

Connecticut Trail Census

Statewide multi-use trail user study



2020 Intercept Survey

Aggregated Data Report

April 20, 2021



Acknowledgments

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April 20, 2021

Executive Summary ~ Key Takeaways

This report provides a summary of intercept survey data collected from multi-use trail users at sites participating in the 2020 [Connecticut Trail Census](#) and provides a general picture of those surveyed on these trails and how the trails are being used. This data was collected through 1,372 surveys by respondents to a QR based survey deployed through posters and lawn signs from April 9, 2020 - December 31, 2020.

- **Walking, running, and jogging outpaces bicycling on these trails.** 78.2% of trail users surveyed indicated using the trail to walk, run, or jog,
 - **A greater share of respondents indicated using the trails for bicycling in 2020.** Bicyclers represented 32.5% of respondents in 2020, while 25.6% indicated use for bicycling in 2019. This may be the result of COVID response and shifts in study sampling.
 - **The majority of users on these trails use them frequently.** In 2020, 43% of users surveyed indicated using the trails two or more times per week (down from 52.6% in 2019).
 - **Average time spent on the trail, 79.3 minutes, was up by 5 minutes over 2019.** Cyclists spend the most time on trails averaging 91.7 minutes followed by walkers, 76.7 minutes.
 - **Only a small percent of trail users, spend money during their visits to the trail but the majority spend annually on trail related gear, supplies, equipment or rentals.** 22.9% of respondents spent money on their most recent trip to the trail, averaging \$11.86 per visit on food, beverages, and gas. Annually, however, respondents indicated spending an average of \$387.10.
 - **Trails are used throughout the year.** Those surveyed use the trails most often in the summer (81.7%), fall (83.5%) and spring (74.3%) but a surprising percentage also use them in winter (39.7%).
 - **An overwhelming majority of users drive to these trails but more people drove together than previous years.** 39.6% of respondents drove their cars or motorcycles, alone, to get to the trail (55.4% in 2019), and 40.3 (28.9% in 2019) drove with someone else. About an equal percentage walk (8.0%) or bike (9.5%) to the trail and 1.3% run or jog. Only 0.1% of respondents reported using public transportation.
 - **Respondents use the trails primarily for exercise, recreation, and relaxation. Use for transportation purposes is negligible.** The majority of users (83.8%) indicated using the trails for the purpose of exercise, followed closely by recreation (48.2%). In 2020, a greater percentage of users indicated using the trails for relaxation, 47.8% than in previous years. Only 2.6% of respondents indicated using the trails for travel.
 - **While use of trails for socializing was down, family time was up.** In 2020 12.7% of users indicated that they use the trails for socializing (17.9% in 2019) and 29.5% for family time (16.3% in 2019).
 - **Most users complete 20% or less of their weekly physical activity using the trail but 39% exercise more since using the trail.**
-

- **Trail users in 2020 came from more unique zip codes, but fewer states.** Respondents in 2020 represented 237 unique zip codes and 12 states, while 2019 Respondents represented 188 unique zip codes and 20 states.
- **More trail users surveyed are female than male.** In 2020 50.9% of respondents (2019, 54.6%) identified as female.
- **Trail users surveyed are largely older than the general population of Connecticut.** 63.8% of those surveyed were over 45 years of age and this has not changed in recent years.
- **Respondents overwhelmingly identified as white.** In 2020 84.3% of respondents identified as white, and this was consistent with previous years (87.0% in 2019).
- **People identifying as American Indian and Pacific Islanders are better represented on the trails than in the general population.** 2.6% of respondents identified as American Indian and 0.3% as Pacific Islander. According to US Census the Connecticut population is 0.6% American Indian and 0.1% Pacific Islander.
- **A majority of respondents report household incomes of \$100,000 or more.** 52.1% of all respondents in 2020 reported household incomes of \$100,000 or more (54.5% in 2019).



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Background

This year will be a year remembered in history for many reasons. Most significantly for this project, outdoor recreational spaces saw an unprecedented jump in use as a result of the COVID-19 pandemic. We document this impact elsewhere in the user count data reports as well as monthly reports published by the Connecticut Trail Census but have suggested areas below where the pandemic may have caused some shifts in use trends. Numerous other studies have also documented this increase in use of outdoor spaces but it is too early to know if these trends will lead to long term changes in use patterns.^{1,2,3,4} Additionally, this year saw a tremendous activist uprising and reckoning for the valuation of black lives, largely precipitated by violence against black people outdoors, including the murder of George Floyd, killed outdoors during an arrest in Minnesota, Ahmaud Arbery killed while jogging in Georgia, and the widely publicized racial confrontation of Amy Cooper and Christian Cooper, who are unrelated, in Central Park in New York City.^{5,6} Now, more than ever, is the right time to shed light on who, why, and how people are using outdoor spaces in hopes that this information can be used to begin to undo oppressive or exclusionary systems, policies, and practices in the design and management of our valued greenspaces.

This report provides a summary of intercept survey data collected from multi-use trail users by volunteer surveyors at sites participating in the [Connecticut Trail Census](#). The Connecticut Trail Census is a statewide volunteer data collection program intended to inform a better understanding of multi-use trail use in the state of Connecticut and to make this important information available to trail user groups, administrators, government agencies, and the general public. The Census involves a trail user intercept survey, as well as infrared user counts on 21 multi-use trail sites throughout the state of Connecticut. The goals of the Connecticut Trail Census are to: understand when, who, how, and why people make use of Connecticut's multi-use trails; educate stakeholders about trail use patterns and trends and user demographics; promote active citizen participation in monitoring and communicating the value of trails; and encourage sound trail building and maintenance programs based on data. The project is funded by the Department of Energy and Environmental Protection Recreational Trails Program, and project partners include the Connecticut State Greenways Council and the Naugatuck Valley Council of Governments.

¹ Bradley, K, A. Budris, E. Wilson, and L. Brown. 2020. "Connecticut Trail Census Aggregated Count Data." Connecticut Trail Census. University of Connecticut. Available online: <https://ctrailcensus.uconn.edu/understanding-the-data/countdata/>

² Oftedal, A. 2020, April 27. "Trail use has surged in response to the COVID-19 pandemic – Parks and Trails Council of Minnesota." [Blog post]. Available online: <https://www.parksandtrails.org/2020/04/27/trail-use-covid19/>

³ Pennsylvania Environmental Council. 2020, June 8. "Measuring COVID-19's Impact on PA Trail Use." [Blog post]. Available online: <https://pecpa.org/pec-blog/measuring-covid-19s-impact-on-trail-use/>

⁴ Kapp, A and E. Oberg. 2020. "Taking Care of Our Trails and Parks in the Midst of COVID-19." *Rails-to-Trails Conservancy*. [Blog post]. Available online: <http://www.railstotrails.org/trailblog/2020/may/22/taking-care-of-our-trails-and-parks-in-the-midst-of-covid-19/>

⁵ Nir, S. M. (2020, June 14). How 2 Lives Collided in Central Park, Rattling the Nation. The New York Times. <https://www.nytimes.com/2020/06/14/nyregion/central-park-amy-cooper-christian-racism.html>

⁶ Green, A. (2020, May 26). Millions of Amy Coopers. The Cut. <https://www.thecut.com/2020/05/why-amy-cooper-called-the-cops.html>

Methods

The survey tool and methods were developed in accordance with best practices in survey design methods with guidance from a survey advisory team, consisting of trail administrators from around the state, the Connecticut Trail Census Advisory Committee, partners from Councils of Government and the Department of Energy and Environmental Protection, and Connecticut Trail Census staff. Survey questions were based on those identified from similar surveys around the country and the National Bicycle and Pedestrian Data Collection Project and included questions about how and why respondents use the trails, spending, health and demographic information. The survey took about five minutes to complete. Note that some survey questions and procedures were modified to decrease error from year to year. These have been noted, where applicable, in the charts and narrative below. A copy of the survey tool is attached to this document as an Appendix.

In 2020, due to restrictions imposed as a result of the COVID-19 pandemic, data was collected via an online survey in Qualtrics software accessed via QR code posted on lawn signs and posters in the vicinity of trailheads at all participating sites. Data was collected from April 9, 2020 - December 31, 2020. Twenty-two (22) specific trail sites were included as selectable from the drop down menu in the survey. Respondents were also able to identify another trail and respond with regard to that defined site.

This project was reviewed and determined exempt by the University of Connecticut Review Board (IRB) Exemption #X15-174. However, under IRB guidelines, data received from minors under the age of 18 was removed prior to analysis. Data was cleaned for completion, and data from minors (under 18) was removed, leaving a total of 1,372 surveys for analysis in 2020, 978 surveys for analysis in 2019, 1,131 from 2018 and 1,003 from 2017. Data from 2017 to 2019 was also reviewed prior to analysis to identify data entry errors. Additional information about how errors were handled for each question was documented and is available on request. For more information about this data or the Connecticut Trail Census, visit <http://cttrailcensus.uconn.edu>.



Example survey signage at trail heads for 2020 QR based data collection.

An aggregated total of 1,372 surveys were collected during the survey period. Of the 1,372 surveys analyzed in 2020, 133 were incomplete (no data) and were removed for analysis, leaving 1,239 respondents who provided information about their most recent trail use; 1,220 specified that they used multi-use trails and 19 specified that they did not use multi-use trails. Of those who used trails, 14 did not use any trails in 2020 (at the time of survey completion) and 156 specified that they most recently used another trail not in the study list, by responding “Other.” Sites included in the study list with posted QR codes and total responses per site are listed below.

Chart 1. Number of Surveys/Respondents by Location

Respondents by Location		
Air Line Trail in East Hampton	109	9%
Air Line Trail in Portland	47	4%
Air Line Trail in Thompson	82	6%
Charter Oak Greenway in Manchester	13	1%
CTFastrak Trail in New Britain	12	1%
Farmington Canal Heritage Trail in Cheshire	62	5%
Farmington Canal Heritage Trail in Hamden	20	2%
Farmington Canal Heritage Trail in New Haven	10	1%
G&S Trolley Trail in Groton	69	5%
Hop River Trail in Bolton	108	8%
Hop River Trail in Vernon	72	6%
Larkin State Bridle Trail in Naugatuck	190	15%
Larkin State Bridle Trail in Oxford	71	6%
Middlebury Greenway in Middlebury	27	2%
Naugatuck River Greenway in Derby	140	11%
Norwalk River Valley Trail in Wilton	38	3%
Riverwalk Trail East in Hartford	2	0%
Riverwalk Trail in Hartford	48	4%
Shoreline Greenway in Madison	40	3%
Still River Greenway in Brookfield	28	2%
Sue Grossman Trail in Torrington	30	2%
Bluff Point State Park in Groton	62	5%
SUM	1280	100%

Additional sites identified as “Other” included a number of locations. In many cases, respondents used “Other” to specify a trail name that was synonymous to sites in the study list. In this case the data record was noted and the text updated for sorting so that data could be included in site specific analysis. Responses for Haley Farm in Groton were renamed and consolidated in the analysis as G&S Trolley Trail as this location is close by. Other locations included other locations along the Airline Trail (Pomfret, Colchester, Hampton, Willimantic, East Hampton, Windham, Lebanon), other locations along the Farmington Canal Trail (Avon, Cheshire, East Granby, Farmington, Simsbury, & Southington), Hockanum River Trail, Oswegatchie Hills, the Pequonnock Rail Trail in Trumbull, Sperry Park Trail in Avon, Witek Park

and Osborndale State Park in Derby. None of these other responses had sufficient response rates for separated analysis.

In previous years, data was collected by local volunteers who received supplies and training from the Connecticut Trail Census, and data was provided on a voluntary and de-identified basis to the University of Connecticut Extension for analysis. By comparison with previous years, in 2019, thirteen of the twenty participating sites (65%) collected an aggregated total of 993 surveys. In 2018, ten of the sixteen participating (63%) sites collected an aggregated total of 1,146 surveys, and in 2017, eleven of the fifteen sites (73%) collected an aggregated total of 1,042 surveys.

The specific data collection location (from 2017-2019, this was the location where live surveyors assessed the survey, and in 2020, where the posters and lawn signs were posted) was chosen by trail administrators familiar with trail use, to most accurately represent normal use along the trail segment and to best facilitate asking people to stop during an activity, usually near a trailhead or parking area. These sites varied slightly from the locations chosen for infrared counts, to avoid interference of the survey with accurate infrared counting. Count summaries are not included in this report but are available on the Trail Census website: www.cttrailcensus.uconn.edu.

Map 1: Survey Data Collection Sites



This report includes survey data collected in 2017, 2018, 2019, and 2020. While some comparison is provided in this report from year to year, this data should be used with caution. The trails selected and the samples of users selected to complete the survey are not random, and therefore may not accurately represent the general trail user population, either for the individual trails or for trail users statewide. Participating trails also changed from year to year,

based on the ability of each community to mobilize volunteers. Additionally, because the samples collected by volunteers are not random, calculations of margins of error are not appropriate for this data. However, we report this data to provide a general picture of those users who did complete the survey. We believe this data is sufficient to inform local programming and policy decisions and to identify needs for further investigation. A full report of prescribed data collection methods can be found at www.cttrailcensus.uconn.edu. Additional discussion about methods and estimated margins of error used to inform surveying recommendations are available at: www.cttrailcensus.uconn.edu.

The charts below compare the survey data collection months, days and hours to overall trail use across all of the trails for which infrared counter data was available. This demonstrates that while usage declines from December through March, trails are still used during these months. In past years, survey samples were heavily skewed to warmer months and may not have been representative of winter users. The QR based survey methods allowed data to be collected throughout the seasons at all times of day (although time of survey completion may not be indicative of actual trail use time) however the QR survey was not deployed until June 1, 2020 so no surveys were received prior to that date. Data for winter and early spring 2021 will be included in the next annual report. Over this also demonstrated that the QR based sampling is reasonably representative of users across the week, between weekend and weekdays, and throughout the day. Further statistical analysis would be necessary to confirm accuracy of the sampling. Some 2019 charts are included here for reference in green.

Connecticut Trail Census

Statewide multi-use trail user study

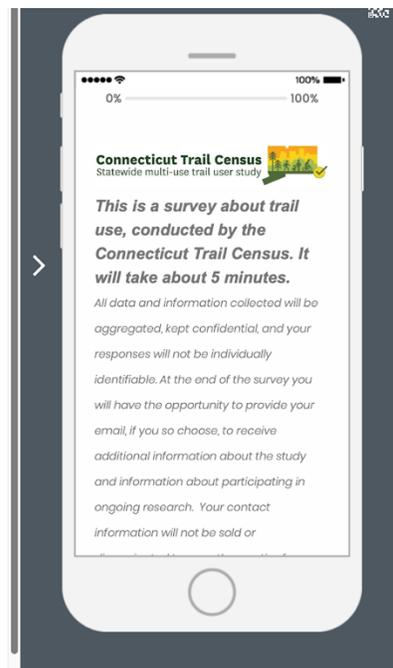


This is a survey about trail use, conducted by the Connecticut Trail Census. It will take about 5 minutes.

All data and information collected will be aggregated, kept confidential, and your responses will not be individually identifiable. At the end of the survey you will have the opportunity to provide your email, if you so choose, to receive additional information about the study and information about participating in ongoing research. Your contact information will not be sold or disseminated to any other parties for any other purpose. The aggregated data set and data report will be made publicly available for researchers and the general public at <http://cttrailcensus.uconn.edu>. You do not have to participate if you do not want to. If you agree to complete this survey, but later change your mind, you may stop at any time. There are no penalties or consequences of any kind if you decide that you do not want to participate. This project has been approved under UConn IRB Exempt Study Number X16-181. [Click to view the participant information sheet.](#)

For more information contact the Principal Investigator: Laura Brown, University of Connecticut Department of Extension, 203-407-3157, laura.brown@uconn.edu

Yes, I would like to participate in the survey.



Online format of QR based survey (and mobile example).

Chart 2. Percent Surveys Collected Compared to Use Estimates by Month

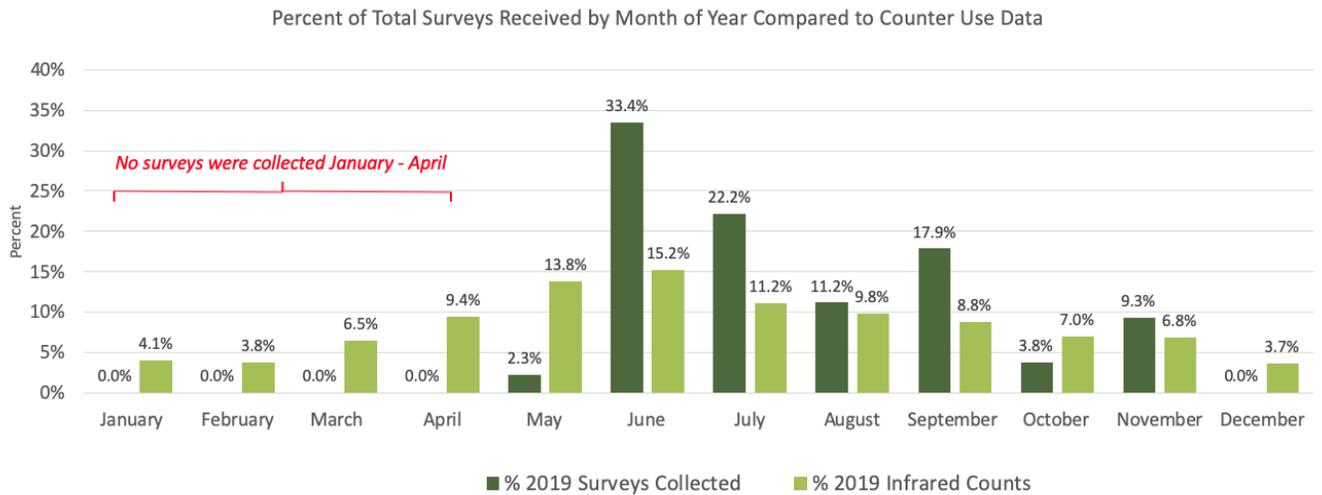
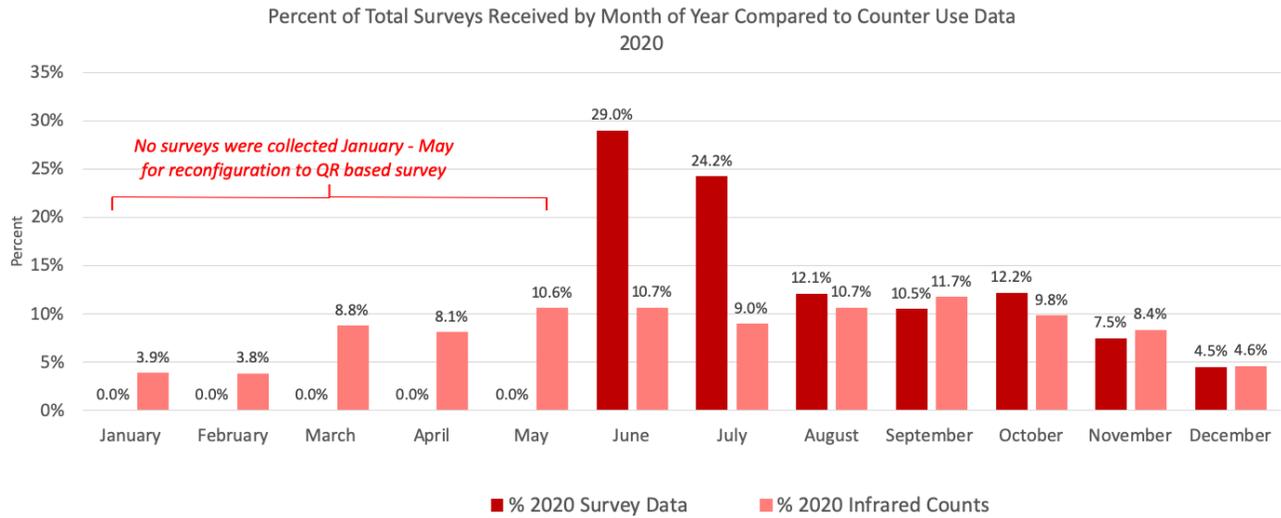


Chart 3. Percent Surveys Collected Compared to Use Estimates by Day of Week

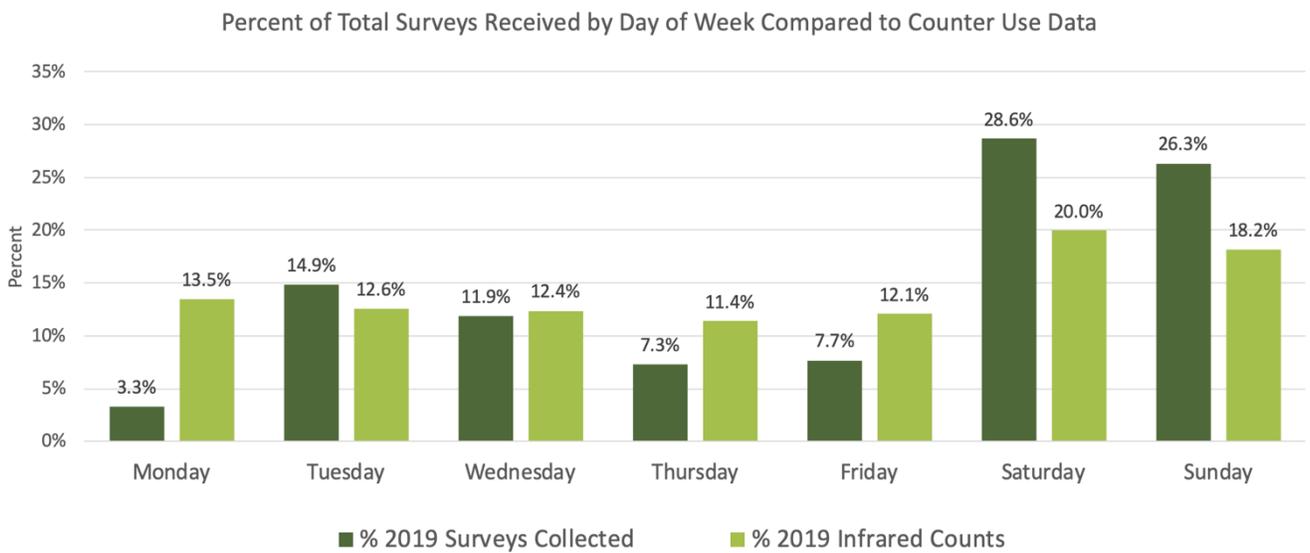
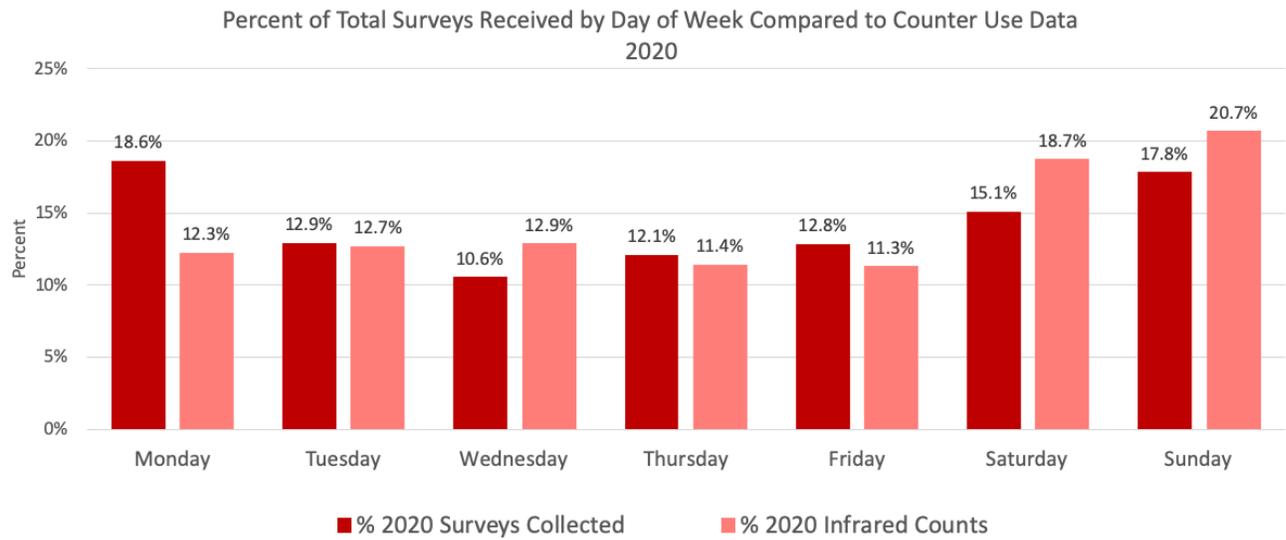
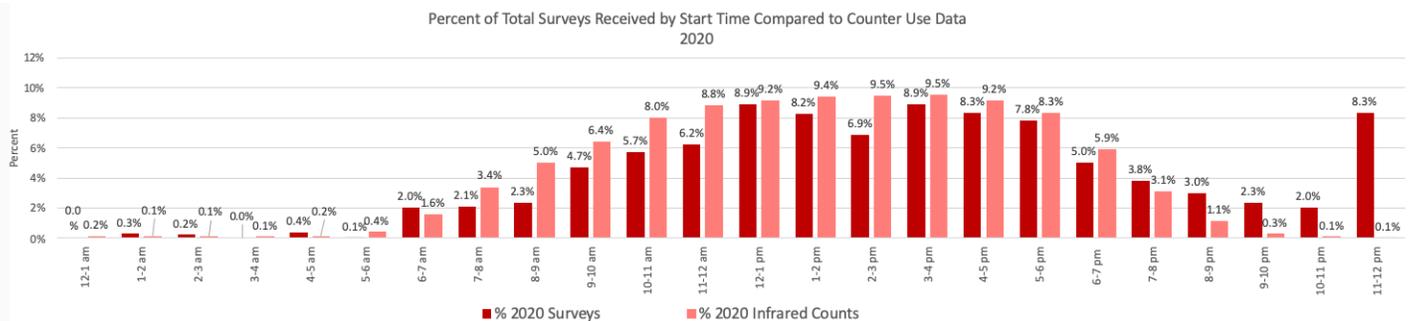


Chart 4. Percent Surveys Collected Compared to Use Estimates by Hour

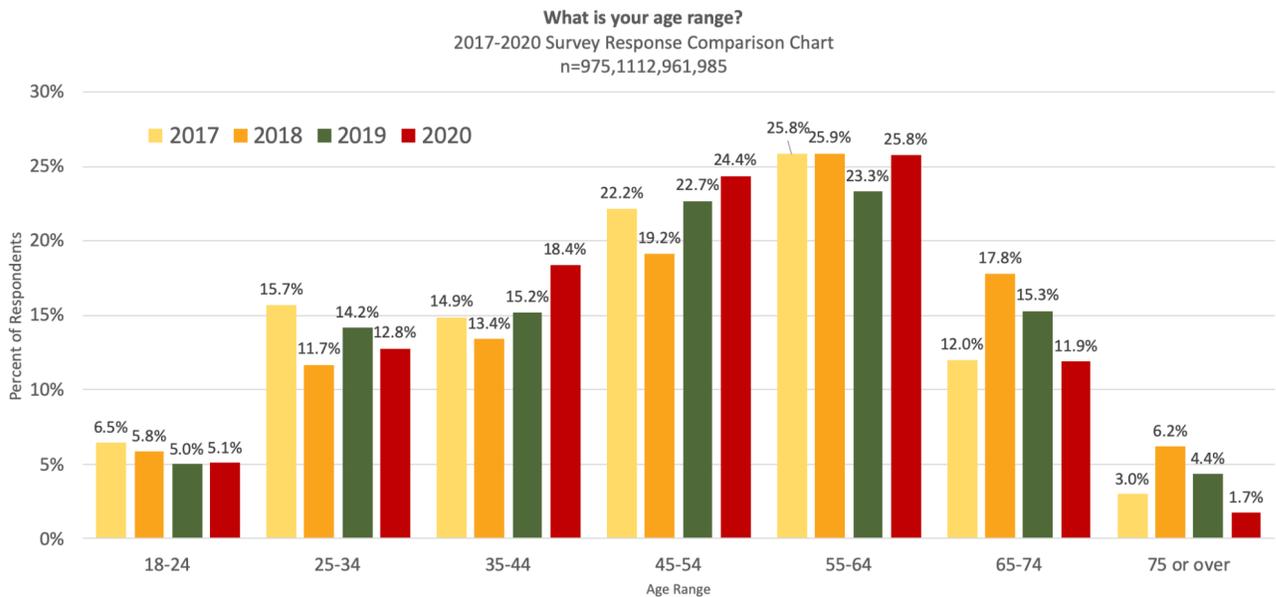


Trail User Demographics: Gender, Income, and Race

More trail users surveyed are female than male. Consistent across all three years of data is the predominance of female users on these trails. In 2020, 50.9% of respondents identified as female while 48.4% identified as male and 0.7% preferred to self-describe. In 2019, 54.6% of respondents identified as female and 45.2% as male, with 0.2% preferring to self-describe. In 2018, 53.3% identified as female and 46.7% as male, and in 2017, 56.5% identified as female and 43.5% as male.⁷ There is a greater proportion of female trail users than the population of the state of Connecticut as a whole, which is 48.8% male and 51.2% female.

Trail users surveyed are largely older than the general population of Connecticut and this has not changed significantly during the four years of data collection. In 2020, 63.8% were over 45 years of age. According to the US Census only 44.7% of the general population of Connecticut is over age 45.⁸ In 2020, users aged 25-34 represented only 12.8% of all those surveyed, however the percent of users under the age of 45 seems to be growing slightly. While this appears to be an upward trend, given the likelihood that the COVID-19 pandemic may have shifted the user base, further data would be needed to confirm this.

Chart 5. Respondent Age Range



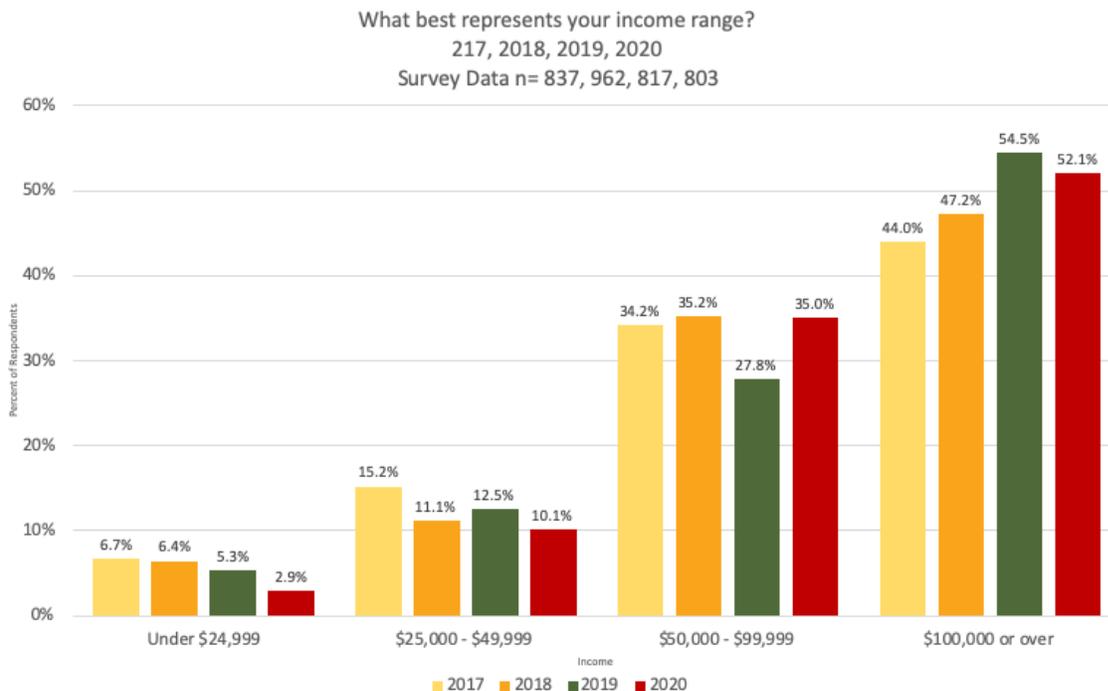
⁷ Gender was observed by the interceptor in the 2017 survey, which likely created some error. In 2018, this was a respondent question.

⁸ US Census Bureau (2017). *American Community Survey 5-Year Estimates*. Retrieved from <https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?src=CF>

A majority of respondents have household incomes over \$100,000.

As shown in the table below, 52.1% of all respondents in 2020 reported household incomes of \$100,000 or more compared to 54.5% in 2019 and 47.2% in 2018. A smaller percentage of respondents reported household incomes of less than \$50,000. It is important to note that this data alone does not explain if this represents a shift in the types of users on these trails or if the same users simply increased their incomes.

Chart 6. Income Range

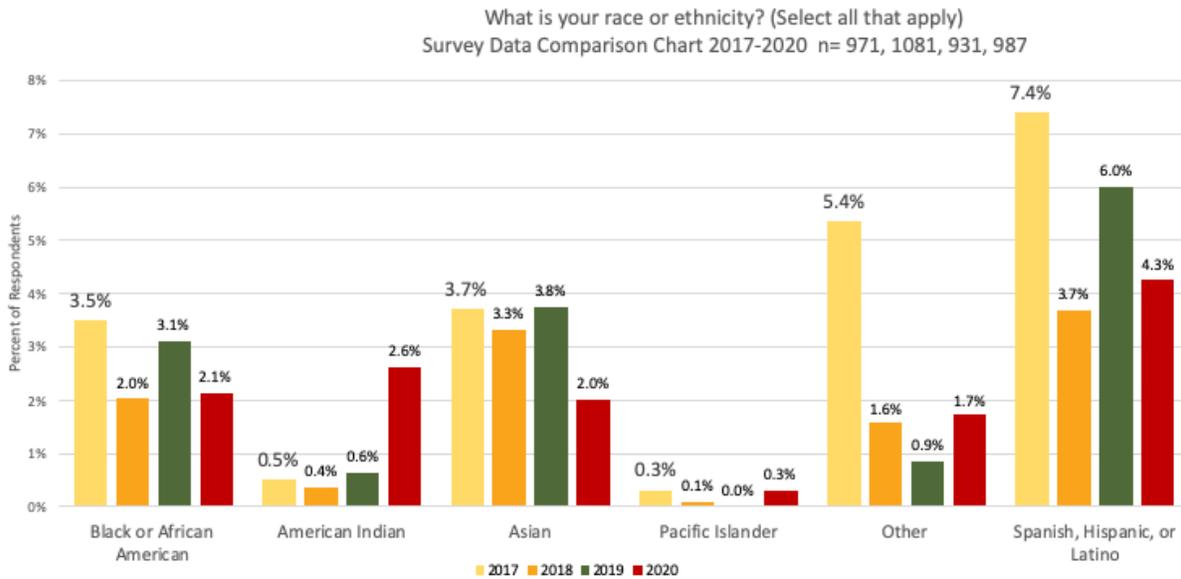


Respondents overwhelmingly identified as white.

In 2020, 84.3% of respondents identified as white, and this was consistent with previous years' data (87.0% in 2019, 90.5% in 2018, and 86.6% in 2017). 2.1% of respondents identified as Black or African American, 4.3% as Spanish, Hispanic or Latino, 2.0% as Asian, 2.6% as American Indian, 1.7% as Other, and 0.3% as Pacific Islander. For comparison, according to US Census⁹ the Connecticut population is 79.9% White, 12.2% Black, 16.9% Hispanic or Latino, 5.0% Asian, 0.6% American Indian and 0.1% Pacific Islander. Interestingly, those identifying as American Indians and Pacific Islanders are better represented on the trails than in the state's general population.

⁹ State of Connecticut QuickFacts. Retrieved from <https://www.census.gov/quickfacts/CT>

Chart 7. Race or Ethnicity



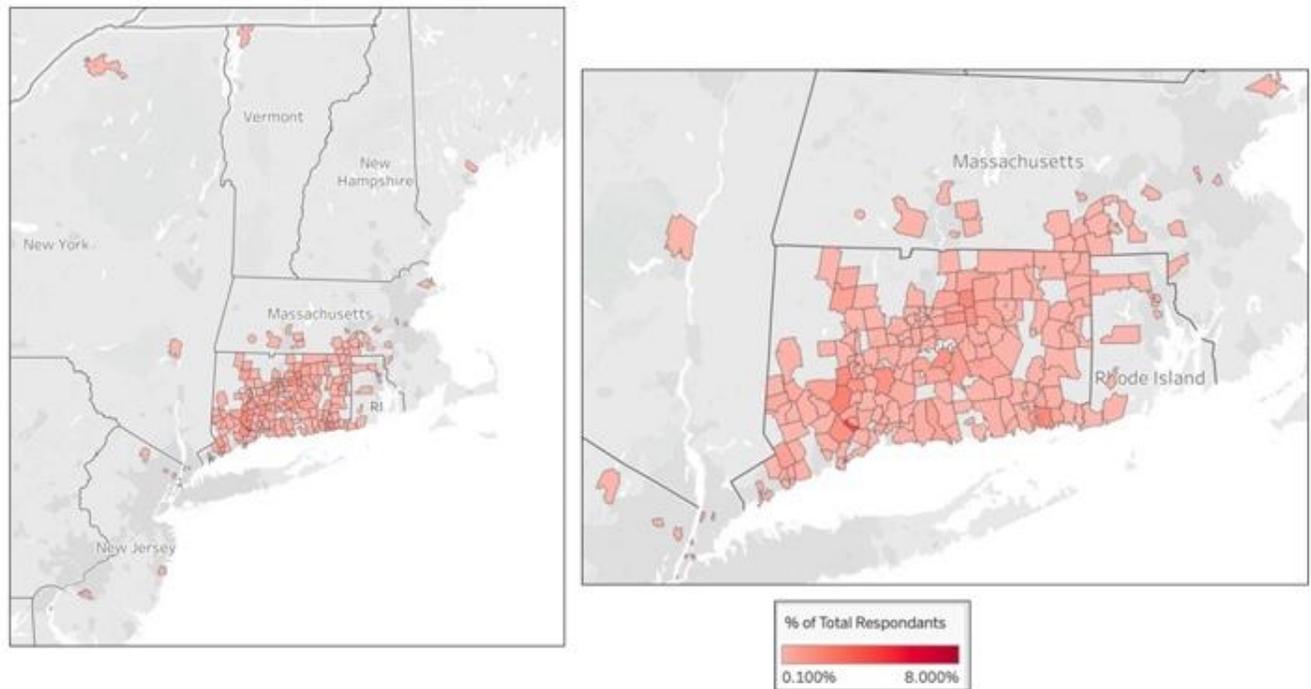
Trail User Zip Codes

Respondents in 2020 represented 237 unique zip codes and 12 states.

In 2019, respondents represented 188 unique zip codes and 20 states. The zip code analysis was conducted using 916 unique data points from the 2020 data set. The map below shows the zip codes where respondents live. There were responses from zip codes within Colorado, Mississippi, Florida, South Carolina, Texas, and Washington D.C that are not displayed on the maps below. This decrease in interstate use may have been an effect of the COVID-19 travel restrictions in place during the year.

An analysis comparing home zip codes to the zip code location of the trail they most recently used shows that approximately 30% of respondents lived in the same zip code of the trail they visited (n = 916). However, of those respondents who indicated they, *“Did not use this trail before the COVID-19 pandemic,”* only 13% lived in the same zip code of the trail. This suggests that new trail users may be coming from outside of the immediate area surrounding the trail.

Map 2: Respondent Home Zip Code



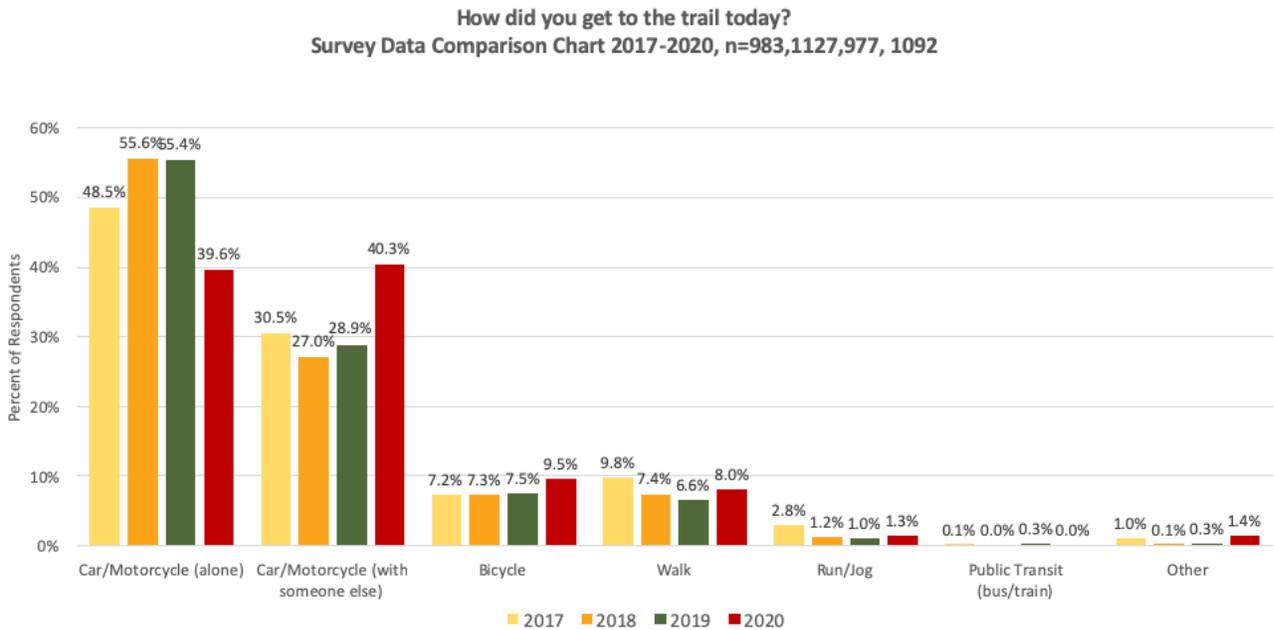
Mode of Transportation

An overwhelming majority of users drive to these trails.

However fewer people drove alone in 2020, compared to previous years. In 2020, 39.6% of respondents drove a Car or Motorcycle alone (compared to 55.4% in 2019) to get to a trail, and 40.3% drove with someone else. About an equal percentage bike (9.5%) or walk (8%) or to the trail, and 1.3% run or jog; 0.1% of respondents reported using public transportation, and this declined from 2019. These shifts are likely to be the result of the COVID-19 pandemic which encouraged people to visit outdoor recreational facilities with family members but discouraged use of public transportation.



Chart 8. Mode of Transportation to the Trail

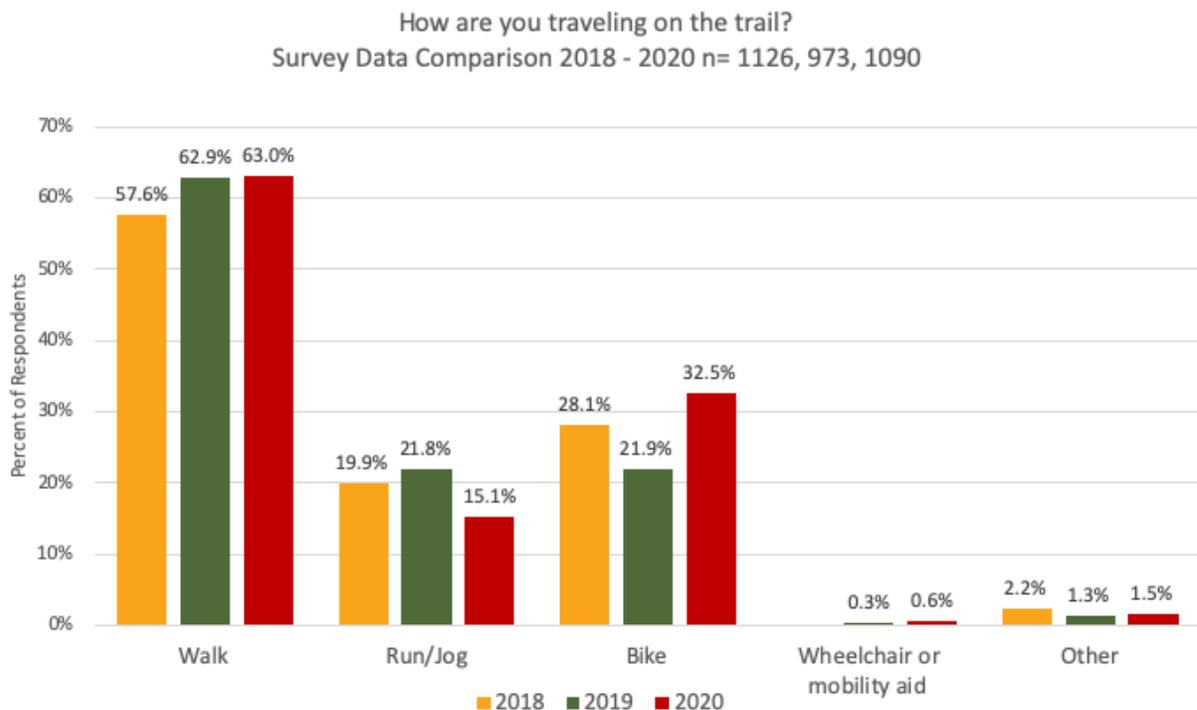


Mode of Use & Purpose

Consistent with previous years’ data, the overwhelming majority of users surveyed, 78.2%, use them for walking, running, or jogging.

This is slightly less than the 84.7% in 2019 that indicated walking, running, or jogging in 2019 with a greater share of respondents bicycling, 32.5%. This could be the result of: 1) response error since in previous years interceptors had to actually physically stop respondents and bicyclists may have been less likely to stop for an interceptor 2) COVID response - bicycling may be perceived as physically safer in creating social distance than walking or 3) shifts due to the addition of new trails in the study which may be more conducive to bicycling. 0.6% indicated using a wheelchair or mobility aid (up from 0.3% in 2019), and 1.5% indicated other modes including dog walking, equestrian, skateboards, tricycles and strollers. This question was an interceptor observed question in 2017, so not included in this graphic. Question responses were modified in 2019 to include “wheelchair or mobility aid” and to consolidate infrequent responses to “other.” This question allowed respondents could provide multiple answers so n values were calculated by total respondents.

Chart 9. Mode of Use on the Trail



Respondents use the trails primarily for *exercise, recreation, and relaxation* and this has not changed significantly.

The majority of users, 83.8%, indicated using the trails for the purpose of exercise and 48.2% for recreation. Recreational use was down significantly from 2019 (62.4%) which also may have been a result of COVID-19. In 2020, a greater percentage of users indicated using the trails for relaxation, 47.8% than in previous years. Only 2.6% of respondents indicated using the trails for travel but this was slightly up from previous years. This question allowed multiple responses to this question so n values were calculated by total respondents.

While use of trails for *socializing* was down, *family time* was up.

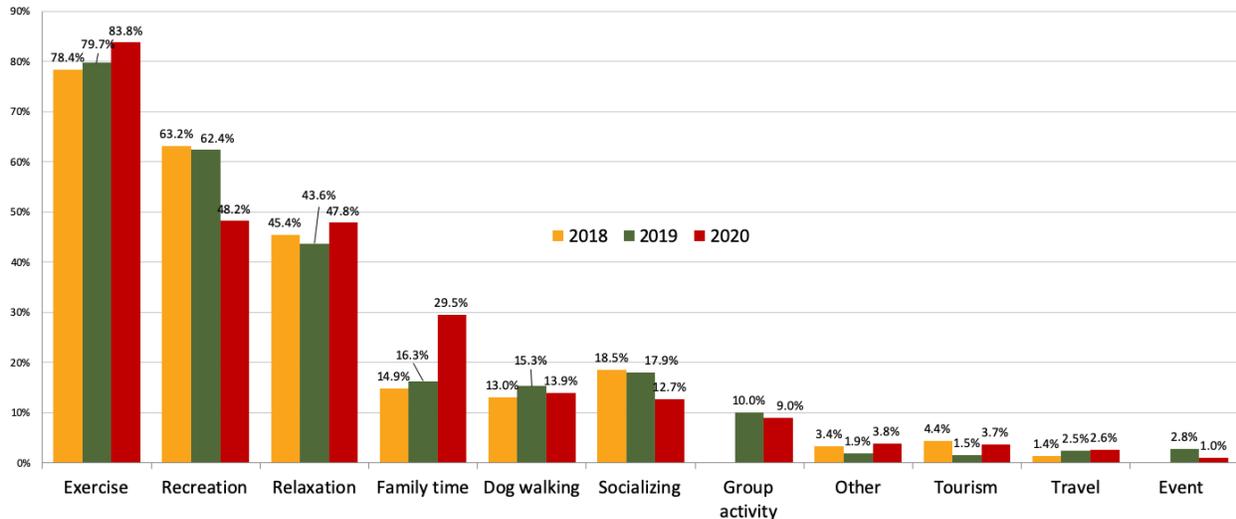
Another significant change from previous years was the percentage of respondents indicating use of trails for “Family time,” 29.5% in 2020, up from 16.3% in 2019. In 2019, 17.9% of users had indicated using the trails for “Socializing,” and this was down to 12.7% in 2020. This is likely an impact of the COVID-19 pandemic. Other uses (n=44) included dog walking, bird watching, photography, horse riding, education, and monitoring.

These trails are not used significantly for transportation.

As in previous years, use of these trails for travel was small, representing less than 3% of respondents.

Chart 10. Purpose on the Trail

What is your purpose?
Survey Data Comparison Chart 2018-2020, n=1130,976, 1091

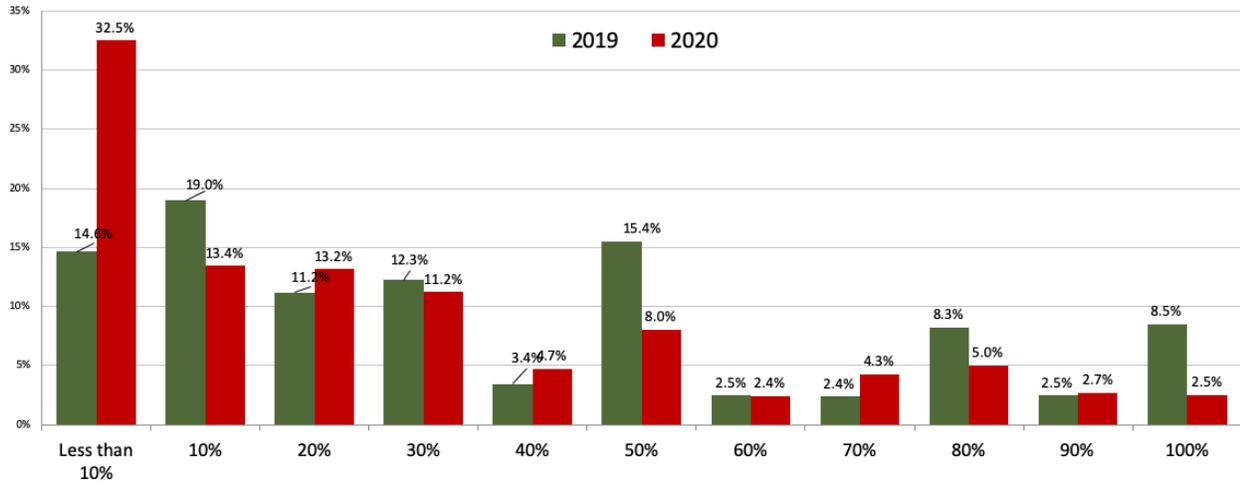


Health

The 2020 survey included several questions about physical activity for respondents who indicated using the trail for exercise. The first question asked users: *During an average week, about what percent of your physical activity do you complete using the trail?*

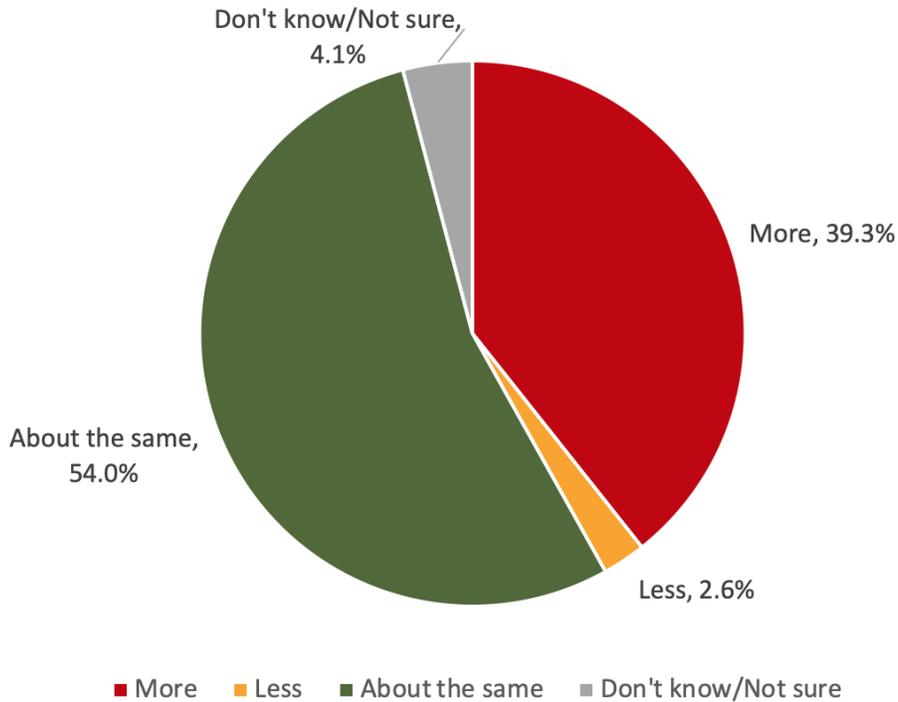
In 2020, 23.5% of users completed less than 10% of their physical activity on the trail, much higher than the 14.5% in 2019 indicating that more of the users are using the trail for doing smaller amounts of their weekly exercise. In 2020, only 2.5% of the 1,034 respondents completed 100% of their physical activity on the trail while in 2019 8.1% (69) of users completed 100% of their physical activity on the trail exclusively. This may be a reflection of the change in demographics of trail users in 2020, reflecting a larger percentage of people using the trail for light activity or socializing due to social distancing requirements. This also indicates a significant amount of potential for engaging existing users in utilizing these amenities for more of their regular physical activity. Additional analysis for physical health data can be found in the 2019 data report.

During an average week, about what percent of your physical activity do you complete using the trail?
Survey Data Comparison Chart 2019-2020, n=848,1034



The second question asked in 2020 was: *Are you exercising more, less, or about the same since you began using the trail?* 39.3% of respondents reported exercising more since they began using the trail.

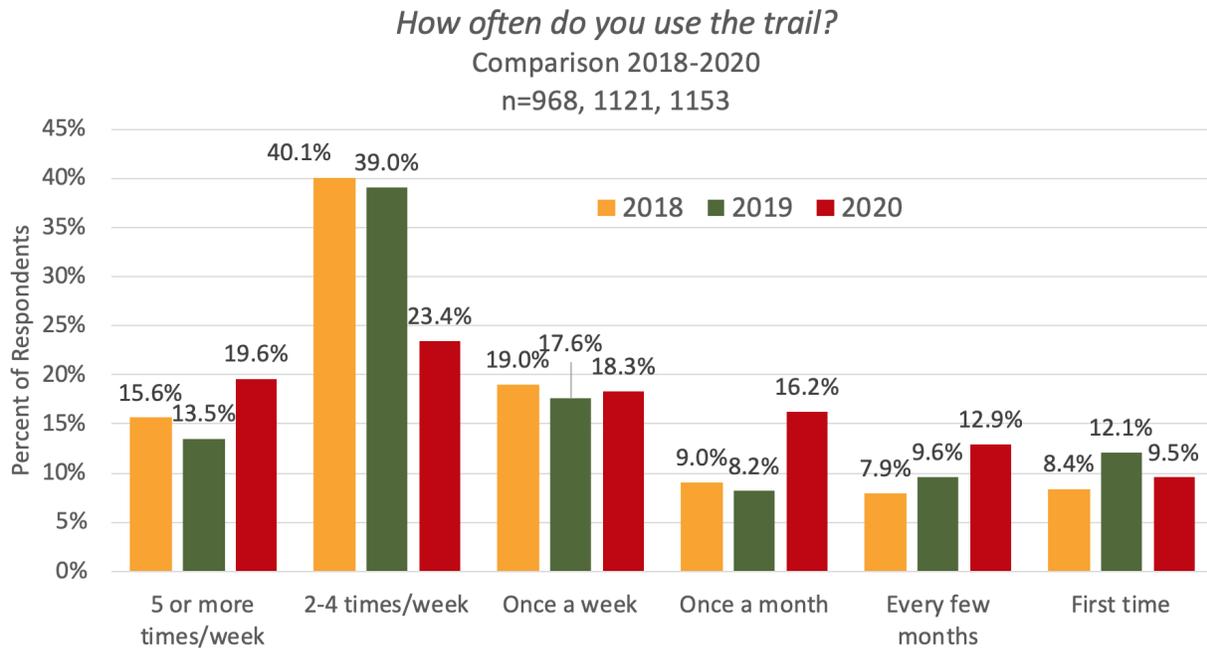
Are you exercising more, less, or about the same since you began using the trail?
2020 n=900



Time and Frequency of Use

The majority of users on these trails use them frequently. In 2020, 43.0% of users reported using the trails 2 or more times per week. This declined somewhat from previous years - in 2019, 52.6% of users surveyed indicated using the trails two or more times per week (in 2018 this was 55.7%).

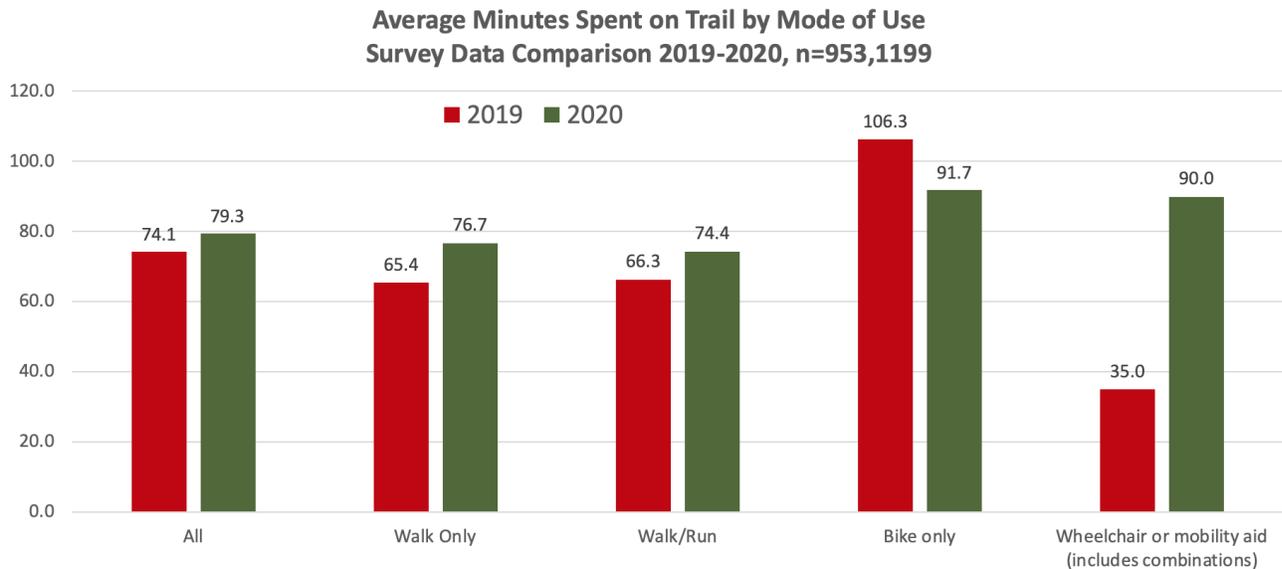
Chart 11. Frequency of Use



Respondents were asked to provide the number of minutes spent on the trail. The average time spent on the trail across all users was higher than all previous years with an average of 79.3 minutes, up from 74.1 minutes in 2019, and 72 minutes in 2018.

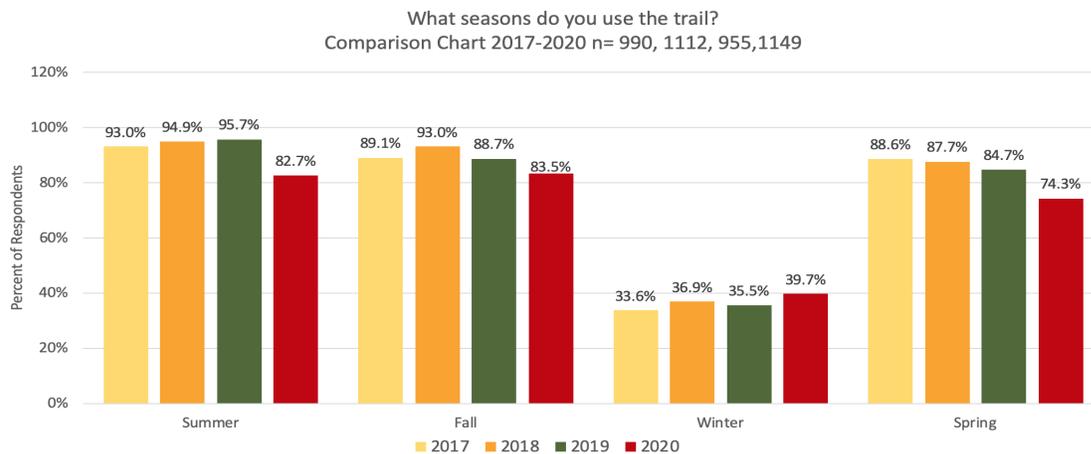
This data was also analyzed by mode of use. As in previous years, bicyclists spend the most time on the trail, an average of 91.7 minutes, followed by: walkers - 76.7 minutes and those doing some combination of walk/run (but not exclusively walking) - 64.8 minutes. Those using a wheelchair or mobility aid (or some combination of wheelchair or mobility aid and other mode) spent 96.1 minutes on the trail, but only 7 respondents used this mode in 2020 and only 2 in 2019. While the amount of time spent by those who were biking or running was down slightly from 2019, the average time spent by walkers was significantly higher. Additional analysis might aim to discern if there are significant differences between new or existing trails users and time spent on the trail.

Chart 12. Time Spent on the Trail



Those surveyed use the trails most often in the summer (82.7%), fall (83.5%) and spring (74.3%), but a surprising percentage also use them in winter (39.7%). Prior to 2020, this data was collected on a seasonal basis in person, but in 2020 it was collected exclusively by QR code throughout the year. Individuals' perception of willingness to use the trails throughout the year may have been affected by the season during which they were completing the survey. The 2020 results reflect a better distribution of use throughout the year by users, including the greatest percentage of people indicating winter use since the start of surveying in 2017. Subsequent year data collection may indicate if this represents a significant change in the overall pattern of use across seasons, which may have implications for suggested maintenance.

Chart 13. Use by Season



Spending

Spending data was analyzed for 1,039 respondents to the daily spending question: *During your most recent visit to the trail, how much did you spend on each of the following in whole dollars?* and analyzed for 698 respondents to the annual spending question: *In the past year, approximately how much did you spend on gear, supplies, equipment or rentals that you used or plan to use on this trail?* Given the likelihood for input error in this question outliers of 2 standard deviations from the mean were removed for analysis.

Only 272 respondents, 22.9%, reported spending on that particular visit to the trail. This was very consistent with data from previous years. Overall the percentage of respondents indicating any spending at all in each category was also consistent from previous years, with the exception that 5.9% of respondents indicated spending on “other” which was more than previous years. It is important to note the significant n value in these responses, particularly the low number of responses for retail, equipment rental, and lodging. Clearly, the majority of trail users on these trails are spending primarily on food, beverages, and gas.

Chart 14a. Percent of Respondents Spending by Category

Average user spending on the most recent trip to the trail (including those who spent nothing) was \$11.86, nearly double the \$6.05 average in 2019. The average expenditure for those who spent during their trip (not including those who spent \$0) was \$51.81, compared to \$27.03 in 2019. The chart below provides an overview of spending calculations from 2017 to 2020. The second part of this chart includes average spending for respondents who indicated spending “\$0.” This question, particularly the formatting, was modified slightly from year to year to address non-response error.

% of Respondents Indicating Expenditures in Each Category					
Category	2020 n=	2020	2019	2018	2017
Beverages	104	10.0%	9.4%	13.6%	11.57%
Food	61	5.9%	5.6%	10.3%	5.98%
Restaurant	75	7.3%	3.0%	4.6%	5.08%
Gas	80	7.9%	10.4%	9.3%	8.77%
Retail	8	0.8%	0.9%	1.6%	1.00%
Equipment rental	1	0.1%	0.4%	0.5%	0.00%
Lodging	4	0.4%	0.1%	0.4%	0.00%
Nearby activities	9	0.9%	1.5%	1.0%	0.70%
Other	60	5.9%	1.5%	0.9%	1.50%
Total	272	22.9%	22.4%	25.8%	19.14%

Chart 14b. Expenditures by Category

Average Expense Per Respondent (Includes respondents who spent nothing)					Average Expense (Only respondents with non zero expenditures in this category)				
Category	2020	2019	2018	2017	Category	2020	2019	2018	2017
Beverages	\$0.67	\$0.56	\$0.83	\$3.16	Beverages	\$6.69	\$5.92	\$6.10	\$5.69
Food	\$0.42	\$0.47	\$1.26	\$1.79	Food	\$7.02	\$8.31	\$12.31	\$6.23
Restaurant	\$1.51	\$1.07	\$1.02	\$7.98	Restaurant	\$20.73	\$36.10	\$22.09	\$32.37
Gas	\$0.33	\$1.32	\$1.36	\$6.60	Gas	\$4.17	\$12.65	\$14.58	\$15.69
Retail	\$0.39	\$0.43	\$1.01	\$2.80	Retail	\$51.13	\$50.75	\$63.33	\$58.00
Equipment rental	\$0.29	\$0.48	\$0.46	\$0.00	Equipment rental	\$300.00	\$116.25	\$86.67	\$0.00
Lodging	\$0.18	\$0.41	\$1.22	\$0.00	Lodging	\$46.25	\$400.00	\$343.75	\$0.00
Nearby activities	\$0.15	\$0.36	\$0.39	\$1.43	Nearby activities	\$17.22	\$23.60	\$40.00	\$42.14
Other	\$9.99	\$0.94	\$0.41	\$3.46	Other	\$168.03	\$61.40	\$46.70	\$48.00
Total	\$11.86	\$6.05	\$7.95	\$5.64	Total	\$51.81	\$27.03	\$30.78	\$29.48

A total of 60.3% of respondents reported annual expenditures on gear, supplies or equipment rentals that they plan to use on the trail and the average expense per respondent in 2020 was \$387.10. Annual expenditures were calculated as a whole and not by category.

Note that this question has changed from year to year to address non-response error. This modification in the question format in 2019 likely accounts for the significant drop in percentage of respondents reporting annual expenditures, from 2018-2019 since the 2019 number indicates only those with annual expenditures related to their use of the current trail. The 2020 question was reworded to account for equipment purchased that may or may not be used on that trail: *In the past year, approximately how much did you spend on gear, supplies, equipment or rentals that you used or plan to use on this trail?*

Chart 15. Annual Expenditures

	% Respondents Reporting Annual Expenditures				Average Expense Per Respondent (Includes respondents who spent nothing)				Average Expense (Only respondents with expenditures)			
	2020	2019	2018	2017	2020	2019	2018	2017	2020	2019	2018	2017
Annual Expenditures	60.3%	29.8%	73.6%	61.40%	\$387.10	\$355.27	\$168.73	\$229.67	\$637.19	\$361.92	\$229.67	\$338.54

Qualitative Data

Survey respondents were asked to comment on their favorite things about the trail and things they would improve about their trail experience. For this report, this data was analyzed in aggregate using a word analyzer.¹⁰ This data was not coded for duplicative answers significantly so some similar phrases may appear in the analysis below. Phrase analysis was selected for those which would be more meaningful and informative. Overall, this data will be most meaningful for trail managers on a trail by trail basis, particularly due to the heavy response pool for particular trails and acknowledging that this data contains a wide variety of trail types. To receive specific trail data or custom analysis please contact laura.brown@uconn.edu.

What is your favorite thing about this trail?

There were 914 responses regarding favorite things about the trail. The following chart includes single words that appeared most in responses. Some differences can be noted from the 2019 data. Top phrases in the 2020 analysis definitely highlighted the focus on convenience, proximity and ease of use. The three top word phrases were “close to home,” “to my house” and “ease of access.” This may reflect the use of the trails for outdoor recreational activity during the pandemic.

Chart 16. Favorite Things about the Trail - Frequency of Responses

2020 Favorite Things by Word Count			
	Description	#	%
1	scenery	62	1.36
2	close	54	1.19
3	flat	51	1.12
4	maintained	49	1.08
5	home	45	0.99
6	nature	41	0.90
7	easy	39	0.86
8	beautiful	36	0.79
9	quiet	34	0.75
10	peaceful	32	0.70
11	clean	27	0.5935

2019 Favorite Things by Word Count			
	Description	#	%
1	scenery	89	2.78
2	quiet	71	2.22
3	clean	70	2.19
4	flat	70	2.19
5	nature	64	2.00
6	shade	63	1.97
7	safe	61	1.91
8	maintained	44	1.38
9	people	44	1.38
10	cars	41	1.28
11	beautiful	39	1.22

¹⁰ Text analyzer online utility. <https://www.online-utility.org/text/analyzer.jsp>

likely to respond to the QR survey, whereas the intercept survey method used in 2019 might have been more likely to include respondents who were overall satisfied with the trail.

Chart 17. What Would Improve the Trail Experience - Frequency of Responses

2020 Improve Experience by Word Count				2019 Improve Experience by Word Count			
	Description	#	%		Description	#	%
1	the tunnel	23	1.62	1	nothing	86	3.80
2	dog poop	14	0.99	2	more	75	3.32
3	clean up	13	0.92	3	longer	51	2.26
4	portable toilet	11	0.78	4	lights	34	1.50
5	garbage cans	11	0.78	5	water	30	1.33
6	pick up	10	0.71	6	tunnel	25	1.11
7	lights in	10	0.71	7	bathrooms	23	1.02
8	bolton notch	9	0.64	8	poop	22	0.97
9	access to	9	0.64	9	bathroom	20	0.88
10	fix the	9	0.64	10	less	17	0.75
11	single track	8	0.56	11	people	17	0.75

Note: 2019 Data was analyzed by single word count

Some top phrases containing 4 words (without punctuation marks)	Occurrences
lights in the tunnel	7
lighting in the tunnel	3
it was closer to	3
it is hard to	3
south of the tunnel	3
if i lived closer	3
pick up after their	3
can't think of anything	3
tunnel at bolton notch	3
up after their dogs	3

In 2019, when asked about what would improve the trail experience, 3.8% (86) responses, noted “nothing” could be improved, while 2.3% noted “longer” and 1.5% (34) referenced lighting. Response phrases focused on increasing length, improvements to lighting, more bathrooms, water fountains, winter maintenance, pick up dog poop, and mile markers. The word cloud below illustrates the most frequently appearing words among all responses by word size.

What would encourage you to use this trail more often?

In 2020 respondents were asked to identify what would encourage them to use the trail more often. This was analyzed based on top two word phrases. Access and ease topped this list, including “closer to” “parking” and “less people” as well as individual lifestyle challenges including “more time” and “free time.” Surprisingly, another top answer referenced a specific trail type, “single track” (cycling).

2020 What Would Encourage by Word Count			
	Description	#	%
1	closer to	20	1.53
2	more parking	16	1.23
3	less people	14	1.07
4	single track	10	0.77
5	more time	8	0.61
6	nothing	8	0.61
7	more access	8	0.61
8	access points	8	0.61
9	free time	7	0.54
10	parking lot	7	0.54
11	easier access	6	0.46

Conclusions and Recommendations

This data can be valuable in helping communities better understand who is using trails and make sound investments in both physical infrastructural amenities and programming to increase use. The results of this report should be used to inform trail planning, development and policy. Despite the variation of trails participating in the survey from year to year, the data collected through the Census from 2017 to 2020 shows some clear trends that inform the following recommendations and actions.

- 1. Understand barriers to trail access and increase use by a diverse range of users -**
Since *walking, jogging and running* are the most frequent uses on these trails, communities may consider developing amenities for these types of users. It is clear from the 2020 data that users are seeking ease and proximity. However, given that the majority of users are white, older, and upper income and that a great majority of our state’s trails are located in suburban and rural areas, there is likely a large portion of the state population for whom trails are inaccessible. While this data cannot answer why additional populations are not using the trails, efforts to increase use will need to engage a broader and more diverse audience than existing trail users. These efforts should engage of a diverse range of audiences in the planning and design process, with the goals of understanding what prevents a wide

variety of users from using trails, and what would motivate people to use the trails more. Given that these trails are public resources for the promotion of physical activity and potentially alternative routes for transportation, these are significant and relevant issues.

2. **Build connectivity and networks** - Trails included in the Census clearly serve a social purpose, but the trails themselves often aren't connected to places where people naturally congregate in communities, such as downtowns, business districts, schools or other park areas. The extremely low use of these trails for travel as well as the very low expenditures of users on the trails indicate that users may not be interacting with their community in other ways during trail use. That is, the trails are disconnected amenities. Additionally, while trail use itself has increased, pedestrian deaths due to unsafe walking and bicycling routes has skyrocketed during the COVID-19 pandemic. Particularly in the post COVID era where people have grown more accustomed to being outdoors but are seeking ease of access, communities, the DOT and DEEP should think systematically about how to better integrate trail and outdoor resource amenities with transportation needs, where people naturally travel, as well as connections to schools, parks, playgrounds, and business districts. This includes creating cohesive safe routes – sidewalks and bike lanes, for instance - for biking or walking from neighborhoods to trails and to other community nodes.
3. **Increase tourism** - The results of the Census also point to the potential to increase use by bicyclists and especially bicycle tourists. Bicyclists, particularly those from out of state, make more investments in equipment, time, and spending during visits. However, many of our trails may not be conducive, either in length or amenities, to attracting these types of users. Communities and trail advocates should focus on understanding what amenities currently exist, what amenities bicycle users seek, and how trails might be better networked to attract longer distance tourism.

Next Steps and Research Needs

As a statewide project housed within the state's land grant university, the Trail Census is in a unique position to serve as a platform for statewide information sharing and coordinating efforts around trail monitoring and use. In 2020, the Census is at a pivotal moment. The public facing TrailFinder project set for launch in May 2020 will serve as an important next step in increasing access to the state's trail systems. There remains a significant need for more analysis of the rich existing data in the count and intercept surveys. The Census has also started a process of improving the quality of count data through the use of predictive modeling and trail typologies. This research, along with the rich survey data should continue to inform trail based decision making. Additional research could include more significant statistical analysis of the data by user type or mode, location of trail, location of user, demographics, and more in depth qualitative analysis.

Appendix A 2020 Trail Census QR Survey

This survey was administered on Qualtrics software and accessed by respondents via QR code. Formatting has been modified below for brevity.

Q1.1

This is a survey about trail use, conducted by the Connecticut Trail Census. It will take about 5 minutes. All data and information collected will be aggregated, kept confidential, and your responses will not be individually identifiable. At the end of the survey you will have the opportunity to provide your email, if you so choose, to receive additional information about the study and information about participating in ongoing research. Your contact information will not be sold or disseminated to any other parties for any other purpose. The aggregated data set and data report will be made publicly available for researchers and the general public at <http://cttrailcensus.uconn.edu>. You do not have to participate if you do not want to. If you agree to complete this survey, but later change your mind, you may stop at any time. There are no penalties or consequences of any kind if you decide that you do not want to participate. This project has been approved under UConn IRB Exempt Study Number X16-181. [Click to view the participant information sheet](#). For more information contact the Principal Investigator: Laura Brown, University of Connecticut Department of Extension, laura.brown@uconn.edu

- Yes, I would like to participate in the survey.
- I do not wish to participate at this time.

Q1.2 This survey asks about multi-use trails in Connecticut. These trails are typically paved or stone dust, allow multiple uses like walking and bicycling, and are physically separated from vehicle traffic.

Please select the Connecticut multi-use trail you are using or have used most recently in 2020:

- Air Line Trail in East Hampton
- Air Line Trail in Thompson
- Air Line Trail in Portland
- Charter Oak Greenway in Manchester
- CTFastrak Trail in New Britain
- Farmington Canal Heritage Trail in Cheshire
- Farmington Canal Heritage Trail in New Haven
- Farmington Canal Heritage Trail in Hamden
- Hop River Trail in Bolton
- Hop River Trail in Vernon
- Larkin State Bridle Trail in Oxford
- Larkin State Bridle Trail in Naugatuck
- Middlebury Greenway in Middlebury
- Naugatuck River Greenway in Derby
- Norwalk River Valley Trail in Wilton
- Riverwalk Trail in Hartford
- Riverwalk Trail East in Hartford
- Shoreline Greenway in Madison
- Still River Greenway in Brookfield
- Sue Grossman Trail in Torrington
- G&S Trolley Trail in Groton
- I used another multi-use trail in 2020.
- I use multi-use trails, but have not used any in 2020.

Q1.3 What is the name and location of the trail you used most recently in 2020? *Use this format:*
"Farmington Canal Trail in Hamden"

Q2.1 How often do you use the [\\${Q1.2/ChoiceGroup/SelectedChoices}](#)?

- I have used the trail once.
- 5 or more times per week
- 2-4 times per week
- Once per week
- Once per month
- Every few months

Q2.2 During which seasons do you typically use the $\{Q1.2/ChoiceGroup/SelectedChoices\}$? *Select all that apply.*

- Summer
- Fall
- Winter
- Spring

Q2.3 How has your use of the $\{Q1.2/ChoiceGroup/SelectedChoices\}$ changed as a result of the COVID-19 pandemic?

- I did not use this trail before the COVID-19 pandemic.
- No change. I am using the trail about the same way I would have otherwise.
- I use this trail more than I would have otherwise.
- I use this trail less than I would have otherwise.

Q2.4 What was the date of your most recent visit to the $\{Q1.2/ChoiceGroup/SelectedChoices\}$? *If you are completing this on the trail please choose today's date.*

Q2.5 Please consider your most recent visit to the $\{Q1.2/ChoiceGroup/SelectedChoices\}$.

Q2.6 How did you get to the trail?

- Car or Motorcycle (Alone)
- Car or Motorcycle (With Others)
- Public Transit (Bus/Train)
- Bicycle
- Walk
- Run/Jog
- Other _____

Q2.7 How many minutes did you spend on the trail?

Q2.8 How did you travel on the trail? *Select all that apply.*

- Walk
- Run/Jog
- Bike
- Wheelchair or mobility aid
- Other _____

Q2.9 What was your purpose when you used the trail? *Select all that apply.*

- Recreation
- Relaxation
- Dog walking
- Travel
- Exercise
- Exercise - Prescribed
- Family Time
- Socializing
- Group Activity
- Event
- Tourism
- Other _____

Q2.10 Are you exercising more, less, or about the same since you began using the [\\${Q1.2/ChoiceGroup/SelectedChoices}](#)?

- More
- Less
- About the same
- Don't know/Not sure

Q2.11 During an average week, about what percent of your physical activity do you complete using the [\\${Q1.2/ChoiceGroup/SelectedChoices}](#)?

▼ Less than 10% ... 100%

Q2.12 During your most recent visit to the trail, how much did you spend on each of the following in whole dollars?

Beverages : _____

Snacks : _____

Full meals at a restaurant : _____

Gas : _____

Retail (gifts, clothing, etc.) : _____

Equipment rental : _____

Lodging : _____

Nearby activities for recreation or amusements : _____

Other : _____

Total : _____

Q2.13 In the past year, approximately how much did you spend on gear, supplies, equipment or rentals that you used or plan to use on this trail?

Q2.14 What is your favorite thing about this trail?



Q2.15 What would improve your experience on this trail?

Q2.16 What would encourage you to use the trail more often?

NON USE BLOCK

Q3.1 What prevents you from using multi-use trails?

Q3.2 What would encourage you to use multi-use trails more often?

Start of Block: Demographic block



Q5.1 What is your home zip code?

Q5.2 What is your age range?

- Under 18
- 18-24
- 25-34
- 35-44
- 45-54
- 55-64
- 65-74
- 75 or over
- I prefer not to answer.

Q5.3 What best represents your household income?

- Under \$24,999
- \$25,000 - \$49,999
- \$50,000 - \$74,999
- \$75,000 - \$99,999
- Over \$100,000
- I prefer not to answer.

Q5.4 What is your race or ethnicity? *Select all that apply.*

- White
 - Black or African American
 - American Indian or Alaska Native
 - Asian
 - Middle Eastern
 - Pacific Islander
 - Spanish, Hispanic or Latino
 - Other _____
 - I prefer not to answer.
-

Q5.5 How do you describe your gender identity?

- Male
- Female
- Prefer to self describe _____
- I prefer not to answer.

Q64 If there is anything else you would like to share please use the space below.

Q5.6 Would you like to be notified about future data releases and studies from the Connecticut Trail Census? Your email will not be associated with any of your previous survey responses or sold or shared for any other purpose.

- Yes!
- No, thank you.

End of Block: Demographic block
