



Gorgon Gas Development and Jansz Feed Gas Pipeline

Fauna Handling and Management Common User Procedure

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TERMS, DEFINITIONS AND ABBREVIATIONS

Terms, definitions and abbreviations used in this document are listed below. These align with the terms, definitions and abbreviations defined in Schedule 2 of the Western Australian Gorgon Gas Development and Jansz Feed Gas Pipeline Ministerial Implementation Statements No. 800 and No. 769 respectively (Statement No. 800 and 769) and the Commonwealth Gorgon Gas Development and Jansz Feed Gas Pipeline Ministerial Approvals (EPBC Reference: 2003/1294, 2008/4178 and 2005/2184).

ABU	Australasia Business Unit
ASBU	Australasia Strategic Business Unit
Bell Hole	An excavation to facilitate directional drilling. A creek or road crossing will need a bell hole on each side of the crossing.
CALM Act	Western Australian <i>Conservation and Land Management Act 1984</i>
Construction	Construction includes any Proposal-related (or action-related) construction and commissioning activities within the Terrestrial and Marine Disturbance Footprints, excluding investigatory works such as, but not limited to, geotechnical, geophysical, biological and cultural heritage surveys, baseline monitoring surveys and technology trials.
Cth	Commonwealth of Australia
CUP	Common User Procedure
DEC	Western Australian Department of Environment and Conservation
DEWHA	Commonwealth Department of the Environment, Water, Heritage and the Arts
DMSO	Dimethylsulfoxide
DNA	Deoxyribonucleic acid
Ecological Element	Element listed in Condition 6.1 of Statement No. 800 and Statement No. 769 and Condition 5.1 of EPBC Reference: 2003/1294 and 2008/4178.
EPA	Western Australian Environmental Protection Authority
EPBC Act	Commonwealth <i>Environment Protection and Biodiversity Conservation Act 1999</i>
EPBC Reference: 2003/1294	Commonwealth Ministerial Approval (for the Gorgon Gas Development) as amended or replaced from time to time.
EPBC Reference: 2005/2184	Commonwealth Ministerial Approval (for the Jansz Feed Gas Pipeline) as amended or replaced from time to time.

EPBC Reference: 2008/4178	Commonwealth Ministerial Approval (for the Revised Gorgon Gas Development) as amended or replaced from time to time.
EPCM	Engineering, Procurement and Construction Management
Excavation	A hole or cavity made by digging. This term applies to all excavations other than trenches associated with onshore construction activities that remain open overnight including (but not limited to) drilling pits, turkey nests, bell holes, bores, and foundations greater than one cubic metre in volume.
Fauna Handler	Person trained in handling, treating and/or euthanising fauna. Fauna handlers may be professionally qualified, or experienced based on past work exposure. Handlers may be trained in particular areas (e.g. snake handling).
Gorgon Gas Development	The Gorgon Gas Development as approved under Statement No. 800 and EPBC Reference: 2003/1294 and 2008/4178 as amended or replaced from time to time.
GPS	Global Positioning System
Habitat	The area or areas in which an organism and/or assemblage of organisms lives. It includes the abiotic factors (e.g. substrate and topography) and the biotic factors.
Interaction	Relating to fauna, recognises the physical (planned or unplanned) interaction that may occur between wildlife and people on Barrow Island (e.g. road collision, handling)
Invenimation	The event of injection of venom in to the human body
Marine Disturbance Footprint	The area of the seabed to be disturbed by construction or operations activities associated with the Marine Facilities listed in Condition 14.3 of Statement No. 800, Condition 12.3 of Statement No. 769 and Condition 11.3 in EPBC Reference: 2003/1294 and 2008/4178 (excepting that area of the seabed to be disturbed by the generation of turbidity and sedimentation from dredging and dredge spoil disposal) as set out in the Coastal and Marine Baseline State Report required under Condition 14.2 of Statement No. 800, Condition 12.2 of Statement No. 769 and Condition 11.2 of EPBC Reference: 2003/1294 and 2008/4178.

Marine Facilities	<p>In relation to Statement No. 800 and EPBC Reference: 2003/1294 and 2008/4178, the Marine facilities are the:</p> <ul style="list-style-type: none">◆ Materials Offloading Facility (MOF)◆ LNG Jetty◆ Dredge Spoil Disposal Ground◆ Offshore Feed Gas Pipeline System and marine component of the shore crossing◆ Domestic Gas Pipeline <p>For the purposes of Statement No. 800, Marine Facilities also include:</p> <ul style="list-style-type: none">◆ Marine upgrade of the existing WAPET landing. <p>In relation to Statement No. 769, Marine Facilities are the Offshore Feed Gas Pipeline System and marine component of the shore crossing.</p>
MEG	Monoethylene Glycol
MGA 50, GDA 94	Map Grid of Australia Zone 50 (WA); projection based on the Geocentric Datum of Australia 1994.
Migratory Species	Species listed as migratory under section 209 of the EPBC Act (Cth).
MOF	Materials Offloading Facility
Native	Species that are native to (naturally occurring in) a region.
Neonates	Newborn infants that are unlikely to survive if separated from parent.
Non-indigenous Species (NIS)	Any species of plant, animal or micro-organism not native to Barrow Island.
OEMS	Operational Excellence Management System
Operations (Gorgon Gas Development)	In relation to Statement No. 800 and EPBC Reference: 2003/1294 and 2008/4178, for the respective LNG trains, this is the period from the date on which the Gorgon Joint Venturers issue a notice of acceptance of work under the Engineering, Procurement and Construction Management (EPCM) contract, or equivalent contract entered into in respect of that LNG train of the Gas Treatment Plant; until the date on which the Gorgon Joint Venturers commence decommissioning of that LNG train.
Operations (Jansz Feed Gas Pipeline)	In relation to Statement No. 769, for the pipeline, this is the period from the date on which the Proponent issues a notice of acceptance of work under the Engineering, Procurement and Construction Management (EPCM) contract, or equivalent contract entered into in respect of that pipeline; until the date on which the Proponent commences decommissioning of that pipeline.

PPE	Personal Protective Equipment
Practicable	<p>Practicable means reasonably practicable having regard to, among other things, local conditions and circumstances (including costs) and to the current state of technical knowledge.</p> <p>For the purposes of the conditions of EPBC Reference: 2003/1294 and 2008/4178 which include the term "practicable", when considering whether the draft plan meets the requirements of these conditions, the Commonwealth Minister will determine what is 'practicable' having regard to local conditions and circumstances including but not limited to personnel safety, weather or geographical conditions, costs, environmental benefit and the current state of scientific and technical knowledge.</p>
PVC	Polyvinylchloride
Relocation	The release of fauna from work areas to elsewhere on Barrow Island.
Scramble Mat	A structure that allows fauna to escape from trenches or excavations, e.g. a ramp with matting or wire mesh.
Significant Fauna	Fauna identified as significant ecological elements in the Terrestrial and Subterranean Baseline State and Environmental Impact Report (Chevron Australia 2009a).
Statement No. 748	Western Australian Ministerial Implementation Statement No. 748 (for the Gorgon Gas Development) as amended from time to time [superseded by Statement No. 800].
Statement No. 769	Western Australian Ministerial Implementation Statement No. 769 (for the Jansz Feed Gas Pipeline) as amended from time to time.
Statement No. 800	Western Australian Ministerial Implementation Statement No. 800 (for the Gorgon Gas Development) as amended from time to time.
Terrestrial Facilities	<p>In relation to Statement No. 800 and EPBC Reference: 2003/1294 and 2008/4178, the terrestrial facilities are the:</p> <ul style="list-style-type: none">◆ Gas Treatment Plant◆ Carbon Dioxide Injection System◆ Associated Terrestrial Infrastructure forming part of the Proposal◆ Areas impacted for seismic data acquisition◆ Onshore Feed Gas Pipeline System and terrestrial component of the Shore Crossing. <p>In relation to Statement No 769, terrestrial facilities are the Onshore Feed Gas Pipeline System and terrestrial component of the Shore Crossing, as approved under Statement No. 769.</p>

Threatened Ecological Communities	Ecological communities listed as critically endangered, endangered or vulnerable under section 181 of the EPBC Act (Cth).
Threatened Species	Species listed as extinct, extinct in the wild, critically endangered, endangered, vulnerable or conservation dependent under section 178 of the EPBC Act (Cth).
Translocation	The release of fauna from Barrow Island (including work areas) to a site off the Island.
Turkey Nest	Small excavation to contain drilling fluids.
VHF	Very High Frequency
Voucher Specimen	A whole animal (usually a cadaver) or a part thereof, that serves as a basis of study and is retained as a reference.
Vouchering	The collection, preservation, and storage of Voucher Specimens.
WA	Western Australia
WAM	Western Australian Museum
WC Act	Western Australian <i>Wildlife Conservation Act 1950</i>
Zoonotics	Diseases that affect both animals and humans.

1.0 INTRODUCTION

1.1 Background

The initial Gorgon Gas Development was approved by the Western Australian State Minister for the Environment on 6 September 2007 by way of Ministerial Implementation Statement No. 748 (Statement No. 748) and the Commonwealth Minister for the Environment and Water Resources on 3 October 2007 (EPBC Reference: 2003/1294).

The Revised and Expanded Gorgon Gas Development was approved by the Western Australian State Minister for the Environment on 10 August 2009 by way of Ministerial Implementation Statement No. 800 (Statement No. 800). Statement No. 800 also superseded Statement No. 748 as the approval for the initial Gorgon Gas Development. Statement No. 800 therefore provides approval for both the initial Gorgon Gas Development and the Revised and Expanded Gorgon Gas Development, which together are known as the Gorgon Gas Development.

The Jansz Feed Gas Pipeline was approved by the Western Australian State Minister for the Environment on 28 May 2008 by way of Ministerial Implementation Statement No. 769 (Statement No. 769) and the Commonwealth Minister for the Environment and Water Resources on 22 March 2006 (EPBC Reference: 2005/2184).

This Procedure covers the Gorgon Gas Development as approved under Statement No. 800 and as approved by EPBC Act Reference 2003/1294 and EPBC Reference: 2008/4178. In addition, this Procedure covers the Jansz Feed Gas Pipeline as approved by Ministerial Implementation Statement No. 769 and EPBC Reference: 2005/2184.

This Procedure satisfies the requirements of the following Western Australian and Commonwealth Ministerial approval conditions.

Conditions 7.6 (ii) and 7.6 (iii) of Statement No. 769 and 800 require:

7.6 (ii) Procedures in relation to and protocols for capturing, relocating, handling, housing, caring for and reporting to the DEC threatened or listed fauna found within the Terrestrial Disturbance Footprint that are not required by DEC for translocation;

7.6 (iii) Procedures to avoid secondary impacts to fauna as a consequence of risks such as animals being trapped in construction trenches or subject to vehicle strike;

Conditions 6.6 (ii) and 6.6(iii) of EPBC Reference: 2003/1294 and 2008/4178 require practicable measures for:

6.6 (ii) Procedures in relation to and protocols for capturing, relocating, handling, housing, caring for and reporting to the DEC threatened or listed fauna found within the Terrestrial Disturbance Footprint that are not required by DEC for translocation;

6.6 (iii) Procedures to avoid secondary impacts to fauna as a consequence of risks such as animals being trapped in construction trenches or subject to vehicle strike;

Matters related to the risks of vehicle collisions with fauna are addressed in the Gorgon Gas Development and Jansz Feed Gas Pipeline Traffic Management Common User Procedure (CUP) (Chevron Australia 2009b).

Common User Procedures have been prepared to support a number of the plans required by Western Australian and Commonwealth Ministerial approval conditions; in particular, the Terrestrial and Subterranean Environment Protection Plan (Chevron Australia 2009c). These procedures provide the detail on specific environmental issues identified in Ministerial plans/reports.

In respect of the Carbon Dioxide Seismic Baseline Survey Works Program, which comprises the only works approved under Statement No. 748 before it was superseded, and under EPBC Reference: 2003/1294 before the Minister approved a variation to it on 26 August 2009, note that under Condition 1A.1 of Ministerial Statement No. 800 and Condition 1.4 of EPBC Reference: 2003/1294 and 2008/4178 this Program is authorised to continue for six months subject to the existing approved plans, reports, programs and systems for the Program, and the works under the Program are not the subject of this Procedure.

1.2 Scope

This Procedure applies to the handling and management of vertebrate fauna during activities associated with construction and operation of the Gorgon Gas Development and Jansz Feed Gas Pipeline. Specifically, this Procedure applies to fauna handling on Barrow Island and surrounding waters, and includes fauna listed under the EPBC Act (Cth).

The document describes procedures for activities that are likely to interact with vertebrate fauna (including terrestrial and marine mammals, birds, amphibians and reptiles, but excluding invertebrates). This includes instructions for the initial response to sick, injured or orphaned animals and directions for obtaining further guidance and/or information. This document currently applies to activities associated with the Gorgon Gas Development and Jansz Feed Gas Pipeline; however, in time it will aim to supersede the internal current Chevron Australia Management of Orphaned or Injured Animals Procedure (Chevron Australia 2006).

Whilst Condition 7.6 (iii) of Statement No. 800 and Statement No. 769 and Condition 6.6 (iii) of EPBC Reference: 2003/1294 and 2008/4178 require that Chevron Australia manages impacts to Significant Fauna, which includes invertebrates, this Procedure does not include invertebrates because:

- ◆ the Terrestrial and Subterranean Baseline State and Environmental Impact Report (Chevron Australia 2009a) indicates that of the terrestrial Significant Fauna, invertebrates are at lower risk of impact from the Gorgon Gas Development and Jansz Feed Gas Pipeline than vertebrates
- ◆ there is no intention to relocate invertebrates that are Significant Fauna, due to the low risk to that fauna at a population level from impacts associated with the Gorgon Gas Development and Jansz Feed Gas Pipeline
- ◆ it is not reasonably practicable, or consistent with industry standards, to manage vehicle strikes or entrapments in excavations or trenches for invertebrates
- ◆ impacts to subterranean invertebrates will be managed through groundwater monitoring and management protocols.

Any matter specified in this Procedure is relevant to the Gorgon Gas Development or Jansz Feed Gas Pipeline only if that matter relates to the specific activities or facilities associated with that particular development.

This Procedure which meets the conditions of EPBC Reference: 2003/1294 and 2008/4178 shall be read and interpreted as only requiring implementation under EPBC Reference: 2003/1294 and 2008/4178 for managing the impacts of the Gorgon Gas Development on, or

protecting the EPBC Act matter listed in Terrestrial and Subterranean Baseline State and Environmental Impact Report (Chevron Australia 2009a). The implementation of matters required only to meet the requirements of Ministerial Statement No. 800 (and No.769) are not the subject of the EPBC Reference: 2003/1294 and 2008/4178.

1.3 Objectives

The objectives of this Procedure are to:

- ◆ minimise stress, injury and death to vertebrate fauna
- ◆ maximise consistency of data collection
- ◆ optimise robustness of data collected
- ◆ provide guidance to relevant personnel on fauna management
- ◆ provide guidance to qualified field staff on fauna handling and decisions for treatment or euthanasia
- ◆ ensure compliance with relevant State and Commonwealth legislation, policies and permits.

1.4 Relevant Documentation

Relevant legislation and regulations that have been taken into account during the development of this Procedure include:

- ◆ *Animal Welfare Act 2002 (WA)*
- ◆ *Conservation and Land Management Act 1984 (CALM Act) (WA)*
- ◆ *Wildlife Conservation Act 1950 (WC Act) (WA)*
- ◆ Wildlife Conservation Regulations 1970 (WA)
- ◆ *Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) (Cth).*

The following standards and guidelines have been taken into account during the development of this Procedure:

- ◆ Western Australian Environmental Protection Authority (EPA) Guidance Statement No. 56 – Terrestrial Fauna Surveys for Environmental Impact Assessment in Western Australia (EPA 2004)
- ◆ Minimum Standards for Wildlife Rehabilitation in Western Australia 2008 (DEC 2008).

The following Chevron Australia Gorgon Gas Development and Jansz Feed Gas Pipeline documents relate to this Procedure:

- ◆ Terrestrial and Subterranean Baseline State and Environmental Impact Report (Chevron Australia 2009a)
- ◆ Terrestrial and Subterranean Environment Protection Plan (Chevron Australia 2009c)
- ◆ Terrestrial and Subterranean Environment Monitoring Program (Chevron Australia 2009d)
- ◆ Fire Management Plan (Chevron Australia 2009e)
- ◆ Barrow Island Weed Hygiene Common User Procedure (Chevron Australia 2009f)
- ◆ Vegetation Clearing and Audit Common User Procedure (Chevron Australia 2009g)
- ◆ Prescribed Fire Plan
- ◆ Traffic Management Common User Procedure (Chevron Australia 2009b)

- ◆ Ecological Monitoring Common User Procedure (Chevron Australia 2009i)
- ◆ Aboriginal Cultural Heritage Management Plan (Chevron Australia 2009j)
- ◆ Post-Construction Rehabilitation Plan (Chevron Australia 2009k).

2.0 FAUNA MANAGEMENT

2.1 Land Clearing

Clearing (whether by fire or mechanical actions) will aim to limit the total loss of terrestrial fauna. Chevron Australia internally requires that any clearing required for the construction or operation of the Gorgon Gas Development or Jansz Feed Gas Pipeline be undertaken in accordance with an internally approved (Chevron Australia) Permit. Clearing not included within Statement No. 800, Statement No. 769, EPBC Reference: 2003/1294 and 2008/4178 will require additional approval.

Where fire is used to clear vegetation, this will be done in accordance with the Prescribed Fire Plan to reduce mortality of terrestrial fauna.

Known active warrens occupied by Boodies are to be trapped by the DEC (if animals are required for translocation) or Chevron Australia within one week prior to clearing so as to remove individuals that occupy the warren and relocate them elsewhere (under licence) as agreed between Chevron Australia and the DEC. Contractors will advise Chevron Australia of the clearing schedule prior to any trapping events; Chevron Australia will in turn advise the DEC. Trapping will continue until it is reasonable to consider that no Boodies reside within the warren (based on trap success and obvious activity such as tracks) or further captures from occupants of the warren are unlikely. Cessation of trapping will occur after consultation with the DEC. The entrances of warrens deemed unoccupied will be collapsed or otherwise physically blocked to prevent re-entry.

Targeted searches for fauna in shelters where present, such as wood, nests and/or termite mounds, will be undertaken within five days prior to clearing by Chevron Australia. Animals caught during these searches will be relocated, or will be used by DEC to support their translocation requirements. At the time of these systematic searches, termite mounds will be disturbed/broken up, and microhabitat/shelters will be broken up or removed to the degree practicable, to initiate egress of fauna living within them and to reduce the available habitat within the site to be cleared.

Mechanical clearing will progress in a systematic manner, slowly progressing so as not to confuse or trap evacuating fauna. Clearing will (where reasonably practicable) progress to an undisturbed area that will not be impacted by roads and construction facilities. It is important not to create habitat islands by leaving isolated pockets uncleared or stockpiling vegetation within the area of disturbance for later works. Double handling of vegetation stockpiles and windrows will be avoided where reasonably practicable.

The management actions for the management of fauna during clearing are summarised in Table 2.1. Table 2.1 includes management actions required in respect of the matters of NES listed in the Terrestrial and Subterranean Baseline State and Environmental Impact Report (Chevron Australia 2009a), as required by Condition 3.2.1 of EPBC Reference: 2003/1294 and 2008/4178.

Planning for translocation of vertebrate fauna will allow sufficient time for the necessary approvals to be completed. Boodies required for translocation to sites for fauna recovery elsewhere in the State will be the responsibility of the DEC. Opportunities to supplement populations of Boodies elsewhere (e.g. Boodie Island or elsewhere on Barrow Island) will be discussed between Chevron Australia and the DEC.

Table 2.1: Management Actions for Clearing

Issue	Action	Timing	Responsibility
Induction	All worksite personnel and visitors are to be inducted regarding proper response to wildlife encounters (including physical interaction with fauna, littering, feeding, approaching and unexpected fauna encounters).	During inductions	Chevron Australia and Contractor
Delineation of area to be cleared	Proposed areas of clearing are to be surveyed, pegged and clearly designated in accordance with Chevron Australia approved internal procedures.	At least 1 week prior to clearing commencing	Contractor
Active Boodie warrens within sites to be cleared	Trapping is to be undertaken around occupied Boodie warrens until it is reasonable to consider no individuals reside within the warren (based on trap success and obvious activity such as tracks) or further captures from occupants of the warren are unlikely. The warren may then be deemed unoccupied.	Within 5 days of clearing commencing	Chevron Australia and DEC
	The entrances of warrens deemed unoccupied will be collapsed or otherwise physically blocked to prevent re-entry.	Once Boodie warren is deemed unoccupied	Chevron Australia and DEC
Initiation of fauna egress from sites to be cleared	Termite mounds will be disturbed/broken up, and microhabitat/shelter will be broken up or removed as practicable, to initiate egress of fauna living within them and to reduce the available habitat within the site to be cleared.	Within 5 days prior to clearing commencing	Contractor
Fauna searches or trapping	Targeted foraging and spotlighting by fauna handlers in area to be cleared for species with vouchering requirements or translocation.	Within 5 days prior to clearing commencing	Chevron Australia
	Fauna will be flushed opportunistically immediately prior to and during clearing of vegetation.	Immediately prior to clearing commencing and ongoing during clearing	Contractor
	Inspections of cleared areas will be made immediately after clearing, and fauna handlers will be called in if displaced or injured animals are found. Any displaced or orphaned animals should be assessed for injury by a fauna handler, and considered for euthanasia, vouchering or relocation (refer to Section 3.0).	Immediately following clearing	Contractor Chevron Australia and DEC
	If required, the DEC may select vertebrate species to trap and translocate	Prior to clearing commencing	DEC
Clearing methodology	Clearing is to take place in a manner such that 'habitat islands' (refugia that fauna can hide within) are not left within the area of disturbance. This would allow fauna within the area of disturbance to move out of the area of their own accord.	During clearing	Contractor

Issue	Action	Timing	Responsibility
	For sites that are cleared in progressive stages, fauna searches should be undertaken in line with each stage of clearance.	During clearing	Contractor
	Clearing via burning shall be conducted in accordance with the Fire Management Plan (Chevron Australia 2009e) and the Prescribed Fire Plan.	During clearing	Contractor
	Vegetation that has been stockpiled for burning is to be checked for and attempts made to flush any fauna present prior to ignition of the stockpile. Where windrows are burnt, they will be burnt slowly and into the wind. This will enable maximum opportunity for fauna that have sought refuge in the windrows to escape before the fire front reaches them.	Prior to stockpile ignition	Contractor

2.2 Excavations (Excluding Trenches)

2.2.1 Fauna Exclusion

The majority of large excavations will take place within cleared areas, therefore reducing the likelihood of fauna interacting with these excavations. This will decrease the risk of fauna interacting with these excavations.

Fauna exclusion methods will be considered for excavations deeper than 500 mm. The methods used to exclude fauna from excavations will depend on factors such as the type of activity, soil type, fauna at risk, and health and safety requirements.

Where excavations are to be left open for longer than 24 hours without activity, a fauna exclusion barrier is to be placed to enclose the perimeter of the excavation if fauna ramps, mats, or ladders are not practicable to use.

Artificial open water bodies or excavations containing mud or other liquids/slurries (e.g. drilling muds/fluids) will include, but not be limited to, stormwater ponds, bunded storage areas and mixing tanks. Management measures will be assessed for each situation, and will depend on the site conditions and facilities.

Management measures to reduce fauna access and entrapment to open water and mud will include, but are not limited to:

- ◆ fauna exclusion fencing (Section 2.3.3, Section 2.3.4)
- ◆ fauna exit ramps or fauna ladders (Section 2.2.2)
- ◆ regular inspections of open drains and stormwater ponds at the Gas Treatment Plant site
- ◆ lids on tanks where design permits
- ◆ sides will be sloped to allow animal to egress where practicable.

Fencing is not required for dry turkey nests and sumps where fauna exit/escape structures are provided.

2.2.1.1 Turtle Exclusion Fencing

Deep excavations associated with the Gorgon Gas Development and Jansz Feed Gas Pipeline, located within 300 m of turtle nesting beaches that will be open during the turtle nesting and hatchling season, and that are accessible to turtles, are to be barricaded using suitable materials considered appropriate for the turtle species likely to interact with the excavations and appropriate for the site conditions. These barricades are to be placed such that they are effective but do not unnecessarily diminish turtle access to nesting areas.

2.2.1.2 Capping of Bores

All bores, which include production, exploration and purpose drilled monitoring bores are to be sealed or capped appropriately to prevent ingress of fauna. Those bores requiring temporary removal of headwork are to be sealed with a concrete plug containing a metal component to facilitate relocation with a metal detector. The plug will be buried if access to the bore is not required again.

2.2.2 Fauna Exit Structures

2.2.2.1 Fauna Ladders and Scramble Mats

Where fauna exclusion remains unachievable, fauna ladders can be used in place of ramps for small excavations. Fauna ladders are structures that give purchase to allow small vertebrates to climb out of the excavation to the surface, and include planks of wood with rungs or steps, planks wrapped with rope or netting, scramble mats or rope/matting. These ladders are primarily effective for arboreal and semiarboreal species, so fauna exclusion is the preferred strategy.

Fauna ladders and scramble mats are available to be installed in turkey nests or large open water bodies where larger vertebrates are commonly lured to water. Where used, scramble mats are to be installed at each corner, and approximately every 25 m around sumps and turkey nests.

Chevron Australia has prepared an internal Fauna Handling and Management Work Instruction to address fauna exit structures required for the Gorgon Gas Development and Jansz Feed Gas Pipeline, and which it internally requires its employees, contractors etc. to comply with, where reasonably practicable.

2.2.2.2 Fauna Exit Ramps

Where exit ramps are not feasible, other mitigation techniques must be considered which can include, but are not limited to:

- ◆ fauna exclusion fences (Section 2.3.3, Section 2.3.4)
- ◆ fauna ladders and scramble nets (Section 2.2.2.1)
- ◆ tightly fitting foam plugs (to cap excavations).

2.2.3 Excavation Inspections

It is recognised that fauna may be trapped or seek shelter in excavations. The chance of fauna encountering excavations increases with the length of the open trench. Therefore, inspections will be carried out as follows:

- ◆ All excavations will be inspected prior to lowering equipment (e.g. cables or pipes) and prior to backfilling. The walls and floors of the excavations will be checked for fauna.
- ◆ Major excavations >500 mm deep will initially be inspected twice daily (early morning, late afternoon). This frequency will only be reduced (in consultation with the DEC) if both the number and frequency of vertebrate fauna observed in the excavations, and the

number and frequency of vertebrate fauna requiring retrieval from the excavations, is low.

- ◆ Structures placed inside the excavations to enable fauna to shelter or escape, such as exit ramps and ladders, will be inspected for fauna sheltering on or under the structures. Inspection will be undertaken daily, although the frequency may be reduced (in consultation with the DEC) if both the number and frequency of vertebrate fauna observed in the excavations, and the number and frequency of vertebrate fauna requiring retrieval from the excavations, is low.
- ◆ Shelter/escape structures placed inside the excavations will also be inspected for fauna sheltering on or under the structures immediately prior to removal of the structures to minimise the risk of injuring fauna as the structures are removed.
- ◆ Excavations plugged with tight-fitting foam plugs will be inspected daily. The plugs will be checked for small gaps or holes that may attract fauna looking for shelter.
- ◆ Excavations containing water, mud or other liquids/slurries (e.g. drilling muds/fluids) will be regularly checked (at least twice a day) because of the additional risk of fauna drowning or becoming stuck in mud. The frequency of inspections may be increased on a case-by-case basis.

Table 2.2: Excavation Inspection Requirements

Issue	Action	Timing	Responsibility
Entrapment in excavations	All excavations are to be inspected for fauna before lowering of pipes or cables and prior to backfilling.	No more than 2 hours prior to activity	Contractor
	All major open excavations are to be inspected daily for trapped fauna, unless agreed otherwise with DEC. This would be undertaken as follows: <ul style="list-style-type: none"> ◆ No later than three hours after sunrise ◆ No earlier than three hours before sunset ◆ During the day as required. 	Daily unless agreed otherwise with DEC	Contractor
	Structures placed inside open excavations to enable fauna to shelter or escape will be inspected for fauna sheltering on or under the structures.	Daily and immediately prior to removal of structures unless agreed otherwise with DEC	Contractor
	Foam plugs used to block excavations will be inspected for small gaps or holes (that may be accessible to fauna) while the plugs are being used.	Daily	Contractor
	Open excavations containing water, mud or other liquids/slurries will be inspected for trapped fauna.	At least twice daily	Contractor

2.3 Trenching

2.3.1 Construction Management

When laying and installing pipelines (production, Monoethylene Glycol (MEG) and utility pipelines), no more than 2000 m of trench will be open at any one point in time and trenches

will be closed as soon as practicable to reduce the amount of time they are open. Temporary fencing or similar measures will, where practicable, be used for deep (1.5 m) trenches to reduce the entrapment of larger fauna on Barrow Island.

2.3.2 Fauna Shelter

Shelter for fauna is to be provided within open trenches at regular intervals as agreed with Chevron Australia. Shelter materials are to be approved by Chevron Australia; they may include hessian sacks, shaded polyvinylchloride (PVC) pipes, cardboard boxes or other materials that provide shade or shelter from predators. Shelters deployed would provide both small and large recesses and/or features to allow smaller animals refuge and protection from larger predators.

Trenches should be backfilled as soon as practicable after pipes or cables are laid to limit impacts such as animals being attracted under these features.

2.3.3 Temporary Fencing

Temporary fencing or similar measures will, where practicable, be used for deep (1.5 m) trenches to reduce the entrapment of larger fauna on Barrow Island. Such fencing acts to guide large fauna away from trenches, or along the fence and away from the risk of entrapment. Considerations for temporary fencing include the type of fence (e.g. flexible plastic fencing), and the method of keeping the fence upright (e.g. by stakes or, where the ground remains impenetrable to stakes, posts held up by base weights). The ends of the trench fencing shall be closed each evening at the cessation of work to prevent fauna entering the trench.

Chevron Australia has prepared an internal Fauna Handling and Management Work Instruction to address temporary fencing required for the Gorgon Gas Development and Jansz Feed Gas Pipeline, and which it internally requires its employees, contractors etc. to comply with, where reasonably practicable.

2.3.4 Permanent Fencing

Where permanent fauna exclusion fences are considered, these are to take into account the purpose of the fence (total fauna exclusion or only exclusion of large animals).

Permanent fauna exclusion fences are to be (typically) >1.2 m in height, and the lower section (typically 800 mm) of fence should incorporate a smooth unscalable surface buried or anchored at the base of the fence where possible (depending on site conditions) to prevent burrowing through the fence by fauna. Where permanent fence is buried below ground, this should, where practicable and where site conditions permit, incorporate a 'skirt' i.e. approximately 90° return away from the fence to prevent burrowing down and beneath the fence by fauna. Materials for permanent fencing shall be suitable to the fauna species that are likely to interact with the site and are appropriate to site conditions. Materials can include, but are not limited to, smooth unscalable surfaces such as sheet plastic or other corrosion-durable material. Provision should be made for fauna exit/escape structures in any open pits, sumps, etc.

Fauna exclusion fences are not to be barbed.

Chevron Australia has prepared an internal Fauna Handling and Management Work Instruction to address permanent fencing required for the Gorgon Gas Development and Jansz Feed Gas Pipeline, and which it internally requires its employees, contractors etc. to comply with, where reasonably practicable.

2.3.5 Trench Inspections

Fauna handlers will be required to inspect trenches for, and to remove, fauna prior to work commencing at the start of each day, no later than three hours after sunrise. Further opportunistic trench inspections for fauna may be undertaken by work personnel and fauna handlers will be notified to remove any fauna that are found entrapped. Where fauna exclusion safeguards (such as fauna exclusion fences) have been implemented, fauna handlers should still inspect for (and remove) animals that may bypass or climb over the safeguard; however, it is anticipated the time to conduct checks will be faster.

Only fauna handlers are to handle fauna or (where required and permitted) to enter trenches for the purpose of fauna management. Fauna handling teams will consist of a minimum of two people, with one person on each side of the trench to ensure inspection of the entire surface of the trench as shown in Figure 2.1, and to allow mobilisation of animals that may be difficult to catch. Inspections will be undertaken where this does not compromise the health and safety of personnel.

For safety reasons, fauna handling teams are not generally permitted inside trenches, and should make all attempts to remove fauna without entry into trenches. If access to the trench is required to remove fauna, authorisation should be sought in accordance with confined space entry procedures.

At least one person in each fauna handling team must have demonstrable relevant experience, as outlined in Section 3.2. Trench inspection requirements are detailed in Table 2.3.

Fauna handling teams will carry with them all the tools required for capturing, handling, identifying and recording fauna as they walk and inspect the trench.

Chevron Australia has prepared an internal Fauna Handling and Management Work Instruction to address tools and equipment required by fauna handlers for capturing, handling, identifying and recording fauna as they walk and inspect Gorgon Gas Development and Jansz Feed Gas Pipeline trenches, and which it internally requires its employees, contractors etc. to comply with, where reasonably practicable.



Figure 2.1: Fauna Handlers Clearing a Pipeline Trench

Table 2.3: Trench Inspection Requirements

Issue	Action	Timing	Responsibility
Entrapment in Trenches	Open trench lengths are not to exceed a length capable of being inspected by staff, and cleared by fauna handling team, within the required time limits. With the exception of the umbilical trench, no more than 2000 m of trench will be open at any one point in time.	-	Contractor
	Fauna handlers are to inspect and clear open trenches daily: <ul style="list-style-type: none"> ◆ No later than three hours after sunrise ◆ No earlier than three hours before sunset ◆ During the day, where practicable. ◆ Nocturnally, if required for further studies undertaken at night (Section 2.3.6) 	Daily when trenches remain open	Contractor
	Shelter for fauna is to be placed in open trenches at the end of each shift or on days when there is no work taking place. Shelter structures are to be placed at regular intervals as agreed with Chevron Australia.	At all times when trenches remain open	Contractor

Issue	Action	Timing	Responsibility
	Open trenches are to be inspected for fauna prior to lowering in of pipes, pipeline bedding/padding and backfilling activities.	No more than 2 hours prior to activity	Contractor
Entrapment in Pipe	Pipes are to be inspected for vertebrate fauna that may be sheltering inside, prior to fit-up for welding and lowering-in of the pipe. Fauna present in pipes are to be removed by fauna handlers, or should be allowed to escape at their own volition. Welded pipe strings are to have end caps fitted to prevent fauna entering the pipe strings.	Prior to use of pipes	Contractor
	Personnel are not to enter pipes or pipe strings to remove fauna.	At all times	Contractor

2.3.6 Further Studies

2.3.6.1 Vertebrate Fauna Peak Activity Entrapment Levels

Chevron Australia will consider undertaking studies that investigate nocturnal vertebrate fauna peak activity entrapment levels within the main feed gas pipeline trench on Barrow Island. This information can allow subsequent clearance efforts to be implemented to peak entrapment periods.

2.3.6.2 Vertebrate Fauna Mark and Recapture Program

Chevron Australia will consider undertaking studies that investigate the loss of body condition, and survivorship of vertebrate fauna that become entrapped in trenches over consecutive nights. Vertebrate fauna recovered from the feed gas pipeline trench excavation can be marked with a non-toxic dye prior to release to aid in recapture identity. If supported, this program will be undertaken in consultation with the DEC. The objective of this program is to mark all entrapped vertebrate fauna and record all subsequent captures of marked fauna, and identify any incremental loss of body condition during consecutive recaptures.

2.3.7 Management of Contingencies and Adverse Weather Conditions

While every effort will be made to minimise risks to fauna injury or death, zero mortalities is considered impracticable.

General contingency actions are summarised in Table 2.4. Requirements for contingency management, and actions to address specific adverse outcomes such as high predation events or high fauna mortality due to entrapment, will be developed on a case-by-case basis in consultation with the DEC.

Whilst every effort will be made to reduce the mortality of fauna due to predation events or heat, it is expected that predation events (raptors, ground-dwelling predators) and extreme temperatures will occur from time to time. Predation or heat exhaustion will be assessed by analysing mortality information collected in the field. Contingency actions to mitigate risks of predation events will be implemented based on this data (Table 2.4). The contingency action will depend upon the type of predation/weather event, and how it may be managed to reduce it further.

Table 2.4: Contingency Actions for Trenching

Issue	Action	Timing	Responsibility
Mortality attributed to predation	In the event that predation remains consistent, different types of shelters are to be considered for trial and shelters placed at key locations in the trench at the end of each day, and inspected and removed if required.	Ongoing during construction	Chevron Australia and Contractor
	If high predation is attributed to individual predators routinely patrolling the trench, these predators may be relocated away from open trenches by fauna handlers in consultation with the DEC.	Ongoing during construction	Chevron Australia and Contractor
Mortality attributed to heat exhaustion	If fauna mortality is observed to be occurring due to high temperatures, additional management measures will be implemented, such as additional shelters or fauna escape/refuge structures within trenches or excavations as required to reduce fauna mortality	Ongoing during construction	Contractor
	<p>In the event that fauna mortality attributed to heat exhaustion increases dramatically or is considered excessive, trenches will be cleared by fauna handlers within two hours after sunrise, and across the day as required.</p> <p>Note: Due to depth and orientation of Gorgon Gas Development feed gas pipeline system trenches, the bottom of trench will be in shade for much of the morning and afternoon.</p>	Ongoing during construction	Contractor
Flooding in trenches	<p>If fauna mortality is observed to be occurring due to significant rainfall from cyclones or Tropical Low systems, additional management measures will be implemented, such as additional shelters or fauna escape/refuge structures within trenches or excavations as required to reduce fauna mortality.</p> <p>The type and frequency of structures (e.g. ladders, wide planks of wood floats) will be determined depending on the trench characteristics (e.g. slope, length of open trench) and expected weather conditions (e.g. amount of rainfall, strength of wind).</p> <p>Flooding will be guided by an adverse weather contingency plan, or equivalent strategy, which will be available to detail the procedure for managing flooding in open trenches in the event of a significant rainfall event.</p>	Ongoing during construction	Contractor

Issue	Action	Timing	Responsibility
	Following heavy rainfall, flooded trenches or major excavations are to be inspected and assessed for water pooling as soon as practicable (depending on weather conditions and safe access). A pump will be available to commence dewatering of trenches or major excavations containing pooled water and these will be cleared of any fauna as soon as practicable.	Whilst standing water remains in trench	Contractor

2.4 Aircraft and Fauna

Aircraft operations have the potential to interfere with fauna breeding cycles, migratory patterns and feeding patterns. Significant direct impacts to fauna from aircraft would be more likely to potentially affect sea and shorebirds and would include aircraft strike of low-flying birds and birds becoming sucked into jet engines or struck by propellers upon plane take-off and landing. In the event that birds become injured or disorientated they will be managed by the measures described in Section 3.3.2, Table 3.1, Section 3.4, Section 3.6 and Section 3.7.3.

3.0 FAUNA HANDLING

3.1 Overview

Personnel are not to intentionally kill, capture, disturb or molest any fauna by any means, as such acts (including attempts and acts of assistance) are offences under the *Wildlife Conservation Act 1950* (WA) (WC Act). Personnel exempt from these conditions are those acting in accordance with the conditions of licences they personally hold such as:

- ◆ licence to take fauna for scientific purposes under Regulation 17 of the WC Act (WA)
- ◆ a Regulation 4 Authority to enter DEC lands and/or water for the purpose of undertaking research, under the Conservation and Land Management Regulations 2002 (WA)
- ◆ licence to take fauna for educational or public purposes under Section 15 of the Wildlife Conservation Regulations 1970 (WA).

A flow diagram to guide fauna handling actions is presented in Figure 3.1.

3.2 Capability of Fauna Handlers

Fauna handlers will be present onsite during the construction and operation of the Gorgon Gas Development and Jansz Feed Gas Pipeline to ensure that the requirements of this Procedure, and animal welfare requirements, can be met.

At least one fauna handler per operational fauna handling team will have experience and/or training in all of the following:

- ◆ attending to accidents involving wildlife
- ◆ inspecting trenches for fauna
- ◆ handling and capturing fauna (including venomous snakes)
- ◆ identifying fauna
- ◆ assessing injured fauna for release, euthanasia or rehabilitation
- ◆ providing care of, or euthanising sick, injured or abandoned, animals
- ◆ senior first aid.

All fauna handlers will also be familiar with:

- ◆ quarantine issues associated with relocation/translocation
- ◆ safety and health risks and implementation of preventative measures associated with working with fauna (e.g. zoonoses)
- ◆ the general ecology of the fauna likely to be encountered on Barrow Island (so that captured fauna may be suitably released back into their respective habitats)
- ◆ the roles and responsibilities other agencies have in fauna incidents on Barrow Island.

When it is considered necessary, persons caring for injured wildlife on Barrow Island are to consult with the DEC or qualified animal carers, as required.

Persons responsible for euthanasia should be familiar with euthanasia techniques through previous on-the-job training and/or a course.

Chevron Australia shall notify the DEC as soon as practicable of any animals kept in captivity or confinement for the purpose of caring for sick, injured, or abandoned juvenile fauna.

A separate flow diagram explicitly for fauna handlers to assess the health, treatment or retention of fauna is shown in Figure 3.2.

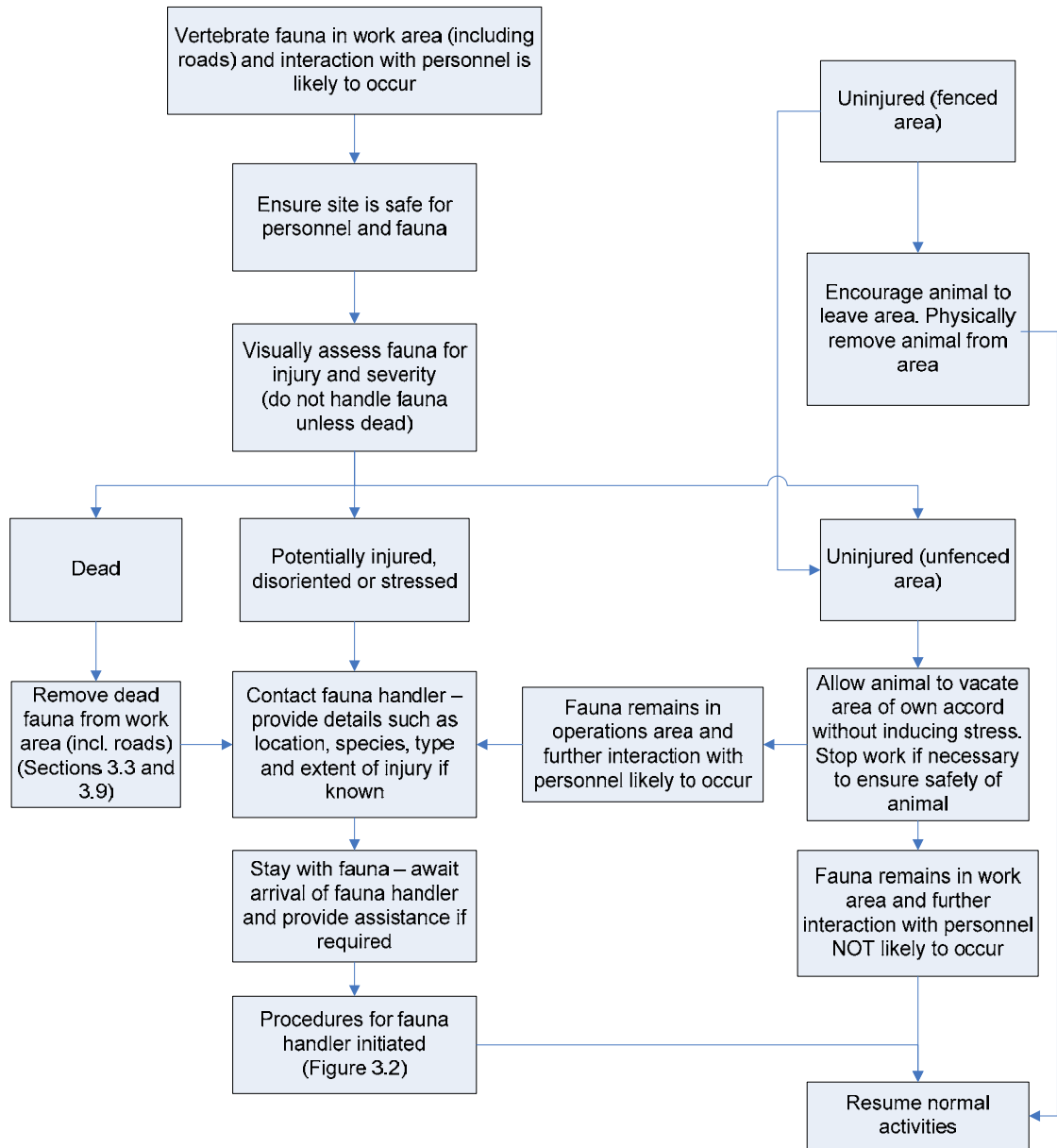


Figure 3.1: Vertebrate Fauna Handling Decision-making Process

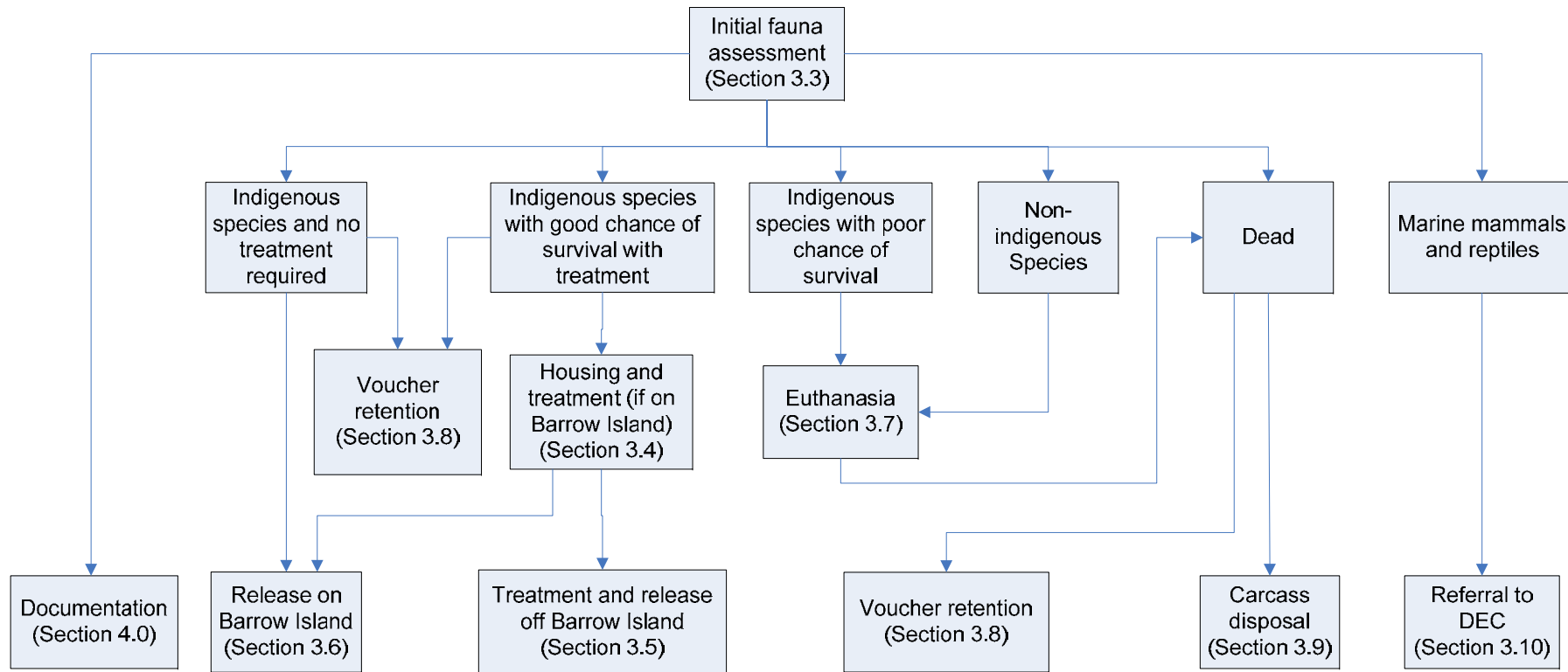


Figure 3.2: Vertebrate Fauna Handling Assessment and Action Process

3.3 Assessment

3.3.1 Initial Assessment

Upon the discovery of an injured, orphaned or dead animal (excluding cetaceans or turtles) the person who found the animal should:

- ◆ promptly assess the condition of the animal
- ◆ check for pouch young in marsupials (as applicable)
- ◆ move dead fauna away from worksites (including roads) if appropriate and safe to do so such that other fauna that may find the carcass will not be in danger from vehicle impact and in turn become injured.

Fauna handlers, or other appropriately trained staff, should be contacted and attend to mortalities of marine fauna (cetacean or turtles) to record the forensic details as required under an incident response management trigger for marine turtles (Chevron Australia 2009I).

All mortalities involving fauna are to be reported to the relevant on-site supervisor and fauna handler as soon as practicable. Mortalities of marine turtles should follow reporting procedures as per the Long-term Marine Turtle Management Plan (Chevron Australia 2009I).

3.3.2 Assessment of Treatment Level by Fauna Handler

An assessment is to be undertaken by a fauna handler to determine the appropriate treatment based on level of distress or injury of an injured or distressed animal. The assessment, if safe to perform, is to include a visual check for broken bones, for signs of severe injuries, and for pouch young in marsupials.

The initial assessment needs to be made as quickly as possible, as the animal may be suffering. The time taken to make an assessment can affect the recovery of any injured fauna – delays will cause stress, slow recovery and/or death.

Extreme care must be taken when considering euthanasia if the cause of distress, injury, illness or change in behaviour is not obvious. Appropriate first aid and observation of the animal must be undertaken before contemplating euthanasia. A guide for assessing the treatment level an animal requires is provided in Table 3.1.

Table 3.1: Assessment of Level of Treatment Required

Treatment	Symptoms
1. Animals requiring passive (husbandry) treatment	<ul style="list-style-type: none"> ◆ Obviously disorientated ◆ Incapable of fleeing due to disorientation, fatigue or injury ◆ Shivering ◆ Very minor injuries ◆ Nocturnal birds (e.g. Shearwaters) that have been disorientated and appear quiet but otherwise uninjured.

Treatment	Symptoms
2. Animals requiring medical treatment	<ul style="list-style-type: none"> ◆ Obvious injuries (e.g. cuts) that do not appear terminal ◆ Vomiting or abnormal defecation and urination ◆ Not supporting their own weight when standing ◆ Abandoned juveniles or pouch young of dead or severely injured marsupials (Euro, Spectacled Hare-wallaby, Rock-wallaby, Boodie, Planigale, <i>Pseudantechinus</i>, Golden Bandicoot, Brush-tail Possum) if: <ul style="list-style-type: none"> • they are fully furred • their eyes are open • their ears are standing up • they are supporting their own weight when standing.
3. Animals requiring euthanasia	<ul style="list-style-type: none"> ◆ Massive trauma ◆ Medical treatment is required and none is available within one hour ◆ Fitting/uncontrolled twitching/involuntary movement ◆ Altered cardiovascular and/or respiratory function ◆ An animal kept for first aid and recovery shows signs of declining health, pain and distress, and the cause of declining health is not obvious and treatable ◆ Blood or other unusual discharge from mouth, nose or other orifices ◆ Mechanism of injury known (e.g. vehicle impact, trauma, heat, crush) and perceived to be serious ◆ An animal removed from a trench displays terminal injuries or illness and/or sustained high levels of pain (such as a large wound that first aid cannot remedy) ◆ An animal has been injured by a vehicle or other traumatic impact and its injuries are terminal or causing sustained high levels of pain (such as a large wound or broken bones that first aid cannot remedy) ◆ Pouch young of dead or severely injured marsupials (Euro, Spectacled Hare-wallaby, Rock-wallaby, Boodie, Planigale, <i>Pseudantechinus</i>, Brush-tail Possum, Golden Bandicoot) if: <ul style="list-style-type: none"> • they are not fully furred • their eyes are not open • their ears are not standing up • they are not supporting their own weight when standing. ◆ Non-indigenous species ◆ Birds with broken wings and/or legs ◆ An animal requiring long term care and/or will not survive after release into the wild due to injuries or development stage (age)

3.3.3 Equipment

Appropriate Personal Protective Equipment (PPE) such as leather gloves, a blanket or similar, and recovery equipment such as a snare or cage is to be used as it will help protect the wearer from scratches or bites that can be received from animals in stress.

Injured fauna may be handled in, or loosely covered with, a dark-coloured heavy cotton bag, or similar, as this will give the animal a feeling of security.

A lockable and ventilated container with clearly visible safety warnings will be used for the transportation of injured or vouchered venomous snakes (Section 3.7.2.2).

3.4 Housing and Treatment on Barrow Island

Small to medium-sized injured and/or abandoned fauna should be transported in a dedicated ventilated insulated box (e.g. esky). Larger animals will be transported in a large dark-coloured cotton bag or blanket, or similar. Animals would be secured by a method that appropriately considers, size, condition and behaviour of the animal prior to transportation.

Care is to be taken during transport to ensure that the animal is not further injured and will not cause unsafe driving or injury to personnel in the vehicle.

Injured or unidentified fauna may be kept overnight for assessment and identification purposes.

Most Australian mammals are extremely difficult to care for in captivity. If the animal is believed to have a high chance of survival, hand rearing may be attempted by any personnel, with approval from on-site environmental senior management, and in consultation with the DEC. However, hand rearing is only to be attempted if the correct resources (appropriate housing, food, staff time commitment) are available for the animal. Fauna should only be kept for the minimum time necessary depending on the course of action required (i.e. repatriation, relocation, translocation, euthanasia).

Details for the housing and feeding of injured or abandoned animals is provided in Chevron Australia internal documentation, such as a work instruction. In summary, for housing and feeding of injured or abandoned fauna the following should be considered;

- ◆ appropriate materials for housing, such as containers and bedding
- ◆ size and adequate ventilation of housing containers
- ◆ environmental conditions of housing facilities
- ◆ provision of and timing of administering appropriate foodstuffs.

In any case, advice on these matters will be sought from appropriate Chevron Australia environmental personnel who can then consult with the DEC, as required.

Chevron Australia has prepared an internal Fauna Handling and Management Work Instruction for the Gorgon Gas Development and Jansz Feed Gas Pipeline to address housing and treatment of fauna required, and which it internally requires its employees, contractors etc. to comply with, where reasonably practicable.

A number of risks may be posed to the health of individual animals and animal populations when interacting with people, such as:

- ◆ physical injury to the animal (including open wounds, which are susceptible to infection)
- ◆ transmission of infectious agents between individual animals via human hands and/or the surface of any equipment coming in contact with animals
- ◆ stress, which can increase susceptibility to disease. Stressed animals may also excrete infectious material into the environment, increasing the chances of disease transmission
- ◆ irritation of the skin, eyes, etc. from contact with residual disinfectants used on equipment.

Section 3.7.2.3 details risk management practices that address hygiene management and animal disease.

3.5 Removal of Animals from Barrow Island

Removal of fauna for the purposes of translocation to other sites may be conducted by the DEC for the purpose of re-establishing wildlife into their former range. Only under exceptional circumstances and with the written approval of the DEC will animals be removed from Barrow Island for any purpose other than wildlife conservation, vouchering, or rehabilitation requirements. Animals that are removed from Barrow Island will not be allowed to return due to the threat of disease importation.

3.6 Release on Barrow Island

In cases where fauna need to be relocated from the worksite to other areas on Barrow Island, this is to be conducted by fauna handlers.

Fauna removed from a site for the purposes of recovery or treatment following clearing, are to be returned to an area near the site from which they were removed, at a time of day that does not compromise their repatriation (before 8 am or after 5 pm). Fauna are to be released into a sheltered area (bush, rock cavity, warren, etc.).

Relocation and release should be undertaken as soon as practicable to a suitable habitat and distance, as determined by a fauna handler taking into consideration the behavioural and habitat requirements of the species. Fauna are to be released within a suitable sheltered location such as spinifex clumps, rock outcrops, or leaf litter depending on their ecology.

Shorebirds are to be released at the coast late in the day, near where they were found. Shearwaters and Bridled Terns are to be released at the coast near Double Islands.

3.7 Euthanasia

3.7.1 Primary Considerations

Animal euthanasia will be undertaken in accordance with the Australian Code of Practice for the Care and Use of Animals for Scientific Purposes (National Health and Medical Research Council [NHMRC] 2004).

Voucher specimens may be required by the Western Australian Museum (WAM). Voucher specimens require the specimen to remain intact and undamaged, which limits the preferred methods of euthanasia.

Other considerations include the need for techniques compatible with the health and safety regulations of a construction site (e.g. firearms and certain drugs would not be appropriate), practicable for use in a field setting and, ideally, preserve native fauna in a condition appropriate for use as voucher specimens for the WAM.

Chevron Australia has prepared an internal Fauna Handling and Management Work Instruction for the Gorgon Gas Development and Jansz Feed Gas Pipeline to address euthanasia of fauna, and which it internally requires its employees, contractors etc. to comply with, where reasonably practicable.

3.7.2 Health and Safety

3.7.2.1 Risks to Handlers

The following risks are to be managed to avoid injury or harm to fauna handlers:

- ◆ physical injuries, such as bites, scratches and blows from animals, and cuts and abrasions from equipment. Additional handlers are to be used to assist with the handling of larger animals
- ◆ inenimination by venomous fauna (Section 3.7.2.2)
- ◆ allergies to animal material such as hair and feathers
- ◆ zoonotics, which are diseases that affect both animals and humans; zoonoses are diseases found in animals that may be transmitted to humans.

3.7.2.2 Protocol for Handling and Transporting Venomous Snakes

Snakes are only to be handled by fauna handlers with the appropriate training. If euthanasia of snakes is required, the snake is to be sedated before euthanasia techniques are applied, where deemed appropriate.

Chevron Australia will apply, where reasonably practicable, an internal protocol for the transportation of venomous snakes requiring euthanasia, or taken for vouchering purposes. For this process, the below requirements will be met:

- ◆ Following positive identification, the fauna handler will communicate the collection of the snake to all co-workers.
- ◆ The snake will be placed inside an appropriate double secured bag and tied either with cord or tape, or clamped.
- ◆ The bagged snake will then be placed inside a suitably ventilated container with clearly visible safety warnings and locked with a padlock. The only active key will be held by the fauna handler who undertook the above process. A second key will be held in an agreed location, and used only by or in communication with this fauna handler.
- ◆ The container will be transported as soon as is practicable to a cool, dry area within the holding facility (Section 3.4).
- ◆ As soon as is practicable, the snake will be attended to by the fauna handler who has undertaken the above process, or co-worker by agreement.

3.7.2.3 Hygiene

All animals are to be handled with the assumption that they carry disease, especially if they appear sick.

These risk management practices are to be applied by fauna handlers:

- ◆ Basic principles of personal and equipment hygiene must be followed at all times to minimise the risk of exposure to disease agents and minimise the risk of spreading disease.
- ◆ Maintain high levels of personal hygiene such as washing and sanitising hands before and after handling animals and before eating.
- ◆ Do not eat, drink or smoke cigarettes while handling animals.
- ◆ Keep animals, animal products and animal waste away from food preparation and storage areas.
- ◆ Ensure appropriate PPE (including gloves, eye protection, face mask, long-sleeved shirt and long pants) is worn when handling injured fauna for first aid or euthanasia purposes, or where blood, wastes and other body fluids are encountered.
- ◆ Disinfect, wash or dispose of equipment that has been used for animal euthanasia, and bags and equipment that have been in contact with animal blood, waste and other body fluids.

3.7.3 Techniques

It is the responsibility of a fauna handler, or other experienced person (e.g. DEC) to euthanise an animal if it is deemed the appropriate course of action.

3.7.4 Equipment

Field equipment for performing euthanasia will be readily accessible by fauna handling teams and will generally consist of simple tools for performing one of the physical euthanasia techniques. These tools will include:

- ◆ customised heavy steel bar (for larger fauna)
- ◆ small steel rod (for smaller fauna)
- ◆ shovel
- ◆ fauna handling equipment including hoop bags, jiggers, calico bags, hessian bags
- ◆ appropriate PPE.

3.8 Voucher Retention

3.8.1 Selection of Voucher Specimens

Voucher specimens are only to be collected by personnel with a valid “Licence to Take Fauna for Educational or Public Purposes” or a “Licence to Take Fauna for Scientific Purposes” under Sections 15 and 17 respectively, of the Wildlife Conservation Regulations 1970 (WA) (refer to Section 3.1). Collections must also occur under a “Licence to Take Fauna from a Nature Reserve” (under the CALM Act (WA)).

Only experienced personnel who are familiar with the ecology of the fauna will determine which animals are suitable for voucher retention, and under the direction of the WAM or the DEC, which have elicited a requirement to obtain voucher specimens. A mixture of adult males and females is desirable. Attention should be taken to ensure females captured do not have dependent young.

Vouchering will be a responsibility of Chevron Australia or the DEC.

Voucher specimens may be obtained from sites to be cleared of vegetation, or from animals that have died or have been euthanised due to injury. Voucher specimens will be lodged in appropriate public collections. For most animals this will be the WAM, and for plants, the Western Australian Herbarium.

Vouchers will be collected and submitted for:

- ◆ animals that have not been previously recorded on Barrow Island
- ◆ animals whose taxonomy and genetics is poorly understood
- ◆ taxa for which the Western Australian Museum (WAM) holds specimens for less than a total of five from Barrow Island (Appendix A).

Voucher specimens may also be provided for research purposes, under licence. To avoid over collection of taxa and provide the current status of all taxa vouchered, the voucher list of specimens (Appendix A) will be managed as follows:

- ◆ list updated following each individual specimen collection by appropriate personnel
- ◆ regular data to be provided to Chevron and records updated within relevant Chevron ecological data management system
- ◆ regular communication with WAM regarding collected specimens.

If opportunities arise, deoxyribonucleic acid (DNA) may be collected from live animals, without the requirement for the euthanasia of the animal.

3.8.2 Live Specimens

The Department of Terrestrial Vertebrates at the WAM (Ph: 08 9212 3700) must be consulted prior to the collection of any voucher specimens that are to be transported live to the Museum. This is to ensure that resources will be available to attend to the animals upon their arrival.

Transfers are to occur only where an animal is to be subsequently euthanised for a voucher specimen.

Each specimen is to be bagged individually in a clean bag inside a secure, insulated esky or container, placed within a pressurised/temperature-controlled section of the plane and transported as soon as practicable to the Western Australian Museum (along with collection records as listed in Section 4.0. For housing of live specimens refer to Section 3.4.

3.8.3 Preserved Specimens

The transportation of large numbers of live animals (particularly mammals) is undesirable from an animal welfare point of view; this approach is to be avoided wherever practicable.

Voucher specimens are to be euthanised as soon as is practicable by suitably experienced personnel. Voucher vertebrate specimens are to be anaesthetised first, and then euthanised by lethal injection (refer to Section 3.7) to limit any damage to the specimen.

Immediately after euthanasia, a tissue sample (liver) may be taken. Biopsy tissue shall be preserved in a material conducive to allowing genetic sampling (e.g. dimethylsulfoxide [DMSO] or alcohol). The remaining specimen tissue, when required for vouchering, shall be preserved based on appropriate vouchering protocols.

For marine turtle or marine mammal mortalities that occur, appropriately experienced personnel must be notified to allow for the collection of biopsy tissue samples, if required. These samples are to be preserved as appropriate for future genetic studies. Additional information should also be collected including, but not limited to, photographs of the individual, location and date (see Section 3.3.1).

A list of Barrow Island species for which voucher specimens are required is shown in Appendix A. This list will be updated electronically as specimens are vouchered. An updated list will be included in the Environmental Performance Report submitted annually to the Western Australian Minister for the Environment and to the Commonwealth Department of the Environment, Water, Heritage and the Arts (DEWHA). As no further voucher specimens are required for mammals, only information related to reptiles and frogs is presented.

All fauna collected for voucher specimens will be the responsibility of Chevron Australia.

3.9 Disposal of Animal Carcasses

'Roadkill' carcasses are to be removed from the roads and left in the adjacent bush away from worksites, roads and access tracks to prevent further harm to carrion-feeding animals. Dead wallabies and Euros are to be checked for pouch young prior to being left in the bush. If pouch young are present and fully furred, they are to be removed and decisions to foster care them are to be made in consultation with the DEC. If foster care is inappropriate, or if

pouch young are present and unfurred, they are to be euthanised using appropriate procedures.

The carcasses of the following will be disposed of in an alternative manner (burial, off-Island removal, incineration) if they are not retained as voucher specimens:

- ◆ animals that have been euthanised by lethal injection to ensure scavenging fauna will not ingest the same lethal toxin
- ◆ animals that are not indigenous to Barrow Island
- ◆ animals displaying symptoms of disease.

Dead animals can carry and shed infective agents so appropriate care and hygiene must be maintained at all times during the handling, storage and transport of specimens and carcasses.

3.10 Referral to the DEC

Marine mammals and reptiles such as turtles, whales, dolphins and dugongs inhabit the waters around Barrow Island and the mainland. Sightings of injured fauna on the beaches, or in the water, are to be reported by personnel to a Chevron Australia representative on the Island, who will then contact the DEC Barrow Island Field Staff or the DEC Regional Office (respectively) so that appropriate action can be taken.

For all other fauna, as described elsewhere in this Procedure, DEC representatives are to be consulted by Chevron Australia when additional information or guidance is required to ensure appropriate fauna handling and treatment actions are taken.

In the event that a virus, pathogen, or other disease agent is suspected in an animal population on Barrow Island, Chevron Australia will consult with the DEC on the appropriate management response within 48 hours.

4.0 RECORDING AND REPORTING

4.1 Recording

Detailed records of dead, injured, captured or entrapped fauna will be kept. Records will enable analysis of any trends in fauna captures or casualties (e.g. GIS reporting, frequency distributions of casualty versus species, trap success, etc.) as part of the Terrestrial and Subterranean Environment Monitoring Program (Chevron Australia 2009d). Data collected by Chevron Australia can be made available to DEC as requested under the standard data-sharing arrangements.

Records are to be kept on an internal Chevron Australia database that includes the following details (where known, or where relevant to the incident):

- ◆ fauna species
- ◆ time and date of capture
- ◆ location (MGA 50, GDA 94)
- ◆ status (alive, alive injured, dead predated, dead heat exhaustion, dead drowned, dead hypothermia, dead other known cause, dead unknown cause)
- ◆ actions taken (euthanasia, release, relocation, none)
- ◆ euthanasia: the method of euthanasia, species of animal, cause of injury/reason for euthanasia, the fauna handler responsible for administering euthanasia, weight of the animal and the volume of Pentobarbitone (if used)
- ◆ voucher number (if voucher specimen taken)
- ◆ if fauna have been entrapped in a trench or excavation, other trench data must be recorded including the presence and number of trench ramps, the temperature, the total length of the open trench and the presence of any water pooling
- ◆ if readily determined: the age, gender and whether pouch young are being carried
- ◆ if applicable, symptoms of a virus, pathogen, or other disease agent expressed in animals held for treatment.

All voucher specimens (if required by the Museum) will be entered into a voucher database retained and managed by Chevron Australia, with the specific specimen details including:

- ◆ species
- ◆ sex if known
- ◆ date collected
- ◆ the collector
- ◆ the location (MGA 50, GDA 94)
- ◆ unique voucher code/field code as allocated by the collector
- ◆ any biopsy tissues taken (and type of tissue).

4.2 Reporting

4.2.1 Compliance Reporting

Condition 4 of Statement No. 800 and Condition 2 of EPBC Reference: 2003/1294 and 2008/4178 requires Chevron Australia to submit a Compliance Assessment Report annually to address the previous 12-month period. Condition 4 of Statement No. 769 and Condition 5 of EPBC Reference: 2005/2184 similarly require that Chevron Australia submit

an Audit Compliance Report on an annual basis, for the previous 12-month period. An audit table is provided in Appendix B to assist with auditing for compliance with this Procedure for Statement No. 800, EPBC Reference: 2003/1294 and 2008/4178 and Statement No. 769. This Procedure is not required under EPBC Reference: 2005/2184 therefore, compliance reporting is not required to meet this condition.

4.2.2 Environmental Performance Reporting

Condition 5.1 of Statement No. 800, Statement No. 769 and Condition 4 of EPBC Reference: 2003/1294 and 2008/4178 require that Chevron Australia submits an Environmental Performance Report to the Western Australian Minister for the Environment and to the Commonwealth DEWHA respectively, on an annual basis, for the previous 12-month period.

In addition, under Condition 5.3 of Statement No. 800 and Statement No. 769 and Condition 4.2 for EPBC Reference: 2003/1294 and 2008/4178 every five years from the date of the first annual Report, Chevron Australia shall submit to the Western Australian Minister for the Environment an Environmental Performance Report covering the previous five year period.

Specific details on the content of the Environmental Performance Report are defined in Condition 5.2 and Schedule 3 of Statement No. 800, Condition 5.2 of Statement No. 769 and Schedule 3 of EPBC Reference: 2003/1294 and 2008/4178.

The information in the Environmental Performance Report will also partly meet the requirements of Condition 3.7 of EPBC Reference: 2003/1294 and 2008/4178.

4.2.3 Routine Reporting

The Terrestrial and Subterranean Environment Protection Plan (Chevron Australia 2009c) and Terrestrial and Subterranean Environment Monitoring Program (Chevron Australia 2009d) contain the routine reporting and documentation requirements associated with fauna.

4.3 Internal Incident Reporting

Chevron Australia has prepared the ASBU Emergency Management Process (Chevron Australia 2007) and Incident Investigation and Reporting Process (Chevron Australia 2008), which it internally requires its employees, contractors, etc. to follow in the event of environmental incidents. These processes will also be internally applied to environmental incidents identified in this Procedure, where this is appropriate and reasonably practicable.

5.0 REVIEW

Chevron Australia is committed to conducting activities in an environmentally responsible manner and aims to implement best practice environmental management as part of a program of continuous improvement. This commitment to continuous improvement means Chevron Australia will review this Procedure every five years and more often as required (e.g. in response to new information).

Reviews will address matters such as the overall design and effectiveness of the Procedure, progress in environmental performance, changes in environmental risks, changes in business conditions, and any relevant emerging environmental issues.

If the Procedure no longer meets the aims, objectives or requirements of the Procedure, if works are not appropriately covered by the Procedure, or measures are identified to improve the Procedure, Chevron Australia may submit an amendment or addendum to the Procedure to the Minister for approval under Condition 36 of Statement No. 800 and Condition 21 of Statement No. 769.

If Chevron Australia wishes to carry out an activity otherwise than in accordance with the Procedure, Chevron Australia will update the Procedure and submit it for approval by the Minister in accordance with Condition 25 of EPBC Reference: 2003/1294 and 2008/4178. The Commonwealth Minister may also direct Chevron Australia to revise the Procedure under Condition 26 of EPBC Reference: 2003/1294 and 2008/4178.

6.0 REFERENCES

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APPENDIX A: VOUCHER LIST OF SPECIMENS

Table A1 contains the voucher list of specimens currently held (as at August 2008) in the WAM and those requiring to be collected from Barrow Island.

Table A1: Voucher List of Barrow Island Specimens

Common Name	Genus	Species	Barrow Island Specimens Collected and in WA Museum	Barrow Island Specimens with Tissue (Liver) in WA Museum	Barrow Island Specimens to be Collected with Tissue
Horned Sea Snake	<i>Acalyptophis</i>	<i>peronii</i>	1	0	5
Olive Sea Snake	<i>Aipysurus</i>	<i>laevis</i>	3	0	5
Gilbert's Dragon	<i>Amphibolurus</i>	<i>gilberti</i>	3	0	5
Stimson's Python	<i>Antaresia</i>	<i>stimsoni</i>	21	1	4
North-western Shovel-nosed Snake	<i>Brachyuropis</i>	<i>approximans</i>	2	0	5
Three Spined Rainbow Skink	<i>Carlia</i>	<i>tricantha</i>	1	0	5
Nimble Ctenotus	<i>Ctenotus</i>	<i>hanloni</i>	2	0	5
Panther Skink	<i>Ctenotus</i>	<i>pantherinus</i>	20	4	1
Water-holding Frog	<i>Cyclorana</i>	<i>platycephala</i>	1	0	5
Sharp-snouted Legless Lizard	<i>Delma</i>	<i>nasuta</i>	10	2	3
Dyed Scalyfoot	<i>Delma</i>	<i>tincta</i>	2	0	5
Rufous Whipsnake	<i>Demansia</i>	<i>rufescens</i>	3	0	5
Turtlehead Sea Snake	<i>Emydocephalus</i>	<i>annulatus</i>	2	0	5
Banded Skink	<i>Eremiascincus</i>	<i>richardsonii</i>	4	1	4
Hawksbill Turtle	<i>Eretmochelys</i>	<i>imbricata</i>	4	1	4
Moon Snake	<i>Furina</i>	<i>ornata</i>	4	0	5
Web-toed Gecko	<i>Gehyra</i>	sp.	3	3	2
Smooth-scaled Skink	<i>Glaphyromorphus</i>	<i>isolepis</i>	7	0	5
Spotted Sea Snake	<i>Hydrophis</i>	<i>ocellatus</i>	1	0	5
Elegant Slider	<i>Lerista</i>	<i>elegans</i>	3	0	5

Common Name	Genus	Species	Barrow Island Specimens Collected and in WA Museum	Barrow Island Specimens with Tissue (Liver) in WA Museum	Barrow Island Specimens to be Collected with Tissue
Burton's Snake Lizard	<i>Lialis</i>	<i>burtonis</i>	8	2	3
Desert Tree Frog	<i>Litoria</i>	<i>rubella</i>	5	0	5
Crowned Gecko	<i>Lucasium</i>	<i>stenodactylum</i>	1	0	5
Sandhill Skink	<i>Morethia</i>	<i>lineocellata</i>	1	0	5
Firetail	<i>Morethia</i>	<i>ruficauda</i>	10	1	4
Flatback Turtle	<i>Natator</i>	<i>depressus</i>	7	0	5
Western Jew Lizard	<i>Pogona</i>	<i>minor</i>	7	0	5
Western Soil-crevice Skink	<i>Proablepharus</i>	<i>reginae</i>	18	2	3
Mulga Snake	<i>Pseudechis</i>	<i>australis</i>	6	1	4
Black-headed Snake Lizard	<i>Pygopus</i>	<i>nigriceps</i>	1	0	5
(Blind Snake) - unnamed	<i>Ramphotyphlops</i>	<i>ammodytes</i>	1	0	5
Beaked Blind Snake	<i>Ramphotyphlops</i>	<i>grypus</i>	1	1	4
(Blind Snake) - unnamed	<i>Ramphotyphlops</i>	<i>longissimus</i>	1	0	5
Southern Phasmid Gecko	<i>Strophurus</i>	<i>jeanae</i>	7	1	4
Short-tailed Pygmy Monitor	<i>Varanus</i>	<i>brevicauda</i>	0	0	5
Spiny-tailed Monitor	<i>Varanus</i>	<i>acanthurus</i>	2	0	5
Perentie	<i>Varanus</i>	<i>giganteus</i>	8	0	5

APPENDIX B: COMPLIANCE REPORTING TABLE

Section No.	Actions	Timing
2.1	Known active warrens occupied by Boodies are to be trapped by the DEC (if animals are required for translocation) or Chevron Australia within one week prior to clearing so as to remove individuals that occupy the warren and relocate them elsewhere (under licence) as agreed between Chevron Australia and the DEC.	Construction and Operations
2.1	Contractors will advise Chevron Australia of the clearing schedule prior to any trapping events; Chevron Australia will in turn advise the DEC.	Construction and Operations
2.1	Trapping will continue until it is reasonable to consider that no Boodies reside within the warren (based on trap success and obvious activity such as tracks) or further captures from occupants of the warren are unlikely.	Construction and Operations
2.1	Cessation of trapping will occur after consultation with the DEC.	Construction and Operations
2.1	The entrances of warrens deemed unoccupied will be collapsed or otherwise physically blocked to prevent re-entry.	Construction and Operations
2.1	Targeted searches for fauna in shelters where present, such as wood, nests and/or termite mounds, will be undertaken within five days prior to clearing by Chevron Australia. Animals caught during these searches will be relocated, or will be used by DEC to support their translocation requirements. At the time of these systematic searches, termite mounds will be disturbed/broken up, and microhabitat/shelters will be broken up or removed to the degree practicable, to initiate egress of fauna living within them and to reduce the available habitat within the site to be cleared.	Construction
2.1	Mechanical clearing will progress in a systematic manner, slowly progressing so as not to confuse or trap evacuating fauna. Clearing will (where reasonably practicable) progress to an undisturbed area that will not be impacted by roads and construction facilities.	Construction
2.1	Double handling of vegetation stockpiles and windrows will be avoided where reasonably practicable.	Construction
2.1	Planning for translocation of vertebrate fauna will allow sufficient time for the necessary approvals to be completed.	Construction and Operations
2.1	Opportunities to supplement populations of Boodies elsewhere (e.g. Boodie Island or elsewhere on Barrow Island) will be discussed between Chevron Australia and the DEC.	Construction and Operations
Table 2.1	All worksite personnel and visitors are to be inducted regarding proper response to wildlife encounters (including physical interaction with fauna, littering, feeding, approaching and unexpected fauna encounters).	All Phases
Table 2.1	Targeted foraging and spotlighting by fauna handlers in area to be cleared for species with vouchering requirements or translocation within 5 days prior to clearing commencing.	Construction
Table 2.1	Fauna will be flushed opportunistically immediately prior to and during clearing of vegetation.	Construction
Table 2.1	Inspections of cleared areas will be made immediately after clearing, and fauna handlers will be called in if displaced or injured animals are found.	Construction

Section No.	Actions	Timing
Table 2.1	Any displaced or orphaned animals should be assessed for injury by a fauna handler, and considered for euthanasia, vouchering or relocation immediately following clearing.	Construction
Table 2.1	Clearing is to take place in a manner such that 'habitat islands' (refugia that fauna can hide within) are not left within the area of disturbance. This would allow fauna within the area of disturbance to move out of the area of their own accord.	Construction
Table 2.1	For sites that are cleared in progressive stages, fauna searches should be undertaken in line with each stage of clearance.	Construction
Table 2.1	Clearing via burning shall be conducted in accordance with the Fire Management Plan and the Prescribed Fire Plan.	Construction
Table 2.1	Vegetation that has been stockpiled for burning is to be checked for and attempts made to flush any fauna present prior to ignition of the stockpile. Where windrows are burnt, they will be burnt slowly and into the wind. This will enable maximum opportunity for fauna that have sought refuge in the windrows to escape before the fire front reaches them.	Construction
2.2.1	Fauna exclusion methods will be considered for excavations deeper than 500 mm.	Construction
2.2.1	Where excavations are to be left open for longer than 24 hours without activity, a fauna exclusion barrier is to be placed to enclose the perimeter of the excavation if fauna ramps, mats, or ladders are not practicable to use.	Construction
2.2.1	<p>Management measures to reduce fauna access and entrapment to open water and mud will include, but are not limited to:</p> <ul style="list-style-type: none"> • fauna exclusion fencing • fauna exit ramps or fauna ladders • regular inspections of open drains and stormwater ponds at the Gas Treatment Plant site • lids on tanks where design permits • sides will be sloped to allow animal to egress where practicable. 	All Phases
2.2.1.1	Deep excavations associated with the Gorgon Gas Development and Jansz Feed Gas Pipeline, located within 300 m of turtle nesting beaches that will be open during the turtle nesting and hatching season, and that are accessible to turtles, are to be barricaded using suitable materials considered appropriate for the turtle species likely to interact with the excavations and appropriate for the site conditions. These barricades are to be placed such that they are effective but do not unnecessarily diminish turtle access to nesting areas.	Construction
2.2.1.2	All bores, which include production, exploration and purpose drilled monitoring bores are to be sealed or capped appropriately to prevent ingress of fauna. Those bores requiring temporary removal of headwork are to be sealed with a concrete plug containing a metal component to facilitate relocation with a metal detector. The plug will be buried if access to the bore is not required again.	All Phases
2.2.2.1	Fauna ladders and scramble mats are available to be installed in turkey nests or large open water bodies where larger vertebrates are commonly lured to water. Where used, scramble mats are to be installed at each corner, and approximately every 25 m around sumps and turkey nests.	Construction

Section No.	Actions	Timing
2.2.2.2	Where exit ramps are not feasible, other mitigation techniques must be considered which can include, but are not limited to: <ul style="list-style-type: none"> • fauna exclusion fences • fauna ladders and scramble nets • tightly fitting foam plugs (to cap excavations). 	Construction
Table 2.2	All excavations are to be inspected for fauna before lowering of pipes or cables and prior to backfilling no more than 2 hours prior to activity.	Construction
Table 2.2	All major open excavations are to be inspected daily for trapped fauna, unless agreed otherwise with DEC. This would be undertaken as follows: <ul style="list-style-type: none"> - No later than three hours after sunrise - No earlier than three hours before sunset - During the day as required. 	Construction
Table 2.2	Structures placed inside open excavations to enable fauna to shelter or escape will be inspected for fauna sheltering on or under the structures daily and immediately prior to removal of structures unless agreed otherwise with DEC.	Construction
Table 2.2	Foam plugs used to block excavations will be inspected daily for small gaps or holes (that may be accessible to fauna) while the plugs are being used.	Construction
Table 2.2	Open excavations containing water, mud or other liquids/slurries will be inspected for trapped fauna at least twice daily.	Construction
2.3.1	When laying and installing pipelines (production, Monoethylene Glycol and utility pipelines), no more than 2000 m of trench will be open at any one point in time and trenches will be closed as soon as practicable to reduce the amount of time they are open.	Construction
2.3.1	Temporary fencing or similar measures will, where practicable, be used for deep (1.5 m) trenches to reduce the entrapment of larger fauna on Barrow Island.	Construction
2.3.3	The ends of the trench fencing shall be closed each evening at the cessation of work to prevent fauna entering the trench.	Construction
2.3.4	Permanent fauna exclusion fences are to be (typically) >1.2 m in height, and the lower section (typically) 800 mm of fence should incorporate a smooth unscaleable surface buried or anchored at the base of the fence where possible (depending on site conditions) to prevent burrowing through the fence by fauna. Materials for permanent fencing shall be suitable to the fauna species that are likely to interact with the site and are appropriate to site conditions.	Construction
2.3.5	Fauna handlers will be required to inspect trenches for, and to remove, fauna prior to work commencing at the start of each day, no later than three hours after sunrise. Further opportunistic trench inspections for fauna may be undertaken by work personnel and fauna handlers will be notified to remove any fauna that are found entrapped.	Construction
2.3.5	Fauna handling teams will consist of a minimum of two people, with one person on each side of the trench to ensure inspection of the entire surface of the trench, and to allow mobilisation of animals that may be difficult to catch. Inspections will be undertaken where this does not compromise the health and safety of personnel.	Construction

Section No.	Actions	Timing
2.3.5	For safety reasons, fauna handling teams are not generally permitted inside trenches, and should make all attempts to remove fauna without entry into trenches. If access to the trench is required to remove fauna, authorisation should be sought in accordance with confined space entry procedures.	Construction
2.3.5	Fauna handling teams will carry with them all the tools required for capturing, handling, identifying and recording fauna as they walk and inspect the trench.	Construction
Table 2.3	Open trench lengths are not to exceed a length capable of being inspected by staff, and cleared by fauna handling team, within the required time limits. With the exception of the umbilical trench, no more than 2000 m of trench will be open at any one point in time.	Construction
Table 2.3	Fauna handlers are to inspect and clear open trenches daily: - No later than three hours after sunrise - No earlier than three hours before sunset - During the day, where practicable. - Nocturnally, if required for further studies undertaken at night	Construction
Table 2.3	Shelter for fauna is to be placed in open trenches at the end of each shift or on days when there is no work taking place. Shelter structures are to be placed at regular intervals as agreed with Chevron Australia.	Construction
Table 2.3	Open trenches are to be inspected for fauna prior to lowering in of pipes, pipeline bedding/padding and backfilling activities no more than 2 hours prior to activity.	Construction
Table 2.3	Pipes are to be inspected for vertebrate fauna that may be sheltering inside, prior to fit-up for welding and lowering-in of the pipe.	Construction
Table 2.3	Fauna present in pipes are to be removed by fauna handlers, or should be allowed to escape at their own volition.	Construction
Table 2.3	Welded pipe strings are to have end caps fitted to prevent fauna entering the pipe strings.	Construction
2.3.6.1	Chevron Australia will consider undertaking studies that investigate nocturnal vertebrate fauna peak-activity entrapment levels within the main feedgas pipeline trench on Barrow Island.	Construction
2.3.6.2	Chevron Australia will consider undertaking studies that investigate the loss of body condition, and survivorship of vertebrate fauna that become entrapped in trenches over consecutive nights.	Construction
2.3.7	Requirements for contingency management, and actions to address specific adverse outcomes such as high predation events, high fauna mortality due to entrapment, will be developed on a case-by-case basis in consultation with the DEC.	Construction
Table 2.4	In the event that predation remains consistent, different types of shelters are to be considered for trial and shelters placed at key locations in the trench at the end of each day, and inspected and removed if required.	Construction
Table 2.4	If fauna mortality is observed to be occurring due to high temperatures, additional management measures will be implemented, such as additional shelters or fauna escape/refuge structures within trenches or excavations as required to reduce fauna mortality.	Construction

Section No.	Actions	Timing
Table 2.4	In the event that fauna mortality attributed to heat exhaustion increases dramatically or is considered excessive, trenches will be cleared by fauna handlers within two hours after sunrise, and across the day as required.	Construction
Table 2.4	If fauna mortality is observed to be occurring due to significant rainfall from cyclones or Tropical Low systems, additional management measures will be implemented, such as additional shelters or fauna escape/refuge structures within trenches or excavations as required to reduce fauna mortality.	Construction
Table 2.4	Following heavy rainfall, flooded trenches or major excavations are to be inspected and assessed for water pooling as soon as practicable (depending on weather conditions and safe access). A pump will be available to commence dewatering of trenches or major excavations containing pooled water and these will be cleared of any fauna as soon as practicable.	Construction
3.2	Fauna handlers will be present onsite during the construction and operation of the Gorgon Gas Development and Jansz Feed Gas Pipeline to ensure that the requirements of this Procedure, and animal welfare requirements, can be met.	All Phases
3.2	At least one fauna handler per operational fauna handling team will have experience and/or training in all of the following: <ul style="list-style-type: none"> • attending to accidents involving wildlife • inspecting trenches for fauna • handling and capturing fauna (including venomous snakes) • identifying fauna • assessing injured fauna for release, euthanasia or rehabilitation • providing care of, or euthanising sick, injured or abandoned, animals • senior first aid. 	All Phases
3.2	All fauna handlers will also be familiar with: <ul style="list-style-type: none"> • quarantine issues associated with relocation/translocation • safety and health risks and implementation of preventative measures associated with working with fauna (e.g. zoonoses) • the general ecology of the fauna likely to be encountered on Barrow Island (so that captured fauna may be suitably released back into their respective habitats) • the roles and responsibilities other agencies have in fauna incidents on Barrow Island. 	All Phases
3.2	When it is considered necessary, persons caring for injured wildlife on Barrow Island are to consult with the DEC or qualified animal carers, as required.	All Phases
3.2	Chevron Australia shall notify the DEC as soon as practicable of any animals kept in captivity or confinement for the purpose of caring for sick, injured, or abandoned juvenile fauna.	All Phases
3.3.1	All mortalities involving fauna are to be reported to the relevant onsite supervisor and fauna handler as soon as practicable.	All Phases
3.3.2	An assessment is to be undertaken by a fauna handler to determine the appropriate treatment based on level of distress or injury of an injured or distressed animal.	All Phases
3.3.3	A lockable and ventilated container with clearly visible safety warnings will be used for the transportation of injured or vouchered venomous snakes.	All Phases

Section No.	Actions	Timing
3.4	Larger animals will be transported in a large dark-coloured cotton bag or blanket, or similar.	All Phases
3.4	Advice on housing and feeding of injured or abandoned fauna will be sought from appropriate Chevron Australia environmental personnel who can then consult with the DEC, as required.	All Phases
3.5	Only under exceptional circumstances and with the written approval of the DEC will animals be removed from Barrow Island for any purpose other than wildlife conservation, vouchering, or rehabilitation requirements. Animals that are removed from Barrow Island will not be allowed to return due to the threat of disease importation.	All Phases
3.6	In cases where fauna need to be relocated from the worksite to other areas on Barrow Island, this is to be conducted by fauna handlers.	All Phases
3.6	Fauna removed from a site for the purposes of recovery or treatment following clearing, are to be returned to an area near the site from which they were removed, at a time of day that does not compromise their repatriation (before 8 am or after 5 pm).	All Phases
3.6	Fauna are to be released within a suitable sheltered location such as spinifex clumps, rock outcrops, or leaf litter depending on their ecology.	All Phases
3.6	Shorebirds are to be released at the coast late in the day, near where they were found.	All Phases
3.6	Shearwaters and Bridled Terns are to be released at the coast near Double Islands.	All Phases
3.7.1	Animal euthanasia will be undertaken in accordance with the Australian Code of Practice for the Care and Use of Animals for Scientific Purposes (National Health and Medical Research Council [NHMRC] 2004).	All Phases
3.7.2.2	Snakes are only to be handled by fauna handlers with the appropriate training.	All Phases
3.7.2.2	If euthanasia of snakes is required, the snake is to be sedated before euthanasia techniques are applied where deemed appropriate.	All Phases
3.7.3	It is the responsibility of a fauna handler, or other experienced person (e.g. DEC) to euthanise an animal if it is deemed the appropriate course of action.	All Phases
3.7.4	Field equipment for performing euthanasia will be readily accessible by fauna handling teams and will generally consist of simple tools for performing one of the physical euthanasia techniques. These tools will include: <ul style="list-style-type: none"> • customised heavy steel bar (for larger fauna) • small steel rod (for smaller fauna) • shovel • fauna handling equipment including hoop bags, jiggers, calico bags, hessian bags • appropriate PPE 	All Phases
3.8.1	Voucher specimens are only to be collected by personnel with a valid "Licence to Take Fauna for Educational or Public Purposes" or a "Licence to Take Fauna for Scientific Purposes" under Sections 15 and 17 respectively, of the Wildlife Conservation Regulations 1970 (WA). Collections must also occur under a "Licence to Take Fauna from a Nature Reserve" (under the CALM Act (WA)).	Construction and Operations

Section No.	Actions	Timing
3.8.1	Only experienced personnel who are familiar with the ecology of the fauna will determine which animals are suitable for voucher retention, and under the direction of the WAM or the DEC, which have elicited a requirement to obtain voucher specimens.	Construction and Operations
3.8.1	Voucher specimens will be lodged in appropriate public collections. For most animals this will be the WAM, and for plants, the Western Australian Herbarium.	Construction and Operations
3.8.1	Vouchers will be collected and submitted for: <ul style="list-style-type: none"> • animals that have not been previously recorded on Barrow Island • animals whose taxonomy and genetics is poorly understood • taxa for which the Western Australian Museum holds specimens for less than a total of five from Barrow Island. 	Construction and Operations
3.8.1	To avoid over collection of taxa and provide the current status of all taxa vouchered, the voucher list of specimens will be managed as follows: <ul style="list-style-type: none"> • list updated following each individual specimen collection by appropriate personnel • regular data to be provided to Chevron and records updated within relevant Chevron ecological data management system • regular communication with Western Australian Museum regarding collected specimens. 	Construction and Operations
3.8.2	The Department of Terrestrial Vertebrates at the Western Australian Museum must be consulted prior to the collection of any voucher specimens that are to be transported live to the Museum.	Construction and Operations
3.8.2	Transfers are to occur only where an animal is to be subsequently euthanised for a voucher specimen.	Construction and Operations
3.8.2	Each specimen is to be bagged individually in a clean bag inside a secure, insulated esky or container, placed within a pressurised/temperature-controlled section of the plane and transported as soon as practicable to the Western Australian Museum (along with collection records as listed in Section 4.0).	Construction and Operations
3.8.3	Voucher specimens are to be euthanised as soon as is practicable by suitably experienced personnel. Voucher vertebrate specimens are to be anaesthetised first, and then euthanised by lethal injection to limit any damage to the specimen.	Construction and Operations
3.8.3	For marine turtle or marine mammal mortalities that occur, appropriately experienced personnel must be notified to allow for the collection of biopsy tissue samples, if required.	Construction and Operations
3.8.3	A list of Barrow Island species for which voucher specimens are required is shown in Appendix A. This list will be updated electronically as specimens are vouchered. An updated list will be included in the Environmental Performance Report submitted annually to the Western Australian Minister for the Environment and to the Commonwealth Department of the Environment, Water, Heritage and the Arts.	Construction and Operations
3.9	Dead wallabies and Euros are to be checked for pouch young prior to being left in the bush. If pouch young are present and fully furred, they are to be removed and decisions to foster care them are to be made in consultation with the DEC. If foster care is inappropriate, or if pouch young are present and unfurred, they are to be euthanised using appropriate procedures.	All Phases

Section No.	Actions	Timing
3.9	<p>The carcasses of the following will be disposed of in an alternative manner (burial, off-Island removal, incineration) if they are not retained as voucher specimens:</p> <ul style="list-style-type: none"> • animals that have been euthanised by lethal injection to ensure scavenging fauna will not ingest the same lethal toxin • animals that are not indigenous to Barrow Island • animals displaying symptoms of disease. 	All Phases
3.10	Sightings of injured fauna on the beaches, or in the water, are to be reported by personnel to a Chevron Australia representative on the Island, who will then contact the DEC Barrow Island Field Staff or the DEC Regional Office (respectively) so that appropriate action can be taken.	Construction and Operations
3.10	In the event that a virus, pathogen, or other disease agent is suspected in an animal population on Barrow Island, Chevron Australia will consult with the DEC on the appropriate management response within 48 hours.	Construction and Operations
4.1	Detailed records will be kept of dead, injured, captured or entrapped fauna.	Construction and Operations
4.1	<p>All voucher specimens (if required by the Museum) will be entered into a voucher database retained and managed by Chevron Australia, with the specific specimen details including:</p> <ul style="list-style-type: none"> • species • sex if known • date collected • the collector • the location (MGA 50, GDA 94) • unique voucher code/field code as allocated by the collector • any biopsy tissues taken (and type of tissue). 	Construction and Operations