Appendix 14
Assessment of the Risk of a LoWC on the management Actions of Protected Areas

Assessment of the Beehive-1 exploration drilling loss of well containment (LoWC) spill risk against the North Marine Parks Network Management Plan (Director of National Parks, 2018)

The following information summarises the probabilities of exposure (%) to the AMPs in the North Marine Parks Network based on the RPS (2022) report *Beehive-1 – Exploration Drilling, Crude Oil Spill Modelling with Surface Dispersant Application* (noting the results presented are for the unmitigated case)

Joseph Bonaparte Gulf AMP	Summer			Transitional			Winter		
	Low	Mod	High	Low	Mod	High	Low	Mod	High
Sea surface	100	47	5	96	36	4	87	22	9
Dissolved – 0-10 m below sea surface	100	97	89	90	79	66	98	95	73
Entrained – 0-10 m below sea surface	100		100	94		83	100		98

Oceanic Shoals AMP	Summer			Transitional			Winter		
	Low	Mod	High	Low	Mod	High	Low	Mod	High
Sea surface	22	-	-	2	-	-	21	-	-
Dissolved – 0-10 m below sea surface	15	12	1	3	-	-	34	21	2
Entrained – 0-10 m below sea surface	35		21	18		11	71		49

Arafura AMP	Summer			Transitional			Winter		
	Low	Mod	High	Low	Mod	High	Low	Mod	High
Sea surface	-	-	-	-	-	-	-	-	-
Dissolved – 0-10 m below sea surface	1	-	-	-	-	-	-	-	-
Entrained – 0-10 m below sea surface	8		3	-		-	-		-

Arnhem AMP	Summer			Transitional			Winter		
	Low	Mod	High	Low	Mod	High	Low	Mod	High
Sea surface	-	-	-	-	-	-	-	-	-
Dissolved – 0-10 m below sea surface	-	-	-	-	-	-	-	-	-
Entrained – 0-10 m below sea surface	6		-	-		-	-		-

Management actions/ strategies	Compliance with management plan
Communication, education and awareness program.	
Develop information on marine parks in the Network to encourage increased awareness and understanding of their values and management arrangements.	No impacts.
Provide infrastructure in and adjacent to the Network, such as signs and marker buoys, to increase understanding of marine park values and rules, particularly at sites that are regularly visited.	No impacts.
Establish a North Network advisory committee to support and collaborate with the Director in management.	No impacts.
Tourism and visitor experience program.	
Promote visitor experiences that foster curiosity and appreciation of natural and heritage values in the Network.	No impacts.
Work with other Commonwealth, state and territory government agencies, and the tourism industry to support tourism initiatives, events and attractions that promote visitor experiences in marine parks.	No impacts.
Facilitate partnerships between Indigenous people and tourism operators.	No impacts.
Indigenous engagement program.	
Collaborate with traditional owners and Indigenous ranger groups and relevant partners to undertake marine park management such as surveillance, monitoring and threat mitigation including marine debris removal, and implement actions identified in sea country plans where applicable.	No impacts.
Identify opportunities and mechanisms to engage traditional owners and Indigenous rangers in the management of marine parks.	No impacts.
Increase understanding of traditional knowledge, map cultural values and manage significant sites.	No impacts.
Implement cultural awareness training for Parks Australia staff in association with traditional owners.	No impacts.
Establish protocols for researchers working with Parks Australia to guide engagement with traditional owners	No impacts.
Marine science program.	
Monitor social and economic uses and their benefits and impacts on marine parks.	No impacts.
Monitor the condition of important habitats such as reef systems and their vulnerability to climate change.	In the event of a Level 2 or 3 oil spill, the OPEP and OSMIP will be implemented to monitor and mitigate any potential impacts.
Monitor the impact of invasive species on marine park values and the effectiveness of management.	No impacts.

Management actions/ strategies	Compliance with management plan
Collaborate with other Commonwealth, state and territory government agencies, marine park users and the science sector to support long-term monitoring. For example, monitoring of coral reefs, protected species and the effects of fishing on marine parks.	In the event of a Level 2 or 3 oil spill, the OPEP and OSMIP will be implemented to monitor and mitigate any potential impacts.
Investigate opportunities to extend citizen science programs.	No impacts.
Assessments and authorisations program.	
Issue authorisations—a permit, class approval, activity licence or lease—for activities in marine parks assessed as acceptable either by the Director or another government or industry policy, plan or program accepted by the Director.	No impacts.
Work with other Commonwealth, state and territory government agencies to improve experiences and consistency of approaches for people seeking authorisations.	No impacts.
Park protection and management program.	
Enable infrastructure such as moorings to protect habitats and enhance visitor safety.	No impacts.
Collaborate with and support other agencies that undertake invasive and protected species management and marine debris removal. For example, biosecurity assessments, research, or removal of ghost nets.	In the event of a Level 2 or 3 oil spill, the OPEP and OSMIP will be implemented to monitor and mitigate any potential impacts.
Work with other Commonwealth, state and territory government agencies to respond to environmental incidents and accidents.	In the event of a Level 2 or 3 oil spill, the OPEP and OSMIP will be implemented to monitor and mitigate any potential impacts. Arrangements with Commonwealth, state and territory government agencies are described in the OPEP and OSMIP.
Collaborate with traditional owners and Indigenous ranger groups to undertake management actions.	In the event of a Level 2 or 3 oil spill, the OPEP and OSMIP will be implemented to monitor and mitigate any potential impacts. Traditional owners and Indigenous owner groups will be notified in the event of a spill and will be invited to assist in response strategies, such as shoreline assessment and responses.

Management actions/ strategies	Compliance with management plan
Compliance program.	
Work with other Commonwealth, state and territory government agencies, particularly where parks adjoin state or territory marine parks, in compliance planning, including implementing actions to deter illegal activities and encourage voluntary compliance.	No impacts.
Collaborate with Commonwealth, state and territory government agencies in surveillance, including water and aerial patrols.	In the event of a Level 2 or 3 oil spill, the OPEP and OSMIP will be implemented to monitor and mitigate any potential impacts. Arrangements with Commonwealth, state and territory government agencies are described in the OPEP and OSMIP.

Assessment of the Beehive-1 exploration drilling LoWC spill risk against the North-West Marine Parks Network Management Plan (Director of National Parks, 2018)

The following information summarises the probabilities of exposure (%) to the AMPs in the North Marine Parks Network based on the RPS (2022) report *Beehive-1 – Exploration Drilling, Crude Oil Spill Modelling with Surface Dispersant Application* (noting the results presented are for the unmitigated case)

Argo-Rowley AMP	Summer			Transitional			Winter		
	Low	Mod	High	Low	Mod	High	Low	Mod	High
Sea surface	2	-	-	7	-	-	2	-	-
Dissolved – 0-10 m below sea surface	3	1	-	7	5	-	2	1	-
Entrained – 0-10 m below sea surface	10		9	17		10	12		3

Kimberley AMP	Summer			Transitional			Winter		
	Low	Mod	High	Low	Mod	High	Low	Mod	High
Sea surface	43	-	-	57	-	-	70	-	-
Dissolved – 0-10 m below sea surface	49	47	24	62	58	20	84	67	15
Entrained – 0-10 m below sea surface	56		48	74		62	93		88

Mermaid Reef AMP	Summer			Transitional			Winter		
	Low	Mod	High	Low	Mod	High	Low	Mod	High
Sea surface	-	-	-	-	-	-	-	-	-
Dissolved – 0-10 m below sea surface	-	-	-	3	2	-	2	-	-
Entrained – 0-10 m below sea surface	7		-	11		5	2		2
Shoreline (AMP)	-	-	-	-	-	-	-	-	-
Mermaid reef shoreline exposure (reef)	-	-	-	-	-	-	-	-	-

Ashmore Reef AMP	Summer			Transitional			Winter		
	Low	Mod	High	Low	Mod	High	Low	Mod	High
Sea surface	-	-	-	-	-	-	1	-	-
Dissolved – 0-10 m below sea surface	-	-	-	-	-	-	5	-	-
Entrained – 0-10 m below sea surface	-		-	-		-	25		14
Shoreline (AMP)	-	-	-	-	-	-	-	-	-
Ashmore reef shoreline exposure (reef)	-	-	-	-	-	-	7	3	-

Cartier Island AMP	Summer			Transitional			Winter		
	Low	Mod	High	Low	Mod	High	Low	Mod	High
Sea surface	-	-	-	-	-	-	2	-	-
Dissolved – 0-10 m below sea surface	-	-	-	-	-	-	4	-	-
Entrained – 0-10 m below sea surface	-		-	-		-	32		15
Shoreline (AMP)	-	-	-	-	-	-	-	-	-
Cartier Island shoreline exposure (island)	-	-	-	-	-	-	11	5	-

Montebello AMP	Summer			Transitional			Winter		
	Low	Mod	High	Low	Mod	High	Low	Mod	High
Sea surface	-	-	-	-	-	-	-	-	-
Dissolved – 0-10 m below sea surface	-	-	-	-	-	-	-	-	-
Entrained – 0-10 m below sea surface	-		-	1		-	-		-

Management actions/ strategies	Compliance with management plan
Communication, education and awareness program.	
Develop information on marine parks in the Network to encourage increased awareness and understanding of their values and management arrangements. For example, an Ashmore Reef Marine Park visitor guide.	No impacts.
Provide infrastructure in and adjacent to the Network, such as signs and marker buoys, to increase understanding of marine park values and rules, particularly at sites that are regularly visited, and	No impacts.
Establish a North-west Network advisory committee to support and collaborate with the Director in management.	No impacts.
Tourism and visitor experience program.	
Promote visitor experiences that foster curiosity and appreciation of natural and heritage values in the Network, for example whale shark watching at Ningaloo Marine Park, diving at Mermaid Reef Marine Park, and bird watching at Ashmore Reef Marine Park.	No impacts.
Work with other Commonwealth and state government agencies, and the tourism industry to support tourism initiatives, events and attractions that promote visitor experiences in marine parks.	No impacts.
Facilitate partnerships between Indigenous people and tourism operators, and support the application of the Uunguu Visitor Management pass system for the native title determination area.	No impacts.
Indigenous engagement program.	
Collaborate with traditional owners, Indigenous ranger groups and relevant partners to undertake marine park management such as surveillance, monitoring and threat mitigation including marine debris removal, and implement actions identified in sea country plans where applicable.	No impacts.
Identify opportunities and mechanisms to engage traditional owners and Indigenous rangers in the management of marine parks.	No impacts.
Increase understanding of traditional knowledge, map cultural values and manage culturally significant sites.	No impacts.
Implement cultural awareness training for Parks Australia staff in association with traditional owners.	No impacts.
Establish research protocols in association with traditional owners, like those in the Collaborative Science on Kimberley Saltwater Country - A Guide for Researchers.	No impacts.
Marine science program.	
Monitor social and economic uses and their benefits and impacts on marine parks in the Network	No impacts.
monitor the condition of important habitats such as reef systems at Ningaloo, Mermaid, Kimberley, Ashmore and Cartier Marine Parks, and their vulnerability to climate change	In the event of a Level 2 or 3 oil spill, the OPEP and OSMIP will be implemented to monitor and mitigate any potential impacts.

Management actions/ strategies	Compliance with management plan
Monitor the impact of invasive species on marine park values and the effectiveness of management. For example, tropical fire ant impacts on seabirds and turtles at Ashmore Reef Marine Park, and the effectiveness of management such as baiting.	No impacts.
Collaborate with other Commonwealth and state government agencies, marine park users and the science sector to support long-term monitoring. For example monitoring of coral reefs, protected species and the effects of fishing on marine parks.	In the event of a Level 2 or 3 oil spill, the OPEP and OSMIP will be implemented to monitor and mitigate any potential impacts.
Investigate opportunities to extend citizen science programs.	No impacts.
Assessments and authorisations program.	
Issue authorisations—a permit, class approval, activity licence or lease—for activities in marine parks assessed as acceptable either by the Director or another government or industry policy, plan or program accepted by the Director.	No impacts.
Work with other Commonwealth and state government agencies to improve experiences and consistency of approaches for people seeking authorisations.	No impacts.
Park protection and management program.	
Enable infrastructure such as moorings to protect habitats and enhance visitor safety	No impacts.
Collaborate with and support other agencies that undertake invasive and protected species management and marine debris removal. For example, this may include biosecurity assessments, research, or removal of ghost nets.	In the event of a Level 2 or 3 oil spill, the OPEP and OSMIP will be implemented to monitor and mitigate any potential impacts.
Work with other Commonwealth and state government agencies to respond to environmental incidents and accidents.	In the event of a Level 2 or 3 oil spill, the OPEP and OSMIP will be implemented to monitor and mitigate any potential impacts. Arrangements with Commonwealth, state and territory government agencies are described in the OPEP and OSMIP.
Collaborate with traditional owners and Indigenous ranger groups to undertake management actions.	In the event of a Level 2 or 3 oil spill, the OPEP and OSMIP will be implemented to monitor and mitigate any potential impacts. Traditional owners and Indigenous owner groups will be notified in the event of a spill and will be invited to assist in response strategies, such as shoreline assessment and responses.

Management actions/ strategies	Compliance with management plan
Compliance program.	
Work with other Commonwealth and state government agencies, particularly where parks adjoin state marine parks, in compliance planning, including implementing actions to deter illegal activities and encourage voluntary compliance.	No impacts.
Collaborate with Commonwealth and state government agencies in surveillance, including water and aerial patrols.	In the event of a Level 2 or 3 oil spill, the OPEP and OSMIP will be implemented to monitor and mitigate any potential impacts. Arrangements with Commonwealth, state and territory government agencies are described in the OPEP and OSMIP.

Assessment of the Beehive-1 exploration drilling LoWC spill risk against the Ord River and Parry Lagoons nature reserves management plan 77 2012 (Department of Environment and Conservation 2012)

The following information summarises the probabilities of exposure (%) to the Ord River Floodplain Ramsar Site based on the RPS (2022) report *Beehive-1 – Exploration Drilling, Crude Oil Spill Modelling with Surface Dispersant Application* (noting the results presented are for the unmitigated case)

Ord River Floodplain Ramsar Site	Summer			Transitional			Winter		
	Low	Mod	High	Low	Mod	High	Low	Mod	High
Sea surface	12	-	-	13	-	-	8	-	-
Dissolved – 0-10 m below sea surface	33	18	1	36	25	5	50	27	2
Entrained – 0-10 m below sea surface	67		37	45		39	68		64

Management actions/ strategies	Compliance with management plan
Protect the values of the planning area.	
Undertake the process for a change in tenure for the Ord River and Parry Lagoons nature reserves to 'class A' nature reserves.	No impacts.
Investigate an appropriate tenure for Parry Lagoons Nature Reserve, for example, a national park category, to better accommodate future visitor needs.	
Undertake the process for incorporating proposed additions as identified in Table 1 into the existing nature reserves.	
Traditional owner involvement in management of the planning area.	
Prepare a joint management agreement under the CALM Act with the Yawoorroong Miriuwung Gajerrong Yirrgeb Noong Dawang Aboriginal Corporation, as resources become available, as identified in the Ord Final Agreement	In the event of a Level 2 or 3 oil spill, the OPEP and OSMIP will be implemented to monitor and mitigate any potential impacts. Arrangements with Commonwealth, state and territory government agencies are described in the OPEP and OSMIP. Traditional owners and Indigenous owner groups will be notified in the event of a spill and will be invited to assist in response strategies, such as shoreline assessment and responses.
Determine interest of pursuing joint management arrangements for the applicable portion of the planning area with the Balanggarra people.	
Foster relations with other traditional owners who speak for country.	
Ensure consultation with and approval from traditional owners who speak for country, for any amendments to land tenure that may occur over land for which they speak.	
Work with traditional owners to promote their participation in commercial activities.	
Ensure consultation with and approval from traditional owners who speak for country, for any research activities that may occur on land for which they speak.	

Management actions/ strategies	Compliance with management plan
Refer development and resource use proposals to traditional owners who speak for country.	
Maintain hydrological regimes occurring at the time of Ramsar listing in 1990.	
Liaise with the Department of Water (DoW) to provide input into environmental water allocations for the Ord River.	In the event of a Level 2 or 3 oil spill, the OPEP and OSMIP will be implemented to monitor and mitigate any potential impacts. Arrangements with Commonwealth, state and territory government agencies are described in the OPEP and OSMIP. Traditional owners and Indigenous owner groups will be notified in the event of a spill and will be invited to assist in response strategies, such as shoreline assessment and responses.
Undertake studies to increase knowledge of hydrological requirements of the Ord River to maintain ecological values.	
Work cooperatively with state and federal government authorities to maintain Ramsar values.	
Conserve native plants and plant communities.	
Maintain and monitor vegetation diversity by reducing threatening processes, such as inappropriate fire regimes, altered hydrological regimes and high densities of introduced animals, such as cattle.	In the event of a Level 2 or 3 oil spill, the OPEP and OSMIP will be implemented to monitor and mitigate any potential impacts. Arrangements with Commonwealth, state and territory government agencies are described in the OPEP and OSMIP. Traditional owners and Indigenous owner groups will be notified in the event of a spill and will be invited to assist in response strategies, such as shoreline assessment and responses.
Work cooperatively with state and federal government authorities to maintain Ramsar values.	
Conserve specially protected and other native fauna.	
Support the preparation and implementation of recovery plans for any threatened fauna species.	In the event of a Level 2 or 3 oil spill, the OPEP and OSMIP will be implemented to monitor and mitigate any potential impacts. Arrangements with Commonwealth, state and territory government agencies are described in the OPEP and OSMIP. Traditional owners and Indigenous owner groups will be notified in the event of a spill and will be invited to assist in response strategies, such as shoreline assessment and responses.
Protect native fauna from introduced and problem animals through appropriate control regimes where necessary.	
Work cooperatively with state and federal government authorities to maintain Ramsar values.	
Monitor the abundance and composition of key fauna species.	

Management actions/ strategies	Compliance with management plan
Prevent loss of native species and decline in plant communities from weed invasion.	
Consistent with regional weed prioritisation, prepare, implement and monitor a weed control program based upon invasiveness, existing and potential impacts, current and potential distribution, and feasibility of control.	No impacts.
Support the Australian Quarantine and Inspection Service to monitor the occurrence of, and potentially control the spread of, weed species.	
Continue to work with other agencies and adjacent landholders to control environmental weeds	
Prevent impacts of introduced and other problem animals on the values of the planning area.	
Consistent with regional prioritisation for introduced and problem animals, prepare a control program based upon existing and potential impacts, current and potential distribution, feasibility of control and capacity for long-term monitoring.	In the event of a Level 2 or 3 oil spill, the OPEP and OSMIP will be implemented to monitor and mitigate any potential impacts. Arrangements with Commonwealth, state and territory government agencies are described in the OPEP and OSMIP. Traditional owners and Indigenous owner groups will be notified in the event of a spill and will be invited to assist in response strategies, such as shoreline assessment and responses.
Work with neighbours to limit cattle intrusions onto the reserves (for example, assist adjoining landowners to ensure boundary fences are adequate to exclude cattle, where practicable).	
Support the Australian Quarantine and Inspection Service and Department of Agriculture and Food to monitor the occurrence of, and potentially control the spread of, introduced animals.	
Implementation of the State Cane Toad Initiative, in collaboration with community-based groups and scientific institutions, to slow the westward spread of cane toads.	
Prevent impacts of altered hydrological regimes on the values of the planning area.	
Work with DoW and Water Corporation to provide information to assess adequate flow for the Ord River to maintain the ecological character of the Ramsar site.	No impacts.
Protect biodiversity, people and property within the planning area. Maintain cultural responsibilities.	
Prepare and implement a prescribed burning program which is in accordance with the key principles and considers the knowledge and responsibilities of traditional owners.	No impacts.
Continue to liaise with neighbouring landholders and local government to integrate fire management across the landscape.	
Integrate fire management with weed and introduced species control programs.	

Management actions/ strategies	Compliance with management plan
Protect and conserve the value of the land to the culture and heritage of Aboriginal persons. Traditional owners using their traditional lands for customary purposes.	
Enhance understanding of the value of the planning area to the culture and heritage of Aboriginal persons.	In the event of a Level 2 or 3 oil spill, the OPEP and OSMIP will be implemented to monitor and mitigate any potential impacts. Arrangements with Commonwealth, state and territory government agencies are described in the OPEP and OSMIP. Traditional owners and Indigenous owner groups will be notified in the event of a spill and will be invited to assist in response strategies, such as shoreline assessment and responses.
Ensure that the values of the land to the culture and heritage of Aboriginal persons inform and guide management actions	
Where applicable, apply the Miriuwung-Gajerrong Cultural Planning Framework (Hill et al. 2008) to inform and guide management actions.	
Work with traditional owners who speak for country, to protect heritage sites within the planning area.	
Ensure management activities attempt to minimise material adverse effect on Aboriginal culture and heritage.	
Protect other cultural heritage.	
Ensure management activities attempt to minimise material adverse effects on other cultural heritage.	In the event of a Level 2 or 3 oil spill, the OPEP and OSMIP will be implemented to monitor and mitigate any potential impacts. Arrangements with Commonwealth, state and territory government agencies are described in the OPEP and OSMIP. Traditional owners and Indigenous owner groups will be notified in the event of a spill and will be invited to assist in response strategies, such as shoreline assessment and responses.
Facilitate visitor enjoyment, appreciation and understanding of the values of the planning area	
Provide a range of opportunities for visitors, and ensure they are consistent with the purpose of the reserves, pose no adverse impacts on the environment or unreasonably interfere with visitor experiences	No impacts.
Minimal risks to visitors and encouragement of appropriate visitor behaviour	
Develop a visitor risk management plan in accordance with department policy that identifies and assesses the risks associated with all recreation sites and monitors and regularly reviews visitor risk.	No impacts.

Management actions/ strategies	Compliance with management plan
Increase community awareness, understanding and appreciation of the values of the planning area to foster support for its protection and effective management.	
Provide information to visitors, volunteers, commercial operators and the tourism industry on: • day-use opportunities • the values and management issues within the planning area such as its importance for migratory waterbirds, visitor safety, permitted activities and regulations • cultural heritage to promote visitor awareness, appreciation and understanding • potentially hazardous areas and activities • Leave No Trace principles	No impacts.
Update existing signage and brochures and install new signs at all access points, including information on Aboriginal cultural interpretation.	
Increase community awareness of the need to keep domestic animals out of the planning area	
Provide safe and convenient access within the planning area for visitors and management, where appropriate	
Maintain designated access points to the planning area to facilitate four-wheel-drive, walking and birdwatching activities.	No impacts.
Pending a future increase in visitor numbers, develop defined walking trails if required	
Passive, low impact visitor use of the planning area	
Encourage visitor use that is consistent with protecting and promoting the values of the planning area.	No impacts.
Provide a range of day-use opportunities consistent with department policies as resources permit	
Provide management solutions to mitigate visitor impacts.	
Commercial tourism activities that extend the range of services, facilities and experiences available, which are compatible with management outcomes.	
Evaluate proposals for licences and commercial tourism leases according to legislation and departmental policies and allow their establishment where appropriate.	No impacts.
Ensure that all commercial operations are managed under a lease, licence or permit agreement with appropriate conditions.	
Minimal impacts from mineral and petroleum exploration and development, including basic raw material extraction and development activities, on the values of the planning area.	
Refer proposals, where appropriate, to the Conservation Commission, to provide advice to the Minister for Environment	In the event of a Level 2 or 3 oil spill, the OPEP and OSMIP will be implemented to monitor and mitigate any potential impacts. Arrangements with Commonwealth, state and territory government agencies are described in the OPEP
Ensure access to basic raw materials from within the planning area by local government authorities and private contractors is allowed only when:	

Management actions/ strategies	Compliance with management plan
• the material is to be used within the planning area • extraction complies with this management plan and the purpose, class and tenure of the reserves • extraction complies with existing department policies and guidelines.	and OSMIP. Traditional owners and Indigenous owner groups will be notified in the event of a spill and will be invited to assist in response strategies, such as shoreline assessment and responses.
Minimal impacts from water resource use on the values of the planning area	
Issue licences as required under the CALM Act for water extraction from bores and other water sources located within the planning area.	No impacts.
Refer proposals that require or effect water resources that may adversely impact upon the values of the planning area to the EPA for consideration of assessment under the EP Act, ensuring consultation with DoW and the Water Corporation.	
Refer proposals to the Conservation Commission, to provide advice to the Minister for Environment.	
Minimal impacts from the installation and maintenance of public utilities on the values of the planning area	
Encourage all new public utilities and services to be located outside of the reserves	No impacts.
Refer proposals that may adversely impact upon the planning area to the EPA for consideration of assessment under the EP Act.	
Refer proposals to the Conservation Commission to provide advice to the Minister for Environment.	
Degraded areas being restored to a condition resembling the natural environment within the local vicinity.	
Coordinate rehabilitation works with weed control, fire management and cattle exclusion to allow natural regeneration wherever possible	No impacts.
Utilise plant stock or seed of local provenance where active rehabilitation is required.	
Effective community involvement in the management of the planning area.	
Continue to encourage, promote and support volunteers and community groups with essential resources to help them carry out their activities.	In the event of a Level 2 or 3 oil spill, the OPEP and OSMIP will be implemented to monitor and mitigate any potential impacts. Arrangements with Commonwealth, state and territory government agencies are described in the OPEP and OSMIP. Traditional owners and Indigenous owner groups will be notified in the event of a spill and will be invited to assist in response strategies, such as shoreline assessment and responses.
Liaise with the Balanggarra and Miriuwung Gajerrong traditional owners, neighbouring landowners and land managers, local authorities, relevant government agencies and other stakeholders in the management of cross-boundary issues.	
Notify adjacent pastoralists of cattle located within the planning area, permit pastoralists to muster cattle and advise pastoralists that any stock remaining after mustering will be eradicated.	
Monitor possible impacts associated with implementing the management plan to provide for improved management	

Management actions/ strategies	Compliance with management plan
Conduct or support research on issues and values required to report on this management plan, and the establishment of baseline information that includes: • current hydrological processes and water quality to determine adequacy to maintain the ecological character of the planning area • macroinvertebrate indicator species to determine water quality and detect levels of change • native plants that are rare, threatened or in need of special protection • vegetation condition and composition and any levels of change in condition and composition • abundance and composition of key fauna species and detect levels of change • threatening processes, such as fire and introduced plants and animals • the impacts of groundwater extraction within the planning area and from adjacent areas, particularly Mantinea Flats irrigation area • visitors' use of the area and its impacts.	In the event of a Level 2 or 3 oil spill, the OPEP and OSMIP will be implemented to monitor and mitigate any potential impacts. Arrangements with Commonwealth, state and territory government agencies are described in the OPEP and OSMIP. Traditional owners and Indigenous owner groups will be notified in the event of a spill and will be invited to assist in response strategies, such as shoreline assessment and responses.
Provide support for cultural heritage research of the reserves and incorporate traditional custodians' cultural knowledge in the management of the reserves	

Assessment of the Beehive-1 exploration drilling LoWC spill risk against the North Kimberley Marine Park Joint Management Plan 2016 Uunguu, Balanggaarra, Miriuwung Gajerrong, and Wilinggin management areas management plan 89 (WA Department of Parks and Wildlife, 2016).

The following information summarises the probabilities of exposure (%) to the North Kimberley Marine Park based on the RPS (2022) report *Beehive-1 – Exploration Drilling, Crude Oil Spill Modelling with Surface Dispersant Application* (noting the results presented are for the unmitigated case)

North Kimberley MP	Summer			Transitional			Winter		
	Low	Mod	High	Low	Mod	High	Low	Mod	High
Sea surface	91	9	-	90	-	-	98	-	-
Dissolved – 0-10 m below sea surface	68	55	33	85	78	44	97	96	88
Entrained – 0-10 m below sea surface	86		71	86		81	98		97

The following information summarises the probabilities of exposure (%) to the King Shoals Sanctuary Zone from the LoWC scenario

King Shoals Sanctuary Zone	Summer			Transitional			Winter		
	Low	Mod	High	Low	Mod	High	Low	Mod	High
Bare Hill - East Cape Domett (E) (WAMOPRA DoT shoreline cell)									
Sea surface	59	5	-	50	-	-	60	-	-
Dissolved – 0-10 m below sea surface	66	52	17	53	40	25	86	78	30
Entrained – 0-10 m below sea surface	82		70	62		56	92		87
Shoreline	40	25	-	38	30	-	60	43	-

The following information summarises the probabilities of exposure (%) to the Cape Domett Special Use Zone from the LoWC scenario

Cape Domett Special Purpose Zone	Summer			Transitional			Winter		
	Low	Mod	High	Low	Mod	High	Low	Mod	High
East Cape Domett – WA- NT Border (C) (WAMOPRA DoT shoreline cell)									
Sea surface	47	5	-	44	-	-	45	-	-
Dissolved - 0-10 m below sea surface	65	46	14	44	40	23	68	59	24
Entrained - 0-10 m below sea surface	75		54	57		48	79		67
Shoreline	45	26	5	44	33	2	52	35	1

Management objectives	Compliance with management plan
Management of cultural values.	
To ensure that Aboriginal culture and heritage sites in the marine park are protected and conserved.	In the event of a Level 2 or 3 oil spill, the OPEP and OSMIP will be implemented to monitor and mitigate any potential impacts. Traditional owners and Indigenous owner groups will be notified in the event of a spill and will be invited to assist in response strategies, such as shoreline assessment and responses.
To support traditional owner connection to country including spiritual and cultural values.	
To enable traditional owners to realise livelihoods from their country.	
To provide recognition of and support for traditional owner rights to continue customary practices and to benefit from their country consistent with the purpose of the marine park.	
The facilitate and maintain the opportunity for Aboriginal people to fulfil their cultural obligations as protectors and managers of their country.	
Management of natural values.	
Natural values are not significantly impacted by human activities in the marine park and baseline status is maintained (or improved) across their natural range.	In the event of a Level 2 or 3 oil spill, the OPEP and OSMIP will be implemented to monitor and mitigate any potential impacts. Arrangements with Commonwealth, state and territory government agencies are described in the OPEP and OSMIP.
Obtain an adequate biophysical, social and cultural knowledge base of values to support future management requirements.	
Acquire adequate knowledge of the impacts of climate change and develop applicable management strategies within the marine park.	
Investigate the extent and significance of current impacts and potential pressures, and if necessary implement management strategies.	
Increase local community and visitor knowledge of the cultural, ecological and social importance of key natural values.	
Management of recreation, tourism and community values.	
To promote visitor access to and enjoyment of the marine park while maintaining the outstanding cultural and natural values.	In the event of a Level 2 or 3 oil spill, the OPEP and OSMIP will be implemented to monitor and mitigate any potential impacts. Arrangements with Commonwealth, state and territory government agencies are described in the OPEP and OSMIP.
To increase community understanding and appreciation of the marine park's values and support for management arrangements.	
To support continued enjoyment of recreational fishing opportunities within the marine park while maintaining the outstanding cultural and natural values.	
To minimise risks to visitors, and encourage appropriate visitor behaviour.	
To ensure human activities do not significantly impact on historic sites in and adjacent to the marine park.	

Management objectives	Compliance with management plan
Management of commercial values.	
Commercial fishing To recognise and allow for commercial fishing whilst maintaining the cultural and natural values of the marine park.	In the event of a Level 2 or 3 oil spill, the OPEP and OSMIP will be implemented to monitor and mitigate any potential impacts. Arrangements with Commonwealth, state and territory government agencies are described in the OPEP and OSMIP. Traditional owners and Indigenous owner groups will be notified in the event of a spill and will be invited to assist in response strategies, such as shoreline assessment and responses.
Pearling and aquaculture To recognise the historical and socio-economic value of pearling by providing for the maintenance of a viable pearling industry while maintaining the cultural and natural values of the marine park.	
Mineral extractions (oil, gas and mining) To ensure industry and associated activities are managed in a manner consistent with the objectives of the marine park.	
Economic opportunities for traditional owners Enable traditional owners to assess and realise commercial opportunities for their benefit.	
To provide for traditional owner subsistence and commercial enterprises and activities consistent with maintain cultural and natural values of the marine park.	

Assessment of the Beehive-1 exploration drilling LoWC spill risk against the Lalang-garram/Camden Sound Marine Park management plan 73 2013–2023 (Department of Parks and Wildlife, 2013)

The following information summarises the probabilities of exposure (%) to the Lalang-garram/Camden Sound Marine Park based on the RPS (2022) report *Beehive-1 – Exploration Drilling, Crude Oil Spill Modelling with Surface Dispersant Application* (noting the results presented are for the unmitigated case)

Lalang-garram/Camden Sound Marine Park	Summer			Transitional			Winter		
	Low	Mod	High	Low	Mod	High	Low	Mod	High
Sea surface	-	-	-	2	-	-	-	-	-
Dissolved – 0-10 m below sea surface	6	1	-	9	2	-	3	1	-
Entrained – 0-10 m below sea surface	17		9	36		15	19		5

Management actions/ strategies	Compliance with management plan
To ensure the marine park has the appropriate legal, administrative, financial and human resource frameworks in place so that it is appropriately managed in partnership with Traditional Owners and in a collaborative setting with other agencies.	
Implement all legal provisions necessary to establish and jointly manage the marine park, including registration of ILUAs; execution of Joint Management Agreements; reservation of intertidal areas within the marine park; gazettal of a CALM Act classified waters notice; and FRM Act fisheries management orders.	In the event of a Level 2 or 3 oil spill, the OPEP and OSMIP will be implemented to monitor and mitigate any potential impacts. Arrangements with Commonwealth, state and territory government agencies are described in the OPEP and OSMIP. Traditional owners and Indigenous owner groups will be notified in the event of a spill and will be invited to assist in response strategies, such as shoreline assessment and responses.
Develop and implement joint collaborative operational plans [DPaW, relevant JMB(s) DoF].	
Develop and apply management targets for Aboriginal culture and heritage values within one year of management plan implementation.	
Undertake a five-year review of the adequacy of management arrangements in the marine park with a particular focus on humpback whales and the special purpose zone (whale conservation). The review will also include the adequacy of management arrangements for other ecological values, including the adequacy of the zoning scheme and protection of the value of the area for the culture and heritage of Aboriginal people.	
Ensure the provision of necessary information and support for assessments of the implementation of the management plan by the MPRA.	
Take into account the guidance and aspirations of Traditional Owners, which are contained in a number of Traditional Owner documents including the North Kimberley Saltwater Country and Healthy Country Plans (e.g. Wunambal Gaambera Healthy Country Plan 2010-2020 and Dambimangari Healthy Country Plan 2012-2022), in protecting and conserving the value of the land and sea to the culture and heritage of Aboriginal people	

Management actions/ strategies	Compliance with management plan
Ensure the setting of conditions for new developments and operations are consistent with management program objectives and management targets for ecological values.	
Develop a maritime incident response plan, specific to the marine park that complements the state's marine oil spill response plan.	
Undertake a review of shipping activity in the marine park to determine the need for navigational measures such as compulsory pilotage and/or designation of shipping routes.	
Ensure any boundary revision of the pearling 'transport exempt area' is consistent with the special purpose zone (pearling).	
Develop and implement a plan for detection and mitigation response to marine pest incursion/outbreak in the marine park, including vessel risk assessments.	
Through the relevant JMB(s), assist Traditional Owners to develop a sustainable management strategy for turtle and dugong.	
Develop a cultural awareness training program approved by the relevant Aboriginal Corporation(s) for government employees and/or contractors working on the ground or in the management of the proposed park.	
To provide world-class commercial and recreational opportunities for users and visitors to the marine park while conserving Aboriginal cultural heritage and marine biodiversity, with a particular emphasis on the protection of humpback whale cows and calves.	
Gazette a Wildlife Conservation (close season for humpback cows and calves) Notice under the provisions of the WC Act applicable to the special purpose zone (whale conservation) and sanctuary zones specifying provisions such as: 1.1 A person in control of a vessel must not move it closer than 500 metres to humpback cows and calves and should maintain that distance. 1.2 A vessel within 500 metres of a humpback cow and calf should manoeuvre at a speed that creates minimal wake in a direct line to a distance greater than 500 metres from the cow and calf as soon as practicable. 1.3 If a humpback cow and calf approach in close proximity of a vessel, that vessel must be operated in neutral gear and with due consideration to navigation and vessel safety, move the vessel away to a distance greater than 500 metres from the cow and calf initially at a speed less than 5 knots for the first 100 metres. 1.4 No in-water interaction is permitted with humpback cows and calves. 1.5 Helicopters may not hover above humpback cows and calves. 1.6 Helicopters and fixed wing aircraft must remain at an altitude above 1,650 feet (500 metres) and a horizontal distance of 500 metres from humpback cows and calves.	In the event of a Level 2 or 3 oil spill, the OPEP and OSMIP will be implemented to monitor and mitigate any potential impacts. Arrangements with Commonwealth, state and territory government agencies are described in the OPEP and OSMIP. Traditional owners and Indigenous owner groups will be notified in the event of a spill and will be invited to assist in response strategies, such as shoreline assessment and responses.

Management actions/ strategies	Compliance with management plan
1.7 A person may not make, or cause to be made, a noise that is likely to frighten or otherwise cause distress to a whale because of its loudness or suddenness or for any other reason. 1.8 A person may not play a recording of sounds made under water in a manner that is likely to be heard by a whale	
During the life of the management plan, consider the need and options for temporal closures to vessels during the core whale visitation period in the special purpose zone (whale conservation).	
If necessary, and taking into account vessel safety issues, gazette speed restriction notice in special purpose zones (whale conservation) and sanctuary zones to reduce the risk of vessel collision with humpback whales.	
Consider commercially licensed operators that may be exempt from some conditions of the Wildlife Conservation (close season for humpback cows and calves) Notice if engaged in endorsed research and monitoring programs for humpback whale cows and calves.	
Ensure that the granting and renewal of commercial operations licences and leases in relation to marine park access and wildlife interaction is consistent with the management plan permitted use table, management targets, Wildlife Conservation (close season) Notices and any other conditions developed for Lalang-garram / Camden Sound Marine Park.	
Control access to sites that Traditional Owners consider unsuitable for visitation through the commercial tour operator licence system in collaboration with Traditional Owners.	
Apply strict commercial tour operator conditions to ensure culturally sensitive and appropriate visitation to approved cultural heritage sites and traditional country in collaboration with Traditional Owners.	
Ensure licence conditions for commercial tour vessels engaged in whale watching consistently include a requirement for operators to collect basic information on whale position and behaviour to assist humpback whale research and monitoring.	
Consider the restriction of access to localised high-use humpback whale calving and nursing areas by vessel or aircraft if humpbacks are found to be sensitive to these activities.	
Restrict access to seaplane landings in the special purpose zone (whale conservation) between June and November unless absolutely necessary for safety reasons.	
Develop and implement new management arrangements for visitor access, which will include considering restriction of foot access to Montgomery Reef.	
Develop information to ensure that visitors are aware of the cultural values of the marine park and are aware of cultural laws and protocols regarding visitor risk and safety.	
Ensure the granting and renewals of licences and leases relating to pearling operations within the marine park is consistent with the management plan permitted use table and management targets.	

Management actions/ strategies	Compliance with management plan
Ensure the granting and renewal of authorisations for commercial fishing operations within the marine park is consistent with the management plan permitted use table and management targets.	
Ensure the authorisation of maritime developments within the marine park is consistent with the management plan permitted use table and management targets.	
Consult as necessary in regard to the issuing and renewal of licences, leases and permits under the WC Act, CALM Regulations, FRM Act and Pearling Act.	
Advise commercial tour operators that it is prohibited to disturb sites protected under the Maritime Archaeological Act 1973, Historic Shipwrecks Act 1976 and Aboriginal Heritage Act 1976.	
Establish and maintain a quantitative and qualitative spatial database of human use within the marine park.	
Ensure the implementation of EPBC Act Policy Statement 2.1 – Interaction between offshore seismic exploration and whales (Australian Government 2008a) within and adjacent to the marine park.	
Prepare a mooring and anchoring plan	
Implement and administer the mooring and anchoring plan.	
Conduct periodic visitor risk assessments in the marine park as required and mitigate identified issues.	
Facilitate training that enhances knowledge of maritime and terrestrial heritage site management.	
Ensure appropriate liaison regarding the introduction or maintenance of navigation infrastructure within the marine park.	
Develop and implement codes of practice as necessary to ensure responsible use of the marine park.	
To foster a high level of community understanding and appreciation of the marine park's values, as well as support for management.	
Develop an education and interpretation plan designed to raise awareness and stewardship of the importance of ecological, cultural and social values (especially those identified with management targets that form the key performance indicators), with emphasis on humpback whales; appropriate behaviours within zones to reduce human impacts and ensure public safety.	In the event of a Level 2 or 3 oil spill, the OPEP and OSMIP will be implemented to monitor and mitigate any potential impacts. Arrangements with Commonwealth, state and territory government agencies are described in the OPEP and OSMIP. Traditional owners and Indigenous owner groups will be notified in the event of a spill and will be invited to assist in response strategies, such as shoreline assessment and responses.
Implement the education and interpretation plan, including delivery of interpretive materials and presentations to the community, commercial tour operators and businesses with an interest in the marine park.	
Collaboratively develop and implement education and interpretation programs, where culturally appropriate, to raise awareness and knowledge of visitors to the marine park about Aboriginal connections with the marine and coastal environment and areas of cultural significance.	
Provide education and interpretive information about the marine park's values and management arrangements to fishing, boat and yacht clubs operating in Broome, Derby, Wyndham and Darwin.	

Management actions/ strategies	Compliance with management plan
To have meaningful public participation in the management of the marine park.	
Prepare and implement a public participation plan that encourages involvement in management through a range of opportunities.	No impacts.
Facilitate public participation in the management of the marine park through appropriate engagement mechanisms.	
Maintain a database of public participation.	
To have a high level of compliance with management arrangements specified for the marine park.	
Develop and implement a collaborative patrol and enforcement plan. a. Facilitate cross-authorisation of enforcement officers as appropriate. b. Monitor compliance with the Wildlife Conservation (close season for humpback cows and calves) Notice within the special purpose zone (whale conservation) and sanctuary zones. c. Ensure the implementation of the Strategy for the Management of Sewage Discharge from Vessels into the Marine Environment (Department for Planning and Infrastructure 2004) and thereby prohibit the discharge of sewage from vessels in the sanctuary zone, in all areas within 500 metres of the shore and in Kuri Bay, Camden Harbour, Sampson Inlet, St George Basin, Prince Regent River, and 'The River' at Montgomery Reef. d. Promote the management plan among commercial tour operators and visitors to inform them about their responsibilities and encourage them to voluntarily report any inappropriate or unlawful activity. e. Ensure marine park visitors obtain and comply with appropriate regulations, licences and permits. f. Maintain a database of compliance statistics and issues for management assessment. g. Patrol the shoreline and waters of the marine park for marine debris and remove as necessary.	In the event of a Level 2 or 3 oil spill, the OPEP and OSMIP will be implemented to monitor and mitigate any potential impacts. Arrangements with Commonwealth, state and territory government agencies are described in the OPEP and OSMIP. Traditional owners and Indigenous owner groups will be notified in the event of a spill and will be invited to assist in response strategies, such as shoreline assessment and responses.
To implement a collaborative and cost-effective research program to improve knowledge and understanding of humpback whales, other important ecological values, cultural heritage and human use in the marine park.	
In consultation with Traditional Owners prepare a collaborative marine research plan. Ensure the research plan utilises existing traditional ecological knowledge and cutural values, includes further research on indigenous cultural values and integrates research on TEK and cultural values with Western science programs.	In the event of a Level 2 or 3 oil spill, the OPEP and OSMIP will be implemented to monitor and mitigate any potential impacts. Arrangements with Commonwealth, state and territory government agencies are described in the OPEP and OSMIP. Traditional owners and Indigenous owner groups will be notified in the event of a spill and will be invited to assist in response strategies, such as shoreline assessment and responses.
Ensure that all research projects undertaken by or on behalf of DPaW comply with DPaW's Science Policy (No. 78) and associated guidelines.	
Establish habitat mapping and characterisation for the marine park to support management and the five-year review.	
Ensure the marine research plan addresses key gaps in knowledge for threatened species and species of special conservation significance with management targets that form key performance indicators.	

Management actions/ strategies	Compliance with management plan
In consultation with Traditional Owners, develop protocols to ensure the research plan and any research undertaken in the marine park is culturally appropriate and that information shared by Traditional Owners is used in a culturally appropriate manner. Research partnerships between research scientists and Traditional Owners should be accompanied by a research agreement.	
Ensure the granting and renewal of permits relating to scientific research is consistent with the management plan permitted use table, management targets, cultural protocols and Wildlife Conservation (close season) Notices as appropriate	
Undertake further research to assist with a five-year review of the adequacy of management arrangements in the marine park, particularly with regard to humpback whales and the special purpose zone (whale conservation) and the adequacy of the zoning scheme for habitat and species representativeness and protection, including St George Basin.	
Spatially and qualitatively characterise the use of the marine park by humpback whales, including the identification of high-use humpback whale calving and nursing areas.	
Consider and use information from cultural mapping projects initiated by Traditional Owners and use it to help inform management actions and responses in relation to Aboriginal cultural and heritage values.	
Spatially and qualitatively characterise human use of the marine park by recreational and commercial users.	
Investigate the extent and significance of interactions between commercial fishing and humpback whales and other specially protected species.	
Ensure outcomes from the research program are incorporated into adaptive marine park management, as well as planning and policy programs.	
Implement research components of the Humpback whale recovery plan (Australian Government 2005) and other relevant species conservation plans/strategies with respect to the marine park.	
Maintain a database of ecological and socio-economic research relevant to management.	
Provide logistical and financial support to researchers where possible.	
To implement a collaborative and cost-effective marine monitoring program to provide for adaptive management and to inform assessment of management effectiveness within the marine park.	
Prepare a collaborative and cost-effective marine monitoring plan. Ensure the marine monitoring plan uses existing traditional ecological knowledge.	In the event of a Level 2 or 3 oil spill, the OPEP and OSMIP will be implemented to monitor and mitigate any potential impacts. Arrangements with Commonwealth, state and territory government agencies are described
Ensure that all monitoring activities undertaken by or on behalf of DPaW comply with DPaW's Science Policy (No. 78) and associated guidelines.	

Management actions/ strategies	Compliance with management plan
Progressively implement the marine monitoring plan with a primary focus on determining if management targets have been achieved for key performance indicators.	in the OPEP and OSMIP. Traditional owners and Indigenous owner groups will be notified in the event of a spill and will be invited to assist in response strategies, such as shoreline assessment and responses.
Implement monitoring components of the Humpback whale recovery plan (Australian Government 2005), and other relevant species conservation plans/strategies with respect to the marine park.	
Ensure an appropriate level of monitoring is undertaken by developers operating with approval in or adjacent to the marine park.	
Consider the potential implications of climate change when developing a marine monitoring program.	
Develop and apply management targets to ecological values identified through the research program.	
In partnership with Traditional Owner rangers, develop and implement an ongoing turtle and dugong monitoring program.	
Develop and apply management targets for human values and uses.	
Ensure biosecurity issues are considered during the development of the marine monitoring plan.	

Assessment of the Beehive-1 exploration drilling LoWC spill risk against the Rowley Shoals Marine Park Management Plan 2007-2017 (WA Department of Environment and Conservation, 2007)

The following information summarises the probabilities of exposure (%) to the Rowley Shoals Marine Park based on the RPS (2022) report *Beehive-1 – Exploration Drilling, Crude Oil Spill Modelling with Surface Dispersant Application* (noting the results presented are for the unmitigated case)

Rowley Shoals MP	Summer			Transitional			Winter		
	Low	Mod	High	Low	Mod	High	Low	Mod	High
Sea surface	-	-	-	1	-	-	-	-	-
Dissolved – 0-10 m below sea surface	-	-	-	3	-	-	2	1	-
Entrained – 0-10 m below sea surface	7		-	10		4	2		2

Management actions/ strategies	Compliance with management plan
To ensure that a fair and equitable zoning scheme is implemented within the park within 6 months of the release of the management plan.	
Gazette appropriate notices under the CALM Act and FRM Act to implement the zoning scheme.	No impacts.
Inform visitors about the types of zones, reasons for and restrictions on activities in the Marine Park using signage, information manuals and education programs.	
Develop and implement procedures to ensure coordination between Government agencies and stakeholders to maximise efficiency and effectiveness of surveillance and enforcement activities.	
Gazette the Marine Park as a mooring control area and seek appointment as the controlling authority within one year of gazettal.	
Develop Codes of Practice for marine based industries and recreational sectors, where necessary.	
To enhance community understanding of and support for the park through education and interpretation programs and active participation in ongoing management.	
Develop and implement, in collaboration with DoF, other relevant agencies and commercial operators, a marine education program to ensure Park users are aware of and understand the values of the park, management zones and regulations, and the reasons for these controls.	No impacts.
Develop and distribute to the community and visitors a range of education materials about the Marine Park's values, pressures on these values, management strategies and targets, as well as marine conservation more broadly.	
Assist the fishing, tourism, charter and other key sectors to access and deliver marine information courses/materials to their staff or patrons.	
To facilitate on-going community participation in the management of the park.	

Management actions/ strategies	Compliance with management plan
Establish and maintain a MAC, or other appropriate mechanism to facilitate community input into the ongoing management of the park.	No impacts.
Encourage charter industry involvement in education and interpretation programs.	
Encourage charter industry involvement in monitoring programs.	
To maximise public compliance with regulations related to the ongoing management of the park.	
Facilitate cross authorisation of Government enforcement officers as appropriate.	In the event of a Level 2 or 3 oil spill, the OPEP and OSMIP will be implemented to monitor and mitigate any potential impacts. Arrangements with Commonwealth, state and territory government agencies are described in the OPEP and OSMIP. Traditional owners and Indigenous owner groups will be notified in the event of a spill and will be invited to assist in response strategies, such as shoreline assessment and responses.
Develop and implement procedures to ensure coordination between Government agencies to maximise efficiency and effectiveness of patrol and enforcement activities.	
Develop and implement a surveillance and enforcement program, in collaboration with DoF, to ensure an adequate level of compliance with zoning restrictions.	
Assess the suitability and, if appropriate implement remote surveillance technology.	
Implement education strategies outlined in this plan to support compliance activities.	
Develop a MOU between DEC and CoastWatch in regard to maintaining regular surveillance flights and reporting for the Rowley Shoals Marine Park.	
Monitor illegal fishing activities by crews of foreign fishing vessels (CoastWatch).	
Develop and maintain a database of incidences of illegal fishing and species taken by crews of foreign fishing vessels.	
Investigate opportunities for appointment of honorary enforcement officers.	
To remediate existing human impacts on the ecological and social values of the park. To provide visitor facilities that enhance visitor enjoyment of and minimise environmental impact to, the Park. To take reasonable steps to minimise visitor risk where possible in the park	
Undertake triennial assessment to identify areas of human impact in the park, assess rehabilitation options and, where appropriate, implement these measures.	No impacts.
Undertake a triennial risk assessment of human use patterns and trends in the park, and where changes in use have potential to cause environmental impacts, assess preventative options and where appropriate, implement these measures.	
Undertake a triennial assessment of visitor risk in the park and, where necessary, implement appropriate measures to minimise visitor risk.	
To obtain an appropriate understanding of the biodiversity and key ecological and social processes within the park. To promote ecological and social research in the Park that improves knowledge of the Park and the technical basis for management decisions	

Management actions/ strategies	Compliance with management plan
Develop and progressively implement a coordinated and prioritised research program focused on key values and processes of the park.	In the event of a Level 2 or 3 oil spill, the OPEP and OSMIP will be implemented to monitor and mitigate any potential impacts. Arrangements with Commonwealth, state and territory government agencies are described in the OPEP and OSMIP. Traditional owners and Indigenous owner groups will be notified in the event of a spill and will be invited to assist in response strategies, such as shoreline assessment and responses.
Develop and maintain detailed habitat and wildlife distribution maps for the park.	
Develop and maintain a database of human usage in the park.	
Identify, prioritise and communicate high priority ecological and social research projects relevant to the management of the park to appropriate research organisations, via a strategic research plan with the aim of maximising priority research outcomes for the park.	
Develop and maintain a database of historical and current research in the park.	
Facilitate ecological and social research in the park conducted by research, academic and educational institutions, by providing financial and logistical assistance (where possible).	
To determine the status and trends in the condition of, and threats to, the ecological values and the effectiveness of management responses in the reserves. To provide the necessary information for the MPRA and DEC audit function. To promote ecological and social monitoring in the park that can detect changes to the ecological values and aid management decisions.	
Develop and progressively implement an integrated and prioritised ecological and social monitoring program for the Park, with a particular emphasis on MPRA and DEC audit requirements.	In the event of a Level 2 or 3 oil spill, the OPEP and OSMIP will be implemented to monitor and mitigate any potential impacts. Arrangements with Commonwealth, state and territory government agencies are described in the OPEP and OSMIP. Traditional owners and Indigenous owner groups will be notified in the event of a spill and will be invited to assist in response strategies, such as shoreline assessment and responses.
Ensure that proponents of development proposals or activities with the potential to impact on the Park's values conduct appropriate compliance monitoring programs.	
Encourage Commonwealth marine research agencies to continue with long-term reference sites to better understand natural variability and key ecological processes (e.g. recruitment, herbivory etc) in the reserves.	

Limits of acceptable change for the Ord River Floodplain Ramsar Site from the Ecological Character Description (Department of Environment and Conservation, 2008)

Limits of acceptable change
Hydrology
Wet season flows sufficient to provide: 4 or more spells over 125 m 3 /s, 2 or more spells over 200 m 3 /s and at least one over 300 m 3 /s. Total annual durations of at least 10, five and one day(s) for 125 m3 /s, 200 m3 /s and 300 m3 /s spells respectively.
Data deficient, however connectivity between Parry Lagoons and the estuary every 3 – 5 years is optimum for maintaining ecological character. Data deficient – baseline must be established before limits can be set. However annual inundation is essential.
Nutrients
Median nutrient concentrations within the Ord Estuary and Parry Lagoons of: < 50 g/L nitrate-nitrite and < 20 g/L phosphate. To be revised when further data becomes available.
Dissolved oxygen
Dissolved oxygen concentrations in the estuary no less than 90% saturation.
Salinity
Salinity during the dry season in the Estuary and False mouths of the Ord to average 30 – 35 ppt.
Annual median salinity in Parry Lagoons < 1ppt.
Toxicants
Atrazine < 0.7 g/L Endosulphan < 0.03 g/L.
Phytoplankton
Annual median chlorophyll a concentrations 10 – 15 g/L (Note this is an estimate based on limited data and should be reviewed with additional monitoring).
Mangrove
Mangrove extent > 26,000 ha Mangrove species 14 No significant change in mangrove distribution and zonation.
Sedge/grassland
Current extent and community composition not known - baseline must be established before quantitative limits can be made No significant change in community composition or extent.
Aquatic vegetation
Current extent and community composition not known - baseline must be established before quantitative limits can be made No significant change in community composition or extent.
Invertebrates

Limits of acceptable change
Insufficient information to set a baseline - baseline must be established before quantitative limits can be made No significant change in community composition or abundance.
Fish
Insufficient information to set a baseline with the possible exception of barramundi and Threadfin Salmon based on commercial fishing data. However, total catch of Barramundi has decreased substantially since the time of listing (Fisheries WA 2003 – 2007), - Baseline must be established before quantitative limits can be made No significant change in community composition or abundance.
Significant species such as the Freshwater Sawfish, Green Sawfish and Northern River Shark require additional protection. However, without population estimates, quantitative limits are difficult to set. - baseline must be established before quantitative limits can be made.
Wetland dependent birds
LAC set based on Ramsar criteria and reason for listing In a majority of the years in which the Parry Floodplain Wetlands is extensively inundated, the system supports: • 20,000 waterbirds substantial numbers of migratory shorebirds • substantial breeding by waterbirds • large numbers of Plumed Whistling-Duck and Little Curlew • at least occasional (1 in 20 year) occurrence of Australian Painted Snipe provided that appropriately frequent, systematic and comprehensive surveys of waterbirds have been conducted at these times.
Crocodiles
No significant change in mean populations for each of these species Mean population estimates for the Saltwater Crocodile = 80 and Freshwater Crocodile = 400 in the lower Ord River.

Assessment of the Beehive-1 exploration drilling LoWC spill risk against the Lalang-gaddam Marine Park Joint Management Plan 98 2022 (DBCA, 2022)

The following information summarises the probabilities of exposure (%) to the Lalang-gaddam Marine Park based on the RPS (2022) report *Beehive-1 – Exploration Drilling, Crude Oil Spill Modelling with Surface Dispersant Application* (noting the results presented are for the unmitigated case)

Lalang-garram / Camden Sound marine park	Summer			Transitional			Winter		
	Low	Mod	High	Low	Mod	High	Low	Mod	High
Sea surface	-	-	-	2	-	-	-	-	-
Dissolved – 0-10 m below sea surface	6	1	-	9	2	-	3	1	-
Entrained – 0-10 m below sea surface	17		9	36		15	19		5

Wyndham - East Kimberley Nearshore Waters	Summer			Transitional			Winter		
	Low	Mod	High	Low	Mod	High	Low	Mod	High
Shoreline	78	70	41	83	79	30	99	93	23
Sea Surface	70	2	-	77	-	-	93	-	-
Dissolved – 0-10 m below sea surface	61	49	27	79	68	40	97	95	82
Entrained – 0-10 m below sea surface	82		62	86		72	97		97

Derby-West Kimberley Shoreline Sector	Summer			Transitional			Winter		
	Low	Mod	High	Low	Mod	High	Low	Mod	High
Shoreline	2	-	-	2	-	-	-	-	-
Entrained – 0-10 m below sea surface	8		-	13		1	5		-

Kingfisher Islands	Summer			Transitional			Winter		
	Low	Mod	High	Low	Mod	High	Low	Mod	High
Entrained – 0-10 m below sea surface	2		-	2		-	-		-

Wildcat Reefs	Summer			Transitional			Winter		
	Low	Mod	High	Low	Mod	High	Low	Mod	High
Dissolved – 0-10 m below sea surface	5	-	-	4	-	-	3	-	-
Entrained – 0-10 m below sea surface	15		8	35		15	12		5

Cockell and Nicolle Reefs Receptor	Summer			Transitional			Winter		
	Low	Mod	High	Low	Mod	High	Low	Mod	High
Entrained – 0-10 m below sea surface	9		-	11		-	4		1

Management actions/ strategies	Compliance with management plan
To ensure that cultural laws and protocols are understood and respected in the marine park	
Ensure marine park management is consistent with cultural laws and protocols.	No impacts
Support Dambeemangarddee people to visit their Sea Country with younger generations to enable crossgenerational exchange of information and maintain connection to country within the Dambeemangarddee community.	
Support Dambeemangarddee people to undertake cultural planning to record the culture and heritage values of the park and inform management.	
Support DAC to ensure visitors, government employees and/or contractors working in the marine park are aware of cultural laws and protocols by developing and implementing cultural awareness communication tools, training and materials.	
Monitor the level of satisfaction of Dambeemangarddee Traditional Owners that they have been able to maintain connection to country.	
To support DAC to increase Dambeemangarddee's involvement in the day-to-day management and operation of the marine park to enhance Dambeemangarddee's ability to look after country and keep it healthy. To conserve and protect sites of cultural significance	
Continue to support DAC to explore and implement tailored training, education and mentoring to fulfil positions of employment relating to the management of the marine park.	No impacts
Support DAC to build their capacity in the management of the marine park and work collaboratively to develop succession plans, career pathways and support networks.	

Management actions/ strategies	Compliance with management plan
Support DAC to review and adapt operational staff structures to be able to undertake a greater role in the day-to-day park management.	
Support DAC to secure long term funding for positions of employment by Dambeemangarddee people relating to the marine park.	
Monitor the level of satisfaction of Dambeemangarddee Traditional Owner's that they have been able to undertake their role as protectors and managers of country and culture in the context of the jointly managed marine park.	
In collaboration with Dambeemangarddee Traditional Owners, develop and apply commercial tour operator licence conditions to ensure culturally sensitive and appropriate visitation to cultural heritage sites.	
Develop and implement tools to measure and monitor effects of visitor and management activities on cultural heritage, sites and ecological values; and implement strategies to address issues where appropriate.	
Work with Dambeemangarddee people and commercial operators to promote culturally appropriate visitation.	
Support Dambeemangarddee to develop protocols for visitors to Dambeemangarddee Sea Country and educate visitors about appropriate behaviour, respecting privacy and access restrictions where applicable.	
Consider information from cultural mapping projects initiated by Traditional Owners and utilise this to help inform management actions and responses in relation to Aboriginal cultural and heritage values.	
To apply language and traditional knowledge and integrate it with conservation science and management of the marine park To maintain oral traditional knowledge	
Undertake and/ or support research to facilitate the systematic recording of oral knowledge by elders and Traditional Owners whilst on-country.	No impacts.
Monitor the level of satisfaction that traditional ecological knowledge is integrated into management of the marine park.	
Investigate opportunities and develop a process to integrate Dambeemangarddee traditional ecological knowledge with contemporary research and monitoring, where appropriate.	
Work with DAC to change formal names of key sites and areas back to their traditional names (e.g. changing Raft Point to Ngumbree) and ensure traditional names are used in signage, education material, documents, maps and when naming facilities relating to the marine park.	
Support and undertake research to better understand Dambeemangarddee traditional knowledge applicable to the marine park.	
To uphold Traditional Owner connection to country including spiritual and cultural values and customary use.	

Management actions/ strategies	Compliance with management plan
Support Dambeemangarddee people to continue to carry out customary activities, including customary fishing and hunting, in the marine park.	No impacts.
Support Dambeemangarddee people to manage sustainable populations of marine wildlife (e.g. julawaddaa (turtle), waliny (dugongs), sharks, rays etc.).	
Work with Dambeemangarddee people to ensure that monitoring programs provide information to facilitate the development and implementation of sustainable management arrangements for customary take.	
Monitor the level of satisfaction of Dambeemangarddee people that they have been able to continue customary practices and benefit from country consistent with the purpose of the marine park.	
Develop mechanisms to feedback information to the Dambeemangarddee Community on the health of customary hunted animals such as jaiya (fish), julawaddaa (turtles) and waliny (dugongs) to support cultural and marine management decisions and facilitate the development and implementation of sustainable management arrangements for customary hunting.	
To ensure that the seabed structural complexity, geomorphic processes and coastal landforms are not significantly impacted by human activities within the marine park	
Ensure that coastal infrastructure and resource development proposals for the area that have the potential to disturb the geomorphology of the marine park are appropriately assessed in accordance with the Environment Protection Act 1986 (EP Act).	In the event of a Level 2 or 3 oil spill, the OPEP and OSMIP will be implemented to monitor and mitigate any potential impacts. Arrangements with Commonwealth, state and territory government agencies are described in the OPEP and OSMIP. Traditional owners and Indigenous owner groups will be notified in the event of a spill and will be invited to assist in response strategies, such as shoreline assessment and responses.
Monitor the condition of geomorphology and the pressures acting on it within the marine park.	
Undertake and/ or support research to characterise the geomorphic features and processes in the marine park and their associated ecological functions.	
Implement management strategies to mitigate or stop any impacts from human activities within the marine park which are negatively impacting the condition of geomorphology.	
To ensure that water and sediment quality is not significantly impacted by human activities within the marine park	
Undertake and/or support research on water and sediment quality in the marine park.	In the event of a Level 2 or 3 oil spill, the OPEP and OSMIP will be implemented to monitor and mitigate any potential impacts. Arrangements with Commonwealth, state and territory government agencies are described in the OPEP and OSMIP. Traditional owners and Indigenous owner groups will be notified in the event of a spill and will be invited to assist in response strategies, such as shoreline assessment and responses.
Monitor the condition of water and sediment quality within the marine park including establishing baselines for water and sediment variables and identifying the pressures acting on them.	
Implement management strategies to mitigate or stop any impacts from human activities within the marine park which are negatively impacting water and sediment quality.	
Where required, support the development and implementation of Parks and Wildlife's maritime incident response plans, which support the State Emergency Management Plan for Marine Oil Pollution.	
Develop and implement biosecurity, mitigation and detection programs.	

Management actions/ strategies	Compliance with management plan
Investigate and designate suitable areas for vessel sewage discharge and if required, incorporate into education, patrol and enforcement programs to enforce sewage discharge arrangements.	
Work with relevant departments, marine park users and stakeholders to address sources of marine debris and abandoned infrastructure in the marine park to reduce the amount of floating, submerged and beached debris and pollution entering the marine park.	
As part of on-country work, patrol the shoreline and waters of the marine park for marine debris and remove and record as necessary and seek support of partners and marine park users to do the same.	
To ensure that waddaroo (coral reef) communities are not significantly impacted by reef walking and other human activities within the marine park.	
Monitor the condition of waddaroo communities and the pressures acting on them within the marine park.	In the event of a Level 2 or 3 oil spill, the OPEP and OSMIP will be implemented to monitor and mitigate any potential impacts. Arrangements with Commonwealth, state and territory government agencies are described in the OPEP and OSMIP. Traditional owners and Indigenous owner groups will be notified in the event of a spill and will be invited to assist in response strategies, such as shoreline assessment and responses.
Implement management strategies to mitigate or stop any human activities within the marine park which are negatively impacting the condition of waddaroo communities.	
Regulate foot access to intertidal areas considered unsuitable for visitation e.g. intertidal waddaroo reefs (through commercial operator licences, by regulation or other mechanisms as relevant).	
Undertake and/or support research into waddaroo communities in the marine park.	
To ensure the diversity, abundance and health of julum and jirdarm communities are not significantly impacted by human activities within the marine park.	
Implement management strategies to mitigate or stop human activities within the marine park which are negatively impacting the condition of julum and jirdarm communities in the marine park.	In the event of a Level 2 or 3 oil spill, the OPEP and OSMIP will be implemented to monitor and mitigate any potential impacts. Arrangements with Commonwealth, state and territory government agencies are described in the OPEP and OSMIP. Traditional owners and Indigenous owner groups will be notified in the event of a spill and will be invited to assist in response strategies, such as shoreline assessment and responses.
Monitor the condition of julum and jirdarm communities and the pressures acting on them within the marine park.	
Undertake and/or support research on the characterisations of the diversity, density, abundance, and distribution of julum and jirdarm communities in the marine park.	
To ensure that jindirm and galow communities are not significantly impacted by human activities in the marine park.	
Monitor the condition of jindirm and galow communities and the pressures acting on them within the marine park.	In the event of a Level 2 or 3 oil spill, the OPEP and OSMIP will be implemented to monitor and mitigate any potential impacts. Arrangements with Commonwealth, state and territory government agencies are described in the OPEP and OSMIP. Traditional owners and Indigenous owner groups will be notified in the event of a spill and will be invited to assist in response strategies, such as shoreline assessment and responses.
Implement management strategies to mitigate or stop human activities in the marine park which are negatively impacting the condition of jindirm and galow communities in the marine park.	
Undertake and / or support research to characterise the diversity, density, abundance, and distribution of jindirm and galow communities in the marine park.	

Management actions/ strategies	Compliance with management plan
To ensure that filter feeding communities are not significantly impacted by human activities within the marine park.	
Monitor the condition of subtidal filter feeding communities and the pressures acting on them within the marine park.	In the event of a Level 2 or 3 oil spill, the OPEP and OSMIP will be implemented to monitor and mitigate any potential impacts. Arrangements with Commonwealth, state and territory government agencies are described in the OPEP and OSMIP. Traditional owners and Indigenous owner groups will be notified in the event of a spill and will be invited to assist in response strategies, such as shoreline assessment and responses.
Implement management strategies to mitigate or stop any impacts from human activities within the marine park which are impacting the condition of geomorphology.	
Undertake and /or support research to characterise the diversity, density, abundance, and distribution of filter feeding communities in the marine park.	
To ensure that sand and mudflat communities are not significantly impacted by human activities within the marine park.	
Implement management strategies to mitigate or stop any impacts from human activities within the marine park which are negatively impacting the condition of intertidal sand and mudflat communities.	In the event of a Level 2 or 3 oil spill, the OPEP and OSMIP will be implemented to monitor and mitigate any potential impacts. Arrangements with Commonwealth, state and territory government agencies are described in the OPEP and OSMIP. Traditional owners and Indigenous owner groups will be notified in the event of a spill and will be invited to assist in response strategies, such as shoreline assessment and responses.
Monitor the condition of intertidal sand and mudflat communities and the pressures acting on them within the marine park.	
Undertake and/or support research to characterise the diversity and community composition of intertidal sand and mudflat communities in the marine park.	
To ensure julawaddaa are not significantly disturbed by human activities occurring within and immediately adjacent to the marine park. To manage customary harvesting of julawaddaa for cultural and ecological sustainability.	
Monitor the condition of julawaddaa and the pressures acting on them within the marine park.	In the event of a Level 2 or 3 oil spill, the OPEP and OSMIP will be implemented to monitor and mitigate any potential impacts. Arrangements with Commonwealth, state and territory government agencies are described in the OPEP and OSMIP. Traditional owners and Indigenous owner groups will be notified in the event of a spill and will be invited to assist in response strategies, such as shoreline assessment and responses.
Implement management strategies to mitigate or stop any impacts from human activities or predators within the marine park which are negatively impacting on the condition of julawaddaa.	
Ensure that management of julawaddaa in the marine park aligns with relevant international and regional agreements (e.g. Convention of Migratory Species of Wild Animals and MoU on the Conservation and Management of Marine Turtles and their Habitats of Indian Ocean and South-East Asia).	
Refer to customary hunting strategies (section 6.4) to develop sustainable management arrangements for customary hunting of julawaddaa.	
Undertake and/or support research to characterise natural variability, movement patterns and critical habitats for julawaddaa within the marine park.	
To ensure non-targeted (those not targeted by recreational and commercial fishers) jaiya, shark and ray species are not significantly impacted by human activities within the marine park. To manage targeted (those targeted by recreational and commercial fishers) jaiya, shark and ray species for cultural and ecological sustainability.	

Management actions/ strategies	Compliance with management plan
Undertake and /or support research to characterise jaiya, shark and ray diversity, abundance, biomass/ size frequency, movement patterns and critical habitats within the marine park and to understand the ecological role of targeted jaiya, species and the consequences of their removal.	In the event of a Level 2 or 3 oil spill, the OPEP and OSMIP will be implemented to monitor and mitigate any potential impacts. Arrangements with Commonwealth, state and territory government agencies are described in the OPEP and OSMIP. Traditional owners and Indigenous owner groups will be notified in the event of a spill and will be invited to assist in response strategies, such as shoreline assessment and responses.
Monitor the condition of jaiya, shark and rays and the pressures acting on them in the marine park.	
Implement management strategies to mitigate or stop any impacts from human activities within the marine park which are negatively impacting the condition of jaiya and sustainability of targeted jaiya.	
To ensure waliny are not significantly impacted by human activities in the marine park. To manage customary harvesting of waliny for cultural and ecological sustainability.	
Undertake and/or support research to characterise natural variability, movement patterns and critical habitats for waliny within the marine park.	In the event of a Level 2 or 3 oil spill, the OPEP and OSMIP will be implemented to monitor and mitigate any potential impacts. Arrangements with Commonwealth, state and territory government agencies are described in the OPEP and OSMIP. Traditional owners and Indigenous owner groups will be notified in the event of a spill and will be invited to assist in response strategies, such as shoreline assessment and responses.
Monitor the condition of waliny and the pressures acting on them within the marine park	
Maintain records of the incidence of boat collisions with waliny.	
Refer to customary hunting strategies in section 6.4 to develop sustainable management arrangements for customary hunting of waliny.	
To ensure ngunubange are not significantly impacted by human activities in the marine park.	
Spatially and qualitatively characterise the use of the marine park by humpback whales including the identification of high-use humpback whale calving and nursing areas	In the event of a Level 2 or 3 oil spill, the OPEP and OSMIP will be implemented to monitor and mitigate any potential impacts. Arrangements with Commonwealth, state and territory government agencies are described in the OPEP and OSMIP. Traditional owners and Indigenous owner groups will be notified in the event of a spill and will be invited to assist in response strategies, such as shoreline assessment and responses.
Monitor the condition of ngunubange and the pressures acting on them within the marine park	
Implement components of the humpback whale recovery plan (Australian Government 2005) and other relevant species conservation plans/strategies with respect to the marine park.	
Implement management strategies to mitigate or stop any impacts from human activities within the marine park which are negatively impacting the condition of ngunubange which could include: • considering the need and options for temporal closures to vessels or vessel speed restrictions during the core ngunubange visitation period in the special purpose zone (whale conservation). • restricting access to localised high-use humpback whale calving and nursing areas by vessel or aircraft if humpback whales are found to be sensitive to these activities [DoT]. • restrict access to seaplane landings in the special purpose zone (whale conservation) between June and November unless absolutely necessary for safety reasons [DBCA, DoT, Civil Aviation Safety Authority].	

Management actions/ strategies	Compliance with management plan
Ensure the implementation of EPBC Act Policy Statement 2.1 – Interaction between offshore seismic exploration and whales (Australian Government 2008a) within and adjacent to the marine park.	
To ensure jigeedany are not significantly impacted by human activities in the marine park.	
Monitor the condition of jigeedany and the pressures acting on them within the marine park	In the event of a Level 2 or 3 oil spill, the OPEP and OSMIP will be implemented to monitor and mitigate any potential impacts. Arrangements with Commonwealth, state and territory government agencies are described in the OPEP and OSMIP. Traditional owners and Indigenous owner groups will be notified in the event of a spill and will be invited to assist in response strategies, such as shoreline assessment and responses.
Implement management strategies to mitigate or stop any impacts from human activities within the marine park which are negatively impacting the condition of jigeedany.	
Undertake research to characterise jigeedany diversity, abundance, natural variability and critical habitats within the marine park.	
To ensure goiyoiya are not significantly impacted by human activities in the marine park.	
Educate users about known and potential distribution of goiyoiya and of the risk of feeding or interacting with them to ensure compliance.	In the event of a Level 2 or 3 oil spill, the OPEP and OSMIP will be implemented to monitor and mitigate any potential impacts. Arrangements with Commonwealth, state and territory government agencies are described in the OPEP and OSMIP. Traditional owners and Indigenous owner groups will be notified in the event of a spill and will be invited to assist in response strategies, such as shoreline assessment and responses.
Monitor the condition of goiyoiya and the pressures acting on them within the marine park.	
Implement management strategies to mitigate or stop any impacts from human activities within the marine park which are negatively impacting the condition of goiyoiya.	
Undertake and/or support research on the abundance and condition of goiyoiya in the marine park.	
To ensure that sea and shore banarddee that inhabit or migrate through the marine park are not significantly impacted by human activities in the marine park.	
Implement management strategies to mitigate or stop any impacts from human activities within the marine park which are negatively impacting the condition of sea and shore banarddee.	In the event of a Level 2 or 3 oil spill, the OPEP and OSMIP will be implemented to monitor and mitigate any potential impacts. Arrangements with Commonwealth, state and territory government agencies are described in the OPEP and OSMIP. Traditional owners and Indigenous owner groups will be notified in the event of a spill and will be invited to assist in response strategies, such as shoreline assessment and responses.
Monitor the condition of sea and shore banarddee and the pressures acting on them within the marine park.	
Undertake and/or support research to characterise the diversity, abundance, natural variability, distribution and habitat requirements of sea and shore banarddee in the marine park.	
To ensure non-targeted (those not targeted by recreational and commercial fishers) invertebrate species are not significantly impacted by human activities within the marine park. To manage targeted invertebrate species (those targeted by recreational and commercial fishers) for cultural and ecological sustainability.	
Monitor the condition of invertebrates and the pressures acting on them in the marine park.	

Management actions/ strategies	Compliance with management plan
Implement management strategies to mitigate or stop any impacts from human activities within the marine park which are negatively impacting the condition of invertebrates and sustainability targeted invertebrates.	In the event of a Level 2 or 3 oil spill, the OPEP and OSMIP will be implemented to monitor and mitigate any potential impacts. Arrangements with Commonwealth, state and territory government agencies are described in the OPEP and OSMIP. Traditional owners and Indigenous owner groups will be notified in the event of a spill and will be invited to assist in response strategies, such as shoreline assessment and responses.
Undertake and/or support research to characterise the diversity, abundance, natural variability, distribution and habitat requirements of invertebrates within the marine park and to understand the ecological role of targeted invertebrate species and the consequences of their removal.	
To promote visitor access to and enjoyment of the marine park while maintaining the outstanding cultural and natural values. To maintain the cultural, ecological and social values of the marine park that are important for nature-based and cultural tourism.	
Work with Dambeemangarddee people and commercial operators to promote culturally appropriate visitation	No impacts.
Implement regulations to restrict or control access to areas within the marine park that are unsuitable for visitation for ecological, cultural or safety reasons (through commercial operator licences, by regulation or other mechanism as relevant).	
Expand the visitor plan to cover the entirety of the Lalang-gaddam Marine Park and prioritise and implement strategies	
Ensure that the granting and renewal of commercial operations licences and leases in relation to marine park access and wildlife interaction is consistent with the plan, permitted use table, management targets and BC Act.	
Undertake a review of shipping activity in the marine park to determine the need for navigational measures such as compulsory pilotage, speed limits and/or designation of shipping routes.	
Develop information to ensure that visitors are aware of the cultural values of the marine park and are aware of cultural laws and protocols regarding visitor risk and safety.	
Ensure that monitoring programs assess the effectiveness of the park's management arrangements for visitor safety and satisfaction and adapt management strategies as required.	
Conduct periodic visitor risk assessments in the marine park as required and mitigate identified issues.	
Establish and maintain a quantitative and qualitative spatial database of human use within the marine park.	
Ensure maritime safety guidelines are followed.	
Facilitate goiyoiya (estuarine crocodile) handling and removal training for relevant departmental staff and Mayala rangers.	
Investigate the need for additional mechanisms to ensure the safety of seaplanes and vessels operating within the marine park.	

Management actions/ strategies	Compliance with management plan
Work with stakeholders to maintain ongoing, safe access for visitors to Garaanngaddim (Horizontal Falls).	
Work with relevant agencies to prepare for and respond to emergencies.	
Assess the need for a mooring and anchoring plan and prepare and implement if necessary.	
If required and appropriate, promote opportunities for sustainable recreation and tourism, including the provision of visitor facilities if required.	
To maintain the ecological values of the marine park that support recreational fishing. To ensure that, in collaboration with the community and DPIRD, recreational fishing is managed in a manner consistent with maintaining the marine park's cultural and ecological values while providing for social uses and enjoyment. To work collaboratively (agencies, stakeholders and community) to maintain and promote quality recreational and customary fishing opportunities in the marine park.	
Through a collaborative approach with Traditional Owners, Recfishwest and recreational fishers, develop fishing regulations for the SPZ (biocultural conservation) which help ensure recreational fishing is culturally appropriate.	No impacts.
Educate recreational fishers on the zoning scheme and any restrictions that may apply to their activities in the marine park.	
Conduct research to determine if ecosystem effects from recreational fishing occur in the marine park and undertake adaptive management actions if required.	
Investigate whether populations of recreationally targeted species are sustainable in the marine park and undertake adaptive management actions if required.	
Monitor spatial and temporal patterns in recreational fishing activity and catch and report the results to DBCA and the Conservation and Parks Commission for the periodic reviews of the implementation of the management plan.	
Identify sites with maritime heritage in the marine park to facilitate long term management. Provide visitor facilities and or interpretive information to enhance visitor enjoyment of, and where appropriate to mitigate or stop impacts on, maritime heritage values in the marine park.	
Advise commercial tour operators that it is prohibited to disturb sites protected under the Maritime Archaeological Act 1973, Historic Shipwrecks Act 1976 and Heritage Act 2018.	No impacts.
Provide information to enhance visitor enjoyment of, and reduce impacts on, European heritage and other maritime sites if required.	
To enable Dambeemangarddee Traditional Owners to realise livelihoods and achieve economic benefits from their Sea Country, consistent with the purpose of the marine park.	

Management actions/ strategies	Compliance with management plan
Identify opportunities to provide employment, business and training for Dambeemangarddee people on-country to help look after country and maintain connection to country.	No impacts.
Work with stakeholders to facilitate Dambeemangarddee employment opportunities in industries such as the tourism industry.	
Encourage and support Dambeemangarddee people to develop business opportunities on country.	
To maintain the ecological values of the marine park which are important to the continuation of commercial fishing industries. To ensure that, in collaboration with the industry and DPIRD, commercial fishing is managed in a manner that is consisted with maintaining the values of the marine park	
Ensure the granting and renewal of authorisations for commercial fishing operations within the marine park are consistent with the plan, permitted use table and management targets.	No impacts.
Educate commercial fishers on the zoning scheme and any restrictions that may apply to their activities in the marine park.	
Work with commercial fishers, through peak stakeholder bodies to ensure operations are conducted in a culturally sensitive manner.	
Monitor commercial fishing catch and effort in the marine park to inform periodic reviews of the implementation of the management plan.	
Implement management strategies to mitigate or stop any significant impacts from commercial fishing activities within the marine park which are negatively impacting the values of the marine park.	
Conduct research to determine if ecosystem effects from commercial fishing occur in the marine park and investigate the extent and significance of interactions between commercial fishing and marine mammals and other protected species and provide information to managers.	
To maintain the ecological values of the marine park which are important to the continuation of a viable aquaculture and pearling industry. To ensure that, in collaboration with the industry and DPIRD, aquaculture and pearling is managed in a manner that is consistent with maintaining the values of the marine park.	
Ensure any boundary revision of the pearling 'transport exempt area' is consistent with the special purpose zone (pearling).	No impacts.
Ensure the granting and renewals of licences and leases relating to pearling and aquaculture operations within the marine park is consistent with the management plan permitted use table and management targets.	
Work with the pearling industry to ensure continued access through the Garaanngaddim (Horizontal Falls) for recreational and commercial vessels.	

Management actions/ strategies	Compliance with management plan
Work with the aquaculture industry to better understand and mitigate the potential impacts of aquaculture on the values of the marine park, particularly regarding risks to the natural stocks of ilerdda (barramundi) in the marine park and report results back to marine park managers.	
To ensure industry and associated activities are managed in a manner consistent with the objectives of the marine park.	
Consider the quality of the remote seascapes of the marine park in site planning and assessment of development proposals.	In the event of a Level 2 or 3 oil spill, the OPEP and OSMIP will be implemented to monitor and mitigate any potential impacts. Arrangements with Commonwealth, state and territory government agencies are described in the OPEP and OSMIP. Traditional owners and Indigenous owner groups will be notified in the event of a spill and will be invited to assist in response strategies, such as shoreline assessment and responses.
Provide advice on the assessment, setting of conditions, and monitoring and reporting requirements for mineral, petroleum and pipeline activities consistent with management objectives and management targets for values of the marine park.	
Ensure ongoing access to the marine park for the enjoyment of country and customary practices is considered during any development proposal.	
Ensure an appropriate level of monitoring is undertaken by developers operating with approval in or adjacent to the marine park.	
Develop a memorandum of understanding (MoU) with KPA to ensure complementary management arrangements.	
Ensure the setting of conditions for new developments and operations are consistent with management program objectives and management targets for ecological values.	
Provide formal advice to the Commission and EPA for the environmental assessment of proposed mineral, petroleum and pipeline activities in and adjacent to the marine park.	
Ensure appropriate liaison regarding the introduction or maintenance of navigation infrastructure within the marine park.	
Where mining, petroleum and pipeline activities have been approved, allow access for mining, petroleum and pipeline activities (e.g. ship loading facilities) within the Ganbadba Sanctuary Zone, Traverse Island Special Purpose Zone (recreation and conservation) and general use zones where required.	
To obtain increased understanding of the biodiversity, biocultural and cultural values and key ecological process and socio-economic uses within the marine park to inform management. To promote research that improves knowledge of the values of the marine park to inform management decisions. To maximise the integration of conservation science with traditional knowledge in all aspects of research within the marine park	
In consultation with Dambeemangarddee Traditional Owners prepare a collaborative prioritised marine research plan that: • utilises existing traditional knowledge and cultural values • includes further research on Indigenous cultural values	No impacts.

Management actions/ strategies	Compliance with management plan
• integrates research on traditional knowledge and cultural values with Western science programs; • addresses key gaps in knowledge for ecological values of the marine park, including threatened species and species of special conservation significance.	
Ensure granting and renewal of permits relating to scientific research is consistent with the management plan.	
Spatially and qualitatively characterise human use of the marine park by recreational and commercial users.	
Ensure outcomes from the research plan are used to prepare and implement a coordinated and prioritised long-term monitoring plan and are incorporated into adaptive marine park management.	
Develop scientific and research protocols and partnership agreement frameworks through the JMB that support genuine scientific/research partnerships with DAC.	
Develop and implement protocols to ensure research is culturally appropriate and that information shared by Dambeemangarddee Traditional Owners is used in a culturally appropriate manner.	
Provide opportunities for Dambeemangarddee Traditional Owners including rangers and departmental staff to be involved and trained in research applicable to the management of the marine park.	
Ensure findings of research by external organisations is shared with Dambeemangarddee Traditional Owners, DBCA and DPIRD.	
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.	
Identify and communicate high priority research projects which address key knowledge gaps to appropriate external organisations and funding bodies.	
Facilitate or support research in the park, including projects by external organisations, by providing assistance where possible.	
Liaise with industry, other government agencies and non-government organisations to access information held on ecological research in the area.	
Investigate mechanisms to work with commercial operators engaged in wildlife viewing to collect basic information e.g. position and behaviour to assist with research and monitoring.	
To monitor key cultural, ecological and social values in the marine park within a 'condition-pressure-management response' framework, to provide knowledge to assess, adapt and improve management.	
Develop and implement a prioritised collaborative and coordinated monitoring program that; assesses the effectiveness of the zoning scheme and management arrangements for protection of the park values, with a focus on condition, pressure and response indicators and metrics for high priority values.	In the event of a Level 2 or 3 oil spill, the OPEP and OSMIP will be implemented to monitor and mitigate any potential impacts. Arrangements with Commonwealth,

Management actions/ strategies	Compliance with management plan
• assesses the nature, level and potential impacts of pressures (from human activities and external pressures such as climate change), including the provision of early warning of critical changes in pressures on park values. • provides a better understanding of the dynamic nature of undisturbed marine ecosystems as reference points for comparisons with altered environments. • uses traditional knowledge and where possible provides capacity building and employment opportunities for Traditional Owners. • meets Commission requirements for assessing the implementation of the plan.	state and territory government agencies are described in the OPEP and OSMIP. Traditional owners and Indigenous owner groups will be notified in the event of a spill and will be invited to assist in response strategies, such as shoreline assessment and responses.
Support Dambeemangarddee People to develop and apply longer term management targets and performance measures for Aboriginal culture and heritage values.	
Provide necessary information and support for assessments of management plan implementation by the Commission.	
Develop and apply management targets to cultural, ecological and socio-economic values identified through the research and monitoring programs.	
Ensure records are kept of any stranded marine fauna.	
To increase understanding of climate change on the marine park and increase the resilience of values to climate change.	
Undertake research to better understand the emerging and predicted impacts of climate change on ecological and biocultural values.	No impacts.
Educate marine park users about the effects of climate change on the values of the marine park and encourage users to reduce their carbon emissions where possible.	
Support international and national climate change initiatives and where possible develop regional and local level adaptive management responses for the protection of park values, informed by research and monitoring outcomes.	
Monitor marine park values 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.	
Assess areas, habitats and species which are most at risk to the effects of climate change and increase their resilience by reducing other pressures where possible.	
To ensure the marine park has appropriate legal, administrative, financial, operational and human resource frameworks in place so that it is effectively jointly managed in partnership with Dambeemangarddee Traditional Owners and in a collaborative setting with other agencies	
Implement all legal provisions necessary to establish and jointly manage the marine park, including registration of ILUAs; execution of JMAs; reservation of intertidal areas within the marine park; gazettal of a CALM Act classified waters notice; and FRM Act fisheries management orders.	No impacts.

Management actions/ strategies	Compliance with management plan
Work with DAC and Dambeemangarddee Traditional Owners to develop commercial tour operator licence conditions to manage access in special purpose zones (cultural protection) to ensure activities including fishing is compatible with the purpose of protecting the value of the land and waters to the culture and heritage of Traditional Owners.	
Develop and implement joint collaborative operational plans.	
Ensure the objectives detailed in the JMAs are applied to all management activities in the marine park	
Develop and maintain appropriate staff structures and operational equipment, including vessels and infrastructure to implement the plan and JMA effectively.	
In accordance with DPIRD's responsibilities under the FRM Act, Pearling Act 1990, and ARM Act (when implemented), develop a framework for DPIRDs involvement in the joint management of the marine park including mechanisms for DPIRD to attend JMB meetings.	
Consult as necessary in regard to the issuing and renewal of licences, leases and permits under the BC Act, CALM Regulations, FRM Act and Pearling Act 1990.	
Where possible, work with neighbouring land and water managers to reduce environmental impacts on marine park values such as regulating sewage discharge.	
Develop induction materials for new JMB members and DBCA staff to acquaint them with the marine park and the role of the JMB.	
Develop and implement a monitoring and evaluation framework to assess joint management effectiveness for the marine park.	
Provide licences and permits with appropriate conditions where required.	
Undertake and/or support feasibility studies for establishing and using seasonal land-based camps for marine park operations.	
Undertake a five-year review (within five years of the date of the CALM Act s62 classified waters notice for the amalgamated parks) of the adequacy of management arrangements, including the zoning scheme, for the marine park.	
DPIRD to provide advice to the JMB and attend meetings as required.	
To enhance community understanding of and support for the marine park and achieve a high level of compliance with regulations, permitted uses and other management arrangements within the marine park.	
Develop and implement a collaborative education and compliance program to maximise compliance with the management plan and to encourage tour operators, visitors on private vessels and commercial fishing, pearling and mining operators to report any inappropriate or unlawful activity.	No impacts.

Management actions/ strategies	Compliance with management plan
Monitor, promote and enforce compliance with fisheries and marine park legislation, including illegal foreign fishing.	
Collaboratively develop and implement an education and interpretation plan to raise awareness and stewardship of the marine park which includes: • information on ecological and cultural values • information on cultural protocols • the zoning and other management arrangements • the condition of the park • safety and any relevant regulations, policies and guidelines relating to management.	
Ensure marine park users, including commercial operators, are aware of and comply with relevant legislation for the protection of marine mammal and other wildlife interaction policies and guidelines.	
Facilitate cross-authorisation of enforcement officers as appropriate including training Dambeemangarddee Rangers in CALM Act compliance with the intention of obtaining the status of honorary enforcement officers pursuant to the CALM Act.	
Facilitate training of Dambeemangarddee rangers in FRM Act compliance, to enable Dambeemangarddee rangers to engage in DPIRD compliance activities.	
Ensure marine park visitors obtain and comply with appropriate regulations, licences and permits.	
Maintain a database of compliance statistics and adapt management strategies to address any noncompliance issues.	
Develop and implement codes of practice as necessary to ensure responsible use of the marine park.	
Install and maintain zone markers and educational signage for the marine park where appropriate.	
Promote the plan among commercial tour operators and visitors to inform them about their responsibilities and encourage them to voluntarily report any inappropriate or unlawful activity.	
Noting remoteness of the marine park, when opportunities arise, facilitate public participation in the management of the marine park, and maintain a database of public participation.	
To assess and evaluate management effectiveness.	
Develop and implement a performance assessment process that is consistent with DBCA and Commission policy and ensure results are reported back to the Dambeemangarddee Community.	No impacts.
Provide necessary information and support for the performance assessment process.	
Support the JMB and DAC to conduct periodic reviews of the effectiveness of plan implementation in meeting cultural, capacity building and other priority objectives.	

Assessment of the Beehive-1 exploration drilling LoWC spill risk against Mayala Marine Park Management Plan 2022 (DBCA, 2022)

The following information summarises the probabilities of exposure (%) to the Mayala Marine Park based on the RPS (2022) report *Beehive-1 – Exploration Drilling, Crude Oil Spill Modelling with Surface Dispersant Application* (noting the results presented are for the unmitigated case)

Derby-West Kimberley Shoreline Sector	Summer			Transitional			Winter		
	Low	Mod	High	Low	Mod	High	Low	Mod	High
Shoreline	2	-	-	2	-	-	-	-	-
Entrained – 0-10 m below sea surface	8		-	13		1	5		-

Broome Shoreline Sector	Summer			Transitional			Winter		
	Low	Mod	High	Low	Mod	High	Low	Mod	High
Shoreline	1	-	-	-	-	-	1	-	-
Entrained – 0-10 m below sea surface	2		-	7		-	1		-

Bathurst Island Nearshore waters	Summer			Transitional			Winter		
	Low	Mod	High	Low	Mod	High	Low	Mod	High
Sea surface	1	-	-	-	-	-	-	-	-
Shoreline	4	3	-	-	-	-	-	-	-
Dissolved – 0-10 m below sea surface	6	2	-	-	-	-	-	-	-
Entrained – 0-10 m below sea surface	20		12	-		-	-		-

Management actions/ strategies	Compliance with management plan
To uphold Mayala's connection to Country and promote economic opportunities. To promote increased understanding and respect for Mayala living cultural landscape and concepts of the marine park.	
Support Mayala people to visit their saltwater Country to maintain their connection to Country, through on-country trips, employment and enterprise development.	No impacts.
Support Mayala to develop and implement cultural awareness communication tools, emphasising the importance of cultural and heritage values for both Traditional Owners and the wider community.	
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.	
Support Mayala to define a framework to ensure the right cultural processes are used for assessment and approval of proposals in the marine park.	
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.	
Develop cultural awareness training material and implement training for government employees and / or contractors working in the marine park.	
Support Mayala to develop protocols for visitors on Mayala Country and educate visitors about appropriate behaviour, respecting privacy and access restrictions where applicable.	
To facilitate and maintain the opportunity for Mayala people to care for Country and keep it healthy so that future generations can continue to experience Country. To conserve and protect sites of cultural significance.	
Ensure marine park management is consistent with cultural laws and protocols.	No impacts.
Ensure Elders and younger generations are involved in the management of the marine park	
Support Mayala MIAC to establish on-country ranger teams, bases and outposts.	
Work with Mayala people to conduct a mapping exercise to document Mayala Sea Country and intertidal zones to assist other management programs (and share where appropriate).	
Work with Mayala people to conduct a mapping exercise to document Mayala Sea Country and intertidal zones to assist other management programs (and share where appropriate).	
Develop and implement tools to measure and monitor effects of visitor and management activities on cultural heritage values and sites and implement strategies to address issues where appropriate.	
In collaboration with Mayala Traditional Owners, develop and apply commercial operator licence conditions to ensure culturally sensitive and appropriate visitation in the marine park especially for cultural heritage sites.	

Management actions/ strategies	Compliance with management plan
Implement regulations to restrict or control access to areas within the marine park that Mayala Traditional Owners consider unsuitable for visitation (through commercial operator licences, by regulation or other mechanism as relevant).	
Support MIAC to explore and implement, tailored training, education and mentoring to enable Mayala people to fulfil positions of employment relating to the management of the marine park.	
Assess the use and condition of cultural sites and implement further strategies to improve the spiritual and physical condition of them where possible.	
Support Mayala MIAC to communicate and regulate protocols for access to Mayala islands.	
Ensure cultural heritage sites in the marine park are protected, particularly significant and sensitive sites at risk.	
Support MIAC to build their capacity in the management of the marine park and work collaboratively to develop succession plans, career pathways and support networks.	
Develop a transition plan to build Mayala's capacity to take on management of the ranger team and conduct periodic reviews of progress.	
To apply language and traditional knowledge and integrate it with conservation science, management and in education about the marine park. To assist in waking up Oowini language.	
Where possible use Mayala and Bardi languages for place names, in signage, educational material, reporting and when naming facilities.	No impacts.
Continue to support the transfer of traditional knowledge through on country learning opportunities, including supporting Mayala people to visit their saltwater country with younger generations to support cross-generational exchange of information.	
Undertake and support research to gain a better understanding of Mayala traditional knowledge applicable to the marine park.	
Investigate opportunities and develop a process for integrating Mayala traditional knowledge, and knowledge holders, into marine park management.	
Recognition of and support for the right of Mayala people to continue customary practices and to benefit from their Country, consistent with the purpose of the marine park.	
Support Mayala people to continue to carry out customary activities, including customary fishing and hunting, in the marine park.	No impacts.

Management actions/ strategies	Compliance with management plan
As part of the education and interpretation plan develop mechanisms to inform users of the marine park about Mayala rights, as the recognised Traditional Owners, to enjoy Mayala Country and maintain their customary practices.	
Work with Mayala people and other Traditional Owner groups to develop sustainable management arrangements for customary hunting of marine wildlife (e.g. Goorlil (turtles), odorr (dugongs), joorroo (sharks) and barnamb (rays) etc.) and develop a customary fishing/ hunting guide.	
Develop mechanisms to feedback information from research and monitoring programs to the Mayala Community on the condition of customary hunted animals such as goorlil (turtles) and odorr (dugongs), to support cultural and marine management decisions and facilitate the development and implementation of sustainable management arrangements for customary hunting.	
To ensure that marrgoorr (coral) and marnany (reef) communities are not significantly impacted by reef walking and other human activities within the marine park	
Undertake and/or support research to characterise the diversity and condition of marrgoorr (coral) and marnany (reef) communities in the marine park.	In the event of a Level 2 or 3 oil spill, the OPEP and OSMIP will be implemented to monitor and mitigate any potential impacts. Arrangements with Commonwealth, state and territory government agencies are described in the OPEP and OSMIP. Traditional owners and Indigenous owner groups will be notified in the event of a spill and will be invited to assist in response strategies, such as shoreline assessment and responses.
Monitor the condition of marrgoorr (coral) and marnany (reef) communities and the pressures acting on them in the marine park.	
Regulate foot access to intertidal marnany (reef) and other areas unsuitable for visitation (through commercial operator licence conditions, by regulation or other mechanisms as relevant).	
Educate users of the reserves about the ecological importance of marrgoorr (coral) and marnany (reef) communities and the potential detrimental effects of in discriminant marnany (reef) walking, collecting, anchoring and boating activities on communities.	
To ensure mangrove communities are not significantly impacted by human activities in the marine park.	
Undertake and/or support research to characterise the diversity, density, abundance and distribution of mangrove communities in the marine park.	In the event of a Level 2 or 3 oil spill, the OPEP and OSMIP will be implemented to monitor and mitigate any potential impacts. Arrangements with Commonwealth, state and territory government agencies are described in the OPEP and OSMIP. Traditional owners and Indigenous owner groups will be notified in the event of a spill and will be invited to assist in response strategies, such as shoreline assessment and responses.
Monitor the condition of mangrove communities and the pressures acting on them within the marine park.	
Educate users of the important ecological role of mangrove communities and the potential impacts of human activities, particularly vessel wash on these communities.	
To ensure the diversity, abundance and condition of noomool (seagrass) and laanyji (macroalgae) communities are not significantly impacted by human activities within the marine park.	

Management actions/ strategies	Compliance with management plan
Undertake and/or support research to characterise the diversity, abundance and distribution of noomool (seagrass) and laanyji (algae) communities in the marine park.	In the event of a Level 2 or 3 oil spill, the OPEP and OSMIP will be implemented to monitor and mitigate any potential impacts. Arrangements with Commonwealth, state and territory government agencies are described in the OPEP and OSMIP. Traditional owners and Indigenous owner groups will be notified in the event of a spill and will be invited to assist in response strategies, such as shoreline assessment and responses.
Monitor the condition of noomool (seagrass) and laanyji (macroalgae) communities and the pressures acting on them within the marine park.	
Educate users of the important ecological role of noomool (seagrass) and laanyji (macroalgae) communities and the potential impacts of human activities, particularly vessel mooring, and nutrient and pollution inputs on these communities.	
To ensure that water and sediment quality are not significantly impacted by human activities in the marine park.	
Develop and implement a biosecurity, mitigation and monitoring program.	In the event of a Level 2 or 3 oil spill, the OPEP and OSMIP will be implemented to monitor and mitigate any potential impacts. Arrangements with Commonwealth, state and territory government agencies are described in the OPEP and OSMIP. Traditional owners and Indigenous owner groups will be notified in the event of a spill and will be invited to assist in response strategies, such as shoreline assessment and responses.
Undertake and/or support research on water and sediment quality in the marine park, including establishing baselines for water and sediment quality variables.	
Monitor the condition of water and sediment quality within the marine park and the pressures acting on it.	
Designate areas for vessel sewage discharge and incorporate into education, patrol and enforcement programs to enforce sewage discharge arrangements.	
As part of on-Country work, patrol the shoreline and waters of the marine park for marine debris and remove and record as necessary, and seek support of partners and marine park users to do the same.	No impacts.
Work with relevant departments, marine park users and stakeholders to address sources of marine debris and abandoned infrastructure in the marine park to reduce the amount of floating, submerged and beached debris and pollution entering the marine park.	In the event of a Level 2 or 3 oil spill, the OPEP and OSMIP will be implemented to monitor and mitigate any potential impacts. Arrangements with Commonwealth, state and territory government agencies are described in the OPEP and OSMIP. Traditional owners and Indigenous owner groups will be notified in the event of a spill and will be invited to assist in response strategies, such as shoreline assessment and responses.
Map the areas of the marine park that are highly sensitive to oil and chemical spills and ensure that this information is accessible to the State Marine Oil Pollution Coordination Group.	
Educate users of the importance of good water and sediment quality, and the potential impacts human activities, particularly nutrient and pollution inputs can have on these communities.	No impacts.
To ensure that the seabed structural complexity, geomorphic processes and coastal landforms are not significantly impacted by human activities within the marine park.	
Undertake and/ or support research to characterise the geomorphic features and processes in the marine park and their associated ecological functions.	In the event of a Level 2 or 3 oil spill, the OPEP and OSMIP will be implemented to monitor and mitigate any potential impacts. Arrangements with Commonwealth,
Monitor the condition of geomorphology and the pressures acting on it within the marine park	

Management actions/ strategies	Compliance with management plan
Ensure that coastal infrastructure and resource development proposals for the area that have the potential to disturb the geomorphology of the marine park are appropriately assessed in accordance with the EP Act.	state and territory government agencies are described in the OPEP and OSMIP. Traditional owners and Indigenous owner groups will be notified in the event of a spill and will be invited to assist in response strategies, such as shoreline assessment and responses.
To ensure that filter feeding communities are not significantly impacted by human activities within the marine park.	
Undertake and support research to characterise the diversity, density, abundance and distribution of filter feeding communities in the marine park.	No impacts.
Educate users of the important ecological role of subtidal filter feed communities and the potential impacts that human activities can have on these communities.	
Monitor the condition of subtidal filter feeding communities and the pressures acting on them within the marine park.	In the event of a Level 2 or 3 oil spill, the OPEP and OSMIP will be implemented to monitor and mitigate any potential impacts. Arrangements with Commonwealth, state and territory government agencies are described in the OPEP and OSMIP. Traditional owners and Indigenous owner groups will be notified in the event of a spill and will be invited to assist in response strategies, such as shoreline assessment and responses.
To ensure that intertidal sand and mudflat communities are not significantly impacted by human activities within the marine park.	
Undertake and/or support research to characterise the diversity, community composition and condition of intertidal sand and mudflat communities in the marine park.	No impacts.
Monitor the condition of intertidal sand and mudflat communities and the pressures acting on them within the marine park.	In the event of a Level 2 or 3 oil spill, the OPEP and OSMIP will be implemented to monitor and mitigate any potential impacts. Arrangements with Commonwealth, state and territory government agencies are described in the OPEP and OSMIP. Traditional owners and Indigenous owner groups will be notified in the event of a spill and will be invited to assist in response strategies, such as shoreline assessment and responses.
Educate users of the important ecological role of subtidal filter feed communities and the potential impacts that human activities can have on these communities.	No impacts.
To ensure goorlil are not significantly disturbed by human activities occurring within and on the boundary of the marine park To manage customary harvesting of goorlil for cultural and ecological sustainability**.**	

Management actions/ strategies	Compliance with management plan
Ensure that management of goorlil in the marine park supports relevant international and regional agreements (e.g. Convention of Migratory Species of Wild Animals and MoU on the Conservation and Management of Marine Turtles and their Habitats of Indian Ocean and South-East Asia).	In the event of a Level 2 or 3 oil spill, the OPEP and OSMIP will be implemented to monitor and mitigate any potential impacts. Arrangements with Commonwealth, state and territory government agencies are described in the OPEP and OSMIP. Traditional owners and Indigenous owner groups will be notified in the event of a spill and will be invited to assist in response strategies, such as shoreline assessment and responses.
Undertake and/or support research to characterise natural variability, movement patterns and critical habitats for goorlil within the marine park.	No impacts.
Monitor the condition of goorlil and the pressures acting on them within the marine park.	In the event of a Level 2 or 3 oil spill, the OPEP and OSMIP will be implemented to monitor and mitigate any potential impacts. Arrangements with Commonwealth, state and territory government agencies are described in the OPEP and OSMIP. Traditional owners and Indigenous owner groups will be notified in the event of a spill and will be invited to assist in response strategies, such as shoreline assessment and responses.
Educate users of the marine park on how to reduce damage to goorlil habitat and impacts on individuals and to respect cultural practice.	No impacts.
To ensure non-targeted (those not targeted by recreational and commercial fishers) aarli, joorroo and barnamb species are not significantly impacted by human activities within the marine park. To manage targeted (those targeted by recreational and commercial fishers) aarli, joorroo, and barnamb species for cultural and ecological sustainability**.**	
Undertake and /or support research to characterise aarli, joorroo and barnamb diversity, abundance, biomass/size frequency, movement patterns and critical habitats within the marine park and to understand the ecological role of targeted aarli species and the consequences of their removal.	No impacts.
Monitor the condition of aarli (fish), joorroo (sharks and barnamb (ray) stocks and the pressures acting on them in the marine park.	In the event of a Level 2 or 3 oil spill, the OPEP and OSMIP will be implemented to monitor and mitigate any potential impacts. Arrangements with Commonwealth, state and territory government agencies are described in the OPEP and OSMIP. Traditional owners and Indigenous owner groups will be notified in the event of a spill and will be invited to assist in response strategies, such as shoreline assessment and responses.

Management actions/ strategies	Compliance with management plan
Educate users about recreational fishing rules and the ecological importance of aarli (fish), joorroo (sharks) and barnamb (rays).	No impacts.
To ensure odorr are not significantly impacted by human activities in the marine park. To manage customary harvesting of odorr for cultural and ecological sustainability**.**	
Undertake and/or support research on the abundance, distribution, natural variability and habitat requirements of odorr in the marine park.	No impacts.
Monitor the condition of odorr and the pressures acting on them within the marine park.	In the event of a Level 2 or 3 oil spill, the OPEP and OSMIP will be implemented to monitor and mitigate any potential impacts. Arrangements with Commonwealth, state and territory government agencies are described in the OPEP and OSMIP. Traditional owners and Indigenous owner groups will be notified in the event of a spill and will be invited to assist in response strategies, such as shoreline assessment and responses.
Educate users about ways to minimise disturbance to odorr and respect cultural practice	No impacts.
Maintain records of the incidence of boat collisions with odorr	
To ensure miinimbi (whales) and bayalbarr (dolphins) are not significantly impacted by human activities in the marine park.	
Undertake and/or support research to characterise miinimbi and bayalbarr diversity, abundance, natural variability and critical habitats within the marine park.	No impacts.
Monitor the condition of miinimbi and bayalbarr and the pressures acting on them within the marine park	In the event of a Level 2 or 3 oil spill, the OPEP and OSMIP will be implemented to monitor and mitigate any potential impacts. Arrangements with Commonwealth, state and territory government agencies are described in the OPEP and OSMIP. Traditional owners and Indigenous owner groups will be notified in the event of a spill and will be invited to assist in response strategies, such as shoreline assessment and responses.
Facilitate large miinimbi disentanglement response training for relevant departmental staff and Mayala rangers.	No impacts.
Educate users about ways to minimise disturbance to miinimbi and bayalbarr, including rules for miinimbi watching.	
Maintain a record of stranding and mortalities of miinimbi and bayalbarr in the marine park	

Management actions/ strategies	Compliance with management plan
To ensure linygurra (estuarine crocodiles) are not significantly impacted by human activities in the marine park.	
Monitor the condition of linygurra (estuarine crocodiles) and the pressures acting on them within the marine park.	In the event of a Level 2 or 3 oil spill, the OPEP and OSMIP will be implemented to monitor and mitigate any potential impacts. Arrangements with Commonwealth, state and territory government agencies are described in the OPEP and OSMIP. Traditional owners and Indigenous owner groups will be notified in the event of a spill and will be invited to assist in response strategies, such as shoreline assessment and responses.
Undertake and/or support research on the abundance, and condition of linygurra (estuarine crocodiles) in the marine park.	No impacts.
Educate users about known and potential distributions of linygurra (estuarine crocodiles) and of the risk of feeding them and ensure compliance.	
To ensure that sea and shore garrabal (birds) that inhabit or migrate through the marine park are not significantly impacted by human activities in the marine park**.**	
Educate users about ways to minimise disturbance to sea and shorebirds including the use of drones.	No impacts.
Undertake and/or support research to characterise sea and shore garrabal diversity, abundance, natural variability, movement patterns and critical habitats within the marine park	
Monitor the condition of sea and shore garrabal and the pressures acting on them within the marine park	In the event of a Level 2 or 3 oil spill, the OPEP and OSMIP will be implemented to monitor and mitigate any potential impacts. Arrangements with Commonwealth, state and territory government agencies are described in the OPEP and OSMIP. Traditional owners and Indigenous owner groups will be notified in the event of a spill and will be invited to assist in response strategies, such as shoreline assessment and responses.
To ensure non-targeted invertebrate species are not significantly impacted by human activities within the marine park. To manage targeted invertebrate species for cultural and ecological sustainability**.**	
Educate users about ways to minimise disturbance to and taking of invertebrates.	No impacts.
Undertake and/or support research to characterise the diversity, abundance, distribution and habitat requirements of invertebrates within the marine park and to understand the ecological role of targeted invertebrate species and the consequences of their removal [DPIRD for targeted species].	

Management actions/ strategies	Compliance with management plan
Monitor the condition of invertebrates susceptible to localised depletion in the marine park and take remedial action if human activities are impacting these species [DPIRD for targeted species].	In the event of a Level 2 or 3 oil spill, the OPEP and OSMIP will be implemented to monitor and mitigate any potential impacts. Arrangements with Commonwealth, state and territory government agencies are described in the OPEP and OSMIP. Traditional owners and Indigenous owner groups will be notified in the event of a spill and will be invited to assist in response strategies, such as shoreline assessment and responses.
To identify, protect and conserve the natural and cultural values of Tanner Island.	
Ensure cultural heritage values, cultural knowledge and cultural laws and protocols inform land management.	No impacts.
Undertake or support baseline surveys of native plants, animals and ecological communities	In the event of a Level 2 or 3 oil spill, the OPEP and OSMIP will be implemented to monitor and mitigate any potential impacts. Arrangements with Commonwealth, state and territory government agencies are described in the OPEP and OSMIP. Traditional owners and Indigenous owner groups will be notified in the event of a spill and will be invited to assist in response strategies, such as shoreline assessment and responses.
Rename the Tanner Island Nature Reserve to its traditional name.	No impacts.
Implement restrictions on visitor access as required for cultural or environmental reasons (through commercial operator licences, by regulation or other mechanisms as relevant).	
To enable Mayala Traditional Owners to realise livelihoods and achieve economic benefits from their Sea Country, consistent with the purpose of the marine park	
Identify opportunities to provide a range of employment, business and career development opportunities that are culturally appropriate and relevant to the management of the marine park.	No impacts.
Support MIAC to attract funding to assist with management of the marine park.	
Seek to employ or upskill Mayala people in roles relating to the marine park.	
Work with stakeholders to facilitate Mayala employment opportunities in industries such as the tourism industry.	
Encourage and support Mayala people to develop and enhance existing business opportunities on Country.	
To provide for nature-based and cultural tourism activities and ensure that they are managed in a manner that is consistent with maintaining the cultural, ecological and social value of the marine park. To maintain the cultural, ecological and social values of the marine park that are important for nature-based and cultural tourism.	

Management actions/ strategies	Compliance with management plan
To minimise risks to visitors and encourage appropriate behaviour	
Encourage the establishment of Mayala owned commercial tourism business in the marine park.	No impacts.
Ensure promotion and marketing of the marine park is consistent with Mayala's aspirations and cultural protocols.	
In collaboration with Mayala Traditional Owners and MIAC, develop a visitor management plan.	
Work with Mayala people 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 park's cultural, natural, recreation and tourism values • Ensure staff and passengers behave appropriately and respectfully at cultural sites • Ensure staff and passengers respect and adhere to Mayala protocols for visitation on land and sea • Conduct operations according to departmental policy and licence conditions (Tourism WA) • Foster community stewardship of the marine park • Reduce impacts on sites • Enhance visitor's cultural experience	
Develop a voluntary visitor pass, for the marine park to plan for sustainable and culturally appropriate visitor usage.	
Conduct a visitor survey to gather data on visitor numbers, locations, anchoring points etc. to understand potential impacts and to aid the development of monitoring programs and a mooring and anchoring plan.	
Promote opportunities for sustainable recreation and tourism, including the provision of visitor facilities if required.	
Assess the need for a mooring and anchoring plan in the marine park and implement if required.	
Maintain a quantitative and qualitive spatial data bases of human use in the marine park.	
Conduct periodic visitor risk assessment in the marine park as required and mitigate identified issues.	
Facilitate linygurra (estuarine crocodile) handling and removal training for relevant departmental staff and Mayala rangers.	
Educate marine park users about protocols and regulations for the use of drones in the marine park to minimise impacts and disturbance to marine park values.	
Work with relevant agencies to prepare for and respond to emergencies.	

Management actions/ strategies	Compliance with management plan
Work with relevant agencies and industry bodies to adapt and improve existing mapping programs or apps reflecting marine park risks and zoning.	
Undertake a review of shipping activity in the marine park to determine the need for navigational measures such as compulsory pilotage, speed limit and/or designation of shipping routes.	
Educate marine park users of the risks in the marine park e.g. strong currents, cyclones and linygurra (estuarine crocodiles).	
To maintain the ecological values of the marine park that support recreational fishing. To ensure that, in collaboration with the community and DPIRD, recreational fishing is managed in a manner consistent with maintaining the marine park's cultural and ecological values while providing for social uses and enjoyment. To work collaboratively (with agencies, stakeholders and the community) to maintain and promote safe and enjoyable recreational fishing opportunities in the marine park.	
Through a collaborative approach with traditional owners, Recfishwest and recreational fishers, develop fishing regulations for the SPZ (biocultural conservation) which help ensure recreational fishing is culturally appropriate.	No impacts
Work with MIAC and Elders to develop, communicate and promote a Mayala-led sustainable fishing protocol including traditional seasonal calendars and access restrictions for dissemination to recreational fishers, fishing clubs and commercial tour operators.	
Educate recreational fishers on the zoning scheme, fisheries regulations and any restrictions that may apply to their activities in the marine park, seek information on management issues in the marine park and seek feedback on management responses.	
Conduct and/or support research to determine if ecosystem effects from recreational fishing occur in the marine park and undertake adaptive management actions if required	
Monitor recreational fishing catch and effort in the marine park and report the results to DBCA and the Commission for the periodic reviews of the implementation of the management plan.	
Investigate whether populations of recreationally targeted species are sustainable in the marine park and undertake adaptive management actions if required.	
To maintain the ecological values of the marine park which are important to the continuation of commercial fishing industries. To ensure that, in collaboration with the industry and DPIRD, commercial fishing is managed in a manner that is consisted with maintaining the values of the marine park	
Ensure Mayala are kept informed and involved in the monitoring and management measures for commercial fishing stocks in the marine park.	No impacts.
Work with commercial fishers, through peak stakeholder bodies to ensure operations are conducted in a culturally sensitive manner.	

Management actions/ strategies	Compliance with management plan
Conduct research to determine if ecosystem effects from commercial fishing occur in the marine park and undertake adaptive management actions if required.	
Monitor commercial fishing catch and effort in the marine park to inform periodic reviews of the implementation of the management plan and make data available to MIAC/JMB.	
Investigate the extent and significance of interactions between commercial fishing and marine mammals and other protected species and address as required.	
To maintain the ecological values of the marine park which are important to the continuation of a viable aquaculture industry. To ensure that, in collaboration with the industry and DPIRD, aquaculture is managed in a manner that is consistent with maintaining the values of the marine park.	
Ensure that aquaculture authorisations are consistent with the management plan and include appropriate monitoring programs, lighting, navigational marking and site utilisation conditions.	No impacts.
Work with the Aquaculture Council of Western Australia and aquaculture proponents to ensure environmental best practice aquaculture management is applied in the marine park.	
Work with aquaculture companies and DPIRD to help them conduct operations in a culturally sensitive manner.	
To maintain the ecological values of the marine park which are important to the continuation of a viable pearling industry. To ensure that, in collaboration with the industry and DPIRD, pearling is managed in a manner that is consistent with maintaining the values of the marine park.	
Ensure that pearling authorisations are consistent with the management plan and include appropriate monitoring programs, lighting, navigational marking and site utilisations conditions.	No impacts.
Work with pearling proponents and other relevant stakeholders to ensure environmental best practice management is applied in the marine park.	
Work with pearling companies and DPIRD to help them conduct operations in a culturally sensitive manner.	
To ensure that, in collaboration with the Western Australian Museum, human activity does not significantly affect historical sites or shipwrecks in the marine park. To increase awareness of maritime heritage within the local community and among visitors.	
Identify sites with maritime heritage value within the marine park and development and implement plans of management for identified sites (WAM, Heritage Council of WA)	No impacts.
Provide interpretive information to enhance visitor enjoyment of, and where appropriate to mitigate or stop impacts on, maritime heritage values in the marine park.	
To ensure industry, development and associated activities are managed in a manner consistent with the objectives of the marine park.	
Develop a memorandum of understanding (MoU) with KPA to ensure complementary management arrangements.	No impacts.

Management actions/ strategies	Compliance with management plan
Provide formal advice to the Commission, the EPA and/or the Minister for Environment relating to mineral, petroleum and pipeline activities in and adjacent to the marine park.	In the event of a Level 2 or 3 oil spill, the OPEP and OSMIP will be implemented to monitor and mitigate any potential impacts. Arrangements with Commonwealth, state and territory government agencies are described in the OPEP and OSMIP. Traditional owners and Indigenous owner groups will be notified in the event of a spill and will be invited to assist in response strategies, such as shoreline assessment and responses.
Provide advice on the assessment, setting of conditions, and monitoring and reporting requirements for mineral, petroleum and pipeline activities consistent with management objectives and management targets for values of the marine park.	In the event of a Level 2 or 3 oil spill, the OPEP and OSMIP will be implemented to monitor and mitigate any potential impacts. Arrangements with Commonwealth, state and territory government agencies are described in the OPEP and OSMIP. Traditional owners and Indigenous owner groups will be notified in the event of a spill and will be invited to assist in response strategies, such as shoreline assessment and responses.
Consider the quality of the remote seascapes of the marine park in site planning and assessment of development proposals.	No impacts.
To obtain increased understanding of the biodiversity, biocultural and cultural values and key ecological process and socio-economic uses within the marine park to inform management. To promote research that improves knowledge of the values of the marine park to inform management decisions. To maximise the integration of conservation science with traditional ecological knowledge in all aspects of research in the marine park	
Encourage and promote involvement of Mayala people in research projects where possible.	No impacts.
Ensure that new knowledge from research and monitoring is communicated to MIAC and the Mayala community.	In the event of a Level 2 or 3 oil spill, the OPEP and OSMIP will be implemented to monitor and mitigate any potential impacts. Arrangements with Commonwealth, state and territory government agencies are described in the OPEP and OSMIP. Traditional owners and Indigenous owner groups will be notified in the event of a spill and will be invited to assist in response strategies, such as shoreline assessment and responses.
Prepare a research plan which is informed by existing research and considers the research strategies and priorities listed in this joint management plan and/or emerging priorities nominated by the JMB.	
Develop a communication framework to guide the communication of science and knowledge to MIAC and the Mayala community.	
Collate and review existing research information to inform development of a research plan.	
Identify and communicate high priority research projects which address key knowledge gaps to appropriate external organisations and funding bodies.	No impacts.

Management actions/ strategies	Compliance with management plan
Develop and implement protocols (where possible utilising or adapting existing protocols) to ensure research is culturally appropriate, commences only with appropriate permissions and that information shared by Traditional Owners is used in a culturally appropriate manner.	
Develop scientific and research protocols and partnership agreement frameworks through the JMB that support genuine scientific and research partnerships with MIAC.	
Where possible, support two-way science programs in schools.	
Facilitate or support research in the marine park, including projects by external organisations, by providing assistance where possible.	In the event of a Level 2 or 3 oil spill, the OPEP and OSMIP will be implemented to monitor and mitigate any potential impacts. Arrangements with Commonwealth, state and territory government agencies are described in the OPEP and OSMIP. Traditional owners and Indigenous owner groups will be notified in the event of a spill and will be invited to assist in response strategies, such as shoreline assessment and responses.
Ensure granting and renewal of permits relating to scientific research is consistent with the management plan and complies with DBCA's Science Policy (No.28) and associated guidelines and any protocols developed with MIAC.	No impacts.
To monitor key cultural, ecological and social values in the marine park within a 'condition pressure-management response' framework, to provide a basis to assess, adapt and improve management.	
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.	In the event of a Level 2 or 3 oil spill, the OPEP and OSMIP will be implemented to monitor and mitigate any potential impacts. Arrangements with Commonwealth, state and territory government agencies are described in the OPEP and OSMIP. Traditional owners and Indigenous owner groups will be notified in the event of a spill and will be invited to assist in response strategies, such as shoreline assessment and responses.
Encourage monitoring in the marine park which aligns with Mayala and departmental priorities.	
Collate and review existing monitoring information and techniques to inform the development of a monitoring plan	
Prepare a monitoring plan which considers the strategies and priorities listed in this joint management plan and/or emerging priorities nominated by the JMB.	
Develop a cultural values monitoring framework (and data storage and access process) to guide these activities in a joint management context, with respect to cultural Law and governance.	No impacts.
Develop and implement protocols to ensure monitoring is culturally appropriate and that any cultural information shared is used in a culturally appropriate manner e.g. supporting ISWAG/ KISSP protocols.	In the event of a Level 2 or 3 oil spill, the OPEP and OSMIP will be implemented to monitor and mitigate any potential impacts. Arrangements with Commonwealth, state and territory government agencies are described
Investigate opportunities and develop a process to integrate traditional ecological knowledge with monitoring, where appropriate.	

Management actions/ strategies	Compliance with management plan
Liaise with industry, other government agencies and nongovernment organisations to access information held on ecological monitoring in the area.	in the OPEP and OSMIP. Traditional owners and Indigenous owner groups will be notified in the event of a spill and will be invited to assist in response strategies, such as shoreline assessment and responses.
Provide necessary information and support for assessments of management plan implementation by the Commission.	
To increase understanding of climate change on the marine park and increase the resilience of values to climate change.	
Support international and national climate change initiatives where relevant in marine park research and adaptive management.	No impacts.
Ensure that impacts of climate change are considered in monitoring programs of the KPI's for the marine park.	
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.	
Monitor marine park values 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.	
Educate marine park users about the effects of climate change on the values of the marine park and encourage users to reduce their carbon emissions where possible.	
Support or provide necessary information to contribute to climate forecast models to help predict the impacts of climate change on the values of the marine park.	
To ensure the 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.	
Ensure the objectives detailed in the JMA are applied to all management activities in the marine park.	No impacts.
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.	
Implement all legal provisions necessary to establish and jointly manage the marine park including execution of the JMA, gazettal of the zoning scheme under the CALM Act and gazettal of orders under the FRM Act.	
Develop governance tools to support effective and efficient decision-making by the JMB, including terms of references, code of conduct and conflict resolution policy.	
Develop and maintain appropriate staff structures, funding, operational equipment including vessels and infrastructure to adequately implement the joint management plan and JMA.	
Develop and maintain understanding of and support for the marine park governance, management plan and activities by the local Mayala community.	
Investigate the need for, and if required, support MIAC to develop procedures to guide the JMB on what cultural decisions need to be referred to MIAC.	

Management actions/ strategies	Compliance with management plan
Develop and maintain an understanding about the delegation of authority from the MIAC to JMB and vice versa, in relation to advice given to external parties and marine park management decisions, consistent with the joint management plan	
Promote culturally inclusive hiring processes by inviting MIAC nominated JMB representative/s to participate in hiring processes for positions related to the marine park.	
Provide licences and permits with appropriate conditions where required.	
Develop annual work plans.	
Develop collaborative operational plans for the implementation of relevant strategies in the plan.	
Work with the MIAC and Mayala Traditional Owners to develop commercial tour operator licence conditions to manage access in special purpose zones (cultural protection) to ensure activities including fishing are compatible with the purpose of protecting the land and waters to the culture and heritage of Traditional Owners.	
Facilitate regional annual meetings between the JMBs of Mayala, Bardi Jawi and Lalang-gaddam marine parks.	
In accordance with DPIRD's responsibilities under the FRM Act, Pearling Act, and ARM Act (when implemented), develop a framework for DPIRDs involvement in the joint management of the marine park including mechanisms for DPIRD to attend JMB meetings.	
Develop materials to aid communication of the management plan to the Mayala community and support MIAC and JMB in the implementation of the plan.	
Pursue external funding opportunities to implement strategies in the joint management plan.	
DPIRD to provide advice to and attend JMB meetings as required.	
Undertake routine inspections and maintenance of department managed infrastructure in the marine park, particularly zone markers and signage.	
Undertake a five-year review of the permitted activities in the special purpose zones.	
Consider the need for temporary or longer-term restrictions e.g. speed limits and/or additional measures where necessary to protect threatened species, ecological communities, and natural features or for safety reasons.	
To enhance community understanding of and support for the marine park and achieve a high level of compliance with regulations, permitted uses and other management arrangements within the marine park.	
Ensure marine park users, including researchers, obtain and comply with appropriate formal permissions.	No impacts.
Encourage voluntary compliance and peer enforcement of regulations.	

Management actions/ strategies	Compliance with management plan
Develop an education and interpretation program which communicates: • the importance of the marine park's values • the purposes of management zones and regulations • appropriate behaviour to reduce human impacts and ensure public safety • Mayala native title rights and visitor protocols on sea and land; and • considers all education and interpretation strategies listed in the management plan.	
Develop and implement a collaborative patrol and enforcement plan.	
Monitor, promote and enforce compliance with fisheries and marine park legislation, including illegal foreign fishing.	
Install zone markers and educational signage for the marine park where appropriate.	
Noting remoteness of the marine park, where possible develop and implement a public participation plan for the marine park which encourages community involvement in management through a range of opportunities including education, research and monitoring.	
Develop, monitor and maintain a database of compliance statistics and adapt management strategies to address any non-compliance issues.	
Facilitate cross-authorisation of enforcement officers as appropriate including training Mayala rangers in CALM Act compliance with the intention of them obtaining the status of honorary enforcement officers pursuant to the CALM Act.	
Facilitate training of Mayala Rangers in FRM Act compliance, to engage in DPIRD compliance activities.	
To assess and evaluate management effectiveness.	
Develop and implement a performance assessment process that is suitable in a joint management setting that is consistent with DBCA and Commission policy and ensure results are reported back to the Mayala Community.	No impacts.
Through the JMB, support MIAC to conduct periodic reviews of the effectiveness of plan implementation in meeting cultural, capacity building and other priority objectives.	
Develop and implement a monitoring and evaluation framework to assess joint management effectiveness for the marine park.	
Provide necessary information and support for the performance assessment process.	
Implement management strategies to mitigate or stop any impacts from human activities within the marine park which are negatively impacting the values of the marine park.	In the event of a Level 2 or 3 oil spill, the OPEP and OSMIP will be implemented to monitor and mitigate any potential impacts. Arrangements with Commonwealth, state and territory government agencies are described

Management actions/ strategies	Compliance with management plan
	in the OPEP and OSMIP. Traditional owners and Indigenous owner groups will be notified in the event of a spill and will be invited to assist in response strategies, such as shoreline assessment and responses.

Assessment of the Beehive-1 exploration drilling LoWC spill risk against Bardi Jawi Gaarra Marine Park Joint Management Plan 2022 (DBCA, 2022)

The following information summarises the probabilities of exposure (%) to the Bardi Jawi Gaarra Marine Park based on the RPS (2022) report *Beehive-1 – Exploration Drilling, Crude Oil Spill Modelling with Surface Dispersant Application* (noting the results presented are for the unmitigated case)

Broome Shoreline Sector	Summer			Transitional			Winter		
	Low	Mod	High	Low	Mod	High	Low	Mod	High
Shoreline	1	-	-	-	-	-	1	-	-
Entrained – 0-10 m below sea surface	2		-	7		-	1		-

Derby-West Kimberley Shoreline Sector	Summer			Transitional			Winter		
	Low	Mod	High	Low	Mod	High	Low	Mod	High
Shoreline	2	-	-	2	-	-	-	-	-
Entrained – 0-10 m below sea surface	8		-	13		1	5		-

Cunningham Island	Summer			Transitional			Winter		
	Low	Mod	High	Low	Mod	High	Low	Mod	High
Dissolved – 0-10 m below sea surface	-	-	-	1	-	-	1	-	-
Entrained – 0-10 m below sea surface	4		-	9		-	2		-

Management actions/ strategies	Compliance with management plan
To uphold Bardi and Jawi's connection to Country and ensure activities in the marine park do not adversely affect opportunities for Bardi and Jawi people to have ongoing cultural connection to Country and economic opportunities. To promote increased understanding and respect for Bardi and Jawi living cultural landscape and concepts of the marine park	
Support Bardi and Jawi people to maintain their connection to Country, through on-Country trips, employment and enterprise development.	No impacts.
Support Bardi and Jawi 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.	
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.	
Support Bardi and Jawi to define a framework to ensure the right cultural processes are used for assessment and approval of proposals in the marine park	
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.	In the event of a Level 2 or 3 oil spill, the OPEP and OSMIP will be implemented to monitor and mitigate any potential impacts. Arrangements with Commonwealth, state and territory government agencies are described in the OPEP and OSMIP. Traditional owners and Indigenous owner groups will be notified in the event of a spill and will be invited to assist in response strategies, such as shoreline assessment and responses.
Develop cultural awareness training material and implement training for government employees and/or contractors working in the marine park.	No impacts.
Support Bardi and Jawi to develop protocols for visitors on Bardi and Jawi Country and educate visitors about appropriate behaviour, respecting privacy and access restrictions where applicable.	
To facilitate and maintain the opportunity for Bardi and Jawi people to care for Country and keep it healthy so that future generations can continue to experience Country. To conserve and protect sites of cultural significance	
Ensure marine park management is consistent with cultural Laws and protocols.	No impacts.
Ensure cultural Elders and younger generations are involved in the management of the marine park.	
Ensure the management programs for the marine park complement and integrate with those developed and implemented for other areas of Bardi and Jawi Country such as the Bardi Jawi IPA plan.	

Management actions/ strategies	Compliance with management plan
Develop and implement tools to measure and monitor effects of visitor and management activities on cultural heritage values and sites and implement strategies to address issues where appropriate	
In collaboration with Bardi and Jawi Traditional Owners develop and apply commercial operator licence conditions to ensure culturally sensitive and appropriate visitation in the marine park especially for cultural heritage sites.	
Implement regulations to restrict or control access to areas within the marine park that Bardi and Jawi Traditional Owners consider unsuitable for visitation (through commercial operator licences, by regulation or other mechanism as relevant).	
Support BJNAC to explore and implement tailored training, education and mentoring to enable Bardi and Jawi people to fulfil positions of employment relating to the management of the marine park.	
Support BJNAC to build their capacity in the management of the marine park and work collaboratively to develop succession plans, career pathways and support networks.	
Ensure cultural heritage sites in the marine park are protected, particularly significant and sensitive sites at risk.	In the event of a Level 2 or 3 oil spill, the OPEP and OSMIP will be implemented to monitor and mitigate any potential impacts. Arrangements with Commonwealth, state and territory government agencies are described in the OPEP and OSMIP. Traditional owners and Indigenous owner groups will be notified in the event of a spill and will be invited to assist in response strategies, such as shoreline assessment and responses.
Assess the use and condition of cultural sites and implement further strategies to improve the spiritual and physical condition of them where possible.	No impacts.
Collaborate with Bardi and Jawi Rangers to patrol, educate and enforce zoning and management arrangements particularly for the special purpose zones (cultural protection) and restricted access areas.	
To apply language and traditional knowledge and integrate it with conservation science management in education about the marine park.	
Where possible, use Bardi and Jawi place names and Bardi and Jawi language in signage, educational material, reporting and naming facilities.	No impacts.
Continue to support the transfer of traditional knowledge through on-Country learning opportunities.	
Work with Bardi and Jawi to support Bardi and Jawi's language program where relevant to the marine park.	
Undertake and support research to gain a better understanding of Bardi and Jawi traditional knowledge applicable to the marine park and develop a database to capture this knowledge.	

Management actions/ strategies	Compliance with management plan
Investigate opportunities and develop a process for integrating Bardi and Jawi's traditional ecological knowledge, and knowledge holders, with conservation science and management applicable to the marine park.	
Recognition of and support for the right of Bard Jawi people to continue customary practices and to benefit from their Country, consistent with the purpose of the marine park	
Support Bardi and Jawi people to continue to carry out customary activities, including customary fishing and hunting, in the marine park.	No impacts.
As part of the education and interpretation plan develop mechanisms to inform users of the marine park about Bardi and Jawi rights, as the recognised Traditional Owners, to enjoy Bardi and Jawi Country and maintain their customary practices.	
Work with Bardi and Jawi people and other traditional owner groups to develop sustainable management arrangements plan for customary fishing and hunting of marine wildlife (e.g. goorlil (turtles), odorr (dugongs), joorroo (sharks) and barnamb (rays) etc. and develop a customary fishing/ hunting guide.	
Develop mechanisms to feedback information to the Bardi and Jawi Community on the condition of customary hunted animals such as green turtles and odorr (dugongs), to support cultural and marine management decisions and facilitate the development and implementation of sustainable management arrangements for customary hunting.	
To ensure that marrgoorr and marnany communities are not significantly impacted by reef walking and other human activities within the marine park.	
Undertake and/or support research on marrgoorr and marnany communities in the marine park.	No impacts.
Monitor the condition of marrgoorr and marnany communities and the pressures acting on them in the marine park.	In the event of a Level 2 or 3 oil spill, the OPEP and OSMIP will be implemented to monitor and mitigate any potential impacts. Arrangements with Commonwealth, state and territory government agencies are described in the OPEP and OSMIP. Traditional owners and Indigenous owner groups will be notified in the event of a spill and will be invited to assist in response strategies, such as shoreline assessment and responses.
Regulate foot access to intertidal marnany and other areas unsuitable for visitation (through commercial operator licences, by regulation or other mechanisms as relevant).	No impacts.
Educate users of the marine park about the ecological importance of marrgoorr (coral) and marnany (reef) communities and the potential detrimental effects of indiscriminate marnany (reef) walking, collecting, anchoring and boating activities on communities.	

Management actions/ strategies	Compliance with management plan
To ensure mangrove communities are not significantly impacted by human activities in the marine park.	
Educate users of the important ecological role and cultural value of mangrove and saltmarsh communities and the potential impacts of human activities, particularly vehicle damage.	No impacts.
Undertake and/or support research to characterise the diversity, density, abundance and distribution of mangrove and saltmarsh communities in the marine park.	
Monitor the condition of mangrove and saltmarsh communities and the pressures acting on them within the marine park.	In the event of a Level 2 or 3 oil spill, the OPEP and OSMIP will be implemented to monitor and mitigate any potential impacts. Arrangements with Commonwealth, state and territory government agencies are described in the OPEP and OSMIP. Traditional owners and Indigenous owner groups will be notified in the event of a spill and will be invited to assist in response strategies, such as shoreline assessment and responses.
To ensure the diversity, abundance and condition of noomool and laanyji communities are not significantly impacted by human activities within the marine park	
Undertake and/or support research to characterise the diversity, density, abundance and distribution of noomool and laanyji communities in the marine park.	No impacts.
Monitor the condition of noomool and laanyji communities and the pressures acting on them within the marine park.	In the event of a Level 2 or 3 oil spill, the OPEP and OSMIP will be implemented to monitor and mitigate any potential impacts. Arrangements with Commonwealth, state and territory government agencies are described in the OPEP and OSMIP. Traditional owners and Indigenous owner groups will be notified in the event of a spill and will be invited to assist in response strategies, such as shoreline assessment and responses.
Educate users of the important ecological role of noomool and laanyji communities and the potential impacts of human activities, particularly vessel mooring, and nutrient and pollution inputs on these communities.	No impacts.
To ensure that water and sediment quality are not significantly impacted by human activities in the marine park.	
Develop and implement a biosecurity, detection and mitigation program.	No impacts.
Undertake and/or support research on water and sediment quality in the marine park, including establishing baselines for water and sediment quality.	
Monitor the condition of water and sediment quality within the marine park including establishing baselines for water and sediment quality variables and identifying the pressures acting on it.	In the event of a Level 2 or 3 oil spill, the OPEP and OSMIP will be implemented to monitor and mitigate any

Management actions/ strategies	Compliance with management plan
Map the areas of the marine park that are highly sensitive to oil and chemical spills and ensure that this information is accessible to the State Marine Oil Pollution Coordination Group.	potential impacts. Arrangements with Commonwealth, state and territory government agencies are described in the OPEP and OSMIP. Traditional owners and Indigenous owner groups will be notified in the event of a spill and will be invited to assist in response strategies, such as shoreline assessment and responses.
Designate areas for vessel sewage discharge and incorporate into education, patrol and enforcement programs to enforce sewage discharge arrangements.	No impacts.
As part of on-Country work, patrol the shoreline and waters of the marine park for marine debris and remove and record as necessary, and seek support of partners and marine park users to do the same.	In the event of a Level 2 or 3 oil spill, the OPEP and OSMIP will be implemented to monitor and mitigate any potential impacts. Arrangements with Commonwealth, state and territory government agencies are described in the OPEP and OSMIP. Traditional owners and Indigenous owner groups will be notified in the event of a spill and will be invited to assist in response strategies, such as shoreline assessment and responses.
Work with relevant departments, marine park users and stakeholders to address sources of marine debris and abandoned infrastructure in the marine park to reduce the amount of floating, submerged and beached debris and pollution entering the marine park.	
Educate users of the importance of good water and sediment quality, and the potential impacts human activities, particularly nutrient and pollution inputs can have on these communities.	No impacts.
To ensure that the seabed structural complexity, geomorphic processes and coastal landforms are not significantly impacted by human activities within the marine park.	
Undertake and/or support research to characterise the geomorphic features and processes in the marine park.	No impacts.
Monitor the condition of geomorphology and the pressures acting on it within the marine park.	
Ensure that coastal infrastructure and resource development proposals for the area that have the potential to disturb the geomorphology of the marine park are appropriately assessed in accordance with the EP Act.	
To ensure that filter feeding communities are not significantly impacted by human activities within the marine park.	
Educate users of the important ecological role of subtidal filter feed communities and the potential impacts that human activities can have on these communities.	No impacts.
Undertake and support research to characterise the diversity, density, abundance and distribution of filter feeding communities in the marine park.	
Monitor the condition of subtidal filter feeding communities and the pressures acting on them within the marine park.	In the event of a Level 2 or 3 oil spill, the OPEP and OSMIP will be implemented to monitor and mitigate any potential impacts. Arrangements with Commonwealth, state and territory government agencies are described

Management actions/ strategies	Compliance with management plan
	in the OPEP and OSMIP. Traditional owners and Indigenous owner groups will be notified in the event of a spill and will be invited to assist in response strategies, such as shoreline assessment and responses.
To ensure that intertidal sand and mudflat communities are not significantly impacted by human activities within the marine park.	
Undertake and/ or support research to characterise the diversity, community composition and condition of intertidal sand and mudflat communities and oombans in the marine park.	No impacts.
Monitor the condition of intertidal sand and mudflat communities and oombans and the pressures acting on them within the marine park.	In the event of a Level 2 or 3 oil spill, the OPEP and OSMIP will be implemented to monitor and mitigate any potential impacts. Arrangements with Commonwealth, state and territory government agencies are described in the OPEP and OSMIP. Traditional owners and Indigenous owner groups will be notified in the event of a spill and will be invited to assist in response strategies, such as shoreline assessment and responses.
Educate users of the important ecological role of intertidal sand and mudflat communities and the potential impacts that human activities can have on these communities.	No impacts.
To ensure goorlil are not significantly disturbed by human activities occurring within and on the boundary of the marine park. To manage customary harvesting of goorlil for cultural and ecological sustainability.	
Ensure that management of goorlil in the marine park supports relevant international and regional agreements (e.g. Convention of Migratory Species of Wild Animals and MoU on the Conservation and Management of Marine Turtles and their Habitats of Indian Ocean and South-East Asia).	No impacts.
Undertake and/or support research to characterise natural variability, movement patterns and critical habitats for goorlil within the marine park.	
Monitor the condition of goorlil and the pressures acting on them within the marine park.	In the event of a Level 2 or 3 oil spill, the OPEP and OSMIP will be implemented to monitor and mitigate any potential impacts. Arrangements with Commonwealth, state and territory government agencies are described in the OPEP and OSMIP. Traditional owners and Indigenous owner groups will be notified in the event of a spill and will be invited to assist in response strategies, such as shoreline assessment and responses.

Management actions/ strategies	Compliance with management plan
Educate users of the marine park on how to reduce damage to goorlil habitat and impacts on individuals and to respect cultural practice.	No impacts.
To ensure non-targeted (those not targeted by recreational and commercial fishers) aarli, joorroo and barnamb species are not significantly impacted by human activities within the marine park. To manage targeted (those targeted by recreational and commercial fishers) aarli, joorroo and barnamb species for cultural and ecological sustainability	
Undertake or support research to characterise aarli, joorroo and barnamb diversity, abundance, biomass/size frrequency, movement patterns and critical habitats within the marine park and to understand the ecological role of targeted aarli species and the consequences of their removal.	No impacts.
Monitor the condition of aarli, joorroo and barnamb stocks and the pressures acting on them in the marine park.	In the event of a Level 2 or 3 oil spill, the OPEP and OSMIP will be implemented to monitor and mitigate any potential impacts. Arrangements with Commonwealth, state and territory government agencies are described in the OPEP and OSMIP. Traditional owners and Indigenous owner groups will be notified in the event of a spill and will be invited to assist in response strategies, such as shoreline assessment and responses.
Educate users about recreational fishing rules and the ecological importance of aarli (fish), joorroo (sharks) and barnamb (rays).	No impacts.
To ensure odorr are not significantly impacted by human activities in the marine park. To manage customary harvesting of odorr for cultural and ecological sustainability.	
Undertake and/or support research on the abundance, distribution, natural variability and habitat requirements of odorr in the marine park.	No impacts.
Monitor the condition of odorr and the pressures acting on them within the marine park.	In the event of a Level 2 or 3 oil spill, the OPEP and OSMIP will be implemented to monitor and mitigate any potential impacts. Arrangements with Commonwealth, state and territory government agencies are described in the OPEP and OSMIP. Traditional owners and Indigenous owner groups will be notified in the event of a spill and will be invited to assist in response strategies, such as shoreline assessment and responses.
Educate users about ways to minimise disturbance to odorr and respect cultural practice.	No impacts.
Maintain records of the incidence of boat collisions with odorr.	
To ensure miinimbi and bayalbarr are not significantly impacted by human activities in the marine park	

Management actions/ strategies	Compliance with management plan
Facilitate large whale disentanglement response training for relevant departmental staff and Bardi Jawi Rangers.	No impacts.
Educate users about ways to minimise disturbance to miinimbi (whales) and bayalbarr (dolphins), including rules for whale watching.	
Maintain a record of stranding and mortalities of miinimbi (whales) and bayalbarr (dolphins) in the marine park.	
Monitor the condition of miinimbi and bayalbarr and the pressures acting on them within the marine park.	In the event of a Level 2 or 3 oil spill, the OPEP and OSMIP will be implemented to monitor and mitigate any potential impacts. Arrangements with Commonwealth, state and territory government agencies are described in the OPEP and OSMIP. Traditional owners and Indigenous owner groups will be notified in the event of a spill and will be invited to assist in response strategies, such as shoreline assessment and responses.
Undertake and/or support research to characterise miinimbi and bayalbarr diversity, abundance, natural variability and critical habitats within the marine park.	No impacts.
To ensure linygurra are not significantly impacted by human activities in the marine park.	
Educate users about known and potential distributions of linygurra and of the risk of feeding them and ensure compliance.	No impacts.
Undertake and/or support research on the abundance and condition of linygurra in the marine park.	
Monitor the condition of linygurra and the pressures acting on them within the marine park.	In the event of a Level 2 or 3 oil spill, the OPEP and OSMIP will be implemented to monitor and mitigate any potential impacts. Arrangements with Commonwealth, state and territory government agencies are described in the OPEP and OSMIP. Traditional owners and Indigenous owner groups will be notified in the event of a spill and will be invited to assist in response strategies, such as shoreline assessment and responses.
To ensure that sea and shore garrabal (birds) that inhabit or migrate through the marine park are not significantly impacted by human activities in the marine park.	
Educate users about ways to minimise disturbance to sea and shore garrabal including the use of drones.	No impacts.
Undertake and/or support research to characterise sea and shore garrabal diversity, abundance, natural variability, movement patterns and critical habitats within the marine park.	

Management actions/ strategies	Compliance with management plan
Monitor the condition of sea and shore garrabal and the pressures acting on them within the marine park.	In the event of a Level 2 or 3 oil spill, the OPEP and OSMIP will be implemented to monitor and mitigate any potential impacts. Arrangements with Commonwealth, state and territory government agencies are described in the OPEP and OSMIP. Traditional owners and Indigenous owner groups will be notified in the event of a spill and will be invited to assist in response strategies, such as shoreline assessment and responses.
To ensure non-targeted invertebrate species are not significantly impacted by human activities within the marine park. To manage targeted invertebrate species for cultural and ecological sustainability	
Educate users about ways to minimise disturbance and taking of invertebrates (e.g. trumpet shells and clams).	No impacts.
Undertake and/or support research to characterise the diversity, abundance, natural variability, distribution and habitat requirements of invertebrates within the marine park and to understand the ecological role of targeted invertebrate species and the consequences of their removal.	
Monitor the condition of invertebrates susceptible to localised depletion in the marine park and take remedial action if human activities are impacting these species.	In the event of a Level 2 or 3 oil spill, the OPEP and OSMIP will be implemented to monitor and mitigate any potential impacts. Arrangements with Commonwealth, state and territory government agencies are described in the OPEP and OSMIP. Traditional owners and Indigenous owner groups will be notified in the event of a spill and will be invited to assist in response strategies, such as shoreline assessment and responses.
To identify, protect and conserve the natural and cultural values of Swan Island	
Ensure cultural heritage values, cultural knowledge and cultural Laws and protocols inform land management.	No impacts.
Rename the Swan Island Nature Reserve to its traditional name.	
Implement restrictions on visitor access as required for cultural or environmental reasons (through commercial operator licences, by regulation or other mechanisms as relevant).	In the event of a Level 2 or 3 oil spill, the OPEP and OSMIP will be implemented to monitor and mitigate any potential impacts. Arrangements with Commonwealth, state and territory government agencies are described in the OPEP and OSMIP. Traditional owners and Indigenous owner groups will be notified in the event of a spill and will be invited to assist in response strategies, such as shoreline assessment and responses.

Management actions/ strategies	Compliance with management plan
Undertake or support baseline surveys of native plants, animals and ecological communities.	No impacts.
To enable Bardi and Jawi Traditional Owners to realise livelihoods and achieve economic benefits from their Sea Country, consistent with the purpose of the marine park	
Identify opportunities to provide a range of employment, business and career development opportunities that are culturally appropriate and relevant to the management of the marine park.	No impacts.
Seek to employ or train Bardi and Jawi people in roles relating to the management of the marine park.	
Work with stakeholders to facilitate Bardi and Jawi employment opportunities in industries such as the tourism industry.	
Encourage and support Bardi and Jawi people to develop and enhance business opportunities on-Country.	
Support BJNAC to attract funding to assist with management of the marine park.	
To provide for nature-based and cultural tourism activities and ensure that they are managed in a manner that is consistent with maintaining the cultural, ecological and social value of the marine park. To maintain the cultural, ecological and social values of the marine park that are important for nature-based and cultural tourism. To minimise risks to visitors and encourage appropriate behaviour.	
Encourage the establishment of Bardi and Jawi owned commercial tourism businesses in the marine park.	No impacts.
Ensure promotion and marketing of the marine park is consistent with Bardi and Jawi's aspirations and cultural protocols.	
Work with Bardi and Jawi people 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 park's cultural, natural, recreation and tourism values • Ensure staff and passengers behave appropriately and respectfully at cultural sites • Conduct operations according to Parks and Wildlife Service policy and licence conditions • Foster community stewardship of the marine park • Reduce impacts on sites • Enhance visitor's cultural experiences	
In collaboration with Bardi and Jawi Traditional Owners and BJNAC, develop a visitor management plan.	
Develop a voluntary visitor pass, for the marine park to plan for sustainable and culturally appropriate visitor usage.	
Conduct a visitor survey to gather data on use of the marine park including visitor numbers, locations and anchoring points to understand potential impacts and direct monitoring programs.	

Management actions/ strategies	Compliance with management plan
Assess the need for a mooring and anchoring plan in the marine park and implement if required.	
Conduct periodic visitor risk assessment in the marine park as required and mitigate identified issues.	
Undertake a review of shipping activity in the marine park to determine the need for navigational measures such as compulsory pilotage, speed limit and/or designation of shipping routes.	
Maintain a quantitative and qualitative spatial database of human use in the marine park.	
Work with relevant agencies and industry bodies to adapt and improve existing mapping programs or apps reflecting marine park risks and zoning.	
Educate marine park users of the risks in the marine park including strong currents, cyclones and crocodiles.	
Facilitate linygurra (estuarine crocodile) handling and removal training for relevant departmental staff and Mayala rangers.	
Work with relevant agencies to prepare for and respond to emergencies situations e.g. search and rescue.	
Educate marine park users about protocols and regulations for the use of drones in the marine park to minimise impacts and disturbance to marine park values.	
Promote opportunities for sustainable recreation and tourism, including the provision of visitor facilities if required.	
To maintain the ecological values of the marine park that support recreational fishing. To ensure that, in collaboration with the community and DPIRD, recreational fishing is managed in a manner consistent with maintaining the marine park's cultural and ecological values while providing for social uses and enjoyment. To work collaboratively with agencies, stakeholders and the community to maintain and promote safe and enjoyable recreational fishing opportunities in the marine park.	
Through a collaborative approach with traditional owners Recfishwest, and recreational fishers, develop fishing regulations for the SPZ (biocultural conservation) which help ensure recreational fishing is culturally appropriate.	No impacts.
Work with BJNAC and Elders to develop, communicate and promote a Bardi and Jawi-led sustainable fishing protocol including traditional seasonal calendars and access restrictions for dissemination to recreational fishers, fishing clubs and commercial tour operators.	
Educate recreational fishers on the zoning scheme, fisheries regulations and any restrictions that may apply to their activities in the marine park.	
Conduct research to determine if ecosystem effects from recreational fishing occur in the marine park and undertake adaptive management actions if required.	

Management actions/ strategies	Compliance with management plan
Monitor recreational fishing catch and effort in the marine park and report the results to DBCA and the Commission for the periodic reviews of the implementation of the management plan.	
Investigate whether the take of recreationally targeted species is sustainable in the marine park and undertake adaptive management actions if required.	
To maintain the ecological values of the marine park which are important to the continuation of commercial fishing industries. To ensure that, in collaboration with the industry and DPIRD, commercial fishing is managed in a manner that is consisted with maintaining the values of the marine park.	
Ensure Bardi and Jawi are kept informed and where possible involved in the monitoring and management measures for commercial aarli (fish) stocks in the marine park.	No impacts.
Work with commercial fishers, through peak stakeholder bodies, to ensure operations are conducted in a culturally sensitive manner.	
Conduct research to determine if ecosystem effects from commercial fishing occur in the marine park and undertake adaptive management actions if required.	
Investigate the extent and significance of interactions between commercial fishing and marine mammals and other protected species and address as required.	
Monitor commercial fishing catch and effort in the marine park to inform periodic reviews of the implementation of the management plan and make data available to MIAC/ JMB.	
To maintain the ecological values of the marine park which are important to the continuation of a viable aquaculture industry. To ensure that, in collaboration with the industry and DPIRD, aquaculture is managed in a manner that is consistent with maintaining the values of the marine park.	
Work with the Aquaculture Council of Western Australia and aquaculture proponents to ensure environmental best practice aquaculture management is applied in the marine park.	No impacts.
Work with aquaculture companies and DPIRD to help them conduct operations in a culturally sensitive manner.	
Monitor, promote and enforce compliance with fisheries and marine park legislation.	
Ensure that aquaculture authorisations are consistent with the management plan and include appropriate monitoring programs, lighting, navigational marking and site utilisation conditions.	
To maintain the ecological values of the marine park which are important to the continuation of a viable pearling industry. To ensure that, in collaboration with the industry and DPIRD, pearling is managed in a manner that is consistent with maintaining the values of the marine park.	
Work with the Pearl Producers Association and pearling proponents to ensure environmental best practice management is applied in the marine park.	No impacts.
Work with pearling companies and DPIRD to help them conduct operations in a culturally sensitive manner.	

Management actions/ strategies	Compliance with management plan
Monitor, promote and enforce compliance with fisheries and marine park legislation.	
Ensure that pearling authorisations are consistent with the management plan and include appropriate monitoring programs, lighting, navigational marking and site utilisation conditions.	
To ensure that, in collaboration with the Western Australian Museum, human activity does not significantly affect historical sites or shipwrecks in the marine park. To increase awareness of maritime heritage within the local community and among visitors.	
Identify sites with maritime heritage value within the marine park and develop and implement plans of management for identified sites.	No impacts.
Provide interpretive information to enhance visitor enjoyment of and, where appropriate, to mitigate or stop impacts on maritime heritage values in the marine park.	
To ensure industry, development and associated activities are managed in a manner consistent with the objectives of the marine park.	
Provide formal advice to the Commission, the EPA and/or the Minister for Environment relating to mineral, petroleum and pipeline activities in and adjacent to the marine park.	No impacts.
Provide advice on the assessment, setting of conditions, and monitoring and reporting requirements for mineral, petroleum and pipeline activities consistent with management objectives and management targets for values of the marine park.	In the event of a Level 2 or 3 oil spill, the OPEP and OSMIP will be implemented to monitor and mitigate any potential impacts. Arrangements with Commonwealth, state and territory government agencies are described in the OPEP and OSMIP. Traditional owners and Indigenous owner groups will be notified in the event of a spill and will be invited to assist in response strategies, such as shoreline assessment and responses.
Consider the quality of the remote seascapes of the marine park in site planning and assessment of development proposals.	
To obtain increased understanding of the biodiversity, biocultural and cultural values and key ecological process and socio-economic uses within the marine park to inform management. To promote research that improves knowledge of the values of the marine park to inform management decisions. To maximise the integration of conservation science with traditional ecological knowledge in all aspects of research in the marine park	
Encourage involvement of Bardi and Jawi people in research projects where possible.	No impacts.
Ensure that new knowledge from research and monitoring is communicated to BJNAC and the Bardi Jawi community.	
Prepare a research plan which is informed by existing research and considers the research strategies and priorities listed in this joint management plan and/or emerging priorities nominated by the JMB.	
Develop a communication framework to guide the communication of science and knowledge to BJNAC and the Bardi Jawi community.	

Management actions/ strategies	Compliance with management plan
Identify and communicate high priority research projects which address key knowledge gaps to appropriate external organisations and funding bodies and ensure results are shared with marine park managers.	
Develop and implement protocols (where possible utilising or adapting existing protocols) to ensure research is culturally appropriate, commences only with appropriate permissions and that information shared by Traditional Owners is used in a culturally appropriate manner.	
Develop scientific and research protocols and partnership agreement frameworks through the JMB that support genuine scientific and research partnerships with BJNAC.	
Where possible, support two-way science programs in schools.	
Facilitate or support research in the marine park, including projects by external organisations, by providing assistance where possible.	
Ensure granting and renewal of permits relating to scientific research is consistent with the management plan and complies with DBCA's Science Policy (No.28) and associated guidelines and any protocols developed with BJNAC.	
To monitor key cultural, ecological and social values in the marine park within a 'condition pressure-management response' framework, to provide a basis to assess, adapt and improve management.	
Facilitate knowledge transfer and uptake of monitoring findings to adaptive marine park management, planning and policy, and where relevant report on conservation achievements and challenges.	No impacts.
Encourage monitoring in the marine park which aligns with Mayala and departmental priorities.	
Collate and review existing monitoring information and techniques to inform the development of a monitoring plan.	
Prepare a monitoring plan which considers the strategies and priorities listed in this joint management plan and/or emerging priorities nominated by the JMB.	
Develop a cultural values monitoring framework (and data storage and access process) to guide these activities in a joint management context, with respect to cultural Law and governance.	
Develop and implement protocols to ensure monitoring is culturally appropriate and that any cultural information shared is used in a culturally appropriate manner e.g. ISWAG/KISSP protocols are supported.	
Investigate opportunities and develop a process to integrate traditional ecological knowledge with monitoring, where appropriate.	
Liaise with industry, other government agencies and non-government organisations to access information held on ecological monitoring in the area.	

Management actions/ strategies	Compliance with management plan
Provide necessary information and support for assessments of management plan implementation by the Commission.	
To increase understanding of the effects of climate change on the values of the marine park and increase the resilience of values to climate change.	
Support international and national climate change initiatives where relevant in marine park research and adaptive management.	No impacts.
Ensure that impacts of climate change are considered in monitoring programs of the KPI's for the marine park.	
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.	
Monitor marine park values 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.	
Educate marine park users of impacts of climate change on marine park values and encourage them to reduce their carbon emissions where possible.	
Support or provide necessary information to contribute to climate forecast models to help predict the impacts of climate change on the values of the marine park.	
To ensure the 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	
Ensure the objectives detailed in the JMA are applied to all management activities in the marine park.	No impacts.
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.	
Implement all legal provisions necessary to establish and jointly manage the marine park including execution of the JMA, gazettal of the zoning scheme under the CALM Act and gazettal of orders under the FRM Act.	
Develop governance tools to support effective and efficient decision-making by the JMB including terms of references, code of conduct and conflict resolution policy.	
Develop and maintain appropriate staff structures, funding, operational equipment, including vessels, and infrastructure to adequately implement the joint management plan and JMA.	
Develop and maintain understanding of and support for the marine park governance, management plan and activities, by the local Bardi Jawi community.	
Investigate the need for, and if required, support BJNAC to develop procedures to guide the JMB on what cultural decisions need to be referred to BJNAC.	

Management actions/ strategies	Compliance with management plan
Develop and maintain an understanding about the delegation of authority from the BJNAC to JMB and vice versa, in relation to advice given to external parties and marine park management decisions, consistent with the joint management plan.	
Promote culturally inclusive hiring processes by inviting BJNAC nominated JMB representative/s to participate in hiring processes for positions related to the marine park.	
Provide licences and permits with appropriate conditions where required.	
Develop annual work plans.	
Develop collaborative operational plans for implementation of relevant strategies in the plan.	
Work with the BJNAC and Bardi and Jawi Traditional Owners to develop commercial tour operator licence conditions to manage access in special purpose zones (cultural protection) to ensure activities including fishing are compatible with the purpose of protecting the land and waters to the culture and heritage of Traditional Owners.	
Facilitate regional annual meetings between the JMBs of Bardi, Jawi, Mayala and Lalang-gaddam marine park.	
In accordance with DPIRD's responsibilities under the FRM Act, Pearling Act, and ARM Act (when implemented), develop a framework for DPIRDs involvement in the joint management of the marine park including mechanisms for DPIRD to attend JMB meetings.	
Develop materials to aid communication of the management plan to the Bardi and Jawi community and support BJNAC and JMB in the implementation of the plan.	
Pursue external funding opportunities to implement strategies in the joint management plan.	
Develop and implement a monitoring and evaluation framework to assess joint management effectiveness for the marine park.	
Undertake a five-year review of the permitted activities in the special purpose zones.	
Undertake routine inspections and maintenance of department managed infrastructure in the marine park, particularly zone markers and signage.	
Consider the need for temporary or longer-term restrictions e.g. speed limits and/or additional measures where necessary to protect threatened species, ecological communities, and natural features or for safety reasons.	
To enhance community understanding of and support for the marine park and achieve a high level of compliance with regulations, permitted uses and other management arrangements within the marine park.	
Ensure marine park users, including researchers, obtain and comply with appropriate formal permissions.	In the event of a Level 2 or 3 oil spill, the OPEP and OSMIP will be implemented to monitor and mitigate any

Management actions/ strategies	Compliance with management plan
	potential impacts. Arrangements with Commonwealth, state and territory government agencies are described in the OPEP and OSMIP. Traditional owners and Indigenous owner groups will be notified in the event of a spill and will be invited to assist in response strategies, such as shoreline assessment and responses.
Encourage voluntary compliance and peer enforcement of regulations.	No impacts.
Develop an education and interpretation plan which communicates: • the importance of the marine park's values • the purposes of management zones and regulations • appropriate behaviour to reduce human impacts and ensure public safety • Bardi and Jawi native title rights and visitor protocols on sea and land; and • Consideration of all education and interpretation strategies listed in the management plan	
Develop and implement a collaborative patrol and enforcement program.	
Monitor, promote and enforce compliance with fisheries and marine park legislation, including illegal foreign fishing.	
Install zone markers and educational signage for the marine park where appropriate.	
Develop and implement a public participation plan for the marine park, which encourages community involvement in management through a range of opportunities including in education, research and monitoring.	
Develop, monitor and maintain a database of compliance statistics and adapt management strategies to address any non-compliance issues.	
Facilitate cross-authorisation of enforcement officers as appropriate including training Bardi Jawi Rangers in CALM Act compliance with the intention of them obtaining the status of honorary enforcement officers pursuant to the CALM Act.	
Facilitate training of Bardi Jawi Rangers in FRM Act compliance, to engage in DPIRD compliance activities.	
Investigate and implement, where necessary, mechanisms to restrict vehicle access in the marine park to designated areas only.	
To assess and evaluate management effectiveness.	
Develop and implement a performance assessment process that is suitable in a joint management setting and is consistent with DBCA and Commission policy and ensure results are reported back to the Bardi and Jawi Community.	No impacts.

Management actions/ strategies	Compliance with management plan
Through the JMB, support BJNAC to conduct periodic reviews of the effectiveness of plan implementation in meeting cultural aspirations, capacity building and other priority objectives.	
Develop and implement a monitoring and evaluation framework to assess joint management effectiveness for the marine park.	
Provide necessary information and support for the performance assessment process.	
Implement management strategies to mitigate or stop any impacts from human activities within the marine park which are negatively impacting the values of the marine park.	