

Proposed Lalang-garram / Horizontal Falls and North Lalang-garram marine parks, and proposed Oomeday National Park

Draft joint management plan 2015

Department of Parks and Wildlife

dambimangari Aboriginal Corporation

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WARNING: This plan may contain names and images of deceased Aboriginal people.

This management plan was prepared by the Department of Parks and Wildlife's Planning Branch with the Dambimangari Aboriginal Corporation and other Dambimangari Traditional Owners.

NB: The spelling of some of the local Indigenous words for country and species of plants and animals are different in different Traditional Owner documents. This is primarily due to the fact that establishing a formal and consistent 'sounds for spelling' system for a language that did not have a written form takes time to develop and refine. This is a project that is being undertaken by Dambimangari Aboriginal Corporation and other Dambimangari Traditional Owners. The project will be finalised in the near future once sufficient work has been conducted with senior Traditional Owners. Within this document, spelling may therefore differ between quotes from previously published documents and this management plan which reflects current spelling.

Questions regarding this plan should be directed to:
Planning Branch
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17 Dick Perry Avenue Kensington WA 6151
Locked Bag 104 Bentley Delivery Centre WA 6983
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The recommended reference for this publication is:
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This document is available in alternative formats on request.

Invitation to comment

This draft management plan has been released for a three-month period to provide the public with an opportunity to comment on how the proposed marine and terrestrial parks are proposed to be managed over the next ten years.

To ensure your submission is as effective as possible:

- be clear and concise
- refer your points to the page numbers or specific sections in the plan
- say whether you agree or disagree with any or all of the management arrangements – clearly state your reasons, particularly if you disagree
- give sources of information where possible
- suggest alternatives for those aspects of the plan with which you disagree.

The draft joint management plan will be reviewed in light of the submissions, according to the criteria outlined below. A summary of public submissions will be made available along with the final management plan.

The draft joint management plan may be amended if a submission:

- provides additional information of direct relevance to management
- indicates a change in (or clarifies) government legislation or management policy
- proposes strategies that would better achieve management objectives
- indicates omissions, inaccuracies or a lack of clarity.

The draft joint management plan may not be amended if a submission:

- clearly supports proposals in the plan or makes general or neutral statements
- refers to issues beyond the scope of the plan
- refers to issues that are already noted within the plan or already considered during its preparation
- is one among several widely divergent viewpoints received on the topic but the approach in the plan is still considered the best option
- contributes options that are not feasible (generally due to conflict with legislation or government policy)
- is based on unclear or factually incorrect information.

Submissions should be made online at: **www.dpaw.wa.gov.au/horizontalfalls**

Alternatively, you can write to:
Planning Branch
Department of Parks and Wildlife
Locked Bag 104
Bentley Delivery Centre WA 6983

Above: The rugged landscape of the proposed national park. Photo – Melissa Loomes /Parks and Wildlife

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Waterfall flowing into *Ganbadba* (Talbot Bay). Photo – Kimberley Media

1 Introduction

1.1 A special place

The proposed Lalang-garram / Horizontal Falls and North Lalang-garram marine parks and the proposed Oomeday National Park lie within Dambimangari people's native title determination area along Western Australia's Kimberley coast (Maps 1 and 2). For thousands of years Dambimangari people have depended on and looked after their traditional land and saltwater country and the area remains one of the last relatively undamaged coastal areas left in the world (Halpern *et al.* 2008).

> Our community has a strong vision for looking after our country. We want to make sure our traditional knowledge is alive and strong and that all plants, animals and cultural sites are looked after.
>
> Leah Umbagai (Dambimangari Aboriginal Corporation 2012)

The proposed parks are being established under the *Kimberley Science and Conservation Strategy*, the State Government's bold plan to conserve the region's natural and cultural values. The strategy provides for the creation of one of the world's largest networks of interconnected marine and terrestrial reserves, which will be jointly managed with Traditional Owners.[1] Within this network, the proposed Lalang-garram / Horizontal Falls Marine Park and the proposed Oomeday National Park will protect world-renowned *Garaanngaddim* (the Horizontal Falls), one of the most significant tourist attractions along the Kimberley coast, and surrounding areas. The proposed North Lalang-garram Marine Park will include the northern extent of Dambimangari saltwater country. Together with the existing Lalang-garram / Camden Sound Marine Park and the proposed North Kimberley Marine Park, these marine parks will contribute to the proposed Great Kimberley Marine Park, which will cover about three million hectares (or 30,000km^2) of Western Australian coastal waters from west of *Ganbadba* (Talbot Bay)

[1] Traditional Owners are Aboriginal people who belong to, have the right to speak for, and have spiritual responsibilities for the care of a certain place or places based on their own laws and customs. Traditional Owners are directly descended from the original inhabitants of the land and may also be the common law holders of native title for the country being discussed.

to the Northern Territory border. The *Kimberley Science and Conservation Strategy* will also achieve important social and economic outcomes by providing increased opportunities for Aboriginal involvement and employment in land and sea management, and by promoting nature and culture based tourism.

The diverse land and seascapes of the proposed marine and national parks include spectacular gorges and waterfalls, islands with fringing *wooddooroo* (coral reefs) and *jindim* (mangrove) lined creeks and bays. The proposed parks lie in the traditional country of the Dambimangari people who have continuing rights and responsibilities for these areas. These proposed parks also provide a stunning setting for visitors and the opportunity to learn about the continuing rich cultural heritage values of the area. Visitors can experience the awe-inspiring *Garaanngaddim* (Horizontal Falls), watch wildlife in the natural environment and fish for *iledda* or barramundi (*Lates calcarifer*) in *jindim* (mangrove) lined creeks. The proposed marine and national parks are within the west Kimberley region, included in the Australian National Heritage list for nationally significant natural, Aboriginal and historical values (Department of Environment 2015).

Under traditional law, Dambimangari people have responsibility to look after country and keep it healthy. Every rock, plant, fish, river and beach is important to Dambimangari people (Dambimangari Aboriginal Corporation 2012). Everything is connected and tightly interlinked and Dambimangari people consider the cultural and natural values of land and saltwater country to be one and the same. For Traditional Owners there is a rich body of oral narratives about the era when the land, the seas, the heavens and all within were created and named. This time is referred to as *Lalai*, also called Dreaming, Dreamtime or Aboriginal Law in Kimberley Kriol. All of the land and sea country in the proposed parks holds special significance.

Within Dambimangari country there are also significant cultural sites including rock art, burial sites, middens, stone arrangements, hunting places, water sources, camping areas and important mythological areas. These cultural sites are evidence of the very long historical connections to, and the use and occupation of the land and sea by the ancestors of today's Traditional Owners, who have continuing contemporary connections to these areas. Visitors to Dambimangari country should be aware that for exclusive native title areas, permission is required from the Traditional Owners and/or the Aboriginal Lands Trust to access any cultural sites or areas of country not within the boundaries of the parks.

The creation of the proposed class 'A' marine and national parks will enhance opportunities for recreation and tourism, research and education, and protection of the area's cultural and natural values. The proposed parks will be jointly managed by Dambimangari Traditional Owners and the Department of Parks and Wildlife (Parks and Wildlife).

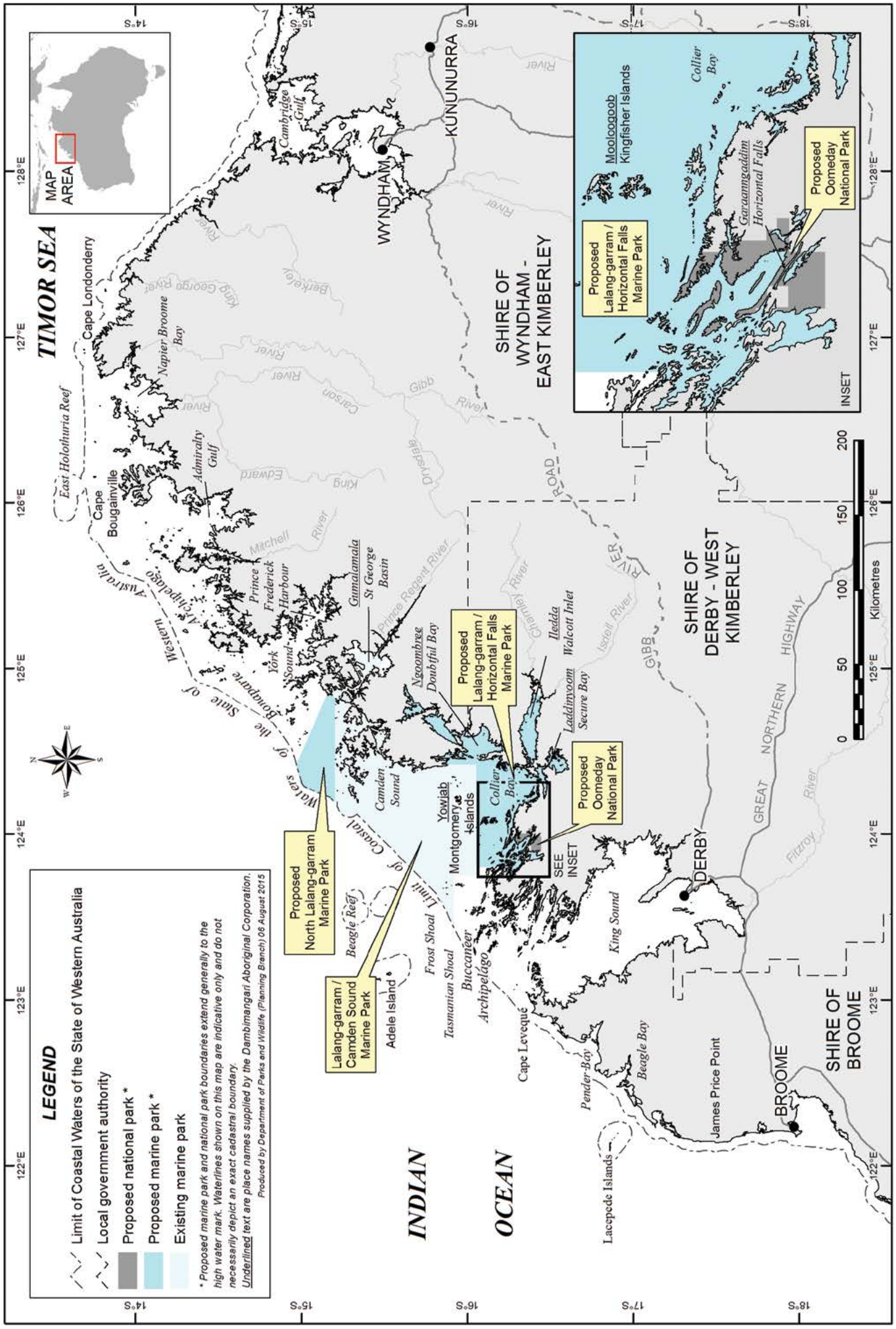
Names of the proposed parks

Senior Dambimangari woman, Mrs Janet Oobagooma, suggested that the marine parks include the name 'Lalang-garram' which evokes the saltwater as a spiritual place as well as a place of natural abundance. *Lalang-garram* is the word in Worrorra (one of the Dambimangari native title group languages) that evokes 'the ocean' in its most general sense. The Dambimangari Traditional Owners chose this word to name the marine parks, including the existing Lalang-garram / Camden Sound Marine Park, for cultural reasons that respect the idea of 'saltwater', without meaning just one place or one part of their traditional country (DAC pers. comm. 2012, 2015).

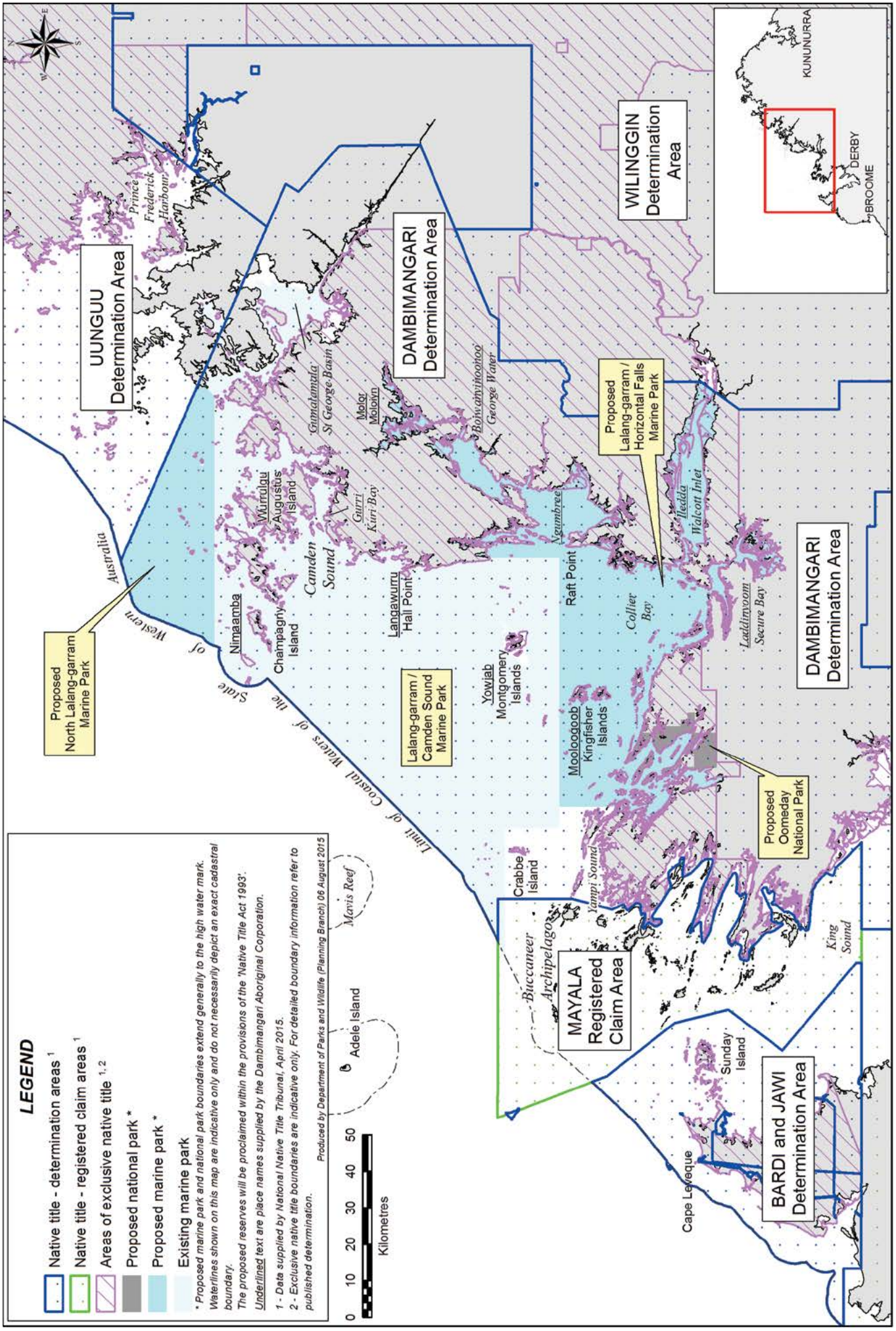
Dambimangari Traditional Owners have suggested the name 'Oomeday' for the proposed national park. *Oomeday* is derived from the name of the language of this area. It also refers to the people of this country and the area of land and sea country, including islands, in the park.

Goojoorm (Molema) Island is one of only about 20 of the 2,600 or so islands along the Kimberley coast that are more than 1,000ha in size. It is surrounded by the ecologically important Turtle Reef. Photo – Kimberley Media

Map 1 Location of the proposed parks



Map 2 Native title claim and determination areas within and adjacent to the proposed parks



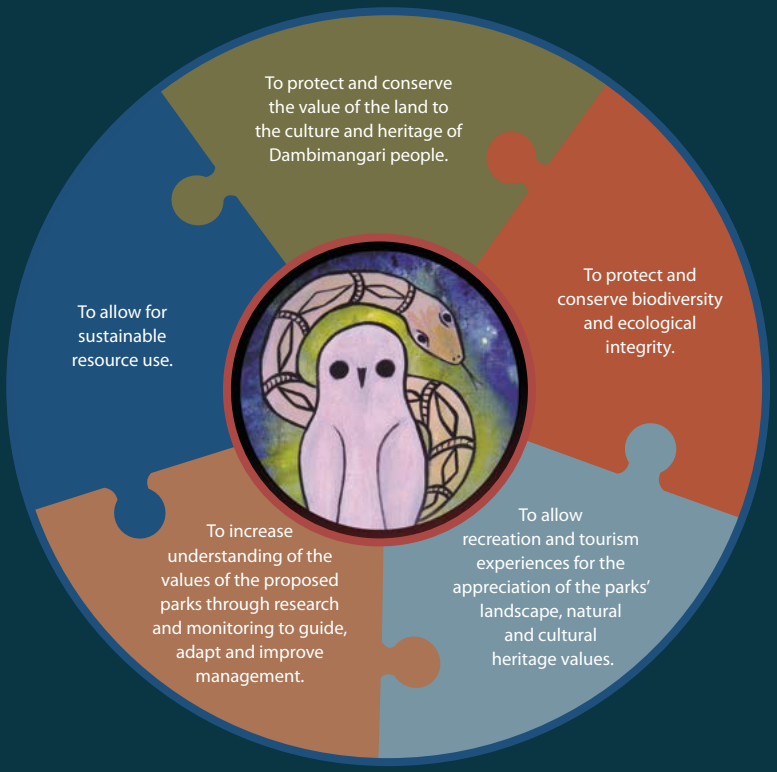
1.2 Vision and strategic objectives

McClarty Range and Horizontal Falls. Photo – Kimberley Media

Vision for the proposed parks

The continuing rich cultural heritage and outstanding natural values of the proposed parks will be jointly managed for conservation, visitor enjoyment and shared use with Dambimangari people.

The following strategic objectives provide broad direction for management.



1.3 Values of the marine and national parks

A summary of the values is given below. See the sections *Marine park values, Proposed marine parks: values and management summary* and *Proposed national park: values and management summary* for more detailed information on park values.

Dambimangari cultural and heritage values

Dambimangari Traditional Owners are saltwater people who, like their ancestors, continue to use both bush and sea resources within their country. The name Dambimangari comes from *dambima* meaning 'homelands' and *ngari* meaning 'belong to'. Dambimangari people follow the laws and beliefs of the *Woongudd* (the creator snake) and *Wandjina* (the creator ancestors) (Dambimangari Aboriginal Corporation 2012).

> We believe all the land, sea, heaven and all living things were put there by *Wanjina* and *Wunggurr*. They made the law and rules by which we live. They set out the way we must look after Dambimangari culture, plants, animals, people and country to keep them healthy.
>
> Dambimangari Aboriginal Corporation 2012

Dambimangari country covers an area of about 27,900km^2 between "*Ungarrang* at the bottom of Kimbolton to *Marlundum Arn Nowngoy* in the Prince Regent area" (Dambimangari Aboriginal Corporation 2012). The significance of the cultural heritage values in this region has been recognised as part of the West Kimberley National Heritage listing, protected under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). Much of Dambimangari country is also included in the National Reserve System through the Dambimangari Indigenous Protected Area (IPA).

Dambimangari people have a deep spiritual connection to country through their continuing body of knowledge, and oral traditions of *Lalai*. Under traditional law they have an obligation to care for country and ensure their culture is passed on to future generations. They do this through customary activities which include hunting for food, visiting important cultural places, making medicines, keeping rock art fresh, passing on *Lalai* narratives, managing country through fire at the right time of year and engaging in ceremonial events. Through customary activities, Dambimangari people maintain their traditional relationships with their land and saltwater country, share knowledge and participate in traditional practices. Cultural sites that are extremely important to Dambimangari people, such as rock art sites, stone arrangements, burial sites and important camping beaches, tell different narratives about creation and how the earth was formed. Visiting these sites helps Dambimangari Traditional Owners maintain connection to country and their ancestors (Dambimangari Aboriginal Corporation 2012).

Particular animals and habitats are culturally important to Dambimangari Traditional Owners, and many animals have their own songs and oral traditions. In the *Dambimangari healthy country plan 2012-2022* (Healthy country plan) Dambimangari people have identified the following management targets:

- cultural sites
- reefs, beaches and islands
- *jaya* (saltwater fish)

- *jurluwarra* (turtles) and *warliny* or dugongs (*Dugong dugon*)
- *ngununbany* (whales) and *jigeedany* (dolphins)
- rivers, *argoom* (waterholes), waterfalls and wetlands (freshwater systems)
- culturally important native animals
- bush fruits and medicine plants
- right-way fire.

The key values identified for the marine and national parks complement the management targets for the Dambimangari IPA outlined in the Healthy country plan.

Stone arrangements

There are many stone arrangements of high cultural significance to Dambimangari people in and around the islands and mainland. Visitors must take care to not displace or move any rocks or stones when visiting the parks and Dambimangari country.

Stone arrangement associated with a *Lalai* narrative. Photo – Kim Doohan and Joh Bornman/DAC

Stone arrangements are found in the national park and the marine park. They are not always obvious to an untrained eye. Stone arrangements vary from individual stones to hundreds of stones over many tens of metres or in large piles; from small distinctive stones to geoglyphs in complex monumental formations and some are standing and others lie flat. Stone arrangements are part of the history of the Dambimangari Traditional Owners indicating resource use, fishing and hunting techniques, wind breaks, funerary and occupation sites as well as *Lalai* narratives. No stones should be removed or relocated from where they are found – you might be damaging an important historic monument.

DAC pers. comm. 2015

Cascading into Dugong Bay, this waterfall flows during the wet and early dry season. Photo – Kimberley Media

Natural values

Cultural and natural values in Dambimangari land and saltwater country are enmeshed in a rich tapestry of oral traditions and material manifestations of land and sea forms, rock art and stone arrangements. The proposed parks feature dramatic, rugged ridges incised by steep valleys and a convoluted coastline of estuaries, bays and offshore islands. The well known *Garaanngaddim* (Horizontal Falls) is a waterfall-like effect created when powerful tidal currents rush through two narrow coastal gorges. For the Dambimangari Traditional Owners the falls are one aspect of the manifest power of their sea country – the *Woongudd* (creator snake). Beneath the waves, the proposed marine parks have a complex bathymetry, with depths changing quickly from channels to shoals (Wilson *et al*. 2011). The North Lalang-garram Marine Park has a rocky coastline about four kilometres in length and a number of islands fringed with *wooddooroo* (coral reefs).

The tropical monsoonal climate has distinctive wet and dry seasons. Dambimangari Traditional Owners further understand the seasons in terms of complex interactions between plants, animals, fish, tides and climatic conditions. For instance, when spinifex is flowering Dambimangari people know that the sea mullet are fat and good to eat. When the weather is cold the tides are 'slow and heavy'. The wet season rains create lush green growth and impressive waterfalls. Widespread river systems that feed into *Iledda* (Walcott Inlet) and *Ngumbree* (Doubtful Bay) flush large amounts of nutrients into the proposed Lalang-garram / Horizontal Falls Marine Park and help sustain the abundant wildlife (Warren Barunga pers. comm. 2014).

The proposed Lalang-garram / Horizontal Falls Marine Park experiences one of the largest tidal ranges in Australia, up to 11m (Short 2011). The large tides create extensive intertidal areas with diverse ecosystems such as *wooddooroo* (coral reefs), *jindim* (mangroves) and mudflat communities (Waples 2007). For the Dambimangari Traditional Owners the intertidal area is an important part of their identification as saltwater people. The subtidal habitats and communities of the proposed marine parks include diverse filter-feeding communities of sponges and hard and soft corals.

The intertidal and subtidal habitats of the proposed marine parks provide critical foraging and nursery areas for a wide range of threatened, protected and culturally important species such as *walyn* (dugong), *jalawadda* (turtle), *goiyoiya* or estuarine crocodile (*Crocodylus porosus*), *ngununbany* (whale), *jigeedany* (dolphin) and migratory seabirds (Mustoe and Edmunds 2008). The proposed marine parks also fall within an area of the Kimberley identified as the principal calving habitat for humpback whale group D, the largest humpback whale population in the world (Jenner *et al*. 2001; Costin and Sandes 2009).

In the proposed national park, the threatened *wijingadda* or northern quoll (*Dasyurus hallucatus*) and *woonganbandj* or golden backed tree rat (*Mesembriomys macrurus*) inhabit the savanna woodland that cloaks the deeply incised sandstone landscape.

Recreation and tourism values

With their spectacular scenery, diverse wildlife and cultural values, the proposed parks provide excellent opportunities for nature and culture based tourism experiences and recreational activities. One of the major drawcards to the Kimberley is the world-renowned *Garaanngaddim* (Horizontal Falls), where tourists either ride the tidal currents by boat or view the impressive feature on scenic flights. Nearby, in the proposed Oomeday National Park people also visit waterfalls near Dugong Bay. Other popular sites in and around the proposed marine parks include the picturesque *Jaanya* (Sale River), *Laddinyoom* (Secure Bay) which is a renowned fishing spot and *Ngumbree* (Raft Point) where visitors view Aboriginal rock art[2] (Scherrer *et al*. 2008). The abundance of wildlife, including large numbers of humpback whales during the breeding season, is regarded by Dambimangari people as an indicator of a healthy marine environment and is also a significant attraction for visitors.

> Traditional Owners understand that travelling through falls has become a popular attraction for tourists, however, Traditional Owners used to go through when the tide was calm, neap tides. Today people want to go through when the tide is rushing – it is a dangerous place – *Mamaa*.
>
> DAC pers. comm. 2015

Residents of Derby and Broome travel by boat to the proposed parks to enjoy the excellent fishing and beauty of the area. Overseas and interstate tourists are also visiting the proposed parks in increasing numbers, as the Kimberley region grows in recognition and popularity as a tourism destination (Scherrer *et al*. 2008).

The most common form of tourism in the parks is the expedition cruise boat industry with multi-day tours operating in the dry season between Broome and Wyndham. Vessels range from small fishing and sight-seeing tour boats to large luxury cruise ships carrying around 100 passengers. The developing nature-based tourism industry provides opportunities to contribute to social, cultural, economic and environmental outcomes for the Kimberley. The Kimberley attracts some 313,000 domestic and 35,600 international visitors annually, accounting for approximately 2.5 million visitor nights and $333M in visitor spend (Tourism Western Australia 2014). One of the development priorities for tourism in the region is the sealing of the road from Broome to Cape Leveque (Main Roads Western Australia, 2015).

Kingfisher Island. Photo – Roanna Goater/Parks and Wildlife

[2] The art site at Raft Point lies within Dambimangari people's exclusive possession native title area. Visitors must seek permission from Dambimangari Traditional Owners before their visit.

Resource use

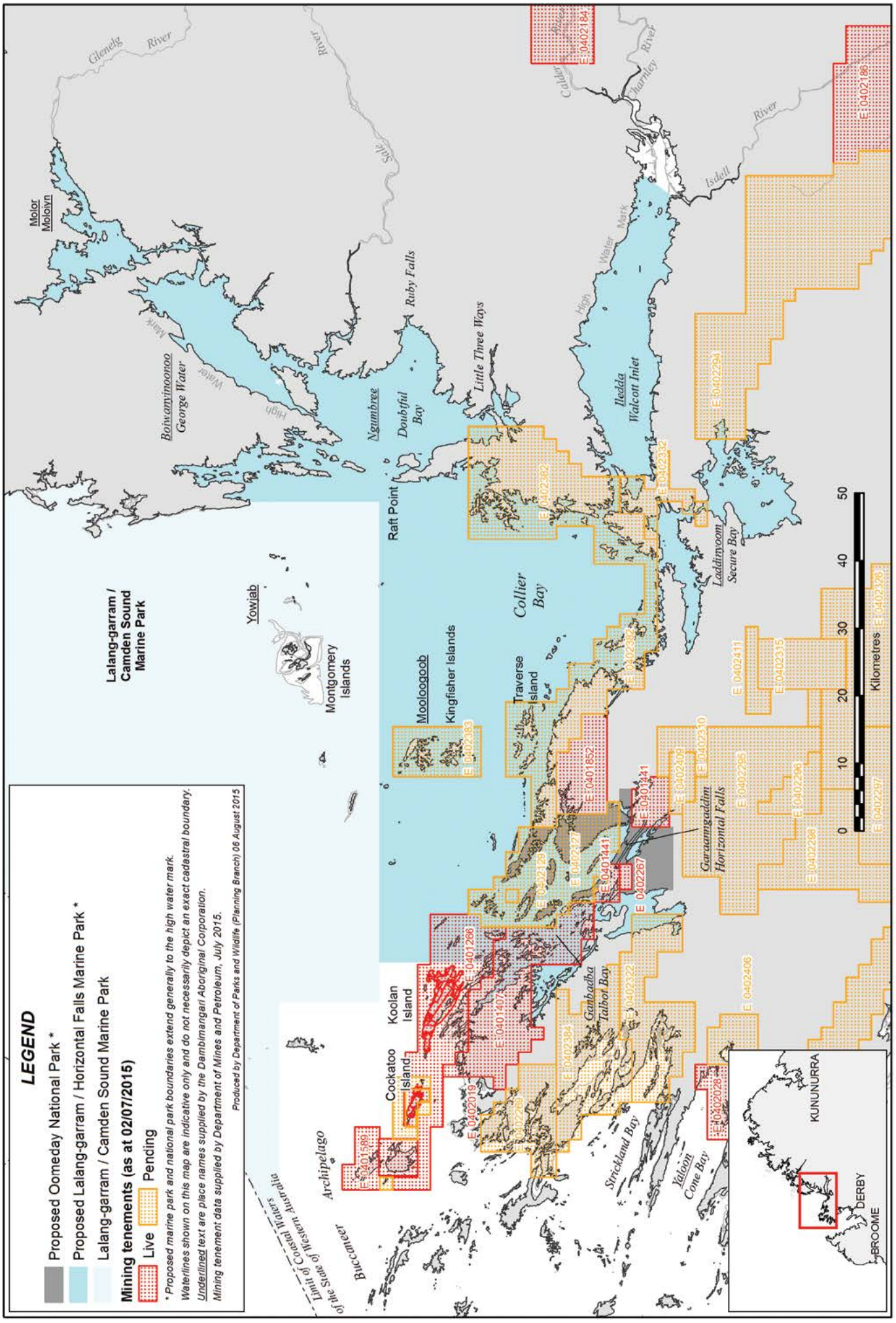
Commercial fishing is also important to the region's economy. Commercial fisheries operating in the proposed Lalang-garram / Horizontal Falls Marine Park include the Kimberley Gillnet and Barramundi Managed Fishery, Kimberley Prawn Managed Fishery and a developing Mud Crab Fishery. The Mackerel Managed Fishery also operates in the proposed North Lalang-garram Marine Park in addition to the Kimberley Prawn Managed Fishery. Other fisheries licensed to operate in the proposed marine parks include the Northern Demersal Scalefish Fishery, the Marine Aquarium Fishery, the Specimen Shell Managed Fishery and the Beche de mer Fishery. The Joint Authority Northern Shark Fishery has been inactive since 2008. The Kimberley is also important for pearl production and there is a pearling lease in the proposed Lalang-garram / Horizontal Falls Marine Park.

There are no current mineral or petroleum developments in the proposed marine or national parks, although mineral exploration tenements overlay some areas in and/or around the proposed Lalang-garram / Horizontal Falls Marine Park and Oomeday National Park (Map 3). These are rich in mineral deposits such as iron ore and copper. There are two iron ore mines located on Koolan and Cockatoo islands to the west of the proposed Lalang-garram / Horizontal Falls Marine Park.

The expedition cruise boat industry is the main form of tourism in the area. Photo – Sarah Bignell/Parks and Wildlife

Left: Mud crab. Photo – Clay Bryce
Right: Barramundi. Photo – Department of Fisheries

Map 3 Mining tenements within and adjacent to the proposed parks



2 Management context

This draft joint management plan has been prepared in partnership with Dambimangari people and with input from key stakeholders. It aims to conserve the values of the proposed marine and national parks in the long term. It provides strategic direction through a summary of policies and guidelines, and operations proposed to be undertaken in the parks. This management plan also provides guidance for operational plans that provide more specific on-ground management direction. Performance assessment processes will also feed into adaptive management at both the strategic and operational planning level.

This draft plan takes into account the values, aspirations and management objectives articulated in a number of Traditional Owner documents such as the North Kimberley saltwater country plan, the Healthy country plan, management programs under the IPA and the Indigenous ranger programs. The plan also aims to complement the management objectives of the jointly managed *Lalang-garram / Camden Sound Marine Park management plan 2013-2023*.

Dambimangari Traditional Owners have determined native title rights and interests based on strong and ongoing cultural connections over their land and saltwater country. This draft plan does not provide any additional restrictions on the exercise of Dambimangari people's native title rights save to the extent otherwise agreed by native title holders or in accordance with the *Conservation and Land Management Act 1984* (CALM Act) and Conservation and Land Management Regulations 2002 (CALM Regulations). Determined native title rights within the marine and national parks include the right to enter, travel and remain on the land and waters; the right to hunt, fish, gather and use resources for personal, domestic and communal needs; the right to undertake cultural activities; and the right to take and use water.

The proposed parks will be managed via a landscape-scale approach that seeks to coordinate management of fire, weeds and introduced animals in partnership with neighbouring land managers (Map 4). This draft joint management plan should be viewed as part of a management framework for the lands and waters within and around the proposed parks.

The proposed parks will be managed in accordance with the provisions of the CALM Act, *Wildlife Conservation Act 1950* (Wildlife Conservation Act), Parks and Wildlife policy and other legislation mentioned throughout this plan.[3]

Once finalised, this plan will guide management of the proposed marine and national parks for 10 years from the date the parks are gazetted. It is intended that the management of the proposed parks will be integrated with the existing Lalang-garram / Camden Sound Marine Park. A five year review may be undertaken and if the management plan is to be amended, the proposed changes will be released for public comment. If the plan is not reviewed and replaced by the end of the 10 year period, this plan will remain in force until a new plan is approved.

The creation of the proposed parks helps fulfil Australia's responsibilities under several international conventions, such as the Convention on Biological Diversity, and supports the International Union for the Conservation of Nature's (IUCN) Protected Areas Program. The proposed marine parks also contribute to the National Representative System of Marine Protected Areas (NRSMPA). The creation of the national park will provide security of tenure and contribute to a comprehensive, adequate and representative reserve system.

[3] Relevant legislation and policies can found on the Parks and Wildlife website at www.dpaw.wa.gov.au/about-us/36-policies-and-legislation.

Left: Dambimangari Traditional Owner Adrian Lane and other Parks and Wildlife staff on country. Photo – Paul Bell
Right: Parks and Wildlife staff conducting video surveys. Photo – Todd Quartermaine

2.1 Joint management

The proposed marine and national parks will be jointly managed by Dambimangari Traditional Owners and Parks and Wildlife. Joint management will be given effect under the CALM Act through a section 56A Joint Management Agreement (JMA) between Dambimangari people and Parks and Wildlife. The Western Australian Government is currently negotiating an Indigenous Land Use Agreement (ILUA) with Dambimangari Aboriginal Corporation (DAC) to ensure the creation of the reserves meets the requirements of the *Commonwealth Native Title Act 1993* (Native Title Act). Once agreed, the ILUA will enable the creation of the proposed national park and the reservation of intertidal areas within the proposed marine parks.

For formal joint management to occur, the final joint management plan will require the Chief Executive Officer of Parks and Wildlife to jointly manage the proposed parks. Formal joint management can commence once the proposed parks have been created and a JMA has been signed and attached to the final joint management plan. The JMA will establish a Joint Management Body (JMB) with representatives from DAC and Parks and Wildlife to manage the proposed parks in accordance with the agreement and the CALM Act.

The JMB will oversee management of the proposed parks, make management decisions, provide strategic input into how management strategies are implemented, and monitor implementation of the plan. Operational responsibility will be coordinated by Parks and Wildlife, under the guidance of the JMB.

2.2 Monitoring management effectiveness

Objectives and strategies define the management direction for the parks, and are complemented by a set of performance measures and targets. Two statutory bodies are responsible for periodic assessment of this joint management plan. For the marine parks, the Marine Parks and Reserves Authority (MPRA) is responsible for conducting periodic assessments in accordance with section 26B(1)(f)(iii) of the CALM Act. The MPRA audit process has been formulated in conjunction with Parks and Wildlife and is guided by an audit policy and a performance assessment framework. In relation to the proposed national park, the Conservation Commission will measure the success of this plan in accordance with section 19(1)(g)(iii) of the CALM Act. The JMB, DAC and Parks and Wildlife will provide information to the MPRA and Conservation Commission to enable an assessment of the plan's implementation. Monitoring by the MPRA and Commission would be informed by healthy country assessments under the Healthy country plan. This outcome-based approach provides a robust framework to support adaptive park management.

Anemones, sponges and corals on Turtle Reef, Talbot Bay. Photo – Kimberley Media

3 Proposed Lalang-garram / Horizontal Falls and North Lalang-garram marine parks

The proposed Lalang-garram / Horizontal Falls Marine Park lies within the Dambimangari determination area and will cover about 353,000ha from *Ganbadba* (Talbot Bay) in the west to *Iledda* (Walcott Inlet) and *Molor Moloiyn* (Glenelg River) in the east. The proposed marine park will provide protection to the remarkable Kimberley marine environment and along with the proposed national park will enhance tourism opportunities around the internationally recognised *Garaanngaddim* (Horizontal Falls). The proposed North Lalang-garram Marine Park lies between Lalang-garram / Camden Sound Marine Park and the proposed North Kimberley Marine Park and will cover about 110,000ha. This area is included in this joint management plan to enable integrated management for all marine parks in Dambimangari saltwater country (Map2).

Most visitors to the proposed marine parks arrive by boat or seaplane. The only road access in the area is the four-wheel drive Munja Track, which leads to the upper reaches of *Iledda* (Walcott Inlet). There are no major developments in the proposed marine parks and commercial activities are currently limited to tourism, commercial fishing and pearling.

Whilst the Kimberley region is considered to be in good condition, pressures for the area include the potential impacts of climate change, fishing, some tourism activities and marine debris. Increases in commercial tourism and improvements in boating and aerial vehicle (e.g. drones) technology will provide the opportunity for more visitors to access and appreciate the parks in the future. Recreational boating numbers have increased in the Kimberley in the last five years and this is likely to continue with the plans to bituminise the road to Cape Leveque on the Dampier Peninsula.

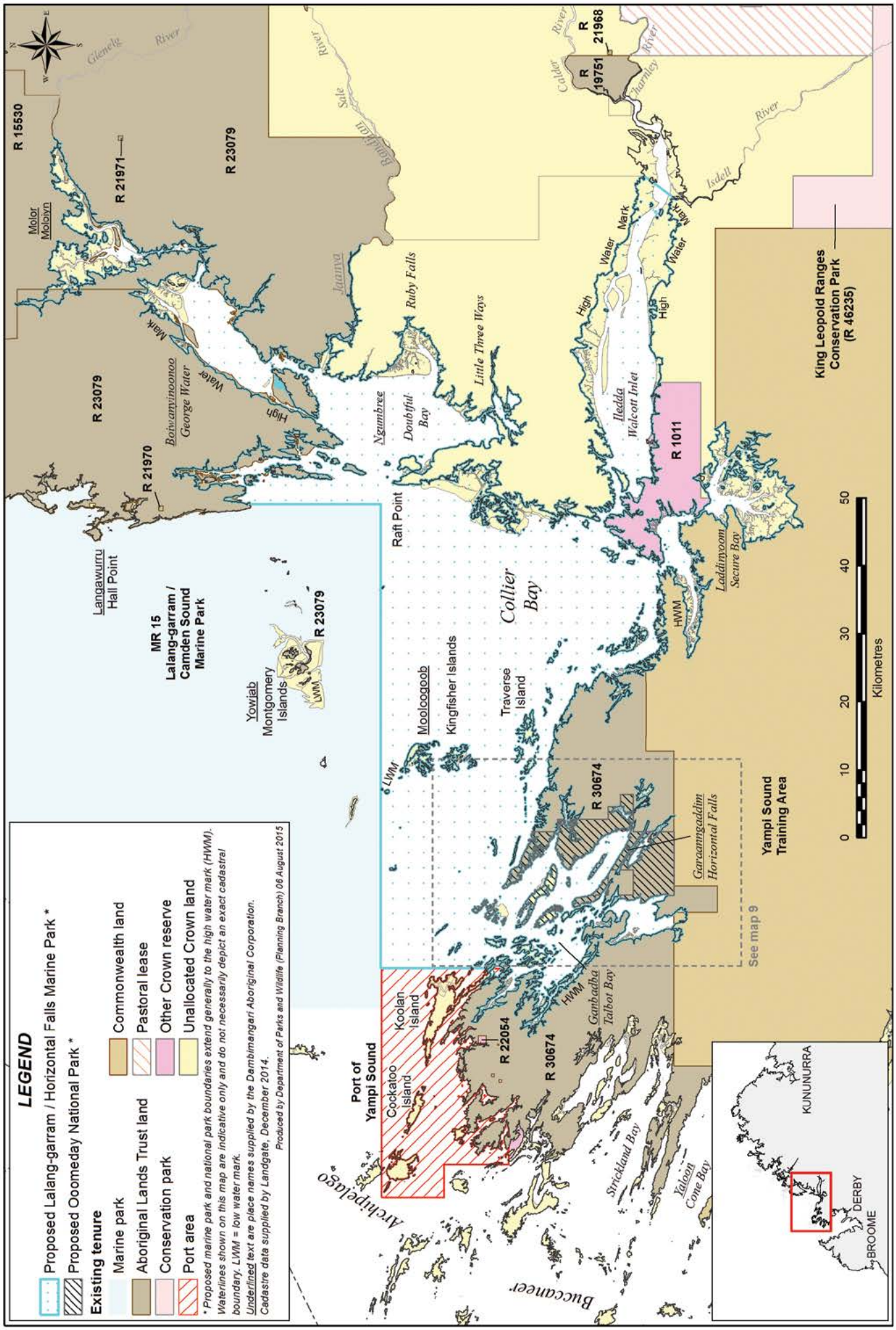
Whilst there is some understanding of current local pressures, there is limited knowledge of how global marine environmental pressures, particularly climate change and the flow on effects – sea level rise, increased sea surface temperatures, ocean acidification and coral bleaching (Department of Climate Change and Energy Efficiency, 2007) – may affect the Kimberley region into the future. Research and monitoring programs have an important role to play in understanding marine park values, current and future pressures and the development of effective adaptive management responses. The establishment of the proposed marine parks will help to provide increased resilience to future pressures and threats, maintain ecosystem health and productivity, protect cultural values and safeguard future opportunities for recreational and economic growth.

The proposed marine parks will be part of a series of jointly managed multiple-use marine parks in the Kimberley also including Lalang-garram / Camden Sound and Eighty Mile Beach marine parks, and the proposed Yawuru Nagulagun / Roebuck Bay and North Kimberley marine parks. Along with the Lalang-garram / Camden Sound and proposed North Kimberley marine parks, the proposed marine parks will make up the Great Kimberley Marine Park and management will be integrated and consistent across these parks (Map 6).

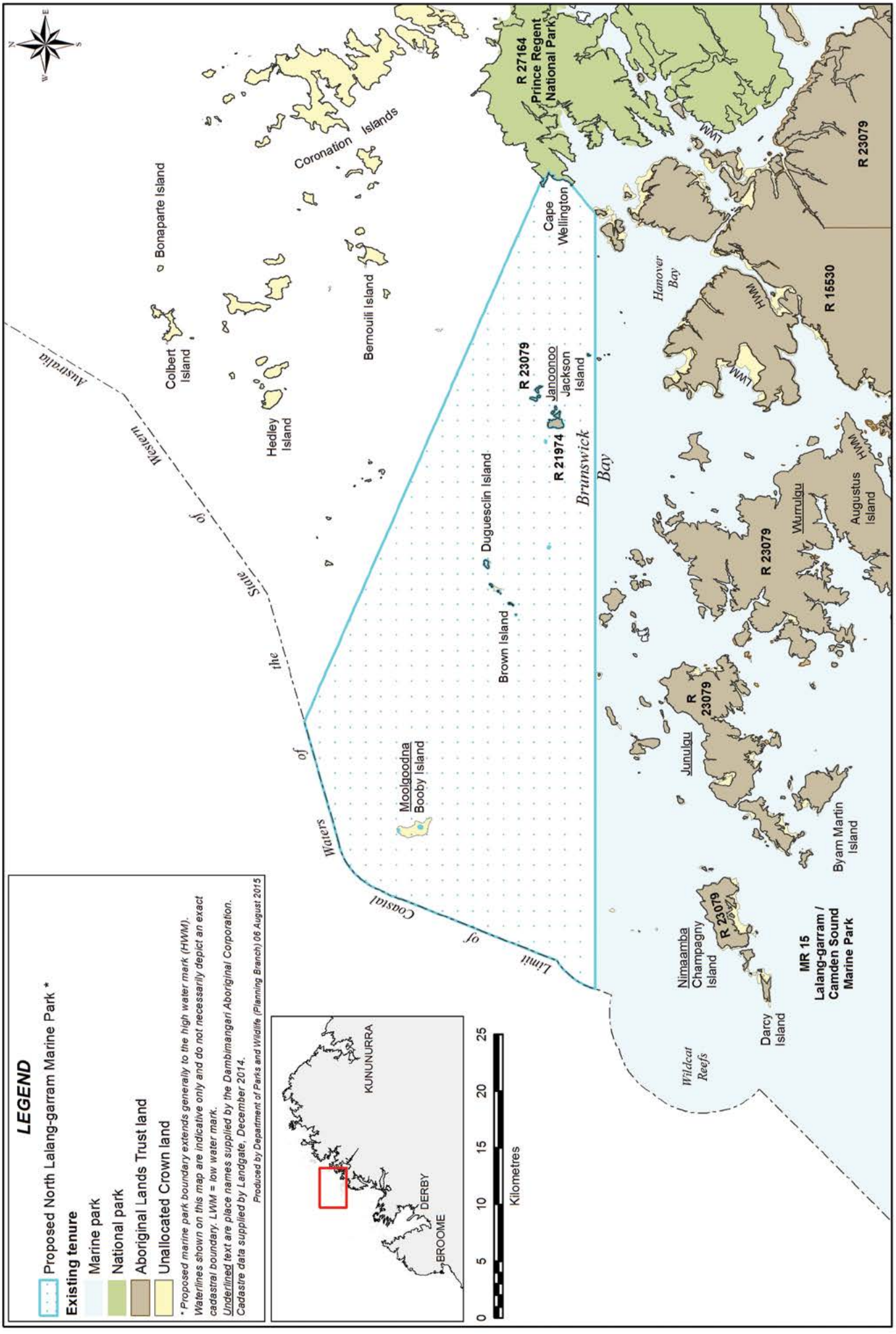
Aboriginal Lands Trust (ALT) reserves 30674, 23079 and 15530, Yampi Sound Defence Training Area (Department of Defence reserve), unallocated Crown land and other crown reserves (Map 4) surround the proposed Lalang-garram / Horizontal Falls Marine Park. The tenure surrounding the proposed North Lalang-garram Marine Park includes ALT reserves 23079 and 21974, unallocated Crown land and Prince Regent National Park (Map 5). Exclusive possession native title occurs around much of the coast and islands above the high water mark of the proposed marine parks and people wishing to visit these areas will need to obtain permission from Dambimangari Traditional Owners before their visit. Visitors to ALT reserves also need to obtain permission for entry from the Aboriginal Lands Trust.

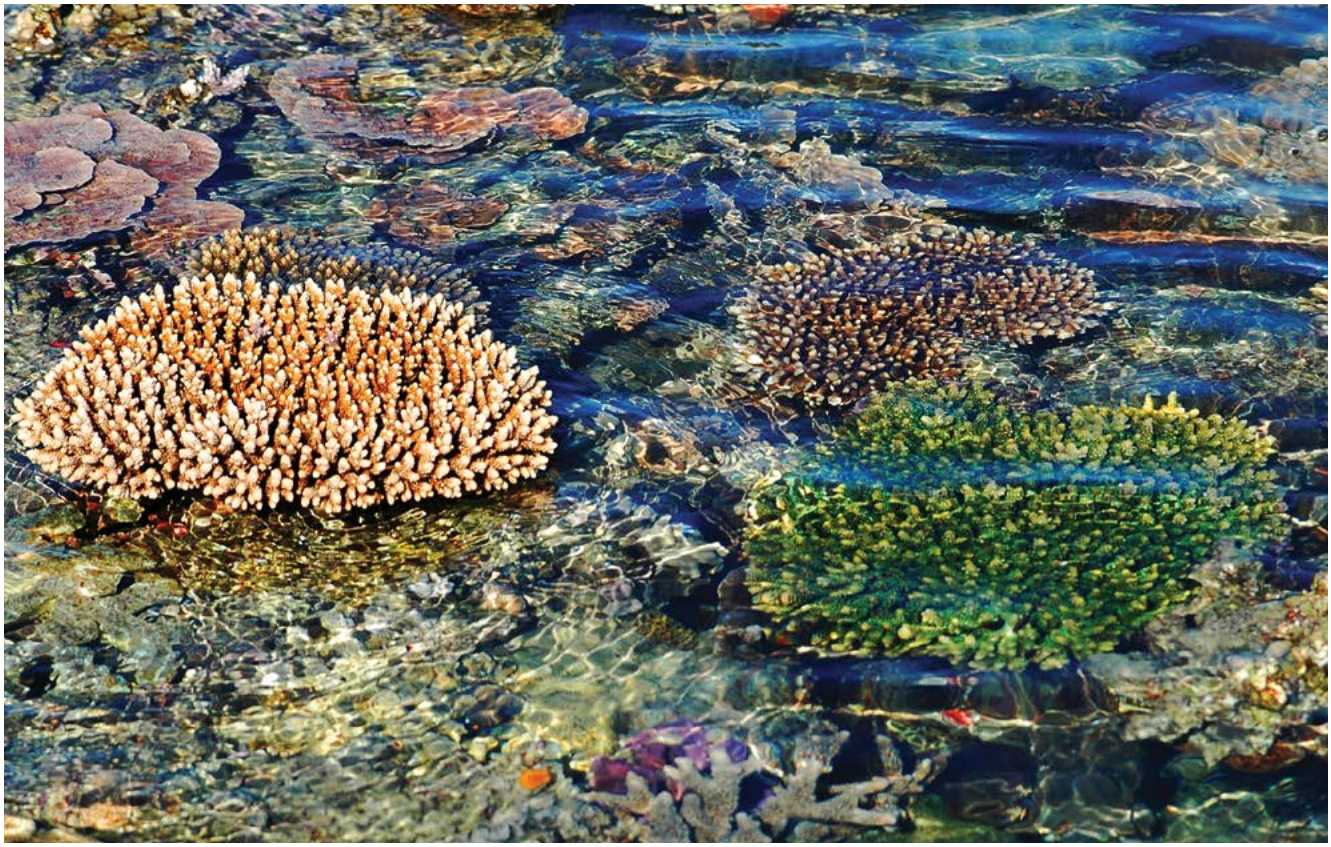
The proposed Lalang-garram / Horizontal Falls and North Lalang-garram marine parks will be gazetted as class 'A' marine parks and vested in the Marine Parks and Reserves Authority (MPRA). This management plan sets the framework for the proposed marine parks to extend to the high water mark. To enable this, the state government is currently negotiating an ILUA with Dambimangari people.

Map 4 Tenure within and adjacent to the proposed Lalang-garram / Horizontal Falls Marine Park



Map 5 Tenure within and adjacent to the proposed North Lalang-garram Marine Park





Coral reef at Turtle Reef in Talbot Bay. Photo – Kimberley Media

3.1 Marine park values

The proposed marine parks feature a broad range of cultural, natural, tourism and resource use values.

From these, a set of high priority values (highlighted with an ✱), have been identified as a focus for research and monitoring programs based on their cultural, ecological and social importance. Monitoring the condition of the high priority natural values will provide valuable insights into the overall health of the broader ecosystems within the marine parks. For more information on the management of marine park values, including strategies, performance measures and targets, please refer to *Proposed marine parks: values and management summary tables*.

Cultural values

This section will be developed in partnership with Dambimangari Traditional Owners.

Habitats and communities[4]

- ✱ ***Jindim* (mangroves) and *galaw* (saltmarshes)**[5] provide nutrients to surrounding waters and important habitat and nursery areas for a wide range of species including commercially valuable fish and invertebrates (Bridgewater and Cresswell, 1999). The proposed Lalang-garram / Horizontal Falls Marine Park contains extensive *jindim* and some of the largest mapped areas of *galaw* in the Kimberley bioregion (Dyall *et al*. 2005; Cresswell and Semeniuk, 2011).
- ✱ ***Wooddooroo* (coral reefs)** are important primary producers that provide food and habitat for a diversity of wildlife. The Kimberley has the richest coral fauna, in both species and genera, of any North West Shelf Bioregion (Wilson 2013). *Wooddooroo* fringe many of the islands in the marine parks. Turtle Reef in the proposed Lalang-garram / Horizontal Falls Marine Park and *Moolgoodna* (Booby Island, previously White Island) in the proposed North Lalang-garram Marine Park have been identified by the Western Australian Museum as ecological hotspots (Bryce pers. comm. 2014).

[4] The spelling of some Traditional Owner names for natural values may have multiple versions. Some marine animals such as turtles may have different names based on their life stage (hatchlings vs adults).

[5] An asterisk marks high priority values. Refer to the proposed marine parks management summary table for performance measures and targets.

- ***Joodam* (seagrass beds) and *lanjam* (macroalgae)** play an important ecological role in coastal ecosystems; they are an important source of primary production and an important food source for many species (Orth *et al*. 2006; Masini *et al*. 2009). Megaherbivores such as dugongs and some sea turtles feed on seagrass leaves and roots (Orth *et al*. 2006). *Joodam* (seagrass beds) occur in between reef platforms in *Ganbadba* (Talbot Bay) (Kordi *et al*. in review), but little is known about *lanjam* (macroalgae) in the proposed marine park.
- **The water column or pelagic habitat** is an important habitat for a variety of inshore and offshore (pelagic) species including sharks and other fish species and megafauna such as whales, dolphins, seabirds and turtles. The water column in the proposed marine parks can reach depths of around 100m. The upper portion of the water column receives sunlight and therefore contributes to primary production.
- ***Gamyammenjooweengadd* (estuaries)** provide a link between land, freshwater habitats and the sea (Levin *et al.* 2001). They are important for filtering water flowing from the land, as spawning habitats, nesting sites, nursery grounds, feeding grounds and can provide refuge from predators (Gillanders *et al*. 2011). There are many *Gamyammenjooweengadd* (estuaries) in the proposed Lalang-garram / Horizontal Falls Marine Park, some of which include *Iledda* (Walcott Inlet), *Ngumbree* (Doubtful Bay), *Laddinyoom* (Secure Bay), *Boiwanyinoonoo* (George Water) and *Jaanya* (Sale River). All estuaries in the marine park are tide-dominated and categorised as 'near pristine' in the national estuaries database (Ozcoasts, Geoscience Australia 2013). There are no estuaries in the proposed North Lalang-garram Marine Park.

Soft coral, *Moolgoodna* (Booby Island). Photo – John Huisman

Red sandstone cliffs are a renowned feature of the Kimberley. Photo – Roanna Goater /Parks and Wildlife

- **Geomorphology** consists of indented rocky shores; islands; unique coastal sediment and extensive reefs (Brocx and Semeniuk 2011). The subtidal features of the proposed Lalang-garram / Horizontal Falls Marine Park include canyons and a flood delta. Terraces, banks and shoals are features of the proposed North Lalang-garram Marine Park. Some coastal geomorphological features in the proposed Lalang-garram / Horizontal Falls Marine Park have become popular tourist attractions including *Garaanngaddim* (Horizontal Falls), the folded cliffs at Cyclone Creek and the intrusive sill of Hart dolerite in *Laddinyoom* (Secure Bay) (Willing pers. comm. 2013).
- **Rocky shores, platforms and shoals** are important features of the Kimberley region. Rocky shores and wide intertidal rock platforms form a large proportion of the shoreline habitats of the proposed marine parks. Rock platforms often support a veneer of corals, especially along the reef front. A mixed community of rocky shore and *wooddooroo* (coral reef) species is characteristic of fringing reefs in the Kimberley bioregion (Wilson, 2013).
- ***Galaab* (sandy beaches)** are important foraging, nesting and breeding areas for birds, sea turtles and other wildlife (McLachlan 2006). The Kimberley region has the shortest beaches and smallest barrier system in the country (Short, 2011). While not extensive in the proposed marine parks, small isolated *galaab* (sandy beaches) occur on some islands such as *Moologoob* (Kingfisher) and Traverse islands. Information on the community assemblages of *galaab* in the proposed marine parks is limited.
- **Subtidal filter-feeding communities** such as sponges and soft corals obtain nutrients from suspended detritus and plankton in the water column. They play an important ecological role by providing nursery or recruitment habitat, food for other organisms and in cycling nutrients (Keesing *et al.* 2011; Bell 2008). Filter feeding communities occur in many areas within the marine parks including Walcott Inlet, Talbot Bay, Kingfisher Islands, Booby Island and Doubtful Bay.

Galagalarri (flatback turtle) hatchling. Photo – Kelly Pendoley

Jurluwarra (saltwater turtle) and *warliny* (dugong) are important to Dambimangari people as an important food source. We have many traditional stories for *jurluwarra* and *warliny* and their cultural use is interwoven with our traditional lifestyles. Healthy saltwater country is important for them and we must work together to make sure that *jurluwarra* and *warliny* are plentiful for generations to come.

Dambimangari Aboriginal Corporation 2012

- **Intertidal sand and mudflats** are extensive in the proposed Lalang-garram / Horizontal Falls Marine Park. They are highly productive components of shelf ecosystems that recycle organic matter and nutrients through microbial activity. The tidal mudflats of Walcott Inlet are up to 5km wide and support a rich intertidal invertebrate community (Zell 2003).

Marine fauna, including species of special conservation interest

- ***Jalawadda* (marine turtle)** species in the Kimberley include *warli* or green turtles (*Chelonia mydas*), *galagalarri* or flatback turtles (*Natator depressus*), *mungidi* or loggerhead turtles (*Caretta caretta*), *nowurralya* or hawksbill turtles (*Eretmochelys imbricata*), leatherback turtles (*Dermochelys coriacea*) and olive ridley turtles (*Lepidochelys olivacea*) (Masini *et al*. 2009). *Jalawadda* are an important food source for Dambimangari people.
- ***Walyn* or dugong (*Dugong dugon*)** often aggregate in protected shallow bays and *jindim* (mangrove) channels. They primarily feed on *Halophila* seagrass and migrate depending on food availability. Australia is considered to be the core of the world's remaining population of dugongs (Marsh *et al*. 2002). *Walyn* are an important food in the traditional diets of Dambimangari people and *Ganbadba* (Talbot Bay) is a culturally significant area for dugongs (Dambimangari Aboriginal Corporation, pers. comm. 2014).
- ***Jigeedany* or dolphins** are common in the proposed marine parks. Indo-Pacific humpback dolphins (*Sousa chinensis*) and *jigidan* or snubfin dolphins (*Orcaella heinsohni*) forage, breed and calve in *Ganbadba* (Talbot Bay) (WWF 2009). *Jaanya* (Sale River) is a known location for snubfin dolphins.

All year round we see many different *jigeedany* (dolphins) hunting for fish and playing around. Often there are common dolphins and humpback dolphins in the blue open water. Closer to shore, in murky water near inlets and *jindim* (mangrove/mangal), you will find the shy snubfin dolphins foraging.

Dambimangari Aboriginal Corporation 2012

Jigidan (snubfin dolphins). Photo – Alex Brown MUCRU/WWF-Australia

Humpback whale and calf. Photo – Tim Willing

- ***Goiyoiya* or estuarine crocodiles (*Crocodylus porosus*)** are apex predators and are important for maintaining the natural balance of wetland ecosystems. They are found throughout the proposed parks in estuarine areas, nearshore waters, oceanic waters and on islands (Semeniuk *et al*. 2011). They are known to breed in the proposed Lalang-garram / Horizontal Falls Marine Park (Willing pers. comm. 2013).
- **Sharks and rays** are diverse in the Kimberley and include threatened and protected species such as sawfish and manta rays (*Manta birostris*). Four of the world's seven known species of sawfish are found in north-western Australia and are likely to be found in the proposed Lalang-garram / Horizontal Falls Marine Park (Morgan *et al*. 2011).

Tawny nurse shark. Photo - Todd Quartermaine/Parks and Wildlife

> Our sea is teeming with life and in the right season you can see the spouts from hundreds of *munumbanany* (humpback whales) in the waters of our sea country. There are stories about the whale and creation of our coastline in our culture.
>
> Dambimangari Aboriginal Corporation 2012

- ***Ngununbany* (whales, both baleen and toothed)** are likely to be diverse in the marine parks. *Munumbanany* or humpback whales (*Megaptera novaeangliae*) migrate to the proposed marine parks from their Antarctic feeding grounds to breed and give birth (Costin and Sandes 2009). They occur in large numbers in the marine parks between June and November each year (Costin and Sandes 2009).
- **Sea snakes** in the Kimberley occupy three broad habitat types; shallow water coral reef and seagrass habitats, deep water soft bottom habitats away from reefs, and the surface of the open ocean. The Kimberley has the world's highest recorded diversity of sea snakes supporting more than one third of all known species, with at least three species found only in the region (Somaweera and Sanders 2015). Sea snakes occur in the proposed marine parks, however, little is known about their populations (Willing pers. comm. 2013).

Stoke's sea snakes mating. Photo – Tim Willing

- ***Jaya* (finfish)** are likely to be diverse in the proposed marine parks. Many species are targeted by commercial and recreational fishers, particularly *iledda* (barramundi) and *doolija* or mangrove jack (*Lutjanus argentimaculatus*).
- **Seabirds and shorebirds** are found in high numbers on the mudflats of *Iledda* (Walcott Inlet) in the proposed Lalang-garram / Horizontal Falls Marine Park (Willing per. comm. 2013). *Moolgoodna* (Booby Island) in the proposed North Lalang-garram Marine Park supports up to 2000 breeding pairs of brown booby (*Sula leucogaster*) and about 500 pairs of crested terns (*Thalasseus bergii*) which nest on the island (BirdLife International 2015).

Visitor attractions

- **Nature-based recreation and tourism** is popular with visitors coming to the proposed marine parks to enjoy wildlife watching, visit cultural sites and visit scenic sights such as waterfalls. One of the main attractions of the proposed marine parks is the impressive *Garaanngaddim* (Horizontal Falls).
- **Recreational fishing** is popular in the Kimberley, and the area is gaining recognition for the quality of its sport and game fishing, targeting *iledda* (barramundi) and *doolja* (mangrove jack). Recreational fishing is predominantly carried out from private and commercial operator vessels. Key recreational fishing areas include *Laddinyoom* (Secure Bay) and Little Three Ways in *Ngumbree* (Doubtful Bay).
- **Remote seascapes** in the proposed park include reefs, rocky shores, mudflats, *jindim* (mangroves) and *galaab* (beaches) and are a significant drawcard for visitors.

Osprey. Photo – Christabelle Oobagooma

Recreational fishing. Photo – Carolyn Thomson-Dans/Parks and Wildlife

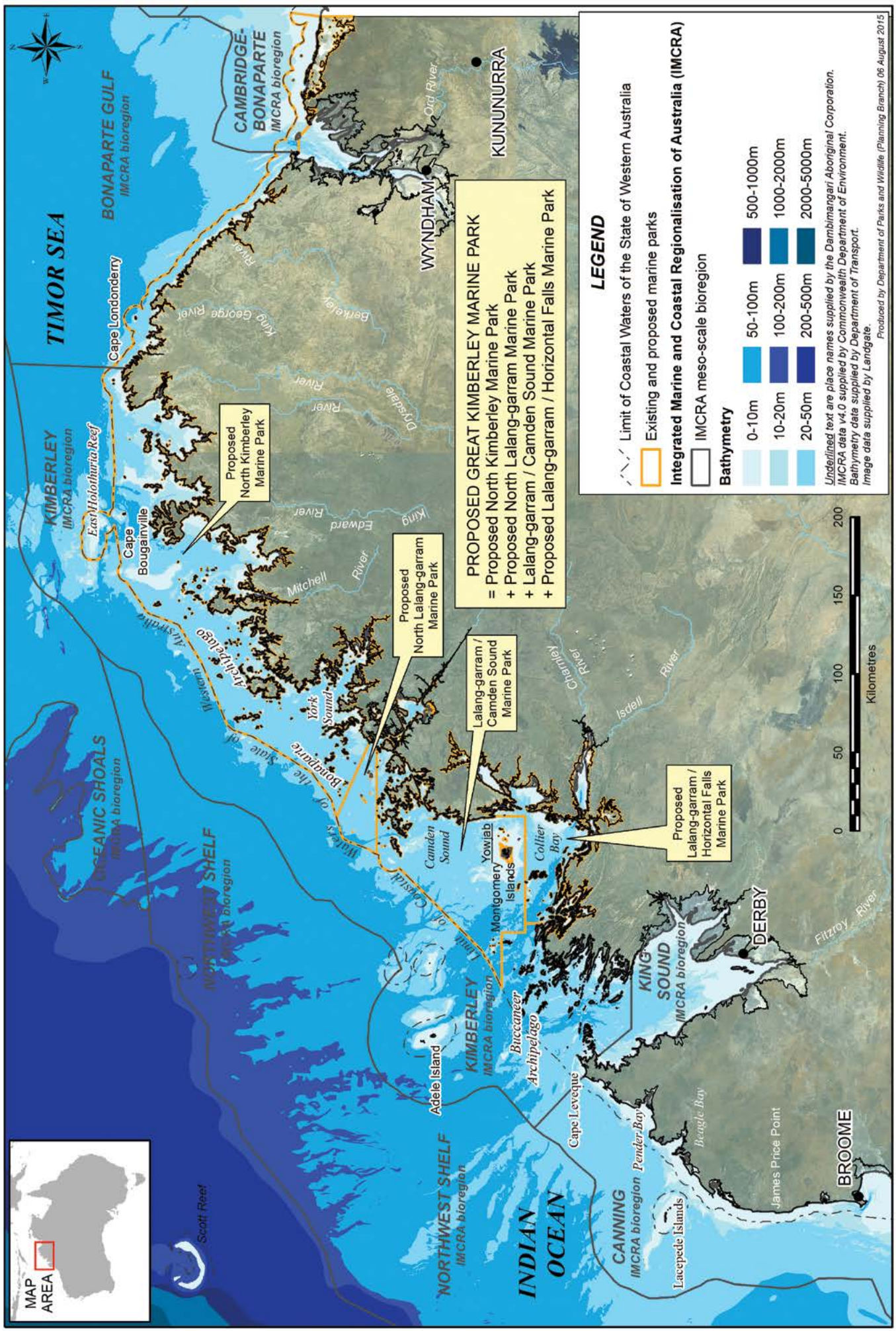
Ngumbree (Doubtful Bay) coast. Photo – Parks and Wildlife

- **Maritime and European heritage** in the proposed Lalang-garram / Horizontal Falls Marine Park includes the mudflats of the *Molor Moloiyn* (Glenelg River), where Charles Kingsford Smith was forced to make an emergency landing in the monoplane *Southern Cross* in March 1929. The incident was named 'Coffee Royal' after the mix of coffee and brandy the crew drank whilst waiting for eventual rescue by Traditional Owners from the Kunmunya Mission (Willing pers. comm. 2013). There is no wreckage associated with this landing and no other maritime heritage sites or shipwrecks have been recorded in the proposed marine parks.
- **Research opportunities** arise from the relatively undisturbed nature of the proposed marine parks, their range of habitats and fauna and their rich cultural and maritime history. The Kimberley region is a unique environment for research and provides significant opportunities for international research partnerships.

Resource use

- **Commercial fishing** is an economically important activity in the proposed marine parks. The Kimberley Gillnet and Barramundi Managed Fishery operates in the nearshore and estuarine zones of the proposed Lalang-garram / Horizontal Falls Marine Park and the Kimberley Prawn Managed Fishery trawls in a defined area of Collier Bay. The area fished by the Kimberley Prawn Managed Fishery is more extensive in the proposed North Lalang-garram Marine Park and the Mackerel Managed Fishery also operates around the reefs of the proposed park. There is a pearling lease in the proposed Lalang-garram / Horizontal Falls Marine Park in *Ganbadba* (Talbot Bay) on the northern side of *Garaanngaddim* (the Horizontal Falls).
- **Mineral exploration and development** interests in the Kimberley have grown in recent years and contribute significantly to the State's economy. Mining tenements cover a number of coastal areas and islands adjacent to the proposed Lalang-garram / Horizontal Falls Marine Park which are rich in iron ore and copper.

Map 6 Marine bioregions and the proposed Great Kimberley Marine Park



A *warli* (green turtle) on Turtle Reef in *Ganbadba* (Talbot Bay). Photo – Kimberley Media

3.2 Zoning and permitted uses

Multiple use zoning and other management strategies aim to protect cultural and natural values while allowing for recreation and tourism opportunities, and sustainable commercial uses to continue. The CALM Act requires marine parks to be zoned as one or a combination of specific zones including sanctuary, recreation, special purpose or general use.[6]

Bioregional setting

The *Interim Marine and Coastal Regionalisation for Australia* (IMCRA), classifies Australia's coast and marine environment into 60 marine bioregions. Each bioregion is a distinct biogeographical unit that represents broad physical and biological differences in the coast and marine environment across Australia. The national guidelines for establishing marine protected areas recommend that IMCRA bioregions form the basis for reserve design, with one or more examples of conservation features (e.g. habitats and ecosystems) found in each bioregion represented in highly protected zones (Australian and New Zealand Environment and Conservation Task Force on Marine Protected Areas 1999). The proposed Lalang-garram / Horizontal Falls and North Lalang-garram marine parks are located within the Kimberley Meso-scale Bioregion, which stretches from King Sound to Cape Londonderry. The Lalang-garram / Camden Sound and the western section of the proposed North Kimberley marine parks are also located within the Kimberley Bioregion (Map 6).

Zoning design

To complement the bioregional framework, a network based approach has been taken, to ensure the zoning schemes complement the outcomes of the Lalang-garram / Camden Sound Marine Park and take into consideration the remainder of the Kimberley Bioregion in the proposed North Kimberley Marine Park.

The proposed zoning scheme for Lalang-garram / Horizontal Falls Marine Park includes approximately 24% sanctuary, 8% special purpose and 68% general use zones (Map 7) and the North Lalang-garram Marine Park is zoned as general use (Map 8).

Design of the zoning schemes has been guided by a set of principles which aim to provide for natural, cultural, recreation, tourism and other sustainable use values (see Appendix).

[6] For more information on zone types, go to: www.dpaw.wa.gov.au/management/marine/marine-parks-and-reserves/71-know-your-zones

Mangroves in *Iledda* (Walcott Inlet). Photo – Todd Quartermaine/Parks and Wildlife

The zoning schemes are based on a comprehensive, adequate and representative (CAR) approach and also aim to protect ecologically and culturally important high priority values (see *Marine park values*) such as *jindim* (mangroves), *wooddooroo* (coral reefs), *jalawadda* (turtles) and *walyn* (dugongs), with consideration of the level of current and projected future pressures
on these values. The proposed zoning was designed to provide connectivity from upstream estuarine environments out to deeper water and offshore islands and provide complementarity (see page 72) to the adjacent proposed Oomeday National Park.

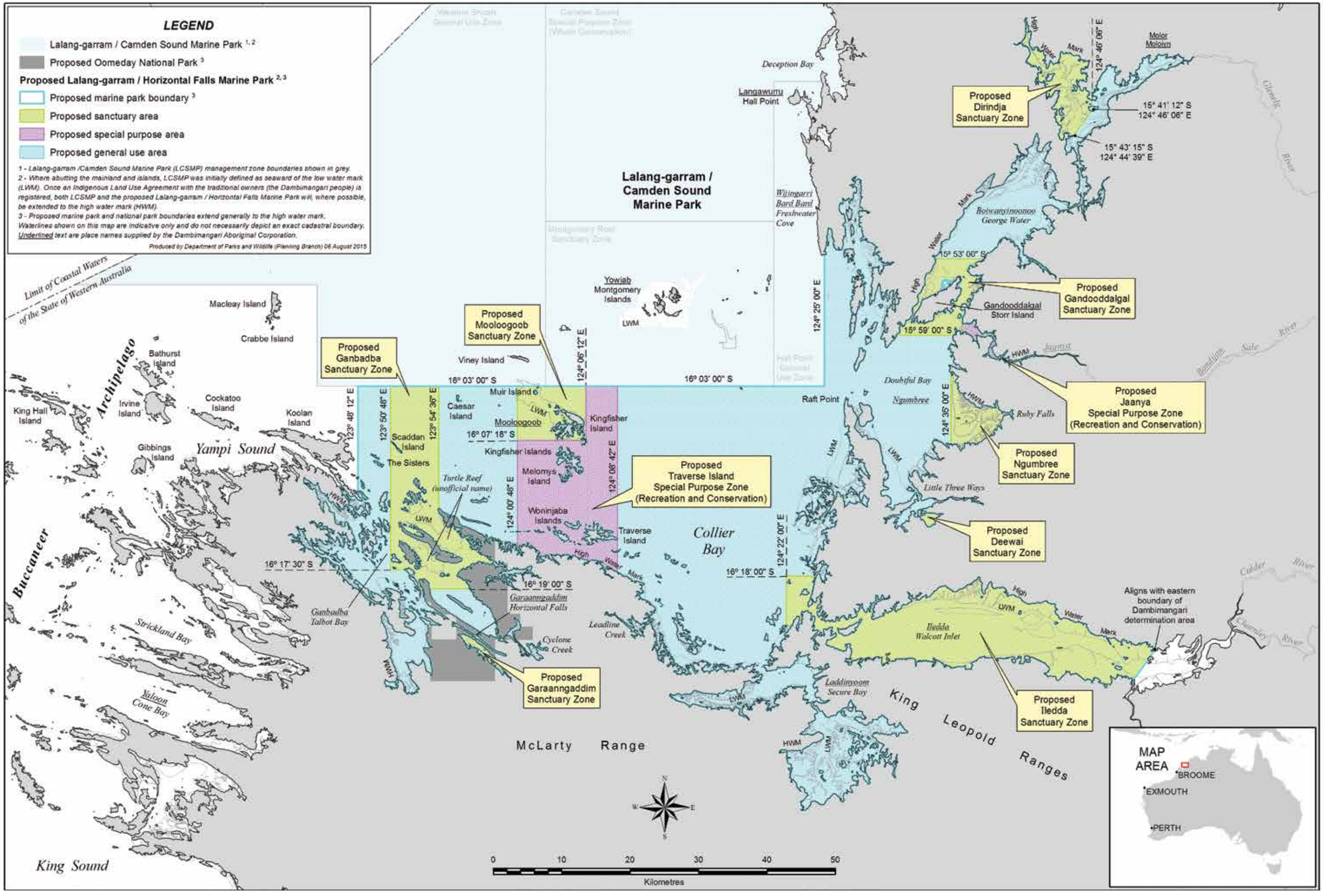
For Dambimangari people, many ecological or natural values also have particular cultural significance. The proposed sanctuary zoning will also protect and conserve Aboriginal cultural heritage values including culturally important *wooddooroo* (coral reefs), *galaab* (beaches) known to be important access points for turtle nesting, important nursery areas for finfish and other marine fauna in *jindim* (mangrove) and estuarine systems, and aggregation areas for culturally important marine fauna such as *jalawadda* (turtles), *walyn* (dugongs), *munumbanany* (whales) and *jigeedany* (dolphins). The inclusion of these areas in sanctuary zones will contribute to meeting Dambimangari aspirations to protect saltwater country and align with objectives and targets identified in the Dambimangari healthy country plan. The zoning schemes also provide for ongoing customary uses such as fishing and hunting.

The zoning schemes also recognise and allow for recreation and tourism and allow for ongoing sustainable use by considering the needs of other parks users such as commercial and recreational fishers. The inclusion of sanctuary zones in the proposed Lalang-garram / Horizontal Falls Marine Park creates important opportunities for education, research and monitoring. By comparing sanctuary areas (as benchmarks) to other areas with similar habitats/ecosystems that allow extractive use a better understanding can be gained of local and regional pressures on the marine environment over time.

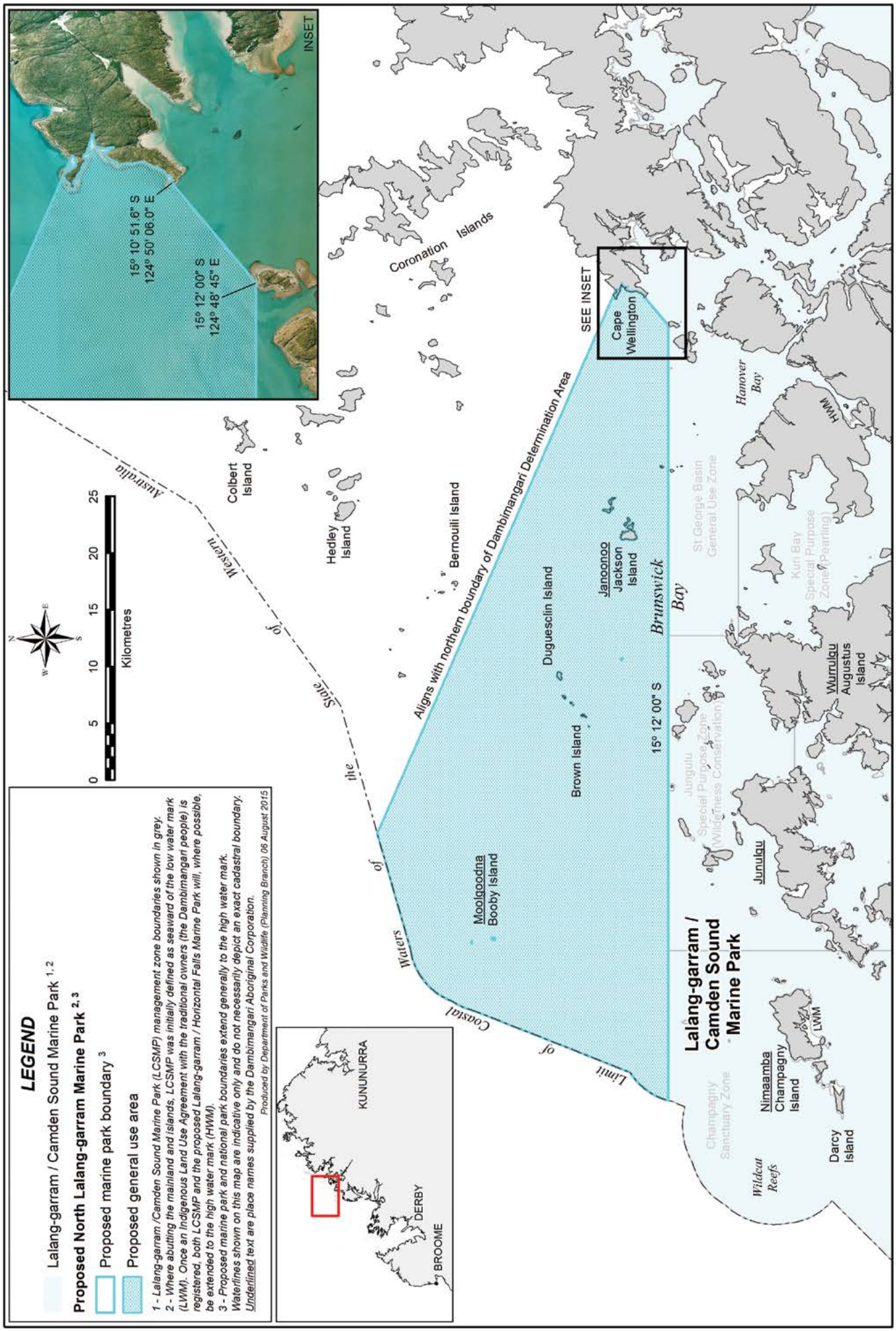
Where possible, the zoning scheme has been designed to be easy for users to understand and comply with zoning arrangements e.g. creating zones with straight line boundaries which align with degrees of longitude and latitude and/or aligning boundaries with prominent features on the coast or islands.

Ultimately the zoning schemes aim to ensure the parks will be managed to maintain ecosystem function and increase ecosystem resilience. The proposed sanctuary zones play a central role in this, by creating 'no take' areas to support the healthy functioning of the complex ecosystems that make up the parks.

Map 7 Proposed zoning for the proposed Lalang-garram / Horizontal Falls Marine Park



Map 8 Proposed zoning for the proposed North Lalang-garram Marine Park



Proposed Lalang-garram / Horizontal Falls Marine Park Sanctuary Zones

Turtle Reef, Talbot Bay. Photo – Landgate

Ganbadba Sanctuary Zone Talbot Bay

Ganbadba Sanctuary Zone will protect features of the Buccaneer Archipelago and representative examples of habitats from deep subtidal (50–100m) to shallow (<10m) intertidal habitats including *jindim* (mangrove communities), fringing *wooddooroo* (coral reefs) and *joodam* (seagrass beds) in *Ganbadba* (Talbot Bay). This zone supports a rich diversity of fauna and species of special conservation interest such as turtles, dugongs and dolphins. Indo-Pacific humpback and snubfin dolphins forage, breed and calve in *Ganbadba* (WWF, 2009). Ganbadba Sanctuary Zone includes the ecologically important and geomorphologically unique Turtle Reef, a terracing algal reef over 25km^2, which has a diverse coral community, rhodolith beds and seagrass patches (Wilson *et al*. 2011; Kordi *et al*. in review). It is intended that reef walking will not be permitted on Turtle Reef. The zone also protects part of an unusual shelf canyon which is not found extensively elsewhere in the Kimberley Bioregion. Many reefs, beaches and islands in *Ganbadba* are culturally important to Dambimangari people and are inhabited by culturally important animals such as turtles and dugongs (Dambimangari Aboriginal Corporation 2012). Ganbadba Sanctuary Zone provides for conservation, recreation and tourism in an area valued by the public for its aesthetic qualities, appealing physical landscape and recreational opportunities (Strickland-Munro *et al*. 2014).

Garaanngaddim (Horizontal Falls)/Poulton Creek. Photo – Kimberley Media

Garaanngaddim Sanctuary Zone Horizontal Falls/Poulton Creek

Garaanngaddim Sanctuary Zone will protect the shallow (0–10m) bay behind *Garaanngaddim* (Horizontal Falls) and includes representative areas of *jindim* (mangrove communities), which are ecologically and culturally important nursery areas, and shallow filter-feeding communities including sponges and soft corals. The area is culturally significant to Dambimangari people and features in their oral traditions for the creation of *Garaanngaddim*. Garaanngaddim Sanctuary Zone provides for conservation, recreation and tourism in an area valued for its tourism, aesthetic qualities and appealing physical landscape (Strickland-Munro *et al*. 2014).

Kingfisher Island. Photo – Landgate

Mooloogoob Sanctuary Zone
Kingfisher Island/Muir Island

Mooloogoob Sanctuary Zone extends from Kingfisher Island, the northern island of *Mooloogoob* (the Kingfisher Islands group) to Muir Island in the north-west of the zone. The zone protects offshore island forming habitats including an ecologically and culturally significant fringing platform coral reef system extending between Kingfisher and Muir islands. The reef systems surrounding the islands also include macroalgae, and soft corals and other filter-feeding communities. It is intended that reef walking will not be permitted on intertidal reefs in this zone. The waters surrounding the islands are ecologically and culturally important for turtles and dugongs, and humpback whales can be spotted in the area during the calving season between June and November (Costin and Sandes 2009). The intertidal areas include *galaab* (sandy beaches), which are important access points for turtles nesting in adjacent supratidal areas, and one of the most diverse mangrove communities on islands surveyed in the Kimberley, with 10 species recorded (Wilson 2013). *Jindim* (mangroves) on the island provide an important habitat for a variety of wildlife such as the collared kingfisher (*Todiramphus chloris sordidus*) (Johnstone pers. comm. 2015). The intertidal area surrounding the islands is highly significant to Dambimangari people with many culturally important sites. The zone also provides complementarity to the Montgomery Reef Sanctuary Zone in Lalang-garram / Camden Sound Marine Park.

Iledda Sanctuary Zone Walcott Inlet

Iledda Sanctuary Zone encompasses the largest mapped tidal delta in the Kimberley Bioregion. The zone in *Iledda* (Walcott Inlet) includes representative examples of *jindim* (mangrove) and *galaw* (saltmarsh communities), intertidal mudflats and subtidal filter-feeding communities. It includes part of a unique flood delta and an inshore deep water (50–100m) channel. The Iledda saltmarsh system is the largest mapped in the Kimberley (Dyall *et al*. 2005) and covers approximately 7,900ha. The inlet's extensive intertidal mudflats are up to 5km wide and support a large number of migratory waterbirds including whimbrels (*Numenius phaeopus*) and grey-tailed tattlers (*Tringa brevipes*) (Willing pers. comm. 2013). The turbid coastal waters of the inlet are likely to provide favourable habitat for snubfin dolphins and sawfish. *Iledda* is a culturally important area for mud crabs and an important breeding area for *iledda* (barramundi) (Dambimangari Traditional Owners, pers. comm. 2014). Iledda Sanctuary Zone provides for conservation, recreation and tourism.

Iledda (Walcott Inlet). Photo – Landgate

Ruby Falls. Photo – Landgate

Ngumbree Sanctuary Zone Doubtful Bay/Ruby Falls

Ngumbree Sanctuary Zone will protect representative areas of shallow (0–10m) habitats, including one of the most significant *jindim* (mangrove) and intertidal sand and mudflat communities in the proposed Lalang-garram / Horizontal Falls Marine Park. The zone, located in *Ngumbree* (Doubtful Bay/Ruby Falls), includes seabird nesting sites, and manta rays are commonly seen in the area (Willing pers. comm. 2013). The zone provides for conservation, recreation and tourism in an area popular with commercial operators because of its natural features and access to the adjacent popular swimming hole at Ruby Falls.

Gandooddalgal Sanctuary Zone Storr Island/Doubtful Bay/George Water

Gandooddalgal Sanctuary Zone protects the waters in *Ngumbree* (Doubtful Bay) and *Boiwanyinoonoo* (George Water) surrounding Storr Island. *Gandooddalgal* is the name for Storr Island and the area where *Jaanya* (the Sale River) enters *Ngumbree* (Doubtful Bay). The zone includes representative areas of shallow to deeper water habitats including fringing *wooddooroo* (coral reefs), subtidal filter-feeding communities, estuary channels and tidal sandflats. The zone contains a number of sites important to Dambimangari people including culturally important platform reefs and extensive sandflat habitats. *Ngumbree* and *Boiwanyinoonoo* are known as highly productive parts of Dambimangari saltwater country, receiving freshwater inputs and nutrients from the land, and are known as important nursery areas for prawns and fish.

Dirindja Sanctuary Zone Glenelg River

Dirindja is the name for the area of *Molor Moloiyn* (Glenelg River) within the sanctuary zone which relates to the mangrove and intertidal areas. Dirindja Sanctuary Zone provides representative examples of *jindim* (mangrove), *galaw* (saltmarsh/saltflats) and intertidal mudflat communities, and is an important breeding area for *goiyoiya* (estuarine crocodiles) (Willing, pers. comm. 2013). *Molor Moloiyn* (Glenelg River), adjacent to Aboriginal Lands Trust Reserve 23079, is particularly important to Dambimangari people and is an important nursery area for fish such as *iledda* (barramundi)[7] (Dambimangari Traditional Owners, pers. comm. 2014).

[7] *Iledda* is used in Dambimangari language for both barramundi and for Walcott Inlet, as the name for the inlet is derived from events in *Lalai* that involve the barramundi.

Deewai. Photo – Landgate

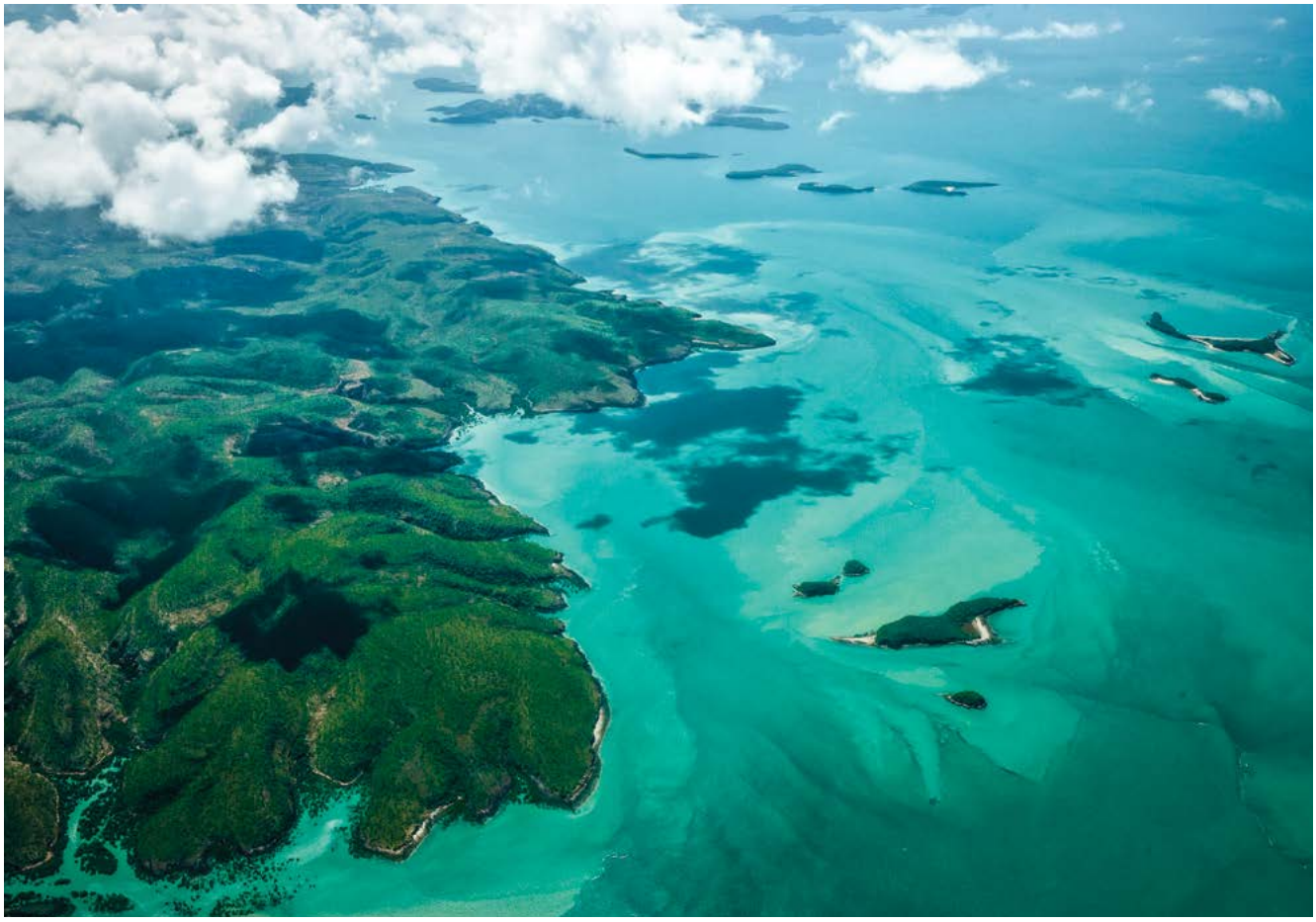
Deewai Sanctuary Zone Lower section of Three Ways

Deewai Sanctuary Zone will protect an ecologically and culturally significant area of dense, shallow *jindim* (mangrove) habitat. Dambimangari people know the area as an important nursery area for fish and breeding area for birds. Important cultural resources such as 'sugar bag' or wild honey can be found in the hollows of some *jindim* trees. Dambimangari people have also identified the *jindim* in this area as an important refuge for fauna including snakes and possums.

Proposed Lalang-garram / Horizontal Falls Marine Park special purpose zones

Traverse Island Special Purpose Zone (recreation and conservation) Traverse Island/Woninjaba Islands/Melomys Island

Traverse Island Special Purpose Zone (recreation and conservation) extends from the coast to Mooloogoob Sanctuary Zone, with the eastern side of the zone extending to the southern border of Lalang-garram / Camden Sound Marine Park. The zone includes Traverse Island, the Woninjaba Islands and Melomys Island, the southern island of *Mooloogoob* (the Kingfisher Islands group). The zone includes a transect from the coast to offshore, encompassing habitats at different depths, from *jindim* (mangrove communities) and fringing *wooddooroo* (coral reef) communities to deep water channels and deep subtidal habitats. The Traverse and Woninjaba islands include *galaab* (sandy beaches) important for turtle (Whiting pers. comm. 2015) and seabird nesting. The coastal area around the mainland and Melomys Island contains culturally important sites, and reefs and beaches which are associated with the events of *Lalai* (Dambimangari Aboriginal Corporation 2012). The purpose of this special purpose zone is to provide for the conservation of ecologically and culturally important marine ecosystems, including *jindim* (mangrove), *wooddooroo* (coral reef) and intertidal communities, whilst continuing to allow for recreational and tourism activities.



Traverse Islands. Photo – Kimberly Media

Jaanya Special Purpose Zone (recreation and conservation) Sale River

The Jaanya Special Purpose Zone (recreation and conservation) includes shallow water habitats including intertidal flats, *jindim* (mangroves) and tidal sands. Species of special conservation interest such as snubfin dolphins reside in *Jaanya* (Sale River) (Willing pers. comm. 2013). The river contains culturally important sites and the whole river system has particular cultural significance to Dambimangari people (Dambimangari Aboriginal Corporation 2012). The scenic *Jaanya* is also known as an important location among commercial tourism operators for wildlife spotting (Scherrer *et al*. 2008). The purpose of the Jaanya Special Purpose Zone (recreation and conservation) is to provide for the conservation of ecologically and culturally important marine and intertidal ecosystems, including habitat for *jigidan* (snubfin dolphins), whilst also allowing for recreation and tourism activities.

Proposed Lalang-garram Horizontal Falls and North Lalang-garram marine park general use zones

All areas in the proposed marine parks not included in sanctuary or special purpose zones will be zoned as general use. The whole of the proposed North Lalang-garram Marine Park is proposed as general use as part of a network-based approach taking into account the zoning scheme in Lalang-garram / Camden Sound Marine Park, the proposed zones in the proposed Lalang-garram / Horizontal Falls Marine Park and the likely zoning scheme for the proposed North Kimberley Marine Park. Management of general use areas is provided for through mechanisms under the CALM Act and CALM Regulations, as well as the implementation of management strategies. The general use areas provide for biodiversity conservation and a range of activities including recreational and commercial fishing. Within the proposed Lalang-garram / Horizontal Falls Marine Park the zoning scheme provides for key fishing areas in southern and western *Ganbadba* (Talbot Bay), Leadline Creek, *Laddinyoom* (Secure Bay), Collier Bay and *Ngumbree* (Doubtful Bay). There are also continued opportunities for fishing in *Molor Moloiyn* (Glenelg River), Little Three Ways and around the *Mooloogoob* (Kingfisher) and Traverse islands. Recreational and commercial fishing are permitted throughout the proposed North Lalang-garram Marine Park.

Dambimangari Traditional Owners have known about the significance of sustainable use of marine resources since time immemorial; within the proposed North Lalang-garram Marine Park is an island and surrounding reef and exposed rock that form part of the narrative and cultural practices associated with honouring the spirits of the sea and thanking them for delivering fish to them for food and seeking the replenishment of marine species.

DAC pers. comm. 2015

School of trevally. Photo – John Huisman

Permitted uses

Table 1 summarises the range of permitted activities across the zone types of the proposed Lalang-garram / Horizontal Falls and North Lalang-garram marine parks. Many activities are also regulated under complementary legislation and regulations, for example, regulations regarding wildlife interactions, the disposal of sullage, and size and bag limits for recreational fishing. Commercial businesses operating within marine parks and reserves require a licence, which carries specific conditions, to be issued by Parks and Wildlife.

The implementation of this joint management plan may require management actions such as temporal closures, speed restrictions and a mooring and anchoring plan. Development of these actions will aim to manage the permitted activities whilst meeting the management objectives.

An activity marked as 'assess' indicates an assessment is required by the appropriate agencies in accordance with relevant legislation and the management objectives and targets in this plan.

Table 1 Summary of permitted uses for the proposed Lalang-garram / Horizontal Falls and North Lalang-garram marine parks

Activity	Sanctuary Zones [a]	Special Purpose Zones (recreation and conservation)	General Use Zones
Customary			
Customary activities (e.g. hunting and fishing)	Yes [b]	Yes [b]	Yes [b]
Commercial			
Commercial gillnet fishing	No	No	Yes
Commercial prawn trawl fishing	No	No	Yes [h]
Commercial fishing (other than gillnet and prawn trawl)	No	Yes	Yes
Pearling	No	Assess	Yes
Aquaculture	No	Assess	Yes
Scenic flights (charter)	Yes	Yes	Yes
Ground disturbing mineral and petroleum exploration and development [c]	No	No	Assess
Non-ground disturbing air-borne geophysical surveys [g]	Assess	Assess	Assess
Non-ground disturbing ship-borne geophysical surveys [g]	Assess	Assess	Assess
Ship loading and other mining related infrastructure (e.g. ship loading docks, cabling or pipelines)	Assess [f]	Assess [f]	Assess
General marine infrastructure (e.g. groynes, jetties)	No	Assess	Assess
Artificial structures (e.g. artificial reefs)	No	No	Assess
Dredging and dredge spoil dumping	No	Assess	Assess
Commercial tour operators – fishing	No	Yes	Yes
Commercial tour operators – non-extractive (e.g. wildlife viewing)	Yes	Yes	Yes
Wildlife/fish feeding [d]	No	No	No
Recreational			
Boating (motorised and non-motorised)	Yes	Yes	Yes
Nature appreciation and wildlife viewing	Yes	Yes	Yes
Shore and boat fishing	No	Yes	Yes
Other use			
Navigation aids	Yes	Yes	Yes
Research and monitoring	Yes	Yes	Yes
Anchoring (soft bottom only)	Yes	Yes	Yes

Seaplane, helicopter and unmanned aerial vehicle (drone) launching and landing [i]	Assess	Assess	Assess
Vessel sewage discharge	No	No	Assess [e]

Permitted activities provisions

[a] Seasonal restrictions to vessels such as speed limits may apply in some areas (e.g. Ganbadba Sanctuary Zone) during dugong calving season.

[b] Customary take is confined to Traditional Owners, subject to the rights and interests provided by the Native Title Act and/or Indigenous Land Use Agreements (ILUAs), or where Traditional Owners have provided consent to another Aboriginal person or group.

[c] Ground disturbing mineral and petroleum exploration and development activities include any activity that disturbs the seabed and/or subsoil within the marine park (e.g. drilling).

[d] Commercial operators seeking to conduct wildlife or fish feeding activities will require lawful authority under their commercial operator's licence provided by Parks and Wildlife and will need to comply with regulations under the FRM Act.

[e] Restrictions may apply in accordance with the DoT Sewage Strategy. The discharge of untreated sewage is prohibited within the marine park.

[f] Ship loading and other mining related infrastructure such as cabling and pipelines will only be assessed for the Ganbadba Sanctuary Zone, Traverse Island Special Purpose Zone (recreation and conservation) and general use areas. Should mining infrastructure be approved, consideration may be given to either amending the boundaries of the zone or excising the area from the marine park. Mining infrastructure is not permitted in any other sanctuary or special purpose zones.

[g] Geophysical surveys such as aero-magnetics will be assessed by the Department of Mines and Petroleum.

[h] Prawn trawling is restricted in some areas through permanent inshore closures managed by DoF. The Collier Bay closure restricts prawn trawling within George Water, Doubtful Bay, Walcott Inlet, Secure Bay and the southern extent of Collier Bay (Fletcher, 2014).

[i] Lawful authority must be obtained to launch, land or make a touchdown in an aircraft on CALM Act lands and waters.

3.3 Proposed marine parks: values and management summary

Management strategies aim to support the strategic and management objectives of the proposed marine parks. They have been developed to address management challenges such as current and future pressures on marine park values, data deficiencies and safety concerns.

Operational plans will be developed which prioritise management strategies and determine timeframes for their implementation. Operational responsibility for implementing the management strategies will primarily be coordinated by the Parks and Wildlife West Kimberley District Office under the guidance of the JMB. Where other agencies are listed in brackets after the strategy they may also be required to provide support, as necessary, to implement the action within the scope of their statutory responsibilities. Where an agency or body is required to take a lead role in strategy implementation, their name (or acronym) is in **bold**. For all other strategies, Parks and Wildlife is the lead agency.

A Memorandum of Understanding (MoU) has been developed between the Minister for Environment and the Minister for Fisheries to establish principles of cooperation and integration between Parks and Wildlife and DoF in the management of the State's marine parks and reserves. Collaborative operational plans will be developed to ensure efficient and effective delivery of a range of programs where there is shared agency responsibility or mutual interest, including education, compliance, research and monitoring.

Sunset over Talbot Bay. Photo – Michael Higgins/Parks and Wildlife

Cultural and heritage values

Strategic objective: to protect and conserve the value of the land to the culture and heritage of Dambimangari people

Connection to country and customary use

Dambimangari people are strongly connected to saltwater country through their law, culture and the spirits that created country. This connection is an important part of their everyday existence. Under traditional law Dambimangari people must look after the plants, animals, people and country to ensure they are healthy (Dambimangari Aboriginal Corporation 2012).

For Dambimangari people, undertaking customary activities on their traditional lands is central to maintaining the culture and heritage of the land. Customary activities are permitted in the proposed marine park and include fishing and hunting for food and preparing medicine. These activities enable the maintenance of traditional relationships with the land and water; sharing of knowledge; engagement in traditional practices; and accessing and looking after places of significance.

> Saltwater tribes have a responsibility to care for the country of their ancestors. They are linked to the land and their ancestors through their belief systems and have a collective system of land ownership.
>
> North Kimberley Saltwater Country Steering Committee 2010

Dambimangari Ranger on country with a flatback turtle hatchling. Photo – Daniel Barrow/Parks and Wildlife

Dambimangari Rangers on country. Photo – Daniel Barrow/Parks and Wildlife

> Our rangers have to look after country both ways – the traditonal way as our ancestors taught us and the western way. Our rangers need our traditional knowledge to know when to look for particular animals on country and to find their way around country.
>
> Dambimangari Aboriginal Corporation 2012

Management objective: To uphold Traditional Owner connection to country including spiritual and cultural values and customary use

Key management challenges

- Ensuring traditional knowledge informs adaptive management.
- Ensuring activities in the proposed marine parks do not significantly affect the rights of Dambimangari Traditional Owners to have ongoing cultural connection to country.

Management considerations

- Observe cultural and heritage values, cultural knowledge and cultural laws and protocols (where appropriate) in decision making.
- Management of the proposed marine parks will complement the Healthy country plan.
- The maintenance of knowledge transfer within the Dambimangari community.
- The CALM Act provides for the protection and conservation of the value of the land (and sea) to the culture and heritage of Aboriginal people and enables joint management of conservation estate with traditional custodians.
- The CALM Act and Wildlife Conservation Act also enable Aboriginal people to continue to carry out customary activities including the right to hunt, fish, gather and use resources for personal, domestic and communal needs.

Management strategies

1. Develop and implement cultural awareness communication tools, emphasising the importance of cultural and heritage values for both Traditional Owners and the wider community.
2. Develop cultural awareness training material and implement training for government employees and/or contractors working in the proposed parks.
3. Support Dambimangari people to undertake cultural planning to record the culture and heritage values of the proposed parks and inform management.
4. Support Dambimangari people to visit their saltwater country with younger generations to support cross-generational exchange of information and maintain connection to country within the Dambimangari community.
5. Support and undertake research to better understand Dambimangari traditional knowledge applicable to the proposed marine parks.
6. Support Dambimangari people to develop and apply management targets and performance measures for Aboriginal culture and heritage values.
7. Design and implement monitoring programs to assess the effectiveness of the zoning scheme and management arrangements for protection of cultural heritage values (see *Research and monitoring*).
8. Support Dambimangari people to manage sustainable populations of marine wildlife (e.g. turtles, dugongs, sharks, rays).
9. Continue to support the Dambimangari Ranger Group and help train and mentor new rangers.
10. Identify opportunities to provide employment, business and training for Dambimangari people on country to help maintain connection to country.

Key performance indicator

Cultural values and customary use	
Target	To be developed with Dambimangari Traditional Owners
Performance measure	To be developed with Dambimangari Traditional Owners
Reporting	Every five years

Cultural sites

For Dambimangari people, whose traditional saltwater country encompasses the marine parks, the land and sea as a whole holds cultural significance. Some cultural sites are more readily identifiable within Dambimangari country and include rock art sites, hunting places, stone arrangements, important camping *galaab* (beaches) and ancient occupation sites. Many of these sites require protection while in some cases cultural sites offer a signature experience to visitors to the proposed marine parks.

> When we say cultural sites, we are talking about *Wandjina* and *Wunggurr* sites, our rock art sites, stone arrangements, burial sites and important camping beaches where our old people rested when they were travelling through saltwater country.
>
> Dambimangari Aboriginal Corporation 2012

Stone arrangement. Photo – Kim Doohan/John Bornman and DAC

Management objective: To provide respect for and protection of culturally significant sites

Key management challenges

- Maintaining the quality of cultural and heritage sites to ensure they are not degraded by high visitation, accidental damage or vandalism.
- Ensuring culturally appropriate visitation. A lack of awareness and understanding of cultural etiquette can result in culturally inappropriate behaviour such as building of stone arrangements.
- Ensuring information shared by the tourism industry and others is culturally appropriate and factually correct. This includes the taking and sharing of photographs.

Management considerations

- All Aboriginal sites whether registered or not are protected under the *Aboriginal Heritage Act 1972,* and it is an offence to alter an Aboriginal site unless permission is granted in accordance with the Act.
- Much of the access to adjacent exclusive native title areas or ALT reserves is through the marine parks, and this should be considered during development of communication material and when setting commercial operator licence conditions. Visitors will need to seek permission from Traditional Owners and/or the ALT prior to entering adjacent exclusive native title areas.

Management strategies

1. Develop and implement tools to measure and monitor effects of visitor and management activities on cultural heritage values and sites and implement strategies to address issues where appropriate.
2. In collaboration with Dambimangari Traditional Owners, apply commercial operator licence conditions to ensure culturally sensitive and appropriate visitation to cultural heritage sites.
3. Regulate access to sites that Traditional Owners consider unsuitable for visitation (through commercial operator licences, by regulation or other mechanisms as relevant), including restrictions on foot access to intertidal reefs (e.g. Kingfisher Islands, Talbot Bay).
4. Work with Dambimangari people and commercial operators to promote culturally appropriate visitation.
5. Where culturally appropriate, ensure visitors are aware of cultural laws and protocols.

Key performance indicator	
Culturally significant sites	
Target	To be developed with Dambimangari Traditional Owners
Performance measure	To be developed with Dambimangari Traditional Owners
Reporting	Annually

Natural values

Strategic objective: to protect and conserve biodiversity and ecological integrity

Habitats and communities

Protecting and conserving habitats is important to maintain biodiversity and ecological integrity. Habitats include both geomorphic habitats such as mudflats and biological habitats such as *jindim* (mangroves). Refer to *Marine park values* for information on the key habitats and communities in the proposed marine parks.

Management objective : To protect and conserve ecologically important habitats and communities

Key management challenges

- Improving baseline information on marine ecosystems, habitats and communities, biodiversity and the human-induced pressures on them.
- Understanding and, where possible, adapting to the potential impacts of climate change on habitats and communities. For example, increased sea surface temperature, coral bleaching events, sea level rise, ocean acidification, changes in rainfall and weather patterns (e.g. storm events), changes in oceanography (e.g. wave size and ocean currents) and changes in distribution of marine species (Department of Climate Change and Energy Efficiency 2007).
- Planning for and mitigating potential risks from:
  - marine pests (introduced or native)
  - increased nutrients e.g. sewage discharge and land-based run-off
  - pollution including major events (e.g. oil spills), chronic pollution and toxicants (e.g. anti-fouling agents and bilge water) and industrial waste.
- Mitigating impacts of physical disturbance from vessels (e.g. anchoring, propeller scour, wake/wash) and people or animals (e.g. trampling and reef walking).
- Minimising the potential impacts of recreational and commercial fishing and pearling activities (see *Visitor attractions* and *Commercial fishing and pearling* sections for related management strategies).
- Minimising the potential impacts of any development or mining related infrastructure in and around the marine parks (see *Mineral exploration and development* for related management strategies).

Management considerations

- Ecologically important habitats are protected by one or a combination of the Wildlife Conservation Act, FRM Act, EPBC Act and EP Act.
- Any environmental impact assessments for proposed developments within or near the proposed marine parks will generally be referred to Parks and Wildlife, the MPRA and JMB for advice.
- The *National Climate Change Adaptation Framework* aims to support decision makers across all scales to understand and incorporate climate change into policy and management decisions.
- The Australian Quarantine and Inspection Service has requirements for the handling and treatment of ballast water in ships entering Australian waters to reduce the risk of introducing marine pests (Department of Agriculture, Fisheries and Forestry 2011).
- The *National Water Quality Management Strategy* provides a nationally consistent approach to water quality management, implemented in WA through a state implementation framework. Development and infrastructure proposals with the potential to significantly affect water quality are subject to assessment and/or regulation under the EP Act.
- In 2014 the Environmental Protection Authority (EPA) drafted an *Environmental Assessment Guideline for Protecting the Quality of Western Australia's Marine Environment*.

Management strategies

1. Implement the zoning scheme for the proposed marine parks (refer to *Zoning and permitted uses*). [DoF]
2. Prepare and implement a coordinated and prioritised research plan (taking into consideration research being conducted through the Western Australian Marine Science Institution (WAMSI). [DoF]
3. As part of the research plan, conduct research to improve knowledge and understanding of habitats and communities in the proposed marine parks which will include:
   - habitat mapping, biological surveys, marine fauna ecology and associated biodiversity assessments
   - understanding key ecological processes, such as connectivity and terrestrial-marine linkages.
   - assessing the extent of human usage and potential impacts on biodiversity
   - ecological implications and potential adaptations to climate change
   - establishing baselines and monitoring water and sediment quality, particularly in high visitation areas. [DoF – in relation to important habitat for fish, sharks and rays]
4. Ensure outcomes from the research plan are used to prepare and implement a coordinated and prioritised long-term monitoring plan to measure the condition of the marine parks' ecological values in relation to pressures and management actions (see *Research and monitoring* section for more details). [DoF]
5. Where possible, work with neighbouring land and water managers to reduce environmental impacts on marine park values such as regulating sewage discharge.
6. Support international and national climate change initiatives and where possible develop regional and local level adaptive management responses for the protection of park values, informed by research and monitoring outcomes.
7. Develop a maritime incident response plan, specific to the proposed marine parks, that complements the state's marine oil spill response plan. [DoT]
8. Develop and implement a marine pest early warning and monitoring program. [**DoF**]

Key performance indicators	
Wooddooroo (coral reef) communities	
Target	No change in *wooddooroo* (coral reef) community composition and live coral cover as a result of human activities in the proposed marine parks
Performance measure	1. Community composition 2. Live coral cover
Reporting	Every five years
Jindim (mangrove) and *galaw* (saltmarsh) communities	
Target	No change in community composition or loss of extent and density of *jindim* (mangrove) and *galaw* (saltmarsh) communities as a result of human activities in the proposed marine parks
Performance measure	1. Community composition 2. Extent 3. Density
Reporting	Every five years
Joodam (seagrass) and *lanjam* (macroalgae) communities	
Target	To obtain an adequate level of knowledge of *joodam* (seagrass) and *lanjam* (macroalgae) in the proposed marine parks to inform the setting of a long term target
Performance measure	To be developed
Reporting	Every five years

Marine fauna including species of special conservation interest

Species of special conservation interest include species that are protected under State or Commonwealth legislation, species listed as having special conservation status (e.g. threatened or vulnerable) and/or species which are extracted for human use. See *Marine park values* for information on the key species in the proposed marine parks.

Rubbish in the sea is a big threat and many *jurluwarra* may mistakenly eat a plastic bag thinking it is a jellyfish. *Jurluwarra* may get caught in ghost nets and drown. We need to develop a monitoring program for *jurluwarra* to see how they are affected by climate change. They feed on reefs and seagrass meadows which are very sensitive to changes in the environment… We must make sure that our saltwater country is not polluted to ensure *munumbanay* and *jigeedany* stay healthy. Visitors to our country must be reminded to be responsible and not leave their rubbish behind.

Dambimangari Aboriginal Corporation 2012

Indo-Pacific bottlenose dolphin. Photo – Simon Allen

Management objective: To protect marine fauna including species of special conservation interest

Key management challenges

- Improving baseline data on marine wildlife.
- Minimising disturbance to marine mammals and other wildlife (e.g. through wildlife watching and noise).
- Minimising physical injury and fatalities to marine mammals and other wildlife (e.g. from boat strike, by-catch or deliberate harm).
- Reducing litter and marine debris to reduce likelihood of ingestion and entanglement.
- Understanding and, where possible, adapting to the potential impacts of climate change on marine fauna including species of conservation interest.
- Minimising the potential impacts of recreational and commercial fishing and pearling activities (see *Visitor attractions* and *Commercial fishing and pearling* sections for related management strategies).
- Planning for and mitigating the potential risk of pollution including major pollution events (e.g. oil spills) and chronic pollution and toxicants (e.g. anti-fouling agents and bilge water) (see *Habitats and communities* section for related management strategies).
- Minimising the potential impacts of any development or mining related infrastructure in and around the marine parks (see *Mineral exploration and development* section for related management strategies).

Management considerations

- Many species of marine fauna are protected by one or a combination of the Wildlife Conservation Act, FRM Act, EPBC Act and EP Act.
- Management strategies should be consistent with and support international, bilateral and regional agreements including those for seabirds and other migratory species, dugongs, turtles and trade in endangered species.
- Management of the proposed marine parks should be consistent with existing policies, regulations and guidelines relating to wildlife interactions (e.g. fisheries regulations prohibiting shark tourism activities).
- Relevant instruments and conservation initiatives for high priority values include *WA Marine Turtle Strategic Conservation Plan 2014-2021*, *National Plan of Action for the Conservation and Management of Sharks 2012 Shark-plan 2* and *Recovery Plan for Sawfish and River Sharks*.

Management strategies

1. Consider the need for temporary restrictions e.g. speed limits and/or additional measures where necessary to protect threatened species, ecological communities or a natural feature. [DoT]
2. As part of the research plan, conduct research and integrate indigenous knowledge to improve knowledge and understanding of:
   - the abundance, distribution and natural variability (spatial and temporal patterns) of marine fauna including threatened and protected species
   - potential disturbance to threatened, vulnerable and migratory species in the proposed marine park (including feral animals)
   - how climate change may impact on marine fauna including threatened, vulnerable and migratory species. [DoF in relation to protected fish, sharks and rays]
3. Ensure park users are aware of and comply with relevant legislation for the protection of marine mammal and other wildlife interaction policies and guidelines.
4. Ensure records are kept of any stranded marine fauna.
5. As part of on-country work, patrol the shoreline and waters of the proposed marine park for litter and marine debris and remove and record as necessary.
6. Investigate mechanisms to work with commercial operators engaged in wildlife viewing to collect basic information e.g. position and behaviour to assist with research and monitoring.

Munumbanany (humpback whale). Photo – Tim Willing

Key performance indicators	
Jalawadda **(turtles)**	
Target	No loss of abundance of nesting *jalawadda* (turtles) or breeding success as a result of human activities or feral animal predation in the proposed marine parks
Performance measure	1. Abundance of nesting turtles 2. Amount of feral animal predation on nests at key rookeries 3. Condition of foraging and nesting habitats
Reporting	Every five years
Walyn **(dugongs)**	
Target	No loss of *walyn* (dugong) abundance and health as a result of human activities in the proposed marine parks
Performance measure	1. Abundance 2. Number of injuries and mortalities (e.g. due to boat strike)
Reporting	Every five years
Sharks and rays	
Target	No loss in presence and abundance of species of conservation concern (e.g. sawfish) as a result of human activities in the proposed marine parks
Performance measure	1. Presence and abundance of species of conservation concern
Reporting	Every five years
Jigeedany **(dolphins)**	
Target	No loss of dolphin abundance and diversity as a result of human activities in the proposed marine parks
Performance measure	1. Abundance 2. Diversity
Reporting	Every five years
Goiyoiya **(estuarine crocodiles)**	
Target	No loss in abundance of *goiyoiya* (estuarine crocodiles) as a result of human activities in the proposed marine parks
Performance measure	1. Abundance
Reporting	Every five years

Warli (green turtle). Photo – Simon Allen

Recreation and tourism values

Strategic objective: To allow recreation and tourism experiences for the appreciation of the parks' landscape, natural and cultural heritage values

Visitor attractions – nature based recreation and tourism; cultural heritage; recreational fishing; remote seascapes; maritime and European heritage

Recreation and tourism allows people to experience the proposed parks, develop an appreciation of their values and support conservation outcomes. Currently people either visit the area independently by private vessel or through tourism and other commercial operators on vessels or seaplanes. Visitation to the Kimberley has increased significantly in the past 10 years and is predicted to continue to increase with the continued development of the expedition cruise industry and the sealing of the road to Cape Leveque. People generally visit the proposed parks to appreciate the remote seascapes, watch wildlife and to enjoy sport and game fishing. The major attraction is the spectacular *Garaanngaddim* (Horizontal Falls) which offers a unique experience whether viewed from the air or on board a vessel. For more information on key sites and tourism values see *Marine park values.* Access to the proposed national park is described in *Proposed national park: values and management summary*.

Management objective: To ensure that recreation and tourism activities are compatible with the outstanding cultural and natural values

Key management challenges

- Ensuring tourism activities do not adversely affect cultural, natural and other commercial, recreational and tourism values.
- Maintaining the quality of the recreational fishing experience.
- Maintaining the area's remote seascapes.
- Ensuring that park users understand the permission requirements for accessing exclusive native title areas adjacent to, but accessed through, the marine parks. This includes operators of commercial and recreational vessels, helicopters, airplanes and the use of unmanned aerial vehicles (drones).

Management considerations

- Recreational fishing in the proposed marine parks will continue to be managed by DoF through licencing and bag and size limits. DoF has released a code of conduct for recreational fishing in the Kimberley region.
- The CALM Act and CALM Regulations require commercial businesses operating in marine parks and reserves to have a commercial operations licence. Commercial operators must abide by the conditions outlined in the Commercial Operator Handbook.
- Recreation and tourism are managed in accordance with Parks and Wildlife Policy No. 18 *Recreation, tourism and visitor services*.
- Cultural heritage sites are protected under the *Heritage of Western Australia Act 1990* and cultural values listed in the National Heritage Listing are protected under the EPBC Act.
- Shipwrecks are either protected under the *Historic Shipwrecks Act 1976* or *Maritime Archaeology Act 1973*.
- Parks and Wildlife Policy No. 34 *Visual resource management on lands and waters managed by CALM* helps to ensure that uses and activities are planned and implemented so as to complement rather than detract from the inherent visual qualities of the environment.

Management strategies

1. Promote opportunities for sustainable recreation and tourism, including the provision of visitor facilities if required.
2. Conduct periodic visitor risk assessments in the proposed marine parks as required and mitigate identified issues. [DoT, DoF]
3. Ensure recreational fishers are aware of the zoning scheme and any restrictions that may apply to their activities in the proposed marine parks. [**DoF**]
4. Conduct research and monitoring to determine if ecosystem effects from recreational fishing occur in the proposed marine parks and undertake adaptive management actions if required. [**DoF**]
5. Investigate whether populations of recreationally targeted species are sustainable in the proposed marine parks and undertake adaptive management actions if required. [**DoF**]
6. Monitor recreational fishing catch and effort in the proposed marine parks and report the results to Parks and Wildlife and the MPRA for the annual and periodic reviews of the implementation of the management plan. [**DoF**]
7. Provide information to enhance visitor enjoyment of, and reduce impacts on, European heritage and other maritime sites if required.
8. Consider the quality of the remote seascapes of the proposed marine parks in site planning and assessment of development proposals.

Key performance indicator	
Nature based recreation and tourism	
Target	A target is to be developed for measuring visitor satisfaction in the proposed marine parks
Performance measure	Visitor satisfaction (e.g. experiences and expectations)
Reporting	Every five years

Visitor safety

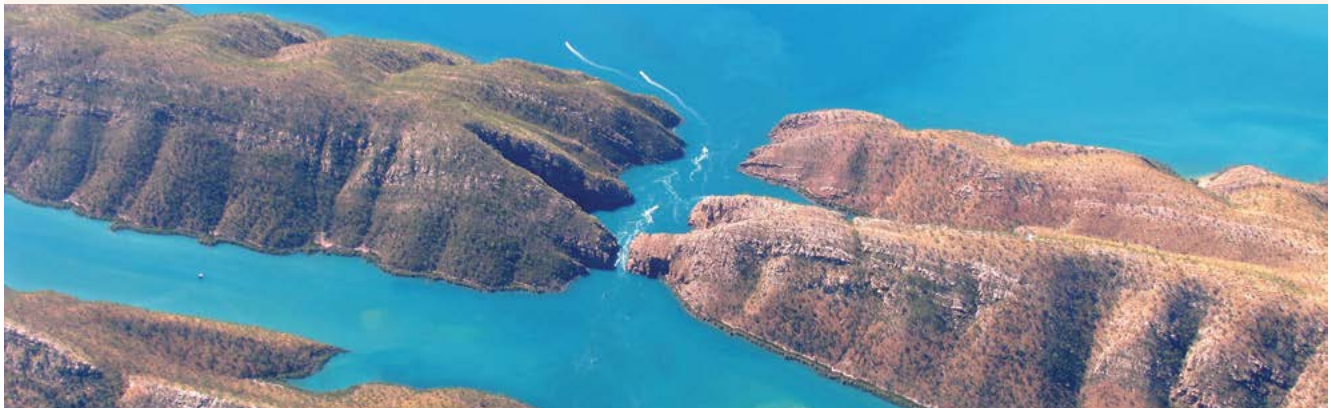
The remoteness of the proposed parks, the strong tides and the chance of tropical cyclones pose risks to visitors who may be inexperienced or unprepared for such conditions. *Garaanngaddim* (the Horizontal Falls) can create treacherous conditions dangerous to navigate. Boats have overturned and people have had to be rescued when trying to ride the falls on insufficient vessels or when inexperienced. In the peak tourism season the large number of vessels and seaplanes which visit the confined area at any one time creates an additional navigation hazard. Seaplanes require calm water to land, and lots of wake and wash from vessels can create unsafe conditions.

> Dambimangari country sees many visitors each year. A visitor is anyone who is not a Dambimangari Traditional Owner. Visitors may be tourists, locals fishing along the coastline, mining people, government workers and many more. Dambimangari Traditional Owners often don't know them and the country does not know them either. We are responsible for the safety of visitors and bear the consequences of accidents and disturbance of our cultural sites. When visitors come, we talk to country to introduce them and smoke them to keep bad spirits away.
>
> Dambimangari Aboriginal Corporation 2012

Garaanngaddim (the Horizontal Falls). Photo – Cathy Zwick

Dambimangari people welcome visitors to their traditional country, including visiting the *Garaanngaddim* (Horizontal Falls), however it is part of Dambimangari traditional cultural laws and protocols not to travel through the falls when the tides are rushing through.

> This is the *Woongudd* (snake) itself… Dambimangari people recognise that the area is important for tourists, but for Traditional Owners the respectful time to travel through the falls is in neap tides – calm water time.
>
> DAC pers. comm. 2015



Garaanngaddim (the Horizontal Falls) from the air. Photo – Tim Willing

Management objective: To minimise risks to visitors, and encourage appropriate visitor behaviour

Key management challenges

- Ensuring visitors are aware of the risks in the proposed marine parks e.g. the presence of *goiyoiya* (estuarine crocodiles) and navigational risks.
- Ensuring the safety of visitors to the proposed marine parks especially in high risk areas such as around *Garaanngaddim* (Horizontal Falls).

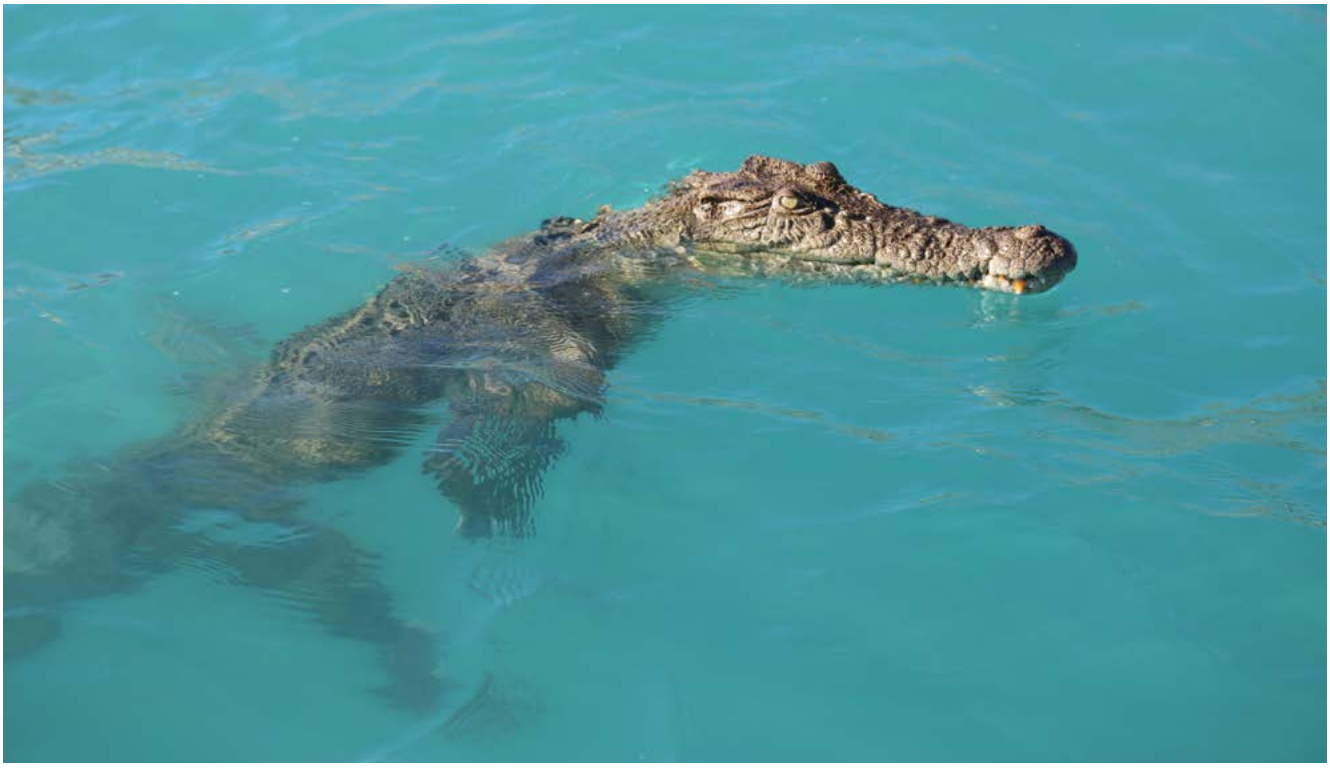
Management considerations

- Parks and Wildlife and Dambimangari Traditional Owners have a shared concern for visitor safety. Under traditional law, Dambimangari are responsible for the safety and wellbeing of visitors to their country.
- Risks to visitors are managed under Parks and Wildlife policy No 53 *Visitor Risk Management*.
- DoT is responsible for installing and maintaining navigation aids and other boating safety measures.

Management strategies

1. Prepare educative and interpretative material to:
   - increase visitor enjoyment and safety
   - reduce impacts on sites
   - ensure visitors are aware of cultural laws and protocols
   - encourage appropriate behaviour including compliance with the zoning scheme.
2. Ensure maritime safety guidelines are followed. [DoT]
3. Investigate the need for additional mechanisms to ensure the safety of seaplanes and vessels operating within the proposed marine parks. [DoT]
4. Ensure safe access is maintained for visitors to *Garaanngaddim* (the Horizontal Falls). [DoF, DoT]
5. Assess the need for a mooring and anchoring plan and prepare and implement if necessary.
6. Ensure that monitoring programs (see *Research and monitoring*) assess the effectiveness of the parks' management arrangements on visitor safety and adapt management strategies as required.

Key performance indicator	
Nature based recreation and tourism	
Target	The number of serious incidents[8] reported remains stable or decreases from 2015 levels
Performance measure	Number of incidents relating to visitor safety reported to Parks and Wildlife and/or the JMB
Reporting	Every five years



Visitors need to be crocodile safe. Photo – Raphael Matos

[8] Serious incidents are those requiring medical treatment.

Education and interpretation

Education and interpretation programs will increase understanding of the values of the proposed marine parks, leading to responsible use and enhanced protection. As most visitors arrive aboard commercial vessels or planes, there is an opportunity to deliver key messages via commercial operators. While most visitors to marine parks comply with management regulations when they understand why strategies are in place, managers need to monitor the level of compliance and take action where necessary regarding inappropriate or illegal behaviour.

Management objective: To increase community understanding and appreciation of the proposed marine parks' values and support for management arrangements

Key management challenges

- Ensuring up-to-date educational material is accessible to a wide range of visitors.
- Maximising compliance, self-regulation and voluntary peer surveillance, given that the area's remoteness and limited access reduces opportunities for patrols.

Management considerations

- Education and compliance programs will be collaboratively established with DoF.
- An adequate level of 'on water' presence by authorised officers, Dambimangari Rangers and DoF officers will be necessary.

Management strategies

1. Develop a communication program which includes:
   - educative and interpretive information on ecological and cultural values
   - the zoning and other management arrangements
   - the condition of the proposed park
   - safety and any relevant regulations, policies and guidelines relating to management. [DoF]
2. Implement the communication plan through educational and interpretive materials and presentations to the community, commercial operators, recreational clubs and businesses with an interest in the proposed marine parks. [DoF]
3. Develop and implement a collaborative education and compliance program to maximise compliance with the management plan and to encourage tour operators, visitors on private vessels and commercial fishing, pearling and mining operators to report any inappropriate or unlawful activity. [DoF]
4. Facilitate cross-authorisation of enforcement officers as appropriate. [DoF, DoT]
5. Monitor compliance statistics and adapt management strategies to address any non-compliance issues. [DoF]

Research and monitoring

Strategic objective: to increase understanding of the values of the proposed parks through research and monitoring to guide, adapt and improve management

Research and monitoring

The proposed marine parks offer excellent opportunities for ecological, anthropological and archaeological research. Cultural understanding and scientific knowledge of values are required to ensure the proposed marine parks are effectively managed. Long term monitoring of the condition of the marine environment and the pressures that impact that condition is also essential to evaluate management effectiveness and inform an adaptive management approach. Parks and Wildlife's Marine Science Program is progressively implementing a systematic marine monitoring program (Western Australian Marine Monitoring Program) in the state's marine parks and reserves to improve understanding of management effectiveness, and to inform future research, monitoring and decision making.

Dambimangari Traditional Owners and Parks and Wildlife officers conduct visitor surveys on country. Photo – Todd Quartermaine/Parks and Wildlife

Management objective: To successfully implement coordinated research and monitoring plans

Key management challenges

- Integrating traditional ecological knowledge and contemporary scientific knowledge and research methods and ensuring research is carried out in a culturally appropriate manner.
- Ensuring research findings contribute to improved management outcomes.

Management considerations

- Research partnerships between research scientists and Dambimangari Traditional Owners should be accompanied by a research agreement.
- The Western Australian Marine Science Institution's (WAMSI's) Kimberley Marine Research Program will provide scientific information to support the effective management of marine environments in the Kimberley, including marine parks.
- All research undertaken within a marine park requires an appropriate research permit and approvals which are issued under the CALM Act, Wildlife Conservation Act, FRM Act, EPBC Act and/or the *WA Animal Welfare Act 2003*.
- Research within the parks needs to take into account Indigenous Cultural Intellectual Property (ICIP) and World Intellectual Property Organisation (WIPO) principles.

Management strategies

1. Develop and implement protocols to ensure research is culturally appropriate and that information shared by Dambimangari Traditional Owners is used in a culturally appropriate manner.
2. Investigate opportunities and develop a process to integrate Dambimangari traditional ecological knowledge with contemporary research and monitoring, where appropriate.
3. Develop a research plan for the marine park (see *Natural values* for details). [DoF]
4. Develop and implement a coordinated and prioritised monitoring program for the proposed marine parks that:
   - assesses the effectiveness of the zoning scheme and management arrangements for protection of the parks' values, with a focus on condition, pressure and response indicators and metrics for high priority values
   - assesses the nature, level and potential impacts of pressures (from human activities and external pressures such as climate change), including the provision of early warning of critical changes in pressures on park values
   - provides a better understanding of the dynamic nature of undisturbed marine ecosystems as reference points for comparisons with altered environments
   - uses traditional ecological knowledge and, where possible, provides capacity building and employment opportunities for Traditional Owners
   - meets MPRA requirements for assessing the implementation of the management plan. [DoF]
5. Facilitate knowledge transfer and uptake of research and monitoring findings to adaptive marine park management, planning and policy, and where relevant report on conservation achievements and challenges. [DoF]
6. Identify and communicate high priority research and monitoring projects which address key knowledge gaps to appropriate external organisations and funding bodies.
7. Facilitate or support research and monitoring in the park, including projects by external organisations, by providing assistance where possible. [DoF]
8. Ensure granting and renewal of permits relating to scientific research is consistent with the management plan. [DoF]
9. Provide necessary information and support for assessments of management plan implementation by the MPRA. [DoF]
10. Liaise with industry, other government agencies and non-government organisations to access information held on ecological research and monitoring in the area.
11. Provide research, training and monitoring opportunities to rangers and other staff as relevant.

Key performance indicators

Research and monitoring	
Target	Research and monitoring plans have been developed and approved by the JMB and research and monitoring activities, as detailed in each relevant plan, have been implemented.
Performance measure	1. Preparation and implementation of research and monitoring plans 2. Number of current and completed research and monitoring projects 3. Number of values, including high priority values, currently being monitored
Reporting	To be determined

Resource use

Strategic objective: To allow for sustainable resource use

Commercial fishing and pearling

Commercial fishing is an important and economically significant industry in the proposed marine parks and provides employment opportunities and fresh fish to regional towns. Key fisheries operating in the proposed marine parks include the Kimberley Gillnet and Barramundi Managed Fishery, and the Kimberley Prawn Managed Fishery. The Mackerel Managed Fishery also operates in the proposed North Lalang-garram Marine Park. There is a pearling lease in the proposed Lalang-garram / Horizontal Falls Marine Park in *Ganbadba* (Talbot Bay) on the northern side of the *Garaanngaddim* (Horizontal Falls).

Management objective: To recognise and allow for commercial fishing and pearling operations whilst maintaining the cultural and natural values of the proposed marine parks

Key management challenges

- Ensuring commercial fishers are aware of and comply with zoning and management arrangements.
- Improving baseline information on any potential trophic and/or ecosystem effects caused through commercial fishing in the proposed marine parks.
- Ensuring that fishers conduct commercial fishing activities in a culturally sensitive manner.
- Improving baseline information on potential by-catch of non-target species through commercial fishing activities in the proposed marine parks.
- Improving baseline information on commercial fishing interactions with marine mammals and other fauna.

Management considerations

- Commercial fishing and the pearling industry is managed and regulated by DoF under the FRM Act and *Pearling Act 1990*.
- Commercial fishing is permitted in general use zones. Commercial fishing can occur in special purpose zones with the exception of commercial prawn trawling and gillnetting.
- The pearling lease in front of *Garaanngaddim* (the Horizontal Falls) is a non-exclusive use area. Other users can move through the lease provided they do not interfere with pearling gear or pearl oysters.

Management strategies

1. Ensure commercial fishers are aware of the zoning scheme and any restrictions that may apply to their activities in the proposed marine parks. [**DoF**]
2. Work with commercial fishers through peak stakeholder bodies to ensure commercial fishing activities are conducted in a culturally sensitive manner. [DoF]
3. Conduct research and monitoring to determine if ecosystem effects from commercial fishing occur in the proposed marine parks and undertake adaptive management actions if required. [**DoF**]
4. Monitor commercial fishing catch and effort in the proposed marine parks to inform periodic reviews of the implementation of the management plan. [**DoF**]
5. Investigate the extent and significance of interactions between commercial fishing and marine mammals and other protected species and address as required. [DoF]
6. Work with the pearling industry to ensure continued access through *Garaanngaddim* (Horizontal Falls) for recreational and commercial vessels. [DoF, DoT]

Parks and Wildlife and Dambimangari Rangers installing base and datalogger of WAMSI weather station in Dambimangari country.
Photo – Michael Hourn/Parks and Wildlife

Mineral exploration and development

Some islands and coastal areas adjacent to the proposed Lalang-garram / Horizontal Falls Marine Park are rich in mineral deposits such as iron ore and copper. Mining tenements (live and pending) overlay parts of the marine park surrounding these areas. There are two iron ore mines on Koolan and Cockatoo islands outside the proposed Lalang-garram / Horizontal Falls Marine Park.

Management objective: To ensure industry and associated activities are managed in a manner consistent with the objectives of the proposed marine parks

Key management challenges

- Ensuring that mineral exploration and developments in the area are assessed and managed in recognition of marine park values.

Management considerations

- Mineral, petroleum and pipeline activities are regulated by the Department of Mines and Petroleum (DMP) under the *Mining Act 1978*, the *Petroleum and Geothermal Energy Resources Act 1967* and the *Petroleum Pipelines Act 1969*.
- Mining, industrial and development proposals may be subject to an environmental impact assessment by the Environmental Protection Authority under the *Environmental Protection Act 1968*.
- Environmental risks associated with shipping and ports are managed through a range of state and national legislation, and international agreements.
- DoT and Department of Planning are responsible for planning and development of coastal infrastructure, while port authorities are autonomous bodies operating under the *Port Authorities Act 1999*. This act requires port authorities to protect the environment of the port, and minimise the impact of port activities on that environment.
- During the life of the management plan there may be proposals to install or construct infrastructure associated with mining, pearling, tourism or public recreation. Proposed developments including exploration activities may be referred to the EPA and subject to the environmental impact assessment requirements of the EP Act.

Management strategies

1. Provide formal advice to the MPRA and EPA for the environmental assessment of proposed mineral, petroleum and pipeline activities in and adjacent to the proposed marine park. [DMP, DoF, Office of the Environmental Protection Authority (OEPA)]
2. Provide advice on the assessment, setting of conditions, and monitoring and reporting requirements for mineral, petroleum and pipeline activities consistent with management objectives and management targets for values of the proposed marine parks. [DMP, OEPA]
3. Where mining, petroleum and pipeline activities have been approved, allow access for mining, petroleum and pipeline activities (e.g. ship loading facilities) within the proposed Ganbadba Sanctuary Zone, Traverse Island Special Purpose Zone (recreation and conservation) and general use zones where required. [DMP, DoT]

‘One of the greatest wonders of the natural world’

Sir David Attenborough

Garaanngaddim (Horizontal Falls)

The impressive *Garaanngaddim* (Horizontal Falls) in the Buccaneer Archipelago is one of the major attractions of the Kimberley. *Garaanngaddim* is like no other; instead of flowing vertically the ‘waterfall’ is created when the massive tides in the area flow through two narrow gaps in the McLarty Range in *Ganbadba* (Talbot Bay). Water builds up on one side of the narrow cliff passages faster than it can flow through them, creating a height difference of up to 4m on a spring tide. Visitors come to experience the sheer power of the Kimberley tides or to view the water rushing through the rugged cliffs from the air. The area is culturally significant to Dambimangari people and features in their traditional Dreamtime narratives.

Horizontal Falls – *Garaanngaddim* – is one of the extremely important cultural sites for the Traditional Owners. It is a potentially dangerous place and has to be treated with respect and consideration to ensure safe passage of those who choose to enter.

DAC pers. comm. 2015

Dambimangari Traditional Owners of *Garaanngaddim* (the Horizontal Falls) recognise that tourists enjoy the thrill of venturing through the falls when the tide is rushing however, for the Traditional Owners the respectful time to travel through the falls is in neaps or during the calm water time. As senior Traditional Owners have explained on numerous occasions the rushing tide is ‘the *Woongudd* (Snake) itself’ and that travelling through the falls at full rushing tide is when ‘the *Woongudd* is travelling’. Traditional Owners say that it is both disrespectful and dangerous to travel when the falls are rushing and further, “the *Woongudd* is damaged every time people drive through the gap.”

DAC pers. comm. 2015

Photo – Todd Quartermaine/Parks and Wildlife

4 Proposed Oomeday National Park

> The land means everything to us. All things on our country are important to us. Through our law we know that everything is connected.
>
> Dambimangari Aboriginal Corporation 2012

> Some of the animals that live on our lands and in our seas are rare or threatened elsewhere in the world.
>
> Dambimangari Aboriginal Corporation 2012

The proposed Oomeday National Park lies about 110km from Derby and surrounds the renowned *Garaanngaddim* (Horizontal Falls). The area proposed to become national park lies wholly within the Dambimangari native title determination area that is currently part of Reserve 30674 (Aboriginal Lands Trust land) and island areas of unallocated Crown land. Once created, the proposed jointly managed class 'A' national park will cover about 14,000ha to high water mark, and be jointly vested in DAC and the Conservation Commission (see Map 9).

The proposed national park lies within Dambimangari people's exclusive possession native title area (see Map 2).[9] Visitors accessing areas of exclusive possession native title outside the national park must seek permission from Dambimangari Traditional Owners and/or the Aboriginal Lands Trust (for Aboriginal Lands Trust lands) before their visit.

Reserve 30674 is currently managed under the Healthy country plan as part of the Dambimangari IPA. The IPA provides Commonwealth recognition of the area's rich cultural and natural importance. The proposed national park will provide statutory protection under the CALM Act and a joint management framework to conserve and protect the values of the area. It will build on the work of the Dambimangari Rangers with the addition of Parks and Wildlife resources. All of the Dambimangari country is culturally significant. It is important that management of the proposed national park is holistic and integrated with the management of the rest of Dambimangari country.

The proposed Oomeday National Park lies within the West Kimberley National Heritage Area. This listing provides for protection of values of matters of national environmental significance under the EPBC Act and includes the cultural and natural values within the proposed national park.[10]

To ensure the creation and management of the proposed national park, and in accordance with the Native Title Act, the State is currently negotiating an ILUA with the Dambimangari Traditional Owners (see *Joint management*).

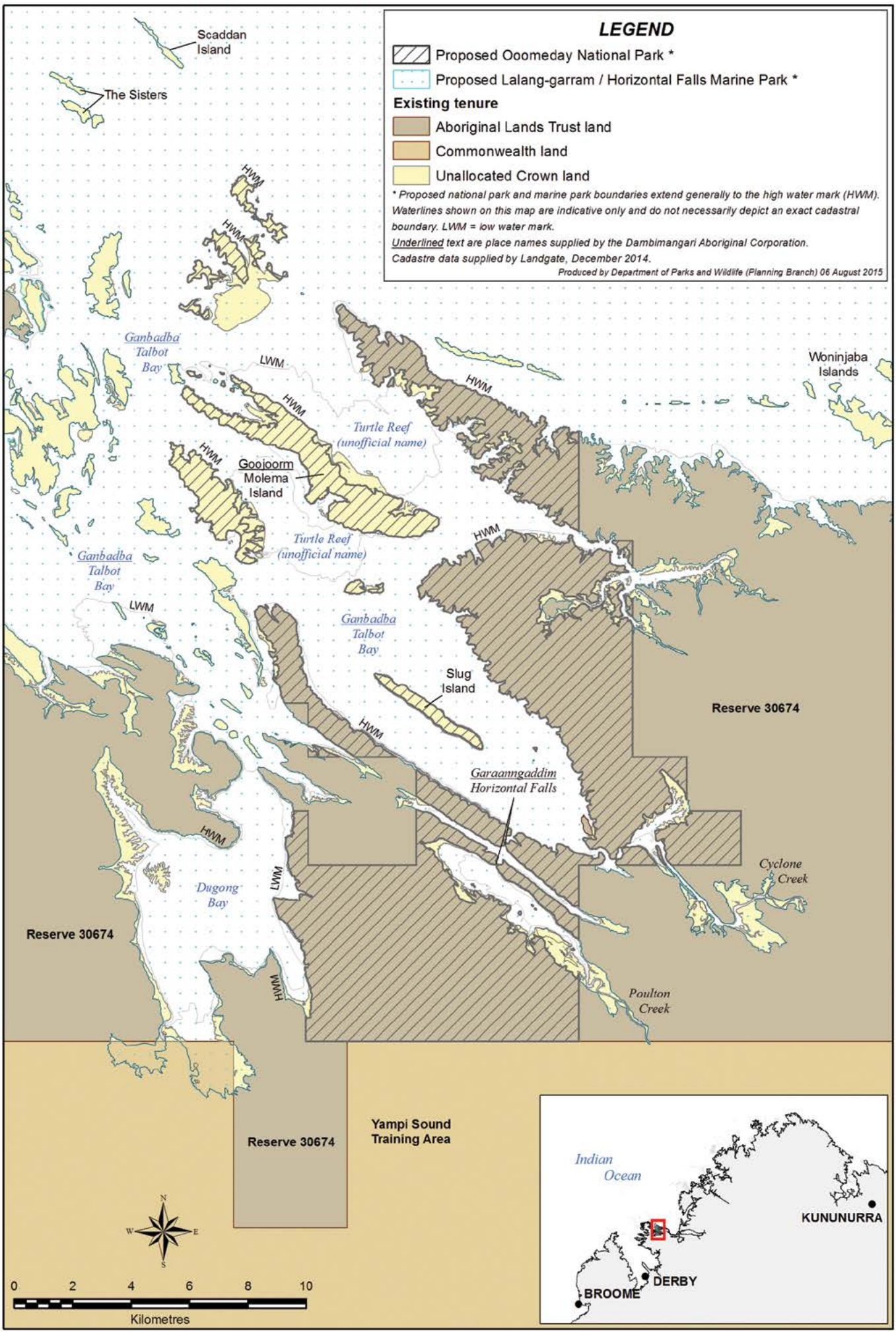
The creation of the park and implementation of this plan will provide new opportunities to increase knowledge and appreciation of the area. This will be done through research and monitoring and by applying a joint management framework for the protection of culture and heritage, the landscape, plants, animals and habitats and culturally appropriate opportunities for recreation and tourism. The joint management framework will also apply to the management of fire, weeds and introduced animals, and resource use.

[9] The creation of the national park will not extinguish native title and Dambimangari Traditional Owners can continue to exercise their native title rights unless inconsistent with the management and operation of the park.

[10] For more information on the National Heritage List and the West Kimberley National Heritage Area see: www.environment.gov.au/heritage/places/national/west-kimberley

Left: Proposed Oomeday National Park. Photo – Melissa Loomes/Parks and Wildlife

Map 9 Proposed Oomeday National Park: existing tenure



4.1 Proposed national park: values and management summary

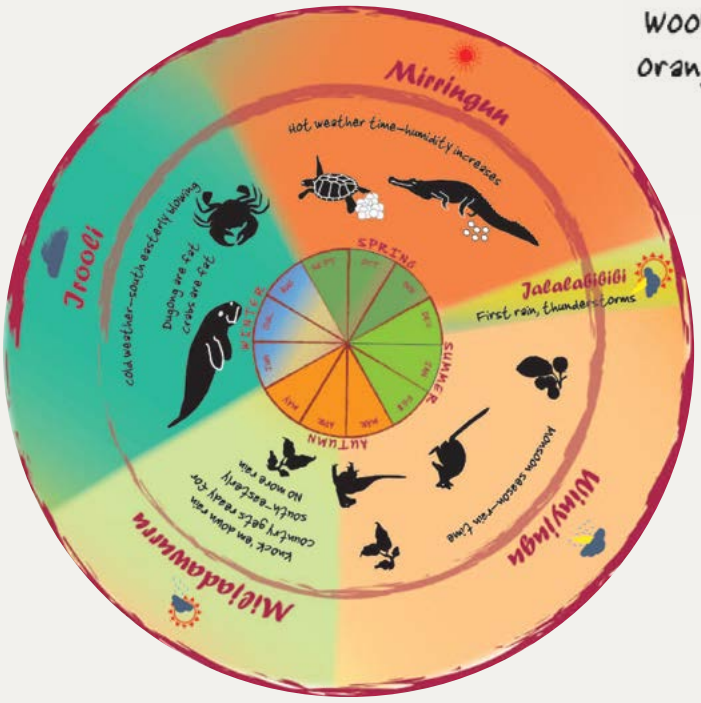
The *Proposed national park: values and management summary* summarises the operations proposed to be undertaken in the proposed Oomeday National Park over the life of the plan. These operations are guided by relevant legislation and Parks and Wildlife policy (see *Management context*).

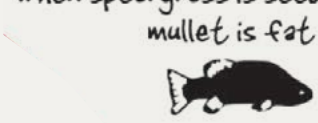
The management strategies have been developed to address potential impacts on the protection of park values. These potential impacts are highlighted in the management challenges identified for each value and include current and future pressures, threats, risks or challenges. Management considerations are also identified for each value and provide specific context for the implementation of the strategies.

All the plants on our country are important for Dambimangari people. We use them for tucker, medicine, tools, weapons, arts and crafts. With the knowledge from our old people we read our country like a book. When certain trees are flowering they are indicators for other things on country – when certain animals are fat and good to hunt for example. When *garraam* (emu berry) is fruiting *jebarrany* (emu) are getting fat and are good to be hunted. Every fruit and every plant has its season.

Dambimangari Aboriginal Corporation 2012

Boab flower. Photo – Greg Keighery/Parks and Wildlife





The Dambimangari seasonal calendar shows how different bush plants and animals are in season and ready for hunting at different times in the year.

Dambimangari Aboriginal Corporation 2012

Traditional Owners undertaking an on-ground review of the proposed Oomeday National Park. Photo – Christabelle Oobagooma/DAC

> The cultural sites are places that tell us about creation, how the earth was formed. They hold the traditional knowledge passed down from generation to generation. Sitting, talking and experiencing those places makes us feel close to our ancestors. They are part of our heritage. Each place tells a different story about how the *Wunggurr* and *Wandjina* created the rocks, the rivers and the ocean. Our belief is that all things in our country were put there for a purpose by the *Wandjina*. Our country has significant cultural sites with rules and responsibilities about how to look after it.
>
> Dambimangari Aboriginal Corporation 2012

Cultural and heritage values

Strategic objective: To protect and conserve the value of the land to the culture and heritage of Dambimangari people

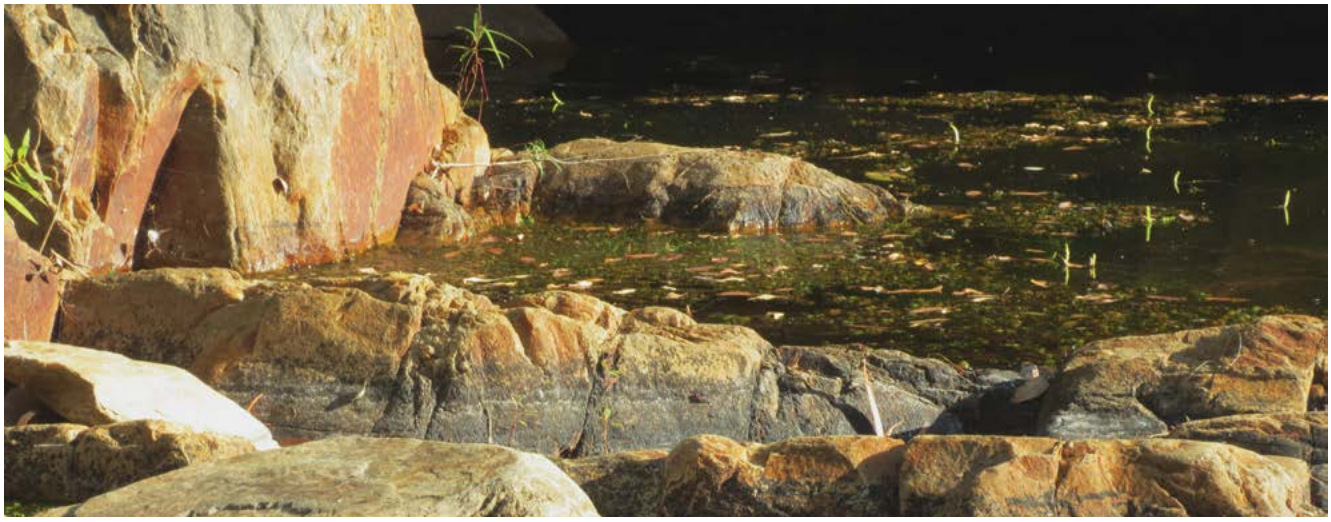
Culture and heritage

The Healthy country plan articulates the importance and values of country to Dambimangari people. Connection to country means Dambimangari have responsibility to look after country. Some plants and animals are especially important to Dambimangari people, and their presence in the proposed national park and wider Dambimangari country is an indicator of the cultural significance of the area.

Some places hold special significance for Dambimangari people. These sites include creation narratives, pre-European contact occupation sites and burial sites. They offer a unique sense of place and specific art sites (outside the proposed national park) are a signature experience and point of interest for visitors to the Kimberley.

Not all sites of cultural importance in the proposed national park have been recorded. Ongoing work by Dambimangari Traditional Owners has identified a number of sites across their country, mostly in coastal areas or on rugged cliffs. Recording the location of sites allows Dambimangari people to maintain and manage them, and to connect to country and to their ancestors.

The opportunity for Dambimangari people to undertake customary activities on country is central to maintaining the culture and heritage of the land. Customary activities will continue once the proposed national park is created and can include hunting for food, preparing medicine, and engaging in artistic and ceremonial events. These activities are an important part of Dambimangari and wider Aboriginal culture, enabling maintenance of traditional relationships with the land and water; sharing of knowledge; engagement in traditional practices; and accessing and looking after significant places.



Wetland in the proposed Oomeday National Park. Photo – Melissa Loomes/Parks and Wildlife

It is our cultural responsibility to visit all these important places regularly to check that they haven't been disturbed and are still healthy. We believe it gives happiness and comfort to our ancestors' spirits by visiting, working, protecting, and living on the land. It also reconnects us to that country. Living and breathing on country gives life and life is health.

Dambimangari Aboriginal Corporation 2012

Management objective: To conserve and protect cultural places and allow for the continuation of connection to country and sharing of cultural knowledge

Key management challenges

- Weeds, introduced animals and vandalism or accidental damage from unmanaged visitors may impact on places of cultural importance.
- Radiant heat generated by high intensity bushfires may damage rock art.

Management considerations

- Manage the park consistent with maintaining cultural values.
- Under the *Aboriginal Heritage Act 1972*, Aboriginal sites are protected, whether registered or not, and it is an offence to alter an Aboriginal site unless permission is granted in accordance with the Act.
- Customary activities must be carried out safely and be consistent with this management plan and relevant legislation (e.g. regarding the use of fire and firearms).
- Allow adaptive management techniques to be applied to the management of cultural heritage.

Management strategies

1. Support Dambimangari people to undertake cultural planning to record the culture and heritage values of the proposed national park.
2. Support Dambimangari people in the management of cultural sites for their protection and maintenance (including repainting rock art) where appropriate.
3. Develop guidelines to ensure cultural and heritage values, cultural knowledge and cultural laws and protocols (where appropriate) are considered before undertaking management activities.
4. Communicate the cultural and heritage values of the proposed national park through information, interpretation and education.
5. Develop and implement tools to measure and monitor effects of visitor and management activities on cultural and heritage values and implement strategies to address issues if required.
6. Apply commercial operator licence conditions to ensure culturally sensitive and appropriate visitation to cultural heritage sites.
7. Identify opportunities to provide employment, business and training for Dambimangari people on country to assist in maintaining connection to country.

Other strategies in this plan also refer to the management of cultural and heritage values in recognition of their intrinsic link with other park values.

Key performance indicator	
Culturally significant sites	
Performance measure	Condition of cultural sites
Target	No deterioration of cultural sites within the proposed Oomeday National Park attributed to management activities or lack of appropriate management activities
Reporting	Every five years

The proposed Oomeday National Park. Photo – Melissa Loomes/Parks and Wildlife

Natural values

Strategic objective: To protect and conserve biodiversity and ecological integrity

Landscape

The proposed park is in an area on the Yampi Peninsula with many fault and fold lines, resulting in a dramatic, ruggedly incised landscape of sandstone ridges, steep valleys and spectacular coastline. This limits on-ground access, but has formed key landscape features such as *Garaanngaddim* (the Horizontal Falls). This feature is significant to Dambimangari people as it is one of the many manifestations of the powerful creative energy of the *Woongudd* (the creator snake). The landscape of the proposed national park gives rise to *Garaanngaddim*, a major visitor attraction usually viewed from the adjacent marine park (see *Visitor experience*).

Management objective: To identify, protect and conserve geological features and visual landscape quality	
Key management challenges • Visitor safety in the rugged features of the area. • Protecting the landscape from degradation. **Management considerations** • Cultural significance of natural features of the landscape. • Activities in the proposed national park or surrounding landscape that may impact on the visual landscape qualities of the proposed national park.	**Management strategies** 1. Identify key geological features and visual landscape qualities and ensure they are considered in assessing development proposals and activities. Also see *Culture and heritage*.

Wijingadda (northern quoll) are very important animals for Dambimangari people. With populations in decline across the Kimberley, the implementation of this management plan will further protect their habitat and reduce potential impacts upon them. Photo – Lesley Gibson/Parks and Wildlife

Native plants, animals and habitats

> Dambimangari country is a very special place. There are not many other places in the world where most of the animals remain as they were thousands of years ago. All the animals have their own songs and stories; some have their images in caves or in stone arrangements. The old people from long ago knew the songs and also created new ones from meeting their ancestors in their dreams. The night before they went hunting, they would sing about the animals. They believed this increased the chances of catching the animals. We only hunt animals in the right season. For example, kangaroo are fat in the hot time when all the grasses are green. We do not hunt when the animals are mating so that they can reproduce. The flowering trees are indicators. They tell the right time to look for certain animals.
>
> Dambimangari Aboriginal Corporation 2012

The vegetation in the proposed national park is mainly open savanna woodland with a mosaic of scattered trees, high grasses in some areas and low spinifex in others. There are some isolated patches of rainforest around watercourses.

From the limited park-specific data available, the proposed park contains threatened small mammals (<5kg) in decline elsewhere in northern Australia such as the endangered *wijingadda* (northern quoll), and the vulnerable *woonganbandj* (golden backed tree rat) and golden bandicoot (*Isoodon auratus auratus*). Habitat types of other threatened or specially protected birds, land snails and reptiles are also present in the proposed park.

The proposed national park includes a number of islands. The 1,090ha *Goojoorm* (Molema Island) is one of the largest islands in the Kimberley and provides an important refuge for wildlife, for example, *wijingadda* (northern quolls) and microbats such as the Priority 1 little north-western mastiff bat (*Mormopterus loriae cobourgiana*).

Few weeds and introduced animals have been recorded in the proposed national park, though the area has not been well surveyed. The high impact, rapidly invasive stinking passionflower (*Passiflora foetida*), mission grass (*Cenchrus pedicellatus*), mint weed (*Hyptis suaveolens*) and sida (*Sida cordifolia*) are priority weeds found across the Kimberley. These are the species most likely to be found in and impact on the cultural, natural, recreation and tourism values of the proposed national park.

The inevitable arrival of cane toads is likely to have a significant impact on native predators and frogs. Their rapid westward movement suggests cane toads will reach the proposed park within the next five to 10 years. Feral pigs and unmanaged cattle occur in the adjacent Yampi Sound Training Area and may also impact on the values of the proposed national park.

> Our country is not as heavily impacted by weeds as in many other parts of Australia. With increases in tourism, mining, cattle, fire and climate change, weeds are more likely to impact on Dambimangari country.
>
> Dambimangari Aboriginal Corporation 2012

Management objective: To identify, protect and conserve native plants, animals and habitats, particularly those of cultural, conservation or tourism significance

Key management challenges

- Unmanaged fire ('wrong-way fire') leading to large, intense and frequent fires is the greatest challenge in protecting native plants, animals and habitats (see *Fire*). Fire has strongly influenced plant composition in the proposed national park and thus the habitats and distribution of wildlife.
- Weeds and introduced animals may impact on ecological integrity, cultural values and visitor experience.
- The remote location and rugged terrain makes on-ground management challenging.

Management considerations

- Cultural significance and knowledge of flora and fauna (e.g. for food, to make tools and medicine, ecological and as part of *Lalai* narratives).
- Extensive flora and fauna surveys are yet to be carried out in the proposed national park. Once completed, such surveys will inform and guide management.
- The use of broad indicators of landscape condition as surrogates for the overall condition of biodiversity at the landscape scale should be considered for the proposed national park. These indicators may include rainforest patch extent; small native mammal diversity and abundance; and native vegetation condition.
- Management of weeds and introduced animals needs to occur on a landscape scale in cooperation with neighbouring land managers.
- There is a need for ongoing weed monitoring in the proposed national park due to the many heavily weed-infested islands nearby (e.g. Koolan Island).
- Active management of introduced animals may be required.
- Weed and introduced animal management should be integrated with fire management.
- Consideration may be given to surveillance and quarantine measures to prevent the introduction and persistence of introduced species on selected islands.

Management strategies

1. Undertake or support baseline surveys of plants, animals and ecological communities.
2. Monitor populations and maintain records of plants, animals and ecological communities, prioritising those of cultural and conservation significance.
3. Establish monitoring sites, on the mainland and/or islands of the proposed national park, for broad indicators of landscape condition.
4. Develop, update and implement recovery plans for threatened plants and animals as required.
5. Use traditional knowledge to manage native plants, animals and habitats.
6. Undertake baseline surveys of existing weeds and introduced animals.
7. Monitor populations of weeds and introduced animals, and implement management programs for those identified as high impact and/or rapidly invasive.
8. Coordinate weed and introduced animal (particularly unmanaged cattle) management programs with neighbouring land managers (DAC and Department of Defence).

Also see the management strategies in *Fire* and *Research and monitoring*.

Key performance indicators

Native plants, animals and habitats

See the *Research and monitoring* section

Weeds

Performance measure	Distribution and/or density of infestations of high impact and/or rapidly invasive weed species
Target	A reduction in the distribution and/or density of infestations
Reporting	Every two years

Left: Weeds are an important management consideration for the proposed national park. The stinking passionflower smothers vegetation and is spread by birds. Photo – Melissa Loomes/Parks and Wildlife Right: Kimberley heather (*Calytrix exstipulata*). Photo – Greg Keighery/Parks and Wildlife

'Right-way fire' prescribed burning on Dambimangari country. This fire was undertaken by Dambimangari Rangers.
Photo – Kim Doohan/John Bornman and DAC

Fire

Right-way fire is a part of the Dambimangari Traditional Owner's land management practices.

> In the old days we used fire to hunt for *jebarrany* (emu), *banadja* (bush turkey), *gurndoola* (agile wallaby) and all the other kangaroos. We would burn the grasses on our country so that it was easier to walk in the bush.
>
> Dambimangari Aboriginal Corporation 2012

Fire is an important natural component of ecosystem function. While many species have adapted to fire, unmanaged fire ('wrong-way fire') is the largest threat to biodiversity in the proposed Oomeday National Park. Unmanaged fire can lead to fire regimes that can affect biodiversity, population viability and long term persistence of many species, communities and habitats, and cultural values in the proposed national park.

Lightning and human activity in the late dry season are the main causes of unmanaged bushfires in the proposed national park. Lightning strikes during the build-up to and during the monsoonal wet season may lead to significant bushfires. Unmanaged human caused ignitions during the late dry season often travel vast distances, depending on the fuel levels and prevailing weather conditions.

Adding fire to the landscape by prescribed burning ('right way fire') can create a mosaic of reduced fuel levels as well as areas of older vegetation. This mosaic pattern represents habitat diversity at a landscape-scale, with patches of unburnt vegetation providing refuges for native animals. It also decreases the extent and frequency of unmanaged bushfires.

> We have many powerful stories about fire. In the Dreamtime *marrirri* (red winged parrot) took the fire from the crocodile's *iwiyagu* (teeth). Right-way fire means that the right Traditional Owners are involved in the planning of, and burning on country.
>
> Dambimangari Aboriginal Corporation 2012

Management objective: To protect human life from bushfires, while conserving cultural, natural, recreation and tourism values of the area

Key management challenges

- Due to its distance from population centres and inaccessibility by vehicle, suppressing the often vast fires is challenging in the proposed national park.
- Fire may impact on visitor safety and visitor experience.

Management considerations

- Fire management in this environment will require implementation of strategic burning and input of cultural knowledge to establish and maintain a spatial and temporal mosaic of vegetation structure.
- Effective fire management requires active and complementary efforts across all land tenures.
- The engagement and involvement of Dambimangari Traditional Owners in planning and implementing fire management activities will be critical to a successful program.
- Consideration of fire regimes to conserve biodiversity, with special focus given to islands in the proposed national park.

Management strategies

1. Manage fire in the proposed national park by using an adaptive management framework that incorporates relevant fire management policies, guidelines, cultural responsibilities, available knowledge (including fire history, cultural information, biodiversity protection and scientific study) and input from key stakeholders to:
   - establish and maintain a mosaic of different vegetation structures and ages across the landscape
   - adapt and implement appropriate fire management for flora, fauna, habitats and islands that require specific fire regimes.
2. Integrate fire management with weed and introduced animal management programs.
3. Establish post-fire monitoring sites to measure the impact of fire, and to develop an understanding of ecological fire requirements of flora and fauna.

Key performance indicator

Prescribed burning

Performance measure	Implementation of the prescribed burning program
Target	1. Prescribed burning program is kept up to date and implemented 2. Decreased proportion of area burnt annually by bushfire 3. Decreased distance between burnt and unburnt vegetation 4. Increased proportion of older aged (>3 years old) vegetation
Reporting	Annually

Recreation and tourism values

Strategic objective: To allow recreation and tourism experiences for the appreciation of the park's landscape, natural and cultural heritage values

Visitor experience

The visitor experience in this proposed national park is quite different to many others around the State. The proposed park's landscape is steep, rugged and spinifex covered. There are no access tracks over land, high temperatures and presence of *goiyoiya* (estuarine crocodiles) near coastal swimming holes, so safe access within the proposed park is limited. The proposed national park's landscape is one of its main attractions and is best viewed on a boat from the adjacent proposed Lalang-garram / Horizontal Falls Marine Park or via a scenic flight.

Visitors access and view the amazing natural features and learn about the cultural values of the proposed national park aboard private or cruise operator vessels, float planes or helicopters (landing on helipads of larger vessels[11]) through the proposed Lalang-garram / Horizontal Falls

Visitors access the steep and rugged proposed national park via a small tender vessel from the adjacent proposed marine park.
Photo – Melissa Loomes/Parks and Wildlife

[11] Under regulation 65 of the CALM Regulations, lawful authority must be obtained to land an aircraft in a national park (e.g. authorised landing strips) except in an emergency.

Marine Park. Most visits are during the dry season (April to October), with weather the biggest influence on visitation. While in the area, visitors' attention is drawn to powerful tidal flows that generate the awe-inspiring *Garaanngaddim* (Horizontal Falls) forming in the adjacent proposed marine park. These unique tidal pinch rapids are difficult and dangerous for even experienced captains to navigate and it is suggested that visitors only attempt to cross the falls during neap tides (see *Values of the marine and national parks – Recreation and tourism values*).

The few visitors who negotiate the rough terrain tend to go directly to points of interest, such as a waterfall or freshwater swimming hole, for a short visit, and are typically on a guided tour. Visits to these areas may be influenced by tidal movements (where access may be restricted) in the adjacent proposed marine park and time of the year, due to the seasonality of some waterfalls. In keeping with the remote character of the proposed national park, no visitor facilities are provided. Visitors should leave no trace and carry out any rubbish. It is important that visitation is undertaken in a safe and culturally appropriate manner. Dambimangari Traditional Owners and Parks and Wildlife have a shared concern for visitor welfare. Setting foot on land is not without risks (see 'Management considerations' in the table below).

Visitor experience within the proposed marine park is further described in *Proposed marine parks: values and management summary*.

Management objective: To allow safe, culturally appropriate opportunities for visitors to experience, appreciate and understand cultural, natural, recreation and tourism values

Key management challenges

- Remoteness from population centres and limited access reduces opportunities for an on-ground management presence.
- Visitors are drawn to the area's remoteness, solitude and rugged terrain, but there is inherent risk in going to such places.
- Ensuring visitors take measures to reduce their risk.

Management considerations

- Culturally appropriate visitation to the proposed national park.
- It is possible to manage access to sensitive cultural areas by classifying parts of the proposed park as prohibited, limited access or temporary control areas.
- Seasonal visitation.
- The risk of encountering *goiyoiya* (estuarine crocodiles) is high, including in fresh *argoom* (waterholes) below significant rock impediments, and they present a significant danger to visitors. More information on *goiyoiya* (estuarine crocodiles) is provided in *Marine park values*.
- Should something go wrong, access to the proposed national park is limited to helicopters or walking from the shore and may result in delayed response.
- Information, interpretation and education help visitors and the wider community to understand and appreciate park values. This enhances visitor experience and promotes support for management. Visitor information needs to be culturally appropriate.
- As most visitors arrive on cruise boats, it is important to ensure commercial tourism operators deliver key messages. Operators have one-on-one contact with visitors and the ability to deliver messages on-board the vessel, on-site and before the trip starts (see *Commercial tourism activities*).
- Tailoring visitor information to suit end users. Pre-visit information could include that available on the *Explore Parks WA* website and *Parkfinder* smartphone app, and printed material.
- To deliver consistent messages to visitors, information, interpretation and education need to be integrated across the proposed marine parks, national park and Lalang-garram / Camden Sound Marine Park.

Management strategies

1. Allow appropriate opportunities for recreation and tourism that consider cultural and natural values.
2. Monitor impacts associated with visitor activities and manage these to minimise unacceptable impacts.
3. Investigate options for managing access to sensitive cultural areas and initiate appropriate notices under Section 62 of the CALM Act.
4. Encourage visitors to take emergency communication (e.g. satellite phone, EPIRB or Personal Locator Beacon) and first aid kits on excursions into the proposed national park.
5. Undertake visitor risk assessments to identify and manage risks associated with recreational use.
6. Enhance visitor experience by developing and implementing an information, interpretation and education program that promotes visitor awareness, appreciation and understanding of cultural and natural values, visitor safety, visitor behaviour and leave no trace principles.

Also see the management strategies in *Commercial tourism activities* and *Research and monitoring*.

Key performance indicators

Visitor satisfaction

A key performance indicator is to be developed for measuring visitor satisfaction in the proposed marine parks which may include aspects of the proposed national park, for example, the visual landscape around *Garaanngaddim* (the Horizontal Falls).

Most visitors to the proposed parks are on a cruise of the Kimberley coast. Photo – Melissa Loomes/Parks and Wildlife

Commercial tourism activities

Commercial operators provide a range of activities and general sightseeing tours and opportunities for visitors to appreciate the values of the area.

A number of tour operators are active in the proposed marine and national parks. Once the parks are created, operators must be licensed under the CALM Regulations to conduct tours in the parks.

There is currently no onshore infrastructure in the proposed national park. All servicing of the tourism industry is done via offshore vessels. Tourism operations that require infrastructure in the national park will need a lease under section 100 of the CALM Act.

Management objective: To ensure commercial tourism activities are compatible with protection of the proposed national park's cultural, natural and other recreational and tourism values	
Key management challenges • Ensuring that commercial tourism activities are culturally appropriate and do not adversely affect cultural, natural and other recreational and tourism values. **Management considerations** • Commercial tourism activities should be evaluated for their impact on cultural, natural and other recreation and tourism values and licenses and leases granted accordingly.	**Management strategies** 1. Engage with tourism operators and facilitate the establishment of high quality commercial tourism operations that: • demonstrate a commitment to protect and promote the proposed park's cultural, natural, recreation and tourism values • ensure the staff and passengers behave appropriately and respectfully at cultural sites • conduct operations according to Parks and Wildlife policy and licence conditions. 2. Monitor commercial tour operations to ensure compliance with licence conditions. See also the management strategies in *Visitor experience*.

Resource use

Strategic objective: To allow for sustainable resource use

Mineral exploration and development

The proposed Oomeday National Park is prospective for copper, gold, silver and zinc. There is a pending tenement for an exploration licence over the northern part of the park, with live tenements adjacent to the park. The latest information on tenements can be found on DMP's Tengraph database.

As a proposed class 'A' national park, the area is afforded the highest level of legislative protection from mineral exploration and development. A section 19[12] of the *Mining Act 1978* exemption area is in place over part of the proposed national park where no exploration and/or mining may take place.

Management objective: To minimise the impact of mineral exploration and development on cultural, natural, recreation and tourism values	
Key management challenges • Ensuring that mineral exploration and developments in the area are assessed and managed in recognition of park values. **Management considerations** • Legislation provides a process for industry to apply for access to undertake mining and petroleum exploration and development in the proposed national park; access to the proposed park should not be assumed and all applications for access and development proposals will be considered on a case-by-case basis. • Basic raw materials should be sourced from outside the proposed national park. • Mining tenements border the proposed national park. Should tenements in the area be relinquished, consideration may be given to their future addition to the national park.	**Management strategies** 1. Work with DMP and the EPA to evaluate proposed mineral and petroleum operations that may impact on the proposed national park and seek to avoid or minimise these impacts. 2. Provide advice aimed at ensuring that any areas disturbed by mineral exploration and development are rehabilitated in accordance with the conditions of the mining or exploration tenure or approval documentation as well as Parks and Wildlife rehabilitation standards and guidelines. 3. Take steps to ensure that all mineral exploration and development and basic raw material extraction activities adhere to Parks and Wildlife weed and disease hygiene practices.

Utilities and water resource use

Management objective: To minimise the impact of utilities and water resource use on cultural, natural, recreation and tourism values	
Key management challenges • Ensuring that any future utilities (e.g. radio or mobile phone tower) and water resource use in the area do not adversely affect cultural, natural, recreation and tourism values. **Management considerations** • There is a presumption against the provision of utilities, given the proposed park's remoteness. • Utility or water resource infrastructure that is not servicing the proposed national park itself should be located outside the park. • Where there is no other viable alternative, consideration may be given to locating public utilities within the proposed national park, however, this may mean that a parcel of land may need to be excised from the park. • Extraction of water will be in accordance with relevant legislative provisions.	**Management strategies** 1. Locate new utilities or water resource infrastructure outside the proposed national park, where possible. 2. Where there is no other viable alternative, locate utilities to minimise impacts on the area's cultural, natural, recreation and tourism values, including visual amenity.

[12] Under section 19 of the *Mining Act 1978*, the Minister for Mines and Petroleum is empowered to exempt an area from mining activity for a period of two years, with further renewal as required.

So far only small parts of our country have been properly surveyed and we need to make sure we record our old peoples' knowledge and at the same time do research jointly with scientists to get a better understanding of the health of our targets.

Dambimangari Aboriginal Corporation 2012

Looking at tracks and scats to identify the animal species in the proposed park. Photo – Kirk Woolagoodja

Research and monitoring

Strategic objective: To increase understanding of the values of the proposed park through research and monitoring to guide, adapt and improve management

Research and monitoring requirements

Cultural understanding and scientific knowledge are needed for effective management. Management will be based on up-to-date and sound knowledge. Ongoing monitoring and evaluation is important to assess effectiveness of management practices and allow for adaptive management.

Research and monitoring will facilitate and promote management effectiveness of the key performance indicators listed in this plan. This will include gaining a better understanding of those values identified over the life of the plan as being most at risk and the threats most likely to impact on cultural, natural, recreation and tourism values. This will inform and improve management of those values.

Management objective: To increase knowledge and shared understanding of cultural, natural, recreation and tourism values, and the impacts on those values, to inform management

Key management challenges

- For much of the proposed national park and the wider Kimberley, available data is inadequate to assess the presence of species, their status and distribution, and an understanding of processes threatening them (McKenzie *et al*. 2009).

Management considerations

- The consideration of both traditional and scientific knowledge will contribute to effective management of the proposed national park.
- A comprehensive monitoring program is underway across the north Kimberley to assess the health of the environment at a landscape scale and monitoring of the proposed park will be included in that program.

Management strategies

1. Ensure that traditional knowledge about country informs research and monitoring programs so they are culturally appropriate.
2. Conduct integrated research and monitoring programs that facilitate management, with a focus on cultural, natural, recreation and tourism values identified in this management plan; the establishment of baseline information; meeting key performance indicators; and other joint managers' research priorities.
3. Encourage and support, wherever possible, external agencies and individuals whose research contributes directly to the joint managers' objectives or the implementation and auditing of this management plan, and advocate the involvement of Dambimangari Traditional Owners in this research.
4. Ensure relevant information gained through research and monitoring in the proposed national park is available for management purposes and that libraries/databases are kept up to date.
5. Incorporate research and monitoring findings into performance assessment of the objectives of this management plan and adapt future management, if required.

Specific research and monitoring strategies relating to the values are listed in relevant sections.

Key performance indicator	
Research and monitoring of key values	
Performance measure	Research and monitoring within the proposed national park according to Parks and Wildlife, Dambimangari Traditional Owner and government initiatives
Target	Knowledge gaps and baseline data on cultural, natural, recreation and tourism values in the proposed national park are filled and completed
Reporting	Five years

Proposed Oomeday National Park. Photo – Melissa Loomes/Parks and Wildlife

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Appendix: Marine park design principles

Comprehensiveness: The full range of ecosystems and communities (e.g. all of the different habitat types) are represented within the network.

Adequacy: The network includes enough of each component of biodiversity (e.g. enough of each particular habitat type) to allow populations, species and communities associated with each component to remain healthy.

Representativeness: Biodiversity features should be represented across their natural range and variability, for example, habitats and communities should be represented across a range of depths and across different wave exposures.

Ecological importance: The protection of ecologically important features such as known nursery, foraging, breeding and calving areas; areas that are unique, unusual or highly productive; and areas that are important for or where known aggregations occur of rare, threatened or protected species.

Connectivity and complementarity: Connectivity includes the way tides, currents and the behaviour of plants and animals combine to connect neighbouring and more widely separated ecosystems in the marine environment (DEH 2009). Complementarity assists with connectivity by connecting protected areas. Complementarity can help increase management effectiveness and provide ecosystem linkages between the land and sea (DEH 2008).

Protect and conserve Aboriginal cultural heritage: The protection of cultural heritage values can involve:

- the protection of culturally important sites or areas such as reefs, beaches and mangrove communities. Important sites may also include important Dreaming sites, fish traps, intertidal stone arrangements, increase sites, ceremonial sites and others.
- the protection of areas important for culturally significant species such as turtles, dugongs, whales and dolphins
- providing for ongoing customary activities such as fishing and hunting
- providing consistency (where culturally appropriate) with cultural laws and protocols through zoning and other management arrangements.

Provide for ongoing ecologically sustainable use: the zoning scheme should:

- consider the existing use of the marine environment and the current management arrangements in place
- promote opportunities for recreation and appreciation of the marine environment
- promote opportunities for education and research
- provide for cultural, natural and maritime heritage values
- be designed so that it is easy for users to understand and comply with zoning and management arrangements.

Ngumbree, proposed Lalang-garram / Horizontal Falls Marine Park. Photo – Sarah Bignell/Parks and Wildlife

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