

**Winter Use Monitoring Report  
Madison Ranger District  
BDNF  
Winter 2006/07**

**Monitoring Objectives**

- Establish a baseline of winter recreation used to determine overall trends and to document if use changes as a result of snowmobile restrictions in the national parks. Trends to monitor include number of users and type of use. The objective is to measure broad trends over time rather than the exact amount of use occurring in the GYA.
- Determine the geographic extent of winter use by updating *Winter Use Assessment* maps to refine areas of concentrated and dispersed snowmobile use, front country and backcountry skiing and other uses. .
- To the extent feasible based on existing science and knowledge, identify areas of potential conflict with winter recreation use and grizzly bears, wolverine, lynx, and big game winter range.
- Identify areas of recreation use conflict and the degree of conflict.
- Develop partnerships with states and others to effectively collect data and monitor use.

**Overview of the Season:**

**The winter of 2006/07 looked to be a no-show. There was a dearth of snow and shallow snow pack through December. On January 3, 2007 the snowmobile trail from Virginia City sported several sections of bare road surface. Snow remained unconsolidated for much of the early winter, and as a result, fewer snowmobilers ventured out. By the end of January, there was 2-4 feet of snow at elevations above 8000 feet in both the Tobacco Roots and the Gravelly mountain ranges. This is about 1-2 feet below the 20 year average for this time of year.**

**The beginning of February saw similar snow conditions. Small storms added little to the modest snow pack. Rocks, stumps and trees were covered, but not to any depth, and these invisible hazards deterred prudent riders from striking off cross country. However, the additional snow did allow improved trail grooming. There was increased precipitation by late February but a poor unconsolidated base persisted. At elevations above 8000 feet in the Tobacco Root and Gravelly ranges there was about 4-6 feet of snow, still about 1-2 feet below normal.**

**In March, conditions were initially good for winter recreation. However, by mid-March temperatures increased dramatically and the pack began to melt. For example, on South Meadow Creek, in the Tobacco Roots, the road was accessible only by snowmobile in early March, but by late-March it could be accessed by ATVs. Conditions began to deteriorate quickly. By the end of March there was only four feet of snow at higher elevations and most winter recreation activities ceased.**

**Winter recreation came to an end a month to six weeks earlier than normal. During the late 1990's use in the high country would continue into May. Such late season use is now uncommon for snowmobiles. However, late season back-country skiing and snowboarding have increased significantly in the Tobacco Roots. Popular areas are North Meadow Creek, Branham Lakes, and within the South Willow Creek drainage. This is an emerging recreational trend. Evidence of ski use in the 1990s primarily evidenced touring on skinny skis. This use was noted in Antelope Basin, up the West Fork of the Madison, and in the Tobacco Roots. By the late 1990s ski touring was essentially displaced by snowmobiles. Traditional backcountry skiers have little tolerance for snowmobile disturbance. However, the new breed of backcountry skiers commonly access use areas by snowmobile and tolerant these machines. This new type of skier is more apt to seek thrills than quiet and solitude. The increase of snowmobile accessed backcountry skiing is due in large measure to the growth of Bozeman, with its culture of backcountry recreation, and burgeoning population of young, active adults.**

#### **Other Trends and Observations:**

**Snowmobile use is on the wane. According to industry records, the snowmobile segment of the power sports industry has seen declining unit sales over the last ten years. Snowmobile sales reached their peak in 1997 when 260,000 sleds were sold. In 2005 only about 143,000 new sleds were sold. The snowmobile industry reports sales decreases of 6.5% per year between 1999 and 2005. The cause of this decline is attributed in large part to climate change. According a spokesman for Canadian snowmobile manufacturer Bombardier:**

**“We cannot ignore global warming. It is clear that in regions where snowfall is less stable, demand for snowmobiles is lower than it used to be. But in regions where the snowfall is stable, sales are going very well.”**

**Sales are growing in Russia and in Scandinavia, where snowfall has been heavier, and declining in North America.**

## **Winter Monitoring Flight Information**

**On March 6, 2007 Jonathan Klein and Brian Anderson conducted an aerial survey of the Madison Ranger District to gauge winter recreation use by observing and mapping snowmobile and ski tracks. Weather and visibility were excellent. There had been no snow or major wind event for about five days, so monitoring conditions were optimal.**

### **Observations:**

#### **Madison Range**

- **No use within the Jack Creek drainage (expected as this is mostly private land);**
- **Moderate use at the head of Muddy Creek (west of Pioneer Mountain). Sleds high mark on the east face of Cedar Mountain (expected as this has become a destination play area);**
- **Heavy use along Buck Ridge, Middle Bear and McAtee Basin. More sleds seem to be dropping into McAtee Basin than observed in previous years, and entering from multiple locations. Previous observations showed most use entering the basin from section 34. Riders seem to be exploring and expanding use;**
- **No violations into the Middle Fork of Bear Creek or McAtee where highmarking was observed right to the wilderness boundary but not beyond;**
- **A set of ski tracks observed in Cougar Creek, Section 1. Skiing was noted in earlier years within McAtee Basin. As snowmobiles use more of McAtee Basin, skiers may be displaced into the wilderness;**
- **No use in Cowboy Heaven (expected as snowmobile access is not possible and it is a long way for skiers to travel);**
- **No ski tracks observed in Papoose drainage (would normally expect to see some evidence of skiing here, but again a poor snow year);**
- **No use on Shedhorn Mountain (this portion of the wilderness has been previously violated, although violations were not well established). Signs were installed in 2000 to inform riders that the area behind the sign is closed. Signs may be effective or snow conditions not good enough to allow access;**
- **One deliberate violation into the head of the North Fork of Bear Creek, rider passed directly by a orange wilderness boundary marker.**

**Overall use in the Madison Range was about as expected, perhaps slightly off from previous years. There is better compliance with**

respect to the wilderness boundary. The fairly regular presence of snow rangers is one likely reason for improved compliance, as well as evident boundary marking. Use has increased in McAtee Basin both spatially and in intensity. Highmarking and snow play remain the primary purpose for visitation.

### Gravelly Range

- Moderate use in the Crockett Lake area (less than normal);
- Some low use evidenced in the Playgo Mine area and upper end of Fine Ridge and French Gulch;
- Low use in Cherry Morgan area (many patches of bare ground exposed);
- Low use at the head of Broomtail Ridge and along the Johnny Ridge Road;
- No use on Smith Lake;
- Low use on Cliff Lake (normally this is a high use area for ice fishing, but ice is not in good shape);
- No use in Wall Creek (which is closed to snowmobiles);
- Heavy use from Elk Lake to Red rock Pass along marked trail but not much playing off of the marked trail (due to shallow snow pack);
- Very little off trail use in the rest of Antelope Basin (normally this area is completely tracked up when snow conditions are good);
- Low use on Hidden Lake Bench;
- Moderate use on Lobo Mesa (usually this is a high use area);
- West side of the Gravelly Range exhibited generally low use. Many areas of exposed ground;
- Moderate use in Arasta Creek, but no highmarking up to the Greenhorn divide as would usually be observed;
- Eureka Basin (south end) more use than expected. This area is not easily accessed. Riders may be coming in from the Centennial Valley, or possibly from Standard Creek and packing extra gas.

Overall use in the Gravelly Range was substantially lower than in past years. Snow levels and snow pack conditions were not optimum. Access from Virginia City was poor with reaches of bare ground from VC up Alder Gulch during much of the winter. A shallow snow pack was not conducive to lower elevation cross country travel.

### Centennials

- Moderate to heavy use along Hellroaring Creek;
- Low use going up to Mount Jefferson on the Montana side;
- Moderate use on “Windshield Hill” below Reas Peak;

- **Highmarks near the summit of Mount Jefferson from the Idaho side;**
- **Rock Creek Basin evidences lots of snowmobile use, with several violations noted in the Cole Creek closure (area is not posted and riders likely are not aware this area is closed);**
- **Violations evident in the Lillian Lake area and BLM WSA (expected as this commonly is the case);**
- **Moderate ski use in around Wolverine Pass, and in the vicinity of the outfitter's ski hut.**

**Overall use is less than observed in past years except in Rock Creek and Cole Creek. There may be more riders accessing the area from the Henry's lake side via the "Waterfall" Trail to avoid the congestion and washboard trail conditions common to access from the Shotgun Road side (out of Island Park).**

### **Snowcrest**

**No use observed in the Snowcrest (did not fly over the Antone Road). Past winter monitoring flights have revealed scant use in the Snowcrest, probably owing to the distances from population and service centers. However, this flight revealed no use whatsoever. Probably attributable to poor snow conditions.**

### **Tobacco Roots**

- **Not much use in the Mill Gulch drainage. There is no real destination in this area and the snow conditions are generally poor for snowmobiles. The Madison District was approached by someone who would like permission to groom the area for cross country skiing;**
- **No use on Ramshorn Mountain;**
- **No observed use on Granite Mountain (head of South Willow);**
- **No observed use on Current Creek or Bivens. Generally this area would exhibit some evidence of snowmobile touring;**
- **Moderate use on Mill Creek, but lots of highmarking evident on Branham Peaks;**
- **North Meadow drainage where we have a groomed snowmobile trail is moderately to heavily used, but (lower than expected based on past observations);**
- **No use at Bell Lake (probably due to shallow snowpack);**
- **No use in the Camp Creek area (poor snow);**
- **No use on Table Mountain;**
- **Low use in Wisconsin and Noble Fork, but use is in association with access to highmarking opportunities in the higher lake's basins;**
- **The upper end of Quartz Creek is a destination play area (surprise observation I was not previously aware of).**

Overall use is about as expected although somewhat off from previous years. There is an apparent shift from touring to highmarking. Late season backcountry ski use is increasing. The Sheridan side caters to a mostly local constituency while the Ennis side is a destination play area for Bozeman and, to lesser extent, Butte.

**Collective Comments and Observations:**

Highest use area is Buck Ridge in the Madison Range, followed by the Hellroaring drainage in the Centennials and Elk Lake in the Gravelly Range. Due to low snowpack and generally poor snow conditions, off trail use is primarily confined to the upper elevations. Overall use, even after a good weekend preceded by the best snowfall of the season, appears low in comparison to previous years. Use appears to be downward trending, both spatially (area used) and numerically (number of riders). There appears to be a shift away from snowmobile touring to highmarking and snowplay, with destinations increasing becoming upper elevation basins. Skiing seems to mirror this trend with not so much touring as backcountry downhill skiing and snowboarding.

It is intuitive that less snow will equate with less snow based recreation, especially below a minimum threshold of snow to provide access and good play opportunities. For the Madison River drainage, the winter of 2006/07 was the worst snow year recorded between 1997 and 2008. Following is data retrieved from the USGS record for the April 1 snow pack average for the Madison River drainage basin:

1997 – 170% of the 30 year average;  
1998 – 110%  
1999 – 110%  
2000 – 85%  
2001 – 73%  
2002 – 85%  
2003 – 85%  
2004 – 80%  
2005 – 75%  
2006 – 110%  
2007 – 70%  
2008 – 120%

**Wildlife Conservation Society (WCS):**

WCS has assisted with winter use monitoring for the past several years. The data collected remains mostly in raw form and has not been compiled in any usable form as of this writing. Data includes

**vehicle counts for the Lyon's Bridge Snowmobile Trailhead for the past three winters, and aircraft overflights for 2006, 2007, and 2008.**

**Overflights were conducted to determine the distribution of snowmobile use in the Madison, Henry's lake, Gravelly, and Centennial mountain ranges (maps attached), with use intensity assigned for all observations. Data compiled is consistent with observations made from winter use monitoring flights conducted by Forest Service personnel.**

**Wolverine telemetry locations were overlaid on a use map of one flight only (map 2). Preliminary conclusions one might draw from the map are that wolverine may avoid areas of high winter recreation use. WCS has made no such definitive finding. Observations made in this regard are the authors.**

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