Tropical Gardens and their Potential as Tourism Attractions

in Northern Australia

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ABSTRACT: Globally, gardens are popular attractions with recent research finding that the botanical garden in Cairns is one of the city’s top attractions. Capitalising on the garden’s tourism appeal offers another opportunity to enhance the city’s attractiveness as a tourism destination, but also raises a number of questions about the recreation needs of local residents versus the needs of visitors as well as about future funding models. Using the Cairns Botanic Gardens as a case study, this research explores the underlying aspects and issues of the management of successful garden attractions in a tropical setting. Issues discussed include visitor management strategies, aesthetics, funding as well as safety with the aim to support other tropical regions in developing their destination through garden tourism.

Keywords: Botanical gardens, tropics, tourism attractions, visitor services, Cairns

Introduction

The establishment of botanic gardens as places for recreation, entertainment and in some cases scientific enquiry in many Australian cities and towns follows a much earlier pattern of gardens that emerged in the United Kingdom (UK) during the early Victorian era. For instance, many of Queensland’s botanic gardens were established during the colonial era and used designs adopted from the UK. Of the 20 botanic gardens located in Queensland, eight (Cooktown, Cairns, Townsville, Whitsundays, Mackay, Longreach, Emerald, Rockhampton) are located in the tropics and all feature collections of tropical plants. When these gardens were first established, generally in the 19th century, most users were local residents. The rapid growth in tourism in the second part of the 20th century has added a new user segment that includes both domestic and international visitors. The Cairns Botanic Gardens (CBG) in particular has emerged as a major tourism attraction offering considerable scope for further development directed towards the tourism market. From a management perspective, however, the ability to cope with increased visitor numbers poses a range of problems that need to be addressed if further tourism related development is to occur. This paper examines issues related to increasing the tourism potential of tropical botanic gardens in the tropics of Northern Australia with a specific focus on the Cairns Botanic Gardens.
The historical context

The tradition of establishing gardens reaches far back into the past with the Hanging Gardens of Babylon, one of the so-called seven wonders of the ancient world, being one of the best-known gardens of antiquity. As one of the seven wonders of the ancient world, the site was regarded as one of the must see’s for travelers in the pre-Christian era. In Asia, the establishment of gardens in China predates Babylon’s Hanging gardens perhaps by millennia. Turner (2010), in a study of the history of Asian gardens between 3000 BC to 2000 AD, found that China has a garden design tradition reaching back 5,000 years with the oldest examples being vast Daoist inspired tracts of natural landscape. Today these areas would be classed as parks. Intricate gardens, now viewed as classical Chinese gardens, were established after Buddhism emerged as a major religion in China. In other areas of Asia there is a much shorter history of garden development. In Indonesia for example, one of the first botanical gardens to be found was the Bogor botanical garden, established by the Dutch in 1817 (Encyclopædia Britannica, 2014). More recently, tropical gardens have been established by hotels and resorts (Gardenvisit.com, 2015).

In Europe, the origins of today’s large-scale involvement in country house and garden visiting can be traced back to the Early Victorian period in the UK. Before that time, country house visiting was predominantly an activity enjoyed by the aristocracy (Hlavac, 2002) with Northern Europe being the likely origin of garden visiting starting in the 16th century (Connell, 2005). Over the course of the Victorian era, the working class population became increasingly interested in garden visiting as a leisure activity resulting in the opening of many private gardens for large scale visiting. The factors that stimulated demand included transport improvements and cheaper fares as well as an increase in leisure time and disposable income (Connell, 2005). Constantine (1981) remarked that the rational recreation movement of the late 19th century encouraged the working class to take up gardening as a leisure pursuit with the result that horticultural shows, as they are known today, became increasingly important in countries such as Germany (Europäisches Symposium, 2008).

Europe’s two World Wars in the 20th century lead to either the destruction or neglect of many garden in Europe although during the inter war years a new age of gardening commenced with new and different elements of style, design and planting (Connell, 2005). The increase in demand and supply of recreational opportunities in the post Second World War era rekindled growth in garden visiting in Europe, examples being the gardens of Versailles, the Renaissance gardens around Rome and Florence, the Wörlitzer Gardens in Germany as well as the noble gardens in the UK (Hlavac, 2002). By 1999, around 16 million...
visits were being made annually to gardens in the UK indicating the expanded potential of garden visiting (Evans, 2001) at the end of the 20th century.

The botanical garden

Amongst the various types of gardens, the botanical garden is of specific interest in this study. Botanic Gardens Conversation International (n.d.) identified the physic gardens of Italy in the 16th and 17th centuries as the world’s first botanic gardens to be used for the academic study of medicinal plants. During the age of exploration and expansion of international trade, botanic gardens became sites for the trial and cultivation of new species discovered by expeditions sent on collecting missions to Europe’s colonies. Later, in the 19th and 20th century, municipal and civic gardens were established throughout Europe and the British Commonwealth. Nearly all of these municipal and civic gardens were built as pleasure gardens with very few having scientific programs. The last 30 years have seen a revival for botanical gardens as scientific institutions following the emergence of the conservation movement. Botanical gardens are regarded as very important due to their existing collections and the scientific knowledge possessed in the propagation of plant species (Botanic Gardens Conservation International, n.d.).

Botanical gardens arguably play an important role in reconnecting people with the world of plants, in educating them and in presenting models for sustainable living stimulated by recent increased awareness and concerns about the human impact upon the environment (Dodd & Jones, 2010). The future role of botanic gardens is seen as broadening audiences, enhancing their relevance to communities, educating and actively changing attitudes and behaviour. Dodd & Jones (2010) for example, emphasise that working with other gardens offers a chance to escape isolation and develop new ideas and approaches, as demonstrated by botanic gardens in Oxford and Eden.

Based on a series of case studies, Gough, Accordino, & Lindsey (2012) and Gough & Accordino (2013) summarised the future role of botanic gardens as: **Gardens as Educators** of youth and the general public about the importance of greening initiatives; **Gardens as Technical Experts** including demonstrations or techniques of conservation; **Gardens as Community Hosts** for meetings and events that promote accessibility to public garden space and **Gardens as Catalysts** for community change and promotion of sustainable community development. Powledge (2011) recognized that even though the role of botanical gardens has expanded, gardens in general face constant funding pressures. Consequently, many botanical gardens have become places of entertainment, requiring financial contributions from their
visitors. In addition to entrance fees as income, increasing numbers of botanical gardens have added gift shops and restaurants as well as marketing arms to entice the public. Today, botanical gardens are regarded as both sites for conservation and sites for recreation by locals as well as tourists (Ballantyne, Packer & Hughes, 2008; Crilley, 2008; Crilley, Hills, Cairncross, & Moskwa, 2010).

**Garden visitors’ motivation**

Connell (2004) attributes the increased interest in garden visiting to the growing attention paid to the natural environment and the fact that there is a rising proportion of garden owners who like to admire floral displays and the work of great landscape architects. Motivations to visit and attitudes towards nature therefore play a crucial role in the investigation of the potential of nature-based activities such as garden visiting. Ballantyne et al. (2008) investigated visitors’ motivation at a subtropical botanical garden and grouped them into seven categories with the categories ‘enjoyment’ and ‘learning and discovery’ identified as the main motivators. Interestingly, the authors found that compared with visitors to other informal learning sites, botanic gardens visitors rated restoration as relatively more important and learning and discovery as relatively less important, pointing to the challenge that botanical gardens face when creating visitor experiences. A more recent qualitative study by Wassenberg, Goldenberg, & Soule (2015) revealed that participants felt that ‘botanical garden’ and ‘plants’ were the most meaningful garden attributes, leading participants to experience the effects of ‘new experiences and learning’, and ‘stress relief and relaxation’, values ‘transference’ and ‘improved quality of life’.

In this respect, Crilley (2008) explored visitor service quality attributes at six Australian city botanic gardens and their importance in influencing behavioural intentions such as recommending the site to others or revisiting the site as the result of a previous visit to a botanic garden. Twenty-three attributes were identified and using factor analysis were grouped into four dimensions; ‘aesthetics’, ‘engagement & learning’, ‘hospitality services’ and ‘staffing’. A study by Crilley et al. (2010) of regional botanical gardens revealed similar results. The authors again found that ‘aesthetics’ is the critical contributor in explaining changes in visitor reported satisfaction, and intentions to revisit and advocate for the gardens in the future. Another critical factor in visitor service quality of gardens was safety with the feeling of being safe when visiting the gardens accorded the highest attributes of service quality. Crilley et al. (2010) argued that although this does not appear to be linked to previous research on motivations or satisfaction levels, it could be that despite the activity that a visitor
is undertaking in the gardens, this is a core service requirement for adult visitors. It is understandably difficult for visitors to relax, enjoy their experience, and connect with an aesthetically pleasing environment if they feel unsafe. Understanding the significance of sites is also important as a recent study by Packer, Ballantyne and Hughes (2014) found. In their study, Packer et al. (2014) discovered that international tourists need assistance in understanding the site they are visiting, particularly its significance and importance.

**Tourism potential of garden visiting**
The growth in domestic and international tourism has generated a resurgence in interest in visiting gardens. Former private gardens as well as public gardens have emerged as major tourist attractions for both independent travellers and tourism operators offering tailored garden tours. Examples of such garden attractions include the traditional National Gardens Scheme in the UK, the Floriade in the Netherlands generally regarded as the world’s leading horticultural exposition, and the biennial Singapore Garden Festival (Packe, 2012). Globally, the increased interest in tourism has resulted in the creation of an ‘International Garden Tourism Network’ which aims to be a platform for stimulating more visits and business for gardens (International Garden Tourism Network, 2015).

While the popularity of gardens is recognized, data on global visitor trends is not comprehensive and Botanic Gardens Conservation International, which states that approximately 250 million per year (Ballantyne et al., 2008) visit botanic gardens and arboreta, provides the only global estimate available. In Australia, a survey by the Australian Bureau of Statistics (ABS) on the total number of visits to Australian botanic gardens between 1999-2000 estimated that about 11.8 million visited botanic gardens (ABS, 2001). The highest attendance rate for botanical gardens was recorded in the Australian Capital Territory (ACT) followed by the Northern Territory and Victoria. With increasing visitor numbers to botanical gardens, an investigation on the potential of tropical botanical gardens and associated landscapes as tourism attractions is of particular interest in the context of developing tourism in Northern Australia.

**Tropical gardens as tourism attractions**
Following our initial investigation on garden visiting, we argue that tropical gardens have the potential to attract significant visitor numbers but their promotion as tourist attractions poses a range of issues that must be addressed by the host community if they are to be promoted as a tourist attraction rather than an amenity for local residents. Issues that need to be addressed
include: ensuring that visitor safety is given a high priority; the provision of adequate infrastructure to meet demand particularly where visitors may not speak English; funding visitor services such as interpretation and; balancing the needs of residents with tourists. As Crilley et al. (2010) observed, safety is a primary concern for visitors. In a tropical climate for the type experienced in Cairns, heat can be problem and unless adequate precautions are taken visitors may suffer sunburn or heat exhaustion. Moreover, there is some potential for visitors to encounter venomous snakes and other animals in the rainforest zone of the gardens. In relation to interpretation, Packer et al. (2008) emphasised that international tourists need assistance in understanding the significance and importance of the site they are visiting and we argue that this is of particular importance in tropical gardens. The funding of visitor services is also an issue of concern to park managers and the communities that host gardens. The two common approaches are to provide gardens as a free good with the local community bearing the cost or imposing some form of user pays principles. In the case of Cairns, the botanical garden has emerged as one of the city’s top 10 attractions and the issues raised previously need to be addressed particularly with expected increases in visitors to the city in the future.

**Methods**

Data for this study were collected using a mixed method approach. An exploration of the current body of knowledge on garden visitor management formed the underlying basis of the research on successful management strategies for tropical gardens. Drawing on the results of this literature review (Crilley, 2008; Crilley et al, 2010) five issues were identified for further investigation: aesthetics, visitor management including visitor engagement and learning, funding, community engagement and safety. The authors then used a qualitative case study approach to investigate the identified issues in relation to the management of gardens as visitor attractions.

Simons (2009, p. 21) describes the case study method as “an in-depth exploration from multiple perspectives of the complexity and the uniqueness of a particular object, policy, institution, programme or system in a real life context” with the primary purpose being to “generate in-depth understanding of a specific topic, programme, policy, institution or system to generate knowledge and/or inform policy development, professional practice and civil community action.” The case study approach was chosen on the basis that it enables insights to be gained from different perspectives and from different types of information (Thomas, 2011). The advantage of the case study method is that it can zoom in on real life situations
and test views directly in relation to phenomena as they unfold such as the application of visitor management strategies (Flyvbjerg, 2011).

The main limitation of the study is the inability to generalise findings. However, as Flyvbjerg (2011) notes, formal generalisation is only one of many ways by which people gain and accumulate knowledge. The fact that knowledge cannot be formally generalized does not mean that it cannot enter into the collective process of knowledge accumulation in a given field or in a society. Knowledge therefore may be transferable even where it is not formally generalizable. The next chapter describes the selected case study in more detail.

The Cairns Botanical Garden
The Cairns Botanical Garden was selected as a case study site based on its current position as a major tourism attraction. In recent unpublished research by Anderson (2015) into visitor attraction ranking on TripAdvisor the three years to 2015, the CBG was consistently ranked in the top five free activities in Cairns. However, there is little information on the visitor profile of garden visitors apart from an estimate that the Flecker Gardens receives about 300,000 visitors a year.

The CBG were established in 1876 when the then Council designated 71 acres for a recreational reserve to the public. The gardens are located north-west of Cairns, approximately five kilometers from the town centre. Over time the reserve has increased in size and developed into a number of distinct botanic spaces that demonstrate the diverse plant life that can be found in the tropics. The collection currently houses over 4,000 species of plants. Apart from the botanic spaces visitors are able to visit the Tanks Art Centre also funded by the Cairns Regional Council but administered as a separate entity to the botanic gardens. Since it was first established a number of new spaces have been added to the original reserve to create a series of distinct botanic spaces that are now promoted as the main attractions of the gardens.

The gardens provide a range of amenities including public toilets, an information centre, guided tours by volunteers, free BBQ stations and a children’s playground. The Visitor Information Centre, which was completed in 2011, houses interactive and interpretive displays showcasing Cairns’ tropical environment and the wet tropics region of Far North Queensland. Although the Gardens are located on an area of high biodiversity, the collection has not focused on this aspect of tropical North Queensland. The Visitor Centre also houses a café and a gift shop.
Findings
Using the criteria suggested in the literature (aesthetics, visitor engagement, funding, community engagement and safety) the following assessment was undertaken on the CBG.

Aesthetics
As Crilley (2008) noted aesthetics are a key element in the appeal of gardens. Compared to many of the gardens in Europe, the CBG offer a different visual appeal based on the luxuriant nature of the tropical climate and the types of plants on display. The following section briefly describes the garden’s botanic spaces.

The Flecker Gardens houses a diverse range of tropical flora collected from tropical ecosystems in Asia, Africa, South and Central America and Australia. In their style of presentation, the Flecker Garden can be described as a tropical version of the gardens found in Europe. The Rainforest Boardwalk runs through a coastal, lowland, swamp rainforest connecting Flecker Garden with the lakes zone. The remnant forest in this zone is one of the few remaining examples of the coastal forest ecosystem that existed in the area before European settlement. This area also contains the endangered Layered Tassel Fern (*Huperzia phlegmarioide*) which was once widespread in coastal areas.

The Lakes zone contains a salt water lake and a fresh water lake with both lakes containing a range of flora and well as local fauna including birds and amphibians. In the northern sector of the gardens the Mount Whitfield Conservation Park, an area owned by the Queensland Parks and Wildlife Service but administered by the Cairns Regional Council, contains extensive areas of rainforest was well as smaller areas of Eucalypt forest and is a popular recreation area for walking and jogging.

Located between the Flecker Garden and the Visitors Information Centre, the Gondwanan Heritage Garden traces the evolution of photosynthetic bacteria to modern flowering plants. Other significant botanic spaces are the Aboriginal Plant Use Garden, which exhibits local flora used by the region’s Indigenous community, and the Mangrove Boardwalk established in a mangrove community a short distance from the Botanic Gardens.

Compared to the manicured, ordered and planned nature of traditional European and Chinese gardens, tropical gardens often appear chaotic and with no apparent sense of either order or border. For visitors who are unfamiliar with this lack of order, tropical gardens may appear daunting and even unsafe if there is an associated sense of danger of a botanic space that may harbour plant and animal species that can cause harm. This dichotomy in aesthetic appeal can be both an attractor and an inhibitor for potential visitors.
Visitor Management
The size and location of the gardens create several problems from a management perspective. A major public road transects the property making it difficult to erect security barriers and limiting options for charging an entrance fee except to specific areas such as the conservatorium currently under construction or to the orchard collection.

Previous research has identified three crucial aspects of visitor management that are important in nature based tourism experiences: orientation, interpretation and education. In addressing these issues, the CBG has been mindful of the needs of both residents and visitors. For example, the garden’s website acts as a first point of orientation for visitors and provides essential information on location, opening hours, a virtual tour online, descriptions of each element of the garden, a downloadable orientation map and for visitor with special needs, information detailing wheelchair access. The garden has adopted a range of strategies to provide visitor interpretation including themed walks and guide tours provided by volunteers from the Friends of the Botanic Gardens, a Visitor Centre that provides a range of brochures and a free downloadable audio tours. Educational guided walks for schools and other educational institutes are also provided on a no cost basis while special interest tours such as the ‘Bird Watching Walk’ are also offered.

Safety
Safety is an important issue and from the perspective of the tourist is assumed not to be a problem unless otherwise advised. While it may be argued that local residents are likely to be aware of safety issues such as heat stroke, sunburn and poisonous animals, these factors may not be apparent to domestic and international visitors from temperate zones or locations where the snakes and spiders are not a feature of the local ecosystem. If visitor numbers increase an overhaul of current safety strategies will be necessary.

Community Engagement
Given the popularity of gardens as a form of recreation in other countries and the status of the botanic gardens as a major attraction of the city (Anderson, 2015), there is significant scope to build the gardens into a major destination attraction. However, before this can occur there needs to be a public debate about the role of the gardens as a space for residents and as a tourist space. Expansion will assist in promoting the city’s tourism industry with subsequent benefits but may also mean a loss of amenity to local residents as they compete with visitors
for opportunities to use the gardens. The question of funding is also significant and may require a public debate.

Funding
The current funding model of the botanic gardens relies on a significant subsidy from city ratepayers offset by minor revenue from commercial activities. Expansion can be funded either through an increase in public funding or through charging of fees. Recent research (Wood, 2013) into a proposed botanic garden in Mossman, just north of Cairns found that 60% of a sample of 203 tourists indicated their willingness to pay an entry fee of at least $5. From a philosophical perspective issues of funding and who pays can be approached from two opposing perspectives, the neoliberal view that advocates a user pays approach (Giddens, 1998) and the social democracy view that facilities such as the CBG should be a free good and available to all members of society irrespective of their ability to pay (Giddens, 1998). From a ratepayer perspective while increased public funding may create an overall benefit to the city through increased visitation there is also an opportunity cost based on forgone opportunities not funded by the council. Ultimately, issues of this nature need to be considered by the public.

Discussion and Conclusion
Given the popularity of the CBG as a tourist attraction, it is apparent that scope exists to undertake additional development that would further increase the garden’s and ultimately the city’s tourism appeal. For example, the size and composition of the garden’s current range of botanic spaces offers unrealised opportunities for “soft” ecotourism experiences that will allow visitors to engage with nature in a safe, supported and non-threatening environment. However, development of such experiences will incur additional costs which is an issue that needs to be resolved at a community level. One approach might be to develop specific areas of the gardens as attractions for which a charge is incurred while other areas retain their current no-cost status.

One significant issue that also needs to be resolved is the absence of data on visitor use of the gardens. The failure to collect visitor data has created a knowledge gap in areas such as the use profile of facilities by local residents and tourists, demographic profiles of users and satisfaction. This knowledge gap must be considered a serious inhibitor to future planning and understanding of visitor needs and will need to be rectified before informed debate of the nature outlined above can occur.
The ‘feel’ of the gardens is another issue that needs further consideration. Given the importance of restoration as a motivation to visit gardens, areas that provide space for reflection should be designed to be consistent with the need for a peaceful, relaxing and reflective experience. First-time visitors, however, may appreciate interpretive activities that focus more on learning and discovery activities, e.g., plant discovery trails, more detailed information sheets, themed maps, guided walks and informal presentations.

Given the garden’s appeal as a tourism attraction further consideration needs to be given to marketing. Apart from budget issues, other issues that need constant attention by management include the maintenance of a clear brand vision and brand identity that utilizes existing botanic spaces to develop a product and segment portfolio matrix that is matched to experiences sought by visitors. Issues that need to addressed include ongoing evaluation of the usefulness and effectiveness of the garden’s website in facilitating visitor decision-making and constant re-evaluation of the objectives set regarding which visitor segments are to be targeted and which products are to be marketed.

The investigation of the case study provided a first insight into the potential of tropical gardens as tourism attraction in northern Australia, but also the inherent challenges. In the White Paper on Developing Northern Australia (Australian Government, 2015) tourism is discussed as one of the five industry pillars contributing to the growth of northern Australia. Specifically, the government’s aspiration for tourism and hospitality are to lift overseas tourists’ horizons beyond the wonders of the Great Barrier Reef and the Daintree Rainforest, to attractions such as the Kakadu National Park, the Kimberley and Broome (p.58). The tropical gardens located across the North of Australia have the potential to contribute to this aspiration, adding significant value to the portfolio of a tourism destination and its image.

REFERENCES


