

## RESEARCH NOTE

### THE RELATIONSHIP BETWEEN CYCLE TOURISM AND SUSTAINABLE TRANSPORT IN THE UK

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The use of both sustainable transport outcomes and tourism impacts as a mixed justification for investment in cycling infrastructure has led to the two often being seen as synonymous. The environmentally friendly credentials of cycle tourism are predicated on a conceptualization of cycle tourism in which cycling as a form of transport supplants other energy-consuming and -polluting forms of transport within the tourism trip. However, using a recent meta-analysis of UK data, this research note shows that even when the environmental costs of major cycling events are excluded, in *absolute* terms recreational cycle tourism across its full range of forms in the UK still generates considerable motorized transport use. But, the use of counterfactual models shows that in *relative* terms, on average across all its forms, recreational cycle tourism in the UK reduces the use of motorized transport to get to and from destinations by 12.2% and reduces motorized transport use at destinations by 7.6%. Consequently, recreational cycle tourism in the UK does have a positive sustainable transport outcome, but this is far smaller than is often visualized.

Key words: Cycling; Cycle tourism; Sustainable transport; Environment; Meta-analysis

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#### Introduction

Transport lies at the heart of the tourism system (Leiper, 1990; Lumsdon & Page, 2004; Page, 2005), but it is a system that is “heavily dependent on the world’s two most energy consuming and polluting

forms of transport—air transport and the motorised vehicle” (Lumsdon, 2000, p. 361). As such, it is often suggested that because cycling as a mode of transport neither consumes nor pollutes, unlike many other tourism forms, cycle tourism is an environmentally

friendly tourism product (e.g., Simonsen, Jorgensen, & Robbins, 1998; Sustrans, 2005).

Cycling is often central to sustainable transport strategies (Faulks, Ritchie, & Fluker, 2007). The National Cycle Network (NCN) in the UK, for example, was pioneered by Sustrans, which describes itself as the “UK’s leading sustainable transport charity” (Sustrans, 2008), and received a £43.5 million grant from the Millennium Commission Lottery Fund in 1995 largely because of its anticipated contribution to sustainable transport goals. However, often further additional justifications for such investments in sustainable transport are the tourism impacts that are claimed. Cope, Doxford, and Hill (1998), for example, showed that the C2C (Coast to Coast) route across the Northern Pennines in the UK was generating over 10,000 holiday trips per annum in the mid-1990s, and Sustrans (2008) claimed that during 2006 four long-distance routes of the NCN directly contributed £9.6 million to the North East economy, and £13.4 million to the wider economy. But utilizing both sustainable transport outcomes and tourism impacts as a mixed justification for investment in cycling infrastructure has led to the two being seen as synonymous, something that may not necessarily be the case.

### The Environmental Credentials of Cycle Tourism

The environmentally friendly credentials of cycle tourism are predicated on a conceptualization of cycle tourism in which cycling as a form of transport supplants other energy-consuming and -polluting forms of transport within the tourism trip.<sup>1</sup> In this conceptualization, cycle tourism is visualized as “cycle touring,” in which cyclists travel by cycle each day to different overnight destinations. However, this is a very narrow view of cycle tourism, which, as definitional discussions have noted (Lamont, 2009; South Australia Tourism Commission, 2005), might also comprise: single destination trips in which cycling tourists stay in the same locality for multiple nights; day trips to cycling routes and trails for the purpose of recreational cycling; or travel to cycling events, either as a participant or spectator. In each of these cases, the possibility of travel by car, rail, or even air transport is raised, and thus the assumption that cycling

supplants other forms of transport to make the trip more environmentally friendly is questioned.

In terms of events, for example, even for local cycling time-trials or mountain bike races, competitors will often transport themselves and their bikes to the event location by motorized transport because they wish to arrive fresh for the event. At the other end of the scale, major cycling events such as the Tour de France involve the transportation of competitors and their entourages, and the travel of spectators, including by air, as well as a much wider range of resource consumption. In fact, a study of the two Le Grand Depart stages of the Tour de France in London and Kent in the UK in 2007 showed a global ecological footprint of almost 58,000 global hectares (Collins, Roberts, & Munday, 2012), meaning it took 58,000 hectares of the earth’s resources to support just 2 days of the 2007 Tour de France.

Although major cycling events have rarely been the direct subject of sustainable transport investment, it has often been claimed that such events have an impact on sustainable transport by encouraging and promoting cycling (Berridge, 2012). Setting aside debates about how far elite sports events can influence wider participation (cf. Weed et al., 2009), it could be argued that if sustainability outcomes are going to be invoked as part of the justification for an event then the environmental costs of such events should be considered. Nevertheless, it is perhaps a little unfair to include major cycling events in an assessment of the relationship between cycle tourism and sustainable transport. As such, while noting the environmental costs of such events, the remainder of this note focuses on the environmental implications of cycling investments that are claimed to have both sustainable transport outcomes and tourism impacts. In short, the focus is on recreational cycle tourism<sup>2</sup> on cycling trails and routes in the UK that are promoted for tourism purposes.

### A Critique of the Relationship Between Recreational Cycle Tourism and Sustainable Transport

It might be expected that the use of cycling trails and routes would include significant use by the type of multidestination cycle tourists that are often visualized when equating cycle tourism with sustainable

transport. However, Weed et al.'s (2014) meta-analysis of UK data shows that such cycle tourists comprise less than 1% of the usage of cycle routes and trails. By far the largest users of such trails are local residents living within 25 miles of the routes (54%) and day-trippers traveling to use the route for recreational cycling from over 25 miles away (29%), with tourists staying for multiple nights within 25 miles of the routes comprising the remaining 16% of use. While some day-trippers arrive at the routes by cycle, the vast majority arrive at the routes by car or other forms of motorized transport (85%). However, perhaps more surprisingly, almost half of local residents using local routes and trails arrive by motorized transport (46%), as do over 70% of tourists staying in the local area. Overall, Weed et al.'s (2014) meta-analysis shows that 62% of cycle route and trail users in the UK arrive at the route by motorized transport, and this increases to 80% if local residents are excluded. Furthermore, these figures relate to daily usage, meaning that 80% of tourists cycling on cycle routes or trails have arrived at the trail by motorized transport *that day*. Such figures also do not account for the transport used by the 16% of cycle route users (35% of tourist users) to travel to their accommodation in the local area. In sum, these data seems to call into serious question the claim that cycle tourism is environmentally friendly because it contributes to sustainable transport outcomes.

#### Developing Counterfactual Models for the Sustainable Transport Impact of Recreational Cycle Tourism

The critique of the relationship between cycle tourism and sustainable transport applies to the *absolute impact* of cycle tourism, whereas it can be argued that what should be considered is cycle tourism's *relative impact*. The term "relative impact" is not being used here to refer to a simplistic comparison of the sustainable transport impact of recreational cycle tourism with other forms of tourism, but to a comparison of the sustainable transport impact of recreational cycle tourism with the impact of the activities that the tourists would have been most likely to have undertaken if they were not undertaking recreational cycling tourism activities. Such comparisons require an understanding of

the principles of counterfactual modeling (Weed, 2010).

Counterfactual modeling is a way of understanding the relative impacts of a particular activity or policy by modeling the impacts of the most likely activity or policy that would have been undertaken or implemented if the activity or policy in question had not taken place. It is derived from the concept of opportunity cost in economics, and shows that the alternative to a particular activity or investment is not no action, but the next most preferred action. Using the impacts of the Olympic and Paralympic Games as an example, Weed (2010) details the principles and the practice of counterfactual modeling, which involves empirical research to establish a counterfactual scenario, and analysis of secondary data to build a counterfactual model of the impact of that scenario. For an assessment of the relationship between cycle tourism and sustainable transport in the UK, Weed et al.'s (2014) meta-analysis can provide the secondary data to build a model of the likely impacts of counterfactual scenarios. However, the counterfactual scenarios themselves are derived from informed assumptions about what the most likely alternative activities might be to different types of recreational cycle tourism trips.

#### The Relative Sustainable Transport Impact of Recreational Cycle Tourism

The two main users of UK cycling routes and trails for recreational cycle tourism identified in Weed et al.'s (2014) meta-analysis are day-trippers (63% of cycle tourist trail use, 29% of all cycling users) and tourists staying locally for multiple nights (35% of cycle tourist rail use, 16% of all cycling users). In terms of counterfactual scenarios, for day-trippers the most likely alternative activity is unlikely to be recreational cycling near to home, because if local cycling was an attractive activity day-trippers would not be making the trip to routes and trails in the first place. Consequently, the most likely alternative activities are other tourist day-trips, such as visiting museums, theme parks, or other visitor attractions, each of which is likely to necessitate motorized transport. Importantly, though, if a counterfactual scenario for cycle tourism day-trips is of activities that necessitate the use of motorized transport, then cycle tourism day

trips can be modeled to reduce the use of motorized transport by 15%, because Weed et al.'s (2014) analysis shows that 15% of UK cycle tourism day-trips do not involve any other form of transport.

In respect of recreational cycle tourists staying locally for multiple nights, two counterfactual models are needed. Firstly, the impact of the most likely alternative activities to cycle route and trail use on the days that such routes are used must be assessed. Similar assumptions can be made here as were made for day-trippers, namely that the alternative to cycle route use will be other tourist activities on that day that will necessitate motorized transport use. A brief further analysis of the UK data provided by Weed et al. (2014) shows that cycle route and trail users staying locally for multiple nights stay for an average of 6.3 nights, and use cycle routes and trails for 3.3 days (53%) of their stay. The assumption here is that cycle route and trail use on these days would be replaced by activities using motorized transport, and that activities on the 47% of days that did not involve trail use would also use motorized transport. Given this assumption, on the basis of data from Weed et al. (2014) that 30% of UK cycle and trail users staying locally for multiple nights do not use motorized transport to access routes and trails, recreational cycle tourism reduces motorized transport use on such trips by ~16%.

The second counterfactual model for recreational cycle tourists staying locally for multiple nights is in relation to the mode of transport used to reach and leave their accommodation at the start and end of their trip. Weed et al. (2014) provide no information on this, but a report in the UK from Mintel (2009) shows that of those taking a holiday in the UK involving some cycling, 67% traveled by car, 19% traveled by train, 8% traveled by cycle, and 6% traveled within the UK by plane. Further analysis

of data provided by Weed et al. (2014) shows that 6% of those on cycle tourism trips involving an overnight stay in the UK will be multidestination cycle tourers, all of whom it might reasonably be assumed would be included within the 8% traveling to their holiday destination(s) by cycle. However, this means that the remaining 2% of those traveling to their holiday destination by cycle will fall within the 94% that stay for multiple nights in the same locality. This translates to ~2% of this group arriving and departing from the local area by cycle, thus representing a 2% reduction in motorized transport use over the counterfactual model, which might reasonably be assumed to be another tourism trip not involving cycling, and therefore not involving the possibility of travel by cycle.

Finally, although Weed et al. (2014) show that cycle tourers comprise only 2% of recreational cycle tourist use of UK cycle routes and trails (1% of all cycling users), they should also be included in this analysis because the reduction of motorized transport use is 100% in comparison to a counterfactual model in which the most likely alternative is a tourist trip involving motorized transport both to and at a destination.

The summary reduction of motorized transport use for each of the recreational cycle tourism market segments in the UK outlined above is shown in Table 1. Table 1 also calculates the overall reduction in motorized transport use to and from destinations, and at destinations, by weighting the reductions for each segment in proportion to the size of that segment, thus giving summary figures for the *relative* sustainable transport impact of cycle tourism in the UK. The estimates are that recreational cycle tourism reduces the use of motorized transport to get to and from destinations by an average of 12.2%, and reduces motorized transport use at destinations by 7.6%.<sup>3</sup>

Table 1  
The Sustainable Transport Impact of Recreational Cycle Tourism in the UK

	Cycle Tourers	Staying Multiple Nights Locally	Day-Trippers	Overall Sustainable Transport Impact
Size of Segment	2%	35%	63%	
Motorized transport use reduction to and from the destination	-100%	-2%	-15%	<b>-12.2%</b>
Motorized transport use reduction at the destination	-100%	-16%	-	<b>-7.6%</b>

## Conclusion

The discussions in this short research note highlight that the sustainable transport outcomes of recreational cycle tourism are distinct from any tourism impacts, such as economic benefits to local communities, that recreational cycle tourism might generate. More specifically, the discussions suggest two things. Firstly, even when the environmental costs of major cycling events are excluded, in *absolute* terms recreational cycle tourism across its full range of forms still generates considerable motorized transport use. However, secondly, and more appropriately, the use of counterfactual models built from secondary data and based on assumptions about the most likely alternative activities to recreational cycle tourism shows that in *relative* terms, on average across all its forms, recreational cycle tourism in the UK reduces the use of motorized transport to get to and from destinations by 12.2% and reduces motorized transport use at destinations by 7.6%. Consequently, recreational cycle tourism in the UK does have a positive sustainable transport outcome, but this is far smaller than is often visualized.

## Notes

<sup>1</sup>Cycle tourism may, of course, have other impacts on the environment through, for example, changing attitudes and awareness. However, the focus here is on one the most widely claimed environmental outcome for cycle tourism—that it reduces the use of other more polluting forms of transport.

<sup>2</sup>The term “recreational cycle tourism” is used here and throughout to distinguish between tourism that includes noncompetitive cycling for leisure, and that which involves training for competition or competing in cycling events, major or otherwise (for examples of the behaviors of these latter types of tourists see, e.g., Bull, 2006).

<sup>3</sup>Please note that these percentages cannot be combined into an overall percentage reduction, as no data are available for the respective absolute volumes of motorized transport use.

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