

Urban Ecotourism

Recommendations for tourism
development at the wetlands in the
City of Cockburn



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1. Executive Summary

Since Europeans first settled in Perth in 1829, over two thirds of the wetlands on the Swan Coastal Plain have been lost or degraded (Murdoch University 1994). It was this fact that led the Environmental Protection Agency of Western Australia to announce that wetlands were among the scarcest resources in Western Australia (Department of Conservation and Environment 1977). Therefore, when the City of Cockburn expressed interest in developing tourism at the wetlands within their council in July of 2004, this study was undertaken to examine if incorporating tourism in the area would be sustainable and to recommend strategies for such a venture.

The City of Cockburn is situated south of Fremantle in Western Australia and contains the majority of the nineteen wetlands of the Beeliar Regional Park. These wetlands are of national and international significance and hence are one of the most important wetland systems on the Swan Coastal Plain (Dooley et al. 2001). To develop tourism at the wetlands presents an opportunity for the Perth community and visitors to experience one of the last remaining natural systems of the Swan Coastal Plain, but it also risks the conservation of the ecology and heritage of the area.

Through a review of relevant literature, it was concluded that 'Ecotourism' embraces the themes of sustainable development as outlined in the Bruntland Report of 1987 (Pigram 1990). That is, it aims to achieve environmental, economic, social/cultural sustainability which in tourism is accomplished through embracing community involvement, effective interpretation, and conserving the natural resource. These tactics are discussed further in detail within this report.

In order to develop strategies for the implementation of ecotourism to the Cockburn wetlands', an analysis of the wetlands current social, cultural, economic, and environmental setting, and a description its current tourism

situation was conducted. The analysis found that the Cockburn wetlands were significant not only for their obvious ecological function, but they are also rich in Indigenous and local history, and they are important mythological sites for the Aboriginal people. In addition, for the residents of the City of Cockburn the wetlands also play a vital role in their heritage and sense of place.

Recommendations were then formulated for developing tourism at the wetlands based on current best practices and ecotourism theory. They can be summarized into three main Recommendations:

- i. Increase significance of the Education Center through development of interactive and/or museum-type displays and the incorporation of sustainable building design
- ii. Develop more meaningful activities and reduce ecological impact by rejuvenating walk trails, re-creating different types of tours, and increasing visitor information tools.
- iii. Foster community involvement in tourism by encouraging and supporting local businesses and local residents to participate in the planning, development, and implementation of tourism at the wetlands.

Through the incorporation of these recommendations it is hoped the wetlands in the City of Cockburn can institutionalize the best practice of ecotourism and become a national leader in sustainable tourism practices.

2. Introduction

3.1 Aims and Goals

The aim of this report is:

‘To investigate sustainable ways of developing tourism at the wetlands within the City of Cockburn.’

And includes the following goals:

- Identify the potential for tourism at the wetlands within the City of Cockburn
- Identify the role of ecotourism in sustainable development and the techniques used to develop tourism sustainably.
- Develop recommendations for the City of Cockburn on how to develop tourism at the wetlands in a sustainable manner using ecotourism techniques.

3.3 Limitations:

The City of Cockburn contains fourteen lakes within its boundaries; however this study focuses on the Eastern chain which contains the larger lakes and has a greater potential for tourism. When ‘the wetlands of the City of Cockburn’ are mentioned within this paper, it is referring to this Eastern chain, in particular Bibra Lake, North Lake, Yangebup Lake and Thomsons Lake.

The recommendations of this paper are suggestions of the author based on literature studied and personal experiences. As this paper was conducted as a prerequisite for completion of university studies, it was restricted by time and unit requirements. Therefore it is suggested that further studies such as

market potential be conducted before considering implementing any of the recommendations presented here.



3. Background: Ecotourism and Sustainable Development

It was the report developed in 1987 by the World Commission on Environment and Development that publicized the concept of sustainable development and made it the well known and contested subject it is today (Pigram 1990; Zethoven 1991; Beder 1993; Bramwell and Lane 1993; Harris and Leiper 1995; Hunter 1995; Pigram and Ding 1995; Butler 1998; Jacobs 1999; Liu 2003). The origins of the concept of sustainable development can be traced back to Garret Hardin's essay *The Tragedy of the Commons* in 1969 which suggested the inevitability of environmental decline in the absence of assigned responsibility for resource protection (Butler 1998). This theme of environmental protection in the face of economic development was picked up again in the United Nations Conference on Human Environment at Stockholm in 1972 (Hardy et al. 2002), and later by the International Union for the Conservation of Nature and Natural resources and their 1980 document *World Conservation Strategy* (Liu 2003). Eventually, the concept was defined as sustainable development in the 1987 document *Our Common Future*:

“Development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (Beder 1993p.3)

Now, more than seventy different definitions for sustainable development have been proposed since the release of *Our Common Future*. This was a result of many people from diverse fields using the term in different contexts, and in conjunction with various concepts, approaches, and biases (Sharpley 2000). However through this discourse, six core ideas of sustainable development have emerged (Bramwell and Lane 1993; Muller 1994; Pigram and Ding 1995). These core ideas include environment-economy integration, futurity, environmental protection, equity, quality of life, and participation (Jacobs 1999).

In the Context of Tourism

When considering the concepts of sustainable development in the context of tourism, new issues, views and challenges are exposed. This is because tourism continues to develop as a significant economic and social activity (Teo 2002) although it utilizes environmental resources (Pigram and Ding 1995). It has significant environmental, economic, social, and cultural impacts which can either be positive or negative, or both. Thus, tourism development has become one of the central challenges within the sustainable development topic. For example, there is discussion that the incorporation of sustainable development into tourism has had its focus primarily upon the ecological sustainability of tourism itself rather than the potential contribution of tourism to long term sustainable development (Hunter 1995; Sharpley 2000). It is argued that *sustainable tourism* is not concerned with protecting the resource base for the sake of environmental sustainability, but rather it is protecting its product so that tourism development may be maintained. Ideally, the concerns of sustainable tourism development should overlap with that at sustainable development, but it seems that sustainable tourism development is developing its own tourism-centric 'agenda' to the extent that the development of tourism does not necessarily conform to all the general concerns and requirements of sustainable development (Hunter 1995), some of which were mentioned earlier.

How it has been applied already

The attempt to incorporate sustainable development concepts into tourism was - and still is - a result of the growing environmental awareness and cultural sensitivity the sustainable development debate has brought about, and the increased public education of the vulnerability of natural resources (Liu 2003). This has caused increasing dissatisfaction with the previous tourism products, and so development of a new type of tourism has evolved - alternative tourism (Butler 1992; Harrison 1996; Newsome et al. 2002; Teo

2002; Liu 2003). Alternative tourism is usually taken to mean alternative forms of tourism (other than mass tourism) which place emphasis on greater contact and understanding between hosts and guests as well as between tourists and the environment (Butler 1992; Newsome et al. 2002).

Of all of the alternative forms of tourism (Adventure, Nature-based, Wildlife, Ecotourism), it is often believed that Ecotourism is the most sustainable (Appendix 1) (Newsome et al. 2002). Indeed, ecotourism has been said to

“represent and encompass a set of principles, policy prescriptions, and management methods which chart a path for tourism development such that a destination area’s environmental resource (including natural, built, and cultural features) base is protected for future development” (Hunter 1997)

Issues that have been raised include the long term accumulative impacts from these forms of tourism; the abuse of the label as a tool for competitive advantage in attracting the growing numbers of consumers willing to choose greener products; the environmental damage it can cause to unique and fragile systems; and most importantly, its role in sustainable tourism development (Butler 1992; Font and Buckley 2001; Honey 2003; Liu 2003). This has led to the development of ecotourism accreditation programs such as Green Globe 21 and NEAP (The Nature and Ecotourism Accreditation Program) in an attempt to distinguish ‘true’ ecotourism products that uphold the values of sustainable development (Font and Buckley 2001; World Tourism Organisation 2002; Honey 2003).

Also to this end, many ecotourism groups and associations have compiled a list of principles which they claim determines authentic ecotourism (Wallace and Pierce, 1996; Newsome, 1992; United Nations Environmental Program, 2003; Srinivas, 2004; Shores, 1999; Wright, 2003;). These lists vary from group to group, however they all address the issues of environmental, economic,

social, and cultural sustainability in tourism development. Appendix 2 includes some lists of principles of ecotourism gathered from various associations. It can be seen from comparing these that the key tools most often mentioned for achieving the goals of ecotourism are conservation, community involvement and interpretation. These three tools will be investigated in more detail later in this report as strategies for developing tourism at the wetlands in the City of Cockburn.

4. Setting the Scene: The Cockburn Wetlands

4.1 Environmental significance

The wetlands within the City of Cockburn are a part of a chain of lakes which make up the Beeliar Regional Park. The Beeliar Regional Park consists of nineteen lakes in two main chains located parallel to the coast; the western chain two kilometers inland from the coast and the eastern chain five to six kilometers (Dooley et al. 2001). These wetlands exist on the low lying areas between the Darling Scarp and the Indian Ocean, with most of the lakes occurring between the interdunal depressions of the soil regime that make up the coastal plain (Murdoch University 1994).

The wetlands found within the City of Cockburn constitute the majority of lakes of the regional park. All of the western chain of lakes as well as eight of the twelve lakes of the eastern chain are within its municipal boundaries (Dooley et al. 2001). This study focuses on the wetlands in the eastern chain, in particular North Lake, Bibra Lake, Yangebup Lake and Thomsons Lake which are the largest lakes within the City of Cockburn.

Wetlands are amongst the scarcest resources in Western Australia (Department of Conservation and Environment 1977). Since Europeans first settled in Perth in 1829, in excess of two thirds of the wetlands of the Swan Coastal Plain have either been destroyed or degraded through modification by landfill, changes to the drainage or water table, or destruction of the surrounding native vegetation (Murdoch University 1994).

Wetlands are significant resources as they play important roles in drainage and water balance and in the maintenance of quality of the surface and ground water (Department of Conservation and Environment 1977). Balla (1994) pointed out that the value of wetlands increases as the number of wetlands decreases, and thus the need for the remaining wetlands to function

as healthy ecosystems also increases. This brings great value to the remaining wetlands on the Swan Coastal Plain, including those within the City of Cockburn.

The Department of Conservation and Land Management (2001) states the Beeliar wetlands can be considered of national and international importance. Indeed, the entire park has been placed on the Interim List of the Register of the Natural Estate, and within the City of Cockburn, Thomsons Lake has been listed on the Directory of Important wetlands in Australia, and is also listed as a RAMSAR site (Dooley et al. 2001). This is an international acknowledgement that this wetland is among the most ecologically valuable wetlands on the continent (Storey et al. 1997). Other studies have also identified the significance of the flora and fauna found at the wetlands in that they include rare and endangered species and that the wetlands are representative of one of the natural systems that exist on the Swan Coastal Plain (Murdoch University 1994).

Moreover, the wetlands hold significant intrinsic and aesthetic value for the people of Perth. The regional park is located within an urban area, thus it is becoming a much valued scenic and landscape feature. They provide relief from the surrounding land use (residential and industrial) and are increasingly becoming valued for their recreation function. Visually, the wetlands provide quality scenes of extensive open water, vegetated wetland areas and vegetation uplands consisting of mature woodland and forest areas (Dooley et al. 2001).

4.2. Cultural Considerations

The wetlands in the City of Cockburn are very significant for the Aboriginal people. Before European settlement, the wetlands were used as a food and water source for traveling Aborigines (Storey et al. 1997). The people would congregate on the wetlands in late autumn and early winter before they

continued up into the Darling Range to hunt game and collect vegetable goods (Balla 1994). Judy Jackson, a local Aborigine recalls what it used to be like:

“ ...times of plenty until the whites came in and moved us on...we lived off the land in that area. We had wildlife - kangaroos, possums, turtles, all the ducks...and all the berries... there were plenty of food there.” (Drake and Kennealy 1995 p. 37)

It is apparent that the wetlands were pivotal in supplying food and water to the Aboriginal people. Not only were significant components of their diet found at the wetlands such as birds, fish, eggs, long-necked turtles, lizards, snakes and freshwater mussels, but they supplied other important resources like Paperbark trees (*Meleauca*), which were used for building materials due to their waterproof qualities (Balla 1994). Indeed, there are ten declared Aboriginal sites identified by the Aboriginal Affairs Department within and adjoining the lakes within the City of Cockburn, the majority of which are found at North Lake, Bibra Lake and Thomsons Lake (Dooley et al. 2001).

The wetlands were - and still are - significant spiritually for the Aboriginal people. According to Nyungar tradition, wetlands, waterways and lakes are said to be home of the powerful water serpent figure, the Wagyl (Storey et al. 1997). The Wagyl is the dreaming ancestor and water-creative spiritual force with serpent-like physical manifestation. It inhabits North and Bibra Lakes (and many other water bodies in the south west) and maintains the flow of the springs (Drake and Kennealy 1995). These places of great religious significance are known as *winnatch* and consequently require the highest respect and reverence in the way they are considered, used and valued (Storey et al. 1997).

“There’s many, many areas of spirituality... sacred sites. It is sacred site Bibra Lake and North Lake... its all oral history and the teaching still goes on.” Judy Jackson (Drake and Kennealy 1995 p. 41)

Refer to Appendix 3 for summarized versions of the Wagyl and Firestick Dreaming stories

4.3. Social Setting

The Cockburn area was initially developed as a market gardening and dairying area south of Perth and Fremantle (BSD Consultants Pty Ltd 2001), now the general land use is urban and residential. The City of Cockburn’s population is just over 74,000 people (City of Cockburn, 2004) with one in five residents in the City speaking a second language at home. It has a greater proportion of children aged 14years or younger, residents between 25 and 39 years, and families with children than the average of the Perth area (BSD Consultants Pty Ltd 2001).

A study by Drake and Kennealy (1995) put together a collection of stories and statements from some of the early settlers, aborigines, and other long-time residents about the environment of the Beelias wetlands from as early as the 1920s. The recollections of the long-time residents found that the wetlands were valued for their wildlife and flora and recreational opportunities.

“The wetlands were a great attraction for adventurous children to go exploring, climbing trees, paddling and wading, catching tadpoles and tortoises and looking for birds’ nests.” (Drake and Kennealy 1995 p. 8)

“It was lovely just to walk around the lake... I’d love to see it now how it was then... all the bush, trees, wildlife.” Alma Marle (Drake and Kennealy 1995 p. 2)

Today the wetlands remain an integral part of the local community. The locals use it for quiet walks, picnics, or to park the car and eat lunch with a great scenic view. There are also community groups related to the wetlands including the Bibra Lake Scouts, the Waalitij Aboriginal Corporation, Native Arc, volunteers at the Wetlands Education Center, the Wetland Conservation Society, the Friends of the Cockburn Wetland Education Center, Friends of Yangebup Wetlands, Friends of North Lake, and the Friends of South Lake. Moreover, as the City of Cockburn councils’ motto ‘Wetlands to Waves’ reflects, it is a fundamental part of the community’s sense of place (City of Cockburn, 2004).

4.4. Economic considerations

The main infrastructure at the wetlands is the Cockburn Wetlands Education Center. This was established through funding by the Australian Government and the City of Cockburn. Participating groups and the City of Cockburn funded the furnishing of the Centre and the educational equipment was funded by the Gordon Reid Foundation for Conservation through a grant to the Wetlands Conservation Society. The landscaping was funded by the Lotteries Commission and the City of Cockburn through a Youth Link job training programme. The Center’s work is supported by four major sponsors, which provide vital funds for salaries and equipment. They include the City of Cockburn, Alcoa of Australia Ltd, Australian Paper, and The Water and Rivers Commission (Cockburn Wetlands Education Centre 2004).

The current charge for school group tours is \$3 per child which only covers the cost of brochures and other materials. Therefore, in order to generate

funds the premises are leased out for private functions and equipment is leased for hire, which interferes with the center's current management objectives (Bernard Seeber Pty Ltd 2004). The Waalitij Corporation and Native Arc also have their premises on-site at Bibra Lake and rely on sponsorship for upkeep of their facilities.

4.5. Current Tourism

As mentioned earlier, all the wetlands within the City of Cockburn are part of the Beeliar Regional Park, and therefore the majority of them are managed by the Department of Conservation and Land Management. The Department has a management zoning system which

“provide[s] a broad guide to the public uses and management activities which are appropriate in certain areas and indicate which management objectives have priority in any area” (Dooley et al. 2001 p. 11)

The Department has identified five management zones within the Beeliar Regional Park a) Conservation and protection, b) natural environment use, c) recreation, d) sport and recreation, and e) special use (Dooley et al. 2001). Appendix 4 shows the management zones and areas from the Park and Appendix 5 shows the acceptable uses and facilities within each zone.

Previous recreational and visitor surveys have confirmed that Bibra Lake is the most visited lake within the City of Cockburn. It also found that the most common activities were walking, dog exercise, picnicking, nature observation, bush care activities, using the playgrounds, cycling, and using sporting facilities (Dooley et al. 2001). Another study of visitor usage at Bibra Lake found that using the playground, walking, picnicking, and sitting and

relaxing were the most popular activities carried out at the wetland (Murdoch University 1994).

Despite this, only two tourism orientated activities exist at Bibra Lake at the moment. Firstly, the Wetland Education Center has established a trail through the wetlands which includes a board walk and bird hide. School groups are taken on this trail where they are encouraged to interact with the environment (flora and fauna) and aid in water testing and rejuvenation techniques. Regeneration sites adjacent to the education center showcase examples of conservation work for visitors. Secondly, the Waalitij Aboriginal Association has also established a trail through the wetlands to identify areas of Aboriginal significance, traditional food sources, and the 'old ways' of living, and Aboriginal guides have been trained by the Department of Conservation and Land Management to conduct the tours (Bernard Seeber Pty Ltd 2004). However, these tours are very rarely conducted now due to lack of participation.



5. Ecotourism: Its main elements

5.1 Conservation of the resource base

As mentioned earlier, sustainable development and thus ecotourism first came about as a result of global recognition of the need for environmental protection. There has been extensive research into the negative environmental impacts from tourism (Newsome et al. 2002), and the tourism industry has often been criticized for its consumptive use of natural environments on which they are dependent. According to The International Ecotourism Society (2004) the concept of ecotourism is based on responsible travel to natural areas that conserves the environment. Indeed, Newsome et al (2002) highlights that ecotourism is tourism that occurs in and depends upon the natural environment like other forms of alternative tourism, but instead of just being *about* the environment, ecotourism is *for* the environment.

Ecotourism conserves the environment several ways. Primarily, it endeavors to reduce the physical impact tourism activities and facilities have on the natural environment. Such impacts include trampling, compaction, land clearing, pollution, and disturbing the wildlife (Newsome et al. 2002). Some ecotourism companies have attempted to highlight this by adopting mottos such as 'take photographs, leave only footprints' (Shores 1999). Ecotourism utilizes several techniques to reduce physical impact through site orientation, interpretation, and energy/waste saving technologies. There may also be activities that physically conserve such as planting trees.

Other ways it aids in conservation is by increasing public awareness and knowledge as to environmentally appropriate behaviours, and by changing attitudes and moving people to positive conservation efforts in their local community (Wearing and Neil 1999). This is primarily done through interpretation techniques explained later in detail. Ecotourism can also

contribute financially to conservation of the natural resource, and is usually adopted in protected areas for this purpose. The revenue generated from ecotourism not only supports individual conservation projects such as breeding programs and investigations into new technologies for conservation, but aids in the economic sustainability of the reserve or park itself by financially supporting continued management of the protected area (Eagles et al. 2002).

5.2 Community

It is often said in ecotourism definitions that the resource base on which tourism is dependent on must be protected. However, due to the nature of the tourism industry, it is the host community that supplies the economic, social, cultural, and infrastructural resource base for most activities (Christensen 1995). Thus it is important to remember that tourism and tourism based on natural areas does not take place in isolation from local people (Wearing and Neil 1999). This is particularly imperative when the tourism attraction is situated in an urban area, as is the case with the wetlands in the City of Cockburn.

Originally, in both ecotourism and biodiversity debates, environmental sustainability and thus conservation issues were foremost and the local community and social sustainability element was neglected (Wearing and Neil 1999). It was the realization of the community's role in delivering the tourism experience and the need for social/cultural sustainability that led to most of the practical applications of ecotourism including community involvement in the decision making, planning, and application of tourism.

“There is no reason why countries or communities should not decide what type of tourism they are willing to accept and set limits to the amount of change they are prepared to put up

with. This applies to ecotourism” (Clark and Banford 1991 p. 7)

Swarbrooke (1999) points out that within any community there is likely to be a range of groups with very different interests, who will take different stances on the issue of tourism. Indeed, the community may not just be local, but may include wider regional community, the industrial community, and the Aboriginal community(s). Moreover, these communities will include those who own tourism enterprises, those employed in the local tourism industry, those entrepreneurs not involved in the tourism business, those who are not employed in the tourism industry and are generally unaffected by the industry, and those whose life is adversely affected by tourism in terms of noise, for example (Swarbrooke 1999).

Often, involving these varying opinions and needs of the community in the planning and decision-making process can be extremely time consuming, expensive, and may generate expectations that far exceed eventual outcomes (Milne 1998). However, Eagles (2002) outlines the following social impacts which may occur when communities are not given choices, or have no control over their involvement with tourism:

- Increased numbers of tourists may disturb community activities, and compete for recreation places and other services.
- Poorly planned tourism development can lead to increased congestion, littering, vandalism and crime.
- Where protected area agencies develop visitor management regulations that also affect local residents, there may also be negative socio-cultural impacts.

The community can be involved in the decision-making and planning processes of tourism development through workshops, consultation, and partnerships. Participatory involvement can include positions such as volunteer guides and park wardens where community members can apply

their local expertise and knowledge (Wearing and Neil 1999). To ensure success with community involvement, there must be a high degree of public education and that the government and other management agencies should be transparent and open (Fennell 2003). Appendix 6 includes a list of public involvement techniques used in the planning of tourism in protected areas.

5.3. Interpretation

Interpretation plays a significant role in the delivery of ecotourism services (Fennell 2003). This is because, when conducted properly, it can stimulate interest in environmental protection (Newsome et al. 2002), reduce visitor impacts on the resource base and thus reduce costs of ecotourism (Eagles et al. 2002), and encourage sustainability through its long term effects (Wearing and Neil 1999). Eagles et al (2002; p 96) puts it succinctly as:

“Interpretation involves providing information to visitors in such a way that they will be stimulated to learn more and gain more appreciation. Thus interpretation is more than the presentation of data and facts, but includes weaving them together so that visitors come to understand, and appreciate the values for which the park was established”

In essence, interpretation should leave the ecotourist with a sense of enjoyment and satisfaction, and a perception that environmental conservation and the principles of sustainability are worthwhile (Wearing and Neil 1999). It is therefore through effective interpretation that ecotourism has the power to encourage returns to the natural area unlike other forms of natural-area tourism.

Common methods of interpretation include visitor centers, education centers, interactive displays, guided tours, and publications (Eagles et al. 2002). However, some very effective interpretation techniques are so subtle that they

are barely recognizable. For example, within the lobby of an ecolodge or museum the materials used in construction, the pattern of pavers on the floor, and the choice of music, all suggest ideas and feelings of which the visitor may or may not consciously be aware (Wearing and Neil 1999). Newsome (2002) also suggest the techniques used should make maximum use of the senses and include active involvement to make the experience more enjoyable, significant, and satisfying so that the themes can be understood and appreciated. Appendix 7 summarises the major interpretation techniques and gives the strengths and weaknesses of each.

The success of any particular interpretation technique also depends upon other factors such as group size, the age and interests of participants, and their level of education (Newsome et al. 2002). In addition, Forestell (1993) points out that different methods are appropriate at different stages throughout the interpretive experience. The different stages include pre-contact where background information is required on the topic or theme; the contact stage where the motivation to learn is generated by creating or uncovering an imbalance between the individuals initial knowledge base and some current perception of the world, therefore requiring certain information to allow the visitor to regain cognitive balance again; and post-contact where the participants make pre- and post-trip comparisons and consider broader issues, therefore requiring other sources of information (Forestell 1993).

All of the above highlight the importance of careful planning of interpretive techniques in the development of ecotourism. In particular, the target audience needs to be identified and understood in order to create appropriate content and structure for the interpretation experience and to select the correct methods to achieve this (Newsome et al. 2002). Decisions on which major themes and associated messages that are to be conveyed to the visitors should also be done in advance so that interpretive ideas and information can be organized in an easy-to-follow manner.



6. Applying Tourism at the Wetlands - Recommendations

6.1 Cockburn Wetlands Educational Center

Education Centers, like Visitor Centers, can play a significant role in contributing to ecotourism. If designed and planned carefully, they can be ecologically, socially, culturally, and economically sustainable through education/interpretation techniques and contributing financially to the natural area. Eagles *et al.* (2002) state that a well designed visitor/education center should draw visitors into the building, persuade them to look at displays and lead them out, better informed, into the real protected area itself. Thus to be successful, they must build in a strong interpretive component and help visitors to understand the significance of the area (Eagles et al. 2002).

The Cockburn Wetlands Education Center (CWEC) is located on the north-east corner of Bibra Lake and was initially established to provide a venue for Landcare, environmental education and youth activities like scouting. The Centre was constructed on land originally used as a dairy farm, then a Council dog pound, and later as a center for scouting activities (Cockburn Wetlands Education Centre 2004). Recently, investigations into the redevelopment of the centre have begun due to an increase in its functions over the years and other management issues. This provides an opportunity to redesign and plan for ecotourism using current best-practice techniques, and thus make it the focal point for tourism at the wetlands.

Recommendation 1

Develop the Cockburn Wetlands Education Centre to be the focal point for tourism at the wetlands by incorporating current best-practices in sustainable design and interpretation techniques.

Many issues usually arise with the development of built facilities in natural areas, mainly due to the obvious potential for ecological degradation. The rise

of Ecologically Sustainable Development has however, led to a rapid increase in sustainable technologies for built environments. In order for the new education center to be sustainable, it is recommended that these new technologies are incorporated into the new design. A leading example of a sustainable and self-sufficient education center is the Piney Lakes Environmental Education Center situated in the Beeliar Regional Park within the City of Melville. The center has incorporated renewable energy and waste management technology into a building the size of a small school. The building is not connected to the mains power grid or to water and sewage mains as everything takes place on site. A list of some of the sustainable design features is included in Appendix 8 (case study 5) and includes wind turbines and solar panels as well as other innovations in water and waste management. The incorporation of some of these techniques into the CWEC would greatly enhance the sustainability of tourism in the area.

Recommendation 2

Incorporate sustainable and energy efficient technologies into the design of the Education Centre and other facilities at the wetlands.

As discussed earlier, interpretation is a fundamental part of ecotourism. In the case of the CWEC, interactive displays and other techniques can educate visitors about the wetlands' ecological significance, Aboriginal history, and local heritage. A case study of the Scottish Seabird Centre describes a 'state of the art' Interpretation Centre situated near North Berwick in Scotland (Appendix 8, case study 1). This center uses such interpretation techniques as photographs, diagrams, specimens, interactive displays, a multimedia show, and a viewing deck with telescopes. Remote cameras across the islands also allow visitors to see birds going about their normal and breeding activities live from the Center.

From this and other case studies (Appendix 8), and general literature of interpretation techniques, the following suggestions for interpretation at the CWEC are put forward:

- Create three themed areas that visitors can walk through: Aboriginal heritage, local history, and the wetland environment.
- Aboriginal heritage:
 - Displays of Dreaming stories, the Wagal, and the spiritual significance of the Cockburn wetlands illustrated with Aboriginal drawings.
 - Local aboriginal art displays, photos, and stories from the elders.
 - Map of significant sites around the wetlands.
 - Museum-type displays of artifacts/crafts.
- Local history:
 - Museum-type displays with enlarged photos of past uses of wetlands and long-time residents as is in the book *Recollections of the Beeliar Wetlands* by Drake and Kennealy (1995).
 - Displays of old-land uses and local stories.
- Wetland environment:
 - Create a mini artificial wetland perhaps with glass cross section to display how a wetland works, sediments display showing how algal blooms occur.
 - Displays of flora and fauna of wetlands - photos, stuffed animals, snake display, invertebrates of wetlands, microscope pictures of algae.
 - Information boards with photos of the consequence of neglect - lead to displays of local conservation groups, information on how visitors can help, donation box, local events, and everyday habits to help wetlands.
 - May lead out to a two storey lookout with coin operated binoculars to spot breeding birds, etc.

Recommendation 3

Plan to incorporate innovative best practice interpretation techniques into the design of the new Wetland Education Centre to reduce environmental impacts of tourism and enrich visitor experience.

6.2. Walk Trails and tours

As mentioned earlier, walk trails already exist around the wetlands. However, they have the potential for environmental degradation through trampling, compaction, and disturbance to the wildlife (Newsome et al. 2002). In order to develop effective ecotourism at the site, the matrix of existing walk trails should be examined (see Appendix 9) and engineering techniques such as runoff barriers, path hardening, elevated boardwalks and natural fencing (Newsome et al. 2002) should be incorporated where needed or appropriate. Decisions should also be made on which paths/trails will be used for tourism purposes and which others for local recreation. The paths used for tourism in particular will have more frequent use should be carefully planned to reduce environmental impacts. Interpretive signs and information boards may also need to be incorporated along these trails, and they may lead to bird hides. These trails may have fenced entry so that they can only be used for tours and visitors may pay for the privilege of entering these conservation/ heritage areas.

Recommendation 4

Reduce environmental impact of tourism at the wetlands by restoring walk trails and incorporating interpretation techniques to educate visitors for a more rewarding experience.

Tours are one of the interpretation techniques used in ecotourism to allow visitors to get a more 'hands-on' experience, and are also used to generate some economic returns for conservation and sustainability of the tourism

development. There is potential for both self-guided and guided tours at the Cockburn wetlands. Suggestions for self-guided tours include

- Self-drive discovery tour of all the wetlands of the Eastern chain within the City of Cockburn (North Lake to Thomsons Lake) which may include audio commentary, brochures/ information books, small walk trails at each lake, binoculars for hire and maps.
- Bike tour of all the lakes similar to the one above, but bikes may be hired from the CWEC.
- Small walks departing from the CWEC along pre-designated interpretive trails (see Recommendation 4).

Guided tours running from the CWEC may also be incorporated with a charge applied. However, to ensure this remains within the ecotourism ethos, visitor management techniques may need to be incorporated (Eagles et al. 2002). This includes having a small group size limit which will aid in reducing environmental impacts and interpretation will be maximized, and thus the customers will be satisfied. Frequency limits may also be applied which will maintain the uniqueness of the tour. Guided tours may be limited to the weekends or only three days per week, with the self-guided tours supplementing this.

Recommendation 5

Establish self-guided and guided tours of the wetlands running from the Education Centre.

6.3. Involving the Community

The Cockburn wetlands are a great asset to the City of Cockburn and to the wider Perth community. Involving the community in the development of tourism can create a sense of pride and respect from the local residents which will be communicated to the visitors. However, the residents of Cockburn will need to be consulted on whether they consider the development of tourism at

the wetlands to be a positive and worthwhile venture before further planning is conducted. A public seminar educating the residents of the possible benefits and costs of developing tourism should be the first step, followed with a workshop to ascertain issues, concerns, and possible ideas the public may have. Community meetings and consultations should be prevalent throughout the development. An opportunity for interested parties to join an advisory board and to participate in the actual implementation is advised. Encourage local businesses to be involved such as in the building materials, construction, and in operating tours.

Recommendation 6

Ensure the community supports development of tourism at the wetlands and involve them in the entire tourism development process.

Other case studies (Appendix 8, case study 5) of implementing ecotourism have incorporated volunteers to aid in maintenance, staffing, monitoring, and the running of tours. Not only does it allow the community to take responsibility in their natural resource and encourage a strong sense of place, but it also aids the management of the protected area by reducing running costs, and thus allowing more funds to go towards conservation (Eagles et al. 2002). Training in the form of regular workshops would need to be incorporated to ensure the volunteers have a strong knowledge base and are able to serve the visitors needs and add to their experience. Creating a volunteer 'association' can create opportunities such as work experience for youth, as well as allowing other residents such as retirees to continue contributing to the community; and for others it may generate a sense of belonging.

Recommendation 7

Establish a tourism volunteer association.

7. Conclusions

The onset of sustainable development in the political agenda has brought about a change in society's values from exploitation to conservation. Through the years, this has manifested in the tourism industry in the rise of alternative forms of tourism such as nature-based and wildlife tourism. However, it was becoming increasingly clear through environmental studies that this was just another form of exploitive development due to the environmental and cultural damage tourism was causing. When this became apparent, a new type of nature tourism formed that aimed to be environmentally, socially, culturally, and economically sustainable while still providing a satisfying tourism experience – this was ecotourism.

Since then, managers of protected areas around the world have embraced ecotourism because when applied effectively, it can directly fund conservation projects, increases public awareness of the importance of the area, and through international recognition, the area can receive increases government funding. All this helps guarantee the future of the natural area and the survival of the flora and fauna it protects.

This report used the principles and concepts of ecotourism and attempted to apply them to the wetlands in the City of Cockburn. These wetlands are just one example of many areas of remnant environments scattered within urban areas and cities of the world. These areas may be considered environmentally more at risk than the large wilderness areas that many tourists travel to see, due to the constant encroachment of urban land use. Some of these areas, like the wetlands, are the last living examples of the regions natural systems and may contain rare or endangered species. If there was anywhere that public awareness was required for conservation, it would be these places. Yet, there has been very little development of ecotourism in urban areas.

The people of Perth and the City of Cockburn have a wonderful opportunity to become industry leaders in the development of urban ecotourism. This can be done by using innovative and creative ways to apply the world's current best practice techniques of interpretation, conservation, and community involvement into Cockburn's wetlands. This report outlines some ideas to that end, however dedicated sponsorship and commitment from the community, further research, and careful planning is required in order to achieve this worthwhile goal. More importantly, the wetlands will be conserved and the people of Perth and the Aboriginal community will always have a reminder of how the Swan Coastal Plain used to be like.



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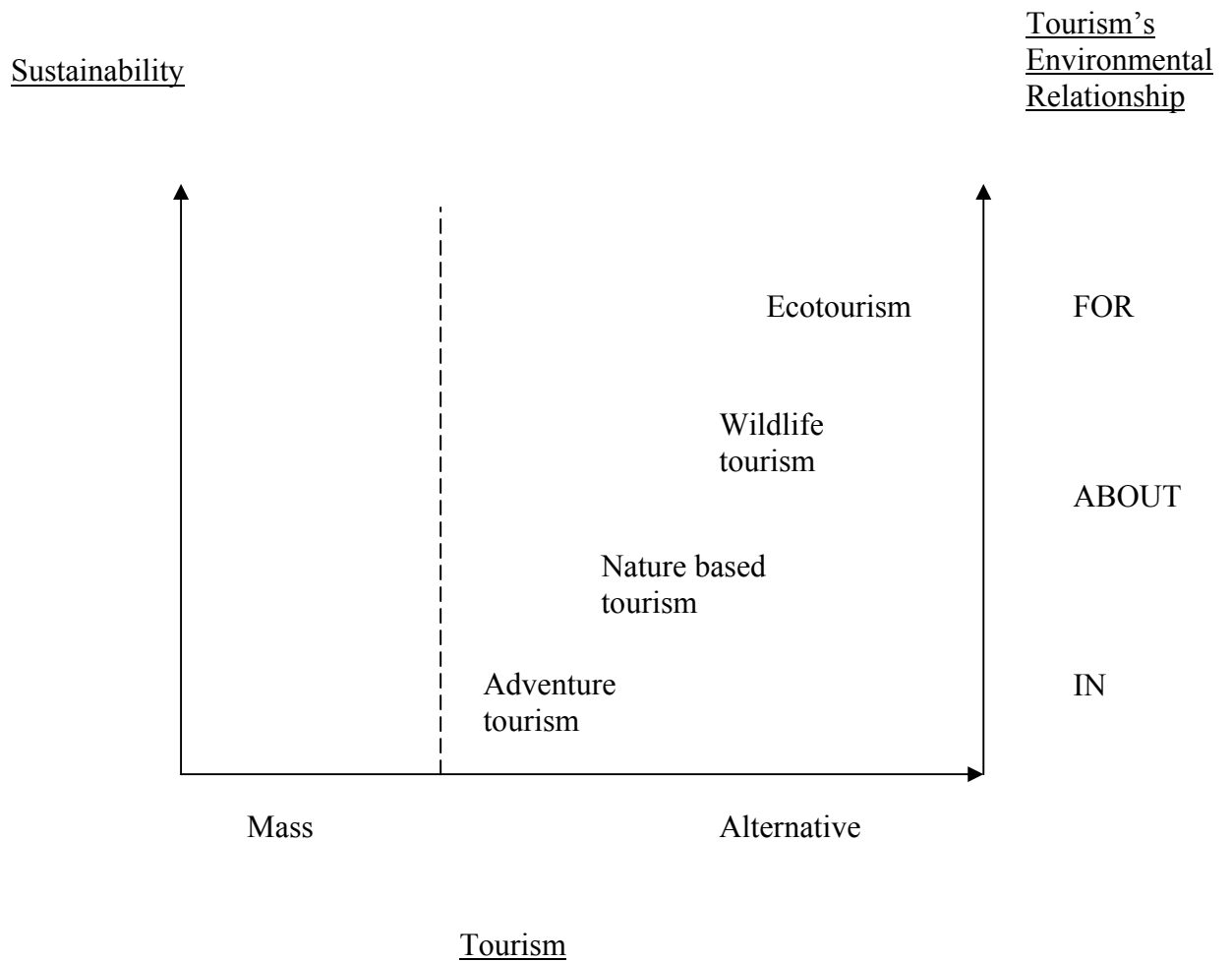
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Appendix 1: Sustainability of natural-area tourism



Natural area tourism and sustainability (Newsome et al. 2002 p. 13)

Appendix 2: Principles and Guidelines for Ecotourism

1) *The United Nations Environmental Program (2003) requirements for the development of sustainable tourism:*

- Tourist resources – natural, historical, cultural and others are preserved in a way that allows them to be used in the future, whilst benefiting today's society.
- The planning and management of tourist development are conducted in a way that avoids triggering serious ecological or social-cultural problems in the region concerned
- The overall quality of the environment in the tourist region is preserved and, if necessary, improved
- The level of tourist satisfaction should be maintained to ensure that destinations continue to be attractive and retain their commercial potential; and
- Tourism should largely benefit all members of society

2) *Global Development Research Centre (Srinivas 2004)*

Sustainable tourism:

- Minimizes environmental impacts using benchmarks
- Improves contribution to local sustainable development
- Requires lowest possible consumption of non-renewable resources
- Sustains the well-being of local people
- Stresses local ownership
- Supports efforts to conserve the environment
- Contributes to biodiversity

Successful ecotourism projects must:

- Effectively promote the preservation of entire local ecosystems, not just individual species, vistas or sites
- Be economically viable in order to attract financing and be sustainable
- Be well planned, financed, managed and marketed in order to meet the stringent environmental and recreational demands of true ecotourism development

3) *Wallace and Pierce's (1996) six principles of true ecotourism*

- It entails a type of use that minimizes negative impacts to the environment and to local people
- It increases the awareness and understanding of an area's natural and cultural systems and the subsequent involvement of visitors in issues affecting those systems

- It contributes to the conservation and management of legally protected and other natural areas
- It maximizes the early and long-term participation of local people in the decision-making process that determines the kind and amount of tourism that should occur
- It directs economic and other benefits to local people that complement rather than overwhelm or replace traditional practices (farming, fishing, social systems, etc)
- It provides special opportunities for local people and nature tourism employees to utilities and visit natural areas and learn more about the wonders that other visitors come to see

4) *The American Society of Travel Agents (ASTA) and Club Med's Ten Commandments on Ecotourism.*(Shores 1999)

ASTA's Ten Commandments on Ecotourism	
"Whether you are traveling on business, pleasure, or a bit of both, all the citizens of the world, present and future, would be grateful if you would respect the ten commandments of world travel:	
1.	Respect the frailty of the Earth
2.	Leave only footprints. Take only pictures.
3.	To make your travels more meaningful, educate yourself about the geography, customs, manners, and cultures of the region you visit.
4.	Respect the privacy and dignity of others.
5.	Do not buy products made from endangered plants or animals.
6.	Always follow designated trails.
7.	Learn about and support conservation-oriented programs and organizations working to preserve the environment.
8.	Whenever possible, walk or utilize environmentally sound methods of transportation.
9.	Patronize those members of the travel industry who advance energy and environmental conservation; water and air quality; recycling; safe management of waste and toxic materials; noise abatement; community involvement; and which provide experienced, well-trained staff dedicated to strong principles of conservation.
10.	Ask your ASTA travel agent to identify those organizations which subscribe to ASTA Environmental Guidelines for air, land, and sea travel."

5) *Characteristics of ecologically sustainable tourism, as expressed by the Commonwealth of Australia* (Wight 2003).

- Develops in accordance with the wisest use of environment resources and services at the national, regional and local levels

- Operates within the biophysical limits of natural resources use
- Maintains a full range of recreational, education and cultural opportunities across generations
- Maintains biodiversity and ecological systems and processes
- Develops in a manner which does not compromise the capacity of other sectors of the economy to achieve ecological sustainability

Appendix 3: Dreaming Stories

1) *The Wagyl*

A long time ago in the Dreaming, the animals and other beings were huge. Two rainbow serpents, called wagyls (maned, seal-faced creatures), left York and followed the Avon River down to Walyunga National Park, to where the river bends east. The female wagyl laid some eggs, then the two wagyls crossed over the hill and continued along the other side before rejoining the Swan River. Today you can see where the eggs have turned to stone. You can also see the side of the hill without trees where the wagyls slithered. The wagyls continued along the river to where Ascot Raceway is today at Belmont. The male wagyl shook himself so hard that some of his scales fell off. They can still be seen embedded in the riverbank, although you may mistake them for shells.

The wagyls continued on to Melville Waters and swam around, creating the huge bay. The female wagyl laid some more eggs at the foot of Kings Park where Kennedy Fountain is today. She then went south, under the ground. Where she surfaced she created Bibra Lake. She then went on to create Yangebup Lake (Jilbup), Thomsons Lake and White Lake. In the meantime, the male wagyl went north underneath Kings Park, coming up and creating Lake Monger, Karrinyup Lake, Joondalup Lake and Yanchep Lake. Later they got lonely and went back underground to meet again at Melville Waters.

The two rainbow serpents were glad to see each other. They swam around together, so creating Crawley Bay, then followed the river down to Fremantle. There they lay in the sun creating a rock bar across the river. At one time Nyoongar used this bar to cross the river. Then the two serpents followed the river out from Fremantle beyond Rottne Island and back to the Dreaming.

2) *Firestick*

During the Dreaming, the Noongar people were marlee (swans). They had no fire to keep warm and they had to eat raw meat. In these times Meika, the moon, had fire on his tail but would not give it to the people. Kower the purple-crowned lorikeet and Watta the pigeon were ngoolijar-mat (brothers-in-law). They said, "We will get the fire for our demman (cousins), the marlee."

Meika looked around and saw Kower and Watta running away with the fire. He called out, "Kal-yung, Kal-yung" ("Fire, give, fire, give"). He kept calling out but they continued to run away. Meika was very angry and called upon Waddern the sea, the moon's uncle, to put the fire out. Waddern rose up and flooded the land.

Kower the lorikeet quickly ran to the balga (Australian grass tree), took the fire from his wing and put it in the flowering stem high up in the balga bush. Kower then showed the marlee (the swans) how to make fire from the balga flower stems. They were so glad to have fire that they called the balga stem Kower after the lorikeet. The lorikeet still has fire under the wings to show the swans that he was a fire bringer. The Noongar people never kill the lorikeets, for they are sacred (winnaitch).

Appendix 4: CALM Management zones, Beeliar Regional Park

Appendix 5: Management zone restrictions

Appendix 6: Public Involvement Techniques

Approach	Description	Selected techniques	Message to the public
Public info/ education	"knowledge about a decision"	<ul style="list-style-type: none"> • Advertising • Newspaper inserts • Posters 	<i>You want them to know and understand about it</i>
Information feedback	"Being heard before the decision"	<ul style="list-style-type: none"> • Briefs • Focus groups 	<i>You want them to understand and support your program</i>
Consultation	"Being heard and involved in discussions"	<ul style="list-style-type: none"> • Community meetings or gatherings • Conferences • Workshops/ Problem-solving meetings 	<i>You want to understand them and value their views and input</i>
Extended involvement	"Having an influence on the decision"	<ul style="list-style-type: none"> • Advisory groups • Task forces 	<i>You seriously expect to implement most of their advice</i>
Joint planning	"Agreeing to the decision"	<ul style="list-style-type: none"> • Consultation • Mediation • Negotiation 	<i>You are fully committed to using the results in all but the most exceptional circumstances</i>


A continuum of stakeholder involvement approaches and selected techniques (Eagles et al. 2002).

Appendix 7: Interpretation Techniques

<i>Technique</i>	<i>Application</i>	<i>Strengths/ Advantages</i>	<i>Weaknesses/ Disadvantages</i>
Publications and websites	Supply of pre-contact information. Visitor orientation and trip planning. Support for visitor centres and self-guided trails. Information on landscape, fauna and flora	Cost effective and portable information. Many possible distribution/ access points with wide dissemination	There is no active visitor involvement. Does not necessarily cater for different visitor needs. Can be expensive if subject to frequent updates and alterations
Visitor Centres	Information on landscape, fauna, flora and management. Opportunity for face-to-face contacts with staff. Located at the entrance gates to national parks and within popular nature-based recreation areas.	Recognisable sites where visitors can obtain information. Scope for the application of a wide range of techniques (e.g. audiovisual, verbal interpretation, interactive displays and original objects)	Can be expensive to set up. May not be designed to cater for different audiences (e.g. focus may be entirely on school groups)
Self-guided trails	Focus of attention for visitors in various natural settings. Opportunities to provide messages through signage	Always available and visitors can explore trails at their own pace	Signs and displays subject to vandalism. Signage may contain too much information. Generally not suitable for children.
Guided touring	Wide application in all environments. Especially important in forests, wildflower tourism and during wildlife observation. Time frames can be from only 1hr up to 2 weeks duration	Very powerful and highly effective if applied properly. Interpreter can respond to client needs and deal with various levels of complexity. Info can be constantly updated. Interpreter can facilitate active involvement.	Requires the availability of well-trained and effective interpreters. Requirement of audience attention and commitment to be entirely successful.

Summary of major interpretation techniques (Newsome et al. 2002)

Appendix 8: Case Studies



1) Interpretation and Visitor Centers

Case Study 1 – Scottish Seabird Centre

The Scottish Seabird Centre is a 'state of the art' interpretation centre situated close to the Bass Rock Gannet (*Sula bassand*) colony at North Berwick, Scotland. The Centre contains education and interpretive features (e.g. photographs, diagrams, specimens, and interactive displays) that are common to visitor and education centers around the world. The materials are arranged in a series of themes that are designed to capture the attention of all age groups and account for different levels of interest. Displays titled 'What is a seabird?'; 'The shore'; 'Survival'; 'Built for the job' and 'High rise living' provide information and interpretation on the biology and ecology of seabirds.

There is also a multimedia show that focuses on the gannets themselves and a viewing deck with telescopes that can be trained on to Bass Rock and the island of Fidra where Puffins (*Fratercula arctica*) are visible particularly during April and May. Furthermore, the most up-to-date interactive technology has been used in order to provide visitors with a unique view of birds on otherwise restricted access seabird breeding islands. From inside the centre the 'seabirds live' exhibit video screens provide people with the opportunity to see birds going about their normal and breeding activities on the two islands. This is achieved by the use of remote cameras positioned on the islands with zoom, pan and rotate facilities that allow visitors in the centre to scan the islands for birds and focus in on nests and chicks during the breeding season. Trained volunteers who are present to assist and answer questions support all of this. A theatre is also present in which films about seabirds are screened. In addition to this there is a website as well as the traditional boat trip that circumnavigates Bass Rock.

Case Study 2 – Bird watching at Rutland Water Nature Reserve, England

Rutland Water has become one of the most important birdwatching sites in the British Isles. Originally developed as a water supply reservoir the site now supports significant populations of birds and was designated a RAMSAR site in 1991. The conservation area consists of two reserves comprising woodlands, ponds and extensive lagoons juxtaposed with open grassy areas and adjacent agricultural land. The two reserves are actively managed to create a range of habitats in order to maximize the number and diversity of winter visiting and breeding birds. So far, up to 248 bird species have been recorded. During winter the area supports up to 20,000 waterfowl and comprises an important over-wintering site for various species of ducks, geese and swans.

Facilities include two visitor centers, 19 birdwatching hides, walkways and nature trails. The main visitor centre at Egleton Reserve sells field guides and educational material and contains an indoor observation gallery from which woodland and water birds can be observed. There is an environmental interpretation section containing displays about birds and information on how and why the reserve is managed as it is. There is also an interpretation centre on the south side of Rutland Water at Lyndon. The reserve has its own website containing information on bird sighting, meetings and educational programmes. An interactive migration trail, which highlights the difficulties faced by migrating birds, is also planned for the Lyndon Reserve. Facilities such as these play a significant role in public education, environmental interpretation and reducing impacts on wildlife.

Case Study 3 – Brixworth Country Park, England

The visitor centre at Brixworth Country Park has a live tank pond life exhibit which provides an example of the sorts of organisms that can be found in the ponds that occur within the park. This display is supplemented by the opportunity to borrow a magnifying glass, tray and net. Visitors can then go to a nearby artificially created pond and sweep for aquatic organisms. Identification charts and books are also available and in this way visitors are able to engage in, identify, and find out about pond life for themselves.

2) Self-guided tours

Case Study 4 – Dryandra Woodland, Western Australia

An audio drive trail has been developed in the Dryandra Woodland in Western Australia. Dryandra is one of the best sites in Western Australia to view rare mammals and this, in combination with extensive woodland, flora and landscape values, results in a visitation rate of 30,000 people a year. The trail consists of six radio transmitters which have been placed along the 25 kilometer road trail. Commentary points are indicated with a drive trail logo and a brochure provides additional information. A radio broadcast band is indicated in order to access the commentary about conservation and various aspects of forest management at Dryandra. The commentaries have been recorded onto microchips and concealed transmitters are powered by 60-watt solar panels. However, batteries provide backup should there be a period of cloudiness and reduced sunshine.

3) Sustainable building design

Case Study 5 – Piney Lakes Environmental Education Centre

The Piney Lakes Environmental Education Centre highlights the many achievements of Melville City Council's commitment to the environment. Initiated by the City of Melville and developed in partnership with the Rotary Club of Melville (Inc.) the centre strives to be the best practical demonstration of environmental education facilities in Australia. It uses renewable technologies, sustainable building design and self-sufficient operations. The Centre is located in a reserve of natural bush regrowth following the closure of a pine plantation that has been developed for housing over the past decade

The centre provides a full-scale demonstration of a more sustainable use of natural resources through renewable energy technology and the efficient use of energy. The building is not connected to the mains power grid or to water and sewerage mains; everything takes place on site. Following are some of the sustainable design features:

- The building uses solar passive design so is orientated to optimize the use of solar energy.
- It faces the north to receive early morning sun, providing heating in the offices. Glass areas to the north make use of natural light and heating in winter.
- The structure utilizes rammed limestone to provide a good level of thermal mass for energy storage, all frameworks are moisture barrier sealed and have bulk insulation.
- Earth sheltering to the two-story building results in soil helping to moderate the temperature by heating in winter and cooling in summer.
- Roofing was built with state of the art integrated polystyrene panels with a parasol custom orb roof.
- On the south side and west of the building insulated glass inserts were used to limit the summer sun whilst the rest of the windows are single clear glass panels to allow in the winter sun.
- Water is collected into a 60,000L tank from the roof and pumped into smaller tanks above the building. It is filtered clean and then gravity fed to the building. The water is sterilized by ultra violet light prior to entering the the building for public consumption.
- Composting toilets using both wet and dry treatment systems were installed to demonstrate the two processes.
- Power is supplied by a Remote Area Power Supply (RAPS) system and features a 5kw wind turbine. In addition arrays of solar photovoltaic (pv) cells generate a further 3kw. A 110volt, 600 amp/hr battery bank is installed downstairs to store the energy.
- A solar hot water system produces all the hot water needed in the building.
- Stand-alone photovoltaic units were installed to supply lighting in the carpark and walk path areas.
- Night ventilation for thermal mass cooling with air circulation occurs. Ceiling fans keeps the buildings cool air circulating.

- Building Management System (BMS) monitors, controls and regulates the internal environment and power supply. It also monitors ambient light levels to regulate and minimise the use of artificial light

4) Volunteering

Case Study 6 – The Wetland Centre, Australia

The Wetlands Centre site is a focal point for volunteer involvement and activities, dating back to the initial campaign conducted by the Hunter Wetlands Trust in 1984 to gain community support for the conservation of Shortland Wetlands.

Volunteer involvement thrives at the Centre. It provides a real sense of self-worth, pride and community engagement for participants, many of whom are retired or unemployed. Further to this, many regular visitors and volunteers develop a deep connection to the wildlife and wetlands that offers them spiritual meaning.

Volunteers are involved in every aspect of our operation. They sit on our Board, act as guides, propagate and plant native trees, maintain the grounds, assist with endangered Freckled Ducks, monitor our wildlife and ponds, assist with the School Holiday Activity Program, help in the café, work in administration and the Library.

Volunteers who become involved at The Wetlands Centre either long or short term are committed to their own goals as well as TWC. Volunteers can offer energy, enthusiasm, a fresh perspective and new ideas, skills and abilities in particular 'new' skills, to gain experience, to have fun, meet new people and experience new challenges. The main area is to gain satisfaction from doing something to make a difference to the world we live in. (reference)

Appendix 9: Beeliar Park Access
