

THE USEFULNESS AND MEANING OF RURAL GREENWAYS: USER EXPERIENCE AT THE TANGLEFOOT TRAIL IN NORTHEAST MISSISSIPPI

SEYMOUR, MICHAEL W.

Mississippi State University, Michael.Seymour@msstate.edu

SUMMERLIN, PETER R.

Mississippi State University, p.summerlin@msstate.edu

1 ABSTRACT

The Tanglefoot Trail is a 43.6-mile greenway in rural, northeast Mississippi. The trail follows a portion of a now abandoned railroad corridor and consists primarily of a multi-purpose pathway that connects six, small communities with a total population of just over 20,000. Community advocates from the area first met in 2005 to begin discussing the idea of the trail. In ensuing years, supporters of the Tanglefoot Trail secured federal and state grant funding to construct the asphalt trail as well as a series of “whistle stop” rest facilities for trail users. The trail was completed in 2013 and is currently used for hiking, biking, running and associated community events. The Tanglefoot Trail was a multimillion-dollar investment. Trail supporters tout the trail’s “transportation, health, environmental and economic benefits” (Interpreting the Trail, n.d.). Recent literature on urban greenways suggests that recreational benefits may outweigh the cost of construction and maintenance (Lindsey, Man, Payton, & Dickson, 2004), that trails may increase the value of surrounding property (Nicholls & Crompton, 2005), and that trail expansion is economically justifiable in some situations (Crompton, 2012). As a result, urban greenways have a fairly straightforward argument. For rural trails, the case is more difficult. The lack of surrounding density and services means that rural greenways are likely to have far fewer users. The health benefit argument may also be more difficult as a recent study of a metropolitan greenway was unable to demonstrate an improvement in the physical activity behaviors of proximate users (West & Shores 2015). All of this may make it challenging to defend a rural greenway’s expense against skeptics. This raises the question: What is the usefulness and meaning of a rural greenway? Anecdotal evidence suggests that the Tanglefoot Trail is highly appreciated by its users, some of whom travel vast distances to use the trail. If rural greenways have a worth beyond simple quantification, perhaps the answer lies in the social and experiential aspects of such trails or their increased significance to a smaller number of users. This paper explores these issues through examination of the results of an online survey of Tanglefoot Trail users; the survey examined user preferences, their motivations for using the trail, and what they found meaningful about the experience. This information is intended not only to increase overall understanding of rural greenways, but also to provide advocates and designers with data useful in their promotion, design and improvement.

1.1 Keywords

Rural Greenways, Rails-To-Trails, User Experience, Walking, Biking, Active Living

2 INTRODUCTION

The Tanglefoot Trail meets the definition of a “greenway” as defined in David Little’s 1990 seminal text, *Greenways for America*. Little includes in his definition “any linear open space” that travels “along a railroad right-of-way converted to recreational use” (Little, 1990, p. 1). The Tanglefoot Trail is one of the more recent rails-to-trails conversions which have resulted from a recognized “greenways movement” that according to greenway expert Julius Fabos (1995) began in the 1980s. In subsequent decades, greenways have received considerable attention as a tool for sustainable design due to their obvious benefits which include promotion of health through active living, advancement of non-motorized transportation options such as biking and walking, and preservation of much-needed greenspace for recreation, water management and wildlife habitat.

While the literature on greenways continues to evolve, there has been an emphasis on user experiences (Akpinar, 2016; Byrne, Wolch & Zhang, 2009; Gobster, 1995; Jim & Chen, 2006; Lee & Moore, 2002; Shafer, Lee & Turner, 2000) due to the obvious need to understand behaviors, perceptions and preferences. While these prior investigations have increased understanding of greenways generally, they have also demonstrated that each trail is a specific case with unique conditions and therefore differing user motivations, understandings and preferences. For example, Shafer et al. (2000) studied three Texas trails and found that some flatter trails were used more for biking while those in a more urban context were useful for commuters or lunchtime exercise. They found that trail context, connections and characteristics made considerable difference in how and why the trails were used. As they summarize in the article, “Greenway trails, like roads, are used in different ways and for different reasons” (Shafer et al., p. 174).

The literature on greenways has also focused most heavily upon trails in an urban context (Akpinar, 2016; Byrne, Wolch & Zhang, 2009; Gobster & Westphal, 2004; Jim & Chen, 2006; Lindsey, Han, Wilson & Yang, 2006; Palardy, Boley & Gaither, 2018; Weber, Boley, Nathan & Gaither, 2017) which may not be generalizable to rural situations. For example, Gobster and Westphal investigated trails around the Chicago River corridor and identified “six interdependent human dimensions” of importance which included “cleanliness, naturalness, aesthetics, safety, access and appropriateness of development” (Gobster & Westphal, 2017, p. 147). Some of these dimensions such as safety (which in their case included crime concerns), would seem context-specific and perhaps less applicable to more rural settings like those surrounding the Tanglefoot Trail. In their 2002 article regarding motivations and attitudes of suburban trail users, Lee, Scott and Moore argue directly for further research in “other urban proximate locations” to determine generalizability of findings (Lee et al., 2002, p. 34).

Finally, much of the greenway literature focuses upon survey of active, on-site users (Akpinar, 2016; Byrne, Wolch & Zhang, 2009; Gobster, 1995; Lee, Scott & Moore, 2002). While this is a logical approach for understanding basic use patterns in an urban context, it is less practical in a rural setting with dispersed access points and more sporadic use. Furthermore, survey of exercised-focused, on-site users may result in less thoughtful, reflective or thorough answers to questions regarding topics such as usefulness and meaning. With this in mind, this study was designed to advance understanding of greenways by presenting data and findings from a survey of supporting users of the Tanglefoot Trail, a highly rural rails-to-trails greenway in northeast Mississippi.

3 METHODS

This paper is the result of a survey of supporters of the Tanglefoot Trail. The survey was conducted online with a link, announcement and subsequent reminder posted on the Tanglefoot Trail Facebook page (Tanglefoot Trail Facebook Page, n.d.). The survey took an average of nine minutes to finish. The survey included Likert-scaled statements, some basic demographic questions and a few open-ended questions for topics that required greater input or reflection. 256 people started the survey with 210 completions (82.03% completion rate). The survey attempts to answer the following research questions:

- Who uses and supports the Tanglefoot Trail?
- How and when do they use the Tanglefoot Trail?
- What motivates them to use the Tanglefoot Trail?
- What do they enjoy most about the Tanglefoot Trail?
- What does the Tanglefoot Trail mean to its users?

There are some obvious limitations to this survey approach. This was a survey of supporters and not on-site users; it therefore captures those who are supportive of the trail and who have Internet access and use Facebook. Although those supporters who had not actually used the trail were excluded by an early question, it should not be viewed as a complete survey of users. As previously mentioned, there have already been many surveys of on-site greenway users and it was decided for the purpose of this study to elicit more in-depth and thoughtful responses. The findings should, however, be viewed with this context in mind.



Figure 1. View of Tanglefoot Trail (2016). As a converted rail line, the Tanglefoot Trail is comprised of long, uninterrupted stretches of asphalt that cut through the rural Mississippi landscape. With the limited intersections, very subtle elevation changes and several miles between stops, the trail is primarily attractive to recreational bike riders. Photos by the authors

4 FINDINGS

4.1 Who uses and supports the Tanglefoot Trail?

Respondents were somewhat older than might be expected with an average age of 51. While this is influenced by the exclusion of those under 18 from the survey, it does seem to reflect the older demographic one typically witnesses using the trail as well as the aging population of the state which has a median age of 36.5 (United States Census Bureau, n.d.). Additionally, there were very few respondents in the 18-24 age bracket (2) and the highest proportion of respondents from the 54-65 age bracket (63). This is further discussed in the conclusions below.

Other significant demographic information collected from respondents included gender and primary residence. In terms of gender, 56% of respondents identified as male and 44% as female. 77% of respondents identified Mississippi as their primary residence with 96% residing in Mississippi or an adjacent state. While trail supporters often mention those who have travelled vast distances to use the trail, the majority of the respondents were from north Mississippi and almost half (49%) from towns directly along the trail route.

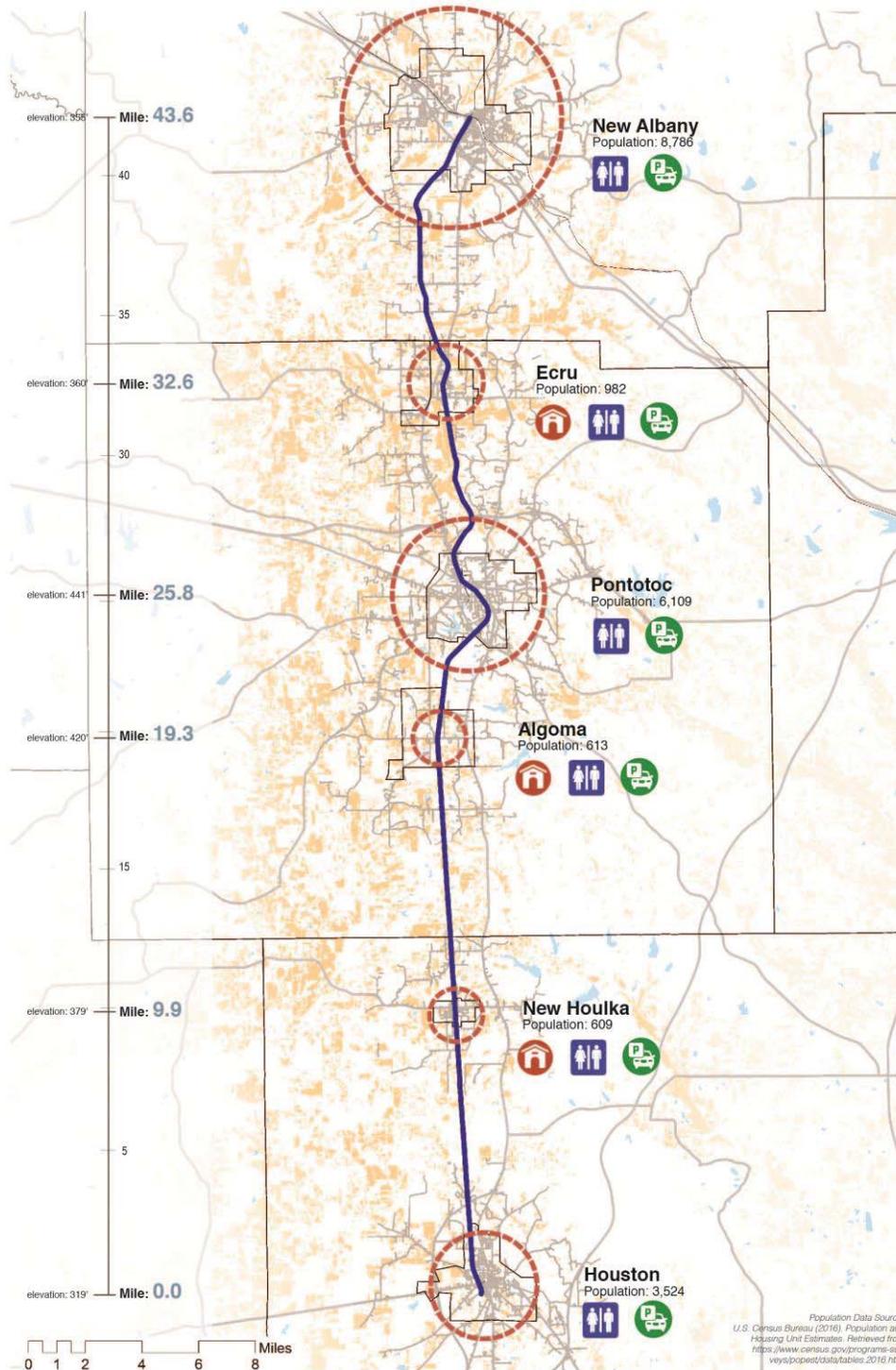


Figure 2. Tanglefoot Trail Overall Map. The 43.6 mile trail navigates through a rural Mississippi landscape comprised of agriculture, pasture, mixed forest, and 6 small communities. Rest areas at each community (referred to as “whistlestops”) provide restroom facilities and public parking for trail users. Image by the authors

4.2 How and when do they use the Tanglefoot Trail?

79% of respondents reported that biking was their primary Tanglefoot Trail activity. 14% of respondents reported walking/hiking as their primary use while 6% reported running and 1% reported another use such as using a golf cart or skating. The dramatic emphasis on biking is unsurprising given the length of the trail, the low surrounding density (which prohibits much destination walking), and the relative flatness of the route.

Respondents were also asked, “How many people do you typically travel with?”. Most respondents reported traveling with someone when they used the Trail. Only 17% reported traveling alone while 57% reported traveling with one or two companions and 26% reported traveling with three or more in their group. Some trail documents encourage using the trail “with a partner” for safety (GM&O Rails-to Trails Recreational District of North Mississippi, 2), although this is not an official regulation. There does, however, seem to be an aspect of camaraderie to the trail (and most greenways) which was mentioned by some of the respondents in the open-ended questions which are examined below.

Respondents were asked several questions about duration and frequency of use, seasonal differences and distance traveled. When asked how much time they “typically spend on the Tanglefoot Trail?” 86% of respondents reported spending more than an hour. Only 1% reported spending less than 30 minutes and 13% reported spending 30 minutes to one hour. Respondents were also asked which seasons of the year they used the Trail. Fall (218 of 220 respondents), summer (197 of 220 respondents) and spring (220 of 220 respondents) were almost equally popular, but winter use was much reduced (92 of 220 respondents). In terms of frequency of use, 61% of respondents reported using the trail once a month or more. However, of this group, only 2% reported using the trail on a daily basis. 34% of respondents reported using the trail a few times a year and only 5% reported having used the trail just one time. In terms of distance, almost half of respondents (49%) reported traveling more than 20 miles on a typical visit to the trail. And 85% of respondents reported traveling over five miles. Only 4% reported traveling two miles or less. The distances and travel times are, obviously, influenced by mode of transportation since most reported that bike riding was their primary trail activity.

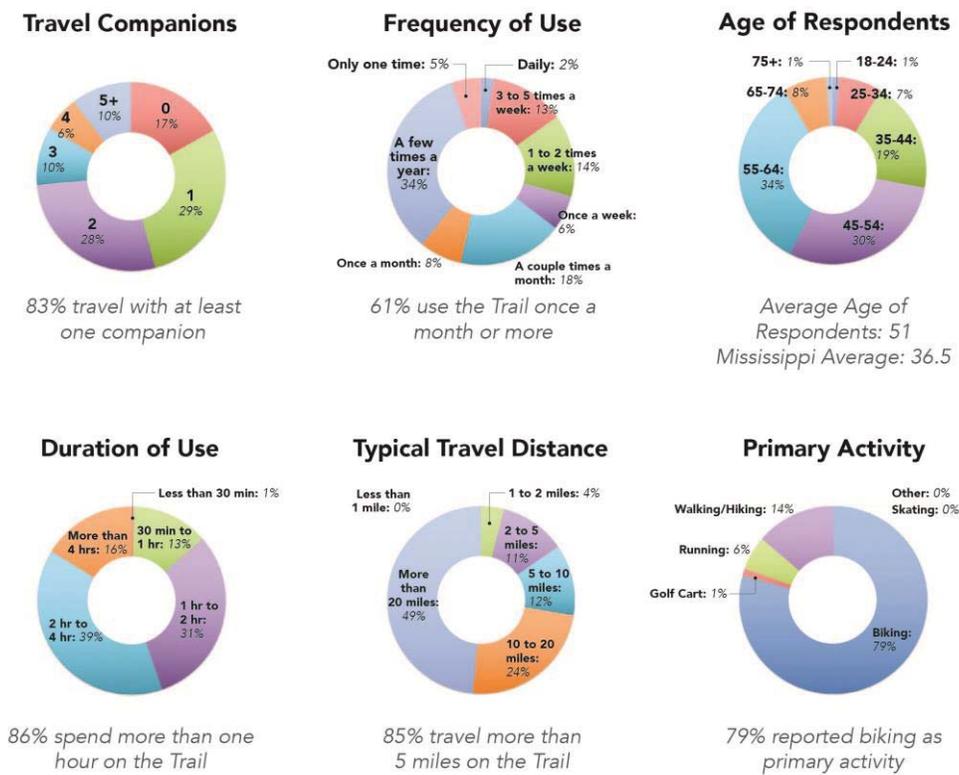


Figure 3. Basic statistics of Tanglefoot Trail users. Image by the authors

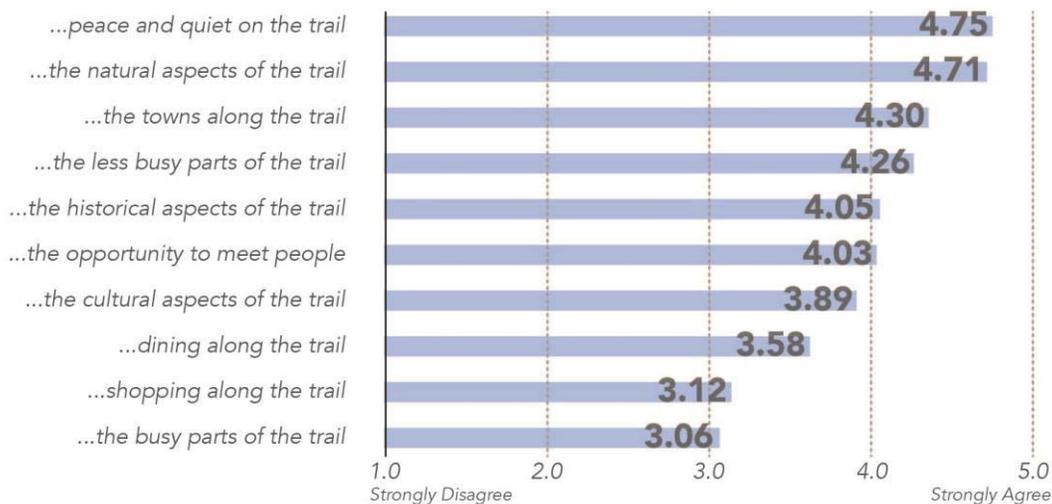
4.3 What motivates them to use the Tanglefoot Trail?

Trail users were asked to rate five motivations for using the trail on a scale of one to ten. Categories were a slightly modified version of those suggested in the Trail User Survey Workbook (2005) created by the Rails-to-Trails Conservancy. Respondents rated “Health and Exercise” (8.98 out of 10) and “Recreation” (8.79 out of 10) very highly in terms of their motivation for using the trail while “Fitness Training” (7.73 out of 10), and “Camaraderie” (5.84 out of 10) were rated as less influential. “Commuting” (2.75 out of 10) was rated the lowest in terms of influence on user motivations, which is not surprising given the rural character, distance between towns and low density of the trail surroundings.

4.4 What do they enjoy most about the Tanglefoot Trail?

Regarding their enjoyment of the trail, participants were asked to rate ten, Likert-scaled (1=Strongly Disagree, 5= Strongly Agree) statements about various aspects of the experience (see Table 1). As these were trail supporters, it is not particularly surprising that they agreed with most statements about aspects of the Trail being enjoyable. However, the extent to which respondents agreed with the various statements is enlightening. Respondents rated “the peace and quiet on the trail” (4.75) and “the natural aspects of the trail” (4.71) very highly. “Shopping along the trail” (3.12) and the “busy parts of the trail” (3.06) were rated the lowest in terms of respondents’ enjoyment. This has ramifications for trail development and is discussed in further detail in the Conclusions below.

Table 1. What do you enjoy most about the Tanglefoot Trail?



4.5 What does the Tanglefoot Trail mean to its users?

Respondents were also asked two open-ended questions regarding the meaning of the trail. The first was “What did you appreciate or find meaningful about the experience of using the Tanglefoot Trail?”. Responses were categorized and tallied; they are presented in Table 2. Most frequently mentioned was the safety the trail provides by allowing riders to avoid cars. The peacefulness of the trail and the natural environment surrounding the trail were the second and third most frequently mentioned items. Quotations from the top three categories are presented below to provide a sense of the responses.

Safety/Lack of Cars:

- “The most important aspect is its safety. You don’t have to worry about people running over you near as much.”
- “I feel safer riding my bike on the trail rather than roads.”
- “I love that I can safely ride my bike for miles and miles with very little danger from vehicles.”

Peacefulness:

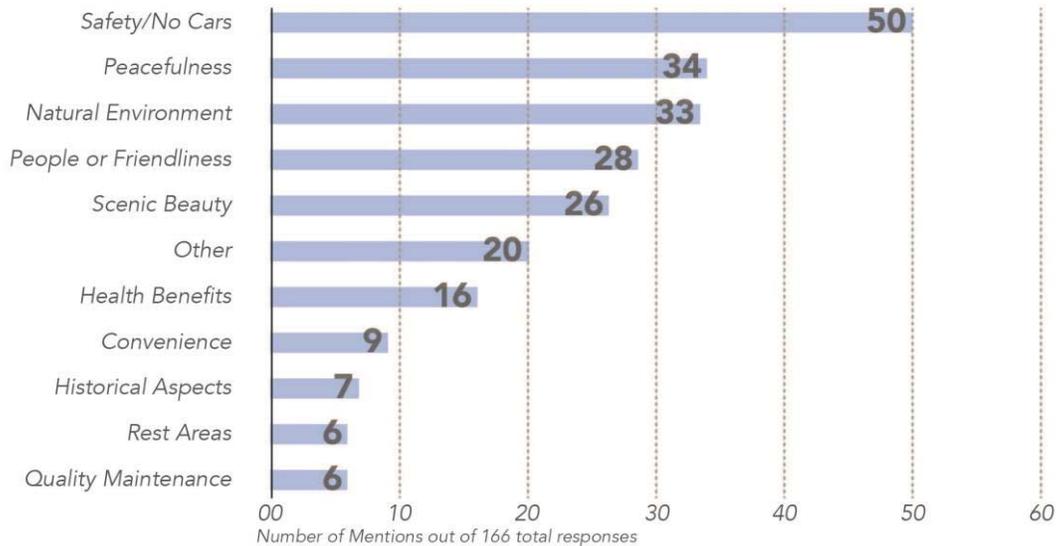
- “I love the peace and quiet as I ride or walk.”

- “It is a peaceful experience.”
- “It is relaxing to be on the trail because it's very quiet and peaceful.”

Natural Environment:

- “Just being out in nature enjoying my bike ride.”
- “I appreciate the natural scenery, and the peace and quiet on the trail. I enjoy hearing and seeing birds, and other animals along the way. It is very therapeutic.”

Table 2. What did you appreciate or find meaningful about the Tanglefoot Trail?



The second question regarding meaning was “In what ways was the experience of using the trail beneficial to you?”. Again, answers were categorized and counted (see Table 3). The top three benefits were all related to health: 1. Provides exercise, 2. Provides place for biking and 3. Improved health. The fourth most frequently mentioned benefit was, again, safety from automobiles while the fifth most frequent benefit was the opportunity to spend time with family or friends. Quotes from each of these categories are presented below.

Provides Exercise:

- “It has made me more physically active.”
- “It provides an enjoyable way to stay active in my retirement years.”

Provides Place for Biking:

- “A place I can ride my bike...”
- “Just a nice bike ride.”

Improved Health:

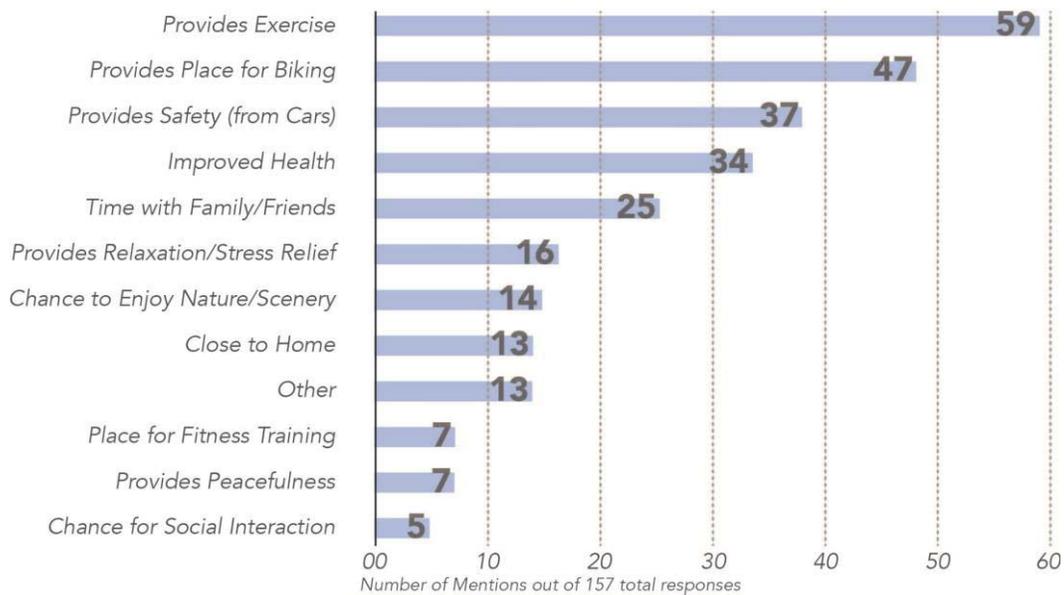
- “Since I started using the trail, I’ve lost 30 lbs. and my blood chemistry is now perfect!”
- “I receive immeasurable health benefits from getting out on the trail to bike or walk. I feel happier and more content.”

Provides Safety (from Cars):

- “The trail has been beneficial to me as it has allowed me to begin a new activity in biking that I would not have done if I did not have a safe, traffic free place to do it.”
- “The trail has provided a safe place to ride my bike...”

Time with Family/Friends:

- “It is a place where my husband and I can walk together for our health and have time to talk as well.”
- “Cycling on the trail is one of the few, healthy, outdoor activities both me and my husband enjoy. The trail allows us to exercise together...”

Table 3. In what ways was the experience of using the Trail beneficial to you?

5 DISCUSSION

This section briefly compares the results of this study with prior findings. In general, this study supports both Shafer, Lee and Turner's (2000) finding that "greenway trails, like roads, are used in different ways and for different reasons" (p. 174) and Gobster's (1995) assertion that "location of greenway trails was an important factor in how they were used" (p. 409). The Tanglefoot Trail is used in its own way based upon its location, its rural context and the landscape characteristics of the trail. In terms of who uses and supports the trail, the Tanglefoot appears to be used by an older demographic than some greenways from prior studies (Akpinar, 2016; Byrne, Wolch & Zhang, 2009), but as previous work suggests, users are most likely to live in proximity (Akpinar, 2016; Gobster, 1995). However, distance is relative and in such a rural context this distance likely increases due to lower density and lack of alternatives.

How and when the Tanglefoot Trail is used is also affected by its rural context and landscape. Other trail studies have found far less bike usage on urban greenways (Akpinar, 2016; Byrne, Wolch & Zang, 2009; Evenson, Herring & Huston, 2005; Shafer, Lee & Turner, 2000), but because the Tanglefoot is a rails-to-trails project and therefore long, mostly flat and straight, it offers a pleasant biking environment. It also is much less crowded than many urban greenways and located in an area of the country where there are very few safe options for biking due to lack of infrastructure. Only young, serious, heavily-equipped "cyclists" would even consider braving most rural Mississippi roadways. Given all this, it is not hard to see why older riders, families and more casual bicyclists choose the Tanglefoot Trail and greatly appreciate the opportunity to ride without the risk of auto traffic.

Some studies have found more frequent use by respondents (Akpinar, 2016) and it seems likely that rural trails would have quite different use patterns due to the need for most users to travel to the site by car. This may mean that users tend to use the trail more recreationally and to stay for a longer length of time once they've arrived. 86% of our respondents reported staying over an hour; this is quite significant given that the US Center for Disease Control and Prevention recommends 150 minutes of moderate exercise per week (Centers for Disease Control and Prevention, 2015). Although Evenson, Herring and Huston (2005) and West and Shores (2015) were unable to demonstrate an increase in physical activity as the result of a trail, it is clear from respondent comments that at least some users are deriving considerable benefit, e.g., "I've lost 30 lbs.". This may depend greatly upon context and what other recreational and exercise options are available. In the case of most rural areas, there are very few exercise alternatives in terms of organized sports, gyms or even parks. This is significant because this study supports the idea found elsewhere in the literature that trail users' primary motivations are related to health and exercise (Akpinar, 2016; Lee, Scott & Moore, 2002; Shafer, Lee & Turner, 2000).

6 CONCLUSIONS

While some aspects of this study are comparable to prior literature, there has been little in-depth research into the meaning of trails to their users and no studies the authors are aware of that address as rural a greenway setting. This is an important area of inquiry to provide additional evidence of the value of greenways, and rural trails in particular. What does the Tanglefoot Trail mean to its users? First and most essentially, the trail simply provides a safe setting for biking and thereby a path to improved health for local residents. Second, respondents expressed thorough appreciation for the peaceful, natural setting of the trail; this opportunity for respite in nature is a major aspect of the trail's meaning to users. For many, the attraction of the Tanglefoot is the green, tunnel-like setting which provides the pleasant, almost meditative experience of pedaling quietly along in the dense shade.

This does, however, raise a bit of a conundrum for trail managers and supporters. Trails are often touted for their tourist potential and the economic opportunities they may offer. Yet trail visitors valued most highly the "less busy" parts of the trail. Care must be taken not to spoil the trail experience for those desiring a respite in a natural environment while also satisfying residents desires for economic development opportunities. In the case of the Tanglefoot Trail, there is minimal risk of incompatible development in many areas of the trail but also little protecting the trail surroundings from such ventures. Trail users did also express appreciation for the "towns along the trail"; it would seem logical to both focus and carefully guide development efforts in these areas as they hold the greatest potential for economic development but also the greatest risk of becoming disagreeable to trail users.

When asked what they found meaningful or appreciated about the Tanglefoot Trail, respondents often mentioned the basics like safety. Just having a safe place to ride without cars was highly valued by many and clearly quite transformative for some who mentioned dramatic weight loss and other physical or mental health benefits such as feeling "happier and more content." Many older adults choose cycling due to the reduced impact as compared to running or more active sports. Although further study is needed, this study suggests that dedicated trails through natural areas may be a useful tool to encourage older adults in rural areas to spend time outdoors and improve their physical activity. However, the specific setting is an important consideration and preference should be given to trails that provide the peaceful experience of nature that trail riders prefer while also connecting the denser areas of towns and rural communities where the greatest number of people live and necessary services can be provided.

This study suggests that the Tanglefoot Trail has had a positive impact on the lives of many rural north Mississippi residents, who otherwise have few, healthful recreational opportunities available. For aging rural populations, such trails may provide an attractive option to improved health outcomes through increased cycling in particular. Future research should examine this issue in greater depth to explore more specifically what landscape character, design features, views and amenities would be helpful in attracting and retaining users and supporters.

7 REFERENCES

- Akpinar, A. (2016). Factors influencing the use of urban greenways: A case study of Aydin, Turkey. *Urban Forestry & Urban Greening*,16, 123-131.
- Byrne, J., Wolch, J. & Zhang, J. (2009). Planning for environmental justice in an urban national park. *Journal of Environmental Planning and Management*,52(3), 365-392.
- Centers for Disease Control and Prevention (2015, June 04). How much physical activity do adults need? Retrieved January 12, 2018, from <http://www.cdc.gov/physicalactivity/basics/adults/index.htm>
- Crompton, J. (2012). Estimates and Economic Benefits Accruing from an Expansion of Houston's Bayou Greenway Network. *Journal of Park and Recreation Administration*,30(4), 83-93.
- Evenson, K. R., Herring, A. H., & Huston, S. L. (2005) Evaluating change in physical activity with the building of a multi-use trail. *American Journal of Preventative Medicine*,28, 177-185.
- Fabos, J. G. (1995). Introduction and overview: the greenway movement, uses and potential of greenways. *Landscape and Urban Planning*,33, 1-13.
- GM&O Rails-to Trails Recreational District of North Mississippi (n.d.) *Tanglefoot Trail User Assistance and Trail Guide*. Retrieved from <http://www.tanglefoottrail.com/site/docs/Tanglefoot-Trail-Guide2013.pdf>

- Gobster, P. H. (1995). Perception and use of a metropolitan greenway system for recreation. *Landscape and Urban Planning*,33, 401-413.
- Gobster, P. H., & Westphal, L. M. (2004). The human dimensions of urban greenways: planning for recreation and related experiences. *Landscape and Urban Planning*,68, 147-165.
- Interpreting the Trail. (n.d.). Retrieved November 20, 2015, from <http://www.tanglefoottrail.com/about-us/interpreting-the-trail/>
- Jim, C. Y., & Chen, W. Y. (2006). Recreation-amenity use and contingent valuation of urban greenspaces in Guangzhou, China. *Landscape and Urban Planning*,75, 81-96.
- Lee, J., Scott, D., & Moore, R. L. (2002). Predicting Motivations and Attitudes of Users of a Multi-use Suburban Trail. *Journal of Park and Recreation Administration*,20(3), 18-37.
- Lindsey, G., Han, H., Wilson, J., & Yang, J. (2006). Neighborhood correlates of urban trail use. *Journal of Physical Activity and Health*,3, 139-157.
- Lindsey, G., Man, J., Payton, S., & Dickson, K. (2004). Property Values, Recreation Values and Urban Greenways. *Journal of Park and Recreation Administration* ,22(3), 69-90.
- Little, C. E. (1995). *Greenways for America*. Baltimore: Johns Hopkins University Press.
- Nicholls, S. (2005). The Impact of Greenways on Property Values and Urban Greenways: Evidence from Austin, Texas. *Journal of Leisure Research*,37(3), 321-341.
- Palardy, N., Boley, B. B., & Gaither, C. J. (2018). Residents and urban greenways: modeling support for the Atlanta BeltLine. *Landscape and Urban Planning*,169, 250-259.
- Rails-to-Trails Conservancy. (2005). *Trail User Survey Workbook*. Retrieved from <https://www.railstotrails.org/resourcehandler.ashx?id=3543>
- Shafer, C. S., Lee, B. K., & Turner, S. (2000). A tale of three greenway trails: user perceptions related to quality of life. *Landscape and Urban Planning*,49 163-178.
- Tanglefoot Trail Facebook Page. (n.d.). Retrieved from <http://www.facebook.com/tanglefoottrail/>
- United States Census Bureau. (n.d.). Retrieved from https://factfinder.census.gov/faces/nav/jsf/pages/community_facts.xhtml?src=bkmmk
- Weber, S., Boley, B. B., Nathan, P., & Gaither, C. J. (2017). The impact of urban greenways on residential concerns: Findings from the Atlanta BeltLine Trail. *Landscape and Urban Planning*, 167, 147-156.
- West, S. T., & Shores, K. A. (2015). Does Building a Greenway Promote Physical Activity among Proximate Residents? *JPAH Journal of Physical Activity and Health*, 52-57.