

## Roebuck Bay Key Values & Management Issues - September 2009

In preparing for the future management of the Ramsar site, it is important to identify both the key values of the Roebuck Bay area and the issues to be faced in conserving those values.

Since 2006, when the initial **Issues Paper** was developed for the RBWG (Community Solutions 2006<sup>1</sup>) new issues have emerged and the priority of other issues has changed. These changes relate to the:

- increased shipping movements and development of Port of Broome activities in relation to the oil and gas industry, in particular as a supply base for the Browse Basin operations;
- proposal for a Marine Park or reserve in Roebuck Bay;
- the imminent resolution of Native Title agreements in relation to land and sea in and around Broome;
- implications and risks associated with climate change for Broome and surrounds;
- discovery of new information on species e.g. snubfin dolphin, new biota;
- increased occurrence of blue-green algae or Lyngbya;
- growing pressures due to development and reclamation of wetlands along the East Asian-Australasian Flyway, resulting in concerns about migratory shorebirds;
- impacts from 'new' invasive species or viruses such as Avian Influenza (Bird Flu) and Cane Toads;
- reports of diminishing stocks of cockles, mud crabs, Barramundi and Threadfin Salmon;
- burgeoning growth in Broome's resident population, and associated requirements for housing and other infrastructure, services and amenities;
- increased visitor numbers with increased demand for recreation and entertainment;
- changes to the 'sense of place' as the key elements of 'community' also change.

In December 2008, in the Ecological Character Description for Roebuck Bay (Bennelongia 2008 p.97), identified a number of key activities that posed threats to the Ramsar site and to the values of the Roebuck Bay area. Those activities were described in the following table:

**Table 1**

<b>Activity</b>	<b>Issues</b>	<b>Contributing to:</b>
Agriculture	Weeds, erosion, nutrients	Habitat disturbance, species and habitat loss; and changed water quality
Water abstraction	Seawater intrusion, changes to mangroves	Changed water quality and regimes
Urban & industrial development	Pollution through drainage, encroachment on habitat, increased disturbance; as well as loss of cultural values & recreational amenity	Habitat disturbance, species and habitat loss and changed water quality
Invasive species eg <i>Lyngbya</i>	Toxicity of the stage which accumulates along shore	Loss of recreational amenity, impacts on species and water quality,
Recreation & tourism	Disturbance	Habitat & species disturbance and to loss of cultural values

<sup>1</sup> Community Solutions (2006). Issues Paper prepared for the Roebuck Bay Working Group as part of the process of developing Interim Management Guidelines for Roebuck Bay. RBWG, Broome.

The **key values and management issues** at September 2009 are summarised in Table 2 below, and draws upon past Values Mapping work<sup>2</sup>, Interim Management Guidelines,<sup>3</sup> and the Issues Paper prepared as part of the Roebuck Bay community planning process, as well the Ecological Character Description (ECD)<sup>4</sup> and an advanced draft of the Crab Creek Management Plan<sup>5</sup>.

Often the activities and pressures present a common threat across many of the values, and the management issues are frequently interactive in their impacts on values.

**Table 2**

Key Values (a)	Management Issues
<b>ECOLOGICAL VALUES</b>	
- <i>shorebirds</i>	<ul style="list-style-type: none"> <li>- Habitat disturbance and loss</li> <li>- Species loss &amp; decline</li> <li>- Introduction of invasive species</li> <li>- Climate change e.g. sea level rise, temperature rises, increased rainfall in 'Wet' season; increased disease &amp; vectors, greater inundation of catchments.</li> </ul>
- <i>marine mammals</i>	<ul style="list-style-type: none"> <li>- Disturbance of birds and their habitat</li> <li>- Species loss &amp; decline.</li> </ul>
- <i>fish habitat</i>	<ul style="list-style-type: none"> <li>- Disturbance and injury from boats</li> <li>- Health of seagrass beds</li> </ul>
- <i>fringing vegetation</i>	<ul style="list-style-type: none"> <li>- Decline in water quality- relating to increased runoff, sedimentation &amp; changed flows into the Bay.</li> <li>- Loss &amp; fragmentation related to town site development, pastoral activity, changed fire regimes, introduced pests &amp; climate change</li> <li>- Maintain health of fringing mangrove vegetation-a fish &amp; prawn nursery and crab habitat</li> </ul>
- <i>benthic organisms</i>	<ul style="list-style-type: none"> <li>- Changed water regimes (increased groundwater drawdown, changed freshwater flows)</li> <li>- Species loss &amp; decline</li> <li>- Lyngbya</li> </ul>

Lambert J & Elix J (2004). Report on Roebuck Bay Values Mapping Project. Workshop report prepared for WWF Australia and National Shorebird Conservation Project. Community Solutions, Sydney.

<sup>3</sup> Lambert J & Elix J (2006). Interim Management Guidelines: A step towards community-based management planning for Roebuck Bay. Report to Roebuck Bay Working Group and WWF Australia. Community Solutions, Sydney.

<sup>4</sup> Bennelongia Pty Ltd (April 2009). Ecological Character Description for Roebuck Bay. Report to Department of Environment and Conservation, Perth Western Australia

<sup>5</sup> Sharon Griffiths & Associates. Mangalagun (Crab Creek) Draft Management Plan (June 2009). Prepared by Griffiths & Associates for the Roebuck Bay Working Group, Broome WA.

Key Values <sup>(a)</sup>	Management Issues
<b>ABORIGINAL CULTURAL VALUES</b>	
<ul style="list-style-type: none"> <li>- <i>spiritual</i></li>   <li>- <i>sustenance &amp; cultural</i></li> </ul>	<ul style="list-style-type: none"> <li>- Loss &amp; degradation of sites, both registered &amp; unregistered, as a result of human use pressures</li> <li>- Ensuring Aboriginal people's access to places along the song cycle system</li> <li>- Conflicts arising from cultural and social/recreation uses over the same area – results in increased feelings of marginalisation (anecdotal reports).</li> <li>- Increasingly difficult for Traditional Owners and custodians to access areas to undertake cultural responsibilities.</li>   <li>- Competition for diminishing resources and an increasingly mobile population</li> <li>- Increasing restrictions to access coast &amp; cultural resources</li> <li>- Sustainable hunting practices, especially marine mammals</li> <li>- Widening socio-economic gap (greater need for low income families to have access to food, medicine and free recreation opportunities)</li> <li>- Aboriginal health and wellbeing status is low and at greater risk with restricted access to sea food and cultural resources.</li> </ul>
<b>SOCIO-CULTURAL VALUES</b>	
<ul style="list-style-type: none"> <li><b>Recreational</b></li>   <li>- <i>fishing</i></li>   <li>- <i>leisure activities</i></li>   <li>- <i>boating</i></li> </ul>	<ul style="list-style-type: none"> <li>- Roebuck Bay is close, popular and accessible to town population</li> <li>- Reduced access to coastal areas for free recreation and camping</li> <li>- Greater access to remote areas due to prevalence of more sophisticated vehicles &amp; craft (land, sea and air travel) well-equipped with modern technology eg GPS, fish finders, freezers &amp; satellite phone</li> <li>- Increased numbers of people using pleasure craft e.g. jet skis, speed boats, yachts, off-road vehicles and motor cycles.</li> <li>- A growing number of boats registered in Broome (increased pressure from more people on water, more fishing, more litter, more pollution)</li>   <li>- Over-fishing</li> <li>- Competition between commercial, recreational and Indigenous harvest</li> <li>- Conflicting values re Aboriginal cultural practices, often not known or understood by non-Indigenous people.</li>   <li>- Increased leisure time, &amp; therefore human pressures; and loss of amenity e.g. vehicles on beach, litter and waste.</li> <li>- Areas used by tourists and for leisure are often those holding cultural significance</li>   <li>- Boat speeds and manoeuvres injure &amp; disturb marine mammals</li> <li>- Demand for safe boat ramp for launching &amp; retrieval in the Bay</li> <li>- Pollution from outboard motors, other motorised pleasure craft;</li> <li>- Waste disposal.</li> </ul>

Key Values <sup>(a)</sup>	Management Issues
<p><b>Historical/heritage</b></p> <p><b>Sense of Community</b></p>	<ul style="list-style-type: none"> <li>- Natural heritage values are not generally known or understood, except in relation to migratory shorebirds</li> <li>- Increased understanding and respect for the historical links between the Broome community and Roebuck Bay</li> <li>- Lack of awareness of registered and unregistered sites around foreshores eg middens, Mangrove Point (Old jetty), flying boat wrecks, traditional fish traps, and Aboriginal burial sites.</li> </ul> <ul style="list-style-type: none"> <li>- Population growth and changing community profile have implications for management: <ul style="list-style-type: none"> <li>o Rapidly growing resident population, predicted to double by 2028</li> <li>o A significant population of young, itinerant, short term residents mostly non-Indigenous</li> <li>o Diminishing percentage of Aboriginal residents in Broome – now around 33%</li> <li>o Widening income gap between sectors of the population</li> <li>o Large numbers of elderly visitors during Dry season; often long-stay independent travellers who reportedly place considerable human pressure on coastal resources, and due to mobility restrictions, require easy access to Roebuck Bay.</li> </ul> </li> </ul>
<p><b>ECONOMIC VALUES</b></p> <p>- <i>shipping &amp; port activities</i></p> <p>- <i>tourism</i></p> <p>- <i>fishing</i></p> <p>- <i>pearling</i></p> <p>- <i>pastoral activities</i></p>	<ul style="list-style-type: none"> <li>- Rapid increase in Port activity in response to commercial interests and pressures</li> <li>- Larger ships entering and leaving the Port</li> <li>- Increased risk of contamination of water, land and air</li> <li>- Growing risk of introduced pests &amp; diseases from increase in shipping movements (and increased international exposure)</li> <li>- Land clearing adjacent to port causing loss of natural vegetation and increased runoff and erosion</li> <li>- Risk of pollutants entering Bay with greater industrial activity</li> </ul> <ul style="list-style-type: none"> <li>- Tourist numbers increasing (up to 237,000 annually in Broome)</li> <li>- Greater interest in nature-based tourism, much of which is unsupervised, or self-drive</li> <li>- Impacts of Hovercraft unknown</li> </ul> <ul style="list-style-type: none"> <li>- Over-fishing</li> <li>- competition for take from commercial, recreational and Indigenous fishers</li> </ul> <ul style="list-style-type: none"> <li>- Increase in lease areas over favoured near-shore fishing spots</li> </ul> <ul style="list-style-type: none"> <li>- Diversification of pastoral leases to incorporate tourism increasing human pressures on the coast and water courses that lead into the Bay</li> <li>- Increased live cattle exports causing pollution, spread of weeds, greater number of shipping movements.</li> </ul>

<ul style="list-style-type: none"> <li>- <i>industrial development</i></li>   <li>- <i>town site development</i></li> </ul>	<ul style="list-style-type: none"> <li>- Increased industrial development in region, often with Broome Port as supply base</li> <li>- Increased activity to support off-shore R&amp;D eg minerals, oil &amp; gas;</li>   <li>- Increased residential &amp; tourism developments</li> <li>- Increased runoff from hardened (sealed and impervious) surfaces</li> <li>- Reduction in natural areas for recreation</li> <li>- Pressure on limited resources &amp; demand for essential services eg water, power &amp; waste disposal. disposal, energy provision</li> <li>- Clearing of natural vegetation cover i.e. loss and fragmentation of ecosystems, increased erosion.</li> <li>- Use of introduced species in gardens &amp; public landscaping</li> <li>- Increased use of water &amp; fertilisers, which may enter the Roebuck Bay system</li> <li>- New wastewater treatment plant; ground water intrusion, crop management etc. Developments of higher density and closer to coast will result in even greater human pressure on the coast</li> <li>- Coastal buffer zone needed between developments &amp; Roebuck Bay.</li> </ul>
<p><b>SCIENTIFIC &amp; EDUCATIONAL VALUES</b></p>	<ul style="list-style-type: none"> <li>- Ensure information collected on the Bay is available to land managers and owners (and the RBWG)</li> <li>- Need for cultural protocols and community/social protocols to be followed by researchers, volunteers and research organisations</li> <li>- Gaps in available data</li> <li>- Access to healthy coastal Country needed for cultural transmission</li> <li>- Incorporating new knowledge &amp; discoveries eg turtles recorded as nesting at Crab Creek, prevalence of snubfin dolphins etc.</li> </ul>
<p><b>INTRINSIC &amp; AESTHETIC VALUES</b></p>	<ul style="list-style-type: none"> <li>- Inappropriate sighting of town site development may reduce water views, open breezeways and access to Roebuck Bay</li> <li>- Maintaining viewing areas &amp; access points to highly valued scenery is vital (also affects economics eg tourism events such as Staircase to Moon)</li> <li>- Ensure ongoing sense of broad community ‘ownership’ (stated as <i>not just a place for business and tourists.</i>)</li> <li>- Commercial operations on the Bay can reduce ‘quiet enjoyment’ and reduce visual amenity.</li> <li>- Promote and encourage community stewardship for Roebuck Bay.</li> </ul>

**Note:** <sup>(a)</sup> In Ramsar terms ‘Values’ are generally thought of as ‘Ecosystem services’ or the benefits that people obtain from the ecosystem (the wetlands and their surrounding management area). These benefits may be ecological, but they may also be cultural, recreational, economic or scientific and educational. The factors that have the potential to fundamentally change those values are considered within the Ramsar framework as ‘Key components and processes’. Consideration of these interactions and the levers within the system that have greatest potential to cause a reduction or loss off values helps in identifying the key management issues.