

# Browse Regional Oil Pollution Emergency Plan – Area Response Planning Guideline

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<b>Acronym</b>	<b>Definition</b>
ARP	Area Response Plan
AMOSC	Australian Marine Oil Spill Centre
ASV	Accommodation Support Vessel
BROPEP	Browse Regional Oil Pollution Emergency Plan
CA	Control Agencies
CASA	Civil Aviation Safety Authority
CMT	Crisis Management Team
DBCA	Department of Biodiversity, Conservation and Attractions
DoT	Department of Transport
EA/JV	External Affairs / Joint Venture
EPBC	Environmental Protection and Biodiversity Conservation Act
EPO	Environmental Performance Outcomes
FOB	Forward Operating Base
FST	Function Support Team
HAZID	Hazard Identification
Helo	Helicopter
HR	Human Resources
HFO	Heavy Fuel Oil
HSE	Health Safety Environment
HSES	Health Safety Environment Security
HSES-MP	Health Safety, Environment and Security Management Plan
HUET	Helicopter Underwater Escape Training
IAP	Incident Action Plan
IBC	Intermediate Bulk Containers
IC	Incident Controller
IFO	Intermediate Fuel Oil
IMG	Incident Management Guide
IMT	Incident Management Team
IPX	INPEX
IUCN	International Union for Conservation of Nature
JHA	Job Hazard Analysis
JSCC	Joint Strategic Coordination Committee
LO	Liaison Officer
LSR	Life Saving Rules
MARPOL	The International Convention for the Prevention of Pollution from ships

MEEC	Marine Environmental Emergency Committee
MEECC	Marine Environmental Emergency Coordination Centre
MEER	Marine Environmental Emergency Response
MoU	Memorandum of Understanding
NEBA	Net Environmental Benefit Analysis
OPEP	Oil Pollution Emergency Plan
OSC	On Scene Commander
OVID	Offshore Vessel Inspection Database
PEP	Project Execution Plan
PPE	Personal Protective Equipment
SCAT	Shoreline Clean-up Assessment Techniques
SHPMEE	State Hazard Plan Maritime Environmental Emergencies
SIMA	Spill Impact Mitigation Assessment
SMPC	State Marine Pollution Coordinator
TH	Petroleum Titleholder
OSCP	Oil Spill Contingency Plan
OWR	Oiled Wildlife Response
WA	Western Australia
WAOWRP	Western Australia Oiled Wildlife Response Plan
VOC	Verification of Competency

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# 1 INTRODUCTION

## 1.1 Purpose

In support of the Browse Regional Oil Pollution Emergency Plan (BROPEP), this BROPEP Area Response Planning Guideline (the Guideline), provides further guidance on potential response actions at remote island/shoreline locations within the BROPEP regional area (Broome to Darwin, out to the Australian EEZ). For identified key receptors, Area Response Plans (ARPs) have been developed to provide additional contextual information on those locations.

This Guideline serves as a practical tool for Control Agencies (CA), to efficiently prepare and execute an oil spill response operation at remote islands/shorelines in northern Australia.

This Guideline has been prepared jointly by INPEX and the Australian Marine Oil Spill Centre (AMOSC), with the intention for it be available for use by applicable oil spill CA within the region outlined above.

CA(s) who may use this Guideline include:

- Petroleum Titleholders (THs);
  - When the TH IMT is the CA, where a spill from a petroleum facility spill may impact a Commonwealth shoreline; specifically Ashmore Reef / Cartier Island.
  - When the TH IMT is providing support to a State/Territory CA, where a spill from a petroleum facility spill may/will enter within a State/Territory waters/shorelines. (This will occur in accordance with the relevant Cross Jurisdictional Arrangements, such as (WA DoT 2020).
- Australian Government agencies;
  - Responding to TH/petroleum facility spills which have entered their State/Territory waters,
  - Responding to any other shipping spill which may impact a Commonwealth/State/Territory shoreline in far NW Australia.

This Guideline provides information related to the following key topics.

- Guidance on the remote shoreline oil spill response options and logistical configurations (including conceptual organisation charts).
- Remote area spill response tactics that may be implemented.
- Protection priorities - key protected fauna species at key receptor locations (and associated species matrices, addressing presence/absence).
- Termination criteria consideration for each of the response tactics.
- Project execution planning considerations, including health, safety, environment and emergency response.
- A flowchart, to assist in utilisation of this guideline, including links to other key documents, is provided in Figure 1-1.

## 1.2 Assumptions

A number of key decisions are assumed to have occurred, prior to any CA utilising this Guideline. Key assumptions are that:

- The relevant THs and/or other Australian Government agencies have already determined/agreed who is the CA, ultimately responsible for the oil spill response at the relevant island/shoreline(s)
- Situational awareness has been developed, and continues to be maintained by the relevant CA(s)
- Situational awareness (including modelling, aerial/satellite surveillance etc), and a Net Environmental Benefit Analysis (NEBA) or Spill Impact Mitigation Assessment (SIMA) process has been used by the relevant CA, and determined that it is appropriate to deploy resources to a remote island/shoreline.

1.3 Using this Guideline

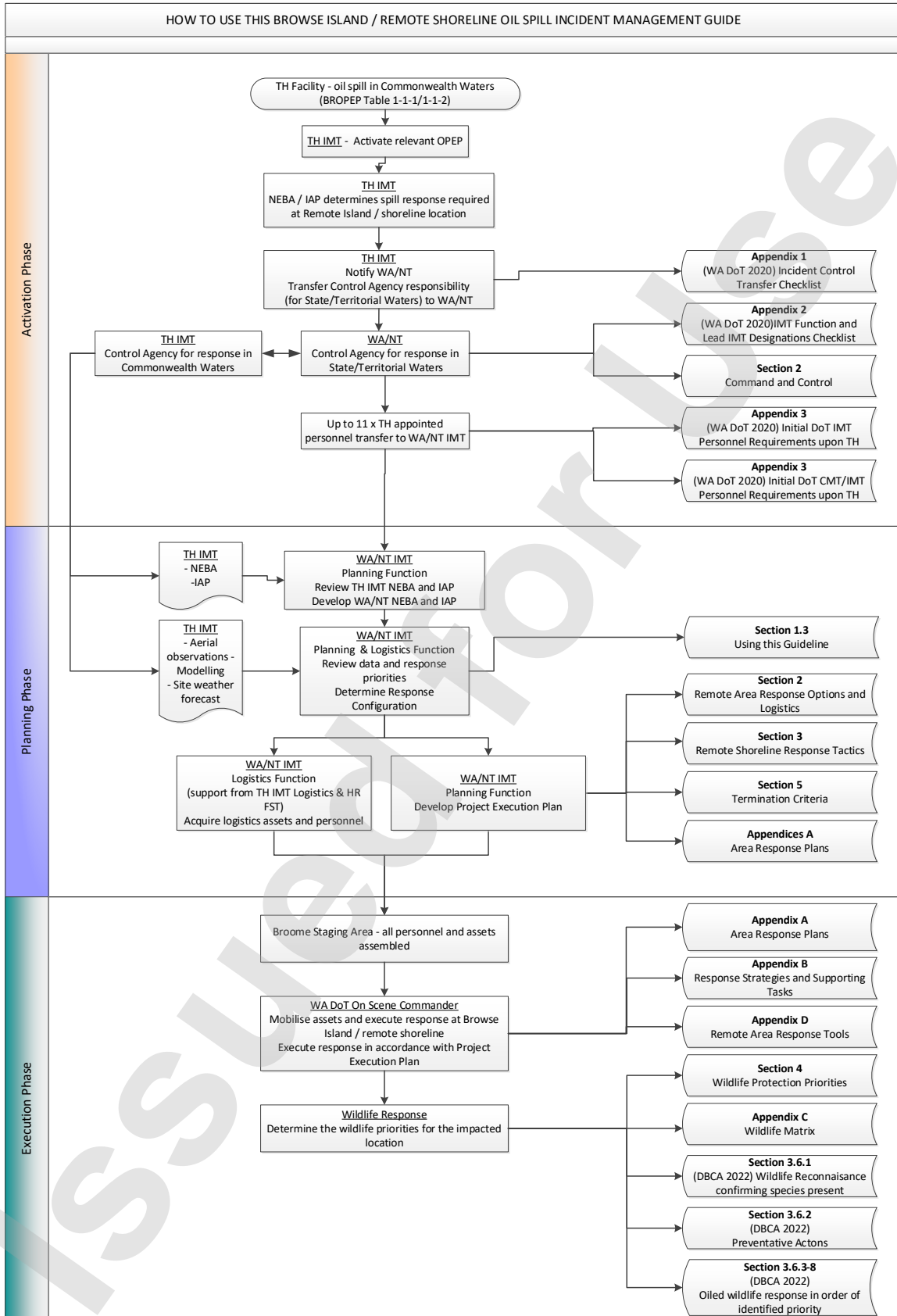


Figure 1-1: BROPEP ARP Guideline – activation, planning and execution flowchart

## 1.4 Area Response Plans – Key Receptors

The key shoreline receptors identified in the BROPEP as the main protection priorities are listed below. ARPs developed for these key receptors provide the following information:

- Maps and site descriptions
- Site access considerations and constraints
- Relevant government agencies / key contact points and contact information
- Key logistical details/considerations
- Seasonality of faunal groups and the potential impact of response strategies
- Site specific resource lists are available in 0

APPENDIX A: contains the ARPs for each location. Whilst this list represents the key receptors identified in the BROPEP, the general response strategies/tactics and considerations within this Guideline can be considered for any remote spill response operation at other remote Kimberly or NT island/shoreline locations.

- Browse Island ARP - APPENDIX A:7A.1
- Seringapatam and Scott Reef / Sandy Islet ARP - 0
- Ashmore Reef / Cartier Island ARP - A.3
- Adele Island ARP - A.4
- Lacapede Islands ARP - A.5
- Rowley Shoals ARP - A.6

In the event of an incident operational tasking will be developed to direct operations for each response strategy selected as appropriate. The selection of response strategies for implementation will be completed following:

- The completion of a SCAT to validate the sensitivities at the impacted location; and
- The completion an operational NEBA/SIMA to confirm the response strategies recommended for the sensitivities present.

The operational tasking information for each response strategy includes:

- oil spill response tasking;
- operational considerations; and
- resources (equipment and personnel) recommended.

## 2 REMOTE AREA RESPONSE OPTIONS AND LOGISTICS

### 2.1 Remote Shoreline Oil Spill Response Options

Extensive consultation and workshopping was undertaken in 2021 with INPEX/Shell (THs), and WA CA (WA Dept of Transport), to determine appropriate spill response options and associated logistical arrangements, for spill response at remote/offshore shorelines in far northern WA (and also applicable to remote shorelines of the NT).

Details of these are defined within the BROPEP BOD/FCA Report, Sections 5 and 6.

A summary of the key points is below;

- Remote shoreline clean-up assessment team (SCAT) should be sent to key locations when situational awareness determines credible risk of oil contact to the remote island/shoreline. Several SCAT teams may need to be deployed to various islands/shorelines, as the spill scenario evolves.
- Remote shoreline response should be triggered, based on situational awareness, including SCAT data when available.
- Shoreline response activities at a remote location should be coordinated as a single remote shoreline response unit. Multiple shoreline response units may be required, in the event that multiple shorelines/sectors become impacted during the spill response.

### 2.2 Remote Shoreline SCAT Unit

As defined in the BROPEP (Section 5.4.1), remote shoreline SCAT unit should be comprised of a 4 person team (excluding marine crew) comprised of:

- 2 x SCAT trained personnel,
- 1 x OWR trained personnel
- 1 x local government or parks advisor/aboriginal heritage advisor (person with local knowledge of the area)

This unit should be activated and available for deployment from the Forward Operating Base (FOB) to field, within 48 hours.

### 2.3 Remote Shoreline Response Unit

As defined in the BROPEP (Section 5.4.1), remote shoreline response unit capabilities, include SCAT, oiled wildlife response (OWR), sensitive receptor protection/protect and deflect, and shoreline clean-up resources.

This unit should be activated and available for deployment from the FOB to field, within 6 days.

Where possible, team leads should be multi-skilled, to enable them to support more than one response strategy.

#### 2.3.1 Remote shoreline response unit team structure

As defined in the BROPEP (agreed between THs and WA CA), remote shoreline response units should consist of the following 43 personnel/roles (not including vessel/aviation crews) as illustrated in Figure 2-1 and Figure 2-2;

- Sector Command Team
  - 1 x On scene commander

- 1 x Deputy on scene commander
- 3 x Admin/logistics support
- 2 x HSE support
- 2 x Paramedic
- 1 x Multi-media/communications
- SCAT
  - 1 x SCAT team lead
  - 1 x SCAT trained support person
  - 1 x OWR trained person
  - 1 x Local ranger/Traditional Owner (familiar with location)
- Shoreline Clean-up Team(s)
  - 4 x Shoreline clean-up team leads (trained in shoreline clean-up)
  - 17 x Labour hire
- OWR - Collection and Rescue
  - 5 x OWR trained personnel
- OWR – Triage, First Aid/other response
  - 1 x Vet
  - 2 x OWR trained personnel
- Protection of Sensitive Resources/Protect and Deflect
  - If this response strategy is determined appropriate through NEBA/SIMA, personnel from shoreline clean-up team should be utilised (requires team-leads to be trained in both response strategies).

### 2.3.2 Remote shoreline response unit logistics

A single remote shoreline response unit will likely require a vessel spread consisting of at least the following:

- Accommodation support vessels (ASV), which provide for:
  - Accommodation for the ~43 response personnel, plus marine and aviation crews (if required)
  - Sector command post
  - OWR container operations (if determined required via NEBA/SIMA)
- Tender(s), which provide for
  - Transfer of personnel, light equipment, wildlife and small volumes of waste between ASVs and shoreline
  - Boom/anchor deployment (if conducting protect & deflect activities)
- (Optional) shoreline landing barge, which can provide:
  - Transport of larger equipment and waste between the ASVs and shoreline
  - Shoreline staging area, with centralised communications, medical, other equipment/stores stockpiles
- (Optional) light utility helicopter, which can provide:
  - Shoreline access when sea-state/tidal conditions prevent vessel based beach landings
  - Slinging of equipment and waste between ASV and shoreline
- (Optional) light rubber tracked vehicle, which can provide:
  - Mechanical transport of equipment and waste, between shoreline staging area and worksites around the shoreline

Note, if a very large wildlife response is to be mounted, the ASV may be used as an oiled wildlife stabilisation facility. Additional faster vessels may be required to transport stabilised oiled wildlife from the ASV to shore-based wildlife rehabilitation facilities. Based on the WAOWRP, as a minimum, the ASV would require:

- Length >38 m
- Beam >10.6 m
- Machinery 2 x engines
- Operating speed >10 knots
- Deck areas >200 square meters – sufficient to accommodate multiple 20ft shipping containers
- Fresh water >120,000L – or reverse osmosis systems to replenish fresh water stocks
- 15ppm oily water separator or large oily water holding tanks

## 2.4 Forward Operating Bases

The relevant CA IMT should establish Forward Operating Bases (FOB) including marine and aviation services to support the remote shoreline response units.

Marine FOBs would be expected to be located in Broome or Darwin, utilising existing TH logistics bases. (These locations could be utilised to support any TH, State/Territory CA remote spill response, if requested).

Aviation FOBs could be established at Broome or Darwin, or other Kimberley/NT airfields, such as Mungalalu/Truscott or Lombadina.

## 2.5 Organisational Structures

For planning purposes, example organisational charts have been provided, for two possible scenarios under this Guideline, specifically if a TH is the CA for an impact on Indian Ocean Territories, and where the TH is supporting a State/Territory government, in their role as CA.

A third scenario exists where purely Australian Government agencies are responding, with no TH involvement (such as a shipping spill). Those organisational structures will be in accordance with relevant government agency Oil Spill Contingency Plan (OSCP).

### 2.5.1 Petroleum Titleholder Control Agency for Remote Shoreline Response

The example organisation structure presented in Figure 2-1 is reflective of a response where the TH will maintain responsibility as a CA. This may be the case when responding to an incident in the Commonwealth managed Indian Ocean Territories.

### 2.5.2 Cross Jurisdictional Response

The example organisation structure presented in Figure 2-2 is reflective of the Cross Jurisdictional Arrangements agreed between THs and WA DoT (WA DoT 2020). This is also reflective of arrangements that are expected between THs and the NT government IMT.

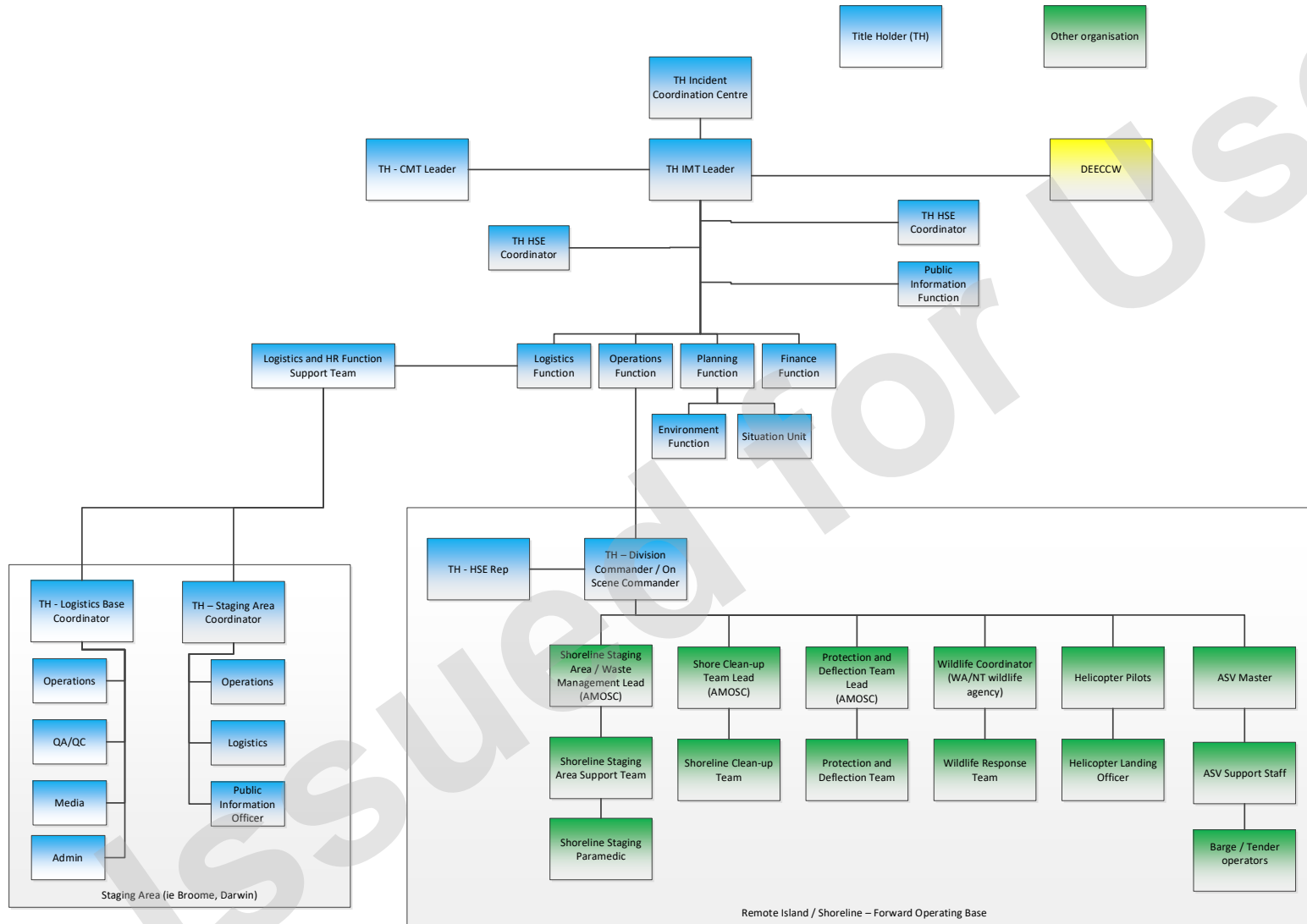


Figure 2-1: Organisation Chart - Titleholder as Control Agency- remote island/shoreline response only

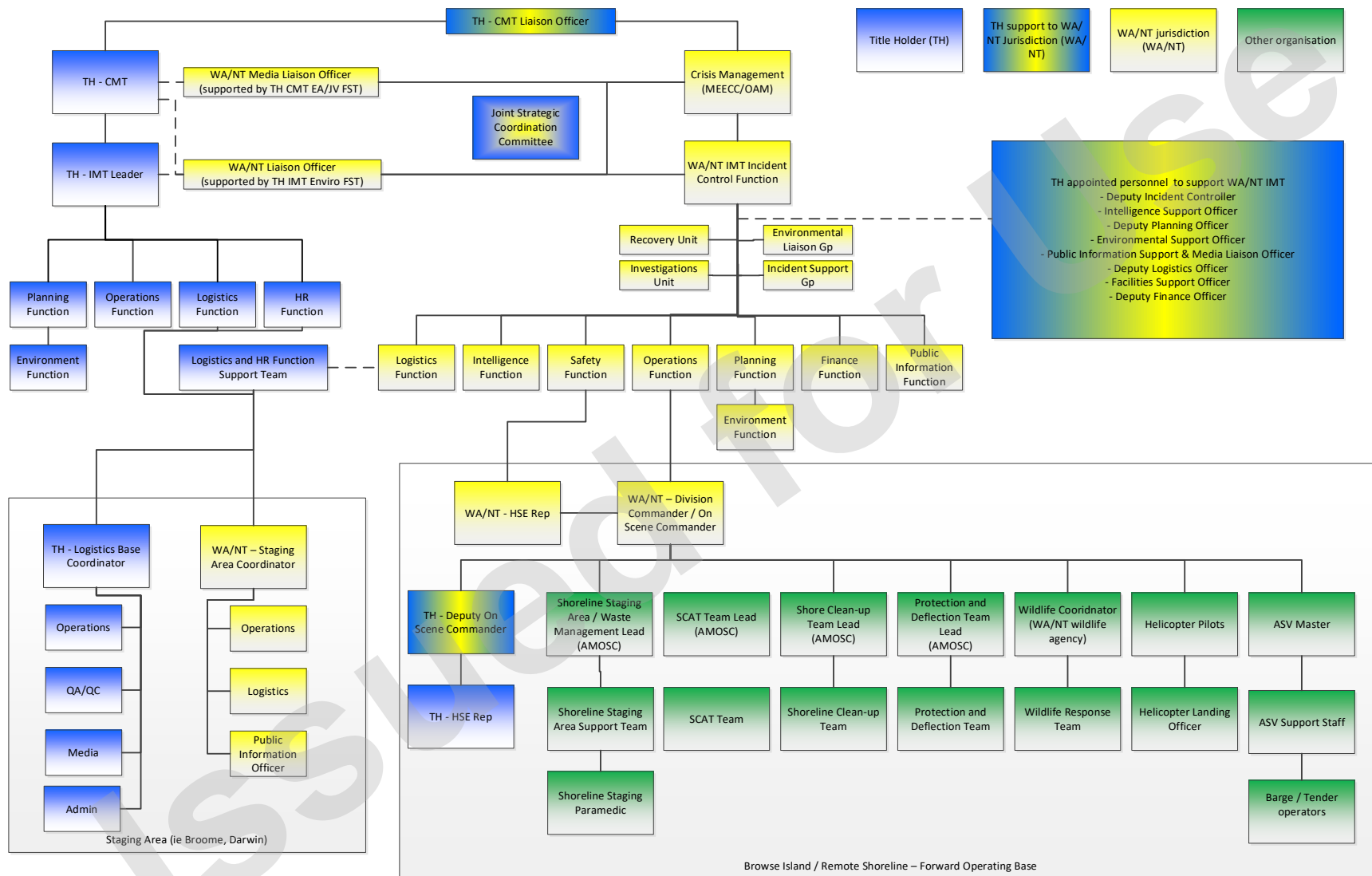


Figure 2-2: Organisation Chart - Cross Jurisdiction Response - remote island / shoreline response

### 3 REMOTE SHORELINE RESPONSE TACTICS

#### 3.1.1 SCAT

SCAT will be implemented to systematically collect data about the location, nature and degree of shoreline oiling including at risk and/or impacted wildlife. This will be used to inform shoreline treatment and OWR planning in addition to understanding the potential impact to any cultural sensitivities associated with the location. For identified key receptors, ARP's are available to direct the response (See appendix A) in addition to Shoreline Treatment Recommendations (AMOSC 2016, IPIECA 2015), to support the execution phase planning of the response.

The activation, resourcing and monitoring of this strategy will be dependent on the location and the type and extent of oiling with further details available in Section 4.5.1 of the BROPEP.

For state/territorial waters shoreline assessment will be conducted in accordance with advice from WA/NT CA, utilising the Department of Transport Shoreline Assessment Form, available through request from WA CA, or at the link below.

[https://www.transport.wa.gov.au/mediaFiles/marine/MAC\\_F\\_Shoreline\\_Assessment.pdf](https://www.transport.wa.gov.au/mediaFiles/marine/MAC_F_Shoreline_Assessment.pdf)

AMOSC supports the equipment and personnel resourcing requirements for THs as described in the AMOSPlan including:

- AMOSC SCAT grab bags
- AMOSC and Core Group Response personnel resources
- Mutual Aid personnel resources

#### 3.1.2 Shoreline Clean-up

Following the completion of SCAT, the shoreline clean-up will be implemented to reduce the volume of oil on the shoreline, to reduce the likelihood/consequence of impacts on the values and sensitivities of the shoreline and promote/increase the speed of the natural recovery of the shoreline to its pre-oiled state. Further details, including the key reference documents, for the activation, resourcing and monitoring of this strategy will be dependent on the location and the type and extent of oiling with further details available in Section 4.5.1 of the BROPEP.

AMOSC supports the equipment and personnel resourcing requirements for THs as described in the AMOSPlan including:

- AMOSC equipment caches (Geelong, Fremantle, Exmouth and Broome)
- Mutual aid TH and AMSA equipment cache access
- AMOSC and Core Group Response personnel
- Mutual aid TH and National Response Team (NRT) response personnel access

#### 3.1.3 Protection of Sensitive Resources / Protect and Deflect

If deemed appropriate from the SCAT, protection and deflection tactics will be implemented to prevent and/or reduce the volume of oil on entering a sensitive habitat, resulting in a reduction in the likelihood and/or consequence of impacts associated with floating oil on the values and sensitivities of the habitat. The activation, resourcing and monitoring of this strategy will be dependent on the type and extent of oiling with further details available in Section 4.5.3 of the BROPEP.

AMOSOC supports the equipment and personnel resourcing requirements for THs as described in the AMOSPlan including:

- AMOSOC equipment caches (Geelong, Fremantle, Exmouth and Broome)
- Mutual aid TH and AMSA equipment cache access
- AMOSOC and Core Group Response personnel
- Mutual aid TH and National Response Team (NRT) response personnel access

### 3.1.4 Oiled Wildlife Response

If a Wildlife Response is required the Western Australia Oiled Wildlife Plan (WAOWRP) will be initiated to provide guidance for any response in Commonwealth, WA and NT waters. The response will be led by the relevant WA/NT wildlife agency in their waters, while the TH will lead a response, with support from AMOSOC in Commonwealth managed Indian Ocean Territories.

AMOSOC supports the equipment and personnel resourcing requirements for THs as described in the AMOSPlan and summarised in the AMOSOC Wildlife State board including:

- AMOSOC equipment caches (Geelong, Fremantle, Exmouth and Broome)
- Mutual aid access to AMSA equipment caches
- Wildlife response personnel (including industry, government and NGO's)

Where possible species response plans will be utilised to provide advice on wildlife taxa where available including:

- AMOSOC Marine Turtle Species Response Plan (AMOSOC, 2022)

At remote locations, limited access and resource constraints necessitate the prioritisation of wildlife to be rescued and treated. This process will be managed by the Wildlife Coordinator, under direction from a qualified veterinarian or suitably experience personnel. The OWR Coordinator is responsible for wildlife prioritisation, including the use of euthanasia based on the decision making framework described in Fig G-4 1 in the WAOWR Manual (WA DBCA, 2022b).

A list of wildlife species (for remote Kimberly/NT shoreline locations), and their protection priorities, as relevant at the date of publication of this Guideline are presented in the wildlife prioritisation matrix, presented in APPENDIX C.

The wildlife prioritisation matrix should be re-validated, as relevant to the ARP location through cross referencing species impacted with the latest versions of relevant international (IUCN) state/territorial and Commonwealth (EPBC ACT) threatened fauna lists, as part of remote area response planning.

### 3.1.5 Waste Management

A detailed waste management plan will need to be prepared at the time of the spill by the CA in consultation with an experienced waste management provider.

Waste minimisation should be a key priority for any remote shoreline response. Techniques may include:

- Pre-clean of beaches before oil reaches the shoreline to reduce solid oily waste.
- Use ASV as the main decontamination station, and minimise the amount of decontamination / liquid waste volume generated onshore.
- Consider how to reduce the number of personnel physically handling the oiled waste / personnel subject to oil contamination to a minimum.

Waste will need to be segregated into appropriate waste streams. Onshore waste streams would include:

- Oily contaminated solid waste (e.g. shoreline clean-up oil, sand, debris)
- Oily contaminated liquid waste (e.g. contain and recover liquid wastes)
- Oily contaminated organic waste (seaweed, deceased oiled wildlife etc)
- Sanitary waste (portable toilet waste)
- Other general waste

TH's are required to maintain a contract with licenced waste contractor who will be able to receive and appropriately dispose of hydrocarbon contaminated solid, liquid and other wastes. The waste contractor should also be involved in the development of the waste management plan and provision of waste storage / transportation containers.

Guidance to assist with the development of the waste management is as follows:

- Heavy fuel oils/bunker fuels are expected to emulsify, increasing volume by a factor of 4, prior to arrival on shoreline.
- During shoreline clean-up, the volume of solid waste generated (including collected oil, sand, PPE etc) is expected to 10x the volume of oil/emulsion that arrived onshore.
- Rakes and shovels could be used to clean-up solid waste from shoreline. HDPE plastic bags, or plastic bins / drums could be used to manually move oily waste from intertidal zone to above the high tide mark, and place waste into temporary storage units such as plastic lined bulka-bags or similar (e.g. plastic drums <1 m<sup>3</sup> capacity). Note, these temporary storage units must be able to be transported either via helicopter slinging or via rubber tracked bob-cat or similar.
- Waste could then be transferred onto barges / ASVs, and into skips, for transport to onshore licenced waste treatment / disposal facilities.
- Liquid wastes could be generated through the washing of seabirds and shoreline containment and recovery activities.
- 1 m<sup>3</sup> IBCs or similar would be required for liquid oily waste recovery onshore.
- 1 m<sup>3</sup> IBCs or vessel holding tanks would be required to be used for liquid oily waste recovery onboard vessels, if oiled wildlife washing and rehabilitation was required at sea.
- During oiled wildlife response, on average, a 5 kg bird will require 1000 L water during the cleaning and rehabilitation process. Monitoring and evaluation data will be needed to determine the numbers of oiled birds expected, and then fresh water and oily contaminated waste water calculations and logistics arranged as necessary.
- Vessel oily water separators should be used only in accordance with MARPOL requirements.

## 4 WILDLIFE PROTECTION PRIORITIES

Whilst a number of protection priority locations have been identified (APPENDIX A:), in general, there are a limited number of social-economic, cultural or aesthetic justifications for shoreline clean-up at these remote locations. However, all locations support wildlife, and therefore protection of the wildlife, and their habitat are key response priorities.

The WA OWR Plan (2022a) and accompanying WA OWR Manual (2022b) have been accepted as appropriate guidance documents for a wildlife response in the event of an oil spill. These documents provide guidance for the determination of the wildlife response priorities.

To assist the prioritisation process at each of the ARP locations, a wildlife prioritisation matrix has been developed utilising the most recent and complete species presence survey data available. This species data has been cross referenced with the latest versions of relevant International, National and state/territorial threatened fauna lists including:

- IUCN Redlist of threatened species - <https://www.iucnredlist.org/>
- EPBC list of threatened species - <https://www.environment.gov.au/cgi-bin/sprat/public/publicthreatenedlist.pl>
- DBCA list of threatened and priority fauna - <https://www.dbca.wa.gov.au/management/threatened-species-and-communities>
- NT governments list of threatened animals - <https://nt.gov.au/environment/animals/threatened-animals>

The CA responsible for management of a wildlife response in an incident will utilise the WA DBCA OWR Manual (2022b), triage process, replicated as Figure 4-1 below. This process will be used to determine the wildlife deemed as present from the SCAT surveys at the time of the incident, meeting the prioritisation criteria of endangered and threatened species and/or high local or cultural significance (Section 2.1 OWR Manual - WA DBCA, 2022b).

This does not preclude the rehabilitation of common species if it is possible to provide effective rehabilitation to them without compromising the care of priority species.

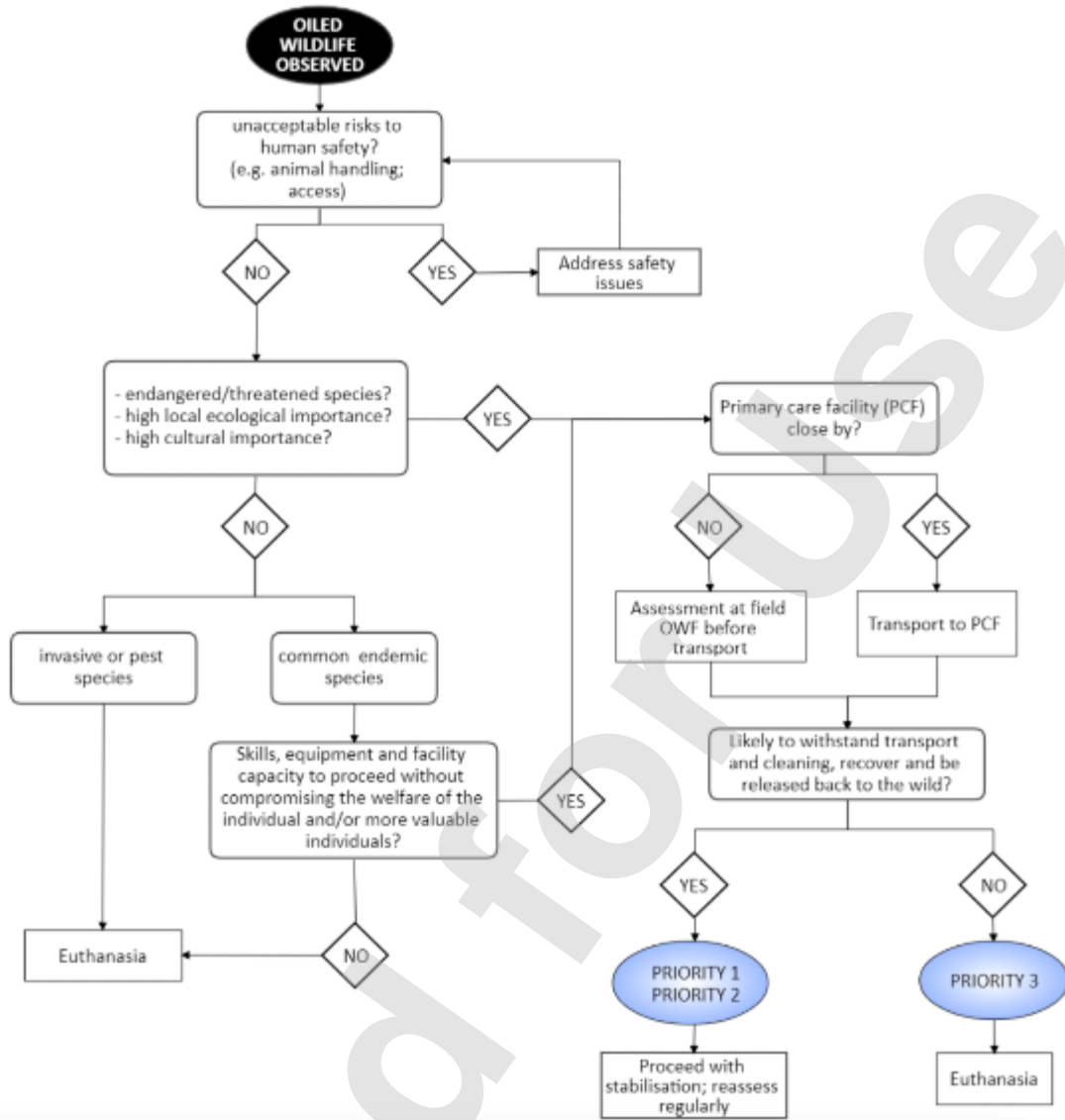


Figure 4-1: Triage process for oiled wildlife field processing (extract of Fig G-4-1, WA DBCA 2022b)

The wildlife matrix (refer 0 provides initial site specific information on the species that have been recorded at each protection priority location and associated conservation listing for each species.

Table 3-1 in the BROPEP indicates the likelihood of species presence due to seasonal migration movements. In the event of an incident at one or more of the priority locations, the following steps will provide support for decisions on priority protection using the matrix:

1. Determine the expected list of species at the impacted site (refer 0 .
2. Complete a shoreline SCAT at the impacted or likely impacted location to confirm the species present.
3. Review the conservation listing of the species that have been identified as present at the impacted location.
4. Prioritise the species based on:
  - o The number of international, national and state/territorial listings for each species

- 
- Species specific advice on the likely success of treatment and rehabilitation given the remote location and the limited capacity to establish facilities for long term rehabilitation
  - Likelihood of treatment impacting survival/breeding success
5. Consideration will also be given to treatment of individuals based on:
- The extent of oiling and the challenges of the remote location and likelihood of rehabilitation success
  - Life stage and the highest chance of survival
6. Determine the potential for treatment methods that allow rapid processing of some species (ie wiping off majority of oil from marine turtles and releasing away from potential recontamination sources).

Consultation with relevant wildlife agencies, based on information gathered from the above will enable a final prioritisation outcome.

Additional information on the species of localised importance is provided in each of the ARP's.

## 5 TERMINATION CRITERIA

Termination Criteria for the incident is presented in the BROPEP (Section 4) as determined in accordance with best practice guidelines (Kerambrun 1998, Dicks et al 2002, AMSA 2022).

Termination of response will be determined by the CA IMT in collaboration with relevant stakeholders and will consider factors including the following:

- The safety of responders
- The current effectiveness of the response (or phase of the response)
- Deteriorating weather conditions (including wind, visibility and sea conditions).

Determination of the end point to allow for the termination of a response relates to the acceptable level of cleanliness for the ecological, aesthetic or cultural values of a sensitivity as described in Table 1 of the Response, Assessment and Termination of Oil Contaminated Foreshores (AMSA 2022).

The final decision on whether to terminate a response strategy will remain with the relevant CA for the remote island/shoreline that has been impacted.

### 5.1 Remote Shoreline Response

As defined in the BROPEP (Table 3-2) remote shoreline response includes the deployment of response capabilities, including SCAT, oiled wildlife, sensitive receptor protection/protect and deflect, and shoreline clean-up activities.

The Termination Criteria are discussed for each of the shoreline response strategies in Section 4 of the BROPEP and would be used as a guide for finalisation with the relevant CA for the impacted location.

For each of these shoreline response strategies, suitable end point criteria must be agreed upon to confirm the termination of the strategy employed. This may relate to a quantitative or qualitative measure associated with the sensitivity (AMSA 2022).

The final decision on whether to activate and terminate a shoreline response will remain with the CA for the impacted remote island/shoreline, and would typically be undertaken in accordance with the guidance on end point provided in the National Plan Response Assessment Termination of Cleaning for Oil Contaminated Foreshores (AMSA 2022). If a shoreline clean-up response is required at a Commonwealth shoreline (e.g., Ashmore Reef, Cartier Island), the response termination will occur in consultation with AMSA and other relevant Government agencies as defined in the BROPEP (Table 2-4).

#### 5.1.1 Oiled Wildlife Response

Wildlife response is likely to be protracted in a spill response, lasting well beyond the oil spill cleanup requirements due to the rehabilitation requirements for impacted wildlife. As such there will be staggered ending of each of the response phases identified in Section 3.6 of the WA OWR Plan (WA DBCA, 2022a). The decision to terminate the strategy will be based on quantitative and qualitative end point criteria relating to the incidents impact to wildlife and the habitats which they rely on for their survival.

The final decision on whether to terminate a wildlife response will remain the responsibility of the relevant Commonwealth, state/territorial wildlife response agency.

## 6 PROJECT EXECUTION PLANNING

A project execution plan (PEP) should be developed, for each remote area response unit deployed to a remote / ARP location.

The PEP would typically include:

- Scope and applicability
- Health, Safety, Environment, Security and Emergency Response Plans
- Daily activity and communications planning
- Project team, roles and responsibilities (including organisation charts etc)
- Mobilisation, execution and termination
- Project management and control (including scope, schedule, costs etc)
- Communications management (including reporting lines including external stakeholders)
- Field activity / response planning and coordination
- Logistics and procurement
- Field operations
- Document and data management
- Management of change

### 6.1 Health and Safety

All oil spill responders, both IMT and field personnel, and their employees have a duty of care to ensure that all reasonable and practical steps are taken to protect the health and safety of all responders and the public.










All response actions must be undertaken safely, consistent with relevant legislation, compliance codes, codes of practice, and any Australian or other recognised standards or codes applicable to each jurisdiction.

It is the responsibility of the CA IMT to ensure that adequate arrangements are in place to monitor compliance with these requirements during remote area spill response activities detailed in this guideline.

In addition to the below guidance pertaining to health and safety, it is recommended that remote area spill response activities are conducted pursuant to the *National Plan – Marine Oil Spill Response Health and Safety Guidance* document.

#### 6.1.1 Life Saving Rules

Whilst the below list of 'life-saving-rules' (LSR)s are based on INPEX's LSRs, these are considered common high risk activities, and any CA IMT should ensure processes are in place to address these key risks.

<p><b>Bypassing Safety Controls</b></p> <p><b>Obtain authorisation before overriding or disabling safety controls</b></p>  <ul style="list-style-type: none"> <li>• I understand and use safety-critical equipment and procedures which apply to my task</li> <li>• I obtain authorisation before:             <ul style="list-style-type: none"> <li>– disabling or overriding safety equipment</li> <li>– deviating from procedures</li> <li>– crossing a barrier</li> </ul> </li> </ul>	<p><b>Confined Space</b></p> <p><b>Obtain authorisation before entering a confined space</b></p>  <ul style="list-style-type: none"> <li>• I confirm energy sources are isolated</li> <li>• I confirm the atmosphere has been tested and is monitored</li> <li>• I check and use my breathing apparatus when required</li> <li>• I confirm there is an attendant standing by</li> <li>• I confirm a rescue plan is in place</li> <li>• I obtain authorisation to enter</li> </ul>	<p><b>Driving</b></p> <p><b>Follow safe driving rules</b></p>  <ul style="list-style-type: none"> <li>• I always wear a seatbelt</li> <li>• I do not exceed the speed limit, and reduce my speed for road conditions</li> <li>• I do not use phones or operate devices while driving</li> <li>• I am fit, rested and fully alert while driving</li> <li>• I follow journey management requirements</li> </ul>
<p><b>Energy Isolation</b></p> <p><b>Verify isolation and zero energy before work begins</b></p>  <ul style="list-style-type: none"> <li>• I have identified all energy sources</li> <li>• I confirm that hazardous energy sources have been isolated, locked, and tagged</li> <li>• I have checked there is zero energy and tested for residual or stored energy</li> </ul>	<p><b>Hot Work</b></p> <p><b>Control flammables and ignition sources</b></p>  <ul style="list-style-type: none"> <li>• I identify and control ignition sources</li> <li>• Before starting any hot work:             <ul style="list-style-type: none"> <li>– I confirm flammable material has been removed or isolated</li> <li>– I obtain authorisation</li> </ul> </li> <li>• Before starting hot work in a hazardous area I confirm:             <ul style="list-style-type: none"> <li>– a gas test has been completed</li> <li>– gas will be monitored continually</li> </ul> </li> </ul>	<p><b>Line of Fire</b></p> <p><b>Keep yourself and others out of the line of fire</b></p>  <ul style="list-style-type: none"> <li>• I position myself to avoid:             <ul style="list-style-type: none"> <li>– moving objects</li> <li>– vehicles</li> <li>– pressure releases</li> <li>– dropped objects</li> </ul> </li> <li>• I establish and obey barriers and exclusion zones</li> <li>• I take action to secure loose objects and report potential dropped objects</li> </ul>
<p><b>Safe Mechanical Lifting</b></p> <p><b>Plan lifting operations and control the area</b></p>  <ul style="list-style-type: none"> <li>• I confirm that the equipment and load have been inspected and are fit for purpose</li> <li>• I only operate equipment that I am qualified to use</li> <li>• I establish and obey barriers and exclusion zones</li> <li>• I never walk under a suspended load</li> </ul>	<p><b>Work Authorisation</b></p> <p><b>Work with a valid permit when required</b></p>  <ul style="list-style-type: none"> <li>• I have confirmed if a permit is required</li> <li>• I am authorised to perform the work</li> <li>• I understand the permit</li> <li>• I have confirmed that hazards are controlled and it is safe to start</li> <li>• I stop and reassess if conditions change</li> </ul>	<p><b>Working at Height</b></p> <p><b>Protect yourself against a fall when working at height</b></p>  <ul style="list-style-type: none"> <li>• I inspect my fall protection equipment before use</li> <li>• I secure tools and work materials to prevent dropped objects</li> <li>• I tie off 100% to approved anchor points while outside a protected area</li> </ul>

**6.1.2 Pre-Prepared Hazard Incident Worksheets**

INPEX and Shell jointly completed two Hazard incident (HAZID) workshops for remote area spill response activities, specifically a remote area helicopter operations HAZID workshop and a remote area vessel and shoreline response HAZID workshop. The outputs of these workshops are included at Appendix D.5 and Appendix 0 respectively.

The below sections include guidance on information that should be included in the health, safety, environment and security management plan (HSES-MP), including some key considerations identified from the HAZID workshops.

### 6.1.3 Job Hazard Analysis

Job Hazard Analysis (JHA) (or similar tool depending on the CAs HSE management system), shall be developed for each specific response task.

### 6.1.4 Training

- Spill response specific inductions and familiarisation with the PEP should be provided to all response personnel by the On Scene Commander (or delegate)
- Vessel/helicopter and other workplace inductions should be conducted as per standard vessel/helicopter operator procedures
- Offshore emergency response training, such as helicopter underwater escape training (HUET) and sea-survival courses as deemed a requirement by the CA IMT (noting exemptions may be granted by the CA IMT on a case by case basis).

### 6.1.5 Vessel based response:

- Must have two tenders operational at all times (one providing rescue support to the other).
- Both tenders must have a throw-line / rescue-line per vessel.
- All personnel must wear PFDs at all times.

### 6.1.6 Light vehicle usage

- Must comply with TH or WA/NT standards which may include:
- Risk assessment: JHA, Step Back 5x5 – must include consideration of exclusion zones, line of fire, secure loads
- Pre-start inspections: The light vehicles shall be inspected before each use using the applicable checklists
- Work management: Spotters to be in place in high traffic, congested or confined areas
- Training: Operators must be trained and hold a current licence (as relevant) and will undergo a site based Verification of Competency (VOC) process to determine adequacy of competency
- Raising loads: Only stable or safely arranged loads are to be lifted
- Line of fire: No person is permitted to walk or work under the raised tynes/bucket of a forklift/bobcat/dingo with or without a load

### 6.1.7 Helicopter activities

- Depending on the location of the spill relative to other offshore facilities, the facilities may be utilised for helicopter landing/refuelling
- Helicopter refuelling only to be undertaken on CPF / FPSO / MODU / FLNG / ASV – no refuelling on beaches
- If helicopter lifting via slinging is to be undertaken, recommend training and rehearsal of slinging activities occur onshore (Broome/Darwin), prior to mobilisation to site

### 6.1.8 Fatigue management and mental health

- Fatigue management sub-plan should be developed

- Heat and humidity will be high, especially between October – April
- High attention to heat-stress / fatigue management required for personnel who do not routinely live or work in northern Australia
- Response personnel should be closely monitored and personnel hours and rotations adjusted according to the conditions and workload
- Consider implementation of a 'buddy-system' for all onshore responders
- Mental health should be considered – oil spill response can be a very confronting activity. Special attention / support should be provided to OWR personnel, especially if euthanising wildlife is required

### 6.1.9 Personal protective equipment

- PPE should be considered, specific to the task being completed, and defined in the JHA
- 'Full PPE' as per offshore petroleum facility standards may not be applicable
- Hard hats only required during lifting / overhead risk activities
- Steel cap boots only required where risk of dropped object / crush injury is relevant
- Tyvex coveralls increase the risk of heat-stress – only relevant personnel should wear them

### 6.1.10 Hazardous marine fauna

- Where dangerous fauna are expected to be encountered (i.e. salt water crocodiles) consultation with the relevant wildlife agency (E.g. WA DBCA or NT Parks and Wildlife) should be conducted to determine the most appropriate mitigation measures.

## 6.2 Environment

### 6.2.1 BROPEP Environmental Performance Outcomes and Standards

The BROPEP Section 4.5 contains a series of environmental performance outcomes (EPO) and standards which must be adhered to by any TH who is utilising the BROPEP, whilst implementing a shoreline response. These EPOs and EPS are however not legally binding when the CA is an Australian government agency, responding under their own OSCP.

The EPOs/EPs are typically related to the following:

- Activation triggers
- Monitoring of response effectiveness and reporting
- Response strategy termination
- HSE planning

All relevant EPOs/EPs should be included within the PEP documentation (when being prepared by a TH as the CA).

Additional tools that have been developed to support remote spill response quarantine management include the following:

- Appendix D.3 - Shoreline Access Quarantine Inspection Form (personnel, helicopters, tenders etc)
- Appendix D.4 - Vessel Master Declaration Form

### 6.3 Emergency response

Severe weather / cyclone preparedness and response needs to be addressed within the Emergency Response Plan. Adherence to the relevant TH or state/territorial CA response documentation would be necessary to satisfy response requirements.

#### 6.3.1 Island Access and Medivac

Island access considerations and medivac capabilities need to be addressed within the Emergency Response Plan.

If there is the potential that personnel may be required to stay onshore during periods when vessel access may not be possible, or there is more than a 'reconnaissance' team working for short periods onshore, a paramedic (arranged through Cas medical services provider) with suitable medical supplies should be positioned at the staging area onshore.

Vessel access to remote shorelines is not always possible. Tidal range, especially during spring tides, can prevent small vessel access for periods of up to several hours. Seasonal winds and swell may also limit small vessel access. Tide & weather forecasts should be used by the CA's IMT to determine the best possible response configuration, and to determine the need for a paramedic to be deployed to site. Tide / weather forecasts should also be used for daily activity planning by the on scene commander (OSC), ASV Master and tender/barge vessel masters.

Onshore/mainland medical support (doctor on-call service) should also be arranged through CA's IMT medical support provider.

Minimum medical supplies should be determined by the CA IMT's medical support provider, but should as a minimum include at least:

- Combi-carrier stretcher
- Rescue basket capable of being winched onboard a helicopter or vessel
- Oxygen and associated resuscitation / ventilation equipment
- Medical response bag, including relevant S4 / S8 medications
- Patient monitoring equipment
- Defibrillator

The INPEX / Shell Full SAR helicopter (search & rescue / medivac), which is stationed in Broome, is capable of undertaking winch-rescue (day and night), and can transfer patients either to a near-by offshore facilities, or directly to a hospital on the mainland (or to mainland hospital via Truscott).

### 6.4 Communication Plan

A communications plan, covering all teams, communication methods and schedule should be developed.

During the execution phase, routine meetings should include at least the following:

- Daily planning meeting, chaired by the OSC, involving all personnel at the remote shoreline
- Daily toolbox talk / JHA review, chaired by the OSC supported by site HSE Reps, for each work party executing the response
- Daily progress meeting between the OSC, FOB and CA IMT

The communications plan should also cover any simultaneous operations with any other spill response activities in the area.

The communications plan must include a 'communication failure plan'. I.e. in the event of failed communications, specified timeframes and actions (e.g. no communications for 30 minutes, response teams move to shoreline staging area).

Refer to Appendix D.1 and D.2 for example communications templates and daily activity planning tools.

## 6.5 Security

Remote island and shoreline locations are within the Indonesian Fishing Memorandum of Understanding box, which could pose key security concerns to remote island and shoreline operations.

Relevant CA security documentation must be considered when planning the response.

## 7 REFERENCES

### General References:

- AMOSC (2016) Shoreline Treatment Recommendations.
- AMOSC (2022) Marine Turtle Species Response Plan.
- AMSA (2018) Marine Oil Spill Response Health and Safety Guidance, NP-GUI-026 (V2.0)
- AMSA (2022) Response Assessment and Termination of Cleaning for oil contaminated foreshores, NP-GUI-025
- BROPEP (2023) Browse Regional Oil Pollution Emergency Plan , Inpex, X060-AH-PLN-70009. 449pp
- Department of Biodiversity, Conservation and Attractions (2022a) Western Australia Oiled Wildlife Response Plan - for environmental Emergencies. V4.0. 88pp
- Department of Biodiversity, Conservation and Attractions (2022b) Western Australia Oiled Wildlife Response Manual. V1. 147pp
- Dicks B, Parker H, Purnell, K, Santner R (2002) Termination of Shoreline Cleanup – A Technical Perspective. ITOPF
- International Petroleum Industry Environmental Conservation Association (IPIECA). 2014. Wildlife response preparedness. IPIECA-IOGP Good Practice Guide Series, Oil Spill Response Joint Industry Project (OSR-JIP). IOGP Report 516. London, UK.
- International Petroleum Industry Environmental Conservation Association (IPIECA). 2015 A Guide to Shoreline Clean-up Techniques – Good practice guidelines for incident management and emergency response personnel.
- Kerambrun and Parker (1998) When Should Cleanup Operations be Brought to a Close – HOW CLEAN IS CLEAN. ITOPF.
- WA Department of Transport (2020) Offshore Petroleum Industry Guidance Note. Revision 5. Marine Oil Pollution: Response and Consultation Arrangements..

### Wildlife Matrix References:

- BirdLife International. (2011). Important Bird Areas factsheet: Lacepede Islands.
- Boyle A, Swann G, Willing T, Gale T, Collins L (2004) Adele Islands Bird Survey Report.
- Clarke RH & Herrod A (2016) The status of seabirds and shorebirds at Ashmore Reef, Cartier Island & Browse Island. Final impact assessment for the Montara Oil Spill. Prepared on behalf of PTTEP Australasia and the Department of the Environment. Monash University, Melbourne, Australia.
- Coate K (2011) Seabird Islands, Adele Island, Western Australia. Corella No. 236. 21(3): 124-128.
- Conservation Commission of Western Australia (2010) Status performance assessment: Biodiversity Conservation on Western Australian Islands. Phase II – Kimberley Islands. Final Report.
- DBCA 2007 Rowley Shoals Marine Park Management Plan. 2007 – 2017. No 56.
- Jacket J 2024 West Island Lacapede bird counts. eBird.
- Surman CA and Nicholson LW (2011) Ichthys Gas Field Development Project: literature review of seabirds in the vicinity of Ichthys Field infrastructure in the Browse Basin, Western Australia. Report prepared by Halfmoon Biosciences, Perth, for INPEX Browse, Ltd., Perth, Western Australia.

## APPENDIX A: AREA RESPONSE PLANS

### A.1 Browse Island Area Response Plan

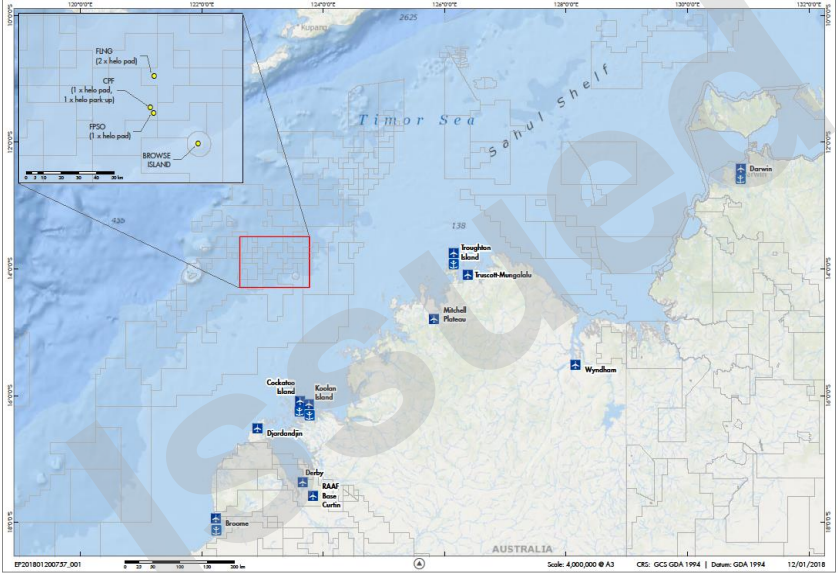
SECTOR_NAME   SEGMENT_ID   Coordinates   14°6'34"S 123°32'54"E	<h2 style="margin: 0;">BROWSE ISLAND</h2> <p style="margin: 0;">MARINE POLLUTION AREA RESPONSE INFORMATION</p>	Kimberley, WA
<h3 style="margin: 0;">SITE DETAILS</h3>		
<p style="margin: 0; color: red;"><b>The Department of Transport (DoT) and The Department of Biodiversity, Conservation and Attractions (DBCA) are the lead agencies for Shoreline and wildlife response respectively in State waters in Western Australia under the state emergency response arrangements.</b></p>		
<h3 style="margin: 0;">SITE LOCATION</h3>	<h3 style="margin: 0;">AREA DESCRIPTION</h3>	
<p style="text-align: center;"><b>Browse Basin Overview</b></p>  <p>The map shows the Browse Basin in the Timor Sea, north-west of Australia. It highlights Browse Island and its surrounding reef flat. Key locations marked include Broome, Derby, Kunene Island, and the RAAF Base Curtin. The map includes a scale of 4,000,000 @ A3 and a date of 12/01/2018.</p>	<p>Browse Island is a small, approximately 14-hectare (35-acre), uninhabited island lying in the <a href="#">Timor Sea</a> about 180 km north-west of the <a href="#">Kimberley</a> coast of north-western <a href="#">Australia</a>. It is a Western Australian Nature Reserve that is vested with the state Conservation Commission and managed by the Department of Biodiversity, Conservation and Attractions.</p> <p>It is considered <a href="#">Western Australia</a>'s most remote island, and is also one of the most remote Australian islands to not fall under <a href="#">external territory</a> status. The island itself is about 800 m at its longest point by 480 m at its widest point with the vegetated part of the island being only 400 m by 300 m.</p> <p>The intertidal reef flat surrounding the island is about 1 km wide on the west side of the island and 400 m to 500 m wide on the east side of the island.</p> <p>The beach surrounding the island is mainly coarse sand and small coral rubble in places. Above the high tide mark, coastal low shrubby vegetation dominates.</p> <p>There is almost no infrastructure on the island with Broome as the nearest regional town, for mobilisation of a response.</p>	
<h3 style="margin: 0;">ADDITIONAL RESOURCES</h3>		
<ul style="list-style-type: none"> <li>• Marine Turtle Species Response Plan</li> </ul>		
<h3 style="margin: 0;">SITE CONSTRAINTS</h3>		

Fig 1 Browse Island Area location

- Remote location with no resources.
- Access via vessel or rotary winged aircraft limited by weather conditions.
- Significant ecological value with limited and potentially hazardous access to sensitivities.
- Strong currents, wave action, and tidal impact make vessel activities challenging.
- Large (~5.5m) tides can limit site access, especially during spring tide periods.

**SITE ACCESSIBILITY AND EXISTING FACILITIES**

- Access is by sea from Broome or Darwin via vessel. There are no ports or harbours, only offshore anchorages.
- Island access is by small tender, supported by a larger liveaboard vessel, required for an extended stay.
- Alternate access by helicopter may be considered from Broome onto Islands if considered suitable.
- There is a protected anchorage in Fraser Inlet on Adele Island (158km to the SW)
- Solar powered lighthouse on the island, no other facilities on the island.

**MAIN SENSITIVITIES**

**Ecological:** Green turtles are the dominant turtle nesting species at Browse Island, nesting between November and April, and a peak between January and March.

Flatback turtles nest in very low numbers at Browse Island, year around, with a peak between June to August.

Historical impacts such as guano mining and the introduction of feral cats and house mice may have resulted in the abandonment of Browse Island as a significant seabird breeding colony. However, there is some increasing presence of seabird activity including feeding, breeding and aggregation occurring at Browse Island between April and September.

The island is surrounded by extensive coral reefs and the peak coral spawning occurs in March/April, with a secondary spawning period in October/November.

**Socio-economic:** Indonesian fishermen conducting 'traditional fishing' for trochus and trepang on the intertidal reef flat (within the MOU box).

Access is restricted to scientific researchers plus a very select number of visitors arriving on expedition ships.

**SITE OVERVIEW**

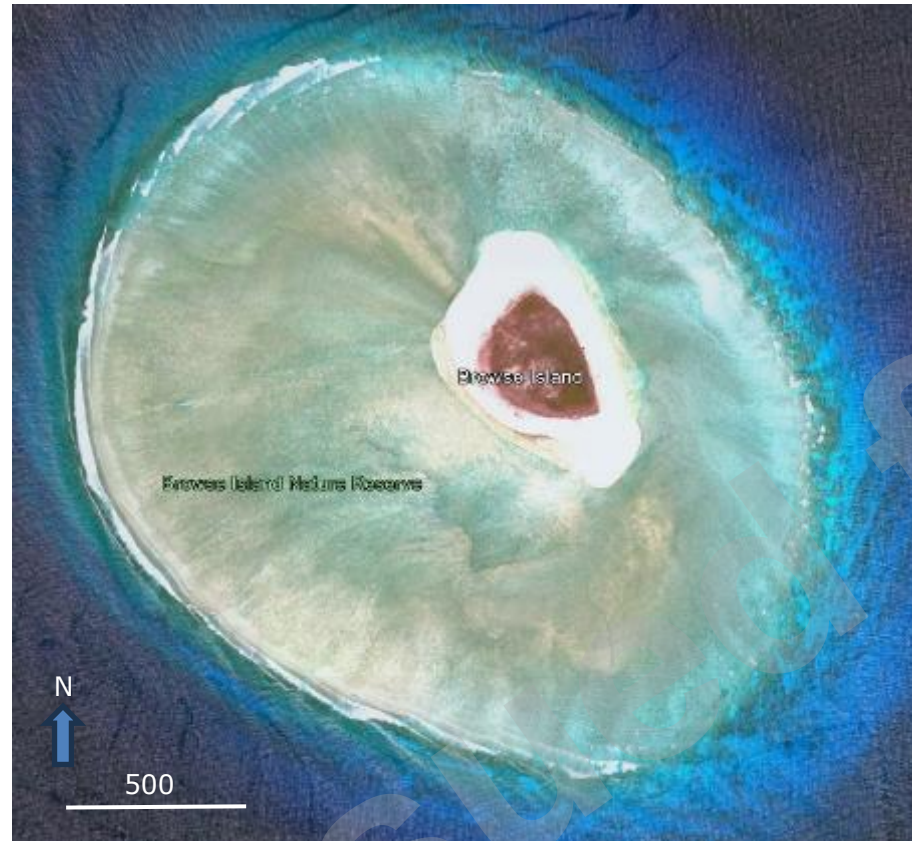


Fig 2: Browse Island

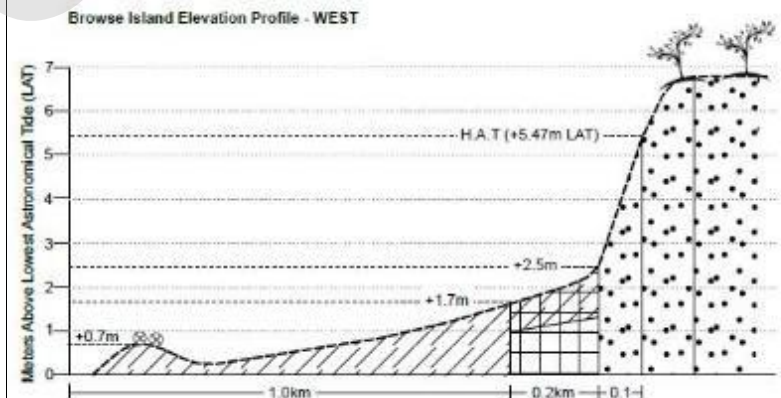
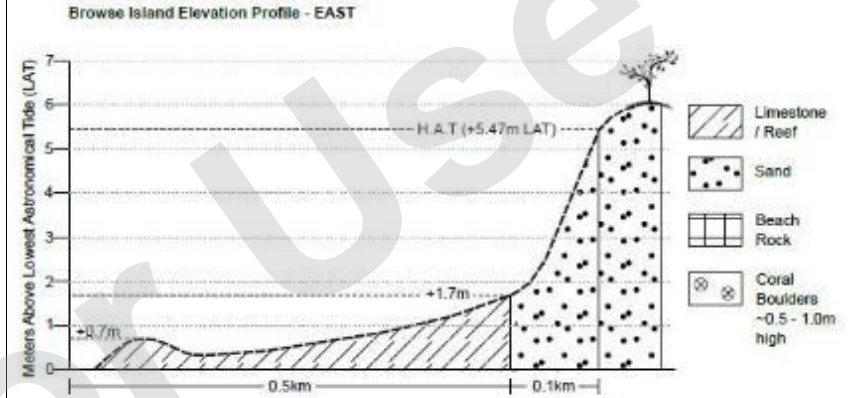


Fig 3 Browse Island Shoreline Elevation profile

**WILDLIFE CHARACTERISTIC SUMMARY**

Characteristics of sensitive wildlife receptors of Browse Island including seasonal presence of taxonomic groups and likely sources of contamination are summarised in the table below.

Should this ARP be implemented – the following steps should be undertaken by the IMT in consultation with relevant stakeholders:

- (1) Wildlife Species Matrix within the BROPEP Tactical Response Planning Guideline is to be used along with the seasonal presence table below to determine the species expected on the islands at the time of the incident.
- (2) Initial SCAT surveys undertaken to confirm the species present and prioritisation of species confirmed with DBCA prior to wildlife operations being completed.

Taxa	Niche/ lifestage	Habitat	Potential Impact	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Turtle	Green Turtle nesting	Beaches	Smothering, fumes	Peak	Peak	Peak	Intermediate	Low	No Occurrence	No Occurrence	No Occurrence	No Occurrence	Low	Intermediate	Peak
Turtle	Flatback nesting	Beaches	Smothering, fumes	No Occurrence	Low	Intermediate	Intermediate	Low	Peak	Peak	Peak	Intermediate	Intermediate	Low	No Occurrence
Seabird	Feeding, aggregation and breeding	Island roosting, offshore feeding	Offshore feeding ingestion	Low	Low	Intermediate	Peak	Peak	Peak	Peak	Peak	Peak	Peak	Peak	Low
Shorebird	Migratory shorebirds residence	Intertidal zone	Ingestion, smothering	No Occurrence	No Occurrence	Low	Intermediate	Low	No Occurrence	No Occurrence	Low	South Migr	Intermediate	Peak	Low
Shorebird	Permanent shorebirds breeding	Intertidal zone	Ingestion, smothering	Peak	Peak	Peak	No Occurrence	No Occurrence	No Occurrence	No Occurrence	No Occurrence	No Occurrence	No Occurrence	Peak	Peak

Occurrence	Key
Peak	Peak Occurrence
Intermediate	Intermediate occurrence
Low	low Occurrence
No Occurrence	No Occurrence

**WILDLIFE RESPONSE STRATEGY MATRIX**

The suitability and impact of response strategies vary between species and have been defined for each species/group as having high, medium or low likelihood of impact on the species.

Taxa	Niche/lifestage	Monitoring & Evaluation	Containment & Recovery	Offshore dispersant application	Shoreline booming	Shoreline clean-up	Shoreline Hazing	Pre-emptive capture	Oiled wildlife response
Turtle	Turtle nesting, emergence	Low	Low	Medium	Medium/High	Medium/High	Low	Low	Medium
Seabird	Feeding, aggregation and breeding	Low	Low	Medium	Low	Low	Low	Medium	Medium
Shorebird	Migratory shorebirds residence	Low	Low	Medium	Medium/High	Medium/High	Medium/High	Medium/High	Medium/High
Shorebird	Permanent shorebirds breeding	Low	Low	Medium	Medium	Medium	Medium	Medium	Medium

**SUBJECT MATTER EXPERTS**

In the event of an incident response, up to date information regarding access to the site or the species located on the site can be obtained from the following contacts:

**Site Experts:**

WA DoT – Duty Officer - (08) 9480 9924

DBCA – Duty Officer – (08) 9219 9108

**Species Experts:** DBCA – Duty Officer - (08) 9219 9108

**Cultural Experts:** Kimberley Land Council - (08) 9194 0100

REFERENCES	LOCAL EMERGENCY CONTACTS: Refer to the IMT for changes in contact details		
<ul style="list-style-type: none"> <li>Clarke RH &amp; Herrod A (2016) The status of seabirds and shorebirds at Ashmore Reef, Cartier Island &amp; Browse Island. Final impact assessment for the Montara Oil Spill. Prepared on behalf of PTTEP Australasia and the Department of the Environment. Monash University, Melbourne, Australia.</li> <li>Surman CA and Nicholson LW (2011) Ichthys Gas Field Development Project: literature review of seabirds in the vicinity of Ichthys Field infrastructure in the Browse Basin, Western Australia. Report prepared by Halfmoon Biosciences, Perth, for INPEX Browse, Ltd., Perth, Western Australia.</li> </ul>	<b>Police, Fire, Ambulance</b>	<b>Phone:</b>	000
		<b>VHF:</b>	Channel 16
		<b>Marine:</b>	Channel 16
	<b>State Emergency Service</b>	132 500	
	<b>Kimberley Ports - Marine Pollution Officer</b>	(08) 9194 3100	
	<b>DBCA Broome</b>	<a href="tel:(08)91955500">(08) 9195 5500</a>	
	<b>DoT Marine Pollution Officer</b>	(08) 9480 9924	
	<b>Broome Police Station</b>	<a href="tel:(08)91039000">(08) 9103 9000</a>	
	<b>First Nations: Kimberley Land Council</b>	(08) 9194 0100	
	<b>Broome Hospital</b>	<a href="tel:(08)91942222">(08) 9194 2222</a>	
<b>Broome Shire Council</b>	(08) 9191 3456		

RESPONSE INFORMATION		
<b>BROWSE ISLAND RESPONSE JUSTIFICATION</b>		
<p>An effective offshore operational response is the preferred option to limit the potential for marine pollution impacting the intertidal reefs and sandy shores of Browse Island. Offshore response strategies may include source control, containment and recovery, and aerial and vessel based dispersant application.</p> <p>Surveillance, Modelling and Visualisation (SMV) via aerial or vessel Observation is a critical response strategy. It should be used to inform the understanding of the behaviour and trajectory of the hydrocarbon spill, and the potential for environmental harm, and therefore the additional response strategies that should be put in place.</p> <p>Onshore response options (including shoreline protection and deflection, shoreline clean-up and oiled wildlife response) on the islands may be limited/not feasible due to high tidal movement, intertidal reefs and exposed coastlines.</p> <p>Outlined below are the recommended primary and secondary response strategies for Browse Island.</p> <p>Further response information including oil spill response tasking, operational considerations and resources (equipment and personnel), for each response strategy listed below is provided in Appendix B of the BROPEP Tactical Response Planning Guideline. In the event of an incident, situational information and an operational NEBA will be needed to identify suitable response strategies and the required supporting resources. This should be prepared by the lead control agency, as a Tasking Assignment (i.e. ICS 204a or equivalent).</p> <p><b>Any shoreline operations on Browse Island would be led by the Department of Transport WA with Oiled Wildlife Response led by the Department of Biodiversity, Conservation and Attractions (DBCA).</b></p>		
<b>RESPONSE STRATEGIES – Monitoring and Evaluation; Protect &amp; Deflect; Shoreline Clean-up; Wildlife Response</b>		
RESPONSE TASKS	RATIONALE BEHIND RESPONSE DECISION	
<b>PRIMARY RESPONSE</b>		
<p><b>Primary Response:</b></p> <p><b>Method:</b></p>	<p><b>Surveillance, Modelling and Visualisation (SMV) via aerial or vessel Observation.</b></p> <p>A minimum of twice daily overflights to determine the fate, behaviour and trajectory of the hydrocarbon. As well as the presence of offshore, nearshore and/or onshore wildlife.</p>	<p>SMV should be used to inform the understanding of the behaviour and trajectory of the hydrocarbon spill, and the potential for environmental harm, and therefore the ongoing response strategies that should be put in place.</p>

<b>Primary Response:</b>	<b>Shoreline Clean-up Assessment Technique (SCAT)</b> , including site reconnaissance, set-up and pre-clean.	Due to the potential environmental sensitivities including turtle and seabird nesting and feeding on the islands, SCAT is necessary to confirm access to the islands and response activities suitable to limit impact to the sensitivities.
<b>Method:</b>	Establish landing areas and staging areas. Manual removal of non-oiled debris to above the high tide areas.	
<b>SECONDARY RESPONSE</b> (subject to NEBA and where access to the island is available and safe for responders)		
<b>Secondary Response:</b>	Establish sensitive receptor / shoreline <b>Protection &amp; Deflection</b> booming.	Protection and deflection equipment to be mobilised to site on response vessels as an option for a response if suitable. As the island beaches are primarily sand and the tidal variation is high P&D may not be effective at these sites.
<b>Method:</b>	Shore-guardian boom deployment on beach. Zoom-boom deployment over reef-flat.	
<b>Secondary Response:</b>	<b>Shoreline clean-up – manual removal of hydrocarbon from the shoreline</b>	As the shoreline of the islands are primarily sandy beaches this would allow for an effective cleanup of oil from the beaches using manual tools. Consideration must be given to the potential disturbance of wildlife from these activities.
<b>Method:</b>	Continued SCAT assessment throughout the operation. Clean-up oil from shoreline.	
<b>Secondary Response:</b>	<b>Wildlife Response</b>	Work with the statutory authority (DBCA) and subject matter experts to determine the suitability of pre-emptive capture and hazing techniques for different species.
<b>Method:</b>	Conduct assessment, capture, cleaning, rehabilitation, relocation or euthanising of oiled wildlife.	Potential for capture and treatment of impacted wildlife while shoreline is cleaned to prevent further oiling is considered suitable.

**A.2 Seringapatam and Scott Reef / Sandy Islet Area Response Plan**

SECTOR_NAME   SEGMENT_ID   Coordinates   14°4'38"S 121°51'24"E	<b>SCOTT &amp; SERINGAPATAM REEFS</b> MARINE POLLUTION AREA RESPONSE INFORMATION	Kimberley, WA
<b>SITE DETAILS</b>		
<p style="color: red;">The Department of Transport (DoT) and The Department of Biodiversity, Conservation and Attractions (DBCA) are the lead agencies for Shoreline and wildlife response respectively in State waters in Western Australia under the state emergency response arrangements. The DoT should be contacted in the first instance on XX (24 hr)</p>		
<b>SITE LOCATION</b>	<b>AREA DESCRIPTION</b>	
	<p>Scott and Seringapatam Reefs is a group of atoll-like reefs in the Timor Sea on the edge of the continental shelf, more than 300km Norwest of Cape Leveque, Western Australia. There are four separate reef structures, Scott Reef North, Central and South and Seringapatam, making up these reefs. Each of the reefs rises steeply up from the seabed 400-500m below.</p> <p><b>Scott Reef South</b> (also Horseshoe Reef or South Reef) is a large crescent-shaped formation that has a rare double reef crest. The lagoon, has depths of over 24 m throughout the greater portion. The reef with its lagoon covers an area of 144 km<sup>2</sup>.</p> <p><b>Scott Reef Central</b>, lies off West Hook (the western extremity of the crescent of Scott Reef South), with Sandy Islet running north-south for 690m and 110 metres wide, covering an area of 9 hectares. This reef dries to 0.8–1.6 km from Sandy Islet. A detached reef, which dries 0.6 m, lies 2.4 km northeast of Sandy Islet. The passage between Scott Reef South and Scott Reef Central is only 33 m deep.</p> <p><b>Scott Reef North</b> consists of a large, approximately circular-shaped, reef lying 23 km southwest of Seringapatam Reef. The reef is composed of a narrow reef-crest that is backed by broad reef flats – much of which becomes exposed at low tide – and a deep central lagoon that is connected to the open sea by two delta-like channels. The reef with its lagoon covers an area of 106 km<sup>2</sup>.</p> <p><b>Seringapatam Reef</b> is located 23 km north of Scott Reef North. It is an egg-shaped reef, with a total area of approximately 50 km<sup>2</sup>, which is</p>	

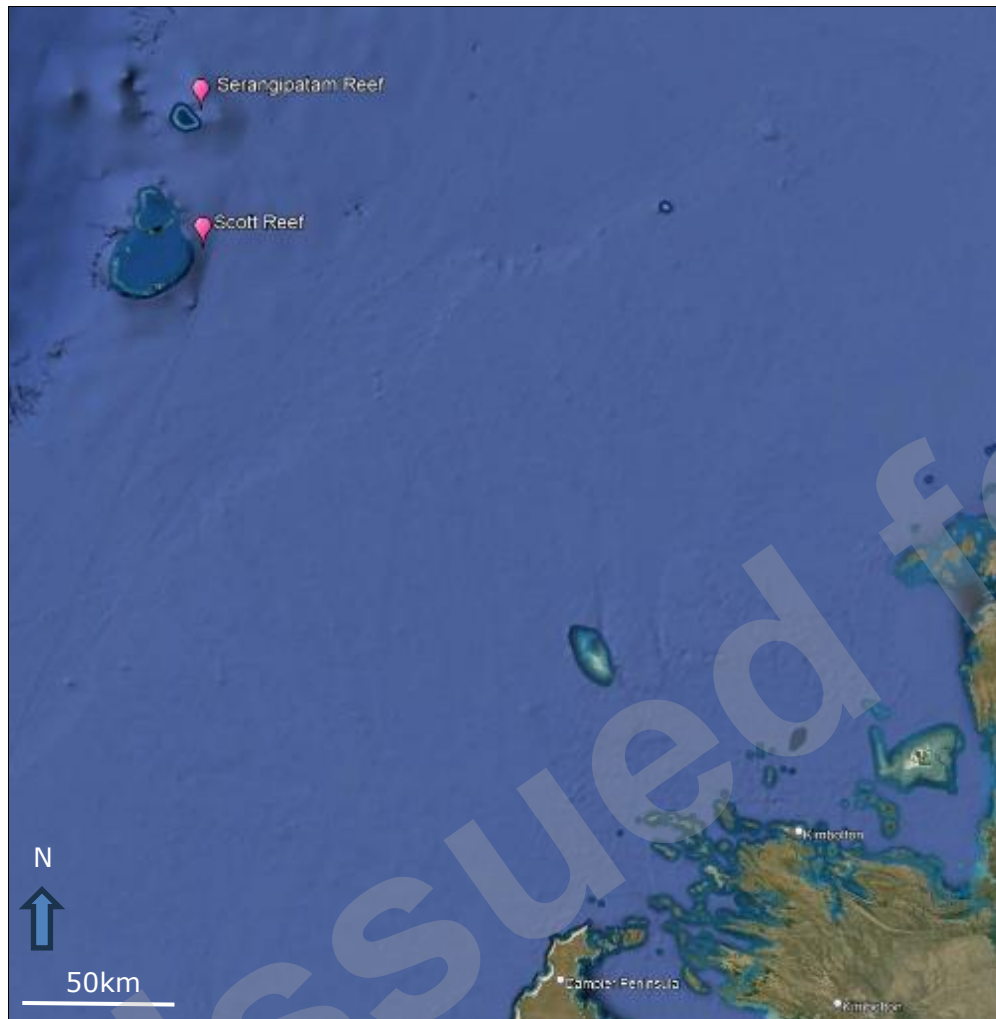


Fig 1 Scott and Seringapatam Reefs Area location – Google Earth

about evenly divided between lagoon and reef flat. Its narrow reef rim encloses a relatively deep lagoon. Much of the reef becomes exposed at low tide. There are large boulders around its edges, with a few sandbanks, which rise about 1.8 m above the water, on the west side. Seringapatam Reef, including the central lagoon, covers an area of 55 km<sup>2</sup>.

Sandy Islet is the nesting site for up 1000 green turtles (*Chelonia mydas*) annually.

#### ADDITIONAL RESOURCES

- Marine Turtle Species Response Plan

#### SITE CONSTRAINTS

- Remote location with no resources.
- Large (~4.00) semi-diurnal tides can limit site access, especially during spring tide periods.
- Access via vessel or rotary winged aircraft limited by weather conditions.
- Significant ecological value with limited and potentially hazardous access to sensitivities.

**SITE ACCESSIBILITY AND EXISTING FACILITIES**

Access by sea from Broome or Darwin via vessel, reasonable anchorages inside atolls.

Alternate access by helicopter may be considered from Broome onto Sandy islet if considered suitable.

Solar powered lighthouse on Sandy Islet, no other facilities on the island.

Liveaboard vessel required for extended stay.

**MAIN SENSITIVITIES**

**Ecological:** Scott and Seringapatam Reefs are characterised by extensive intertidal and subtidal coral reef communities. Migratory seabirds and shorebirds utilise sandy islet as resting site.

Two species of marine turtle, Green and Hawksbill, nest during the summer months on Sandy Islet, located on South Scott Reef. These species also inter-nest and forage in the surrounding waters (Guinea 2006). Scott and Seringapatam reefs provide foraging areas for seabird species such as the lesser frigatebird, wedge-tailed shearwater, brown booby and roseate tern (Donovan et al. 2008).

**Socio-economic:** Scott and Seringapatam Reefs are remote and can only be accessed by boat. Given the turtles nesting on the islands, these species are highly sensitive to disturbance from visitation. Visitors to the islands must remain on the beach areas and should not venture further inland past the high tide unless considered suitable.

SITE OVERVIEW



Fig 2: Scott and Seringapatam Reefs



Fig 2: Green Turtles (*Chelonia mydas*) nesting on Sandy Islet Scott Reef



Fig 3: Extensive fringing reef community

**WILDLIFE CHARACTERISTIC SUMMARY**

Characteristics of sensitive wildlife receptors of Scott and Seringapatam Reefs including seasonal presence of taxonomic groups and likely sources of contamination are summarised in the table below.

Should this ARP be implemented – the following steps should be undertaken by the IMT in consultation with relevant stakeholders:

- (3) Wildlife Species Matrix within the BROPEP Tactical Response Planning Guideline is to be used along with the seasonal presence table below to determine the species expected on the islands at the time of the incident.
- (4) Initial SCAT surveys undertaken to confirm the species present and prioritisation of species confirmed with DBCA prior to wildlife operations being completed.

Taxa	Niche/lifestage	Habitat	Potential Impact	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Turtle	Green Turtle nesting	Beaches	Smothering, fumes	Peak Occurrence	Intermediate occurrence	Intermediate occurrence	Intermediate occurrence	Intermediate occurrence	Intermediate occurrence	Intermediate occurrence	Intermediate occurrence	Intermediate occurrence	Intermediate occurrence	Intermediate occurrence	Peak Occurrence
Turtle	Hawksbill nesting	Beaches	Smothering, fumes	Peak Occurrence	Intermediate occurrence	Intermediate occurrence	Intermediate occurrence	Intermediate occurrence	Intermediate occurrence	Intermediate occurrence	Intermediate occurrence	Intermediate occurrence	Peak Occurrence	Peak Occurrence	Peak Occurrence
Seabird	Feeding, aggregation and breeding	Island Roosting, offshore feeding	Offshore feeding ingestion	Intermediate occurrence	Intermediate occurrence	Intermediate occurrence	Peak Occurrence	Peak Occurrence	Peak Occurrence	Peak Occurrence	Peak Occurrence	Peak Occurrence	Peak Occurrence	Peak Occurrence	Intermediate occurrence
Shorebird	Migratory shorebirds residence	Intertidal zone	ingestion, smothering	No Occurrence	No Occurrence	Intermediate occurrence	North Migr	Intermediate occurrence	No Occurrence	No Occurrence	Intermediate occurrence	South Migr	Intermediate occurrence	Peak Occurrence	Intermediate occurrence
Shorebird	Permanent shorebirds breeding	Intertidal zone	ingestion, smothering	Peak Occurrence	Peak Occurrence	Peak Occurrence	No Occurrence	No Occurrence	No Occurrence	No Occurrence	No Occurrence	No Occurrence	No Occurrence	Peak Occurrence	Peak Occurrence

Occurrence	Key
Peak Occurrence	Peak Occurrence
Intermediate occurrence	Intermediate occurrence
low Occurrence	low Occurrence
No Occurrence	No Occurrence

**WILDLIFE RESPONSE STRATEGY MATRIX**

The suitability and impact of response strategies vary between species and have been defined for each species/group as having high, medium or low likelihood of impact on the species.

Taxa	Niche/ lifestage	Monitoring & Evaluation	Containment & Recovery	Offshore dispersant application	Shoreline booming	Shoreline clean-up	Shoreline Hazing	Pre-emptive capture	Oiled wildlife response
Turtle	Turtle nesting, emergence	Low	Low	Medium	Medium/High	Medium/High	Low	Low	Medium
Seabird	Feeding, aggregation and breeding	Low	Low	Medium	Low	Low	Low	Medium	Medium
Shorebird	Migratory shorebirds residence	Low	Low	Medium	Medium/High	Medium/High	Medium/High	Medium/High	Medium/High
Shorebird	Permanent shorebirds breeding	Low	Low	Medium	Medium	Medium	Medium	Medium	Medium

**SUBJECT MATTER EXPERTS**

In the event of an incident response, up to date information regarding access to the site or the species located on the site can be obtained from the following contacts:

**Site Experts:**

WA DoT – Duty Officer - (08) 9480 9924

DBCA – Duty Officer – (08) 9480 9924

**Species Experts:** DBCA – Duty Officer - (08) 9480 9924

**Cultural Experts:** Contact through KLC

REFERENCES	LOCAL EMERGENCY CONTACTS: Refer to the IMT for changes in contact details		
<ul style="list-style-type: none"> <li>Guinea, M, (2006). Sea turtles, sea snakes and dugongs of Scott Reef, Seringapatam Reef and Browse Island with notes on West Lacepede Island., Report submitted to the Australian Government Department of the Environment, Water, Heritage and the Arts, Canberra.</li> <li>Donovan, A, Brewer, D, van der Velde, T &amp; Skewes, T, (2008). Scientific descriptions of four selected key ecological features (KEFs) in the north-west bioregion: final report., A report to the Department of the Environment, Water Heritage and the Arts, CSIRO Marine and Atmospheric Research, Hobart</li> </ul>	<b>Police, Fire, Ambulance</b>	<b>Phone:</b>	000
		<b>VHF:</b>	Channel 16
		<b>Marine:</b>	Channel 16
	<b>State Emergency Service</b>	132 500	
	<b>Kimberley Ports - Marine Pollution Officer</b>	(08) 9194 3100	
	<b>DBCA Broome</b>	<a href="tel:(08)91955500">(08) 9195 5500</a>	
	<b>DoT Marine Pollution Officer</b>	(08) 9480 9924	
	<b>Broome Police Station</b>	<a href="tel:(08)91039000">(08) 9103 9000</a>	
	<b>First Nations: Kimberley Land Council</b>	(08) 9194 0100	
	<b>Broome Hospital</b>	<a href="tel:(08)91942222">(08) 9194 2222</a>	
<b>Broome Shire Council</b>	(08) 9191 3456		

RESPONSE INFORMATION		
<b>SCOTT REEF AND SERINGAPATAM RESPONSE JUSTIFICATION</b>		
<p>An effective offshore operational response is the preferred option to limit the potential for marine pollution impacting the intertidal reefs and sandy shores of Scott and Seringapatam Reefs. Offshore response strategies may include source control, containment and recovery, and aerial and vessel based dispersant application.</p> <p>Surveillance, Modelling and Visualisation (SMV) via aerial or vessel Observation is a critical response strategy. It should be used to inform the understanding of the behaviour and trajectory of the hydrocarbon spill, and the potential for environmental harm, and therefore the additional response strategies that should be put in place.</p> <p>Onshore response options (including shoreline protection and deflection, shoreline clean-up and oiled wildlife response) on the islands may be limited/not feasible due to high tidal movement, intertidal reefs and exposed coastlines.</p> <p>Outlined below are the recommended primary and secondary response strategies for Scott and Seringapatam Reefs.</p> <p>Further response information including oil spill response tasking, operational considerations and resources (equipment and personnel), for each response strategy listed below is provided in Appendix B of the BROPEP Tactical Response Planning Guideline. In the event of an incident, situational information and an operational NEBA will be needed to identify suitable response strategies and the required supporting resources. This should be prepared by the lead control agency, as a Tasking Assignment (i.e. ICS 204a or equivalent).</p> <p><b>Any shoreline operations on Scott and Seringapatam Reefs would be led by the Department of Transport WA with Oiled Wildlife Response led by the Department of Biodiversity, Conservation and Attractions (DBCA).</b></p>		
<b>RESPONSE STRATEGIES – Monitoring and Evaluation; Protect &amp; Deflect; Shoreline Clean-up; Wildlife Response</b>		
<b>RESPONSE TASKS</b>		<b>RATIONALE BEHIND RESPONSE DECISION</b>
<b>PRIMARY RESPONSE</b>		
<b>Primary Response:</b>	<b>Surveillance, Modelling and Visualisation (SMV)</b> via aerial or vessel Observation.	SMV should be used to inform the understanding of the behaviour and trajectory of the hydrocarbon spill, and the potential for environmental harm, and therefore the ongoing response strategies that should be put in place.
<b>Method:</b>	A minimum of twice daily overflights to determine the fate, behaviour and trajectory of the hydrocarbon. As well as the presence of offshore, nearshore and/or onshore wildlife.	

<b>Primary Response:</b>	<b>Shoreline Clean-up Assessment Technique (SCAT)</b> , including site reconnaissance, set-up and pre-clean.	Due to the potential environmental sensitivities including turtle and seabird nesting and feeding on the islands, SCAT is necessary to confirm access to the islands and response activities suitable to limit impact to the sensitivities.
<b>Method:</b>	Establish landing areas and staging areas. Manual removal of non-oiled debris to above the high tide areas.	
<b>SECONDARY RESPONSE</b> (subject to NEBA and where access to the island is available and safe for responders)		
<b>Secondary Response:</b>	Establish sensitive receptor / shoreline <b>Protection &amp; Deflection</b> booming.	Protection and deflection equipment to be mobilised to site on response vessels as an option for a response if suitable. As the island beaches are primarily sand and the tidal variation is high P&D may not be effective at these sites.
<b>Method:</b>	Shore-guardian boom deployment on beach. Zoom-boom deployment over reef-flat.	
<b>Secondary Response:</b>	<b>Shoreline clean-up – manual removal of hydrocarbon from the shoreline</b>	As the shoreline of the islands are primarily sandy beaches this would allow for an effective cleanup of oil from the beaches using manual tools. Consideration must be given to the potential disturbance of wildlife from these activities.
<b>Method:</b>	Continued SCAT assessment throughout the operation. Clean-up oil from shoreline.	
<b>Secondary Response:</b>	<b>Wildlife Response</b>	Work with the statutory authority (DBCA) and subject matter experts to determine the suitability of pre-emptive capture and hazing techniques for different species. Potential for capture and treatment of impacted wildlife while shoreline is cleaned to prevent further oiling is considered suitable.
<b>Method:</b>	Conduct assessment, capture, cleaning, rehabilitation, relocation or euthanising of oiled wildlife.	

**A.3 Ashmore Reef / Cartier Island Area Response Plan**

SECTOR_NAME   SEGMENT_ID   COORDINATES   Ashmore: 12°15'35"S 123°4'19'E Cartier: 12°31'49"S 123°33'23'E	<b>ASHMORE AND CARTIER ISLANDS</b>  MARINE POLLUTION AREA RESPONSE INFORMATION	Kimberley, WA
<b>SITE DETAILS</b>		
<b>The Department of Climate Change, Energy, the Environment and Water (DEECCW) are the lead agency for Shoreline and wildlife response on Indian Ocean Territories in Australia. DEECCW should be contacted in the event of an incident impacting the Territories</b>		
<b>SITE LOCATION</b>	<b>AREA DESCRIPTION</b>	
	<p>The Territory of Ashmore and Cartier Islands is an uninhabited Australian external territory lying in the Indian Ocean on the edge of the continental shelf, 840 kilometres west of Darwin, 320km from the NW coast of Australia and 140km S of the Indonesian Island of Rote. Cartier Island Marine Reserve is ~46km SE of Ashmore and together the reserves cover an area of 750km<sup>2</sup>. The reserves are characterised by four low lying tropical islands in two separate reefs (Ashmore and Cartier), as well as the 12NM territorial sea generated by the islands. The territory comprises Ashmore Reef, which includes West, Middle and East Islands, in addition to two lagoons, as well as Cartier Reef, which includes Cartier Island.</p> <p>The <a href="#">Ashmore Reef Marine Park</a> and <a href="#">Cartier Island Marine Park</a> are both classed as strict nature reserves (IUCN Ia) and protect biodiverse areas of significant and international importance, as well as cultural heritage.</p> <p><b>Ashmore Reef</b> – Covers an area of approximately 583km<sup>2</sup> to the limits of the reefs. Ashmore Reef has three vegetated cays West, Middle and East Islands have a combined land area variously reported as 54 hectares, 93 hectares and 112 hectares. Each has a fresh water lenses and two lagoons, separated by a calcareous algal rise. Both lagoons have two entrances on the northern side of the reef. Ashmore Reef Reserve was designated a Ramsar Wetland of International importance in October 2002.</p> <p><b>Cartier Reef</b> – Covers an area of approximately 167km<sup>2</sup> to the limits of the reefs with Cartier Island having a reported land area of 0.4ha. Cartier Island was a former bombing range.</p>	



Fig 1 Ashmore and Cartier Reefs

**ADDITIONAL RESOURCES**

- Marine Turtle Species Response Plan
- DEECCW (2013) Cartier Island Marine Park – Unexploded Ordnance (UXO) Information

**SITE CONSTRAINTS**

- Remote location with no resources.
- Strong currents, wave action, and tidal impact make vessel activities challenging.
- Large (~4.00) semi-diurnal tides can limit site access, especially during spring tide periods.
- At Ashmore Reef, only West Island Lagoon and the eastern beach of West Island are open to the public. Public access to Middle and East Islands is prohibited.
- Public access to Cartier Island intertidal reef flats and sand cay is not permitted, due to safety risk associated with unexploded ordinance (Cartier Island is an old military bombing range).

**SITE ACCESSIBILITY AND EXISTING FACILITIES**

In accordance with the North-west Marine Parks Network Management Plan 2018 (Part 4.2.9):  
*Actions required to respond to oil pollution incidents, including environmental monitoring and remediation, in connection with mining operations authorised under the OPGGS Act, may be conducted in all zones without an authorisation issued by the Director, provided that the actions are taken in accordance with an environment plan that has been accepted by NOPSEMA, and the Director is notified (via Parks Australia’s duty officer number – 0419 293 465), in the event of oil pollution within a marine park, or where an oil spill response action must be taken within a marine park, so far as reasonably practicable, prior to response action being taken.*

- Access is by sea from Broome or Darwin via vessel. There are no ports or harbours, only offshore anchorage. There are 13 public moorings located at Ashmore Reef. There are no moorings at Cartier Island.
- Island access is by small tender, supported by a larger liveaboard vessel, required for an extended stay.
- Alternate access by helicopter may be considered from Broome onto Islands if considered suitable.
- All freshwater wells in the Territory are infected with cholera or contaminated and undrinkable.
- An Australian Border Force vessel is stationed off the reef at Ashmore for up to 300 days per year. The island are visited by seasonal caretakers and occasional scientific researchers.
- The Prelude and Ichthys oil and gas production facilities, located ~180km south of Ashmore Reef are the nearest helicopter pads and permanent medical facilities.

### MAIN SENSITIVITIES

#### **Ecological:**

The Cartier and Ashmore Reserves are characterised by extensive coral reef communities surrounding the sand flats and emergent islands.

The Islands of the Reserves and the associated intertidal sandflats provide a resting place for large numbers of migratory shorebirds and support large colonies of breeding seabirds. Some of the bird species are in such large numbers that Ashmore Reef Reserve was designated a Ramsar Wetland of International Importance in 2002.

Ashmore Reef is a recognised Ramsar site with 100,000 seabirds breeding on the Islands of Ashmore Reef Marine Park. Breeding birds include; crested terns, white-tailed tropicbirds and greater frigatebirds.

In addition, tens of thousands of migratory shorebirds also turn up to feed on the extensive intertidal habitats including; curlew sandpipers (listed as critically endangered), bar-tailed godwits and great knots.

The Reserves support significant populations of feeding, breeding and nesting sea turtles including Green (*Chelonia Mydas*) and Hawksbill (*Eretmochelys imbricata*) turtles and Ashmore Reserve is home to 17 species of sea snake, the highest recorded globally.

#### **Socio-economic:**

A 1974 MOU between Australia and Indonesia sets out arrangements by which traditional fishers can access resources in Australia's territorial sea in the region. The area, known as the MOU Box, contains Ashmore and Cartier Islands Territory and allows traditional Indonesian fishermen to access parts of Ashmore for shelter, freshwater and to visit grave sites.

**SITE OVERVIEW**



Fig 2: West Island - Ashmore Reef

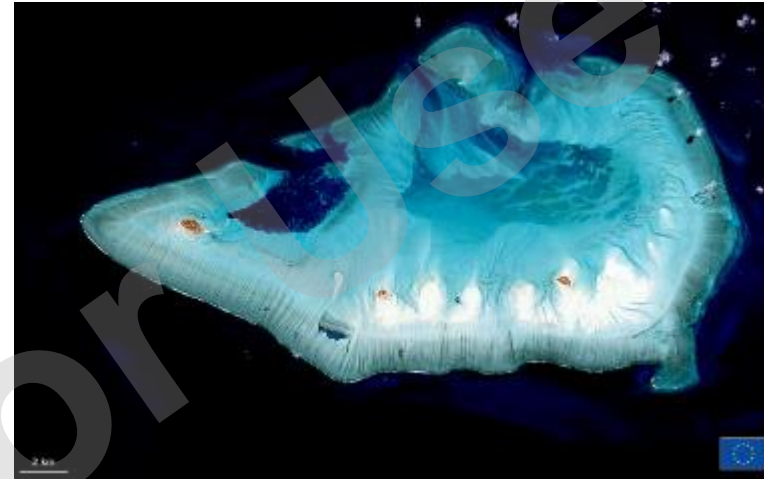


Fig 3: Ashmore Reef with East, Middle and West Islands

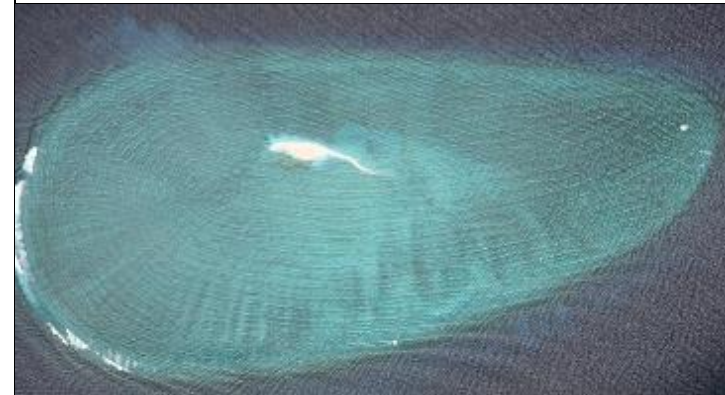


Fig 4: Extensive fringing reef community surrounding Cartier Island

**WILDLIFE CHARACTERISTIC SUMMARY**

Characteristics of sensitive wildlife receptors of Ashmore Reef and Cartier Island including seasonal presence of taxonomic groups and likely sources of contamination are summarised in the table below.

Should this TRP be implemented – the following steps should be undertaken by the IMT in consultation with relevant stakeholders:

- (1) Wildlife Species Matrix within the BROPEP Tactical Response Planning Guideline is to be used along with the seasonal presence table below to determine the species expected on the islands at the time of the incident.
- (2) Initial SCAT surveys undertaken to confirm the species present and prioritisation of species confirmed with DEECCW prior to wildlife operations being completed.

Taxa	Niche/ lifestage	Habitat	Potential Impact	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Turtle	Green Turtle nesting	Beaches	Smothering, fumes	Red	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange
Turtle	Hawksbill nesting	Beaches	Smothering, fumes	Red	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Red	Red	Red
Seabird	Feeding, aggregation and breeding	Island Vegetation breeding, offshore feeding	Offshore feeding ingestion	Yellow	Yellow	Yellow	Red	Red	Red	Red	Red	Red	Red	Red	Yellow
Shorebird	Migratory shorebirds residence	Intertidal zone	Ingestion, smothering			Yellow	North migr	Yellow			Yellow	South Migr	Orange	Red	Yellow
Shorebird	Permanent shorebirds breeding	Intertidal zone	Ingestion, smothering	Red	Red	Red								Red	Red

Occurrence	Key
Red	Peak Occurrence
Orange	Intermediate occurrence
Yellow	low Occurrence
	No Occurrence

**WILDLIFE RESPONSE STRATEGY MATRIX**

The suitability and impact of response strategies vary between species and have been defined for each species/group as having high, medium or low likelihood of impact on the species.

Taxa	Niche/ lifestage	Monitoring & Evaluation	Containment & Recovery	Offshore dispersant application	Shoreline booming	Shoreline clean-up	Shoreline Hazing	Pre-emptive capture	Oiled wildlife response
Turtle	Turtle nesting, emergence	Low	Low	Medium	Medium/ High	Medium/ High	Low	Low	Medium
Seabird	Feeding, aggregation and breeding	Low	Low	Medium	Low	Low	Low	Medium	Medium
Shorebird	Migratory shorebirds residence	Low	Low	Medium	Medium/ High	Medium/ High	Medium/ High	Medium/ High	Medium/ High
Shorebird	Permanent shorebirds breeding	Low	Low	Medium	Medium	Medium	Medium	Medium	Medium

**SUBJECT MATTER EXPERTS**

In the event of an incident response, up to date information regarding access to the sites or the species located on the sites can be obtained from the following contacts:

**Site Experts:** DEECCW – duty officer - 0419 293 465  
**Species Experts:** DEECCW – duty officer - 0419 293 465

**REFERENCES**

- Director of National Parks 2018, North-west Marine Parks Network Management Plan 2018, Director of National Parks, Canberra.
- <https://www.infrastructure.gov.au/territories-regions-cities/territories/ashmore-and-cartier-islands>
- [https://en.wikipedia.org/wiki/Ashmore\\_and\\_Cartier\\_Islands](https://en.wikipedia.org/wiki/Ashmore_and_Cartier_Islands)
- <https://parksaustralia.gov.au/marine/parks/north-west/ashmore-reef/#:~:text=The%20Ashmore%20Reef%20Ramsar%20Site,65%20Ramsar%20sites%20in%20Australia.>

**LOCAL EMERGENCY CONTACTS:**

**Refer to the IMT for changes in contact details**

<b>Police, Fire, Ambulance</b>	<b>Phone:</b>	000	
	<b>VHF:</b>	Channel 16	
	<b>Marine:</b>	Channel 16	
<b>State Emergency Service</b>	132 500		
<b>Kimberley Ports - Marine Pollution Officer</b>	(08) 9194 3100		
<b>DCCEEW Duty Officer</b>	0419 293 465		


<ul style="list-style-type: none"> <li>National Heritage Trust (2005) Ashmore Reef and Cartier Island Reserves brochure.</li> <li>Richards, Z. Beger, M, Hobbs, JP, Bowling, T, Chong-Seng, K, Pratchett, M. (2009) Ashmore Reef National Nature Reserve and Cartier Island Marine Reserve. Marine Survey 2009. Department of the Environment Water Heritage and the Arts.</li> </ul>	<b>DBCA Broome</b>	<a href="tel:(08)91955500">(08) 9195 5500</a>	
	<b>DoT Marine Pollution Officer</b>	(08) 9480 9924	
	<b>Broome Police Station Darwin Police Station</b>	<a href="tel:(08)91039000">(08) 9103 9000</a> (08) 8901 0208	
	<b>First Nations: Kimberley Land Council</b>	(08) 9194 0100	
	<b>Border Force</b>	131 881	
	<b>Broome Hospital</b>	<a href="tel:(08)91942222">(08) 9194 2222</a>	
	<b>Broome Shire Council</b>	(08) 9191 3456	

RESPONSE INFORMATION
<p><b>ASHMORE AND CARTIER ISLANDS RESPONSE JUSTIFICATION</b></p> <p>An effective offshore operational response is the preferred option to limit the potential for marine pollution impacting the intertidal reefs and sandy shores of the Ashmore and Cartier Islands. Offshore response strategies may include source control, containment and recovery, and aerial and vessel based dispersant application.</p> <p>Surveillance, Modelling and Visualisation (SMV) via aerial or vessel Observation is a critical response strategy. It should be used to inform the understanding of the behaviour and trajectory of the hydrocarbon spill, and the potential for environmental harm, and therefore the additional response strategies that should be put in place.</p> <p>Onshore response options (including shoreline protection and deflection, shoreline clean-up and oiled wildlife response) on the islands may be limited/not feasible due to high tidal movement, intertidal reefs and exposed coastlines.</p> <p>Outlined below are the recommended primary and secondary response strategies for Ashmore and Cartier Islands.</p> <p>Further response information including oil spill response tasking, operational considerations and resources (equipment and personnel), for each response strategy listed below is provided in Appendix B of the BROPEP Tactical Response Planning Guideline. In the event of an incident, situational information and an operational NEBA will be needed to identify suitable response strategies and the required supporting resources. This should be prepared by the lead control agency, as a Tasking Assignment (i.e. ICS 204a or equivalent).</p> <p><b>Any shoreline operations on Ashmore and Cartier Islands should be confirmed with the Department of Climate Change, Energy, the Environment and Water (DEECCW) before proceeding.</b></p>

RESPONSE STRATEGIES – Monitoring and Evaluation; Protect & Deflect; Shoreline Clean-up; Wildlife Response		
RESPONSE TASKS		RATIONALE BEHIND RESPONSE DECISION
<b>PRIMARY RESPONSE</b>		
<p><b>Primary Response:</b></p> <p><b>Method:</b></p>	<p><b>Surveillance, Modelling and Visualisation (SMV)</b> via aerial or vessel Observation.</p> <p>A minimum of twice daily overflights to determine the fate, behaviour and trajectory of the hydrocarbon. As well as the presence of offshore, nearshore and/or onshore wildlife,</p>	<p>SMV should be used to inform the understanding of the behaviour and trajectory of the hydrocarbon spill, and the potential for environmental harm, and therefore the ongoing response strategies that should be put in place.</p>
<p><b>Primary Response:</b></p> <p><b>Method:</b></p>	<p><b>Shoreline Clean-up Assessment Technique (SCAT)</b>, including site reconnaissance, set-up and pre-clean.</p> <p>Establish landing areas and staging areas. Manual removal of non-oiled debris to above the high tide areas.</p>	<p>Due to the potential environmental sensitivities including turtle and seabird nesting and feeding on the islands, SCAT is necessary to confirm access to the islands and response activities suitable to limit impact to the sensitivities.</p>
<b>SECONDARY RESPONSE</b> (subject to NEBA and where access to the island is available and safe for responders)		
<p><b>Secondary Response:</b></p> <p><b>Method:</b></p>	<p>Establish sensitive receptor / shoreline <b>Protection &amp; Deflection</b> booming.</p> <p>Shore-guardian boom deployment on beach. Zoom-boom deployment over reef-flat.</p>	<p>Protection and deflection equipment to be mobilised to site on response vessels as an option for a response if suitable. As the island beaches are primarily sand and the tidal variation is high P&amp;D may not be effective at these sites.</p>

<b>Secondary Response:</b>	<b>Shoreline clean-up – manual removal of hydrocarbon from the shoreline</b>	As the shoreline of the islands are primarily sandy beaches this would allow for an effective cleanup of oil from the beaches using manual tools. Consideration must be given to the potential disturbance of wildlife from these activities.
<b>Method:</b>	Continued SCAT assessment throughout the operation. Clean-up oil from shoreline.	
<b>Secondary Response:</b>	<b>Wildlife Response</b>	Work with the statutory authority (DEECCW) and subject matter experts to determine the suitability of pre-emptive capture and hazing techniques for different species. Potential for capture and treatment of impacted wildlife while shoreline is cleaned to prevent further oiling is considered suitable.
<b>Method:</b>	Conduct assessment, capture, cleaning, rehabilitation, relocation or euthanising of oiled wildlife.	

**A.4 Adele Island Area Response Plan**

SECTOR_NAME   SEGMENT_ID   COORDINATES   15°31'38"S 123°9'17"E	<b>ADELE ISLAND</b>  MARINE POLLUTION AREA RESPONSE INFORMATION	Kimberley, WA
<b>SITE DETAILS</b>		
The Department of Transport (DoT) and The Department of Biodiversity, Conservation and Attractions (DBCA) are the lead agencies for shoreline and wildlife response respectively in State waters in Western Australia under the state emergency response arrangements.		
<b>SITE LOCATION</b>	<b>AREA DESCRIPTION</b>	
	Adele Island is located in the Indian Ocean approximately 100kms off the Kimberley Coast directly north of Ardyaloon, Dampier Peninsula. The Island is 2.9km long and 1.6 km wide covering an area of 217ha. This low lying island is covered by an unusually dense growth of beach spinifex, saltwater couch grass and lantern flowers and surrounded by extensive sandbanks overlaying a limestone platform which extends 25km at low tide. The Extensive sand flats are broken by many seawater channels which are best developed at Fraser Inlet.  In the south and particularly towards the North West of the island several large sand bars, devoid of vegetation, have formed and provide feeding areas for resident and migratory shorebirds.  The island was declared a nature reserve in 2001 in recognition of its status as a bird breeding sanctuary leading to its classification by BirdLife International as an important bird area for its seabirds and waders.	
Fig 1 Adele Island Area location		<b>ADDITIONAL RESOURCES</b> <ul style="list-style-type: none"> <li>• Marine Turtle Species Response Plan</li> </ul>

	<p><b>SITE CONSTRAINTS</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Remote location with no resources.</li> <li><input type="checkbox"/> Access via vessel or rotary winged aircraft limited by weather conditions.</li> <li><input type="checkbox"/> Significant ecological value with limited and potentially hazardous access to sensitivities.</li> <li><input type="checkbox"/> Strong currents, wave action, and tidal impact make vessel activities challenging.</li> </ul>
<p><b>SITE ACCESSIBILITY AND EXISTING FACILITIES</b></p>	
<ul style="list-style-type: none"> <li>• Access by sea from Broome or Darwin via vessel. There are no ports or harbours, only identified anchorage for limited sized vessels.</li> <li>• Site access is by small tender, supported by a larger liveaboard vessel, required for an extended stay.</li> <li>• Alternate access by helicopter may be considered from Broome onto Islands if considered suitable.</li> </ul>	
<p><b>MAIN SENSITIVITIES</b></p>	
<p><b>Ecological:</b> Adele Island is known as a breeding location for the Masked booby, Caspian tern, and lesser crested tern. In addition, there are a number of globally important bird species breeding or staging on the island including the lesser frigatebird with 2000-5700 breeding pairs, brown booby with 1500-8500 breeding pairs, grey tailed tattler with up to 5500 individuals, and the red necked stint with up to 4100 individuals. The Island also hosts the only known WA colonies of the red-footed booby and greater frigatebird.</p> <p>Green Turtles, <i>Chelonia mydas</i>, nest on the island seasonally and use the surrounding lagoons for inter nesting and mating.</p> <p>Extensive coral reef communities surround Adele Island and a rollolith (unattached, free-living benthic organisms) habitat is present on the SW side of the island dominated by Milleporinid coralliths (coral) and rhodoliths (red crustose coralline algae) with additional three genera of coral (Pavona, Psammocora, Cyphastrea) also present.</p> <p><b>Socio-economic:</b> Access is restricted to scientific researchers plus a very select number of visitors arriving on expedition ships.</p>	

**SITE OVERVIEW**



Fig 2: Adele Island – Google Maps

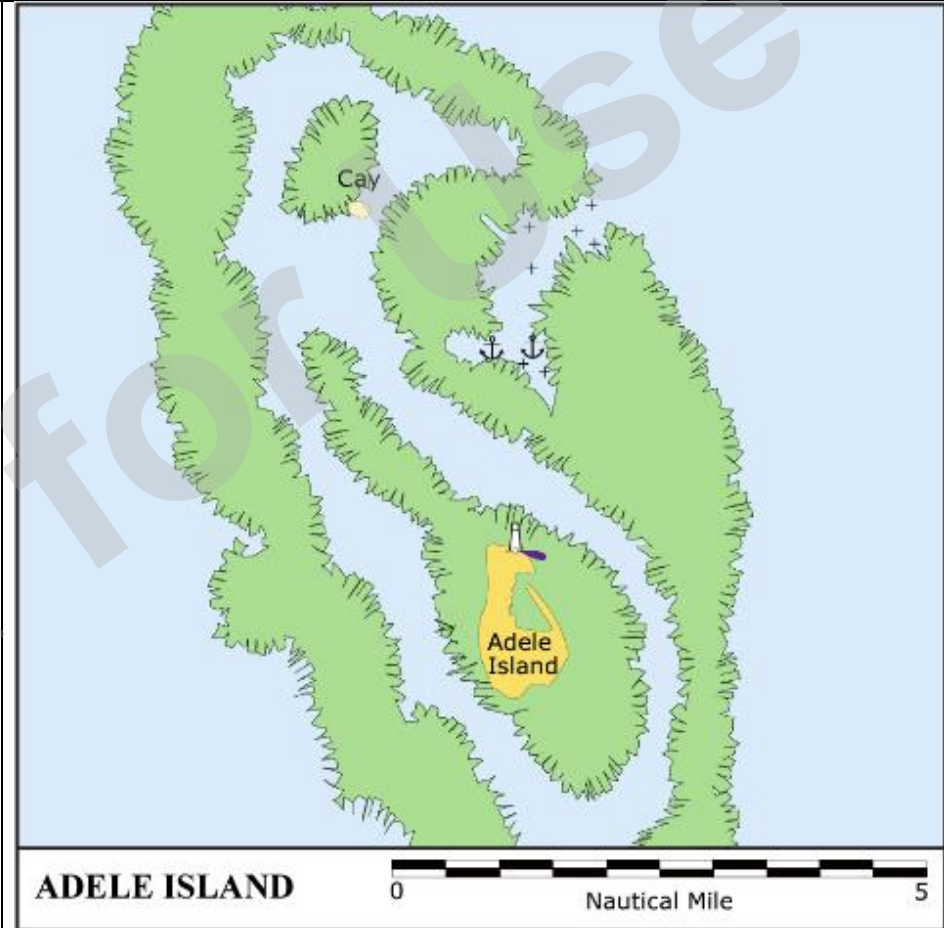


Fig 3: Reefs and inlets of Adele Island – WA Cruising Guide

**WILDLIFE CHARACTERISTIC SUMMARY**

Characteristics of sensitive wildlife receptors of Adele Island including seasonal presence of taxonomic groups and likely sources of contamination are summarised in the table below.

Should this ARP be implemented – the following steps should be undertaken by the IMT in consultation with relevant stakeholders:

- (1) Wildlife Species Matrix within the BROPEP Tactical Response Planning Guideline is to be used along with the seasonal presence table below to determine the species expected on the islands at the time of the incident.
- (2) Initial SCAT surveys undertaken to confirm the species present and prioritisation of species confirmed with DBCA prior to wildlife operations being completed.

Taxa	Niche/ Life stage	Habitat	Potential Impact	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Turtle	Green Turtle nesting	Beaches	Smothering, fumes	Red	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Red
Seabird	Feeding, aggregation and breeding	Island Vegetation	Offshore feeding ingestion	Yellow	Yellow	Yellow	Red	Red	Red	Red	Red	Red	Red	Red	Yellow
Shorebird	Migratory shorebirds residence	Intertidal zone	Ingestion, smothering			Yellow	Orange	Yellow			Yellow	South Migr	Orange	Red	Yellow
Shorebird	Permanent shorebirds breeding	Intertidal zone	Ingestion, smothering	Red	Red	Red								Red	Red

Occurrence Key

Red	Peak Occurrence
Orange	Intermediate occurrence
Yellow	low Occurrence
	No Occurrence

**WILDLIFE RESPONSE STRATEGY MATRIX**

The suitability and impact of response strategies vary between species and have been defined for each species/group as having high, medium or low likelihood of impact on the species.

Taxa	Niche/ Life stage	Monitoring & Evaluation	Containment & Recovery	Offshore dispersant application	Shoreline booming	Shoreline clean-up	Shoreline hazing	Pre-emptive capture	Oiled wildlife response
Turtle	Turtle nesting, emergence	Low	Low	Medium	Medium/ High	Medium/ High	Low	Low	Medium
Seabird	Feeding, aggregation and breeding	Low	Low	Medium	Low	Low	Low	Medium	Medium
Shorebird	Migratory shorebirds residence	Low	Low	Medium	Medium/ High	Medium/ High	Medium/ High	Medium/ High	Medium/ High
Shorebird	Permanent shorebirds breeding	Low	Low	Medium	Medium	Medium	Medium	Medium	Medium

**SUBJECT MATTER EXPERTS**

In the event of an incident response, up to date information regarding access to the site or the species located on the site can be obtained from the following contacts:

**Site Experts:**

WA DoT – Duty Officer - (08) 9480 9924

DBCA – Duty Officer – (08) 9219 9108

**Species Experts:** DBCA – Duty Officer - (08) 9219 9108

**Cultural Experts:** Contact through Kimberly Land Council (KLC)

**REFERENCES**

**LOCAL EMERGENCY CONTACTS:**

**Refer to the IMT for changes in contact details**

- BirdLife International (2020) Important Bird Areas factsheet
- Boyle A, Swann G, Willing T, Gale T, Collins L (2004) Adele Islands Bird Survey Report.
- Clarke, R.H., Swann, G., Nerenberg, S., Carter, M. and Herrod, A. (2012a) Seabirds and Shorebirds at Adele Island; Results of Targeted Counts in April 2012. Monash University, Vic.
- Clarke, R.H., Swann, G., Stewart, A., Carter, M. and Herrod, A. (2012b) Seabirds and Shorebirds at Adele Island; Results of Targeted Counts in November 2012. Monash University, Vic.
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- Conservation Commission of Western Australia (2010) Status performance assessment: Biodiversity Conservation on Western Australian Islands. Phase II – Kimberley Islands. Final Report.
- Fremantle Sailing Club (2023) WA Cruising Guide Version 5.4
- Jones, H.P., Tershy, B.R., Zavaleta, E.S., Croll, D.A., Keitt, B.S., Finkelstein, M.E. and Howald, G.R. (2008). Severity of the effects of invasive rats on seabirds: a global review. Conservation Biology 22, 16–26.
- Solihuddin, T., Bufarale, G., Blakeway, D., O’Leary, M.J., (2016) [Geomorphology and Late Holocene Accretion History of Adele Reef: a Northwest Australian Mid-Shelf Platform Reef](#), Geo-Marine Letters, 2016, 1–15. DOI: 10.1007/s00367-016-0465-3
- Walker, J. (1892) Bird life of Adele Island, north-west Australia. Ibis, 6, 254–261

<b>Police, Fire, Ambulance</b>	<b>Phone:</b>	000
	<b>VHF:</b>	Channel 16
	<b>Marine:</b>	Channel 16
<b>State Emergency Service</b>	132 500	
<b>Kimberley Ports - Marine Pollution Officer</b>	(08) 9194 3100	
<b>DBCA Broome</b>	<a href="tel:(08)91955500">(08) 9195 5500</a>	
<b>DoT Marine Pollution Officer</b>	(08) 9480 9924	
<b>Broome Police Station</b>	<a href="tel:(08)91039000">(08) 9103 9000</a>	
<b>First Nations: Kimberley Land Council</b>	(08) 9194 0100	
<b>Broome Hospital</b>	<a href="tel:(08)91942222">(08) 9194 2222</a>	
<b>Broome Shire Council</b>	(08) 9191 3456	



<p><b>Primary Response:</b></p> <p><b>Method:</b></p>	<p><b>Shoreline Clean-up Assessment Technique (SCAT)</b>, including site reconnaissance, set-up and pre-clean.</p> <p>Establish landing areas and staging areas.</p> <p>Manual removal of non-oiled debris to above the high tide areas.</p>	<p>Due to the potential environmental sensitivities including turtle and seabird nesting and feeding on the islands, SCAT is necessary to confirm access to the islands and response activities suitable to limit impact to the sensitivities.</p>
<p><b>SECONDARY RESPONSE</b> (subject to NEBA and where access to the island is available and safe for responders)</p>		
<p><b>Secondary Response:</b></p> <p><b>Method:</b></p>	<p>Establish sensitive receptor / shoreline <b>Protection &amp; Deflection</b> booming.</p> <p>Shore-guardian boom deployment on beach.</p> <p>Zoom-boom deployment over reef-flat.</p>	<p>Protection and deflection equipment to be mobilised to site on response vessels as an option for a response if suitable. As the island beaches are primarily sand and the tidal variation is high P&amp;D may not be effective at these sites.</p>

<p><b>Secondary Response:</b></p> <p><b>Method:</b></p>	<p><b>Shoreline clean-up – manual removal of hydrocarbon from the shoreline</b></p> <p>Continued SCAT assessment throughout the operation. Clean-up oil from shoreline.</p>	<p>As the shoreline of the islands are primarily sandy beaches this would allow for an effective cleanup of oil from the beaches using manual tools.</p> <p>Consideration must be given to the potential disturbance of wildlife from these activities.</p>
<p><b>Secondary Response:</b></p> <p><b>Method:</b></p>	<p><b>Wildlife Response</b></p> <p>Conduct assessment, capture, cleaning, rehabilitation, relocation or euthanising of oiled wildlife.</p>	<p>Work with the statutory authority (DBCA) and subject matter experts to determine the suitability of pre-emptive capture and hazing techniques for different species.</p> <p>Potential for capture and treatment of impacted wildlife while shoreline is cleaned to prevent further oiling is considered suitable.</p>

**A.5 Lacapepe Islands Area Response Plan**


SECTOR_NAME   SEGMENT_ID   Coordinates   16°52'28"S 121°8'21"E	<b>LACEPEDE ISLANDS</b>  <b>MARINE POLLUTION AREA RESPONSE INFORMATION</b>	<b>Kimberley, WA</b>
<b>SITE DETAILS</b>		
<b>The Department of Transport (DoT) and The Department of Biodiversity, Conservation and Attractions (DBCA) are the lead agencies for Shoreline and wildlife response respectively in State waters in Western Australia under the state emergency response arrangements.</b>		
<b>SITE LOCATION</b>	<b>AREA DESCRIPTION</b>	
	<p>The Lacapepe Islands are located 28km to the west of the Dampier peninsula and 120km north of Broome. The Island group is made up of four islands including West, Middle, East and Sandy Islands covering a total area of 180.2 ha. The islands are small, low lying atolls of coarse sand and limestone, lying atop a broad fringing platform reef. The islands are internationally significant as they are home to one of the largest colonies of brown booby's (<i>Sula leucogaster</i>) and the largest breeding colony in the Indian Ocean for the lesser frigatebird (<i>Fregata ariel</i>). The Lacapedes are also one of Western Australia's most important breeding grounds for green turtles (<i>Chelonia mydas</i>).</p> <p>Although the islands themselves are sparsely vegetated with beach spinifex (<i>Spinifex longifolius</i>) and saltbushes (<i>Halosarcia</i>), they are home to over 50 species of birds, many of which are threatened or protected under international agreements. The island was declared a nature reserve in 1970 in recognition of its status as a bird breeding sanctuary leading to its classification by BirdLife International as an important Bird Area for its seabirds.</p>	
<b>ADDITIONAL RESOURCES</b>		
<ul style="list-style-type: none"> <li>• Marine Turtle Species Response Plan</li> </ul>		
<b>SITE CONSTRAINTS</b>		

Fig 1 Lacapepe Islands Area location

	<ul style="list-style-type: none"> <li><input type="checkbox"/> Remote location with no resources.</li> <li><input type="checkbox"/> Strong currents, wave action, and tidal impact make vessel activities challenging.</li> <li><input type="checkbox"/> Access via vessel or rotary winged aircraft limited by weather conditions.</li> <li><input type="checkbox"/> Significant ecological value with limited and potentially hazardous access to sensitivities.</li> <li><input type="checkbox"/> All islands are closed to public visitation between October and April (inclusive) each year for nesting of seabirds and turtles.</li> </ul>
<b>SITE ACCESSIBILITY AND EXISTING FACILITIES</b>	
<ul style="list-style-type: none"> <li>• Access is by sea from Broome or Darwin via vessel. There are no ports or harbours, only offshore anchorages.</li> <li>• Island access is by small tender, supported by a larger liveaboard vessel, required for an extended stay.</li> <li>• Alternate access by helicopter may be considered from Broome onto Islands if considered suitable.</li> <li>• Solar powered lighthouse on the island on East Lacapede, no other facilities on the island.</li> </ul>	
<b>MAIN SENSITIVITIES</b>	
<p><b>Ecological:</b> The Lacapede Islands are known for nesting seabirds including the fairy tern (<i>Sternula nereis</i>), eastern curlew (<i>Numenius madagascariensis</i>), curlew sandpiper (<i>Calidris ferruginea</i>) and great knot (<i>Calidris tenuirostris</i>). The islands host the largest single seabird nesting colony of the brown booby (<i>Sula leucogaster</i>) in the world supporting over 1% of the world population. The islands provide major turtle rookeries and mating sites for green turtles (<i>Chelonia mydas</i>) and flatback turtles (<i>Natator depressus</i>). They also have significant populations of geckos (<i>Gehyra punctata</i>) and the Gilbert’s dragon (<i>Gemmatophora gilberti</i>).</p> <p><b>Socio-economic:</b> The Lacapedes are remote and can only be accessed by boat. Given the low-lying sparsely vegetated terrain and the high density of birds and turtles nesting on the islands, these species are highly sensitive to disturbance from visitation, the islands are closed to public visitation between October and April (inclusive) each year for nesting of seabirds and turtles. Visitors to the islands must remain on the beach areas and should not venture further inland past the dune vegetation.</p> <p><b>Cultural Heritage:</b> Through their cultural traditions, the Nyul Nyul, Nimanburr and Jabirr Jabirr/Ngumbarl Traditional Owner groups jointly hold Native Title over approximately 12,000 square kilometres of Country which includes the Lacapede Islands.</p>	

**SITE OVERVIEW**



Fig 3: Lacapede Island Seabirds



Fig 2: Lacapède Islands



Fig 4: Lacapède Islands

**WILDLIFE CHARACTERISTIC SUMMARY**

Characteristics of sensitive wildlife receptors of the Lacapède Islands, including seasonal presence of taxonomic groups and likely sources of contamination, are summarised in the table below.

Should this ARP be implemented – the following steps should be undertaken by the IMT in consultation with relevant stakeholders:

- (1) Wildlife Species Matrix within the BROPEP Tactical Response Planning Guideline is to be used along with the seasonal presence table below to determine the species expected on the islands at the time of the incident.
- (2) Initial SCAT surveys undertaken to confirm the species present and prioritisation of species confirmed with DBCA prior to wildlife operations being completed.

Taxa	Niche/lifestage	Habitat	Potential Impact	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Turtle	Green Turtle nesting	Beaches	Smothering, fumes	Red	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Red
Turtle	Hawksbill nesting	Beaches	Smothering, fumes	Red	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Red	Red	Red
Seabird	Feeding, aggregation and breeding	Island Vegetation breeding, offshore feeding	Offshore feeding ingestion	Yellow	Yellow	Yellow	Red	Red	Red	Red	Red	Red	Red	Red	Yellow
Shorebird	Migratory shorebirds residence	Intertidal zone	ingestion, smothering			Yellow	North migr	Yellow			Yellow	South Migr	Orange	Red	Yellow
Shorebird	Permanent shorebirds breeding	Intertidal zone	ingestion, smothering	Red	Red	Red								Red	Red

Occurrence Key

Red	Peak Occurrence
Orange	Intermediate occurrence
Yellow	low Occurrence
White	No Occurrence

**WILDLIFE RESPONSE STRATEGY MATRIX**

The suitability and impact of response strategies vary between species and have been defined for each species/group as having high, medium or low likelihood of impact on the species.

Taxa	Niche/ lifestage	Monitoring & Evaluation	Containment & Recovery	Offshore dispersant application	Shoreline booming	Shoreline clean-up	Shoreline Hazing	Pre-emptive capture	Oiled wildlife response
Turtle	Turtle nesting, emergence	Low	Low	Medium	Medium/ High	Medium/ High	Low	Low	Medium
Seabird	Feeding, aggregation and breeding	Low	Low	Medium	Low	Low	Low	Medium	Medium
Shorebird	Migratory shorebirds residence	Low	Low	Medium	Medium/ High	Medium/ High	Medium/ High	Medium/ High	Medium/ High
Shorebird	Permanent shorebirds breeding	Low	Low	Medium	Medium	Medium	Medium	Medium	Medium

**SUBJECT MATTER EXPERTS**

In the event of an incident response, up to date information regarding access to the sites or the species located on the sites can be obtained from the following contacts:

**Site Experts:**

WA DoT – Duty Officer - (08) 9480 9924

DBCA – Duty Officer – (08) 9219 9108

**Species Experts:** DBCA – Duty Officer - (08) 9219 9108

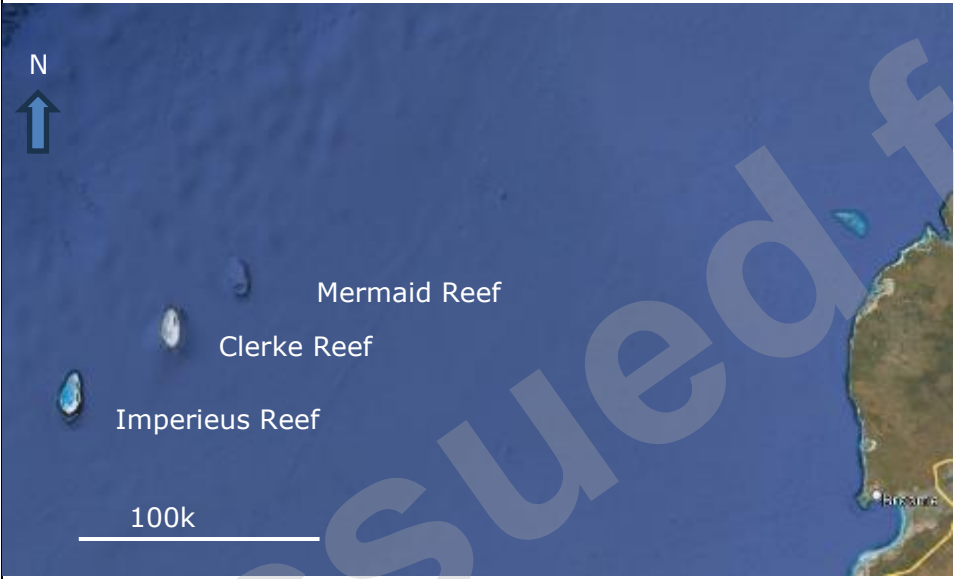
**Cultural Experts:** Nyul Nyul, Nimanburr and Jabirr Jabirr/ Ngumbarl Traditional Owner groups – Contact through Kimberly Land Council (KLC).

REFERENCES	LOCAL EMERGENCY CONTACTS: Refer to the IMT for changes in contact details			
<ul style="list-style-type: none"> <li>• <a href="https://en.wikipedia.org/wiki/Lacepede_Islands">https://en.wikipedia.org/wiki/Lacepede_Islands</a></li> <li>• Fremantle Sailing Club (2023) WA Cruising Guide Version 5.4</li> <li>• BirdLife International (2020) Important Bird Areas factsheet</li> <li>• Jacket J 2024 West Island Lacapede bird counts. eBird.</li> <li>• Guinea, M, (2006). Sea turtles, sea snakes and dugongs of Scott Reef, Seringapatam Reef and Browse Island with notes on West Lacepede Island., Report submitted to the Australian Government Department of the Environment, Water, Heritage and the Arts, Canberra.</li> </ul>	<b>Police, Fire, Ambulance</b>	<b>Phone:</b>	000	
		<b>VHF:</b>	Channel 16	
		<b>Marine:</b>	Channel 16	
	<b>State Emergency Service</b>	132 500		
	<b>Kimberley Ports - Marine Pollution Officer</b>	(08) 9194 3100		
	<b>DBCA Broome</b>	<a href="tel:0891955500">(08) 9195 5500</a>		
	<b>DoT Marine Pollution Officer</b>	(08) 9480 9924		
	<b>Broome Police Station</b>	<a href="tel:0891039000">(08) 9103 9000</a>		
	<b>First Nations: Kimberley Land Council</b>	(08) 9194 0100		
	<b>Broome Hospital</b>	<a href="tel:0891942222">(08) 9194 2222</a>		
<b>Broome Shire Council</b>	(08) 9191 3456			



<p><b>Primary Response:</b></p> <p><b>Method:</b></p>	<p><b>Shoreline Clean-up Assessment Technique (SCAT)</b>, including site reconnaissance, set-up and pre-clean.</p> <p>Establish landing areas and staging areas. Manual removal of non-oiled debris to above the high tide areas.</p>	<p>Due to the potential environmental sensitivities including turtle and seabird nesting and feeding on the islands, SCAT is necessary to confirm access to the islands and response activities suitable to limit impact to the sensitivities.</p>
<p><b>SECONDARY RESPONSE</b> (subject to NEBA and where access to the island is available and safe for responders)</p>		
<p><b>Secondary Response:</b></p> <p><b>Method:</b></p>	<p>Establish sensitive receptor / shoreline <b>Protection &amp; Deflection</b> booming.</p> <p>Shore-guardian boom deployment on beach. Zoom-boom deployment over reef-flat.</p>	<p>Protection and deflection equipment to be mobilised to site on response vessels as an option for a response if suitable. As the island beaches are primarily sand and the tidal variation is high P&amp;D may not be effective at these sites.</p>
<p><b>Secondary Response:</b></p> <p><b>Method:</b></p>	<p><b>Shoreline clean-up – manual removal of hydrocarbon from the shoreline</b></p> <p>Continued SCAT assessment throughout the operation. Clean-up oil from shoreline.</p>	<p>As the shoreline of the islands are primarily sandy beaches this would allow for an effective cleanup of oil from the beaches using manual tools. Consideration must be given to the potential disturbance of wildlife from these activities.</p>
<p><b>Secondary Response:</b></p> <p><b>Method:</b></p>	<p><b>Wildlife Response</b></p> <p>Conduct assessment, capture, cleaning, rehabilitation, relocation or euthanising of oiled wildlife.</p>	<p>Work with the statutory authority (DBCA) and subject matter experts to determine the suitability of pre-emptive capture and hazing techniques for different species. Potential for capture and treatment of impacted wildlife while shoreline is cleaned to prevent further oiling is considered suitable.</p>

**A.6 Rowley Shoals Area Response Plan**

SECTOR_NAME   SEGMENT_ID   Coordinates   17°20'S 119°20'E		<b>ROWLEY SHOALS</b>		Kimberley, WA
<b>MARINE POLLUTION AREA RESPONSE INFORMATION</b>				
<b>SITE DETAILS</b>				
<p>The Department of Transport (DoT) and The Department of Biodiversity, Conservation and Attractions (DBCA) are the lead agencies for Shoreline and wildlife response respectively in State waters in Western Australia including Imperieuse and Clerke Reefs. The Department of Climate Change, Energy, the Environment and Water (DEECCW) is the lead agency for Mermaid Reef.</p>				
<b>SITE LOCATION</b>			<b>AREA DESCRIPTION</b>	
 <p>Fig 1 Rowley Shoals</p>			<p>The Rowley Shoals is a group of three <a href="#">atoll-like coral reefs</a> south of the <a href="#">Timor Sea</a>, about 260 km west of <a href="#">Broome</a> on the northwestern <a href="#">Australian</a> coast, on the edge of the Australian <a href="#">continental shelf</a>. Each atoll covers an area of around 80 to 90 km<sup>2</sup> within the rim of the reef, including the <a href="#">lagoons</a>, while the land areas are negligible. They all rise steeply from the surrounding ocean floor and are located on the same undersea platform as Scott Reef to the North.</p> <p><b>Imperieus Reef</b> measuring of 17.8 km in length and 9.5 km in width, is the largest and most SW reef of the Rowley Shoals Marine Park. There are two lagoons with multiple coral areas, many of which dry. The basin opens to the sea via a narrow shallow passage in the northeast. The passage is extremely narrow and large vessels are unable to navigate it.</p> <p>There is a small, unvegetated sand cay, Cunningham Island, near the northern end of the atoll with a light and radio beacon. The island is an important resting place for migratory birds.</p> <p><b>Clerke Reef</b>, Clerke Reef is approx. 15 km long by 6 km wide. At the northern end of the reef lies Bedwell Island, a bare sand cay about 2 m high. At low tide two further sand-banks become exposed just to the north of the Island and there is also an extensive area of sand-bank that is exposed at the southern end of the shoal. On the eastern and western sides of the reef there are drying boulders on either side of the reef. The deepest</p>	

	basin of the reef's lagoon system has a maximum depth of 10 m and is connected to the sea via three narrow passages in the north-east.
--	--

There is a small unvegetated sand cay, Bedwell Island, near the northern end of Clerke Reef comprised of coarse coral sand. It is home to one of only two colonies of red-tailed tropicbirds in WA together with other bird species. Bedwell Island is also an important resting area for migratory birds making their mammoth annual flights from as far north as Siberia.

**Mermaid Reef** The reef is approx. 14 km long by 7 km and covers and uncovers with the tide. There is no permanent land at Mermaid Reef, but a large sand bank near the northern end and a series of small sand banks along the western side of the lagoon becomes exposed during low tide only.

**ADDITIONAL RESOURCES**

- Marine Turtle Species Response Plan

**SITE CONSTRAINTS**

- Remote location with no resources.
- Large (~4.00) semi-diurnal tides can limit site access, especially during spring tide periods.
- Access via vessel or rotary winged aircraft limited by weather conditions.
- Significant ecological value with limited and potentially hazardous access to sensitivities.

**SITE ACCESSIBILITY AND EXISTING FACILITIES**

Access by sea from Broome via vessel/ Anchorages on the outside of the NE face of each with variable access into the lagoons.

At **Imperius Reef** there are two lagoons with multiple coral areas, many of which dry. The basin opens to the sea via a narrow shallow passage in the northeast. The passage is extremely narrow and large vessels are unable to navigate it.

At **Mermaid Reef** live aboard vessels can access the lagoon is possible through a passage on the north east. There are mooring points and an anchorage area designated within the lagoon. Approval from the Reserve Manager is required prior to mooring and anchoring.

At **Clerke Reef** live aboard vessels can access the lagoon via a passage on the north east. There are mooring points around the reef and within the lagoon. Approval from DPaW is required prior to mooring.

No other facilities are available at the Shoals.

Alternate access by helicopter may be considered from Broome onto islands if considered suitable.

Liveaboard vessel required for extended stay.

**MAIN SENSITIVITIES**

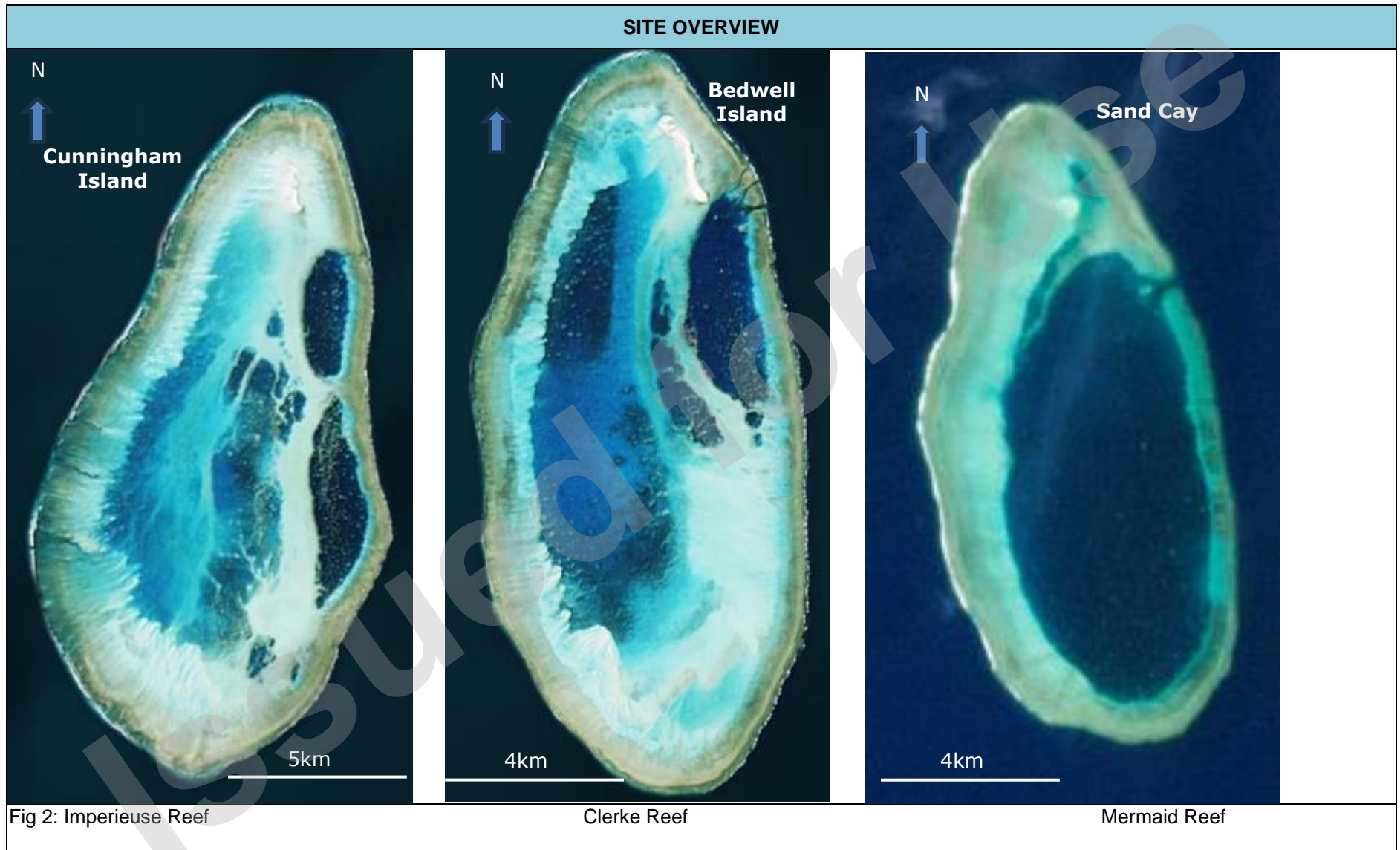
**Ecological:** The Rowley Shoals are characterised by significant intertidal and subtidal coral communities surrounding and within the lagoons. The Islands of Imperieus and Clerke Reefs offer resting areas for migratory birds and seabirds in the area.

Bedwell Island on Clerke Reef is home to one of only two colonies of red-tailed tropicbirds in WA in addition to providing an important resting area for migratory birds.

Two species of marine turtle, Green and Hawksbill, nest during the summer months on Bedwell and Cunningham Islands on Clerke and Imperieus Reefs respectively. These species also inter-nest and forage in the surrounding waters.

**Socio-economic:** The Rowley Shoals are remote and can only be accessed by boat. Given the turtles nesting on the islands, these species are highly sensitive to disturbance from visitation. Visitors to the islands must remain on the beach areas and should not venture further inland past the high tide unless considered suitable.

The liveaboard vessel visitation to the Rowley Shoals has increased significantly in recent years for access to fishing and diving expeditions.



**WILDLIFE CHARACTERISTIC SUMMARY**

Characteristics of sensitive wildlife receptors of Ashmore Reef and Cartier Island including seasonal presence of taxonomic groups and likely sources of contamination are summarised in the table below.

Should this TRP be implemented – the following steps should be undertaken by the IMT in consultation with relevant stakeholders:

- (1) Wildlife Species Matrix within the BROPEP Tactical Response Planning Guideline is to be used along with the seasonal presence table below to determine the species expected on the islands at the time of the incident.
- (2) Initial SCAT surveys undertaken to confirm the species present and prioritisation of species confirmed with DEECCW prior to wildlife operations being completed

Taxa	Niche/ lifestage	Habitat	Potential Impact	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Turtle	Green Turtle nesting	Beaches	Smothering, fumes	Red	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange
Turtle	Hawksbill nesting	Beaches	Smothering, fumes	Red	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Red	Red	Red
Seabird	Feeding, aggregation and breeding	Island Vegetation breeding, offshore feeding	Offshore feeding ingestion	Yellow	Yellow	Red	Red	Red	Red	Red	Red	Red	Red	Red	Yellow
Shorebird	Migratory shorebirds residence	Intertidal zone	Ingestion, smothering			Yellow	North migr	Yellow			Yellow	South Migr	Orange	Red	Yellow
Shorebird	Permanent shorebirds breeding	Intertidal zone	Ingestion, smothering	Red	Red	Red								Red	Red

Occurrence	Key
Red	Peak Occurrence
Orange	Intermediate occurrence
Yellow	low Occurrence
	No Occurrence

**WILDLIFE RESPONSE STRATEGY MATRIX**

The suitability and impact of response strategies vary between species and have been defined for each species/group as having high, medium or low likelihood of impact on the species.

Taxa	Niche/ Lifestage	Monitoring & Evaluation	Containment & Recovery	Offshore dispersant application	Shoreline booming	Shoreline clean-up	Shoreline Hazing	Pre-emptive capture	Oiled wildlife response
Turtle	Turtle nesting, emergence	Low	Low	Medium	Medium/ High	Medium/ High	Low	Low	Medium
Seabird	Feeding, aggregation and breeding	Low	Low	Medium	Low	Low	Low	Medium	Medium
Shorebird	Migratory shorebirds residence	Low	Low	Medium	Medium/ High	Medium/ High	Medium/ High	Medium/ High	Medium/ High
Shorebird	Permanent shorebirds breeding	Low	Low	Medium	Medium	Medium	Medium	Medium	Medium

**SUBJECT MATTER EXPERTS**

In the event of an incident response, up to date information regarding access to the site or the species located on the site can be obtained from the following contacts:

**Site Experts:**

WA DoT – Duty Officer - (08) 9480 9924

DBCA – Duty Officer – (08) 9480 9924

**Species Experts:** DBCA – Duty Officer - (08) 9480 9924

**Cultural Experts:** Contact through KLC

REFERENCES	LOCAL EMERGENCY CONTACTS: Refer to the IMT for changes in contact details		
<ul style="list-style-type: none"> <li>• DBCA 2007 Rowley Shoals Marine Park Management Plan. 2007 – 2017. No 56.</li> <li>• DBCA/DPIRD Rowley Shoals Marine Park Visitors Guide.</li> </ul>	<b>Police, Fire, Ambulance</b>	<b>Phone:</b> 000	
		<b>VHF:</b> Channel 16	
		<b>Marine:</b> Channel 16	
	<b>State Emergency Service</b>	132 500	
	<b>Kimberley Ports - Marine Pollution Officer</b>	(08) 9194 3100	
	<b>DBCA Broome</b>	<a href="tel:(08)91955500">(08) 9195 5500</a>	
	<b>DoT Marine Pollution Officer</b>	(08) 9480 9924	
	<b>Broome Police Station</b>	<a href="tel:(08)91039000">(08) 9103 9000</a>	
	<b>First Nations: Kimberley Land Council</b>	(08) 9194 0100	
	<b>Broome Hospital</b>	<a href="tel:(08)91942222">(08) 9194 2222</a>	
<b>Broome Shire Council</b>	(08) 9191 3456		

RESPONSE INFORMATION		
<b>ROWLEY SHOALS RESPONSE JUSTIFICATION</b>		
<p>An effective offshore operational response is the preferred option to limit the potential for marine pollution impacting the intertidal reefs and sandy shores of the Rowley Shoals. Offshore response strategies may include source control, containment and recovery, and aerial and vessel based dispersant application.</p> <p>Surveillance, Modelling and Visualisation (SMV) via aerial or vessel Observation is a critical response strategy. It should be used to inform the understanding of the behaviour and trajectory of the hydrocarbon spill, and the potential for environmental harm, and therefore the additional response strategies that should be put in place.</p> <p>Onshore response options (including shoreline protection and deflection, shoreline clean-up and oiled wildlife response) on the islands may be limited/not feasible due to high tidal movement, intertidal reefs and exposed coastlines.</p> <p>Outlined below are the recommended primary and secondary response strategies for the Rowley Shoals.</p> <p>Further response information including oil spill response tasking, operational considerations and resources (equipment and personnel), for each response strategy listed below is provided in Appendix B of the BROPEP Tactical Response Planning Guideline. In the event of an incident, situational information and an operational NEBA will be needed to identify suitable response strategies and the required supporting resources. This should be prepared by the lead control agency, as a Tasking Assignment (i.e. ICS 204a or equivalent).</p> <p><b>Any shoreline operations on the Rowley Shoals would be led by the Department of Transport WA with Oiled Wildlife Response led by the Department of Biodiversity, Conservation and Attractions (DBCA).</b></p>		
<b>RESPONSE STRATEGIES – Monitoring and Evaluation; Protect &amp; Deflect; Shoreline Clean-up; Wildlife Response</b>		
<b>RESPONSE TASKS</b>		<b>RATIONALE BEHIND RESPONSE DECISION</b>
<b>PRIMARY RESPONSE</b>		
<b>Primary Response:</b>	<b>Surveillance, Modelling and Visualisation (SMV)</b> via aerial or vessel Observation.	SMV should be used to inform the understanding of the behaviour and trajectory of the hydrocarbon spill, and the potential for environmental harm, and therefore the ongoing response strategies that should be put in place.
<b>Method:</b>	A minimum of twice daily overflights to determine the fate, behaviour and trajectory of the hydrocarbon. As well as the presence of offshore, nearshore and/or onshore wildlife.	

<p><b>Primary Response:</b></p> <p><b>Method:</b></p>	<p><b>Shoreline Clean-up Assessment Technique (SCAT)</b>, including site reconnaissance, set-up and pre-clean.</p> <p>Establish landing areas and staging areas. Manual removal of non-oiled debris to above the high tide areas.</p>	<p>Due to the potential environmental sensitivities including turtle and seabird nesting and feeding on the islands, SCAT is necessary to confirm access to the islands and response activities suitable to limit impact to the sensitivities.</p>
<p><b>SECONDARY RESPONSE</b> (subject to NEBA and where access to the island is available and safe for responders)</p>		
<p><b>Secondary Response:</b></p> <p><b>Method:</b></p>	<p>Establish sensitive receptor / shoreline <b>Protection &amp; Deflection</b> booming.</p> <p>Shore-guardian boom deployment on beach. Zoom-boom deployment over reef-flat.</p>	<p>Protection and deflection equipment to be mobilised to site on response vessels as an option for a response if suitable. As the island beaches are primarily sand and the tidal variation is high P&amp;D may not be effective at these sites.</p>
<p><b>Secondary Response:</b></p> <p><b>Method:</b></p>	<p><b>Shoreline clean-up – manual removal of hydrocarbon from the shoreline</b></p> <p>Continued SCAT assessment throughout the operation. Clean-up oil from shoreline.</p>	<p>As the shoreline of the islands are primarily sandy beaches this would allow for an effective cleanup of oil from the beaches using manual tools. Consideration must be given to the potential disturbance of wildlife from these activities.</p>
<p><b>Secondary Response:</b></p> <p><b>Method:</b></p>	<p><b>Wildlife Response</b></p> <p>Conduct assessment, capture, cleaning, rehabilitation, relocation or euthanising of oiled wildlife.</p>	<p>Work with the statutory authority (DBCA) and subject matter experts to determine the suitability of pre-emptive capture and hazing techniques for different species. Potential for capture and treatment of impacted wildlife while shoreline is cleaned to prevent further oiling is considered suitable.</p>

## APPENDIX B: RESPONSE STRATEGIES & SUPPORTING TASKS

The information below should be used to support the application of response strategies considered appropriate following:

- The completion of SCAT surveys to validate the sensitive receptors (incl faunal species) present at the location; and
- Completion of an operational NEBA/SIMA to determine which of the strategies should be applied to ensure the least impact on the sensitivities.

### PRIMARY RESPONSE – Site reconnaissance & SCAT, staging area set-up and pre-clean of shoreline if necessary

<b>RESPONSE REQUIREMENTS</b>	<p><b>Tasking</b></p> <ol style="list-style-type: none"> <li>1) Vessel / aircraft operators and team leads - conduct site reconnaissance and SCAT, including wildlife assessment aerial and onsite.</li> <li>2) Develop and conduct JHA with team</li> <li>3) Establish site control as outlined above including:             <ol style="list-style-type: none"> <li>a) Tender / barge / helicopter landing areas</li> <li>b) Staging area / equipment laydown area</li> <li>c) Medical tent</li> <li>d) Waste storage and collection points</li> <li>e) Rest/ welfare areas</li> <li>f) Decontamination station.</li> </ol> </li> <li>4) To reduce potential oiled waste volume, relocate debris to above the high tide mark.</li> </ol>	<p><b>Considerations</b></p> <ul style="list-style-type: none"> <li>• Use of drone for SCAT (to eliminate need to physically walk on the island) may be permitted by DCCEEW.</li> <li>• High potential for arduous physical work. Avoid heat exhaustion through regular rest breaks, shelter, water, etc.</li> <li>• Site assessment to define foot/vehicle traffic routes through sensitive areas (turtle and bird nesting zones) to minimise response impacts.</li> <li>• Ensure tender / barge reef crossing and beach landings have considered the hazards described above.</li> <li>• Staging area ongoing operations - recommended personnel number is 4. This includes:             <ul style="list-style-type: none"> <li>• Staging Area Lead</li> <li>• Paramedic</li> <li>• 2 x General Labourer – staging area assistants</li> </ul> </li> <li>• Pre-clean - to be completed by the shoreline cleanup team</li> </ul> <p><b>Communications include;</b></p> <ul style="list-style-type: none"> <li>• 1 x VHF radio and 1 x satellite phone for the Staging Area Lead</li> <li>• 1 x VHF radio and 1 x satellite phone for the Shoreline Clean-Up Team Lead and 2 x VHF radios, one for each team of four personnel.</li> </ul>
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**SECONDARY RESPONSE – Establish protection & deflection booming**

<b>RESPONSE REQUIREMENTS</b>	<p><b>Tasking – If requested</b></p> <ol style="list-style-type: none"> <li>1) Protection and Deflection Team Lead - if requested, conduct assessment of boom deployment locations</li> <li>2) Develop and conduct JHA with team</li> <li>3) Deploy boom if necessary as directed by Team Lead</li> <li>4) Shore-guardian boom deployed on sand beaches</li> <li>5) Zoom-boom deployed floating over the intertidal reef flat</li> <li>6) Boom sets would need to be regularly monitored for effectiveness, and adjusted with tide movements as necessary.</li> <li>7) Deploy skimmer</li> <li>8) Deploy liquid waste recovery unit above the high-tide line</li> <li>9) Conduct skimming and collection of liquid oily waste.</li> <li>10) Record waste volumes collected and report to IMT each day.</li> <li>11) Cease protection and deflection once termination criteria reached (as defined by Control Agency).</li> </ol>	<p><b>Considerations</b></p> <ul style="list-style-type: none"> <li>• Currents will vary dependant on the season, wind speed, swell direction and height.</li> <li>• Shore-guardian boom deployed at low tide. Shore-guardian boom can be used on all tidal conditions; however sea-state / wave heights and cross-shore currents will need to be monitored to ensure response effectiveness and safety of the boom.</li> <li>• Zoom-boom deployed via tender. Consult bathymetry data and tidal predictions to determine vessel draft restrictions.</li> <li>• Zoom-boom can only be used over the reef flat during neap tide periods – boom must remain floating at all times. Spring tides (low tide &lt;1.7m) will result in zoom-boom becoming snared and damaged/destroyed on intertidal reef flat and result in additional damage to coral reef structures.</li> </ul> <p>Recommended personnel number is 11. This includes;</p> <ul style="list-style-type: none"> <li>• 2 x protection and deflection Team Lead</li> <li>• 4 x General Labourers</li> <li>• 1 x Coxswain</li> <li>• 1 x General labour vessel crew</li> </ul> <p><b>Communications include;</b></p> <ul style="list-style-type: none"> <li>• 1 x VHF radio and satellite phone for the Protect and Deflect Team Lead, and 2 x VHF radios, one for each team of four personnel.</li> </ul>
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SECONDARY RESPONSE –Shoreline clean-up		
<b>RESPONSE REQUIREMENTS</b>	<p><b>Tasking</b></p> <ol style="list-style-type: none"> <li>1) Shoreline Clean-Up Team Lead (AMOSC)</li> <li>2) Review SCAT results and develop and conduct JHA with team</li> <li>3) Conduct Shoreline Clean-up; this will likely include:               <ol style="list-style-type: none"> <li>a) Identify priority segments to commence clean-up</li> <li>b) Clean course sand with shovels and rakes;</li> <li>c) Use HDPE plastic bags or buckets for manual transport of waste (no more than 20kg per bag)</li> <li>d) Transfer waste into bulka-bag collection points above high-tide mark.</li> <li>e) Record waste volumes collected and report to IMT each day.</li> </ol> </li> <li>4) Cease shoreline clean-up once termination criteria reached (as defined by Control Agency).</li> </ol>	<p><b>Considerations</b></p> <ul style="list-style-type: none"> <li>• Avoid disturbing turtles/seabirds where possible – utilise pre-defined foot/vehicle tracks, and other controls as defined in wildlife permits, HSE-MP and JHA.</li> <li>• Continued use of drones for SCAT and other daily operational support tasks dependent on demonstrating that impacts on wildlife are acceptable (the Wildlife Response Team Leader will determine ongoing acceptability of drones).</li> <li>• High potential for arduous physical work. Avoid heat exhaustion through the use of rest breaks, shelter, water, etc</li> <li>• Shoreline-clean - recommended personnel number is 21. This includes;</li> <li>• 4 x Shoreline Clean-up Team Lead</li> <li>• 17 x General Labourers.</li> </ul> <p><b>Communications include;</b></p> <ul style="list-style-type: none"> <li>• 1 x VHF radio and satellite phone for the Shoreline Clean-Up Team Lead, and 2 x VHF radios, one for each team of 10 personnel.</li> </ul>

**SECONDARY RESPONSE – Wildlife response**

<b>RESPONSE REQUIREMENTS</b>	<p><b>Tasking</b></p> <ol style="list-style-type: none"> <li>1) Wildlife Coordinator – conduct oiled wildlife assessment onshore</li> <li>2) Develop and conduct JHA with team</li> <li>3) Commence wildlife response; this will likely include:             <ol style="list-style-type: none"> <li>a) Identify priority wildlife for capture</li> <li>b) On scene triage</li> <li>c) Seabird triage, stabilisation and transport to mainland for rehabilitation</li> <li>d) Marine turtle assessment, treatment and</li> <li>e) Turtle hatchling cleaning and translocation</li> <li>f) Euthanasia where appropriate</li> </ol> </li> <li>4) Record wildlife response activities and report to IMT each day.</li> <li>5) Cease wildlife response once termination criteria reached (as defined by Control Agency).</li> </ol>	<p><b>Considerations</b></p> <ul style="list-style-type: none"> <li>• Consider pre-emptive capture or wildlife hazing, as advised by DBCA / veterinarian advice on site</li> <li>• Avoid disturbing nesting turtles/seabirds where possible – utilise pre-defined foot/vehicle tracks, and other controls as defined in wildlife permits, HSE-MP and JHA.</li> <li>• High potential for arduous physical work. Avoid heat exhaustion through the use of rest breaks, shelter, water, etc</li> <li>• Wildlife Response - recommended personnel number is 5. This includes;</li> <li>• 1 x Wildlife Coordinator</li> <li>• 1 x Vet</li> <li>• 6 x trained wildlife response personnel</li> <li>• Additional wildlife response personnel may be required on support vessel if larger wildlife response required.</li> </ul> <p><b>Communications include;</b></p> <ol style="list-style-type: none"> <li>1. 1 x VHF radio and satellite phone for the Wildlife Response Team Lead.</li> </ol> <p>Wildlife Prioritisation is to be implemented in accordance with the BROPEP Area Response Planning Guideline.</p>
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Response strategy	Equipment	Recommended quantity	
SCAT	Surveillance Drone	1	Unit
Protection and Deflection	Shore Guardian Boom	24	25m lengths
	Shoreline Ancillaries Kit	1	Unit
	Shoreline anchor kit	4	Unit
	Zoom Boom	16	25m lengths
	Zoom Boom anchor kit	8	Unit
	Shore based skimming systems	2	Skimming packages suitable for oil types
	Liquid waste collection containers (e.g. 1m <sup>3</sup> IBC plus bunding)	As required	Depends on personnel numbers (daily decontamination liquid waste) and skimming activities (if required)
Shoreline clean-up	Shoreline Clean-up kit – rake & shovel	30	30 rakes & 30 shovels
	Temporary solid waste storage – HDPE bags / plastic buckets and bulka-bags	As required	Depends on estimated oily waste ashore – 20 kg of oily waste per 75 L HDPE bag/plastic bucket; 750 kg of oily waste per 1 m <sup>3</sup> bulk-a bag.
Wildlife response	Wildlife Response Kit (AMOSC/AMSA/WA DBCA) phases 1-4	1	Unit
	Wildlife Response Kit Phases 5-8	1	Wildlife Container on a vessel for washing of wildlife

Maximum indicative response personnel	Peak response numbers
On Scene Commander and Deputy	2
HSE Representative	2
Media/communicaiton advisor	1
Sector command team admin/logistis support	3
Paramedic	2

Staging area / ancillary equipment	Quantity	
Staging area shade shelter (~4x4m)	6	Unit
Staging area tables, chairs, eskies etc	As required	
Decontamination kit	2	Unit
Fresh water for decontamination	As required	20L jerry-cans
Hand held VHF radio	10	Unit

SCAT (2 x SCAT – incl 1 drone Operator, 1 x OWR)	3 (first nations advisor not required)
Shoreline clean-up (4 x leads, 17 x labour hire)	21
OWR collection/rescue	5
OWR intake/triage (inc. 1 x vet, 2 x trained OWR)	3
Protect and deflect (2 x lead, 4 x labour hire)	6
Helicopter Pilot	2
Helicopter Landing Officer	2
Vessel coxswain and deckhand – from mother ship vessel crew	-
<b>Indicative total response personnel</b>	<b>52</b>
Note. Manning levels are an estimate only. It is anticipated the initial response team would complete a maximum of 21 days before changing out. Manning levels will need to be continually re-assessed as the response progresses.	

Satellite phone	4	Unit
PPE (per person – as defined by JHA)	1	Per person
Tyvex coveralls	1	Per person per day
Medical response equipment onshore (as defined by paramedic)	1	Unit

Vehicles / Vessels	Quantity
Accommodation support vessel (minimum 52 response personnel + marine crew)	1
Tenders / small vessels for beach landing	2
Landing barge with drop-down front door	1
Light utility helicopter	
Light (<1 tonne) tracked vehicle	1

**Notes.**  
 1 - Response personnel numbers are based on responders completing a maximum of 21 days before changing out, for the duration of the response. Response personnel levels will drop for ongoing maintenance of booms and recovery however shoreline clean-up crew requirements may need to be re-assessed as the response progresses.

**APPENDIX C: WILDLIFE MATRIX**

Wildlife			Location							Listing					
Group	Common Name	Scientific Name	Browse Island	Lacapede Islands	Adele Island	Ashmore Reef	Cartier Island	Rowley Shoals	Scott Reef Sandy Islet	Source	IUCN Listing	EPBC status	EPBC Act Listing	WA	NT
Raptor	Brown Goshawk	<i>Accipiter fasciatus</i>	P							DCCEEW	LC	marine	NL	NL	NL
Shorebirds	Common Sandpiper	<i>Actitis hypoleucos</i>	P		P	P				DCCEEW	LC	marine/migratory	NL	NL	NL
Waterbird	Australasian Darter	<i>Anhinga novaehollandiae</i>					P			DCCEEW	LC	marine	NL	NL	NL
Sea birds	Black Noddy	<i>Anous minutus</i>			P	B				DCCEEW	LC	marine	NL	NL	NL
Sea birds	Common Noddy	<i>Anous stolidus</i>		B	B	B	P		B	DCCEEW	LC	marine/migratory	NL	NL	NL
Sea birds	Lesser Noddy	<i>Anous tenuirostris</i>				B				DCCEEW	NL	marine	V	E	NL
Sea birds	Pacific Swift	<i>Apus pacificus</i>					P			DCCEEW	LC	marine/migratory	NL	NL	NL
Shorebirds	Great Egret	<i>Ardea alba</i>	P			B				DCCEEW	LC	marine	NL	NL	NL
Shorebirds	Eastern Great Egret	<i>Ardea alba modesta</i>			B	B				DCCEEW	LC	marine	NL	NL	NL
Sea birds	Wedge Tailed Shearwater	<i>Ardenna pacifica</i>	P			B	P			DCCEEW	LC	marine/migratory	NL	NL	NL
Shorebirds	Ruddy Turnstone	<i>Arenaria interpres</i>	P	P	P	P	P	P		DCCEEW	LC	marine/migratory	V	NL	NL
Sea birds	Bulwer's Petrel	<i>Bulweria bulwerii</i>					P			DCCEEW	LC	marine/migratory	NL	NL	NL
Shorebirds	Striated Heron	<i>Butorides striata</i>	P							eBird	NL	marine	NL	NL	NL
Shorebirds	Sharp-tailed Sandpiper	<i>Calidris acuminata</i>	P			P				DCCEEW	V	marine/migratory	V	NL	NL
Shorebirds	Sanderling	<i>Calidris alba</i>	P		P	P	P	P		DCCEEW	LC	marine/migratory	NL	NL	NL
Shorebirds	Red Knot	<i>Calidris canutus</i>		P	P	P				DCCEEW	NT	marine/migratory	V	E	E
Shorebirds	Curlew Sandpiper	<i>Calidris ferruginea</i>			P	P				DCCEEW	NT	marine/migratory	CE	CE	CE
Shorebirds	Pectoral Sandpiper	<i>Calidris melanotos</i>			P					eBird	LC	marine/migratory	NL	NL	NL
Shorebirds	Little Stint	<i>Calidris minuta</i>				P				DCCEEW	LC	marine	NL	NL	NL
Shorebirds	Red-necked Stint	<i>Calidris ruficollis</i>	P	P	P	P	P			DCCEEW	NT	marine/migratory	NL	NL	NL
Shorebirds	Long-toed Stint	<i>Calidris subminuta</i>	P			P				DCCEEW	LC	marine/migratory	NL	NL	NL
Shorebirds	Great Knot	<i>Calidris tenuirostris</i>		P	P	P				DCCEEW	E	marine/migratory	V	CE	CE
Sea birds	Streaked Shearwater	<i>Calonectris leucomelas</i>	P							DCCEEW	NT	marine/migratory	NL	NL	NL
Shorebirds	Oriental Plover	<i>Charadrius veredus</i>	P			P				DCCEEW	LC	marine/migratory	NL	NL	NL
Shorebirds	Greater Sand Plover	<i>Charadrius/Anarhynchus leschenaultii</i>	P	P	P	P	P	P		DCCEEW	LC	marine/migratory	V	V	V
Shorebirds	Lesser Sand Plover	<i>Charadrius/Anarhynchus mongolus</i>		P	P	P	P			DCCEEW	E	marine/migratory	E	E	E
Shorebirds	Red-capped Plover	<i>Charadrius fuicapillus</i>			P					DCCEEW	LC	marine	NL	NL	NL
Sea birds	White Winged tern	<i>Chlidonias leucopterus</i>			P		P			DCCEEW	LC	marine/migratory	NL	NL	NL
Shorebirds	Silver Gull	<i>Chroicocephalus novaehollandiae</i>		B	B					DCCEEW	LC	marine	NL	NL	NL
Shorebirds	Little Egret	<i>Egretta garzetta</i>				B	P			DCCEEW	LC	marine	NL	NL	NL
Shorebirds	White Faced Heron	<i>Egretta novaehollandiae</i>	P							eBird	LC	marine	NL	NL	NL
Shorebirds	Pacific Reef Heron	<i>Egretta sacra</i>	P	B		P	P	P		DCCEEW	LC	marine	NL	NL	NL
Shorebirds	beach stone curlew	<i>Esacus magnirostris</i>				P				DCCEEW	NT	marine	NL	NL	NL
Raptor	Nankeen Kestrel	<i>Falco cenchroides</i>	P							DCCEEW	LC	marine	NL	NL	NL
Sea birds	Lesser Frigatebird	<i>Fregata ariel</i>	P	B	B	B	P		P	DCCEEW	LC	marine/migratory	NL	NL	NL
Sea birds	Great Frigatebird	<i>Fregata minor</i>	P		B	B				DCCEEW	LC	marine/migratory	NL	NL	NL
Shorebirds	Swinhoe's Snipe	<i>Gallinago megala</i>				P				DCCEEW	LC	marine/migratory	NL	NL	NL

Wildlife			Location							Listing					
Shorebirds	Buff Banded Rail	<i>Gallirallus philippensis</i>	P			P				DCCEEW	LC	marine	NL	NL	NL
Sea birds	Australian Tern	<i>Gelochelidon macrotarsa</i>		P						DCCEEW	LC	marine/migratory	NL	NL	NL
Sea birds	Gull-Billed Tern	<i>Gelochelidon Nilotica</i>			P					DCCEEW	LC	marine/migratory	NL	NL	NL
Shorebirds	Oriental Pratincole	<i>Glareola maldivarum</i>			P	P	P			DCCEEW	LC	marine/migratory	NL	NL	NL
Shorebirds	Sooty Oyster Catcher	<i>Haematopus fuliginosus</i>		B						eBird	LC	marine	NL	NL	NL
Shorebirds	pie d oyster catcher	<i>Haematopus longirostris</i>		B	P					eBird	LC	marine	NL	NL	NL
Raptor	white-breasted sea eagle	<i>Haliaeetus leucogaster</i>		B				P		DCCEEW	LC	marine	NL	NL	NL
Raptor	Brahminy Kite	<i>Haliastur indus</i>	P							DCCEEW	LC	marine	NL	NL	NL
Shorebirds	Black winged stilt	<i>Himantopus himantopus</i>	P		P	P	P			DCCEEW	LC	marine	NL	NL	NL
Shorebirds	Pied Stilt	<i>Himantopus leucocephalus</i>			P					eBird	NL		NL	NL	NL
Sea birds	white-throated needletail	<i>Hirundapus caudacutus</i>						P		DCCEEW	LC	marine/migratory	V	NL	NL
Sea birds	Caspian Tern	<i>Hydroprogne caspia</i>		B	B					DCCEEW	LC	marine/migratory	NL	NL	NL
Shorebirds	Black Bittern	<i>Ixobrychus flavicollis</i>	P							eBird	LC	marine	NL	NL	NL
Shorebirds	Broad-billed Sandpiper	<i>Limicola falcinellus</i>			P	P				DCCEEW	NL	marine/migratory	NL	NL	NL
Shorebirds	Asian Dowitcher	<i>Limnodromus semipalmatus</i>				P				DCCEEW	NT	marine/migratory	V	NL	NL
Shorebirds	Bar-tailed Godwit	<i>Limosa lapponica</i>	P	P	P	P				DCCEEW	NT	marine/migratory	NL	NL	NL
Shorebirds	Black-tailed Godwit	<i>Limosa limosa</i>			P	P				DCCEEW	NT	marine/migratory	E	NL	NL
Waterbird	little pied cormorant	<i>Microcarbo melanoleucos</i>					P			DCCEEW	LC	marine	NL	NL	NL
Shorebirds	Far Eastern Curlew	<i>Numenius madagascariensis</i>			P	P				DCCEEW	E	marine/migratory	CE	CE	CE
Shorebirds	Little Curlew	<i>Numenius minutus</i>				P				DCCEEW	LC	marine/migratory	NL	NL	NL
Shorebirds	Whimbrel	<i>Numenius phaeopus</i>		P	P	P	P			DCCEEW	LC	marine/migratory	NL	NL	NL
Shorebirds	Nankeen night heron	<i>Nycticorax caledonicus</i>	P		P	P				DCCEEW	LC	marine	NL	NL	NL
Sea birds	Bridled Tern	<i>Onychoprion anaethetus</i>		B	B	B	P			DCCEEW	LC	marine/migratory	NL	NL	NL
Sea birds	Sooty Tern	<i>Onychoprion fuscata (sterna?)</i>		B	P	B	P	P	P	DCCEEW	LC	marine	NL	NL	NL
Waterbird	Australian Pelican	<i>Pelecanus conspicillatus</i>		B	B		P			DCCEEW	LC	marine	NL	NL	NL
Sea birds	White tailed tropic bird	<i>Phaethon lepturus</i>	P			B		P		DCCEEW	LC	marine/migratory	NL	NL	NL
Sea birds	Red Tailed Tropic Bird	<i>Phaethon rubricauda</i>	P			B		P		DCCEEW	LC	marine/migratory	NL	NL	NL
Shorebirds	pie d cormorant	<i>Phalacrocorax various</i>		B	B					DCCEEW	LC	marine	NL	NL	NL
Shorebirds	Pacific Golden Plover	<i>Pluvialis fulva</i>	P	P	P	P	P			DCCEEW	LC	marine/migratory	NL	NL	NL
Shorebirds	Grey Plover	<i>Pluvialis squatarola</i>		P	P	P				DCCEEW	LC	marine/migratory	V	NL	NL
Sea birds	wedge tailed shearwater	<i>Puffinus pacificus</i>						P		DCCEEW	LC	marine/migratory	NL	NL	NL
Sea birds	Roseate Tern	<i>Sterna dougallii</i>		B	P	B				DCCEEW	LC	marine/migratory	NL	NL	NL
Sea birds	Common Tern	<i>Sterna hirundo</i>			P		P			DCCEEW	LC	marine/migratory	NL	NL	NL
Sea birds	Little Tern	<i>Sternula albifrons</i>		P	P			P		DCCEEW	LC	marine/migratory	NL	NL	NL
Sea birds	Fairy tern	<i>Sternula nereis nereis</i>		B						DCCEEW	V	marine	V	V	NL
Shorebirds	Australian Pratincole	<i>Stiltia isabella</i>				P				DCCEEW	LC	marine	NL	NL	NL

Wildlife			Location							Listing					
Sea birds	Masked Booby	<i>Sula dactylatra</i>		B	B	B				DCCEEW	LC	marine/migratory	NL	NL	NL
Sea birds	Brown Booby	<i>Sula leucogaster</i>	P	B	B	B	P	P	B	DCCEEW	LC	marine/migratory	NL	NL	NL
Sea birds	Red Footed Booby	<i>Sula sula</i>			B	B				DCCEEW	LC	marine/migratory	NL	NL	NL
Sea birds	Lesser Crested tern	<i>Thalasseus bengalensis (sterna)</i>		B	P	B		P	P	DCCEEW	LC	marine	NL	NL	NL
Sea birds	Great Crested Tern	<i>Thalasseus bergii</i>	B	B	B	B	P		P	DCCEEW	LC	marine/migratory	NL	NL	NL
Shorebirds	collared Kingfisher	<i>Todiramphus chloris</i>	P							eBird	NL	marine	NL	NL	NL
Shorebirds	Sacred Kingfisher	<i>Todiramphus sanctus</i>	P				P			DCCEEW	LC	marine	NL	NL	NL
Shorebirds	Grey-tailed Tattler	<i>Tringa brevipes</i>	P	P	P	P	P			DCCEEW	NT	marine/migratory	NL	NL	NL
Shorebirds	Wood Sandpiper	<i>Tringa glareola</i>	P			P				DCCEEW	LC	marine/migratory	NL	NL	NL
Shorebirds	Common Greenshank	<i>Tringa nebularia</i>	P	P	P	P	P			DCCEEW	LC	marine/migratory	E	NL	NL
Shorebirds	Marsh Sandpiper	<i>Tringa stagnatilis</i>			P	P				DCCEEW	LC	marine/migratory	NL	NL	NL
Shorebirds	Common redshank	<i>Tringa totanus</i>			P					DCCEEW	LC	marine/migratory	NL	NL	NL
Shorebirds	Terek Sandpiper	<i>Xenus cinereus</i>			P	P				DCCEEW	LC	marine/migratory	V	NL	NL
Turtle	Flatback	<i>Natator depressus</i>		P						DCCEEW	NL	marine	V	NL	NL
Turtle	Hawkesbill	<i>Eretmochelys imbricata</i>				P		P	P	DCCEEW	NL	marine	V	NL	NL
Turtle	Green Turtle	<i>Chelonia mydas</i>	P	P	P	P	P	P	P	DCCEEW	E	marine/migratory	V	V	NL

This species matrix table is a compilation of known surveys from the locations as described in the references

Location Key	
P	recorded as present
B	recorded as breeding

Conservation Listing Key	
Not Listed (NL)	
Least Concern (LC)	
Near Threatened (NT)	
Vulnerable (V)	
Endangered (E)	
Critically Endangered (CE)	

**APPENDIX D: REMOTE AREA RESPONSE TOOLS**

**D.1 Example Contacts Director**

Asset / Position	Name / Company	Primary Contact	Secondary Contact	Tertiary Contact
Onshore Support				
Control Agency IMT Leader		Phone#1	Phone#2	Email
Control Agency Operations Lead		Phone#1	Phone#2	Email
Control Agency Planning Lead		Phone#1	Phone#2	Email
Control Agency Logistics Lead		Phone#1	Phone#2	Email
Control Agency Intelligence/Situation Unit Lead		Phone#1	Phone#2	Email
AMOSC Support (Geelong)		Phone#1	Phone#2	Email
Onshore aviation base		Phone#1	Phone#2	Email
Onshore logistics/marine base		Phone#1	Phone#2	Email
Onshore medical support		Phone#1	Phone#2	Email
Field Response Team				
On Scene Commander		Sat Phone #	Email	
Deputy On Scene Commander		Sat Phone #	Email	
On Scene Logistics				
ASV – Vessel Captain		VHF #	Email	Sat Phone #
Helicopter		VHF #	Sat Phone #	
Landing Barge		VHF #	UHF #	Sat Phone #
Tender #1		VHF #	UHF #	
Tender #2		VHF #	UHF #	
Shoreline Staging Area Coordinator		VHF #	Sat Phone #	
Shoreline Medical Support / Paramedic				
SCAT Team Lead		VHF #	Sat Phone #	
Shoreline Clean-up Team Lead				
Protection of Sensitive Resources Team Lead		VHF #	Sat Phone #	
Oiled Wildlife Response Team Lead		VHF #	Sat Phone #	

**D.2 EXAMPLE DAILY ACTIVITY PLANNER AND CHECK-IN SCHEDULE**

Daily Activity Plan (Endorsed by On Scene Commander)													
Team	Tasking							OSC name & signature	Date	____ / ____ / 20____			
Staging Area							# Persons in team	Depart for shoreline	____:____ hrs	JHA#			
								Return from shoreline	____:____ hrs				
SCAT							# Persons in team	Depart for shoreline	____:____ hrs	JHA#			
								Return from shoreline	____:____ hrs				
Shoreline Clean-up							# Persons in team	Depart for shoreline	____:____ hrs	JHA#			
								Return from shoreline	____:____ hrs				
Sensitive Resource Protection							# Persons in team	Depart for shoreline	____:____ hrs	JHA#			
								Return from shoreline	____:____ hrs				
Wildlife Response							# Persons in team	Depart for shoreline	____:____ hrs	JHA#			
								Return from shoreline	____:____ hrs				
Tenders / Barges							# Persons in team	Start shoreline ops	____:____ hrs	JHA#			
								End shoreline ops	____:____ hrs				
Helicopter							# Persons in team	Start helo activities	____:____ hrs	JHA#			
								End helo activities	____:____ hrs				
High Tide			Weather Forecast					Sunrise		Emergency Contact	VHF Channel 16 Sat Phone# _____		
Low Tide								Sunset					
Scheduled Radio Check-ins (maintained by radio operator)													
Team	Comms method	#1 timing (hh/mm)	Complete (Y/N)	Comment	#2 timing (hh/mm)	Complete (Y/N)	Comment	#3 timing (hh/mm)	Complete (Y/N)	Comment	#4 timing (hh/mm)	Complete (Y/N)	Comment
Staging area	VHF												
SCAT	VHF												
Shoreline Clean Up													
Sensitive Resource Protection	VHF												
Oiled Wildlife Resposne	VHF												
Tender #1	VHF												

Barge	VHF												
Helicopter	VHF												

Issued for Use

**D.3 SHORELINE ACCESS QUARANTINE INSPECTION CHECKLIST**

**Purpose:** This form is to be used by each vessel / helicopter conducting shoreline landings as part of oil spill response. The use of this form helps reduce the risk of introduction of exotic pests / diseases to the remote location. If there is any uncertainty regarding the outcome of any quarantine inspection, please contact the relevant IMT HSE / Environment Advisor for clarification prior to transit to shoreline, as further risk assessment may be required.

**Document records** - Original copy of this checklist is to remain on the vessel. A copy of this Form and any attachments (as relevant) are to be sent to the relevant INPEX Environmental Advisor.

<b>Vessel / helicopter name</b>	
<b>Date(s)</b> (dd/mm/yy)	_____ / _____ / 20____ to _____ / _____ / 20____
<b>Description of proposed activity</b> <i>Provide brief description of activity to be undertaken at the shoreline</i>	
<b>Confirm vessel/helicopter inspection conducted.</b> <i>Vessels / helicopters shall be visually inspected prior to their first shoreline landing</i>	<i>(Provide brief description of inspection undertaken. If any quarantine items removed, provide details of storage / disposal undertaken)</i>
<b>Confirm personnel and equipment inspection conducted.</b> <i>Personnel (clothing), and equipment shall be visually inspected prior to first shoreline landing.</i>	<i>(Provide brief description of inspection undertaken. If any quarantine items removed, provide details of storage / disposal undertaken)</i>

**D.4 VESSEL MASTER DECLARATION FORM**

**Purpose:** This form is to be used to ensure vessels conducting oil spill response activities in proximity to any remote shoreline location are effectively assessed and managed to protect the locations environmental values. If multiple vessels are involved, answers regarding biosecurity status must be provided for all vessels. All Vessel Masters must sign the declaration at the end of this Form. If there is any uncertainty that the risks to the environment will be acceptable, please contact the relevant IMT Planning/Environment personnel for clarification prior to departure from port, for transit to remote shoreline, as further risk assessment may be required.

**Document records** - Original copy of this Form is to remain on the vessel. A copy of this Form and any attachments (as relevant) are to be sent to IMT Operations.

<b>Vessel name(s)</b>	
<b>Date(s) of proposed activity</b> (dd/mm/yy)	_____ / _____ / 20____ to _____ / _____ / 20____
<b>Description of proposed activity</b> <i>Provide brief description of activity to be undertaken whilst near remote shoreline location.</i>	
<b>Confirm vessel biofouling risk status.</b> <i>Only 'low risk' vessels can conduct activities at remote shorelines. Any vessel with biofouling status as not 'low risk', or with any additional biofouling related controls in place (i.e. limitations on entering State/Territory waters), shall not enter the State/Territory Waters. (HOLD latest vessel check processes?)</i>	<i>(Provide evidence / cross reference to vessel biofouling risk status report / DOFWA vessel check report)</i>
<b>Confirm vessel topside biosecurity risk status / coastal clearance.</b> <i>Non-coastal cleared vessels (vessels which have not been released from biosecurity control by Australian quarantine agency) shall not enter State/Territory waters.</i>	<i>(Provide evidence that vessel has been 'released from biosecurity control' by DAWR, or specify that home port is in northern WA / NT)</i>
<b>Can the vessel remain on DP / not use anchors whilst conducting the activity?</b> <i>Whilst anchoring is generally permitted around remote shorelines, anchoring should be avoided if possible, to prevent damage to subtidal coral reefs.</i>  <i>If prolonged response expected, establishment of semi-permanent moorings, or dedicated anchor zones may be appropriate.</i>	<i>(Provide discussion on measures to reduce / eliminate anchor impacts on coral reef)</i>

**Vessel Master Declaration**

To be completed / signed by the Master of each vessel involved in the remote shoreline oil spill response activity

As Vessel Master, I understand my vessel will operate in State/Territory Waters, or at a Commonwealth reef/shoreline, and confirm the following will occur:

- Vessel will minimise external lighting at night, maintaining only the lighting required to conduct safe deck operations and meet navigation requirements (reduced lighting will minimise risk of harm to marine turtles, especially hatchlings)
- Vessel will not discharge bilge, food scraps or sewage within 3nm of the shoreline
- Vessel will not discharge any ballast water within 12nm of the shoreline

**Vessel Name:** \_\_\_\_\_ **Vessel Master Name** \_\_\_\_\_ **Vessel Master Signature** \_\_\_\_\_ **Date (dd/mm/yy)** \_\_\_\_/\_\_\_\_/\_\_\_\_

**Vessel Name:** \_\_\_\_\_ **Vessel Master Name** \_\_\_\_\_ **Vessel Master Signature** \_\_\_\_\_ **Date (dd/mm/yy)** \_\_\_\_/\_\_\_\_/\_\_\_\_

**Vessel Name:** \_\_\_\_\_ **Vessel Master Name** \_\_\_\_\_ **Vessel Master Signature** \_\_\_\_\_ **Date (dd/mm/yy)** \_\_\_\_/\_\_\_\_/\_\_\_\_

**D.5 INPEX HELICOPTER HAZID WORKSHEET**

Full copy of the HAZID worksheet and HAZID report can be found [here](#) C270-AH-REP-10000: UTILITY HELICOPTER SUPPORT TO OIL SPILL EMERGENCY HAZID WORKSHOP

Step 1 Facility:	Step 2		Step 3	Step 4		Step 5	Step 6	Step 7			Step 8			Step 9			Notes / Comments					
	Hazard	Accident / Event Description	Causes (Threats)	Existing Prevention Safeguards / Controls (Barriers)	Reference / Supp			Worse Case Credible Consequences	Existing Mitigation Safeguards / Controls (Barriers)	Risk Ranking			Actions / Recommendations			Reassessed Risk Ranking (Optional)						
Applicable Activities								C	L	Risk	Additional Action / Safeguard Description	By Whom	By When	C	L	Risk						
<p><b>A. Flying utility helicopter</b>  <b>B. Conduct aerial observations over water &amp; land, from utility helicopter</b>  <b>C. Land/take off utility helicopter on Facilities (CPF, FPSO), Support Vessels (OSV, PSV, Barge etc.) or Beaches (Browse Island, WA Coastline, NT Coastline)</b>  <b>D. Slings equipment underneath Utility Helicopter on/off Support Vessels, Browse Island, remote beaches etc.</b>  <b>E. Transferring 20-30 oil spill responders, per day from Support vessel(s) onto Browse Island and back</b></p>		Helicopter crash	<p>1. Utility helicopter overloaded (people)</p> <p>2. Pilot error</p> <p>3. Utility helicopter Mechanical failure</p> <p>4. Insufficient fuel</p> <p>5. Contaminated fuel</p> <p>6. Browse Island has had house mice and they could potentially eat wires in helicopter</p>	<p>1.1. Equipment and passenger weighing at all air bases - manifest</p> <p>1.2. Calibration of scales</p> <p>1.3. Helicopter flight planning</p> <p>1.4. Flight manifest verification</p> <p>1.5. Safety margin</p> <p>1.6. Pilot competency</p> <p>1.7. Guidance for passenger/equipment weights on flight log - reviewed by pilot</p> <p>2.1. All flights performed by two pilots</p> <p>2.2. Qualified and licensed pilots as per Helicopter Scope of Work</p> <p>2.3. Fatigue Reduction Management System</p> <p>2.4. Training on specific helicopter (as per Helicopter Scope of Work). Training Plan to specify, i.e.:                      Captain:                      - 2000 hrs total flying time                      Co-Pilot:                      300 hrs total flying time                      2.5. D&amp;A Policy                      2.6. Crew Resource Management (CRM) Training</p> <p>3.1. Twin engine helicopters</p> <p>3.2. Gear box certification requirements</p> <p>3.3. Helicopter on-line status monitoring (HUMS)</p> <p>3.4. Comprehensive preflight checks</p> <p>3.5. Preventative maintenance system PMS</p> <p>3.6. Licensed maintenance engineers</p> <p>3.7. Internal &amp; external audits</p> <p>3.8. Industry alerts taken into account in PMS</p> <p>3.9. Redundancies in helicopter equipment</p> <p>4.1. Minimum Regulatory and Contractor requirements for fuel (sufficient fuel carried to return to onshore alternate without landing on facility)</p> <p>4.2. Helicopter flight planning</p> <p>4.3. Navigation aids and equipment</p> <p>4.4. Communications regarding refuelling requirements</p> <p>5.1. Fuel Quality Management Process</p> <p>5.2. Hell fuel contamination testing - water checks every flight, visual checks (clean and bright)</p> <p>5.3. Contractor Fuel Quality Control</p> <p>5.4. Inspection/audits of onshore fuel providers</p> <p>5.5. Preventative maintenance of Hell fuel system</p> <p>5.6. Third party logistics management of Hell fuel</p> <p>5.7. Design and specification Hell fuel storage containers</p> <p>6.1 Day time operation only</p>		<p>Financial Consequences</p> <p>Health and Safety Consequences - Helicopter crash / ditch into the sea. Multiple Fatalities</p> <p>Health and Safety Consequences - Helicopter crash onto facility. (Topsides process) Multiple Fatalities (Not applicable to underslung loads)</p> <p>Health and Safety Consequences - Helicopter crash on land. Multiple Fatalities</p> <p>Environmental Consequences</p> <p>Reputation Consequences</p> <p>Cultural and Social Heritage Consequences</p>	<p>The FRC is available for rescue of personnel in the water (near FPSO/CPF only)                      Rescue by FPSO FRC                      Helideck access restricted during helicopter operations                      Aviation Standard, including aircraft certification requirements, minimum aircraft specifications, equipment / life saving appliances requirements, IFR rating and pilot competency requirements                      Capability and competency of personnel                      Emergency management, including medical and emergency response                      Operation and maintenance of technical control measures in accordance with the Asset Integrity Standard</p> <p>A GA is initiated upon a helicopter crash at the CPF                      Active fire protection including DIFFS (only for facility in [3]), helideck monitors (only for facility in [3]) and portable fire fighting equipment                      Emergency management, including medical and emergency response                      Operation and maintenance of technical control measures in accordance with the Asset Integrity Standard</p> <p>A GA is initiated upon a helicopter crash at the CPF                      Active fire protection including DIFFS (only for facility in [3]), helideck monitors (only for facility in [3]) and portable fire fighting equipment                      Emergency management, including medical and emergency response                      Operation and maintenance of technical control measures in accordance with the Asset Integrity Standard</p> <p>Emergency management, including medical and emergency response                      Crash box includes fire extinguisher, axe, flares/signals, blankets, first aid kit, bolt cutters etc.                      Automatic crash indication device (CPI, ADELTA)                      Flight tracking</p>				<p>Update utility helicopter Scope of Work to include the requirement for Contractor to provide a range of lifting arrangements (i.e. cargo net, tow hooks, strops, load cell in strop etc.)</p> <p>Perform desktop calculations on the approximate fill size of a bulka bag (with sand and oil) to ensure total weight remains less than 800 kg. (Calculations included in Appendix G of this report).                      Update utility helicopter Scope of Work to include the requirement for the Contractor to advise safe fill levels on bulka bags.</p> <p>Prepare the temporary deviation from the INPEX aviation standard that would be required for the use of the Utility Hel for these activities and cold refuelling. (Base case for Browse Island is refuelling on the facilities, but for more remote beaches along the WA or NT coastline, cold refuelling may be required.)                      Items to consider temporary deviation include but are not limited to:                      - Single pilot                      - Cold refuelling                      - Browse Island as alternate</p> <p>Update utility helicopter Scope of Work to request the Contractor to identify the range (distance in km and miles) of the intended aircraft type for the various activities and loads.</p> <p>Delete two pilot carried from safeguard in HAZID sheet if this is not the case for utility helicopter after Tim action - temporary deviation from the INPEX aviation standard that would be required for the use of the Utility Hel for these activities confirmed.</p> <p>Statement to be provided in workshop report clarifying the nominated controls are what INPEX reasonably expected to be in place. Availability of these controls will be reviewed in more detail risk assessment once the contractor is appointed.</p> <p>Update utility helicopter Scope of Work to include the requirement to provide bird strike protector information on the utility helicopter.                      (Close out to be provided in report, refer to comments)</p>	Jamie C										<p>Heavy lifts (bulk bags, not until later in the clean up operations, few weeks).</p> <p>Contract negotiation outcome to capture the gaps.</p> <p>Generally this cause will present night time only</p> <p>Any dangerous goods would be under slung, not applicable.</p> <p>Browse Island is a bird nesting site and a migratory stop over for many different birds. Utility helicopter unlikely to have bird strike protectors. No need to include bird strike protection given the small diameter of the intakes. No protection for rotor blades available or required.</p>

**D.6 INPEX /SHELL VESSEL AND SHORELINE HAZID WORKSHEET**

Full copy of the HAZID worksheet and HAZID report can be found [here](#) X060-AH-REP-10010: Marine Vessel access to Browse Island Oil Spill Emergency Response HAZID Report

Browse Island Vessel and Shoreline Spill Response HAZID Register															
Title		Risk Assessment for accessing Browse Island by vessel(s) to support oil spill response activities													
Date of Last Revision:		27-Nov-17													
Date of Assessment:		15 and 27 Nov 2017													
Assessment Team Members:		Steve Pearce (Facilitator), Kevin Mundy (Presenter), Jamle Carle, Dan Hazell (Scribe), Brendan Privilege, Nick Jacob, Bruce MacGregor, Phil Leigh, Sturt Andrews, Josh Corbett, Colin Muir													
Date Reviewed and Approved by Stakeholders:		Dee Drury (GM Logistics)													
RISK ASSESSMENT RECORD						INHERENT RISK			RISK REDUCTION PLAN			RESIDUAL RISK			
TASKS APPLICABLE TO THE SCOPE OF WORKS									STAKEHOLDERS REVIEW						
No.	Risk Title	Risk Description	Consequences	Existing Controls	Comment	Likelihood	Consequence	Score	Additional Controls To improve the existing controls by implementing agreed new controls	Responsible Person	Target Date	Likelihood	Consequence	Score	Date verifying Recommended Action(s) Completed
General Hazards															
1	Competency - general vessel operations	Not qualified for standard vessel operations	damage to equipment / personnel injury	Call-off contracts in place for response vessels All vessels crewed / manned by STCW qualified personnel for vessel operations		Highly Unlikely	Minor	9						#N/A	
2	Competency - response personnel	Inexperienced people	Injury	Request experienced personnel from offshore labour hire companies as a preference Project briefing / HSE induction Morning activity briefings, toolbox talks, after action reviews. Maximise use of AMOSC core group.	AMOSC core-group personnel are most competent oil spill responders in Aust. Industry and will provide on-the-job training to labour hire personnel.	Unlikely	Minor	8						#N/A	
3	Communication / Communication Breakdown	Inadequate planning and/or malfunctioning communications	Miscommunication, inability to respond to arising issues (Inclement weather, personnel stranded onshore). Safety and operational effectiveness issue.	Communication plan, with established communication strategies and contingencies. Comms Plan covers all activities / sites including ASVs, tenders, shorebased teams and Ichthys Field. Daily / shift toolbox meeting reiterates comms from Comms Plan. Secondary method of communication for all teams. Details of landing plan are known and agreed by all personnel, with arrival and departure times are determined, and associated check-in times are determined and executed. Radio checks between small vessel / shore teams and ASV prior to departure		Remote	Minor	10						#N/A	
4	Cyclone / heavy weather	Severe climatic and ocean conditions	Vessel capsize / fatality	Weather Forecasting Ship communication equipment Follow processes described in Ichthys Field cyclone contingency plan		Remote	Major	7						#N/A	
5	Fitness for work	Poor concentration	Human Error, injury	INPEX Alcohol and Drugs policy and Fitness for Work Standard.	INPEX Medical would negate later health claims.	Highly Unlikely	Moderate	8	Confirm if INPEX Offshore Medical standards would apply during oil spill response.	Dan Hazell	30-Mar-18	Highly Unlikely	Moderate	8	23 April 2018 - confirmed Careflight medic available to be mobilised for spill response, and that INPEX standards apply, noting that the offshore labour hire company health standards would apply for those personnel that company hires for the job. CLOSED.
8	Outdoor work / fatigue management	High heat / humidity. Sunburn / sun exposure. Fatigue - long hours of manual labour	Medical Treatment Injury Sunburn Heat exhaustion Dehydration	Adequate rest breaks Activity roster Fatigue management / roster for longer term response Suitable shade structures onshore PPE Suncream Cool water & electrolyte / re-hydration drinks		Possible	Minor	7						#N/A	
6	Hazardous materials handling	Spills, inadequate labelling, inappropriate use	Chemical exposure, personal injury	Competent personnel SDS sheets reviewed and controls incorporated into JHA PPE Drip trays for refueling Spill kits for vehicles onshore Vessel standard operating procedures for vessel activities. DPAW / AMOSC trained personnel to supervise any response activity where chemical handling is required.	oily wastes, wildlife cleaning agents, fuels (day tanks)	Highly Unlikely	Minor	9						#N/A	
7	Manual handling	Repeated physical handling of rakes, shovels, buckets, booms, skimmers, wildlife equipment handling etc.	Personal injury - musculo/skeletal injury	JHA to determine appropriate PPE Proper lifting techniques 2 persons Mechanical lifting devices (dingo / bob-cat) for pick-up and transfer of bulka-bags around the site Fitness for work		Possible	Moderate	6						#N/A	
	Project coordination and accountability	Lack of control of activity	lack of coordination between oil spill response, OSMP and other activities in the area (SIMOPs). Incidents / poor performance	Experienced INPEX client rep supervising activity from ASV Consideration of dedicated HSE resource, depending		Unlikely	Minor	8	Develop a conceptual org-chart and include project coordination section	Dan Hazell	30-Mar-18	Highly Unlikely	Minor	9	Org chart reviewed in consultation with WA DoT, and included in Section 3 of the IMG...

## Document Endorsement and Approvals

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### Document Identification

Document Number	Revision	Security Classification	Date
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### Document Revision History

Revision	Date and Time	Issue Reason
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### Delegation of Authority

From Name	To Name	Date and Time	Action

Name	Title

### Electronic Endorsement and Approval

Electronic approval of this document complies with the issued INPEX Electronic Approval Standard (0000-A9-STD-60011) and records evidence that the applicable person has either endorsed and/or approved the content contained within this document. The reviewers of this document are recorded in the CDS.

Name	Title	Date and Time	Action
Mat Hyland	Security, Emergency Ma	28/01/25 15:31	Endorser
Nigel Ross	HSE Support Manager	07/02/25 13:20	Approver