

Rottnest Island, Indian Ocean: moving towards sustainability

P. Amaranti, R. Mau & J. Tedesco
Rottnest Island Authority, Western Australia

Abstract

Rottnest Island is a nature reserve which lies in the Indian Ocean, approximately 18 kilometres west of the city of Perth, Western Australia. The special attributes of a holiday settlement with no private land ownership or private vehicles, based around heritage buildings in a significant conservation reserve, make Rottnest Island unique in the region. The Island which is managed on behalf of the Western Australian government by the Rottnest Island Authority is mostly self-funded and operates primarily on the revenue received from visitors from fees and charges for holiday accommodation and recreational services. Funding is also received from business leases, a State Government annual contribution and through grants and sponsorship. Financial business modelling has demonstrated that the RIA's commercial operations are financially profitable and sustainable. However significant costs are associated with conserving Rottnest Island's natural and cultural heritage assets, maintaining essential infrastructure and meeting government administrative requirements. Rottnest Island's utilities and infrastructure requires significant capital injections. The associated costs cannot be met in the short-term. The RIA needs to balance the need to maintain visitor affordability with generating sufficient revenue and funding to protect and maintain the Island's environment and heritage values and assets at an acceptable level. The Authority is committed to finding a solution to achieve environmental, social and economic sustainability.

Keywords: Rottnest Island, sustainability, financial, environment, social, heritage, commercial operations, conservation, carrying capacity, climate change.



1 Introduction

1.1 Context and significance

Rottneest Island is a marine and terrestrial protected area that lies in the Indian Ocean, approximately 20 kilometres west of the capital city of Perth, Western Australia (Figure 1).

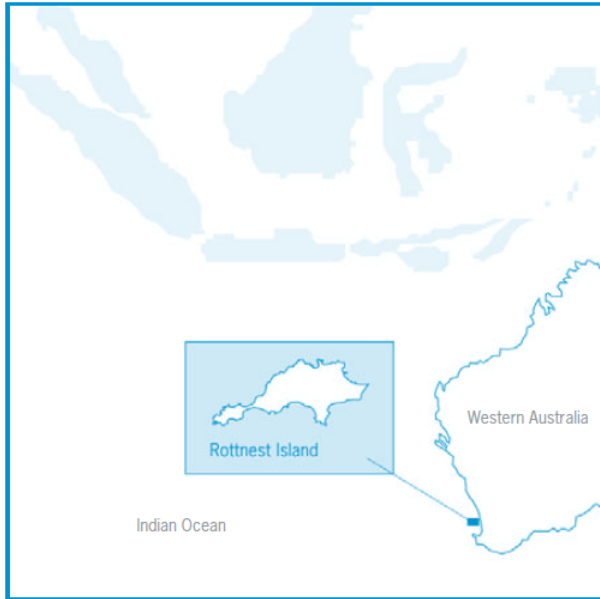


Figure 1: Location of Rottneest Island, Western Australia.

The Island is 11 kilometres long and up to 4.5 kilometres at its widest point with a land area of 1900 hectares surrounded by 3800 hectares of marine reserve. The Mediterranean climate, scenic natural environment, biodiversity and turquoise waters in 63 sheltered beaches and 20 bays make Rottneest Island a favourite holiday destination. The Island also has cultural and spiritual significance for Aboriginal communities across the State.

Rottneest Island welcomes an estimated 500,000 visitors each year, including accommodated guests, day-trippers and people staying on private boats. Visitors reach the Island by ferry (30 or 45 minutes depending on departure ports), private boat or light aircraft (15 minute flight). The majority of visitors are Western Australians (60%), with the balance of Interstate (20%) and International (20%) visitors.

Rottneest Island's significance lies in its environment, including terrestrial, lake and marine ecosystems, and in its rich and diverse cultural heritage. The terrestrial landscape has great intrinsic beauty and unusually high landscape

diversity. The marine environment has high habitat diversity that supports a range of temperate and tropical species.

The Island's cultural and social heritage results from a history spanning Aboriginal, maritime (from as early as 1610), colonial, European, military and recreational use. The special attributes of a holiday settlement with no private land ownership or private vehicles, based around heritage buildings in a significant conservation reserve, make Rottnest Island unique in the region.

1.2 Managing Rottnest Island

Rottnest Island is managed by the Rottnest Island Authority under the WA *Rottnest Island Authority Act 1987* (RIA Act). The Minister for Tourism is responsible for administering the Act on behalf of the Western Australian State Government. The control and management of the Island is vested in the Rottnest Island Authority (the Authority) which consists of a chairman and five other members appointed by the Governor on the nomination of the Minister for Tourism. Members are selected according to their relevant experience. The Authority is supported by a government agency (RIA) which oversees the daily operation of the Island with a core staff of just over 100.

The Rottnest Island Authority was established for the purpose of enabling it to:

- a) *provide and operate recreational and holiday facilities on the Island;*
- b) *protect the flora and fauna of the Island; and*
- c) *maintain and protect the natural environment and the man-made resources of the Island and, to the extent that the Authority's resources allow, repair its natural environment.*

The operations undertaken to perform these functions are complex and include provision of holiday accommodation and facilities, school education programs, interpretation and tours; supplying utilities for water, power, gas, wastewater and waste management; provision of public transport, roads and paths, boating facilities and an airport; and managing the A-class reserve (terrestrial and marine) and heritage assets.

The RIA does not deliver all the services on the Island alone. Partners include:

- the Rottnest Island Business Community (RIBC) – independent businesses that operate a variety of recreational, accommodation, dining, wellbeing and retail services under lease from the RIA;
- volunteer organisations which contribute to visitors' enjoyment, provide information, assist with enhancing and conserving the Island, and help to raise funds;
- facilities and maintenance contractors who manage the Island's utilities and provide cleaning, delivery and maintenance services across the Island; and
- government departments such as the Police, Rescue and Emergency Services, Fisheries, Marine Safety, Department of Health and Department of Education which provide staff, training and other support functions.



1.3 Financial challenges

The RIA Act requires the Authority to “*perform its functions in such manner as to ensure that, taking one year with another, its revenue is at least sufficient to meet its expenditure.*” The RIA operates primarily on the revenue received from visitors in the form of admission fees and charges for holiday accommodation and recreational services (mooring fees, bike and recreational activity hire, bus tours). Funding is also received from business leases, a State Government annual contribution for both capital expenditure and environmental management, and through grants and sponsorship. The RIA is able to outsource provision of some services to reduce costs and risks while maintaining responsibility. The RIA currently has a revenue base of \$34 million per annum.

Financial business modelling has demonstrated that the RIA’s commercial operations, including accommodation, bike hire and moorings, are financially profitable and sustainable. However significant costs are associated with conserving Rottneest Island’s natural and cultural heritage assets, maintaining essential infrastructure and meeting government administrative requirements. Rottneest Island’s utilities and infrastructure require significant capital injections to maintain adequate supply.

Some sections of the community have asked the RIA to maintain affordability by keeping fees and charges down. However this needs to be balanced with generating sufficient revenue and funding to maintain the Island’s environment and heritage values and assets at an acceptable level. This will be another major challenge facing the RIA over the coming years, especially in the uncertain climate of the global economic situation.

2 Strategic directions and management

The RIA’s has a vision for Rottneest Island to be “a model of ethical tourism based on financial, environmental and social sustainability”. This vision is underpinned by a desired outcome that “Rottneest Island visitors enjoy recreational and holiday experiences in healthy natural and cultural environments”.

Under the RIA Act, the direction for RIA management of the Island is established in a five-year plan which sets out guiding principles, policy statements, major initiatives and a summary of operations. The guiding principles and policy statements make clear the policy framework that will govern all decisions in the life of a plan. The current management plan came into effect in July 2009 and remains in place until 2014 (RIMP).

Detailed planning and delivery of the RIMP is underpinned by:

- the guiding principles and policy statements in the RIMP;
- market research to understand visitor trends, demographics and expectations so that the Island experience meets the needs of visitors while retaining a focus on sustainability and protecting the environment; and
- the principles of ethical tourism and recreation.



Holiday and recreation services for visitors are offered in conjunction with commercial operators. Ferry, barge and air services, accommodation providers, shops, restaurants and recreation businesses provide essential elements of the visitor experience. The RIA strongly supports the commercial sustainability of private business on Rottnest Island as part of ensuring a sustainable future. Planning and delivery is undertaken in consultation with key stakeholders.

2.1 Ethical tourism and recreation

Ethical tourism is a responsible approach that reduces social and environmental impacts. For example holiday makers can put pressure on fragile environments, often inadvertently destroying what they came to see, and depleting resources at the expense of local people. Ethical tourism means doing everything possible to ensure that when people go on holiday their impact on the local environment, culture and people is positive rather than negative [1].

An increasing number of visitors are interested in ecotourism [2]. Many are seeking 'ethical' destinations where they can be assured that their experience is based on conservation and sustainable management. Many travellers also want to leave as small a footprint as possible when they visit Western Australia, particularly in national parks [3]. For the RIA, ethical tourism means that all visitors are attracted to Rottnest Island to enjoy the environment in a safe, friendly and relaxed culture, knowing that the Island is well managed on sustainable principles. It also means that visitors play their part in caring for the Island environment and leave with a deeper appreciation and understanding of its natural and cultural heritage values.

2.2 Financial sustainability

The RIA has a corporate objective to acquire and manage its financial and other resources to become financially sustainable. Financial sustainability is defined as generating enough income (from all sources provided in the Act) to enable the RIA to fund operating and asset replacement expenditures. It does not include a commercial rate of return for the whole agency, but commercial rates of return may be required from certain operations. It also excludes the purchase of additional significant capital items.

The RIA has made significant advances towards financial sustainability over the past five years and in 2007-08 reported its first positive financial result followed by a profit in 2008-09. The RIA continues to face a challenging fiscal environment with an objective to maintain profitability and increase its revenue base to invest back into the island.

Key factors for the RIA in meeting its financial sustainability target are:

- The RIA acts in a 'business-like' manner to perform financially like a private business whilst providing several non-commercial functions for the benefit of the Western Australian community. The costs for these services cannot be fully recovered e.g. environmental and cultural heritage management.



- The RIA operates as a State Government agency. While the RIA has some flexibility regarding its operations within its own legislation, for example an inferred power to employ and purchase, other State legislation and Government policy often inhibit the RIA from exercising such flexibilities.
- While the RIA is 'asset rich' in the form of holiday accommodation units, utilities and other infrastructure, it has cash-flow challenges that need to be addressed to maintain its viability. In the past, limited net cash revenue has resulted in the RIA not having adequate finances to maintain its facilities and other infrastructure to the required standards.

2.2.1 Moving forward

The RIA aims to become financially sustainable by generating sufficient cash-based funding to enable it to operate as required by the Act. The intention is to acquire and manage financial and other related resources such as staff and assets to become commercially sustainable. This will include achieving additional funding through review of fees and charges as well as raising revenue through offering new recreational and other services.

The RIA will seek to fund specific projects through grants, private partnerships, commercial sponsorship and raising loans for revenue generating projects. Cost savings can be achieved through a variety of activities including reprioritizing expenditure, efficiency improvements, reducing levels of servicing and introducing new technologies. Initiatives presented in this RIMP are limited to those that can be funded at this time. The RIA will measure success in moving in the direction of being financially sustainable by reference to the profit and loss statement and cash-flow statements.

2.3 Environmental and social sustainability

The Corporate objective is for Rottnest Island's natural environment and cultural heritage to be conserved and enhanced as models of sustainability within Australia. The RIA and its partners are working towards basing all operations on sustainable principles, practices and technologies to the extent that this is commercially achievable.

The RIA has applied the commonly accepted definition of sustainability being '*development which meets the needs of the present without compromising the ability of future generations to meet their own needs*' [4]. Public consultation indicated that sustainability received strong support from RIA staff and stakeholders. There was a desire for the RIA to show leadership in becoming a benchmark for sustainable recreation and for the Island to be a showpiece for demonstrating environmental sustainability.

2.3.1 Sustainable visitor capacity

Visitation at Rottnest Island is highly seasonal. Visitor numbers peak over summer and in all school holidays, when accommodation is at saturation point, putting pressure on some popular locations around the Island. Sustainable visitor capacity refers to the type and amount of visitor use a particular site can support



over a given period without compromising its environmental, cultural and social values including the visitors' recreational experience [5].

Visitor capacity and related approaches based on limits of acceptable change, visitor impact management and 'tourism optimization management' have been used in Australia and overseas as a basis for conservation of natural and cultural heritage while providing high quality recreation experiences [6–11].

The RIA funded the development and application of a new visitor management tool at Rottnest Island – the sustainable visitor capacity (SVC) framework [12]. The SVC framework was employed to assess current visitation levels and impacts in selected areas around the island, including several sites characterised by fragile ecosystems and large numbers of visitors. The methodology proved valuable in providing an estimate of sustainable visitor capacity that took into account environmental impacts, visitor satisfaction, service capacity, socio-cultural impacts and management strategies.

The visitor capacity research provided input into management controls to ensure all sites were managed sustainably. The research also provided an informed basis for recreational planning in the marine and terrestrial environment leading to the development of a Recreational Opportunity Spectrum, influencing node design for a Coastal Walk Trail, general service delivery (e.g. tours), visitor education, event planning and coastal management.

2.3.2 Conservation action planning

Conservation Action Planning (CAP) is a relatively simple, straightforward and proven approach for planning, implementing and measuring success for conservation projects [13]. The RIA has developed a Conservation Action Plan as part of the RIMP. The CAP process is an international recognized open source standard for conservation planning. It provides a comprehensive methodology for biodiversity conservation management that established biodiversity indicators for the RIA's Environmental Management System and annual performance-reporting framework. The CAP project team, with assistance from various external advisors and stakeholders, identified conservation targets and their threats, developed indicators to assess their viability and devised various strategies and measures to ensure the long term sustainability of the Island's terrestrial environmental values. Together, these represent a testable hypothesis of conservation success that forms the basis of an "adaptive" approach to conservation management.

2.3.3 Sustainability accreditation

In 2010, the RIA implemented an internationally recognised organization wide sustainability program. The RIA subscribed to the EarthCheck Sustainability Accreditation Scheme – a leading global benchmarking program for travel and tourism, designed to help and encourage the industry to make and benefit from cost savings and worthwhile improvements in key sustainability performance areas [14].

The RIA fulfilled the EarthCheck benchmarking requirements for the accommodation, vehicle and community areas, focusing on energy, water, waste,



paper, cleaning and pesticides. In 2011, the RIA achieved ‘Bronze Certification’ and as a result has now established baseline reporting criteria.

The next stage of accreditation is ‘Silver’ which requires a comprehensive environmental risk assessment to be undertaken across all aspects of the operations. Environmental risk profiles were created with suggested treatment plans to mitigate risks and set annual performance targets. The RIA is in the process of finalizing the implementation of an Environmental Management System that meets or exceeds ISO 14001 standards.

Implementing an internationally recognized sustainability program has provided a framework for improving practices and independent assessment of progress. Promoting Rottneest Island as a sustainable tourism destination is a critical element of the Island’s tourism marketing strategy and fundamental to helping achieve economic sustainability on the Island. Targeted reductions in rates of resource usage (e.g. power, water, gas) and in all forms of waste have the potential to achieve long-term financial savings for the RIA and all other operators on the Island.

2.3.4 Development planning control

The RIA has recently reviewed and subsequently improved its development planning and assessment process that now apply to all internal and external operations undertaken by the RIA, its partners (e.g. Rottneest Island businesses, contractors) and private developers.

Development is limited to the designated Settlement Area, as specified in the Act, unless approved by the Minister or provided for in the RIMP. All developments will be subject to the development assessment and planning controls and will be formally assessed and managed to ensure consistency with the style and scale that is appropriate to Rottneest Island. Assessment will include ensuring compatibility with heritage and sustainability requirements.

Developments that may adversely affect the environment will be progressed in consultation with the Environmental Protection Authority (EPA) to ensure proposals conform to the WA *Environmental Protection Act 1986* or similar legal requirements that may apply during the life of the RIMP. Similarly, any other legally required determinations by third parties will be sought, including for health, heritage and Aboriginal heritage purposes.

Any proposed development that may have a significant impact on the environment, heritage or social aspects of the Island, including potential adverse impact on visitor amenity (e.g. additional traffic and noise) will be subject to public comment. Furthermore, the Minister responsible for the Authority may direct that public comment be sought for any proposed development. Together these measures provide a high level of protection for Rottneest Island from inappropriate development or cumulative impacts of development.

2.3.5 Social sustainability initiatives

Social sustainability initiatives include positioning the Island as an ethical tourism destination, Aboriginal reconciliation and economic opportunities for Aboriginal people, heritage conservation, community education and



interpretation, improving customer service, maintaining a safe and secure environment and volunteer support.

Education and involvement of RIA staff and partners (including contractors, volunteers and the business community) and Island visitors is an important component of developing a sustainability culture on the Island. Interpretation about sustainability initiatives tells visitors how they can help, allowing everyone to play a part in protecting Rottneest Island for future generations.

2.4 Climate change and global factors

Long-term planning is based on consideration of external factors including climate change, global trends including the global economic crisis and fuel prices, and emerging economic, social and environmental issues. Tourism Australia has identified climate change as the top challenge facing the Australian tourism industry in the next 10 years [3].

For Rottneest Island, climate change is most likely to damage features that attract visitors and exacerbate existing management issues including coastal erosion and cliff collapses, fire control and the success of vegetation restoration programs. A priority is to protect the Island's ecosystems to give them the best chance of adapting. Ecological systems are best able to adapt to change if they are healthy and intact. For instance, Rottneest Island's marine sanctuary zones were designated to provide such protection.

The RIA had commissioned a preliminary climate change vulnerability assessment to be undertaken that recommended priorities for further information gathering, research or development of adaptation strategies as a basis for future RIA management decisions [15].

The RIA has identified a suite of 'leading' commercial, market and societal indicators that will provide alerts to possible adverse effects on the Island and the RIA as an organisation. These indicators, for example the level of advance bookings, will be monitored on a quarterly basis to gauge any effects.

The RIA's corporate risk management framework will enable threats to be documented, rated with a risk level and management responsibility identified. Various responses are detailed in the corporate risk database.

3 Summary

The vision for Rottneest Island is it being a model of ethical tourism based on financial, environmental and social sustainability. Challenges to financial sustainability arise from significant costs associated with maintaining essential utilities and infrastructure, and conservation of environmental and heritage values.

Moving towards financial sustainability will include achieving additional funding through fees and charges and raising revenue through offering new services. The RIA will explore opportunities for Public Private Partnerships for delivery of its utility services. Specific projects will be funded through grants, private partnerships, commercial sponsorship and raising loans for revenue generating projects. Cost savings will include reprioritising expenditure.



Environmental and social sustainability will be achieved through implementation of a range of strategies. EarthCheck, a leading international tourism sustainability accreditation program provides the framework for working towards sustainability through a process of independent assessment of progress and benchmarking against other similar operations and best practice standards. Visitor research and the development of a sustainable visitor capacity model underpins planning of recreation facilities and management of popular sites in the Reserve.

The RIA has strengthened its development approval process to ensure that all planned developments are consistently assessed and do not adversely affect the Island's environmental, cultural and social values. The RIA will identify, monitor and respond to external threats and opportunities including climate change to ensure effective forward planning and risk management.

References

- [1] Sustainable Stuff, www.sustainablestuff.co.uk/what-ethicaltourism.html
- [2] Ecotourism Australia, www.ecotourism.org.au
- [3] Tourism Western Australia, *Tourism 2020 Discussion Paper*, 2008.
- [4] Sustainability, www.swinburne.edu.au/ncs/sustainability.htm
- [5] Queensland Parks and Wildlife Service, www.epa.qld.gov.au/parks_and_forests/activities_in_parks_and_forests/tourism_in_protected_areas_initiative/
- [6] Newsome D, Moore, SA, and Dowling RK, *Natural Area Tourism, ecology, impacts and management*, Channel View Publications, 2002.
- [7] Northcote, J. and Macbeth, J., Conceptualizing yield – sustainable tourism management, *Annals of Tourism Research*, Vol. 33 (1), pp. 199–220, 2006.
- [8] CRC for Sustainable Tourism, www.crctourism.com.au
- [9] Kangaroo Island Tourism Optimisation Model, www.tomm.info/
- [10] United Nations Environment Programme, Priority Actions Programme, *Mediterranean Action Plan: Guidelines for carrying capacity assessment for tourism in Mediterranean coastal areas*, Regional Activity Centre, 2006.
- [11] United Nations Environment Programme, Priority Actions Programme, *Mediterranean Action Plan: Carrying Capacity Assessment for tourism development*, Coastal Area Management Programme Fuka-Matrouh-Egypt, Regional Activity Centre, 1999.
- [12] Northcote, J., Scherrer, P. and Macbeth, J. 'Assessing sustainable visitor capacity for small island destinations: the case of Rottneest Island, Australia'. *International Conference. Sustainable Tourism: Issues, Debates and Challenges*, Anissaras-Hersonissos, Crete, 22–25 April, 2010.
- [13] Conservation Measures Partnership, www.conservationmeasures.org
- [14] EarthCheck, <http://www.earthcheck.org>
- [15] Coastal Zone Management Pty Ltd., *Rottneest Island Preliminary Climate Change Vulnerability Assessment*. Report for Rottneest Island Authority, 2011.

