



# SHELTOWEE TRACE TRAIL TOWN USE AND EXPENDITURE PATTERNS

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# EXECUTIVE SUMMARY OF PROPOSAL

- The Sheltowee Trace is a 333 mile trail extending from the northern boundary of the Daniel Boone National Forest to the southern boundary of the Big South Fork National Rec-reational Area.
- The Sheltowee Trace includes six designated trail towns in Kentucky: Morehead, Livingston, Slade, McKee, Stearns, and London.
- EKU's Division of Regional Economic Assessment and Modelling (DREAM) conducted an online study of Shel-towee Trace Trail Town visitors to establish their use and expenditure patterns while visiting the Sheltowee Trace.
- In 2020, visitors to the Sheltowee Trace spent an average of \$24.70 per visit in one of the six trail towns for food, retail, and transportation costs.
- Visitors staying the night spent an additional \$76 at hotel/motel, \$16 for camping, or \$206 for rental cabins with an estimated 90% choosing to stay at least one night.
- Visitors reported coming to the Sheltowee Trace to see its scenery, experience peace and tranquility, and engage in their favorite recreation activities.

# AUTHORS' NOTE ON IMPACTS OF COVID-19 ON STUDY METHODOLOGY AND RESULTS

This study occurred during the 2020 COVID-19 pandemic. The pandemic reduced access to trail town activities inside the Daniel Boone National Forest and altered visitation patterns in presently unknown ways. Moreover, economic expenditures could be influenced by business hour changes, business closures (temporary or permanent) and visitor's willingness to interact with others during their stay.

Prior to the pandemic, the team built the study around an in-person survey which would have given more precise measures of visitor expenditures in specific trail towns

and likely higher survey response rates. The week before the study was scheduled to begin, COVID-19 increased in the United States, triggering closures and travel advisories. Dr. Maples and Dr. Bradley elected to cancel our planned in-person data collection efforts and instead use an online survey to protect both our team as well as Sheltowee Trace visitors.

Although the findings of this study are valid and valuable, they may also be shaped by the pandemic. It is advisable to repeat this study in a later year using an in-person survey as a comparison to the results collected during the pandemic.



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# WHAT IS THE SHELTOWEE TRACE TRAIL?

Climbing between deep hemlock gorges and piney, craggy summits, the Sheltopee Trace is a 333-mile National Recreation Trail that spans the Daniel Boone National Forest from Rowan County, Kentucky to the Big South Fork National River and Recreation Area in Scott County, Tennessee.

The name “Sheltopee” honors the history of Daniel Boone, who was captured by Shawnee Indians while making salt in an area close to the present-day trail. Chief Blackfish, his adopted Shawnee father, renamed him Sheltopee, which meant “Big Turtle.”

The Trace was started by US Forest Service landscape architect Verne Orndorf in the mid-1970s. He envisioned the trail for foot travel only, gaining inspiration from local Sierra Club members who wanted a long-distance footpath in Kentucky. Today, the Trace has an active non-profit, the Sheltopee Trace Association, that actively helps build new trail and maintain existing trail for the public good.

## SHELTOPEE TRACE INFORMATION

[sheltopeetrace.com](http://sheltopeetrace.com)

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## 2005 VERNE ORNDORFF ORAL HISTORY INTERVIEW

[sheltopeetrace.com/audio/VerneOrndorff-05Jun.mp3](http://sheltopeetrace.com/audio/VerneOrndorff-05Jun.mp3)

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## SHELTOPEE TRACE ASSOCIATION

[sheltopeetrace.org](http://sheltopeetrace.org)



# MEET YOUR RESEARCH TEAM



• **Dr. James N. Maples** is an Associate Professor of Sociology and Director of the Division of Regional Economic Assessment and Modelling (DREAM) at Eastern Kentucky University.  
••••• His research agenda examines rural economies in transition with a focus on utilizing outdoor recreation as a sustainable base of economic growth.



• **Dr. Michael J. Bradley** is an Associate Professor in the Department of Parks, Recreation, and Hospitality Administration at Arkansas Tech University. He is also the director of Red Dirt Consulting. His professional and academic interests include  
••••• human dimensions of natural resource and wildlife; beer, wine, and spirits; and recreation and tourism as economic development tools.



• **Jason L. Ray** is a retired law enforcement officer and is now working as the Health Education Coordinator for Franklin county Kentucky. He is also a Junior at Eastern Kentucky  
••••• University with a major in Psychology.



• **Alexandra Miller** is an undergraduate student at Eastern Kentucky University. She is currently pursuing a BA in  
••••• Sociology and a BS in Recreation & Park Administration. Her research interests are in outdoor recreation and economic impact studies.

# STUDY METHODOLOGY

## Research Questions

This study examines three core questions about Shelton Trace:

- 1 Why do visitors choose to visit the Shelton Trace?
- 2 What are the trail town expenditure patterns for persons visiting the Shelton Trace?
- 3 What are the demographics of persons visiting the Shelton Trace?

## Data Collection

Data in this study are from an online survey sent to a convenience sample of persons visiting the Shelton Trace in the last three years. The survey was released via email lists and social media pages of local retailers, event organizers, and city/county tourism orgs. The survey was released in the spring and fall of 2020. In all, 418 persons initiated the online survey with 383 completing at least 1/3 of the survey. Incomplete responses were included up to the point the respondent stopped answering survey questions. Due to the unknown number of persons visiting the Shelton Trace each year and the use of multiple email and media lists, this is best described as a convenience sample.

## Variables: Economic Expenditure Data

The research team collected economic expenditure data for persons visiting the Shelton Trace who live outside of the six Shelton Trace trail towns. Expenditure categories include lodging (hotels, camping, and rental cabins/houses), food (limited service, full service, convenience store purchases, breweries/bars, and groceries), retail (general and recreation), gasoline purchases, and taxi/shuttle use.

Zip codes were collected to establish respondents as living inside vs outside counties containing one of the six trail towns examined.

Economic expenditure data are collected in two forms: expenditures inside trail towns on the Shelton Trace and expenditures outside of trail towns but still inside the state of Kentucky. These are discussed separately in the report.

Economic expenditure data in this study include steps approved by Forest Service methodology to reduce points of influence which might inaccurately overstate mean expenditure patterns. This included eliminating respondents with parties of nine or larger, excluding disproportionately long stays, and excluding retail and recreational retail purchases greater than \$500.

## Variables: Use Patterns Data

The research team collected data on respondents' Shelton Trace use patterns by framing responses around the respondent's most recent trip to the Shelton Trace. Questions included the purpose of their visit, the trail town nearest where they visited, the length of their stay, and their group size. The survey also included an eighteen item Likert matrix (strongly disagree to strongly agree) asking about their general motivations for visiting the Shelton Trace.

## Variables: Demographic Data

The survey included questions asking respondents about their sex, age, racial background, education, and personal annual income.

# USE PATTERNS FOR THE SHELTOWEE TRACE

**Table One** outlines basic visitation information for respondents in this study. The survey asked re-spondents about their most recent trip to the Sheltowee Trace. In all, 73% reported visiting most recently in 2020, while another 19% visited in 2019.

Respondents indicated engaging in many main activities as part of their visit. Note that a visit may also include multiple

activities. For example, a respondent might come to the Sheltowee Trace to hike but also could view natural features and camp. The table lists only the main purpose of their visit. Among 2020 visitors living outside the trail towns in this study, over half reported hiking/walking/day hiking as their main purpose for being there. Other popular options included backpacking and thru-hiking.

**Table One: Visitation Use Patterns**

Variable	Cases	Percent
<b>Year of most recent visit to Sheltowee Trace</b>		
2018 or earlier	22	6.69
2019	64	19.45
2020	243	73.86
<b>Main purpose for visit (2020 only, excludes local residents)</b>		
Hiking/walking/day hiking	107	51.94
Backpacking/overnight hikes	51	24.76
Thru-hiking the Sheltowee	13	6.31
Rock climbing	1	0.49
Mountain biking	2	0.97
Horseback riding	3	1.46
Paddling	2	0.97
Viewing natural features	4	1.94
Relaxing	2	0.97
Driving for pleasure	2	0.97
OHV use	2	0.97
Camping in primitive sites	3	1.46
Camping in developed sites	1	0.49
Cookouts/eating outdoors	1	0.49
Other purpose (includes trail work, trail running, and forest work)	12	5.83

(categories with zero responses: cycling, fishing, hunting, viewing wildlife, visiting nature center, studying nature, visiting historic sites, gathering forest products, motorized boating, and motorized trail activity.)



**Table Two** further explores use patterns for respondents in this study. Of the six trail towns along the Sheltopee, Slade (45%) and Morehead (31%) received the most reported 2020 visits among respondents in this study who do not live in a Sheltopee Trace trail town.

Group size most typically ranged from one to four persons with a mean group size of

2.2 persons. Length of stay was examined in both total days and total nights for the most recent 2020 trip the respondent took to the Sheltopee Trace. Visitors averaged just over two days and exactly two nights as a result of their visit. Although not noted in the table, over 90% of respondents indicated that they stayed at least one night as a result of their trip.

**Table Two: Visitation Use Patterns, continued**

Variable	Count	Percent
<b>Visited (2020 only, excludes local residents)</b>		
Morehead	64	31.07
Livingston	7	3.4
Slade	93	45.15
McKee	3	1.46
Stearns	15	7.28
London	24	11.65
<b>Group size (2020 only, excludes local residents)</b>		
1	90	45
2	51	25.5
3	24	12
4	15	7.5
5	7	3.5
6	4	2
7	2	1
8	7	3.5
<b>Visit length (2020 only, excludes local residents)</b>		
	<b>Mean</b>	<b>Range</b>
Visit, total days	2.19	0-10
Visit, total nights	2	0-10

# EXPENDITURE PATTERNS ACROSS ALL TRAIL TOWNS

**Table Three** summarizes expenditure patterns of persons visiting any trail town on the Sheltoewe Trace as part of their 2020 visit. The results in this table are stated as per visitor expenditures and only include persons who live outside zip codes from any of the six trail towns on the Sheltoewe Trace. This ensures expenditures can be considered as new tourism contributions to the economy.

**Lodging:** Persons visiting the Sheltoewe Trace have three main lodging options in the region: hotel/motels, camping, and rental cabins/homes. The statistics below (unlike other expenditures) include only persons who reported staying overnight and who reported a minimum expenditure in that category (at least \$20 for hotel and cabin rental and \$1 for camping). Overall, visitors spent \$76 on hotel/motels, \$16 in camping, and \$206 on rental cabins/homes inside trail towns. Although not presented in this

table, recall that 90% of respondents indicated staying at least one night.

**Travel:** Gasoline is an important part of travelling in this region and represents a common expenditure for visitors. On average, Sheltoewe Trace visitors reported spending around \$8 on gasoline purchased inside trail towns. Visitors also occasionally used shuttle services, averaging around \$1.55 per visit.

**Food:** Visitors spent an estimated \$3.51 on fast food, \$6 on dine-in meals using wait-staff, and \$2 on food from gas stations and convenience stores. Visitors also spent around \$1 at bars or breweries and \$1.41 on groceries on average. Note that bars and breweries are not available in all trail towns.

**Retail:** Visitor retail expenditures were fairly low. They reported an average of \$1 spent on general retail and less than \$1 on recreation retail purchases such as gear.

**Table Three: Average Trail Town Expenditures When Visiting the Sheltoewe Trace**

Variable	Cases	Mean (in \$)	St Dev	Min Value	Max Value
Lodging, Hotel	15	76.11	38.54	25	170
Lodging, Camping	17	16.03	10.38	1	47
Lodging, Cabin	4	206.25	126.44	100	350
Gasoline	200	7.99	12.45	0	65
Food, Limited Service	200	3.51	7.29	0	50
Food, Full Service	200	6.07	12.19	0	75
Food, Convenience	200	2.02	3.71	0	20
Food, Breweries & Bars	200	0.78	4.79	0	50
Food, Groceries	200	1.41	5.67	0	40
Retail, General	200	1.06	5.63	0	50
Retail, Recreation	200	0.31	1.61	0	13
Taxi/shuttle Use	200	1.55	7.10	0	50

# EXPENDITURE PATTERNS OUTSIDE TRAIL TOWNS BUT INSIDE KENTUCKY

**Table Four** summarizes visitor expenditure patterns beyond trail towns but still inside Kentucky. These indicate expenditures created as a result of travelling to and from the Sheltowee Trace inside Kentucky but outside of any of the trail towns.

**Lodging:** There were few respondents indicating lodging outside of the six trail towns, but those few expenditures were comparably large. Persons utilizing lodging outside of the six trail towns spent an average of \$215 for hotel/motels, \$118 for camping, and \$375 for cabins.

**Travel:** While travelling to and from the Sheltowee Trace, respondents indicated spending around \$9.73 on gasoline and less than \$1 on taxis or shuttles.

**Food:** Food expenditures differed from expenditures inside trail towns. For example, dine in (full service) expenditures inside trail towns averaged \$6 per person, while respondents reported spending around \$2 outside of trail towns. Fast food slightly increased to \$4, as did purchases at convenience stores. However, grocery purchases more than doubled from \$1.41 in trail towns to \$3.90 outside of trail towns.

**Retail:** Retail expenditures were higher outside of trail towns. For example, general retail doubled to \$2.11. Rec retail, however, rose by over \$7 dollars outside of trail towns vs. inside trail towns.

**Table Four: Average Expenditures outside of Trail Towns but inside Kentucky When Visiting the Sheltowee Trace, 2020**

Variable	Cases	Mean (in \$)	St Dev	Min Value	Max Value
Lodging, Hotel	3	215.00	160.23	120	400
Lodging, Camping	5	118.00	104.49	20	250
Lodging, Cabin	4	375.00	239.79	150	650
Gasoline	206	9.73	17.80	0	100
Food, Limited Service	206	4.00	14.37	0	150
Food, Full Service	206	1.95	9.96	0	100
Food, Convenience	206	1.33	4.67	0	40
Food, Breweries & Bars	206	.58	4.26	0	40
Food, Groceries	206	3.90	15.40	0	120
Retail, General	206	2.11	12.59	0	160
Retail, Recreation	206	7.57	42.49	0	500
Taxi/shuttle Use	206	.63	5.25	0	50

# MOTIVATIONS FOR VISITING THE SHELTOWEE TRACE

**Table Five** summarizes respondents' motivations for visiting the Sheltowee Trace over the last three years. This also includes local residents living in any of the six trail towns studied. The table is measured on a five point Likert scale where 1=strongly disagree and 5=strongly agree. Throughout the table,



respondents agreed with nearly every item. The strongest agreement responses included enjoying beautiful scenery (4.70), enjoying their favorite activity (4.56), experiencing peace/tranquility (4.56), keeping fit (4.40), and escaping their daily routine (4.39).

**Table Five: Motivations for Visiting the Sheltowee Trace**

Variable	Count	Mean	St Dev	Min	Max
Enjoy my favorite activity	320	4.56	0.78	1	5
Enjoy beautiful scenery	320	4.70	0.66	1	5
Relax	321	4.48	0.83	1	5
Experience peace/tranquility	317	4.56	0.71	1	5
Be with family and friends	315	4.02	1.05	1	5
Observe wildlife	318	4.13	0.90	1	5
Escape my daily routine	319	4.39	0.90	1	5
Experience stimulation and excitement	314	4.10	0.98	1	5
Keep physically fit	322	4.40	0.82	1	5
Feel at one with nature	317	4.31	0.88	1	5
Experience new things	318	4.01	0.94	1	5
Develop skill and knowledge	314	3.90	0.97	1	5
Use my outdoor gear/equipment	317	3.88	1.04	1	5
Challenge myself	321	4.29	0.95	1	5
Gain a sense of accomplishment	318	4.26	0.91	1	5
Learn about the environment	318	3.89	0.91	1	5
Develop confidence in myself	319	3.95	0.96	1	5
Meet new people	316	3.09	1.15	1	5

# DEMOGRAPHIC PATTERNS

**Table Six** summarizes demographics of persons responding to the survey. As this study is best treated as a convenience sample, these demographics may or may not be representative of Sheltowee Trace visitor demographics and should be treated with caution.

In all, 53% of respondents identified as female compared to 44% identifying as male. Having

a four year college degree represented the largest section of users (32%) followed by having a Master’s degree (23%). This finding is supported by other studies in the Red River Gorge indicating that outdoor recreation users are often well-educated persons.

Concomitantly, the most common personal income category was \$50,000-\$74,999 (25%) followed by greater than \$99,999 (19%).

**Table Six: Respondent Demographics**

Variable	n	Percent
<b>Sex</b>		
Female	171	53.11
Male	144	44.72
I’m not sure	2	0.62
Prefer not to answer	5	1.55
<b>Education</b>		
Less than high school degree or GED equivalent	1	0.31
Completed high school or GED, no college	22	6.81
Completed some college, but no degree	49	15.17
Completed two-year Associate/technical degree	30	9.29
Completed Bachelor’s degree	104	32.2
Completed Master’s degree	76	23.53
Completed Doctorate or terminal degree	35	10.84
Do Not Record	6	1.86
<b>Personal Income</b>		
\$0-\$19,999	15	4.66
\$20,000-\$29,999	28	8.7
\$30,000-\$39,999	27	8.39
\$40,000-\$49,999	24	7.45
\$50,000-\$74,999	81	25.16
\$75,000-\$99,999	50	15.53
Greater than \$99,999	64	19.88
Do Not Record	33	10.25

## CONTACT INFORMATION FOR FUTURE STUDIES

EKU's Division of Regional Economic Assessment and Modelling (DREAM) offers highly valuable but affordably-priced services in your region, including:

- Economic impact studies**
- Feasibility studies**
- Customer experience studies**
- Marketing studies**
- Needs assessments**
- Cost-benefit analyses**

Please contact DREAM Director, Dr. James Maples, with questions and ideas at [james.maples@eku.edu](mailto:james.maples@eku.edu)

