1999-2002 Katy Trail State Park Equestrian Use Study

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by
Dawn K. Fredrickson
C. Randal Vessell Ph.D.

Department of Parks, Recreation & Tourism
School of Natural Resources
University of Missouri-Columbia

Executive Summary

The Katy Trail State Park Equestrian Use Study was a three-year study to determine the impacts of multiple use on the Trail. More specifically, the purpose of this study was:

- To obtain information about Katy Trail visitors, their socio-demographic and use characteristics, and their perceptions of encounters with other users; particularly, to determine what, if any, social impacts may occur from the diverse and increasing uses on the Trail.
- To monitor trail surface and trailhead indicators and maintenance requirements to determine what, if any, physical and resource impacts may occur from this multiplicity of uses.

In order to obtain information about Katy Trail users, a visitor survey was conducted on-site at specified trailheads along the Trail. From the results of this survey, a profile of the "typical" Katy Trail visitor emerged: a 49-year old white male with a four-year college degree or a post-graduate education and an annual household income of between $25,000 and $50,000. This visitor was generally a bicyclist from Missouri who visited the Trail on the weekends, about 56 times a year. He was more likely to be a day-user of the Trail because he usually lived within 25 miles of a trailhead. The Katy Trail was most attractive to this visitor because of its convenient location, scenic beauty, and ease of use.

In addition to being able to profile a typical Katy trail user, the survey results revealed several significant trends during the course of the three-year study. The first of these significant trends was the steadily increasing household income reported by trail visitors during the third year of study, with a higher percentage of visitors reporting incomes of over $75,000 when compared to the first and second years. Second of the trends was the increasing percentage of trail users traveling the entire distance of the completed Katy Trail, with a corresponding rise in the number of users staying overnight during a trail visit. These "go-the-distance" users may account for the increase in household incomes, as these users are also characterized by higher incomes, higher levels of education, and a higher percentage of out-of-state residence.

As the Katy Trail nears its completion, it will continue to attract new and diverse users while increasing visitation rates of its repeat visitors. Research suggests that the increase in use frequency, intensity and diversity has potential for visitor conflict as well as negative resource impact. The visitor survey results from this study, however, suggest that Trail users do not feel crowded, experience very little conflict, and have much higher expectations of the number of encounters of other users than

generally encountered during a trail visit. The high satisfaction and performance ratings given by visitors, their low perceptions of crowding and the few reported negative encounters all serve as social indicators confirming the compatibility of a multiplicity of uses, including equestrian use, on certain sections of the Trail with low use frequency and intensity. Additionally, the physical indicators used to assess resource damage also reinforce the feasibility of maintaining multiple use on the Katy Trail.

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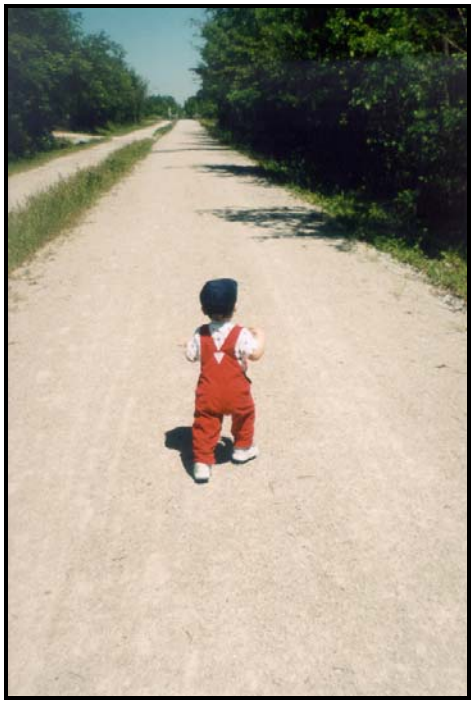


The recreational opportunities provided by the Katy Trail appeal to visitors of all ages.

A 225-mile trail built on the former railroad corridor of the Missouri-Kansas-Texas (MKT) Railroad, the Katy Trail travels through some of the most scenic and historic areas of Missouri. Stretching from St. Charles in the east to Clinton in the west, the Trail takes its visitors on a journey through a myriad of natural and cultural landscapes, providing extraordinary recreational opportunities. Until recently, permitted uses on the Trail included only bicycling and pedestrian traffic. In September 1999, the Missouri Division of State Parks (DSP) opened a new section of the Trail from Sedalia to Clinton. In addition to hiking and biking, equestrian use is now allowed on this new section from the State Fairgrounds in Sedalia to just east of Clinton at Calhoun, making the Trail a truly multiple-use recreational area.

Need for Research

As with any multiple-use recreational area, complications can arise that become more complex and more challenging to manage as the number and diversity of users increase. Trail managers in particular are not exempt from these challenges as they attempt to provide high-quality user experiences in addition to maintaining user safety and protecting the natural resources. Perhaps the greatest challenge facing trail managers in their attempts to provide high-quality user experiences is the challenge of minimizing user conflicts. As multiple-use trails become the norm, it is increasingly common for trail users to encounter other trail users (or evidence of trail use) during a trail visit. Many of these encounters are with visitors who engage in the same activity while others are encounters with visitors engaging in very different activities. For the most part, these encounters tend to be positive or neutral and do not affect user satisfaction and enjoyment (Moore, 1994). Some encounters, however, are negative, resulting in conflicts that can sharply divide user types on such issues as

who should be allowed to use a trail and what defines proper trail etiquette.

As trail use increases and grows in diversity of activity, the potential for user conflict also grows. Although user conflict can be viewed as a problem "...of success – an indication of the trail's popularity" (Flink, Olka & Searns, 2001, p. 147), conflict is also defined as "goal interference attributed to another's behavior" (Jacob & Schreyer, 1980, p. 369) and as such becomes the responsibility of the manager to minimize. Minimizing user conflict is a difficult task, requiring an understanding of the processes that create conflict as well as an understanding of the types of conflict that can occur on a trail. The multiple-use status of the Katy Trail and its increasing visitation suggest the potential for user conflict. The recent addition of equestrian use on the Katy Trail provides ideal opportunity to study the social impacts of multiple-use and to develop an understanding of the types and processes of user conflict.

Study Purpose

The purpose of this study was to provide Katy Trail managers with non-biased data comparing visitor characteristics and physical indicators of a pilot and a control section of the Trail. The first year of study was used to develop a reliable methodology to monitor the immediate and long-term impacts of equestrian use on the Katy Trail. The second and third years of study continued the monitoring process using the baseline measures developed during the first year of study. Objectives of the study were four-fold:

- To conduct a survey of trail users on both the pilot and control sections of the Trail in order to compare select socio-demographic characteristics of trail users; compare visitors' patterns of use; compare visitors' satisfaction with trail facilities and services; describe users' encounters with other visitors; and compare visitor characteristics between types of users (e.g., equestrian and nonequestrian).

- To provide an assessment of trail surface and support structures (trailheads, parking areas, adjoining trail areas). Specifically, this assessment measures indicators of trail surface character; compares trail and surface indicators between pilot and control sections; and determines relationship (if any) between impacts, use levels, use types, and trail conditions.

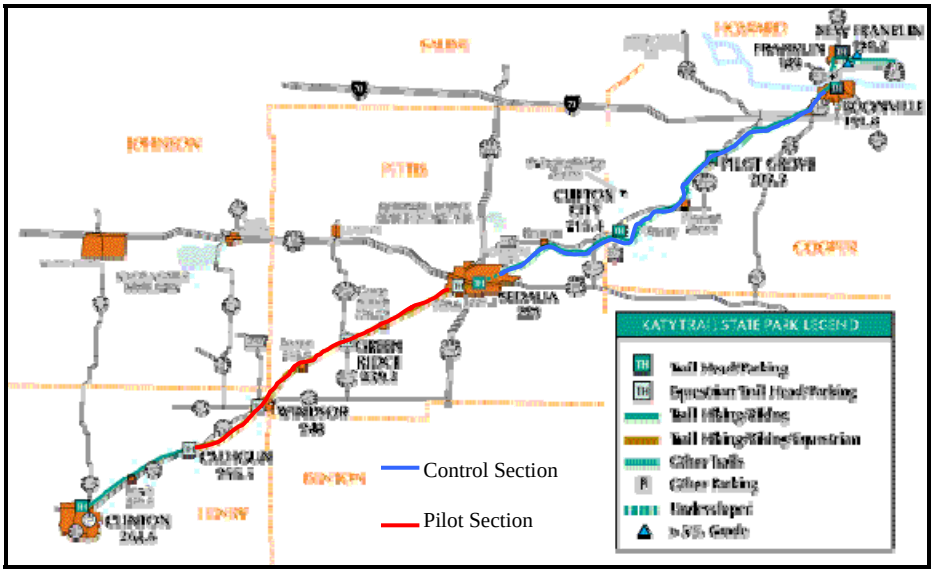
- To provide visitor counts of trail use on both sections. Specifically, this objective provides estimates of visitor use levels and user types between pilot and control sections.

- To analyze maintenance requirements for both sections by monitoring the maintenance system data and making comparisons between the pilot and control sections.

Study Area

The study area includes two sections of the Katy Trail and is shown in Figure 1. The control section encompasses a 32.7 mile section of trail traveling from Boonville to Sedalia and includes four trailheads: Boonville, Pilot Grove, Clifton City, and Griessen Rd. in Sedalia. The pilot, or equestrian, section encompasses a 25.6 mile section of trail traveling from the State Fairgrounds in Sedalia to Calhoun and also includes four trailheads: Sedalia Fairgrounds, Green Ridge, Windsor, and Calhoun.

Figure 1. Map of Study Area



Sampling Procedures & Data Collection

A sample of adult visitors (18 years of age and older) visiting the study area during the three years of study (September 1999-May 2002) were asked to participate in the survey. The survey of Katy Trail visitors was administered on-site to eliminate the non-response bias of a mailback survey. A copy of the questionnaire used during this study is provided in Appendix A. Table 1 lists the number of surveys collected by trailhead. A total of 595 surveys were collected, with a response rate of 79.4%. Two-thirds (66%) were collected from the pilot section while one-third (34%) were collected from the control section. In order to reduce cost of data collection, visitors from the control section were only surveyed

during the first year. It was felt that, because the visitor characteristics of control section visitors were so similar to Katy Trail data collected in 1998 (Moisey & Fredrickson, 1999), additional data collection on the control section would unnecessarily increase the cost of the study. The majority (63%) was collected during weekends (Saturday and Sunday) while a little over a third (37%) was collected during the weekdays (Monday through Friday). Sixty-two percent (61.6%) of those responding to the survey were bicyclists, 30.2% were walkers/hikers, 5.1% were horseback riders and 3.1% were runners/joggers.

Visitor survey signs used to notify visitors of survey.

Table 1. Surveys Collected by Trailhead

	1999-2000		2000-2001*		2001-2002*		Total	
	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent
Boonville	115	33.0%					115	19.4%
Pilot Grove	31	8.9%					31	5.2%
Clifton City	26	7.4%					26	4.4%
Griessen Rd.	30	8.6%					30	5.1%
Fairgrounds	76	21.8%	34	32.4%	43	30.5%	153	25.8%
Green Ridge	32	9.2%	23	21.9%	32	22.7%	87	14.5%
Windsor	18	5.2%	31	29.5%	33	23.4%	82	13.5%
Calhoun	21	6.0%	17	16.2%	33	23.4%	71	12.0%
Total	**349**	**58.7%**	**105**	**17.7%**	**141**	**23.7%**	**595**	**100.0%**

* Control Section visitors were not surveyed during second and third years of study.

In addition to collecting questionnaire data, observation data was also obtained regarding visitor characteristics: type of user (e.g., walker/hiker, bicyclist, runner/jogger, and equestrian user), group size, and number of individuals participating in the survey. Day of week and weather conditions were also documented. A copy of the survey form used to collect observation data is provided in Appendix B. Table 2 indicates the percentage of user types observed using the Trail during the study period. **Note: percentages of user types observed using the Trail are different from percentages of user types participating in the study.** This difference may be accounted for by the fact that many of those responding to the survey were part of a larger group that "elected" those individuals to fill out a questionnaire for the entire group. Also, several of the users

observed on the trail were under the age of 18 and could not participate in the survey.

Table 2. Frequency & Percentage of User Types Observed

	Control		Pilot		Total	
	Freq.	Percent	Freq.	Percent	Freq.	Percent
Walker/Hiker	249	54.7%	220	31.8%	469	40.9%
Bicyclist	172	37.8%	414	59.9%	586	51.1%
Runner/Jogger	34	7.5%	22	3.2%	56	4.9%
Equestrian			35	5.1%	35	3.1%
Total	**455**	**39.7%**	**691**	**60.3%**	**1146**	**100.0%**

A trail segment observation survey was conducted as well. The purpose of this survey was to assess trail surface conditions and trailhead conditions on both sections. Trail surface conditions were monitored for obstructions, ruts, equestrian manure (pilot section), and any other noticeable problems. Each trailhead was also monitored for litter and damage to the trailhead, including damage to the parking area and trailhead structures such as restrooms, gates, signs and other structures. A copy of the trail segment observation survey is given in Appendix C. Results from the trail segment observation survey will be discussed in more detail in a following section. A comparison of maintenance requirements for both the control and pilot sections was also conducted in order to determine a relationship (if any) between use levels, use types, and maintenance requirements. Results from this comparison are provided in a following section.

Reporting Format

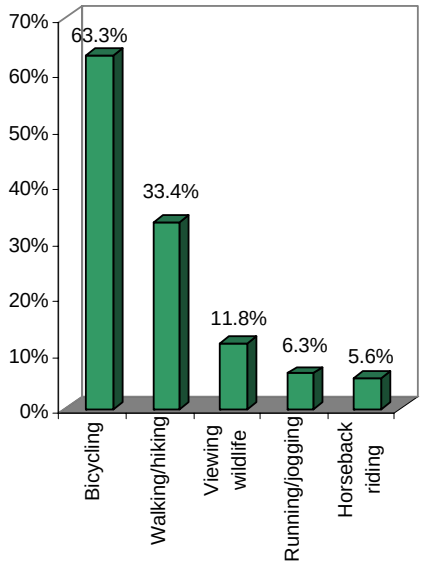
This report provides the combined results of the three years of study, as well as individual results from each section and visitor type. Notable differences in results between years will be indicated as well as notable differences between trailheads; otherwise, results will be reported as a composite of the three years. For the percentages of overall responses to each survey question, see Appendix F. The number of individuals responding to each question is represented as “n”. Results from the individual trailheads are shown in Appendix G.

User Characteristics & Use Patterns

The average visitor to the Katy Trail was a 49-year old white male with a college or post-graduate education and an annual household income of between $25,000 and $50,000. More likely to be a Missouri resident, this visitor was more than half (52%) as likely to live within 25 miles of one of the eight trailheads included in the study. Typically a day-user, the average visitor was 81.4% more likely to be a frequent repeat user, one who visited the Trail an average of 56.2 times during a year. An average user was 60% (59.9%) more likely to use the Trail on a weekend rather than on a weekday. The typical user was two-thirds (65%) more likely to enter and exit the Trail from the same trailhead and was 61.5% more likely to visit the Trail with family and friends rather than alone (34%) or with a club or organized group (4.1%). Although the average distance for traveling on the Trail during a visit was 23.5 miles, the median distance users traveled was 13 miles, indicating that half of the users traveled more than 13 miles and half traveled less than 13 miles during a typical Trail visit. The most frequently reported distance was two miles. Based on surveyor observation, the typical user of the Katy Trail was a bicyclist (51.1%), but a large contingent of walkers/hikers (40.9%) was also represented. It is interesting to note that although bicyclists accounted for half of the visitors observed using the Trail, they accounted for almost two-thirds (61.6%) 30.2% of those visitors responding to the survey.

Bicycling was the recreational activity in which the highest percentage (63.3%) of visitors reported participating. Figure 2 shows the percentage of visitor participation in the most frequently reported activities. Percentages in the primary recreational activities of bicycling, walking/hiking, running/jogging and horseback riding are very similar to the percentages of corresponding user types responding to the survey. Small differences in percentages may be accounted for by the fact that some visitors may have interpreted the survey question to be inclusive of all

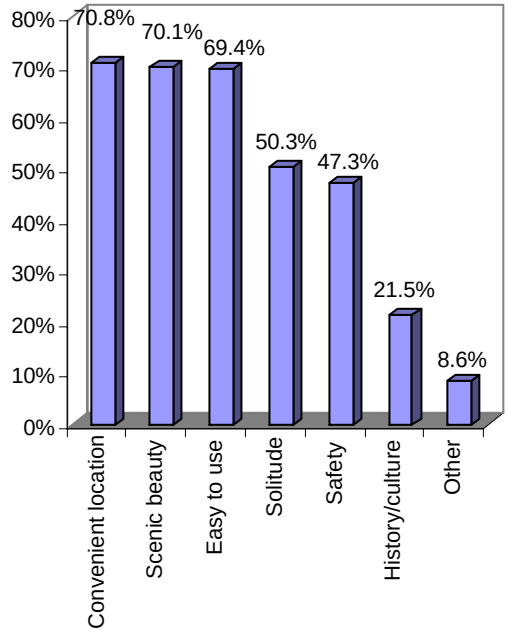
Figure 2. Participation in Recreational Activities



activities ever participated in during any trail visit, whereas the question asked visitors to identify which activities they were "...engaging in during ***this*** trail visit."

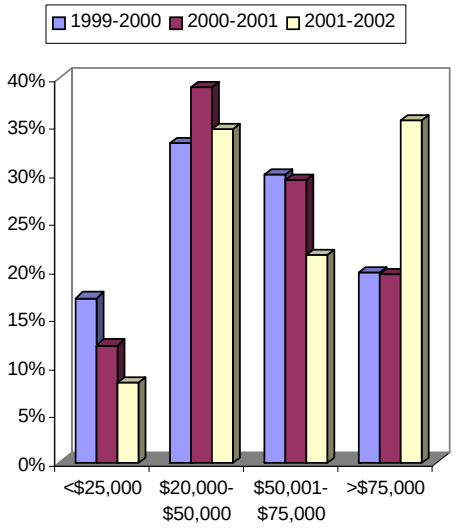
Visitors to the Trail were asked to describe what features most attracted them to the Trail. The Trail's convenient location (70.8%) was the most attractive feature, followed by its scenic beauty (70.1%) and its ease of use (69.4%). Other features attracting visitors to the Trail included solitude (50.3%), safety (47.3%), and historical/cultural aspects (21.5%). Figure 3 shows the percentage of each feature.

Figure 3. Features Attracting Visitors to the Trail



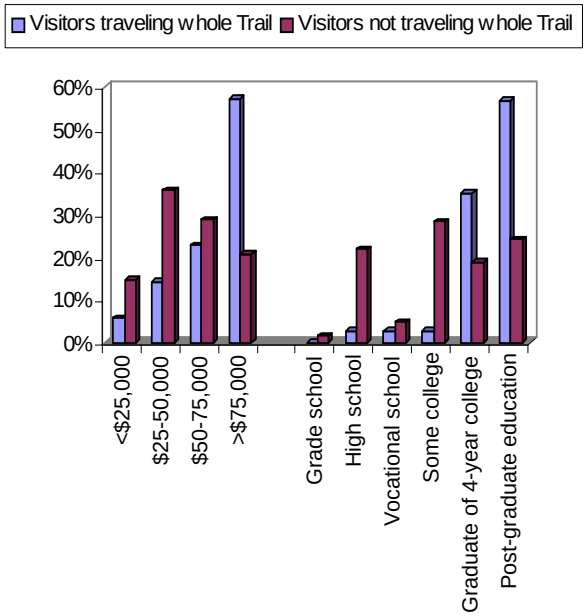
Another interesting result is the increasing annual household income of visitors to the Trail. There was a significant ($p<.01$) increase in the number of users reporting an annual income of over $75,000 when comparing responses from each of the three years of study. Percentages remained similar during the first and second years of study, with about 20% of respondents reporting an annual household income of over $75,000. During the third year, however, the percentage of respondents with an annual income of over $75,000 increased to 35.5%. Figure 4 compares the level of income during the first, second and third years of study. This increase in income may be a result of the increase in percentage of users traveling the whole length of the Trail, from St. Charles to Clinton or from Clinton to St. Charles. During the first year of study, 4.2% of visitors indicated they were traveling the whole Katy Trail. During the second year of study, 3.3% of visitors reported they were traveling the whole length of the Trail. During the third year, however,

Figure 4. Comparison of Income Levels Between Years of Study



almost 15% (14.7%) of visitors indicated they were traveling the entire distance. Those visitors traveling the entire length of the Trail are characterized by significantly ($p<.001$) higher levels of education (91.9% with a four-year college or advanced graduate degree compared to 43.2% of visitors not traveling the entire Trail) and household incomes (57.1% with an annual income of over $75,000 compared to 20.7% respectively). Figure 5 compares the education and household income levels of both sets of users. Additionally, a significantly higher ($p<.001$) percentage of out-of-state visitors indicated traveling the whole trail (29.6%) when compared to Missouri visitors (2.8%).

Figure 5. Income & Education Levels of Visitors Traveling Entire Distance on Katy Trail Compared to Visitors Not Traveling Entire Distance



Closely corresponding to the increase in the number of users traveling the whole length of the Trail is the increase in the number of users staying overnight during a visit. During the first year of study, less than one-fourth (22.1%) of the visitors indicated staying overnight during their Katy Trail visit. During the second year, overnight visitors accounted for 27.7% of the visitors surveyed. Thirty-seven percent (36.7%) of the visitors surveyed during the third year of study indicated they were staying overnight. Not surprisingly, 100% of the visitors traveling the whole distance on the Trail indicated staying overnight during their visit, whereas only 21.6% of the visitors not traveling the entire distance indicated staying overnight. Overnight visitors were equally likely to stay in nearby lodging facilities (32.2%) or in nearby campgrounds (32.2%) and 20.8% reported staying at a nearby bed and breakfast. As the Katy Trail increases in popularity and nears its completion, all demographic indicators and life stages favor growth in the percentage of visitors traveling the whole length of the Trail (as well as the percentage of visitors staying overnight during a trail visit), suggesting potential economic impact for the communities along the Trail.

Out of state visitors traveling the entire length of the Katy Trail.

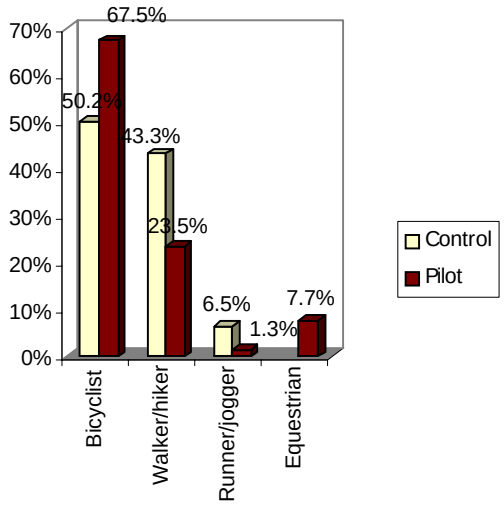
Control & Pilot Section Visitor Characteristics

Table 3 lists the socio-demographic characteristics and Table 4 lists the visit characteristics of control section and pilot section visitors. Bicyclists participating in the study accounted for half (50.2%) of the visitors surveyed on the control section of the Katy Trail, while walkers/hikers accounted for 43.3%) and runners/joggers accounted for 6.5%). Bicyclists accounted for two-thirds (67.5%) of the visitors surveyed on the pilot section while walkers/hikers accounted for 23.5%, equestrian users accounted for 7.7% and runners/joggers accounted for only 1.3% of those pilot section visitors participating in the study. Figure 6 compares the percentages of user types for each section.

Socio-demographic Characteristics

Over half (55.6%) of the visitors surveyed on the control section were male while 44.4% were female. Over half (56.6%) of the visitors surveyed on the pilot section were male while 43.4% were female. The average age of control section visitors was 47.2; when grouped into four age categories, 17.1% of the visitors were between the ages of 18-34, 57.3% were between the ages of 35-54, 15.6% were between the ages of 55-64, and 10.1% were 65 or over. The average age of pilot section visitors was 49.8 years of age. Although a statistically ($p<.05$) significant difference in average age exists between pilot and control section visitors, the practical difference in the average age is minimal. A statistical difference ($p<.05$) also exists in the percentage of visitors grouped into the four age categories. Eleven percent (10.8%) of the pilot section visitors fell into the age category of 18-34 years of age, smaller than the percentage of control section visitors. More similar is the percentage of

Figure 6. Percentage of User Types by Section



visitors belonging to the 35-54 years of age category (51.4%). A higher percentage of pilot section visitors (23.6%) were aged 55-64 years than control section visitors, and a higher percentage of pilot visitors fell into the age category of 65+ when compared to control section visitors. Less than 2% (1.5%) of control section visitors reported having some type of disability that substantially limited one or more life activity or that required special accommodations. Most of these were mobility-impairing disabilities, including arthritis, bad knees, and back problems. Four percent (3.6%) of the pilot section visitors reported some type of disability, most of which were mobility-impairing disabilities but also included heart and blood pressure problems.

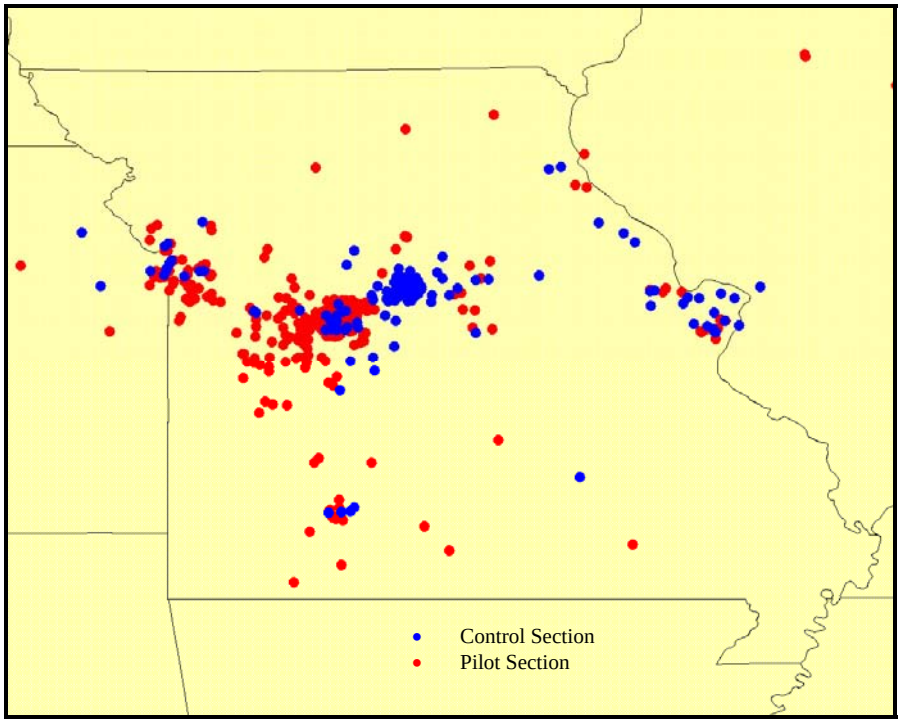
The vast majority (94.4%) of visitors to the control section was white, 2.5% were African American, 1% was Hispanic, 1% reported being of Native American descent, and 1% indicated an "other" race. Most (96.8%) of the visitors to the pilot section were white as well, while less than 1% were Hispanic (0.3%), African American (0.5%) or Asian (0.5%). Almost 2% (1.6%) reported to be of Native American descent and less than 1% (0.3%) indicated an "other" race. Almost one-third (30.5%) of control section visitors fell into the "$25,000-$50,000" household income category, 28.2% reported an annual household income of between $50,001 and $75,000, 24.1% had an annual income of over $75,000, and 17.2% made less than $25,000 annually. Over one-third (36.6%) of the pilot section users indicated an annual household income of between $25,000 and $50,000, over one-fourth (27.6%) made between $50,001 and $75,000 annually, 23.1% reported an income of over $75,000, and less than 15% (12.6%) of visitors reported an annual household income of less than $25,000. Almost half (45.4%) of the visitors surveyed on the control section indicated they had completed a four-year college degree or post-graduate education, while 30.3% indicated completing vocational school or some college, and 24.4% indicated completing grade school or high school. Almost half (47%) of pilot section visitors had completed a four-year college degree or a post-graduate education, 31.9% reported completing vocational school or some college, and 21% had a high school education or less.

Table 3. A Comparison of Socio-demographic Characteristics of Pilot & Control Section Visitors

	Control	Pilot
Gender	Female 44.4%	Female 42.9%
	Male 55.6%	Male 57.1%
	18-34 17.1%	18-34 10.8%
	35-54 57.3%	35-54 51.4%
Age	55-64 15.6%	55-64 23.6%
	65+ 10.1%	65+ 14.2%
	mean = 47.2	mean = 49.8
Disability	Yes 1.5%	Yes 3.6%
	No 98.5%	No 96.4%
	African American 2.5%	Asian 0.5%
	Caucasian/white 94.4%	African American 0.5%
Ethnicity	Hispanic 1.0%	Caucasian/white 96.8%
	Native American 1.0%	Hispanic 0.3%
	Other 1.0%	Native American 1.6%
		Other 0.3%
	< $25,000 17.2%	< $25,000 12.6%
Income	$25,000-$50,000 30.5%	$25,000-$50,000 36.6%
	$50,001-$75,000 28.2%	$50,001-$75,000 27.6%
	> $75,000 24.1%	> $75,000 23.1%
	Grade school 2.0%	Grade school 1.1%
	High school 22.2%	High school 19.9%
Education	Vocational school 5.6%	Vocational school 4.5%
	Some college 24.7%	Some college 27.4%
	4-year college degree 20.7%	4-year college degree 19.9%
	Post-graduate education 24.7%	Post-graduate education 27.1%
	Missouri 82.4%	Missouri 86.6%
	Boonville 40.1%	*Sedalia 33.3%*
	Sedalia 9.4%	*Windsor 8.5%*
Residence	Out-of-state 17.6%	Out-of-state 13.4%
	Kansas 3.6%	*Kansas 3.0%*
	Illinois 3.1%	*Illinois 2.2%*
	Texas 2.1%	*Alabama 1.6%*
		Texas 1.4%
	Columbia 4.2%	Columbia 2.2%
	Kansas City 7.9%	Kansas City 15.5%
MSA	St. Louis 9.7%	St. Louis 3.4%
	Springfield 2.4%	Springfield 3.4%
	Non-metropolitan 75.8%	Non-metropolitan 75.5%
	# 5 miles 48.2%	# 5 miles 41.3%
	6-15 miles 3.6%	6-15 miles 8.5%
	16-25 miles 1.6%	16-25 miles 1.4%
Distance from Residence	26-50 miles 7.8%	26-50 miles 10.1%
	51-150 miles 15.5%	51-150 miles 21.9%
	> 150 miles 23.3%	> 150 miles 16.9%
	mean = 140.4 miles	mean = 104.8 miles

Based on ZIP code data provided by the respondents, 82.8% of control section visitors were Missouri residents while 17.2% came from out of state, including Kansas (3.6%), Illinois (3.1%) and Texas (2.1%). Three-fourths (75.8%) of the Missouri residents from the control section were from non-metropolitan areas while about 10% (9.7%) came from the St. Louis Metropolitan Statistical Area (MSA) and 7.9% came from the Kansas City MSA. Almost two-thirds (61.1%) of control section visitors lived within 50 miles of one of the eight trailheads surveyed, and over half (53.4%) lived within 25 miles. Specifically, forty percent (40.1%) of the control section visitors were from Boonville. Eighty-seven percent (86.6%) of the pilot section visitors were from Missouri while 13.4% were from out of state, including Kansas (3%), Illinois (2.2%), Alabama (1.6%) and Texas (1.4%). Although most (75.5%) of the Missouri visitors in the pilot section were from non-metropolitan areas, 15.5% came from the Kansas City MSA. Sixty-one percent (61.3%) of the pilot section visitors lived within 50 miles of one of the eight trailheads surveyed, and half (51.2%) lived within 25 miles. One-third (33.3%) of pilot section visitors came from Sedalia. Figure 7 is a map comparing residence between pilot and control section visitors.

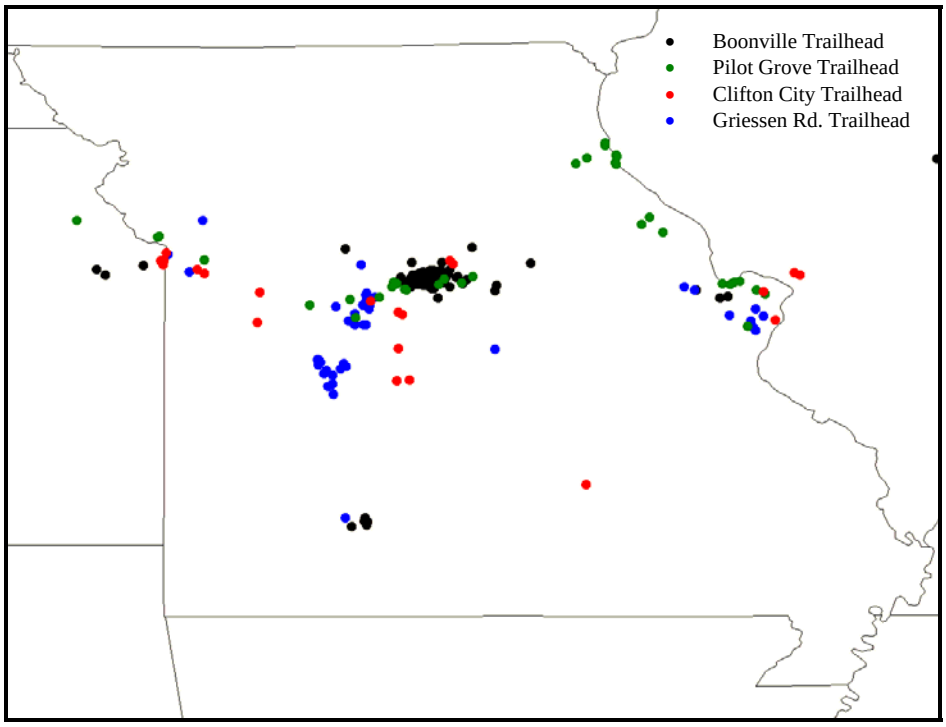
Figure 7. Residence of Pilot & Control Section Visitors by ZIP Code



Use Patterns

Frequent repeat visitors, 82.7% of control section visitors indicated having used the Katy Trail before, visiting the Trail an average of 77.8 times a year. Although much more likely to be a day-user (71.3%), over one-fourth (28.7%) of the control section visitors did indicate staying overnight during their visit to the Katy Trail. Interestingly, a significantly ($p<.001$) higher percentage of visitors surveyed at the Pilot Grove (45.2%), Clifton City (42.3%) and Griessen Rd. (41.4%) trailheads indicated staying overnight when compared to the visitors surveyed at the Boonville trailhead (14.7%). This suggests that the visitors surveyed at the Boonville trailhead were local residents who utilized the Katy Trail and the Boonville trailhead several times a week. This is further indicated by the fact that three-fourths (75.5%) of the visitors surveyed at the Boonville trailhead lived within 25 miles from the trailhead (70.8% lived within Boonville itself), traveled an average distance of 11 miles while on the Trail, and visited the Trail an average of 119.7 times during a year. Visitors to the Pilot Grove, Clifton City and Griessen Rd. trailheads, however, were much more likely to live farther away than 25 miles (77.4%, 88.5%, and 56.7% respectively), travel a greater distance while on the Trail (36.6, 35.4, and 27 miles respectively), and visit with much less frequency (11, 12.8, and 40.3 times a year respectively). Figure 8 is a map showing residence of visitors accessing the four trailheads in the control section.

Figure 8. Residence of Control Section Visitors by Trailhead



Visitors to the pilot section were more likely to be repeat visitors (80.7%) than first-time visitors (19.3%), visiting the Trail an average of 44.9 times a year (significantly [p=.001] fewer times than repeat visitors from the control section). Visitors to the pilot section were also more likely to be day-users (74.5%) rather than overnight visitors (25.5%). A significantly (p<.001) higher percentage of visitor surveyed at the Green Ridge (36.5%), Windsor (32.1%) and Calhoun (32.8%) trailheads indicated staying overnight when compared to the visitors surveyed at the fairgrounds trailhead (12.2%). Visitors to the fairgrounds trailhead were characterized by a greater frequency of repeat visits (60.3 visits a year compared to 51.9, 27.5, and 18 for Green Ridge, Windsor and Calhoun respectively); a larger percentage of visitors living within 25 miles of the trailhead (78.6% compared to 36.7%, 30.3% and 31.8% for Green Ridge, Windsor and Calhoun respectively); and a lesser distance traveled on the Trail during a visit (17.1 miles compared to 29.2, 32.5 and 23.5 for Green Ridge, Windsor and Calhoun respectively). These results suggest that users of the Sedalia State Fairgrounds trailhead are more local in nature (in fact, 77.2% live in Sedalia) and use the Trail and fairgrounds trailhead more than once a week, whereas visitors to the other trailheads are more regional in nature and do not use the Trail with as much frequency. Figure 9 shows the residence of pilot section visitors by trailhead.

Figure 9. Residence of Pilot Section Visitors by Trailhead

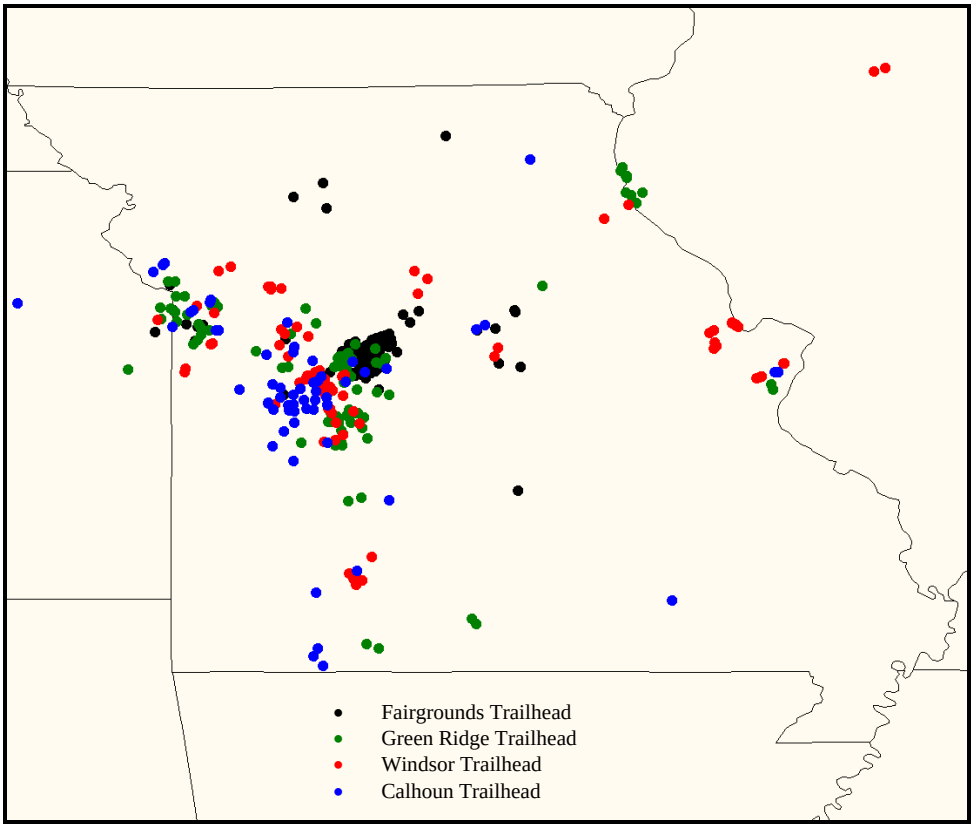


Table 4. A Comparison of Visit Characteristics of Pilot & Control Section Visitors

	Control	Pilot
User Type	Bicyclist 50.2% Walker/hiker 43.3% Runner/jogger 6.5%	Bicyclist 67.5% Walker/hiker 23.5% Equestrian 7.7% Runner/jogger 1.3%
Repeat Visitation	Repeat visitor 82.7% First-time visitor 17.3% 0 = 77.8 visits/year	Repeat visitor 80.7% First-time visitor 19.3% 0= 44.9 visits/year
Day Use vs. Overnight Use	Day User 71.3% Overnight user 28.7%	Day user 74.5% Overnight user 25.5%
Length of Overnight Stay	1 night 16.7% 2 nights 25.0% 3 nights 10.4% 4 nights 22.9% 5+ nights 25.0% 0 = 4.6 nights	1 night 21.3% 2 nights 24.0% 3 nights 16.0% 4 nights 21.3% 5+ nights 17.4% 0 = 3.4 nights
Overnight Lodging	Nearby lodging facilities 27.5% Nearby bed & breakfast 29.1% Nearby campground 25.5% Friends/relatives 3.6% Other 14.6%	Nearby lodging facilities 35.1% Nearby bed & breakfast 16.0% Nearby campground 36.2% Friends/relatives 3.2% Other 9.6%
Group Composition & Size	Alone 37.2% Family 36.2% Family & friends 7.4% Friends 18.1% Club or other 1.1% 0 = 4.2 people	Alone 32.3% Family 33.1% Family & friends 8.6% Friends 19.6% Club or other 6.3% 0 = 3.6 people
Average Distance	0 = 20.2 miles	0 = 25.2 miles

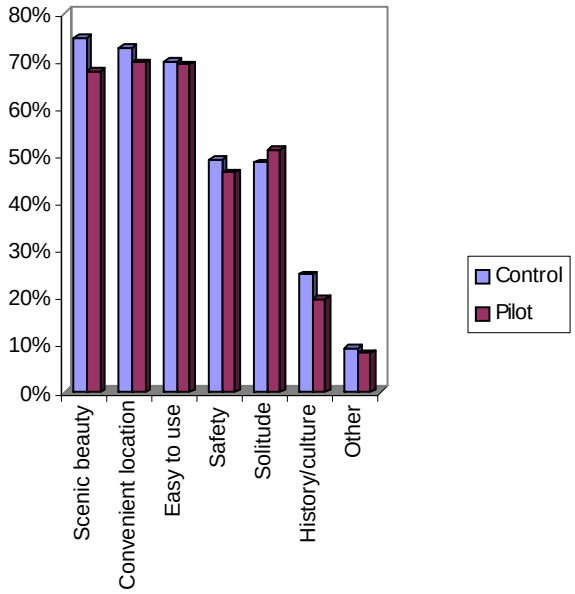
Of those control section visitors staying overnight, most stayed in nearby lodging facilities (56.4% [hotels, motels, bed and breakfast facilities, etc.]) or in nearby campgrounds (25.5%). The average stay for overnight visitors was 4.6 nights, although the most frequent response was two nights. Most of the pilot section visitors who indicated staying overnight stayed either in nearby lodging facilities (51.1% [hotels, motels, bed and breakfast facilities, etc.]) or in nearby campgrounds (36.2%). The average overnight stay for pilot section visitors was 3.4 nights, although the most frequent response was two nights. The majority (61.7%) of control section users visited the Trail with family and/or friends while 37.2% visited the Trail alone. Average group size was 1.5 adults and 2.7 children. The majority (61.3%) of pilot section users also visited the Trail with family and/or friends while 32.3% visited alone. Average group size for pilot section visitors was 1.5 adults and 2.1 children.

Two-thirds (66.3%) of the control section visitors indicated entering and exiting the Trail at the same trailhead during a visit. Boonville was the most frequently reported trailhead by which visitors entered (55%) and exited (54%) the Trail, with Griessen Rd. (20.5%) a distant second in the frequency of visitors entering (20.5%) and exiting (12.1%) the Trail. In addition to the eight trailheads included in the study, 10.5% of control section visitors also used other trailheads along the Katy Trail to access the Trail. These other trailheads included Clinton (5.5%), Rocheport (1.5%) and the Sedalia depot (1%). Eighteen percent (18.2%) of control section visitors also indicated using another trailhead to exit the Trail, including St. Charles (11.6%), Augusta (2%), and the North Jefferson City trailhead (1%). Only 4.1% of control section visitors indicated traveling the entire distance of the Trail.

Sixty-four percent (64.2%) of pilot section visitors indicated entering and exiting the same trailhead during a visit. The Sedalia State Fairgrounds trailhead was the most frequently reported trailhead by which visitors both entered (31.2%) and exited (30.8%) the Trail, with Windsor accounting for 15.6% of the visitors entering and 16.1% of the visitors exiting. In addition to the eight trailheads included in the study almost one-fourth (24.3%) of pilot section visitors indicated using another trailhead to enter the Trail. These other trailheads included Clinton (20.4%) and the Sedalia Depot (3.4%). Twenty-four percent (24.1%) of the pilot section visitors also indicated using another trailhead to exit the Trail, including Clinton (12.7%), St. Charles (7.9%) and the Sedalia Depot (1.9%). Nine percent (9.2%) of the pilot section visitors indicated traveling the entire Trail.

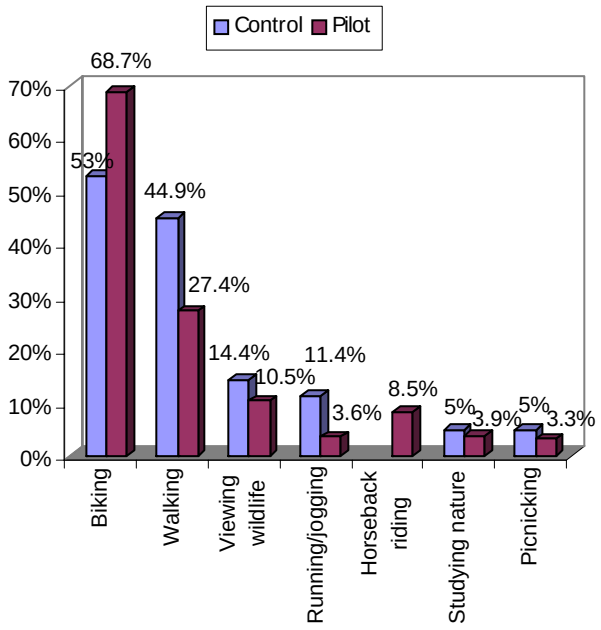
Control section visitors were most attracted to the Trail because of its scenic beauty (74.8%), with convenient location a close second (72.8%). Pilot section visitors were most attracted to the Trail because of its convenient location (69.7%) and its ease of use (69.2%). Figure 10 compares the similarities in control section and pilot section visitors and the percentages of their attraction to Katy Trail features.

Figure 10. A Comparison of the Katy Trail Features that Attract Control & Pilot Section Visitors



For the both the control and pilot sections, bicycling was the most frequently reported recreational activity, with 53% of control section visitors and 68.7% of pilot section visitors reporting participation. Walking/hiking was the second most frequently reported activity (44.9% and 27.4% respectively) and viewing wildlife was third (14.4% and 10.5% respectively). For the control section, running/jogging (11.4%) was the fourth most frequently reported activity, and picnicking (5%) and studying nature (5%) were fifth. On the pilot section, horseback riding (8.5%) was the fourth most frequently reported activity with running/jogging (3.6%) the fifth. Figure 11 compares the percentage of participation in recreational activity between sections.

Figure 11. Comparison of Recreational Activity Participation Between Sections



User Type Characteristics

See Table 5 for a comparison of socio-demographic characteristics and Table 6 for a comparison of visit characteristics of the four user types: walker/hiker, bicyclist, runner/jogger and equestrian user.

Socio-demographic Characteristics

Walker/Hiker

The average walker was a 50 year-old who was over half (55.3%) as likely to be female rather than male (44.7%). Much more likely (96.6%) to be white than any other racial or ethnic background, a typical walker was also more likely to have an annual household income of between $25,000 and $50,000 (38.7%) when compared to the other income categories (24.7% with an income of less than $25,000; 24% with an income of between $50,001 and $75,000; and 12.7% with an income of over $75,000). A typical walker was slightly more likely to have completed a four-year college degree/post-graduate education (35.1%) than have completed grade/high school (32.8%) or vocational school/some college (32.2%). The vast majority (98.2%) of walkers was from Missouri with 84.8% living within 15 miles of the eight trailheads included in the study.

Bicyclist

A typical bicyclist was significantly more likely to be male (63.5%) than female (36.5%) and averaged 48.5 years of age. The vast majority (97.2%) of bicyclists surveyed were white, 1.7% indicated Native American descent, while less than 1% were Hispanic (0.6%) or African American (0.3%). One-third (32.2%) of bicyclists indicated an annual household income of between $25,000 and $75,000, 29.7% indicated an income of between $50,001 and $75,000, 28.1% reported making over $75,000 and 10.1% made less than $25,000 annually. Over half (52.6%) of bicyclists reported completing a four-year college degree or post-graduate education, 30.5% indicated having completed vocational school or some college, and 17% reported having completed grade or high school. Although most (77.8%) bikers were Missouri residents, one in five (22.2%) came from out of state including Kansas (4.6%), Illinois (4), and Texas (2.3%). Over half (54.1%) lived more than 50 miles away from the trailheads they used to access the Trail.

Runner/Jogger

A higher percentage of runners/joggers were male (62.5%) rather than female (37.5%). Runners/joggers were significantly ($p<.05$) younger than the other four user types, averaging 40.9 years of age. Most of the runners/joggers were white (77.8%), 5.6% reported being of Native American descent, 5.6% were Hispanic, 5.6% were Asian and 5.6% were African American. Over a third (38.5%) of runners/joggers indicated an

annual household income of between $25,000 and $50,000, 30.8% reported an annual income of over $75,000, 23.1% made between $50,001 and $75,000 annually, and less than 10% (7.7%) made less than $25,000 annually. Almost two-thirds (61.1%) of runners/joggers indicated having completed a four-year college degree or post-graduate education, one-third (33.3%) reported completing vocational school or some college, and 5.6% indicated having completed high school. The average runner/jogger was 94.4% more likely to be from Missouri with only one (5.6%) visitor indicating out-of-state residence in Hawaii. The average runner/jogger was almost 90% (88.9%) more likely to live within 5 miles of one of the eight trailheads included in the study.

Equestrian User

Horseback riders were over half as likely to be female (59.3%) than male (40.7%), and the average age for a horseback rider was 50.7 years of age. Ninety percent (89.7%) of equestrian users were white while 6.9% reported being of Native American origin and 3.4% reported being of Asian descent. Over a third (34.6%) reported an annual household income of between $25,000 and $50,000, 30.8% indicated an income of between $50,001 and $75,000, 26.9% reported making over $75,000 a year, and less than 10% (7.7%) made less than $25,000 annually. Horseback riders were equally likely to have completed a four-year degree or a post-graduate degree (34.5%) or to have completed vocational school or some college (34.5%) while 31% indicated having completed high school. Over 90% (93.1%) of horseback riders were Missouri residents with only 6.9% coming from other states. Horseback riders were 69% more likely to live within 50 miles of the trailheads they used to access the Trail.

Table 5. A Comparison of Socio-demographic Characteristics
By User Type

	Walker/Hiker	Bicyclist	Runner/Jogger	Equestrian User
Gender	Female 55.3% Male 44.7%	Female 36.5% Male 63.5%	Female 37.5% Male 62.5%	Female 59.3% Male 40.7%
Age	18-34 16.1% 35-54 47.1% 55-64 18.4% 65+ 18.4% 0 = 49.9	18-34 11.2% 35-54 56.1% 55-64 22.9% 65+ 9.8% 0 = 48.5	18-34 23.5% 35-54 70.6% 55-64 5.9% 0 = 40.9	18-34 10.3% 35-54 51.7% 55-64 20.7% 65+ 17.2% 0 = 50.7
Disability	Yes 3.0% No 97.0%	Yes 2.9% No 97.1%	No 100.0%	Yes 3.6% No 96.4%
Ethnicity	African American 2.9% Caucasian/white 96.6% Other 0.6%	African American 0.3% Caucasian/white 97.2% Hispanic 0.6% Native American 1.7% Other 0.3%	African American 5.6% Asian 5.6 Caucasian/white 77.8% Hispanic 5.6% Native American 5.6% Other 5.6%	Asian 3.4% Caucasian/white 89.7% Native American 6.9%
Income	< $25,000 24.7% $25,000-$50,000 38.7% $50,001-$75,000 24.0% > $75,000 12.7%	< $25,000 10.1% $25,000-$50,000 32.2% $50,001-$75,000 29.7% > $75,000 28.1%	< $25,000 7.7% $25,000-$50,000 38.5% $50,001-$75,000 23.1% > $75,000 30.8%	< $25,000 7.7% $25,000-$50,000 34.6% $50,001-$75,000 30.8% > $75,000 26.9%
Education	Grade School 1.3% High School 31.9% Vocational School 6.9% Some College 24.4% 4-Year College 15.6% Post-Grad. Education 20.0%	Grade School 1.7% High School 15.3% Vocational School 2.5% Some College 28.0% 4-Year College 22.9% Post-Grad. Education 29.7%	High School 5.6% Some College 33.3% 4-Year College 22.2% Post-Grad. Education 38.9%	High School 31.0% Vocational School 13.8% Some College 20.7% 4-Year College 13.8% Post-Grad. Education 20.7%
Residence	Missouri 98.2% *Boonville 35.8%* *Sedalia 32.1%* Out-of-state 1.8% (n=3) *California 0.6%* *Kansas 0.6%* *Montana 0.6%*	Missouri 77.8% *Sedalia 29.3%* *Windsor 6.3%* Out-of-state 22.2% (n=77) *Kansas 4.62%* *Illinois 4.0%* *Texas 4.0%*	Missouri 94.4% *Boonville 61.1%* *Sedalia 27.8%* Out-of-state 5.6% (n=1) *Hawaii*	Missouri 93.1% *Clinton 14.8%* *Warrensburg 14.8%* *Warsaw 11.1%* *Windsor 11.1%* Out-of-state 6.9% (n=2) *Kansas 3.4%* *Texas 3.4%*
MSA	Columbia 1.2% Kansas City 3.1% St. Louis 1.9% Springfield 0.6% Non-metropolitan 93.2%	Columbia 3.9% Kansas City 17.4% St. Louis 8.5% Springfield 5.0% Non-metropolitan 65.1%	Columbia 5.9% Non-metropolitan 94.1%	Kansas City 32.1% Non-metropolitan 67.9%
Distance from Residence	≤ 5 miles 81.2% 6-15 miles 3.6% 16-25 miles 0.6% 26-50 miles 3.0% 51-150 miles 7.9% > 150 miles 3.6% 0 = 37.1	≤ 5 miles 26.2% 6-15 miles 8.1% 16-25 miles 2.0% 26-50 miles 9.5% 51-150 miles 25.6% > 150 miles 28.5% 0 = 165.4	≤ 5 miles 88.9% 26-50 miles 5.6% > 150 miles 5.6% 0 = 5.8	≤ 5 miles 10.3% 6-15 miles 13.8% 26-50 miles 44.8% 51-150 miles 27.6% > 150 miles 3.4% 0 = 58.5

Use Patterns

Walker/Hiker

The majority (92.7%) of walkers was frequent repeat visitors, visiting the Trail an average of 88.3 times a year. Walkers were much more likely to visit the Trail only for the day (92.8%) rather than spend the night (7.2%) during a visit. Of those who did spend the night, most (40%) stayed at a nearby campground. Walkers were more likely to visit the Trail with family and friends (54.5%), although a large percentage (42.9%) also came to the Trail alone. Average group size for walkers was 1.4 adults and 2.6 children. Eighty-seven percent (87.2%) indicated entering and exiting the same trailhead during a visit, over a third of whom entered (39.4%) and exited (38.3%) the Trail at the Boonville Trailhead while about a fourth entered (24%) and exited (27.4%) at the Fairgrounds Trailhead. The average distance walkers traveled while on the Trail was 4.1 miles. In addition to walking, walkers also reported participating in other recreational activities during their visit to the Katy Trail: bicycling (10.1%), viewing wildlife (9.6%), running/jogging (8.4%), and studying nature (2.8%). Walkers were most attracted to the Trail because of its convenient location (89.3%) and ease of use (71.9%). Figure 12 compares Trail attraction between user types.

Bicyclist

Bicyclists were more likely to be repeat visitors (76.3%) although one in five (23.7%) reported being first time visitors. The typical bicyclist visited the Trail an average of 35.2 times a year. Although more likely to visit just for the day (60.7%), almost 40% (39.3%) of bicyclists reporting staying overnight during their Trail visit. Most of the overnight bicyclists stayed either in nearby lodging facilities (33.1%), in a nearby campground (31.7%), or in a nearby bed and breakfast facility (21.6%) and the average overnight stay was 3.6 nights. Bicyclists typically visited the Trail with family and friends (64.1%) although 29.8% came alone and 6% came as part of a club or organized group. Group size for bicyclists averaged 1.5 adults and 2.3 children. Half (51.5%) of the bicyclists surveyed indicated entering and exiting the Trail at the same trailhead, about a third of whom indicated entering (31.2%) and exiting (34.7%) a trailhead other than the eight included in the survey. Other trailheads that bicyclists most often used to enter the Trail included Clinton (80.2%), Sedalia Depot (14.2%), Rocheport (2.8%) and McBaine (1.9%). Other trailheads used to exit the Trail included St. Charles (44.5%), Clinton (40.3%), Sedalia Depot (6.7%), North Jefferson City (3.4%), Augusta (2.5%) and Rocheport (1.7%). Eleven percent (10.8%) indicated traveling the entire distance from Clinton to St. Charles. Bicyclists averaged 35.2 miles while using the Trail. In addition to bicycling, bicyclists reported participating in the following activities: viewing wildlife (13.8%), walking/hiking (9%), picnicking (6.1%) and studying nature (5.2%). Trail features most

attractive to bicyclists were its scenic beauty (74.7%), ease of use (68.6%), and convenient location (62.3%).

An out-of-state bicyclist traveling from Ohio who was attracted to the Katy Trail because of its ease of use and safety (as opposed to riding on roads and highways).

Runner/Jogger

Most (94.4%) runners/joggers were frequent repeat visitors who visited an average of 160.9 times a year, a statistically ($p<.001$) greater frequency when compared to the other user types. One hundred percent (100%) of runners/joggers were day-users; there were no runners/joggers reporting overnight stays. The vast majority (76.5%) of runners/joggers reported visiting the Trail by themselves while only 23.5% came with family and friends. Average group size for runners/joggers included 1.1 adults and 1.5 children. The majority (94.4%) of runners/joggers utilized the same trailhead when entering and exiting the Trail, most of whom entered (72.7%) and exited (72.7%) at the Boonville trailhead. The average distance traveled while on the Trail was 4.1 miles. In addition to running/jogging, 16.7% of this user group also participated in walking/hiking during their Trail visits. Features that most attracted runners/joggers to using the Trail included its convenient location (88.9%), its ease of use (77.8%) and its scenic beauty (66.7%).

Equestrian User

Two-thirds (66.7%) of horseback riders were repeat visitors while one-third (33.3%) indicated first time use. A typical horseback rider was not as frequent a visitor as the three other user types, visiting the Trail an average of only 7.8 times in the past year. None of the equestrian users reported overnight stays and most (89.3%) visited the Trail with their family and friends rather than alone (10.7%), suggesting that horseback riding is a group activity. Average group size for equestrian riders included 2.1 adults and 2 children. Seventy-two percent (72.4%) of horseback riders indicated entering and exiting the same trailhead during a visit to the Trail. Forty-three percent (43.3%) reported accessing the Trail through the Windsor trailhead and one-third (33.3%) entered at the Calhoun trailhead. Over a third also reported exiting at Windsor (37.9%) and over a third at Calhoun (34.5%). Average distance of a Trail ride was about 13 (12.6) miles. Other activities horseback riders engaged in while on the Trail included viewing wildlife (6.7%), studying nature (3.3%) and picnicking (3.3%). Equestrian users were most attracted to the Katy Trail because of its ease of use (63.3%) and its convenient location (53.3%).

Figure 12. A Comparison of Trail Features Most Attractive to the Four User Types

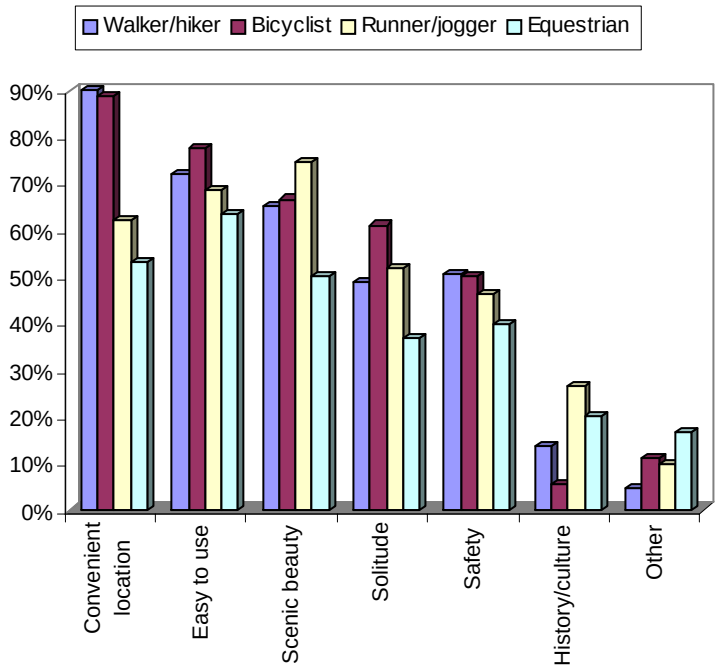


Table 6. A Comparison of Visit Characteristics
By User Type

	Walker/Hiker	Bicyclist	Runner/Jogger	Equestrian User
Repeat Visitation	Repeat visitor 92.7% First-time visitor 7.3% 0 = 83.3 visits/year	Repeat visitor 76.3% First-time visitor 23.7% 0 = 35.2 visits/year	Repeat visitor 94.4% First-time visitor 5.6% 0 = 160.9 visits/year	Repeat visitor 66.7% First-time visitor 33.3% 0 = 7.8 visits/year
Day Use vs. Overnight	Day user 92.8% Overnight user 7.3%	Day user 60.7% Overnight user 39.3%	Day user 100.0%	Day user 100.0%
Length of Overnight Stay	1 night 30.0% 2 nights 50.0% 3+ nights 20.0% 0 = 6.6 nights	1 night 18.8% 2 nights 21.4% 3 nights 15.2% 4 nights 23.2% 5+ nights = 21.4% 0 = 3.6 nights		
Overnight Lodging	Nearby lodging 20.0% Nearby bed & breakfast 10.0% Nearby campground 40.0% Friends/relatives 30.0%	Nearby lodging 33.1% Nearby bed & breakfast 21.6% Nearby campground 31.7% Friends/relatives 1.4% Other 12.2%		
Group Composition & Size	Alone 42.9% Family 34.6% Family & friends 7.7% Friends 12.2% Club/organized group 1.9% Other 0.6% 0 = 4.0 people	Alone 29.8% Family 36.1% Family & friends 8.1% Friends 16.9% Club/organized group 5.7% Other 0.3% 0 = 3.8 people	Alone 76.5% Family 17.6% Family & friends 5.9% 0 = 2.6 people	Alone 10.7% Family 21.4% Family & friends 10.7% Friends 57.1% 0 = 4.1 people
Average Distance	0 = 4.1 miles	0 = 35.0 miles	0 = 4.1 miles	0 = 12.6 miles

Measures of Satisfaction

As discussed in the introduction, providing high-quality user experiences is a primary goal of natural resource recreation providers, sometimes a daunting task in areas of shared use. A multiplicity of factors can and do impact visitor experiences and the ability to derive satisfaction from them. Visitors' perceptions of crowding, perceptions of safety, perceptions of resource impacts, and conflicts with other users can lead to experiential changes (ie., modified behavior for coping with negative changes in experience) and possible user displacement (the exchange of dissatisfied users with more tolerant users; the dissatisfied users choose to visit a different area) (Peine, Jones, English & Wallace, 1999). Because of these factors, determining success of provision can be difficult, particularly when asking users to quantify a qualitative experience. To compensate for this difficulty, a series of questions relating to visitor satisfaction, perceptions of safety, perceptions of crowding, and encounters with other users was asked, each in an attempt to provide additional information regarding visitors' experiences while using the Katy Trail. Visitors' perceptions of safety and crowding as well as their encounters with other users will be discussed in further detail. The following is a summary of the questions specifically relating to visitors' satisfaction with their Trail visits.

Overall Satisfaction

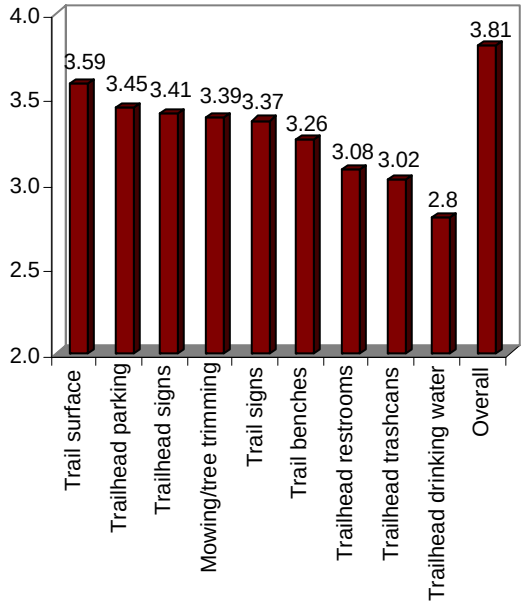
When asked how satisfied they were their visit to the Katy Trail, 81.3% of visitors reported they were very satisfied and 18.5% reported they were satisfied with their visit. Less than 1% (0.2%) indicated being dissatisfied with their visit. On a 4.0 scale, with one equaling very dissatisfied and four equaling very satisfied, the average satisfaction score for visitors to the Trail was 3.81. There were no significant ($p<.05$) differences in overall satisfaction between pilot and control section visitors or between visitors to the eight trailheads. Although there was a statistically significant ($p<.05$) difference in overall satisfaction between user types, practical significance is minimal since all satisfaction scores were high: horseback riders (3.93), bicyclists (3.84), runners/joggers (3.78), and walkers/hikers (3.74).

A satisfied Katy Trail user.

Satisfaction with Trail Features

In addition to overall satisfaction, visitors were asked to indicate their level of satisfaction with nine select trail features: trail surface, provision of benches along the Trail, trail signs, mowing and tree trimming along the Trail, trailhead restrooms, trailhead drinking water, trailhead parking, trailhead signs, and trailhead trash receptacles. Using the same scale 4.0 scale, "trail surface" was given the highest satisfaction score (3.59), with other scores ranging from 3.45 (trailhead parking) to 2.8 (trailhead drinking water). Figure 13 shows the average scores for the nine features as well as the average overall satisfaction score.

Figure 13. Satisfaction with Katy Trail State Park Features



Pilot and Control Section Visitors

Differences in satisfaction between visitors to the two sections did exist. Pilot section visitors were significantly ($p<.01$) more satisfied with trailhead restrooms (3.16), trailhead drinking water (3.02), and trailhead parking (3.5) than control section visitors (2.94, 2.43 and 3.36 respectively). These differences also occurred at individual trailheads. Obviously, visitors who were surveyed at trailheads that provided restrooms and drinking water were significantly more satisfied than visitors at trailheads without restrooms. Table 7 compares, between trailheads, the satisfaction scores of variables showing significant difference ($p<.01$).

Table 7. Differences in Trailhead Satisfaction Scores

	Trail benches	Trailhead restrooms	Trailhead drinking water	Trailhead parking	Trailhead trashcans
Boonville	3.43	2.79	2.31	3.43	2.72
Pilot Grove	3.11	3.23	2.79	3.37	3.25
Clifton City	2.76	2.91	2.36	3.21	3.21
Griessen Road	3.15	3.11	2.48	3.25	3.11
Sedalia Fairgrounds	3.09	2.92	2.91	3.35	2.99
Green Ridge	3.34	3.26	2.97	3.61	3.23
Windsor	3.37	3.32	3.22	3.59	3.26
Calhoun	3.31	3.22	3.00	3.52	2.83
Overall	3.26	3.08	2.80	3.45	3.02

Info Depot at Calhoun trailhead.

During the study period, not all of the trailheads offered restroom facilities and drinking water, contributing to the lower satisfaction scores for these trail features. During the first year of study, Pilot Grove trailhead was the only trailhead with a permanent restroom facility and water fountain; pit latrines were provided at the other trailheads, although Sedalia fairgrounds also provided a water spigot. The pit latrines at Griessen Rd. and Sedalia fairgrounds were later removed. Construction of restroom facilities and "Info Depots" at each of the trailheads (exluding Griessen Rd. and Sedalia fairgrounds) was begun during the study period and has only recently been completed (S. Klenc, personal communication, July 30, 2002). As construction of trailhead facilities neared completion, a corresponding increase in satisfaction scores occurred (Table 8). With the completion of the Sedalia Depot trailhead, Griessen Rd. and Sedalia fairgrounds are no longer designated trailheads and will not offer restroom facilities; the fairgrounds will continue to provide equestrian parking and access to the Trail (S. Klenc, personal communication, July 30, 2002).

Table 8. Differences in Satisfaction Scores Between Study Years

	Trailhead restrooms ($p<.01$)	**Trailhead drinking water** ($p<.001$)	**Trailhead trashcans** ($p<.05$)
First Year	2.97	2.56	3.00
Second Year	3.05	2.97	2.85
Third Year	3.31	3.20	3.18
Overall	3.08	2.80	3.02

User Types

There were also significant differences in satisfaction ratings between the four user types. Table 9 compares the differences in satisfaction scores between user types. Equestrian users were significantly ($p<.01$) more satisfied with trail surface, mowing and tree trimming, trailhead restrooms, trailhead drinking water, trailhead parking, and trailhead trash receptacles than the other three user groups. These differences may be accounted for by the differences in amenity provision at the eight trailheads during the study period, but may also be accounted for by the greater satisfaction experienced by horseback riders in general due to their being allowed to use the Trail.

Table 9. Differences in Trailhead Satisfaction Scores Between User Types

	Trail surface	Mowing/tree trimming	Trailhead restrooms	Trailhead drinking water	Trailhead parking	Trailhead trashcans
Walker/hiker	3.63	3.27	2.67	2.47	3.37	2.71
Bicyclist	3.53	3.44	3.21	2.90	3.46	3.14
Runner/jogger	3.67	3.12	2.89	2.00	3.31	2.73
Equestrian user	3.93	3.67	3.45	3.42	3.78	3.33
Overall	3.59	3.39	3.08	2.80	3.45	3.02

Performance Measures

Trail users were asked to rate the performance and importance of four select Trail attributes: being free of litter and trash, having clean restrooms, providing access for persons with disabilities, and being safe. Performance scores were based on a 4.0 scale, with one equaling poor and four equaling excellent. Importance scores were also based on a 4.0 scale, but with one equaling very unimportant and four equaling very important. Table 10 lists the scores of these attributes.

Table 10. Mean Performance & Importance Scores for Trail Attributes

Attribute	Mean Performance Score	Mean Importance Score
A. Being free of litter/trash	3.56	3.76
B. Having clean restrooms	3.18	3.70
C_1. Disabled accessibility	3.40	3.23
C_2. Disabled accessibility	3.30	3.60
D. Being safe	3.57	3.80

C_1 = All visitors
C_2 = Disabled visitors

Table 11. Differences in Performance Ratings Between User Types

	Being free of litter/trash	Having clean restrooms	Being safe
Walker/hiker	3.39	2.77	3.47
Bicyclist	3.64	3.33	3.60
Runner/jogger	3.39	2.50	3.65
Equestrian user	3.69	3.40	3.79
Overall	3.56	3.18	3.57

Pilot and Control Section Visitors

A comparison of pilot and control section visitors indicated a significant difference ($p<.001$) in the performance score for restroom cleanliness, with pilot section visitors rating this feature significantly higher (3.35) than control section visitors (2.93). Again, this difference may be due to the difference in type of restroom facility provided at each of the trailheads. For instance, visitors to the Pilot Grove trailhead gave restroom cleanliness a significantly ($p<.001$) higher rating (3.48) than visitors to the Boonville (2.69), Clifton City (2.81), and Griessen Rd. (3.29) trailheads. Performance ratings for restroom cleanliness also increased significantly ($p<.001$) from the first year of study to the third year of study (3.06, 3.23 and 3.42 for the first, second and third years, respectively), suggesting that visitors have a negative perception of pit latrines regardless of their cleanliness.

User Types

Equestrian users and bicyclists gave significantly ($p<.001$) higher performance ratings regarding the Trail being free of litter and trash and having clean restrooms than walkers/hikers and runners/joggers. A significant ($p<.05$) difference also existed in the performance rating of trail safety between user types. Trail safety is an important issue and will be discussed in further detail in the following section. Table 11 compares differences in performance ratings between user types.

Importance-Performance Measures

The Importance-Performance (I-P) Analysis approach was used to further analyze visitors' rating of the performance and importance of the four trail attributes. Both the mean performance and mean importance scores were plotted on an I-P Matrix to illustrate the relative performance and importance of the attributes by trail visitors. The I-P Matrix is divided into four quadrants to provide managers with a guide to aid in possible management decisions. For example, the upper right quadrant is labeled "high importance, high performance" and shows attributes that are

important to visitors and also rate high in performance, indicating to managers that that visitors' expectations are being met relative to the importance placed on those attributes. The upper left quadrant is labeled "high importance, low performance" and indicates those attributes that visitors feel are important but also feel that performance is not satisfactory, suggesting a concentration or redirection of efforts to these attributes. The lower right quadrant is labeled "low importance, high performance" and lists those attributes that are not as important to visitors and exceed their expectations in performance. Efforts in this area could be redirected to attributes with higher importance. The lower left quadrant is labeled "low importance, low performance" and shows those attributes that have low priority with visitors and whose performance levels at least meet expectations relative to their importance. Figure 14 shows the I-P Matrix for visitors overall, Figure 15 shows the I-P Matrix for pilot and control section visitors, and Figure 16 shows the I-P Matrix for the four user types.

Figure 14. Importance-Performance Matrix of Trail Attributes

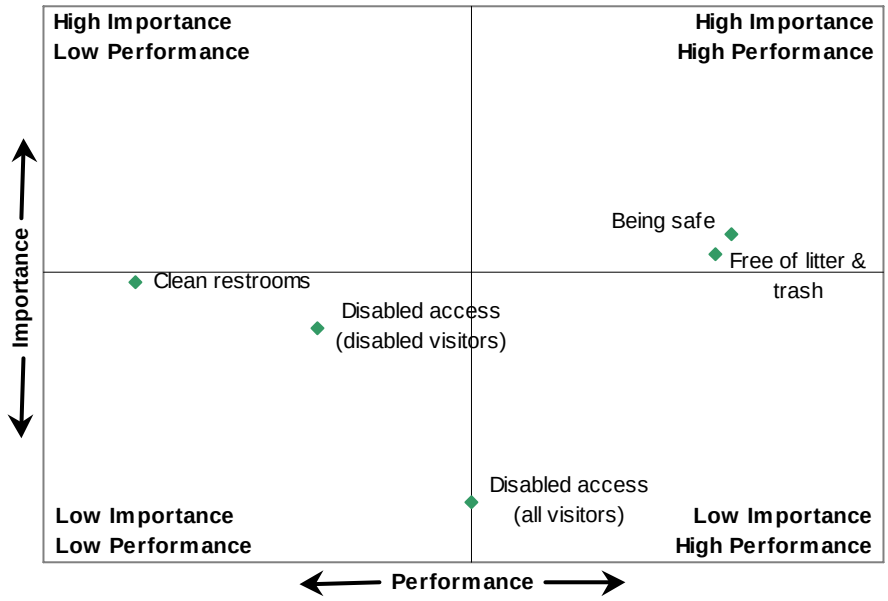


Figure 15. Importance-Performance Matrix of Trail Attributes by Section

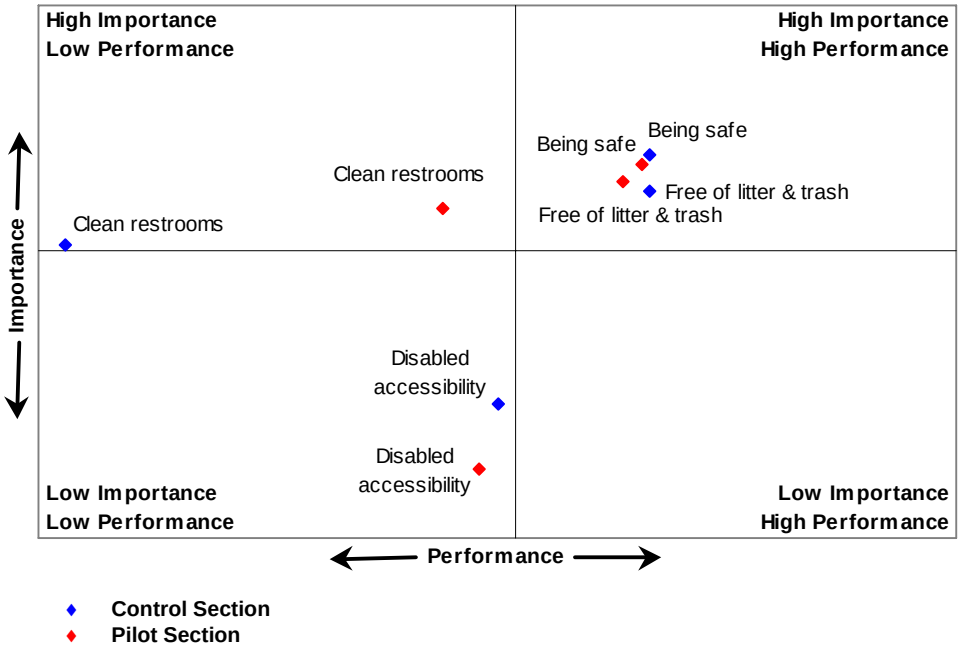
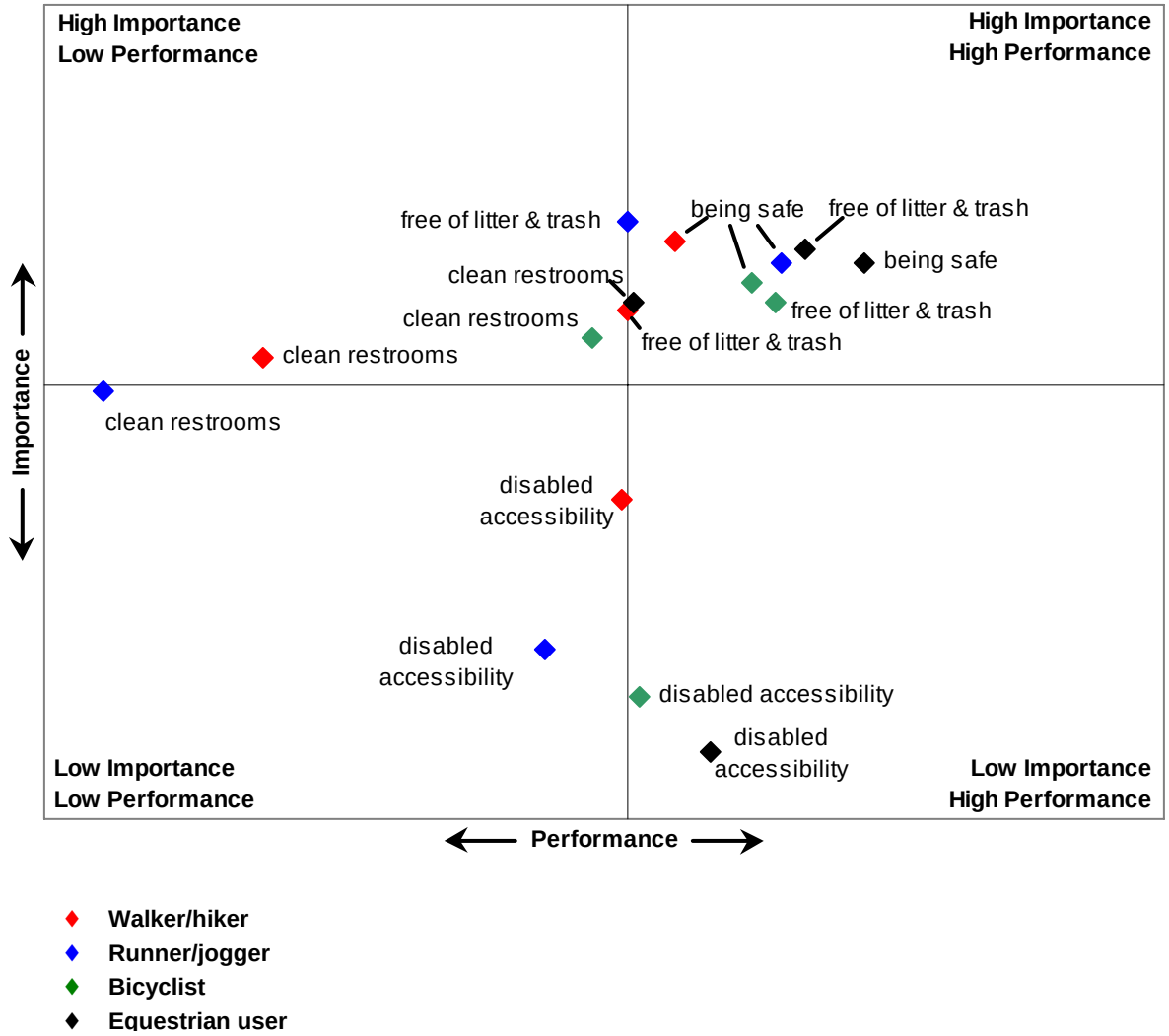


Figure 16. Importance-Performance Matrix of Trail Attributes, by User Type



Trail Safety

Of the three primary challenges to managers of multiple-use areas (providing quality user experiences, maintaining user safety, and protecting the natural resources), maintaining user safety is perhaps the single most important and most difficult management challenge faced by trail managers. Unsafe situations or conditions caused by other trail users can act as goal interference in preventing trail visitors from achieving quality trail experiences. This goal interference due to safety issues is a frequent source of conflict among trail users. Numerous threats to user safety can occur on trails: collisions and near misses among users; reckless and irresponsible user behavior, including poor user preparation and judgement; unsafe conditions related to trail use (e.g., deep ruts); unsafe conditions not related to trail use (e.g., obstacles, weather, etc.); poor trail design, construction, maintenance or management; and other hazards such as wildlife encounters and crime (Moore, 1994). Because of the importance of providing for user safety, Katy Trail managers were particularly interested in determining how visitors perceive trail safety. Trail users were asked to rate safety for performance on an excellent to poor rating scale. For those visitors not giving an excellent safety rating, these visitors were then asked to describe what influenced their rating. Finally, visitors were asked to identify which of seven select safety features would most increase their feeling of safety on the Katy Trail.

Overall, safety was given the highest performance rating and the highest importance rating of the four trail attributes that visitors were asked to evaluate (see Table 10 and Figure 15). In fact, 61.2% of visitors gave safety an excellent rating and 35.4% gave it a good rating. There were no differences in safety ratings between pilot and control visitors, nor were there differences in ratings between the eight trailheads. There were differences, however, between user types. Equestrian users gave safety a significantly higher ($p<.05$) rating (3.79) than runners/joggers (3.65), bicyclists (3.60), and walkers/hikers (3.47). These differences in safety may be due, in part, to the significantly ($p<.001$) greater percentage of runners/joggers (76.5%), walkers/hikers (42.9%), and bicyclists (29.8%) who visited the Trail alone when compared to the percentage of horseback riders who visited the Trail by themselves (10.7%). There was also a significant ($p<.05$) difference in the safety ratings of weekend visitors when compared to weekday visitors. Weekday visitors gave safety a significantly ($p<.05$) higher rating (3.65) than weekend visitors (3.53), although both ratings are high. Weekday visitors may encounter Katy Trail staff more frequently than weekend visitors, thus contributing to an increased feeling of safety. There were no differences in safety ratings between male and female visitors, nor were there differences between male and female visitors and whether they traveled alone or with a group while on the Trail.

Of those visitors not rating safety excellent (38.8%), over half (52.3%) noted what influenced their rating. Their comments were grouped into 10 categories and are shown in Figure 17. A list of the safety comments are provided in Appendix D. Twenty percent (20.2%) of the visitors either had no reason for not giving safety an excellent rating or who felt that no place could be perfect. Almost 19% (18.6%) commented on the remote and isolated nature of the Trail, while 16.1% commented on natural risk factors and trail conditions related to trail location, design, and use. Table 12 compares the percentage of safety comments by user type.

Figure 17. Comments from Visitors Not Rating Trail Safety Excellent

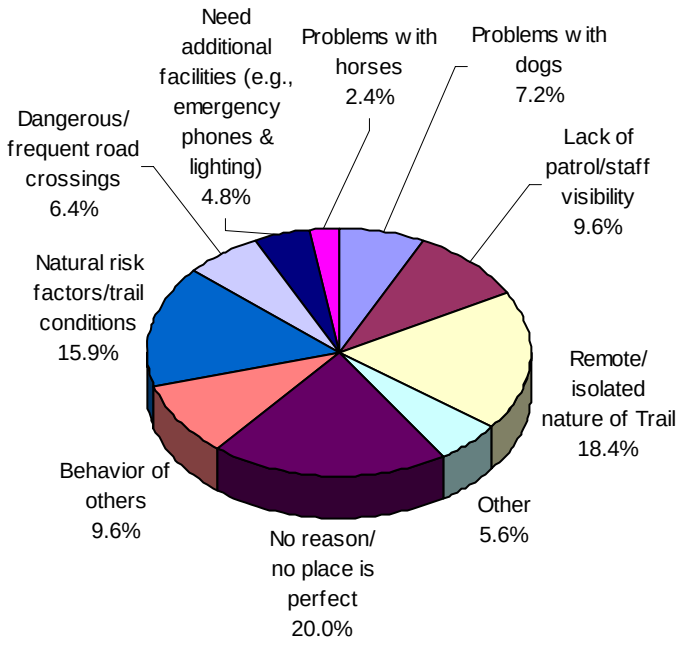
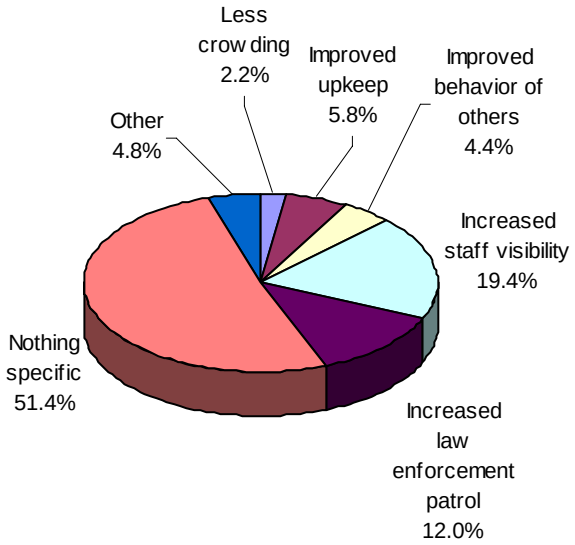


Table 12. Safety Comments by User Type

	Walker/hiker		Bicyclist		Runner/ jogger		Horseback rider	
	Freq.	**%**	**Freq.**	**%**	**Freq.**	**%**	**Freq.**	**%**
No reason/don't know, no place is perfect	9	27.3%	16	21.9%			1	25.0%
Remote/isolated nature of Trail	6	18.2%	13	17.8%			1	25.0%
Natural risk factors &/or trail conditions	2	6.1%	10	13.7%	1	25.0%	2	50.0%
Behavior of others	2	6.1%	9	12.3%	1	25.0		
Lack of patrol by law enforcement/staff	4	12.1%	6	8.2%	1	25.0%		
Problems with dogs	4	12.1%	5	6.8%				
Dangerous/frequent road crossings	1	3.0%	6	8.2%				
Need additional facilities (e.g. phones & lighting)	2	6.1%	3	4.1%	1	25.0%		
Problems with horses			2	2.7%				
Other	3	9.1%	3	4.1%				
Total	**33**	**100.0%**	**73**	**100.0%**	**4**	**100.0%**	**4**	**100.0%**

Visitors were given a list of seven attributes and were asked to indicate which of the seven would most increase their feeling of safety at KTSP. Although instructed to select only one attribute, many visitors selected more than one; consequently, 501 responses were given by 463 respondents. Figure 18 shows the percentage of responses given by visitors. Although over half (51.5%) felt that nothing specific would increase their feeling of safety, 19.4% felt that increased visibility of park staff and 12% felt that increased law enforcement patrol would increase their feeling of safety while using the Trail.

Figure 18. Percentage of Safety Attributes Chosen by Visitors



To determine if visitors' perceptions of safety affected their satisfaction and performance ratings, responses were divided into two groups based on how they rated the Katy Trail on being safe. Group 1 was composed of those who felt that trail safety was excellent; group 2 included those visitors who did not give trail safety an excellent rating. Group 1 was significantly ($p<.001$) more satisfied overall than group 2, with an overall satisfaction score of 3.93 compared to 3.62. Group 1 also had significantly ($p<.001$) higher ratings for all nine of the satisfaction features and for all four of the trail attributes when compared to the ratings given by group 2. **Cautionary note: while these results may indicate that visitors' perceptions of safety do in fact impact their ability to derive satisfaction from their experiences, it would be premature to assume that satisfaction ratings are solely attributable to safety ratings. For example, the safety comments of visitors give some indication that a segment of visitors do not give the highest scale rating to *anything.* Additionally, our research utilizes the highest segmentation of safety differentiation, i.e. excellent versus not excellent.**

Crowding and Conflict

Two of the most serious threats to quality trail experiences on multiple-use trails are crowding and conflict between users (Moore, 1994). Crowding is a perceptual construct not always explained by the number or density of other users in an area. In other words, the feeling of being crowded is a subjective judgement on the part of an individual that there are too many other users in a particular recreation area regardless of whether there are, in fact, too many people (Moore, 1994). Expectations of visitor numbers, discrepancies between expected and actual encounters, behavior of other visitors, types of encounters, size and proximity of groups encountered, visitors' perception of resource degradation, and visitors' attitudes and experience levels all play a significant role in crowding perceptions (Armistead & Ramthun, 1995; Moore, 1994; Peine et al., 1999). Closely related to and sometimes indistinguishable from crowding, conflict is also a perceptual or subjective state that does not always require actual contact to be present in the mind of a visitor. Much research has been conducted on the issue of conflict in recreational areas and Moore (1994) provides an excellent review and synthesis of the literature related to user conflict. He identified several common themes or causes of conflict among trail users, five of which are briefly summarized below.

- **Activity specialization and level of technology** – intensity of participation, status, range of experience, and different levels of technology use can all create situations rife with conflict. For instance, experienced mountain bike users may disregard and intimidate novice users. Walkers/hikers may resent bicyclists as "high-tech" invaders who are faster and more mechanized, creating a feeling of vulnerability.

- **Asymmetrical conflict** – many times, feelings of conflict are one-way and not reciprocated between different user types. For example, walkers/hikers may dislike encountering horseback riders but horseback riders are neutral in attitude regarding their encounters with walkers/hikers. In general, trail users don't mind encounters with the same user types, but dislike meeting user types that are faster and more mechanized than they are or that pose a potential safety hazard (e.g., horseback riders may dislike encounters with walkers/hikers and their dogs for fear the dogs may bark and spook the horses).

- **Differing environmental attitudes and perceptions** – users who view the environment as an integral part of the experience are more susceptible to conflict than users who see the environment as just a setting for their activity. Users who differ in terms of the importance they give to "conquering" the environment are likely to experience conflict as well.

- **Seeing others as different** – users experiencing conflict may perceive others to be different from themselves in terms of background, lifestyle, feelings about the environment, activities, etc. Frequent repeat visitors also often develop place attachment, creating a sense of ownership and tradition that can be upset by new or different user types. One negative contact between user types can lead some sensitive users to assume that *all* encounters with "those other" user types will be negative. Tolerance levels for others are very dependent upon previous conflict and personal norms.

- **Violation of norms** – individuals and groups with different standards of behavior and expectations of how others should behave may often be in conflict with one another. The strength of the norm violated will most likely influence the magnitude of the conflict.

In order to determine what, if any, impacts occur when encountering other users on the Trail, Katy Trail visitors were asked a series of questions related to crowding and visitor encounters. The following nine-point scale was used to determine visitors' perceptions of crowding:

1	2	3	4	5	6	7	8	9
Not at all Crowded		Slightly Crowded			Moderately Crowded			Extremely Crowded

Visitors' overall mean response to this question was 1.2. Ninety percent (89.5%) of the visitors to the Trail did not feel crowded at all (selected 1 on the scale) during their visit. Only 10.5% of visitors felt some degree of crowding (selected 2-7 on the scale); the majority (72.3%) of the visitors who indicated some degree of crowding selected 2 on the scale. Visitors who indicated they felt crowded were also asked to specify where they felt crowded. During the entire three years of study, only 6 visitors (9.8% of those who indicated feeling crowded) responded to this question. For a list of their responses, see question 14 in Appendix F. There were no differences in crowding between pilot and control section visitors, between weekend and weekday visitors, or between visitors to the eight trailheads. Although a significant ($p=.052$) difference did exist in crowding scores between the four user types, no practical significance existed since all scores were low: runners/joggers (1.1), bicyclists (1.1), walkers/hikers (1.2), and horseback riders (1.5).

In addition to crowding, Katy Trail visitors were asked to indicate how many times they expected to encounter the following user groups during their visit to the Trail: walkers/hikers, walkers/hikers with dogs, bicyclists, runners/joggers, and horseback riders. Visitors were also asked to indicate

their actual encounters with those user groups, to rate those encounters, and to describe any negative encounters. Overall results indicate that, in general, the majority of Katy Trail encounters were equal to or less than expected and were characterized as either positive or neutral experiences. Figure 19 provides a graphical representation comparing visitors' actual encounters by their expected encounters and includes a pie chart showing the percentage of visitors who encountered other users equal to their expectations, for the following categories: 0 visitors, 1-3 visitors, 4-6 visitors, 7-9 visitors, and 10+ visitors. Also included are the percentages of visitors encountering horseback riders equal to their expectations. Notable is the percentage (50.9%) of visitors who expected and encountered no other visitor. Table 13 lists the percentages of visitors rating their encounters with other users.

Figure 19. Actual Encounters by Expected Encounters

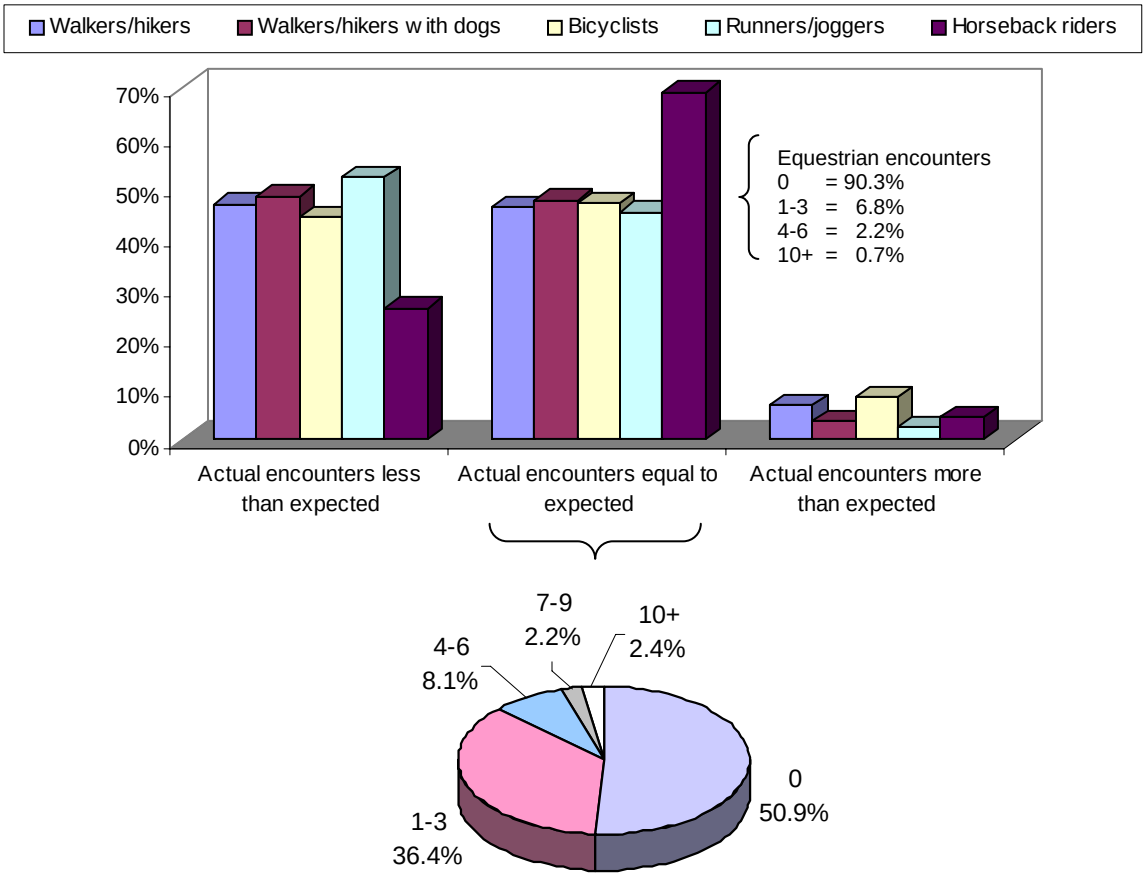


Table 13. Percentage of Visitors Rating Their Encounters with Other Users

	Enjoyed		Didn't mind		Disliked		Not applicable[+]	
	freq.	percent	freq.	percent	freq.	percent	freq.	percent
Encounters with walkers/hikers	175	43.4%	108	26.8%	1	0.2%	119	29.5%
Encounters with walkers/hikers with dogs	67	20.9%	66	20.6%	3	0.9%	184	57.5%
Encounters with bicyclists	212	50.0%	110	25.9%	2	0.5%	100	23.6%
Encounters with runners/joggers	62	20.7%	48	16.0%			190	63.3%
Encounters with horseback riders	25	9.0%	26	9.3%	5*	1.8%	223	79.9%
Total	**541**	**31.3%**	**358**	**20.7%**	**11**	**0.6%**	**816**	**47.3%**

[+] The majority (94.8%) of visitors giving a "not applicable" rating were those visitors who did not encounter other users.

* One of the visitors that indicated disliking an encounter with horseback riders didn't actually encounter any horseback riders during their visit. Three of those visitors that reported disliking their encounters with horseback riders encountered between 1-3 horseback riders during their visit. The final visitor who reported disliking an encounter indicated encountering between 4-6 horses. All were bicyclists.

In responding to the question asking visitors to describe their negative encounters, 19 visitors responded to this question. Their comments are provided in Appendix F, question 18. Although only five visitors rated their encounters with horseback riders as a negative experience (one of whom did not actually encounter any horses), seven (36.8%) of the comments were negative comments about equestrian use on the Trail. Only two of those comments related to specific encounters with equestrian riders. The other five comments were from visitors concerned with damage to the trail surface, the potential hazards of horses encountering bicyclists, and encountering horse manure on the Trail. Other comments included encounters with bicyclists (5 comments, 26.3%), encounters with dogs (5 comments, 26.3%), and encounters with users whose behavior made others feel uncomfortable (2 comments, 10.5%).

Visitor Count Estimates and Comparisons

Because knowing intensity and type of use is helpful in assessing potential for conflict as well as assessing impacts on the natural resources (Moore, 1994), it was a goal of this study to provide visitor count estimates for both the pilot and control sections. Electronic visitor counters were located at each of the trailheads, with dual counters placed at the trailheads on the pilot section to account for both equestrian use and other uses. Initial calibration of the counters on the pilot section, however, resulted in suspect data. Technical difficulty with the equipment continued to be a problem throughout the three years of study, preventing utilization and analysis of counter data. Because of the Trail's linear design and multiple points of access, any method for collecting visitation data would provide rough estimates at best. In addition to using visitor counters, two other methods have been proposed for collecting visitation data on the Katy Trail (Fink, 1998): user registration and observation counts. Both have minimal cost association and would be acceptable alternatives in the interim.

Additional Visitor Comments

Visitors were given the opportunity to write any additional comments or suggestions on how DNR could make their experience on the Katy Trail a better one. Thirty-one percent (31.3%) of the visitors responded to this opportunity with 219 comments. Their comments and suggestions were grouped by similarities into 15 categories, which are listed in Table 14. Table 15 compares percentages of comments between user types. Appendix E provides a copy of visitors' comments and suggestions.

Table 14. Additional Comments and Suggestions from Visitors

Category	Frequency	Percent
General positive comments	55	25.1%
Provide additional facilities	53	24.2%
Negative comments about equestrian use	14	6.4%
Comments about trail maintenance	14	6.4%
Better dissemination of information regarding Katy Trail and surrounding communities	11	5.0%
Provide camping along Trail	11	5.0%
Complete Trail to Kansas City/through Sedalia	10	4.6%
Provide better signage	9	4.1%
Positive/neutral comments about equestrian use	8	3.7%
Remove horse manure from Trail	5	2.3%
Comments about patrol/increasing patrol	5	2.3%
Keep restrooms open during off-season	5	2.3%
Pave Trail	4	1.8%
Negative comments about dogs	3	1.4%
Other	12	5.5%
Total	**219**	**100.0%**

Table 15. Comparison of Comments by User Type

Category	Walker/hiker	Bicyclist	Runner/jogger	Equestrian User
General positive comments	21.8%	21.3%	20.0%	11.1%
Provide additional facilities	30.9%	18.5%	40.0%	33.3%
Negative comments about equestrian use	5.5%	7.4%	20.0%	
Comments about trail maintenance	12.7%	4.6%		
Better dissemination of information regarding Katy Trail & surrounding communities	5.5%	6.5%		
Provide camping along Trail	1.8%	8.3%		
Complete Trail to Kansas City/through Sedalia	1.8%	5.6%		
Provide better signage	3.6%	4.6%		11.1%
Positive/neutral comments about equestrian use	3.6%	2.8%		33.3%
Remove horse manure from Trail	5.5%	1.9%		
Comments about patrol/increasing patrol	3.6%	3.7%		
Keep restrooms open during off-season		4.6%		
Pave Trail		3.7%		
Negative comments about dogs	1.8%	0.9%		
Other	1.8%	5.6%	20.0%	11.1%

Trail Surface and Support Structure Assessment

Because minimizing the environmental impacts of use is of such primary importance for resource managers, a considerable amount of trail manager time and resources is spent in this effort. Much research has been conducted on trail use and its impacts on the natural resources; most of the research, however, has focused on wilderness trails (Kuss, Graefe & Vaske, 1990). Nevertheless, there are generalizations that can be made regarding use and its impacts regardless of trail type. There is a multiplicity of factors influencing the amount of resource damage caused by trail use (Moore, 1994), several of which are listed below:

- soil characteristics
- slope of surface and topography
- quality of trail design and construction
- level of maintenance
- type of use
- level of use
- concentration or dispersal of use
- season of use and weather

Other generalizations include: trail biking causes more damage than walking/hiking; horseback riding causes more damage than walking/hiking and bicycling; rate of degradation generally decreases after a certain amount of damage has already occurred (this has important implications for whether to concentrate or disperse use); and finally, wet trails are more susceptible to damage than dry trails (Kuss et al., 1990; Moore, 1994). Because the Katy Trail was designed and constructed specifically for high levels of use, much of the resource damage that occurs on wilderness trails is minimized on the Katy Trail. Damage to the resources can still occur, however, and this damage can lead to feelings of crowding and conflict in trail users. For this reason and because protecting the natural resources is a primary goal of Katy Trail managers, an objective of this study was to develop trail indicators that would assess the relationship between resource impacts and use levels, use types, and trail conditions. Specifically, trail surface conditions were monitored for obstructions, ruts, equestrian manure, and any other noticeable problems. Trailhead conditions were monitored for litter, vandalism, and other damage to the trailhead including damage to the parking area and damage to structures such as restrooms, signs and gates, and other structures.

Trail Surface Assessment

Overall, the majority (88.2%) of trail surface observations indicated no noticeable problems. Only 11.8% of the observations indicated noticeable problems, including vehicle ruts and tracks (37.8%), erosion (33.3%),

horse tracks (15.6%), litter and broken glass (4.4%), downed branches (4.4%), and other damage (4.4%). Most (77.8%) of these instances of trail surface damage were observed in the pilot section with only 22.2% observed in the control section. Table 16 lists type of trail surface damage by section.

Table 16. Trail Surface Assessment by Section

	Control		Pilot	
	Frequency	Percent	Frequency	Percent
Vehicle ruts/tracks	5	50.0%	12	34.3%
Erosion	1	10.0%	14	40.0%
Horse tracks	2	20.0%	5	14.3%
Downed branches			2	5.7%
Litter/glass	1	10.0%	1	2.9%
Other	1	10.0%	1	2.9%
Total	**10**	**100.0%**	**35**	**100.0%**

Trail surface was also monitored for presence of horse manure. Not surprisingly, 96.7% of the instances of horse manure were recorded in the pilot section, although most (93.1%) of these observations indicated only slight amounts of manure.

Trailhead Area Assessment

Seventy-three percent (72.9%) of the trailhead area observations indicated no noticeable problems, while 27.1% of the observations included such noticeable problems as vehicle ruts and potholes (27.6%), litter and/or broken glass (17.2%), overgrown weeds/grass (12.1%), vandalism (9.5%), equestrian manure (8.6%), and other (16.4%) problems such as damage due to construction at or near the trailhead. Over half (56.9%) of these observations were recorded on the pilot section, while 43.1% were recorded while observing the control section. Table 17 compares the percentages of trailhead observations between pilot and control sections.

Table 17. Trailhead Area Assessment by Section

	Control		Pilot	
	Frequency	Percent	Frequency	Percent
Vehicle ruts and potholes	20	40.0%	12	18.2%
Litter and/or broken glass	12	24.0%	8	12.1%
Vandalism			11	16.7%
Equestrian manure			10	15.1%
Overgrown weeds/grass	5	10.0%	9	13.6%
Downed branches	2	4.0%		
Horse tracks	2	4.0%	2	3.0%
Dog waste	1	2.0%	2	3.0%
Erosion			1	1.5%
Other	8	16.0%	11	16.7%
Total	50	100.0%	66	100.0%

Maintenance Analysis

An analysis of maintenance requirements for both sections of the Trail was conducted by monitoring maintenance system data provided by trail staff. Table 18 provides a comparison of maintenance hours spent on equivalent tasks for both the pilot and control sections. While a Chi-square test does indicate significant differences ($p<.001$) in the percentages of time spent on the various maintenance tasks between the two sections, differences in percentage of time spent on trail and trailhead surface maintenance (highlighted) are minimal, suggesting that allowing multiple uses on the trail has not resulted in a dramatic operations impact.

Table 18. A Comparison of Katy Trail Maintenance Hours & Percentages for the Pilot and Control Sections

	Control		Pilot	
	Frequency	Percent	Frequency	Percent
Cleaning & trash pickup	760	12.9%	342	8.8%
Cyclic maintenance	84	1.4%	99	2.6%
Equipment maintenance	357	6.1%	156	4.0%
Gates & signs	419	7.1%	446	11.5%
Inspection	300	5.1%	134	3.5%
Mowing	806	13.7%	676	17.4%
Repairs	438	7.5%	197	5.1%
Small maintenance & repair	107	1.8%	58	1.5%
Trail surface & edge repair	436	7.4%	441	11.4%
Trail surface – water/flood	105	1.8%	78	2.0%
Trailhead surface, including water/flood repair	160	2.7%	57	1.5%
Vegetation trimming, weed eating, & spraying	1706	29.0%	1141	29.4%
Other (i.e., culverts & ditching; landscaping; pools, wells & lagoons)	197	3.4%	57	1.5%
Total	**5875**	**100.0%**	**3882**	**100.0%**

Conclusion

As trail use increases and grows in diversity (as is already occurring, suggested by the increase in repeat visitation, the growth in out-of-state visitors, and the increase in visitors traveling the whole length of the Trail and staying overnight), the potential for user conflict and resource impact also grows. However, results from the three years of study seem to indicate minimal social and physical impacts. The high satisfaction and performance ratings given by users, their low crowding scores and few reported negative encounters all serve as positive social indicators confirming the compatibility of equestrian use on this particular section of the trail, provided use frequency and intensity remain at or near current levels. Additionally, the high satisfaction ratings given to trail surface

reinforce trail surface and trailhead area assessments, which show very little surface damage. Visitors gave trail surface satisfaction a mean rating of 3.59, the highest rating given to any of the satisfaction variables. Equestrian use not withstanding, there were no statistical differences in satisfaction ratings between pilot and control section visitors. In fact, ratings for satisfaction of trail surface were slightly higher for pilot section visitors (3.60) than control section visitors (3.55).

Of concern, however, are the ten (4.6%) additional comments provided by visitors that did indicate some dissatisfaction regarding trail surface conditions, most of the which suggested that equestrian use on the Trail was negatively impacting trail surface. For instance, one walker commented, "Do not like horses on the trail, especially after a rain when the trail is soft." A bicyclist reported, "I did NOT like the vibration on my bicycle from the horse hoof tracks." A runner/jogger remarked, "I think allowing horses on the trail is a mistake because it degrades the surface of the earth." These are valid comments, particularly since surface and trailhead assessments did indicate some damage, most often after inclement weather. However, not all of the damage was created by equestrian use; observations indicated some damage by mountain bikes, consistent with literature findings that suggest trail biking can also cause significant damage, particularly after inclement weather. Nonetheless, regular maintenance by trail staff during the study period lessened the severity of these instances. The ability of staff to mitigate trail damage without significant increase in maintenance requirements suggests the feasibility of allowing equestrian use on other sections of the Trail that possess similar physical and use characteristics to the pilot section.

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Appendix A. Katy Trail State Park Visitor Survey

KATY TRAIL STATE PARK

The Missouri Department of Natural Resources and the University of Missouri are seeking your evaluation of Katy Trail State Park. This survey is voluntary and completely anonymous. Your cooperation is important in helping us make decisions about managing this trail. Thank you for your time.

1. Is this your first visit to Katy Trail State Park? *(Check only one box.)*
   ☐ yes ☐ no If no, about how many times have you visited the trail in the past year? _____

2. Which trailhead did you use today to enter the Katy Trail? *(Check only one box.)*
   ☐ Calhoun ☐ Griessen Rd. ☐ did not use a trailhead
   ☐ Windsor ☐ Clifton City ☐ other trailhead *(Please specify.)*
   ☐ Green Ridge ☐ Pilot Grove _____
   ☐ Fairgrounds ☐ Boonville _____

3. On this trip, where are you planning on exiting the Katy Trail? *(Check only one box.)*
   ☐ Calhoun ☐ Griessen Rd. ☐ am not exiting at a trailhead
   ☐ Windsor ☐ Clifton City ☐ other trailhead *(Please specify.)*
   ☐ Green Ridge ☐ Pilot Grove _____
   ☐ Fairgrounds ☐ Boonville _____

4. During this visit to the trail, are you staying overnight?
   ☐ yes If yes, how many nights are you staying near the trail during this visit? _____
   ☐ no *(If no, skip to question 6.)*

5. If staying overnight, where are you staying? *(Check only one box.)*
   ☐ nearby campground ☐ nearby community lodging facilities
   ☐ friends/relatives ☐ nearby bed & breakfast
   ☐ other *(Please specify.)* _____

6. With whom are you visiting the trail? *(Check only one box.)*
   ☐ alone ☐ family and friends ☐ club or organized group
   ☐ family ☐ friends ☐ other *(Please specify.)*
   _____

7. Which recreational activities are you engaging in during this trail visit? *(Check all that apply.)*
   ☐ biking ☐ running/jogging ☐ picnicking
   ☐ walking ☐ horseback riding ☐ attending special event
   ☐ hiking ☐ viewing wildlife ☐ other *(Please specify.)*
   ☐ backpacking ☐ studying nature _____

8. What is the average distance you normally travel on the trail during a visit? *(Please specify number of miles.)* _____

9. How satisfied are you with each of the following in Katy Trail State Park? *(Check one box for each feature.)*

		Very Satisfied	Satisfied	Dissatisfied	Very Dissatisfied	Don't Know
a.	trail surface	☐	☐	☐	☐	☐
b.	benches along trail	☐	☐	☐	☐	☐
c.	signs along trail	☐	☐	☐	☐	☐
d.	mowing/tree trimming	☐	☐	☐	☐	☐
e.	trailheads					
	- restrooms	☐	☐	☐	☐	☐
	- drinking water	☐	☐	☐	☐	☐
	- parking	☐	☐	☐	☐	☐
	- trailhead signs	☐	☐	☐	☐	☐
	- trash receptacles	☐	☐	☐	☐	☐

10. How do you rate Katy Trail State Park on each of the following? *(Check one box for each feature.)*

		Excellent	Good	Fair	Poor	Don't Know
a.	being free of litter/trash	☐	☐	☐	☐	☐
b.	having clean restrooms	☐	☐	☐	☐	☐
c.	access for persons with disabilities	☐	☐	☐	☐	☐
d.	being safe	☐	☐	☐	☐	☐

11. If you did not rate the trail as excellent on being safe, what influenced your rating? _____
    _____

12. Which of the following would most increase your feeling of being safe at Katy Trail State Park? *(Check only one box.)*
    ☐ less crowding ☐ increased law enforcement patrol
    ☐ improved upkeep of facilities ☐ nothing specific
    ☐ improved behavior of others ☐ other *(Please specify.)*
    ☐ increased visibility of park staff _____

13. During this visit, how crowded did you feel? *(Circle one number.)*

1	2	3	4	5	6	7	8	9
Not at all Crowded		Slightly Crowded			Moderately Crowded			Extremely Crowded

14. If you felt crowded on this visit, where did you feel crowded?
    _____

PLEASE TURN SURVEY OVER.

15. About how many times did you expect to encounter the following recreation users today? *(Circle one category for each user type.)*

	Number of Encounters				
	0	1 to 3	4 to 6	7 to 9	10+
a. walkers/hikers	0	1 to 3	4 to 6	7 to 9	10+
b. walkers/hikers with dogs	0	1 to 3	4 to 6	7 to 9	10+
c. bicyclists	0	1 to 3	4 to 6	7 to 9	10+
d. runners/joggers	0	1 to 3	4 to 6	7 to 9	10+
e. horseback riders	0	1 to 3	4 to 6	7 to 9	10+

16. About how many times did you encounter the following recreation users today? *(Circle one category for each user type.)*

	Number of Encounters				
	0	1 to 3	4 to 6	7 to 9	10+
a. walkers/hikers	0	1 to 3	4 to 6	7 to 9	10+
b. walkers/hikers with dogs	0	1 to 3	4 to 6	7 to 9	10+
c. bicyclists	0	1 to 3	4 to 6	7 to 9	10+
d. runners/joggers	0	1 to 3	4 to 6	7 to 9	10+
e. horseback riders	0	1 to 3	4 to 6	7 to 9	10+

17. Please evaluate your encounters with other recreation users during your visit today. *(Circle only one number for each user type.)*

	Enjoyed	Didn't Mind	Disliked	Not Applicable
a. walkers/hikers	1	2	3	4
b. walkers/hikers with dogs	1	2	3	4
c. bicyclists	1	2	3	4
d. runners/joggers	1	2	3	4
e. horseback riders	1	2	3	4

18. If you indicated that you disliked any encounter, what were your reasons?

_____

_____

_____

19. When visiting any state park, how important are each of these items to you? *(Check only one box for each feature.)*

	Very Important	Important	Unimportant	Very Unimportant	Don't Know
a. being free of litter/trash	☐	☐	☐	☐	☐
b. having clean restrooms	☐	☐	☐	☐	☐
c. access for persons with disabilities	☐	☐	☐	☐	☐
d. being safe	☐	☐	☐	☐	☐

20. Overall, how satisfied are you with this visit to Katy Trail State Park?

Very Satisfied	Satisfied	Dissatisfied	Very Dissatisfied
☐	☐	☐	☐

21. What attracts you to using the Katy Trail? *(Check all that apply.)*

☐ convenient location
☐ easy to use
☐ solitude
☐ safety
☐ scenic beauty
☐ historical/cultural aspects
☐ other *(Please specify.)*

_____

_____

22. What is your age? _____

23. Gender? ☐ female ☐ male

24. What is the highest level of education you have completed?

☐ grade school ☐ vocational school ☐ graduate of 4-year college
☐ high school ☐ some college ☐ post-graduate education

25. What is your ethnic origin? *(Check only one box.)*

☐ Asian ☐ African American ☐ Native American/American Indian
☐ Hispanic ☐ Caucasian/White ☐ other *(Please specify.)*

_____

26. Do you have a disability that substantially limits one or more life activities or that might require special accommodations?

☐ no ☐ yes If yes, what disability or disabilities do you have?

27. What is your 5-digit zip code *(or country of residence, if you live outside the U.S.)*? _

_____

28. What is your annual household income?

☐ less than $25,000 ☐ $50,001 - $75,000
☐ $25,000 - $50,000 ☐ over $75,000

29. Please write any additional comments about your park visit or suggestions on how the Missouri Department of Natural Resources can make your experience in Katy Trail State Park a better one.

THANK YOU FOR YOUR HELP.
YOU ARE ALWAYS WELCOME IN MISSOURI STATE PARKS.

Appendix B. Visitor Observation Survey

Katy Trail Visitor Observation

Date_____ Day of Week_____ Time Slot_____
Weather_____ Temperature_____ Trailhead_____

	Survey #'s	# of Adults	# of Children	Type of User	*General Observation on User	Enter/ Exit
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						

* For general observation on users, use the following codes:

equestrian:	walking	hiker/walker, bicyclist, runner/jogger:	passive (slow walking, riding, running
	trotting		
	galloping		active (paced walking, riding, running)

Appendix C. Trail Segment Observation Survey

Date_____
Time Slot_____

Katy Trail Segment Observation

1. Trailhead_____ ☐ east ☐ west

2. Trailhead surface conditions:
☐ no noticeable surface problems
☐ noticeable problems (obstructions, ruts, etc.)
Describe:

Picture? ☐ yes ☐ no

3. Equestrian manure:
☐ none
☐ slight obstruction (very manageable)
☐ notable obstruction (requires user concentration)
Describe:

Picture? ☐ yes ☐ no

4. Trailhead Area:
☐ no significant observable damage/litter (vehicle ruts, tracks, straw, manure etc.
☐ noticeable damage
Describe:

Picture? ☐ yes ☐ no

Appendix D. List of Responses for Safety Comments

Responses to Question #11

If you did not rate the trail as excellent on being safe, what influenced your rating?

No reason/don't know, no place is perfect

Don't know.
Don't know.
Don't know -- haven't been accosted…but?
Experience.
First ride.
Haven't lived here very long.
Have not traveled the trail much.
I don't know whether any place can be rated that safe anymore.
I jog in the early morning. Anyone has access.
I only use for walking/jogging in home area.
I think the trail is safe, don't over do it.
Is any place completely safe?
It's the 90's.
Just the state of life these days.
Never had any problems.
No experience.
No information to base the facts on.
No place is completely safe.
Nothing in particular.
Nothing in particular.
Nothing is excellent.
Nothing special.
There is no such thing as safe in this world.
This is my first experience. It seems fine, but I don't know anything else about it.
What is your criteria for safety?

Remote/isolated nature of Trail

At times I feel uneasy due to surrounding areas--not the trail itself.
Calhoun is secluded.
Distances between "public areas" are too far apart.
Distant from populated areas.
First ride. Remote. With people this trip. Would not ride alone.
I have not seen Rangers patrolling. Somewhat deserted in places.
Isolated.
Isolation.
Just because when I'm alone, there are not others around -- nothing the trail can help!
Just feel unsafe at places. Big dog on trail.
Just in some spots the woods are too thick.
Lonely stretches.
Never had problems but several areas isolated.
Not many people around.

Remote from other people.
Remote nature of the trail.
Seclusion.
Seems desolate sometimes -- what if there is an emergency?
Some parking very isolated with no security.
Some parts are pretty well private and could be dangerous.
Well, anything could happen and it is a long way for help.
Will not walk at night.
You can only be so safe this isolated.
You don't see very many people -- or DNR personnel.

Natural risk factors and/or trail conditions
Along Missouri River, needs barricades in some places.
Around Rocheport, need safety rails around river.
Continuous access along trail.
Culvert areas close to trail.
Fallen objects.
I don't know what you would do about it but the sides are easy to lose your balance on.
Inherent dangers involved with biking.
Intersections, occasional rough spots on trail.
It took awhile to clear the branches in winter.
Pot holes.
Sedalia to Griessen Rd. area very bad. Need bathroom. Route into town is awful.
Soft edge could lead to accidents.
Some ruts; soft spots.
Space between gates too narrow for riders to pass safely.
Steep down grades on some sides, soft shoulder.
Steep slopes.
Surface.
Surface conditions.
The only way to make it incredibly safe is to put railing along the whole thing, which is unnecessary.
Trail drop-off.
Trail is crowned to middle.
Trail slopes to outside edges, making walking uneven.
Walnuts are a hazard for bikers.
When trail intersects at an angle, trimming brush is vital.

Behavior of others
Easy access to people who may not be welcome.
For people of the town (Columbia) they do not know safety rules.
It is not predictable when people with mental problems will be on the trail. I would not like to have a law officer every half mile either.
Kemper Military Academy, snakes, dogs.
Other people.
People are not always predictable.

Some young thugs hang around bridges at Windsor.
Unaware of who might be lurking.
Uncontrolled children and dogs.
Vandalism.
Vandalism to vehicles at trailhead parking.

Lack of patrol by law enforcement/staff
Don't see many officials around.
Golf balls, no patrol, dogs.
I did not see any security.
I have not seen Rangers patrolling. Somewhat deserted in places.
I'm not sure -- I never see police.
Increase visibility of park staff.
Infrequent patrols.
Limited access and no evidence of patrol.
Maybe phones along trail to call for help. More patrol/rangers.
No visible supervision.
Some parking very isolated with no security.
You don't see very many people -- or DNR personnel.

Problems with dogs
Dogs.
Dogs.
Dogs in the country.
Dogs on trail.
Golf balls, no patrol, dogs.
Just feel unsafe at places. Big dog on trail.
Kemper Military Academy, snakes, dogs.
Someone walking with a dog did not control it and it nipped me.
Uncontrolled children and dogs.

Dangerous/frequent road crossings
Better crossings.
Cars on road do not know they are at the trail.
Frequent road crossing.
Intersections, occasional rough spots on trail.
Need warning signs for motorists at crossings.
Some road crossings weren't marked to yield.
Unmarked crossing for cars.

Need additional facilities (e.g. phones & lighting)
If at night, lights needed.
Maybe phones along trail to call for help. More patrol/rangers.
Might have emergency phones every so often.
No emergency phones, etc.; no lights.
Sedalia to Griessen Rd. area very bad. Need bathroom. Route into town is awful.

We could have a couple of other restrooms and something for water.

Problems with horses
Damage from horses: poop, lack of control, rough surface.
Horses do not know trail etiquette.

Other
Golf balls, no patrol, dogs.
Have seen some trash along trail.
I wonder sometimes about snakes.
Kemper Military Academy, snakes, dogs.
Needs finishing.

Appendix E. List of Responses for Additional Comments

Responses to Question #29

Please write any additional comments about your park visit or suggestions on how the Missouri Department of Natural Resources can make your experiences in Katy Trail State Park a better one.

General positive comments

Boonville:
- Enjoy trail.
- Great place.
- It is a wonderful place!
- Love the trail!!
- Loved it!!
- Very good trail.
- Very impressed with all aspects.
- We really enjoy the trail.
- We'll be back.
- Wonderful place.

Pilot Grove:
- I noticed a few downed trees which need to be cleared from the trail. Other than that, it's been really nice.
- I really enjoyed the park. Thank you.
- Thanks!

Clifton City:
- I have been very impressed. Need more water sources.
- Park Ranger Snider was very nice.

Griessen Rd.:
- Enjoyed it. Thanks.
- I'm very happy the state has made this park available.
- This is one of the best things the state has done.

Fairgrounds:
- Great!
- Repair after storms is excellent.
- Trails are great. So glad to have them open. Thank you!!
- I'd come back.
- Keep up good work.
- Combined use with Fairgrounds is a great idea. Expand this. Can't wait for 65 bridge to open.
- Continue or is being done now.
- Enjoy nature!
- Great.
- I'm glad we have this facility.
- Katy Trail is very convenient for my dogs and walking.
- Thanks!!
- Very enjoyable riding.

Green Ridge:
- The Katy Trail State Park is a fantastic resource.

- Camping allowed at trailheads would have made this trip easier -- tough to find places to camp. Drinking water at trailheads would be good! Love the trail -- wished it went to KC!
- Great adventure. Perfect weather, wonderful personalities.
- Thanks for a pleasant afternoon in November.
- Thanks for a safe place for some great exercise.
- Value trails highly. Willing to pay/contribute to upkeep.
- Absolutely loved it -- perfect, today.
- We very much have enjoyed it. While the prairie restoration is good for wildlife, it's terrible for shade.
- Very pleased.

Windsor:

- Great trail!!
- The trail is wonderful.
- We enjoy the Trail. It is a big asset to Missouri and I hope you continue to improve and maintain it.
- Enjoying the trip.
- Keep up the good work on the trail and maybe extend it to Kansas City.
- Enjoy it!
- Very nice trail. A show of law enforcement would help.

Calhoun:

- Great park!
- Great park!
- I like it!
- Very good.
- The trail is wonderful and most people are also. Just a few incooperative people cause some problems.
- Great place to relax and enjoy nature.
- Great! More and clean restrooms.
- Great!
- Please keep it open. It's great!

Provide additional facilities

Boonville:

- Better upkeep of dead trees and brush. Need restrooms and drinking water.
- More restrooms.
- More trash receptacles and drinking fountains would help, especially with older people and children.
- Need a bench closer to entrance for disabled.
- Need additional restrooms
- Need drinking water.
- Need more restrooms.
- Need water fountain.
- The Booneville trail head really needs restroom facilities with drinking fountains.
- Trail needs trash cans at trail heads, better restrooms and fewer signs.
- We need bathroom facilities, drinking fountains/pop machines and trash cans.
- We need restrooms, trash cans along the trail, and a pop machine.

Pilot Grove:
- More sites for water and shelter house for family picnics.
- Provide water at each trailhead.

Clifton City:
- I have been very impressed. Need more water sources.
- Signs with distance to next city and 5 major cities on trail, for people who are going the whole distance. More accessible drinking fountains.

Fairgrounds:
- Bike racks at state fair trailhead.
- Restrooms, benches.
- Want more restrooms, benches, dogs on leashes.
- Some benches would be nice for sitting down while on trail.
- Bike racks at Fairgrounds Trailhead would be helpful.
- Bicycle rack at State Fair Trailhead.
- Add mountain bike trails.
- More benches. More posting of facilities available in towns at trailheads and in brochures.
- As a bike camper, I wish there were showers along the trail.
- I think you should have restrooms closer and a way to get water.
- Need restrooms.
- Need water outlets.
- Needs a water fountain and benches.
- Needs restroom, trash can, benches.
- Sedalia restrooms, water. Take down "trail closed" sign at Clarendon Rd. "Trail closed" sign should be at 3rd St. Finish trail 3rd St. to Engineer St.
- Would like Sedalia to have restrooms and maps entering and leaving Sedalia. Sedalia area needs more maps and rest areas.

Green Ridge:
- More benches between Windsor and Green Ridge.
- More/clean restrooms.
- Camping allowed at trailheads would have made this trip easier -- tough to find places to camp. Drinking water at trailheads would be good! Love the trail -- wished it went to KC!
- Restroom and campgrounds with hot showers.
- Jeff. City -- why as Capitol, cannot have better facilities?
- Need bike racks at rest stops.
- Need bike racks.
- Need primitive campsites as on C&O Canal Path in Maryland. Mowed out areas in right of way every 10 miles with table, pit toilet, and fireside, all free.
- Need to finish Sedalia path. Have more drinking water at stops.
- No water at Clifton City.
- Some porta-potties need to be cleaned more often (McBaine!). More trash receptacles.

Windsor:
- Would like hitching rack for tying horses at 5 ft. high -- would be nice, but not essential. Call me if you wish: Melani Stewart, 240 NW 700, Warrensburg, MO 64093 (660) 747-2993.
- Would like to see a picnic area every so often to take a break on.
- Need trashcans on trail.

- More water fountains!!

Calhoun:

- Build emergency shelters (in the shape of a caboose) for bikers to spend the night. Erect signs telling about the history of the area, flora and fauna. Publish an abbreviated guide to travel that fits in your pocket. Have someone ride a similar trail in Quebec called Le Petit Train du Nord, and compare the similarities and differences. See www.laurentides.com/anglars. On left frame, to Linear Park and click on it.
- Have restroom facilities available for winter riding.
- We love it just as it is except need larger trash receptacles to accommodate use.
- Great! More and clean restrooms
- Horses need to be allowed further on trail. Picnic tables.
- Provide more drinking water.
- Stop cutting down the trees on the sides of the trail. That is one of the best things about the Clinton-Sedalia section. Need water at Calhoun trailhead.

Negative comments about equestrian use

Boonville:

- Horse riding on Boonville bridge is not a good idea.
- Sedalia to Calhoun--horses on trail, unsafe--many horses are very skittish when near bike riders.

Clifton City:

- No horse use.

Fairgrounds:

- Horses are ruining trail surface.
- I think allowing horses on the trail is a mistake because it degrades the surface of the earth.

Green Ridge:

- Do not like horses on the trail, especially after a rain when the trail is soft.
- I do not like the use of brush hogs to trim the trees. Also do not like horses on the trail.
- Don't like horses. Too many ruts. They should clean up their droppings.
- I did NOT like the vibration on my bicycle from the horse hoof tracks.

Windsor:

- No more horses on trails. Damages surface and is unsafe for encounters.
- Please keep horses off the trail. It causes it to be rough.

Calhoun:

- Horses and bikers are not compatible. Horses are slow, unruly and block the trail for bikers.

Comments about trail maintenance

Boonville:

- Better upkeep of dead trees and brush. Need restrooms and drinking water.
- Clean up trashy areas (tires, etc.)
- Trim the dead woods and trees from the trail.

Pilot Grove:

- I noticed a few downed trees which need to be cleared from the trail. Other than that, it's been really nice.

Griessen Rd:
- Poor directional signs through Sedalia. Bad horse tracks in areas where shouldn't be horses. Bad tractor tire marks in Rhineland and other areas. Some areas need to be rolled.
- Please don't be so harsh on the trees along the right of way.

Fairgrounds:
- Bridge 4 miles west of fairgrounds--access rail weak and short at east end.
- Less mowing and trimming.

Green Ridge:
- Some porta-potties need to be cleaned more often (McBaine!). More trash receptacles.
- I do not like the use of brush hogs to trim the trees. Also do not like horses on the trail.
- We very much have enjoyed it. While the prairie restoration is good for wildlife, it's terrible for shade.

Calhoun:
- Most of surface is great except horrible into Sedalia from the south.
- Please stop cutting the trees down. Horses make trail rough where their shoes dig in.
- Stop cutting down the trees on the sides of the trail. That is one of the best things about the Clinton-Sedalia section. Need water at Calhoun trailhead.

Better dissemination of information regarding Katy Trail and surrounding communities

Boonville:
- At trailheads, provide a list of services and businesses in community or at least provide an where where businesses can post advertisements.
- More campgrounds near the trail. Please include this info with trail info. Also, info on restaurants.

Pilot Grove:
- Encourage groups to sponsor benches. Encourage small businesses to advertise or do a directory for trail users.

Clifton City:
- Camping spots at some trail heads, for tents-RVs. Pamphlets showing the places to camp.
- Need more updates on website.

Griessen Rd.:
- List directions from I-70 to different entrances on your website.

Fairgrounds:
- Easier info on the net. The majority of information I got came from the Katy Trail Guide (Brett Dufur), which is an excellent book.
- More benches. More posting of facilities available in towns at trailheads and in brochures.
- Would like Sedalia to have restrooms and maps entering and leaving Sedalia. Sedalia area needs more maps and rest areas.

Provide camping along Trail

Boonville:
- More campgrounds near the trail. Please include this info with trail info. Also, info on restaurants.

Clifton City:
- Camping spots at some trailheads, for tents-RVs. Pamphlets showing the places to camp.
- More campsites, RV facilities along the trail.

Fairgrounds:
- I met people (bicyclists) who need camping facilities in this area.
- Like to see more camping areas.

Green Ridge:
- Would like to see bathrooms left open later in the year. More campgrounds near trail.
- Encourage Amtrak to haul larger numbers of bicycles. Develop campsites attached to trail.
- Need primitive campsites as on C&O Canal Path in Maryland. Mowed out areas in right of way every 10 miles with table, pit toilet, and fireside, all free.
- Camping allowed at trailheads would have made this trip easier -- tough to find places to camp. Drinking water at trailheads would be good! Love the trail -- wished it went to KC!

Calhoun:
- Would like to see more camping areas close to the trail.

Complete Trail to Kansas City/through Sedalia

Green Ridge:
- Need to finish Sedalia path. Have more drinking water at stops.
- Please open Sedalia length to the rest of the trail.

Calhoun:
- Connect it to Kansas City!

Provide better signage:

Boonville:
- Better signage directing out of town visitors. Sign on Main Street points down Chestnut Street as streets to turn right on to get to Katy Trail. This is wrong. Sign should be at corner of Main and Spring--which also has a stop light. This goes directly to Katy Trail. Thanks.
- The sign at Rocheport tunnel is wrong. North and South Dakota are switched, as well as Arizona and New Mexico.

Clifton City:
- Signs with distance to next city and 5 major cities on trail, for people who are going the whole distance. More accessible drinking fountains.

Griessen Rd.:
- Poor directional signs through Sedalia. Bad horse tracks in areas where shouldn't be horses. Bad tractor tire marks in Rhineland and other areas. Some areas need to be rolled.

Fairgrounds:
- Sedalia restrooms, water. Take down "trail closed" sign at Clarendon Rd. "Trail closed" sign should be at 3rd St. Finish trail 3rd St. to Engineer St.

Green Ridge:
- More signs approaching a town, such as two miles to Green Ridge.

Calhoun:
- Build emergency shelters (in the shape of a caboose) for bikers to spend the night. Erect signs telling about the history of the area, flora and fauna. Publish an abbreviated guide to travel that fits in your pocket. Have someone ride a similar trail in Quebec called Le Petit Train du Nord, and compare the similarities and differences. See www.laurentides.com/anglars. On left frame, to to Linear Park and click on it.
- Signpost where Lewis was.

- There should be LARGE signs on the trail from Sedalia to Calhoun saying, "Horses have right of way." Trailhead signs should say same.

Positive/neutral comments about equestrian use on Trail

Pilot Grove:
- Open the trail up for horse riding.

Griessen Rd.:
- With a little education, bicyclists and horses can co-exist on the trail.

Green Ridge:
- I think it's great that the horses get to use the trail.

Windsor:
- Like to see park rangers. Don't care about horse poop.
- Love riding my horses on the trail!
- Very good place to ride horses.
- Thank you for this horse trail!

Calhoun:
- Horses need to be allowed further on trail. Picnic tables.

Remove horse manure from Trail

Fairgrounds:
- Horse manure on trail is not nice.

Green Ridge:
- Don't like horse manure.
- Horseback riders need to clean up horse manure.
- Clean trail of horse manure.

Comments about patrol/increasing patrol

Boonville:
- Put the rangers on bikes. The 4 wheelers stink for hours after passing.

Green Ridge:
- More patrolling to keep motorized vehicles off the trail. ATVs on trail mostly at night.

Windsor:
- Very nice trail. A show of law enforcement would help.

Keep restrooms open during off-season

Green Ridge:
- Keep restrooms open.
- Need to keep bathrooms open.
- Keep restrooms open after November 1!!
- Would like to see bathrooms left open later in the year. More campgrounds near trail.

Pave Trail

Green Ridge:
- Need paved trail.
- Pave the trail.

Windsor:
- If it were paved, we could rollerblade on it.
- It should be paved for rollerblading.

Negative comments about dogs

Pilot Grove:
- Dogs can sometimes be a problem.

Fairgrounds:
- Want more restrooms, benches, dogs on leashes.

Calhoun:
- Loose dogs on trail a problem.

Other

Pilot Grove:
- Encourage local folks to create businesses so we could spend a little money! Bike repair, bike rental, snack shed and crafts.
- Kill the snakes.
- Make the trail longer.

Clifton City:
- I really feel like asking about income and race is a bit much!

Griessen Rd.:
- Poor directional signs through Sedalia. Bad horse tracks in areas where shouldn't be horses. Bad tractor tire marks in Rhineland and other areas. Some areas need to be rolled.

Fairgrounds:
- Bugs are only problem I've had. I think electric bikes should be permitted.
- We have camped at Hermann and Sedalia, it's beautiful. We're just used to Minnesota trails, which are hard-surfaced.
- At fairgrounds, have direct access from parking lot to trail.
- From Fairgrounds parking lot to trail, have direct access to trail.
- Please open the trail from Griessen Road into Sedalia!!
- Provide a spur that connects Katy Trail to Bothwell Lodge and other sites of historical/cultural/tourist significance in Sedalia to promote more tourism.
- Sedalia restrooms, water. Take down "trail closed" sign at Clarendon Rd. "Trail closed" sign should be at 3rd St. Finish trail 3rd St. to Engineer St.

Green Ridge:
- Encourage Amtrak to haul larger numbers of bicycles. Develop campsites attached to trail.
- Buy the Rock Island, Windsor to Lees Summit.

Windsor:
- Hopefully the trail will remain in good condition and open to the public.
- Like to see park rangers. Don't care about horse poop.

Calhoun:
- Build emergency shelters (in the shape of a caboose) for bikers to spend the night. Erect signs telling about the history of the area, flora and fauna. Publish an abbreviated guide to travel that fits in your pocket. Have someone ride a similar trail in Quebec called Le Petit Train du Nord, and compare the similarities and differences. See www.laurentides.com/anglars. On left frame, to to Linear Park and click on it.

- Structure with signs looks expensive to build and is ABSOLUTELY USELESS and could have been used to eat at if you didn't have to face the wall.

Appendix F. Responses to Survey Questions

Katy Trail State Park Visitor Survey

1. Is this your first visit to Katy Trail State Park? (n=585)

yes	18.6%
no	81.4%

If no, about how many times have you visited the trail in the past year? (n=379)

The responses from this open-ended question were grouped into the following 9 categories:

0	2.4%
1-2	13.8%
3-4	11.9%
5-10	17.9%
11-20	12.0%
21-30	10.9%
31-50	8.6%
51-100	6.5%
101+	16.6%

The average number of times visitors visited the trail in the past year was 56.2 times.

2. Which trailhead did you use today to enter the Katy Trail? (n=578)

Calhoun	5.0%	Clifton City	2.6%*
Windsor	10.2%	Pilot Grove	2.2%*
Green Ridge	6.6%	Boonville	19.2%*
Fairgrounds	20.8%	did not use trailhead	6.1%
Griessen Rd.	7.8%*	other trailhead	19.6%

Other trailheads used to enter the Trail: (n=110)

Clinton	80.0%	McBaine	1.8%
Sedalia Depot	13.6%	New Franklin	0.9%
Rocheport	2.7%	Weldon Springs	0.9%

3. On this trip, where are you planning on exiting the Katy Trail? (n=576)

Calhoun	5.6%	Clifton City	1.7%*
Windsor	10.9%	Pilot Grove	1.7%*
Green Ridge	7.3%	Boonville	18.9%*
Fairgrounds	20.7%	am not exiting at a trailhead	6.4%
Griessen Rd.	4.7%*	other trailhead	22.0%

Other trailheads used to exit the Trail: (n=124)

St. Charles	42.7%	N. Jefferson City	3.2%
Clinton	41.9%	Rocheport	1.6%
Sedalia Depot	6.5%	New Franklin	0.8%
Augusta	3.2%		

Control section visitors were not surveyed during second or third years of study.

4. During this visit, are you staying overnight? (n=572)

yes 26.6% no 73.4%

If yes, how many nights are you staying near the trail during this visit? (n=123)

The responses from this open-ended question were grouped into the following 6 categories:

1	19.5%
2	24.4%
3	13.8%
4	22.0%
5-10	16.2%
11+	4.0%

The average number of nights visitors stayed was 3.9 nights.

5. If staying overnight, where are you staying? (n=149)

nearby campground	32.2%	nearby community lodging facilities	32.2%
friends/relatives	3.4%	nearby bed & breakfast	20.8%
other	11.4%		

6. With whom are you visiting the trail? (n=535)

alone	34.0%	family & friends	8.2%	club or organized group	4.1%
family	34.2%	friends	19.1%	other	0.4%

7. Which recreational activities are you engaging in during this trail visit?

biking	63.3%	running/jogging	6.3%	picnicking	3.9%
walking	32.6%	horseback riding	5.6%	attending special event	0.5%
hiking	1.2%	viewing wildlife	11.8%	other	1.2%
backpacking	0.3%	studying nature	4.2%		

8. What is the average distance you normally travel on the trail during a visit? (n=559)

The responses from this open-ended question were grouped into the following 7 categories:

1-2	15.1%
3-4	15.5%
5-10	13.3%
11-20	28.0%
21-50	27.6%
51-100	4.5%
101+	2.0%

The average distance visitors traveled was 23.5 miles.

9. How satisfied are you with the following in Katy Trail State Park? (Mean in parentheses.)

	Very Satisfied	Satisfied	Dissatisfied	Very Dissatisfied	
a. trail surface (3.59)	59.9%	38.7%	1.4%	0.0%	n=581
b. benches along trail (3.26)	42.0%	43.3%	13.1%	1.7%	n=467
c. signs along trail (3.37)	43.6%	50.2%	6.0%	0.2%	n=532
d. mowing/tree trimming (3.39)	45.7%	48.3%	5.3%	0.7%	n=547
e. trailheads					
- restrooms (3.08)	35.1%	42.8%	16.6%	5.5%	n=453
- drinking water (2.80)	24.2%	40.2%	26.9%	8.6%	n=405
- parking (3.45)	46.7%	51.5%	1.6%	0.2%	n=495
- trailhead signs (3.41)	46.3%	48.5%	4.6%	0.6%	n=503
- trash receptacles (3.02)	32.6%	44.8%	14.6%	8.0%	n=460

10. How do you rate Katy Trail State Park on each of the following? (Mean in parentheses.)

	Excellent	Good	Fair	Poor	
a. being free of litter/trash (3.56)	62.8%	31.9%	4.1%	1.2%	(n=583)
b. having clean restrooms (3.18)	41.0%	42.2%	11.0%	5.9%	(n=410)
c. access for persons with disabilities (3.40)	47.7%	45.0%	6.7%	0.6%	(n=342)
d. being safe (3.57)	61.2%	35.4%	3.1%	0.4%	(n=556)

11. If did not rate the trail as excellent on being safe, what influenced your rating?

113 visitors (52.3% of those who did not rate the trail as excellent on being safe) responded to this with 118 comments. The 118 responses were divided into 10 categories. Frequencies and percentages of responses in each category are listed.

	Frequency	Percent
1. Don't know/no place is perfect	26	20.0%
2. Remote/isolated nature of the trail	20	18.4%
3. Natural risk factors &/or trail conditions	15	15.9%
4. Behavior of others	12	9.6%
5. Lack of patrol by law enforcement/staff	11	9.3%
6. Problems with dogs	9	7.2%
7. Dangerous/frequent road crossings	7	6.4%
8. Need additional facilities (e.g. phones/lighting)	6	4.8%
9. Problems with horses	2	2.4%
10. Other	6	5.6%
Total	118	100.0%

12. Which of the following would most increase your feeling of being safe at Katy Trail State Park?
501 responses were given by 463 visitors.

	Frequency	Percent
1. Less crowding	11	2.2%
2. Improved upkeep of facilities	29	5.8%
3. Improved behavior of others	22	4.4%
4. Increased visibility of park staff	97	19.4%
5. Increased law enforcement patrol	60	12.0%
6. Nothing specific	258	51.5%
7. Other	24	4.8%
Total	501	100.0%

13. During this visit, how crowded did you feel? (n=580)
On a scale of 1-9, with 1=Not at all crowded and 9=Extremely crowded, the mean response was 1.2.

14. If you felt crowded on this visit, where did you feel crowded? (n=6)
Only six visitors answered this question.
Groups of bicyclists.
150 was going on so hard to rate.
MS 150 same time.
Pilot Grove Trailhead.
Pilot Grove Trailhead.
Felt crowded in Sedalia.

15. About how many times did you expect to encounter the following recreation users today?

	0	1 to 3	4 to 6	7 to 9	10+	
a. walkers/hikers	11.1%	51.3%	26.6%	5.2%	5.8%	n=503
b. walkers/hikers with dogs	27.4%	56.6%	12.5%	1.1%	2.4%	n=449
c. bicyclists	10.6%	37.2%	27.6%	27.6%	12.6%	n=492
d. runners/joggers	29.3%	54.2%	11.7%	2.6%	2.2%	n=461
e. horseback riders	65.1%	25.2%	7.4%	0.5%	1.8%	n=444

16. About how many times did you encounter the following recreation users today?

	0	1 to 3	4 to 6	7 to 9	10+	
a. walkers/hikers	37.6%	44.9%	12.9%	2.6%	2.0%	n=497
b. walkers/hikers with dogs	67.8%	28.6%	2.9%	0.5%	0.2%	n=444
c. bicyclists	30.2%	38.0%	16.9%	9.9%	5.0%	n=497
d. runners/joggers	73.6%	23.2%	2.7%	0.2%	0.2%	n=444
e. horseback riders	85.9%	9.3%	3.2%	0.7%	0.9%	n=432

17. Please evaluate your encounters with other recreation users during your visit today.

		Enjoyed	Didn't Mind	Disliked	Not Applicable	
a.	walkers/hikers	43.4%	26.8%	0.2%	29.5%	(n=403)
b.	walkers/hikers with dogs	20.9%	20.6%	0.9%	57.5%	(n=320)
c.	bicyclists	50.0%	25.9%	0.5%	23.6%	(n=424)
d.	runners/joggers	20.7%	16.0%	0.0%	63.3%	(n=300)
e.	horseback riders	9.0%	9.3%	1.8%	79.9%	(n=279)

18. If you indicated that you disliked any encounter, what were your reasons?

19 visitors responded to this question. Their responses are as follows:

Animal excrement all over trail. Riders do not know trail etiquette. Hooves damage trail – they don't stay on their area. Horses bolted towards bikers.

Dogs are not leashed.

I think you should leave dogs at home.

People don't understand horses.

The walker didn't look friendly.

Bicyclists too fast.

Bikes and horses don't always get along.

Dog chased me two crossings back.

Dogs were not leashed and followed us.

Horse manure.

Horse was afraid of bikes.

Horses are ok but will require increased maintenance due to hoof damage.

Horses hurt the trail.

I hate it when I run into animals using the restroom on the trail instead of the grass.

Kids on bikes a little too near me.

My daughter met a young man on this trail last week that made them feel uncomfortable. By the way, he spoke to them.

Four bicyclists were very nice. One bicyclist was very rude.

Some bicyclists do not use caution with horses.

Two sets of bicyclists were very nice. One lone biker did not obey the rules and was not cooperative.

19. When visiting any state park, how important are each of these items to you?

		Very Important	Important	Unimportant	Very Unimportant	
a.	being free of litter/trash (3.76)	76.4%	23.4%	0.2%	0.0%	(n=556)
b.	having clean restrooms (3.70)	71.7%	26.2%	2.0%	0.0%	(n=538)
c.	disabled access (3.28)	44.1%	41.9%	11.5%	2.5%	(n=442)
d.	being safe (3.80)	81.4%	17.8%	0.4%	0.4%	(n=555)

20. Overall, how satisfied are you with this visit to Katy Trail State Park?

	Very Satisfied	Satisfied	Dissatisfied	Very Dissatisfied	
(Mean score=3.81)	81.3%	18.5%	0.2%	0.0%	(n=578)

21. What attracts you to using the Katy Trail? (n=592)

convenient location	70.8%	scenic beauty	70.1%
easy to use	69.4%	historical/cultural aspects	21.5%
solitude	50.3%	other	8.6%
safety	47.3%		

22. What is your age? (n=580)

Responses were divided into the following four categories:

18-34	12.9%	55-64	20.8%
35-54	53.5%	65+	12.8%

(Average age=48.9)

23. Gender? (n=557)

female	43.4%
male	56.6%

24. What is the highest level of education you have completed? (n=574)

grade school	1.4%	vocational school	4.9%	graduate of 4-year college	20.2%
high school	20.7%	some college	26.5%	post-graduate education	26.3%

25. What is your ethnic origin? (n=573)

Asian	0.3%	African American	1.2%	Native American/American Indian	1.4%
Hispanic	0.5%	Caucasian/White	96.0%	Other	0.5%

26. Do you have a disability that substantially limits one or more life activities or that might require special accommodations? (n=560)

yes 0.7% no 99.3%

If yes, what disability or disabilities do you have? (n=9)

The following is a list of all responses to this open-ended question.

Bad knee.
Blood pressure.
Heart
Knee replacement.
Walking/back trouble.
Arthritis, exhaustion, etc.
Back – four operations.
Chronic lung disease, heart conditions, bad leg.
Knee.

27. What is your 5-digit zip code (*or country of residence, if you live outside the U.S.*)? (n=559)

The states with the highest percentages were:

Missouri (85.2%)	Illinois (2.5%)
Kansas (3.2%)	Texas (1.6%)

28. What is your annual household income? (n=507)

less than $25,000	14.2%	$50,001-$75,000	27.8%
$25,000-$50,000	34.5%	over $75,000	23.5%

29. Please write any additional comments about your park visit or suggestions on how the Missouri Department of Natural Resources can make your experience in Katy Trail State Park a better one.

31.3% of visitors responded to this question with 219 responses. The responses were divided into 16 categories. Frequencies and percentages of responses in each category are listed.

	Frequency	Percent
1. General positive comments	55	25.1%
2. Provide additional facilities	53	24.2%
3. Negative comments about equestrian use	14	6.4%
4. Comments about trail maintenance	14	6.4%
5. Better dissemination of information regarding Katy Trail and surrounding communities	11	5.0%
6. Provide camping along trail	11	5.0%
7. Complete trail to Kansas City/through Sedalia	10	4.6%
8. Provide better signage	9	4.1%
9. Positive/neutral comments about equestrian use	8	3.7%
10. Remove horse manure from trail	5	2.3%
11. Comments about patrol/increasing patrol	5	2.3%
12. Keep restrooms open during off-season	5	1.8%
13. Pave trail	4	1.4%
14. Negative comments about dogs	3	1.4%
15. Other	12	5.5%
Total	219	100.0%

Appendix G. Results by Trailhead and User Type

Table 1. Age and Gender by Trailhead and User Type

	AGE		Gender			
	Mean	Valid N	Female		Male	
			Count	Row %	Count	Row %
Trailhead						
Boonville	48.4	114	61	55.0%	50	45.0%
Pilot Grove	45.4	31	11	35.5%	20	64.5%
Clifton City	45.3	26	7	26.9%	19	73.1%
Griessen Rd.	46.6	28	8	28.6%	20	71.4%
Fairgrounds	49.0	150	53	37.9%	87	62.1%
Green Ridge	49.7	84	40	49.4%	41	50.6%
Windsor	49.2	78	35	46.7%	40	53.3%
Calhoun	52.3	69	27	41.5%	38	58.5%
Type of user						
Walker/hiker	49.9	174	94	55.3%	76	44.7%
Runner/ jogger	40.9	17	6	37.5%	10	62.5%
Bicyclist	48.5	358	125	36.5%	217	63.5%
Equestrian	50.7	29	16	59.3%	11	40.7%

Table 2. Income by Trailhead and User Type

	Income?							
	<$25,000		$25-50,000		$50-75,000		>$75,000	
	Count	Row %	Count	Row %	Count	Row %	Count	Row %
Trailhead								
Boonville	19	20.7%	31	33.7%	23	25.0%	19	20.7%
Pilot Grove	5	16.1%	6	19.4%	10	32.3%	10	32.3%
Clifton City	5	21.7%	8	34.8%	7	30.4%	3	13.0%
Griessen Rd.	1	3.6%	8	28.6%	9	32.1%	10	35.7%
Fairgrounds	14	10.7%	57	43.5%	38	29.0%	22	16.8%
Green Ridge	8	10.7%	27	36.0%	18	24.0%	22	29.3%
Windsor	9	13.2%	19	27.9%	22	32.4%	18	26.5%
Calhoun	11	18.6%	19	32.2%	14	23.7%	15	25.4%
Type of user								
Walker/hiker	37	24.7%	58	38.7%	36	24.0%	19	12.7%
Runner/ jogger	1	7.7%	5	38.5%	3	23.1%	4	30.8%
Bicyclist	32	10.1%	102	32.2%	94	29.7%	89	28.1%
Equestrian	2	7.7%	9	34.6%	8	30.8%	7	26.9%

Table 3. Ethnicity by Trailhead and User Type

	Ethnicity							
	Asian		Hispanic		African American		Caucasian/white	
	Count	Row %	Count	Row %	Count	Row %	Count	Row %
Trailhead								
Boonville	0	.0%	1	.9%	5	4.5%	104	92.9%
Pilot Grove	0	.0%	0	.0%	0	.0%	30	96.8%
Clifton City	0	.0%	1	3.8%	0	.0%	24	92.3%
Griessen Rd.	0	.0%	0	.0%	0	.0%	29	100.0%
Fairgrounds	1	.7%	1	.7%	2	1.4%	141	95.3%
Green Ridge	0	.0%	0	.0%	0	.0%	79	96.3%
Windsor	1	1.3%	0	.0%	0	.0%	75	97.4%
Calhoun	0	.0%	0	.0%	0	.0%	68	100.0%
Type of user								
Walker/hiker	0	.0%	0	.0%	5	2.9%	168	96.6%
Runner/jogger	1	5.6%	1	5.6%	1	5.6%	14	77.8%
Bicyclist	0	.0%	2	.6%	1	.3%	341	97.2%
Equestrian	1	3.4%	0	.0%	0	.0%	26	89.7%

	Ethnicity			
	Native American/American Indian		Other	
	Count	Row %	Count	Row %
Trailhead				
Boonville	0	.0%	2	1.8%
Pilot Grove	1	3.2%	0	.0%
Clifton City	1	3.8%	0	.0%
Griessen Rd.	0	.0%	0	.0%
Fairgrounds	2	1.4%	1	.7%
Green Ridge	3	3.7%	0	.0%
Windsor	1	1.3%	0	.0%
Calhoun	0	.0%	0	.0%
Type of user				
Walker/hiker	0	.0%	1	.6%
Runner/jogger	0	.0%	1	5.6%
Bicyclist	6	1.7%	1	.3%
Equestrian	2	6.9%	0	.0%

Table 4. Education by Trailhead and User Type

	Education											
	Grade school		High school		Vocational school		Some college		Graduate of 4-year college		Post-graduate education	
	Count	Row %	Count	Row %	Count	Row %	Count	Row %	Count	Row %	Count	Row %
Trailhead												
Boonville	3	2.7%	30	26.5%	9	8.0%	29	25.7%	12	10.6%	30	26.5%
Pilot Grove	1	3.3%	4	13.3%	0	.0%	4	13.3%	11	36.7%	10	33.3%
Clifton City	0	.0%	7	26.9%	1	3.8%	7	26.9%	7	26.9%	4	15.4%
Griessen Rd.	0	.0%	3	10.3%	1	3.4%	9	31.0%	11	37.9%	5	17.2%
Fairgrounds	3	2.0%	24	16.2%	9	6.1%	40	27.0%	35	23.6%	37	25.0%
Green Ridge	0	.0%	21	25.3%	1	1.2%	24	28.9%	15	18.1%	22	26.5%
Windsor	1	1.3%	19	24.7%	3	3.9%	21	27.3%	11	14.3%	22	28.6%
Calhoun	0	.0%	11	16.2%	4	5.9%	18	26.5%	14	20.6%	21	30.9%
Type of user												
Walker/hiker	2	1.2%	54	31.6%	15	8.8%	40	23.4%	27	15.8%	33	19.3%
Runner/jogger	0	.0%	1	5.6%	0	.0%	6	33.3%	4	22.2%	7	38.9%
Bicyclist	6	1.7%	54	15.3%	9	2.5%	99	28.0%	81	22.9%	105	29.7%
Equestrian	0	.0%	9	31.0%	4	13.8%	6	20.7%	4	13.8%	6	20.7%

Table 5. Visitation Patterns by Trailhead and User Type

	First visit?				Number of times	
	Yes		No		Mean	Valid N
	Count	Row %	Count	Row %		
Trailhead						
Boonville	16	13.9%	99	86.1%	119.7	N=74
Pilot Grove	6	19.4%	25	80.6%	11.0	N=23
Clifton City	8	30.8%	18	69.2%	12.8	N=12
Griessen Rd.	5	16.7%	25	83.3%	40.3	N=21
Fairgrounds	17	11.3%	134	88.7%	60.3	N=106
Green Ridge	19	22.6%	65	77.4%	51.8	N=53
Windsor	21	26.6%	58	73.4%	27.5	N=45
Calhoun	17	24.6%	52	75.4%	18.0	N=45
Type of user						
Walker/hiker	13	7.3%	164	92.7%	88.3	N=121
Runner/jogger	1	5.6%	17	94.4%	160.9	N=12
Bicyclist	85	23.7%	273	76.3%	35.2	N=224
Equestrian	10	33.3%	20	66.7%	7.8	N=20

Table 6. Overnight Use by Trailhead and User Type

	Staying overnight?				Number of nights	
	Yes		No		Mean	Valid N
	Count	Row %	Count	Row %		
Trailhead						
Boonville	19	17.4%	90	82.6%	7.8	N=18
Pilot Grove	14	45.2%	17	54.8%	3.0	N=14
Clifton City	11	42.3%	15	57.7%	2.3	N=7
Griessen Rd.	12	41.4%	17	58.6%	2.4	N=9
Fairgrounds	18	12.2%	129	87.8%	1.9	N=14
Green Ridge	31	36.5%	54	63.5%	3.6	N=25
Windsor	25	32.1%	53	67.9%	2.7	N=19
Calhoun	22	32.8%	45	67.2%	5.1	N=17
Type of user						
Walker/hiker	12	7.2%	155	92.8%	6.6	N=10
Runner/jogger	0	.0%	18	100.0%	.	N=0
Bicyclist	140	39.3%	216	60.7%	3.6	N=112
Equestrian	0	.0%	29	100.0%	2.0	N=1

Table 7. Overnight Lodging by Trailhead and User Type

	Where are you staying overnight?									
	Nearby campground		Friends/ relatives		Other		Nearby lodging facilities		Nearby bed & breakfast	
	Count	Row %	Count	Row %	Count	Row %	Count	Row %	Count	Row %
Trailhead										
Boonville	4	21.1%	2	10.5%	3	15.8%	5	26.3%	5	26.3%
Pilot Grove	1	8.3%	0	.0%	2	16.7%	1	8.3%	8	66.7%
Clifton City	6	50.0%	0	.0%	3	25.0%	3	25.0%	0	.0%
Griessen Rd.	3	25.0%	0	.0%	0	.0%	6	50.0%	3	25.0%
Fairgrounds	9	52.9%	1	5.9%	0	.0%	7	41.2%	0	.0%
Green Ridge	9	29.0%	0	.0%	5	16.1%	8	25.8%	9	29.0%
Windsor	7	28.0%	2	8.0%	1	4.0%	9	36.0%	6	24.0%
Calhoun	9	42.9%	0	.0%	3	14.3%	9	42.9%	0	.0%
Type of user										
Walker/hiker	4	40.0%	3	30.0%	0	.0%	2	20.0%	1	10.0%
Bicyclist	44	31.7%	2	1.4%	17	12.2%	46	33.1%	30	21.6%

Table 8. Visit Characteristics by Trailhead and User Type

	With whom are you visiting the trail?											
	Alone		Family		Family & friends		Friends		Club or organized group		Other	
	Count	Row %	Count	Row %	Count	Row %	Count	Row %	Count	Row %	Count	Row %
Trailhead												
Boonville	45	42.5%	37	34.9%	7	6.6%	16	15.1%	0	.0%	1	.9%
Pilot Grove	7	25.0%	9	32.1%	3	10.7%	9	32.1%	0	.0%	0	.0%
Clifton City	5	20.0%	14	56.0%	1	4.0%	4	16.0%	1	4.0%	0	.0%
Griessen Rd.	13	44.8%	8	27.6%	3	10.3%	5	17.2%	0	.0%	0	.0%
Fairgrounds	54	40.0%	41	30.4%	12	8.9%	24	17.8%	4	3.0%	0	.0%
Green Ridge	20	26.7%	30	40.0%	6	8.0%	13	17.3%	6	8.0%	0	.0%
Windsor	19	25.7%	26	35.1%	6	8.1%	18	24.3%	4	5.4%	1	1.4%
Calhoun	19	30.2%	18	28.6%	6	9.5%	13	20.6%	7	11.1%	0	.0%
Type of user												
Walker/hiker	67	42.9%	54	34.6%	12	7.7%	19	12.2%	3	1.9%	1	.6%
Runner/ jogger	13	76.5%	3	17.6%	1	5.9%	0	.0%	0	.0%	0	.0%
Bicyclist	99	29.8%	120	36.1%	27	8.1%	66	19.9%	19	5.7%	1	.3%
Equestrian	3	10.7%	6	21.4%	3	10.7%	16	57.1%	0	.0%	0	.0%

Table 9. Trailhead Used to Enter Trail by Trailhead and User Type

	Entering which trailhead?											
	Calhoun		Windsor		Green Ridge		Fairgrounds		Griessen Rd.		Clifton City	
	Count	Row %	Count	Row %	Count	Row %	Count	Row %	Count	Row %	Count	Row %
Trailhead												
Boonville	0	.0%	0	.0%	0	.0%	1	.9%	4	3.5%	0	.0%
Pilot Grove	0	.0%	0	.0%	0	.0%	1	3.2%	4	12.9%	1	3.2%
Clifton City	0	.0%	0	.0%	0	.0%	0	.0%	10	40.0%	8	32.0%
Griessen Rd.	0	.0%	0	.0%	0	.0%	0	.0%	23	79.3%	1	3.4%
Fairgrounds	1	.7%	2	1.4%	4	2.7%	103	70.1%	3	2.0%	0	.0%
Green Ridge	3	3.5%	10	11.8%	32	37.6%	10	11.8%	0	.0%	1	1.2%
Windsor	4	5.1%	42	53.8%	2	2.6%	2	2.6%	1	1.3%	3	3.8%
Calhoun	21	30.9%	5	7.4%	0	.0%	3	4.4%	0	.0%	1	1.5%
Type of user												
Walker/hiker	6	3.4%	11	6.3%	15	8.6%	42	24.0%	11	6.3%	0	.0%
Runner/ jogger	0	.0%	0	.0%	0	.0%	4	22.2%	0	.0%	0	.0%
Bicyclist	13	3.7%	35	9.9%	19	5.4%	70	19.8%	34	9.6%	15	4.2%
Equestrian	10	33.3%	13	43.3%	4	13.3%	3	10.0%	0	.0%	0	.0%

	Entering which trailhead?							
	Pilot Grove		Boonville		not using trailhead		Other trailhead	
	Count	Row %	Count	Row %	Count	Row %	Count	Row %
Trailhead								
Boonville	0	.0%	103	89.6%	1	.9%	6	5.2%
Pilot Grove	8	25.8%	6	19.4%	1	3.2%	10	32.3%
Clifton City	3	12.0%	1	4.0%	1	4.0%	2	8.0%
Griessen Rd.	1	3.4%	0	.0%	1	3.4%	3	10.3%
Fairgrounds	1	.7%	0	.0%	25	17.0%	8	5.4%
Green Ridge	0	.0%	0	.0%	3	3.5%	26	30.6%
Windsor	0	.0%	0	.0%	1	1.3%	23	29.5%
Calhoun	0	.0%	1	1.5%	2	2.9%	35	51.5%
Type of user								
Walker/hiker	5	2.9%	69	39.4%	13	7.4%	3	1.7%
Runner/ jogger	0	.0%	13	72.2%	1	5.6%	0	.0%
Bicyclist	8	2.3%	28	7.9%	21	5.9%	110	31.2%
Equestrian	0	.0%	0	.0%	0	.0%	0	.0%

Table 10. Trailhead Used to Exit Trail by Trailhead and User Type

	Exiting which trailhead/											
	Calhoun		Windsor		Green Ridge		Fairgrounds		Griessen Rd.		Clifton City	
	Count	Row %	Count	Row %	Count	Row %	Count	Row %	Count	Row %	Count	Row %
Trailhead												
Boonville	0	.0%	2	1.8%	0	.0%	0	.0%	0	.0%	0	.0%
Pilot Grove	0	.0%	0	.0%	0	.0%	0	.0%	3	9.7%	1	3.2%
Clifton City	1	4.3%	0	.0%	0	.0%	2	8.7%	4	17.4%	7	30.4%
Griessen Rd.	0	.0%	0	.0%	0	.0%	1	3.3%	17	56.7%	0	.0%
Fairgrounds	1	.7%	3	2.0%	7	4.7%	105	70.9%	1	.7%	1	.7%
Green Ridge	1	1.2%	14	16.7%	29	34.5%	7	8.3%	1	1.2%	1	1.2%
Windsor	7	8.9%	37	46.8%	5	6.3%	3	3.8%	1	1.3%	0	.0%
Calhoun	22	32.8%	7	10.4%	1	1.5%	1	1.5%	0	.0%	0	.0%
Type of user												
Walker/hiker	8	4.6%	10	5.7%	15	8.6%	48	27.4%	11	6.3%	0	.0%
Runner/ jogger	0	.0%	0	.0%	0	.0%	4	22.2%	0	.0%	0	.0%
Bicyclist	14	4.0%	42	11.9%	22	6.3%	63	17.9%	16	4.5%	10	2.8%
Equestrian	10	34.5%	11	37.9%	5	17.2%	3	10.3%	0	.0%	0	.0%

	Exiting which trailhead/							
	Pilot Grove		Boonville		Not using trailhead		Other trailhead	
	Count	Row %	Count	Row %	Count	Row %	Count	Row %
Trailhead								
Boonville	2	1.8%	98	86.0%	3	2.6%	9	7.9%
Pilot Grove	7	22.6%	9	29.0%	0	.0%	11	35.5%
Clifton City	1	4.3%	0	.0%	0	.0%	8	34.8%
Griessen Rd.	0	.0%	0	.0%	4	13.3%	8	26.7%
Fairgrounds	0	.0%	0	.0%	24	16.2%	6	4.1%
Green Ridge	0	.0%	0	.0%	5	6.0%	26	31.0%
Windsor	0	.0%	1	1.3%	0	.0%	25	31.6%
Calhoun	0	.0%	1	1.5%	1	1.5%	34	50.7%
Type of user								
Walker/hiker	4	2.3%	67	38.3%	7	4.0%	5	2.9%
Runner/ jogger	0	.0%	13	72.2%	1	5.6%	0	.0%
Bicyclist	6	1.7%	28	8.0%	29	8.2%	122	34.7%
Equestrian	0	.0%	0	.0%	0	.0%	0	.0%

Table 11. Trailhead Used to Exit Trail by Trailhead Used to Enter Trail

	Entering which trailhead?											
	Calhoun		Windsor		Green Ridge		Fairgrounds		Griessen Rd.		Clifton City	
	Count	Row %	Count	Row %	Count	Row %	Count	Row %	Count	Row %	Count	Row %
Exiting which trailhead/												
Calhoun	22	68.8%	5	15.6%	0	.0%	1	3.1%	0	.0%	0	.0%
Windsor	2	3.2%	46	73.0%	1	1.6%	2	3.2%	0	.0%	3	4.8%
Green Ridge	0	.0%	3	7.1%	30	71.4%	7	16.7%	1	2.4%	0	.0%
Fairgrounds	1	.9%	1	.9%	4	3.4%	95	81.9%	1	.9%	0	.0%
Griessen Rd.	0	.0%	0	.0%	1	3.8%	1	3.8%	18	69.2%	0	.0%
Clifton City	0	.0%	0	.0%	0	.0%	0	.0%	1	10.0%	7	70.0%
Pilot Grove	0	.0%	0	.0%	0	.0%	0	.0%	0	.0%	2	20.0%
Boonville	0	.0%	1	.9%	0	.0%	0	.0%	2	1.8%	0	.0%
Not using trailhead	1	2.8%	0	.0%	0	.0%	5	13.9%	1	2.8%	0	.0%
Other trailhead	2	1.6%	3	2.4%	1	.8%	6	4.8%	18	14.4%	3	2.4%

	Entering which trailhead?							
	Pilot Grove		Boonville		not using trailhead		Other trailhead	
	Count	Row %	Count	Row %	Count	Row %	Count	Row %
Exiting which trailhead/								
Calhoun	0	.0%	0	.0%	3	9.4%	1	3.1%
Windsor	0	.0%	0	.0%	2	3.2%	7	11.1%
Green Ridge	0	.0%	0	.0%	0	.0%	1	2.4%
Fairgrounds	2	1.7%	1	.9%	6	5.2%	5	4.3%
Griessen Rd.	3	11.5%	1	3.8%	0	.0%	2	7.7%
Clifton City	0	.0%	1	10.0%	0	.0%	1	10.0%
Pilot Grove	6	60.0%	2	20.0%	0	.0%	0	.0%
Boonville	2	1.8%	101	92.7%	1	.9%	2	1.8%
Not using trailhead	0	.0%	3	8.3%	22	61.1%	4	11.1%
Other trailhead	0	.0%	1	.8%	1	.8%	90	72.0%

Table 12. Distance Traveled on Trail by Trailhead and User Type

	DISTANCE	
	Mean (mileage)	Valid N
Trailhead		
Boonville	11.0	N=110
Pilot Grove	36.6	N=29
Clifton City	35.4	N=22
Griessen Rd.	27.0	N=30
Fairgrounds	17.1	N=146
Green Ridge	29.2	N=80
Windsor	32.5	N=77
Calhoun	29.9	N=65
Type of user		
Walker/hiker	4.1	N=169
Runner/jogger	4.1	N=18
Bicyclist	35.2	N=340
Equestrian	12.6	N=30

Table 13. Recreational Activities by Trailhead and User Type

	Biking				Walking			
	Yes		No		Yes		No	
	Count	Row %	Count	Row %	Count	Row %	Count	Row %
Trailhead								
Boonville	37	32.2%	78	67.8%	73	63.5%	42	36.5%
Pilot Grove	28	90.3%	3	9.7%	5	16.1%	26	83.9%
Clifton City	26	100.0%	0	.0%	0	.0%	26	100.0%
Griessen Rd.	16	53.3%	14	46.7%	11	36.7%	19	63.3%
Fairgrounds	98	64.1%	55	35.9%	60	39.2%	93	60.8%
Green Ridge	66	76.7%	20	23.3%	19	22.1%	67	77.9%
Windsor	52	65.0%	28	35.0%	12	15.0%	68	85.0%
Calhoun	52	73.2%	19	26.8%	13	18.3%	58	81.7%
Type of user								
Walker/hiker	18	10.1%	160	89.9%	160	89.9%	18	10.1%
Runner/ jogger	0	.0%	18	100.0%	3	16.7%	15	83.3%
Bicyclist	356	98.1%	7	1.9%	29	8.0%	334	92.0%
Equestrian	0	.0%	30	100.0%	0	.0%	30	100.0%

	Hiking				Backpacking			
	Yes		No		Yes		No	
	Count	Row %	Count	Row %	Count	Row %	Count	Row %
Trailhead								
Boonville	1	.9%	114	99.1%	0	.0%	115	100.0%
Pilot Grove	1	3.2%	30	96.8%	0	.0%	31	100.0%
Clifton City	1	3.8%	25	96.2%	0	.0%	26	100.0%
Griessen Rd.	0	.0%	30	100.0%	0	.0%	30	100.0%
Fairgrounds	2	1.3%	151	98.7%	0	.0%	153	100.0%
Green Ridge	2	2.3%	84	97.7%	2	2.3%	84	97.7%
Windsor	0	.0%	80	100.0%	0	.0%	80	100.0%
Calhoun	0	.0%	71	100.0%	0	.0%	71	100.0%
Type of user								
Walker/hiker	3	1.7%	175	98.3%	0	.0%	178	100.0%
Runner/ jogger	0	.0%	18	100.0%	0	.0%	18	100.0%
Bicyclist	4	1.1%	359	98.9%	2	.6%	361	99.4%
Equestrian	0	.0%	30	100.0%	0	.0%	30	100.0%

(continued)

Table 13. Recreational Activities by Trailhead and User Type

	Running/jogging				Horseback riding			
	Yes		No		Yes		No	
	Count	Row %	Count	Row %	Count	Row %	Count	Row %
Trailhead								
Boonville	20	17.4%	95	82.6%	0	.0%	115	100.0%
Pilot Grove	1	3.2%	30	96.8%	0	.0%	31	100.0%
Clifton City	0	.0%	26	100.0%	0	.0%	26	100.0%
Griessen Rd.	2	6.7%	28	93.3%	0	.0%	30	100.0%
Fairgrounds	11	7.2%	142	92.8%	2	1.3%	151	98.7%
Green Ridge	0	.0%	86	100.0%	4	4.7%	82	95.3%
Windsor	0	.0%	80	100.0%	17	21.3%	63	78.8%
Calhoun	3	4.2%	68	95.8%	10	14.1%	61	85.9%
Type of user								
Walker/hiker	15	8.4%	163	91.6%	2	1.1%	176	98.9%
Runner/ jogger	17	94.4%	1	5.6%	0	.0%	18	100.0%
Bicyclist	5	1.4%	358	98.6%	1	.3%	362	99.7%
Equestrian	0	.0%	30	100.0%	30	100.0%	0	.0%

	Viewing wildlife				Studying nature			
	Yes		No		Yes		No	
	Count	Row %	Count	Row %	Count	Row %	Count	Row %
Trailhead								
Boonville	11	9.6%	104	90.4%	3	2.6%	112	97.4%
Pilot Grove	8	25.8%	23	74.2%	5	16.1%	26	83.9%
Clifton City	5	19.2%	21	80.8%	0	.0%	26	100.0%
Griessen Rd.	5	16.7%	25	83.3%	2	6.7%	28	93.3%
Fairgrounds	12	7.8%	141	92.2%	3	2.0%	150	98.0%
Green Ridge	14	16.3%	72	83.7%	5	5.8%	81	94.2%
Windsor	8	10.0%	72	90.0%	2	2.5%	78	97.5%
Calhoun	7	9.9%	64	90.1%	5	7.0%	66	93.0%
Type of user								
Walker/hiker	17	9.6%	161	90.4%	5	2.8%	173	97.2%
Runner/ jogger	0	.0%	18	100.0%	0	.0%	18	100.0%
Bicyclist	50	13.8%	313	86.2%	19	5.2%	344	94.8%
Equestrian	2	6.7%	28	93.3%	1	3.3%	29	96.7%

(continued)

Table 13. Recreational Activities by Trailhead and User Type

	Picnicking				Attending special event			
	Yes		No		Yes		No	
	Count	Row %	Count	Row %	Count	Row %	Count	Row %
Trailhead								
Boonville	2	1.7%	113	98.3%	0	.0%	115	100.0%
Pilot Grove	4	12.9%	27	87.1%	0	.0%	31	100.0%
Clifton City	4	15.4%	22	84.6%	0	.0%	26	100.0%
Griessen Rd.	0	.0%	30	100.0%	1	3.3%	29	96.7%
Fairgrounds	0	.0%	153	100.0%	2	1.3%	151	98.7%
Green Ridge	4	4.7%	82	95.3%	0	.0%	86	100.0%
Windsor	6	7.5%	74	92.5%	0	.0%	80	100.0%
Calhoun	3	4.2%	68	95.8%	0	.0%	71	100.0%
Type of user								
Walker/hiker	0	.0%	178	100.0%	1	.6%	177	99.4%
Runner/ jogger	0	.0%	18	100.0%	0	.0%	18	100.0%
Bicyclist	22	6.1%	341	93.9%	1	.3%	362	99.7%
Equestrian	1	3.3%	29	96.7%	0	.0%	30	100.0%

	Other			
	Yes		No	
	Count	Row %	Count	Row %
Trailhead				
Boonville	0	.0%	115	100.0%
Pilot Grove	1	3.2%	30	96.8%
Clifton City	0	.0%	26	100.0%
Griessen Rd.	1	3.3%	29	96.7%
Fairgrounds	1	.7%	152	99.3%
Green Ridge	3	3.5%	83	96.5%
Windsor	1	1.3%	79	98.8%
Calhoun	0	.0%	71	100.0%
Type of user				
Walker/hiker	0	.0%	178	100.0%
Runner/ jogger	0	.0%	18	100.0%
Bicyclist	6	1.7%	357	98.3%
Equestrian	1	3.3%	29	96.7%

Table 14. Satisfaction Ratings by Trailhead and User Type

	Overall satisfaction		How satisfied with trail surface?		How satisfied with trail benches?		How satisfied with trail signs?	
	Mean	Valid N	Mean	Valid N	Mean	Valid N	Mean	Valid N
Trailhead								
Boonville	3.83	115	3.57	114	3.43	104	3.42	105
Pilot Grove	3.87	31	3.47	30	3.11	27	3.30	30
Clifton City	3.77	26	3.42	26	2.76	21	3.25	24
Griessen Rd.	3.72	29	3.67	30	3.15	26	3.41	27
Fairgrounds	3.74	147	3.55	148	3.09	104	3.33	132
Green Ridge	3.87	84	3.68	85	3.34	68	3.40	82
Windsor	3.84	77	3.62	78	3.37	65	3.34	71
Calhoun	3.84	69	3.61	70	3.31	52	3.46	61
Type of user								
Walker/hiker	3.74	175	3.63	175	3.31	129	3.41	150
Runner/ jogger	3.78	18	3.67	18	3.53	15	3.56	16
Bicyclist	3.84	355	3.53	357	3.21	305	3.33	340
Equestrian	3.93	28	3.93	30	3.41	17	3.60	25

	How satisfied with mowing/trimming?		How satisfied with trailhead restrooms?		How satisfied with trailhead water?		How satisfied with trailhead parking?	
	Mean	Valid N	Mean	Valid N	Mean	Valid N	Mean	Valid N
Trailhead								
Boonville	3.35	109	2.79	91	2.31	77	3.43	103
Pilot Grove	3.39	28	3.23	30	2.79	28	3.37	30
Clifton City	3.29	24	2.91	22	2.36	22	3.21	24
Griessen Rd.	3.50	30	3.11	28	2.48	25	3.25	28
Fairgrounds	3.31	139	2.92	90	2.91	79	3.35	106
Green Ridge	3.52	81	3.26	68	2.97	59	3.61	74
Windsor	3.47	74	3.32	65	3.22	64	3.59	70
Calhoun	3.35	62	3.22	59	3.00	51	3.52	60
Type of user								
Walker/hiker	3.27	164	2.67	120	2.47	98	3.37	143
Runner/ jogger	3.12	17	2.89	9	2.00	10	3.31	16
Bicyclist	3.43	338	3.21	303	2.90	277	3.46	308
Equestrian	3.67	27	3.45	20	3.42	19	3.78	27

(continued)

Table 14. Satisfaction Ratings by Trailhead and User Type

	How satisfied with trailhead signs?		How satisfied with trailhead trashcans?	
	Mean	Valid N	Mean	Valid N
Trailhead				
Boonville	3.47	99	2.72	96
Pilot Grove	3.41	29	3.25	28
Clifton City	3.24	25	3.21	24
Griessen Rd.	3.41	29	3.11	28
Fairgrounds	3.27	108	2.99	94
Green Ridge	3.53	80	3.23	71
Windsor	3.41	71	3.26	61
Calhoun	3.44	62	2.83	58
Type of user				
Walker/hiker	3.30	138	2.71	126
Runner/ jogger	3.47	15	2.73	15
Bicyclist	3.43	324	3.14	300
Equestrian	3.56	25	3.33	18

Table 15. Performance Ratings by Trailhead and User Type

	Rate being free of litter/trash		Rate restroom cleanliness		Rate disabled accessibility		Rate trail safety	
	Mean	Valid N	Mean	Valid N	Mean	Valid N	Mean	Valid N
Trailhead								
Boonville	3.48	115	2.69	83	3.41	85	3.59	111
Pilot Grove	3.71	31	3.48	25	3.59	17	3.54	28
Clifton City	3.62	26	2.81	21	3.18	17	3.46	26
Griessen Rd.	3.80	30	3.29	24	3.47	15	3.68	28
Fairgrounds	3.44	149	3.27	73	3.32	75	3.45	136
Green Ridge	3.67	85	3.38	64	3.46	41	3.67	81
Windsor	3.62	77	3.27	60	3.48	50	3.62	77
Calhoun	3.57	70	3.43	60	3.33	42	3.64	69
Type of user								
Walker/hiker	3.39	175	2.77	101	3.38	121	3.47	163
Runner/ jogger	3.39	18	2.50	8	3.25	12	3.65	17
Bicyclist	3.64	359	3.33	280	3.41	194	3.60	346
Equestrian	3.69	29	3.40	20	3.53	15	3.79	28

Table 16. Mean Crowding Scores by Trailhead and User Type

	CROWDED	
	Mean	Valid N
Trailhead		
Boonville	1.14	114
Pilot Grove	1.10	31
Clifton City	1.08	26
Griessen Rd.	1.14	29
Fairgrounds	1.19	150
Green Ridge	1.12	85
Windsor	1.22	76
Calhoun	1.26	69
Type of user		
Walker/hiker	1.20	175
Runner/ jogger	1.11	18
Bicyclist	1.13	357
Equestrian	1.46	28

Table 17. Trail Attraction Features by Trailhead and User Type

	Convenient location				Easy to use			
	Yes		No		Yes		No	
	Count	Row %	Count	Row %	Count	Row %	Count	Row %
Trailhead								
Boonville	99	86.1%	16	13.9%	83	72.2%	32	27.8%
Pilot Grove	16	51.6%	15	48.4%	18	58.1%	13	41.9%
Clifton City	13	50.0%	13	50.0%	16	61.5%	10	38.5%
Griessen Rd.	19	63.3%	11	36.7%	24	80.0%	6	20.0%
Fairgrounds	126	82.4%	27	17.6%	105	68.6%	48	31.4%
Green Ridge	52	60.5%	34	39.5%	65	75.6%	21	24.4%
Windsor	54	67.5%	26	32.5%	52	65.0%	28	35.0%
Calhoun	40	56.3%	31	43.7%	48	67.6%	23	32.4%
Type of user								
Walker/hiker	159	89.3%	19	10.7%	128	71.9%	50	28.1%
Runner/ jogger	16	88.9%	2	11.1%	14	77.8%	4	22.2%
Bicyclist	226	62.3%	137	37.7%	249	68.6%	114	31.4%
Equestrian	16	53.3%	14	46.7%	19	63.3%	11	36.7%

	Solitude				Safety			
	Yes		No		Yes		No	
	Count	Row %	Count	Row %	Count	Row %	Count	Row %
Trailhead								
Boonville	51	44.3%	64	55.7%	63	54.8%	52	45.2%
Pilot Grove	16	51.6%	15	48.4%	12	38.7%	19	61.3%
Clifton City	14	53.8%	12	46.2%	8	30.8%	18	69.2%
Griessen Rd.	17	56.7%	13	43.3%	16	53.3%	14	46.7%
Fairgrounds	80	52.3%	73	47.7%	67	43.8%	86	56.2%
Green Ridge	43	50.0%	43	50.0%	49	57.0%	37	43.0%
Windsor	43	53.8%	37	46.3%	39	48.8%	41	51.3%
Calhoun	34	47.9%	37	52.1%	26	36.6%	45	63.4%
Type of user								
Walker/hiker	87	48.9%	91	51.1%	90	50.6%	88	49.4%
Runner/ jogger	11	61.1%	7	38.9%	9	50.0%	9	50.0%
Bicyclist	188	51.8%	175	48.2%	168	46.3%	195	53.7%
Equestrian	11	36.7%	19	63.3%	12	40.0%	18	60.0%

(continued)

Table 17. Trail Attraction Features by Trailhead and User Type

	Scenic beauty				Historical/cultural aspects			
	Yes		No		Yes		No	
	Count	Row %	Count	Row %	Count	Row %	Count	Row %
Trailhead								
Boonville	84	73.0%	31	27.0%	24	20.9%	91	79.1%
Pilot Grove	20	64.5%	11	35.5%	11	35.5%	20	64.5%
Clifton City	22	84.6%	4	15.4%	7	26.9%	19	73.1%
Griessen Rd.	25	83.3%	5	16.7%	8	26.7%	22	73.3%
Fairgrounds	96	62.7%	57	37.3%	17	11.1%	136	88.9%
Green Ridge	62	72.1%	24	27.9%	20	23.3%	66	76.7%
Windsor	55	68.8%	25	31.3%	26	32.5%	54	67.5%
Calhoun	51	71.8%	20	28.2%	14	19.7%	57	80.3%
Type of user								
Walker/hiker	116	65.2%	62	34.8%	24	13.5%	154	86.5%
Runner/ jogger	12	66.7%	6	33.3%	1	5.6%	17	94.4%
Bicyclist	271	74.7%	92	25.3%	96	26.4%	267	73.6%
Equestrian	15	50.0%	15	50.0%	6	20.0%	24	80.0%

	Other			
	Yes		No	
	Count	Row %	Count	Row %
Trailhead				
Boonville	8	7.0%	107	93.0%
Pilot Grove	7	22.6%	24	77.4%
Clifton City	3	11.5%	23	88.5%
Griessen Rd.	1	3.3%	29	96.7%
Fairgrounds	9	5.9%	144	94.1%
Green Ridge	10	11.6%	76	88.4%
Windsor	7	8.8%	73	91.3%
Calhoun	6	8.5%	65	91.5%
Type of user				
Walker/hiker	8	4.5%	170	95.5%
Runner/ jogger	2	11.1%	16	88.9%
Bicyclist	36	9.9%	327	90.1%
Equestrian	5	16.7%	25	83.3%

Table 18. Visitors' Expectations of Walkers/Hikers Compared to Their Actual Encounters by Trailhead

Trailhead
Boonville

	See how many walkers/hikers?									
	0		1-3		4-6		7-9		10+	
	Count	Row %	Count	Row %	Count	Row %	Count	Row %	Count	Row %
Expect how many walkers/ hikers?										
0	2	66.7%	0	.0%	1	33.3%	0	.0%	0	.0%
1-3	6	15.8%	24	63.2%	7	18.4%	1	2.6%	0	.0%
4-6	4	10.3%	19	48.7%	13	33.3%	3	7.7%	0	.0%
7-9	1	10.0%	2	20.0%	6	60.0%	1	10.0%	0	.0%
10+	0	.0%	2	33.3%	2	33.3%	0	.0%	2	33.3%

Trailhead
Pilot Grove

	See how many walkers/hikers?									
	0		1-3		4-6		7-9		10+	
	Count	Row %	Count	Row %	Count	Row %	Count	Row %	Count	Row %
Expect how many walkers/ hikers?										
0	2	100.0%	0	.0%	0	.0%	0	.0%	0	.0%
1-3	1	7.1%	12	85.7%	0	.0%	0	.0%	1	7.1%
4-6	3	42.9%	3	42.9%	1	14.3%	0	.0%	0	.0%
7-9	0	.0%	0	.0%	1	50.0%	0	.0%	1	50.0%
10+	0	.0%	1	25.0%	2	50.0%	0	.0%	1	25.0%

Table 18. Visitors' Expectations of Walkers/Hikers Compared to Their Actual Encounters by Trailhead

Trailhead
Clifton City

	See how many walkers/hikers?									
	0		1-3		4-6		7-9		10+	
	Count	Row %	Count	Row %	Count	Row %	Count	Row %	Count	Row %
Expect how many walkers/ hikers?										
0	2	50.0%	2	50.0%	0	.0%	0	.0%	0	.0%
1-3	7	87.5%	1	12.5%	0	.0%	0	.0%	0	.0%
4-6	6	75.0%	1	12.5%	1	12.5%	0	.0%	0	.0%
7-9	1	100.0%	0	.0%	0	.0%	0	.0%	0	.0%
10+	3	100.0%	0	.0%	0	.0%	0	.0%	0	.0%

Trailhead
Griessen Rd.

	See how many walkers/hikers?									
	0		1-3		4-6		7-9		10+	
	Count	Row %	Count	Row %	Count	Row %	Count	Row %	Count	Row %
Expect how many walkers/ hikers?										
0	7	100.0%	0	.0%	0	.0%	0	.0%	0	.0%
1-3	1	12.5%	7	87.5%	0	.0%	0	.0%	0	.0%
4-6	0	.0%	1	100.0%	0	.0%	0	.0%	0	.0%
7-9	0	.0%	0	.0%	0	.0%	0	.0%	0	.0%
10+	1	50.0%	0	.0%	0	.0%	1	50.0%	0	.0%

Table 18. Visitors' Expectations of Walkers/Hikers Compared to Their Actual Encounters by Trailhead

Trailhead
Fairgrounds

	See how many walkers/hikers?									
	0		1-3		4-6		7-9		10+	
	Count	Row %	Count	Row %	Count	Row %	Count	Row %	Count	Row %
Expect how many walkers/ hikers?										
0	9	69.2%	4	30.8%	0	.0%	0	.0%	0	.0%
1-3	31	41.3%	39	52.0%	3	4.0%	2	2.7%	0	.0%
4-6	9	30.0%	15	50.0%	6	20.0%	0	.0%	0	.0%
7-9	0	.0%	0	.0%	2	40.0%	3	60.0%	0	.0%
10+	0	.0%	0	.0%	1	50.0%	0	.0%	1	50.0%

Trailhead
Green Ridge

	See how many walkers/hikers?									
	0		1-3		4-6		7-9		10+	
	Count	Row %	Count	Row %	Count	Row %	Count	Row %	Count	Row %
Expect how many walkers/ hikers?										
0	13	92.9%	1	7.1%	0	.0%	0	.0%	0	.0%
1-3	14	46.7%	15	50.0%	1	3.3%	0	.0%	0	.0%
4-6	5	35.7%	9	64.3%	0	.0%	0	.0%	0	.0%
7-9	0	.0%	1	100.0%	0	.0%	0	.0%	0	.0%
10+	2	100.0%	0	.0%	0	.0%	0	.0%	0	.0%

Table 18. Visitors' Expectations of Walkers/Hikers Compared to Their Actual Encounters by Trailhead

Trailhead
Windsor

	See how many walkers/hikers?									
	0		1-3		4-6		7-9		10+	
	Count	Row %	Count	Row %	Count	Row %	Count	Row %	Count	Row %
Expect how many walkers/ hikers?										
0	5	100.0%	0	.0%	0	.0%	0	.0%	0	.0%
1-3	14	42.4%	17	51.5%	2	6.1%	0	.0%	0	.0%
4-6	4	44.4%	3	33.3%	1	11.1%	1	11.1%	0	.0%
7-9	0	.0%	2	66.7%	1	33.3%	0	.0%	0	.0%
10+	0	.0%	3	50.0%	0	.0%	0	.0%	3	50.0%

Trailhead
Calhoun

	See how many walkers/hikers?									
	0		1-3		4-6		7-9		10+	
	Count	Row %	Count	Row %	Count	Row %	Count	Row %	Count	Row %
Expect how many walkers/ hikers?										
0	3	60.0%	2	40.0%	0	.0%	0	.0%	0	.0%
1-3	13	40.6%	19	59.4%	0	.0%	0	.0%	0	.0%
4-6	5	31.3%	5	31.3%	6	37.5%	0	.0%	0	.0%
7-9	2	66.7%	0	.0%	1	33.3%	0	.0%	0	.0%
10+	1	50.0%	1	50.0%	0	.0%	0	.0%	0	.0%

Table 19. Visitors' Expectations of Walkers/Hikers Compared to Their Actual Encounters by User Type

Type of user
Walker/hiker

	See how many walkers/hikers?									
	0		1-3		4-6		7-9		10+	
	Count	Row %	Count	Row %	Count	Row %	Count	Row %	Count	Row %
Expect how many walkers/ hikers?										
0	22	91.7%	2	8.3%	0	.0%	0	.0%	0	.0%
1-3	28	35.9%	45	57.7%	3	3.8%	1	1.3%	1	1.3%
4-6	6	17.1%	17	48.6%	10	28.6%	2	5.7%	0	.0%
7-9	1	12.5%	1	12.5%	5	62.5%	1	12.5%	0	.0%
10+	0	.0%	0	.0%	0	.0%	0	.0%	2	100.0%

Type of user
Runner/jogger

	See how many walkers/hikers?									
	0		1-3		4-6		7-9		10+	
	Count	Row %	Count	Row %	Count	Row %	Count	Row %	Count	Row %
Expect how many walkers/ hikers?										
0	1	100.0%	0	.0%	0	.0%	0	.0%	0	.0%
1-3	4	44.4%	4	44.4%	1	11.1%	0	.0%	0	.0%
4-6	1	25.0%	2	50.0%	1	25.0%	0	.0%	0	.0%
7-9	0	.0%	0	.0%	2	100.0%	0	.0%	0	.0%
10+	0	.0%	0	.0%	0	.0%	0	.0%	0	.0%

Table 19. Visitors' Expectations of Walkers/Hikers Compared to Their Actual Encounters by User Type

Type of user
Bicyclist

	See how many walkers/hikers?									
	0		1-3		4-6		7-9		10+	
	Count	Row %	Count	Row %	Count	Row %	Count	Row %	Count	Row %
Expect how many walkers/ hikers?										
0	20	71.4%	7	25.0%	1	3.6%	0	.0%	0	.0%
1-3	49	35.0%	81	57.9%	8	5.7%	2	1.4%	0	.0%
4-6	27	33.8%	36	45.0%	15	18.8%	2	2.5%	0	.0%
7-9	3	25.0%	3	25.0%	2	16.7%	3	25.0%	1	8.3%
10+	7	29.2%	7	29.2%	5	20.8%	1	4.2%	4	16.7%

Type of user
Equestrian

	See how many walkers/hikers?									
	0		1-3		4-6		7-9		10+	
	Count	Row %	Count	Row %	Count	Row %	Count	Row %	Count	Row %
Expect how many walkers/ hikers?										
0	0	.0%	0	.0%	0	.0%	0	.0%	0	.0%
1-3	6	54.5%	4	36.4%	1	9.1%	0	.0%	0	.0%
4-6	2	40.0%	1	20.0%	2	40.0%	0	.0%	0	.0%
7-9	0	.0%	1	33.3%	2	66.7%	0	.0%	0	.0%
10+	0	.0%	0	.0%	0	.0%	0	.0%	0	.0%

Table 20. Visitors' Expectations of Walkers/Hikers with Dogs Compared to Their Actual Encounters by Trailhead

Trailhead
Boonville

	See how many with dogs?					
	0		1-3		4-6	
	Count	Row %	Count	Row %	Count	Row %
Expect how many with dogs?						
0	8	88.9%	1	11.1%	0	.0%
1-3	29	46.8%	31	50.0%	2	3.2%
4-6	3	30.0%	6	60.0%	1	10.0%
7-9	0	.0%	1	100.0%	0	.0%
10+	1	33.3%	2	66.7%	0	.0%

Trailhead
Pilot Grove

	See how many with dogs?					
	0		1-3		4-6	
	Count	Row %	Count	Row %	Count	Row %
Expect how many with dogs?						
0	4	66.7%	2	33.3%	0	.0%
1-3	6	46.2%	6	46.2%	1	7.7%
4-6	0	.0%	3	75.0%	1	25.0%
7-9	1	100.0%	0	.0%	0	.0%
10+	1	100.0%	0	.0%	0	.0%

Trailhead
Clifton City

	See how many with dogs?					
	0		1-3		4-6	
	Count	Row %	Count	Row %	Count	Row %
Expect how many with dogs?						
0	8	100.0%	0	.0%	0	.0%
1-3	10	100.0%	0	.0%	0	.0%
4-6	2	100.0%	0	.0%	0	.0%
7-9	0	.0%	0	.0%	0	.0%
10+	3	100.0%	0	.0%	0	.0%

Table 20. Visitors' Expectations of Walkers/Hikers with Dogs Compared to Their Actual Encounters by Trailhead

Trailhead
Griessen Rd.

	See how many with dogs?					
	0		1-3		4-6	
	Count	Row %	Count	Row %	Count	Row %
Expect how many with dogs?						
0	8	100.0%	0	.0%	0	.0%
1-3	2	22.2%	7	77.8%	0	.0%
4-6	0	.0%	1	100.0%	0	.0%
7-9	0	.0%	0	.0%	0	.0%
10+	0	.0%	0	.0%	0	.0%

Trailhead
Fairgrounds

	See how many with dogs?					
	0		1-3		4-6	
	Count	Row %	Count	Row %	Count	Row %
Expect how many with dogs?						
0	22	91.7%	2	8.3%	0	.0%
1-3	41	68.3%	16	26.7%	3	5.0%
4-6	5	35.7%	7	50.0%	2	14.3%
7-9	0	.0%	0	.0%	0	.0%
10+	1	100.0%	0	.0%	0	.0%

Trailhead
Green Ridge

	See how many with dogs?					
	0		1-3		4-6	
	Count	Row %	Count	Row %	Count	Row %
Expect how many with dogs?						
0	18	85.7%	3	14.3%	0	.0%
1-3	18	72.0%	7	28.0%	0	.0%
4-6	4	66.7%	2	33.3%	0	.0%
7-9	1	100.0%	0	.0%	0	.0%
10+	0	.0%	0	.0%	0	.0%

Table 20. Visitors' Expectations of Walkers/Hikers with Dogs Compared to Their Actual Encounters by Trailhead

Trailhead
Windsor

	See how many with dogs?					
	0		1-3		4-6	
	Count	Row %	Count	Row %	Count	Row %
Expect how many with dogs?						
0	17	100.0%	0	.0%	0	.0%
1-3	18	72.0%	7	28.0%	0	.0%
4-6	2	50.0%	1	25.0%	1	25.0%
7-9	2	100.0%	0	.0%	0	.0%
10+	1	100.0%	0	.0%	0	.0%

Trailhead
Calhoun

	See how many with dogs?					
	0		1-3		4-6	
	Count	Row %	Count	Row %	Count	Row %
Expect how many with dogs?						
0	20	95.2%	1	4.8%	0	.0%
1-3	13	61.9%	8	38.1%	0	.0%
4-6	7	77.8%	1	11.1%	1	11.1%
7-9	0	.0%	0	.0%	0	.0%
10+	0	.0%	1	100.0%	0	.0%

Table 21. Visitors' Expectations of Walkers/Hikers with Dogs Compared to Their Actual Encounters by User Type

Type of user
Walker/hiker

	See how many with dogs?					
	0		1-3		4-6	
	Count	Row %	Count	Row %	Count	Row %
Expect how many with dogs?						
0	36	97.3%	1	2.7%	0	.0%
1-3	43	55.8%	33	42.9%	1	1.3%
4-6	4	33.3%	7	58.3%	1	8.3%
7-9	0	.0%	1	100.0%	0	.0%
10+	1	100.0%	0	.0%	0	.0%

Table 21. Visitors' Expectations of Walkers/Hikers with Dogs Compared to Their Actual Encounters by User Type

Type of user
Runner/jogger

	See how many with dogs?					
	0		1-3		4-6	
	Count	Row %	Count	Row %	Count	Row %
Expect how many with dogs?						
0	2	100.0%	0	.0%	0	.0%
1-3	4	33.3%	7	58.3%	1	8.3%
4-6	0	.0%	0	.0%	0	.0%
7-9	0	.0%	0	.0%	0	.0%
10+	0	.0%	0	.0%	0	.0%

Type of user
Bicyclist

	See how many with dogs?					
	0		1-3		4-6	
	Count	Row %	Count	Row %	Count	Row %
Expect how many with dogs?						
0	63	88.7%	8	11.3%	0	.0%
1-3	84	66.1%	39	30.7%	4	3.1%
4-6	19	52.8%	13	36.1%	4	11.1%
7-9	4	100.0%	0	.0%	0	.0%
10+	6	66.7%	3	33.3%	0	.0%

Type of user
Equestrian

	See how many with dogs?					
	0		1-3		4-6	
	Count	Row %	Count	Row %	Count	Row %
Expect how many with dogs?						
0	4	100.0%	0	.0%	0	.0%
1-3	6	66.7%	3	33.3%	0	.0%
4-6	0	.0%	1	50.0%	1	50.0%
7-9	0	.0%	0	.0%	0	.0%
10+	0	.0%	0	.0%	0	.0%

Table 22. Visitors' Expectations of Bicyclists Compared to Their Actual Encounters by Trailhead

Trailhead
Boonville

	See how many bikers?									
	0		1-3		4-6		7-9		10+	
	Count	Row %	Count	Row %	Count	Row %	Count	Row %	Count	Row %
Expect how many bikers?										
0	5	83.3%	1	16.7%	0	.0%	0	.0%	0	.0%
1-3	19	45.2%	20	47.6%	2	4.8%	1	2.4%	0	.0%
4-6	3	16.7%	7	38.9%	5	27.8%	3	16.7%	0	.0%
7-9	2	18.2%	4	36.4%	0	.0%	5	45.5%	0	.0%
10+	1	16.7%	1	16.7%	1	16.7%	2	33.3%	1	16.7%

Trailhead
Pilot Grove

	See how many bikers?									
	0		1-3		4-6		7-9		10+	
	Count	Row %	Count	Row %	Count	Row %	Count	Row %	Count	Row %
Expect how many bikers?										
0	1	100.0%	0	.0%	0	.0%	0	.0%	0	.0%
1-3	1	14.3%	6	85.7%	0	.0%	0	.0%	0	.0%
4-6	0	.0%	2	40.0%	3	60.0%	0	.0%	0	.0%
7-9	0	.0%	1	16.7%	2	33.3%	2	33.3%	1	16.7%
10+	0	.0%	0	.0%	3	30.0%	1	10.0%	6	60.0%

Trailhead
Clifton City

	See how many bikers?									
	0		1-3		4-6		7-9		10+	
	Count	Row %	Count	Row %	Count	Row %	Count	Row %	Count	Row %
Expect how many bikers?										
0	1	50.0%	1	50.0%	0	.0%	0	.0%	0	.0%
1-3	1	33.3%	0	.0%	1	33.3%	0	.0%	1	33.3%
4-6	2	18.2%	6	54.5%	2	18.2%	0	.0%	1	9.1%
7-9	1	50.0%	1	50.0%	0	.0%	0	.0%	0	.0%
10+	2	40.0%	1	20.0%	1	20.0%	0	.0%	1	20.0%

Table 22. Visitors' Expectations of Bicyclists Compared to Their Actual Encounters by Trailhead

Trailhead
Griessen Rd.

	See how many bikers?									
	0		1-3		4-6		7-9		10+	
	Count	Row %	Count	Row %	Count	Row %	Count	Row %	Count	Row %
Expect how many bikers?										
0	6	100.0%	0	.0%	0	.0%	0	.0%	0	.0%
1-3	1	20.0%	3	60.0%	0	.0%	1	20.0%	0	.0%
4-6	0	.0%	3	60.0%	2	40.0%	0	.0%	0	.0%
7-9	0	.0%	0	.0%	0	.0%	1	100.0%	0	.0%
10+	1	33.3%	1	33.3%	0	.0%	0	.0%	1	33.3%

Trailhead
Fairgrounds

	See how many bikers?									
	0		1-3		4-6		7-9		10+	
	Count	Row %	Count	Row %	Count	Row %	Count	Row %	Count	Row %
Expect how many bikers?										
0	11	84.6%	2	15.4%	0	.0%	0	.0%	0	.0%
1-3	18	32.7%	31	56.4%	6	10.9%	0	.0%	0	.0%
4-6	7	26.9%	9	34.6%	9	34.6%	1	3.8%	0	.0%
7-9	3	23.1%	1	7.7%	5	38.5%	4	30.8%	0	.0%
10+	0	.0%	3	42.9%	3	42.9%	0	.0%	1	14.3%

Trailhead
Green Ridge

	See how many bikers?									
	0		1-3		4-6		7-9		10+	
	Count	Row %	Count	Row %	Count	Row %	Count	Row %	Count	Row %
Expect how many bikers?										
0	9	90.0%	1	10.0%	0	.0%	0	.0%	0	.0%
1-3	6	28.6%	15	71.4%	0	.0%	0	.0%	0	.0%
4-6	9	39.1%	7	30.4%	5	21.7%	1	4.3%	1	4.3%
7-9	2	33.3%	4	66.7%	0	.0%	0	.0%	0	.0%
10+	0	.0%	5	62.5%	0	.0%	3	37.5%	0	.0%

Table 22. Visitors' Expectations of Bicyclists Compared to Their Actual Encounters by Trailhead

Trailhead
Windsor

	See how many bikers?									
	0		1-3		4-6		7-9		10+	
	Count	Row %	Count	Row %	Count	Row %	Count	Row %	Count	Row %
Expect how many bikers?										
0	6	100.0%	0	.0%	0	.0%	0	.0%	0	.0%
1-3	7	33.3%	10	47.6%	2	9.5%	2	9.5%	0	.0%
4-6	3	20.0%	2	13.3%	8	53.3%	2	13.3%	0	.0%
7-9	0	.0%	2	28.6%	0	.0%	4	57.1%	1	14.3%
10+	2	20.0%	5	50.0%	1	10.0%	1	10.0%	1	10.0%

Trailhead
Calhoun

	See how many bikers?									
	0		1-3		4-6		7-9		10+	
	Count	Row %	Count	Row %	Count	Row %	Count	Row %	Count	Row %
Expect how many bikers?										
0	4	80.0%	1	20.0%	0	.0%	0	.0%	0	.0%
1-3	3	23.1%	9	69.2%	1	7.7%	0	.0%	0	.0%
4-6	0	.0%	8	36.4%	9	40.9%	4	18.2%	1	4.5%
7-9	1	10.0%	2	20.0%	3	30.0%	4	40.0%	0	.0%
10+	0	.0%	2	16.7%	1	8.3%	4	33.3%	5	41.7%

Table 23. Visitors' Expectations of Bicyclists Compared to Their Actual Encounters by User Type

Type of user
Walker/hiker

	See how many bikers?									
	0		1-3		4-6		7-9		10+	
	Count	Row %	Count	Row %	Count	Row %	Count	Row %	Count	Row %
Expect how many bikers?										
0	30	96.8%	1	3.2%	0	.0%	0	.0%	0	.0%
1-3	25	38.5%	37	56.9%	2	3.1%	1	1.5%	0	.0%
4-6	6	24.0%	9	36.0%	9	36.0%	0	.0%	1	4.0%
7-9	1	12.5%	1	12.5%	1	12.5%	5	62.5%	0	.0%
10+	1	100.0%	0	.0%	0	.0%	0	.0%	0	.0%

Table 23. Visitors' Expectations of Bicyclists Compared to Their Actual Encounters by User Type

Type of user
Runner/jogger

	See how many bikers?									
	0		1-3		4-6		7-9		10+	
	Count	Row %	Count	Row %	Count	Row %	Count	Row %	Count	Row %
Expect how many bikers?										
0	1	100.0%	0	.0%	0	.0%	0	.0%	0	.0%
1-3	7	58.3%	4	33.3%	1	8.3%	0	.0%	0	.0%
4-6	0	.0%	0	.0%	0	.0%	0	.0%	0	.0%
7-9	1	100.0%	0	.0%	0	.0%	0	.0%	0	.0%
10+	0	.0%	0	.0%	0	.0%	0	.0%	0	.0%

Type of user
Bicyclist

	See how many bikers?									
	0		1-3		4-6		7-9		10+	
	Count	Row %	Count	Row %	Count	Row %	Count	Row %	Count	Row %
Expect how many bikers?										
0	11	68.8%	5	31.3%	0	.0%	0	.0%	0	.0%
1-3	23	28.0%	49	59.8%	6	7.3%	3	3.7%	1	1.2%
4-6	17	18.5%	33	35.9%	29	31.5%	11	12.0%	2	2.2%
7-9	7	15.9%	13	29.5%	9	20.5%	14	31.8%	1	2.3%
10+	5	8.6%	18	31.0%	10	17.2%	9	15.5%	16	27.6%

Type of user
Equestrian

	See how many bikers?									
	0		1-3		4-6		7-9		10+	
	Count	Row %	Count	Row %	Count	Row %	Count	Row %	Count	Row %
Expect how many bikers?										
0	1	100.0%	0	.0%	0	.0%	0	.0%	0	.0%
1-3	1	12.5%	4	50.0%	3	37.5%	0	.0%	0	.0%
4-6	1	12.5%	2	25.0%	5	62.5%	0	.0%	0	.0%
7-9	0	.0%	1	33.3%	0	.0%	1	33.3%	1	33.3%
10+	0	.0%	0	.0%	0	.0%	2	100.0%	0	.0%

Table 24. Visitors' Expectations of Runners/Joggers Compared to Their Actual Encounters by Trailhead

Trailhead
Boonville

	See how many runners/joggers?							
	0		1-3		4-6		10+	
	Count	Row %	Count	Row %	Count	Row %	Count	Row %
Expect how many runners/ joggers?								
0	11	91.7%	1	8.3%	0	.0%	0	.0%
1-3	26	48.1%	28	51.9%	0	.0%	0	.0%
4-6	8	38.1%	10	47.6%	3	14.3%	0	.0%
7-9	0	.0%	4	100.0%	0	.0%	0	.0%
10+	0	.0%	1	100.0%	0	.0%	0	.0%

Trailhead
Pilot Grove

	See how many runners/joggers?							
	0		1-3		4-6		10+	
	Count	Row %	Count	Row %	Count	Row %	Count	Row %
Expect how many runners/ joggers?								
0	5	71.4%	2	28.6%	0	.0%	0	.0%
1-3	6	60.0%	3	30.0%	1	10.0%	0	.0%
4-6	2	50.0%	1	25.0%	1	25.0%	0	.0%
7-9	1	100.0%	0	.0%	0	.0%	0	.0%
10+	3	75.0%	0	.0%	1	25.0%	0	.0%

Trailhead
Clifton City

	See how many runners/joggers?							
	0		1-3		4-6		10+	
	Count	Row %	Count	Row %	Count	Row %	Count	Row %
Expect how many runners/ joggers?								
0	8	88.9%	1	11.1%	0	.0%	0	.0%
1-3	9	100.0%	0	.0%	0	.0%	0	.0%
4-6	2	100.0%	0	.0%	0	.0%	0	.0%
7-9	1	100.0%	0	.0%	0	.0%	0	.0%
10+	1	100.0%	0	.0%	0	.0%	0	.0%

Table 24. Visitors' Expectations of Runners/Joggers Compared to Their Actual Encounters by Trailhead

Trailhead
Griessen Rd.

	See how many runners/joggers?							
	0		1-3		4-6		10+	
	Count	Row %	Count	Row %	Count	Row %	Count	Row %
Expect how many runners/ joggers?								
0	10	100.0%	0	.0%	0	.0%	0	.0%
1-3	1	16.7%	5	83.3%	0	.0%	0	.0%
4-6	1	100.0%	0	.0%	0	.0%	0	.0%
7-9	0	.0%	0	.0%	0	.0%	0	.0%
10+	0	.0%	0	.0%	0	.0%	0	.0%

Trailhead
Fairgrounds

	See how many runners/joggers?							
	0		1-3		4-6		10+	
	Count	Row %	Count	Row %	Count	Row %	Count	Row %
Expect how many runners/ joggers?								
0	19	90.5%	1	4.8%	1	4.8%	0	.0%
1-3	48	66.7%	22	30.6%	2	2.8%	0	.0%
4-6	3	60.0%	2	40.0%	0	.0%	0	.0%
7-9	0	.0%	1	50.0%	1	50.0%	0	.0%
10+	0	.0%	0	.0%	0	.0%	0	.0%

Trailhead
Green Ridge

	See how many runners/joggers?							
	0		1-3		4-6		10+	
	Count	Row %	Count	Row %	Count	Row %	Count	Row %
Expect how many runners/ joggers?								
0	24	96.0%	1	4.0%	0	.0%	0	.0%
1-3	20	87.0%	3	13.0%	0	.0%	0	.0%
4-6	2	40.0%	3	60.0%	0	.0%	0	.0%
7-9	2	100.0%	0	.0%	0	.0%	0	.0%
10+	0	.0%	0	.0%	0	.0%	0	.0%

Table 24. Visitors' Expectations of Runners/Joggers Compared to Their Actual Encounters by Trailhead

Trailhead
Windsor

	See how many runners/joggers?							
	0		1-3		4-6		10+	
	Count	Row %	Count	Row %	Count	Row %	Count	Row %
Expect how many runners/ joggers?								
0	19	100.0%	0	.0%	0	.0%	0	.0%
1-3	19	95.0%	1	5.0%	0	.0%	0	.0%
4-6	5	83.3%	1	16.7%	0	.0%	0	.0%
7-9	1	100.0%	0	.0%	0	.0%	0	.0%
10+	1	50.0%	0	.0%	0	.0%	1	50.0%

Trailhead
Calhoun

	See how many runners/joggers?							
	0		1-3		4-6		10+	
	Count	Row %	Count	Row %	Count	Row %	Count	Row %
Expect how many runners/ joggers?								
0	17	100.0%	0	.0%	0	.0%	0	.0%
1-3	19	76.0%	6	24.0%	0	.0%	0	.0%
4-6	7	77.8%	1	11.1%	1	11.1%	0	.0%
7-9	1	100.0%	0	.0%	0	.0%	0	.0%
10+	0	.0%	0	.0%	1	100.0%	0	.0%

Table 25. Visitors' Expectations of Runners/Joggers Compared to Their Actual Encounters by User Type

Type of user
Walker/hiker

	See how many runners/joggers?							
	0		1-3		4-6		10+	
	Count	Row %	Count	Row %	Count	Row %	Count	Row %
Expect how many runners/ joggers?								
0	43	97.7%	1	2.3%	0	.0%	0	.0%
1-3	39	56.5%	30	43.5%	0	.0%	0	.0%
4-6	8	50.0%	6	37.5%	2	12.5%	0	.0%
7-9	1	33.3%	2	66.7%	0	.0%	0	.0%
10+	0	.0%	0	.0%	0	.0%	0	.0%

Table 25. Visitors' Expectations of Runners/Joggers Compared to Their Actual Encounters by User Type

Type of user
Runner/jogger

	See how many runners/joggers?							
	0		1-3		4-6		10+	
	Count	Row %	Count	Row %	Count	Row %	Count	Row %
Expect how many runners/ joggers?								
0	1	100.0%	0	.0%	0	.0%	0	.0%
1-3	8	66.7%	4	33.3%	0	.0%	0	.0%
4-6	0	.0%	0	.0%	1	100.0%	0	.0%
7-9	0	.0%	1	100.0%	0	.0%	0	.0%
10+	0	.0%	0	.0%	0	.0%	0	.0%

Type of user
Bicyclist

	See how many runners/joggers?							
	0		1-3		4-6		10+	
	Count	Row %	Count	Row %	Count	Row %	Count	Row %
Expect how many runners/ joggers?								
0	67	91.8%	5	6.8%	1	1.4%	0	.0%
1-3	95	73.6%	31	24.0%	3	2.3%	0	.0%
4-6	22	61.1%	12	33.3%	2	5.6%	0	.0%
7-9	5	62.5%	2	25.0%	1	12.5%	0	.0%
10+	5	62.5%	1	12.5%	2	25.0%	0	.0%

Type of user
Equestrian

	See how many runners/joggers?							
	0		1-3		4-6		10+	
	Count	Row %	Count	Row %	Count	Row %	Count	Row %
Expect how many runners/ joggers?								
0	2	100.0%	0	.0%	0	.0%	0	.0%
1-3	6	66.7%	3	33.3%	0	.0%	0	.0%
4-6	0	.0%	0	.0%	0	.0%	0	.0%
7-9	0	.0%	0	.0%	0	.0%	0	.0%
10+	0	.0%	0	.0%	0	.0%	1	100.0%

Table 26. Visitors' Expectations of Horseback Riders Compared to Their Actual Encounters by Trailhead

Trailhead
Boonville

	See how many horseback riders?									
	0		1-3		4-6		7-9		10+	
	Count	Row %	Count	Row %	Count	Row %	Count	Row %	Count	Row %
Expect how many horseback riders?										
0	74	100.0%	0	.0%	0	.0%	0	.0%	0	.0%
1-3	5	100.0%	0	.0%	0	.0%	0	.0%	0	.0%
4-6	1	100.0%	0	.0%	0	.0%	0	.0%	0	.0%
7-9	0	.0%	0	.0%	0	.0%	0	.0%	0	.0%
10+	0	.0%	1	100.0%	0	.0%	0	.0%	0	.0%

Trailhead
Pilot Grove

	See how many horseback riders?									
	0		1-3		4-6		7-9		10+	
	Count	Row %	Count	Row %	Count	Row %	Count	Row %	Count	Row %
Expect how many horseback riders?										
0	16	88.9%	1	5.6%	0	.0%	0	.0%	1	5.6%
1-3	0	.0%	0	.0%	0	.0%	0	.0%	1	100.0%
4-6	1	33.3%	1	33.3%	1	33.3%	0	.0%	0	.0%
7-9	0	.0%	0	.0%	0	.0%	0	.0%	0	.0%
10+	0	.0%	0	.0%	0	.0%	0	.0%	1	100.0%

Trailhead
Clifton City

	See how many horseback riders?									
	0		1-3		4-6		7-9		10+	
	Count	Row %	Count	Row %	Count	Row %	Count	Row %	Count	Row %
Expect how many horseback riders?										
0	17	100.0%	0	.0%	0	.0%	0	.0%	0	.0%
1-3	2	100.0%	0	.0%	0	.0%	0	.0%	0	.0%
4-6	2	100.0%	0	.0%	0	.0%	0	.0%	0	.0%
7-9	0	.0%	0	.0%	0	.0%	0	.0%	0	.0%
10+	0	.0%	0	.0%	0	.0%	0	.0%	0	.0%

Table 26. Visitors' Expectations of Horseback Riders Compared to Their Actual Encounters by Trailhead

Trailhead
Griessen Rd.

	See how many horseback riders?									
	0		1-3		4-6		7-9		10+	
	Count	Row %	Count	Row %	Count	Row %	Count	Row %	Count	Row %
Expect how many horseback riders?										
0	17	100.0%	0	.0%	0	.0%	0	.0%	0	.0%
1-3	0	.0%	0	.0%	0	.0%	0	.0%	0	.0%
4-6	0	.0%	0	.0%	0	.0%	0	.0%	0	.0%
7-9	0	.0%	0	.0%	0	.0%	0	.0%	0	.0%
10+	0	.0%	0	.0%	0	.0%	0	.0%	0	.0%

Trailhead
Fairgrounds

	See how many horseback riders?									
	0		1-3		4-6		7-9		10+	
	Count	Row %	Count	Row %	Count	Row %	Count	Row %	Count	Row %
Expect how many horseback riders?										
0	63	95.5%	3	4.5%	0	.0%	0	.0%	0	.0%
1-3	21	77.8%	4	14.8%	2	7.4%	0	.0%	0	.0%
4-6	5	100.0%	0	.0%	0	.0%	0	.0%	0	.0%
7-9	0	.0%	0	.0%	0	.0%	0	.0%	0	.0%
10+	1	50.0%	0	.0%	0	.0%	0	.0%	1	50.0%

Trailhead
Green Ridge

	See how many horseback riders?									
	0		1-3		4-6		7-9		10+	
	Count	Row %	Count	Row %	Count	Row %	Count	Row %	Count	Row %
Expect how many horseback riders?										
0	24	92.3%	1	3.8%	1	3.8%	0	.0%	0	.0%
1-3	18	81.8%	2	9.1%	2	9.1%	0	.0%	0	.0%
4-6	2	50.0%	1	25.0%	1	25.0%	0	.0%	0	.0%
7-9	1	50.0%	0	.0%	1	50.0%	0	.0%	0	.0%
10+	1	50.0%	0	.0%	1	50.0%	0	.0%	0	.0%

Table 26. Visitors' Expectations of Horseback Riders Compared to Their Actual Encounters by Trailhead

Trailhead
Windsor

	See how many horseback riders?									
	0		1-3		4-6		7-9		10+	
	Count	Row %	Count	Row %	Count	Row %	Count	Row %	Count	Row %
Expect how many horseback riders?										
0	20	95.2%	1	4.8%	0	.0%	0	.0%	0	.0%
1-3	12	70.6%	5	29.4%	0	.0%	0	.0%	0	.0%
4-6	5	50.0%	2	20.0%	3	30.0%	0	.0%	0	.0%
7-9	0	.0%	0	.0%	0	.0%	0	.0%	0	.0%
10+	0	.0%	0	.0%	1	100.0%	0	.0%	0	.0%

Trailhead
Calhoun

	See how many horseback riders?									
	0		1-3		4-6		7-9		10+	
	Count	Row %	Count	Row %	Count	Row %	Count	Row %	Count	Row %
Expect how many horseback riders?										
0	20	87.0%	2	8.7%	0	.0%	1	4.3%	0	.0%
1-3	14	60.9%	8	34.8%	0	.0%	1	4.3%	0	.0%
4-6	3	42.9%	2	28.6%	1	14.3%	1	14.3%	0	.0%
7-9	0	.0%	0	.0%	0	.0%	0	.0%	0	.0%
10+	1	100.0%	0	.0%	0	.0%	0	.0%	0	.0%

Table 27. Visitors' Expectations of Horseback Riders Compared to Their Actual Encounters by User Type

Type of user
Walker/hiker

	See how many horseback riders?									
	0		1-3		4-6		7-9		10+	
	Count	Row %	Count	Row %	Count	Row %	Count	Row %	Count	Row %
Expect how many horseback riders?										
0	100	98.0%	2	2.0%	0	.0%	0	.0%	0	.0%
1-3	13	92.9%	1	7.1%	0	.0%	0	.0%	0	.0%
4-6	1	33.3%	0	.0%	2	66.7%	0	.0%	0	.0%
7-9	0	.0%	0	.0%	0	.0%	0	.0%	0	.0%
10+	0	.0%	0	.0%	0	.0%	0	.0%	0	.0%

Table 27. Visitors' Expectations of Horseback Riders Compared to Their Actual Encounters by User Type

Type of user
Runner/jogger

	See how many horseback riders?									
	0		1-3		4-6		7-9		10+	
	Count	Row %	Count	Row %	Count	Row %	Count	Row %	Count	Row %
Expect how many horseback riders?										
0	13	100.0%	0	.0%	0	.0%	0	.0%	0	.0%
1-3	0	.0%	0	.0%	0	.0%	0	.0%	0	.0%
4-6	0	.0%	0	.0%	0	.0%	0	.0%	0	.0%
7-9	0	.0%	0	.0%	0	.0%	0	.0%	0	.0%
10+	0	.0%	0	.0%	0	.0%	0	.0%	0	.0%

Type of user
Bicyclist

	See how many horseback riders?									
	0		1-3		4-6		7-9		10+	
	Count	Row %	Count	Row %	Count	Row %	Count	Row %	Count	Row %
Expect how many horseback riders?										
0	138	93.9%	6	4.1%	1	.7%	1	.7%	1	.7%
1-3	56	76.7%	13	17.8%	3	4.1%	0	.0%	1	1.4%
4-6	17	70.8%	4	16.7%	3	12.5%	0	.0%	0	.0%
7-9	1	100.0%	0	.0%	0	.0%	0	.0%	0	.0%
10+	3	42.9%	1	14.3%	1	14.3%	0	.0%	2	28.6%

Type of user
Equestrian

	See how many horseback riders?									
	0		1-3		4-6		7-9		10+	
	Count	Row %	Count	Row %	Count	Row %	Count	Row %	Count	Row %
Expect how many horseback riders?										
0	0	.0%	0	.0%	0	.0%	0	.0%	0	.0%
1-3	3	30.0%	5	50.0%	1	10.0%	1	10.0%	0	.0%
4-6	1	20.0%	2	40.0%	1	20.0%	1	20.0%	0	.0%
7-9	0	.0%	0	.0%	1	100.0%	0	.0%	0	.0%
10+	0	.0%	0	.0%	1	100.0%	0	.0%	0	.0%