AGENDA ITEM or FINAL CONTRACT REVIEW SUBMITTAL FORM

Agenda Item: Gothic Road Resolution

Action Requested: Motion

Parties to the Agreement:

Term Begins: **Term Ends:** **Grant Contract #:**

Summary:

Resolution re: Gothic Road Snowmobile Closure

Fiscal Impact:

Submitted by: Liz Mense **Submitter's Email Address:** EMense@gunnisoncounty.org

Finance Review: ○ Required ◉ Not Required

Comments:

Reviewed by: Discharge Date:

County Attorney Review: ◉ Required ○ Not Required

Comments:
ready for bocc discussion db 8/29/18

Reveiwed by: GUNCOUNTY1\dBaumgarten Discharge Date: 8/29/2018 Certificate of Insurance Required

Yes ○ No ◉

County Manager Review:

Comments:

Reveiwed by: GUNCOUNTY1\mbirnie Discharge Date: 8/29/2018

○ Consent Agenda ◉ Regular Agenda ○ Worksession Time Allotted: 10 minutes

Agenda Date: 9/4/2018

Revised April 2015

Monitoring and Analyzing Winter Backcountry Use in the Upper Gunnison Valley
2017-2018

Douglas Shaw

Abstract

Crested Butte and the Upper Gunnison Valley (UGV) are renowned for backcountry access which is revered by, and beneficial to, innumerable winter recreation groups. Certain characteristics of the valley, including the long winters, exceptional snowfall, and extremely cold temperatures have turned the area from a mining town to a tourist destination that thrives due to its outdoor opportunities. Currently, the UGV's backcountry is regulated by a Winter Travel Management Plan (WTMP) that was designed and created more than twenty years ago. Since its implementation, the tools available for backcountry access have improved dramatically. Coupled with a 2015 United States Forest Service ruling that declared, "a system of routes and areas to provide for over-snow vehicle use" must be established for all winter use areas, this study set out to collect a baseline dataset concerning the recreational use of winter trailheads in the UGV.

To do this, game-style digital trail cameras were installed at eight locations from which the UGV backcountry is traditionally accessed. Data was downloaded from the cameras often, saved on an external hard drive, images were filed by trailhead and date, and analyzed. This information is presented in both spreadsheet and graph forms, providing data for individual forms of recreation as well as similar user groups (e.g., non-motorized, mechanized, motorized). In addition to the electronic monitoring, students were enlisted to perform real-time data acquisition in the field in order to help verify the accuracy of the cameras. This study presents a broad view of local backcountry use trends, while also providing valuable lessons learned during the introductory study. Finally, teaching aids have been included that can bolster future studies of this nature.

Introduction

Crested Butte and the Upper Gunnison Valley (UGV) are well known for broad backcountry opportunities available to diverse recreational groups throughout the seasons. Above all, the region is renowned for the ease with which one can access backcountry for innumerable winter recreational activities. Outdoor recreation is a major draw for both locals and tourists while also being a significant driver of the local economy. The tourism industry alone is the single largest contributor to Gunnison County's economy, responsible for nearly 36% of the accrued capital. Although summer generates approximately half of the region's tourism, winter recreation is unquestionably essential to the economic survival of the town's contemporary character (Gunnison County Community Development and Geographic Information Services, 2014).

This was not always the case. Beginning in the late 1800's, Crested Butte saw an influx of people from all over the world who came chasing their dreams of striking it rich in the silver and gold mining industry. Not long after, the area became an important hub for the

Denver and Rio Grande Railroad, which was fundamental to mining in the West Elk Mountains and the development of other mining towns on the Western Slope. Not long after the silver and gold reserves dried up, coal mining became an essential industry in Crested Butte. Mining and related operations continued in one form or another until the middle of the 20th century.

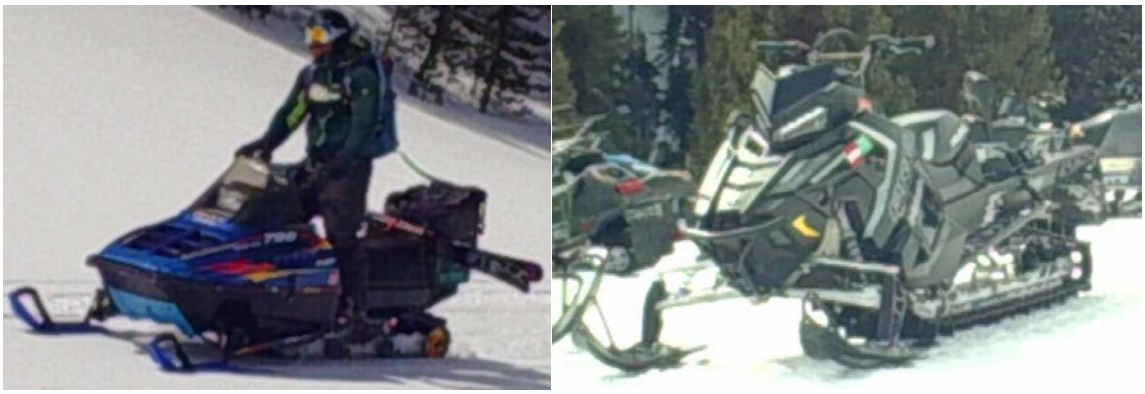
1960 saw an extreme reversal of fortune for Crested Butte and the UGV when legend Dick Eflin and colleague Fred Rice formed Crested Butte LTD, acquired the Malensek Ranch (later to be *Mount Crested Butte*), and began the task of obtaining permits to operate a ski area from the Gunnison National Forest Supervisor E.W. Stein. The ski area at Mt. Crested Butte opened for business on Thanksgiving Day, 1961 with nothing more than a rope tow on loan from Western State College and a Doppelmeier T-bar. 1962 saw the addition of base area facilities, a gondola, and the realization that Crested Butte's destiny would be in great contrast to its recent past (Miller, 2005 and Colorado Ski and Snowboard Hall of Fame, 2005).

Due to the efforts of Eflin and Rice, Crested Butte is now the destination haven for a diverse range of enthusiast groups during both the winter and summer seasons. Although visitation rates are historically at a maximum during the summer months, concerns regarding the future of winter backcountry recreation, access, and opportunities were the motivation for the following research. Local conditions such as long winters, plenty of snowfall, extremely cold temperatures, and easy access for all sorts of activities have attracted enthusiasts forming myriad special interest groups. Attractions like Crested Butte Nordic (50 km of groomed trails) and the Crested Butte Mountain Bike Association (CBMBA) network of groomed fat bike trails (>80 km) further solidify the town's draw. Pastimes include, but are not limited to, skiing (Nordic and Alpine Touring (AT)), snowboarding and noboarding, snowshoeing, fat biking, and snowmobiling.

At present, dispersed winter recreation throughout the UGV backcountry is regulated by a Winter Travel Management Plan (WTMP), enforced by the United States Forest Service (USFS). The plan was designed and implemented more than twenty years ago (Storch, 1995). Since its introduction, the technologies supporting backcountry travel have advanced immensely; snowmobiles have become drastically lighter and more powerful, splitboard and AT equipment are becoming commonplace, entire new forms of backcountry travel have been developed (e.g., fat bikes, snow bikes, tracked side by sides', more), and avalanche safety gear is more effective and available than ever (Figures 1-4). This has created an environment in which habitual resort skiers and snowboarders are more likely to access backcountry terrain due to the ease with which that terrain can be accessed and powder can be skied (Rivers and Menlove, 2006).

Moreover, a 2015 United States Forest Service (USFS) ruling that declared, "a system of routes and areas to provide for over-snow vehicle use" must be established for all winter use areas (USDA, 2015). Although the UGV has an existing WTMP, it is reasonable to believe that the plan will be reevaluated to create a new travel management rule (TMR) for the area. Quantitative data regarding backcountry travel and use in the UGV will be a

valuable resource to help inform this decision-making process (Svajda, et al., 2016). This study was designed to collect such data in the most comprehensive manner possible.



Figures 1 and 2. Shown for contrast is a mid-1990's Polaris RMK700 snowmobile (above, left); once the pinnacle of snowmobile technology. Today these are noteworthy because of their "lead sled" moniker which illustrates the machines disproportionate power to weight rating, a direct byproduct being the undesirable characteristic of sinking in snow. Capabilities are not enhanced by the short track and paddle (~133x1.25"), conventional equipment of the day. Beside the lead sled (above, right) is essentially a modern incarnation of the same machine; this 2017 Polaris RMK800 is inordinately more effective for backcountry travel. Note the elongated track (163x2.6") and increased suspension travel (illustrated by the distance from the snow to the bottom of the machine/tunnel). Numerous improvements over the years have made these machines far more capable than their predecessors.

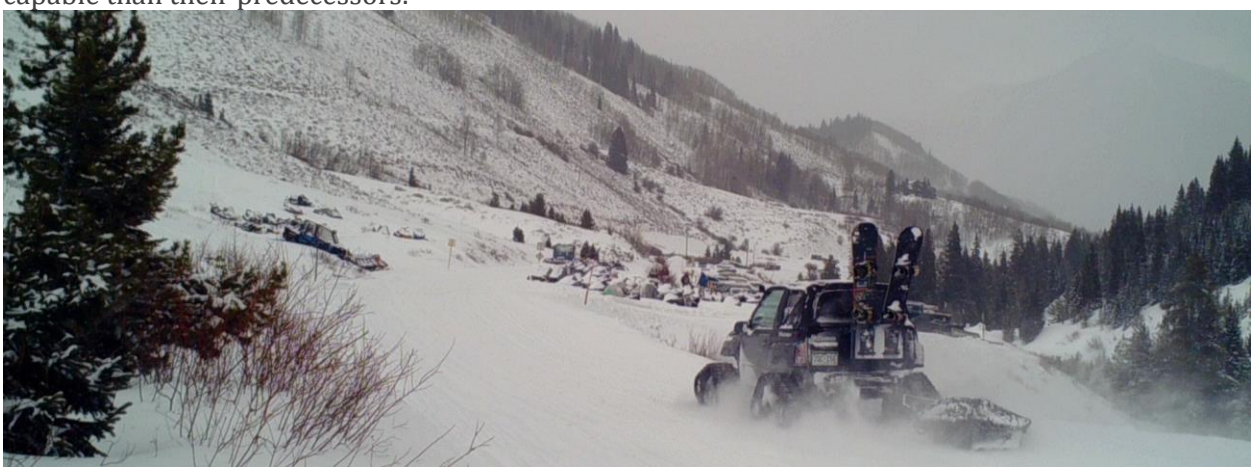


Figure 3. An example of over-snow vehicle progression. Pictured is a Geo Tracker which has been modified through the addition of Side by Side/UTV tracks for the purpose of shuttling owners to and from Irwin, CO.

Figure 4. Avalanche recovery gear is far more advanced than could have been imagined when the current WTMP was designed. Shown above is an avalanche airbag; an airbag typically charged with gaseous carbon-dioxide that can instantly be deployed in the event of an avalanche to keep the user above moving snow.

Methods

In order to create the most complete dataset possible, trailhead monitoring was carried made possible through the use of infrared/motion activated cameras that served as an indirect-counting method. This technique has been formally defined as "using electrical and mechanical counting devices, self-activated or time-lapse photography, and remote sensing techniques" (James, 1971). Motion-activated photography also produced accurate total counts (daily, user group, trailhead), information about direction of movement, method of travel and propulsion, user type, and even group size. In addition, the equipment required little maintenance once calibrated, produced well-defined results, and ultimately was relatively inexpensive (Hollenhorst et al., 1992).

Game-style digital trail cameras were installed at eight locations from which the UGV backcountry is traditionally accessed (Figure 5). The total number of days monitored varied between each location due to a number of reasons, including limited equipment, technical difficulties, and incorrect setup (these will be discussed further in the results section). For future work, Appendix A includes pictures of camera placement and a detailed description about the best practices for each location.

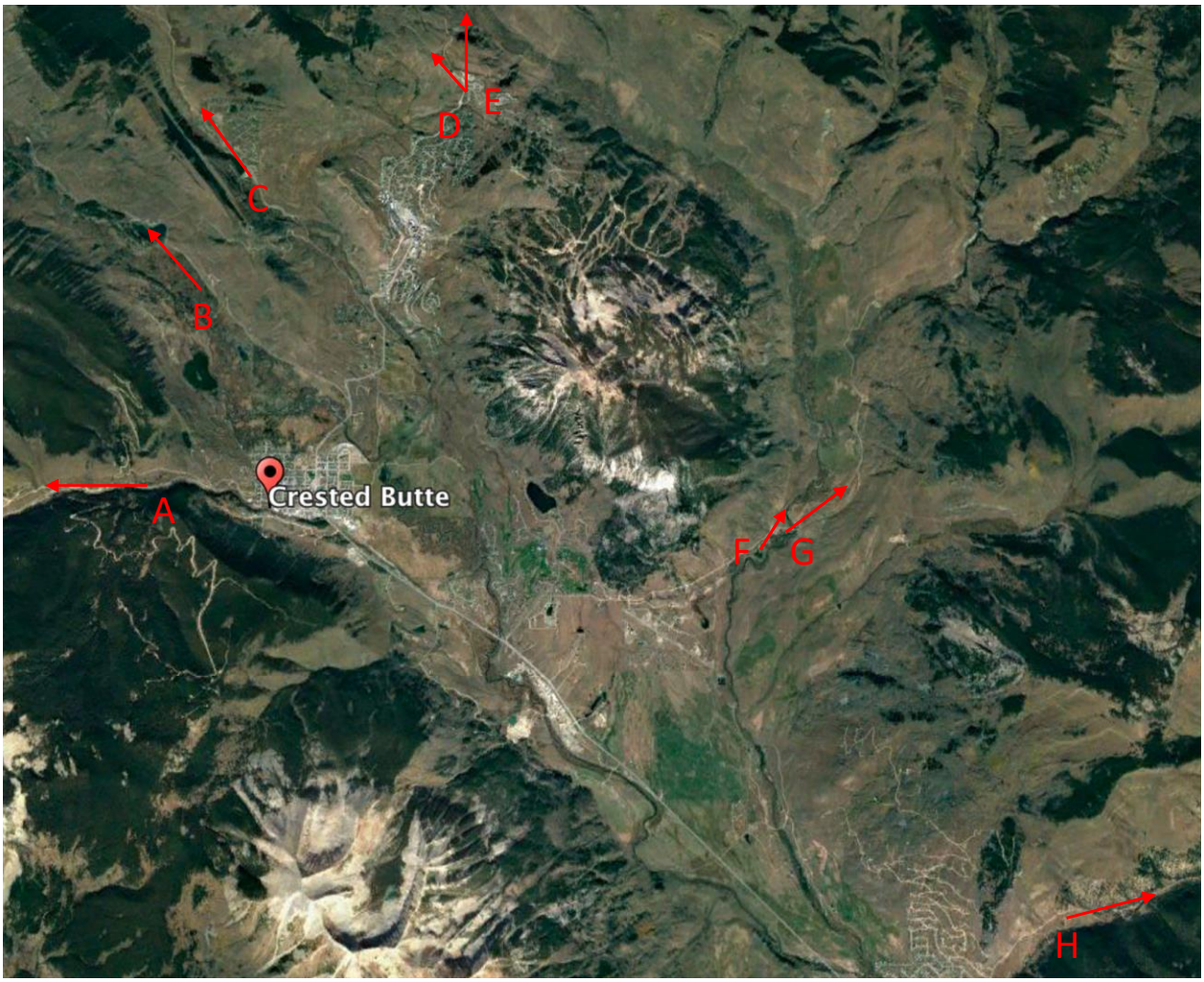


Figure 5. Locations at which data was collected. A. Kebler Pass Trailhead B. Slate River Road Trailhead C. Washington Gulch Trailhead D. Snodgrass Trailhead E. Gothic Corridor Trailhead F. Brush Creek Trailhead G. Brush Creek Road H. Cement Creek Road Trailhead (Image: Google Earth, 2018).

Images were downloaded from the cameras two to three times each week. This frequency helped ensure that the memory cards did not become full, the batteries always had power, and the cameras were facing the desired direction. This practice proved to be beneficial after the multiple times that bystanders interfered with the equipment (e.g., covering lenses, moving units). An external hard drive kept by Dr. Melanie Armstrong at Western State Colorado University (WSCU) operates as the storage facility for all images and data associated with this project.

Excel spreadsheets were drafted for each trailhead with day/date on the (-) Y axis and user group on the (+) X axis. Pictures were analyzed in one day increments, making sure to never study less than a full day (this was to avoid double counts if revisiting at a later date). Initially the count was recorded using a classic "*tally*" in which the number five would be signified by four vertical lines with a slash running through them. This proved to be inefficient due to the paper it would have eventually wasted and the time spent writing and

counting. To streamline the process a dozen *Tally Clicker*'s were purchased; these are the small counters that have a loop on top for your finger, a 4-place numeric display above a label indicating user group, top mounted button for raising the number (+1), and a reset knob on the side. A custom tray was then fabricated out of 2" X 1" tubing with the seam side 2" face removed, ¾" angle iron tacked perpendicular onto the end of the tubing to avoid movement, and a duct tape wrap around all edges to ensure a tight fit and good grip (Figure 6). In this tray, clickers were grouped in the same order as they occurred on the spreadsheets.

User groups were added to each spreadsheet as they appeared at each trailhead. Users were only counted on their way out into the backcountry to avoid counting the same user multiple times during a single outing. On the other hand, if someone made more than one distinct trip during a day, they would be counted as such (e.g., someone goes out in the morning, comes back to the trailhead later, then goes back out for a second trip). Motorized vehicles were given a single count unless the vehicle was determined to be a "hybrid" vehicle (meaning that it was being used as a mode of transport for skiers/snowboarders/etc.), in which case its count reflected the number of skiers/snowboarders/etc. using that vehicle. Appendix B includes detailed descriptions of each user group.

To help verify the legitimacy of collected information, three assistants were enlisted to perform real-time monitoring in the field. Work was generally carried out during the daylight hours (e.g., 0800 – 1530), on weekends, and at the Kebler, Slate, Washington Gulch, Gothic/Snodgrass, and Brush Creek Trailheads. Specific times were chosen by the students, based on availability and known periods of use. For the sake of diversity, a small percentage of the days studied took place during the work week. Worksheets containing the same user groups/categories as the existing database were provided in order to maintain continuity between groups of data. Observations were entered into spreadsheets and compared to data that was collected from the trail cameras during the corresponding time frame. This information can be found alongside comparisons to corresponding time frames in Appendix C.

Finally, trail monitoring took place starting after the first significant snowfall (December 21, 2017) and ended the weekend after the ski area closed (April 16, 2018). These specific dates were established as borders to the study because they represented the limits of suitable backcountry snow. The 2017-2018 winter produced specific difficulties due to less than average snowfall. This issue was apparent by the early emergence of dirt at most trailheads and may have contributed to a low total user count throughout the UGV. On the other hand, it is possible that the total number of users may increase by an order of magnitude during normal snowfall (while the ratio of users across trailheads might stay the same). One consequence of the drought was an earlier than average "shut down" of winter trailheads; as such the cameras at those trailheads were removed from the field earlier than others. Future studies might start earlier and/or end later, snow load dependent.

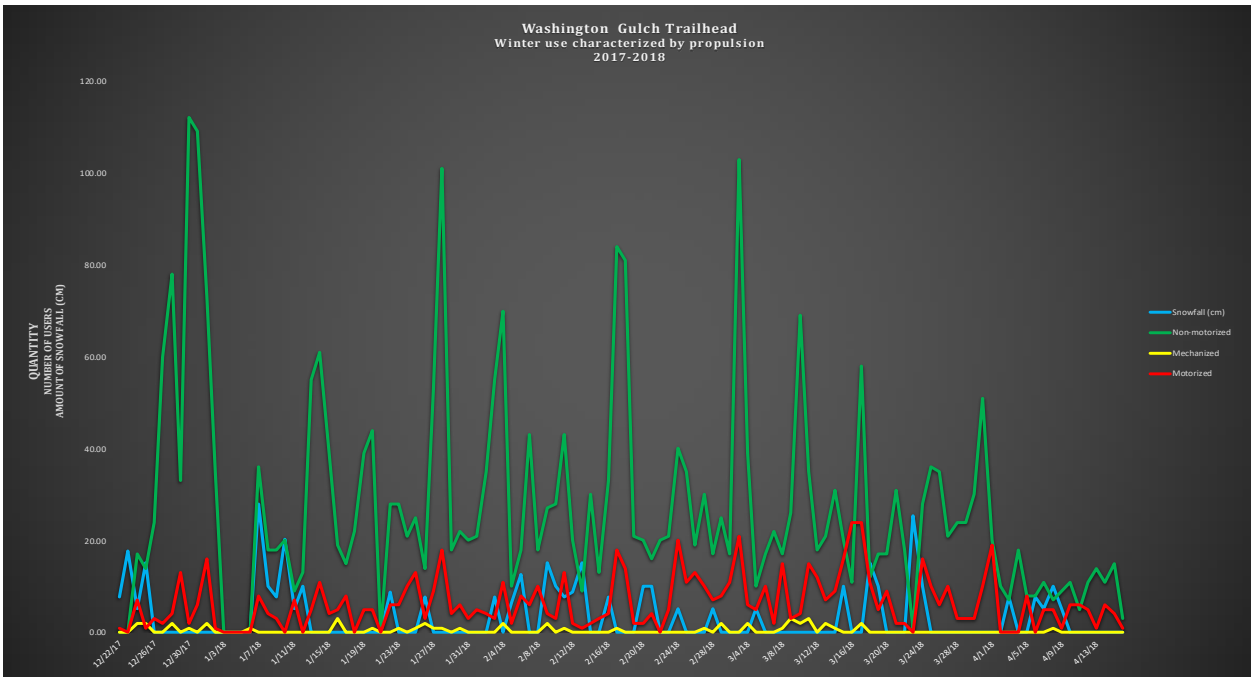
Figure 6. Tally Clickers used to count the data that was collected in the field. After counting a handful of days on paper it was determined that using these tools would be the only efficient way to count the enormous catalogue of figures connected to this project. The tray holding the clickers is made of out 2"x1" tubing with one 2" face removed (the seam side), ¾" angle iron tacked onto the ends to limit movement, and a duct tape wrap around the edges for a tight fit and finish.

Results

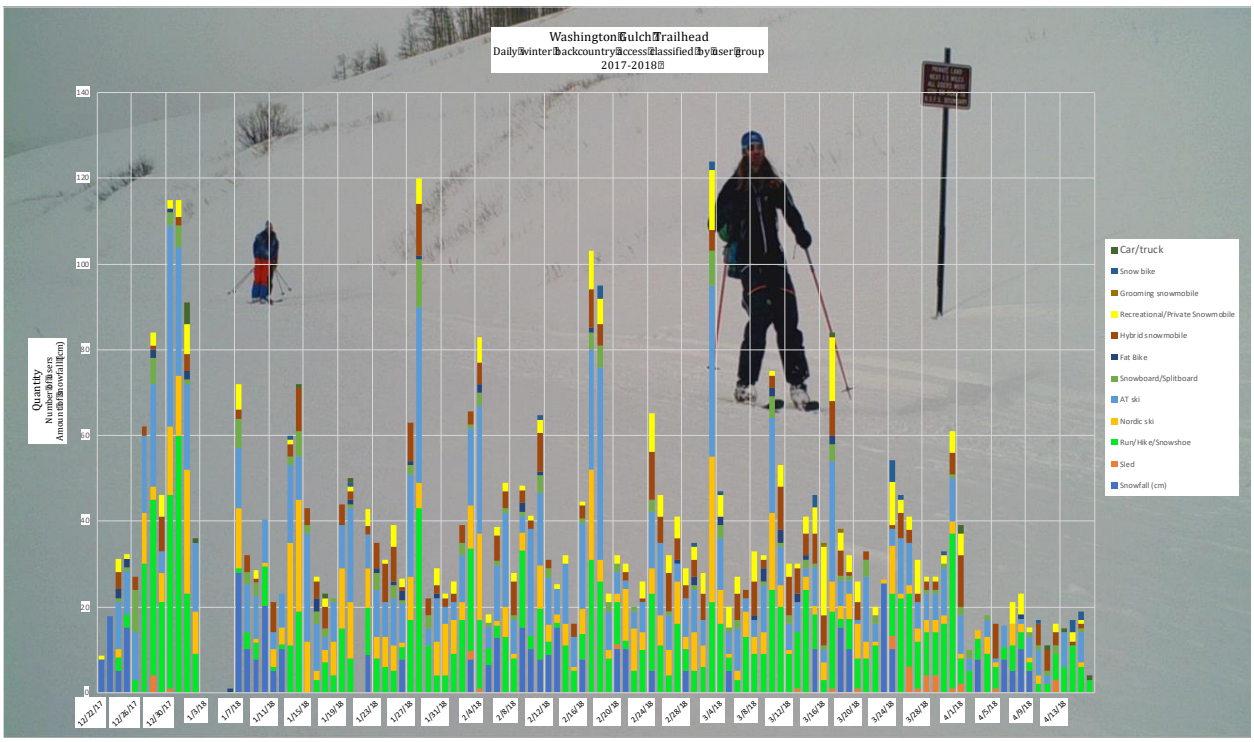
This study set out to collect an exhaustive baseline dataset concerning the recreational use of winter trailheads in the UGV. The collected information may not provide the encyclopedic dataset anticipated, but it does present a broad view of the local trends (Table 1, Graphs 1&2). While initial plans for this work relied solely on the use of digital photography equipment to monitor users, the inclusion of students engaged in intermittent real-time monitoring proved to be indispensable when it came to quality control (Table 2). Complications, issues, and faults identified during the quality control process, and which spawned the incomplete conclusions during the 2017-2018 season, will be valuable lessons learned and teaching aids that can bolster future studies of this nature.

	A	B	C	D	E	F	G	H	I	J	K
1	***Compiled winter trailhead use data***										
2			***Total***					***Average Daily***			
3	***Trailhead***	***Days monitorea***	***All Users***	***Non-Motorized***	***Mechanized***	***Motorized***		***All Users***	***Non-Motorized***	***Mechanized***	***Motorized***
4											
5	*Brush Creek Road*	41.00	534.00	488.00	18.00	28.00		13.02	8.27	0.31	0.47
6	*Brush Creek Trailhead*	90.00	1412.00	1392.00	18.00	2.00		15.69	14.97	0.19	0.02
7	*Cement Creek*	44.00	773.00	557.00	30.00	186.00		17.57	12.66	0.68	4.23
8	*Gothic Corridor*	84.00	3427.00	3187.00	216.00	24.00		40.80	35.81	2.43	0.27
9	*Kebler Pass*	*60.00*	5022.00	372.00	10.00	4640.00		83.70	6.20	0.17	77.33
10	*Slate River Road*	112.00	3465.00	2514.00	111.00	840.00		30.94	21.67	0.96	7.24
11	*Snodgrass*	103.00	5776.00	5629.00	120.00	27.00		56.08	48.95	1.04	0.23
12	*Washington Gulch*	113.00	4004.00	3222.00	47.00	735.00		35.43	27.77	0.41	6.34

Table 1. Highlights of the data collection project. Daily use data broken down by user group can be found for each trailhead in Appendix C.



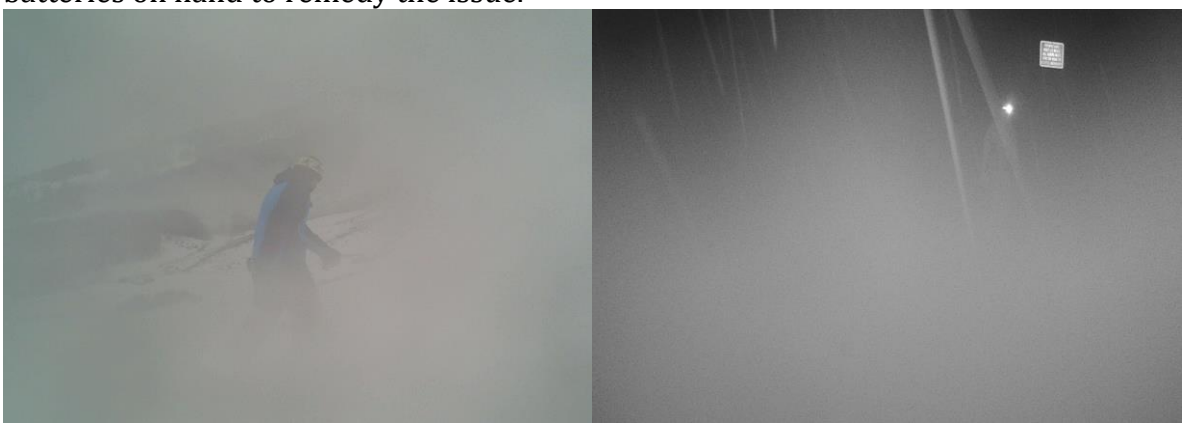
Graph 1. Washington Gulch Trailhead use as characterized by the means of propulsion for the 2017-2018 winter season. A complete set these graphs for all trailheads can be found in Appendix D.



Graph 2. Washington Gulch Trailhead use broken down by individual user groups, 2017-2018 season. A complete set of these graphs, including all trailheads studied, can be found in Appendix D.

Table 2. Percent difference between real-time monitoring and trail camera data for all possible days during which students worked in the field. Data for individual days and/or trailheads can be found in Appendix D.

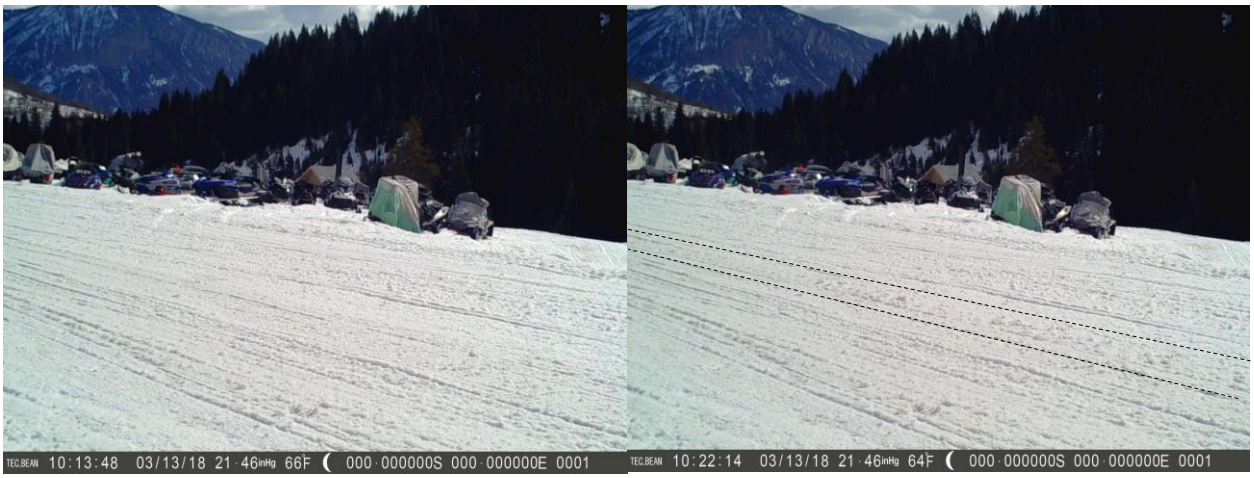
Analyzing data proved to be acutely straightforward with a few notable exceptions, such as camera interference, camera placement, and distance to the subject/from the parking area. "Camera interference" relates to a number of different inputs, including nature, bystanders/trailhead users, and even researcher error. The primary way in which nature interfered with the equipment was through snowfall; it was not uncommon for the lens of the camera to end up packed with snow after a storm (Figures 7 & 8). Of course, this was not an issue with all cameras every storm, because they all faced slightly different directions; snow packing was directly related to the direction of incoming wind. In the future, this problem could be mitigated by fabricating a box with a small visor to cover the lens and deflect snow. People interfered in a number of different way; someone covered a lens with mud, another camera was used as a hat rack, cameras were occasionally spun around their mounting post to an essentially worthless angle, and at one time the batteries were removed (Figures 9 & 10). Researcher error was limited to allowing cameras batteries to run flat at one point, and when the problem was discovered there were no new batteries on hand to remedy the issue.



Figures 7 & 8. An example of a camera lens covered in snow after a storm. Not always was the snow translucent; often it was opaque (figure 8).

Figures 9 & 10. An example of someone actively messing with the camera. Finding material on the lens was a rare, and bothersome, problem.

Another obstacle encountered during this season involved camera proximity and angle to the trailhead. The cameras used in this study have to be within 23 meters (75 feet) of the target to capture it. Some trailheads (e.g., Cement Creek, Washington Gulch, Brush Creek Trailhead, Snodgrass, Gothic) provided the ideal infrastructure to setup equipment and fully document users. These areas typically had a post within a few feet of the trailhead/parking area, on which the equipment could be affixed, in order for the camera to function properly. If the camera was too far from the trailhead/road/parking area (approximately more than 7.62 meters or 25 feet), then data acquisition was often poor. This is because the users were able to pick up enough velocity before passing the camera that they would essentially move into- and back out of- frame before the camera was able to take a picture. In many cases this problem could be documented, and the user counted, based off of tracks in the snow and/or roost in the picture (Figures 11, 12, 13). To avoid redundancies, more detailed information can be found in Appendix A.



Figures 11 & 12. The above pictures illustrate an example of the camera shutter speed issue discussed in the text. Note the time, date, and additional snowmobile tracks (indicated in the picture on the right with black dotted lines). These pictures were taken contiguously.

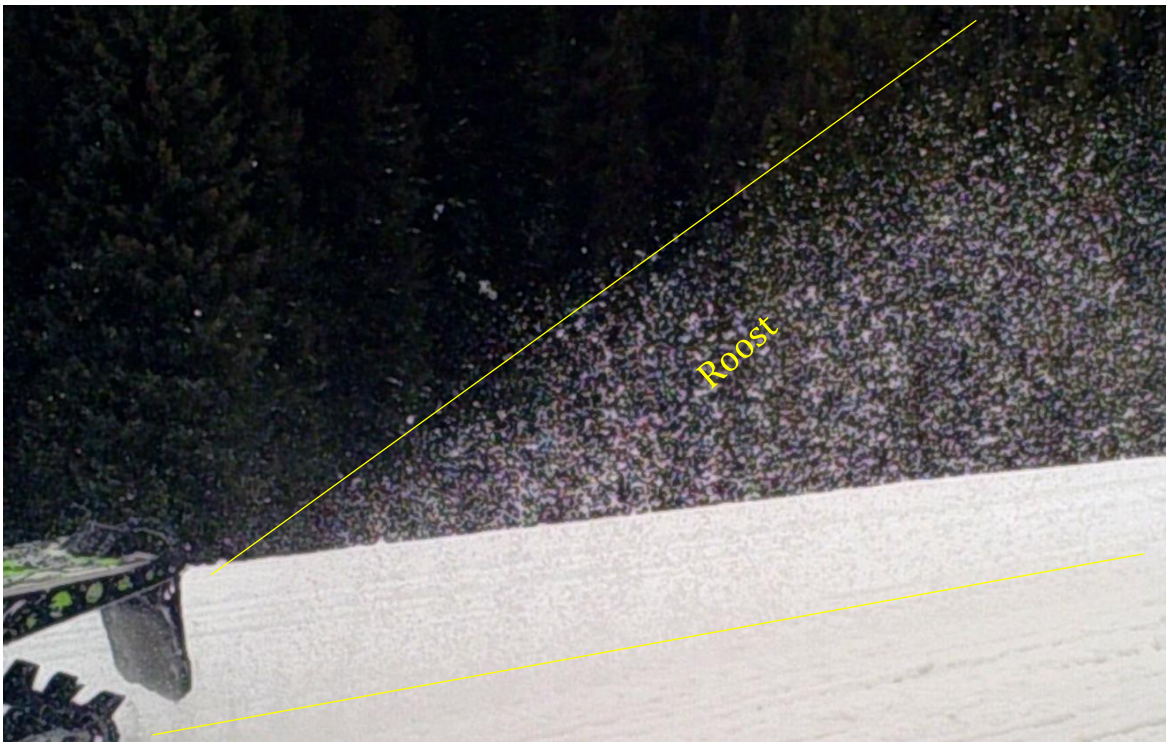


Figure 13. This picture clearly illustrates the roost (snow being kicked up by, and flying behind, the snowmobile) that is often seen in pictures which may not actually contain the machine producing that roost. This characteristic can be used to determine the direction and mode of transportation in pictures with no apparent user.

Conclusion

The aim of the first year of this study was to design a program to monitor trailhead use that could differentiate between user groups in the field. After the design of the study was formulated and finalized, it was put into service for a period of time (up to 117 days, location dependent). Throughout the study, data was accumulated and compiled in a manner which is straightforward and easy to digest and/or reference. That data has since been assembled in the appendices which present the material in easy to read, visual/graphical, and exhaustive forms (See appendices B & C). If this work is continued in the future, it will produce data necessary for statistical analysis of usage as well as a baseline for estimated trends in the future. The information collected thus far, when provided to community sponsors, should be useful when making comments regarding the future of winter travel in the UGV.

Some unintended consequences of hurdles can be seen in the results. While some trailheads were monitored for comparable lengths of time, no two provided reliable data for an equal number of days. Reasons for discrepancies include botched camera placement/orientation, equipment failure due to batteries or incorrect settings, lack of clarity by virtue of snowpack, mud, or other organics interfering with the lens, nonorganic interference (e.g., gear hanging over the camera), and even lack of sufficient equipment.

Concepts and plans have been developed and included in an attempt to minimize these issues during future work, although a season of problem-free data collection may require more testing and tuning.

Finally, it should be noted that this study took place during a season with an abnormally low amount of snowfall. This drought is likely responsible for a lower rate of backcountry travel than during an average season. With this in mind, the assumption could be made that the ratio of backcountry users across trailheads may be similar during average, and even above average, seasons. Future work could benefit from running statistical analyses of use vs. fresh snowfall, use vs. trailhead, user group vs. trailhead, and more.

Acknowledgements

This project would not have come to fruition without the confidence, input, motivation, support, expertise, and insights brought to the table by Dr. Melanie Armstrong of the WSCU MEM program. Thanks Melanie, it seems like last week we were just beginning to kick around the idea of monitoring a few trailheads during limited windows of time. Time flies when there's none of it. I'd also like to thank the project's community sponsors, *Silent Tracks* and *Share the Slate*. Whether you were writing grants to help procure equipment or delineating classic backcountry trends, this work would not have been possible without you. I cannot forget Christina Frank, thanks for putting up with the late nights, stress, and serious lack of skiing this past year; and of course, my family, thanks for always being there when I needed a paper edited at the eleventh hour. And of course, all the other people who helped by providing knowledge, details, connections, and other crucial elements (in no particular order): Michele Veltri, Matt McCombs, Phil Chamberland, William A. (Tony) Smith, Gregg Grossman, the Town of Crested Butte, and many more that I'm certainly forgetting right now.

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Compiled winter trailhead use data

Trailhead	***Days monitor***	***Total All Users***	***Non-Motorized***	***Mechanized***	***Motorized***
Brush Creek Road	41.00	534.00	488.00	18.00	28.00
Brush Creek Trailhead	90.00	1412.00	1392.00	18.00	2.00
Cement Creek	44.00	773.00	557.00	30.00	186.00
Gothic Corridor	84.00	3427.00	3187.00	216.00	24.00
Kebler Pass	*60.00*	5022.00	372.00	10.00	4640.00
Slate River Road	112.00	3465.00	2514.00	111.00	840.00
Snodgrass	103.00	5776.00	5629.00	120.00	27.00
Washington Gulch	113.00	4004.00	3222.00	47.00	735.00

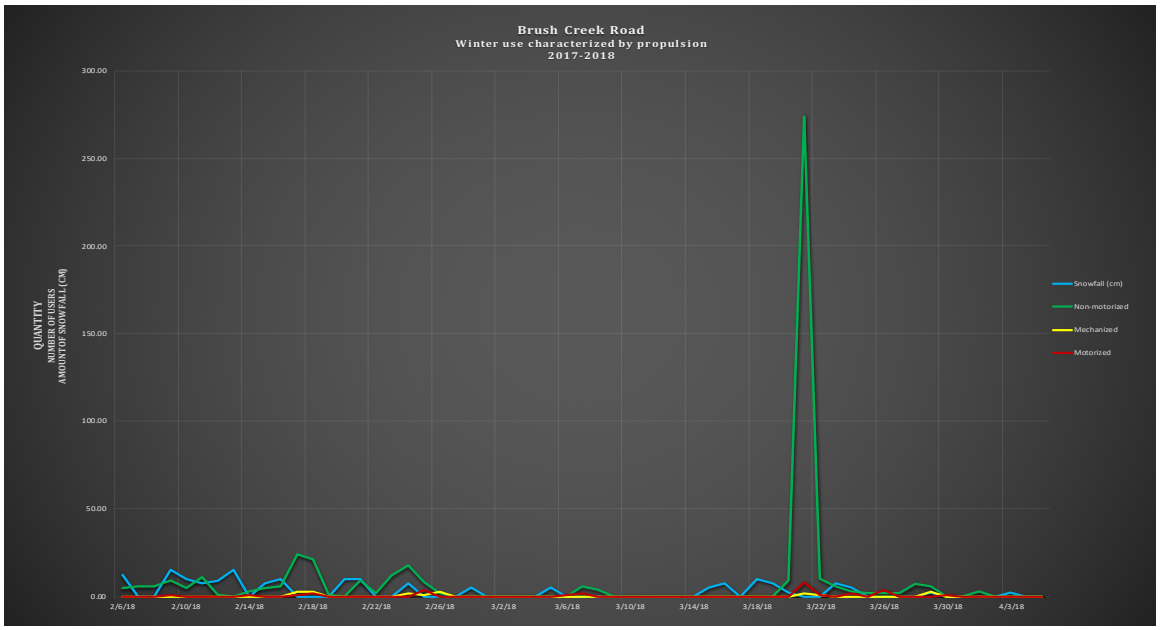
Average Daily			
All Users	***Non-Motoriz***	***Mechanized***	***Motorized***
13.02	8.27	0.31	0.47
15.69	14.97	0.19	0.02
17.57	12.66	0.68	4.23
40.80	35.81	2.43	0.27
83.70	6.20	0.17	77.33
30.94	21.67	0.96	7.24
56.08	48.95	1.04	0.23
35.43	27.77	0.41	6.34

Appendix D
Graphs/Visual aids

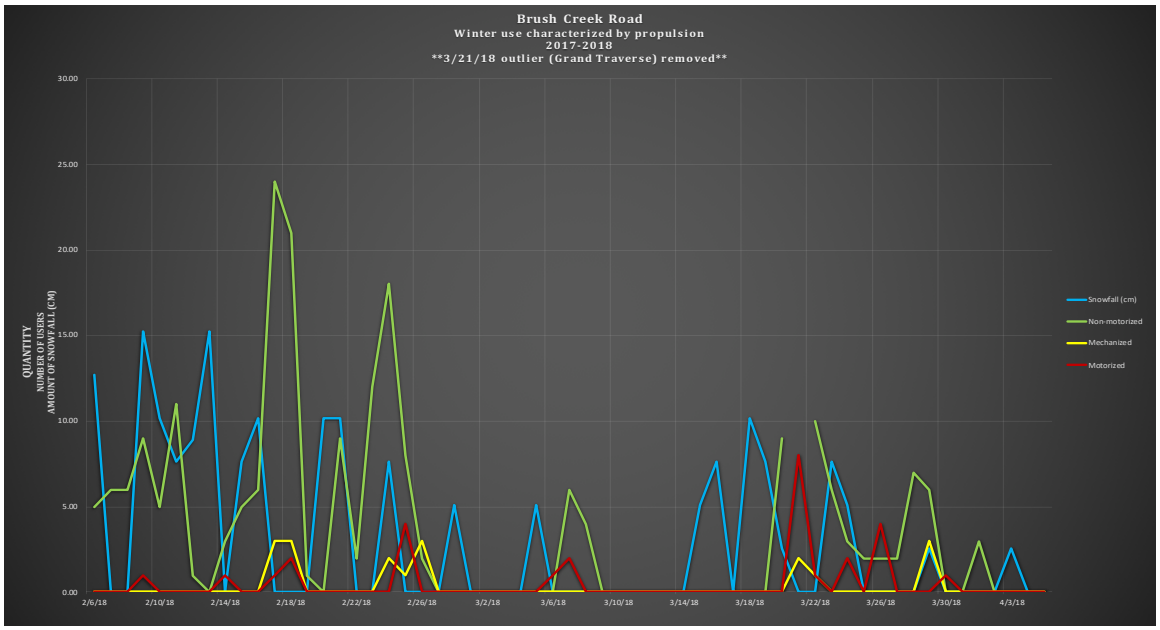
A. Brush Creek Road

Two versions of each Brush Creek Road graph are provided in order to visualize trends with and without the March 21, 2018 outlier, which is significantly greater than any other quantity graphed. This outlier was the result of Grand Traverse racers being turned around half-way to Aspen because of poor conditions and avalanche danger.

1.

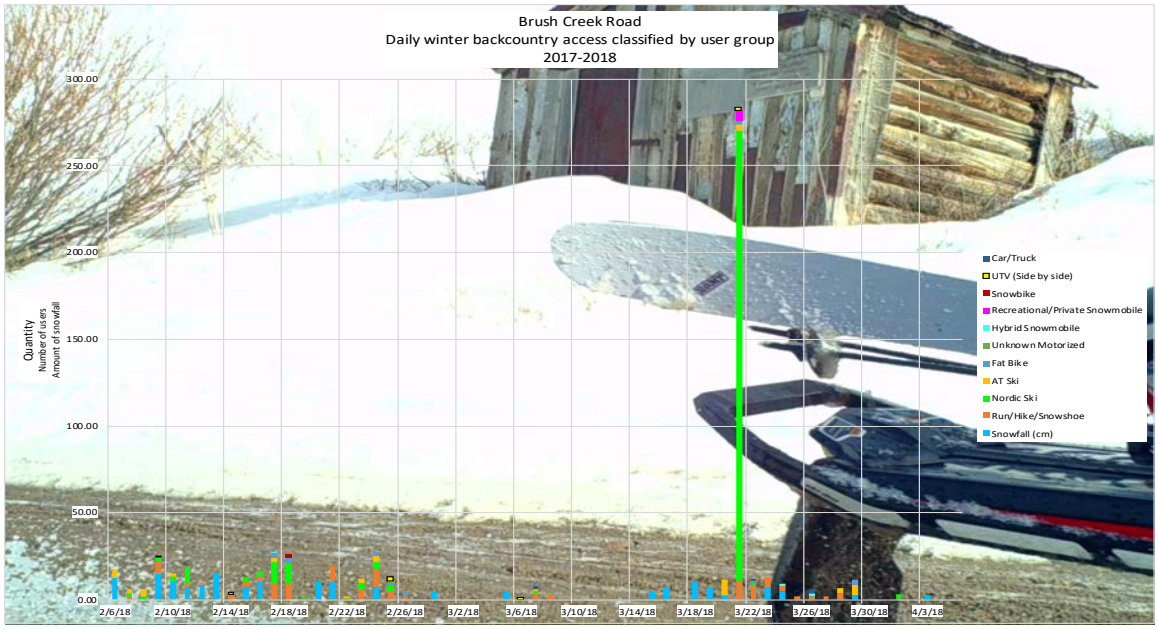


2.

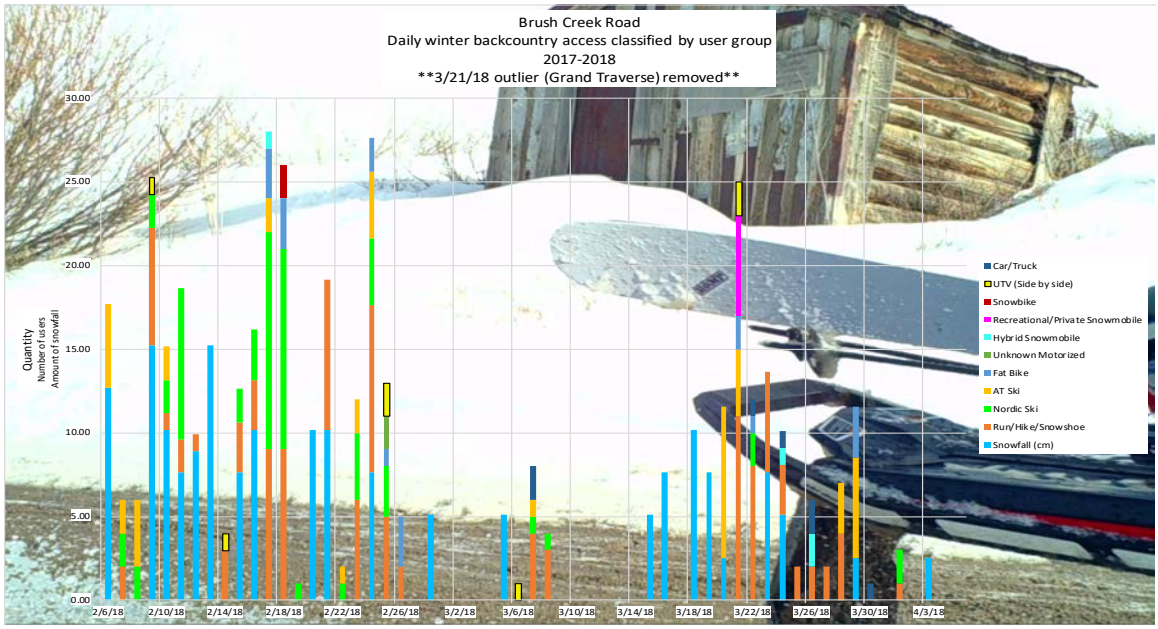


Winter backcountry access via Brush Creek Road, identified by means of propulsion, 2017-2018. Daily snowfall values are also included for reference. The top graph includes the March 21, 2018 outlier representing Grand Traverse racers. Traditionally the Grand Traverse starts in Crested Butte and ends in Aspen, CO but this year was turned around midway due to poor conditions including avalanche concerns.

3.



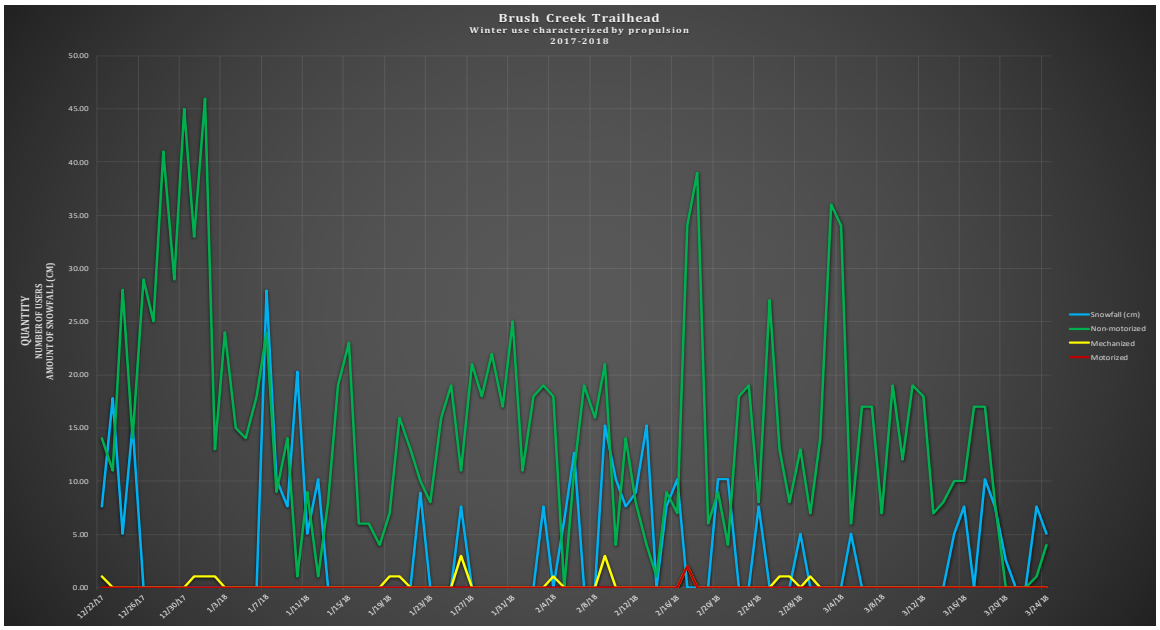
4.



Winter backcountry access via Brush Creek Road delineated by individual user group, 2017-2018. The top graph includes the March 21, 2018 outlier representing Grand Traverse racers. Traditionally the Grand Traverse starts in Crested Butte and ends in Aspen, CO but this year was turned around midway due to poor conditions, including avalanche concerns. Brush Creek Road provides motorized access to immense backcountry opportunities.

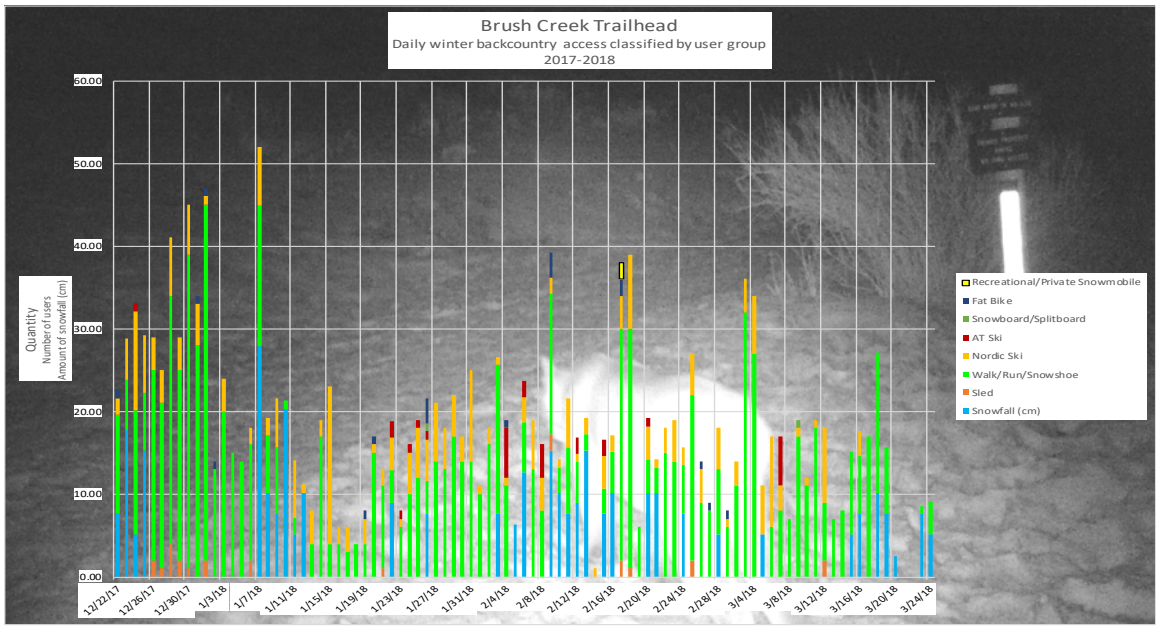
B. *Brush Creek Trailhead*

1.



Winter backcountry access via Brush Creek Trailhead, characterized by means of propulsion, 2017-2018. Daily snowfall values are also included for reference. The Brush Creek Trailhead provides non-motorized access to a limited network of trails on the southeast boundary of Mt. Crested Butte.

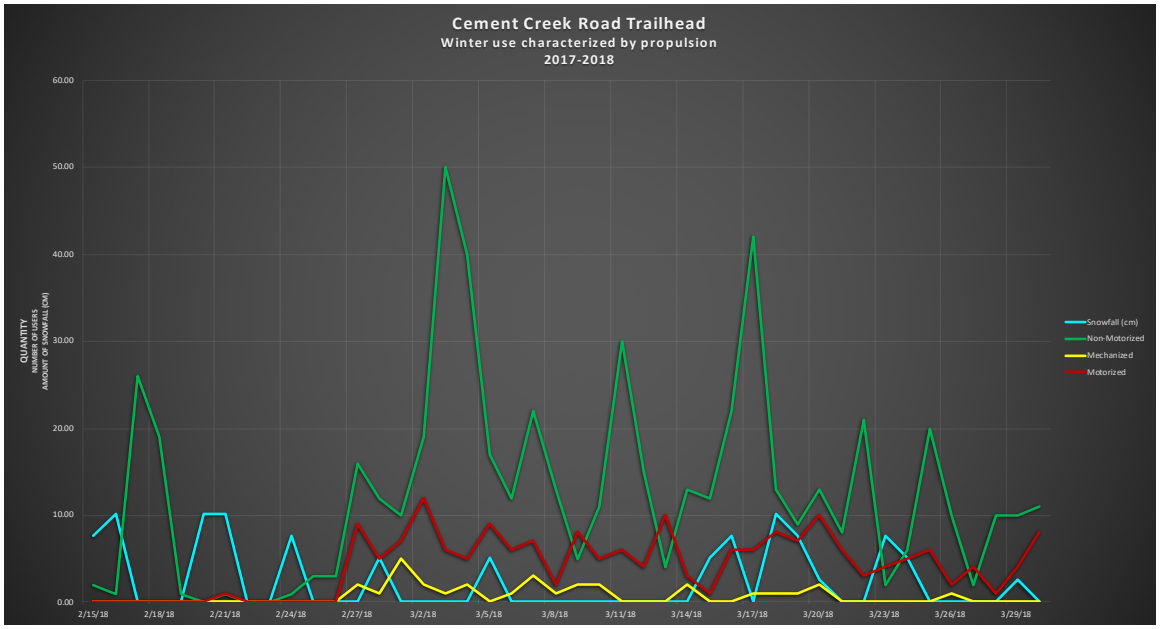
2.



Winter backcountry access via Brush Creek Trailhead, delineated by individual user group, 2017-2018. The Brush Creek Trailhead provides non-motorized access to a limited network trails on the southeast boundary of Mt. Crested Butte.

C. *Cement Creek*

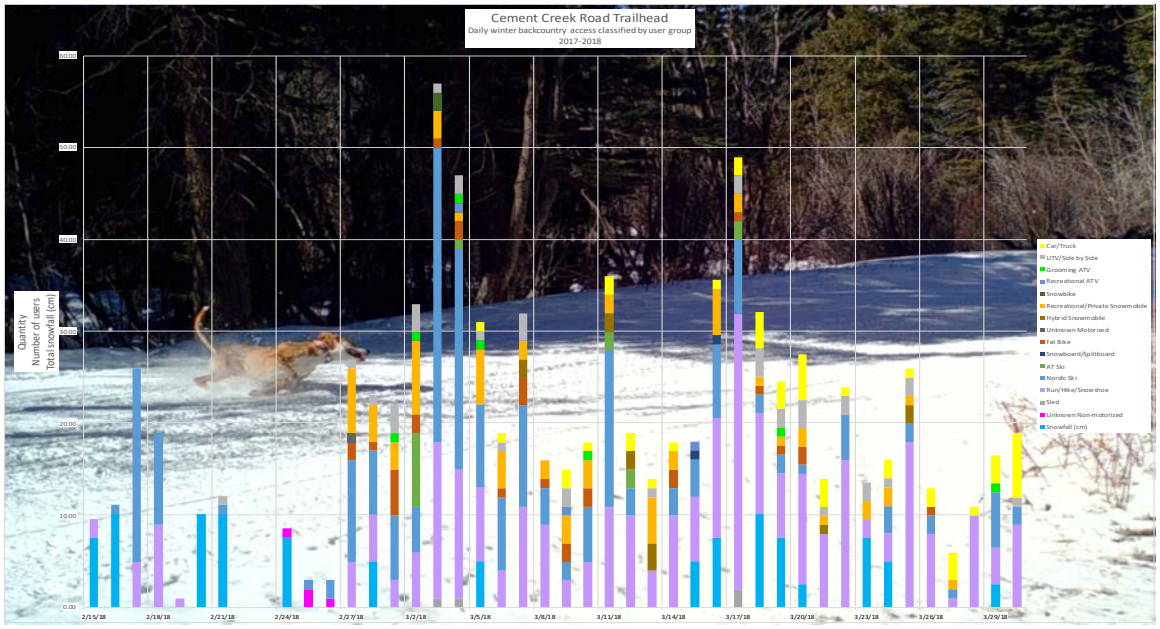
1.



Winter backcountry access via Cement Creek Road Trailhead, characterized by means of propulsion, 2017-2018. Daily snowfall values are also included for reference. Cement

Creek provides access to some residential areas, vast wilderness, Taylor Park, and eventually Aspen, CO.

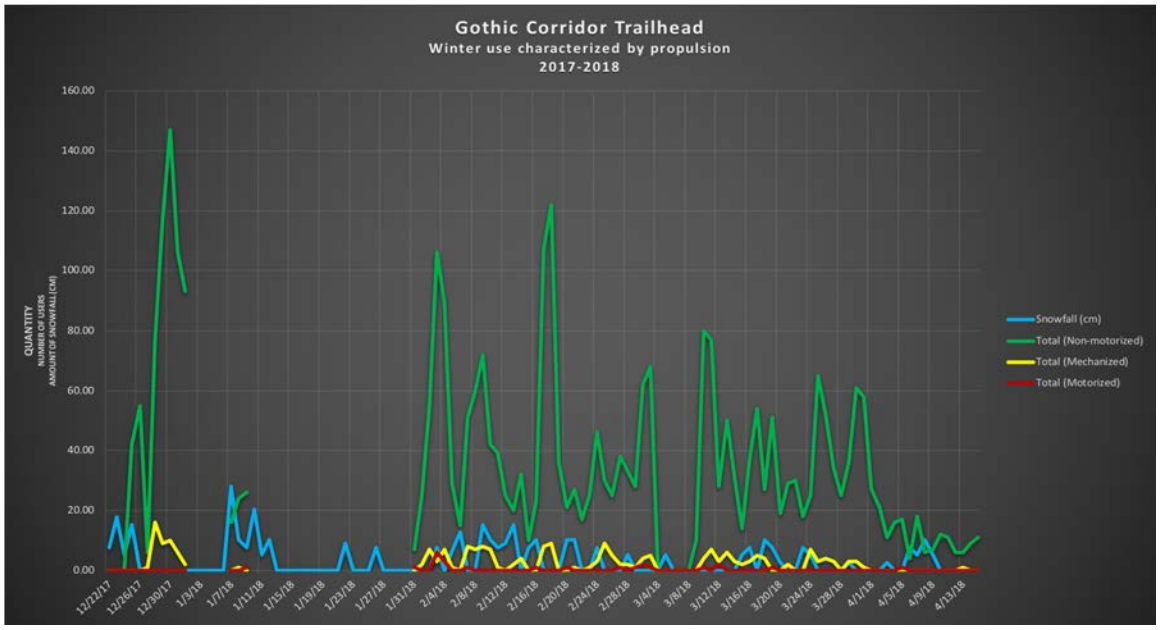
2.



Winter backcountry access via Cement Creek Road Trailhead, delineated by individual user group, 2017-2018. Daily snowfall values are also included for reference. Cement Creek provides access to some residential areas, vast wilderness, Taylor Park, and eventually Aspen, CO.

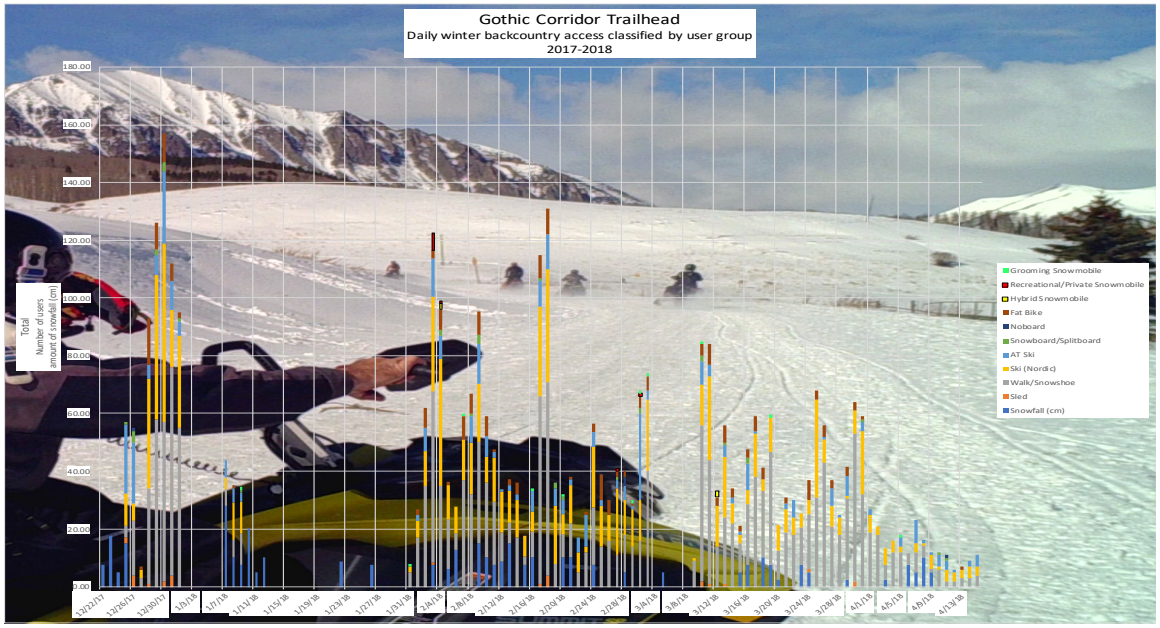
D. *Gothic Corridor*

1.



Winter backcountry access via Gothic Corridor Trailhead, characterized by means of propulsion, 2017-2018. Daily snowfall values are also included for reference. The Gothic Corridor Trailhead provides non-motorized access to the Rocky Mountain Biological Laboratory (including the Maroon and Forest Queen huts), extensive backcountry skiing opportunities, groomed fat biking, and also limited motorized access to residential properties in Schofield Park.

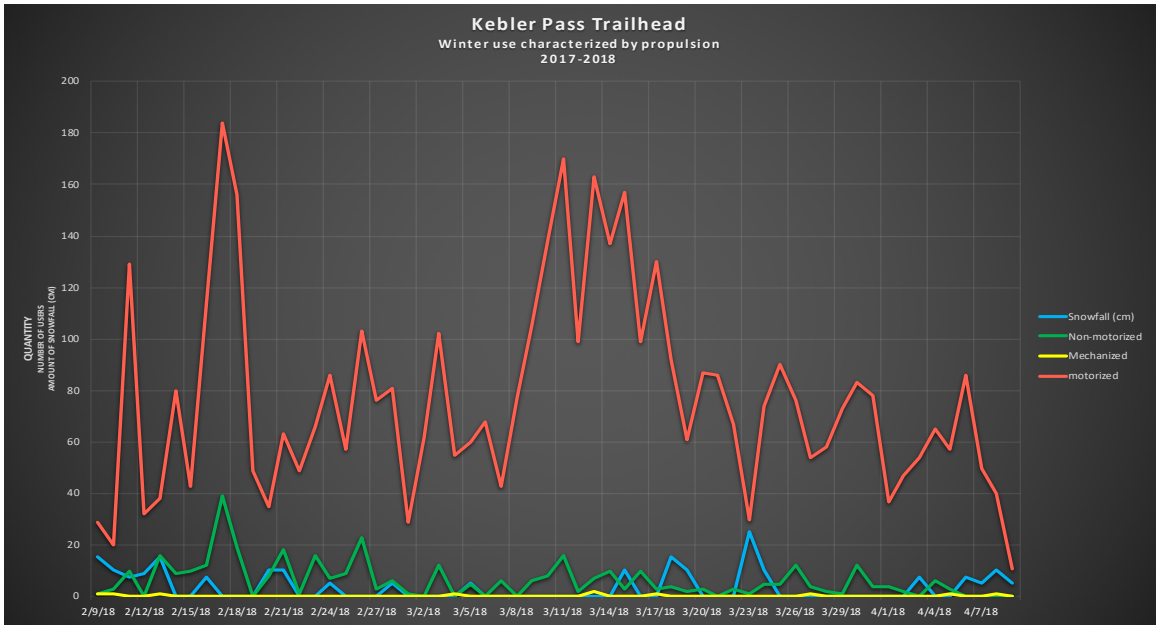
2.



Winter backcountry access via Gothic Corridor Trailhead, delineated by individual user group, 2017-2018. Daily snowfall values are also included for reference. The Gothic Corridor Trailhead provides non-motorized access to the Rocky Mountain Biological Laboratory (including the Maroon and Forest Queen huts), extensive backcountry skiing opportunities, groomed fat biking, and also limited motorized access to residential properties in Schofield Park.

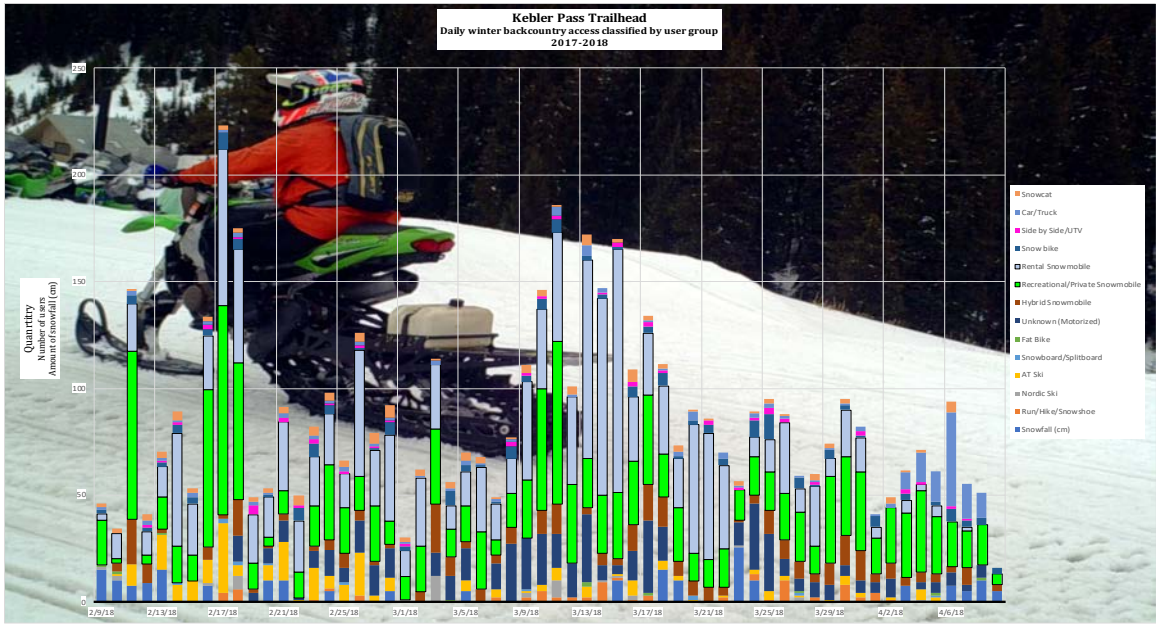
E. Kebler Pass

1.



Winter backcountry access via Kebler Pass Trailhead, characterized by means of propulsion, 2017-2018. Daily snowfall values are also included for reference. The Kebler Pass Trailhead provides motorized access to a myriad of recreation opportunities, guided cat skiing, Lake Irwin, the Irwin Townsite, and other residential areas.

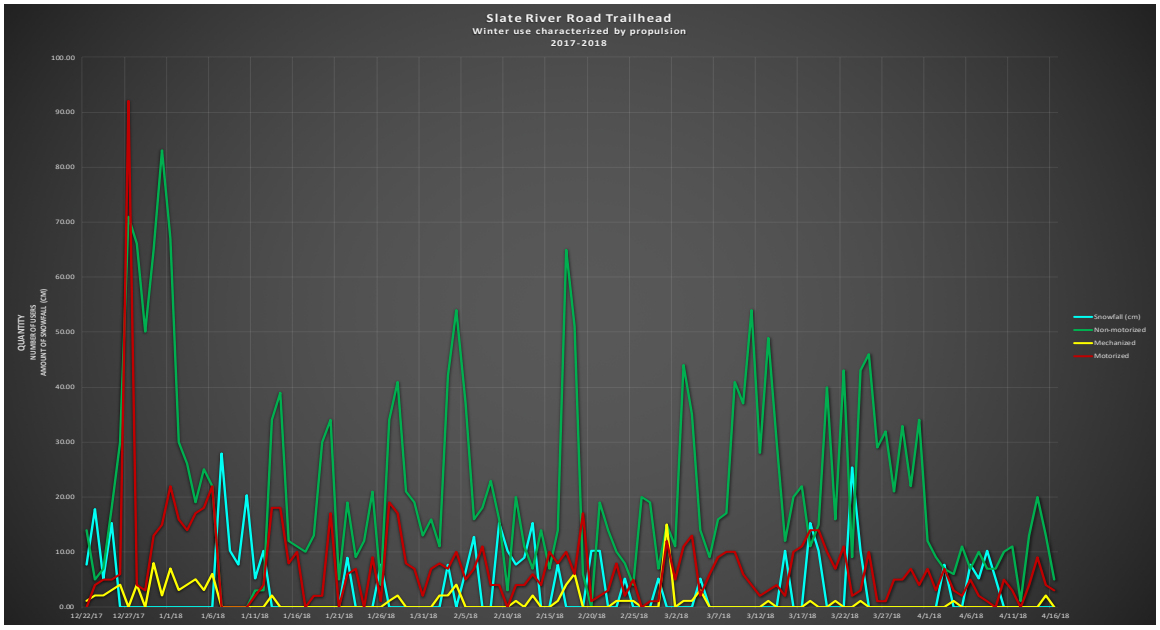
2.



Winter backcountry access via Kebler Pass Trailhead, delineated by individual user group**,** 2017-2018. Daily snowfall values are also included for reference. The Kebler Pass Trailhead provides motorized access to a myriad of recreation opportunities, guided cat skiing, Lake Irwin, the Irwin Townsite, and other residential areas.

F. Slate River Road Trailhead

1.



Winter backcountry access via Slate River Road Trailhead, characterized by means of propulsion, 2017-2018. Daily snowfall values are also included for reference. The Slate River Road Trailhead provides motorized access for all forms of backcountry recreation and to the Pittsburgh Townsite.

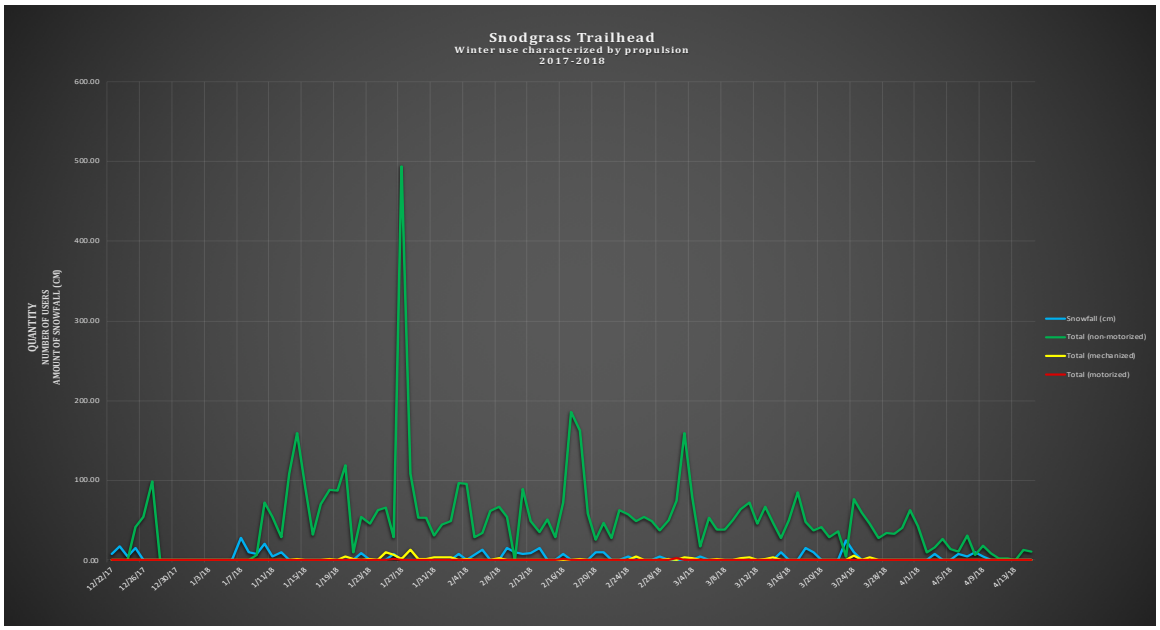
2.

Winter backcountry access via Slate River Road Trailhead, delineated by individual user group, 2017-2018. Daily snowfall values are also included for reference. The Slate River Road Trailhead provides motorized access for all forms of backcountry recreation and to the Pittsburgh Townsite.

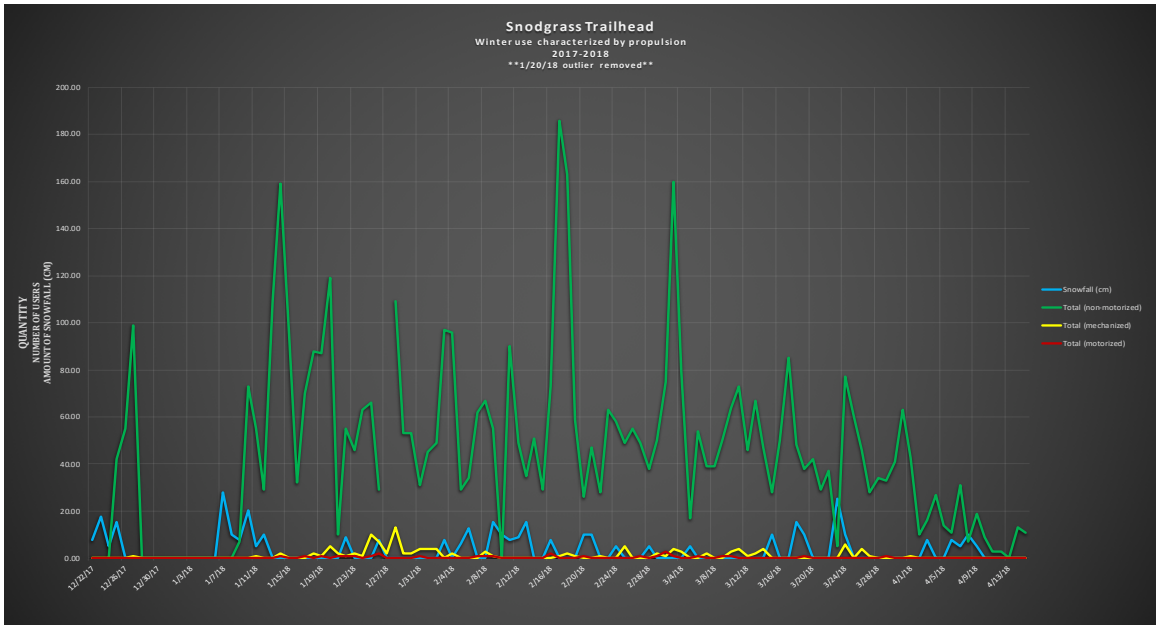
G. *Snodgrass Trailhead*

Two versions of each graph are provided for the Snodgrass Trailhead in order to visualize trends with and without the 1/20/18 outlier, which is significantly greater than any other quantity graphed.

1.

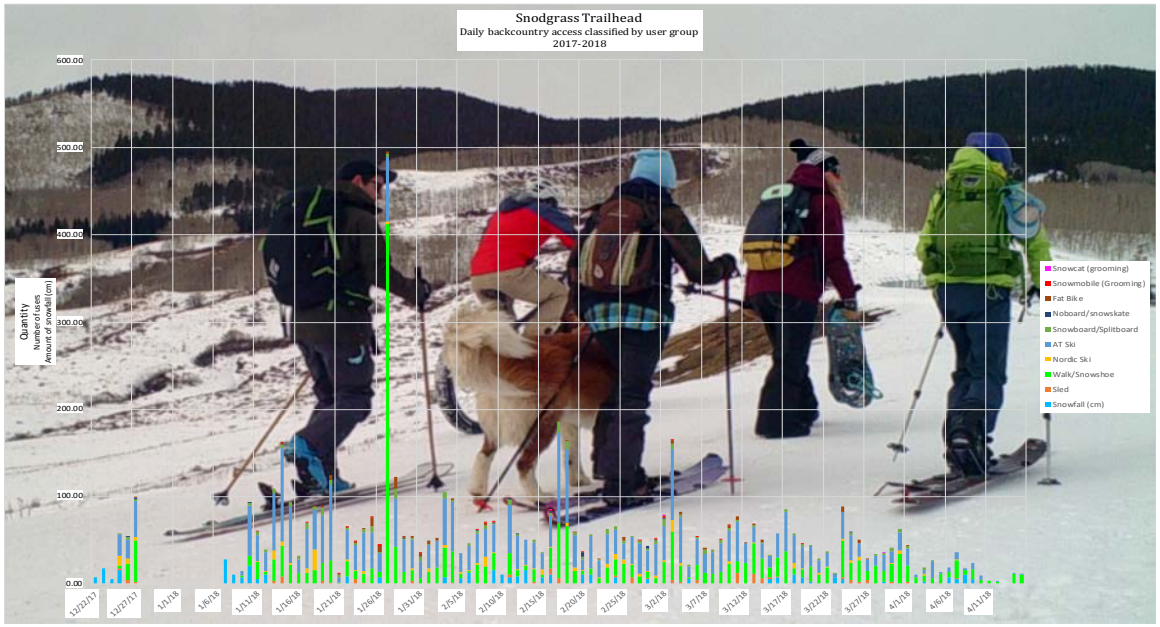


2.

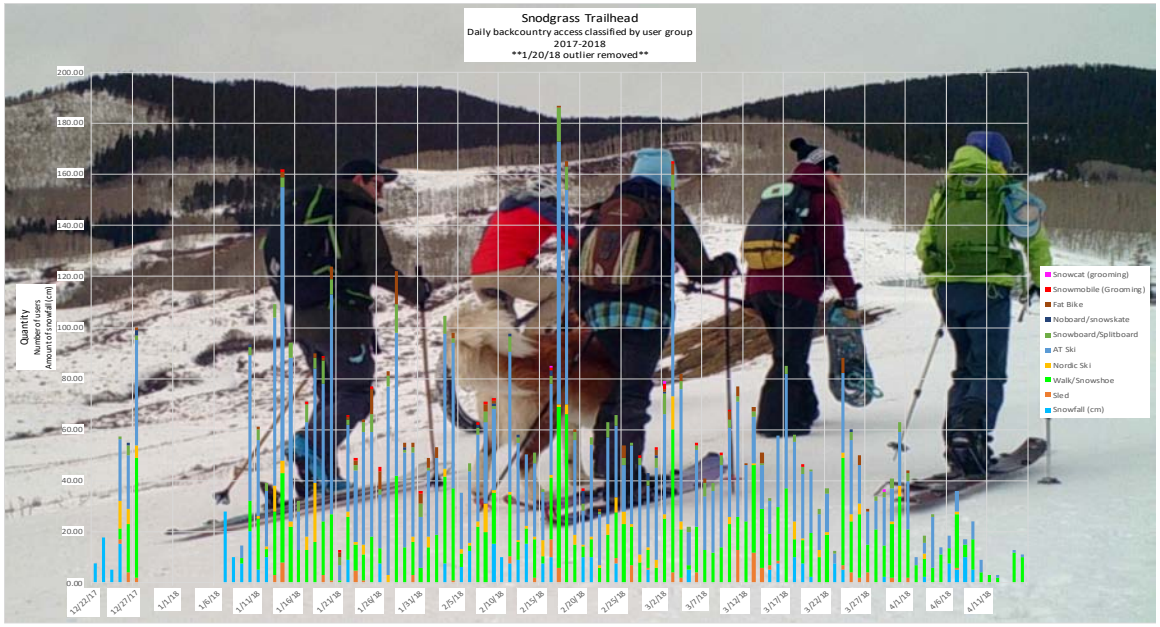


Winter backcountry access via Snodgrass Trailhead, characterized by means of propulsion**,** 2017-2018. Daily snowfall values are also included for reference. The Snodgrass Trailhead provides non-motorized access to groomed fat biking trails, convenient backcountry skiing, and numerous other recreational activities. This graph is presented with and without the January 20, 2018 outlier in order to accurately visualize the typical trends.

3.



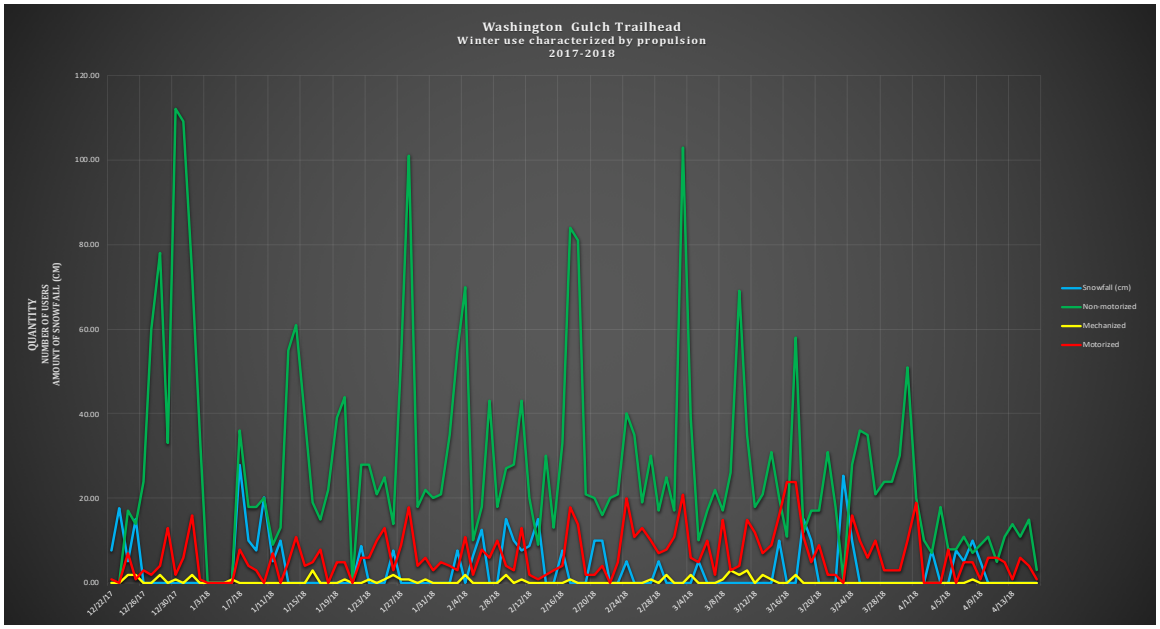
4.



Winter backcountry access via Snodgrass Trailhead, delineated by individual user group**,** 2017-2018. Daily snowfall values are also included for reference. The Snodgrass Trailhead provides non-motorized access to groomed fat biking trails, convenient backcountry skiing, and numerous other recreational activities. This graph is presented with and without the January 20, 2018 outlier in order to accurately visualize the typical trends.

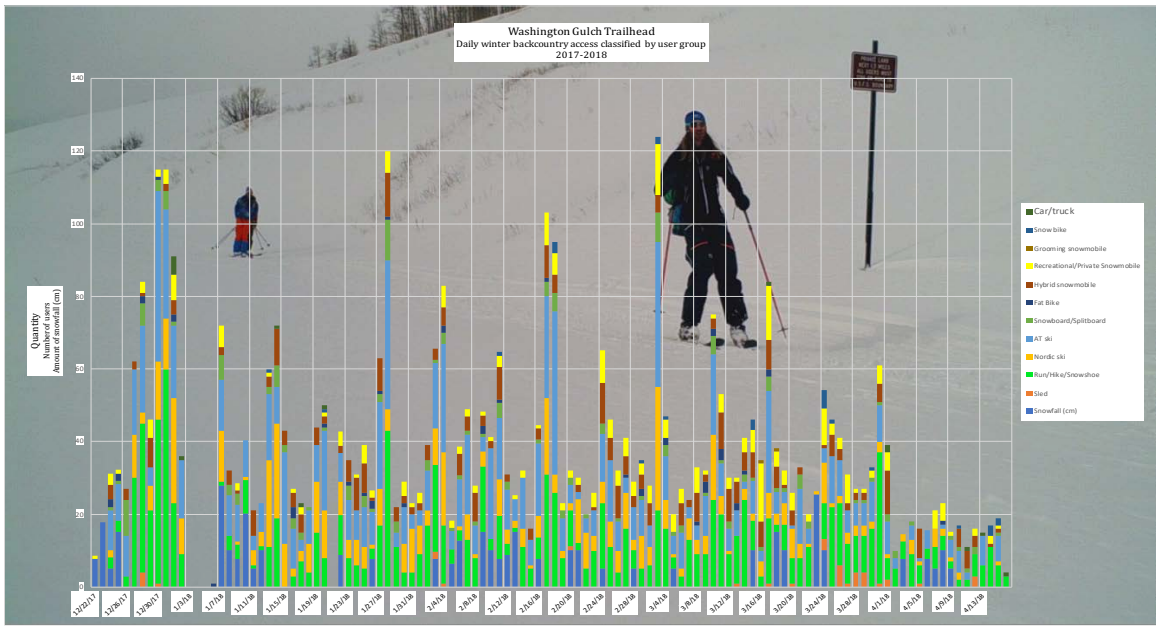
H. *Washington Gulch*

1.



Winter backcountry access via Washington Gulch Trailhead, characterized by means of propulsion, 2017-2018. Daily snowfall values are also included for reference. Washington Gulch provides restricted motorized access to the Elkton townsite and huts and extensive backcountry recreation opportunities.

2.



Winter backcountry access via Washington Gulch Trailhead, delineated by individual user group, 2017-2018. Daily snowfall values are also included for reference. Washington Gulch provides restricted motorized access to the Elkton townsite and huts as well as extensive backcountry recreation opportunities.

BOARD OF COUNTY COMMISSIONERS
OF THE COUNTY OF GUNNISON, COLORADO

RESOLUTION NO. 18-_____

A RESOLUTION ESTABLISHING A PARTIAL SEASONAL CLOSURE OF COUNTY ROAD #317 ("GOTHIC ROAD"), AND IDENTIFYING CERTAIN EXCEPTIONS TO SUCH CLOSURE

WHEREAS, Gunnison County Road #317 is a county road; and

WHEREAS, pursuant to C.R.S. 42-4-106(1), the Board of County Commissioners may by resolution prohibit the operation of vehicles on a road for a total period of not to exceed ninety days in any one calendar year whenever such road by reason of deterioration, rain, snow or other climatic conditions will be seriously damaged or destroyed unless the use of vehicles thereon is prohibited; and

WHEREAS, pursuant to C.R.S. 33-14-118, the Board may regulate the operation of snowmobiles on streets and highways within county boundaries by resolution and by giving appropriate notice thereof; and

WHEREAS, pursuant to C.R.S. 18-9-117, the Board has authority, in addition to any authority granted by any other law, to adopt such orders, rules or regulations as are reasonably necessary for the administration, protection and maintenance of public property including but not limited to restriction or limitation of the use of the public property as to time, manner or permitted activities, and prohibition of activities or conduct on public property which may be reasonably expected to substantially interfere with the use and enjoyment of such places by others, and use of all vehicles as to place, time and manner of use; and

WHEREAS, the Board has determined that general vehicle use on that portion of County Road #317 beyond the northern municipal boundary of Mt. Crested Butte when winter conditions (e.g., snow, mud) exist, will cause serious damage to that portion of the road; and

WHEREAS, the Board has determined that certain seasonal, motorized vehicle use on County Road #317 will be to the detriment of public, health and safety for considerations including but not limited to detrimental impacts on non-motorized and recreation traffic; and

WHEREAS, the Board has determined that the orders, rules and regulations set forth below are necessary to ensure the public's use and enjoyment of County Road #317; and

NOW, THEREFORE, BE IT RESOLVED by the Board of County Commissioners of Gunnison County, Colorado that:

1. Board of County Commissioners of the County of Gunnison, Colorado Resolution No. 01-25 is hereby repealed and rescinded.

2. a. Gunnison County shall install and maintain a closure gate on County Road #317 at the northern municipal town boundary of Mt. Crested Butte. Each year, the Gunnison County Public Works Director shall close and lock the County gate to preclude any snowmobile or other motorized vehicle use beyond the gate, except for emergency fire, ambulance, search and rescue or law enforcement vehicles, and except as identified below, when the Director determines that winter conditions are such that vehicle travel on the portion of the road on the north side of the gate will significantly damage or destroy the road or will substantially interfere with the use and enjoyment of the road by others.

b. A second gate, located north of the townsite of Gothic, is on U.S. Forest Service land, and managed by the Forest Service. Gunnison County will seek coordination with the Forest Service for closure of the second gate.

3. During the closure of the County gate as identified above, there shall be no use whatsoever of a snowmobile or other motorized vehicle on any portion of County Road #317 except that:

a. In an emergency, fire, ambulance, public utility, search and rescue and law enforcement personnel may use snowmobiles or any other motorized vehicles, north of the closure gate without a permit and without prior notification to or permission from Gunnison County.~~; and~~

b. Owners of real property north of the closure gate that is accessed by County Road #317 north of the closure gate may access such property from the closure gate north by snowmobile. Any such owner must have whatever Forest Service permit is necessary to access their respective property over Forest Service roads. Such snowmobile use shall be limited to either a) access legally permitted structures on private property or b) agricultural purposes, such as activities related to livestock maintenance. Real property owners are expressly prohibited from using snowmobiles for purely recreational purposes unrelated to either structure access or agricultural use.

~~b. Landowners with a legally permitted structure accessed by County Road #317 may use a snowmobile, or other motorized vehicle(s), to access the structure only with prior written permission from the Gunnison County Director of Public Works ("GCDPW"), which written permission shall identify the days and hours of the limited access, except that the GCDPW may waive the writing requirement in an emergency, as determined by the~~

~~GCDPW in his or her sole discretion; and~~

~~c. The GCDPW is authorized to allow other snowmobile or other motorized vehicle access on a case by case basis, including but not limited to care of livestock; the GCDPW may – but is not required to choose to obtain Board approval on a case by case basis. Any authorization granted by the GCDPW shall be in writing and shall include limitations on such access, such as, without limitation, hours of operation, number of vehicles used, and date(s) of such access.~~

d. The Rocky Mountain Biological Laboratory ("the Laboratory") may make no more than one roundtrip access per week, on a regular schedule. The access schedule shall be pre-arranged with the Director of Public Works. Access to Laboratory property shall be by snowmobile, but no other motorized vehicle, only between the hours of 3 p.m. and 10 p.m., not on weekends or holidays. The driver of such snowmobile shall wear clothing/emblem identifying ~~Rocky Mountain Biological~~the Laboratory. The Laboratory shall provide a monthly written report to inform the Director of Public Works identifying the previous month's trips.

e. Grooming for non-motorized recreational purposes, such as fat biking or cross country skiing, may be performed by snowmobile or other motorized vehicle pursuant to a permit issued by the GCDPW ~~Director of Public Works~~ according to parameters identified by the Board on an annual basis.

4. "Snowmobile" for the purposes of this Resolution means a self-propelled vehicle intended for travel solely on snow, with a maximum curb weight of 1,000 pounds (450 kilograms), driven by a track or tracks in contact with the snow, and which may be steered by a ski or skis in contact with the snow. *See* 36 CFR sec. 7.13.

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INTRODUCED by Commissioner _____, seconded by Commissioner _____, and adopted this _____ day of _____, 2018.

BOARD OF COUNTY COMMISSIONERS
OF THE COUNTY OF GUNNISON, COLORADO

By: _____
Phil Chamberland, Chairperson

By: _____
Jonathan Houck, Commissioner

By: _____
John Messner, Commissioner

ATTEST:

_____
Deputy County Clerk

BOARD OF COUNTY COMMISSIONERS
OF THE COUNTY OF GUNNISON, COLORADO

RESOLUTION NO. 18-_____

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WHEREAS, pursuant to C.R.S. 33-14-118, the Board may regulate the operation of snowmobiles on streets and highways within county boundaries by resolution and by giving appropriate notice thereof; and

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4. "Snowmobile" for the purposes of this Resolution means a self-propelled vehicle intended for travel solely on snow, with a maximum curb weight of 1,000 pounds (450 kilograms), driven by a track or tracks in contact with the snow, and which may be steered by a ski or skis in contact with the snow. *See* 36 CFR sec. 7.13.

INTRODUCED by Commissioner _____, seconded by Commissioner _____, and adopted this _____ day of _____, 2018.

BOARD OF COUNTY COMMISSIONERS
OF THE COUNTY OF GUNNISON, COLORADO

By: _____
Phil Chamberland, Chairperson

By: _____
Jonathan Houck, Commissioner

By: _____
John Messner, Commissioner

ATTEST:

_____
Deputy County Clerk