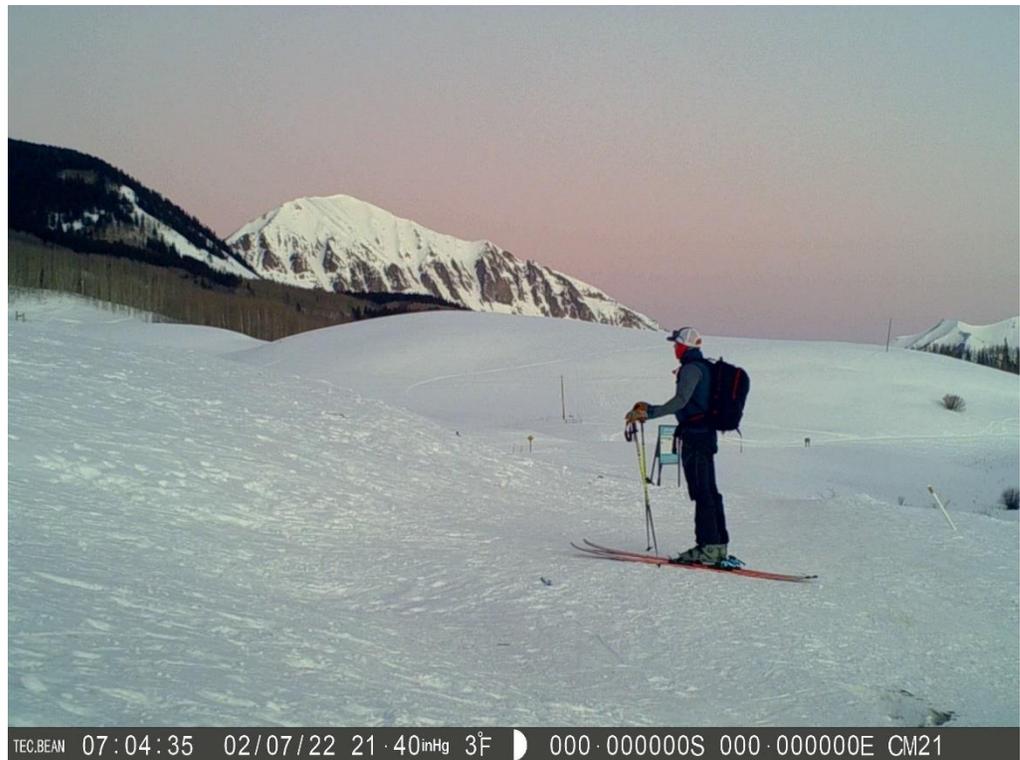


# 2021 /22 WINTER DATA COLLECTION INITIATIVE



2021/22

Upper Gunnison Valley Winter Visitor Use Report

The town of Crested Butte, and the surrounding Upper Gunnison Valley (UGV), is known throughout the Rockies as a winter recreation destination. This visitor use study aims to provide a database for stakeholders interested in winter recreation patterns in the UGV.

# 2021 /22 Winter Data Collection Initiative

## UPPER GUNNISON VALLEY WINTER VISITOR USE REPORT

### Introduction

Considered by many to be one of Colorado's "last great Colorado ski towns" – Crested Butte, is located near the north end of the Upper Gunnison Valley (UGV), in central Colorado. This former mining town is now a travel destination that attracts recreationists year-round, but the long winters, low temperatures, and heavy snowfall are what have built this area's reputation as a winter recreators dream. The town's location within in the Elk Mountains offers a truly outstanding amount of winter backcountry access within 30 min drive from the town. Currently, these popular trailheads in the Crested Butte area are under the regulation of United States Forest Service's (USFS) Winter Travel Management Plan (WTMP), which was created over 20 years ago. Since the agency's plan was developed, technological changes along with observed increased visitation to the backcountry have prompted members of the Crested Butte community to express interest in updating the WTMP. Beginning with former student Doug Shaw's 2017/18 study, graduate students from the Master of Environmental Management program at Western Colorado University, have been working in collaboration with The Center for Public Lands to produce an annual quantitative dataset (in addition to a qualitative winter backcountry user survey) regarding backcountry use/travel in the UGV. The goal of this study is to increase knowledge of winter travel patterns and enhance stakeholder's ability to aid the USFS in a winter travel management planning process.

While Crested Butte and the UGV is certainly a well know place for winter recreational opportunities, they are not the only community facing changes in winter recreational planning. In 2015, a United States Forest Service ruling declared that "a system of routes and areas to provide for over-snow vehicle use" must be established for all winter use areas across the nation. While the local Forest Service office does plan to implement changes to the WTMP to account for the 2015 ruling, they have not done so yet. There are plans to complete a Forest Plan Revision before considering the WTMP. In the meanwhile, the community aims to study and better understand visitor use patterns in order to inform the planning of the WTMP once the process commences.

In addition to this report, the Center for Public Lands will be producing a comprehensive, multi-year study, starting from the 2017/18 season, to compile data that can be used by different land mangers (USFS, BLM, private lands owners, etc..) to help inform policies for winter recreation management. The goal of this study is to increase knowledge of winter travel patterns and enhance stakeholder's ability to aid the USFS's Winter Travel Management Plan.

This study is an ongoing collaboration between the Master of Environmental Management program at Western Colorado University, The Center for Public Lands, Silent Tracks, and the Town of Crested Butte. The following presents the results of data collection in the winter of 2021-22.

## METHODOLOGY

The methods and design of the 2021/22 study have been repeated with minimal variation since the original 2017 study. It is our hope that continuing a similar methodology will produce the most accurate model of recreational usage and show any trends or patterns that might emerge over time. Trailhead monitoring occurred via eight remote cameras installed trailheads in the six major drainages used for backcountry travel in the Upper Gunnison Valley. Images are collected from December to April and the cameras are maintained once every week or two to retrieve SD cards, ensure proper camera framing and replace batteries if needed. Infrared counters could be used to record number of trailhead users, but the photo-capture mode available on remote cameras allows a better understanding of what type of winter recreation is occurring on the various trailheads.

Users are categorized in 4 main user types: **non-motorized** (cross-country skiers, snowshoes, backcountry skiers/spilt-boarders, hikers, etc.), **motorized** (snowmobiles, any type of over snow vehicle), **hybrid** (a user encompassing more than one category) and **mechanized** (fat tire bikes, mountain bikes). Motorized users are defined as “any vehicle which is self-propelled, other than a wheelchair or mobility device” by the US Forest Service. Hybrid users appear to be participating in multiple forms of recreation, typically identified by a snowmobile carrying skis or pulling skiers. Primarily, we focused on counting “outgoing” traffic, so some users who walked around the camera, were linking trail systems, etc... may have been missed.

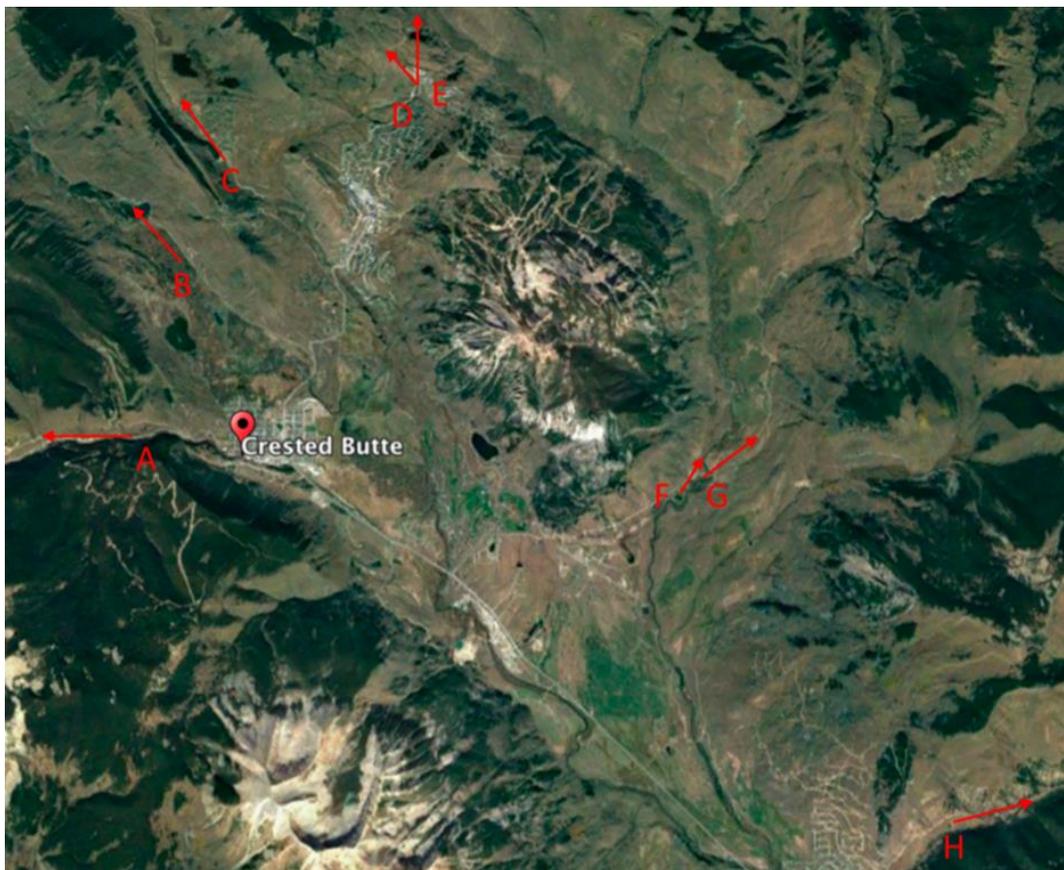


Figure 1: Location of Trailheads: A – Kebler Pass B – Washington Gulch C – Slate River D – Snodgrass E – Gothic F – Brush Creek Trail Head G – Brush Creek Road H – Cement Creek. (Image: Google Earth, 2018).

## Results

Our counts show that between Dec 9<sup>th</sup>/10<sup>th</sup>, 2021 and April 15<sup>th</sup>, 2022 there were at least 27,280 recreational visits that took place on winter trails in the Upper Gunnison Valley (Table 1). Kebler Pass was the most visited trailhead with 9,241 recreators counted, averaging out to around 92 users per day. The overwhelming majority of users counted at Kebler Pass were motorized users, with this category adding up to 7,855 (85% of trailhead total) people, mostly snowmobilers. The other 7 trailheads were primarily used by non-motorized recreators, with around ~900 strictly motorized visits at these remaining basins through the duration of the study.

The camera with the lowest number of users counted was at Brush Creek Road, with a total of 762 visits. 5 of the trailheads had between 1,900 and 4,000 users for the winter season (Slate River, Washington Gulch, Gothic and Cement Creek). Snodgrass Trailhead received the 2<sup>nd</sup> greatest number of visitors, totaling over 5,000 users. Snodgrass also saw the most amount of mechanized use, with 375 fat-tire bikers counted across the season.

Trailhead	Days with Data	Total Users	Non-motorized	Motorized	Hybrid	Mechanized
Brush Creek TH	116	969	967	0	0	2
Brush Creek RD	57	762	642	64	31	25
Cement Creek	117	2,709	2,062	507	17	123
Gothic	110	3,906	3,680	31	23	172
Snodgrass	104	5,061	4,978	7	0	76
Washington Gulch	103	1,975	1,621	204	146	4
Slate River	103	2,657	2,075	73	498	11
Kebler Pass	100	9,241	699	7,855	672	15
<b>Totals</b>	<b>810</b>	<b>27,280</b>	<b>16,724</b>	<b>8,741</b>	<b>1,387</b>	<b>428</b>

Table 1: 2021-2022 Totals, including number of days data was collected, total recreation visits, and number of visits by category for each trailhead.

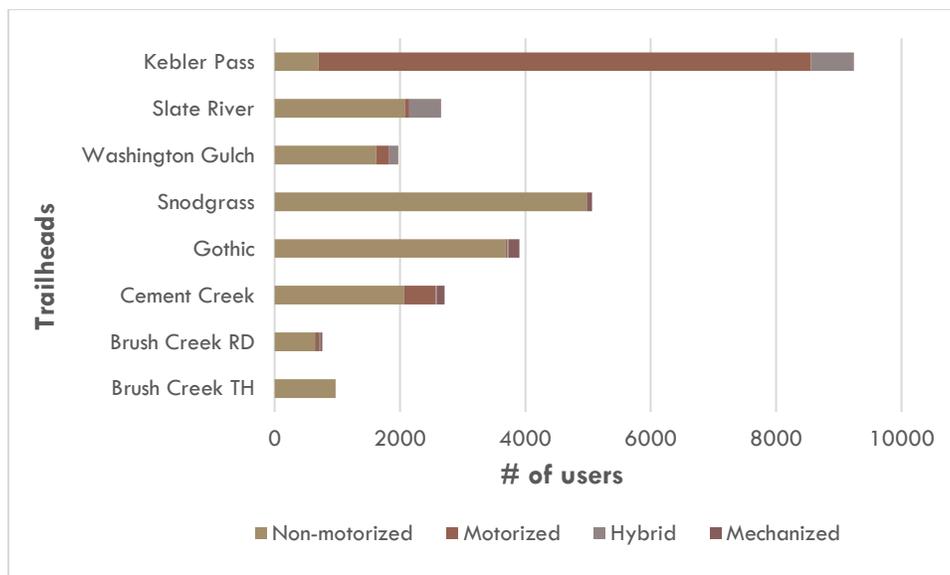


Figure 2: This bar chart represents the number of non-motorized, motorized, hybrid, and mechanized users at each trailhead, to highlight the proportional use of each recreation type by trailhead.

Consistent with the total user data, Snodgrass and Kebler Pass had the two highest daily averages at around ~50 and ~90 users respectively, while both Brush Creek trailhead and road averaged the lowest daily average, both averaging less than fifteen users per day. The remaining 4 trailheads averaged between ~20 and 35 users per day.

Trailhead	Average Daily	Average Daily Non-Motorized	Average Daily Motorized	Average Daily Hybrid	Average Daily Mechanized
Brush Creek TH	8.35	8.33	0	0	0.02
Brush Creek RD	13.37	11.26	1.12	0.54	0.44
Cement Creek	23.15	17.62	4.33	0.14	1.05
Gothic	35.51	33.45	0.28	0.21	1.56
Snodgrass	48.66	47.86	0.06	0	0.73
Washington Gulch	19.17	15.74	1.98	1.42	0.04
Slate River	25.8	20.15	0.71	4.83	.11
Kebler Pass	92.41	6.99	75.88	6.72	0.15
<b>Totals</b>	<b>266.42</b>	<b>161.4</b>	<b>84.36</b>	<b>13.86</b>	<b>4.1</b>

Table 2: 2021 – 2022 Averages, including total valley wide daily use, user category averages, and trailhead specific averages. Average daily use was calculated by dividing total annual visits by number of days data were collected

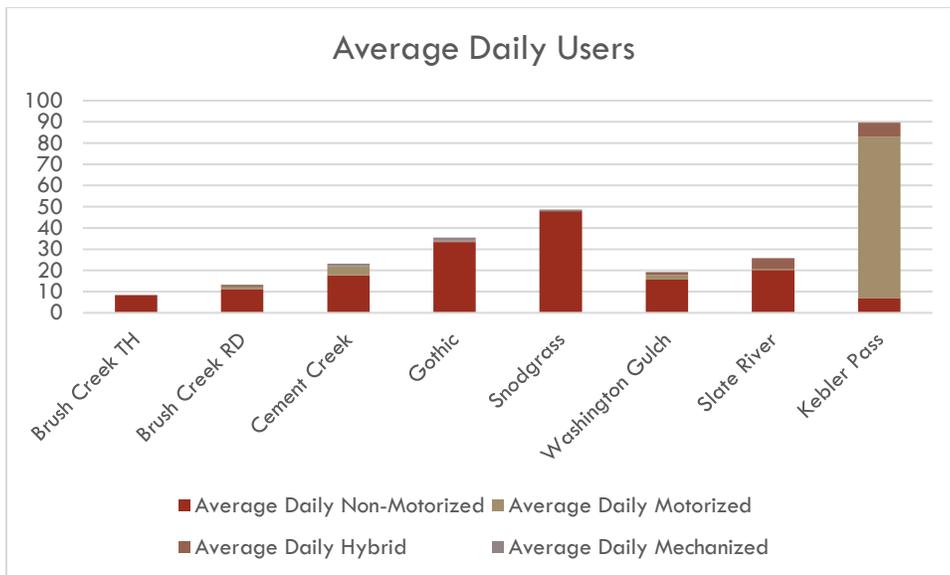
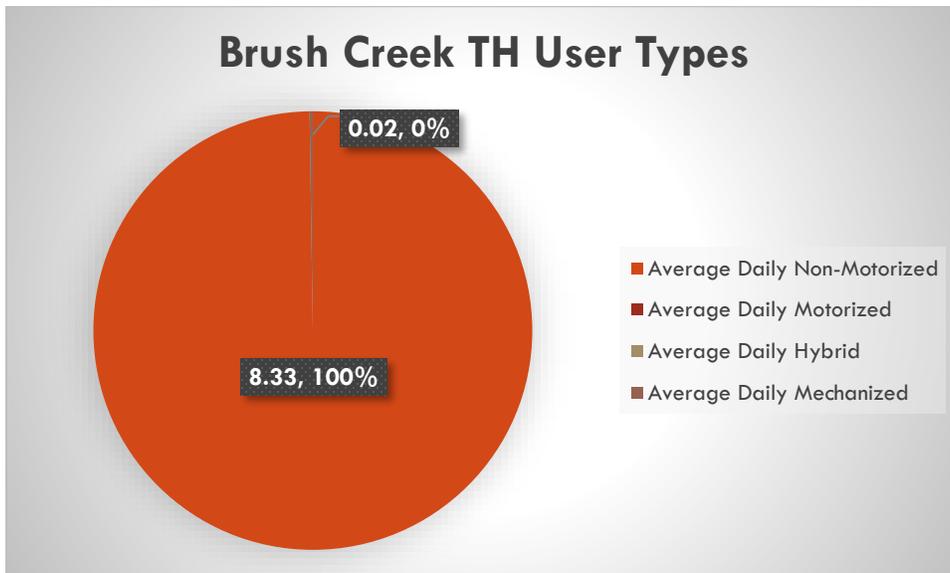


Figure 3: Bar chart representing daily average number of users at each trailhead.

## BRUSH CREEK TRAILHEAD

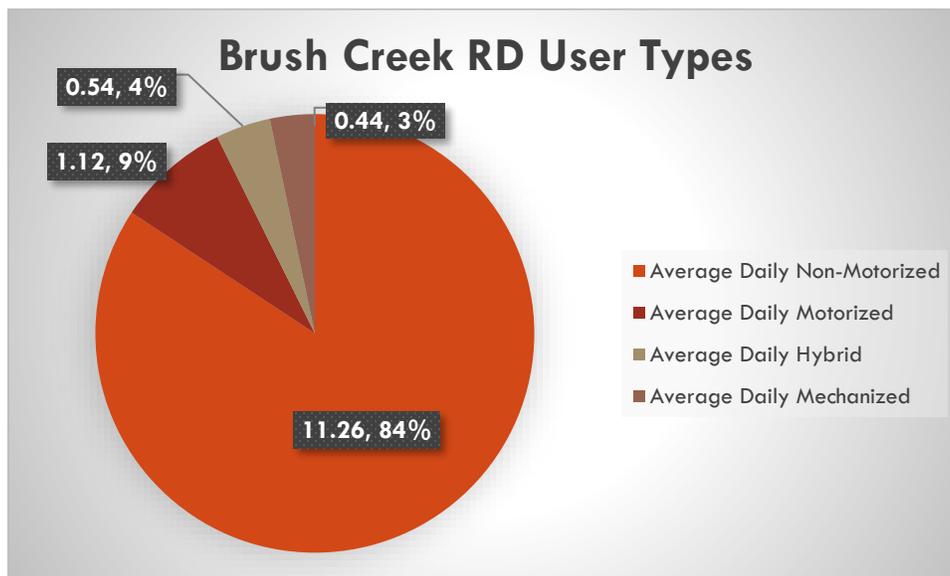
Total # of visitors = 969  
 Average # of visits per day = 8.35



2021-22 study shows there were nearly 6.5 less visits per day from the 20/21 season. 2<sup>nd</sup> lowest amount of total use observed (previous total # = 911.) Moved camera slightly up trail and to taller height in Mid-February, which resulted in higher daily averages in March (~13 user per day.) Dry start to winter, followed by camera being buried by snow lead to low December counts. Nearly 100% of observed users were non-motorized users (cross country skiers, snow-hikers and dog walkers), the only additional users were a couple of mechanized users (snow-bikes.)

## BRUSH CREEK ROAD

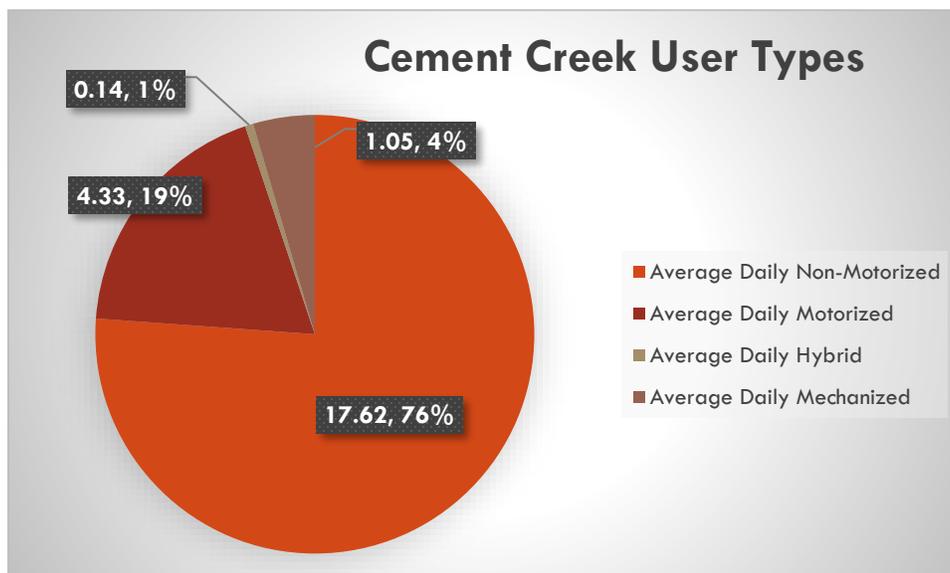
**Total # of visitors = 762**  
**Average # of visits per day = 13.37**



Third season observing visitor use on Brush Creek Road. In the past we have used Lazy F-Bar Ranch (private property south of BC Road) signage, but always struggled with snowplow’s snowbank blocking most of frame. I moved the camera slightly down trail, attached to a “narrow bridge” sign. Potentially missed a majority of motorized and hybrid users, as visitors tend to drive vehicles/trailers to further down the road.

## CEMENT CREEK

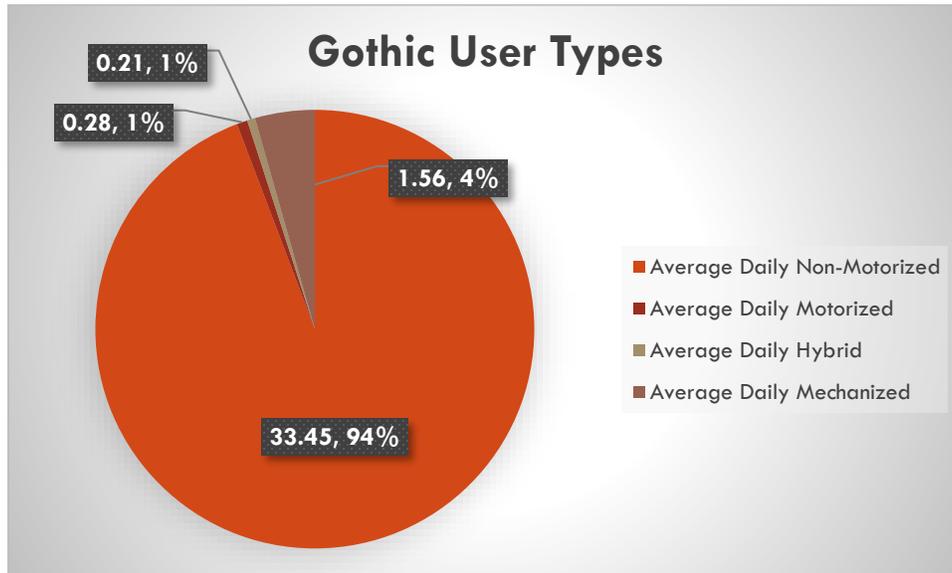
**Total # of visitors = 2,709**  
**Average # of visits per day = 23.15**



2021 – 2022 study shows there were around ~11 less users per day at Cement Creek this year in comparison with least year. 2<sup>nd</sup> highest total and average of users observed since the implementation of the WDCI. 2<sup>nd</sup> busiest trailhead for “motorized” recreators.

## GOTHIC

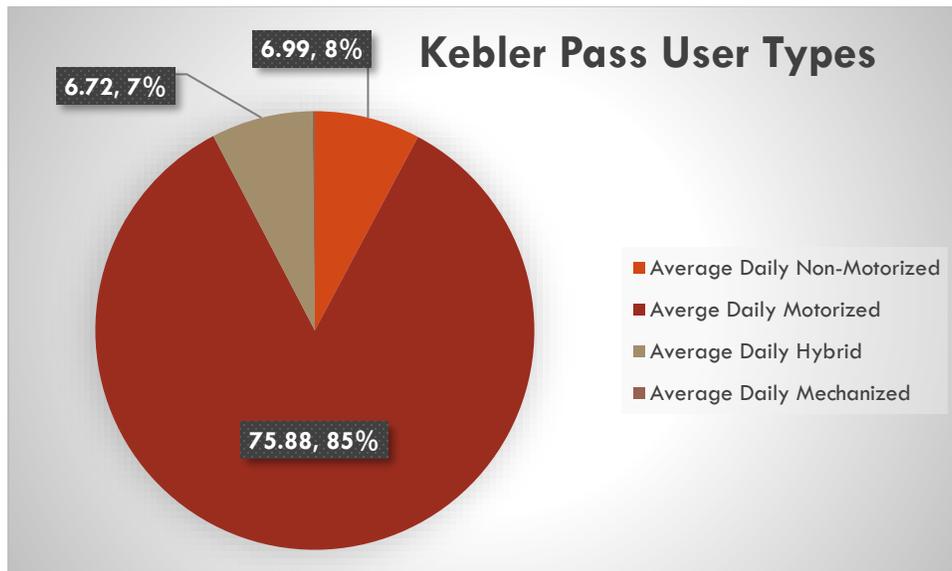
Total # of visitors = 3,906  
Average # of visits per day = 34.45



Gothic's 2021-22 numbers show that overall, there were around 500 less people this season than last year's record high. The average # of visitors per day is actually higher than last years, which was the most we've seen since the start of the WDCI.

## KEBLER PASS

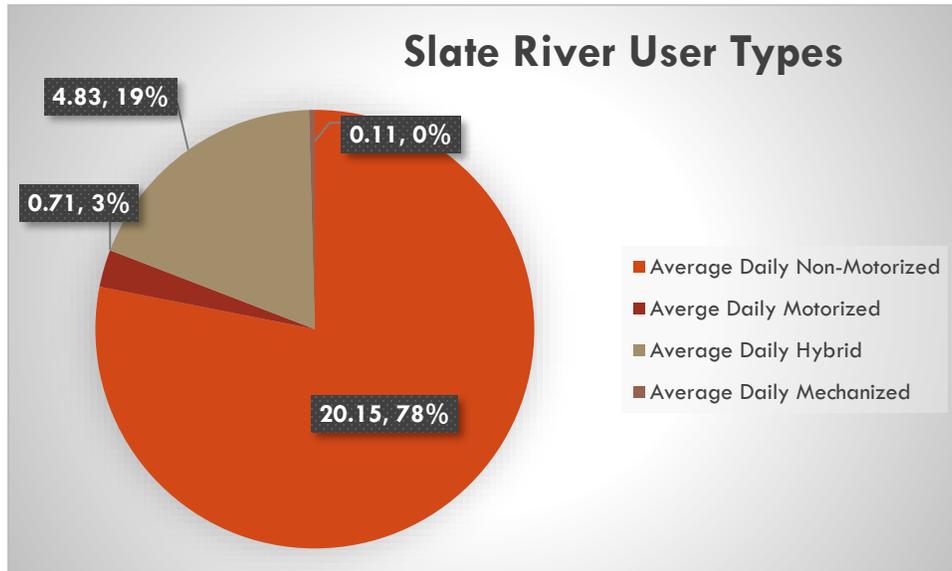
Total # of visitors = 9,241  
Average # of visits per day = 92.41



With over 9,000 visitors observed over the course of the 2021/22 WDCI season and averaging over 90 users per day, Kebler Pass is again the busiest trailhead researched in this study. Kebler Pass Trailhead's average users observed in February (~155) and March (~134) are the two highest monthly averages at any trailhead observed of the entirety of data collection for the WDCI.

**SLATE RIVER**

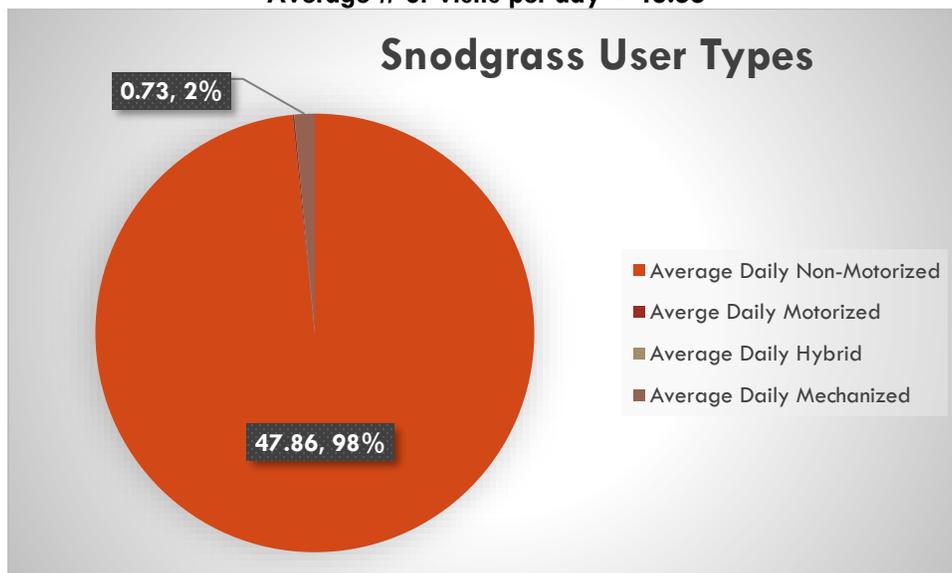
**Total # of visitors = 2,657**  
**Average # of visits per day = 25.8**



This season's study observed the 2<sup>nd</sup> lowest number of users at the Slate River Trailhead since the implementation of the study. Again, a decrease in # of motorized users, with the 2020-21 study showing 108 motorized users, while this season's study only observed 73 motorized users. Like last season, a higher percentage of hybrid use is seen at this trailhead than any other in the study.

**SNODGRASS**

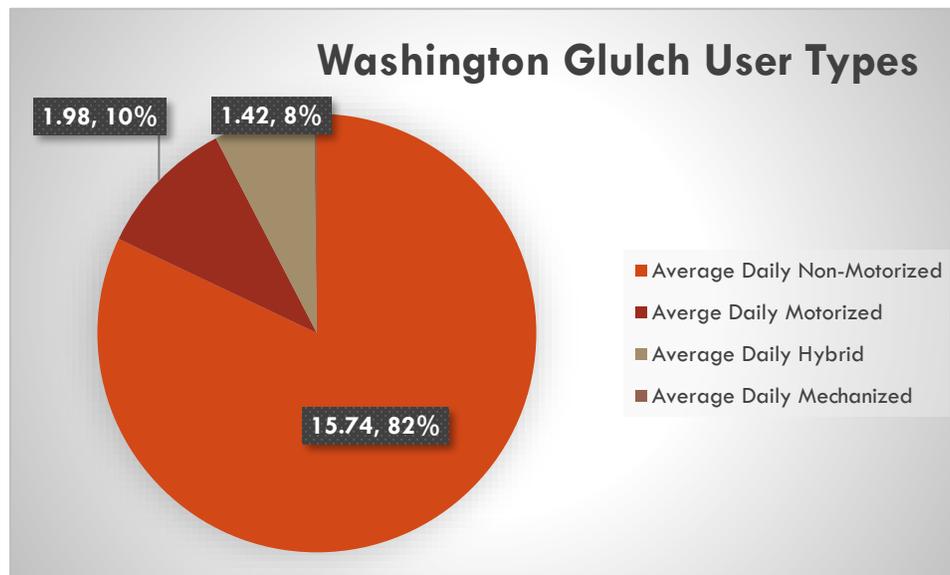
**Total # of visitors = 5,061**  
**Average # of visits per day = 48.66**



Snodgrass Trailhead was again the second busiest trailhead, with just over 5,000 visitors counted this season, the third busiest season since the beginning of the WDCI. New trailhead infrastructure most likely has contributed to lower observed numbers this season, with many people now starting their recreation past the original trailhead/camera location.

## WASHINGTON GULCH

Total # of visitors = 1,975  
Average # of visits per day = 19.17



This season was the lowest observed amount of visitation at the Washington Gulch trailhead since the implementation of the WDCI. 2nd highest % of “hybrid” users and 3<sup>rd</sup> highest percentage of “motorized” users.

## CONCLUSIONS

There was noted decrease in both the total number, as well as averages of recreation use observed from the previous season in the 2021/22 Winter Data Collection Initiative. Every trailhead that was monitored dropped in terms of number of overall observed users compared to the record high 20/21 WDCI counts. I think there are number of reasons why such a large decrease was seen in this year’s study. This season’s WDCI having nearly 200 less days of total days for analysis (compared to previous year) is an obvious reason, but one must consider the increased interest in outdoor recreation following COVID-19 pandemic during the very busy 20-21 season. While this year’s collection registered lower total and average numbers in comparison to last year, the 33.67 average still makes this year the third busiest season in terms of overall average. While some patterns of linear growth have appeared at specific trailheads, overall, the season’s supports the idea that overall use and data is mostly fluctuating. There were a couple different observations that stood out to the author, including the Gothic Trailhead having its 2<sup>nd</sup> highest count, and with an average of ~35 users per day, matches the observed highest average of the previous season. New trailhead infrastructure at the Gothic/Snodgrass may have influenced this “growth” at Gothic, while at the time, decreasing the number of users counted at the Snodgrass camera. Essentially, a lot more people are starting their Snodgrass activity at the end of the new parking area (Gothic’s trailhead). Gothic’s camera was placed further down-trail, as it became quite difficult to decipher who was heading to which trailhead and this was most likely we saw the trails daily average double from February to March. While this year’s study has shown that the linear growth trend that appeared at Kebler Pass over the years finally declined, I think the numbers would have met or surpassed last years without camera failure. I believe this large loss of data at Kebler was caused by public tampering, based on the condition/position of the camera and lock when I came across it.

**2021/22 Winter Data Collection Initiative**

There were a couple of variables that affected this seasons count and decline. First off, the beginning of the winter season was quite slow. In fact, we didn't start recording users at trailheads until around December 10<sup>th</sup>, 2021, simply because there wasn't any snow on the trails. Once snow fell around the 10<sup>th</sup>, that is all we saw until one of the largest winter storm systems to hit the Upper Gunnison Valley in recent memory arrived, beginning around the 23<sup>rd</sup> of the month. There was so much snow that I had to dig out and raise the camera positions at every trailhead twice of the course of 2-week period. Unfortunately, there was quite a bit of data lost during this period because of snowfall coverage, dead batteries, etc... (although there was just so much snow and high avalanche danger, there might not have been a large amount of people recreating during that period anyway.) Another setback that occurred this season was a battery issue. I decided after doing some research, that I would invest in more expensive lithium batteries to power the trail cameras this season. While it was true the lithium batteries lasted longer than traditional alkaline batteries, they also had an issue with showing the true/correct amount of battery % remaining. Basically, the cameras (and a separate "battery tester" device I purchased) would read them at 100% battery health, regardless of the actual amount of battery % remaining. I lost data at multiple trailheads because I wasn't sure on the camera's battery health, which did end up impacting my overall data count. Last season, I was able to collect around 96% of possible data without failure, while this year that percentage fell to around 82%. I think we would have obviously seen higher totals and averages with more accurate data collection, but I'm not entirely sure we would have matched the record high results from last year.

	17-18	18-20	19-20	20-21	21-22
<b>Brush Creek Rd</b>	538	ND	ND	1,542	<b>762</b>
<b>Brush Creek Trailhead</b>	1,388	911	979	1,998	<b>969</b>
<b>Cement Creek Trailhead</b>	780	1,890	2,418	4,615	<b>2,709</b>
<b>Gothic Rd</b>	3,457	3,083	2,400	4,445	<b>3,906</b>
<b>Kebler Pass</b>	5,388	7,064	8,154	11,882	<b>9,241</b>
<b>Slate River Rd</b>	4,130	4,042	2,355	4,726	<b>2,657</b>
<b>Snodgrass Trailhead</b>	5,776	5,203	3,661	10,364	<b>5,601</b>
<b>Washington Gulch Trailhead</b>	4,355	2,450	2,371	4,781	<b>1,975</b>
<b>Total Days for Analysis</b>	718	952	924	1,029	<b>979</b>
<b>Total Days with No Data</b>	71	34	197	40	<b>169</b>
<b>Total Days with Data</b>	647	918	727	989	<b>810</b>
<b>Avg Users/Day (Total Users/Total Days with Data)</b>	39.89	26.84	30.72	44.78	<b>33.67</b>
<b>Total Users</b>	25,812	24,643	22,338	44,293	<b>27,280</b>

Figure 6: 5-year comparison chart, showing total counts and overall average users observe per day.

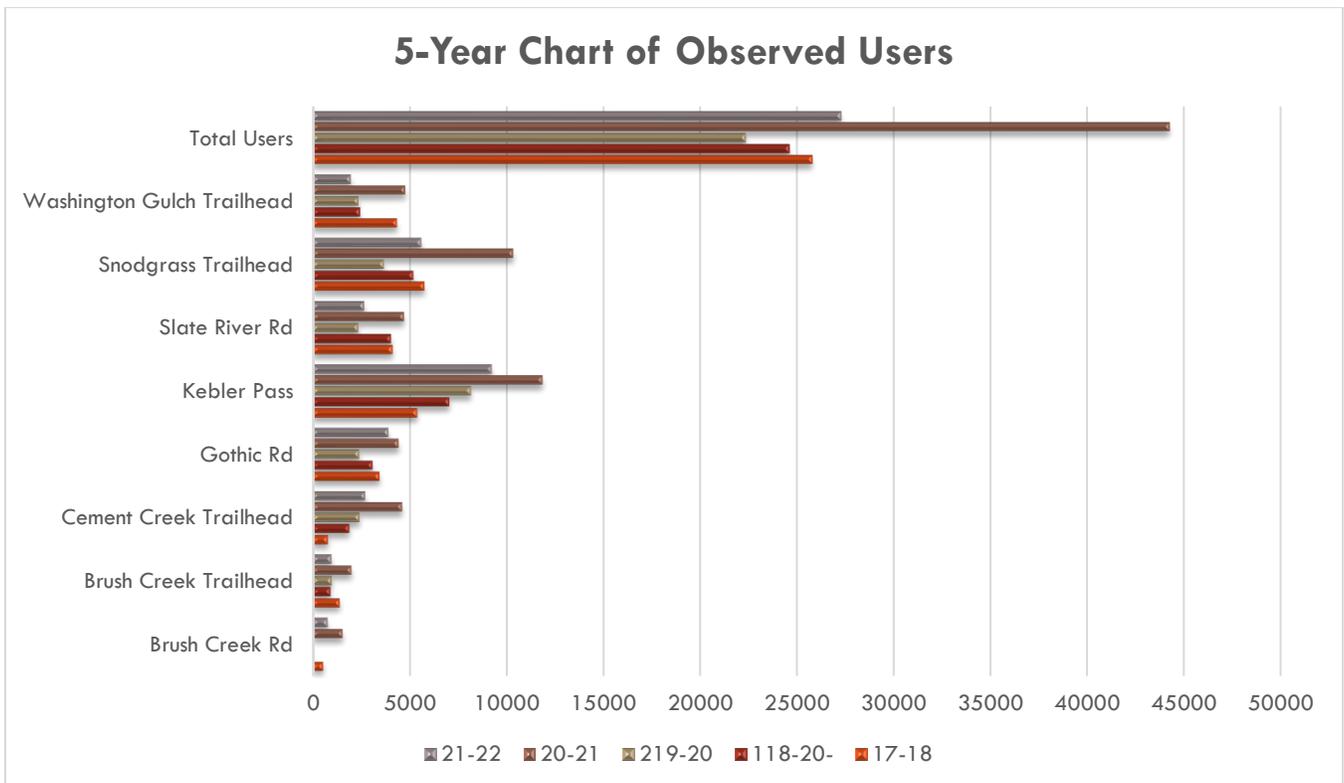


Figure 7: This bar chart illustrates the total numbers of observed recreation visits for each site during the 4 years of data collection

## Acknowledgements

Thank you to the multitude of stakeholders that all play a role in making the Winter Data Collection Initiative possible. I would like to thank Western Colorado University, the Center for Public Lands and the Gunnison Ranger District of the United States Forest Service for this opportunity to contribute to their ongoing research. I also would like to thank our partners at Crested Butte Land Trust and Silent Tracks for your support and your continued goal of making recreational opportunities more sustainable, accessible and enjoyable. In addition to all the stakeholders, I would like to extend my gratitude to all the community members and winter backcountry visitors who participated in the 2020/21 Gunnison Valley Winter User Survey.

Thank you to Dr. Melanie Armstrong and Dr. Jeff Sellen, two professors in the Master of Environmental Management Program at Western Colorado University who have done so much to support me and assist me throughout the process of this study. Also, a huge thank you Maddie Rehn and Tobias Nickel, both who have had the role of Associate Director with the Center for Public Lands. Both of you and everyone else who has been with CPL over the past two years... I am so appreciative of all your guidance and support. Thank you to my research assistant, Rachel Pawela. Your efforts in helping me process/analyze images was huge and I greatly appreciate all your assistance. Thank you, Lily Richards and Kathryn Bickley, for your work on the comprehensive study, and the implementation guide, both of which helped tremendously in this year's WDCI reports and my overall graduate work. Thank you to all the previous research leads and assistants, and to Doug Shaw for your work designing the original study.

