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Rail trail development: a conceptual model for sustainable tourism

Abstract

Notwithstanding the contemporary significance of rail trails as recreational and tourism assets, studies focusing particularly on these multi-use trails have been sparse. This paper presents a contribution to this gap, proposing a model of rail trails as tourism products in an attempt to provide a conceptual basis for rail trail management, planning and research. Examining the Otago Central Rail Trail using this model indicates a potential for rail trails to be established as sustainable tourism products and assets to the adjacent communities. We conclude that the model, despite its limitations, provides useful information that may help managers to better understand and further develop the benefits derived from rail trails.

Keywords: rail trails; tourism product development; multiple-use recreation; sustainable tourism; Otago Central Rail Trail; New Zealand

Introduction

In the last 30 years, old railway lines around the world have gone through a process of change and some have become an important recreational and tourism asset: rail trails. Notwithstanding their importance today to the provision of a recreational resource and tourism product, there is a dearth of publications reporting research that has either specifically investigated different aspects of the tourism experience or examined the diverse impacts of the use of this resource on communities and visitors (e.g.: Beeton, 2010; Bowker, Bergstrom and Gill, 2007; Hawthorne, Krygier and Kwan, 2008; Moore, Gitelson and Graefe, 1994; Moore and Graefe, 1994; Siderelis and Moore, 1995). This article intends to

expand this literature by conceptualizing rail trails as tourism products and therefore provide planners and managers with tools to better leverage these assets for sustainable tourism development. The Otago Central Rail Trail (OCRT), New Zealand, will be used as a case-study to provide support to our discussions.

The guiding research question motivating this paper was: what are the characteristics of rail trails that contribute to their development as a tourism product, in terms of their setting, structure, sustainability and impacts on adjacent communities? Through an extensive review of literature on rail trails conducted in various academic disciplines we propose a model for rail trails as a sustainable tourism product. The model presents attributes of rail trails that we suggest are the best 'candidates' to explain the tourism potential of a particular rail trail, based on evidence from the academic and technical literature. These attributes are not unique to rail trails, but can be found in a variety of settings, such as other long-distance walking and cycling trails. However, our argument in this paper is that together these attributes create an atmosphere and context that is particular to rail trails and therefore can be used to promote this specific type of long-distance trail as a tourism product.

In building our argument, we discuss a distinction between rail trails with tourism attributes from rail trails that are used mainly as transportation corridors, whilst emphasizing rail trail contributions to sustainable tourism. This differentiation is based on the main use and management focus of the rail trail, and it is conceptual only, as most rail trails are used both by local communities and tourists (frequently domestic but increasingly international tourists also), although to different extents. However, as we will argue throughout the paper, some rail trails have more tourism potential than others, and it is on the 'touristic' ones that our model is focused. The model we present is exploratory and is proposed to be tested. It is, therefore, a response to Moore and Shafer's (2001, page 11-12) plea for "more work involving defining trail and greenway resources", developing "more meaningful typologies of

trails" and "understanding of the physical aspects of trails". Here we focus on one specific type of trail, i.e. rail trails, and on one particular use and impact, i.e. tourism.

Rail trails as a sustainable tourism product

Rail trails usually are defined as multi-use trails used for transportation and recreation, either sited on former railway lines or that run continuously beside an active railway for most of its length (Beeton, 2003; Moore, Gitelson and Graefe, 1994). Rail trails serve different purposes, sometimes serving mainly as a transportation corridor connecting parks and other rural areas, or urban settings and green strips, and at other times serving as a recreational ground for locals, as well as domestic and international tourists (Fábos, 2004; Moore and Shafer, 2001). Rail Trails have gentle gradients, with no sharp rises, wide curves, hard surfaces, and relatively wide and long corridors that are popular particularly with cyclists, walkers and horseback riders[1].

Although there has been an evident increase in the number and popularity of rail trails around the world there is still a rather sparse and disconnected body of academic literature concerning different aspects of rail trails. The dearth of specific rail trail studies contrasts with a more profuse literature on general long-distance trails (e.g. Cope, Doxford and Hill, 1998; Downward, Lumsdon and Weston, 2009; Lortet, 1998; Lumdson, Downward and Cope, 2004). An extensive presentation of this broader literature, although potentially useful, is beyond the aims of this paper as it is our aim to focus particularly on rail trails and what is known specifically about them.

It is due to the fact that rail trails are commonly considered a type of greenway, or 'linear park', but with a number of particularities (Betz, Bergstrom and Bowker, 2003), that several studies have dealt with aspects of rail trails, or of a particular rail trail, within the broader context of greenways, and their theoretical and conceptual approaches are informed

by the same rationale (e.g. Fábos, 2004; Gobster, 1995; Hawthorne, Krygier and Kwan, 2008; Moore, Graefe and Gitelson, 1994; Searns, 1995). Moore and Shafer (2001) point out, however, that there are different approaches to trail and greenway definitions, and rail trails are situated within this contested space. The authors highlight that "greenways often include trails but are not one in the same" (Moore and Shafer, 2001, page 4). Therefore, conceptualizing rail trails exclusively as greenways, although not wrong and useful for a more general discussion of trails and greenways, does little to provide a better understanding of rail trails in particular. More specifically, academic studies with a strong tourism focus are rare, with few significant contributions in the last decade (e.g. Beeton, 2010; Bichis-Lupas and Moisey, 2001; Bowker, Bergstrom and Gill, 2007). In fact, tourism does not seem to be the focus of rail trail stakeholders either, when planning for trail development (Baker, 2001). Although Baker's study is now a decade old, it does indicate how recent tourism participation, if any, is in rail-to-trails development discussions. Rail trail-focused economic impact reports, visitor surveys or more general feasibility studies, mainly coming from government bodies and trail administrators, are more accessible, but the concept of rail trails is significantly less theorized as that is not the purpose of these reports (e.g. Beeton, 2003; 2006; Busbee, 2001; Knoch and Tomes, 2006; 2008; Lumsdon et al., 2009). Also, in general, there is little effort made to establish the particularities of rail trails.

Other fields that have engaged in rail trail studies are: recreation (Moore and Graefe, 1994; Siderelis and Moore, 1995), urban/landscape planning and management (Baker, 2001; Betz, Bergstrom and Bowker, 2003; Gobster, 1995; Hawthorne, Krygier and Kwan, 2008), health sciences (Merom et al., 2003; Troped et al., 2001), and law (Bowman and Wright, 2008). It is evident that there is a significant gap in the academic literature that needs to be explored, as more and more of the rail trails successfully established around the world are becoming ever more popular tourism attractions. The description presented below, and the

model generated by it, is an initial step towards constructing a theoretical conceptualization of the rail trail as an emerging sustainable tourism product.

The Tourism Product Model

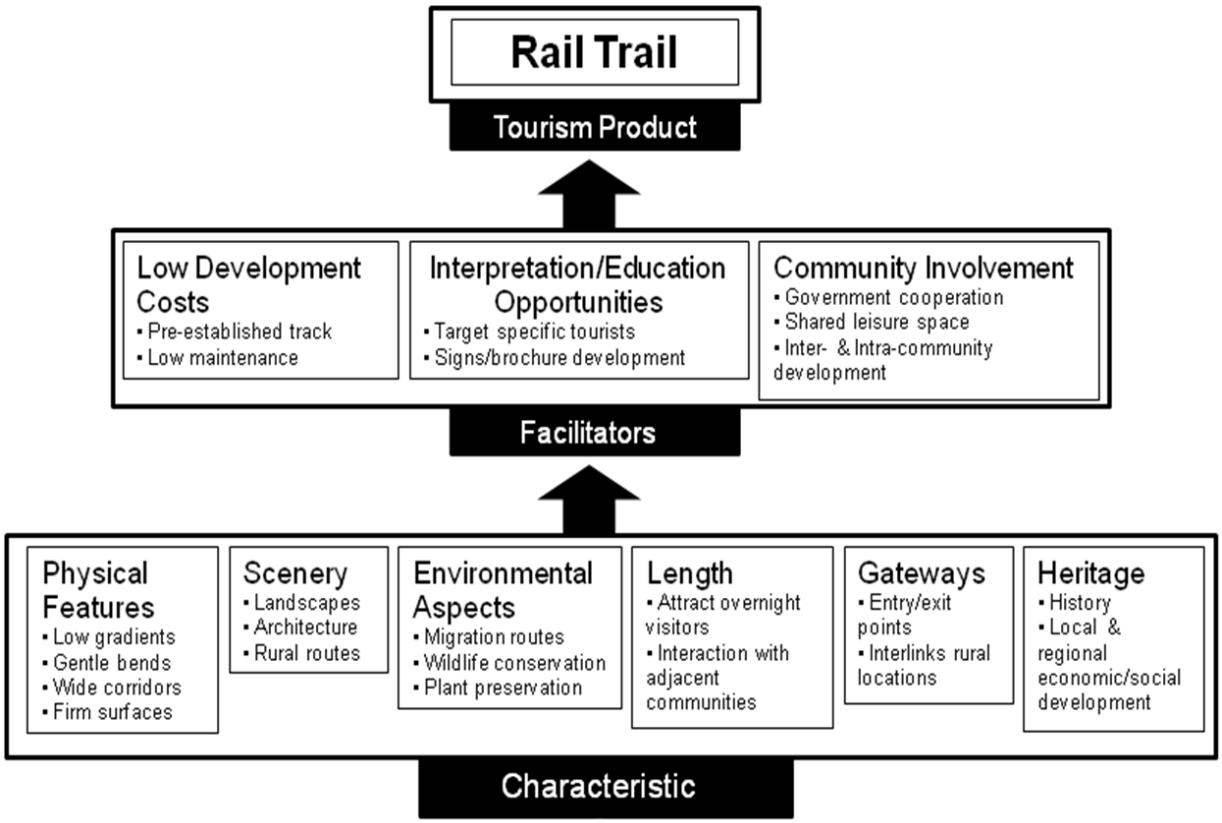
First and foremost, rail trails have become popular products with a distinct group of recreationists because of the trails' gentle gradients, reasonably wide corridors, and firm surfaces. These characteristics, a consequence of railways' physical structure and the limitations of trains, provide an ideal setting for the practice of non-motorized recreational activities, by a wide range of participants (Beeton, 2003; 2006; Moore, Gitelson and Graefe, 1994). The typical focus on non-motorized recreation helps to promote sustainability ideals as it endorses climate responsiveness through low-emissions activities (Scott, Gössling and Peeters, 2010). Such an attribute attracts environmentally conscious tourists and enhances the quality of the product as a sustainable tourism option. Also, the active engagement with the landscape, through a physically active recreation pursuit, adds another dimension to the experience, which is often conducive to a positive sense of well-being and health, and to social bonding (Green, 2009; Moore and Ross, 1998) enhanced by the safe environment provided in this off road experience (Mundet and Coenders, 2010).

The rail trails' ideal setting for non-motorized recreation together with a few other characteristics build to compose a tourism product that is rapidly growing in popularity. The following model (Figure 1) depicts our proposition for understanding rail trails as sustainable tourism products as it will be argued throughout this manuscript.

The model illustrates the connection between the proposed main characteristics that comprise a rail trail that has tourism potential. These characteristics were identified in the academic and technical/industry literature, and through anecdotal evidence, and put together in the model in order to be tested for validity. In addition to the attributes, we present what

we argue are facilitators of the achievement of a successful product. The six proposed characteristics – length, physical features, scenery, environmental aspects, gateways, and heritage – are therefore what we propose as the key elements for the tourism product; the three facilitators identified strengthen the significance of the tourism product and indirectly help connect each characteristic to create a sustainable tourism product. However, not all characteristics must be present in all cases, as the case study will show. Nonetheless, we aim to illustrate that the more characteristics present, and the stronger the interconnections between characteristics and facilitators, the stronger the case for a rail trail to be distinguished as a tourism product.

Figure 1. Rail trail tourism development model



The physical features of rail trails presented above provide a context that is of interest to developers and managers, and that complies with environmentally-sound ventures.

Railway tracks can be relatively easily adapted to walking and cycling tracks and costs are low when compared with a brand new development (Betz, Bergstrom and Bowker, 2003). As Neilson (in Turco, Gallagher and Lee, 1998, page 48) asserts, "the trail has been blazed, the land cleared, the creeks bridged, hills cut through, swamps filled and embankments built. An abandoned railroad right of way possesses other unique features. It is level, open, clear, well drained, and self-contained or screened". Therefore, as advocated by *Rails-to-Trails Conservancy*, the product is created through the recycling of a disused resource, with little investment on new non-renewable supplies. Obviously, this cost will be increased if private land needs to be purchased. Nonetheless, costs associated with conversion and maintenance are usually considered to be low. Moreover, otherwise low amenity value will have its amenity value increased significantly when converted to recreational trails (Ivy and Moore, 2007). Therefore, as illustrated in our model, low development costs may be considered a significant facilitator for the development of a sustainable tourism product.

Although length can be highly variable, it is our argument that in order to enhance the potential to attract overnight visitors, and therefore to be better positioned as a tourism product, rail trails should provide for longer recreational opportunities. Consequentially, we argue that the length of the rail trail is a crucial aspect to be considered when classifying a rail trail as a tourism product. A valuable example is found in the United States where one can find several rail trails of less than 1 km in length. Those trails are usually used in connection to other trail types and can hardly be distinguished by their tourism importance in isolation from other products.

Mundet and Coenders' (2010) study highlights the importance of length for the rail trail tourism experience. Their findings suggest that tourists travel much longer distances than commuters or locals, therefore, confirms the premise that length is an important factor when considering the potential for rail trails to become tourism products, even when tourism is just

one of the functions the trail plays in the community. In the case of the Girona Greenways, the greenway has the potential to "be integrated more closely in to a holistic sustainable tourism strategy" if the presence of "cyclists/walkers undertaking longer tours across the network" is appropriately leveraged (Mundet and Coenders, 2010, page 673). It is difficult, however, to establish the minimum length that a rail trail needs to have to be considered suitable for tourism development.

For communities, the development of a tourism product that embraces 'slow' experiences reinforces the importance of their own history, values and ways of living. The corridors preserved by the rail trails connect the local community members, through the use of a shared leisure space, with the potential to strengthen community links and bring the communities together (Baker, 2001). For tourism, this means a stronger product associated with 'experiencing the local culture'. This characteristic may also lead to cooperation between different governments, locally and regionally (Baker, 2001), which in turn also strengthens the tourism product, with money and effort channelled toward a common goal. The corridors are, therefore, important means to bridge geographical and socio-political environments, as well as ecological ones, as we will discuss later.

The close connection of rail trails with the history of a local area's economic and social development brings a heritage component to these corridors (Moore and Shafer, 2001) that allows for them to be regarded as sustainable tourism products. Rail trails often are associated with stories of hardships and successes. According to Baker (2001), in Canada, railways were "corridors that brought the country together" in the late 19th century. The preservation and enjoyment of such a legacy is, therefore, of utmost importance for the country's cultural heritage. The fact that longer rail trails typically traverse numerous districts, connecting different communities within a region, provides tourists, domestic or international, the opportunity to travel through different townships and learn about their

histories by actively engaging with the landscape and the surrounding communities (Bichis-Lupas and Moisey, 2001). Such a characteristic therefore also enhances the rail trail potential to become a successful tourism product.

Due to their linear nature and frequently rural location, rail trails need centres that function as gateways to provide not only entrance and exit points but also services to accommodate visitors' needs. The concept of gateways for access to tourism products has been extensively discussed in tourism (e.g, Bertram, Muir and Stonehouse, 2007), and seems well fitted also to the rail trail product. A major distinction between rail trails and other products/destinations, however, is that the rail trail may interconnect several secondary gateways along the route, depending especially on the length of the track and the density of adjacent communities. Towns adjacent to the rail trail will likely become allied in the provision of the tourism product, enhancing regional ties and community life. Also, the interconnectedness between townships will be enhanced by the availability of a carbon-free transportation route (Tiedt, 1980), a benefit widely advocated and mentioned in the greenways and long-distance trails literature. More significantly, the existence of secondary gateways enhances the impact of the product on smaller, less economically developed townships adjacent to disused railway lines, and therefore has the potential to better distribute impacts on communities along the rail trail product corridor (Pollock et al., 2007). These gateways will likely be providers of other tourism products, many of which will be directly related to the rail trail experience (Beeton, 2006; Pollock et al., 2007). Services may include accommodation, restaurants, rail trail service providers (e.g. bicycle rental), transportation to and from major transport hubs, and other general services.

Another aspect of rail trails' environmental sustainability is the possibility for creating migration routes for animals, establishing buffer zones for wildlife conservation, corridors for plant species' preservation and even wildlife refuges (Fábos, 2004; Gobster, 1995). Although

local plants and animals were disrupted in order to create the rail line, subsequently the verges of railways were rarely ploughed or fertilized and as a consequence native species of plant and animals could successfully re-colonize and continue living in the area. Several rail trails around the world have used this feature as a rationale for the creation and development of rail trails, as well as to gather support from other interest groups and more diverse governmental agencies (Morris, Bridges and Smithers, 2000). This feature is central to some contemporary and emerging tourism niches and is highly regarded by marketers for the promotion of certain trails. It also emphasizes the sustainable potential of rail trails as tourism products as it protects a green corridor that could be otherwise further disrupted or completely destroyed.

Scenery also is an important attraction commonly associated with rail trails throughout the world. Railway routes can usually travel through areas of great natural beauty that other modes of transport cannot reach. Therefore, vast tracts of natural land were left aside with little disturbance granting the rails-to-become-trails beautiful scenery. Such an aspect may be an important component to a rail trail that aims to develop tourism along its route (Busbee, 2001), particularly as the outdoor recreation and nature-based tourism literature indicate that visitors to parks and other outdoor areas consider the beauty of scenery one of their main motivations to visit these spaces (Wearing, Scheinsberg, Grabowski and Tumes, 2009). More importantly, due to the characteristics of the product associated with a rail trail – one of active/physical engagement – scenery is not experienced only from the window of a moving vehicle, but closely through the body of the tourists who are walking, cycling or horseback riding on the trails. Such embodied engagement with nature has been proven significant in outdoor recreation and nature-based tourism experiences (Beeton, 1999; Edensor, 2000; Green, 2009; Reis, 2009).

Another feature of rail trails' landscape relates to their building structures. Usually tracks cross high embankments and bridges that travel through old style tunnels, making the experience rather unique and scenic. Such historic features are therefore preserved to provide for recreationists' and tourists' enjoyment, but also help preserve the communities' history in a sustainable way (McKercher, 2001). Therefore, it adds to the product as it enhances the cultural significance of the trail providing a cultural tourism experience for visitors.

The successful provision of heritage sites, wildlife corridors, and an ideal distance between gateways also leads to interpretive opportunities that can target the general tourist, nature tourists or educational groups (Moore and Ross, 1998). These opportunities not only enhance the product being delivered but also have the potential to attract new niche groups and other general visitors. Furthermore, education through interpretation has been regarded as an important tool for maximizing positive impacts and reducing negative effects of tourism on the environment and on the social fabric of hosting communities (Knudson, Cable and Beck, 1999).

The rail trail attributes detailed above form the proposed model to serve as a framework to understand rail trails as tourism products. More importantly, this model may serve as a guideline in the assessment phase, or in the development and promotion, of a tourism product based on disused railway lines, with the potential to enhance analysis and production of a more sustainable and feasible product. In the following section we will therefore present a case-study where we applied the model in an attempt to assess not only the tourism potential of the Otago Central Rail Trail, but also the appropriateness of the model to a real-life scenario.

The case-study context

Case-studies are advocated when a researcher "attempts to examine: (a) a contemporary phenomenon in its real-life context, especially when (b) the boundaries between phenomenon and context are not clearly evident" (Yin, 1981, page 59). It is an effective research approach when a theory – or a model as it is the case here – needs to be refined or assessed (Stoecker, 1991).

According to Yin (1981, page 58), the case study is a research strategy that uses evidence coming from "fieldwork, archival records, verbal reports, observations, or any combination of these". Here, it is the combination of secondary data, verbal reports and observations, over a period of three years, that form the material presented in this paper. The attributes of rail trails identified in the literature, and incorporated into the model proposed above, were elected as the elements of analysis for the case study (Xiao and Smith, 2006). Due to its exploratory nature (Yin, 2003), this case study has not yet been compared to, and contrasted with other settings and contexts. The intention of this paper is to encourage other researchers and practitioners to do so, and therefore continue the assessment and validation of the model presented here. In fact, case study strategies are most commonly seen in tourism studies that focus on "tourism development, planning and community perceptions of or reactions to the impacts of tourism" (Xiao and Smith, 2006, page 742), which is precisely the case of this paper.

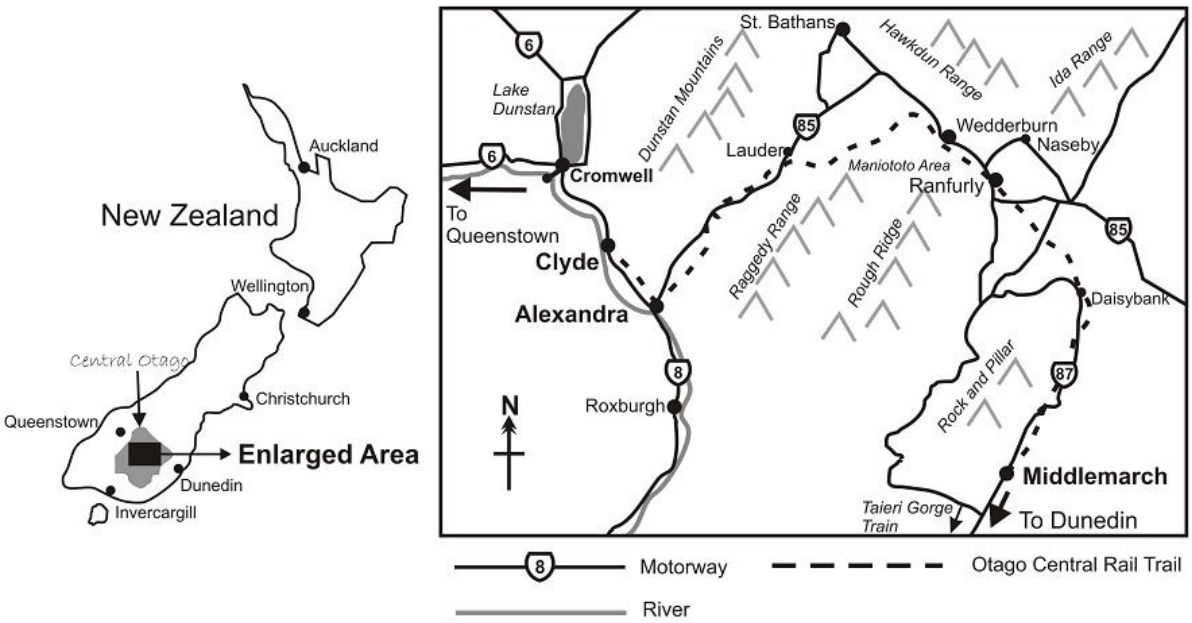
The Otago Central Rail Trail was established in February 2000 through a cooperative effort between the Department of Conservation (DOC) and the Otago Central Rail Trail Trust. Located in the Central Otago region, the 150 km recreational rail trail was built upon Central Otago's historic railway foundations. As is commonly the case, the Otago Central Railway has an important and curious local and regional history which affords the current rail

trail more touristic appeal. The construction of the original railway line began in 1871, took 42 years to be completed, and had a rather short life-span, closing in 1990.

The Central Otago region is located in the southern part of the South Island of New Zealand (see Figure 2) and is home to the country's most severe temperatures and driest landscapes. In total, the region covers an area of 10,000 km^2 with just over 16,500 permanent residents (Statistics New Zealand, 2006).

According to Tourism Central Otago (2007), the region has experienced a 260% increase in visitor numbers from 1997 to 2005. In 2005 there were 66,744 international visitors to Central Otago, significant for an area with very recent tourism marketing effort and still limited tourism products and services. The annual domestic market is yet more significant, with almost 350,000 day visitors and over 205,000 overnight visitors, with the peak number in December 2000 (Tourism Central Otago, 2007).

Figure 2. Otago Central Rail Trail, Central Otago, New Zealand



The OCRT plays an important and decisive role in the development of the tourism industry in the Central Otago District with up to 20,000 travellers using the trail each year

(Central Otago District Council [CODC], 2009). A study conducted with business owners on communities adjacent to the OCRT in 2008 found that the majority of participants attribute at least 21% of their turnover to the rail trail and that almost one third of all businesses surveyed considered the OCRT as an important factor in deciding to establish their business (Jellum and Reis, 2008). Similarly, a visitor study conducted on the OCRT in 2009 found that the rail trail is directly responsible for NZ$ 4.7 million of expenditure into the Central Otago economy per year, plus NZ$ 2.3 million to GDP and sixty full-time-equivalent positions (CODC, 2009). Despite the promising numbers, the sparse population of the region is reflected in the small number of tourism ventures in the region: 370 small to medium size tourism operators ranging from accommodation to activity and service providers (Tourism Central Otago, 2007).

The OCRT as a tourism product

The OCRT in New Zealand is exemplary of a rail trail that has developed as a tourism product (CODC, 2009; Jellum and Reis, 2008; Reis, Jellum and Lovelock, 2010) with sustainable tourism characteristics. Recently, the Department of Conservation was granted the international Parks Forum's Economic Award for developing the Otago Central Rail Trail, with judges celebrating the rail trail as an "example of a successful partnership that provided positive visitor opportunities, financial support for DOC and a greater appreciation of the natural and cultural value of parks" (Otago Daily Times, 2010). Such an award confirms the significance of the OCRT as a tourism product with significant impacts on the host/adjacent communities.

The OCRT offers industrial, farming and social history within a context of beautiful scenery, crossing mountain ranges, plains and river gorges in one of New Zealand's most extreme regions. Also, for its entire length, the trail is situated within countryside with the

lowest density of population in the whole country providing resources for what has been described as a sublime landscape experience (Park, 2006), thus enhancing the tourism experience. In fact, its length, we argue, has helped the venture to become a popular tourism product. Extending 150 km, the OCRT provides an opportunity for multi-day recreational experiences as well as for short-term visits that can be undertaken from different communities along the corridor. Two recent studies with rail trail users showed that visitors spend, in average, four nights along the trail, and take part in a number of activities while on the trail (e.g. visiting wineries and/or gold mining heritage sites) (CODC, 2009; Reis, Jellum and Lovelock, 2010). This element of our model, the rail trail's length, supports other elements that will be discussed following, such as gateways, and helps provide an exclusive tourism experience.

The structural characteristics of the OCRT are elementary features of any rail trail, whether directed to tourism development or not. However, the choice for maintaining the gravel surfacing, instead of sealing the paths, helped the preservation of the historical landscape of the old railway line and contributes to a tourism experience that is interested in cultural and physical heritage. Moreover, the gravel surface represents a less impacting visual human interference in the environment, which also contributes to the tourism experience, especially for those tourists who appreciate the local natural landscape. In addition, this option arguably has allowed for the costs of re-surfacing to be reduced making the conversion of the railway a more feasible project. Lastly, by avoiding the use of asphalt to seal the tracks (a non-renewable resource), the OCRT has opted for a more environment-friendly approach to track development, contributing to a greener image for its product.

Another structural aspect of the OCRT that provides extra heritage value to the tourism experience is the occasional presence of old railway tracks alongside the new rail trail. Several rail trails around the world have been established long after the old lines have

been removed, or have opted to eliminate all traces of old tracks. In these cases no remnants of the old railway track can be found and an historical artefact is lost. The OCRT, on the contrary, has opted to preserve this asset (Department of Conservation, 1994), and the potential for a heritage experience.

Together with railway tracks, in the primary and some secondary gateway ports, tourists will find also a restored railway building, usually with information panels describing the heritage site. It is clear that these buildings provide heritage value to the tourism experience and are usually highly valued by locals and those who visit the trail (Graham, 2004). In fact, a study by Blackwell (2001) found that tourists to the OCRT rated learning benefits derived from information panels about the history of the old railway line and the appreciation of old historical buildings as highly valuable and an important outcome of their experiences. A visitor study conducted by the Central Otago District Council (2009) found similar results, with participants ranking highly the heritage tourism opportunities provided by the rail trail.

Other structural remnants of the Otago Central Railway can still be found in the OCRT, and are rather common in rail trails around the world, providing them extra charisma: old stone, iron and/or wooden bridges, tunnels of different style, high viaducts through gorges, and old distance markers and signals. An added attribute of the OCRT regarding its physical heritage, which contributes to its placement as a tourism product, is the conservation of old Gangers' sheds: corrugated iron sheds spaced along the line where maintenance workers (gangers) sheltered, and alongside which they parked their jiggers. Such artefacts are constant reminders of the local history and help the community to connect and feel part of that landscape, even when tourism becomes a major part of their environment.

Still regarding the heritage aspect of the OCRT experience, the cultural history of the old railway line is a major highlight of the product today. Not only has the trail itself had an

interesting, locally and nationally relevant history (Hurst, 1990), but the whole of the Central Otago area is populated with a rich cultural heritage. The Gold Mining era and the stories of hundreds of immigrants overcoming or succumbing to the harshness of the Central Otago landscape and climate provides for full cultural experiences. In fact, several products related to this heritage are promoted in the area, and there is current regional political interest in developing the product further (Baker, 2009; Munro, 2009; Tourism Central Otago, 2007). This additional product can only benefit the rail trail product and has been shown to enhance the tourism experience of rail trail users (CODC, 2009).

Increasingly, tourists have been interested in exploring the contemporary local culture by meeting locals and their local livelihoods and avoiding what has been termed inauthentic experiences. The OCRT, with its several gateway ports and locally-owned small to medium-size businesses provides a good opportunity for such engagement. New Zealand has a significant rural population and culture, especially in the South Island where the trail is located, with hundreds of farms around the region. As the OCRT crosses small communities in a farming region, the potential for engaging with locals is increased and the product is strengthened. Although most visitors to the OCRT entry or exit the trail through the towns of Middlemarch and Clyde (Figure 2), there are nine other small towns that are used for accommodation and/or stopovers along the way (Reis, Jellum and Lovelock, 2010).

A rather distinctive aspect of the OCRT in regards to the gateway ports is a daily tourist train service between Dunedin, a major centre in the South Island, and Middlemarch, a starting or finishing point of the OCRT route. The train service connects the rail trail product to a major gateway port and makes a ‘real’ link with the history of the trail the visitor is about to experience. The experience can, therefore, be considered more authentic. Visitor studies on the OCRT have shown that the majority of visitors to the rail trail use the Taieri Gorge Railway train to start or finish their rail trail experience, and that this link between historic

train and heritage trail adds significance to their tourism experience (CODC, 2009; Reis, Jellum and Lovelock, 2010).

The possibility of creating buffer zones for wildlife conservation, migration routes for animals and corridors for plant species preservation has not been adopted by the OCRT. Although the national natural conservation body (DOC) is responsible for the trail, the OCRT does not, and has never, presented the potential for such conservation ventures. Its value relies purely on the conservation of national heritage and provision of outdoor recreation opportunities to a wide range of users. As asserted before, the region crossed by the rail trail has been extensively farmed in the last century and the railway has not been able to provide a safe corridor for any plant preservation. Today, the rail trail being through farmland but not grazed, there is the potential for weed spreading along the rail trail corridor. Aware of this potential, DOC spends part of the rail trail management budget in weed control activities (Department of Conservation, 1994).

In this sense, unlike most cases, it is hard to classify the OCRT as a greenway in the strictest sense. Not only does it not provide a green corridor for the preservation of plants or animals, but it has the potential to propagate weeds in a region already sensitive to pest invasion. However, despite this context, the OCRT – and other rail trails for that matter – still possesses strong sustainable tourism elements, by providing a multi-day, slow tourism option with public train and shuttle bus transportation access to the major gateway cities.

Summary and conclusions

Several motives can be associated with the increased interest in rail trail developments and their subsequent use and popularity, such as an increase in active tourism involvement, sustainability concerns, and an overall increase in outdoor recreation participation. Despite this increase in popularity and their significance to the tourism industry, rail trails have not

been extensively studied, and therefore lack theoretical frameworks that help with a better understanding of the phenomenon and its management, particularly as it relates to tourism planning and development. This paper has presented a contribution to this gap, proposing one model of rail trails as tourism products, within a sustainability agenda, as an attempt to provide a conceptual basis for rail trail research in tourism and management contexts.

Some important conclusions can be drawn from our model. First, not all components of our model need be present in order for a rail trail to be considered a sustainable tourism product. The OCRT, for instance, does not feature as a green corridor for the preservation of plants and wildlife, but the trail is nonetheless indisputably a significant sustainable product for the tourism industry of the region (CODC, 2009; Jellum and Reis, 2008; Reis, Jellum and Lovelock, 2010). The potential for slow tourism experiences, the number of tourists spending a few days without the use of cars or other motorized vehicles together with the increasing investment from tourism providers to deliver services that help reduce fossil-fuel use by tourist, all combine to create a product that is certainly environment-friendly. Therefore, the case study demonstrated that the environmental component of our model can be looked and interpreted in different ways. How many of the proposed elements of the model, or which ones, are necessary or essential to create a tourism product that is of significance to the region, is still to be tested. Although the reuse of resources, non-motorized forms of recreation, wildlife issues and the importance of community involvement for the sustainable development of a tourism product have been the focus of discussion elsewhere, we argue that rail trails have the potential to combine these elements in a way that is conducive for the development of a sustainable tourism product. Such combination is not easily found in other tourism products and therefore has its merits. In general, however, the model and its application on the OCRT have demonstrated that rail trails, with certain characteristics, can be regarded as a product that is able to provide a sustainable form of

tourism that rests on the current four pillars of sustainability and as such "reflects a 'quadruple bottom line' of environmental, social, economic and climate responsiveness" (UNWTO-UNEP-WMO, 2007, page 2).

Notes

1. As rail trails are developed for recreational use, opportunities may expand to encompass seasonal recreation variations such as snowmobiling, skiing, dog sledding or other non-traditional activities.

2. Such trails serve, however, a crucial function and may well enhance the recreational opportunities for local residents of the area.

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