GOVERNMENT OF WESTERN AUSTRALIA

PLAN FOR OUR PARKS
SECURING 5 MILLION HECTARES OVER 5 YEARS

Proposed Wudjari Marine Park

indicative joint management plan

2024

GOVERNMENT OF WESTERN AUSTRALIA

Conservation and Parks Commission

Department of **Biodiversity, Conservation and Attractions**

Esperance Tjaltjraak
Native Title Aboriginal Corporation

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February 2024

ISBN 978-1-925978-84-1 (online)

This management plan was prepared by the Conservation and Parks Commission through the agency of the Department of Biodiversity, Conservation and Attractions (DBCA) in consultation with Traditional Owners.

Warning: This plan shows photographs of, mention names, and/or refer to quotations from Aboriginal people who may have passed away.

NB: The spelling of some of the traditional language words for Country and species of plants and animals may vary.

Questions regarding this plan should be directed to:
Aboriginal Engagement, Planning and Lands Branch
Parks and Wildlife Service
Department of Biodiversity, Conservation and Attractions
Locked Bag 104
Bentley Delivery Centre WA 6983
Email: pscmp@dbca.wa.gov.au

The recommended reference for this publication is:
Department of Biodiversity, Conservation and Attractions (2024) *Proposed Wudjari Marine Park indicative joint management plan 2024*. Department of Biodiversity, Conservation and Attractions, Perth.
This document is available in alternative formats on request.

Front cover photos
Main: The cultural landscape feature on Middle Island. *Photo – Andy McGregor/ETNTAC*
Top left: ETNTAC conducting underwater monitoring in the Recherche Archipelago. *Photo – ETNTAC*
Top right: New Zealand fur seal pup on Salisbury Island. *Photo – Andy McGregor/ETNTAC*

Invitation to comment

This indicative joint management plan has been released for a four-month period to provide the public with an opportunity to comment on how the Mirning Marine Park is 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 objectives, strategies and zones
- 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 indicative 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 indicative 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 indicative 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.
- contains abusive or racist comments.

Submissions are welcome during the public comment period and can be made:

- online at dbca.wa.gov.au/haveyoursay
- or by writing to: Mirning Marine Park Plan Coordinator – Aboriginal Engagement, Planning and Land Unit, Department of Biodiversity, Conservation and Attractions, Planning Branch, Locked Bag 104, Bentley Delivery Centre, WA 6983.

Wudjari foreword

Kaya Wanju, Kepa Kurl Wudjari Wadarn Boodja.

We are custodians of the Wudjari nation.

We are saltwater people connected to the lands and waters by our spirits and ancestors.

We welcome you to Esperance Tjaltjraak Native Title Aboriginal Corporation, where our rangers and office staff work together to keep our land and sea Country healthy.

This plan is part of our continuous journey, a new chapter, working with our joint management team at DBCA, our partners, and our wider community, and supporting our sea Country rangers; together we are taking a leadership role in the research and management of Wudjari Marine Park.

In the footsteps of our ancestors….

Tjaltjraak: Pronounced ‘dul-u-rak’ this is the Wudjari name of the local blue gum tree; it means ‘glow in the dark’. Tjaltjraak is a culturally significant species of eucalypt, the geographic distribution of which roughly aligns with the boundaries of Kepa Kurl Nyungar Country.

Wudjari: We represent the Wudjari (pronounced 'wood-jah-ree') language group, located at the southern edge of the Nyungar nation.

Kepa Kurl: Kepa Kurl (pronounced 'kep-pa kurl') is the Wudjari name for 'Esperance'. 'Kepa' translates to water and 'Kurl' to boomerang. Kepa Kurl means 'where the waters lie like boomerangs' and refers to the shape of the two bays closest to the Esperance townsite.

Kepa Kurl Wudjari people have a distinct identity as acknowledged by our separate native title determination. In some ways, Wudjari Nyungars occupy a unique cultural and geographic frontier between the southwestern Noongar cultural bloc and the Western Desert bloc to our north and east, sharing some history with both groups but maintaining our own distinct identity.

Esperance Tjaltjraak Native Title Aboriginal Corporation (ETNTAC) is a community-controlled organisation governed by a board of 12 intergenerational Traditional Owners elected by our membership. Inclusivity and gender-balance enables our development, as our board comprises a male and female representative from each family group. We respect the lore and wisdom of our old people. A circle of Elders comprising individuals nominated by each family guide the board and the organisation in culture and heritage matters.

Contents

Acknowledgments

The Department of Biodiversity Conservation and Attractions (DBCA) and the Esperance Tjaltjraak Native Title Aboriginal Corporation (ETNTAC) were greatly assisted in the preparation of the management plan by the considerable time and effort put into discussion and meetings by the Community Reference Committee (CRC) for the proposed Wudjari Marine Park.

Many groups and individuals provided valuable input to the CRC through Sector Advisory Groups, out-of-session discussions and individual submissions.

During the course of reserve planning, staff from various agencies including the Department of Primary Industries and Regional Development; Department of Mines, Industry Regulation and Safety; and local governments, also provided valuable information and guidance relating to their areas of responsibility.

1. Introduction

"Our people, the Wudjari people, follow the six seasons. We observe our surroundings and learn from our Country, its plants and animals. Our land and sea tell us where to be on Country at different times of the year."

Wudjari Elder

The proposed Wudjari Marine Park is located on the south coast of Western Australia from Jerdacuttup (Mason Bay) in the west to Euradup (Point Malcolm) in the east (Map 1). It falls within and seaward of the boundaries of the Esperance Nyungar's determined native title area which is managed by Esperance Tjaltjraak Native Title Aboriginal Corporation (ETNTAC) as the lead body for the Wudjari people, and with an aim to empower members to build stable, purposeful, culturally connected lives.

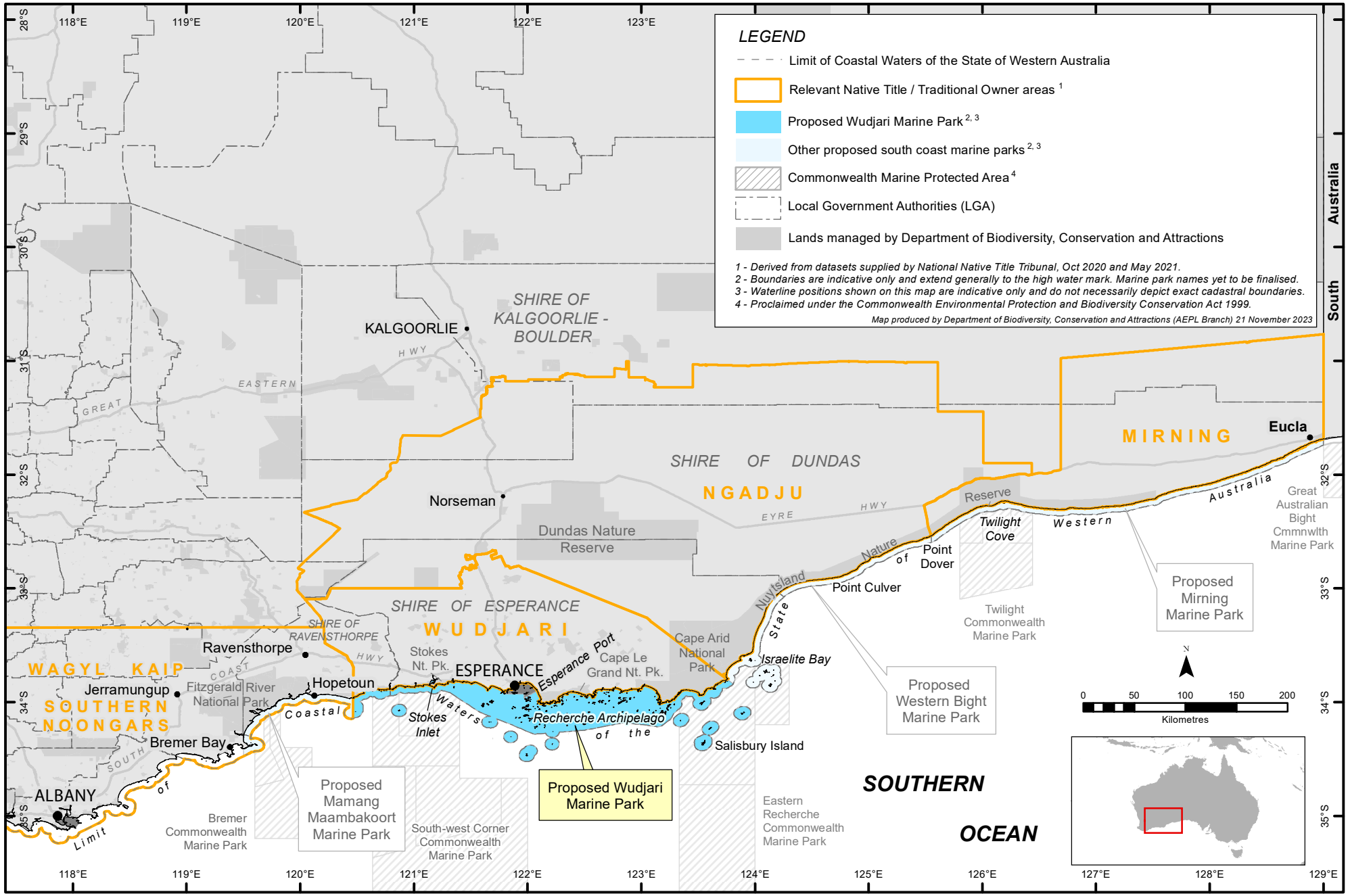
The proposed marine park encompasses Wudjari Wadarn (sea) boodja (Country) centred on Kepa Kurl (place where the water lies like a boomerang) and segments of the cultural complexes and cultural landscapes of Wudjari. It contains a diverse array of marine habitats and communities, including seagrass, macroalgae and reef communities, as well as ecologically important foraging and breeding areas for a variety of threatened species. Southern right whales use the sheltered bays for breeding and calving between June and October each year and Australian sea lions and long-nosed fur seals breed and forage in the area.

The area is also highly regarded for its social and economic values. Commercial fishing has been undertaken in the area for generations, providing livelihoods and supplying fresh fish for local communities. Recreational fishing, both from the shore and on the water, is also highly regarded. Visitation to the proposed marine park is limited to those after an adventure, as road access and amenities along the coast are limited.

The proposed marine park will contribute to the conservation and enhancement of the outstanding cultural and ecological values of Wudjari sea Country. It will allow for multiple uses in recognition of the exceptional conservation status, economic value, and potential of the area. It aims to find a balance between protecting the unique cultural and environmental values whilst supporting recreational and commercial uses, for the benefit of present and future generations, as development and visitation to the area grows.

The proposed marine park will be jointly managed with the ETNTAC through a joint management body (JMB). The proposed joint management arrangements will make this the first formal jointly managed reserve with the Wudjari people. The intertidal and estuarine portions of the proposed marine park will also be jointly vested with the ETNTAC and Conservation and Parks Commission (CPC).

The establishment of the proposed marine park is part of the Plan for Our Parks initiative which will create five million hectares of new national and marine reserves across Western Australia. The proposed marine park will add a further 801,350 hectares (approximately) to Western Australia's marine reserve system and will contribute to the National Representative System of Marine Protected Areas.



Map 1 – Locality of the proposed Wudjari Marine Park (including native title boundaries)

2. The management plan

2.1 Purpose of the plan

This indicative joint management plan details how the proposed Wudjari Marine Park will be jointly managed by the Wudjari people as represented by ETNTAC, and the Department of Biodiversity, Conservation and Attractions (DBCA) to preserve, study, manage and promote culture and heritage, enhance nature conservation, and allow for ongoing sustainable recreational and commercial use.

The main outcomes of the indicative joint management plan are listed below.

- The establishment of the proposed marine park as a Class A reserve over the State waters of the Wadarn Boodja (Wudjari sea Country) up to the high-water mark.
- The establishment of a JMB for the purposes of section 56A of the *Conservation and Land Management Act 1984* (CALM Act).
- The establishment of a joint management framework for the proposed marine park between DBCA and ETNTAC in accordance with the requirements of a Section 56A joint management agreement (JMA) under the CALM Act for Wudjari Conservation Estate.
- Promotion and support for the continued exercise of Wudjari peoples' native title rights recognising their ongoing connection to, and responsibility for Wadarn Boodja.
- Preservation of Wudjari culture and heritage values of the proposed marine park.
- The establishment of a framework to allow for ongoing sustainable multiple use.
- Promotion and support to build the capacity of Wudjari people and ETNTAC to progressively take on greater responsibility and accountability for management of the proposed marine park.
- A conservation framework built on western and cultural science under a cultural governance structure to help ensure the ecological and cultural components and processes of Wadarn Boodja are conserved and the existing and potential pressures on the values are appropriately managed.
- The establishment of seven management programs (management framework, education and interpretation, public participation, patrol and enforcement, management intervention and visitor infrastructure, research and monitoring) with prioritised strategies to help achieve management objectives for the proposed marine park.
- Contribution to the fulfilment, support and promotion of Australia's responsibilities under several international conventions such as the Convention on Biological Diversity, the International Union for the Conservation of Nature's Protected Areas Program and the United Nations Declaration on the Rights of Indigenous Peoples.
- Contribution to the National Representative System of Marine Protected Areas.
- The continuation and enhancement of cultural, recreational and commercial uses for the benefit and enjoyment of Wudjari people, the community and visitors.

2.2 Development of the plan

This indicative joint management plan has been prepared by representative Wudjari people, engaged via the ETNTAC, and DBCA, in consultation with the Department of Primary Industries and Regional Development (DPIRD), the south coast community and stakeholders through a ministerial appointed Community Reference Committee and sector advisory groups.

Many Wudjari people have contributed to this plan by sharing knowledge, developing management documents and strategies, engaging with stakeholders and the broader

community, and generously giving their time. Decision making for the proposed management arrangements in this plan has been underpinned by traditional knowledge and values, in conjunction with the latest research on the area, information from the Tjaltjraak Healthy Country program, and information from the community and stakeholders.

This indicative joint management plan has been prepared in conjunction with the indicative joint management plan for the proposed Mamang Maambakoort Marine Park, the proposed Mirning Marine Park, and the indicative management plan for the Western Bight marine park, to ensure consistency and complementarity of management arrangements across the neighbouring proposed marine parks.

This indicative joint management plan sets a vision for the area and describes the aspects of Wudjari Wadarn Boodja that are important to Wudjari people and the wider community to manage. These are referred to throughout this document as values. The plan identifies the healthy land and sea Country themes as well as key ecological and cultural values and the current and potential pressures acting on them. This plan recognises Wudjari Special Purpose Zones that serve as focus areas of management related to different cultural areas - no restrictions on commercial and recreational fishing are proposed for these zones. This plan acknowledges that cultural values, ecological values and socio-economic values are interconnected and interdependent. It provides strategic direction through objectives and applies seven management programs to be implemented through management strategies (see section 4.4). The key components of the management framework are shown in Figure 1.

2.3 Structure of the plan

Figure 1: Structure of the plan

The final joint management plan will guide management of the proposed marine park for 10 years, or until a new joint management plan is prepared under the CALM Act. Any amendments required during the life of the plan require a statutory public comment period and approvals from the Minister for Environment, Minister for Fisheries and Minister for Mines and Petroleum.

The DBCA Esperance district and ETNTAC joint management partners, through the JMB, have the primary responsibility for coordinating and implementing the management of the proposed marine park.

As the lead agency for the management of the State's fish and aquatic resources, DPIRD is responsible for leading, coordinating and undertaking management strategies relating to these.

In the case of overlapping or bordering management responsibilities or mutual interests with other departments or organisations, collaborative operational plans and memoranda of understanding will be developed to ensure efficient and effective delivery of management arrangements.

The key terms used in the management summary tables in this plan are defined below.

Terminology	Description
Vision	The long-term aspiration for the proposed marine park.
Strategic objectives	The broad direction required to achieve the vision.
Values	The cultural, ecological and socio-economic features and activities which are important to the area.
Pressures	Anything which affects or has the potential to affect the condition of a value. Pressures can be anthropogenic or natural.
Management objectives	Identifies what the primary aims of management will be.
Management strategies	Provide direction on how the management objectives will be achieved. The prioritisation of management strategies is based on the best available information and may change during the life of the plan.
Management programs	The seven broad categories across which management occurs (management frameworks, education and interpretation, public participation, patrol and enforcement, management intervention and visitor infrastructure, research and monitoring). This ensures a coordinated and prioritised approach is taken to implement strategies. The management programs are consistent across all marine parks in the State and are the basis for budgeting and annual reporting.
Key performance indicators (KPI)	Assigned to key values to measure overall management effectiveness. These key values reflect the highest conservation and management priorities and form an important part of the audit process (see section 10). Each KPI has three components: performance measures, targets and reporting requirements.
Performance measures	Performance measures are indicators of management effectiveness in achieving the proposed marine park's objectives and targets.
Management targets	The long-term targets provide specific benchmarks to assess the success or otherwise of management strategies within the life of the plan. For the purposes of this management plan, 'significant change' refers to a statistically significant change beyond the limits of natural variability. Specific limits for each ecological value will be determined as long-term monitoring datasets further develop.
Monitoring	Monitoring will be carried out to assess the condition of values in the proposed marine park, with the most significant values being prioritised for monitoring. If the condition of a value has significantly decreased as a result of human

	activities in the area, adaptive management will be carried out.
Responsibilities	Joint management partners are the lead for all strategies. Where other organisations are required to support implementation of a management strategy, their name is listed in brackets next to the strategy. Where an agency or body is required to take a lead role in strategy implementation, their name (or acronym) is in bold.

2.4 Vision

The vision statement represents the aspirations for the conservation and protection of the cultural and ecological values and sustainable use of the proposed marine park and will provide guidance for ongoing management. The vision is:

> "Working together to care for our shared coastal and marine environment in ways that preserve, enhance, protect and celebrate all cultural, ecological and community values, and our shared knowledge, history and heritage, for our families and future generations".

2.5 Strategic objectives

The strategic objectives of this plan support the goals of the Wudjari people and the broader south coast community and provide more specific direction for the long-term realisation of the vision for the proposed marine park.

Connection to Wadarn Boodja (cultural heritage and identity)

Protect and conserve the values and heritage of the Wudjari People in relation to the proposed marine park.

Caring for Wadarn Boodja (custodial obligations and cultural-ecological values)

Enhance, maintain and conserve a healthy sea Country, including marine biodiversity and ecological integrity.

People and Wadarn Boodja (community and socio-economic values)

Provide equitable and sustainable opportunities for recreational and commercial activities by allowing communities to safely utilise the marine environment as a source of income, food and enjoyment.

Understanding Wadarn Boodja (cultural leadership in research and monitoring)

Encourage and promote research and monitoring and the sharing of knowledge from Traditional Owners, scientists and local community to guide and inform best-practice management.

3. Management setting

3.1 Definition of area and tenure

Lying in the Integrated Marine and Coastal Regionalisation of Australia (IMCRA) South Coast Mesoscale Bioregion, the proposed Wudjari Marine Park is located in the Great Southern region of Western Australia. It covers approximately 801,350 hectares adjacent to the Shire of Ravensthorpe and the Shire of Esperance.

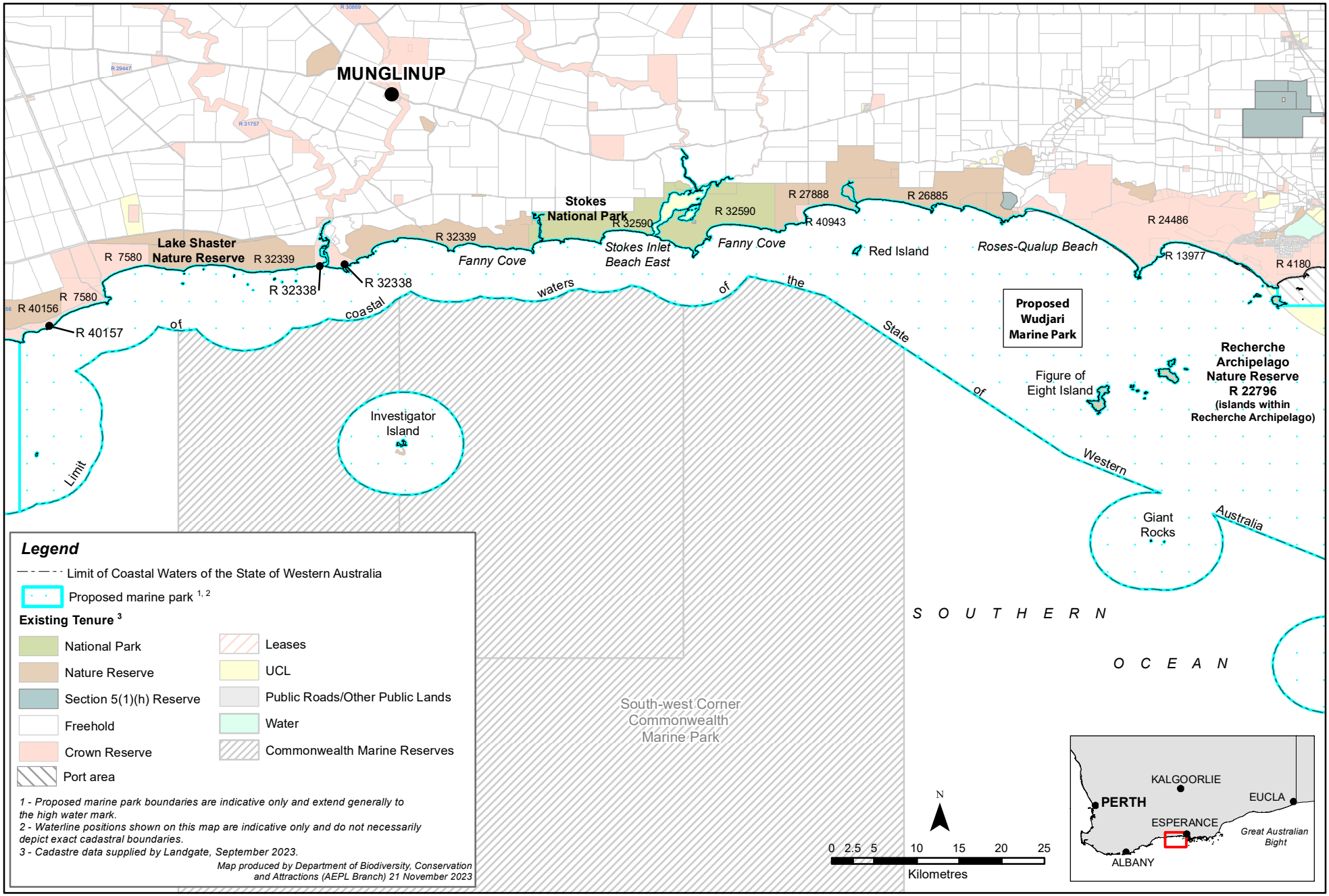
The western boundary of the proposed marine park is situated about 30km east of Hopetoun and aligns with the western land boundary of the Esperance Nyungar native title determination area and the Wagyl Kaip and Southern Noongar Indigenous Land Use Agreement boundary. This boundary runs generally south from the coast on the eastern side of Mason Bay and extends offshore past West Island and Black Rock to the limit of Western Australian coastal waters.

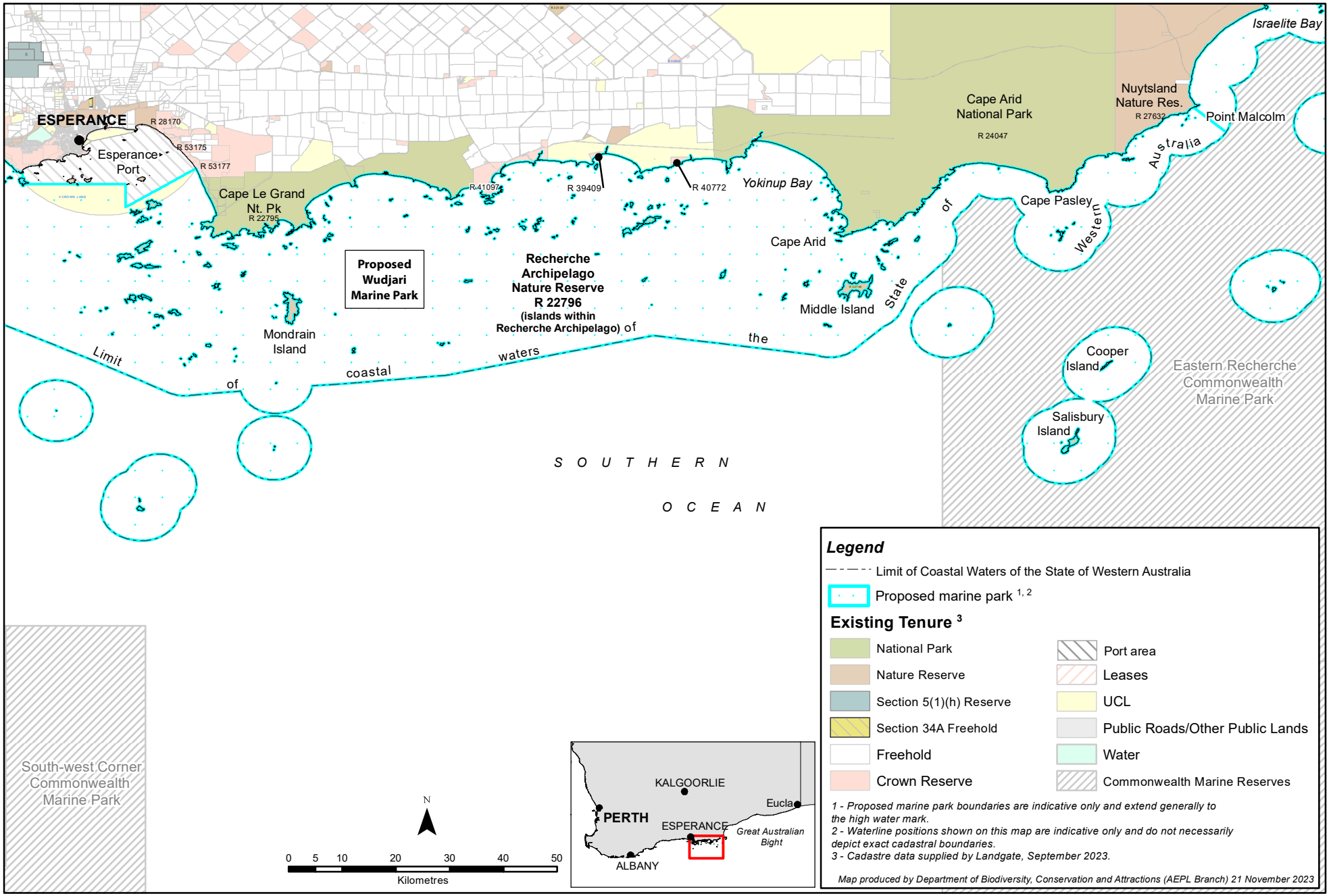
The eastern boundary of the proposed marine park will be in the vicinity of the Point Malcolm area, but the exact boundary is yet to be defined. This boundary will be confirmed following discussion between ETNTAC and Ngadju Native Title Aboriginal Corporation. The southern boundary of the proposed marine park is aligned with the limit of coastal waters of Western Australia and borders in some areas the Commonwealth's Southwest Marine Park. It includes State waters around offshore islands that are surrounded by Commonwealth waters.

The proposed marine park includes intertidal areas to the high-water mark subject to adjacent terrestrial tenure and registration of an Indigenous Land Use Agreement with ETNTAC providing for native title consents in accordance with the *Native Title Act 1993* (Cth). All major inlets/estuaries are proposed to be included in the proposed marine park. The Esperance port area is excluded from the proposed marine park. The outer boundary for the proposed marine park and surrounding tenure is shown in Maps 2 and 3.

It is intended that the proposed marine park will be gazetted as a Class A marine park and the intertidal and estuarine portions are proposed to be jointly vested in the ETNTAC and CPC. Class A reservation provides the highest security of tenure, requiring the approval of Parliament to amend or cancel a reserve's purpose or significantly alter its boundary. By contrast, the zoning scheme and management plan can be amended after a public consultation period with the approval of the Minister for Environment, Minister for Fisheries, and Minister for Mines and Petroleum.

Map 2 – Tenure within and adjacent to Wudjari Marine Park – west





Map 3 – Tenure within and adjacent to the proposed Wudjari Marine Park – east

3.2 Legislative context

The proposed marine park will be managed in accordance with the provisions of the CALM Act, the *Fish Resources Management Act 1994* (FRM Act), the *Conservation and Land Management Regulations 2002* (CALM Regulations), the *Biodiversity Conservation Act 2016* (BC Act), DBCA policy and other relevant legislation and cultural protocols mentioned throughout this plan.

The proposed marine park helps fulfil Australia's responsibilities and commitments under several international conventions, including the Convention on Biological Diversity, and will support the International Union for the Conservation of Nature's Protected Areas Program. The proposed marine park also contributes to Australia's National Representative System of Marine Protected Areas by conserving important marine ecosystems and protecting marine biodiversity through a comprehensive, adequate and representative system of marine reserves.

Delivered in partnership with Wudjari people through the ETNTAC, and by embracing Wudjari people's cultural relationship and vision for sea Country, the establishment of the proposed jointly managed marine park also addresses Wudjari peoples' rights as stipulated in the United Nations Declaration on the Rights of Indigenous Peoples.

An Indigenous Land Use Agreement (ILUA) is being negotiated with the ETNTAC, pursuant to the *Native Title Act 1993*, to provide for the native title consent to create the proposed marine park over the intertidal zone. The ILUA applies the non-extinguishment principle, which means that native title rights and interests continue to exist alongside the proposed marine park and can be exercised consistently with the CALM Act.

Within the proposed marine park, continued customary activities such as fishing rights and hunting are ensured. The FRM Act recognises customary fishing rights and the CALM Act and BC Act provide for the undertaking of customary activities. ETNTAC is currently engaged in a process to develop Wudjari customary fishing guidelines and protocols with DPIRD.

3.3 Joint management

In recognition of the significant cultural values, Wudjari people's ongoing connection to Country, their obligations to care for it, and the Esperance Tjaltjraak Healthy Country Plan, this marine park is proposed to be jointly managed.

In the context of reserves established under the CALM Act, joint management is a partnership between Traditional Owners and DBCA to work together to care for and manage a certain area of sea or land Country.

Joint management of the proposed marine park will be an ongoing and adaptive process which will require ETNTAC and DBCA to actively work together, share decision making and undertake management activities collaboratively. Joint management provides the structure to bring together appropriate resources, combine cultural and ecological knowledge, implement and develop innovative conservation practices to achieve the management objectives set out in this plan. Traditional knowledge and understanding of Wadarn Boodja (Wudjari sea Country) will underpin management decisions for the proposed marine park, and Wudjari people will be actively involved in managing the area.

Joint management is given effect through the CALM Act through a signed section 56A JMA which will be attached to the final joint management plan. For formal joint management to occur, the final joint management plan requires the Chief Executive Officer of DBCA to jointly manage the proposed marine park.

The JMA enables the establishment of a JMB (Wudjari representatives nominated by ETNTAC and staff from DBCA) to manage the proposed marine park in accordance with the agreement and the CALM Act. The JMB will oversee management of the proposed marine park, make management decisions, provide strategic input into how management strategies are implemented, monitor implementation of the plan and provide advice in accordance with the management plan.

DPIRD will be invited to present on fisheries management matters to the joint management body.

In addition to joint management of the proposed marine park, it is proposed that those parts of the proposed marine park within the Esperance Nyungar's determination area will be jointly vested with ETNTAC.

Joint vesting of the proposed marine park means that the ETNTAC will not only share the responsibility of making management decisions through the JMB but will also share the overall responsibility with the Commission of making sure the proposed marine park fulfils its purpose.

4. Connection to Wadarn Boodja

Strategic objective: Protect and conserve the values and heritage of the Wudjari Traditional Owners in relation to the proposed marine park.

4.1 Healthy Country

Making Country healthy requires respect of the animals, plants and ecologies that make Country their home. Joint management partners and the broader community cannot work together, undertake conservation, or make Country healthy again if we do not respect each other, and the knowledge, experience, and values everyone brings to the table.

There are right and wrong ways go about respecting Wudjari boodja and each other. Wudjari protocol tells us how to be respectful the right way. Wudjari protocol is local to Wudjari boodja. Centred around strong cultural governance and led by Elders, it is founded on a situated and deep time understanding of how boodja changes, and what sort of management boodja needs. For boodja to be healthy, it needs strong cultural governance, led by Elders, and centred around Wudjari protocol.

4.1.1 What is Country?

The proposed marine park lies, in part, on Wudjari Wadarn Boodja, or sea Country. Boodja (Country) is a term that can mean many different things. For the Wudjari community, Country is where the heart is, bringing together people, practices, places, and processes.

"Country…it's my life, it's my home, it's my mother.
Caring for Country is like caring for us."
Wudjari Elder

Understanding Country is important to ensuring that it is cared for appropriately. Wudjari Country covers Israelite Bay in the east, to the Jerdacuttup region in the west, and out to sea. Physically, it is the region that Wudjari old people used to traverse, trade, gather together, hunt, fish, and tell stories about, but it is also much more than this. Many people often think of Country in terms of 'nature', 'bush', or 'wilderness', but this is not entirely correct. Country includes things we might refer to as cultural-things like material heritage, or stories (both Wudjari and European) attached to specific places. Country even includes people and their practices. Of course, Country also includes things that are normally referred to as ecological: things like species, biological process, and landforms. Most things on Country are both cultural and natural in some way. For instance, a kubitj (island) in Wadarn Boodja might be an important spawning ground for sea life, but it also might hold stories about our communities' shared heritage. Likewise, Wudjari Elders recognise that fin-fish biodiversity is important for sustaining local ecosystems, which in turn, also makes it important culturally. There are many other groups across this region that will likely see and think about their environments along similar terms.

Culture involves a way seeing and being with Country that brings together local ecologies, processes, heritages, practices, and people.

"We make sure to look after Country, so Country can look after us…"
Wudjari Elder

Wudjari culture recognises that our communities are a part of Country, and that just as Wudjari old people lived off and managed it, so too should we. People should be able to love

and enjoy Country, because they are a part of it, and it helps to sustain them. But this also means ensuring that Country can look after us. Wudjari Elders teach that when Country is unhealthy, when its parts are not respected, it cannot sustain us. However, if we respect and care for Country together, then we can all enjoy in its offerings. The Wudjari community offers this understanding of Country to all those that visit and enjoy this marine park, in the hope that together, we might ensure its health for future generations.

Healthy boodja is boodja you can feel connected to. It is where you can source a feed, where people can go to feel their spirits lifted up, and where you can find all sorts of plants, animals, and ecologies.

"My hope for the future is that we do have healthy Country, that our fish stocks are not depleted, that our young ones will look after the land and sea, pass it on to their young ones, and make sure that future generations are going to have food in the future."
Wudjari Elder

4.1.2 Everything is important, everything has a role

"We've got to listen to all these stories, listen to what Country is telling us."
Wudjari Elder

All sorts of different things can be found on Wudjari Country, but all of them share one thing in common: they tell stories. These stories tell of Wudjari old people, of family histories, of ecologies, of biodiversity, of hydrological and geological processes, and of the ways our shared community have, and continue to connect with boodja. There are heritage stories, ecological stories, cultural stories, dreaming stories, family stories, stories about shared and individual history, stories about practices like fishing, hunting, and burning, and stories that encompass all of those things. More often than not, the stories that make up Wudjari Boodja are reflected within the physical landscape. They are evidenced by material heritage, flora and fauna structures, abiotic and biotic ecological processes, landscape structures, and geological formations.

"When driving through Country, you notice the changes. Country speaks to you..."
Wudjari Elder

Some stories are short—they might only comprise a name, perhaps a brief memory, a sight or smell. But brevity does not make any of these stories any less important than others. What is important about these stories is that they tie Wudjari People and the whole Esperance community—including their past, present and future—to boodja, and all things that are encompassed by it. The same is also true in reverse: stories also tie boodja to the people and things that live within it. What this means is that stories both help to make up (or constitute) what boodja actually is (including what it means to the Wudjari community), and in turn, also help to make our communities whole.

Elders emphasise that all things on Country —all ecosystems, species, habitats, processes, heritages and peoples—and the stories they tell are important. They all have a part to play in making boodja what it is. This means that managing Country is not about protecting things and stories that are more or less valuable. Managing Country is about looking after the stories and things that are most in need.

There are some parts of Country that right now, need more healing and more management than others. Boodja is hanging on but is not as healthy as it should be. Some things are less healthy than others, and they need to be prioritised first.

"All sorts of fish are very important. No fish is special, they're all good, they're all the same."
Wudjari Elder

4.1.3 Access to Country

Connecting with sea Country relies on being able to access it. Without appropriate access access, Wudjari people cannot conduct their customary activities, engage in their culture, and feel connected to their ancestral boodja. Moreover, without uninhibited access, Tjaltjraak rangers and Elders cannot monitor Wadarn Boodja, or conduct recognisance and compliance operations. Nor can they take part in, manage, and direct research or conservation projects. This means that without access to Wadarn Boodja, Wudjari peoples, and particularly rangers and Elders, cannot adequately fulfill their obligations to care for Country.

Summary of management arrangements for healthy Country	
Requirements	• Recognition and respect of Wudjari peoples' connection to Country. • Governance arrangement for management reflective of Wudjari cultural governance and ETNTAC processes. • Culturally appropriate visitation and respectful behaviour by all visitors.
Pressures	• Difficulties in accessing Country. • Erosion of traditional knowledge. • Culturally inappropriate visitation.
Management objectives	• To uphold Wudjari peoples' connection to Country and ensure activities in the proposed marine park do not adversely affect opportunities for Wudjari people to have ongoing cultural connection to Country and economic opportunities. • To establish effective, meaningful and collaborative partnerships with Wudjari Traditional Owners to protect heritage values, conserve biodiversity and enhance the resilience of the proposed marine park. • To respect and promote Wudjari peoples' relationship and connection to Wadarn Boodja and how it is integral to marine park planning and management.
Management strategies Joint management partners are the lead for all strategies. Supporting agencies are listed in brackets. If agencies are required to take a lead role, their name is in bold.	1. Support Wudjari people to maintain their connection to Country, through on-Country trips, employment and enterprise development. 2. Support Wudjari people to develop and implement cultural awareness communication tools, emphasising the importance of cultural and heritage values for both Traditional Owners and the wider community. 3. Develop cultural awareness training material and implement training for government employees and/or contractors working in the proposed marine park. 4. Design and develop management tools to address the impacts of human activities that may prevent cultural fulfilment to uphold Traditional Owner cultural rights and obligations. 5. Assess and monitor human activities that impact on the continuity of cultural fulfilment and upholding the cultural rights and obligations to continue the enjoyment of Country.

	6. Support Wudjari people to define a framework to ensure the right cultural processes are used for assessment and approval of proposals in the proposed marine park. 7. Support Wudjari people to develop protocols for visitors on Wudjari Country and educate visitors about appropriate behaviour, respecting privacy and access restrictions where applicable. 8. Undertake cultural surveys and cultural reviews across Wadarn Boodja, including underwater archaeological assessments to establish baseline heritage knowledge for the region, and use the results to inform marine park management and track ecological change. 9. Investigate research opportunities for assessing the connectivity between marine and terrestrial ecologies, Wadarn Boodja and the relationship between submerged cultural places/landscapes, and marine habitats and ecologies in Wadarn Boodja. 10. Develop and establish programs that include art, youth and community camps, cultural mapping, cultural perspectives programs and oral histories, that foster intergenerational sharing and community education.
Performance measures	To be determined by the JMB
Target	To be determined by the JMB
Reporting	To be determined by the JMB

4.2 Employment and development

Wudjari rangers and elders possess extensive experience and knowledge of their Country, and in ways that can be quite different to mainstream learning and educational systems.

"Us oldies, our time's going to end. We need to invest in our young people, they're our future."
Wudjari Elder

Building on the objectives of joint management and understanding that Country cannot be healthy if its people are unhealthy, the proposed marine park management plan considers measures and programs for cultural leadership in knowledge exchange and integration. This includes providing opportunities and resources to support the capacity building of the Tjaltjraak Sea Country Program and team. These components relate to directly alleviating structural and social inequalities, through projects and programs delivered under the proposed marine park plan through cultural leadership. Elders recognise that this may be an ongoing process, however emphasised the need to ensure that rangers are given every opportunity to develop their skills and abilities.

"In the past, there was plenty of stock around for us to eat. But these days, if it's not healthy, you're not going to get that. So, we need to make sure that it is healthy, and this is where our rangers come in."
Wudjari Elder

The growth and fulfilment of our communities is an important component of managing country. There is need to ensure that the proposed marine park enhances opportunities across Wudjari Boodja, rather than overtly restricting them.

Wudjari Elders acknowledge that everyone—managers and those in the broader community—have their strengths, and there is a need to build on those strengths in order achieve the best outcomes for Country.

"Being out on Country, it makes you feel good. But we need to make sure our young people, our rangers, they can take over from us… When I'm gone, and a few other Elders are gone, there'll be more opportunity for them to get out on Country"
Wudjari Elder

Summary of management arrangements for employment and development	
Requirements	Strong cultural governance and cultural leadership.
Management objectives	To enable Traditional Owners to achieve economic benefits consistent with the purpose of the proposed marine park.
Management strategies Joint management partners are the lead for all strategies. Supporting agencies are listed in brackets. If agencies are required to take a lead role, their name is in bold.	1. Develop mechanisms to empower Wudjari JMB members to support the recruitment and retention of Wudjari staff. 2. Employ Wudjari people in a range of roles relating to the proposed marine park, including science pathways, scholarships, training, cadetships, administration and planning. 3. Identify sources to seek long term funding for employment within marine park management for Wudjari people. 4. Actively pursue linkages to other organisations and stakeholders to create opportunities for the Wudjari community to create business development and employment relating to the proposed marine park, including philanthropic sponsorship. 5. Develop tailored pathways, training, education and mentoring to enable Wudjari people to fulfil positions of employment relating to the management of the proposed marine park, including DPIRD positions [DPIRD].
Performance measures	To be determined by the JMB
Target	To be determined by the JMB
Reporting	To be determined by the JMB

4.3 Special Wudjari places and ancient cultural corridors

"Everything's significant culture way. But some places are special. They're significant for different reasons…"
Wudjari Elder

There are some places in Wadarn Boodja where stories, ecologies and material heritage are particularly dense, and meaningful to Wudjari people (Smith, 1993; Mitchell, 2016; Guilfoyle, et al., 2019). Sometimes they are also meaningful to other groups that make Kepa Kurl (Esperance) their home. Many of these places are where the Wudjari old people and others used to (and still do) gather, and so they must be managed carefully. Some of these places have Wudjari cultural or colonial stories associated with them, some are important places to conduct cultural-ecological research, and some are places that must be protected due to the species and ecological processes that inhabit them.

The density of stories at these places makes them particularly vulnerable to threats and require strong forms of management, including cultural and scientific research, monitoring, and protection. People visiting these places must be respectful and share in Wudjari cultural protocols. An overarching management recommendation for this Plan is to develop a cultural heritage management plan for each special Wudjari place. Special places that can be shared by Wudjari people are detailed in Appendix 2.

Wudjari Boodja is comprised of a number of cultural corridors. These corridors are ancestral pathways-where the old people used to travel, camp and find food. They run from the north of Wudjari Boodja all the way to Wadarn Boodja. In the past, particularly during the last glacial maximum, sea levels were considerably lower than they are today. This means that Wudjari cultural corridors extended much further out to sea, possibly all the way to the continental shelf. Cultural knowledge and archaeological evidence document how corridors followed where estuaries currently flow. Just as the granite outcrops of Kepa Kurl are special places for Wudjari today, the islands of the Recherche Archipelago were special places for the old people and are part of the ongoing cultural heritage and identity of Wudjari today.

"Years ago, the islands were connected to the mainland. So they'll be storylines that go out all that way. And even today, those storylines still go out to the ocean."
Wudjari Elder

For Wudjari Elders and the wider community, understanding more about the natural and cultural heritage of Wadarn Boodja is extremely important. New knowledge and ways of seeing Wadarn Boodja rejuvenates and build connections with the ocean. Building an understanding of Wadarn Boodja's cultural corridors is a critical part of this rejuvenation. Submerged cultural features and landforms have been documented near islands and within the intertidal zones of Wadarn Boodja. It is anticipated that significant cultural features and archaeological sites now underwater will be found across the Recherche Archipelago. Such sites would likely be thousands of years old and contain a wealth of information about human-environment relations in a changing landscape. Here then, there is a significant potential for Wudjari Wadarn Boodja to become a world class research destination for understanding the ancient human history of this continent.

Summary of management arrangements for special Wudjari places and ancient cultural corridors	
Requirements	• Recognition and respect of Wudjari peoples' right to speak for and look after Country. • Culturally appropriate visitation and respectful behaviour by all visitors. • Opportunity for Traditional Owners to access cultural places to continue their use and to manage and protect sites. • Acceptance of the separation of specific men's and women's cultural business.

	• Formal cultural research designs and programs to systematically study and protect cultural values, places and landscapes relating to ancient coastlines and ancient landforms.
Pressures	• Difficulties in accessing Country. • Erosion of traditional knowledge. • Culturally inappropriate visitation.
Management objectives	• To facilitate the opportunity for Wudjari people to care for boodja (Country) and keep it strong. • To promote increased understanding and respect for Wudjari peoples' living cultural landscape and concepts of the proposed marine park. • To identify, manage and protect places and landscapes of cultural significance.
Management strategies Joint management partners are the lead for all strategies. Supporting agencies are listed in brackets. If agencies are required to take a lead role, their name is in bold.	1. Work with adjacent landowners to ensure coastal development proposals consider if and how they impact marine park values [LGAs]**.** 2. Conduct an audit and create a database of all cultural places within the proposed marine park and establish a program of works to actively protect and manage these areas. 3. Undertake further research into submerged cultural landscapes to identify and confirm features and associated ethnographic information for protection, research, monitoring, and management. 4. Develop and implement tools to measure and monitor impacts on cultural places and implement strategies to address issues where possible and appropriate. 5. Support Wudjari people to teach their younger generations about cultural places and landscapes, field methodologies and heritage place management. 6. Facilitate and resource appropriate Elder mentoring and guidance for Wudjari employees when they are working at cultural places. 7. Establish relationships with external researchers and universities, encouraging archaeological and heritage research projects, conducted according to Wudjari cultural protocol, that explore ancient Wadarn Boodja corridors. 8. Develop and implement cultural education materials and interpretive signage for Wudjari special places, including plaques or other suitable form of interpretation on coastal areas and islands to document aspects of Wudjari history. 9. Ensure patrol activities and monitoring plans have a focus on ancient cultural corridors within the marine park (including Muir-a-Gairp-Mandoowernup, Benwenerup and Boyatup-Belinup-Gabtoobitch cultural corridors and associated estuary complexes). 10. Undertake sea floor, marine archaeological and biodiversity mapping along ancient cultural corridors and ensure the results are used to inform marine park management. 11. Support Traditional Owners to access, identify, protect and maintain cultural heritage sites in the park, in particular identified high priority, highly significant and/or sensitive sites. 12. Identify culturally and ecologically sensitive sites that require additional protection and manage access through commercial operator licences, by regulation or other mechanisms as relevant.

Performance measures	To be determined by the JMB
Target	To be determined by the JMB
Reporting	To be determined by the JMB

5. Caring for Country

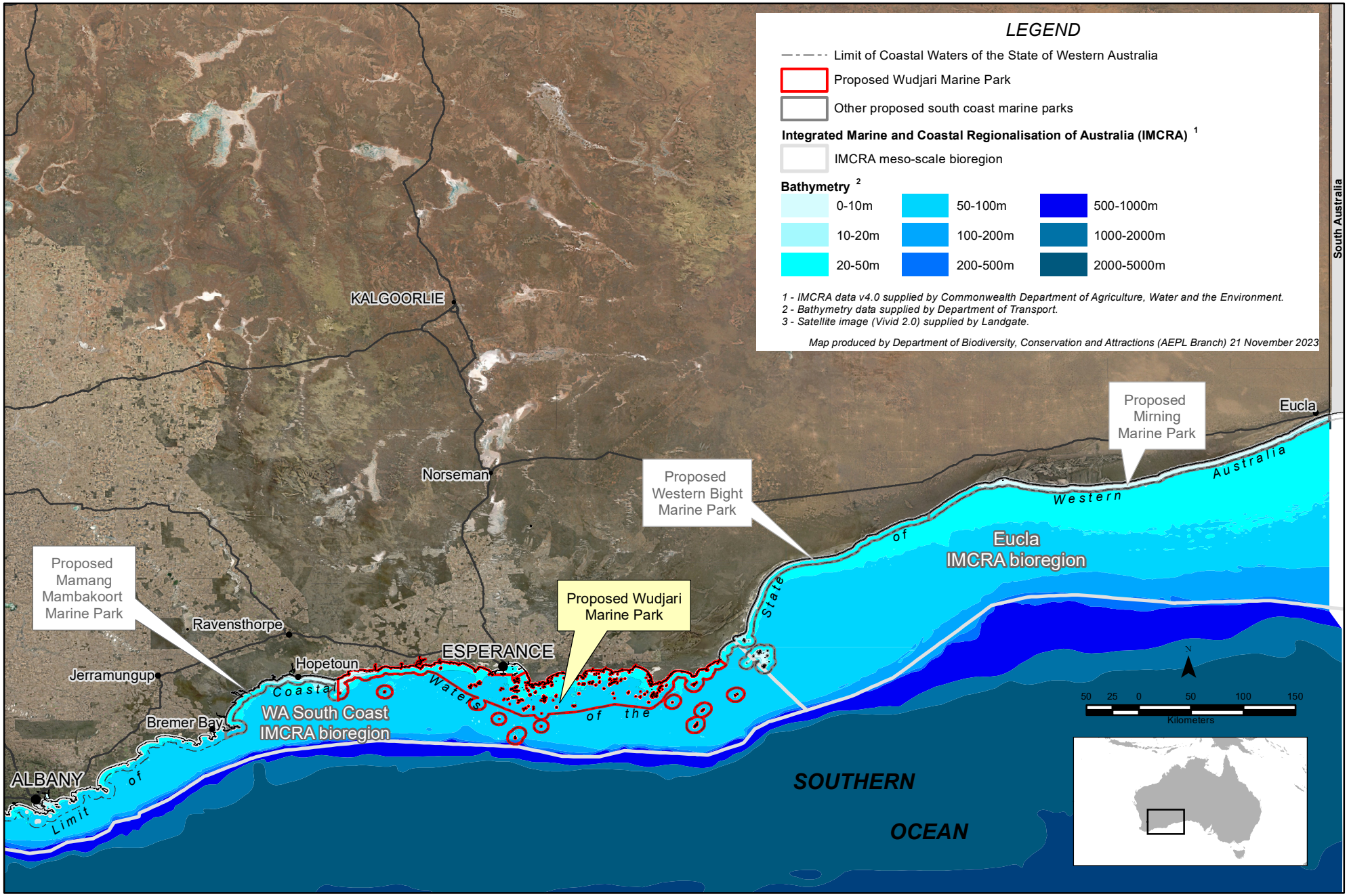
Strategic objective: Enhance, maintain and conserve a healthy sea-Country, including marine biodiversity and ecological integrity.

Healthy boodja is vibrant. It is full of colour and life and sounds and smells. It is vivid and fulfilling, filling one up with energy and good feelings. As Elder and senior cultural advisor Aunty Donna Beach makes clear: "Think about it like a gardener: what plants are healthy and green, what plants are going to grow well, what plants are going to be around in the future… Look at the trees, are they full and green and thick? Does the oil shine on the leaves? Does it glisten?"

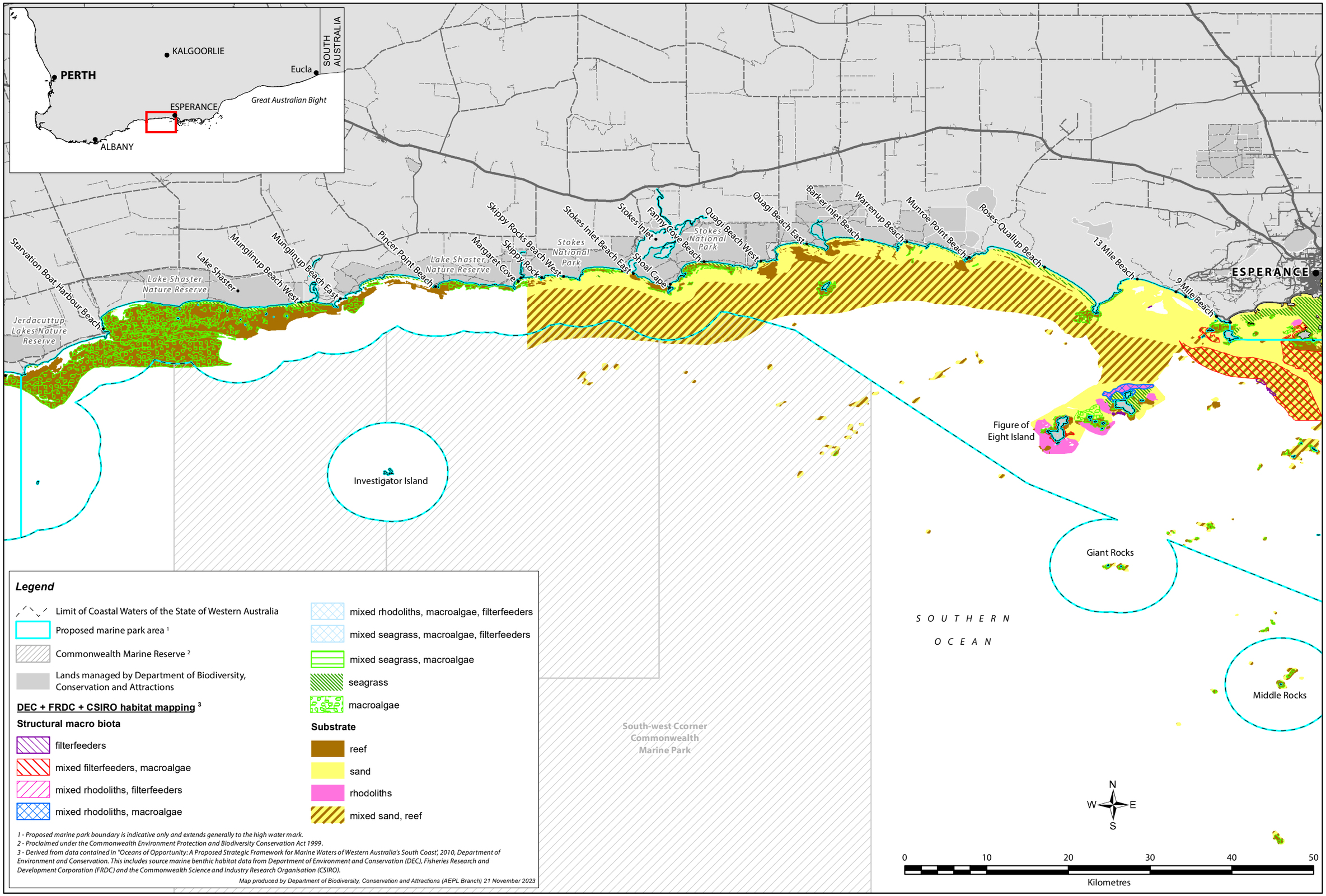
Vibrant boodja also has vitality. It is full of all different sorts of life and habitats. There are lots of species and those species are abundant. Boodja that has vitality is less susceptible to changes or adverse impacts, it is strong and feels good to be in.

This extends to the people that live on boodja. People on healthy boodja are also vibrant and have vitality, because they are actively involved in making it so. Looking after boodja is like caring for people, because if we don't look after Country, Country doesn’t look after us. Managing boodja involves being out on Country, working, fishing and enjoying it, ensuring that it stays vibrant and vital for future generations.

Cultural and ecological values are highly interconnected, and it is understood that separating these values is not compatible from a holistic viewpoint. However, for the purpose of developing clear management objectives and strategies for each value, ecological values have been separated into individual values which allows for transparent and accountable management, audit and review processes. The purpose of this section of the indicative joint management plan is to identify each ecological value within the Wudjari Marine Park, to note existing conditions, threats and pressures and outline management strategies that are designed to conserve and protect the natural environment, flora and fauna (Maps 4-8). This includes physical, geological, chemical and biological characteristics of the area. The inseparable links between people and Country are acknowledged within this section, however management strategies that promote these uses are included in other sections of the management plan.



Map 4 – Marine Bioregions, bathymetry and the proposed Wudjari Marine Park



Legend

- Limit of Coastal Waters of the State of Western Australia
- Proposed marine park area [1]
- Commonwealth Marine Reserve [2]
- Lands managed by Department of Biodiversity, Conservation and Attractions

DEC + FRDC + CSIRO habitat mapping [3]

Structural macro biota

- filterfeeders
- mixed filterfeeders, macroalgae
- mixed rhodoliths, filterfeeders
- mixed rhodoliths, macroalgae
- mixed rhodoliths, macroalgae, filterfeeders
- mixed seagrass, macroalgae, filterfeeders
- mixed seagrass, macroalgae
- seagrass
- macroalgae

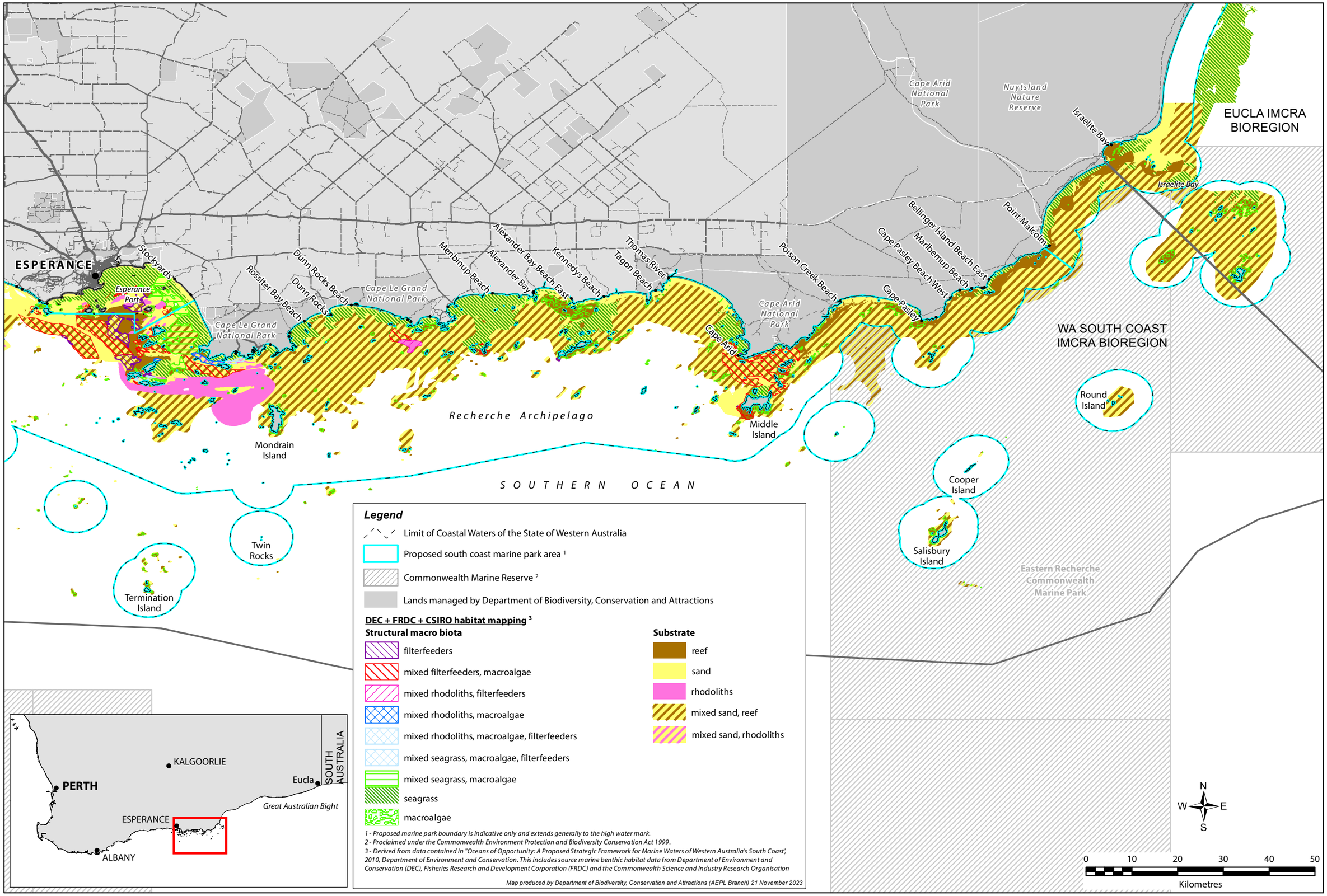
Substrate

- reef
- sand
- rhodoliths
- mixed sand, reef

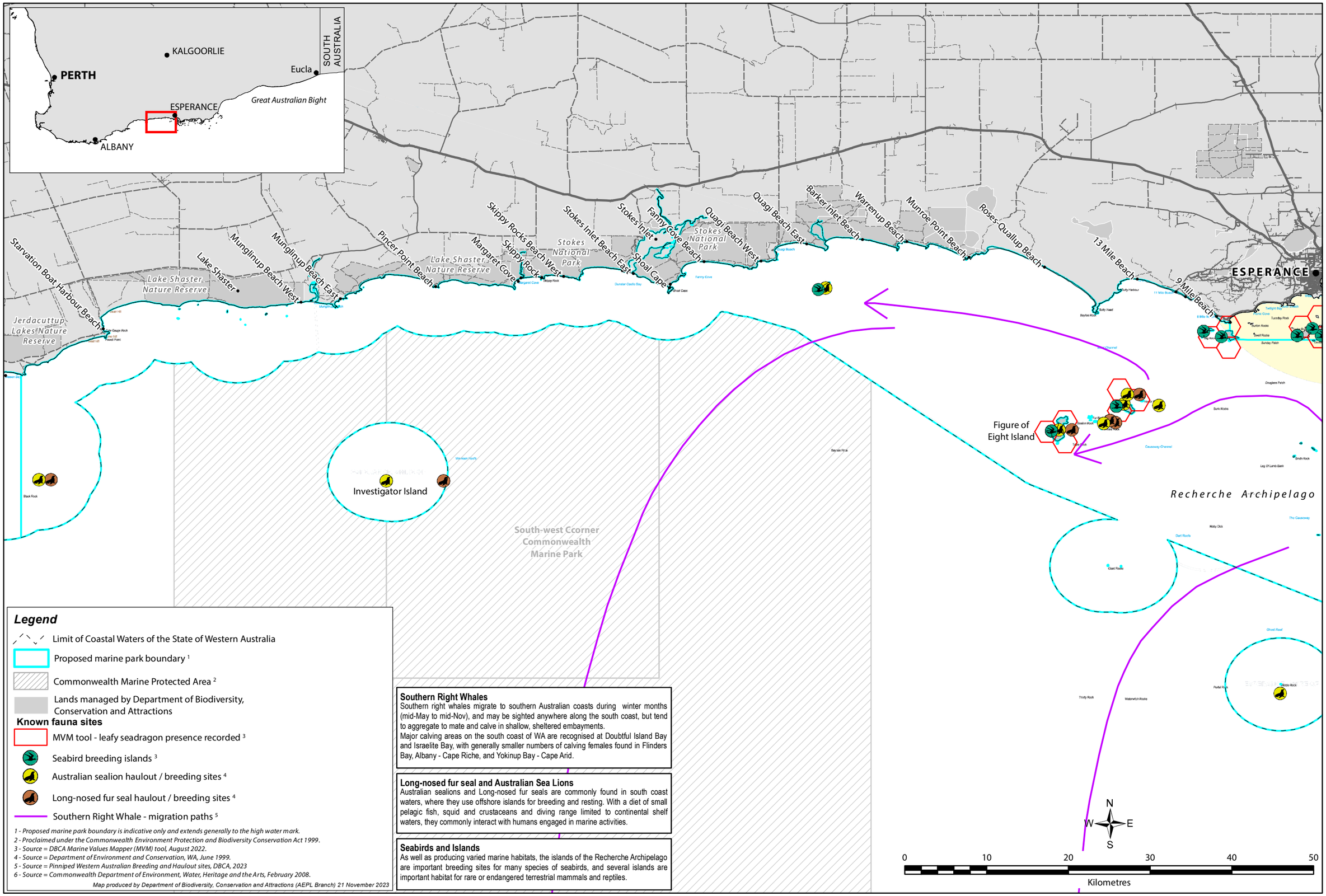
1 - Proposed marine park boundary is indicative only and extends generally to the high water mark.
2 - Proclaimed under the Commonwealth Environment Protection and Biodiversity Conservation Act 1999.
3 - Derived from data contained in "Oceans of Opportunity: A Proposed Strategic Framework for Marine Waters of Western Australia's South Coast', 2010, Department of Environment and Conservation. This includes source marine benthic habitat data from Department of Environment and Conservation (DEC), Fisheries Research and Development Corporation (FRDC) and the Commonwealth Science and Industry Research Organisation (CSIRO).

Map produced by Department of Biodiversity, Conservation and Attractions (AEPL Branch) 21 November 2023

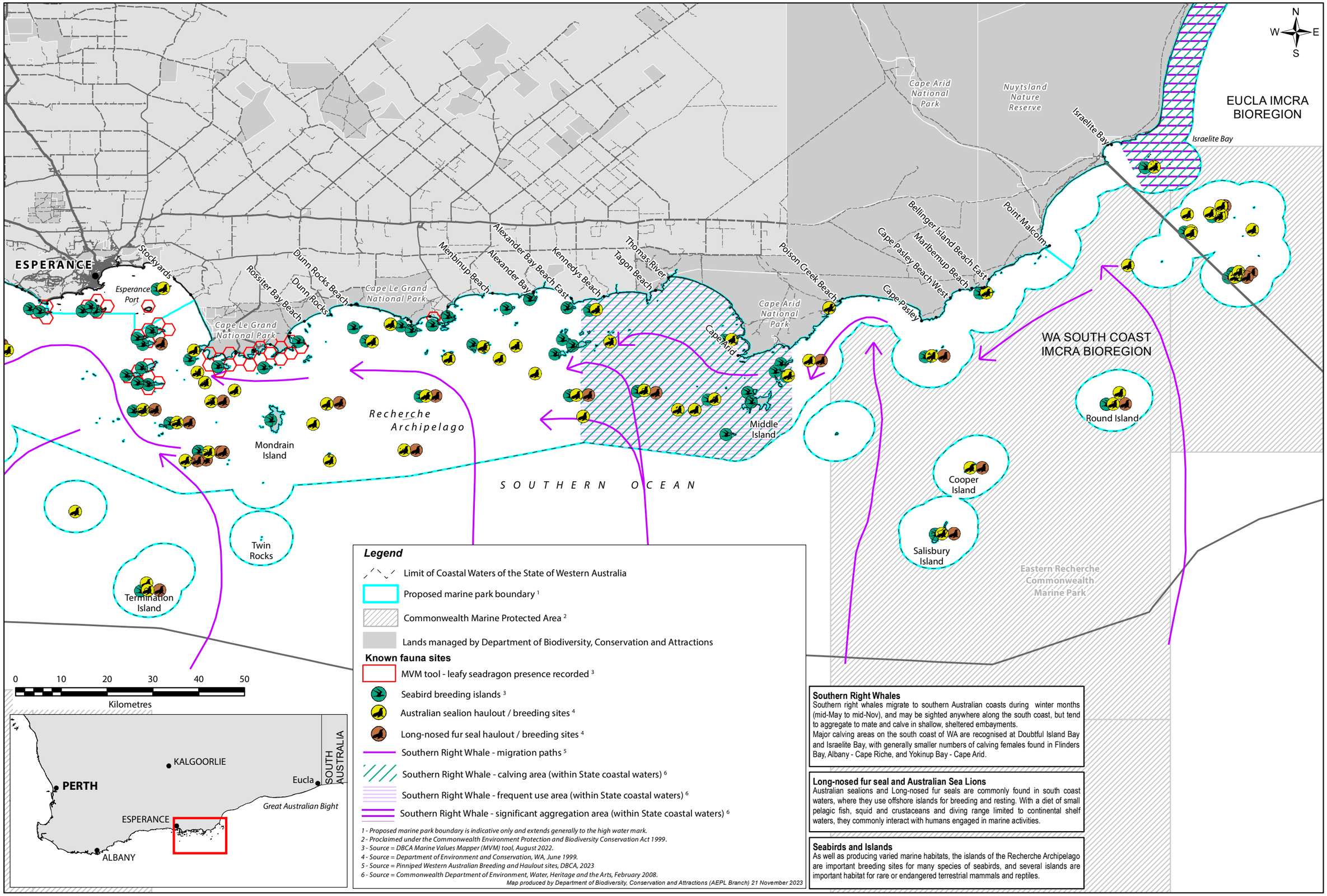
Map 5 – Known marine habitats within and adjacent to the proposed Wudjari Marine Park – west.



Map 6 – Known marine habitats within and adjacent to the proposed Wudjari Marine Park – east



Map 7 - Known marine fauna within and adjacent to the proposed Wudjari Marine Park (west)



Legend

- Limit of Coastal Waters of the State of Western Australia
- Proposed marine park boundary [1]
- Commonwealth Marine Protected Area [2]
- Lands managed by Department of Biodiversity, Conservation and Attractions

Known fauna sites

- MVM tool - leafy seadragon presence recorded [3]
- Seabird breeding islands [3]
- Australian sealion haulout / breeding sites [4]
- Long-nosed fur seal haulout / breeding sites [4]
- Southern Right Whale - migration paths [5]
- Southern Right Whale - calving area (within State coastal waters) [6]
- Southern Right Whale - frequent use area (within State coastal waters) [6]
- Southern Right Whale - significant aggregation area (within State coastal waters) [6]

1 - Proposed marine park boundary is indicative only and extends generally to the high water mark.
2 - Proclaimed under the Commonwealth Environment Protection and Biodiversity Conservation Act 1999.
3 - Source = DBCA Marine Values Mapper (MVM) tool, August 2022.
4 - Source = Department of Environment and Conservation, WA, June 1999.
5 - Source = Pinniped Western Australian Breeding and Haulout sites, DBCA, 2023
6 - Source = Commonwealth Department of Environment, Water, Heritage and the Arts, February 2008.

Map produced by Department of Biodiversity, Conservation and Attractions (AEPL Branch) 21 November 2023

Southern Right Whales
Southern right whales migrate to southern Australian coasts during winter months (mid-May to mid-Nov), and may be sighted anywhere along the south coast, but tend to aggregate to mate and calve in shallow, sheltered embayments.
Major calving areas on the south coast of WA are recognised at Doubtful Island Bay and Israelite Bay, with generally smaller numbers of calving females found in Flinders Bay, Albany - Cape Riche, and Yokinup Bay - Cape Arid.

Long-nosed fur seal and Australian Sea Lions
Australian sealions and Long-nosed fur seals are commonly found in south coast waters, where they use offshore islands for breeding and resting. With a diet of small pelagic fish, squid and crustaceans and diving range limited to continental shelf waters, they commonly interact with humans engaged in marine activities.

Seabirds and Islands
As well as producing varied marine habitats, the islands of the Recherche Archipelago are important breeding sites for many species of seabirds, and several islands are important habitat for rare or endangered terrestrial mammals and reptiles.

Map 8 - Known marine fauna within and adjacent to the proposed Wudjari Marine Park (east)

5.1 Geomorphology

The landforms and seascapes of Wudjari Country are part of the heritage, identity and ongoing cultural connections of the community, imbued with spiritual meaning and significance. The marine habitats are also understood as the ancient landforms of the Wudjari and are of heritage value and significance.

In this way, all landforms have cultural associations, names, stories, uses and features, and are part of the identity and heritage of Wudjari. A biocultural corridor is essentially connected landforms and associated ecosystems—land and sea. They're linked to creation stories, with protocols for learning, visiting, connecting with, protecting and honouring.

The IMCRA is a framework developed for classifying Australia's marine environment into ecological bioregions at a scale useful for regional planning. These bioregions are used as the basis for the development of a National Representative System of Marine Protected Areas (NRSMPA). The proposed Wudjari Marine Park lies in the South Coast IMCRA Bioregion (Map 4), which is characterised by long term carbonate sedimentation, granites and numerous canyons. The Recherche Shelf extends from Cape Leeuwin to Israelite Bay and supports four main rocky reef systems and an archipelago of ~105 islands and ~1,500 islets known as the Recherche Archipelago. While the reef systems and Recherche Archipelago provide some protection from south-west swells and winds, the proposed marine park is typically exposed to high energy.

The coastal geomorphology of Wudjari Country consists of a repeating pattern of long, arcing sandy beaches backed by dunes and located between high, cliffed granitic, doleritic or metasedimentary headlands (Sanderson et al., 2000). The most exposed parts of headlands facing south and southwest are either cliffed or fronted by steep slopes which are swept by wave action. The south-eastern sides of the headlands, adjacent to the next wide bay and beach, are exposed to lesser wave action and tend to have granite or gneiss boulder fields along the shore (CALM, 1994; Sanderson et al., 2000).

The geomorphology is determined predominantly by wave refraction around discrete headlands and islands. Foredune plains occur primarily as fill in sheltered embayments. Oceanographic processes play a major part in shaping the coast, and together with the morphology of the seabed, contribute to influencing the distribution of biota, for example, exposure to wave energy appears to determine the distribution of unconsolidated substrate and is the most useful regional scale predictor of rhodolith and seagrass habitats (Ryan et al., 2007).

Ancient drainage channels occur on the seafloor, providing evidence that sea level in the area was 120 metres lower 18,000 years ago at the end of the last glacial maximum, and that coastal drainage channels flowed across the current continental shelf to the shelf break (SCRMPWG, 2010).

The beaches along the open coast of the proposed Wudjari Marine Park are exposed to heavy surf and generally consist of coarse sands. Intertidal sand flats occur in sheltered corners and are not extensive (CALM, 1994). Wherever offshore structures protect the shore from the direct effects of swell, sheltered sandy beaches have developed in association with cuspate forelands and tombolos (Sanderson et al., 2000).

Broadly, ecological communities on beaches within the proposed marine park can be characterised by sheltered sandy beaches and exposed south-facing headlands of limestone and granite (CALM, 1994). Ecological communities on sandy beaches rely primarily on marine based nutrient sources (McLachlan & Brown, 2006). Beach-cast wrack is prominent

on many beaches within the proposed marine park and provides nutrients to the generally low-productivity habitats of sandy beaches (Ince et al., 2007).

Beaches provide important habitat for macroinvertebrate assemblages and shorebirds. Limestone and granitic intertidal platforms provide a hard substrate on many of the beaches within the proposed marine park, and generally support a high diversity of macroinvertebrates and marine flora (Bessey et al., 2018). Beaches are also highly valued for recreational coastal activities and are significant features to the lifestyle of people on the south coast, including those that visit for holidays.

Threats to the geomorphology of the proposed marine park include climate change (causing increased storms and erosion), physical disturbance from recreational activities, such as four-wheel driving, and coastal development. Disturbance from coastal development is centred around the main coastal towns in the region. A significant proportion of the south coast is encompassed within national parks and nature reserves which has reduced development pressures. Recently, several locations within the proposed marine park have been identified for green hydrogen projects and Butty Head has been identified as a potential port area. Proposed developments likely to have a significant impact on the environment are referred to the Environmental Protection Authority (EPA) and may be subject to the environmental impact assessment requirements of the *Environmental Protection Act 1986* (EP Act). Boat harbours are usually managed by the Department of Transport, with boat ramps administered by local authorities.

Summary of management arrangements for geomorphology	
Current status	The geomorphology of the proposed marine park is generally undisturbed. However, parts of the coastline have been altered by coastal development including groynes, marinas and ports.
Pressures	• Physical disturbance (e.g., trampling/4WD access). • Large scale coastal developments such as groynes, marinas and ports (both current and future projects). • Construction of general marine infrastructure (e.g., navigation markers, jetties). • Ground disturbing mining exploration /development.
Current major pressure	Climate change
Management objectives	• To ensure that geomorphology of the proposed marine park is understood in relation to Wudjari cultural places and values, and associated knowledge systems of management and protection. • To ensure that the geomorphology of the proposed marine park is not significantly affected by human activities.
Management strategies Joint management partners are the lead for all strategies. Supporting agencies are listed in brackets. If agencies are required to take a lead role, their name is in bold.	1. Educate users about the cultural and ecological importance of the proposed marine parks' geomorphology and appropriate access to protect sensitive coastal landforms. 2. Undertake and/or support research to characterise the geomorphologic features and processes in the proposed marine park, and associated cultural connections, places names and knowledge systems. 3. Monitor the condition of geomorphology and the pressures acting on it within the proposed marine park. 4. Ensure that advice relating to coastal and offshore development activities in the area that have the potential to disturb the

	geomorphology of the proposed marine park is provided to the relevant statutory authority as part of environmental impact assessment and approvals processes. 5. Ensure effective management of commercial and recreational access and use of coastal landforms adjacent to the reserves through liaison with coastal land managers.
Performance measures	Indicators to be developed but may include: • area of coastal disturbance • area of seabed disturbance.
Target	• No change of seabed structural complexity as a result of human activity in the park. • No change in coastal and island landform structure as a result of human activity in the park except for in approved development sites.
Reporting	5-10 years

5.2 Water and sediment quality (KPI)

"We use our senses, to experience, feel, understand, and connect with wadarn boodja."
Wudjari Elder

High water quality in the Wudjari Marine Park is essential to maintain healthy ecosystems and support unique species that depend on the clear waters of the south coast. Water quality is strongly influenced by oceanographic processes, including water temperature, currents, wind and wave action. There is little exchange and/or flushing occurring between Wadarn Boodja and estuarine systems as the majority of estuary sandbars remain closed to the ocean all year around. There is extremely low flow from rainfall, resulting in very low and intermittent freshwater input into the marine environment (SCRMPWG, 2010).

Due to the high penetration of sunlight into the marine environment, light is generally less limiting to benthic habitats and planktonic primary producers on the inner continental shelf, where water column turbidity from phytoplankton bloom and from river discharges are small (Carruthers et al., 2007; Kendrick et al., 2009). The surface waters of the southwestern Australian shelf, waters of the Leeuwin Current and surface waters offshore are very low in nitrogen year-round and primary productivity is nitrogen limited (Kendrick et al., 2009; Lourey et al., 2006).

Potential sources of marine pollution and other pressures on water quality in the proposed marine park include:

- ship-sourced pollution incidents (i.e., oil spills) and operational related impacts (i.e., product spill and the release of anti-fouling biocides)
- wastewater from aquaculture projects which can potentially contain contaminants, pathogens and/or high levels of nutrients if not managed appropriately (noting there are no existing or proposed aquaculture projects within the proposed marine park)
- dredging and dredge spoil disposal
- habitat degradation due to coastal developments.

Water quality in the proposed marine park is believed to be relatively unaffected by marine pollution caused by boating and fishing. The most dominant water quality issues experienced on the south coast relate to estuaries and ports (SCRMPWG, 2010).

Sewage discharge from vessels has the potential to increase nutrient levels and to cause health problems for direct contact recreational activities due to elevated bacterial levels. The impact of sewage discharge from vessels will vary considerably from place to place and seasonally as a consequence of environmental parameters (e.g., water circulation) and human usage patterns (e.g., number of vessels). The Strategy for Management of Sewage Discharge from Vessels into the Marine Environment (DoT, 2009) outlines guidelines for marine sewage discharge in Western Australian waters.

In the reserves, the following sewage discharge scheme is recommended to be applied, however during the life of the management plan, may be amended if considered necessary:

- sanctuary zones and special purpose zones will be 'Zone 1' (no discharge areas)
- waters in general use zones from 500m seaward of the low water mark will be 'Zone 3' (open discharge areas).

Development and infrastructure proposals that have the potential to impact on sediment and water quality in Western Australia are subject to assessment under the EP Act. The EPA can set conditions for sediment quality, which are subsequently regulated by DWER and DPIRD.

Summary of management arrangements for water and sediment quality	
Current status	Water and sediment quality within the proposed marine park are believed to be in a generally excellent condition. Some localised areas, including estuaries may have lower water or sediment quality.
Pressures	• Lack of knowledge regarding the cultural values and significance to water and sediments. • Introduction of nutrients and toxicants from wastewater, storm water and aquaculture • Vessel discharge (e.g., sewage, ballast water.) • Large scale coastal developments such as groynes, marinas and ports (both current and future projects). • Construction of general marine infrastructure (e.g., navigation markers, jetties). • Sand mining dredging and other sand bypassing works. • Eutrophication from agricultural land clearing and loss of riparian buffer zones in estuarine areas. • Major pollution event (e.g., chemical or oil spills).
Current major pressure	• Climate change • Marine debris/litter
Management objectives	To ensure the water and sediment quality of the proposed marine park is not significantly impacted by marine debris and human activities.
Management strategies Joint management partners are the lead for all strategies. Supporting agencies are listed in	1. Develop cultural education programs to communicate the cultural values of water and sediment to the broader community as the foundation for respect, nurturing and enhancement. 2. Facilitate long-term management by accumulating spatial and temporal information on impacts on water quality of various activities in the reserves.

brackets. If agencies are required to take a lead role, their name is in bold.	3. Establish a collaborative approach with adjacent land managers and relevant authorities in seeking to minimise catchment and urban-based inputs that have the potential to affect the proposed marine parks water quality (i.e., marine debris, nutrients and stormwater). 4. Educate users about regulations on boat sewage disposal and enforce controls on the discharge of sewage from vessels in the proposed marine park. 5. As part of on-Country work, patrol the shoreline and waters of the proposed marine park for marine debris and remove and record as necessary; and seek support of partners and marine park users to do the same. 6. Develop an education campaign to encourage visitors to care for and clean Wadarn Boodja, keeping all rubbish with them, and cleaning up litter when they can. 7. Support and/or promote research, including citizen science projects to establish the origin of litter, litter surveys, beach clean-ups and other waste minimisation strategies for marine debris/plastic within the proposed marine park. 8. Educate recreational and commercial fishers on responsible fishing behaviours, including ways to minimise gear loss and appropriate rubbish disposal **[DPIRD]**. 9. Undertake and/or support research on water and sediment quality in the proposed marine park, including establishing baselines for water and sediment quality and understanding natural variability. 10. Monitor the condition of water and sediment quality within the proposed marine park, including in major estuaries and share this information with terrestrial land managers. 11. Work with relevant departments, users of the proposed marine park and stakeholders to address sources of marine debris in the proposed marine park. 12. Increase awareness of marine debris via the action-oriented projects focused on the impacts of marine debris that are part of the Tjaltjraak Healthy Sea Country Program.
Performance measures	• Sea temperature. • Nutrient concentration. • Toxicants concentration. • Pathogen concentration. • Marine debris mass. • Kilometres of coastline cleaned. • Number of beach clean-up events per year.
Target	• No significant increase in oceanic waters in nutrient, toxicant and pathogen concentrations. • Decrease in nutrient and toxicant concentration in estuarine waters. • Decrease in marine debris/litter throughout the park.
Reporting	3-5 years

5.3 Estuarine, saltmarsh and mudflat communities

'All estuaries are cultural zones of the Wudjari – they represent Songlines and important lungs and filters – the connector between our lands and sea'.

Wudjari Elder

The estuaries of the south coast are part of the Creation Stories of Wudjari. For example, the Benwenerup Biel is referred to as a "spiritual highway"—a landscape of sacred and spiritual importance. The creation story that details a dispute between the gnow (mallee fowl), the walitj (eagle) and the people (wardung, or the crows). The story accounts for the protocols related to sharing, protecting water systems, and the events that also led to the creation of the estuary (Walitj Benwenerup).

"Our stories tell of these songlines, these creation stories—they are our lore, how our ancestors mandate the way we need to care and manage this system. So, we have a set of binding principles for the management of the waterway and estuary. We inherit the responsibility to uphold these principles and care for these waters."

Wudjari Elder

The proposed marine park is characterised by the numerous estuaries that are scattered throughout. Estuaries are home to a diverse range of plants and animals and are internationally recognised as important to migratory birds. Estuaries are extremely important to the Wudjari people being highly significant in ancient cultural corridors and archaeological findings provide evidence of Wudjari use over thousands of years.

Western science documents the formation of estuaries along the south coast of Western Australia around 7000 years ago. They remained tidally dominant systems until around 4000 years ago when they shifted towards wave-dominated systems (SCRMPWG, 2010). The south coast region's estuaries and catchments are highly heterogeneous systems, experiencing extreme seasonal variation in rainfall, runoff, river flow, tidal regime, river discharge and entrance sandbars.

Seasonal fluctuations are characterised by differences in environmental characteristics of estuary basins, with freshwater estuarine systems in winter and brackish to hypersaline in summer/autumn. Many estuaries in this region are closed by sand bars at their mouths until they are opened mechanically by humans or heavy rainfall periods where river flow and catchment run-off are significant, filling the estuaries and naturally opening the bars to the ocean (Bancroft et al., 1997).

Coastal areas on the south coast, particularly near the mouths of estuaries, contain complex ecosystems made up of sedges, mudflats, and salt-adapted vegetation known as saltmarsh. Coastal saltmarsh vegetation is recognised nationally and globally as an ecosystem of high ecological value that is increasingly under threat from agriculture, urban and rural developments, changes to drainage and water quality and weed invasions (DoPW, 2016). These habitats occur generally between the elevation of the mean high tide and the mean spring tide and often occur in association with estuaries.

This community consists mainly of salt-tolerant vegetation (halophytes) including grasses, herbs, reeds, sedges and shrubs. Succulent herbs and grasses generally dominate, vegetation is generally <0.5m tall, except for some reeds and sedges. There is typically a high degree of endemism at the species level.

In most instances the catchments of the south coast have undergone significant changes due to increased urban and agricultural practices. This has resulted in increased risk of adjacent streams, inlets and estuaries being subjected to the adverse effects of salinity, sedimentation, and eutrophication (Hodgkin & Clark, 1989). The catchments of the rivers and creeks that have been cleared for agriculture all show signs of salinity stress and erosion, therefore it can be assumed that their coastal inlets are receiving increased loads of nutrients and silt.

Summary of management arrangements for coastal and estuarine communities	
Current status	• The majority of estuaries within the proposed marine park are in altered states with increased levels of salinity, sedimentation and eutrophication. • The condition of salt marshes and mudflats is largely unknown; however, it is likely they have been impacted by clearing, reducing water and sediment quality.
Pressures	• Eutrophication from agricultural land clearing and loss of riparian buffer zones. • Physical disturbance (e.g. trampling, 4WD access). • Discharge of toxicants and physical and chemical stressors (i.e. sediment and nutrients from inlet outflow). • Marine debris/litter. • Construction of general marine infrastructure (e.g. navigation markers and jetties). • Ground disturbing mining exploration/development. • Major pollution event (e.g. chemical or oil spill).
Current major pressure	• Climate change. • Adjacent land use.
Management objectives	To ensure that coastal and estuarine communities in the proposed marine park are not significantly impacted by human activities.
Management strategies Joint management partners are the lead for all strategies. Supporting agencies are listed in brackets. If agencies are required to take a lead role, their name is in bold.	1. Undertake and/or support culturally guided research to better understand sedimentation processes associated with estuaries and the pressures acting on them within the proposed marine park. 2. Develop and support monitoring and research opportunities for assessing the health and relationship between marine and terrestrial ecologies in Wadarn Boodja. 3. Establish a collaborative approach, with neighbouring land and water managers to address human activities that have the potential to significantly impact on estuarine communities in the proposed marine park. 4. Monitor the condition of estuarine communities and the pressures acting on them within the proposed marine park under cultural leadership and with the Tjaltjraak Healthy Country Program team. 5. Seek to protect riparian vegetation from impacts associated with human use. 6. Educate users of the important cultural values and ecological role of estuarine communities and the potential impacts that human activities have on these communities. 7. Ensure that infrastructure developments are constructed to minimise the physical impacts to estuaries.

	8. Investigate feasibility and impact of artificial estuary opening as part of ongoing, Traditional Owner led management activities. [Department of Water and Environmental Regulation (DWER)] 9. Develop integrated fish ecology projects linked to water quality health and improvements and customary practices.
	.
Performance measures	Indicators to be developed but may include: • area of saltmarsh vegetation. • nutrient water and sediment concentration. • toxicant water and sediment concentration.
Target	• No significant decline in total cover of saltmarsh vegetation as result of human activity in the proposed marine park. • Decrease in nutrient and toxicant concentration in estuarine waters.
Reporting	2-3 years

5.4 Seagrass communities (KPI)

"Seagrass is a haven for our smaller fish—a food source and a habitat—it 'stabilises' the sand. If the seagrass is impacted, then the fish and habitats are too—and then none of us can catch a feed!"
Wudjari Elder

Seagrass communities are important benthic primary producers which provide many ecosystem services, including supporting biological productivity, carbon sequestration, fisheries, improving water quality and stabilising sandbanks (Nordlund et al., 2016). Seagrasses are influenced by changes in environmental conditions associated with water movement, nutrient availability, light and temperature (Bearham et al., 2013; Lee et al., 2007). In the proposed marine park, they are important for providing structurally complex habitat for a diverse range of finfish and invertebrates.

Seagrasses in the proposed marine park are highly diverse and include endemic and rare deep-water species. Seagrass species within the proposed marine park include *Posidonia sinuosa, P. australis, P. denhartogii, P. coriacea, P. ostenfeldii, P. kirkmami, Amphibolis griffithii, A. antarctica, Halophila spp.* and *Zostera tasmanica* (Kendrick et al., 2005). Of the approximately 72 seagrass species known worldwide, almost one-third are restricted to southern Australia (Short et al., 2011; Carruthers et al., 2007). There is a high level of endemism on the southwest coast of Australia with approximately half of the 19 seagrass species found there being endemic to the area (Carruthers et al., 2007; Kendrick et al., 2005; Kuo & McComb, 1989). Due to the exceptionally clear water on the south coast, seagrasses can grow at depths over 40m (Kirkman & Kuo, 1990; Kilminster et al. 2018), with evidence of sparse *Halophila spp, Zostera tasmanica* and *P. ostenfeldii* complex growing in deep (42m) protected areas adjoining islands (Kendrick et al., 2005).

Dense seagrass areas are typically found on protected lee sides of headlands and offshore island groups in depths of less than 30m, as well as in coastal embayments from Victoria Harbour to Alexander Bay.

"Seagrass plays such an essential role in our marine environment."
Wudjari Elder

While no seagrass species are listed as threatened in Western Australia, there is one listed priority ecological community—Posidonia australis complex seagrass meadows [Priority 3(i)] (Threatened Species Scientific Committee, 2013). The priority ecological community consists of the assemblage of flora, fauna and micro-organisms associated with the seagrass meadows (dominated by Posidonia australis complex).

Seagrasses are susceptible to increased nutrient levels, which can cause an increase in epiphytic loads on seagrass blades (leaves) and/or increased phytoplankton in the water column that in turn results in shading of seagrasses, which limits photosynthetic ability. Other threats to seagrasses in the proposed marine park include climate change, unregulated anchoring and the construction of marine and coastal infrastructure. Seagrasses are protected throughout the State under the BC Act and the FRM Act. Development proposals that may impact on seagrass communities are subject to an environmental impact assessment under the requirements of the EP Act.

Summary of management arrangements for seagrass communities	
Current status	Seagrasses are generally in a good condition within the proposed marine park.
Pressures	• Unregulated mooring and anchoring that cause scouring in seagrass dominated areas. • Construction of general marine infrastructure (e.g., navigation markers and jetties). • Commercial and recreational fishing (e.g., damage to habitat). • Ground disturbing mining exploration/development. • Discharge of toxicants and physical and chemical stressors (i.e., sediment and nutrients from inlet outflow). • Large scale coastal developments such as groynes, marinas and ports (both current and future projects). • Sewage discharge from vessels. • Pest/disease. • Major pollution event (e.g., chemical or oil spill). • Sand mining, dredging and other sand bypassing works.
Current major pressure	Climate change (e.g., marine heatwaves, increasing sea surface temperature)
Management objectives	• To ensure seagrass communities are not significantly impacted by human activities. • To gain an increased understanding of the seagrass communities in the proposed marine park to facilitate long-term management
Management strategies Joint management partners are the lead for all strategies. Supporting agencies are listed in brackets. If agencies are required to take a lead role, their name is in bold.	1. In partnership with adjoining land and water managers, monitor the condition of seagrass communities and the pressures acting on them within the proposed marine park, and address as require. 2. Undertake and/or support research to characterise the diversity, density, abundance, and distribution of seagrass communities in the proposed marine park, including public participation and monitoring programs. 3. Educate users of the important cultural values and ecological role of seagrass communities and the potential impacts of human activities,

	particularly vessel mooring, and nutrient and pollution inputs on these communities and the biodiversity values of wrack. [DPIRD] 4. Liaise with adjacent landowners and regulatory authorities for requests relating to wrack removal where required for public access or safety. Provide an authorisation where appropriate. 5. Establish a collaborative approach with neighbouring land and water managers to address human activities that have the potential to significantly impact on seagrass communities in the proposed marine park.
Performance measures	Indicators to be developed but may include: • percent cover • community composition • shoot density • canopy height.
Target	• No significant decline in total cover, shoot density or canopy height as a result of human activity. • No significant change in community composition as a result of human activity.
Reporting	3-5 years

5.5 Macroalgae and rhodolith communities (KPI)

The southern coast of Australia has one of the highest levels of species richness and endemism of macroalgae in the world, with around 1000 species of benthic macroalgae identified in the region, of which 62% are endemic to the south coast (Entwisle & Huisman, 1998; Kerswell, 2006; McClatchie et al., 2006; Phillips, 2001; Wormersley, 1990).

The distribution and abundance of macroalgae species on the south coast is not recorded in detail, however a broad picture has been formed. The golden kelp *Ecklonia radiata*, which often forms as dense beds in the shallow sublittoral zone, is the dominant alga along the south coast (CALM, 1994; McClatchie et al., 2006). Other common brown algae include *Cystoceira*, *Scytothallia*, *Cystophora* and *Hormosira banksii*. Conspicuous green algae include various species of *Caulerpa*, while the red algae are represented by many cool temperate species (CALM, 1994). Results from surveys by Goldberg and Kendrick (2005) identified a geographical transition from kelp dominated areas to the west, into a fucalean-dominated assemblage (i.e., sargassum) in the Recherche Archipelago and further east. The Leeuwin and Capes current strongly influence the distribution of macroalgae along the southwestern and southern coasts of Australia (McClatchie et al., 2006).

A total of 242 macroalgal species were recorded around the western islands of the Recherche Archipelago at varying levels of depth and exposure (Goldberg & Kendrick, 2005). A total of 254 species were recorded from Black Island, consisting of canopy, understory, and epiphytic species (Goldberg, 2005). A total of 198 macroalgal species were recorded at Woody Island, Esperance Bay (Goldberg, 2007).

Rhodoliths are unattached, marine, benthic algal nodules of various sizes, with origins that are predominantly accreted by crustose coralline red algae precipitating calcium carbonate within their cell walls (Foster, 2001). Rhodolith beds are a unique substrate and functional habitat which support a high biodiversity of associated organisms, including macroalgae, filter feeding communities and fish (Kendrick et al., 2005).

A regional summary of Australian rhodoliths identified areas including the Wudjari Marine Park as an area with globally significant rhodolith distribution (Harvey et al., 2017). Eight species of rhodolith are known to occur in Australian waters, with only two species identified in Western Australia, namely *Lithophyllum stictaforme* and *Neogoniolithon brassica-florida* (Harvey et al., 2017). Rhodolith beds were found to be widespread throughout the western Recherche Archipelago and occurred mainly in high energy environments between islands and in open offshore waters, in depths of between 27–90m. Some beds were as large as 9000ha and over 25km wide (Kendrick et al., 2005). It is unknown how common this habitat type is along the Western Australian south coast, although it has been suggested that significant rhodolith beds are likely to stretch between the Recherche Archipelago and Twilight Cove (Sutton & Day, 2021). Kendrick et al. (2005) estimated a 17 percent cover of rhodolith habitat within the Recherche Archipelago, which forms one of only three locations in Australian where the extent of rhodolith beds has been established in high resolution benthic surveys (Harvey et al., 2017).

Macroalgae and rhodolith communities are susceptible to several impacts including heatwaves and warming ocean temperatures due to climate change. Rhodolith beds are particularly susceptible to the impacts of ocean acidification due to their magnesium-calcite skeletons. Macroalgae and rhodolith communities can also be impacted by physical disturbance such as from anchoring, hydrodynamic forces (e.g., swell), infrastructure and some fishing methods (Burnett & Koehl, 2022).

Macroalgae and rhodoliths are protected throughout the State under the BC Act and the FRM Act. In addition, development proposals that may impact on macroalgae communities are subject to an environmental impact assessment by the EPA.

Summary of management arrangements for macroalgae and rhodolith communities	
Current status	Macroalgae and rhodolith communities are generally in a good condition within the proposed marine park.
Pressures	• Unregulated mooring and anchoring that cause scouring in macroalgal dominated areas. • Construction of general marine infrastructure (e.g., navigation markers and jetties). • Commercial and recreational fishing (e.g., damage to habitat). • Ground disturbing mining exploration/development. • Discharge of toxicants and physical and chemical stressors (i.e., sediment and nutrients from inlet outflow). • Large scale coastal developments such as groynes, marinas and ports (both current and future projects). • Sewage discharge from vessels. • Pest/disease. • Major pollution event (e.g., chemical or oil spill). • Sand mining, dredging and other sand bypassing works.
Current major pressure	Climate change
Management objectives	To ensure the diversity, cover and condition of macroalgae and rhodolith communities are not significantly impacted by human activity in the proposed marine park.

Management strategies Joint management partners are the lead for all strategies. Supporting agencies are listed in brackets. If agencies are required to take a lead role, their name is in bold.	1. Monitor the condition, diversity and cover of macroalgae and rhodolith communities and the pressures acting on them within the proposed marine park and address as required. 2. Undertake and/or support research to characterise the diversity, community composition and condition of macroalgae and rhodolith communities and increase their resilience in the proposed marine park. 3. Educate marine park users about the ecological importance of the proposed marine park's macroalgae and rhodolith communities and the potential detrimental impacts of physical disturbance on these communities. 4. Establish a collaborative approach with neighbouring land and water managers to address human activities that have the potential to significantly impact on macroalgae and rhodolith communities in the proposed marine park.
Performance measures	Indicators to be developed but may include: • percent cover • community composition • macroalgae density (canopy forming species).
Target	• No significant decline in cover of macroalgae and rhodoliths as a result of human activity. • No significant decline in density of macroalgae as a result of human activity. • No significant change in community composition of macroalgae and rhodoliths as a result of human activity.
Reporting	3-5 years

5.6 Subtidal soft sediment communities

"The white sands of Kepa Kurl and beyond are part of our identity and cultural heritage. We know them as kwongkan—vibrant, shiny sands, great plains—that support all our cultural plants and animals. Much of the sand plains of our old people are now submerged, our beaches and bays."

Wudjari Elder.

Soft sediment habitats typically occur in sheltered areas where sediments formed by the erosion of cliff faces, limestone and skeletal fossil fragments in sedimentary rocks build up due to the high energy of the south coast (Sutton & Day, 2021). Marine habitats made up of soft sediments form most of the Eucla bioregion benthic environment (CALM, 1994; Dutkiewicz et al.; 2015) and make up approximately 28 percent of the marine benthic environment within the Recherche Archipelago (Sutton & Day, 2021).

Soft sediment environments along the south coast of Western Australia are known to host distinct infauna and epifauna communities (Sutton & Day, 2021), however there is little information available on the condition of these communities within the proposed marine park. Some important species, to commercial and recreational fishing, such as the southern saucer scallop (*Ylistrum balloti*), tend to occur in pockets of high abundance within soft sediment environments.

Wudjari connect submerged sandy systems with the sand dune systems that characterise their coastlines, and part of the Kwongkan substrate (shiny sands) that define much of their cultural landscape. In places, deep sands cover ancient landscapes such as wetlands and granite outcrops—features of the ancient Wudjari coastal plain.

Threats to subtidal soft sediment communities include climate change, unregulated mooring and anchoring, the construction of marine infrastructure, commercial fishing, particularly bottom trawling and nutrient and toxicant input. Due to the low level of industrial and coastal development in the proposed marine park and limited size and restrictions on the South Coast Trawl Fishery it is likely that these communities are in an undisturbed condition (SCRMPWG, 2010).

Summary of management arrangements for soft sediment communities	
Current status	Limited information is available, however, soft sediment communities within the proposed marine park are believed to be in a generally good condition.
Pressures	• Construction of general marine infrastructure (e.g., navigation markers and jetties). • Commercial and recreational fishing (e.g., damage to habitat). • Ground disturbing mining exploration/development. • Discharge of toxicants and physical and chemical stressors (i.e., sediment and nutrients from inlet outflow). • Large scale coastal developments such as groynes, marinas and ports (both current and future projects). • Sewage discharge from vessels. • Pest/disease. • Major pollution event (e.g., chemical or oil spill). • Sand mining, dredging and other sand bypassing works.
Current major pressure	Climate change
Management objectives	To ensure the species diversity and biomass of soft sediment communities within the proposed marine park are not significantly impacted by human activities.
Management strategies Joint management partners are the lead for all strategies. Supporting agencies are listed in brackets. If agencies are required to take a lead role, their name is in bold.	1. Undertake and/or support research to better characterise the cultural values and places related to soft sediment communities and submerged cultural places. 2. Undertake and/or support research to better characterise the flora, fauna and distribution of soft sediment communities within the proposed marine park. 3. Monitor the condition of soft sediment communities and the pressures acting on them within the proposed marine park. 4. Educate users of the important cultural values and ecological role of soft sediment communities and the potential impacts that human activities have on these communities.
Performance measures	Indicators to be developed but may include: • diversity • species abundance.
Target	No significant decline in diversity or species abundance as a result of human activity.

Reporting	3-5 years

5.7 Filter feeder communities

Filter feeder communities are comprised of species such as sponges, bryozoans, sea squirts and sea anemones. They are generally located in areas that have strong water currents and hard substratum.

The Recherche Archipelago is known to support a high diversity of marine invertebrates (McDonald & Kendrick, 2005). Sponge gardens found throughout the archipelago are made up of diverse communities of sponges, soft corals, ascidians, bryozoans and hydroids. A total of 409 species of sponges were identified in three sampling locations within the Recherche Archipelago, with representatives from 11 of the 15 currently recognised orders of Demospongiae (McDonald & Kendrick, 2005). The sponge fauna found in the Recherche Archipelago represents approximately 20 percent of the described species in Australia (McDonald & Kendrick, 2005).

These animals provide a habitat that supports many organisms including commercially targeted fish, crustacean and mollusc species. Wells et al. (2003) identified 27 species, including six newly described hydroid species at depths between four and 25 metres at offshore islands of the Recherche Archipelago. The ranges of 23 species previously known to occur in waters off South Australia have been extended to waters west of the Great Australian Bight (Wells et al., 2003).

Very few coral species are found within the proposed marine park. Coral fauna diminishes rapidly south of Rottnest Island with some species flourishing in a few suitable habitats along the south coast of Western Australia (Veron & Marsh, 1988). Corals represented only two percent of the cnidarian taxa collected and examined from a survey carried out within the Recherche Archipelago (Kendrick et al., 2005).

In the Wudjari Marine Park, coral communities are generally found in the moderately sheltered waters in the outer part of the Recherche Archipelago (Ross et al., 2018). Scleractinian corals (i.e., stony/hard corals) occur sporadically, but do not form coral reefs (Wells et al., 2005). Veron and Marsh (1988) reported seven species from four genera that occur along the south coast of Western Australia including three (*Coscinaraea mcneilli*, *Plesiastrea versipora* and *Scolymia australis*) which extend across southern Australia (Shepherd & Veron, 1982), and *C. marshae* which extends into South Australia. Three species of *Turbinaria* cover extensive areas in the Recherche Archipelago. *Symphyllia wilsoni* and *Favites* sp. have been found as beach worn specimens on the south coast. Additionally, James et al. (1994) identified four ahermatypic (non-reef building) coral species, including *Scolymia australis*, *Monomyces radiatus*, *Flabellum pavoninum* and a *Charyophillia* sp. from a single dredge that scoured the seafloor between 180–250m deep.

Globally, filter feeder communities are susceptible to several threats, including heatwaves and warming ocean temperatures due to climate change, hydrodynamic forces, some fishing methods, unregulated anchoring and the construction of marine infrastructure. Due to the low level of industrial and coastal development in the proposed marine park and management of the South Coast Trawl Fishery it is likely that these communities are in a relatively undisturbed condition (SCRMPWG, 2010).

Summary of management arrangements for filter feeder communities	
Current status	Limited information is available on filter feeder communities, but they are believed to be in a generally good condition throughout the proposed marine park.
Pressures	• Commercial fishing (e.g., bottom trawling). • Unregulated anchoring. • Climate change. • Discharge of toxicants and physical and chemical stressors (i.e., sediment and nutrients from inlet outflow). • Sand mining, dredging and other sand bypassing works. • Large scale coastal developments such as groynes, marinas and ports (both current and future projects). • Construction of general marine infrastructure (e.g., navigation markers and jetties). • Ground disturbing mining exploration/development. • Pests/disease. • Major pollution event (e.g., chemical or oil spill).
Current major pressure	None currently identified.
Management objectives	• To ensure that filter feeder communities within the proposed marine park are not significantly impacted by human activities. • To develop an increased understanding of the distribution and diversity of filter feeder communities in the proposed marine park.
Management strategies Joint management partners are the lead for all strategies. Supporting agencies are listed in brackets. If agencies are required to take a lead role, their name is in bold.	1. Educate marine park users about the ecological importance of the proposed marine park's filter feeder communities and the potential detrimental impacts of physical disturbance (e.g., anchoring) on these communities. 2. Monitor condition of filter feeder communities and the pressures acting on them within the proposed marine park. 3. Undertake and/or support research to characterise the diversity, community composition and condition of filter feeder communities in the proposed marine park.
Performance measures	Indicators to be developed but may include: • diversity • total cover • community composition • introduced species.
Target	• No significant decline in diversity or total cover as a result of human activity. • No significant change in community composition as a result of human activity. • No significant change in the abundance of introduced species as a result of human activity.
Reporting	3-5 years

5.8 Invertebrates

"When our Elders are once again harvesting shellfish for the estuary, we know that our efforts are working, Country is healing, our community is healing."
Wudjari Elder

Marine invertebrates are animals without a backbone, such as sea urchins, starfish, sea cucumbers, crabs, lobsters, octopus, abalone, jellyfish and anemones. Invertebrates have important functions within the ecosystem as a food source for other invertebrates, finfish and migratory birds, as well as in nutrient cycling. Invertebrate communities in the proposed marine park exhibit high levels of endemism and consist of both tropic and temperate species.

The relatively high levels of endemism and biodiversity in southern Australian waters can be attributed to the continent's long period of geological isolation (>65 million years), the unusually large width of the continental shelf, and the characteristically low nutrient status of Australia's southern coastal waters (McClatchie et al., 2006; Poore, 1995). The presence and distribution of invertebrates within the proposed marine park is influenced by substrate, depth, availability of food and the temperature gradient produced by the Leeuwin current.

"Wamap nurtures her babies until they are big enough and strong enough to go out to the ocean. In this way, wamap teaches people, to nurture their children, and family."
Wudjari Elder

While specific species ranges within the proposed marine park are unknown, approximately 347 species of temperate Australia echinoderms are known to occur across the south coast from Albany to Eucla; 115 species of decapod crustaceans are known to occur between Cape Naturaliste and the South Australian and Western Australian border; and 347 species of marine molluscs (15 chitons, 273 gastropods, 49 bivalves, 6 cephalopods and 4 scaphopods) occur within Esperance Bay and the Recherche Archipelago.

Many marine invertebrates formed and continue to be a major component of Wudjari subsistence that in turn links to community identity, health and wellbeing. The process of procuring these species as food source is also part of Wudjari family and community life.

Invertebrates are vulnerable to impacts from climate change. Commercial and recreational fisheries target species including the southern rock lobster (*Jasus edwardsii*), southern saucer scallop (*Ylistrum balloti*), greenlip abalone (*Haliotis laevigata*), brownlip abalone (*H. conicopora*), Roe's abalone (*H. roeii*) and a variety of specimen shell. In addition, bioprospecting, fisheries bycatch and pollution may impact invertebrates.

DPIRD is responsible for the management of the recreational and commercial take of invertebrate species under the FRM Act. DPIRD's management occurs across bioregions, zones within bioregions, at a resource level and in some cases at a smaller scale where fisheries operate within restricted areas. Noting the scale of management may not be at the marine park scale, populations of some species in a reserve could become locally depleted even when the fishery and resource is being managed at a sustainable level.

Invertebrates also form part of the marine environment's overall biodiversity and are therefore managed by DBCA under the CALM Act as one of the numerous ecological values within the proposed marine park.

Summary of management arrangements for invertebrates	
Current status	Invertebrates are generally considered to be in a good condition in the proposed marine park.
Pressures	• Climate change. • Pests/disease. • Discharge of toxicants and nutrients from storm water. • Vessel discharge (e.g., sewage and ballast water). • Physical disturbance (e.g., trampling). • Aquaculture (e.g., habitat exclusion, discharges). • Habitat degradation. • Ground disturbing mining exploration/development. • Large scale coastal developments such as groynes, marinas and ports (both current and future projects). • Sand mining, dredging and other sand bypassing works. • Illegal fishing.
Current major pressure	Commercial and recreational fishing for targeted species.
Management objectives	• To ensure non-targeted species are not significantly impacted by human activities within the proposed marine park. • To manage targeted invertebrate species for ecological sustainability.
Management strategies Joint management partners are the lead for all strategies. Supporting agencies are listed in brackets. If agencies are required to take a lead role, their name is in bold.	1. See section 9.3 – Zoning and permitted activities. 2. See section 6.2 – Recreational fishing. 3. See section 6.3 – Commercial fishing. 4. Undertake and/or support research to characterise the diversity, abundance, distribution and habitat requirements of invertebrates within the proposed marine park. [DPIRD for targeted species, at an appropriate scale for the relevant stocks] 5. Monitor the condition of invertebrates and the pressures acting on them within the proposed marine park and take remedial action if required. [DPIRD for targeted species] 6. Educate users of the proposed marine park about the cultural value and ecological importance of invertebrates (including shells), ways to minimise disturbance to them and relevant fisheries regulations that apply. [DPIRD] 7. Undertake and/or support research to characterise the sustainability of targeted invertebrate species and the consequences of their removal. **[DPIRD]** 8. Provide updates to marine park managers in relation to management of recreational and commercial fisheries, including reviews and amendments where relevant to the proposed marine park. **[DPIRD]** 9. Investigate the feasibility of potential restoration of invertebrate habitats and populations. [DPIRD]
Performance measures	Indicators to be developed but may include: • diversity • target species abundance

	• community composition.
Target	Sanctuary zones • No decline in diversity and abundance as a result of human activity. • No change in community composition as a result of human activity. General use zones and special purpose zones • No significant decline in community diversity as a result of human activity. • No significant change in community composition as a result of human activity. • No change in target species abundance beyond ecologically sustainable levels as a result of human activity (to be determined in consultation with DPIRD).
Reporting	3-5 years

5.9 Finfish, sharks and rays (KPI)

Many fish species form part of the cultural heritage of Wudjari and feature in stories, events, ceremony, as well as forming part of kinship and cultural connection.

"The Wudjari come to this place—Mandooweerinup—when it's hot, and the salmon are running, and the moodjah tress are flowering. The Wudjari call the dolphins by banging on the ground. The dolphins sense the Wudjari and come close to them. The dolphins help to round up the salmon and bring them closer to the shore for the Wudjari—and they also get a feed for themselves. It is customary for the first fish caught to be thrown back to the ocean—as a sign of gratitude and respect. We use paperbark to cook the fish in the coals. These practices have been passed down through generations from our old people."

Wudjari Dolphin Dreaming as told by a Wudjari Elder

Fish communities of southwestern Australia are diverse with many endemic species (Hutchins, 2001; Thomson-Dans et al., 2003). The region is considered a hotspot for the discovery of species new to science (Stiller et al., 2015). The effect of the Leeuwin Current extends the range of many subtropical fish species into temperate areas of the southern coastline of Australia (Kendrick et al., 2009).

The white shark (*Carcharodon carcharias*) is listed as vulnerable under both the *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act) and BC Act, and is protected under the FRM Act. Most of the south coast of Western Australia is recognised as a biologically important area for white sharks and it is suggested that the Recherche Archipelago may also be a nursery area for white sharks, following the observation of a juvenile near Salisbury Island (Smith, 2020; Sutton & Day 2021), however this requires further investigation. It is understood that the south coast shoreline that extends from east of Esperance through to the Western Australia–South Australia border is a significant nursery area for Australian salmon (*Arripis truttacea*) and Australian herring (*Arripis georgiana*) (Gaughan & Santoro, 2020). Both species are important to the commercial fishing sector in the south coast region of Western Australia.

There are three species of seadragon endemic to Australia that are all found along the south coast, including the leafy seadragon (*Phycodurus eques*), the weedy seadragon (*Phyllopteryx taeniolatus*) and the ruby seadragon (*Phyllopteryx dewysea*). Leafy and weedy seadragons are protected under the FRM Act (DPIRD, 2021). The ruby seadragon was only described as a new species in 2015, so little is known about its distribution.

The primary pressures on finfish are extraction by commercial and recreational fishing (targeted removal and bycatch). Other threats include climate change, marine debris, introduction of marine pests and habitat damage.

DPIRD is responsible for the management of recreational and commercial take of finfish species under the FRM Act. DPIRD's management occurs across bioregions, zones within bioregions, at a resource level and in some cases at a smaller scale where fisheries operate within restricted areas. Noting the scale of management may not be at the marine park scale, populations of some species in a reserve could become locally depleted even when the fishery and resource is being managed at a sustainable level.

Finfish also form part of the overall biodiversity and are therefore managed by DBCA under the CALM Act as one of the numerous ecological values within the proposed marine park.

Summary of management arrangements for finfish, sharks and rays	
Current status	Finfish, sharks and rays are generally considered to be in relatively good condition within the proposed marine park.
Pressures	• Climate change. • Marine debris (e.g., entanglement, ingestion). • Introduction of marine pests. • Feeding. • Mooring and anchoring – habitat damage. • Toxicants (e.g., marina or vessel discharge, untreated wastewater or stormwater). • Sand mining, dredging and other sand bypassing works. • Vessel discharge (e.g., sewage). • Large scale coastal developments such as groynes, marinas and ports (both current and future projects). • Aquaculture (e.g., habitat exclusion, entanglements, discharges). • Vessel noise and strike. • Major pollution events (e.g., oil or chemical spill).
Current major pressure	Recreational and commercial fishing (e.g., direct removal and bycatch).
Management objectives	• To ensure non-targeted species are not significantly impacted by human activities within the proposed marine park. • To manage targeted species for ecological sustainability.
Management strategies Joint management partners are the lead for all strategies. Supporting agencies are listed in brackets. If agencies are required to take a lead role, their name is in bold.	1. See section 9.3 – Zoning and permitted activities. 2. See section 6.2 – Recreational fishing. 3. See section 6.3 – Commercial fishing. 4. Identify knowledge gaps and undertake and/or promote research programs to characterise finfish, shark and ray diversity, abundance, biomass and behaviours within the proposed marine park, and conduct research to understand the ecological role of targeted finfish species and the consequences of their removal. [DPIRD for targeted species] 5. Monitor the biodiversity, current health and abundance of finfish, sharks and rays and the pressures acting on them in the proposed marine park. [DPIRD for targeted species] 6. Undertake white shark ecological research with the aim of better understanding behaviour and assisting to mitigate shark attack risk whilst also improving conservation outcomes. [DPIRD]

	7. DPIRD to involve the JMB in white shark tagging and research. **[DPIRD]** 8. Undertake research on leafy seadragons, investigating their behaviours, population numbers, ecological relationships and threats. 9. Educate users about recreational fishing rules, the ecological importance of finfish, sharks and rays and responsible fishing behaviour. [DPIRD] 10. Provide updates to marine park managers in relation to management of recreational and commercial fisheries, including reviews and amendments where relevant to the proposed marine park. [DPIRD] 11. Educate users about the cultural stories of fish and the interrelationships with seasons, plants and practices (for example Wudjari Dolphin Dreaming—seasons—moodjah flowering—salmon—respect—subsistence).
Performance measures	Indicators to be developed but may include: • diversity • species abundance • species size distribution • community composition.
Target	Parkwide • No loss in diversity or abundance of protected species as a result of human activity. Sanctuary zones • No decline in diversity, species abundance or species size distribution as a result of human activity. • No change in community composition as a result of human activity. General use and special purpose zones • No significant decline in species diversity or species abundance as a result of human activities. • No significant change in community composition as a result of human activity. • No change in target species abundance or target species biomass beyond ecologically sustainable levels as a result of human activity (to be determined in consultation with DPIRD).
Reporting	3-5 years

5.10 Seabirds and shorebirds (KPI)

Wudjari people once managed seabirds (especially yowli/mutton birds) as a sustainable food source, however with land clearing and the introduction of the feral animals, most colonies are on offshore islands which are difficult to access. The Tjaltjraak Seabird Monitoring Program is part of the cultural revitalisation of managed subsistence that links to ecological management. As apex predators, seabirds have been consistently shown to be reliable indicators of the overall health of marine ecosystems. Therefore, the study and management of seabird colonies can inform the evaluation of marine park management. This program is a key, long-term feature of culturally guided research that links to a more a holistic management process for sea Country.

Most seabirds are highly pelagic, foraging at sea for the greater part of their lives. The movements of very few seabird species have been tracked in southern Western Australia,

with the exception of the flesh-footed shearwater (*Ardenna carneipes*), which migrates to the Bay of Bengal during the winter months (Lavers et al., 2018). In contrast, shorebirds commonly feed by wading in shallow water or along the shoreline. The sandy beaches, intertidal reef platforms and rocky outcrops of the proposed marine park provide an important feeding, roosting and nesting habitat for seabirds and shorebirds.

Of the 110 species of seabirds that comprise the Australian seabird fauna, 81 (72 percent) can be found in the southwest region of Australia (McClatchie et al., 2006). Additionally, the region also contains some of the most significant and diverse seabird breeding islands within Australian territorial waters (McClatchie et al., 2006).

Important breeding and nesting habitats for seabirds in the area include those in the Recherche Archipelago, which has been identified by Birdlife International as an Important Bird Area (McClatchie et al., 2006, Dutson et al., 2009). The southwestern population of the flesh-footed shearwater, which is listed as a vulnerable species under the BC Act, nests on islands between Cape Leeuwin and the South Australia border (Lavers, 2018). The Recherche Archipelago is home to around 45 percent of the world's breeding population of this species, and also provides important nesting habitat for other breeding populations of poorly studied seabirds e.g., white-faced storm petrel (*Pelagodroma marina*) and shorebirds. The archipelago supports the westernmost population of short-tailed shearwaters (*Ardenna tenuirostris*) and the only breeding population of great-winged petrels (*Pterodroma macroptera*) in Australia, with birds from this region shown to be at risk from exposure to persistent organic pollutants (POPs; Gilmour et al., 2021). Flesh-footed shearwaters are also at risk from chemical pollutants, with the concentration of cadmium in their feathers increasing by 1.5 percent per year since the early 1900s (Bond & Lavers, 2020).

Climate change also poses a substantial risk to these birds, with substantial changes in trophic niche and trophic level recorded in Western Australian shearwaters over the past 75 years (Bond & Lavers, 2014), plus a predicted increase in the frequency of bushfires on their breeding islands resulting from dry lightning strikes associated with drought and global warming (Lavers et al., 2022). There is also growing concern regarding the conservation status of Pacific gull (*Larus pacificus*) populations in southwest Western Australian (Birdlife Australia, 2021). Beaches along Western Australia's south coast provide important nesting habitat for shorebird species, such as the fairy tern (*Sterna nereis nereis*) and hooded plover (*Thinornis cucullatus*).

Other threatened and endangered seabird and shorebird species that are known to occur on the south coast include:

- northern rockhopper penguin (*Eudyptes moseleyi*)
- wandering albatross (*Diomedea exulans*)
- grey-headed albatross (*Diomedea chrysostoma*)
- black-browed albatross (*Diomedea melanophris*)
- northern giant petrel (*Macronectes halli*).

The status of seabirds and shorebirds in the proposed marine park is species dependent. Modelled estimates show a decline in the abundance of eastern curlew (*Numenius madagascariensis*) and ruddy turnstone (*Arenaria interpres*) around the Recherche Archipelago, and areas of increased and decreased abundance for red-necked stints and sooty oystercatchers depending on location (Clemens et al., 2016). The Cape Barren goose (*Cereopsis novaehollandiae grisea*), which breeds on the islands of the Recherche Archipelago, is listed as vulnerable under the EPBC Act and BC Act (Lee & Bancroft, 2001). The population diminished by nearly half in 1991 when six months of drought and hot weather caused a shortage of available food. Surveys carried out in 1993 showed that the

population had recovered; however, there is no new information on the population (Comer & Garnett, 2021) and the species is still listed as Vulnerable under the EPBC Act.

The decline in some species of seabirds (including both short-tailed and flesh-footed shearwaters) and shorebirds is caused by a variety of factors, many of which are synergistic (i.e. cumulative effects), including overfishing of the prey that seabirds rely on for food (Bond & Lavers, 2014), entanglement in fishing gear, plastic pollution (e.g., up to 90 percent of flesh-footed shearwaters from Western Australia contain plastic (Lavers & Bond, 2016)), introduction of non-native predators to seabird colonies, destruction and changes to seabird habitat, and environmental and ecological changes caused by climate change (Bond & Lavers, 2020).

In July 2021, DPIRD convened an ecological risk assessment (ERA) of the fisheries that access the Small Pelagic Scalefish Resource (the resource) including the West Coast Purse Seine Fishery, South Coast Purse Seine Fishery, Purse Seine Development Zones (PSDZ) and recreational fishers (Blazeski et al., 2021). A medium/high risk was given to flesh-footed shearwaters due to the potential interaction with purse seine nets and uncertainty associated with population modelling and fishery-dependent data. Bycatch of seabirds in south coast fisheries is an ongoing, well-documented issue requiring further research and mitigation. For example, off Albany, at least 170 adult, breeding birds are drowned in nets each year (Lavers, 2015; Norriss et al. 2020). Annual survival of this species is one of the lowest recorded for any seabird, worldwide (Lavers et al., 2018) and this corresponds with advice from local Traditional Owners who consistently report shearwaters are no longer observed in areas they were once common. A voluntary Code of Practice in the South Coast Purse Seine Managed Fishery (SCPSMF) has been put in place to reduce interactions between the SCPSMF and protected species including flesh-footed shearwaters.

The national *Threat Abatement Plan* for the incidental catch of seabirds during oceanic longline fishing operations (2018), has been developed and implemented (Commonwealth of Australia, 2018). All seabird species and their eggs are protected under State and Federal Government legislation to the 200nm economic exclusion zone.

Summary of management arrangements for seabirds and shorebirds	
Current status	Several seabird and shorebird species known to occur on the south coast are listed as threatened or are declining.
Pressures	• Entanglement in and ingestion of marine debris. • Introduction of non-native predators to seabird colonies. • Climate change (e.g., increasing water temperatures affecting prey availability, sea level rise affecting habitat; dry lightning, drought, bushfires and other alterations to habitat on islands). • Disturbance to feeding, roosting and nesting activity by people, vehicles, vessels, low flying aircraft (including remotely piloted aircraft (RPA)). • Commercial fishing (e.g., bycatch). • Infrastructure development. • Large scale coastal developments (e.g., loss or degradation of habitat). • Major pollution event (e.g., oil or chemical spill). • Removal of sea wrack from beaches (important for foraging birds).
Current major pressure	None currently identified.

Management objectives	To ensure that the abundance and diversity of seabirds and shorebirds in the proposed marine park are not significantly impacted by human activity.
Management strategies Joint management partners are the lead for all strategies. Supporting agencies are listed in brackets. If agencies are required to take a lead role, their name is in bold.	1. Monitor human impacts to seabird and shorebird breeding and feeding habitat and regulate if required. 2. Design and implement an education and interpretation program that increases the public's awareness of the national and international significance of waterbird populations and informs visitors about impacts human activities can have on birds. 3. Facilitate research to characterise bird diversity, abundance, natural variability, movement patterns and critical habitats within the proposed marine park. 4. Facilitate research on shearwater behaviour, population numbers, ecological relationships, threats, and their capacity to act as bio-indicators. 5. Assess the level and potential impacts of human activities to the seabird and shorebird populations in the proposed marine park and implement an appropriate monitoring program. 6. Ensure that management of migratory shorebirds in the proposed marine park supports relevant international agreements (e.g., Ramsar Convention, Convention on the Conservation of Migratory Species of Wild Animals). 7. Liaise with land managers to undertake complementary management actions on adjacent land and terrestrial reserves to manage potential detrimental impacts on seabirds and shorebirds.
Performance measures	Indicators to be developed by may include: • abundance • diversity • breeding success.
Target	• No loss of diversity or abundance of seabird and shorebird species as a result of human activity. • No significant decline in breeding success of key seabird and shorebird species beyond the limits of natural variation due to human activities in the park.
Reporting	3-5 years

5.11 Pinnipeds (KPI)

Two species of pinnipeds, the Australian sea lion (*Neophoca cinerea*) and the long-nosed fur seal (*Arctocephalus forsteri*) commonly use the islands of the south coast as breeding and haul-out sites (CALM, 1994). Additionally, 11 of the 34 species of pinnipeds in the world are likely to be found in the coastal waters along the south coast of Australia (King, 1988).

The Australian sea lion is endemic to Australia and listed as an endangered species under the EPBC Act and the BC Act. Surveys of known Australian sea lion breeding sites estimate an overall population of between 9,900 to 12,500 animals. About 30% of the Australian population occurs at sites in Western Australia and 70% in South Australia. The Australian sea lion is neither increasing in population numbers nor expanding its range (DAFF, 2007;

Dennis & Shaughnessy, 1996; Campbell, 2003; Gales et al., 1994). Stokes Inlet and the Recherche Archipelago are the most important areas in Western Australia for Australian sea lion haul-out sites (Shaughnessy et al., 2013).

The long-nosed fur seal is listed as 'other protected fauna' under the BC Act and exists in New Zealand and Australia, with an estimated population of 50,000 in New Zealand (including outlying islands) and 5,000 along Australia's southern coast (Bonner, 1994; Lee & Bancroft, 2001; Shaughnessy et al., 2011; Shaughnessy et al., 2013). In Western Australia, long-nosed fur seals are found from the South Australian border to Cape Leeuwin (Shaughnessy et al., 1994). Breeding grounds in the proposed marine park occur throughout the Recherche Archipelago (Lee & Bancroft, 2001). In 1994, there were 16 surveyed breeding localities in Western Australia (Shaughnessy et al., 1994). Of these, Salisbury Island, Seal Rock and Cooper Island were determined to be the three most important breeding sites for the species (Lee & Bancroft, 2001).

Current threats to both species include habitat and prey availability, fisheries bycatch, entanglement in demersal gillnets and marine debris, displaced or disturbed habitats and introduced diseases (DoPW, 2016; Hamer et al., 2013; Osterrieder et al., 2017; Shaughnessy et al., 2013). Additionally, it has been recognised that tourism, such as marine observations, can negatively impact haul-out cycles which influences the survival rate of pups (Osterrieder et al., 2017).

Bycatch from fishing has been identified to be one of the largest threats to the Australian sea lion population as it often results in injury or death (Hamer et al., 2013). To assist in mitigating these risks, in June 2018 DPIRD implemented fisheries management changes which created a network of 33 Australian sea lion gillnet exclusion zones through the known range of Western Australia's Australian sea lion colonies (Watt et al., 2021). Waters within the zones are closed to gillnet fishing by commercial demersal gillnet and demersal longline operators to reduce the risk of interaction between nets and sea lions. These zones range from six to 33 kilometres in radius around known breeding colonies and cover a total of 17,300km² around Western Australia. As of 2021, no interactions have been reported since the implementation of the gillnet exclusion zones. (Watt et al., 2021).

Sea lion exclusion devices are also a legislative requirement for operators in the commercial rock lobster fishery to reduce the risk of Australian sea lions drowning in pots. The effectiveness of these devices in mitigating interactions has been shown over a range of studies (How et al., 2023)

Summary of management arrangements for pinnipeds	
Current status	• Australian sea lion numbers do not appear to be recovering in terms of population size and are listed as endangered under the EPBC Act and the IUCN red list. • Long-nosed fur seals in Western Australia appear to be increasing and expanding in range.
Pressures	• Commercial fishing (bycatch, prey availability). • Marine debris (e.g., ingestion, entanglement). • Disease (e.g., *Mycobacterium pinnipedii* (tuberculosis) *Coxiella burnetii* (Q fever)). • Discharge of toxicants and nutrients (e.g., from waste and storm water). • Disturbance (e.g., wildlife watching and interactions). • Vessel strike. • Large scale coastal developments. • Aquaculture (e.g., habitat exclusion, entanglements).

	• Major pollution event (e.g., oil or chemical spill). • Provisioning (e.g., causing a change in behaviour). • Illegal culling.
Current major pressure	Climate change.
Management objectives	To ensure the abundance of pinnipeds is not impacted by human activity in the proposed marine park.
Management strategies Joint management partners are the lead for all strategies. Supporting agencies are listed in brackets. If agencies are required to take a lead role, their name is in bold.	1. Educate users of the proposed marine park about pinnipeds and the potential detrimental impacts of human activities (e.g., feeding and discarding of offal and bait, disturbance, marine debris) on the proposed marine park's pinnipeds, and regulations for pinniped interactions under the BC Act. 2. Implement an eight-knot speed limit within 500m of pinniped breeding and haul-out sites. **[Department of Transport (DoT)]** 3. Conduct targeted compliance and enforcement to monitor compliance within gillnet exclusion zones around sea lion colonies. [DPIRD]. 4. Investigate sources of injury and causes of mortality of pinnipeds and maintain records of them in the proposed marine park. 5. Undertake and/or support research projects where it contributes to management effectiveness. 6. Regulate access of recreational visitors to marine park areas adjacent to breeding grounds and haul-out sites. 7. Assess and respond to marine fauna entanglements in collaboration with other agencies, considering capacity and circumstances as appropriate.
Performance measures	Indicators to be developed but may include: • number of reported pinniped injuries and deaths • number of Australian sea lions at breeding and haul-out sites over the course of a breeding cycle.
Target	• No significant increase in the number of reported pinniped injuries or deaths as a result of human activity. • No significant decline in the number of pinnipeds at haul-out or pupping sites and islands over the course of a breeding cycle within the proposed marine park.
Reporting	3-5 years

5.12 Cetaceans (KPI)

Of the 38 species of whales and dolphins recorded in Western Australia, 27 have been recorded or are likely to occur off the south coast region (Colman, 1998). Humpback (*Megaptera novaengliae*) and southern right (*Eubalaena australis*) whales are the most common whale species that occur within the proposed marine park.

The humpback whale breeding population of Western Australia (southern hemisphere group IV) is one of three different populations of the Australasian region and is widely reported as the largest natural breeding population in the world, with current estimates of more than 20,000 (Colman, 1998; Lee & Bancroft, 2001; Hedley et al., 2011; Salgado-Kent et al., 2012). Humpback whales are frequently seen as they migrate along the south coast to and from their winter feeding grounds in Antarctica to breeding and calving grounds in the north of Western Australia. The humpback whale is listed as vulnerable under the EPBC Act and conservation dependant under the BC Act (WA). The humpback whale is subject to International Whaling Commission (IWC) regulations and protected within the Australian Whale Sanctuary.

Southern right whales visit the south coast between June and October each year. The females use sheltered bays on the south coast as birthing and nursery areas and cows and calves are often seen close to the shore in August and October (CALM, 1994). The southern right whale forms large aggregations in coastal embayments along the Western Australian south coast, during the 'over-wintering months' where breeding, calving and rearing of young takes place. An estimated 55,000–70,000 southern right whales could be found in the southern hemisphere in the late 1700s, however, whaling in the nineteenth century reduced southern right whale numbers in Australian waters. Current estimates of the south-western Australian subpopulation are at approximately 2500 individuals. The population is increasing at a rate of ~6% annually (Smith, 2021).

Common dolphins (*Delphinus delphis*) are predominantly offshore inhabitants and are one of the world's most abundant dolphin species. They are commonly sighted throughout the south coast region. Within Australian waters there are no estimates of population size, population trends, information on specific calving areas or reproductive cycle for this species.

The distribution of bottlenose dolphins in Australian waters is not well known, although they are usually found offshore in waters deeper than 30m as well as some coastal areas (Lee & Bancroft, 2001). Bottlenose dolphins are known to have a low reproductive rate, with an interbirth interval of about three to six years, and high calf mortality (Connor et al., 2000; Wells & Scott, 2000).

Threats to whales and dolphins include entanglement in marine debris, climate change, overfishing, which reduces prey availability and vessel strike. Bottlenose and common dolphins can also be caught as bycatch in trawl, gillnet, purse seine and trap fisheries (Kemper & Gibbs, 2001; Kemper et al., 2003).

DPIRD assess fishing-related threats to species and ecosystems and identify and implement a range of management actions to mitigate impacts, as well as undertake ongoing monitoring to review the effectiveness of measures put in place. The Australian Fisheries Management Authority initiated a bycatch action plan for several fisheries in 2001 to reduce bycatch of dolphins and other marine animals (Ross, 2006).

Summary of management arrangements for cetaceans	
Current status	• The humpback whale population within the proposed marine park is believed to be the largest breeding population in the world and has been downlisted to species of conservation interest under the BC Act, as the population is beginning to recover from whaling impacts. • The southern right whale is listed as vulnerable under the BC Act, and while slowly recovering, population estimates are still low when compared to the estimated population in the 1800s. • Little is known about the size or health of other cetacean species in the proposed marine park, but they are assumed to be in a stable condition.
Pressures	• Marine debris (e.g., ingestion, entanglement). • Climate change (e.g., increasing water temperatures). • Discharge of toxicants and nutrients (e.g., from waste and storm water). • Disturbance (e.g., wildlife watching and interactions). • Vessel strike. • Mining exploration/development (e.g., seismic surveys). • Large scale coastal developments (e.g., habitat loss and/or modification). • Major pollution events (e.g., oil and chemical spills). • Commercial fishery (bycatch and prey depletion).
Current major pressure	None currently identified.
Management objectives	To ensure that cetaceans are not significantly impacted by human activity in the proposed marine park.

Management strategies
 	
Joint management partners are the lead for all strategies. Supporting agencies are listed in brackets. If agencies are required to take a lead role, their name is in bold.
	1. Undertake monitoring, in collaboration with Wudjari sea Country rangers to:
	  • assess the condition of cetaceans and the pressures acting on them within the proposed marine park
	  • monitor the effectiveness of any management responses to address pressures and issues involving cetaceans within the proposed marine park
	  • develop and maintain records on the incidence of entanglement, vessel strike, strandings or mortalities of cetaceans in the proposed marine park.
	2. Undertake and/or support research characterising cetacean diversity, abundance, natural variability and habitat use within the proposed marine park.
	3. Undertake and/or support cultural research characterising cetacean cultural connections and importance to Wudjari heritage, and ensure the results inform public education products.
	4. Report on cetacean monitoring, population assessments and management outcomes to other government agencies and the wider community.
	5. Assess and respond to marine mammal entanglements, injuries and mortality events in collaboration with other agencies, considering capacity and circumstances as appropriate.
	6. Educate marine park users and commercial tour operators about cetaceans, the potential detrimental impacts of human activities on the proposed marine park's cetaceans, responsible marine mammal

	viewing and regulations relating to marine mammals under the BC Act. 7. Enforce marine mammal regulations in place under BC Act. 8. Investigate the extent and significance of interactions between recreational fishing and marine mammals and address as required. **[DPIRD]**
Performance measures	Indicators to be developed but may include: • diversity • species abundance • species distribution.
Target	• No significant decline in diversity or species abundance as a result of human activity. • No significant change to species distribution as a result of human activity.
Reporting	10 years

6. People on Country

Strategic objective: Provide equitable and sustainable opportunities for recreational and commercial activities by allowing communities to safely utilise the marine environment as a source of income, food and enjoyment.

Boodja is where the heart is. It is not just 'nature', although it is mother to all things. It is life, spirit, home and culture; and it is where the Wudjari old people used to walk.

Our communities are not and have never been separate from their boodja. Boodja has always needed people on it, managing it, caring for it and enjoying it. Before colonisation, Wudjari people looked after boodja, undertaking activities like cultural burning, estuary opening and fish trapping. In turn, the animals and plants of Wudjari Boodja have grown and dispersed with these cultural practices. People have always needed boodja and boodja has always needed people. People should not be excluded from boodja, but at the same time, Wudjari Elders recognise that there are right and wrong ways of connecting. Wrong ways cause harm, right ways lift spirits. Making boodja healthy means connecting with Country in the right way.

6.1 Visitation, tourism, nature appreciation and visitor safety

Tourism has become one of the most significant economic sectors on the south coast with popular tourism destinations including the region's forests, coastline, national parks, wildlife, heritage values and fine food and wine (SCRMPWG, 2010). Patterns of recreational activity are mostly influenced by season/holiday periods, weather, access, and proximity to population centres.

It is estimated that 40% of domestic tourists visiting the south coast engage in some form of marine activity as part of their tourism experience due to the region's clean water, lack of crowds and idyllic coastal scenery. Marine-based activities include wildlife watching, recreational diving, surfing, sailing, boating, water skiing, jet skiing, island visits, windsurfing, beach-going, swimming, coastal walks and four-wheel driving and camping on the coast and on islands. Increasing numbers of visitors are arriving on cruise ships (SCRMPWG, 2010).

Charter boats operating on the south coast offer a range of tourism opportunities including wildlife watching, visiting islands and heritage site and private functions. Diving and snorkelling charters focussing on local reefs and wrecks run from Albany, Bremer Bay and Esperance and sight-seeing charters based on coastal scenery, islands, harbours, and estuaries are available in most south coast towns (SCRMPWG, 2010). There is a current lack of co-design and integration of tourism that brings together cultural and eco-elements.

There are also a variety of terrestrial-based tour operators active adjacent to the proposed marine park who are licensed to operate in the adjacent national parks and nature reserves. Activities include bushwalking, sightseeing and wildflower tours, and other nature-based appreciation activities.

Marine nature-based tourism has the potential to make an important contribution to the protection of the region's ecosystem by fostering a greater understanding of the environment. However, if tourism is carried out inappropriately it has the potential to reduce the quality of the features visitors seeks to experience. Examples include visitors leaving litter, interacting inappropriately with wildlife and physically disturbing or damaging marine habitats.

The CALM Act and CALM Regulations require commercial businesses operating in marine parks and reserves to have a commercial operations licence and abide by the conditions outlined in the department's *Commercial Operator Handbook – Marine*, which provides specific information for commercial businesses operating in a marine park or reserve.

Recreation and tourism within the proposed marine park will be managed in accordance with the department's Policy No. 18 – Recreation, tourism and visitor services, which focuses on both the management of activities consistent with protecting the proposed marine park's values (the values on which commercial nature-based marine tourism depend), and maintenance of a viable tourism product.

6.1.1 Visitor safety

The remote nature of the proposed marine park, combined with extreme weather conditions (e.g., strong winds, large swells and storms), pose a risk to visitors and other marine park users. This is particularly dangerous for visitors who may be inexperienced in, or unprepared for, such conditions. Visitors to the proposed marine park are advised to be mindful of the risks that Australian sea lions and other wildlife can pose to their safety and the effects of inappropriate interactions with them, such as feeding them or not maintaining separation distances.

Risks to visitors are managed under the framework of the department's Policy Statement No. 53 – Visitor Risk Management Policy. Other departments and organisations which have a shared responsibility for visitor safety in the proposed marine park include:

- DoT, which is responsible for installing and maintaining navigation aids and other boating safety measures in all state waters
- The Australian Maritime Safety Authority (AMSA), which is responsible for ensuring domestic commercial vessels comply with the requirements of the *Marine Safety (Domestic Commercial Vessel) National Law Act 2012.*

Summary of management arrangements for recreation, tourism and visitor safety	
Requirements	• High water quality. • Healthy marine and estuarine communities. • Clean beaches and coastal areas. • High aesthetic quality of the marine environment. • Provision of 'undisturbed' areas for nature appreciation. • Appropriate infrastructure and activities. • Equitable access to the natural values in appropriate zones. • Avoidance or minimisation of visitor injury.
Management objectives	• Ensure that tourism activities and recreational use are managed in a manner that is consistent with maintaining the cultural, ecological and social value of the proposed marine park. • To maintain the ecological values of the proposed marine park important for recreation and nature-based and cultural tourism. • To minimise risk to visitors and encourage appropriate behaviour. • To manage activities in a manner that minimises conflict between marine park users.
Management strategies Joint management partners are the lead for	1. Ensure the granting and renewal of commercial tour licences is consistent with the provisions of this management plan. 2. Encourage the establishment of Wudjari owned commercial tourism business in the proposed marine park.

all strategies. Supporting agencies are listed in brackets. If agencies are required to take a lead role, their name is in bold.	3. Conduct information exchange workshops and interpretation training for marine tourism operators. 4. Develop and maintain a database of the spatial and temporal patterns and potential environmental impacts of commercial tourism operations within the proposed marine park. 5. Work with relevant agencies and industry bodies to adapt and improve existing mapping programs or apps reflecting marine park risks and management arrangements, including zoning. [DoT] 6. Work with the Wudjari and commercial operators to promote culturally appropriate visitation and facilitate the establishment of high-quality commercial tourism operations that: • increase visitor enjoyment and safety • demonstrate a commitment to protect and promote the proposed park's cultural, natural, recreational and tourism values • conduct operations according to DBCA licence conditions • foster community stewardship of the proposed marine park. 7. Provide input to the Marine Tour Operator handbook to develop specific conditions for commercial marine nature-based tourism operations in the proposed marine park, including performance measures, desired trends, short-term and long-term management targets monitoring and reporting requirements. 8. Investigate opportunities to run safety campaigns to educate visitors on safe practices in and around Wadarn Boodja. 9. Implement interpretative signage at access points around Wadarn Boodja, with the aim of promoting Wudjari protocol, and educating marine users on how to properly respect and care for boodja. 10. Conduct visitor surveys to gather data on use of the proposed marine park, including visitor numbers, locations and anchoring points to understand potential impacts and direct monitoring programs. 11. Seek to designate vessel speed restrictions for wildlife protection and/or for safety requirements if necessary. [DoT] 12. Work collaboratively with the charter boat sector in the management of the proposed marine park particularly in key areas such as visitor education programs, mooring arrangements, compliance and monitoring programs. [Charter sector] 13. Educate marine park users about protocols and regulations for the use of RPAs to minimise impacts and disturbance to marine park values. Conduct periodic visitor risk assessment in the proposed marine park as required and mitigate identified issues. [AMSA, DoT, DPIRD] 14. Investigate how Wudjari fishing protocols can be built into the broader fisheries community education program, to provide cultural education to the wider community (e.g., catch care guide – how to fillet fish effectively etc). [DPIRD]
Performance measures	• Visitor satisfaction (e.g., experiences and expectations) as determined by human use monitoring. • Number of visitor safety incidents reported to DBCA and/or the JMB.
Target	• Visitor satisfaction is 85 percent or above within five years. • No increase in the total number of serious visitor safety incidents per capita compared to baseline levels.
Reporting	Annually

6.2 Recreational fishing

Recreational fishing is of great importance to the Western Australian community as well as the residents of and visitors to the South Coast and generates significant economic activity in regional centres. The most recent national social and economic survey of recreational fishers, prepared by the Fisheries Research and Development Corporation, February 2023 has estimated the annual economic contribution to Western Australia from recreational fishing is approximately $1.1 billion (Moore et al., 2023). Previously the annual economic contribution from recreational fishing in Western Australia was estimated to be $2.4 billion, including a total of approximately $146.6 million in the Goldfields-Esperance region (McLeod & Lindner, 2018). Differences in estimates may be explained by different methodological approaches and assumptions made in the economic modelling.

Nevertheless, the south coast offers a diverse array of recreational fishing experiences. Many south coast recreational fishers have catch-related motives related to obtaining a 'fresh feed' or 'for fresh seafood'. In this respect, continued access for the community to undertake recreational fishing is important for food security, ensuring the community's access to healthy and affordable food.

Other primary motives for undertaking recreational fishing include to relax and unwind, to be outdoors, for solitude, or to be with family and friends, highlighting the important social and mental health benefits recreational fishing provides.

Due to the remoteness of much of the coastline and limited access to many areas, recreational beach and boat fishing in the proposed marine park tends to be concentrated around major population and holiday centres.

The main species targeted by beach and rock fishers on the south coast include Western Australian salmon (*Arripis truttaceus)*, Australian herring (*Arripis georgianus)*, whiting (*Sillaginodes spp.)* and silver trevally (*Pseudocaranx dentex)*. Common species targeted by boat-based fishers include pink snapper (*Chrysophrys auratus)*, queen snapper (*Nemadactylus valenciennesi*), bight redfish (*Centroberyx gerradi)* and King George whiting (*Sillaginodes punctata),* while mullet (*Muglidae spp.)* and black bream (*Ancanthopagrus butcheri*) are targeted in rivers and estuaries (Newman et al., 2021).The potential pressures associated with recreational fishing in the proposed marine park include bycatch of unwanted non-target species, overfishing of targeted species, and associated impacts on other ecological values (i.e. from litter, discarded/broken off fishing gear and disturbance of sensitive habitats).

Sanctuary zones, which prohibit extractive activities, including recreational fishing, will be used to ensure ecologically important and representative areas of ecosystems are protected from a variety of pressures, including recreational fishing. Following the public submission period, consideration will be given to moving the boundaries of some sanctuary zones approximately 200 metres from the mainland high water mark to allow for recreational fishing from and close to the shore.

DPIRD is responsible for managing target fish stocks for sustainability, with fisheries rules continuing to apply both within and outside of the proposed marine park. Fish stocks are managed through a wide range of management tools, including size and bag limits, gear restrictions, licences and closed seasons.

Commercial tour operators offering recreational fishing who wish to operate in the proposed marine park require a licence from DBCA under the CALM Act and must also adhere to the rules, provisions and regulations outlined by DPIRD and FRM Act.

Summary of management arrangements for recreational fishing	
Requirements	• Maintenance of key habitats (e.g., nursery and spawning areas). • Equitable and safe access to fishing grounds in appropriate zones. • Maintenance of sustainable targeted fish stocks. • Maintenance of recreational fishing experience. • Appropriate provision and placement of infrastructure and facilities.
Management objectives	• To ensure that, in collaboration with the community and DPIRD, recreational fishing in the proposed marine park is managed in a manner that is consistent with maintaining the proposed marine park's cultural and ecological values, while providing for social uses and enjoyment. • To maintain ecological values of the proposed marine park that support recreational fishing. • To work collaboratively (with agencies, stakeholders and the community) to maintain and promote safe and enjoyable recreational fishing opportunities in the proposed marine park.
Management strategies Joint management partners are the lead for all strategies. Supporting agencies are listed in brackets. If agencies are required to take a lead role, their name is in bold.	1. See section 9.3 – Zoning and permitted activities. 2. Educate recreational fishers on recreational fishing rules, including in the proposed marine park. **[DPIRD]** 3. Educate recreational fishers on customary fishing and right of Traditional Owners, including Wudjari guidelines and protocols for responsible fishing. [DPIRD] 4. Conduct and/or support research to determine if cultural and ecosystem effects from recreational fishing are occurring in the proposed marine park and undertake adaptive management actions if required. [DPIRD] 5. Implement safety signage in dangerous areas in/around Wadarn Boodja. [LGA] 6. Engage with local recreational fishing groups to promote responsible fishing behaviour (i.e., best catch care practices). [DPIRD] 7. Monitor recreational fishing catch and effort in the proposed marine park. **[DPIRD]** 8. Investigate whether the take of recreationally targeted species is sustainable in the proposed marine park and undertake adaptive management if required. **[DPIRD]** 9. Provide updates to marine park managers in relation to fisheries management and monitoring. **[DPIRD]**

6.3 Commercial fishing

Commercial fishing on the south coast is recognised as an important social and economic contributor to Western Australia's regional communities, generating more than half a billion dollars of income directly into the State economy. It also provides benefits in the form of the supply of locally caught, fresh and sustainable seafood to Western Australian communities, employment, training and career opportunities for regional youth and contributes to the diversity and resilience of local economies. Community access to fish is a recognised key value in the proposed marine park for its importance in food security as a healthy, sustainable and affordable food source.

Western Australia's commercial fishing industry is based on a mix of products and markets, with many products that have traditionally accessed overseas markets transitioning in recent years to focus on increased local supply to support community access to sustainable seafood. This is particularly important for food security in regional towns where cafes, restaurants, fish and chip shops and tourism businesses need to be able to access Western Australian caught fish to make their business viable.

Commercial fishing in Western Australia is managed by DPIRD under the FRM Act using an ecosystem-based fisheries management approach. DPIRD's management of all commercial fishing is underpinned by scientific research, with 98% of Western Australia's aquatic resources currently being sustainably managed. Commercial fishing is managed through a wide range of fisheries management tools, including gear restrictions, licences, spatial closures, temporal closures, quota allocations and/or bag and size limits. Twelve commercial fisheries operate in the region (see Appendix 3 for details).

Further information about each of these fisheries and status assessments are publicly available in DPIRD's annual *Status Reports of the Fisheries and Aquatic Resources of Western Australia: The State of the Fisheries.*

Various aquaculture leases exist across the south coast, however none lie in the proposed marine park. *Fisheries Management Paper 140 – Aquaculture Plan for the Recherche Archipelago* identifies future development opportunities for the aquaculture sector in the Recherche Archipelago, particularly York, Mart, Remark, Tory and Mondrain Island groups. Future aquaculture proposals can be accommodated in general use zones.

Approximately 75% of the combined proposed south coast marine parks are available for commercial fishing. Sanctuary zones, which prohibit extractive activities will be used to ensure ecologically important and representative areas of ecosystems are protected from a variety of pressures, including commercial fishing. Following the public submission period, consideration will be given to moving the boundaries of some sanctuary zones approximately 200 metres from the mainland high water mark to allow for commercial fishing from and close to the shore.

The JMB will provide advice to DPIRD on the ecosystem impacts of commercial fishing in the proposed marine park. Unsustainable fishing practices can result in habitat damage, ecosystem impacts, altered food web dynamics and a decline in stocks.

Summary of management arrangements for commercial fishing	
Requirements	• Maintenance of sustainable, targeted fish stocks. • Equitable access to fishing grounds in appropriate zones, across all extractive activities. • Appropriate provision and placement of infrastructure and facilities.
Management objectives	To ensure that, in collaboration with industry and DPIRD, commercial fishing in the proposed marine park is managed in a manner that is consistent with maintaining the ecological and cultural values of the proposed marine park.
Management strategies Joint management partners are the lead for all strategies. Supporting agencies are listed in	1. Work with commercial fishers through peak bodies to ensure operations are conducted in a culturally sensitive manner. **[DPIRD]** 2. Monitor commercial fishing catch and effort in the proposed marine park to inform periodic reviews of its management of commercial fisheries and aquatic resources. **[DPIRD]**

brackets. If agencies are required to take a lead role, their name is in bold.	3. Investigate the extent and significance of interactions between commercial fishing and threatened, endangered or protected species and address as required. **[DPIRD]** 4. Conduct research to determine if ecosystem effects from commercial fishing occur in the proposed marine park and undertake adaptive management actions if required. **[DPIRD]** 5. Provide updates to marine park managers in relation to fisheries management and monitoring. **[DPIRD]** 6. Ensure that any future aquaculture authorisations are assessed to ensure the values of the park are maintained. [**DPIRD** and DoT]

6.4 Industry, mining and development proposals

Ports and shipping

Established in 2014, the Southern Ports Authority is the custodian of the three 'gateway' ports of Albany, Esperance and Bunbury (southernports.com.au). The ports of the Southern Port Authority are vital components of the economic and social fabric of the south coast, with imports and exports through the southern ports playing a critical role in the continuing economic prosperity and activity of the regions they support, as well as to the State and national economies (SCRMPWG, 2010).

The main trade through the Port of Esperance for 2021-22 was iron ore, grain, spodumene, oil/petroleum, woodchips, sulphur, fertiliser and nickel (Southern Ports, 2022). Iron ore and grain exports made up the majority of the trade, with 62.69% and 21.70% respectively. For the 2022 financial year, 200 ships passed through the Port of Esperance, which included 914,268 tonnes of imports and 12,780,158 tonnes of exports.

Development proposals

During the life of the management plan there may be proposals to install or construct infrastructure in or adjacent to the proposed marine park. The nature of the proposed development will determine the appropriate level of assessment. DoT and the Department of Planning, Lands and Heritage (DPLH) are responsible for planning and development of coastal infrastructure. Any developments with the potential to have environmental impacts may be subject to an environmental impact assessment under the EP Act.

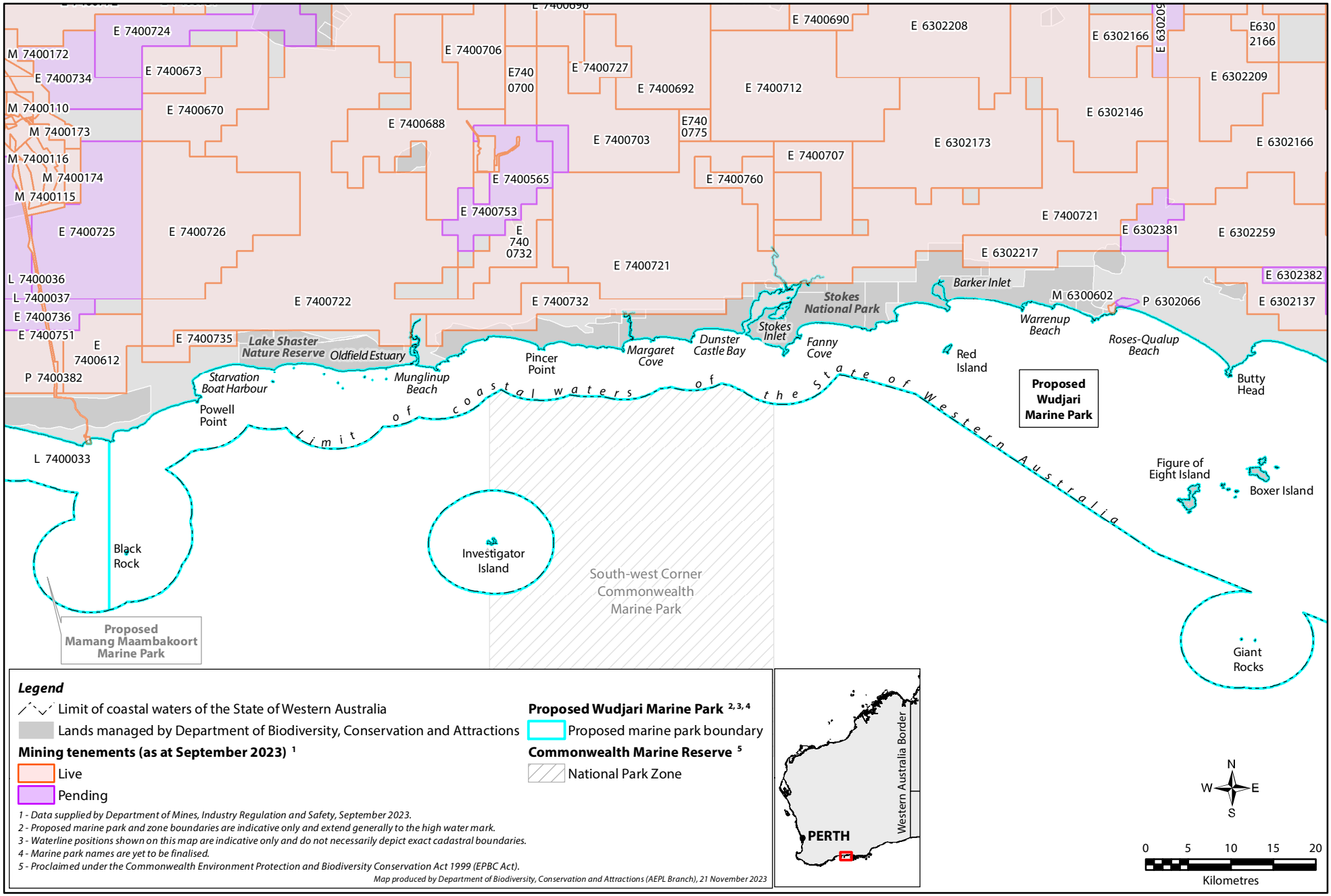
Mining exploration and development

Mineral and petroleum exploration, extraction, and rehabilitation activities are regulated by other government agencies under legislation such as the Environmental Protection Act, Mining Act 1978 (Mining Act), and State agreements. Petroleum (which includes oil, gas, and geothermal energy) exploration and production on state land and onshore waters is authorised under the Petroleum and Geothermal Energy Resources Act 1967 (Petroleum Act). The Department of Mines, Industry Regulation and Safety (DMIRS) is the State's lead agency for related assessment and approvals under the Mining Act and the Petroleum Act and is a decision-making authority for non-State agreement projects under these Acts. Projects of state significance may be administered by the Department of Jobs, Tourism, Science and Innovation under project specific agreement acts.

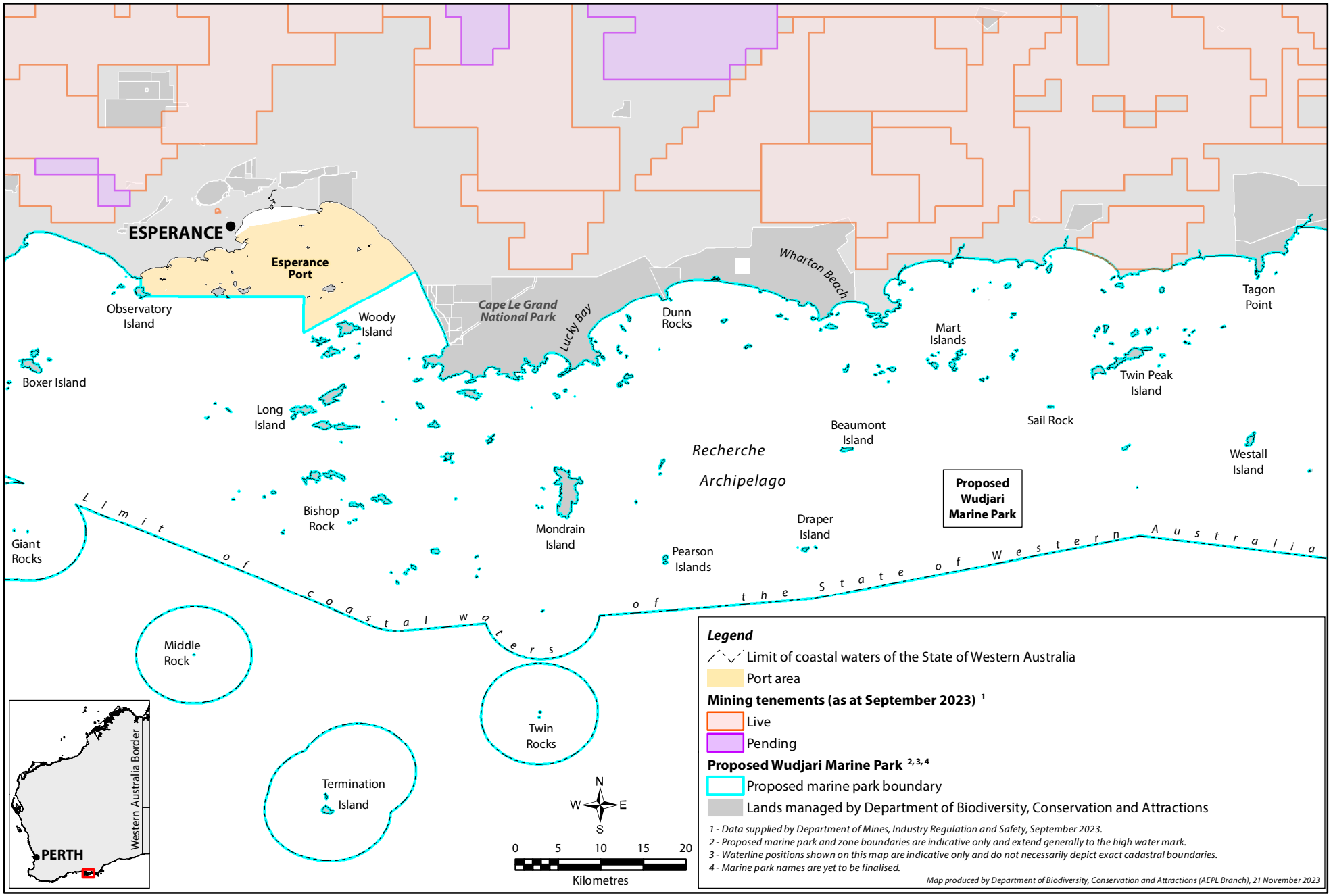
Exploration and development proposals that may cause significant impact on key biodiversity values should be referred to the EPA for environmental impact assessment under the Environmental Protection Act. Applications to explore or mine within parks vested in the Conservation and Parks Commission may also be referred to the Minister for Environment as required under environmental, mining and petroleum legislation. Exploration

and development that may have a significant impact on matters of national environmental significance may also require approval under the EPBC Act.

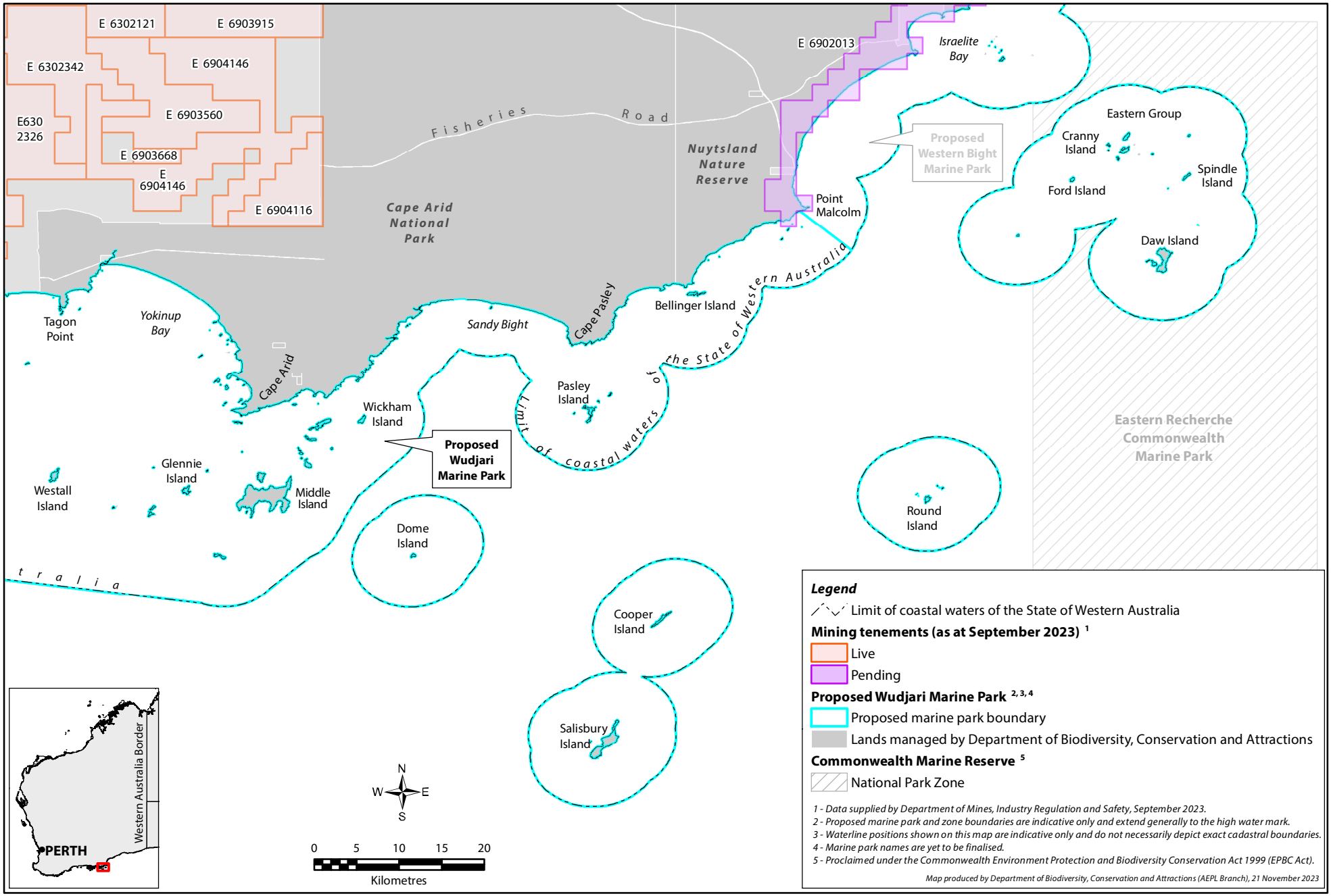
The oil and gas industry uses seismic surveys to explore for natural resources. Marine seismic surveys can increase background noise levels while they are in progress and have the potential to impact marine fauna by disrupting communication, navigation, and foraging habits. Some marine species such as whales may temporarily move away from the affected area. Any seismic survey in the proposed marine park will be subject to evaluation as part of the applicable State and Commonwealth government approvals processes.



Map 9 – Mining tenements winthin and adjacent to the proposed Wudjari Marine Park - west.



Map 10 – Mining tenements winthin and adjacent to the proposed Wudjari Marine Park - central.



Map 11 – Mining tenements winthin and adjacent to the proposed Wudjari Marine Park - east.

Mooring and anchoring

Management of moorings and anchoring is a key aspect of managing increasing vessel use in Western Australia's marine parks. With an expected increase in commercial and recreational vessels visiting and operating on the south coast, it is expected that mooring and anchoring activities will increase over time.

The proposed marine park allows for mooring and anchoring activities, however if not installed and maintained correctly, moorings may cause irreversible damage to the surrounding habitat and pose a risk to marine park users and property. Refer to the department's Policy Statement 59: Mooring Policy for further information regarding the management of moorings within marine parks. If required, a mooring and anchoring plan may be developed for the proposed marine park.

Summary of management arrangements for industry, mining and development proposals	
Requirements	Equitable access in appropriate zones.
Management objectives	To ensure that shipping and industry, including mining, development and associated activities are managed in a manner consistent with the objectives of the proposed marine park.
Management strategies Joint management partners are the lead for all strategies. Supporting agencies are listed in brackets. If agencies are required to take a lead role, their name is in bold.	1. Provide formal advice to the Commission and the EPA relating to mineral, petroleum and renewable energy activities in and adjacent to the proposed marine park. [DPIRD, DWER] 2. If required, develop a mooring plan, with appropriate consultation on ecological and social impacts and suitable capacities and ensure all moorings meet required standards. 3. Provide advice on the assessment, setting of conditions, and monitoring and reporting requirements for mineral, petroleum and renewable energy activities consistent with the management objectives and management targets for values in the proposed marine park. 4. Refer or recommend the referral of exploration or development proposals, that may impact significantly on the values of the park, to the EPA for consideration under the Environmental Protection Act or to the Commonwealth Department of Climate Change, Energy, the Environment and Water for assessment under the EPBC Act. 5. Ensure that license conditions of approved industry activities include appropriate environmental performance measures, desired trends, short-term and long-term management targets, and monitoring and reporting requirements. [DWER] 6. Assess the viability and applicability of project proposals on sea Country from both scientific and cultural perspectives. 7. Explore partnerships with the Southern Ports Authority for collaborative monitoring of seagrass and indicator species between marine park zones and port waters, with reference to integrated management, biosecurity and public education.

6.5 Maritime heritage

European settlement in the Esperance region began in the early 19th century with the establishment of early whaling and sealing colonies along the coast and on the islands of the Recherche Archipelago. In 1837, James Maclean Dempster set up at Fremantle and established a whaling base forming the Fremantle Whaling Co. which operated throughout the south coast waters of Australia. Following the discovery of gold in the late 19th century, many travelled to the region to work as gold prospectors during the 'gold rush' which saw Esperance town's early development as a port and recreation centre (SCRAP & SCRIPT, 1997).

The south coast has a rich maritime history which is reflected in the naming of places in the area. Some key events are listed below.

Date	Event
1627	The first European to record the Archipelago of the Recherche was Peter Nuyts, aboard the Dutch ship the 'Gulden Zeepaard', who mapped 1500km of the south coast calling it Nuyts land.
1792	Admiral Bruny d'Entrecasteaux arrived in command of two vessels L'Esperance and La Recherche, taking shelter in the lee of Observatory Island naming the area Esperance Bay ("hope") and Recherche ("to search for") after his ships. He also named Cape Le Grand and other features.
1826	King George Sound military settlement established as ships of many nations frequented the south coast, including whalers and sealers.
1892	Bayley and Ford's gold find at Coolgardie brought people in their hundreds, via Esperance, and as many as 400 men arrived in one ship alone.
1893	Patrick Hannan found gold at Kalgoorlie. This rush led to the proclamation of Esperance townsite gazetted on plans laid out by surveyor Brazier.

Maritime heritage is protected under the Commonwealth *Underwater Cultural Heritage Act 2018* (UCH Act) and the State *Maritime Archaeology Act 1973* (MA Act). The Western Australian Museum has statutory responsibility for the management of historic wrecks. This period of European exploration is an important theme for Wudjari heritage, and so the study and management of maritime history requires consideration of the shared histories and integrative research and management.

Summary of management arrangements for maritime heritage	
Requirements	Identification and protection of historic maritime sites.
Management objectives	To ensure that, in collaboration with the Western Australian Museum (WAM), human activity does not significantly affect historical sites or shipwrecks in the proposed marine park.
Management strategies Joint management partners are the lead for all strategies. Supporting agencies are listed in brackets. If agencies are required to take a lead	1. Provide interpretive information to inform and enhance visitor understanding of maritime heritage values in the proposed marine park, including information about regulations under the MA Act and UC Act. 2. Liaise with the Heritage Council of Western Australia, WAM, local government and other relevant organisations regarding the appropriate protection, conservation and management of maritime heritage sites.

role, their name is in bold.	3. Encourage research on maritime heritage, with appropriate permitting, including recording oral histories to facilitate long-term management. **[WAM]** Liaise with other stakeholders to improve the identification, protection, conservation and, where necessary, restoration of maritime heritage.

7. Understanding Country

Strategic objective: Encourage and promote research and monitoring and the sharing of knowledge from Traditional Owners, scientists and local community to guide and inform best-practice management.

7.1 Research and education

The complexity of Wudjari sea Country connections, ancient and changing coastlines, and the diversity of marine habitats, flora and fauna, combined with the range of human activities which occur in the proposed marine park, provide excellent opportunities for research and education.

The proposed marine park is located within the IMCRA South Coast Mesoscale Bioregion, which is influenced by the Leeuwin and Capes currents. The influence of these currents provides a temperature gradient along the length of the south coast, and as a result, the area is of significant scientific interest. The sanctuary zones provide an opportunity for scientists to undertake research on the recovery of marine ecosystems over time when pressures are removed. All zones provide the opportunity for social research with regard to use patterns and community perceptions.

The variety of marine conditions and habitats within the proposed marine park also increases the value of educational opportunities. The proposed marine park is near population centres such as Hopetoun and Esperance and is host to a variety of human activities. This provides an excellent opportunity for community education about the proposed marine park and the marine environment in general.

Research and education can empower people to become stewards for the proposed marine park and allow a greater dissemination of information to occur. Research and education can also help to create an affinity and respect for marine life and encourage participation in marine park use and management, particularly with respect to compliance with marine park rules.

With pressures likely to increase, an increased understanding of the cultural, ecological and social values of the proposed marine park will be critical to effective management. Research in the proposed marine park, informed by traditional ecological knowledge, will assist with continuous improvement of joint management practices and decisions and ensure the proposed marine park is effectively managed.

Research within the proposed marine park will require a licence issued by DBCA. This will enable DBCA to:

- maintain an understanding of research effort
- direct research effort, where necessary, so it is relevant to management
- collaborate with researchers where possible
- share research outcomes with others.

Additional permits or special permission may also be required from DBCA to take flora and fauna, and from DPIRD to carry out research on fish in the proposed marine park. These additional requirements are particularly relevant if the activity would otherwise be prohibited, such as the take of protected fish or the use of prohibited fishing gear.

"If there are things we don't know, then we find out, but we do it with the culture in mind. We don't know everything, but we will find out."
Wudjari Elder

7.1.1 Sharing knowledge

Wudjari Elders and rangers are eager to work with and share their knowledge with the Esperance community, external researchers and joint management partners. There is a clear drive to share and communicate Wudjari values with the broader community that will access the proposed marine park. Wudjari Elders and community members want to help cultivate the sense of respect and love Wudjari people have for their Wadarn Boodja amongst the broader community.

Sharing knowledge, however, cannot be one-sided. For instance, Wudjari community members expect that external researchers and joint management partners give back to the Wudjari community. This could be through contributing to Tjaltjraak objectives, or simply through sharing skills and knowledge. This reciprocal engagement is important to ensuring that everyone benefits from working together.

7.1.2 Learning from Country

Healthy boodja is when land and sea is understood and well researched. Elders, rangers and the broader Wudjari community agree that exploring new and innovative ways of knowing Country is key to connecting with it and making it healthy. Elders and rangers also possess a strong desire to explore new ways of looking after Country. This includes by combining traditional cultural practices of knowledge making with new technologies and scientific methodologies. Conducting research that adds to and enriches the extensive knowledge already held by Elders and rangers helps to drive successful conservation planning, but it is also valuable in its own right. Knowledge and research can help make Country healthy.

In addition to specific broad cultural research values, there is a strong desire amongst Wudjari community members to know more about particular species and ecologies that inhabit Wadarn Boodja. The Wudjari community is excited to embrace new approaches to conservation and sea Country management and be on the forefront of scientific and cultural research.

"You need to be multidisciplinary to look after Country now. We need culture, science, and anyone who's got knowledge that can help. If we have a problem in one area, then we get experts together that can help solve that problem. That's how we need to be."
Wudjari Elder

7.1.3 Understanding marine seasonality

The six seasons reflect a nuanced understanding of yearly changes on Wudjari Country. These seasons are far more accurate and suited to local conditions than those proposed by the European Gregorian calendar. Whilst there is a growing understanding in academic circles of the six seasons and its relationship to terrestrial ecological cycles, there has been less research to date on relationships between the six seasons and marine ecological systems.

A better understanding of marine seasonality is considered to be central to ecological and cultural conservation/rejuvenation on Wudjari Country. There is need to investigate how the

Noongar six seasons relate to marine ecological changes, and how Wudjari knowledge of seasonality on their Country can assist in local marine conservation priorities.

"If we're going to care for Country, we need to have a better understating of local conditions, of how the marine calendar works, and if the Wudjari calendar can help us to understand that."
Wudjari Emerging Elder

7.1.4 Cultural and evidence-based management

The Wudjari community possesses extensive and situated ecological experience of their boodja. Collectively, this experience constitutes an immense wealth of qualitative observational data concerning Country, its ecologies, and the threats it is facing. Wudjari Elders and rangers also care for deep and expansive cultural-ecological knowledge that has been passed down from their old people. This knowledge provides them a strong factual understanding of their Country, and important perspectives on how best to approach conservation management. Notwithstanding, Elders and rangers strongly value scientific knowledge that can inform practical and effective marine management. They also value the experiences and perspectives of other groups in the broader community.

The Wudjari community want to ensure that the broader Esperance community can continue to experience and enjoy Wadarn Boodja, but in a sustainable way that ensures Country and its fish are healthy for future generations. The experiences, knowledges, and values held by Wudjari Elders and rangers place them in a strong position to observe, monitor and assess changes that have been occurring on boodja. These observations are not subjective, they are built on deeply ingrained systems of cultural and predictive expertise, mediated by strong cultural governance. Therefore, where explicit and local quantifiable research is not available to measure ecological health or monitor changes in Wadarn Boodja, the expertise of Wudjari Elders and rangers should be sought.

Drawing on this expertise, and generally speaking, Elders and rangers are clear that protection efforts should be informed by research and made under strong cultural governance.

"You can explain things to people, but its best to take people out to Country and show them."
Wudjari Elder

Research strategies specific to particular values of the proposed marine park are detailed in sections 4 to 6. A summary of the generic management objectives, strategies and targets for the research and education values are described in the table below.

Summary of management arrangements for research and education	
Requirements	• Equitable access to the full range of research and educational opportunities in appropriate zones. • Access to representative sites covering the range of major human activity in the proposed marine park. • Access to representative sites free of major human influences.
Management objectives	• To obtain increased understanding of the biodiversity, biocultural and cultural values and key ecological process and socio-economic uses within the proposed marine park to inform management. • To promote research that improves knowledge of the values of the proposed marine park to inform management decisions.

	• To maximise the integration of conservation science with traditional ecological knowledge in all aspects of research in the proposed marine park. • To promote and facilitate the use of the park for education.
Management strategies Joint management partners are the lead for all strategies. Supporting agencies are listed in brackets. If agencies are required to take a lead role, their name is in bold.	1. Identify, prioritise and communicate high priority ecological, cultural and social research projects relevant to the management of the proposed marine park to appropriate research organisations. 2. Develop programs that increase knowledge and understanding amongst the community of cultural landscapes and the processes of climate change and adaptation that have led to the formation of our marine and coastal landforms and biodiversity. 3. Develop a research and engagement web portal, detailing relevant Wudjari cultural protocols, research expectations, ongoing research and engagement news, interpretation and education content and upcoming research opportunities. 4. Ensure the JMB are briefed on proposed research activities and outcomes and ensure Wudjari ranger collaboration and upskilling. 5. Develop collaborative research relationships with marine researchers and their institutions. 6. In all research projects: • included Wudjari knowledge should be explicitly attributed to Wudjari community as custodians of this knowledge; and acknowledge the specific community members who shared that knowledge • where specific Wudjari community members, rangers and/or elders have made a significant contribution to a research project (including data collection and processing), they should be included as co-authors in any associated output/publication • Wudjari intellectual property should never be published or disseminated by non-Wudjari persons without the explicit informed consent of the circle of Elders. The Elders should be informed as to how this intellectual property will be acknowledged • where possible, research and monitoring conducted on Wadarn Boodja should include provisions for Elders to be involved in activities and ensure cultural safety • where local baseline ecological data is not available, or efforts to source this data are not possible (e.g., resourcing or time limitations), Wudjari knowledge, particularly those of Elders, should be drawn on for expert elicitation. 7. Encourage community and local industry involvement in research and education programs. 8. Develop and implement education and interpretation programs to: • ensure users are aware of and understand the values of the proposed marine park • ensure users are aware of management zones and regulations and the reasons for these controls • improve community knowledge of Wudjari protocols, and how to respect Country. • provide interpretive information on Wudjari stories and histories.

	9. Develop a range of education materials about the proposed marine park's values and management and distribute to the local community and visitors. 10. Encourage commercial tour operators to provide educational courses/materials to their staff and customers to foster the community stewardship of the proposed marine park. 11. Where possible, work with other Traditional Owner groups on the south coast to develop complementary interpretive information across the four marine parks. 12. Encourage and support Traditional Owner participation in the development and implementation of research and education programs and identify appropriate opportunities for integrating traditional knowledge. 13. Facilitate knowledge transfer and uptake of research findings to adaptive marine park management and planning. 14. Seek funding and research opportunities to engage with external researchers, in order to better understand marine seasonality, particularly in relation to the Wudjari six seasons.
Performance measures	• Research plans have been developed and approved by the JMB. • Research activities, as detailed in the plan, have been implemented.
Target	Preparation and implementation of a research plan *Ongoing and completed research projects
Reporting	To be determined

7.2 Monitoring

Long-term monitoring of the condition of values in the marine environment and the pressures that impact those values is essential to evaluate management effectiveness and inform an adaptive management approach. Monitoring enables the detection of detrimental impacts and can determine trigger points for corrective management action before cultural, ecological or social values of a marine park become significantly degraded. Where changes have occurred and remediation measures are required, a monitoring program should also determine the rate of recovery of an affected area or value.

DBCA, in collaboration with joint management partners around the State, is progressively implementing the DBCA Marine Monitoring Program, a systematic program in the State's marine parks and reserves designed to improve understanding of management effectiveness, and to inform future research, monitoring and decision making. Various monitoring activities have been undertaken for key ecological values in the proposed park since its creation, and future monitoring efforts would seek to build upon these datasets.

In addition to joint management partners, other organisations involved in monitoring include DPIRD for targeted species as defined in the FRM Act, universities and community groups. Monitoring of the proposed marine park will focus on determining trends in key ecological, cultural and social values within a 'condition-pressure management response' framework that measures the 'health' of values against defined management targets.

"It's good to get out on Country and talk to the Elders. We need to know what's going on."
Wudjari Elder

Wudjari environmental management aims to ensure that changes to Country are well monitored. Monitoring changes on Country ensures that issues are identified quickly and provides an expanding data source with which to deliver timely and appropriate management action. Monitoring also enables external stakeholders to become involved in sea Country stewardship and helps to bring together divers and snorkellers working to ensure a sustainable and healthy marine environment.

Wudjari Elders emphasise that situated and enduring knowledge of Country is essential to ensuring that it says healthy. Observing seasonal ecological processes and human use, reviewing anthropogenic and ecological threats, engaging/building relationships with marine users, undertaking compliance patrols, checking on conservation efforts, ensuring cultural safety, and generally staying connected with Country are actions that can only be undertaken through ongoing qualitative and quantitative monitoring, facilitated by regularly traveling Country.

"Our healthy Country programs form part of our adaptive management—cultural conservation corridors—to reconnect the fragmented landscape and restore our broken songlines."
Wudjari Emerging Elder

Summary of management arrangements for monitoring	
Requirements	• Equitable access to the full range of monitoring opportunities in appropriate zones. • Access to representative sites covering the range of major human activities in the proposed marine park. • Access to representative sites free of major human influences.
Management objectives	To monitor key cultural, ecological and social values in the proposed marine park within a 'condition-pressure-management response' framework, to provide a basis to assess, adapt and improve management.
Management strategies Joint management partners are the lead for all strategies. Supporting agencies are listed in brackets. If agencies are required to take a lead role, their name is in bold.	1. 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. [DPIRD] 2. Prepare a monitoring plan which considers existing information, the strategies and priorities identified in this plan, and emerging priorities. 3. Develop a cultural values monitoring framework (and data storage and access process) to guide these activities in a joint management context. 4. Drawing on cultural-scientific expertise, utilise a cultural governance model to assess the ongoing performance of all marine park values. 5. Investigate opportunities and develop a process to integrate traditional ecological knowledge in monitoring, where appropriate. 6. Provide necessary information and support for assessments of management plan implementation by the Commission. [DPIRD]
Performance measures	The development and implementation of a prioritised monitoring program.

Target	• Preparation and implementation of monitoring plan. • Ongoing and completed monitoring projects. • Number of values, including KPIs, currently being monitored.
Reporting	To be determined.

8. Climate change

"We're seeing sea levels rising. We're getting these once-in-a-century storms quite regularly now."
Wudjari Elder

Climate change refers to changes in weather patterns (i.e. temperature, rainfall) and associated changes in oceans, land surfaces and ice sheets, occurring over a period of decades or longer (CSIRO & BoM 2015; Australian Academy of Science, 2020). The effects of ocean warming and sea level rise due to climate change are currently impacting the marine environment globally and climate change is considered to be one of the greatest threats to marine life (Pörtner, 2019). It is possible that the impacts of climate change may limit the extent to which management objectives stated in the plan can be achieved.

"The sea level is rising—dunes are constantly getting washed away—every winter. The tide just comes in and washes all the sand away."
Wudjari Elder

The ecological impact of climate change effects including increased temperatures and frequency of episodic events such as heatwaves can range from species shifting their geographic ranges, seasonal activities and migration patterns to decreased ocean productivity, altered habitats and greater incidence of disease or mortality (Hoegh-Guldberg & Bruno, 2010). This can in turn affect cultural and social values by changing the ecological health of the marine resources upon which customary, recreational and commercial activities rely. Ocean warming is occurring not only in the shallow ecosystem but in environments exceeding 2,000m deep in the Southern Ocean (Cooley et al., 2022)

"Even in my lifetime - seen quite a bit of change."
Wudjari Emerging Elder

Establishing marine protected areas can contribute to maintaining climate change resilience and rebuilding ecological and social resilience (IUCN, 2017). Protection of coastal carbon habitats, such as seagrass, can help to ensure that carbon is not released as a result of the loss and degradation of those areas, while maintaining these critical habitats. Additionally, effective management of human use and local pressures can help to maintain or increase ecosystem health, thereby increasing resilience to external pressures such as climate change. Although marine protected areas can contribute to reducing local stressors, they do not protect against the impacts of climate change, which is one of the biggest challenges that marine protected area managers face.

"We are too busy looking at the bigger picture, or the worst-case scenario, but sometimes the little things are more important."
Wudjari Elder

The Wudjari history is one of thousands of years of experience, adapting and embracing incredible changes to their landscape and homelands, since the end of the last Ice Age. Understanding aspects of this tumultuous human-environment relationship can also help us understand the process and rates of climate change today; and so deep time, culturally guided archaeological research is an important management tool.

"We are worried about climate change. Seagrass has an important part to play in that. We don't want climate change to affect the health of our environments. Seagrass plays such an essential part of our marine environment and if it can help fight climate change, we need to protect it."
Wudjari Elder

Research and monitoring programs contribute to our understanding of the effects of climate change, as well as the development of effective adaptive management responses. Management to reduce the impacts of climate change on the proposed marine park will focus on:

- increasing knowledge and understanding of the effects of climate change on the values of the proposed marine park
- monitoring the effects of climate change on the values and pressures of the proposed marine park
- increasing the health and resilience of ecosystems through the sound management of human uses and local pressures
- undertaking local adaptive management.

Summary of management arrangements for climate change	
Management objectives	To increase understanding of climate change on the proposed marine park and increase the resilience of ecological values to climate change.
Management strategies DBCA is the lead for all strategies. Supporting agencies are listed in brackets. If agencies are required to take a lead role, their name is in bold.	1. Support international and national climate change initiatives where relevant in marine park research and adaptive management. 2. Ensure that impacts of climate change are considered in monitoring programs for the KPI's for the proposed marine park. 3. Assess areas, habitats and species which are most at risk from the effects of climate change and increase their resilience by reducing other pressures where possible. [DPIRD] 4. Monitor values of the proposed marine park and the climate-related pressures acting on them to inform the development of local and regional level adaptive management responses for the protection of park values. 5. Educate users of the proposed marine park about the effects of climate change on the values of the proposed marine park. 6. Support or provide necessary information to contribute to climate forecast models to help predict the impacts of climate change on the values of the proposed marine park.

9. Plan implementation and operation

Sections 4 to 8 outline the management objectives, strategies, performance measures and targets required to achieve the strategic objectives for the proposed marine park. To successfully implement these strategies a number of supporting management strategies are required to effectively administer the park, support overall management and ensure compliance with management arrangements. The implementation of all strategies is ultimately subject to resource availability.

9.1 Cultural governance

Making Country healthy and ensuring it remains healthy requires strong cultural governance.

Wudjari Elders draw on deep time, intergenerational, embodied, and situated knowledge of Country and its communities, knowledge which obligates them to ensure that Country remains healthy. Because Country also includes people.

Being obligated to care for Country makes Elders the custodians, and advocates for healthy Country. Elders know that everyone has different skills and experiences that must be taken into consideration. Bringing everyone together, respecting each other, yarning, filling knowledge gaps, and exploring solutions to problems collaboratively is a core component of Wudjari cultural practice.

"The Elders are up top, they look after Country. Young ranger, senior ranger, anyone, they [Elders] give you the authority. If there is anyone with problems, the Elders help sort them out".
Wudjari Elder

ETNTAC utilises a cultural protocol organised around informing, consulting with, and seeking permissions from Elders to work on Country. A council of Elders, containing at least one representative from each family group, is kept informed about activities on Country, providing guidance and decision making and ensuring that any decisions made reflect the views of the entire community. Elders make decisions together, on consensus, and only after hearing all the information on hand, and where possible, visiting Country.

Strong cultural governance means that Elders, through the JMB must have oversight in all matters relating to the health of their boodja.

9.1.1 Holistic and priority management

Wudjari Elders note that all things in Country (both land and sea) are significant and interconnected. Activities that make Country unhealthy on the land also make sea Country unhealthy, and vice versa.

This means that all organisms and ecosystems should be cared for because they are all important, and that any research, monitoring, or management work conducted on Country must take a holistic approach. A holistic approach includes cultural and ecological values and acknowledges that the ocean and land is interconnected.

"This is all sea Country. All this land used to be underwater. You used to find shells all the way up at the top of our Country. And what happens now on land, well that affects the ocean today."
Wudjari Elder

9.1.2 Transparency, respect, and accountability

Wudjari Elders emphasise a need for ensuring transparency, respect and accountability in joint management. All parties must respect what each other have to offer, treat each other as equals, be transparent and open in relation to their requirements and challenges, and be accountable for the promises they make.

They need to listen look and learn. That our cultural process, our law, through oral history. We have a custodial law thing that we have here on Esperance Country. So they come here and listen about who we are, and what we do."
Wudjari Elder

Summary of management arrangements for cultural governance	
Management objectives	Wudjari people and the wider community working together to create a new, holistic management model for the proposed marine park that better aligns customary and contemporary management.
Management strategies Joint management partners are the lead for all strategies. Supporting agencies are listed in brackets. If agencies are required to take a lead role, their name is in bold.	1. Develop and embed a culture of transparency, accountability, and respect between joint management partners and other agencies. 2. Develop a clear approvals protocol for joint management actions, where the JMB provide final decision-making authority. 3. Ensure that Elders are regularly taken out onto Wadarn Boodja in order to facilitate strong cultural governance.
Performance measures	To be determined by JMB
Target	To be determined by JMB
Reporting	To be determined by JMB

9.2 Administration and governance

The following strategies will ensure appropriate legal, administrative, financial, governance, human resources and data management arrangements are in place to effectively implement management actions and manage the proposed marine park in a collaborative setting.

Summary of management arrangements for administration and governance	
Management objectives	To ensure the proposed marine park has appropriate legal, administrative, financial, operational and human resource frameworks in place so that it is effectively jointly managed in a collaborative setting.

Management strategies Joint management partners are the lead for all strategies. Supporting agencies are listed in brackets. If agencies are required to take a lead role, their name is in bold	1. Implement all statutory notices required to support implementation of the management plan within 12 months of marine park gazettal. 2. Collaborate with and provide advice to agencies, stakeholders and adjacent land managers, where necessary, to ensure the protection of marine park values and complementary management of adjacent reserves. 3. Secure and maintain appropriate funding for staff structures, operational equipment, including vessels, and infrastructure to adequately implement the management plan. [DPIRD] 4. Consider third party proposals for the establishment of a marine research station, including laboratories and living quarters. 5. Investigate the possibility of developing an information sharing platform for all agencies involved in managing the proposed marine park to share their data (e.g., a data dashboard). 6. Develop annual work plans. 7. Develop collaborative operational plans for implementation of relevant strategies in the plan. [DPIRD] 8. Ensure cultural safety protocols are observed by joint management partners and other agencies and organisations; including by developing health and safety plans and protocol for all management and research operations conducted on Wadarn Boodja, which incorporates cultural safety provisions. 9. Develop a communications plan and protocol for management actions, research and decision making, to ensure that joint management partners are aware of work on Country and are afforded opportunities to participate. 10. Pursue external funding and partnership opportunities to implement strategies in the indicative joint management plan. 11. Assess impacts on marine park values and manage appropriately as required (e.g., speed limits and/or additional measures to protect threatened species, ecological communities, and natural features or for safety reasons). [DoT]

9.3 Zoning and permitted activities

The implementation of an appropriate zoning scheme is an important strategy for the conservation of marine biodiversity, increased recognition and protection of culturally significant areas and customary practices, and the management of human use in the proposed marine park. Importantly, the application of the zoning scheme should not be viewed in isolation but as one tool in a suite of complementary management tools available to marine park joint management partners to achieve desired ecological, cultural and social outcomes.

9.3.1 Proposed zoning design

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 (ANZECC, 1998). The proposed Wudjari Marine Park falls within the IMCRA South Coast Mesoscale Bioregion. To complement the bioregional framework, a network-based approach was taken, considering the adjacent proposed marine parks which were developed concurrently.

The proposed zoning scheme for the combined Mamang Maambakoort, Wudjari, Western Bight and Mirning marine parks is comprised of:

- Thirty-one sanctuary zones covering approximately 330,000 ha or 25% of the parks.
- Twenty special purpose zones (cultural protection/cultural management) covering approximately 172,210 ha or 13% of the parks.
- Three special purpose zones (whale conservation) covering approximately 75,790 ha or 6% of the parks.
- One special purpose zone (wildlife conservation) covering approximately 3,380 ha or less than 1% of the parks.
- General use in the remainder of the parks, covering approximately 724,130 ha or 55% of the parks.

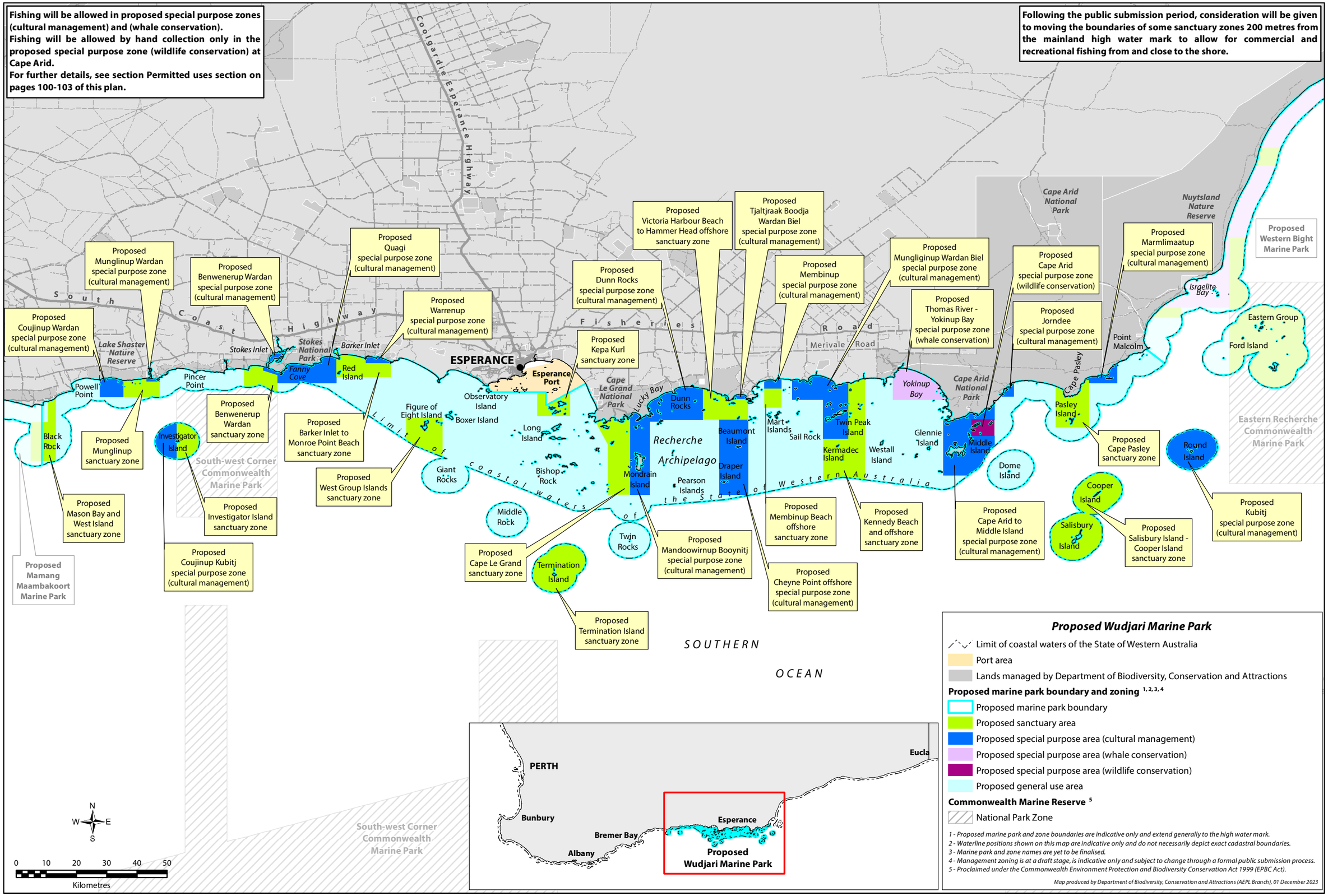
Maps 12-15a show the proposed zoning scheme for the Wudjari Marine Park. A summary of the activities permitted in each proposed zone is presented in Table 2.

Design of the proposed zoning scheme was guided by a set of principles which aim to provide for ecological, cultural, recreation, tourism and other sustainable use values (see Appendix 1).

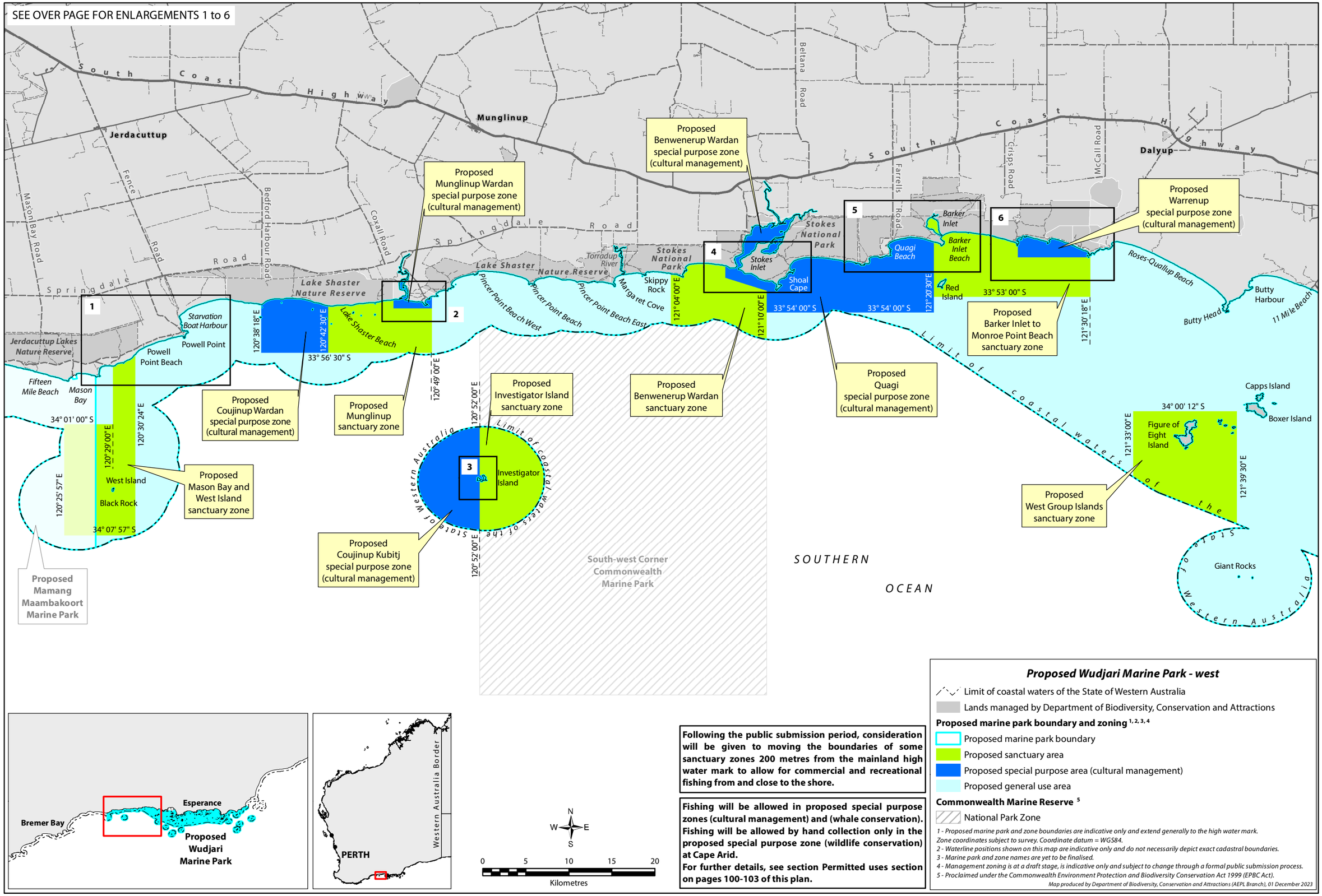
The proposed zoning scheme is based on a comprehensive, adequate and representative (CAR) approach. It aims to protect ecologically and culturally important high priority values such as seagrass, macroalgal reef, soft substrate and filter feeding communities and considers the level of current and projected future pressures on these values. The proposed zoning scheme is designed to provide connectivity from estuarine environments out to deeper water and offshore islands and provide complementarity to adjacent marine and terrestrial reserves.

The proposed zoning scheme recognises and allows for recreation and tourism and allows for ongoing sustainable use by considering the needs of park users such as commercial and recreational fishers. Where possible, the proposed zoning scheme has been designed to be easy for users to understand and comply with 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.

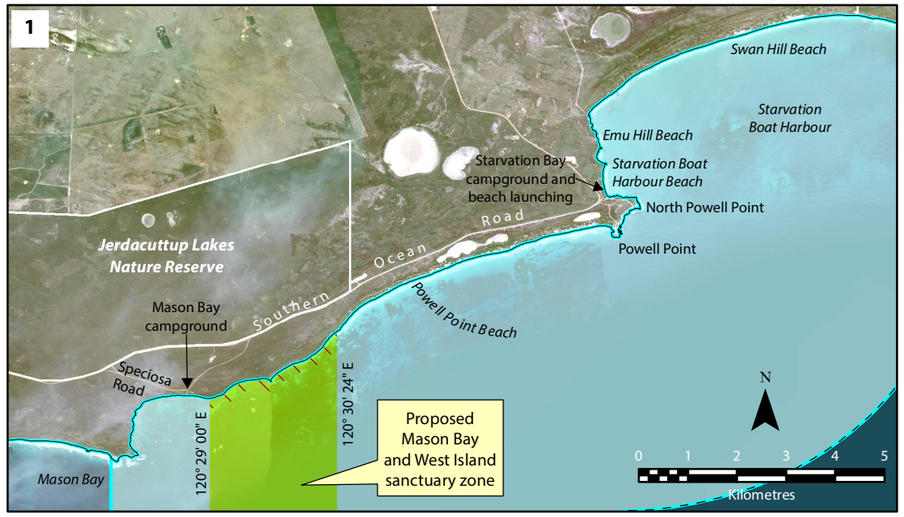
Ultimately the proposed zoning scheme aims to ensure the proposed marine park is managed to maintain ecosystem function and increase ecosystem resilience.

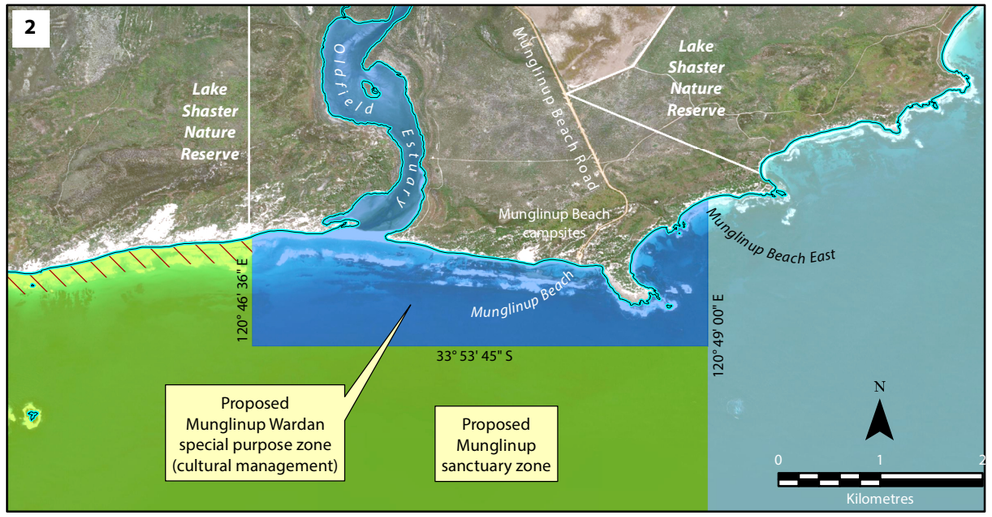


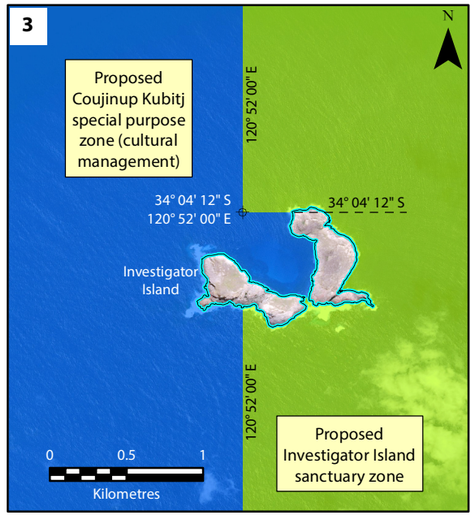
Map 12 – Proposed Wudjari Marine Park proposed zoning.

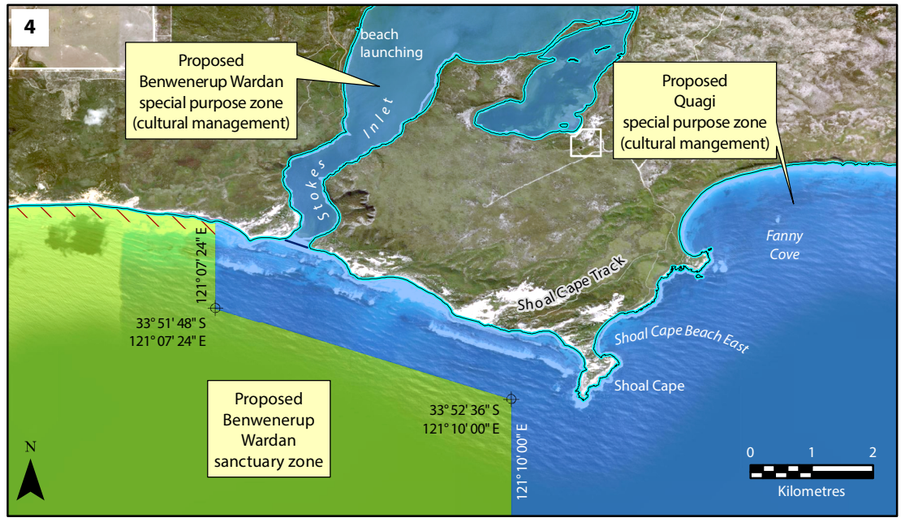


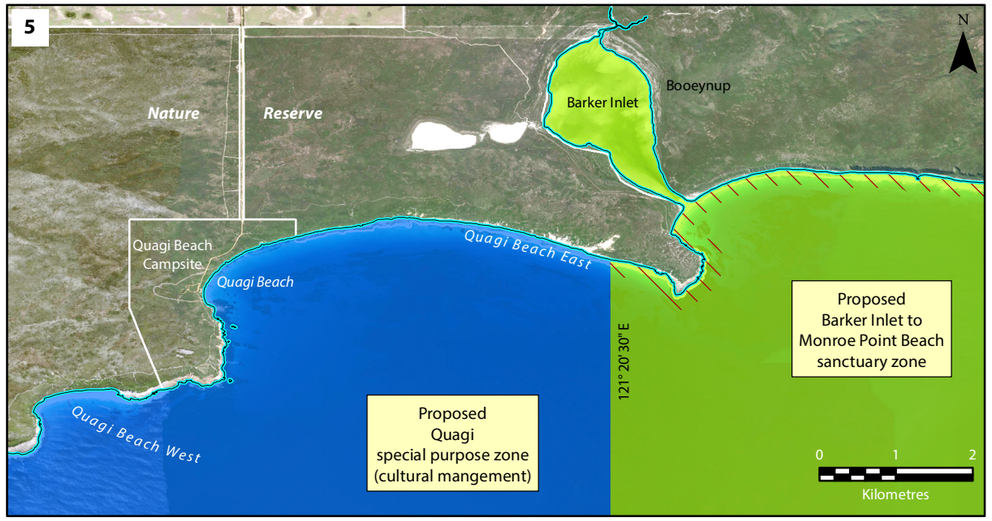
Map 13 – Proposed Wudjari Marine Park proposed zoning - west.











Proposed Wudjari Marine Park - west

Limit of coastal waters of the State of WA

Lands managed by Department of Biodiversity, Conservation and Attractions

Proposed marine park boundary and zoning [1, 2, 3, 4]

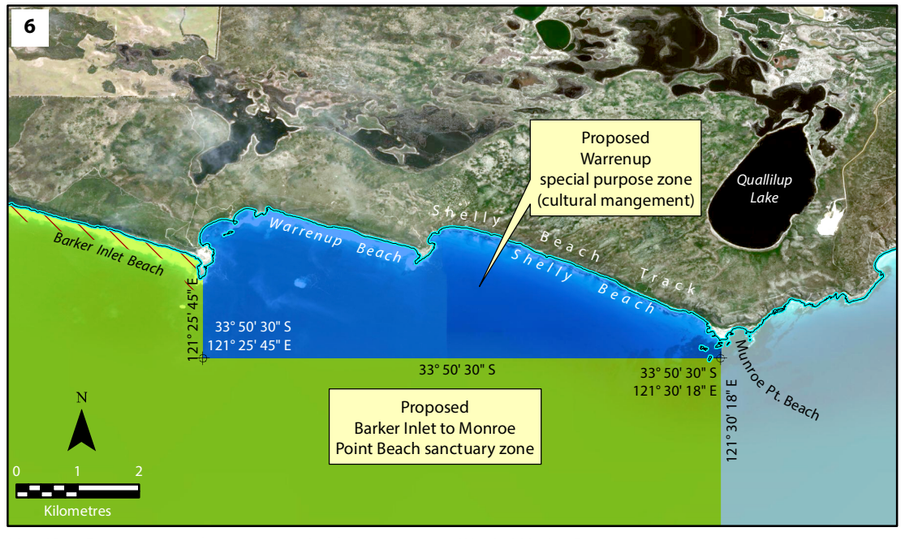
- Proposed marine park boundary
- Proposed sanctuary area
- Proposed special purpose area (cultural management)
- Proposed general use area

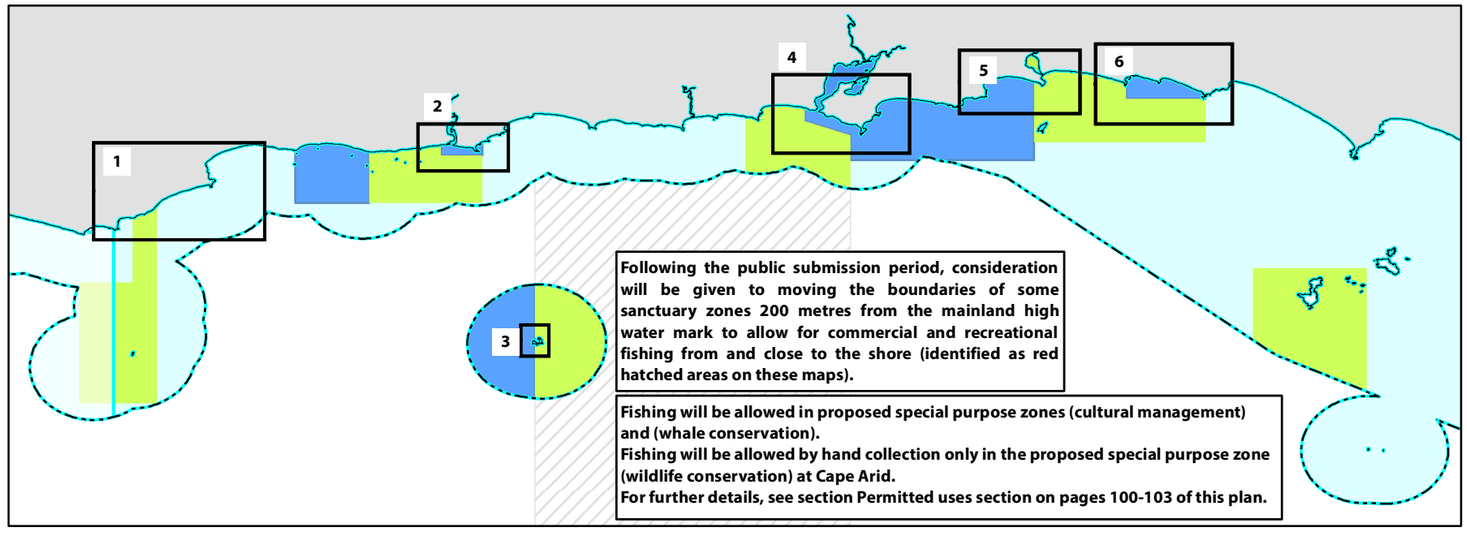
Commonwealth Marine Reserve [5]

- National Park Zone

1 - Proposed marine park and zone boundaries are indicative only and extend generally to the high water mark. Zone coordinates subject to survey. Coordinate datum = WGS84.
3 - Marine park and zone names are yet to be finalised.
2 - Waterline positions shown on this map are indicative only and do not necessarily depict exact cadastral boundaries.
4 - Management zoning is at a draft stage, is indicative only and subject to change through a formal public submission process.
5 - Proclaimed under the Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act).

Map produced by Department of Biodiversity, Conservation and Attractions (AEPL Branch), 01 December 2023





Map 13a – Enlargements of proposed zoning for the proposed Wudjari Marine Park - west.

SEE OVER PAGE FOR ENLARGEMENTS 7 to 10

Following the public submission period, consideration will be given to moving the boundaries of some sanctuary zones 200 metres from the mainland high water mark to allow for commercial and recreational fishing from and close to the shore.

Fishing will be allowed in proposed special purpose zones (cultural management) and (whale conservation).
Fishing will be allowed by hand collection only in the proposed special purpose zone (wildlife conservation) at Cape Arid.
For further details, see section Permitted uses section on pages 100-103 of this plan.

Proposed Kepa Kurl sanctuary zone

Proposed West Group Islands sanctuary zone

Proposed Cape Le Grand sanctuary zone

Proposed Dunn Rocks special purpose zone (cultural management)

Proposed Victoria Harbour Beach to Hammer Head offshore sanctuary zone

Proposed Membinup special purpose zone (cultural management)

Proposed Membinup Beach offshore sanctuary zone

Proposed Mungliginup Wardan Biel special purpose zone (cultural management)

Proposed Thomas River - Yokinup Bay special purpose zone (whale conservation)

Proposed Kennedy Beach and offshore sanctuary zone

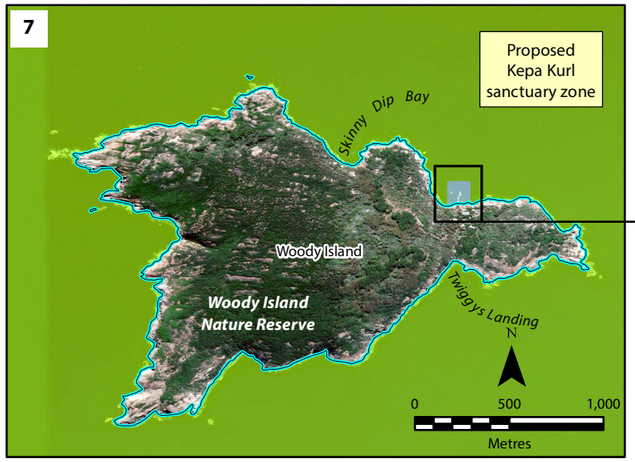
Proposed Mandoowirnup Booynitj special purpose zone (cultural management)

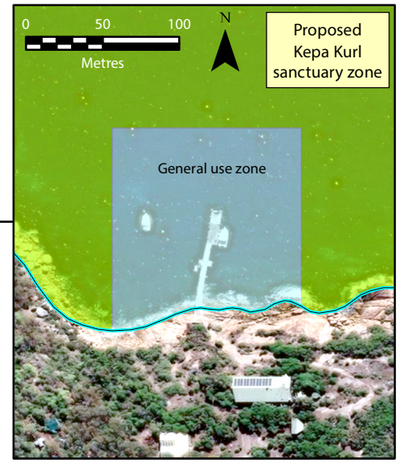
Proposed Cheyne Point offshore special purpose zone (cultural management)

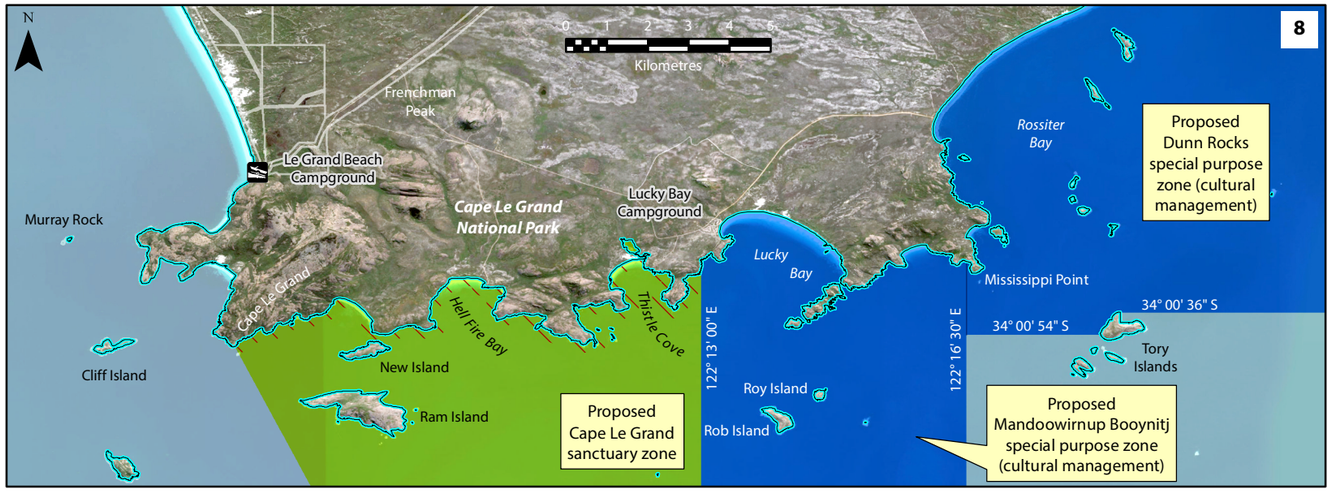
Proposed Termination Island sanctuary zone

Proposed Wudjari Marine Park

Map 14 – Proposed Wudjari Marine Park proposed zoning - central.







Proposed Wudjari Marine Park - central

Proposed marine park boundary and zoning [1, 2, 3, 4]

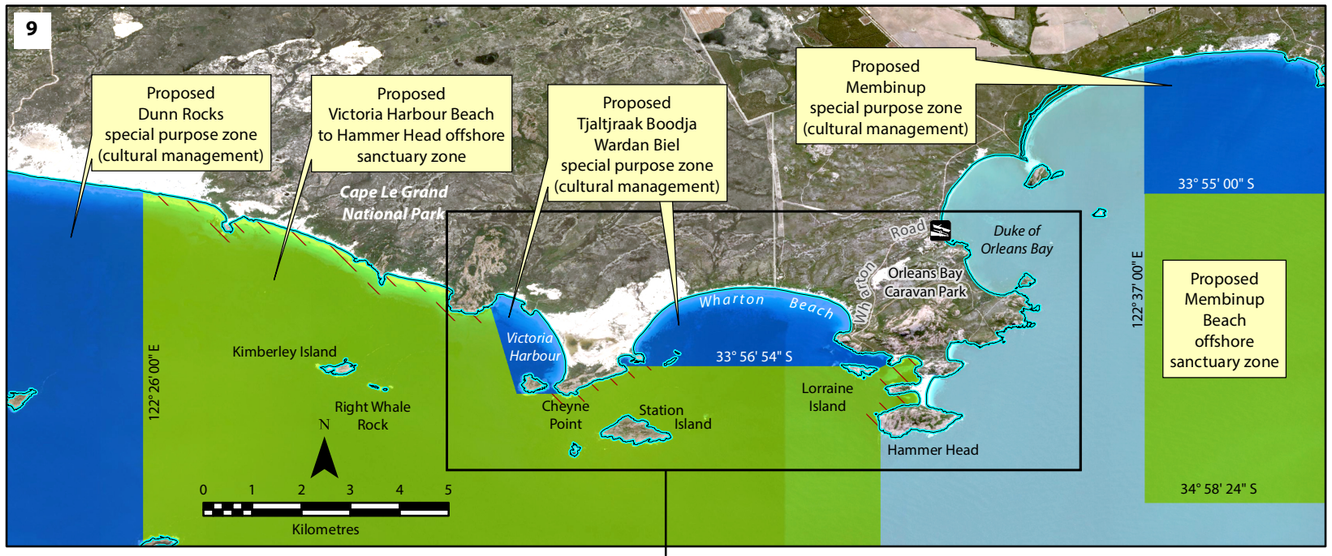
- Proposed marine park boundary
- Proposed sanctuary area
- Proposed special purpose area (cultural management)
- Proposed general use area

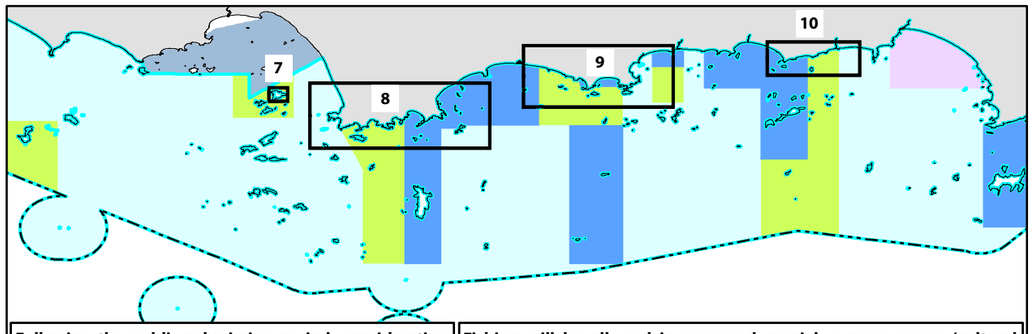
Boat ramp

Limit of coastal waters of the State of Western Australia

1 - Proposed marine park and zone boundaries are indicative only and extend generally to the high water mark. Zone coordinates subject to survey. Coordinate datum = WGS84.
2 - Waterline positions shown on this map are indicative only and do not necessarily depict exact cadastral boundaries.
3 - Marine park and zone names are yet to be finalised.
4 - Management zoning is at a draft stage, is indicative only and subject to change through a formal public submission process.

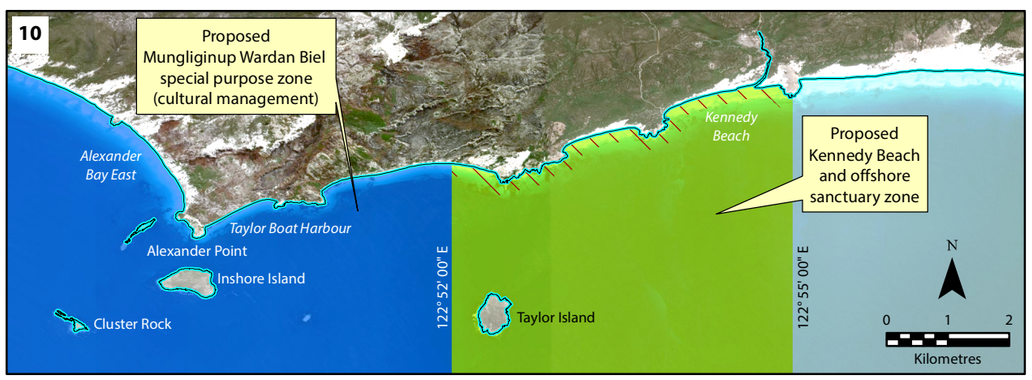
Map produced by Department of Biodiversity, Conservation and Attractions (AEPL Branch), 01 December 2023

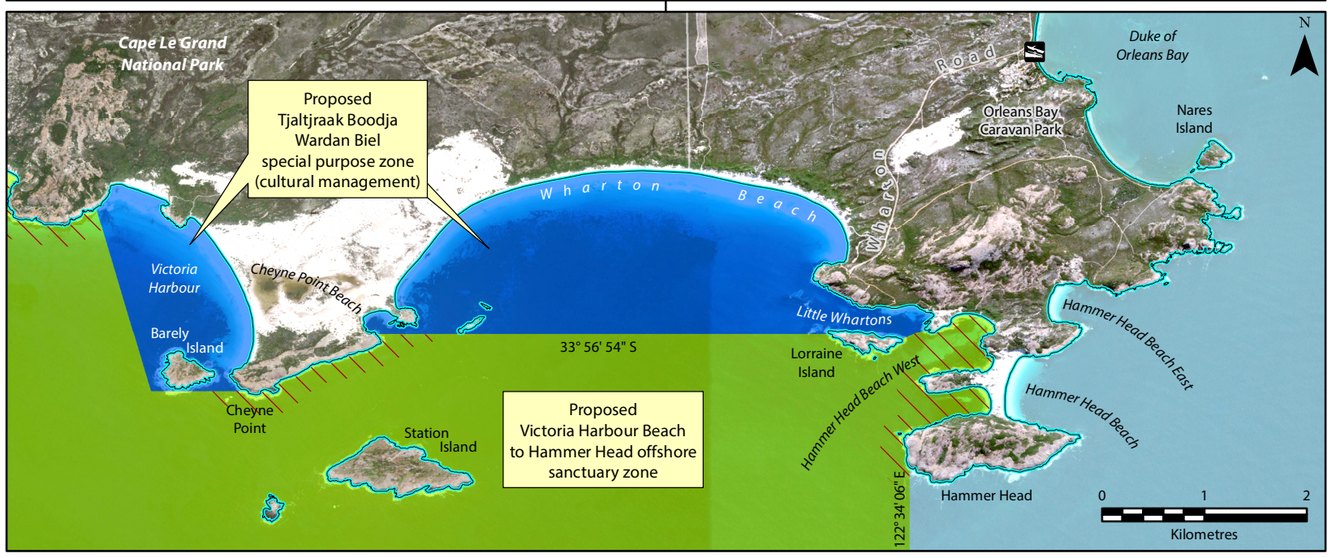




Following the public submission period, consideration will be given to moving the boundaries of some sanctuary zones 200 metres from the mainland high water mark to allow for commercial and recreational fishing from and close to the shore (identified as red hatched areas on these maps).

Fishing will be allowed in proposed special purpose zones (cultural management) and (whale conservation).
Fishing will be allowed by hand collection only in the proposed special purpose zone (wildlife conservation) at Cape Arid.
For further details, see section Permitted uses section on pages 100-103 of this plan.





Map 14a – Enlargements of proposed zoning for the proposed Wudjari Marine Park - central.

Following the public submission period, consideration will be given to moving the boundaries of some sanctuary zones 200 metres from the mainland high water mark to allow for commercial and recreational fishing from and close to the shore.

Fishing will be allowed in proposed special purpose zones (cultural management) and (whale conservation).
Fishing will be allowed by hand collection only in the proposed special purpose zone (wildlife conservation) at Cape Arid.
For further details, see section Permitted uses section on pages 100-103 of this plan.

SEE OVER PAGE FOR ENLARGEMENTS 11 and 12

Cape Arid National Park
Gora Road
Israelite Bay
Point Dempster
6 Mile Island
Fisheries Road
Nuytsland Nature Reserve
Pasley Track
Lagoon Road
Merivale Road
Thomas River Rd
Thomas River
Poison Creek Road
123° 21' 33" E
123° 40' 00" E
Point Malcolm
Proposed Marmlimaatup special purpose zone (cultural management)
Proposed Western Bight Marine Park
Eastern Group
Pointer Island
Ford Island
Spindle Island
Rodondo Island
Daw Island
Bellinger Island
12
33° 54' 00" S
Cape Pasley
Sandy Bight
33° 56' 24" S
123° 00' 00" E
Yokinup Bay
33° 57' 00" S
Jenamullup Creek
Proposed Cape Arid special purpose zone (wildlife conservation)
11
Proposed Thomas River - Yokinup Bay special purpose zone (whale conservation)
Proposed Jorndee special purpose zone (cultural management)
123° 29' 00" E
123° 35' 00" E
Pasley Island
34° 02' 00" S
Proposed Cape Pasley Sanctuary Zone
Wickham Island
123° 18' 06" E
Westall Island
Glennie Island
123° 09' 00" E
Middle Island
Hasler Island
Proposed Wudjari Marine Park
Douglas Island
34° 10' 30" S
Western Australia
Dome Island
Limit of coastal waters of the State of Western Australia
Proposed Cape Arid to Middle Island special purpose zone (cultural management)
Proposed Salisbury Island - Cooper Island sanctuary zone
Cooper Island
Salisbury Island
Round Island
Proposed Kubitj special purpose zone (cultural management)
Eastern Recherche Commonwealth Marine Park
SOUTHERN OCEAN
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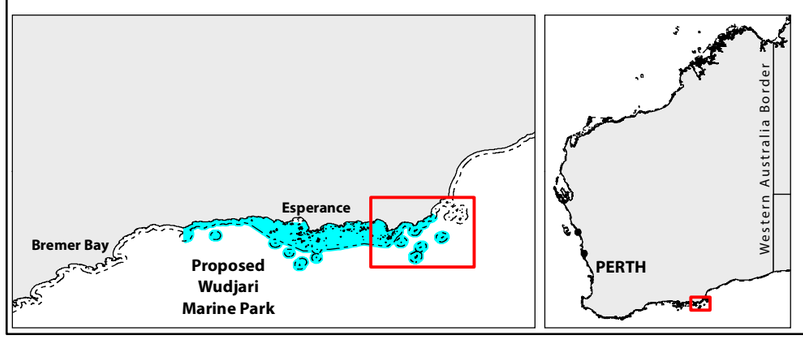


Proposed Wudjari Marine Park - east

- Limit of coastal waters of the State of Western Australia
- Lands managed by Department of Biodiversity, Conservation and Attractions

Proposed marine park boundary and zoning [1, 2, 3, 4]

- Proposed marine park boundary
- Proposed sanctuary area
- Proposed special purpose area (cultural management)
- Proposed special purpose area (whale conservation)
- Proposed special purpose area (wildlife conservation)
- Proposed general use area

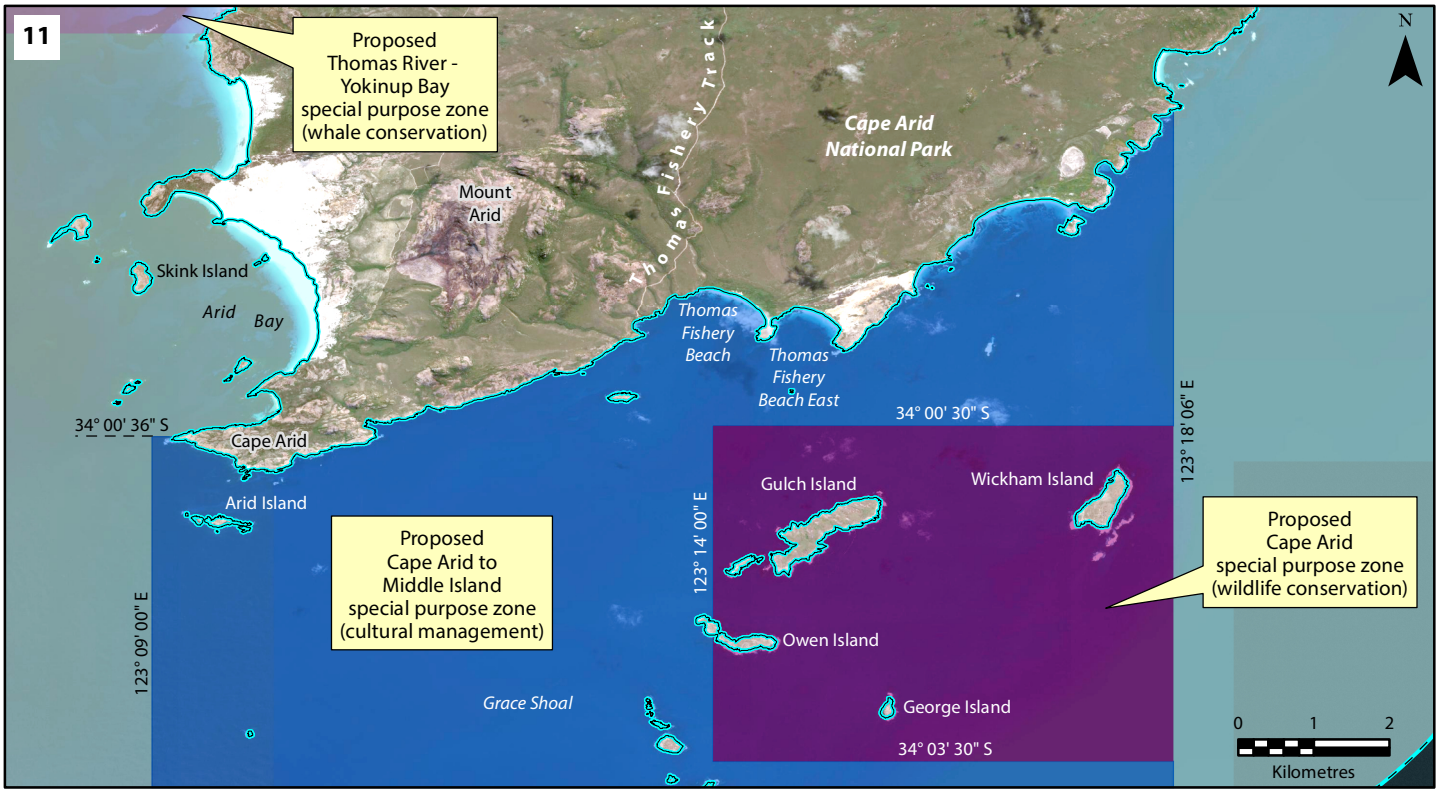
Commonwealth Marine Reserve [5]

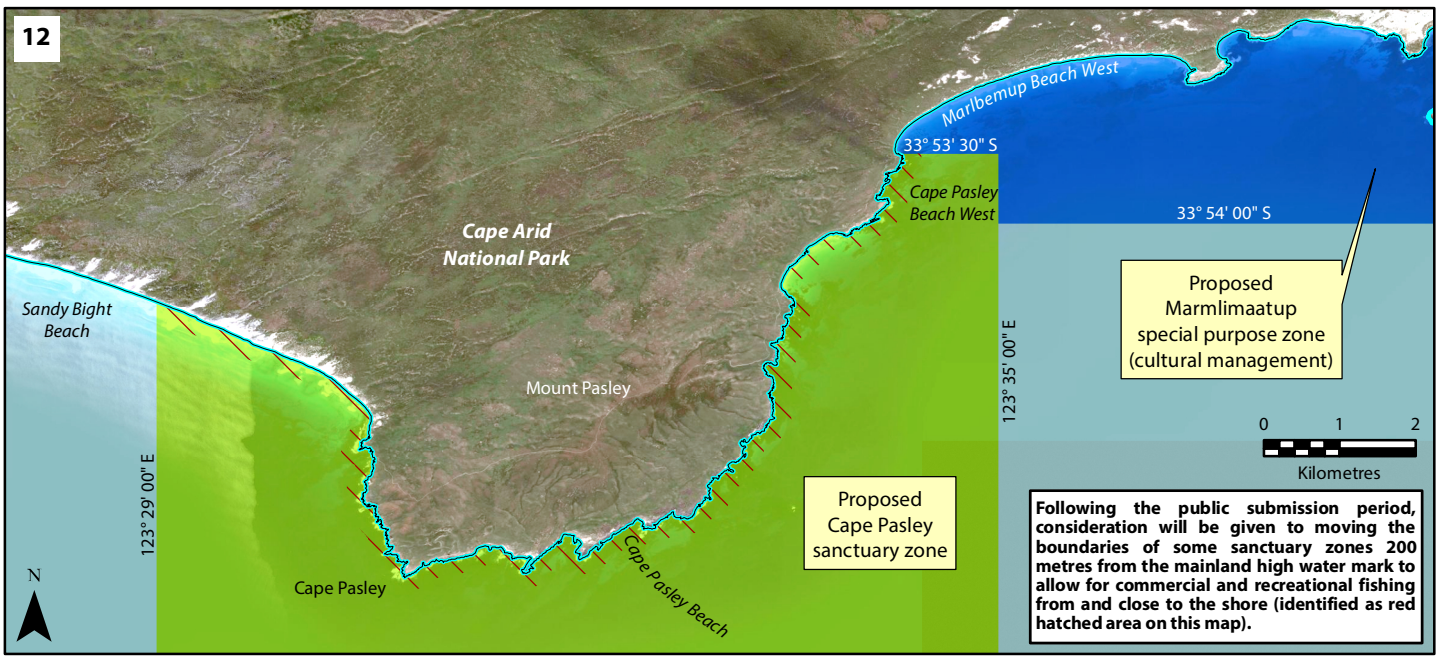
- National Park Zone

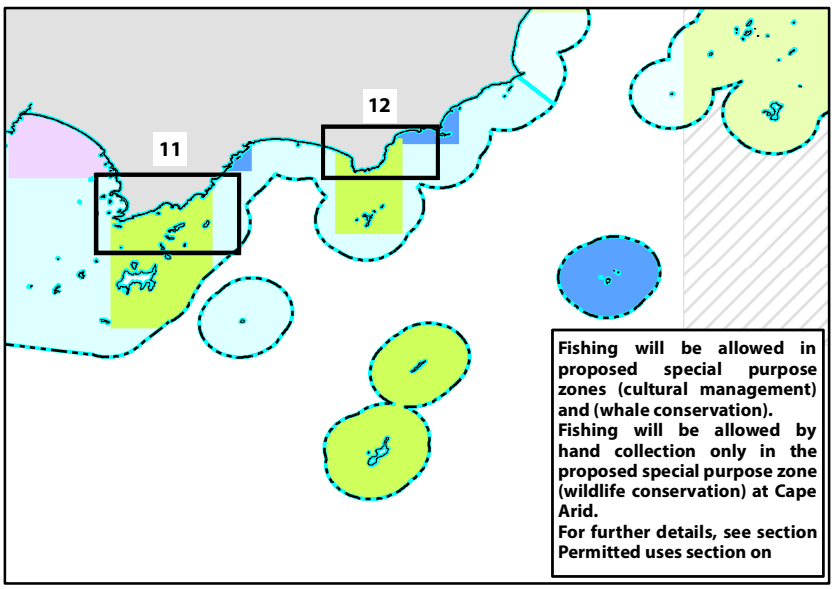
1 - Proposed marine park and zone boundaries are indicative only and extend generally to the high water mark. Zone coordinates subject to survey. Coordinate datum = WGS84.
2 - Waterline positions shown on this map are indicative only and do not necessarily depict exact cadastral boundaries.
3 - Marine park and zone names are yet to be finalised.
4 - Management zoning is at a draft stage, is indicative only and subject to change through a formal public submission process.
5 - Proclaimed under the Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act).

Map produced by Department of Biodiversity, Conservation and Attractions (AEPL Branch), 01 December 2023

Map 15 – Proposed Wudjari Marine Park proposed zoning - east.







Proposed Wudjari Marine Park - east

Limit of coastal waters of the State of WA

Proposed marine park boundary and zoning [1, 2, 3, 4]

- Proposed marine park boundary
- Proposed sanctuary area
- Proposed special purpose area (cultural management)
- Proposed special purpose area (whale conservation)
- Proposed special purpose area (wildlife conservation)
- Proposed general use area

Commonwealth Marine Reserve [5]

- National Park Zone

1 - Proposed marine park and zone boundaries are indicative only and extend generally to the high water mark. Zone coordinates subject to survey. Coordinate datum = WGS84.
2 - Waterline positions shown on this map are indicative only and do not necessarily depict exact cadastral boundaries.
3 - Marine park and zone names are yet to be finalised.
4 - Management zoning is at a draft stage, is indicative only and subject to change through a formal public submission process.
5 - Proclaimed under the Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act).

Map produced by Department of Biodiversity, Conservation and Attractions (AEPL Branch), 01 December 2023

Map 15a – Enlargements of proposed zoning for the proposed Wudjari Marine Park - east.

9.3.2 Sanctuary zones

The proposed sanctuary zones will play an important role in protecting areas of critical habitat to maintain the healthy functioning of the complex ecosystems that make up the proposed marine park. Sanctuary zones act as benchmarks to compare to other areas with similar habitats and ecosystems that are subject to extractive use. This allows managers to gain a better understanding of local and regional pressures on the marine environment over time. As such, sanctuary zones provide important opportunities for education, research and monitoring.

Sanctuary zones can help to increase ecosystem health by reducing pressures on the ecosystems protected, thereby increasing resilience to external pressures such as climate change.

Proposed Mason Bay and West Island Sanctuary Zone

The proposed Mason Bay and West Island Sanctuary Zone (approximately 10,367ha in total) includes areas across both the proposed Mamang Maambakoort Marine Park (approximately 3,884ha) and the proposed Wudjari Marine Park (approximately 6,483ha). The proposed sanctuary zone provides connectivity from the coast out to deeper water pelagic habitats (up to around 70m) and will protect representative examples of seagrass, low profile macroalgal limestone reef and soft sediment communities. A variety of ecologically important areas will be protected in the sanctuary zone including breeding, pupping and foraging areas for Australian sea lions and long-nosed fur seals. This zone will also protect species such as seadragons which are genetically distinct from others recorded further west. Cultural values such as artefacts of high cultural significance will also be protected from extractive activities.

Proposed Munglinup Sanctuary Zone – Munglinup beach/Oldfield estuary area

The proposed Munglinup Sanctuary Zone (approximately 5,489ha) is characterised by granitic islets and reefs, and high-profile limestone reefs associated with remnant shoreline/dune systems. Depths in the proposed zone reach down to 50m. The proposed sanctuary zone will protect representative examples of marine habitats including high and low profile macroalgal reef, nearshore seagrass and soft sediment communities. The proposed sanctuary zone will protect important haul-out and foraging areas for Australia sea lions. The proposed sanctuary zone also provides connectivity to the nearby Lake Shaster Nature Reserve (a nationally significant wetland) and the South-west Corner Marine Park in Commonwealth waters. It will also contribute to the protection of an area of Wudjari Country that has been identified as having high biocultural significance.

Proposed Investigator Island Sanctuary Zone

The proposed Investigator Island Sanctuary Zone (approximately 6,022ha) surrounds the eastern side of Investigator Island and is characterised by steeply sloping granitic shores surrounded by soft sediment and shore and reef habitats. The proposed sanctuary zone provides complementarity to the Commonwealth South-west Corner Marine Park national park zone and will protect a range of hard- and soft-substrate communities across broad ranges in depths and exposures, and is particularly important for representing deeper water habitats with complex bathymetry with depths down to 70–80m. Areas of ecological importance that will be protected in this sanctuary zone include breeding, pupping and foraging areas for Australian sea lions and long-nosed fur seals, and breeding and foraging areas for little penguins. A diverse range of fish species will also be protected from extractive activities. The proposed sanctuary zone will also contribute to the protection of an area of Wudjari Country that has been identified as having high biocultural significance.

Proposed Benwenerup Wardan Sanctuary Zone

The proposed Benwenerup Wardan Sanctuary Zone (approximately 5,655ha) has a range of shoreline types from hard and steeply sloping, to soft and low gradient shorelines with shallow intertidal reef platforms. The proposed zone will protect a diverse range of communities including high- and low-profile reef communities consisting of linear, shore-parallel systems and shallow/intertidal reef platforms and lagoons. Representative examples of seagrass and nearshore soft sediment communities in the South Coast Bioregion will also be protected. The zone is also highly important for representing a variety of mixed soft and hard sediment habitats. The locality of the proposed Benwenerup Wardan Sanctuary Zone between the South-west Corner Marine Park in Commonwealth waters and the terrestrial Stokes National Park will provide continuity of protection of important habitats from terrestrial to offshore areas.

Proposed Barker Inlet to Monroe Point beach Sanctuary Zone

The proposed Barker Inlet to Monroe Point beach Sanctuary Zone (approximately 9,078ha) marks a transition in geology and geomorphology from a limestone dominated coast to the west and granitic bedrock to the east. Depths in the proposed zone reach down to 50m. The proposed zone will protect representative examples of habits including macroalgal reef, seagrass, saltmarsh and soft sediment communities. The Barker Inlet is an important estuarine system that is surrounded by nature reserve, and will also be protected in this proposed zone. The range of depths and shoreline types in this zone from hard and steeply sloping cliffs to soft and low gradient shorelines creates a diversity of habitats that will be protected. A variety of ecologically important areas will be protected in the sanctuary zone at Red Island, including breeding, pupping and foraging areas for Australian sea lions and breeding and foraging sites for seabirds.

Proposed West Group Islands Sanctuary Zone (Figure of Eight and Boxer Islands)

The proposed West Group Islands Sanctuary Zone (approximately 10,292ha) will protect representative examples of marine habitats at different depths (0 – >80m) in the South Coast Bioregion. The proposed sanctuary zone has very high habitat diversity including high- and low-profile reefs with macroalgae and filter feeders, rhodolith, seagrass and soft sediment communities. The proposed sanctuary zone protects breeding and foraging areas for a variety of birds including little penguins, great-winged petrels, flesh-footed shearwaters, short-tailed shearwaters, Cape Barren geese, silver gulls and Pacific gulls. Breeding and foraging areas for Australian sea lions and long-nosed fur seals will also be protected in addition to ecologically important areas for leafy seadragons. The terrestrial components of the islands within the proposed sanctuary zone are protected by the Recherche Archipelago Nature Reserve. The proposed sanctuary zone will also contribute to the protection of an area of Wudjari Country that has been identified as having high biocultural significance.

Proposed Kepa Kurl Sanctuary Zone – Esperance Bay and islands including Woody Island

The proposed Kepa Kurl Sanctuary Zone (approximately 5,370ha) will protect the highest diversity of habitats in the South Coast Bioregion across a range of different depths up to around 40m. Benthic habitats include seagrass, macroalgae and other reef habitats, filter feeders, rhodoliths, soft sediment and pelagic communities. Sites of ecological importance in the proposed Kepa Kurl Sanctuary Zone include foraging and haul-out areas for Australian sea lions and long-nosed fur seals, and breeding and for a variety of birds including black-faced cormorant, Cape Barren goose, Caspian tern, flesh-footed shearwater, great-winged petrel, little penguin, Pacific gull, silver gull, white-bellied sea eagle and white-faced storm petrel. The proposed sanctuary zone will also contribute to the protection of an area of Wudjari Country that has been identified as having high biocultural significance.

The area surrounding Woody Island will also protect a known hotspot for blue grouper. Woody Island in an ecotourism destination and non-extractive activities that are highly valued in the area, including wildlife viewing and sightseeing, swimming, snorkelling and diving, can continue to be enjoyed. Fishing activities will continue to be permitted from the jetty in Shearwater Bay (unofficial name) adjacent to the ecotourism accommodation. The proposed sanctuary zone will also contribute to the protection of an area of Wudjari Country that has been identified as having high cultural significance.

Proposed Cape Le Grand Sanctuary Zone – Cape Le Grand and offshore area

The proposed Cape Le Grand Sanctuary Zone (approximately 16,677ha) will protect a high diversity of habitats and species in the South Coast Bioregion across a range of different depths (0–70m). The proposed zone will represent seagrass, macroalgal, filter feeding, soft sediment and pelagic communities as well as the most significant representation of rhodolith communities in the proposed marine park. Sites of ecological importance which will be protected in the proposed sanctuary zone include foraging areas for Australian sea lions and long-nosed fur seals, and breeding and foraging areas for a variety of birds including black-faced cormorant, Cape Barren goose, Caspian tern, flesh-footed shearwater, great-winged petrel, little penguin, Pacific gull, silver gull, white-bellied sea eagle and white-faced storm petrel. The area also includes a known breeding site for leafy seadragons and is an important tourism destination popular for diving and snorkelling. The proposed sanctuary zone will also contribute to the protection of an area of Wudjari Country that has been identified as having high biocultural significance. Non extractive activities which are highly valued in this area—including diving, snorkelling, boating, wildlife watching, swimming and surfing—can still be enjoyed in the proposed sanctuary zone.

Proposed Termination Island Sanctuary Zone

The proposed Termination Island Sanctuary Zone (approximately 17,158ha) will protect a range of habitats including macroalgae and reefs at different depths and exposures in the South Coast Bioregion, including the deepest area of the proposed marine park and closest to the continental shelf at 100m. Recent research indicates that filter feeding communities in this proposed zone have particularly high diversity and biomass. Offshore breeding and foraging areas for Australian sea lions, long-nosed fur seals, little penguins and great-winded petrels will be protected in this proposed zone. The proposed Termination Island Sanctuary Zone also abuts the Recherche Archipelago Nature Reserve providing protection across the marine and terrestrial interface.

Proposed Victoria Harbour beach to Hammer Head offshore Sanctuary Zone

The proposed Victoria Harbour beach to Hammer Head offshore Sanctuary Zone (approximately 9,871ha) will provide protection to a range of communities including reef, seagrass, macroalgae, filter feeding, soft sediment and rhodolith communities. It will provide protection and connectivity to nearshore seagrass habitats and offshore reef habitats and link to the abutting Cape Le Grand National Park and Recherche Archipelago Nature Reserve. Areas of ecological importance that will be protected in this zone include breeding and foraging areas for the Australian sea lion, Cape Barren goose, Caspian tern, fairy tern, flesh-footed shearwater, little penguin, Pacific gull, white-bellied sea eagle, white-faced storm petrel and sooty oyster catcher; and important habitats for leafy seadragons. The proposed sanctuary zone will also contribute to the protection of an area of Wudjari Country that has been identified as having high biocultural significance. Non extractive activities, which are highly valued in this area including diving, snorkelling, boating, wildlife watching, swimming and surfing, can still be enjoyed in the proposed sanctuary zone.

Proposed Membinup beach offshore area Sanctuary Zone

The proposed Membinup beach offshore Sanctuary Zone (approximately 2,905 ha) will provide protection to a range of communities including filter feeding and soft sediment communities and is critical for the representation of seagrass communities in the South Coast Bioregion across a range of depths and gradients. Foraging areas for little penguins and white-faced storm petrels will be protected in this proposed sanctuary zone. The proposed sanctuary zone will also contribute to the protection of an area of Wudjari Country that has been identified as having high biocultural significance. Non-extractive activities which are highly valued in this area including boating and wildlife watching, can still be enjoyed in the proposed sanctuary zone.

Proposed Kennedy Beach and offshore area

The proposed Kennedy Beach and offshore area Sanctuary Zone (approximately 24,041ha) is characterised by complex bathymetry and a range of shorelines. The proposed sanctuary zone will protect representative examples of seagrass communities, macroalgae communities, filter feeding communities and soft sediment communities. Ecological areas of importance that will be protected in this zone include breeding and foraging areas for Australian Sea Lions, long nose- fur seals, Cape Barren goose, flesh-footed shearwater, little penguin, little shearwater, Pacific gull and short-tailed shearwater. The proposed sanctuary zone will provide complementarity with the Recherche Archipelago Nature Reserve. The proposed sanctuary zone will also contribute to the protection of an area of Wudjari Country that has been identified as having high biocultural significance. Non extractive activities which are highly valued in this area including diving, snorkelling, boating, wildlife watching, swimming and surfing can still be enjoyed in the proposed sanctuary zone.

Proposed Cape Pasley Sanctuary Zone

The proposed Cape Pasley Sanctuary Zone (approximately 11,504ha) consists of a unique gneissic geology and complex bathymetry resulting in a range of habitats and communities in this area of the South Coast Bioregion. Representative examples of seagrass, macroalgae, reef and soft sediment communities will be protected in this proposed zone. Areas of ecological importance that will be protected include breeding and foraging areas for Australian sea lions, long-nosed fur seals and great-winged petrels around Pasley Island and islets. The proposed sanctuary zone will also contribute to the protection of an area of Wudjari Country that has been identified as having high biocultural significance. Non-extractive activities which are highly valued in this area, including diving, snorkelling, boating, wildlife watching, swimming and surfing, can still be enjoyed in the proposed sanctuary zone. The proposed sanctuary zone provides complementarity with the neighbouring terrestrial Cape Arid National Park/Nuytsland Nature Reserve, Recherche Archipelago Nature Reserve (islands) and Commonwealth Eastern Recherche Marine Park.

Proposed Salisbury Island–Cooper Island Sanctuary Zone

The proposed Salisbury Island–Cooper Island Sanctuary Zone (approximately 31,252ha) consists of a unique gneissic geology which connects underwater to the coast at Cape Pasley. The zone also includes complex bathymetry resulting in a range of habitats and communities in this area of the South Coast Bioregion. Representative examples of macroalgae, reef, soft sediment, seagrass and pelagic communities will be protected in this proposed zone. Areas of ecological importance include breeding, pupping and foraging areas for Australian sea lions and long-nosed fur seals on Salisbury and Cooper Islands. The islands are also a known high-density area for white sharks. The proposed sanctuary zone will also contribute to the protection of an area of Wudjari Country that has been identified as having high biocultural significance. The proposed sanctuary zone provides connectivity with island habitats and complementarity with other areas of protection in the

areas including the Recherche Archipelago Nature Reserve which protects the islands, and the Eastern Recherche Marine Park in Commonwealth waters.

9.3.3 Special purpose zones (cultural management)

The proposed special purpose zones (cultural management) will play an important role in protecting the value of Wadarn Boodja (Sea Country) to the culture and heritage of Wudjari people. No restrictions on commercial and recreational fishing are proposed for these zones. Located over culturally sensitive geographical areas and features, the conservation purpose of the special purpose zones (cultural management) is to protect the value of the land and waters to the culture and heritage of Wudjari people. These zones may contain tangible and intangible values. The proposed special purpose zones (cultural management) are located in areas which Wudjari have identified as being special due to their connections to heritage and the cultural corridors of Country. Some zones have cultural stories associated with them, some are important places to conduct cultural-ecological research, and some relate to the ongoing and deeply held cultural obligations to learn from and care for Wadarn Boodja. There are also places within the proposed special purpose zones (cultural management) which were used by Wudjari old people. These places require careful management to ensure that management is aligned with Wudjari's cultural obligations to care for these special places and ensure connection to Country is maintained.

In the proposed special purpose zones (cultural management), Wudjari people will work to ensure that cultural traditions are sustainable. This may be done in a variety of ways including through monitoring, education and knowledge sharing. Some zones may need rejuvenating and community action. Research will be a strong focus in the proposed special purpose zones (cultural management). This will help the Wudjari community learn more about the impacts and pressures on cultural values and how everyone can work best together to ensure the protection of Wadarn Boodja.

When visiting the special purpose zones (cultural management) marine park users are asked to be respectful of the cultural significance of these areas. Wudjari people want all people visiting Wadarn Boodja to be learn about their culture and share in their cultural ways, heritage, protocols, and research. The proposed zones are listed in Table 1.

Table 1: Proposed special purpose zones (cultural management)

Cultural name	**Mainland geographical reference**	**Area (ha) approximately**
Coujinup Wardan	Starvation Bay/Lake Shaster area	3,914
Munglinup Wardan	Munglinup/Oldfield Estuary	474
Coujinup Kubitj*	Investigator Island	5,526
Benwenerup Wardan	Stokes NP/Lort-Young River	1,195
Quagi	Shoal Cape to Quagi Beach (including Fanny Cove)	10,956
Warrenup	Warrenup Beach to Munroe Point Beach	1,215
Mandoowirnup Booynitj **	Cape le Grand–Mondrains/Lucky Bay	13,355
To be decided	Mississippi Point/Rossiter Bay/Dunn Rocks	14,402
Tjaltjraak Boodja Wardan Biel***	Victoria Harbour/Wharton Beach/Duke of Orleans	667

Cultural name	Mainland geographical reference	Area (ha) approximately
To be decided	Offshore from Wharton Beach and Victoria Harbour	19,373
Membinup	Membinup Beach	1,341
Mungliginup Wardan Biel	Alexander Bay to Kennedy Beach and offshore	18,608
Jorndee	Poison Creek	965
To be decided	Cape Arid – Middle Island are	20,341
Marmlimaatup	Bellinger Island area	2,565
Kubitj	Round Island	14,092

* Kubitj means “island”, ** Booynitj means “knees”, *** Biel means “pathways”.

9.3.4 Special purpose zone (wildlife conservation)

The Cape Arid Special Purpose Zone (wildlife conservation) (approximately 3,377 ha) has the conservation purpose of minimising impacts to Australia sea lions at known breeding sites, as well as providing a high level of protection for seabird rookery and foraging areas. Representative examples of macroalgae reef, filter feeders and seagrass communities will be protected in this proposed zone. Commercial and recreational fishing- other than hand collection of abalone, crustacean, octopus, aquarium fish and specimen shells- will be prohibited in this zone.

9.3.5 Special purpose zone (whale conservation)

The Thomas River–Yokinup Bay Special Purpose Zones (whale conservation) (approximately 11,514 ha), will provide management measures that enhance protection in a portion of the proposed marine park that is used by southern right whales for breeding and calving. The conservation purpose of this zone is to conserve the sheltered bays that are of high ecological importance to southern right whales and to provide protection to a range of habitats.

9.3.6 General use zones

All areas in the proposed marine park not included in proposed sanctuary or proposed special purpose zones are proposed to be zoned as general use (approximately 496,033 ha). 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 and aquaculture.

9.4 Permitted uses

The permitted uses table (Table 2) summarises the range of permitted activities in the different zone types in the proposed marine park. Users should be aware that many of the listed activities are also regulated under complementary legislation and regulations such as those regarding wildlife interactions, the disposal of sullage, and size and bag limits for recreational fishing. In accordance with the CALM Act, a licence is required to carry out some activities (e.g., commercial tourism and research) in State marine parks. The implementation of the management plan may include management actions such as temporal closures. Development of such management actions will aim to limit the impacts on 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.

Any changes to the permitted activities and uses table requires a statutory two-month public comment period and approvals from the Minister for Environment, Minister for Fisheries and Minister for Mines and Petroleum.

Table 2: Summary of permitted uses for the Wudjari Marine Park.

Activity	Sanctuary zones	Special purpose zones (cultural management)	Special purpose zones (wildlife conservation) [a]	Special purpose zones (whale conservation) [b]	General use zones
Customary					
Customary activities (e.g., sustainable harvesting and fishing)	Yes [a]	Yes [a]	Yes [a]	Yes [a]	Yes [a]
Commercial fishing and aquaculture [c]					
Commercial abalone fishing	No	Yes	Yes [d]	Yes	Yes
Commercial crustacean fishing	No	Yes	Yes [d]	Yes	Yes
Commercial estuarine fishing	No	Yes	No	Yes	Yes
Commercial line and trap fishing	No	Yes	No	Yes	Yes
Commercial nearshore net fishing	No	Yes	No	Yes	Yes
Commercial purse seine fishing	No	Yes	No	Yes	Yes
Commercial salmon fishing	No	Yes	No	Yes	Yes
Commercial demersal longline (shark) fishing	No	Yes	No	Yes	Yes
Commercial demersal gillnet (shark) fishing	No	Yes	No	Yes	Yes
Commercial trawl fishing (scallop)	No	Yes	No	Yes	Yes
Commercial octopus fishing	No	Yes	No	Yes	Yes
Commercial specimen shell fishing	No	Yes	Yes [d]	Yes	Yes
Commercial marine aquarium fishing	No	Yes	Yes [d]	Yes	Yes
Commercial fishing (other)	No	Yes	No	Yes	Yes
Aquaculture	No	Assess	No	No	Yes
Commercial - other					
Ground-disturbing mining and petroleum exploration and development [e]	No	No	No	No	Assess
Non-ground-disturbing activities including geophysical surveys, geological mapping, sampling and geochemical surveys [f]	No [g]	No	No [g]	No	Assess

Ship loading and other mining related infrastructure (e.g., ship loading docks, cabling or pipelines)	No	No	No	No	Assess
General marine infrastructure (e.g., groynes, jetties and boat launching facilities)	No	Assess	No	Assess	Assess
Artificial structures (e.g., artificial reefs)	No	Assess [h]	No	No	Assess
Dredging and dredge spoil dumping	No	Assess [i]	No	Assess [i]	Assess
Scenic flights (charter) [c]	Yes	Yes	Yes	Yes	Yes
Commercial tour operators – fishing [c]	No	Yes	No	Yes	Yes
Commercial tour operators – non-extractive (e.g., wildlife viewing) [c]	Yes	Assess [h]	Yes	Assess [h]	Yes
Commercial use of remotely piloted aircraft (drones) [c]	Assess	Assess	Assess	Assess	Assess
Commercial (other) [c]	Assess	Assess	Assess	Assess	Assess
Wildlife/fish feeding	No	No	No	No	No
Recreational					
Boating (motorised and non-motorised)	Yes	Yes	Yes	Yes	Yes
Nature appreciation and wildlife viewing	Yes	Yes	Yes	Yes	Yes
Recreational fishing [c- from a boat]	No	Yes	Yes [d]	Yes	Yes
Remotely piloted aircraft (RPA) (drone) launching and landing [j]	Yes	Yes	Yes	Yes	Yes
Recreational live shell collecting	No	No	No	No	Yes
Other use					
Access	Yes	Yes	Yes	Yes	Yes
Vessel transit	Yes	Yes	Yes	Yes	Yes
Navigation aids	Yes	Yes	Yes	Yes	Yes
Research and monitoring [c]	Yes [k]	Assess [h]	Yes [k]	Yes	Yes
Anchoring [l]	Yes	Yes	Yes	Yes	Yes
Mooring	Assess	Assess	Assess	Assess	Yes
Seaplane and helicopter launching and landing [m]	Assess	Assess	Assess	Assess	Assess
Vessel sewage discharge and de-ballasting	No	No	No	No	Yes [n]
Permitted activities provisions					
[a] Customary take is confined to Wudjari Traditional Owners, or where Traditional Owners have provided consent to another Aboriginal person or group. [b] Seasonal restrictions to vessels such as speed limits may apply. [c] Licence or permit required under the *Conservation and Land Management Act 1984* and/or *Fish Resources Management Act 1994* and related regulations. [d] Hand collection only [e] Ground-disturbing mining and petroleum exploration and development activities include any activity that disturbs the land, seabed and/or subsoil within the marine park (e.g., drilling). [f] Geophysical surveys will be assessed by the Department of Mines, Industry Regulation and Safety.					

[g] Non-ground disturbing exploration activities are permitted in Munglinup warden (Oldfield Estuary) inlet.

[h] Any new proposals to also be referred to marine park managers.
[i] Activity permitted if activity is shown to be compatible with the specified purpose of the zone. Only small-scale dredging for the purpose of public access and safety will be considered.
[j] Recreational use of RPAs must comply with Civil Aviation Safety Authority (CASA) rules as well as legal requirements under the CALM Act, BC Act 2016, and the *Bushfires Act 1954* and related regulations. Restrictions on the use of RPAs may be applied in some areas or for certain periods of time subject to the Civil Aviation Regulations 1988 and the Civil Aviation Safety Regulations 1998, under the *Civil Aviation Act 1988.*
[k] Non-extractive/destructive research and monitoring activities only.
[l] Except where restrictions are put in place for the protection of ecological and/or cultural values.
[m] Lawful authority must be obtained to launch, land or touchdown in an aircraft on CALM Act lands and waters.
[n] Only in gazetted sewage discharge areas.

- Consideration will be given where existing permissions relating to animal exercise areas are in effect.

- 'Assess' is denoted where matters require statutory assessment and approval according to other regulatory processes, or where an activity is to be assessed against the primary conservation purpose of a zone.

9.5 Community stewardship and compliance

Education and public participation will help to increase public awareness and understanding of the values and management issues in the proposed marine park. Increased understanding helps to ensure appropriate behaviour and develop a sense of community stewardship and lead to better protection and management of the park. While most users comply with management arrangements when they understand why they are implemented, it is important to monitor compliance and mitigate inappropriate or illegal behaviour. It will also be important that users of the proposed marine park also play self-regulatory and peer surveillance roles.

Summary of management arrangements for community stewardship and compliance	
Management objectives	• To enhance community understanding of and support for the proposed marine park and achieve a high level of compliance with regulations, permitted uses and other management arrangements within the proposed marine park. • To acknowledge the strong connection of the marine environment to the identities of local communities and to promote stewardship of the proposed marine park.
Management strategies Joint management partners are the lead for all strategies. Supporting agencies are listed in brackets. If agencies are required to take a lead role, their name is in bold.	1. Install zone markers and educational signage for the proposed marine park where appropriate. [DPIRD for signage] 2. Develop and implement a collaborative patrol and enforcement program. **[DPIRD]** 3. Ensure proposed marine park users, including researchers, obtain and comply with appropriate formal permissions. [DPIRD] 4. Monitor, promote and enforce compliance with fisheries and proposed marine park legislation. **[DPIRD]** 5. Encourage voluntary compliance and peer enforcement of regulations. **[DPIRD, DoT]**

	6. Develop and implement a public participation plan for the proposed marine park, which encourages community involvement in management through a range of opportunities including in education, research and monitoring. 7. Develop an education and interpretation plan which communicates: • the importance of the proposed marine park's values • the purposes of management zones and regulations • appropriate behaviour to reduce human impacts and ensure public safety • considers all education and interpretation strategies listed in the joint management plan. 8. Maintain a database of compliance statistics and adapt management strategies to address any non-compliance issues. **[DPIRD]** 9. Identify opportunities to provide specific training opportunities for Wudjari to build the skills required to assist with compliance and education activities on the south coast. [DPIRD] 10. Identify opportunities to employ Wudjari fisheries compliance officers on the South Coast to assist in fisheries patrols. **[DPIRD]**
Performance measures	To be determined
Target	To be determined

10. Assessing management effectiveness

Progress in implementing the final joint management plan and in assessing management effectiveness against stated objectives will be regularly reviewed through a formal process consisting of annual management effectiveness reports and periodic and ten-year reviews of the indicative joint management plan.

10.1 Annual reviews

The prioritised management strategies outlined in the final joint management plan will be implemented by the joint management partners, primarily through the collaboration of DBCA's Esperance district and Marine Science Program, Wudjari Traditional Owners, rangers and other specialist branches guided by the JMB. The JMB with the assistance from these partners and DPIRD will prepare an annual review of the implementation of the indicative joint management plan for consideration by the ETNTAC and the CPC. Key parts of the annual review will include:

- progress in implementing joint management plan strategies
- assessment of the condition of values, the pressures acting on values, management response and management effectiveness
- identifying issues affecting implementation
- resource allocation.

As part of the annual review process, ETNTAC will also provide an update to the Wudjari community on the implementation of the joint management plan and condition of Wadarn Boodja.

10.2 Periodic assessments

The CPC has a statutory responsibility to periodically assess the implementation and effectiveness of indicative joint management plans. The JMB will provide information from monitoring and other operational programs to the CPC to enable an assessment of the plan's implementation.

10.3 Revision of the joint management plan

The final joint management plan will guide joint management of the proposed marine park for 10 years, or until a statutory revision is undertaken and a new joint management plan is prepared. If such a revision does not occur by the end of the plan's specified lifespan, the plan will remain in force in its original form unless it is revoked by the Minister for Environment or a new co-designed plan is approved. Full public consultation will occur at the time of revision, and endorsement of a revised indicative joint management plan will be sought from the JMB and CPC. Approval of the Minister for Environment following concurrence from the Minister for Mines and Petroleum and Minister for Fisheries is also required.

Summary of management arrangements for assessing management effectiveness	
Management objectives	To assess and evaluate management effectiveness.
Management strategies Joint management partners are the lead for	1. Develop and implement a management effectiveness reporting process that is suitable in a joint management setting and ensure results are reported back to the Wudjari community. [Commission]

all strategies. Supporting agencies are listed in brackets. If agencies are required to take a lead role, their name is in bold.	2. Support ETNTAC to conduct periodic reviews of the effectiveness of plan implementation in meeting cultural, capacity building, joint management effectiveness and other priority objectives. 3. Provide necessary information and support for the management effectiveness reporting process. [DPIRD] 4. Implement management strategies to mitigate or stop any impacts from human activities within the proposed marine park which are negatively impacting the values of the proposed marine park. [DPIRD]

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Appendix 1 – Design principles

Comprehensiveness: The full range of ecosystems, habitats and communities present within and across each bioregion are represented within the network.

Adequacy: The network includes enough of each component of biodiversity (e.g., enough of each habitat) to maintain a healthy functioning marine ecosystem.

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

Precautionary principle: Lack of scientific certainty should not be used as a reason for postponing measures to protect the marine environment. A precautionary approach is a proactive (rather than reactive) approach designed to protect areas that are currently in relatively good condition, helping to ensure they stay that way into the future. Where biodiversity data is limited, a precautionary approach uses surrogates (e.g., mapped and unmapped habitats, geomorphology or other physical or environmental gradients) for biodiversity.

Ecological importance, vulnerability and resilience: Biologically and ecologically important areas play an essential role in sustaining populations and maintaining ecosystem function. Likewise, the inclusion of natural areas, with a higher degree of integrity and resilience, as well as areas with vulnerable habitats or vulnerable life-stages will help protect and sustain marine environments. Ecologically important features may include 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: Connectivity refers to the way components of a marine ecosystem are connected through tides, currents and the behaviour of plants and animals (DEH, 2009). Key considerations for connectivity may include dispersal ranges for different marine organisms; distances between and within marine parks and sanctuary zones; benthic-pelagic linkages; connections between catchments to the coast to deep water environments; physical oceanography such as tides and currents; and foraging areas and migratory pathways for a range of marine animals.

Protect and conserve Aboriginal culture and heritage: The protection of cultural heritage values including:

- conserving culturally significant sites and areas important for culturally significant species
- respecting and providing for ongoing connection to Country and culture, including customary activities
- where culturally appropriate, providing consistency with cultural laws, lore and protocols, including cultural management arrangements
- where culturally appropriate, contributing to raising awareness of Aboriginal culture and heritage values
- respecting current and future aspirations and arrangements for sea Country, including opportunities for economic development, training and management

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

- consider the full diversity of marine uses, including economic use, social use and ecosystem services

- have complementarity
- promote opportunities for recreation and appreciation of the marine environment;
- provide for natural and maritime heritage values
- provide for education and research
- be designed so that it is easy for users to identify, understand and comply with zoning and management arrangements.

Appendix 2 – Commercial fisheries operating on the south coast

The South Coast Crustacean Managed Fishery (SCCMF)
The SCCMF extends from Augusta to the SA border. The SCCMF is a multi-species, effort-controlled pot-based fishery, with catches of southern rock lobster (*Jasus edwardsii)* and western rock lobster (*Panulirus cygnus)* as well as deep-sea crab species namely giant crab (*Pseudocarcinus gigas*), crystal crab (*Chaceon albus*), and champagne crab (*Hypothalassia Acerba*). This fishery is managed through limited entry as well as size limits and ITQ (Individually Transferable Quota). (How and Baudains, State of the Fisheries Report 2020/21).

Abalone Managed Fishery
Abalone species targeted by commercial abalone divers are Greenlip (*Haliotis laevigata*), Brownlip (*H. conicopra*) or Roe's (*Haliotis roei)* abalone on the southwest and south coast of WA. The abalone fishery is a dive fishery that operates in the shallow coastal waters off the coast, with the abalone collected by hand. This fishery is managed through total allowable commercial catches, meaning it is a quota-based fishery (Strain, Fabris and Jones, Status of the Fisheries Report 2020/21).

The South Coast Estuarine Managed Fishery (SCEMF)
This fishery operates within the South Coast Bioregion, with fishing activity occurring in 13 estuaries between Cape Beaufort on the southwest and the WA/SA border. This fishery targets estuarine finfish species and blue swimmer crabs (*Portunus armatus)*, with the main fishing methods being gill netting, purpose-designed crab traps and haul netting. This fishery is managed through input controls with restrictions of the number, length and mesh size of nets used, and the number of crab traps used, as well as size limits and temporal closures (Duffy, Harris, and Blay, State of the Fisheries Report 2020/21).

The South Coast Salmon Managed Fishery (SCSMF)
This fishery operates between Cape Beaufort on the southwest and the WA/SA border and utilises beach seine nets to target Western Australian salmon (*Arripis truttaceus)*. This fishery is managed through input controls with restrictions on the type, length and mesh size of nets used, as well as size limits (Duffy, Harris and Blay, Status of the Fisheries Report 2020/21).

The South Coast Purse Seine Managed Fishery (SCPSNF)
The SCPSMF operates between Cape Leeuwin on the southwest and the WA/SA border. This fishery operates with purse seine nets to catch pilchards (*Sardinops sagax)* and other small pelagic fish and is managed through limited entry (with a restricted number of licences issued) and total allowable commercial catches, (meaning it is a quota-based fishery). There are also other input controls with restrictions on the number, length and mesh size of nets used, as well as size limits. There are 5 management zones for this fishery - King George Sound (Zone 1); Greater Albany (Zone 2); Bremer Bay and Esperance (Zones 3 and 4); and Augusta (Zone 5) (Norriss and Blazeski, Status of the Fisheries Report 2020/21).

The South Coast Demersal Gillnet and Demersal Long Line Managed Fishery (SDGDLF)
This fishery operates between 33°S on the southwest to the WA/SA border. Demersal gillnets are used to target primarily sharks with scalefish as a by-product, or operators can use demersal longline. The main targeted shark species include gummy (*Mustelus*

antarcticus), dusky (*Carcharhinus obscurus*), whiskery (*Furgaleus macki*), and sandbar (*C. plumbeus)* sharks. This fishery is managed through the use of input controls with restrictions of the number, length, drop and mesh size of nets, and the size of hooks on longlines. There are also other controls in the form of limited effort and size limits (Braccini and Watt, Status of the Fisheries Report 2020/21).

The South Coast Line and Fish Trap Managed Fishery (SCLFTMF)
The SCLFTMF operates between Black Point on the southwest and the WA/SA border (excluding the waters of the South Coast Estuarine Fishery). The fishery is divided across 4 licence classes – Class A (line and hook); Class B (line and jig for squid); and Class C and D (fish trap in oceanic waters and King George Sound). This fishery is managed through limited entry (with a restricted number of licences issued) and input controls with restrictions of the number of lines and hooks, jigs and traps used, as well as size limits (Duffy, Harris, and Blay, State of the Fisheries Report 2020/21).

The South Coast Nearshore Net Managed Fishery (SCNNMF)
Operators are licenced to fish by means of net in the SCNNMF between Black Point and the WA/SA border. Fishing operators in this fishery are targeting scalefish and squid (*Sepioteuthis australis)* - this excludes Western Australian salmon and small pelagic fish, through the use of beach seine, haul and gill nets. This fishery is managed through limited entry (with a restricted number of licences issued) and input controls with restrictions of the number, length and mesh size of nets, as well as size limits (Duffy, Harris, and Blay, State of the Fisheries Report 2020/21).

Octopus Interim Managed Fishery (OIMF)
The OIMF is a state-wide fishery that targets the western rock octopus *Octopus djinda,* using trigger traps or unbaited, passive shelter pots. Commercial octopus catch is harvested from three different fisheries; however, the majority of commercial catch comes from the OIMF. This fishery is managed through input controls with restrictions of the number of pots or traps permitted (Newman, Wise, Santoro, and Gaughan, State of the Fisheries Report 2020/21).

Specimen Shell Managed Fishery (SSMF)
Shell licence holders can operate throughout Western Australia. About 200 species of specimen shell are collected each year, using a variety of methods. The main methods are by hand, by wading along coastal beaches or, in some instances, by use of remotely operated underwater vehicles. While the fishery covers the entire Western Australian coastline, some concentration of effort occurs in areas adjacent to population centres such as Broome, Exmouth, Shark Bay, Geraldton, Perth, Mandurah, the Capes area, Albany, and Esperance. This fishery is managed through limited entry (with a restricted number of licences issued) and input controls with restrictions on the gear used as well as closed areas (Hart, Bruce, and Steele, State of the Fisheries Report 2020/21).

Marine Aquarium Fish Managed Fishery (MAFMF)
The MAFMF operates in all State waters between the Northern Territory border and South Australian border. The fishery is typically more active in waters south of Broome with higher levels of effort around the Capes region, Perth, Geraldton, Exmouth, Dampier, and Broome. The MAFMF resource potentially includes more than 1,500 species of marine aquarium fishes and uses small nets or hand collection techniques. Operators in the MAFMF are also permitted to take coral, live rock, algae, seagrass, and invertebrates (Newman, Bruce and Bissell, State of the Fisheries Report 2020/21).

The South Coast Trawl Fishery (SCTF)
The SCTF targets Saucer scallops, *Ylistrum balloti* (formerly *Amusium balloti*) using otter trawl nets on the south coast of WA from (115° 30’ E to 125° E) east of Augusta to east of

Israelite Bay. Key fishing areas include Bremer Bay (Doubtful Islands), the Recherche Archipelago and Israelite Bay. This fishery is managed through limited entry (with a restricted number of licences issued) and input controls with restrictions of the length and mesh size of nets used, as well as seasonal closures. The nets used must also have bycatch reduction devices incorporated, in the form of a grid (Kangas, Wilkin, Breheny, Cavalli, Grounds and Brown, State of the Fisheries Report 2020/21).