 270'	36"	
Avalanche Lake (womens)	outhouse	> 200' / > 200'	6'	(1994)
Avalanche Lake (mens)	outhouse	> 200' / > 200'	6'	(1994)
Granite Park Patrol Cabin	outhouse	100' / 200'	6'	(1994)
Logan Creek Patrol Cabin	outhouse	?	?	
Sperry Patrol Cabin	outhouse	300' / 300'	?	

WALTON AREA:				
LOCATION	TYPE OF STRUCTURE	CLOSEST DISTANCE TO WATER/ DOWNHILL DISTANCE TO WATER	HOLE DEPTH	CONCERNS/DEFICIENCIES
Harrison Lake	lowrider	300' / 300'	42"	
Harrison Cabin	outhouse	170' / 170'	60"	
Lower Nyack Campground	lowrider	200' / 200'	<6"	Monitor depth
Upper Nyack Cabin	outhouse	130' / 130'	60"	
Lower Nyack Cabin	outhouse	180' / 180'	36"	Need new roof shingles and 1x6's and repair hole in floor.
Upper Nyack Campground	lowrider	200' / 200'	60"	New in 1996
Beaver Woman Lake Campground	lowrider	250' / 250'	24"	
Coal Creek Campground	lowrider	225' / 225'	<6"	Monitor.
Coal Creek Cabin	outhouse	140' / 140'	60"	Evaluate proximity to water
Lake Isabel Campground	outhouse	210' / 210'	48"	
Upper Park Creek Campground	outhouse	90' / 90'	36"	Evaluate proximity to water
Lower Park Cr. Cabin	outhouse	150' / 150'	24"	
Lower Park Creek Campground	outhouse	200' / 200'	60"	New in 1994
Ole Creek Campground	lowrider	140' / 170'	42"	Evaluate proximity to water
Ole Lake Campground	outhouse	210' / 210'	60"	
Fielding Patrol Cabin	outhouse (2 hole)	90' / 90'	48"	Need new roof, structure poor shape

TWO MEDICINE SUBDISTRICT:				
LOCATION :	TYPE OF STRUCTURE	CLOSEST DISTANCE TO WATER/ DOWNHILL DISTANCE TO WATER	HOLE DEPTH	CONCERNS/DEFICIENCIES
Cobalt Lake Campground	outhouse	116' /116'	3'	
Upper Two Medicine Lake Campground	outhouse	217' /217'	3'	
No Name Lake Campground	outhouse	186' /186'	5'	New in 1993.
Oldman Lake Campground	outhouse	274' /274'	2'	
Morning Star Lake Campground	outhouse	190' /190'	4'	
No Name Spike camp	lowrider	210'	4.5'	
Cut Bank Gypsy Camp	lowrider	32'	5.5'	Too close to water
Atlantic Creek Campground	outhouse	285' /285'	4'	
Pray shelter	wood outhouse	400' /400'	2'	(1994) floor needs replaced

ST. MARY SUBDISTRICT:				
LOCATION	TYPE OF STRUCTURE	CLOSEST DISTANCE TO WATER/ DOWNHILL DISTANCE TO WATER	HOLE DEPTH	CONCERNS/DEFICIENCIES
Gunsight Lake Campground	outhouse	250' / 500'	4.5'	
Otokomi Lake Campground	wood outhouse	180' / 180'	2'	Replace structure - poor condition
Reynolds Creek Campground	lowrider	200' / 200'	6'	
Virginia Falls	metal outhouse	72' / 72'	5'	Too close to water - relocate.
Red Eagle Lake (HD>) Campground	outhouse	180' / 180'	3'	
Red Eagle Lake (Ft.1 Campground	wood outhouse	182' / 182'	3'	
Gunsight Gypsy camp	lowrider	<200'	6'	new in 1994
1913 Ranger Station	outhouse	800' / 800'	8'	Not evaluated in 1997
Red Eagle Spike Camp	lowrider	>200, / >200'	5'	Need to rodent proof
Baring Creek Patrol Cabin	outhouse	800' / 800'	6'	(1994)

MANY GLACIER SUBDISTRICT:				
LOCATION	TYPE OF STRUCTURE	CLOSEST DISTANCE TO WATER/ DOWNHILL DISTANCE TO WATER	HOLE DEPTH	CONCERNS/DEFICIENCIES
Cracker Lake Campground	metal outhouse	250'/250'	6'	
Poia Lake Campground	outhouse	200'/200'	4'	
Iceberg Lake	outhouse	125'/125'5'	5'	Needs new lid and hinges
Grinnell Lake (womens)	outhouse	150'/150'	4'	Both will need replacement soon
Grinnell Lake (mens)	outhouse	200'/200'	4'	
Oastler Shelter (#1) Womens	metal outhouse	100'/100'	4'	Pit is wet and swampy, evaluate proximity to water. (1994)
Oastler Shelter (#2) mens	metal outhouse	100'/100'	4'	Pit is wet and swampy, evaluate proximity to water. (1994)
Grinnell Glacier (womens)	outhouse	130'/130'	4'	relocated late in 1992
Grinnell Glacier (mens)	outhouse	200'/200'	4'	rodent proof
Ptarmigan Falls	outhouse	>200'	3'	
Lee Creek Patrol cabin	lowrider	240'	2'	Need to mark trail
Slide Lake Patrol Cabin	lowrider	30'	4'	Too close to water but has very low use
Slide Lake Campground	lowrider	84'/250'	5'	New in 1994

BELLY RIVER AREA:				
LOCATION	TYPE OF STRUCTURE	CLOSEST DISTANCE TO WATER/ DOWNHILL DISTANCE TO WATER	HOLE DEPTH	CONCERNS/DEFICIENCIES
Helen Lake Campground	lowrider	300' / 300'	4'	
Elizabeth Lake head CG	outhouse	200' / 200'	4'	
Elizabeth Lake foot CG #1	outhouse	200' / 200'	7'	
Elizabeth Lake foot CG #2	outhouse	200' / 200'	7'	
Mokowanis Lake Campground	lowrider	210' / 240'	5'	
Mokowanis Junction Campground	outrider	200' / 200'	3'	
Glenns Lake Head Campground	outhouse	200' / 200'	4'	
Glenns Lake Foot Campground	outhouse	150' / 150'	2.5'	
Cosley Lake CG #1	outhouse	240' / 240'	2'	
Cosley Lake CG #2	outhouse	240' / 240'	2'	
Belly River Campground	outhouse	12' / 130'	3'	

GOAT HAUNT AREA:				
LOCATION	TYPE OF STRUCTURE	CLOSEST DISTANCE TO WATER/ DOWNHILL DISTANCE TO WATER	HOLE DEPTH	CONCERNS/DEFICIENCIES
Fifty Mountain Campground	outhouse	200' / 220'	4'	Strong lean to structure
Hawksbill Campground	lowrider	335' / 335'	6'	
Hole-in-the-Wall Campground	lowrider	40' / 40'	2'	
Kootenai Lakes Campground	outhouse	230' / 255'	4'	
Lake Francis Campground	outhouse	300' / 300'	2'	
Lake Janet Campground	lowrider	245' / 245'	3'	
Stoney Indian Lake Campground	lowrider	150' / 150'	3'	
Waterton River Campground	outhouse	235' / 235'	6'	
Pass Creek Patrol Cabin	outhouse	100'	6'	
Kootenai Patrol Cabin	low rider	>200'	6'	

SECTION 15

BACKCOUNTRY EXOTIC VEGETATION SUMMARY

INTRODUCTION

The following computer print-outs summarize, by Subdistrict, the exotic vegetation infestations which are known to occur in Glacier's backcountry. The role of the Wilderness Management Section includes the documentation and treatment of exotic vegetation in the backcountry. Reports are given to each area regarding the previous years infestation and efforts are made to visit each site and treat the area accordingly before the plants mature or produce seeds. New reports are then filed to document the size and treatment given.

CONCERN AREAS:

The following areas within Glacier's backcountry have significant noxious weed infestations that are of major concern to park management:

<u>Location</u>	<u>Species</u>
- Upper North Fork River corridor	Oxeye Daisey
- Big Prairie and North Fork River corridor	Leafy Spurge
- Apgar Range	St. Johns Wort
- Middle Fork River corridor	St. Johns Wort, Spotted Knapweed
- Red Eagle Trail	Spotted Knapweed
- Two Medicine old RR right of way	Spotted Knapweed
- Elizabeth Lake head	Orange Hawkweed

PRIORITIES AND ACTIONS

The # 1 priority for Glacier National Park regarding noxious weeds is to prevent it's intrusion into the natural zone (**backcountry**). In 1997, all major trailheads were sprayed with herbicides (using Stinger) in an effort to prevent their spread into the natural zone. In addition, manual pulling and weed whipping was conducted on backcountry infestations, particularly in the Middle Fork and bio-control agents (insects) were introduced in several natural zone areas, including the Middle Fork of the **Flathead** River (**Nyack** Flats, near West Glacier), Big Prairie, Apgar Mountains (Flathead Ranger Station), **Camas** Firing Range, **Lubec**, Running Rabbit Mt.

The following print outs summarizing backcountry noxious weed infestations use these species codes:

Code **Common Plant Name**

HIEAUR - Orange **Hawkweed**
CIRVUL - Canadian Thistle
CENMAC - Spotted Knapweed *
LINVUL - Butter and Eggs
CHRLEU - Oxeye Daisey *
HYPPER - St. Johns Wort (Goatweed) *
EUPESU - Leafy Spurge *
POTREC - Sulphur Cinquefoil
TANVUL - Common Tansy

* denotes category 1 noxious weeds as designed by the State of Montana and Glacier National Park.

Location Codes

GH = Goat Haunt/Belly River Area
MD = Lake McDonald Subdistrict
MG = Many Glacier Subdistrict
NF = North Fork Subdistrict
SM = St. Mary Subdistrict
TM = Two Medicine Subdistrict
WL = Walton Area

Exotic Plant Baseline Infestation Inventory Report:
Natural Zone

SITE#	LOCATION	UTM-E	UTM-N	COMM	SPECIES	DATE	ACRE	SQFT	DEN
GH 1	HEAD OF ELIZABETH LAKE	3002	5418.7	SHR	HIEAUR	7/1/85	0.1	4356	HIG
GH 3	BOULDER PASS TRAIL	286.9	5426.3	MIX	CIRVUL	9/21/92	0	800	MOD
GH 5	PASS CREEK CABIN	288	5419.8	FOR	RUMCRI	9/15/93	0	20	LOW
GH 6	RIPRN AREA NR UPR KOOT LK	287.8	5423.8	GRA	CIRARV	8/3/95	10	435600	HIG
GH 7	KOOTENAI LKS CAMPGROUND	287.5	54232	GRA	RUMCRI	9/13/95	0	625	LOW
GH 7	KOOTENAI LKS CAMPGROUND	287.5	54232	GRA	CHRLEU	9/13/95	0	2000	MOD
M D 7	FLATTOP TRAIL	294.6	5403.1	FOR	CENMAC	6/10/87	0.2	6810	LOW
M D 7	FLATTOP TRAIL	294.6	5403.1	FOR	CHRLEU	7/21/93	0	424	MOD
M D 7	FLATTOP TRAIL	294.6	5403.1	FOR	TANVUL	9/21/87	0	10	LOW
M D 8	NW SHORE OF LK MCDONALD	284.1	5384.6	SHR	CENMAC	7/18/92	0	400	MOD
MD 17	ROCKY POINT	280.6	5381.8	MIX	POTREC	6/30/92	0	30	MOD
MD 17	ROCKY POINT	280.6	5381.8	MIX	CENMAC	8/1/95	0	10	LOW
MD 19	ARROW LAKE CAMPSITE	287.3	53982	FOR	CHRLEU	7/19/94	0	200	HIG
MD 20	HUCKLEBERRY L.O. TRAIL	719.9	5352.8	FOR	CHRLEU	7/24/94	0	1200	MOD
MD 21	CAMAS BR - BIG CK.	710	5388	GRA	CHRLEU	7/29/94	0	10	LOW
MD 21	CAMAS BR -BIG CK.	710	5388	GRA	CENMAC	7/29/94	1	43560	LOW
MD 22	BIG CK.-GT. NORTH. FLATS	710	5384.3	SHR	CENMAC	8/20/94	0	1900	LOW
MD 23	G.N.FLATS-GLACIER RIM.	713.3	5380	SHR	CENMAC	8/20/94	0.2	8000	LOW
MD 24'	GLAC. RIM-BLANKENSHIP BR.	715	5372	GRA	CENMAC	8/20/94	0	535	LOW
MD 25	W. GLAC.-BLANKENSHIP BR.	720	5375	SHR	CHRLEU	7/27/94	0	1500	MOD
MD 25	W. GLAC.-BLANKENSHIP BR.	720	5375	SHR	HYPPER	7/27/94	0.1	2800	HIG
MD 25	W. GLAC.-BLANKENSHIP BR.	720	5375	SHR	CENMAC	7/27/94	2.3	99300	MOD
MD 26	LINCOLN LAKE CAMPGROUND	295.4	5385.3	FOR	CHRLEU	8/9/95	0	2	LOW
MG 7	GRINNELL TRAILHEAD	304.2	5407.8	FOR	CENMAC	8/16/87	0	300	MOD.
MG 8	GRINNELL GLAC TRAILHEAD	303.4	5406.5	FOR	CENMAC	8/20/89	0	1	LOW
MG 9	REDROCK LAKE AREA	300.3	5407.9	FOR	LINVUL	7/14/92	0	100	LOW
MG 10	WINDMAKER CK. CROSSES TR	299.1	5407.1	MIX	LINVUL	7/4/93	0	500	HIG
NF 2	BIG PRAIRIE	695.8	5410.7	GRA	POTREC	8/9/91	25	108900	MOD
NF 2	BIG PRAIRIE	695.8	5410.7	GRA	EUPESU	7/1/89	45	196020	HIG
NF 2	BIG PRAIRIE	695.8	5410.7	GRA	CENMAC	9/15/89	0.1	4356	HIG
NF 2	BIG PRAIRIE	695.8	5410.7	GRA	CIRARV	9/11/95	0.1	5280	HIG
NF 9	OLD HORSE PASTURE	705.1	5411.6	GRA	CENMAC	9/15/89	1.8	78408	HIG
NF 9	OLD HORSE PASTURE	705.1	5411.6	GRA	CHRLEU	8/12/92	0	36	MOD
NF 9	OLD HORSE PASTURE	705.1	-5411.6	GRA	HYPPER	8/12/92	0	1	LOW
NF 14	ABANSULIV MEADOW ROADB	710.1	5396.1	FOR	HYPPER	9/15/89	0	12	MOD
NF 14	ABAN SULN MEADOW ROADB	710.1	5396.1	FOR	CENMAC	9/15/89	0.1	4356	MOD
NF 18	CAMAS CR:RIFLE RNG-NF RIV	712	5390.3	FOR	CENMAC	9/29/89	4	174240	HIG
NF 19	BOWMAN CR CMPGR	700	5407.1	FOR	CENMAC	9/1/87	0	15	LOW
NF 23	ABOVE CONFLUENCE OF BIGC	708.8	5387.4	GRA	CENMAC	7/29/87	4.3	189000	LOW
NF 24	DOWNSTREAMALONG RIVER	693	5414.5	BAR	CENMAC	8/1/89	0	100	LOW

SITE#	LOCATION	UTM-E	UTM-N	COMM	SPECIES	DATE	ACRE	SOFT	D E N
N F 25	BORDER-KISHENEHN CK.	687	5428	GRA	CHRLEU	7/7/94	1	43560	LOW
N F 26	KISHENEHN CK.-FORD CK.	692	5420	BAR	CHRLEU	7/7/94	1.5	67500	LOW
N F 27	FORD CK. TO POLEBR RS.	694.4	5410	SHR	CENMAC	7/7/94	3.5	151045	MOD
N F 27	FORD CK. TO POLEBR RS.	694.4	5410	SHR	HIEAUR	7/7/94	0	9	MOD
NF 27	FORD CK. TO POLEBR RS.	694.4	5410	SHR	CHRLEU	7/7/94	8	348480	LOW
N F 28	POLEBR R.S.-COAL CREEK	702	5400	GRA	CIRARV	7/29/94	0.1	2500	LOW
NF 28	POLEBR R.S.-COAL CREEK	702	5400	GRA	CHRLEU	7/29/94	0	150	LOW
N F 29	COAL CK. - CAMAS BRIDGE.	710.5	5390	BAR	CHRLEU	7/29/94	0	25	LOW
N F 29	COAL CK. - CAMAS BRIDGE.	710.5	5390	BAR	CENMAC	7/29/94	0	650	LOW
SM 8	SUN RIFT GORGE AREA	309	5394.7	FOR	CENMAC	7/5/89	0	450	HIG
SM 9	OTOKOMI L A K E T H	314.7	5396.6	FOR	CENMAC	8/1/87	0	10	LOW
SM 10	RED EAGLE TRAILHEAD SOUTH	320.5	5399.5	GRA	CENMAC	7/13/87	2	87120	HIG
SM 10	RED EAGLE TRAILHEAD SOUTH	320.5	5399.5	GRA	TANVUL	8/1/87	0	3	LOW
SM 10	RED EAGLE TRAILHEAD SOUTH	320.5	5399.5	GRA	CHRLEU	8/2/92	0	2	LOW
SM 11	VIRGINIA FALLS	300.7	5390.2	FOR	CHRLEU	9/3/92	0	12	MOD
TM 1	COBALT LK TO SHOULDER	320.6	5367.6	SHR	HYPPEP	8/9/90	0.2	8712	HIG
TM 2	FIREBRAND (LUBEC) TRAILHD	331.2	5359.8	GRA	CENMAC	7/20/87	0.8	34125	HIG
TM 2	FIREBRAND (LUBEC) TRAILHD	331.2	5359.8	GRA	CHRLEU	7/15/94	0	40	LOW
TM 3	OLD RIGHT OF WAY	331.2	5359.8	BAR	CENMAC	0/16/92	12	522720'	HIG
w L 2	COAL CR TRAILHD	298.9	5365.4	GRA	HYPPEP	8/5/90	0	75	HIG
WL 2	COAL CR TRAILHD	298.9	5365.4	GRA	HIEAUR	7/8/94	2	87120	LOW
w L 2	COAL CR TRAILHD	298.9	5365.4	GRA	CENMAC	7/4/87	0.2	9000	MOD
w L 2	COAL CR TRAILHD	298.9	5365.4	GRA	CHRLEU	7/16/92	6	261360	MOD
w L 4	OLE CREEK TRAIL	307	5350	GRA	CHRLEU	7/4/92	0	200	LOW
w L 4	OLE CREEK TRAJL	307	5350	GRA	HYPPEP	9/21/87	0	480	LOW
WL 5	RECOVERED BURN AREA	311.7	5366.6	SHR	CHRLEU	7/14/94	0	3	LOW
w L 5	RECOVERED BURN AREA	311.7	5366.6	SHR	HIEAUR	7/16/87	0	3	LOW
WL 6	TRAILHEAD RIVER BAR	288	5375	SHR	CENMAC	8/8/87	0	300	LOW
W L 8	NYACK FORD	292.8	5368.7	MIX	HYPPEP	7/16/92	60	261360	LOW
WL a	NYACK FORD	292.8	5368.7	MIX	CENMAC	8/8/87	40	174240	MOD
WL 8	NYACK FORD	292.8	5368.7	MIX	CHRLEU	7/16/92	80	348480	MOD
WL 9	JUNCTION LO TRAIL&BNDRY T	293.1	5370.5	GRA	CENMAC	7/7/94	24	104544	MOD
w L 9	JUNCTION LO TRAIL&BNDRY T	293.1	5370.5	GRA	HYPPEP	8/8/87	0	3	LOW
w L 9	JUNCTION LO TRAIL&BNDRY T	293.1	5370.5	GRA	CHRLEU	7/26/93	0	50	LOW
WL 11	1.5 MI UP COAL CRK TRAIL	304.1	5366.2	GRA	HIEAUR	7/24/93	0	100	LOW
WL 11	1.5 MI UP COAL CRK TRAJL	304.1	5366.2	GRA	HYPPEP	7/14/87	0.1	4000	MOD
WL 14	HARRISON CK BOUNDARY TRA	289.8	5374.7	FOR	CHRLEU	9/8/93	0	25	LOW
WL 14	HARRISON CK BOUNDARY TRA	289.8	5314.7	FOR	HYPPEP	7/7/94	0	50	LOW
WL 14	HARRISON CK BOUNDARY TRA	289.8	5314.7	FOR	CENMAC	8/2/87	0	400	LOW
WL 15	118 MILE SW OF RNGR STATN	293.3	5368.4	FOR	CHRLEU	7/13/95	0	250	LOW
WL 15	1/8 MILE SW OF RNGR STATN	293.3	5368.4	FOR	CENMAC	7/30/87	40	174240	HIG
WL 15	118 MILE SW OF RNGR STATN	293.3	5368.4	FOR	VERTHA	7/3/89	0	1350	LOW

SITE#	LOCATION	UTM-E	UTM-N	COMM	S P E C I E S	DATE	ACRE	SOFT	DEN
WL 16	LINCOLN CREEK FORD	286.9	53752	FOR	CHRLEU	8/11/95	2.1	90000	Low
WL 16	LINCOLN CREEK FORD	286.9	53752	FOR	CENMAC	8/15/90	03	13068	HIG
WL 17	ABOUT 1 MI W OF LAKE	2913	5375.6	FOR	HYPPEP	8/17/90	0	1	LOW
WL 18	3/8 MI N OF PARK CR MOUTH	306.3	5354.4	FOR	CENMAC	7/22/92	6	261360	HIG
WL 18	3/8 MI N OF PARK CR MOUTH	3063	5354.4	FOR	HYPPEP	7/22/92	6	261360	HIG
WL 19	EOF PARK CR KONRIVER	306.5	5352.8	FOR	HYPPEP	7/22/92	7	304920	LOW
WL 19	EOF PARK CR KONRIVER	306.5	5352.8	FOR	CENMAC	7/22/89	10	435600	HIG
WL 20	CREEK FLOODPLAIN	306.5	5352.8	FOR	CENMAC	7/3/89	0	1124	LOW
WL 21	RIVER AT ESSEX CREEK	306.7	5350.4	FOR	HYPPEP	7/22/92	2	87120	MOD
WL 21	RIVER AT ESSEX CREEK	306.7	5350.4	FOR	CENMAC	7/1/89	0.1	4356	MOD
WL 23	S OF WALT RANGER STATION	306.8	5349.5	FOR	CENMAC	7/1/89	0.1	4356	MOD
WL 23	S OF WALT RANGER STATION	306.8	5349.5	FOR	HYPPEP	8/15/87	0	200	LOW
WL 27	PC TRAIL ABOVE RIVER BY PC	306.7	53533	FOR	HYPPEP	7/25/93	0	300	LOW
WL 27	PC TRAIL ABOVE RIVER BY PC	306.7	53533	FOR	CHRLEU	7/14/92	4	174240	HIG
WL 29	OLE CAMPGROUND	315.5	53532	MIX	CHRLEU	8/3/93	0	10	LOW
W-L 29	OLE CAMPGROUND	315.5	53532	MIX	CENMAC	7/20/92	0	750	LOW
WL 32	GRAVEL BAR NEAR GOATLICK	3093	5346.5	SHR	HYPPEP	7/15/92	0.2	8712	LOW
WL 32	GRAVEL BAR NEAR GOATLICK	309.3	5346.5	SHR	CENMAC	7/15/90	52	225000	MOD
WL 34	JCT OLE CR TR/BNDRY TRAIL	307.8	5350.8	FOR	CHRLEU	7/18/92	0	10	LOW
WL 35	STREAM 2 MILES FROM WALT N	3072	53522	FOR	CHRLEU	7/18/92	0	100	LOW
WL 36	2 MI IN FROM FIELDING	316.7	5352.1	MIX	CHRLEU	7/20/92	0	10	LOW
WL 36	2 MI IN FROM FIELDING	316.7	5352.1	MIX	HYPPEP	8/28/93	0	1	LOW
WL 37	FIELDING-COAL TRAIL	307.3	5361.6	FOR	HYPPEP	8/4/92	0	1000	LOW
WL 38	SITE 2 LOWER NYACK CG	299.6	5373.3	FOR	CENMAC	8/15/92	0	4	LOW
WL 38	SITE 2 LOWER NYACK CG	299.6	5373.3	FOR	CHRLEU	7/22/93	0	20	LOW
WL 43	PARK CK. FORD	311.3	53564	FOR	CHRLEU	9/14/93	0	100	LOW
WL 44	SCALPLOCK TRAIL	308.6	5351.2	FOR	HYPPEP	8/10/93	0	410	LOW
WL 44	SCALPLOCK TRAIL	308.6	5351.2	FOR	CHRLEU	7/23/94	0.2	8712	LOW
WL 46	BOUNDARY TRAIL	298.3	5315.3	FOR	HYPPEP	8/14/93	0	25	LOW
WL 48	PAOLA -BROWNS HOLE	304	5358.5	SHR	HYPPEP	8/5/94	0.8	33500	MOD
w L 48	PAOLA -BROWNS HOLE	304	5358.5	SHR	CHRLEU	8/5/94	0.1	4500	MOD
WL 48	PAOLA -BROWN'S HOLE	304	5358.5	SHR	CENMAC	8/5/94	3	131500	LOW
WL 48	PAOLA -BROWN'S HOLE	304	5358.5	SHR	CIRARV	8/5/94	0	1500	MOD
WL 49	BROWN'S HOLE- CASCADILLA	300	5363	SHR	CHRLEU	8/5/94	0	2050	LOW
WL 49	BROWN'S HOLE- CASCADILLA	300	5363	SHR	CENMAC	8/5/94	8.2	357000	MOD
WL 49	BROWN'S HOLE- CASCADILLA	300	5363	SHR	CIRARV	8/5/94	0	800	MOD
WL 49	BROWN'S HOLE- CASCADILLA	300	5363	SHR	HYPPEP	8/5/94	0.2	10800	LOW
WL 50	RR OVERPASS-LINCOLN CK.	291	5373	GRA	CENMAC	8/3/94	12	522000	Low
WL 50	RR OVERPASS-LINCOLN CK.	291	5373	G M	HYPPEP	8/3/94	12	522720	LOW
WL 50	RR OVERPASS-LINCOLN CK	291	5373	GRA	CIRARV	8/29/95	0	625	LOW
WL 50	RR OVERPASS-LINCOLN CK	291	5373	GRA	CHRLEU	8/3/94	12	522720	LOW
WL 51	BEAR CK.-WALTON RS.	308.5	5347	BAR	CENMAC	9/6/95	8.5	370260	MOD

SITE#	LOCATION	UTM-E	UTM-N	COMM	SPECIES	DATE	ACRE	SQFT	DEN
WL 51	BEAR CK.-WALTON R.S.	308.5	5347	BAR	CIRARV	9/6/95	0	108	LOW
WL 51	BEAR CK.-WALTON RS.	308.5	5347	BAR	HYPPEP	9/6/95	13	56628	MOD
WL 52	WALTON R.S.-PAOLA CK.	305	5353	BAR	HYPPEP	8/28/95	0.8	34848	MOD
WL 52	WALTON R.S.-PAOLA CK.	305	5353	BAR	CENMAC	8/28/95	6.2	270072	MOD
WL 52	WALTON R.S.-PAOLA CK.	305	5353	BAR	CHRLEU	8/28/95	0	1000	LOW
WL 53	CASCADILLA CK.-RR OVERPAS	294.9	5365	BAR	CENMAC	8/29/95	33	143748	MOD
WL 53	CASCADILLA CK.-RR OVERPAS	294.9	5365	BAR	CHRLEU	8/29/95	15	653400	MOD
WL 53	CASCADILLA CK.-RR OVERPAS	294.9	5365	BAR	HYPPEP	8/29/95	15	653400	LOW
WL 53	CASCADILLA CK.-RR OVERPAS	294.9	5365	BAR	CIRARV	8/29/95	18	784080	MOD
w L 5 4	NEW #1	308.9	5350.4	SHR	HYPPEP	7/1/95	2.1	90000	MOD
WL 55	HEAD OF HARRISON LAKE	296.9	5378.6	FOR	CHRLEU	7/29/95	0	4'	LOW
WL 56	BDRY TR; 1.8 MI W OF HARR	289.5	5375.1	FOR	CHRLEU	7/29/95	0.7	30000	LOW
WL 56	BDRY TR; 1.8 MI W OF HARR	289.5	5375.1	FOR	HYPPEP	8/10/95	0	150	LOW
WL 56	BDRY TR; 1.8 MI W OF HARR	289.5	5375.1	FOR	CENMAC	8/10/95	0	150	LOW
WL 57	GRAVEL AREA ON OLE CREEK	3072	5350.7	BAR	CHRLEU	7/1/95	0.5	21780	MOD
WL 57	GRAVEL AREA ON OLE CREEK	3072	5350.7	BAR	HYPPEP	7/1/95	0	1	LOW
WL 57	GRAVEL AREA ON OLE CREEK	3072	5350.7	BAR	HIEAUR	7/1/95	0.5	20000	LOW
WL 57	GRAVEL AREA ON OLE CREEK	3072	5350.7	BAR	VERTHA	7/1/95	4.6	200000	LOW
WL 58	NEAR BRDGE ON SOLDREER STR	315.6	5353.9	FOR	CHRLEU	6/23/95	0	2.	LOW

SECTION 16 TRAIL MAINTENANCE SUMMARY

INTRODUCTION

The backcountry of Glacier National Park has approximately 735 miles of maintained trail. Most of these trails are in proposed wilderness areas and are managed with wilderness values in mind.

The trails maintenance staff is directly supervised by the Assistant Chief Ranger (Division of Resources Management). The trails staff consists of two District Trails Foremen, one on each side of the Park, and a Supervisory Animal Packer. The 1997 Seasonal staff included 33 (compared to 57 in 1996) trail crew personnel in 11 different subdistricts and areas.

Record setting snow depths caused many difficulties for trail maintenance crews as enormous snow drifts crushed walkways, bridges and rails. Fortunately, a relatively gradual runoff spared most trails from the washouts and scouring normally associated with large snowpacks.

Crews were smaller than in recent years, due to reduction, in "soft" money. However, all 735 miles of trail were maintained to some degree and a number of special projects were completed. New bridges were built at Pass Creek, Rockwell Creek, Allen Creek, Quartz Creek, Rubideau Creek and on the Lincoln Lake Trail. Major repairs were completed on eleven other bridges. The first phase of the replacement of the Hidden Lake walkway was begun in the fall and major walkway repair was completed at the head of Josephine Lake. Tread projects were completed in Belly River, on the Boulder Pass, Highline, Bowman Lake, and Flattop Mountain Trails.

Volunteers played an important part in maintaining trails this year. Organized groups included an SCA High School work group in Belly River, the Sierra Club at Logging Lake, the Glacier Park Associates for several projects and the **Over-the-Hill** Gang on the **Highline** and Ole Creek Trails.

Of the 735 miles of maintained trail in the backcountry, 44% are considered to be in good condition. 41% are considered to be fair condition and 15% are considered to be poor.

1997 TRAILS FEATURES INVENTORY

Trails Feature	Measure Units	Total Features
Unpaved trails	Miles	735
Trail snowfield (maintained)	Linear feet	21, 000 *
Trail signs	Each post	303 *
Trail bridges	Each	200 *
Trail walkways	Linear feet	18, 221 *
Non-Campground privies	Each	45
Stock ramps	Each	22
Hitchrails non-campground	Each	53
Corrals	Each	10
Drainage devices	Each	13, 423 *
Designated Backcountry Campgrounds:	Each	62
Trail Crew Work Camps	Each	18
Livestock- horses	Each	20
Livestock- mules	Each	41

WEST LAKES DISTRICT TRAIL REPORT
SUMMARY
FY 1997

BRIDGES;

1. Repaired - 7
2. New Construction - 3

Bridge work included:

Lake McDonald - Lincoln Creek Suspension Bridge, Mineral Creek Suspension Bridge, Crystal Ford Bridge, Rubideau Creek Bridge, Loop Trail/Chalet Creek Bridge

Walton - Ole Creek Suspension Bridge (approach)

TREAD (MAJOR)

1. Turnpikes - 801 feet
2. Check and fill - 1,870 feet

TREAD (MINOR):

1. Grading - 7,485 feet
2. Rocking - 18,740 feet
3. Snow Work - \$4,521 (Highline Trail)

NEW **TRAIL** CONSTRUCTION:

1. Re-route - 320 feet
2. New Trail - 0 feet

BRUSHING:

1. Power Brushing - 47,370 feet

CORDUROY:

1. Removed - 510 feet
2. Repaired - 109 feet
3. Constructed - 249 feet

NEW DRAINS:

1. Total - 71

TRAINING:

1. Blasters School
2. Chain Saw Safety and Maintenance
3. Bear Management
4. Red Card Certification and Refresher

HUDSON BAY DISTRICT TRAIL REPORT
SUMMARY
FY 1997

BRIDGES :

1. Complete reconstruction **12**
2. Repair 22
3. Dismantled 4

Bridges were completely reconstructed at the following locations:

Goat Haunt - Pass Creek, Stoney Indian Lake, Spring Creek

Belly River - Gable Creek I, Gros Ventre Creek, Mokowanis Campground

Many Glacier - Allen Creek

St. Mary - Curley Bear Creek, Rising Sun Creek West, Gunsight Lake Gypsy Camp

Two Medicine - Rockwell Falls, Bighorn Basin

TREAD REPAIR:

1. Major - 1,621 feet/.3 mile (includes turnpike, check and fill and wall work.
2. Minor - 7.45 miles
3. Snow Work - \$4,782 (Grinnell Glacier, Ptarmigan Tunnel, Hidden Lake Trail)

BRUSHING:

1. Power Brushing - 19,740 feet/3.74 miles
2. Hand Brushing - 4,638 feet/.87 miles

CORDUROY:

1. New.Rebuilt - 429 feet (head of Josephine Lake to Grinnell Lake)
2. Repaired - 7 feet

TRAINING:

1. Blasters School
2. Chain Saw Safety and Maintenance
3. Bear Management
4. Red Card Certification and Refresher

1997 TRAIL MAINTENANCE COSTS:

Hudson Bay District:

Trail opening - \$17,734
Snow work - \$5,409
Brushing - \$7,386
Routine tread work - \$24,279
Construction of new trail sections - \$314
Bridge work - \$30,095
Drain work - \$17,611
Boardwalkwork - \$13,308
Additional clearing - \$1,060

West Lakes District:

Trail opening - \$41,525
Snow work - \$4,521
Brushing - \$15,120
Routine tread work - \$21,766
Construction of new trail sections - \$1,422
Bridge work - \$12,271
Drain work - ?
Boardwalk work - \$9,311
Additional clearing - \$1,866

SECTION 17 WILDLAND FIRE SUMMARY

INTRODUCTION

Glacier's backcountry experienced a very low level of **wildland** fire activity in 1997. In total, approximately 6 acres burned. The following fire activity was recorded:

TYPE OF FIRE	LOCATION OF FIRE	ACRES BURNED
Lightning Natural Out	Flattop	.1
Lightning Natural Out	Granite Park	.1
Lightning Natural out	Adair Ridge	.1
Lightning Prescribed Natural	Peabody	5.0
Lightning Natural Out	Needmo	.1
Lightning Prescribed Natural	Salvage	.2
Lightning Suppression	Scalplack	.1
Lightning Natural Out	Dutch Ridge	.1
Lightning Natural Out	Anaconda	.1
Lightning Natural Out	Gauge	.1
Human Caused Suppression	Outbound	.1
Lightning Natural Out	Covey	.1
Lightning Natural Out	Lone Pine	.1
TOTALS	13	6.3

Glacier's **parkwide** fire history study was concluded this summer by Steve Barrett. His report with map are completed and available in the park library.

SECTION 18

LIMITS OF ACCEPTABLE CHANGE MONITORING NORTH FORK SUBDISTRICT

INTRODUCTION

The following information and attached table summarizes the "Limits of Acceptable Change" monitoring data collected in the North Fork Subdistrict during the 1997 field season as mandated in the North Fork Management Plan.

MONITORING GOALS

Monitoring goals for both social and resource indicators were established prior to the beginning of the field season. The resource indicator monitoring goal including conducting annual backcountry campground evaluations at each of the 12 designated backcountry campgrounds in the Subdistrict. This monitoring goal was met.

The following monitoring goals were established for social indicators:

<u>Zone</u>	<u>Monitoring Goal</u>	<u>Samples Collected</u>
Road	50 per segment; 150 total	185 total
Trail	75 samples; no segment less than 3x	110 total
Wilderness Remote	10 samples	12 total
Lake	30 samples: Bowman Lake	22 total
	10 samples: Kintla Lake	15 total

Monitoring goals were met for every segment except for the Bowman Lake.

DATA COLLECTION

The social indicator data was **collected** by backcountry patrol personnel using a pre-printed 4"x5" index card with appropriate data entry blocks. Detailed written monitoring instructions were provided.

The resource indicator data was collected by backcountry patrol personnel during the annual Backcountry Campground Evaluation (August 15 - Sept. 15).

CALCULATION OF CONDITIONS

The following criteria were followed when analyzing the data and comparing existing conditions to established standards:

Road Zone - The number of vehicle encounters per sample (patrol) was divided by the duration of the sample (patrol) and an encounters per hour was determined. This figure was compared to the standard of 5 vehicles per hour and each sample was determined to either meet or exceed the standard. The percentage of samples that met the standard per segment was compared to the 80% probability factor in determining if the standard was met for the segment.

Trail Zone - The number of parties encountered on the trail segment per sample (patrol) was divided by the duration of the sample and an encounters per hour was determined. This was compared to the standard of .375 encounters per sample hour (which was equivalent to the standard of 3 encounters per 8 hour day). This method was necessary to avoid inaccurate extrapolation for samples that were less than 8 hours in duration. The percentage of samples that met the standard per segment was compared to the 80% probability factor in determining if the standard was met for that segment.

Wilderness Remote Zone - The number of parties encountered in the Wilderness Remote Zone per sample (patrol) was divided by the duration of the patrol. This was compared to the standard of 0 encounters per sample hour (which was equivalent to the standard of 0 encounters per 8 hour day). The percentage of samples that met the standard was compared to the 80% probability factor in determining if the standard was met.

EXISTING CONDITIONS

Specific conditions for each indicator are outlined in the attached tables. Overall conditions are summarized as follows:

Social Indicators:

Road Zone - 0 of 3 segments met standard

Trail Zone - 1 of 8 segments met standard

Wilderness Remote Zone - standard was met

Resource Indicators:

Bare Ground in Backcountry Campgrounds - 44 of 45 campsites and 9 of 12 food prep areas met standard

Root Exposure Backcountry Campgrounds - 20 of 45 campsites and 5 of 12 food prep areas met standard

Social Trails in Backcountry Campgrounds - 38 of 45 campsites met standard

RECOMMENDATIONS

1. Re-evaluate the social indicators and standards and their applicability to overall management goals and objectives for the area.
2. Establish and implement an action plan in response to standards that are out of compliance.

LIMITS OF ACCEPTABLE CHANGE MONITORING SUMMARY - NORTH FORK SUBDISTRICT

INDICATOR	SEGMENT	STANDARD	CONDITION (* met #standard)
A. Social Indicators:			
1. Parties encountered on trail per 8-hour day	Akokala Lake Trail	80% probability of no more than (3) encounters per 8-hour day.	2 of 8 samples (25%) met standard. Avg. per 8 hour day = 1.5
	Boulder-Brown Pass Trail	"	11 of 20 samples (55%) met standard. Avg. per 8 hour day = 2.8
	Bowman Lake Trail (foot-head of lake)	"	1 of 3 samples (33%) met standard = Avg. per 8 hour day = 8
	Kintla Lake Trail (foot-head of lake)	"	3 of 8 (38%) met standard. Avg. per 8 hour day = 7.71
	Logging Creek Trail (trailhead-Grace L.)	"	6 of 13 (46%) met standard. Avg. per 8 hour day = 5.6
	Numa Lookout Trail	"	2 of 4 samples (50%) met standard. Avg. per 8 hour day = 7
	Quartz Creek Trail	"	3 of 3 (100%) samples met standard. Avg. per 8 hour day = 0
	Quartz Lake Loop Trail	"	6 of 13 samples (46%) met standard. Avg. per 8 hour day = 3.29
1. Parties encountered off trail per 8-hour day	Wilderness Remote	80% probability of (0) encounters per 8-hour day.	13 of 13 samples (100%) met standard. Avg. per 8 hour day = 0

INDICATOR	SEGMENT	STANDARD	CONDITION
3. Vehicles encountered on road per hour	Bowman Lake Road (Polebridge RS - Bowman Lake)	80% probability of no more than (5) encounters per hour.	27 of 68 samples (40%) met standard. Avg. per hour = 7.7
	Kintla Lake Road (Polebridge RS - Kintla Lake)	80%	29 of 59 samples (49%) met standard. Avg. per hour = 4.7
	Inside North Fork Road (Polebridge RS-Dutch Creek)	"	33 of 55 samples (60%) met standard. Avg. per hour = 4.7
4. Boats encountered on lake	Bowman Lake	None established.	22 samples recorded 4.0 boats per sample hour
	Kintla Lake	None established	20 samples recorded 47. non-motorized boats (1.06 persample hour)
5. Litter occurrences on backcountry trails	Akokala Lake Trail	None established.	8 occurrences
	Boulder-Brown Pass Trail	"	28 occurrences
	Bowman Lake Trail (foot-head of lake)	"	16 occurrences
	Kintla Lake Trail (foot-head of lake)	"	15 occurrences
	Logging Creek Trail	"	22 occurrences
	Numa Lookout Trail	"	2 occurrences
	Quartz Creek Trail	"	13 occurrences
	Quartz Lake Loop Trail	"	14 occurrences
	Wilderness Remote	"	0 occurrences

1 INDICATOR	SEGMENT	STANDARD	CONDITION
Resource Indicators:			
1. Bare Ground	Adair Campground	225 sq. ft. per campsite, c 75 sq. ft. x number of campsites for food prep area	4 of 4 campsites met standard
	Akokala Lake Campground	"	3 of 3 campsites met standard
	Boulder Pass Campground	"	3 of 3 campsites met standard
	Bowman Lake Head Campground	"	6 of 6 campsites met standard
	Brown Pass Campground	"	3 of 3 campsites met standard
	Grace Lake Campground	"	3 of 3 campsites and food prep met standard
	Kintla Lake Head Campground	"	6 of 6 campsites and food prep met standard
	Logging Lake Campground	"	2 of 3 campsites met standard
	Lower Quartz Lake Campground	"	4 of 4 campsites met standard
	Quartz Lake Campground	"	3 of 3 campsites and food prep met standard
	Upper Kintla Lake Campground	"	4 of 4 campsites and food prep met standard
	Round Prairie Campground	"	3 of 3 campsites met standard
	Food Prep Areas	"	9 of 12 food prep areas met standard

INDICATOR	SEGMENT	STANDARD	CONDITION
2. Root Exposure	Adair Campground	2 or less per campsite	4 of 4 campsites met standard
	Akokala Lake Campground	"	3 of 3 campsites met standard
	Boulder Pass Campground	"	3 of 3 campsites met standard
	Bowman Lake Head Campground	"	2 of 6 campsites met standard
	Brown Pass Campground	"	3 of 3 campsites met standard
	Grace Lake Campground	"	1 of 3 campsites met standard
	Kintla Lake Head Campground	"	5 of 6 campsites met standard
	Logging Lake Campground	"	2 of 3 campsites met standard
	Lower Quartz Lake Campground	"	2 of 4 campsites met standard
	Quartz Lake Campground	"	1 of 3 campsites met standard
	Upper Kintla Lake Campground	"	4 of 4 campsites met standard
	Round Prairie Campground	"	3 of 3 campsites met standard
	Food Prep Areas	"	5 of 12 food prep areas met standard

3. Social Trails	Adair Campground	(1) social trail per campsite	4 of 4 campsites met standard
	Akokala Lake Campground	"	3 of 3 campsites met standard
	Boulder Pass Campground	"	3 of 3 campsites met standard
	Bowman Lake Head Campground	"	6 of 6 campsites met standard
	Brown Pass Campground	"	3 of 3 campsites met standard
	Grace Lake Campground	"	3 of 3 campsites met standard
	Kintla Lake Head Campground	"	6 of 6 campsites met standard
	Logging Lake Campground	(1) social trail per campsite	1 of 3 campsites met standard
	Lower Quartz Lake Campground	"	3 of 4 campsites met standard
	Quartz Lake Campground	"	3 of 3 campsites met standard
	Upper Kintla Lake Campground	"	4 of 4 campsites met standard
	Round Prairie Campground	"	3 of 3 campsites met standard

SECTION 19 FLATHEAD WILD AND SCENIC RIVER MANAGEMENT

INTRODUCTION

Glacier National Park is bounded on the west by the North Fork of the **Flathead** and on the south by the Middle Fork of the **Flathead** Wild and Scenic Rivers. Management of these river corridors is jointly shared between the Glacier National Park and **Flathead** National Forest, with the U.S.F.S. serving as the lead management agency. The following information summarizes river patrol accomplishments, guide/outfitter use, and significant management actions in 1997:

RIVER PATROLS

The following river patrols were conducted on the Wild and Scenic River system by U.S. Forest Service and NPS personnel in 1997:

Segment	# Patrols	River Miles
Upper North Fork (Canadian border to Big Creek)	30	372
Lower North Fork (Big Creek to Blankenship Bridge)	5	60
Upper Middle Fork (non- Wilderenss)	4	18
Lower Middle Fork (Essex to confluence of Middle Fork and South Fork)	18	226
TOTAL	57	676

RIVER GUIDE/OUTFITTER USE

River guide/outfitters and Institutions accounted for the following use in 1997:

OUTFITTER	NORTH FORK OF THE FLATHEAD	MIDDLE FORK OF THE FLATHEAD
Glacier Wilderness Guides/ Montana Raft Company	195 service days	6,609 service days
Northwest Voyageurs	33 service days	3,380 service days
Great Northern Raft Company	n/a	9,929 service days
Glacier Raft Company	181 service days	13,649 service days
Flathead Lutheran Bible Camp	389 service days	n/a
Glacier Presbyterian Church Camp	60 service days	n/a
TOTAL SERVICE DAYS	858	33,567

Commercial outfitter (including Institutional guiding) use on the North Fork of the **Flathead** reflected a 7% decrease from 1996, and commercial use on the Middle Fork reflected a 8% decrease from 1996.

RIVER MANAGEMENT ACTIONS

The following management actions were implemented in 1997:

1. A GS-5 seasonal River Ranger position was funded by the U.S.F.S. for 80 days. This position was capably filled by Laurie Fisher.
2. **One** Student Intern from the University of Montana was utilized by the U.S.F.S. to assist with the river management program.
3. A new river Limits of Acceptable Change monitoring form for each major river segment was developed and utilized in 1997. The form includes improved monitoring instructions.
4. An Experience Quality Index survey form was developed and implemented in 1997, in order to collect quality index data associated with Limits of Acceptable Change Standards.
5. A camping closure was initiated at West Glacier, on the Forest Service side of the river, upstream from the old bridge.

AGENCY CONTACTS

River management personnel participated in the following presentations, public contacts, and agency functions in 1997:

1. Glacier Raft Company and Montana Raft Company seasonal orientation (U.S.F.S. presentation by **Kraig Lang** and NPS presentation by Steve Frye).
2. River Management presentation to the Glacier Institute by Laurie Fisher.
3. Summer interpretive programs at private RV parks and campgrounds in the **Canyon** (several presentations by Laurie Fisher and Kraig Lang, U.S.F.S.).
4. Annual river outfitters close out meeting (attended by outfitters, U.S.F.S. and NPS personnel).
5. River Management presentation to Trout Unlimited by Kraig Lang.
6. Kraig Lang hosted law enforcement coordination float trips with U.S. Attorney's Office and Federal Special Agents.

1997 RIVER LAC MONITORING REPORT
North Fork of the Flathead River

Upper North Fork Management Unit (Canadian border to Big Creek):		
Indicator	Standard	Condition
1. Encounters per day with other float parties	80% Probability of encountering no more than (3) float parties on river per day	Monitored 30 days in 1997. There were 21 days with no encounters. Maximum float parties encountered on any one trip (3). All sampling days met standard. <u>STANDARD IS BEING MET</u>
2. Encounters per day with shore parties	80% Probability of encountering no more than (7) shore parties per day	Monitored 30 days in 1997. There were 6 days with no encounters. Maximum shore parties met on any one trip (7). All sampling days met standard. <u>STANDARD IS BEING MET</u>
3. Campsite conditions	No campsites with an impact index between 50-60. No more than 3 campsites with an impact index between 40-49.	14 campsites surveyed, none of these sites had a rating between 50-60. The highest impact recorded was 36, at Ford River Access. All samples met standard. <u>STANDARD IS BEING MET</u>
4. Experience Quality Index	No more than 20% of surveyed users at the lowest quality level. No less than 20% at the highest quality level	Survey conducted in 1997. Results pending.
5. Occurrences of litter	No more than one occurrence of litter visible from water craft per (2)miles of river or <u>20</u> occurrences	Monitored on 30 days in 1997. There were 9 days were no litter was found. Maximum litter occurrences found one trip (5). All sampling days met standard. <u>STANDARD IS BEING MET</u>

Indicator	Standard	Condition
6. Kilometers of shoreline with man made modifications in the background	No more than 5% decrease from 1982 in number of natural appearing kilometers	There are 70 kilometers of shoreline within the upper North Fork Management Unit. In 1997, 19 out of 70 kilometers had visible permanent human made modifications in the foreground. 73% of the shoreline remains unmodified.
7. Mechanical sounds heard from water craft	80% probability of hearing no more than (12) mechanical sound occurrences while floating per day	Monitored on 30 days in 1997. Maximum sounds heard on any one trip (0). All sampling days met standard. <u>STANDARD NOT MET</u>

Lower North Fork Management Unit (Big Creek - Blankenship Bridge) :

Indicator	Standard	Condition
1. Occurrences of litter	No more than one occurrence of litter visible from water craft per (3) miles of river or (6) litter occurrences	Monitored 5 days in 1997. 3 of 5 days met standard. Average for all trips (no more than 1 piece of litter per mile). 60% of float trips met standard <u>STANDARD NOT MET</u>
2. Campsite and day-use site conditions	No site with an impact index between 50-60. No more than 3 sites with an impact index between 40-49.	3 campsites surveyed, with no sites recording an index > 41. <u>STANDARD IS BEING MET</u>
3. Defacement of natural features	No more than one new occurrence of defacement per year	Monitored 5 days in 1997. No occurrences of defacement recorded. <u>STANDARD IS BEING MET</u>
4. Experience Quality Index	No more than 25% of surveyed users at lowest quality level	Survey conducted in 1997.

SECTION 20

1997 WILDERNESS IMPLEMENTATION SCHEDULE (WIS)

INTRODUCTION

The Wilderness Implementation schedule (WIS) serves as a written means of outlining annual backcountry management objectives and assignments in Glacier National Park. Backcountry patrol Rangers utilize the WIS as a guideline for daily project assignments and duties.

PROJECT LISTING

Projects and tasks are listed in the WIS (by Subdistrict or Area). They are compiled annually through analysis of Backcountry Campground Evaluations, end of the season reports, backcountry -patrol reports, and field inspections.

PROJECT CODES

Each project/assignment listed in the WIS has been assigned a code to enable Wilderness Management Section personnel to recognize the overall level of importance and priority of each assignment. Project codes are based on the following criteria:

Code 1 (Mandatory): Indicates a project with demonstrated life/safety considerations, and/or involving non-compliance with standards mandated in Glacier's Bear Management Plan. This priority code also includes all inventory and monitoring and resource management projects designated as annual goals by the Wilderness Manager as well as projects involving severe cases of resource degradation.

Code 2 (Moderate Priority): Indicates a project involving deficiencies which involve significant impact/degradation to natural resources, and/or work needed to correct serious cases of non-compliance with standards mandated in Glacier's Backcountry Management Plan and/or Backcountry and Wilderness Maintenance Standards.

Code 3 (Low Priority): Indicates a project involving deficiencies which demonstrate minor degrees of on-going impact/degradation to natural resources, with potential for accelerated resource damage, and/or work needed to correct minor cases of non-compliance with standards mandated in Glacier's Backcountry Management Plan and/or Backcountry and Wilderness Maintenance Standards.

COMPLETION DATES

The completion date and call number of the personnel responsible for project completion are listed in the far right column of the WIS.

Footnotes: projects which required consultation and coordination with the Resource Management/Reveg Crew (including annual CRMPS projects) are footnoted with an (*). Projects which required coordination with the Trail Crew are

footnoted with an (**).

COMPLETED WIS

A completed 1997 WIS for each area and Subdistrict in Glacier is kept on file in the Wilderness Management Office. The following WIS for the Walton Subdistrict is included to serve as an example of the format and content of a typical WIS.

1997 WILDERNESS IMPLEMENTATION SCHEDULE WALTON AREA

Management Activity	Location	Task/Assignment	Project Code	Completion Date/Call #
Provide Wilderness Management Training and Orientation	Park Headquarters	Conduct 4 hour Wilderness Management orientation session for all Visitor Protection personnel involved with backcountry patrols	1	Completed by all as required
	Park Headquarters and backcountry	Conduct annual Backcountry Ranger Training (5 days) for all personnel assigned to Wilderness Mgmt. Section	1	5/27-5/31 All
Inventory and monitor backcountry resource conditions and impacts	Beaver Woman Lake CG	Conduct annual backcountry campground evaluation	1	8/21 423,424
	Coal Creek Campground	"	1	8/22 423,424
	Harrison Lake Campground	"	1	8/25 424
	Lake Isabel Campground	"	1	9/6 423
	Lower Nyack Campground	"	1	9/9 424
	Lower Park Creek Campground	"	1	9/1 424
	Ole Creek Campground	"	1	8/27 423,424
	Ole Lake Campground	"	1	8/28 423
	Upper Nyack Campground	"	1	9/10 424
	Upper Park Creek Campground	"	1	9/6 423
	St. Nicholas area	Conduct undesignated campsite survey	3	
	Pinchot Creek area	"	3	
Implement Hazard Tree Management Plan	all backcountry campgrounds	survey all backcountry campgrounds for hazard trees	1	ONGOING

Manage Backcountry Sign System	all backcountry trails and campgrounds	remove all unnecessary backcountry signing (certain geographic features)	3	COMPLETE
	"	install new, updated signs as assigned	1	COMPLETE
	all backcountry campgrounds	install new version of the "Notice to Backcountry Campers"	1	COMPLETE
Visitor Use Management	all backcountry campgrounds	conduct backcountry campground occupancy survey (each night camped out)	2	COMPLETE
	Subdistrict wide	promote the use of the Voluntary Climber Registration Form at VC's, Ranger Stations, etc.	1	ONGOING
	S&district wide	collect summit register data from any mountain summit reached	2	ONGOING
Backcountry Permit System	Appar VC	all backcountry rangers will work at bc permit desk 1 x per month (June, July, Aug.), 2 hours minimum	1	COMPLETE
Vegetation Management	Subdistrict wide	document all backcountry and trailhead noxious weed infestations (use standard form)	1	COMPLETE
	Subdistrict wide	document all noxious weed eradication efforts (use standard form)	1	COMPLETE
	Subdistrict wide	assist with eradication of noxious weeds at designated locations	1	ONGOING
Wild and Scenic River Management	Middle Fork of the Flathead, W. Glacier - Blankenship	conduct thorough river corridor clean up effort	2	ONGOING
		remove all NPS boundary signs along the river corridor	3	ONGOING
		install NPS river message signs at appropriate river access locations	2	ONGOING
		monitor river LAC indicators on each float trip	1	ONGOING
Backcountry Law Enforcement	Subdistrict wide	non-commissioned bc rangers will document all non-compliance on bc visitor contact form	2	ONGOING

Backcountry Law Enforcement	Subdistrict wide	commissioned bc rangers will document violators stated reason for non-compliance	2	ONGOING
Bear Management	"	all bc rangers will attend the annual Bear Mgmt. Training	1	6/9 424, 425 6/11 423, 424
	"	all bc rangers will assist with bear management actions as assigned	1	ONGOING
Backcountry Facility Management	Coal Creek Campground	get bc map changed to show trail to water	2	7/31 423,424
	"	monitor food pole, change as needed, OK	2	7/16 424,425
	"	monitor toilet depth, needs replacement	1	7/16 424,425
	"	add log check to site #1	2	7/26&31 423,424
	"	flush stump and add fill to site #2	2	7/31 423,424
	"	level and remove stump at hitchrail	2	7/31 423,424
	"	add fill to food prep area	2	ONGOING
	"	delineate food prep area to slow expansion	2	ONGOING
	"	flag new site for toilet	2	7/22 423
	"	burried logs to delineate site 2	2	7/31 423,424
	"	reattached metal CG sign to post	1	7/31 423,424
	"	Install new version of Notice to BC campers	1	7/22 424
	Coal Creek Cabin	Pack in supplies as needed, return staple gun, new smoke alarm battery, variety of nails and screws, clean dish towels.	2	ONGOING 8/22,9/18,7/26 423,424
	"	R & R area	2	7/30 423, 424
	"	brush and build ciarn at TH	2	8/2 423,424
	Harrison Lake Campground	add fill to site # 1, monitor	2	ONGOING
	"	delineate food prep area; reduce total size. Use large rocks and logs	2	7/8 424,425
	"	install tent site marker for site 1	1	7/8 424, 425
"	install outhouse site marker	2	7/8 424, 425	

Backcountry Facility Management	"	install food pole site marker	2	7/8 424, 425
	"	reanhor fire grate	2	7/8 424, 425
	"	reset metal food prep area sign	2	7/8 424, 425
	"	remove rope from food cable	2	
	"	4 orange trail markers for food prep trees	2	
	"	build cairn at river crossing and TH	2	8/3 424
	Harrison Lake Cabin	Install new notice to BC campers sign	1	8/25 4 2 4
	"	Pack in seasonal supplies as needed, smoke alarm battery, clean dish towels	2	ONGOING 7/31 425
	"	R & R around cabin area	2	ONGOING
	"	New oilcloth for table	3	7/31 425
	"	New lock for cabin door	2	7/8 424, 425
	Lake Isabel Campground	level and enlarge site # 1, looks good	2	7/22 424, 425
	"	enlarge site # 2, add log check	2	7/22 424, 425
	"	delineate food area site to help with root exposure, monitor	2	7/1 424 7/22 424, 425
	"	reshore outhouse	2	7/22 424, 425
	"	reset CC map post	2	7/1 424
	"	install new outhouse site marker	2	7/22 424, 425
	"	replace rail on hitchrail	2	7/22 424, 425
	"	replaced manners sign with new version	2	7/22 424, 425
	"	new cribbing needed for outhouse, rotting	2	
	"	add fill, 10-20 bags, to site 2	2	
	Lower Nyack Campground	monitor toilet depth, replacement needed new site across access trail in same area	1	7/14 424,425 8/4 424
	"	enlarge site #1, add log check as needed	2	MONITOR
	"	delineate boundary of site	2	MONITOR

Backcountry Facility Management	"	delineate and fill site # 3	2	MONITOR
	"	level hitchrail and tighten or replace posts as needed	2	MONITOR
	"	reanchor fire grate	2	
	"	replaced manners sign with new version	1	8/4 424
	"	needs outhouse site marker	3	8/15 423
	"	install orange trail markers from gravel bar to TH	2	8/30 423
	Lower Nyack Campground	Tamp hitchrail posts	2	8/15 423
	"	Install new notice to BC campers sign	1	9/9 424
	Lower Nyack Cabin	pack in supplies as needed, smoke alarm battery, clean dish towels	2	8/4 424
	"	R & R around cabin	2	8/15 423
	"	needs new wood box	3	
	Lower Park Creek Campground	block social trail between site #2 and #3	2	6/30 424, 425
	"	delineate site # 4 to eliminate spread	2	6/30 424, 425
	"	retamp hitchrail posts	2	6/20 423
	"	replaced manners sign with new version	1	7/22 424, 425
	"	reanchor fire grate	2	
	Lower Park Creek Cabin	pack in supplies as needed, new smoke alarm battery, clean dish towels	2	7/21 All
	"	R & R around cabin	2	ONGOING
	"	reattach stovepipe elbow	2	6/25 423, 424
	Ole Creek Campground	lower manners sign and retamp	2	5/22 424, 6/26 423
	"	level and block site # 1	2	ONGOING
	"	delineate site # 2	2	ONGOING
	"	delineate and fill site # 3	2	ONGOING

Backcountry Facility Management	"	delineate food prep area	2	ONGOING
	"	reanchor fire grate	2	6/26 424
	"	reset food prep area sign	2	6/26 424
	"	repair low rider lid and seat	2	6/26 424
	"	level hitchrail area and rehab	2	7/18 423,425
	Ole Lake Campground	pull oxeye daisy around hitchraii	2	6/25 425, 7/29 none found
	"	limb trees around food cable	2	7/29 122, 425
	"	delineate site # 2, monitor	2	ONGOING
	Ole Lake Campground	delineate site # 1, monitor	2	ONGOING
	"	continue to rehab old food prep area, good	2	ONGOING
	"	replaced SE post of hitchrail	2	7/17 423
	"	remove crib wire from old rail, add to new	2	7/29 122, 425
	"	pack in cache		6/25 425
	"	limb and buck up tree along toilet access	2	6/25 425
	"	return sven saw to cache		
	"	install boot print sign behind site 2	2	
	Upper Nyack Campground	remove small fir tree and brush around hi tehrai l	2	
	"	delineate site # 1; fill as necessary	2	ONGOING
	Upper Nyack Cabin	pack in seasonal supplies as needed, new smoke alarm battery, clean dish towels, ant bomb	2	ONGOING 8/5 424
	"	clean and brush around cabin	2	ONGOING
	"	needs new wood box	3	
	Upper Park Campground	continue rehab work on old site, looks good	2	ONGOING
	"	level site 1, looks good	2	7/1 424

Backcountry Facility Management	"	level hitchrail area	2	7/1 424
	"	block social trail from site 1 to outhouse	2	7/1 424
	"	replaced manners sign with new version	2	7/22 424, 425
	Upper Park Cabin	pack in supplies as needed, new smoke alarm battery, clean dish towels, newspapers, board for wood box, matches	2	ONGOING 6/30 424 7/22 424, 425
	"	clean and brush around cabin	2	ONGOING
	"	cut and split firewood for winter		7/22 424, 425
	Beaver Woman campground	continue rehab on old site	2	7/15 424, 425
	"	delineate new site and protect as needed	2	8/21 4 2 4
	"	monitor food pole; replace as needed, ok	2	7/15 424, 425
	Beaver Woman campground	add duff layer to site # 1, grub access trail	2	8/21 4 2 4
	"	continue to rehab site at main junction	2	7/15 424, 425
	"	pack in cache	2	7/15 424, 425
	"	Install new lid for low rider	1	8/21 423,424
	"	Replace lid on hitchrail	2	8/21 423,424
	"	Install new sign board for manners sign	2	8/21 423,424
	"	Pack out cache	1	9/24 120
	Fielding Cabin	seasonal supplies as needed; smoke alarm battery	2	
		replace rail on hitchrail at TH	2	6/29 424, 425

SECTION 21

BACKCOUNTRY MANAGEMENT ACTIONS

INTRODUCTION

The following table summarizes significant backcountry management actions accomplished in Glacier National Park during 1997:

Element	Management Action
Backcountry and Resource Management Projects	Revised the Backcountry Campground evaluation form to include a sliding scale for bare ground and vegetative cover measurements in order to account for varying campground capacities
	Continued collection of "limits of acceptable change" data in the North Fork Subdistrict
	Completed Environmental Assessment for the proposed Gable Creek backcountry campground, with a finding of no significant impact
	Completed the construction of the new Gable Creek backcountry campground
	Eliminated one campsite at the Belly River Campground
	Designed a "flying squirrel resistant" food container for use at the Elizabeth Lake foot Campground
	Changed the policy regarding use of a designated campground in " winter " status to permit a maximum of one party and 6 persons
Backcountry Management Policies and Regulations	Continued the temporary closure of the Sperry Chalet due to sewage and safety considerations
	Continued implementing the seasonal closure for skiers and snowboarders in the Logan Pass area, in an effort to mitigate impacts to freshly emerging soil and vegetation
	Belton Chalets continued to operate the Granite Park Chalet with reduced overnight services (hut system)
	Re-instituted the Backcountry Preservation Fund in association with the Glacier Park Associates
	Continued issuing backcountry Use Permits out of Waterton Townsite (by Waterton Lakes NP personnel)

Backcountry Management Policies and Regulations	Continued to offer bear resistant food containers free of charge to undesignated camping parties
	Increased the standard for bare ground in tent sites at designated backcountry campgrounds to 225 sq. ft.
	modified policy regarding use of designated campgrounds in " winter " status during the summer season to allow for one party per night, and a maximum of 6 persons
Backcountry Fee Demonstration program	Established Glacier's first ever advance reservation system for Backcountry Use Permits (\$20)
	Transferred the responsibility for Backcountry Use Permit Issuance from the Division of Interpretation to the Wilderness Management Section
Backcountry Information and Handouts	Updated the " Backcountry Camping Guide" with improved text and updated regulations
	Updated the Undesignated Camping Handout to include a regulatory and campsite selection criteria checklist
Backcountry Management Operations	Continued the seasonal intern Backcountry Ranger position at Walton Ranger Station (filled by Justin Ivary) sponsored by the Glacier National Park Associates
	Updated the Backcountry Ranger Patrol Guidelines
	Updated the Backcountry Ranger Handbook
	Updated the Backcountry Campground Evaluation Form and Procedures
	Sent all seasonal Backcountry Rangers to the annual Bear Management Training/Certification
	Completed the fifth annual Glacier National Park "State of, the Backcountry Report"
	Conducted the fifth annual Backcountry Ranger Training (5 days)
	Hosted the fifth annual mid-season Backcountry Ranger meeting at St. Mary

1997 BACKCOUNTRY PRESERVATION FUND

The Glacier National Park Associates again sponsored the Backcountry Preservation Fund. They provided volunteer services to complete the annual mailing to Park visitors who expressed interest in the program. A total of \$4,458 were donated to this fund in 1997. The following is a summary of the actual and obligated expenditures from this fund:

1. Backcountry permit computer printers (5 Epeom LQ **870's**) - \$2,200. Purpose: These printers allowed our designated Backcountry Use Permit issuing stations to upgrade their capability to computer print their permits, thus speeding up and enhancing the permitting process for backcountry campers.
2. Bear Resistant Food Containers (12) - \$800. Purpose: These high impact plastic canisters will provide backcountry campers with approved permits for camping in undesignated campsites above or near timberline an improved means of legally storing food and garbage.
3. **Tyvek** paper Backcountry Use Permits (15,000) - \$1,458. Purpose: This 3 year supply of Backcountry Use Permits was printed on special **Tyvek** paper, which is tearproof and waterproof. The printing also incorporated an important regulatory and Leave No Trace checklist on the reverse side of the permit, which is discussed with each party obtaining a Backcountry Use Permit.

We would like to extend a special thanks to the Glacier National Park Associates, a "friends of Glacier" organization who provided logistical support for the Backcountry Preservation Fund, and to the generous park visitors who contributed.

GRANITE PARK AND SPERRY CHALETS

The following information summarizes the current status of the Granite Park and Sperry Chalets: Both Chalets remain closed to full services due to sewage, safety, and water system concerns. Granite Park Chalet was re-opened in 1996 for limited operations (i.e. as a hut system) operated by **Belton** Chalets. The hut system operation continued in 1997, providing overnight sleeping rooms. Visitors had to pack in their own sleeping bags and food, but were able to use Chalet cooking facilities..

Granite Park Chalet was served by two NPS maintenance workers on a rotational basis in 1997, plus the concessioner hut keeper(s). In 1997, the NPS completed window and door, revegetation, and composting toilet work. In 1998, the NPS will continue with a maintenance presence and the Chalet "hut system" will be operated by the Glacier Wilderness Guides. The NPS will conduct repairs of a load bearing ceiling joist and will be flying out (6-9 loads) human waste via helicopter. The sewage and water system must be funded and completed prior to re-opening of the Granite Park facility to historic operational levels.

Sperry Chalet continued to be closed to the public in 1997, for on-going contract rehabilitation and construction activity. Major work projects completed in 1997 included:

- Completion of the roof on the employee dorm,
- Repair of the dining room roof on the Chalet
- Rebuild of the kitchen deck at the Chalet
- Completion of first story deck on Chalet,
- Re-build of balcony decks on second story of Chalet
- Completion of new propane storage area underneath the deck
- Completion of the septic system
- Construction of the composting toilet (dry in and rock work)
- Completion of 1,200 square feet of revegetation.

The will approximately 16 contractor employees, a 2 person NPS construction crew, and 2 (rotating) NPS Resource Advisors working at the Sperry Chalet in 1998. The

SECTION 22

WILDLIFE, FISHERIES, ECOLOGY, AND SCIENCE

WILDLIFE

In 1997, 3 bald eagle nests were successful, producing 4 young (this productivity is down from recent years); there were ten bald eagle nesting territories in the park. There were only 4 unduplicated sightings of grizzly bear females with cubs of the year; this is the lowest number recorded since 1987. The thirteen in the Northern Continental Divide Ecosystem (NCDE) is also the lowest since 1987. There was good reproduction 2 years ago and lots of cubs will be out on their own next year. In the NCDE there were twelve mortalities, 4 of them females and 3 were train kills. There were no grizzly mortalities in Glacier National Park.

We also experienced no bear-inflicted human injuries in Glacier's backcountry. No bears were trapped and/or relocated in the park, but there were 3 grizzlies released in the park that were trapped outside the park (1 from the Lake Five area and 2 from the Blackfeet Indian reservation). Wolf pup production is **unknown**, though we believe pups were produced by the South **Camas** Pack and possibly by the reformed North **Camas** Pack. We trapped and radio-collared 1 wolf (a pup or yearling) during fall trapping and now have 1 active collar in each of the 2 packs (though the one in the South **Camas** Pack may fail or has failed).

Fifteen Harlequin ducks were captured and banded as part of an on-going cooperative effort with the Montana Natural Heritage Program. Only 2 broods of 9 young were observed on Upper **Mcdonald** Creek, plus one brood of 2 young on the **Waterton** River.

Other monitoring work included mountain goats in the Walton Goat Lick area, to determine number of goats and their response to floaters on the Middle Fork of the **Flathead** River and the monitoring of mountain sheep in the southeast section of the park.

FISHERIES

Glacier National park cooperated with the Blackfeet Tribe; the U.S. Fish and Wildlife Service; the Alberta Conservation Association; and the Blood Indian Tribe of Canada and **Waterton** Lakes National park, Canada in a project to determine bull trout movement and spawning in the Belly River and St. Mary River drainages. This project was partially funded by a National Park Service Challenge Cost share grant and built upon work done on bull trout genetics in 1996 and will continue in the St. Mary drainage in 1998. The park banned fishing in park waters containing only bull trout and instituted a catch and release program for bull trout on all other waters. A federal listing for bull trout in the Columbia River basin is expected in 1998.

ECOLOGY

Grants were obtained from the National Park Foundation (\$10,000) and the National Fish and Wildlife Foundation (\$5,000) to fund a flora manual for the park. The University of Utah has agreed to publish the manual.

Preliminary work was begun on the Whitebark Pine Project (funded in **FY98-2000**) to work out field protocols. Nearly 2,000 Whitebark pine seeds were collected and are in preparation for germination.

A search was conducted for **Botrychium** spp. in Big and Round Prairies, resulting in **1-3** new species records for the park and 1 potentially new species for science.

The ecologist coordinated researchers studying classification of alpine vegetation, recovery after trampling of alpine vegetation, forest gap response to edge in landscape, and Glacier Lily response to grizzly bears.

The park continued water quality monitoring through its agreement with the **Flathead** Basin Commission. A National Park Service Challenge cost share grant helped with the cost of the analysis of water sampled from 3 backcountry lakes: Upper Dutch, Gyrfalcon and Cobalt. Bowman, Kintla, and McDonald lakes were monitored under the Clean Water 2000 program.

SCIENCE

A multi-park study describing the importance of Whitebark pine and related habitats to the ecology and long-term survival of grizzly bears in the Northern Rocky Mountains continued this year under the direction of Ms. Kate Kendall (**USGS-BRD**). Other parks involved in the study include Yellowstone and Grand Teton National parks. Three years of field investigations have been completed and 1 additional year of field surveys remain. A high elevation vegetation map for Glacier National Park that includes Whitebark pine stands is currently in preparation. The map is based on data from field surveys processed through the park GIS system.

Preliminary studies were carried out in 1997 to test several experimental methods and survey techniques, many of which will be employed in a, park-wide investigation of grizzly bears set to begin next year. Funding was obtained for research to develop DNA "finger printing" techniques to identify and track the movements of individual bears throughout their park range. Hair and scat samples were tested and a survey design protocol was developed for use during implementation of the study in 1998.

Park Geographer Carl Key (**USGS/BRD**) completed a major manuscript describing park glaciers which will appear as a chapter in an Atlas of North American Glaciers, part of a worldwide series dealing with this subject.

Glacier National Park is one of ten U.S. National parks selected as a study site for global climate change research. The park program, being carried out under the direction of Dr. Dan Fagre, is recognized as a leading edge science effort that is producing extremely useful information.

Dr. Leo **Marnell** (Senior Park Scientist) published a paper describing the status and trends of cutthroat trout populations in Glacier National Park in 1997. A 4 year study of amphibians and reptiles in Glacier National Park culminated in 1997. Dr. **Marnell** published several manuscripts based on the results of these surveys this year. A seasonal biotechnician was hired in 1997 to conduct field studies aimed at developing a sampling protocol for implementation of a park-wide amphibian-monitoring program.

A manuscript was published describing the results of sediment paleolimnology research at Avalanche Lake. The research was principally a methodological investigation aimed at documenting the historical chronology of fish populations in remote lakes. Results from the study confirmed that the cutthroat trout populations in Avalanche Lake are indigenous to this water and were not introduced. Additional field studies were carried out on several other park lakes containing trout populations of unknown origin and the results are currently being analyzed.

SECTION 23

WILDERNESS MANAGEMENT RECOMMENDATIONS

INTRODUCTION

The following recommendations have been compiled (and paraphrased in some cases) from seasonal Backcountry Ranger "end of season" reports. Each recommendation was reviewed during the winter season by the Backcountry Coordinator, Wilderness Manager and Assistant Chief Ranger. A final or suggested disposition follows each recommendation in bold print:

BACKCOUNTRY MANAGEMENT OPERATIONS

1. Set up a policy explaining the shared responsibility for maintenance of the Middle Fork **SSC's** by all that use them. There has been some questions as to who is responsible for the maintenance of these cabins.

Agree. Currently routine maintenance the Middle Fork cabins are the responsibility of the West Lakes District Ranger. During the summer months the DR has allowed the Backcountry Coordinator to oversee the scheduling of use of the cabins. The DR is responsible for the maintenance of the cabins and then the overall administration of the cabins. We have always felt that the cabins, especially in the Middle Fork should be the responsibility of the Wilderness Management Unit. We will pursue this with the DR **for** the Middle Fork. It should also be noted that specialized maintenance or rehabilitation of the backcountry patrol cabins is the responsibility of Jack Polzin (Maintenance Div.)

2. The BC intern at Walton is valuable asset for all operations. This position should be maintained at all costs.

Agree. We have a commitment from the Glacier Park Associates to sponsor this position for 1998.

3. We have discussed the possibility of having one BC ranger doing the Nyack loop continuously. This would cause some logistic problems but maybe worth it to the resource.

Disagree. If we are having problems around the loop we will schedule more patrols. There are other areas that have significantly more problems which would we could more justify a full-time presence. (Fifty Mountain CG, for one)

4. I think that the Lake McDonald area needs two backcountry ranger positions. I know this is a matter of funding. **What** about a position that is funded by both our unit and the bear **team** budget. This positions duties could include the usual BC responsibilities of the **bear** team while being tied to the wilderness management unit through the WIS and **its** demands. In the event of an emergency involving wildlife, bear **team** duties would become the priority. The job share proposal take the burden off of both budgets to fund the entire position. This would also accomplish our desire **to** not duplicate patrols and to receive assistance on the WIS.

Agree. We have proposed ideas **like** this **to** the Chief Ranger but there is no funding at this time. **Weare** aware of the need for more help in the area and will continue to work **for** funding and housing especially at the head of the Lake.

5. Would like to pack out all perishable food items, including canned goods from the cabins. Too much food is being wasted and attracting rodents. Leave some freeze dried items and other emergency rations. Everyone using the cabins should pack in their own food, matches, toilet paper, fire starter, white gas and paper towels which would be the most efficient way to supply the cabins. Also, only have 2 sleeping bags in each cabin as apposed to 6 like some have now. There is not space for that many bags.

The backcountry patrol cabins are the DR responsibility. We also agree that the **cabins** should be stocked with only **emergency** rations, but we feel that they should also be **stocked** with cabin items like matches, toilet **paper**, fire starter, white **gas**, dish soap, dishes, cleaning supplies, and paper towels. In most areas, the cabins are stocked by the packers when they are going in empty to retrieve a trail crew or the such. They also **carry extra horse freed** so that BC rangers **or** others on stock patrol can carry the tools and equipment needed to complete large projects. This seems to be the most efficient **way** to supple the cabins. Please work with the BC coordinator in your district to help facilitate this
in your area.

6. Need to look into possible alternative funding sources to provide for high level of resource monitoring and resource management protection for the NFSD, which is a unique and important part of the Northern Rocky Mountains Ecosystem. This includes both backcountry and frontcountry resource management funding.

Disagree. There is a **parkwide** need for additional Wilderness Management and Resource Management personnel. The need is not specific to the North **Fork**.

7. would like to get away from glue and **trim pieces** on sign boards due to the attraction to wildlife from these items on signs.

Disagree. Most **of** the attraction we have seen is for rubbing on the signs. With the metal sign posts **smaller** animals can't climb and chew, but the bears seam to like to rub and bit at the signs. We are looking at eliminating the campground "manners" sign which would help somewhat.

8. Would like to see some mention of the simple fact that tin foil does not burn and needs to be packed out with other trash on the BC video.

Agree. This is emphasized in the Leave no Trace program.

9. Would like to see the removal of fire grates from the backcountry for a variety of reasons.

Agree. We have recommended this for 1998.

10. Would hope that the current problems at Round Prairie CG stop any future development of river **CG's**. Currently we have a CG which has hardly any river channel in front of it and the possibility of development right across the river on private land. **Most river** users are on the river for the river not where thy will camp at night. The walk-site has had many folks camping at the trail because they have not wanted a cg you can not drive to. I think it would be better to have a low volume of undesignated camping along the river than any new river **CGs**. The road to the trailhead is also getting trashed because it is so rutted that only a high clearance vehicle can stay off the vegetation on the side of the road.

Disagree. There are no plans **for** any future development anyplace in the North Fork. The river campground was established as a mitigation for closing two other campgrounds in the North Fork. Kyle Johnson canoed the North Fork river in late July last **year** and found adequate access to the CG. **Apparently** users **of** this CC are not getting all of the information necessary. This is a training item and

we will try to **make** sure everyone at Apgar and other permit/visitor centers **are** better informed. The camping that is occurring at the trailhead is a frontcountry management issue. The road issue is a Maintenance rather than Wilderness Management concern and should be routed through **the Maintenance** Division.

11. Trail status involving the mentioning of brush conditions was questioned by the wilderness management unit at headquarters this season with some status being removed without any communication with the North Fork personnel. Why? We also had some **other trail** status comments changed or removed without any discussion to why, some **of which** involved visitor safety issues.

Disagree. We sometimes have inconsistencies **parkwide** as to a variety of things one which can be the trail status entries. The **NF** area was the only area to report brushy conditions which were correct but not consistent parkwide. It would not be fair to the visitor to call the trail around Logging Lake brushy and say nothing **for** most of the Middle Fork. The Wilderness Management Section is developing and will emphasize uniform trail status reporting criteria for 1998.

12. Would prefer that if only one site opens up to summer conditions in a three site CG that the one site would be open to first come first serve for walk-in permits until conditions open up at least on more site.

Disagree. If areas open before the reservation date they will all be on a first come basis. If it is after the date and only two sites are open on a three site CG then they may be both reserved. That is the way the system works and it would not be fair to cancel a reservation for a site. They **are** entitled to that site as much or more than a walk-in person;

13. Make more training available to the backcountry rangers. This would include helicopter, SAR, sawyer, etc.

Disagree. Many of these types of training are not priorities for the Wilderness Management Unit. Our primary objectives are in the Backcountry, implementing our programs. We have to draw the line regarding low priority training that is not directly related to our primary objectives. Currently some BC rangers are scheduled for 14 days **of** training before the end of June. It is important that we keep these people in the field as much as possible.

14. Get one or **more** VIP/SCA to assist in the St. Mary area, perhaps even to be stationed at **Gunsight** Lake to take on the difficulties that persist there.

This would be great but why not just another BC ranger instead. It all comes down to funding. We could easily double our staff in most areas and still not have enough. We are interested in improving **our** base funding most **of** which goes into personal services, but current funding increases are not available.

15. Work **more** with other Subdistricts as well as other work units to gain **more** experience in other environments.

Disagree. This is basically training, which is good but at what cost. If you **are** looking to enhance your experience level and make yourself more marketable this will probably have to be done on your own time. We **have** a certain amount of time to complete numerous projects. If we need help in **other areas** for a project which is a priority we have and **will** detail personnel **from** other areas to assist.

16. Communicate with subdistricts when people from outside **the** district are going to be working and patrolling in the area to negate doubling of resources.

Agree. That is the way it is supposed to work. Unfortunately not everyone thinks that they have to "check in" when they go into the backcountry hence we

have a lot of doubling parkwide. Have your supervisor contact theirs when it happens and we will continue to try to **work** with other units.

17. It is very clear that more time needs to be spent with BC law enforcement at the seasonal law enforcement refresher. 95% of the frontcountry folks were not familiar with a BC permit enough to even know where or what to look for.

Agree. This is a training item and we will try to address it at the seasonal **LE** refresher.

18. The squirrel buckets worked well at Elizabeth CG. The only problem is size, They need to be bigger.

Agree. The size should not be a problem if folks are only hanging their food. We are going to try to work on the lid arrangement to make it more **user friendly**.

19. What are the chance of moving the weather station and the solar panels behind the cabin at Belly River so that they would be out of sight more.

Agree - Fire Xanagement personnel will attempt to relocate the weather station this spring when they go in and install the unit **for** the summer. This will be dependent on finding a suitable alternative location behind the Ranger Station. We will talk with the radio shop regarding the solar panel.

20. Epi pens need to be available to give to visitors should the need arrive.

Disagree - The **Park's EMS** Coordinator indicates that epi-pens can be obtained via prescription only. He would be able to do so for the Park, but feels that the likelihood of using them in the backcountry is very slight. The pens have a 2 year shelf life and cost approx. \$20.00. There have been no recorded instances in which a Ranger could have helped someone in the backcountry if they had one with them. Park visitors may carry their own, and it is OK to help a patient administer the injection if they ask for your help.

21. We need a short form for documenting non-compliance. A way to record incidents that are not enough to warrant a citation. It would make the collection of information easier for the noncommissioned ranger and give us better records on what's going on.

Disagree., We currently have a BC non-compliance form that is to be used by non-commissioned employees every time they encounter a person in a non-compliance situation. Sometimes this form is used as a follow-up by supervisors to issue citations. This form is discussed each year at Backcountry Ranger Training. It serves us well and we see now need to revise it.

22. Both positions in Belly River need to be commissioned.

Agree. We are finding that with the increased visitation that commissioned BC rangers would be a plus in a lot of areas. The expenses associated with background checks will influence **our** ability to add additional commissions.

23. The Belly River area needs an extra person. There were numerous instances where problems could **have** been eliminated relatively easy with an additional person. This is also a safety issue with solitary and bear management patrols.

Agree. This would be great but current funding levels do not allow **for** additional positions at Belly River. We could easily add additional Backcountry Rangers in all areas **of** the Park, but again, funding does not allow for this. The current **staff** of two Backcountry Rangers and one SCA has been adequate for the most part.

24. We need some continued training with firearms at the range.

Agree. This is always a problem. Remember that even if we had a week of firearms training that unless you work at it over the winter somehow, you will lose your comfort and confidence by the time you get back. We certainly won't be able to justify extensive training every year.

25. We need more hands-on field training with the weed program to identify and treat infestations.

Agree. Depending on the location of our training this season we can incorporate this into the training more.

26. There is an incredible wealth of information available to the public through our park naturalists and their programs. I would like to have work time available to attend some of the programs throughout the summer. This would be an effective way for BC rangers up to speed on the specific history, flora, geology etc. of the area.

Disagree. This is a great way to increase ones knowledge of the park but can only be justified on your own time.

27. Would strongly support a full-time volunteer at Goat Haunt to assist the BC ranger.

Agree. We would like to have an additional person to assist the Backcountry Ranger at this location. However, it is not always easy to find the right person for such an assignment and it does not come without some expense. In addition, the housing situation may not allow for an additional person at Goat Haunt this year.

28. I would like to see more discussion during the annual BC training for issues regarding the wilderness act and other wilderness related issues by non-park experts.

Agree. This would be' great and we have done this in-past years. **It** is a time management thing but if we get mostly returning folks we can explore more things if there is time and interest. We have invited Greg Kroll from the Arthur **Carhart** National Wilderness Training Center to the 1998 training for this very purpose.

BACKCOUNTRY MANAGEMENT POLICIES, GUIDELINES AND REGULATIONS

1. Clarify the policy regarding eating on the beach or other areas in designated campgrounds which are outside of the food prep area. Day hikers eat near campgrounds but campers are not supposed to. What is the policy on this.

The policy has been and will continue to be this. Campers and others must Prepare and consume food in the designated food prep.

2. Have visitors phone number as part of Backcountry Use Permit. This would allow easier contact later in time if a need arises.

Disagree. This may be intrusive to visitors and we rarely are in need of a phone number under these circumstances. Phone numbers can be obtained during law enforcement contacts.

3. Promote wilderness in terms of minimum tool use; use hand drills, hand saws and so forth. Have properly working tools of the sort available to use. Encourage other work units to use hand tools rather than automatically grabbing

the power tools.

Agree. We are developing a minimum requirement decision tree to help better guide our decisions regarding this matter. We will try to acquire some better hand tools also.

4. Address the large groups brought to sensitive areas by naturalists (possibly limit number).

Agree. We have had this discussion with the Division of Interpretation in the past. It is a serious problem that we are hoping they will address earnestly. **Backcountry** Concession day use group sizes are also a related **concern**.

5. When a trail is closed to stock for the public, do not allow the park to use stock on that trail. It sends a very mixed message to the public.

Agree. We need to address this issue internally. Unless we can utilize alternative access trails, the use of helicopters for administration reasons may increase.

6. For backcountry fees, don't make them more expensive for a family of four than a drive in campground. Yes they are more expensive to maintain but the public doesn't know that.

Disagree. The two types of use are vastly different and cannot be compared equally. The backcountry fee demonstration program is predicated on generating a profit. A fair but profit generating pricing scheme will be developed.

7. More LE commissions in the backcountry.

Agree. There seems to be an increased need associated with documented backcountry non-compliance. Availability of qualified personnel and the costs associated with background checks will influence our ability to address this issue. Keep in mind that commissioned Rangers are not the only personnel who can contribute to preventative law enforcement in the backcountry.

8. The reservation system seemed to work well. Most of the visitors I talked to liked it and **would not** have many problems with the \$4 user fee also.

Agree. We will implement an additional fee for backcountry camping in 1998.

9. Statistics for the state of the backcountry are not accurate. Law enforcement rangers and naturalists travel frequently in the BC and pick up litter but it is never reported. If this information is pertinent we need a system to document the information correctly.

Disagree. The statistic reflected in the "State of the Backcountry Report" reflect the impacts that were observed and documented. It does not say that it reflects everything out there. It is the responsibility to everyone in the Ranger Division to complete a backcountry patrol report form. If this is not occurring, it represents a supervisory problem. We are considering a different format for the backcountry patrol reports and reporting of impacts.

10. I have some concern with volunteers writing BC permits at Two Medicine. We had a turnover late in the season and the-new folks had no training and were not familiar with the area. Recommend that permits be written by trained personnel only.

Agree. A GS-4 Visitor Use Assistant will be hired for backcountry permit issuance at Two Medicine in 1998. VIP's will still have to **cover** on their lieu days.

11. We need to clear up the tribal land permits for backcountry rangers and also the road to Cut Bank RS.

Agree. We are addressing this issue.

MAJOR MAINTENANCE AND RESOURCE MANAGEMENT PROJECTS

1. Need new low riders/outhouse (cribbing and hole) at Nyack, Coal, Sperry and **Flattop** campgrounds. Also, new cribbing at Isabel which may mean a new hole.

The Trail Crew is aware and we will work with them on these projects.

2. Wood boxes needed at both Nyack locations

We will work with the carpenter shop to try and make some kits up this winter.

3. We need to look at a relocation again at Isabel CG. We seem to be losing ground under those trees in the food prep area.

We will evaluate this next season and formulate a plan. One possible solution is to relocate the food prep area.

4. Eliminate fire pit at lower Park Creek CG. The browse lines and social trails are getting difficult to mitigate.

We can eliminate fires from a campground based on the amount of dead and down firewood available. The CG evaluation for Park shows we may seriously look at this proposal. Good documentation this next season one way or another is a must.

5. Add a BC CG where Lincoln Creek cabin is. This could open up some early BC trips into Walton area, as well as help facilitate other BC trips into Lake McDonald.

This has been suggested by the **GWGs** and others. Early season visitors to Lincoln Creek and the Walton subdistrict will **encounter** heavy downfall, dangerous high water crossings and campgrounds in winter status because we have not been able to visit the areas personally. We feel that there are other areas in the northern part **of** the Park that may be more conducive to early season visits, but will evaluate possible campground locations in the Lincoln Creek area this summer.

6. Consider changing the seat configuration on pit toilets in the backcountry. Go to a boxed in wooded seat with no metal involved. The metal cones are maintenance intensive and parts to repair are difficult to obtain.

Agree. This has been discussed and we hope to start making all new outhouses with this design.

7. Consider replacing the roofs of pit toilets with corrugated fiberglass roofing material. This material **is** waterproof, rot proof, lightweight to pack in, and allows natural light into an otherwise dark toilet. It also eliminates the need for asphalt roofing and 1x6 **underlayment** material.

This is an idea that has been thrown around for some time. **These** types of **roofs** may not hold up to snow loading, but we will give this idea some further consideration. In the mean time we plan to cut a round hole using a hole saw and then **screen** over it. This would allow for light to enter the structure.

8. Remove the treated lumber plank bridge from the John's Lake trail. A log bridge would suffice here, and treated lumber is inappropriate in the BC.

Agree with all aspects of this proposal but is not a priority at this funding level for trails.

9. Haul in a bunch of 2" gravel for the barn area at the head of the lake.

Project completed fall of 1997.

10. Put a pit toilet in Preston Park

Agree. This is a problem that we need to address. We plan to conduct the necessary compliance and install a pit toilet in this area in 1998.

11. Reroute trail by snowfield on Triple Divide Pass trail.

Agree. This will most likely be completed in 1998.

12. Reduce the number of campsites at **Gunsight** Lake.

Agree. The **number of** campsites at **Gunsight** was reduced by one a few years ago. Additional reductions have been discussed, but there are many mitigating factors that must be considered before we act. This issue will be addressed in an upcoming revision **of** the Backcountry Management Plan.

13. On the Cobalt Lake trail there is a well defined social trail that people use in spring before the bridges are in place. Would it be possible to re-route the trail so that it doesn't cross the creek.

We will have the Trail Crew take a look at this. There may not be a good re-route due to topographic limitations.

14. On the Atlantic Creek trail, one **mile** in from Cut Bank RS there is a small stream that flows all summer and muddies the area. People are crossing above it and creating severe root damage. Could a small log bridge be put in.

We will discuss this with the Trail Crew.

15. No Name Lake CG: Move food prep area to near food pole due to severe root exposure in present location. Rehab/revege area with **CRMPS** project.

Agree. We need to work on this area. We will submit this as a **CRMPS** project.

WILDERNESS MANAGER'S RECOMMENDATIONS

INTRODUCTION

The following recommendations regarding Glacier's Backcountry Management program are provided by the Wilderness Manager. They represent ideas and suggestions that I believe would enhance **wilderness values** and experiences, enhance resource protection, and improve the Park's overall Wilderness Management program.

WILDERNESS MANAGEMENT POLICIES AND GUIDELINES

1. Develop a minimum tool policy and decision tree for GNP that clearly establishes when, where, and why power tools and mechanical modes of transport can be used in our proposed Wilderness.
2. Establish criteria for closing high day use area access trails due to environmental reasons during early season melt out, when soil is saturated and vegetation is freshly emerging. It is during this time that resources are **most** vulnerable to impact. This would be similar to our "not available due to environmental conditions" status for designated campgrounds.
3. Improve our means of incorporating wilderness values (solitude, minimum tool, etc.) into our decision making process for potentially intrusive activities (research, aircraft use, fire suppression, etc.).
4. Develop defensible backcountry day use group size limits for all user groups (concessions, Glacier Institute, Naturalist hikes, general public, etc.)
5. Update the Backcountry and Wilderness Maintenance Standards to provide clearer criteria regarding the placement and installation of foot logs over small, non-hazardous stream crossings.
6. Develop criteria for seasonal closure of the Fifty Mountain meadows area during periods of high bear density in the fall.
7. Develop and implement an action plan which addresses the North Fork **LAC** standards that are currently out of compliance.
8. Eliminate **metal** fire grates at designated backcountry campgrounds which allow fires. These grates are a maintenance problem, safety hazard, and are inappropriate in bear country, as they may entice someone to cook odorous food directly on the grate.
9. Eliminate the "Notice to Backcountry Campers" sign which is posted in each designated backcountry campground. The information posted on them is repetitive and the additional sign and sign post are unnecessary facilities in proposed wilderness.
10. Develop criteria for the use and installation of the footprint/slash signs. They have proliferated in the backcountry to inappropriate levels.
11. Begin the process of identifying research needs (both resource and social) needed to support **the** future Backcountry Management Plan update.
12. Evaluate the effects on visitor solitude of NPS led naturalist hikes which utilize designated backcountry campgrounds as destinations. Research has shown that solitude in campsites is very important to backcountry visitors. I believe that we should not be leading large naturalist hike groups into these areas, or perhaps these campgrounds should be relocated.

13. Retrofit several bear resistant stock feed containers (aluminum) and establish a check out program for all stock users.
14. Modify the Compendium to authorize the use of bear resistant stock feed containers for stock parties.

BACKCOUNTRY MANAGEMENT OPERATIONS

1. Improve frequency and duration of backcountry patrol and law enforcement coverage at Fifty Mountain Campground.
2. Increase level of overnight backcountry patrols at designated campgrounds. Reduce the number of overnight patrols at places like Pass Creek Cabin, Slide Lake Cabin, etc. Continue to attain our WIS goal of camping out at least once per summer in each designated backcountry campground.
3. Improve safety and comfort of backcountry (class A field) uniform items by incorporating more effective fabrics, designs, and fit. This may require approval of non-R&R uniform items for use in Glacier. The most pressing need is for an improved backcountry patrol trouser.
4. Recruit a VIP to assist 1998 Backcountry Management Operations at Goat Haunt and St. Mary (Logan Pass Snow Management Area).
5. Continue to have qualified seasonal Backcountry Rangers assigned to the Wilderness Management Section attend the annual Bear Management Training.
6. Establish a more pro-active winter backcountry patrol program, possibly through the use of VIP's or SCA's.
7. Explore possibilities for obtaining cyclic maintenance funds for the Wilderness Management Section, for use on backcountrycampgroundimprovements and repairs. This cyclic funding should apply to campground maintenance, just as it applies to trail maintenance.
8. Encourage Trail Crews using the Red Gap Pass Gypsy Camp to walk down the main trail to a point at least 200 feet from the nearby creeks before seeking out an area for human waste disposal. The current spike camp location is sandwiched in between two major creeks, where there are no suitable human waste disposal areas,.

BACKCOUNTRY PERMIT SYSTEM/WILDERNESS EDUCATION/TRAINING

1. Work toward **securing funding** and resources to improve the Backcountry Camping video.
2. Invite a Greg **Kroll** (Arthur **Carhart** National Wilderness Training center) to speak at the 1998 Backcountry Ranger Training.
3. Seek a grant or other source of funding to develop and design a portable "wilderness skills trail" designed specifically for Glacier National Park. The objective of the "wilderness skills trail" would be to promote leave no trace **wildland** ethics, provide camping in bear country education, and educate the public about Glacier's backcountry camping **policies** and regulations, through various outreach efforts.
4. Develop and install a fixed "wilderness skills trail" adjacent to the new Backcountry Permit Center (quarters # 44).
5. Develop and install a "mock" backcountry campground for visitor education purposes, adjacent to the Apgar Backcountry Permit Center.

6. Promote the initiation of the trailhead bulletin board plan which will include the construction and installation of much needed new trailhead bulletin boards.

7. Evaluate the current hodge-podge of informational signing present in many of the "high day use" areas. Consider appropriateness of signing in the backcountry vs. the need to provide some sort of resource protection message. Evaluate ways and means to reduce impacts in "high day use areas" by providing improved educational messages (consider signs, trailhead bulletin boards, informational handouts, etc.)

8. To improve inter-divisional cooperation and communication, require all visitor protection personnel who engage in backcountry patrol work to attend a 2 hour backcountry management orientation session coordinated by the Wilderness Manager.

9. Develop a parkwide, interdivisional Leave No Trace educational strategy. This effort could include the following initiatives: short, succinct "Leave No Trace" message for future trailhead bulletin boards.

- Incorporate a "mandatory" Leave No Trace messages into all parkwide interpretive programs (hikes, campfire talks, etc).
- Develop a citizens Leave No Trace patrol program for designated high day use areas.
- provide Leave No Trace orientation to all appropriate employees
- continue to incorporate Leave No Trace educational messages into appropriate park site bulletins
- incorporate a Leave No Trace message into the TIS recording at major park entrances

10. Develop a Wilderness awareness orientation program for all employees of Glacier who deal with Wilderness Management related issues in one way or another.

11. Institute an annual Wilderness Manager's Hike (in September) in which a select group of local citizens and land management professionals are invited to participate in a first hand look and discussion regarding Backcountry Management in Glacier.

12. Assure that all seasonal Backcountry Rangers are introduced to the use of GPS devices.

13. Organize and coordinate a Arthur Carhart National Wilderness Training center sponsored Wilderness Management and Awareness Workshop for Glacier National Park. Target audience would be staff members (Rangers, Trails, Compliance, Interpretation, Fire Management, Resource Management, etc.) who have duties associated with Wilderness, minimum requirement, etc. Objective of course would be to heighten the entire staff's awareness of the Wilderness Act, Wilderness Management policies, minimum requirement considerations, etc. This course would be similar to several very successful workshops already conducted (Hawaii Volcanoes, Big Bend, Grand Canyon, Point Reyes, etc.), which have been coordinated by Greg Kroll, NPS representative.

BACKCOUNTRY MANAGEMENT PROJECTS

1. Close the Belly River Campground based on the fact that the toilet fails to comply with distance from water standards and the site floods regularly. Draft an EA to address the re-location of the three campsites eliminated.
2. Rehabilitate the closed Belly River Campground site.
3. Schedule Resource Management/Rehabilitation (**CRMPS**) projects at the following locations: Red Eagle Lake foot CG, Belly River CG, Akokala Lake CG, Boulder Pass CG, quarters # 44 construction site.
4. Complete mapping of all destination day use areas.
5. Make the following improvements at the Gable Creek Campground:
 - replace the low rider with an outhouse
 - install a stock feed hanging device adjacent to the hitchrail
 - clean up the slash around the hitchrail
 - relocate and improve the stock access trail to water
6. Install small screened windows in outhouses, to enhance interior lighting and improve visitors willingness to use them.
7. Install stock feed hanging devices near the hitchrail all popular stock use campgrounds.
8. Install a pit toilet in the Preston Park area', due to significant human waste problems and documented occurrences in the area near the Piegan **Pass/Siyeh** Pass Trail Junction..
9. Explore the possibility of procuring cyclic maintenance funding to augment the Backcountry Ranger work force, based on the justification of continued and backlogged Backcountry Campground maintenance.

RIVER MANAGEMENT

1. Work with the **U.S.F.S** to carefully examine the current river LAC indicators and standards for appropriateness and suitability, and initiate the river **user** quality survey called for in the river management guidelines.
2. Improve frequency and quality of wild and scenic river corridor patrols on the Middle Fork and lower North Fork of the **Flathead** River. Work to establish a seasonal River Patrol Ranger position in the Wilderness Management Section.
3. Assist with a joint NPS/USFS river management training in early summer of 1998.

CONCESSIONS MANAGEMENT

1. Eliminate the sale of soda pop and other non-traditional or historical refreshments at the Granite Park Chalet. Pop cans will lead to litter along the trail and pop is an ineffective means of hydration. Horse packing these inappropriate items to the Chalet also creates unnecessary pack stock traffic and impacts.
2. Require all Chalet guests to receive an orientation packet, including the basic backcountry regulations and safety advice. These visitors are entering our backcountry and staying overnight, but do not get any of the information that

overnight campers receive. This creates a potential safety and non-compliance concern.

3. Require all Chalet employees to attend an annual orientation in which specific backcountry regulations and policies are discussed. There are reports of Chalet employees providing inaccurate and inappropriate information to visitors.

4. Develop a policy to deal with the increasing number of "Institutional Guiding" activities that are being conducted under the auspices of an educational course.

5. Require at least one management level employee of the Glacier Wilderness Guides to attain a Master of Leave No Trace certification.

6. Do not authorize any additional Commercial Use Licenses for guided photography seminars or other day use business activities occurring in the backcountry. This issue is not just a Concessions Management issue, but also a Backcountry Management issue. Currently the approval process for these activities does take into account backcountry management considerations. Approval of additional business in the backcountry may negatively affect the desired future conditions for the backcountry. We need to incorporate this issue into the upcoming Backcountry Management Plan revision. I believe that the photography seminars are typically just a means of circumventing our limitations on backcountry guiding. In addition, I question whether these photography seminars are necessary and appropriate. One does not have to enter our backcountry to learn about photography. This type of activity is not even dependent on being in a National Park. **By authorizing** more businesses in the backcountry, we are risking the establishment of a "commercialized" atmosphere in the backcountry.

7. Explore the possibility of allowing GPI staff to issue Backcountry Permits to their seasonal employees on site. This would require someone on the GPI staff to be designated and trained to provide such a service.