A brief summary of economic impacts, tourist profiles, and management preferences of climbers in the Chattanooga region.

Chattanooga Climbing Impact Report

UTC Tourism Center

June 2016

www.utc.edu/health-human-performance/tourismcenter

Andrew W. Bailey, Ph.D.
Eric Hungenberg, Ph.D.
Amanda McDowell

Table of Contents

Executive Summary

- Climbing in Chattanooga brought in over **16,565 non-resident visits** in the 2015-16 climbing season, including **8,698 unique visitors** (10,185, including Hamilton County residents).

- Seventy percent of climbers surveyed were visitors and 30%, locals. Median visitor age was 26 (*Mean*= 28), most having completed some college (42%) or having a college degree (29%).

- The most popular attraction for visitors was downtown restaurants and stores (28.8%).

- While camping was the most common form of lodging (48%), climbing visitors generated a total of **2709 paid hotel/hostel room nights**.

- Average per trip expenditure was **$178** per person. The average visitor spent the most money on food ($55.35), with food expenditures reaching **$2,286,936.17**.

- Accounting for group size and total visits per year, climbers had a total economic impact of approximately **$6,964,055** on Hamilton County. This conservative estimate excludes impacts from regional climbing areas not within 30 minutes of downtown Chattanooga. Including the popular areas of Foster Falls and Rocktown, a potential Impact of *$10.3 million* was deduced.

Tourism Recommendations:

1. Climbing in Chattanooga attracts a young, frugal demographic, but frequent visits generate significant economic impacts. **Development of a variety of climbing areas** would foster a more diverse clientele in the region, closer resembling the national demographic (OIA, 2014).

2. Return on investment is extremely robust given the lack of human resources and site infrastructure allocated to the generation of climbing-related tourism. **Investment in climbing management, marketing, and infrastructure** would greatly enhance tourism attraction.

3. **Cross marketing partnerships with local shops and restaurants** would be the most logical course of action for climbing associations because of the high percentage of climbers that visit these establishments.

4. **Creative revenue sources** should be explored to create a sustainable infrastructure for climbing in the region.

Project Overview

In conjunction with the Southeastern Climbers' Coalition, the University of Tennessee at Chattanooga presents a report showcasing the economic impact and consumer behaviors of visitors climbing at popular areas in the region.

Contained in this report is a concise overview of the direct and indirect impact these climbers have on Hamilton County. The direct impact represents actual dollars spent at local restaurants, hotels, gas stations, etc. by non-local climbers visiting the area. Total impact is calculated by assessing the ripple effects (indirect impact) the direct spending then has on specific industry in Hamilton County, TN.

This report does not account for costs related to infrastructure, maintenance, staffing, etc. of these climbing locations, and instead only accounts for the net impact that climbers have in the region. Given that most maintenance is conducted by volunteer groups, the cost would be minimal.

Methods

The data are a sum of all valid survey responses collected throughout the fall climbing season at local climbing spots and SCC events within the Chattanooga area. Surveyors travelled to Tennessee Wall, Sunset Rock, and Stone Fort, both on the weekends and throughout the week to distribute the surveys. A total of 530 surveys were collected, with a 97% response rate (366 visitors and 164 residents).

Data were analyzed with a combination of SPSS and IMPLAN software to determine descriptive statistics and the overall impact on the economy. The impact was delimited to Hamilton County, TN, in an effort to estimate a conservative and authentic estimate of impact. Popular sites, such as Foster Falls and Rocktown, were not included in the official estimate, as they are 45-minutes from Chattanooga. Climbers from Nashville and Atlanta, for example, often day-trip to these locations without stopping in Chattanooga. Given the popularity of these sites, and the very conservative methods used, the authors included a "potential impact" figure, based on parking lot data collected at these sites (e.g. car counts & license plates). A supplemental study would need to be conducted to estimate true impacts generated from regional sites and provided to regional counties.

The totals for the participant data were calculated by first determining Stone Fort (SF) as the constant, as this location requires registration, providing an exact number of visitors. From this, we established a ratio of visitors from parking lot counts at other climbing locations compared to that of Stone Fort. Using this method, we were able to calculate an approximate annual count of climbers at all regional sites. For a detailed description of this approximation, see Appendix A.

Descriptives & Travel Information

Table 1. Visitor Demographics

Female	48%
Male	52%
Number in Party	3.67
Days of Trip	2.09
Nights of Trip	1.53
Average Trips to Chattanooga per Year	4.7

Table 2. Attraction Visits

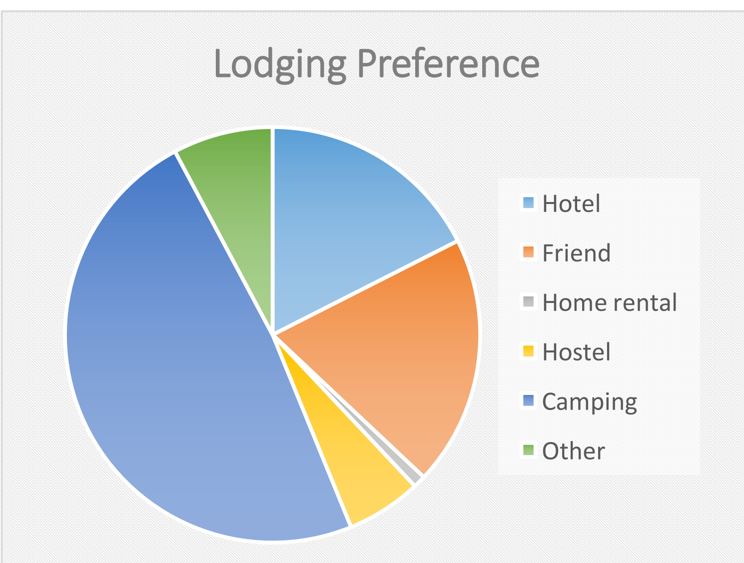
Aquarium	6.3%
Rock City	3.8%
Outdoor Recreation Sites	28.2%
Downtown Stores and Restaurants	28.8%
High Point Climbing Gym	19.5%

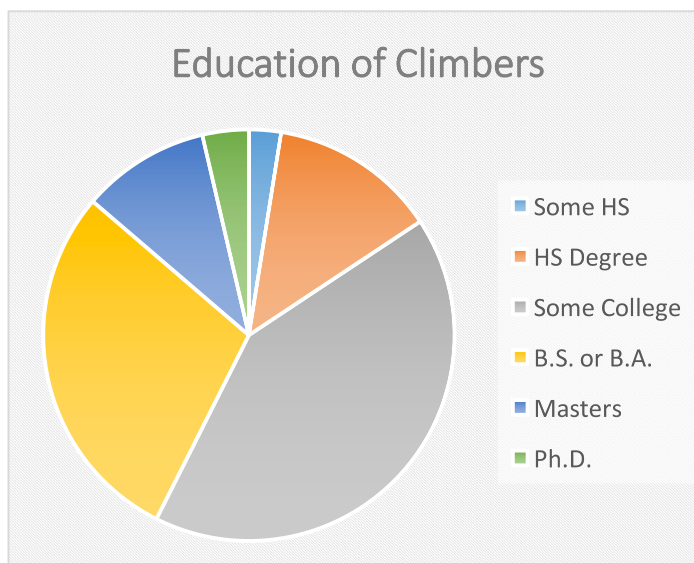
- Climbers are almost evenly split between male and female, and tend to travel in groups.

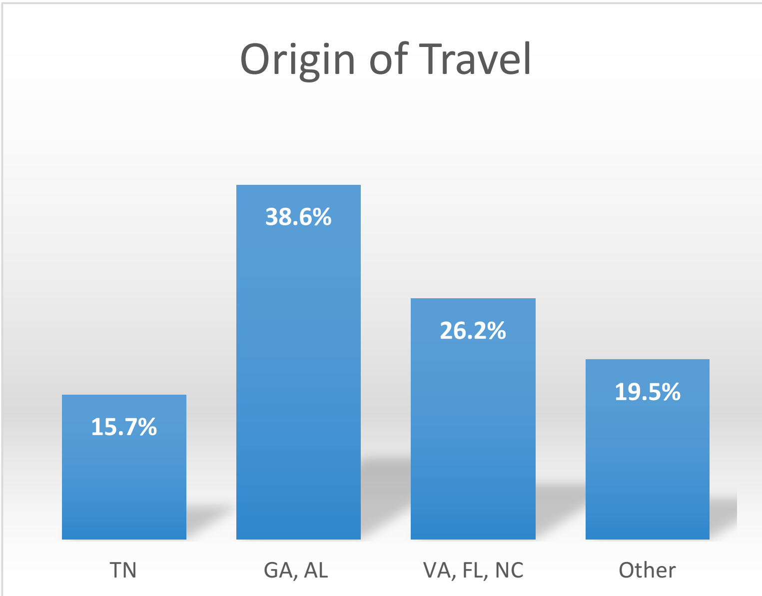
- On average, they spend 2 days per trip in Chattanooga and travel here 4.7 times per year (~9 climbing days a year).

- While a low percentage of climbers visit other local tourist attractions during their visit, about a third visit local downtown stores and restaurants, and other outdoor recreation sites during their stay.

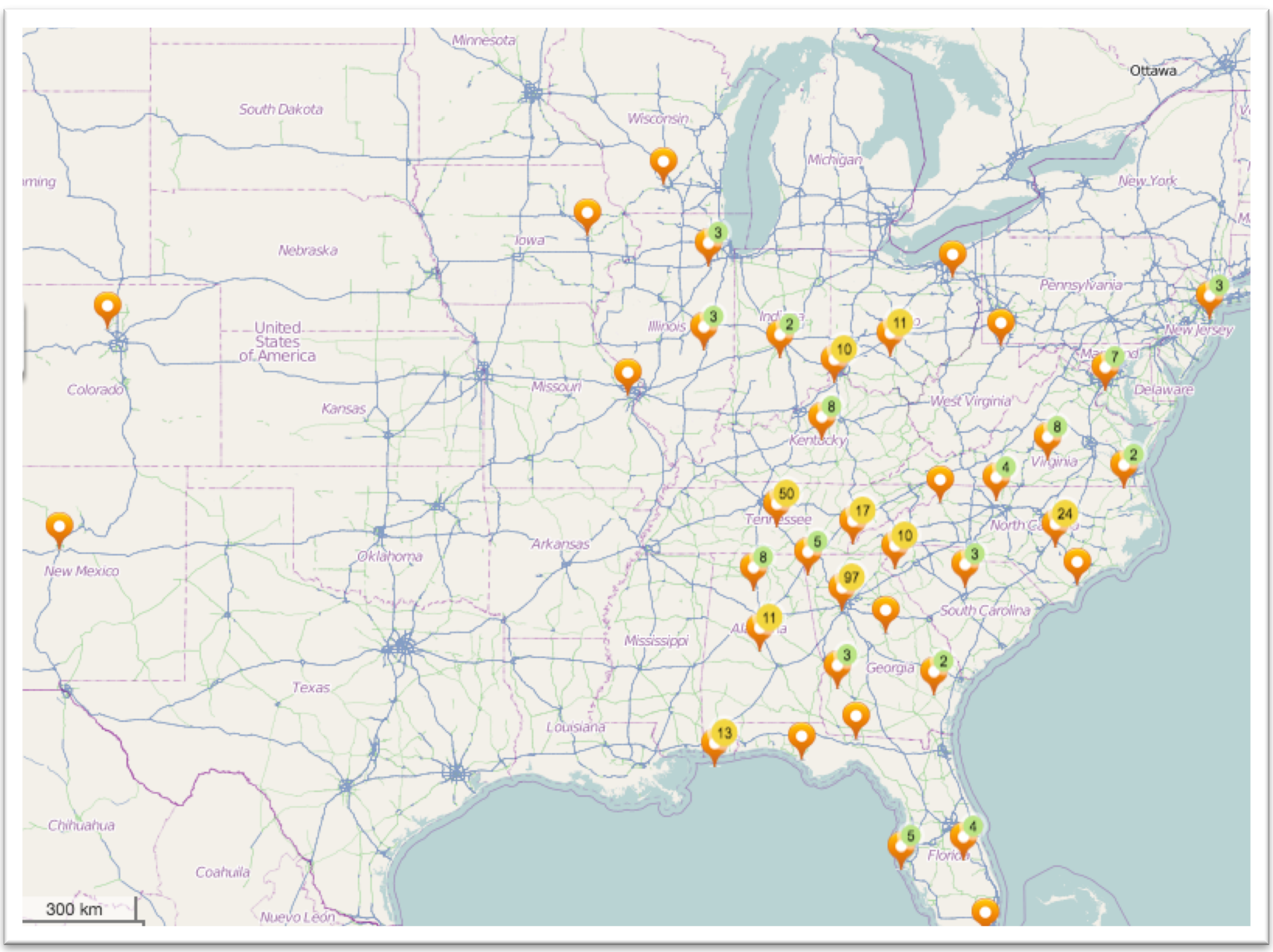
- More experienced climbers tend to spend less on tourist attractions, as many attractions are a "one and done" experience.







The vast majority (84%) of visiting climbers originate outside of TN, indicating that significant state and local taxes are generated from climbers to the region. The figure below illustrates the weighted origin map of climbers in Chattanooga. Clusters are evident in regional areas (Nashville, Atlanta) as well as non-adjacent states (FL, OH, IN). Accolades for Chattanooga's outdoor resources and it's status as Best Outdoor Town (Outside Magazine, 2015) attract visitors from across the country.



Expenditures

Table 3. Average Expenditures per Discrete Category

Spending Categories	Average Spending	Total Spending
Food	55.35	1,989,092.26
Lodging	42.56	1,529,296.68
Entertainment	18.64	669,740.41
Shopping	18.08	649.669.09
Transportation	37.31	1,340,748.61
Misc.	6.73	241,843.50
Total Direct Impact	**$178.67**	**$6,420,494.41**

- Chattanooga's unique climbing sites and urban attractions induce significant spending.
- The average per trip spending is higher than for similar activities in the region (c.f. Menard et al., 2013), likely due to a longer average stay per trip.

Table 4. Direct, Indirect, and Induced Impact

Impact Type	Employment	Labor Income	Total Value Added	Output
Direct Effect	65.6	1,648,918.8	2,666,340.9	4,624,607.1
Indirect Effect	8.5	436,858.4	726,019.7	1,202,435.0
Induced Effect	9.2	422,532.4	712,579.3	1,137,013.4
Total Effect	**83.3**	**$2,508,309.7**	**$4,104,940.0**	**$6,964,055.6**

- The economic impact of climbing supports ***83 full time employees*** in Hamilton County.

Total Economic Impact is the result of a non-linear ripple effect generated from the direct spending of visitors in Hamilton County. In the table above, the ***Direct Effect*** represents the marginal (non-leaked) money remaining in the region. ***Indirect Effects*** are the result of local businesses spending more on employment and materials, as a result of added business. ***Induced Effects*** include additional spending by local employees as a result of increased hours/income due to the activity. Further, these effects impact the region in various ways: 1) ***Employmen***t: the number of full-year, full-time jobs supported by climbers, 2) ***Labor Income***: added income for current employees, 3) ***Total Value***: true profits after accounting for employment, taxes, and other everyday business expenses, and 4) ***Output***: total overall sales and revenue from climbers.

Given a multiplier of 1.63 for the surrounding 30-county region (Menard et al., 2013), the surrounding counties gain $.063 for every $1 spent by climbers in Hamilton County; or a total of $4,387,355.

Table 5. Top 10 County Industries Impacted.

Description	Employment	Labor Income	Total Value Added	Output
Food services and drinking places	34.6	808,729.6	1,115,688.6	2,125,331.7
Hotels and motels, including casino hotels	13.7	360,379.7	904,542.8	1,531,251.4
Other amusement and recreation industries	12.4	307,150.2	397,738.6	673,571.4
Retail Stores - General merchandise	3.5	96,737.1	147,078.2	202,497.1
Retail Stores – Miscellaneous	2.6	62,026.0	90,504.5	117,464.6
Retail Stores - Gasoline stations	1.9	88,583.8	115,795.9	157,248.3
Employment services	1.0	32,344.7	34,813.5	42,533.6
Services to buildings and dwellings	0.9	29,578.1	35,022.5	60,670.5
Real estate establishments	0.6	24,530.9	80,567.1	101,321.0
Offices of physicians, dentists, and other health practitioners	0.5	54,169.2	54,902.0	82,581.4

Expenditure information was collected for discrete categories, coinciding with industry data in the IMPLAN software. Based on the most recent industry data specific to Hamilton County, TN, direct expenditures were analyzed to determine the specific impact on the local economy.

- Climbers traveling to Hamilton County have the strongest impact on restaurants and bars, followed by hotels, amusement, and retail.

- This points to key partners for generating political and financial support for climbing in the region.

Table 6. Annual Induced Local and State Impacts

Description	Employee Compensation	Tax on Production and Imports	Households	Corporations
Dividends				$250.00
Social Ins Tax- Employee Contribution	$986.00			
Social Ins Tax- Employer Contribution	$1,938.00			
Tax on Production and Imports: Sales Tax		$292,549.00		
Tax on Production and Imports: Property Tax		$127,447.00		
Tax on Production and Imports: Motor Vehicle Lic		$4,377.00		
Tax on Production and Imports: Severance Tax		$241.00		
Tax on Production and Imports: Other Taxes		$30,979.00		
Tax on Production and Imports: S/L NonTaxes		$3,093.00		
Corporate Profits Tax				$8,284.00
Personal Tax: Income Tax			$1,512.00	
Personal Tax: NonTaxes (Fines- Fees			$9,012.00	
Personal Tax: Motor Vehicle License			$2,202.00	
Personal Tax: Property Taxes			$605.00	
Personal Tax: Other Tax (Fish/Hunt)			$942.00	
Total State and Local Tax	**$2,924.00**	**$458,686.00**	**$14,273.00**	**$8,534.00**

- Climbing in Chattanooga generates ***$484,417 in state and local taxes*** annually.

Given that climbing sites are often managed by a variety of agencies, it is important to understand the *value added* these activities can provide at the state and national levels. These numbers represent additional state and local income that would not exist if not for climbing travel. Negotiations with local and state land management agencies for climbing access and maintenance should be informed by real valued added.

Table 7. Annual Induced Federal Impacts

Description	Employee Compensation	Proprietor Income	Tax on Production and Imports	Households	Corporations
Social Ins Tax- Employee Contribution	$99,847	$12,334			
Social Ins Tax- Employer Contribution	$130,135				
Tax on Production and Imports: Excise Taxes			$44,453		
Tax on Production and Imports: Custom Duty			$17,623		
Tax on Production and Imports: Fed NonTaxes			$5,050		
Corporate Profits Tax					$70,463
Personal Tax: Income Tax				$127,086	
Total Federal Tax	**$229,982**	**$12,334**	**$67,127**	**$127,086**	**$70,463**

- Climbing in Chattanooga generates ***$506,992 in federal taxes*** annually.

A relationship with the National Park and National Forest services has been nurtured to maintain access to popular climbing sites. Induced impacts of climber expenditures provide a sizeable revenue to the federal budget through federal sales and income taxes.

Tourism Recommendations:

The following tourism recommendations were developed by the authors, based on data collected from the surveys and initiatives promoted by other climbing-rich areas. These recommendations only include tourism-specific ideas. General management decisions should be made by relevant parties (e.g. SCC and land managers), based on climber feedback (see "Management and Policy Info" below).

1. **Development of various climbing areas for all types of climbers**:
   The Chattanooga area is renowned for its diverse crags and boulders, which cater to myriad climbers seeking distinctive sites and experiences. In accordance with this strategic advantage, it is recommended that Chattanooga and its stakeholders remain committed to developing new climbing areas while enhancing existing ones. By bolstering Hamilton County's climbing portfolio, Chattanooga may bring a broader demographic of climber-visitors. This approach not only assists in generating additional non-local spending, but will make climbing more inclusive for residents and visitors. For example, the most popular sites, Stone Fort and Foster Falls, are notably easier to access than other sites in the region, having a shorter approaches, developed parking areas, ample climber-specific signage, a land management presence, and an overall more "family friendly" atmosphere. Developing new climbing areas with similar characteristics would likely increase climbers' visits, particularly as climbing becomes a more mainstream, family-friendly sport, reinforced by indoor climbing gyms and school climbing teams.

   A kid-friendly approach to certain climbing areas could benefit Chattanooga residents and tourists alike, and may be especially effective at bringing climbing families to the area for extended trips to climb, stay in hotels, and eat in restaurants. At the same time, areas like Tennessee Wall, Deep Creek, or Sunset remain well-known and highly popular, despite more difficult approaches and a relatively lower level of site development. Maintenance of these sites, too, is important to Chattanooga's overall attractiveness as a climbing destination. Generally, development or improvement of any climbing area should be managed in a way suitable to the location and with regard to the diversity climbers' preferences.

2. **Investment in climbing management and infrastructure:**
   The $7 million impact generated by climbers in the region, as well as countless advertising opportunities for the Best Outdoor Town, come at very little cost. There are currently two full-time employees advocating for climbing in the region: 1) One director of the Southeastern Climbers Coalition and 2) One regional director for the Access Fund. Both of these jobs are responsible for **regional** access, including climbing areas from Florida to Virginia. Other activities generate more money in the region (c.f. Ironman & Riverbend reports; UTC Tourism Center), but they require teams of managers and marketers as well as a checklist of permits and road closures. Climbers to Chattanooga are largely an unseen clientele, generating a consistent source of revenue while requiring very little financial support. Trail maintenance, site cleanup, and other management initiatives are directed by two paid

employees, a host of dedicated volunteers, and supportive land managers. Broad initiatives (accessibility, marketing, maintenance, land acquisition, etc.) cannot realistically be managed without significant improvement in resources. City, County, and State agencies should lend political and financial support, where available, to ensure continued and increased access of climbing in the region. As illustrated by the list of area climbing crags that are currently closed (http://www.seclimbers.org/modules.php?name=Content&pa=showpage&pid=13), access to climbing is not guaranteed. In addition, professionalizing the climbing industry would only increase the potential for influence and opportunities, enhancing commercial services, tourism development, and revenue.

3. **Partnerships with local shops and restaurants:**

Given that the bulk of the economic impact supports food and retail establishments, it would seem fitting to partner with those businesses. Some establishments voluntarily support non-profits, through regular promotions. For example, The Flying Squirrel offers "10% nights," whereby 10% of their profits for one day's sales are donated to the SCC. Given the growing outdoor culture in the region, it would seem feasible to expand this to a host of other businesses. By doing so, a fund could be established to support a variety of initiatives. For instance, a one-day promotional event for climbing support during the annual RiverRocks festival might be embraced by a host of local restaurants and shops in the area, driving festival participants and local outdoor advocates to those locations. Support from the city and county, as well as the visitor's bureau, would increase visibility for such initiatives.

4. **Creative Revenue Sources:**

Given a choice of methods to increase the cost/benefit ratio, climbers would prefer to include donation boxes at all sites (85%), and to outsource maintenance of sites to qualified non-profits (83%), followed by reduced maintenance (31%), an increase in bar/restaurant taxes for outdoor projects (28%), management by private companies (5%), and closing less popular areas (3%). While a combination of methods may be required, none of these will provide a consistent, sustainable revenue source for long-term planning.

Private grants are always a great revenue source, and local foundations have been supportive of climbing development in the past (e.g. Community Foundation, Lyndhurst Foundation). However, no foundation wants to support a project indefinitely. Capital funds from donations could be used to develop an enterprise fund, through which large-scale projects can be planned ahead of time. A sustainable funding model should be the end-goal.

Local, State, and Federal agencies should consider adding climbing or "recreational" support as a budget line item, given the significant tax revenues generated from climbing tourism. While many agencies are highly supportive of specific climbing initiatives, it is difficult to plan ahead without a dependable budget. Currently, projects are managed on an "as needed" basis, rendering climbing initiatives "reactive" rather than "proactive". Improvements in climbing infrastructure can't be made without significant foresight and planning.

Memberships or user fees for climbing areas would directly enhance sustainable funding and support. The current daily rate at Stone Fort is $7, with over 12,000 visits a year. The Georgia Outdoor Recreation Pass is now required for entry to Rocktown, as well ($19/year). Not only does this generate revenue for state land management, but it generates buy-in from managing agencies. For example, when the road to Rocktown was recently washed out, state agencies were quick to act, as the closure directly influenced their bottom line, and they could justify the expense based on revenues.

The majority of climbers (70%) to Chattanooga would be willing to pay $5 or more per trip to climb in the area, while only 8% would not be willing to pay anything. A climbing access pass could generate between $118,500 ($5 daily fee) & $356,000 ($50 annual pass) to go toward climbing infrastructure. Of course, a climbing pass would require negotiations with a variety of agencies; local, state, and federal. A climbing pass may require a unique agreement for each site and would require buy-in from a variety of stakeholders. Many state and federal agencies are struggling to devise a sustainable revenue plan, and may welcome ideas for partnerships. In the end, any income would be better than the current rate, and any partnering agencies would likely reap the benefits of the alliance through increased visitation.

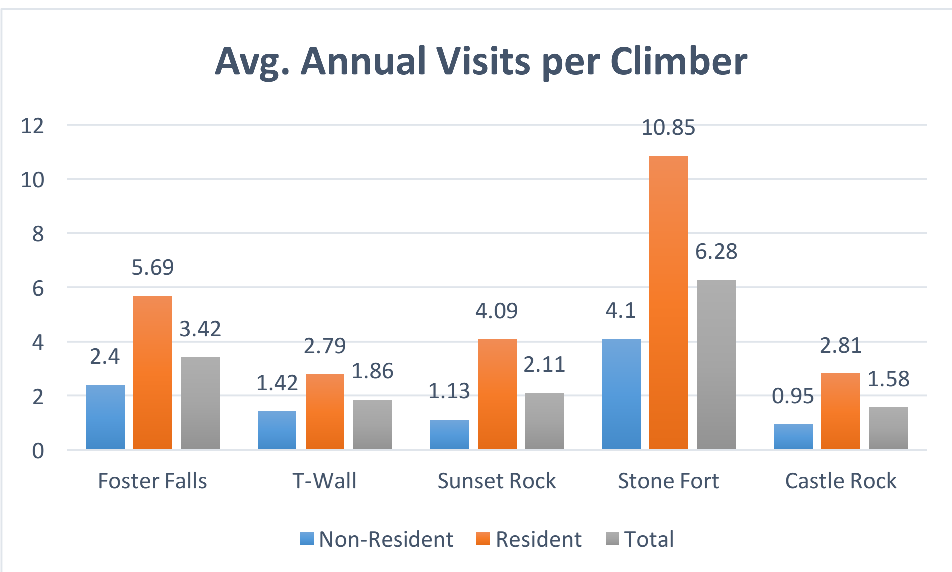
Management and Policy Data:

The following section provides information gleaned from the surveys that may guide climbing management and policy. These results describe the local climbing community, their average skill level, participation rates, and management preferences.

Descriptives and Site Visitation

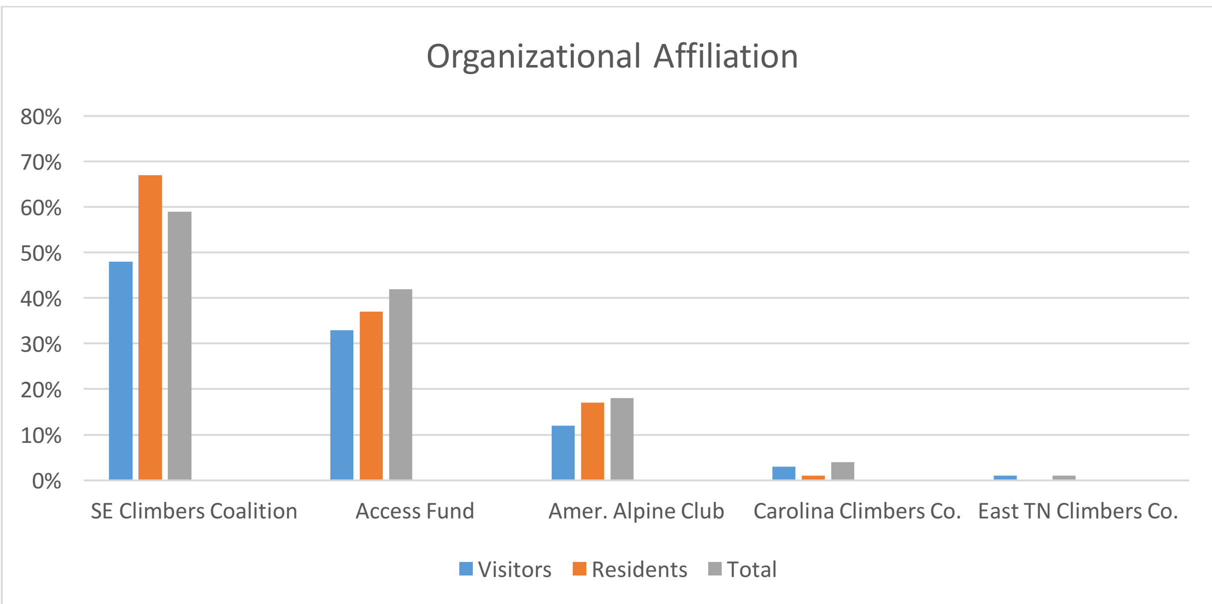
Table 8. Descriptive Statistics of Chattanooga Climbers

	Visitors	Residents	Total
% Female	48%	36%	45%
Age	28.07	26.68	27.83
Children	0.43	0.36	0.41
Years Climbing	5.31	6.6	5.69
Avg Trad Level	5.9	5.9+	9.31
Avg Sport Level	5.11	5.11+	5.11
Avg Bouldering Level	V4+	V6	V5



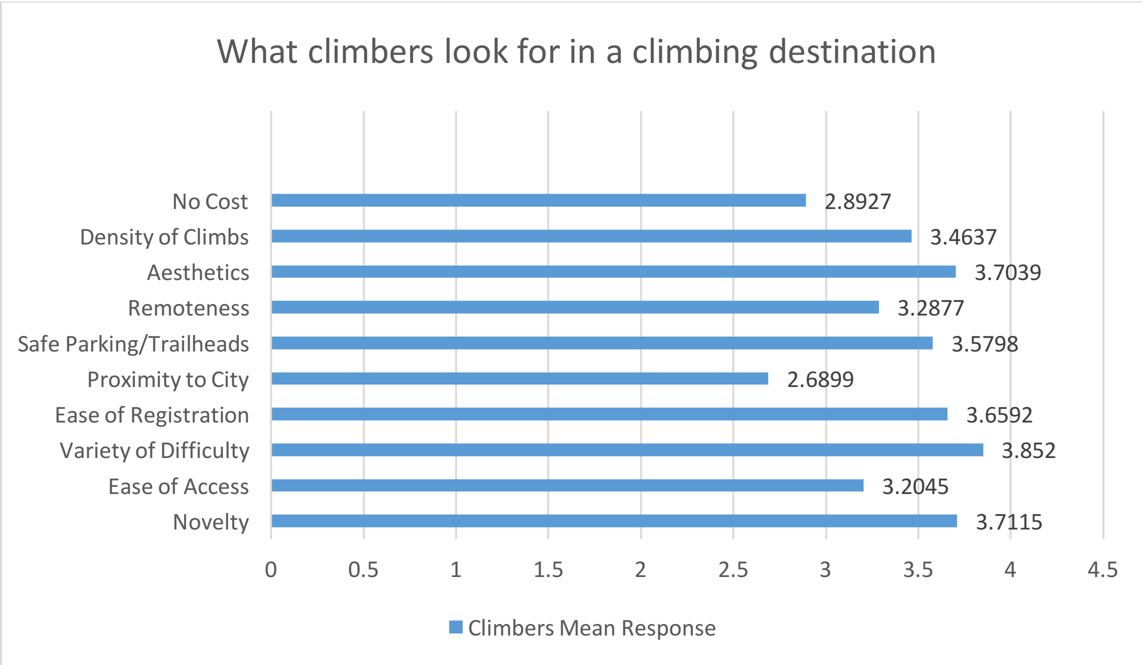
Volunteering and memberships

Climbing initiatives in Chattanooga are bolstered by a dedicated army of volunteers. Visitors and residents combined average 8.2 hours of volunteering per year, for a total of 83,517 annual work hours. This is the equivalent of $605,502 of work at the rate of minimum wage in TN. As shown below, the majority of climbers are affiliated with the Southeastern Climbers Coalition, and nearly half affiliate with the Access Fund. The continued presence of these organizations in the region is vital for organizing the climbing community, with all of its resources, at the grass roots level.



Destination and Management Preferences

The chart below illustrates the site preferences for all climbers visiting Chattanooga area crags.



**Responses were given on a 5-point scale (1=Not at all, 5=Absolutely) and reflect mean values*

Factor Descriptions:

Cost: Free access
Density: clusters of climbs in one area that don't require one to move the gear a lot.
Aesthetics: Classic climbing lines and nice views.
Remoteness: The site feels remote, pristine, and unlike a crowded, manicured park.
Safe: Sites that don't appear sketchy- person & property are safe (e.g. parking lots).
Proximity: Prefer areas close to some kind of city center with urban amenities.
Registration: A simple and unencumbered registration/permit process
Variety: Variety of climbs with various levels of difficulty.
Access: Ease of access to areas (route-finding, parking, well-maintained trails).
Novelty: Searching for new climbs and new experiences.
Well-cared for: The area is free of trash, graffiti, etc.

According to climbers' collective responses, factors most impactful in determining their choice of destination were Aesthetics, Variety of Difficult levels, Novelty, and Ease of Registration (especially among Sport climbers).

It should be noted that "no cost" was among the least influential factors in dictating where climbers chose to recreate. This indicates that minimal fees associated with accessing climbing sites may not act as a constraint to climbers. Further, sites which are closer in proximity to cities may not be more desirable than sites requiring greater travel. Having said that, all sites examined in this study were within a relatively short drive time from downtown.

Management Preferences by Frequency of visit.

The table below illustrates the relationship between the factors climbers consider when choosing a climbing destination and their number of visits to a particular area. This provides insight into management preferences of those who frequent areas the most. The cells highlighted in yellow indicate a statistically significant relationship. Numbers further from zero represent stronger relationships. All relationships are negative, indicating that climbers who participate more frequently tend to care less about these factors. Put another way, newer climbers and tourists care more about these factors than seasoned climbers. This could also be an issue of expectations and site selection. Once climbers have been to an area, they tend to adjust their expectations to the site's given characteristics. Additionally, climbers will frequent sites that have their desired site characteristics.

Table 9. Correlation Analysis illustrating relationship between number of days visited and what climbers look for in a climbing destination

	Well Cared	Novelty	Access	Variety	Registration	Proximity	Safe	Wilderness	Aesthetics	Density	Cost
Foster Falls	-0.064	-0.109	-0.144**	-0.070	-0.159**	-0.135*	-0.050	0.008	-0.009	-0.108	-0.108
T Wall	-0.035	-0.205**	-0.228**	-0.165**	-0.184**	-0.195**	-0.091	-0.052	-0.065	-0.129*	-0.033
Sunset Rock	-0.053	-0.208**	-0.227**	-0.133*	-0.105	-0.200**	-0.167	0.035	-0.059	-0.134*	-0.063
Stone Fort	-0.077	-0.017	-0.056	0.026	-0.037	0.033	-0.015	0.040	0.009	-0.066	-0.054
Castle Rock	-0.072	-0.133*	-0.197**	-0.129*	-0.155*	-0.211**	-0.168**	-0.059	-0.003	-0.164**	-0.075
Other Sites	0.065	0.057	-0.040	0.030	-0.038	0.031	-0.070	-0.015	0.054	0.048	0.058

**= Significant at p< .05, **= Significant at p< .01*

Example of Interpretation for Table 9:

T Wall: Newer climbers at T wall prioritize novelty of climbs, easier access, climbs with various levels of difficulty, ease of registration, proximity to the city, and density of climbs. Access has the strongest relationship to fewer climbing days, followed by novelty.

Management Preferences by Responsibility and Climbing Type

Table 9 illustrates management priorities measured by frequency of visit. It may be equally important to consider various types of climbers and ownership of site maintenance when prioritizing management initiatives. Table 10 (below) displays site preference factors as compared to each climber's assessment of who is responsible for site maintenance and their primary type of climbing. Primary type of climbing was determined by the strongest level of climbing compared to other climbing types. These results present a different picture for maintenance priorities.

Table 10. Correlation Analysis for the relationship between site preferences and climbing type/ responsibility for maintenance.

	Well Cared	Novelty	Access	Variety	Registration	Proximity	Safe	Remote	Aesthetics	Density	Cost
My Responsibility	.628**	.177**	.100	.146**	.170**	.104*	.186**	.176**	.148**	.188**	.140**
Land Manager's Responsibility	.114	.175**	.130*	.092	.055	.118*	.117*	-.019	.050	.050	-.005
Non-Profits' Responsibility	.287**	.067	.123*	.077	.036	.130*	.085	.048	.072	.089	.043
Trad Primary	.092	-.136*	-.234**	-.202**	-.186**	-.292**	-0.060	.031	.004	-.139**	-.078
Sport Primary	.140*	-.117*	-.229**	-.112*	-.114*	-.196**	-.109*	-.083	-.080	-.148**	-.142**
Boulder Primary	.117	.126*	-.046	.045	.017	-0.06	-.059	.061	.136**	.032	-.062

As presented in Table 10, climbers who strongly agree that maintenance is their responsibility also care about all of the climbing site factors. Access is the only factor not to reach significance, though it trended positive. Those who believe the land manager is primarily responsible for maintenance sought novelty of climbs, ease of access, proximity to the city, and safety. Those placing the responsibility primarily on non-profits prefer a well-cared for site, ease of access, and proximity to the city.

The primary climbing type should be interpreted carefully, as many climbers reported participation in all three types of climbing. This means that the groups are not discrete, but overlapping. Those who climb at a high level in all three categories would not be identified as a particular climbing "type". Trad climbers are the least concerned with all site preferences. This group probably prefers a "hands-off" management policy with the least interference. Sport climbers have a similar perspective, but do prefer a well-cared for site. Finally, climbers who are primarily boulderers are seeking novelty of climbs and aesthetics, but don't have a strong preference for other site factors.

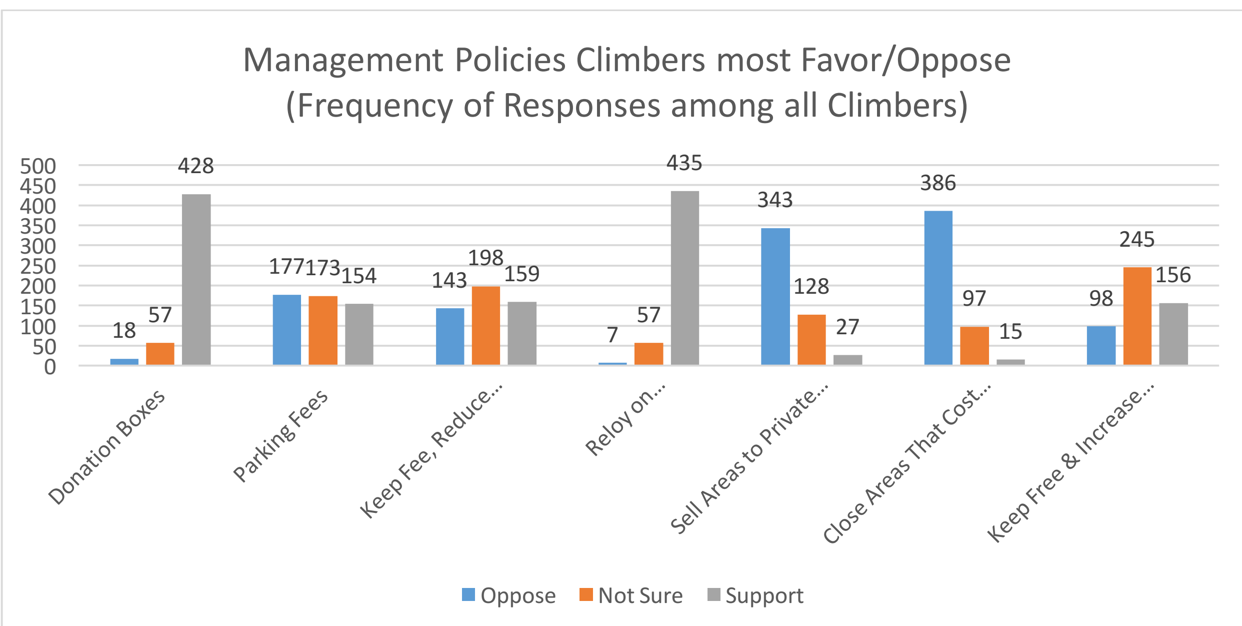
Support for Sustainability Initiatives

Maintaining outdoor areas can be costly and time intensive. Consequently, management policies must be efficient and effective in preserving the natural areas which climbers revere so deeply. Below is a table detailing which management/financing policies climbers believe to be most prudent and sensible in sustaining climbing access in Hamilton County. Respondents were provided three options with regards to each of the seven policies below. Answers closer to 0 indicate opposition to the plan of action while answers closer to 2 indicate full support of the initiative. Based upon climbers' collective responses, the most favorable proposals include: 1) Providing Donation Boxes in Parking Lots and 2) Allow qualified volunteer and non-profit organizations to manage sites. Conversely, the policies climbers are in most disfavor of include: 1) Selling Areas to Private Companies and 2) Closing Areas that Cost Too Much.

Table 11. Illustration of management policies Resident/Non-Resident climbers most favor/oppose

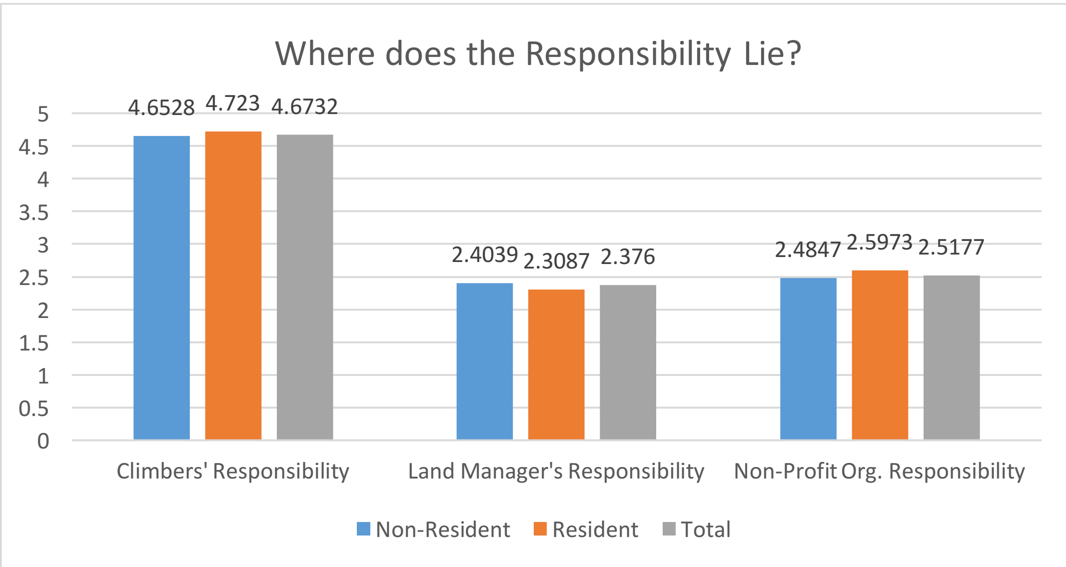
	Donation Boxes	Parking Fees	Keep Free, Reduce Maintenance	Rely on Volunteer/ Non-Profit Orgs.	Sell Areas to Private Companies	Close Areas That Cost Too Much	Keep Free & Increase Taxes
Non-Resident N=357	1.85	1.04	1.04	1.84	0.38	0.28	1.10
Resident N=143	1.72	0.76	1.01	1.90	0.33	0.19	1.15
Total N=480	1.82	0.95	1.03	1.86	0.37	0.26	1.12

** Note: 0=Support, 1=Not sure, 2=Oppose*



Where does the Responsibility Lie?

In addition to soliciting responses concerning policy initiatives, climbers were also asked who, specifically, should be responsible for caring for and maintaining the natural areas which support recreational climbing. Below is a chart detailing climbers' responses. It is very clear that climbers possess a personal responsibility to ensure the preservation of climbing sites in which they recreate.

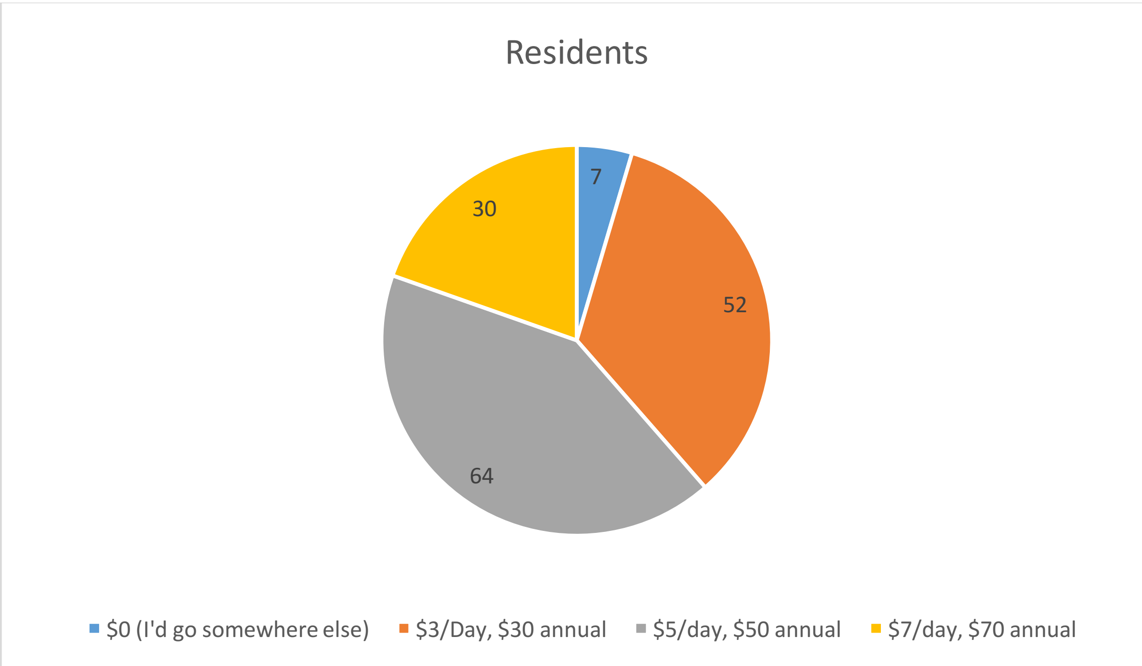


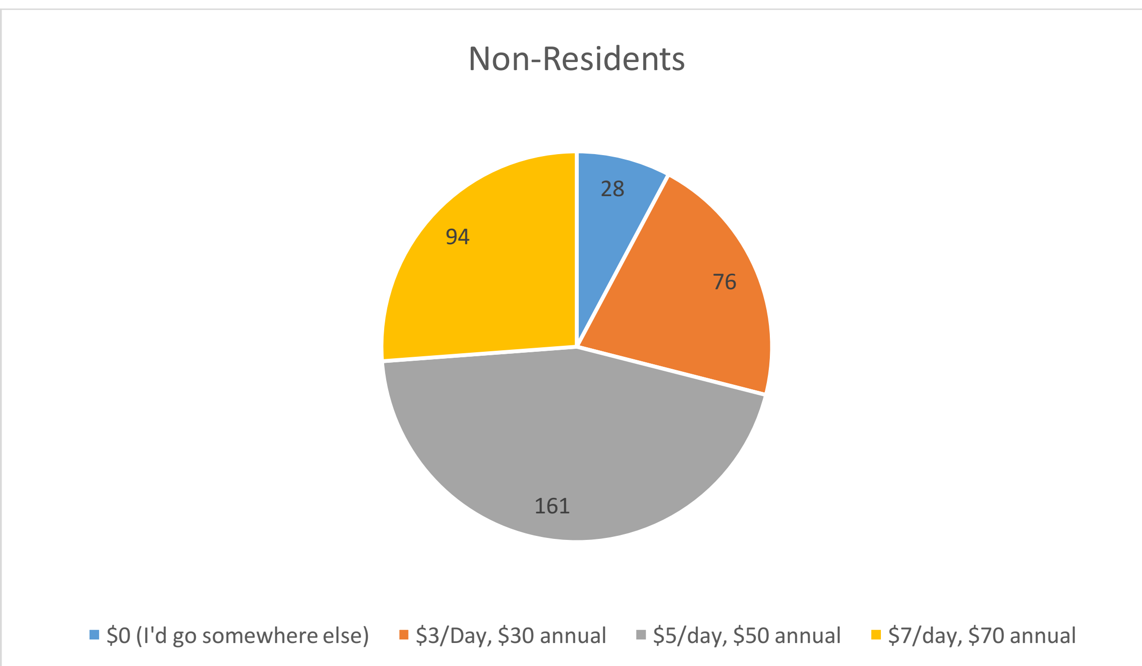
*Note: Responses were given on a 5-point scale (1=Strongly Disagree, 5=Strongly Agree)

Climbers should be commended for their ownership of the areas and the sport. Climbers are historically generous with their time and and financial support to protect the sites they enjoy. Volunteering and donations have sustained climbing in Chattanooga, but don't provide a reliable budget from which to plan for the future. A sustainable revenue source would provide necessary resources for future planning, but may also impact the ownership currently exhibited by the climbing community. Discussions on how to balance these priorities should be forthcoming.

Willingness to Pay Access Fees

Regarding climbers' willingness to pay a fee to access recreational climbing areas, responses indicate that climbers would be willing to pay up to $5/day or $50 annually. *Mean* responses associated with Resident and Non-Resident climbers are provided in the figures below.





Appendix A (Climber Count Approximations)

Using the concrete registration count from Stone Fort (12,037 annual climbers), a ratio was established for other climbing sites as compared to Stone Fort (SF). This was accomplished through parking lot counts taken at each parking area on the same days. An overall ratio was established based on weekday and weekend counts. For every 1 person at Stone Fort, there is .47 at Tennessee Wall (TW) and .06 at Sunset Rock (SR), and .44 at Deep Creek (DC). Using this ratio, we were able to determine the total number of people per year at each location.

Total Climbers = SF + (.47)SF + (.06)SF + (.44)SF = 16,565.5

Hamilton County residents were then removed from the data, as they do not contribute "additional" income to the county. Surveys conducted at climbing sites revealed that 70% of climbers were non-residents.

Total Visitors = 16,565.5 * (0.7) = 11,595.85

Most climbers made numerous trips to Hamilton County, thus inflating the visitor estimates. To get the number of unique visits to each location, we divided total number of visits by average number of visits per year for each climbing location, as reported on the survey (SF= 4.1, TW= 1.42, SR= 1.13, DC= 2). From this we were able to determine that there were 10,185 unique climbing visits, with 7130 of these visits being from persons who did not reside in Hamilton County. Climbers also reported that for every climbing group (3.7 people) there were 0.22 non-climbers on the trip to visit Chattanooga. Given that non-climbers were not intercepted at the trailhead, they were added to the overall visitor numbers. We multiplied the number of unique visitors by the average total expenditure, to arrive at the total direct expenditures for visitors on one visit.

Total Direct Expenditures = (7130 climbers + 436 non-climbers) * $178 = $1,351,683.03

We then took the average number of annual climbing days in the region (9.5) and divided it by the average trip length (2.0), which equals the average of trips per year with an average expenditure of $178 per person. This figure scaled to visits per year and multiplied by the number of unique visitors to the region gave us our final direct expenditure figure.

Total Expenditures = (9.5/2) * $1,351,683.03 = $6,420,494.41

The "Likely Impact" of $10,483,986 included estimated climbers passing through Chattanooga using parking lot counts from Foster Falls and Rocktown. This estimate included non-Hamilton County cars that would have to pass through Chattanooga in route to the climbing location. This would exclude Nashville climbers at Foster Falls and Atlanta climbers at Rocktown. A percentage of non-climbers (e.g. hikers) were also removed based on observations.

References

Menard, J., English, B., & Jensen, K. (2013). *Estimated Economic Impacts of Ocoee Whitewater Rafting on the Local Economy*. Univeristy of TN, Knoxville: Dept. of Agricultural & Natural Resource Economics.

Outdoor Industry Association; OIA. (2014). *Outdoor recreation participation* (Topline Report). Boulder, CO: Outdoor Foundation. Retrieved from http://outdoorindustry.org/images/researchfiles/ResearchParticipation2014Topline.pdf?207

Other Hamilton County impact reports can be found at:
http://www.utc.edu/health-human-performance/tourismcenter/

About the Authors:

Andrew W. Bailey, Ph.D. is program coordinator and assistant professor of the Sports and Leisure Services Administration program at UTC. He also founded the UTC Tourism Center and regularly conducts research on the impacts of recreation and sport-related tourism in the Chattanooga region. When not in the office, he can be found playing outside with his wife and little girl. He can be contacted at Andrew-Bailey@utc.edu

Eric Hungenberg, Ph.D. is an assistant professor of Sport and Leisure Services Administration at UTC. His background working as a practitioner in sport involved overseeing and marketing destination sport events. His research agenda is geared towards understanding sport commitment, and examining the relationship between a consumer's emotional connection to location and sport-related consumption. He can be contacted at Eric-Hungenberg@utc.edu

Amanda McDowell is an undergrad researcher extraordinaire who spent many hours in the field and behind the desk collecting, entering, cleaning, and analyzing data. Many thanks and congratulations on moving on to the real world.

Of course, many thanks go to our outdoor recreation students for research assistance, the Southeastern Climbers Coalition for support and promotion, the Access Fund for support and motivation, and local agencies for cooperation with a drawn-out data collection process.