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AN ESTIMATED 353,000 PEOPLE HIKED COLORADO'S 14ERS IN 2018 QUANDARY TOPS BIERSTADT AS MOST-CLIMBED 14ER

Colorado Fourteeners Initiative

A Partnership for Preservation

(Golden, Colo.) The number of people climbing a 14,000-foot peak in Colorado continued its steady increase in 2018, according to the most recent hiking use report released by the Colorado Fourteeners Initiative (CFI). Total hiking use during the peak summer-to-fall season rose by an estimated 19,000 days, an increase of 5.7 percent, from an estimated 334,000 hiker days in 2017 to an estimated 353,000 hiker days in 2018. This level of hiking use represented \$95.7 million in statewide economic impact based on past 14er hiker expenditure studies.

"People continue to love climbing Colorado's 14ers," said Lloyd F. Athearn, executive director of CFI. "As Colorado grows, so does the number of people climbing our highest peaks. More than half of all 14er hiking use statewide occurs on the 11 peaks closest to the Front Range population centers. Two 14ers had seasonal use totals exceeding 36,800 person days. Roughly half of hiking use occurs on weekends, with Saturday use (30.5%) higher than Sunday (20%) at virtually all locations monitored."

For the first time in CFI's five years of tracking hiking use on Colorado's highest peaks, the most popular 14er in the state was Quandary Peak near Breckenridge. CFI's two Quandary trail counters—one on the standard "East Slopes" route and a second on the less-climbed "West Ridge"—had an observed count of 38,259 hiker days between May 28 and October 7, 2018. This level of use slightly eclipsed Mount Bierstadt near Georgetown, which had been the most-climbed peak in all prior estimates. Data from the Forest Service's counter on Mount Bierstadt combined with CFI's multi-factor modeling program estimated seasonal use on that peak at more than 36,800 hiker days.

The busiest single day recorded last year for hiking on any 14er was July 20, when 1,023 people climbed Bierstadt. The biggest day for hiking Quandary was July 14, when 945 people climbed the peak.

Rounding out the top five most-climbed routes in the state are Grays and Torreys Peaks, which most commonly are climbed together, at an estimated 25,000-30,000 hiker days, Mount Elbert (25,000-30,000 hiker days) and the "Decalibron" loop that includes Mounts Lincoln, Democrat and Bross (20,000-25,000 hiker days).

"Each year we continue to optimize the accuracy of the data collected and have more confidence in the estimates we release," added Athearn. "We were able to deploy two new counters last season on Pikes Peak and one on Mount Lindsey, bringing to 22 the number of counters CFI had deployed in the field. We also were able to tap into similar counters placed by the Forest Service at four locations. With several years of counts at identical locations we are also able to more accurately assess long-term trends on some peaks."

Some additional observations, changes from past years and notes about 14er hiking use that occurred during 2018:

- The very low snowpack during the winter of 2017-18 meant that CFI staff were able to deploy counters earlier in the season than in past years. Counters on four peaks were out for the entire monitoring period (May 28 through October 7): Mount Elbert and Huron, La Plata and Quandary Peaks.
- The estimated number of people climbing Pikes Peak was based on two counters placed last year—one on the Barr Trail and one on the Devil's Playground Trail (also known as the Crags Route)—rather than modeling the entire seasonal hiking use. CFI used responses from a survey of 14er hikers to determine how commonly climbers descend both routes rather than take a vehicle or the train. The Barr Trail counter was placed past the turnoff to the Bottomless Pit, so is not affected by use on the lower trail from people descending from the Manitou Incline.
- CFI obtained permission from the Blanca Ranch to place a counter high on Mount Lindsey. This is the third counter placed in the Sangre de Cristo Range.
- Data from two counter locations used in past years—Mount Shavano and Challenger Point—was not utilized in preparing these estimates due to tampering and lack of access. Counts for both peaks were estimated using the modeling system.
- The angle of the sensor on the main Quandary route was refined to ensure that it counted a hiker passing at any point on the trail. The prior sensor angle may have undercounted people who passed immediately adjacent to the tree on which the sensor is mounted. This may be factor in a larger-than-anticipated jump in hiking use on the peak in 2018.
- Tampering with trail counters—especially those mounted in cairns—continues to cause data gaps on several peaks, including Democrat, Grays/Torreys, Handies (American Basin), Redcloud/Sunshine, Sherman, and Sneffels. While modeling can fill in gaps, that is not as accurate as direct counts and may be a source of either undercounting or overcounting.
- Forest Service infrared trail counters placed at trailheads serving Mounts Belford, Oxford, Harvard, Columbia, Massive and Missouri Mountain provided upper limits for people hiking on these trails, which also serviced other recreational destinations. CFI's estimates for hiking use on these peaks all fell below the trailhead counts.

"Hiking use has grown dramatically at some locations—especially peaks closest to the Front Range population centers, which have themselves also grown tremendously in recent years," said Athearn. "The average annual growth rate on Quandary was 35 percent between 2015 and 2018, though some of this may be attributable to the minor sensor adjustment at the start of the 2018 season. The average annual growth rate on La Plata Peak was 8 percent, and on Huron Peak 9 percent between 2016 and 2018."

Growth rate calculations for these peaks utilized raw data counts for the months of July, August and September.

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Colorado was the fifth-fastest-growing state between 2010 and 2018, growing its population by 13.2 percent. The Denver metro area has grown nearly 15 percent during the same period. In-migration was highest for those aged 24-32, the prime age for fit, outdoor-oriented people to be exploring Colorado's high peaks.

CFI's estimate of hiking use suggests a statewide economic impact of more than \$95 million directly attributable to hiking 14ers based on economic expenditure studies performed by Colorado State University economists John Loomis and Catherine Keske. Their 2009 study found that climbers of Quandary Peak near Breckenridge spent an average of \$271.17 per day for gasoline, food, lodging, equipment and other retail purchases.¹ This expenditure estimate has not been updated in almost a decade, so it is likely understated.

"While growth in 14er hiking on some peaks has been dramatic during the past few years CFI has been tracking use, that does not necessarily translate into increased on-the-ground resource impacts," said Athearn. "In many places our investments in trail construction and maintenance mean the summit trail is in better condition despite significantly incrased hiking use."

For example, the condition of the main Quandary Peak summit trail increased from a C+ grade in CFI's 2011 baseline assessment to an A- in the 2018 secondary assessment. Despite accommodating many more hikers in 2018 than 2011, the investment of more than \$223,400 in seasonal staff wages and 1,322 volunteer days actually improved the on-the-ground trail condition according to CFI's 2019 "14er Report Card."

"The challenge is building out and maintaining the network of sustainably designed, durably constructed summit hiking trails—CFI's top priority—before hiking use impacts make this harder and more expensive to do," said Athearn. "If we can provide a robust network of 14er hiking trails that protects the fragile alpine tundra ecosystems through which these trails pass we can protect these signature Colorado peaks while helping foster recreational enjoyment and economic development for years to come."

CFI's hiking use projections are based on the combination of several data sources. 1) CFI collected hourby-hour data during the 2018 hiking season using compact infrared trail counters that were placed at 19 locations adjacent to summit hiking trails servicing 20 14er peaks. Hiking use is estimated for the period between May 27 and October 7. Missing data were modeled using a linear model incorporating week number, day of the week, holiday and use levels on other similar peaks, which has shown to be statistically accurate. 2) Hiking use projections for all other 14ers were based on crowdsourced "14er checklists" submitted to the 14ers.com website by more than 17,000 individual hikers. Estimates for peaks without trail counters were calculated using a trend line calculated by the relative frequency of reported hiking use on all peaks using data points as anchors for peaks that had trail counters in 2018. 3) Trail counters used by the Forest Service on Mount Bierstadt and at three trailheads serving 14ers and data sets obtained from other organizations helped refine use estimates for several peaks.

CFI began deploying compact infrared trail counters as part of a pilot program in 2014 at five locations: Grays/Torreys, Castle, Quandary, Redcloud/Sunshine and Handies Peaks (American Basin). The program was expanded in 2015 to five additional locations: Mounts Elbert (3 locations), Democrat and Handies Peak (Grizzly Gulch). Additional funding in 2016 allowed CFI to add 10 new monitoring locations: Mounts Sneffels, Sherman, Princeton, Antero and Shavano, La Plata, Huron and Wilson Peaks, Challenger Point/Kit Carson Peak and Blanca Peak/Ellingwood Point. In 2017 the Antero counter was moved to the Winfield approach to La Plata Peak. In 2018 two new counters were deployed on Pikes Peak (Barr Trail and Devil's Playground), while the La Plata (Winfield) counter was moved to the West Ridge of Quandary and the Princeton counter was moved to Mount Lindsey.

Hiking use is being monitored at 22 locations during the 2019 summer/fall hiking season. There were no changes in the peaks with counters, though a few counters were moved to better monitoring locations to reduce hiker tampering.

CFI uses the term "person days" to report hiking use on the 14ers. This represents one person hiking one peak on one day. Anecdotally we know that individual enthusiasts may hike multiple 14ers over the course of a given year, including climbing the same peak multiple times. Using "person days" reports the number of days of hiking use that occurred, but does not represent the number of individual people who hiked 14ers that year.

About Colorado Fourteeners Initiative. CFI was founded in 1994 to preserve and protect the natural integrity of Colorado's 14,000-foot peaks through active stewardship and public education. To date CFI has constructed 31 sustainably designed, durably built summit trails on 28 14er peaks. CFI has engaged almost 19,300 days of volunteer stewardship since 2001 in the construction and maintenance of these peaks. A multi-pronged educational strategy has contacted more than 139,000 hikers in the field through paid crews and volunteer Peak Stewards, while CFI's YouTube channel contains more than 70 educational videos that have been viewed more than 147,600 times. Learn more at www.14ers.org and obtain frequent updates on Facebook.

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ⁱ Loomis, John and Catherine Keske, "Did the Great Recession Reduce Visitor Spending and Willingness to Pay for Nature-Based Recreation? Evidence from 2006 and 2009," Contemporary Economic Policy, Vol. 30, No. 2, April 2012, pp. 238-246.