

Are they NUTS or is it a market to explore? The voice of the multi-day bicyclist

Norma P. Nickerson
Institute for Tourism and Recreation Research, University of Montana
Missoula, MT, USA

Jake Jorgenson
Institute for Tourism and Recreation Research, University of Montana
Missoula, MT, USA

Meredith Berry
Institute for Tourism and Recreation Research, University of Montana
Missoula, MT, USA

Jane Kwenye
College of Forestry and Conservation, University of Montana
Missoula, MT, USA

Daniel Kozel
Geography Department, University of Montana
Missoula, MT, USA

and

Jessica Schutz
College of Forestry and Conservation, University of Montana
Missoula, MT, USA

ABSTRACT

The purpose of this study was to understand the niche market of touring cyclists and to examine the potential for cycle tourism in the state of Montana. Adventure Cycling Association provided 3,145 emails of visiting cyclists and purchasers of maps from 2011 to 2013. Results show that cycling tourists spent \$75/day and stayed eight nights on average in Montana. Results indicate a strong potential for cycle tourism in the state of Montana. Cyclists are generally satisfied, but improvements are needed in infrastructure to encourage more riders. Touring cyclists fit directly in line with Montana's geotourism marketing brand pillars.

Key Words: Bicycle tourism, challenges, memorable experiences, expenditures

INTRODUCTION

It seems odd to say that bicycle tourism could be the new phenomenon in the travel industry. During the 1890's the bike was the means of independent transport until the motor vehicle took over in the 1920's (Tobin 1974). In the 1960's the surge of air travel re-defined what it means to travel. Today, bicycle tourism, a form of slow travel (Dickinson, Lumsdon & Robbins 2011; Lumsdon & McGrath 2011), is starting to receive the attention of researchers, destinations, and entrepreneurs. It has been slow in coming, especially in the United States.

The Adventure Cycling Association began as a result of the U.S. Bicentennial celebration by establishing, planning, and promoting the Bikecentennial – a ride across the United States in 1976 (D'Ambrosio 2006). While Adventure Cycling is a thriving nonprofit organization whose mission is to inspire and empower people to travel by bicycle, the scale of bicycle tourism and its economic effects are difficult to measure. Membership in cycling organizations is one measure: In Britain, the Cyclists Touring Club has 70,000 members (CTC 2014); In North America, the Adventure Cycling Association has 46,500 members (ACA 2014).

A review of the academic literature related to bicycling and tourism shows that North America is by far "behind the eight ball" when compared to other countries around the world. Bicycle tourism has been identified and studied in Denmark, New Zealand (Ritchie, 1998), the UK (Cope, Doxford & Hills 1998) Australia (Faulk, Ritchie, & Fluker 2007), and Taiwan (Chang & Chang 2005) to name a few. Ritchie, Tkaczynski & Faulks (2010 p.411) noted,

“Although there appears to be a growing interest in bicycle tourism from the tourism industry and destinations, studies on this phenomenon are scarce.” Recently, in the US, planners at the city and statewide level have engaged in researching bicycle tourism. Wisconsin, Oregon, Arizona, and Iowa represent a few states that have conducted studies related to bicycle tourism. The range of economic impact figures from these studies is \$30 million to 400 million depending on the methods and measurements used. Because of the inability to generalize other research results to specific destinations, the purpose of this study was to assess the characteristics of touring cyclists, what they look for in multi-day cycling trips, experiences, challenges and how much they spend during their travels in Montana.

LITERATURE REVIEW

Ritchie, et.al. (2010, p. 410) state that “bicycle tourism refers to tourism that involves watching or participating in a cycling event, or participating in independent or organized cycle touring.” They note a range of definitions used including the UK-based engineering and construction charity Sustrans (1999, p.1) which states, “recreational visits either overnight or day visits away from home, which involve leisure cycling as a fundamental or significant part of the visit.”

However, Ritchie (1998, p. 568-569) provides a definition of a *cycle tourists* as:

“A person who is away from their home town or country for a period not less than 24 hours or one night, for the purpose of a vacation or a holiday, and for whom using a bicycle as a mode of transport during this time away is an integral part of their holiday or vacation. This vacation may be independently organized or part of a commercial tour and may include the use of transport support services and any type of formal and/or informal accommodation.”

Using Ritchie’s (1998) definitions of *cycle tourists* and *recreational cyclists*, spending at least 24 hours or one night on vacation is essential for classification of a *cycle tourist*, which is a commonplace classification criterion for a general tourist in prior literature. However, bicycling must be an “integral” part of the vacation or trip. Ritchie (1998) notes that this definition provides a range of classifications and segments for cyclists, however, not all cyclists are assumed to be the same.

While there is some research on bicycling, Ritchie et al (2010) suggest that more academic research is needed on bicycle tourism. Published journal articles are scarce, but there is a push by planners at the city and statewide level to research bicycle tourism. Wisconsin (Grabow, Hahn, & Whited, 2010), Oregon (Dean Runyan Assoc., 2013), Arizona (McClure Consulting LLC, Economic & Policy Resources, & Kimley-Horn Associates, 2013), and Iowa (Lankford et al, 2011) represent a number of states that have conducted studies pertaining to bicycle tourism, specifically economic impacts of bicycling.

Recently, two literature reviews have provided attempts to aggregate information to guide decision-making processes relevant to their location (Linscheid, Bakshi, & Tuck, 2013; Weigand, 2008). In addition, a study conducted by the Outdoor Foundation (Southwick, 2006) estimated \$133 billion in contributions due to bicycling. As many as 1.1 million jobs, \$17.7 billion in federal and state tax revenue, and \$53.1 billion in retail sales and services are attributed to bicycling in the United States. While national statistics are useful, scaling down the impact to local or regional levels is more beneficial to local planners.

While the above mentioned studies provide excellent data on bicycling in general, there is still a lack of knowledge related to the characteristics and spending patterns of multi-day cyclists, therefore, further exploratory research is needed on this niche tourism market.

METHODS

Adventure Cycling, a nonprofit organization who encourage people to travel by bicycle, provided the Institute for Tourism and Recreation Research (ITRR) with the email addresses of 3,200 people who purchased Montana route maps or who stopped into the Adventure Cycling headquarters in Missoula, MT while biking in 2011, 2012, & 2013. An invitation to take an on-line survey was sent to the 3,200 email addresses in late October 2013. One week later, a reminder email was sent to those who had not responded to the first invitation.

Of the 3,200 emails sent, 47 came back as undeliverable and 8 came back twice as “out-of-office,” (i.e. not replying to emails). This resulted in 3,145 surveys delivered. As in all on-line data collection, it is impossible to know the

number of people who did not see the survey as it may have ended up in their “junk” box. This usually results in a smaller response rate. However, for this study, 718 surveys were completed resulting in a 23 percent response rate (718/3,145). This is an acceptable response rate for on-line methodology.

RESULTS

Survey respondents ranged in age from 18 to 79 years, with a mean of 52 years. Seventy-six percent of respondents were male and 24 percent were female. The majority of respondents were employed (44%) followed by retired (36%). Eleven percent of respondents represented business owners while students were 4% of the respondents.

Twenty-four percent of respondents make less than \$50,000, 37 percent make between \$50,000 and \$100,000 and 38 percent of respondents make over \$100,000. The top three states nonresidents traveled from were California, Washington, and Oregon. Only three states (Arkansas, Delaware, and West Virginia) did not have at least one touring cyclist participant in our survey. Internationally, individuals from eighteen countries responded. Canada had the highest number of participants (18), followed by the Netherlands (9), and the United Kingdom (6).

The majority of respondents (92%) are planning to take a multi-day bicycle trip in the next three years. In addition, respondents are active in multiple cycling activities. Table 1 shows that the vast majority of respondents have engaged in cycling-related activities in the past 3 years including day road rides (87%), taking their bike on vacations (85%), independent bike touring (82%), and casual cycling in town (80%).

Table 1
Cycling related activities in the past three years

Cycling Related Activities in Past 3 Years	Frequency	Percentage
Day road rides	526	87%
Take my bike on vacations	514	85%
Independent bike touring	495	82%
Casual cycling in town	486	80%
Commuting to work/school	360	60%
Mountain biking	264	44%
Fundraising rides	218	36%
Rent a bike on vacations	191	32%
Commercial bike tour	182	30%
Bicycle races	108	18%
Used 'bike share' on vacations	56	9%

Of the surveyed respondents, less than half (46%) indicated being a spectator at cycling events. Of those who attend cycling events, viewing road racing events is the most popular event to watch (76%). Much lower in numbers is watching cyclo cross racing (33%), mountain bike racing (28%), bicycle tours (26%) and other bicycle events (22%). This tends to indicate that cyclists want to be on the bike, not watching someone on the bike.

In regards to multi-day trips, Table 2 shows that most respondents prefer either a 5-7 day bike trip (29%) or a trip lasting more than 30 days (28%). Ten to 14 days was also popular (23%), as was 15-29 days (15%). As shown by the low percentages of preference for shorter bicycle trips (1% for 1-2 days and 4% for 3-4 days), respondents tended to favor trips lasting longer than 4 days.

Table 2
Optimum length of a multi-day bike trip

Optimum Length of Trip	Frequency	Percentage
1-2 days	6	1%
3-4 days	24	4%
5-7 days	172	29%
10-14 days	137	23%
15-29 days	91	15%
30+ days	171	28%

The average preferred daily mileage was 60.26 miles. More cyclists preferred to ride 50 or 60 miles per day (123 and 162 respondents respectively).

Montana Specific Cycling

The average length of stay in Montana was 8 nights. The vast majority of nights were spent in either a motel (39%), or a private (22%) or public (19%) campground. Fewer nights were spent in dispersed camping along the bicycle route (6%) or with a friend or relative (5%).

Table 3
Type of overnight lodging used

Overnight Stay	Percentage
Motel	39%
Private campground	22%
Public land campgrounds	19%
Dispersed camping along route	6%
Home of friend/relative	5%
Warm Showers.com	3%
B&B	2%

While cyclists participated in many activities as they traveled through Montana, Table 4 displays the activities where at least one-fourth of cyclist participated. Ninety-two percent went road biking (indicating that 8% did mountain biking only) and 40% visited other historical sites. About a third of respondents visited Lewis and Clark sites (38%), watched wildlife (37%), went day hiking (33%) and engaged in nature photography. Slightly over one-fourth experienced local breweries (29%), or visited a museum (28%). These data reveal that while in Montana, cyclists are participating in a wide range of activities.

Table 1
Activities participated in while in Montana

Activities in MT	Frequency	Percentage
Road biking	443	92%
Visited other historical sites	196	40%
Visited Lewis & Clark sites	186	38%
Wildlife watching	181	37%
Day hiking	162	33%
Nature photography	144	30%
Experience local Breweries	142	29%
Visited museums	137	28%

A total of \$75.75/day/person is spent on average by individuals who traveled across Montana on their bike trip. For cyclists in Montana, accommodations (\$23.23 per day), restaurants and bars (\$15.66 per day), and Adventure Cycling Association Guided Trips (\$12.01 per day) comprised the highest spending categories (Table 6).

Table 6
Average Daily Expenditures of cyclists in Montana

Spending Categories	All Cyclists (n= 468)	Spending categories	All Cyclists (n= 468)
hotel/motel, B&B, hostel, etc.	\$22.23	Transp. Fares (e.g. bus, plane)	\$2.09
Restaurants and Bars	\$15.66	Fuel/Gasoline	\$2.02
Adventure Cycling Guided Trip	\$12.01	Bike Repairs/Service	\$1.35
Groceries and Snacks	\$7.53	Other Guided Trips (rafting/fishing)	\$0.59
Bike Related Retail Purchases	\$3.31	Services (e.g. rentals, showers, medical, etc.)	\$0.64
Camping (Private & Public)	\$4.00	Fees/Licenses/Admittances	\$0.78
Other Retail Purchases	\$3.32	Other Expenditures	\$0.22
TOTAL/person/day			\$75.75

Satisfaction of services, activities and road conditions are displayed in Table 5. The mean was calculated on a 6-point scale from 1=completely dissatisfied to 6=completely satisfied. Higher means indicate higher satisfaction. Overall, cyclists were most satisfied with the hospitality of local people (mean = 5.10), historical sites and local breweries visited (mean = 4.79 and 4.77 respectively), and signage on highways (mean = 4.49). Compared to the other variables, cell phone coverage (mean = 3.75) had the lowest service related satisfaction followed by width of shoulders (mean = 3.93).

Table 5
Satisfaction of services while in Montana

Satisfaction with services	Mean
Hospitality of local people	5.10
Availability of camping areas	4.43
Availability of grocery/convenience stores	4.40
Availability of motels/B&B/hostels	4.40
Availability of Restaurants	4.36
Laundry services	4.26
Availability of restrooms	4.24
Availability of showers	4.17
Availability of bike repair services	4.16
Availability of cycling stores/equipment	4.15
Cell phone coverage	3.75
Satisfaction with the activities	Mean
Historical Sites	4.79
Local breweries	4.77
Cultural events	4.38
Night life	4.29
Satisfaction with road conditions	Mean
Signage on Highways	4.49
Signage in Towns	4.44
Courtesy of motor vehicle drivers	4.34
Amount of vehicle traffic	4.28
Quality of pavement	4.17
Lack of debris on shoulders/road	4.17
Width of shoulders	3.93

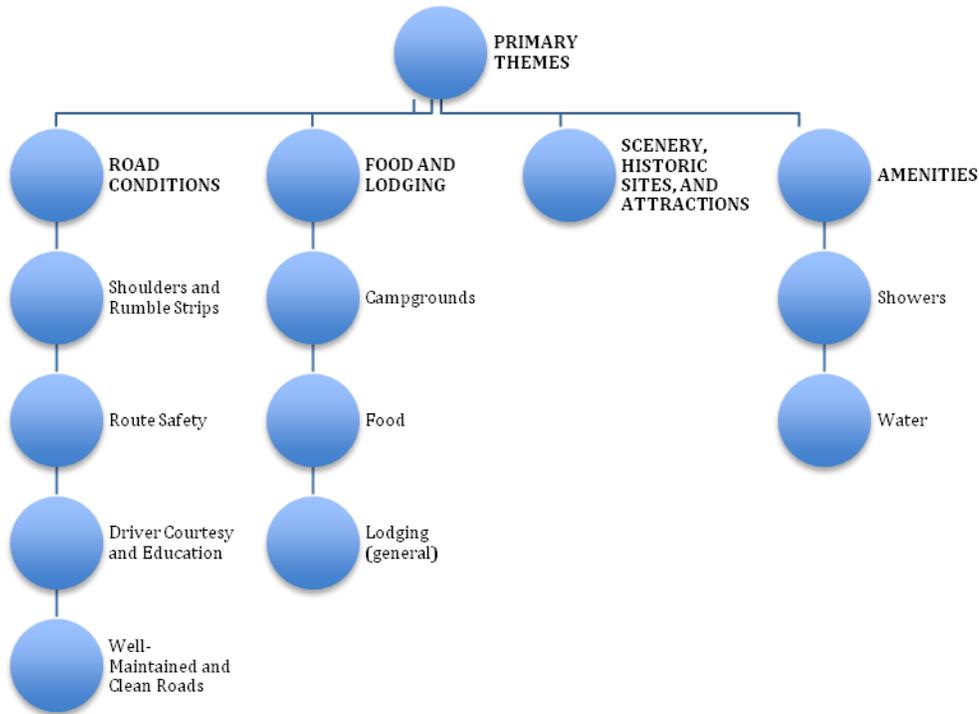
Challenges and Memorable Experiences

Two open ended questions were asked on the survey. One asked respondents to provide any additional information related to their needs, challenges, expectations, and requirements for a successful and comfortable multi-day cycling trip. The second question asked respondents to describe their most memorable experience while cycling in Montana. Overall, the comments were critical about Montana's cycling infrastructure and state consideration for the sport. However, these negative responses are not to say that they did not enjoy their trip and that they will not return. Instead it is a reminder that cyclists face different challenges and have a different set of needs than the traditional auto tourist. The majority of the most memorable experiences described by cyclists tended to be related to the scenery, challenges, friendly hospitality, and weather. In almost all cases, the experiences were upbeat and inspiring.

Needs and challenges of cyclists

When asked to describe their challenges while cycling in Montana, respondents were descriptive on what their needs are while traveling within the state. Figure 1 identifies the many discussion areas that emerged: road conditions; food and lodging; scenery, historic sites, and attractions, and; amenities emerged at the top of most respondent's minds.

Figure 1: Primary themes related to needs and challenges of cyclists



Road Conditions: Over one-third of respondents suggested that highways should not have such large rumble strips and that there is a need for appropriate shoulder width on roadways. This was by far the top suggestion for improving their trip. A lack of these considerations was also the number one complaint of cycling in Montana. For example, one wrote: “The State of Montana needs to focus in on adopting a standard for road shoulders that takes into account the state's desire to be a "mecca" for cyclists.”

Food and Lodging: Cyclists are not always able to plan their lodging ahead of time because plans can get off schedule very easily due to weather, technical problems, or physical condition for a particular day. Campgrounds typically offer the most flexible accommodations for a late night or unexpected arrival. Respondents praised other states and regions where cyclist/hiker only campsites are prevalent. As one respondent wrote, “The bicycle infrastructure in Montana really has to be improved if you want to attract cyclists to the state. There is a woeful lack of ... reasonably priced places to stay overnight. Even campgrounds can be expensive.” Respondents said that certain stretches of Montana lacked the availability of food, be it grocery stores, local cafes, or restaurants. “[The] biggest challenge for us was to get something decent to eat; we relied a lot on Cenex [convenience store stations].”

Scenery, Historic Sites, Attractions: Part of bicycle touring is enjoying the scenery and stopping to see historic sites and attractions. Unsurprisingly, cyclists gave praise for how Montana’s scenery made their trip memorable. “My favorite rides are along rivers and across mountains of the West. [I] prefer scenic and historic routes like the Lewis and Clark trail where I stopped at each and every sign.”

Amenities: Free hot showers were an often-mentioned expectation of campgrounds and other lodging facilities. It was also a requested need at public areas such as pools or truck stops. Water was a top need and finding it was a concern and challenge. Respondents sometimes mentioned the lack of, and need for, water along rural routes. One respondent suggested the installation of water fountains. The lack of water may go hand-in-hand with a lack of stores or other facilities. “We camped a lot in city parks - would have been nice to have more showers - maybe at the public pools.” “The long stretches of road in Montana can be fatal if you run out of water in the summer.”

Memorable experiences in Montana

In an attempt to grasp a deeper understanding of the cycle trip, respondents were asked to state their “most memorable” experience or day they had while cycling in Montana. Montana memorable experience comments were provided by 445 of the 502 respondents (89%) who cycled in Montana between 2011 and 2013. Eight themes

emerged from the data, however, even these 8 could be reduced to four major areas of experiences: 1) scenery and Glacier National Park, 2) Challenges, (climbs, descents, passes, undesirable experiences; 3) Friendly hospitality; and 4) Miscellaneous. Figure 2 provides the full spectrum of emerging themes related to memorable experiences.

Figure 2
Primary themes of cyclists' most memorable experiences while in Montana



Scenery example: “The most memorable day cycling in Montana was climbing up to the town of Wisdom, and spending the night in that location. It was not one of the largest climbs of the trip so far, but we were unsure whether the snow had melted from the previous night’s storm up top. When we arrived the snow had indeed melted, making it safe for travel with skinny tires. The town of Wisdom and the absolutely breathtaking scenery was the most memorable experience of the 3 month cross country trip.”

Along with scenery, Glacier National Park memories were highlighted many times. For example: “Certainly the most memorable day was the climb from East Glacier up “Going-to-the-Sun road” and descending on the west side of Logan Pass. It was wonderful cycling with the most amazing scenery!”

Challenges example: “Climbing over Rogers Pass was grueling and amazing and then the descent into Lincoln was so refreshing with the beautiful conifers lining the road. After all the dry, narrow road, lack of shoulder, rolling, wide open expanse of eastern Montana, finally hitting the western continental divide was such a breath of fresh air.”

Friendly hospitality example: “Beyond the beauty of the state, it was the kindness of the people that over and over impressed me with their support and interest in my journey.”

Weather example: “The scenery and the weather shaped my experiences in June 2013. Started a beautiful riding day, and hours later, flash flooding, lightening and high winds came into play.”

As expected, a variety of themes are mentioned numerous times such as scenery and weather. However, themes such as “hospitality of local people” and “challenge” are unique themes that are telling of Montana’s character. Cycle tours can be a very difficult endeavor for those who choose to embark, but the hospitality of Montana’s locals appears to make the experience even more enjoyable as well as the scenic landscapes. The conversations with residents in restaurants and bars and their willingness to help them out when needed are noted experiences that were overwhelmingly positive. Furthermore, the challenge of Montana’s diverse landscapes makes for an experience that is long-lasting. The grueling rides up steep mountain passes followed by the ease of downhill riding for miles provides a sense of accomplishment and fulfillment for those who may not have known what to expect prior to visiting. Unlike many other states, the variety of landscapes proves to be refreshing for those who are cycling long distances. Respondents did not discriminate one section of Montana as superior to others parts; they enjoyed the entirety of their stay.

DISCUSSION

One of the most important aspects of a long distance cycle tour is road conditions. In the eyes of the cyclists, rumble strips, debris, and shoulder width are critical to consider when making or maintaining roadways. If the rumble strip covers the entire shoulder, it does not allow cyclists to use the highway in a safe manner. Shoulders must be an adequate size to account for vehicles to pass and the cyclist to safely ride along the highway. It is even more preferred to build cycle trails adjacent to the highways. This would decrease the conflict that cyclists have with vehicles, create safer riding conditions, and provide residents with a trail to use as well.

Visitor expenditures indicate a great opportunity for local communities to bring in extra economic activity through promotion of this niche market. Cyclists spend time in all regions of the state, not just a few towns. Much of Western Montana and most of Eastern Montana (more specifically the northern route and the I-94/90 corridor) could see increased cycle tourism in their communities if proper services are provided. Cycle-friendly infrastructure, welcoming locals, and signage would go a long way to embracing this niche market.

Cyclists need different amenities than the average auto tourist. “Bicycle camps” similar to what the Montana town of Twin Bridges offers is a very well-received infrastructure design that substantially improves the experience for cyclists. If a number of small communities were able to build similar types of camps, the economic and social impact could be great for local residents. Word-of-mouth spreads quickly through niche market communities and the town may see an increase in visitation/spending due to these changes. Cyclists are willing to spend time and money in towns on their off-days and at night. Providing affordable, comfortable accommodations for cyclists encourages even more time spent in town to enjoy what it has to offer. Changing existing public campground policies to be inviting for touring cyclists would be beneficial. A number of campsites designated for cyclists/hikers only, excluding bicyclists from minimum night reservation policies, or providing bicycle-specific amenities at campgrounds (e.g. bicycle tools/racks, covered group shelters, electrical outlets for charging devices, and wildlife-proof storage containers) are a few of the many options to consider.

Driver courtesy is another significant aspect of the cycling experience. Many cyclists thoroughly enjoyed the hospitality of local people, but also noted that some drivers were not courteous on the road. It is not fair to assume that this is the majority of local residents, but only one bad encounter can make the entire trip unforgettable in a not-so-good way. Comments by cyclists referred to being pushed off the road by someone driving too close, being yelled at by passing vehicles, and drunk drivers. Thus, educating the entire public on how to share the road with cyclists and vehicles is needed. Even signs that say, ‘Bicyclists may use full lane’ provide a reminder to the public that bicycles may be present on the highway. Ensuring the courtesy of both parties provides a better, safer experience for drivers and cyclists. The other “not so popular” suggestion would be to reduce Montana’s 2-lane highway speed limits to increase safety for both the cyclists and the automobile drivers.

One major takeaway message is that little is known about cycle tours or the people that participate in this activity. Furthermore, more research is needed to understand differences between mountain biking and road biking, economic benefits, and infrastructure development. The state of Montana could attempt to target this market to bring in a demographic that appears to fit the geotourism theme. While questions were not asked directly about geotourism, it appears that touring cyclists fit within geotourism’s principles of supporting local communities, practicing environmentally sustainable behaviors, and integrating themselves within the culture of the place. Montana markets to geotourists, therefore bicycle tourism is a perfect fit for the state.

REFERENCES

- ACA (2014). Membership. Accessed 1/24/14 <http://www.adventurecycling.org/membership/>
- Chang, H.W. & Chang, H.L. (2005). A Strategic Study of Bicycle Tourism in Taiwan. *Journal of the Eastern Asia Society for Transportation Studies*, 5(1), 1675-1684.
- Cope, A., Doxford, D., & Hills, A. (1998). Monitoring tourism on the UK's first long-distance cycle route. *Journal of Sustainable Tourism*, 6(3), 210-233.
- CTC. (2014). Membership. Accessed 1/24/14 <http://www.ctc.org.uk/membership>
- D'Ambrosio, D. (2006). Thirty years and counting: A history of Adventure Cycling. *Adventure Cyclists*, accessed 1/24/14 http://www.adventurecycling.org/default/assets/File/About_Us/DAmbrosio_Thirty_Years.pdf
- Dean Runyan Associates. (2013). The Economic Significance of Bicycle-Related Travel in Oregon. Prepared for Travel Oregon. Portland, OR. Retrieved from http://www.deanrunyan.com/doc_library/bicycletravel.pdf.
- Dickinson, J.E., Lumsdon, L. M., Robbins, D. (2011). Slow travel: issues for tourism and climate change. *Journal of Sustainable Tourism*, 19 (3), 281-300
- Faulks, P., Ritchie, B., & Fluker, M. (2007). Cycle Tourism in Australia: An investigation into its size and scope. Eds., Cooper, C., De Lacy, T., & Lago, L. The Sustainable Tourism Cooperative Research Centre, Queensland, AU. Retrieved from <http://atfiles.org/files/pdf/Faulks-Australia-Cycle-Tourism.pdf>.
- Grabow, M., Hahn, M., & Whited, M. (2010). Valuing Bicycling's Economic and Health Impacts in Wisconsin. The Nelson Institute for Environmental Studies. Center for Sustainability and the Global Environment. Prepared for Representative Spencer Black. University of Wisconsin-Madison. Madison, WI. Retrieved from http://www.sage.wisc.edu/igert/download/bicycling_final_report.pdf.
- Lankford, J., Lankford, S., Grybovych, O., Bowles, B., Fleming, K., Fuller, K., Lankford, J. & Printz, J. (2011). Economic and Health Benefits of Bicycling in Iowa. Sustainable Tourism and Environmental Program, University of Northern Iowa. Cedar Falls, IA. Retrieved from http://www.peoplepoweredmovement.org/site/images/uploads/Economic_and_Health_Benefits_of_Bicycling_in_Iowa.pdf
- Les M. Lumsdon & Peter McGrath (2011) Developing a conceptual framework for slow travel: a grounded theory approach, *Journal of Sustainable Tourism*, 19:3, 265-279
- Linscheid, N., Bakshi, B., & Tuck, B. (2013). Quantifying the Economic Impact of Bicycling: A Literature Review with Implications to Minnesota. Prepared for Minnesota Department of Transportation Research Synthesis. University of Minnesota, St. Paul, MN.
- McClure Consulting LLC, Economic & Policy Resources Inc., & Kimley-Horn Associates Inc. (2013). An Economic Impact Study of Bicycling in Arizona: Out-of-state Bicycle Tourists & Exports. Prepared for Arizona Department of Transportation. Retrieved from <http://www.azdot.gov>.
- Ritchie, B. (1998). Bicycle tourism in the South Island of New Zealand: planning and management issues. *Tourism Management*, 19(6), 567-582.
- Ritchie, B., Tkaczynski, A., & Faulks, P. (2010). Understanding the motivation and travel behavior of cycle tourists using involvement profiles. *Journal of Travel & Tourism Marketing*, 27(4), 409-425.
- Southwick Associates, Inc. (2006). The Economic Contribution of Active Outdoor Recreation – Technical Report on Methods and Findings. Prepared for Outdoor Industry Foundation. Fenandina Beach, Florida.
- Sustrans. (1999). *Cycle Tourism*. Bristol, UK. Author.

Tobin, G. (1974). The bicycle boom of the 1890s: the development of private transportation and the birth of the modern tourist. *Journal of Popular Culture*, 8(spring), 838-849

Weigand, L. (2008). A Review of Literature: The Economic Benefits of Bicycling. Report by Portland State University #CUS-CTS-08-03, p. 1-13. Retrieved from <http://www.pdx.edu/ibpi/sites/www.pdx.edu/ibpi/files/Economic%20Benefits%20of%20Bicycling.pdf>.