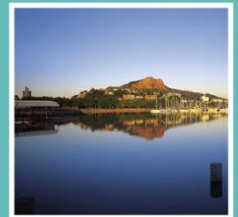
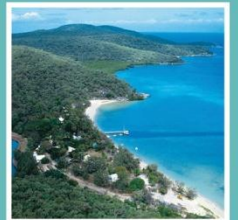
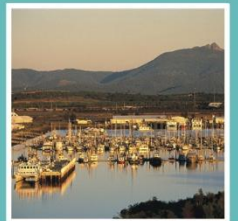
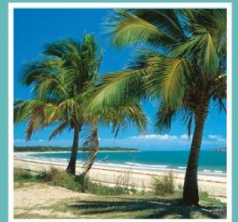


Great Barrier Reef Coastal Zone Strategic Assessment 2014

supplementary strategic
assessment report



Great Barrier Reef coastal zone strategic assessment

Supplementary Report

July 2014

The Department of State Development, Infrastructure and Planning is responsible for driving the economic development of Queensland.

© State of Queensland, July 2014. Published by the Department of State Development, Infrastructure and Planning, 63 George Street, Brisbane Qld 4000, Australia



Licence: This work is licensed under the Creative Commons CC BY 3.0 Australia licence. To view a copy of the licence, visit www.creativecommons.org/licenses/by/3.0/au/deed.en. Enquiries about this licence or any copyright issues can be directed to the Senior Advisor, Governance on telephone (07) 3224 2085 or in writing to PO Box 15009, City East Qld 4002.

Attribution: The State of Queensland, Department of State Development, Infrastructure and Planning.

Images courtesy of Tourism Queensland.

The Queensland Government supports and encourages the dissemination and exchange of information. However, copyright protects this publication. The State of Queensland has no objection to this material being reproduced, made available online or electronically but only if it is recognised as the owner of the copyright and this material remains unaltered.



The Queensland Government is committed to providing accessible services to Queenslanders of all cultural and linguistic backgrounds. If you have difficulty understanding this publication and need a translator, please call the Translating and Interpreting Service (TIS National) on 131 450 and ask them to telephone the Queensland Department of State Development, Infrastructure and Planning on (07) 3227 8548.

Disclaimer: While every care has been taken in preparing this publication, the State of Queensland accepts no responsibility for decisions or actions taken as a result of any data, information, statement or advice, expressed or implied, contained within. To the best of our knowledge, the content was correct at the time of publishing.

Any references to legislation are not an interpretation of the law. They are to be used as a guide only. The information in this publication is general and does not take into account individual circumstances or situations. Where appropriate, independent legal advice should be sought.

An electronic copy of this report is available on the Department of State Development, Infrastructure and Planning's website at www.dsdip.qld.gov.au

Contents

Abbreviations.....	1
1. Introduction	3
1.1 Background	3
1.2 Purpose of the Supplementary Report.....	3
1.3 GBR coastal zone.....	4
1.3.2 Jurisdictional framework	6
1.3.3 Great Barrier Reef Intergovernmental Agreement.....	6
1.3.4 Intergovernmental Agreement on the Environment.....	7
2. Strategic assessment process	9
2.1 Overview	9
2.2 Independent review	11
2.3 Public consultation.....	12
2.3.1 Consultation process	13
2.3.2 Outcomes from consultation	13
2.4 Final reports.....	15
2.4.1 Methodology for finalising the reports	15
2.4.2 Meeting the Terms of Reference	16
3. Queensland Government Program	19
3.1 Overview	19
3.2 How the Program protects MNES and OUV	20
3.3 Benefits of the Program	23
3.3.1 Enhanced protection of MNES and OUV in the GBR coastal zone	23
3.3.2 Enhanced management arrangements.....	24
3.3.3 Social and economic benefits for the Queensland community	25
3.4 Activities	27
3.4.1 Introduction.....	27
3.4.2 Urban development	27
3.4.3 Industrial development.....	28
3.4.4 Port development	28
3.4.5 Shipping	29
3.4.6 Tourism development	29
3.4.7 Agriculture	30
3.4.8 Fishing and aquaculture	31
3.5 Impacts.....	32
3.5.1 Potential impacts to MNES from activities.....	32
4. The Program and MNES.....	44
4.1 World heritage	44
4.1.1 Protection of world heritage under the EPBC Act.....	45
4.1.2 Protection of world heritage under the Program.....	46
4.1.3 Outcomes for world heritage under the Program	48
4.1.4 Case study 1—World heritage: Prohibition of mining activity	49
4.1.5 Case study 2—World heritage, GBR Marine Park and Commonwealth marine areas: Resort development.....	51
4.2 National heritage	63
4.2.1 Protection of national heritage under the EPBC Act.....	63

4.2.2	Protection of national heritage under the Program.....	64
4.2.3	Outcomes for national heritage under the Program	66
4.3	Great Barrier Reef Marine Park	66
4.3.2	Protection of the Great Barrier Reef Marine Park under the EPBC Act	67
4.3.3	Protection of the Great Barrier Reef Marine Park under the Program.....	70
4.3.4	Outcomes for the Great Barrier Reef Marine Park under the Program.....	72
4.4	Commonwealth marine area.....	72
4.4.1	Protection of a Commonwealth marine area under the EPBC Act	72
4.4.2	Outcomes for Commonwealth marine areas under the Program	74
4.5	Listed threatened species.....	75
4.5.1	Protection of listed threatened species under the EPBC Act.....	76
4.5.2	Protection of Listed Threatened Species under the Program.....	79
4.5.3	Outcomes for listed threatened species under the Program	80
4.5.4	Case study 3—Listed threatened species: Residential development.....	81
4.6	Threatened Ecological Communities	89
4.6.1	Protection of Threatened Ecological Communities under the EPBC Act	90
4.6.2	Protection of Threatened Ecological Communities under the Program.....	91
4.6.3	Outcomes for Threatened Ecological Communities under the Program.....	92
4.6.4	Case study 4—Listed threatened ecological communities: Industrial development.....	93
4.7	Listed migratory species	101
4.7.1	Protection of migratory species under the EPBC Act.....	101
4.7.2	Protection of migratory species under the Program	102
4.7.3	Outcomes for listed migratory species under the Program.....	104
4.7.4	Case study 5—Listed migratory species and ecological communities: Mining activity	105
4.8	Ramsar wetlands.....	116
4.8.1	Protection of Ramsar Wetlands under the EPBC Act.....	116
4.8.2	Protection of Ramsar wetlands under the Program.....	118
4.8.3	Outcomes for Ramsar wetlands under the Program	121
5.	Implementation of commitments	122
	Appendix 1: Summary of public submissions and Queensland Government responses	127
	Appendix 2: Summary of independent review findings and Queensland Government responses	164
	Appendix 3: MNES.....	193
	Appendix 4: Traditional Owners within the GBR coastal zone.....	217
	Appendix 5: Fisheries in the Great Barrier Reef coastal zone	228
	Appendix 6: Mahogany glider update	234
	Appendix 7: Cassowary update.....	239
	References	242

Figures

Figure 1	Geographic scope of the GBR coastal zone strategic assessment	5
Figure 2	GBR coastal zone strategic assessment process	10
Figure 3	The ‘avoid, mitigate, offset’ hierarchy.....	20
Figure 4	Strategic outcomes of the Program.....	22
Figure 5	Mahogany glider habitat	238

Tables

Table 1	GBR coastal zone strategic assessment timetable	11
Table 2	GBR coastal zone strategic assessment reports and the TOR	16
Table 3	Development activities that potentially impact MNES.....	34
Table 4	Assessment of potential impacts from development activities under the Program.....	35
Table 5	Implementation of commitments	122

Abbreviations

Abbreviation	Definition
AES	Areas of Ecological Significance
ANZECC	Australian and New Zealand Environment and Conservation Council
ARMCANZ	Agriculture and Resource Management Council of Australia and New Zealand
CAMBA	China-Australia Migratory Bird Agreement
CSG	Coal Seam Gas
COTS	Crowth-of-Thorns Starfish
CSIRO	The Commonwealth Scientific and Industrial Research Organisation
DAFF	Queensland Department of Agriculture, Fisheries and Forestry
DEHP	Queensland Department of Environment and Heritage Protection
DNPRSR	Queensland Department of National Parks, Recreation, Sport and Racing
DNRM	Queensland Department of Natural Resources and Mines
DOE	Australian Department of the Environment
DPC	Queensland Department of the Premier and Cabinet
DSDIP	Queensland Department of State Development, Infrastructure and Planning
ECD	Ecological Character Descriptions
ERA	Environmentally Relevant Activity
EA	Environmental Authority
ED Act	<i>Economic Development Act 2012</i> (Qld)
EIS	Environmental Impact Statement
EMP	Environmental Management Plans
EP Act	<i>Environment Protection Act 1994</i> (Qld)
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i> (Cwth)
ESD	Ecologically Sustainable Development
FC	Forward Commitments
FHA	Fish Habitat Area
GBR	Great Barrier Reef
GBRMP	Great Barrier Reef Marine Park
GBRMPA	Great Barrier Reef Marine Park Authority
GBRWHA	Great Barrier Reef World Heritage Area
IAS	Initial Advice Statement
IDAS	Integrated Development Assessment System
IESC	Independent Expert Scientific Committee on Coal Seam Gas and Large Coal Mining Development
IGA	Great Barrier Reef Intergovernmental Agreement

Abbreviation	Definition
IGAE	Intergovernmental Agreement on the Environment
JAMBA	Japan-Australia Migratory Bird Agreement
LNG	Liquid Natural Gas
MNES	Matters of National Environmental Significance
MSES	Matters of State Environmental Significance
MSQ	Maritime Safety Queensland
NC Act	<i>Nature Conservation Act 1992</i> (Qld)
NRM	Natural Resource Management
OUV	Outstanding Universal Value
PDA	Priority Development Area
PPDA	Priority Port Development Areas
PVMP	Property Vegetation Management Plan
QPWS	Queensland Parks and Wildlife Service
REMP	Receiving Environment Monitoring Program
ROKAMBA	Republic of Korea-Australia Migratory Bird Agreement
SAA	Strategic Assessment Agreement
SARA	State Assessment and Referral Agency
SDA	State Development Area
SDAP	State Development Assessment Provisions
SDPWO Act	<i>State Development and Public Works Organisation Act 1971</i> (Qld)
SP Act	<i>Sustainable Planning Act 2009</i> (Qld)
SPP	State Planning Policy
SPRAT	Species Profile and Threats Database
SRA	Strategic Rehabilitation Areas
TEC	Threatened Ecological Communities
TI Act	<i>Transport Infrastructure Act 1994</i> (Qld)
TOR	Terms of Reference
TSS	Total Suspended Solids
TUMRA	Traditional Use of Marine Resources Agreement
UNESCO	United Nations Educational, Scientific and Cultural Organisation
WHA	World Heritage Area
WTMA	Wet Tropics Management Authority
WTWHA	Wet Tropics World Heritage Area

1. Introduction

1.1 Background

The Queensland Government entered into a Strategic Assessment Agreement (SAA)¹ with the Australian Government in 2012 under section 146 of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) to undertake a strategic assessment of the Great Barrier Reef (GBR) coastal zone.

The assessment responds to the June 2011 decision of the United Nations Education, Scientific and Cultural Organisation (UNESCO) World Heritage Committee (WHC) that requested that the Australian Government undertake a strategic assessment of the Great Barrier Reef World Heritage Area (GBRWHA).

‘...undertake a comprehensive strategic assessment of the entire property, identifying planned and potential future development that could impact the Outstanding Universal Value (OUV) to enable a long-term plan for sustainable development that will protect the OUV of the property.’²

The Queensland Government’s strategic assessment (strategic assessment) forms part of a comprehensive approach which includes a strategic assessment of the Great Barrier Reef marine zone, undertaken by the Great Barrier Reef Marine Park Authority (the GBRMPA).

Queensland’s assessment takes a ‘systems’ level approach and provides a broad landscape scale assessment of the state’s legislation, policies, plans and programs (the Program). It identifies and manages Matters of National Environmental Significance (MNES) and the OUV of the GBRWHA and Wet Tropics World Heritage Area (WTWHA). It also identifies a range of measures to better integrate and strengthen coastal and marine management in conjunction with the GBRMPA.

1.2 Purpose of the Supplementary Report

Queensland’s strategic assessment reports have been developed to ensure that the documentation the Queensland Government provides to the Australian Minister for the Environment (the Minister) meet the Endorsement Criteria identified in the SAA and the Terms of Reference (TOR)³.

The documents comprising the Queensland Government’s package of reports include the revised Program Report, this Supplementary Strategic Assessment Report, the draft Strategic Assessment Report, and an independently prepared report on the outcomes of the public consultation.

¹ <http://www.environment.gov.au/system/files/pages/e166e5b7-bd7f-4bc5-9807-ba263e248632/files/s146-gbr-strategic-assessment-qld.pdf>

² <http://whc.unesco.org/en/decisions/4418/>

³ <http://www.dsdirp.qld.gov.au/resources/report/great-barrier-tor.pdf>

The purpose of this Supplementary Report is to provide further information in response to matters raised during public consultation and to address recommendations from the independent review. It is also addresses feedback received from the Australian Department of the Environment (DOE).

The Supplementary Report is not a standalone document and should be considered as part of a package of reports including the revised Program Report and the draft Strategic Assessment Report.

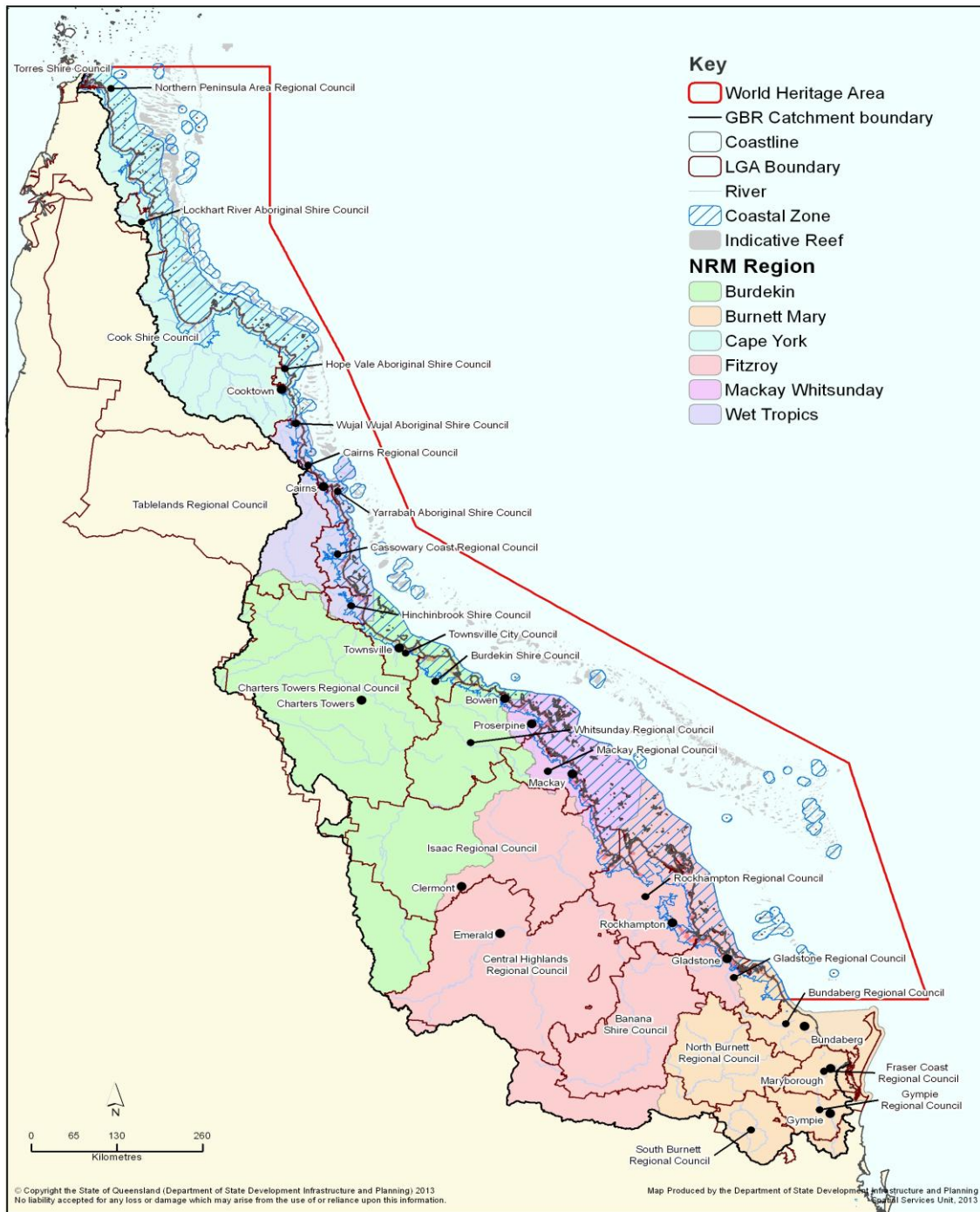
1.3 GBR coastal zone

The strategic assessment covers the GBR coastal zone adjacent to the GBR and includes Queensland waters, islands and adjacent inland areas, 5 kilometres inland and 10 metres Australian High Datum, whichever is further.

The GBR coastal zone incorporates parts of the GBRWHA, GBR Marine Park (GBRMP) and the broader GBR catchment areas to the extent that water quality management arrangements apply. Figure 1 presents the geographic scope of the strategic assessment.

The GBR coastal zone spans an area that is nearly 2 300 kilometres long. The comprehensive strategic assessment, conducted by both the Australian and Queensland governments, covers an area of 348 000 square kilometres, which is roughly the same size as countries such as Japan or Italy.

Figure 1 Geographic scope of the GBR coastal zone strategic assessment



1.3.2 Jurisdictional framework

Under the *Great Barrier Reef Marine Park Act 1975* (Cwlth) (GBRMP Act), the Australian Government is responsible for the management of the GBRMP covering 344 400 square kilometres.

Queensland is responsible for the management of the GBR Coast Marine Park, covering 63 000 square kilometres, as established under the *Marine Parks Act 2004* (Qld) (MP Act). This is contiguous with the GBRMP and covers the area between the low and high water marks and includes many waters within the limits of the state.

There are approximately 980 islands and cays within the boundaries of the GBRMP. The majority of the islands fall within the jurisdiction of Queensland and almost half of these are national parks under the *Nature Conservation Act 1992* (Qld) (NC Act). There are around 70 islands that are owned by the Australian Government. The GBR Coast Marine Park and the island national parks form part of the GBRWHA.

The Queensland and Australian governments both have jurisdictional responsibilities with regard to fisheries which were established under the *Fisheries Management Act 1991* (Cth), the *Fisheries Act 1994* (Qld) and the EPBC Act.

The Queensland Government maintains responsibility for the GBR coastal zone in relation to Natural Resource Management (NRM), land use planning and development assessment.

The Australian Government is responsible, under the EPBC Act, for regulating activities having or likely to have a significant impact on MNES and OUV and maintains responsibility for managing the environment within Australian Government land and waters.

1.3.3 Great Barrier Reef Intergovernmental Agreement

Cooperative management of the GBR was first recognised in 1979 through the Emerald Agreement between the Queensland and Australian governments. In June 2009, the Great Barrier Reef Intergovernmental Agreement (IGA)⁴ was signed by the Prime Minister of Australia and the Premier of Queensland, replacing the Emerald Agreement.

The IGA provides a contemporary arrangement for cooperation between Queensland and Australian governments and recognises the jurisdictional framework governing the GBRWHA and adjacent GBR coastal zone.

The objectives of the IGA are to:

- provide for the long-term protection and conservation of the environment and biodiversity of the GBR ecosystem, as encompassed by the GBRWHA, and its transmission in good condition to future generations
- allow ecologically sustainable use of the GBR ecosystem subject to the overarching objective of long-term protection and conservation
- provide for meeting Australia's international responsibilities for the GBRWHA under the World Heritage Convention.

⁴ <http://www.environment.gov.au/topics/marine/great-barrier-reef/protecting-reef/intergovernmental-agreement>

The IGA reaffirms the Queensland and Australian governments' commitments to:

- prohibit activities for the exploration and recovery of minerals or petroleum, and any drilling and mining within the GBRWHA, including for the purposes of depositing materials
- maintain the complementary nature of relevant Queensland and Australian government management arrangements. These arrangements include marine park legislation and associated regulations; zoning plans and plans of management; planning and development arrangements; environmental assessment and permit requirements; and management of fishing activities
- continue a joint program of field management, with shared funding on a 50:50 basis, for the GBRMP and Queensland marine and national parks within the GBRWHA
- continue joint action to halt and reverse the decline in quality of water entering the GBR
- address significant threats to the health and biodiversity of the GBR ecosystem, including pollution from the land and sea, the impacts of climate change, ecologically unsustainable fishing activities and other resource extraction activities
- ensure Indigenous traditional cultural practices continue to be recognised in the conservation and management of the GBR.

The IGA outlines guiding principles that support the implementation of the agreement by both governments and have been considered throughout the GBR coastal zone strategic assessment process. Guiding principles include:

- collaborative and cooperative approach is fundamental to the effective long-term protection, conservation and management of the GBR
- the precautionary principle will be applied including ecosystem-based management and the principles of ecologically sustainable use
- economic growth and the long-term health of the GBR ecosystem are interconnected, and actions or changes in one can impact on the other and must be taken into account
- trends in the health, use of and risks to the GBR ecosystem will be regularly monitored and reported to ensure decisions are soundly based.

1.3.4 Intergovernmental Agreement on the Environment

On 1 May 1992, the Australian Government, Queensland Government and all other state and territory governments signed the Intergovernmental Agreement on the Environment (IGAE). This agreement facilitates, amongst other things, a cooperative national approach to the environment and better environmental protection.

It identifies the principles of Ecologically Sustainable Development (ESD) and requires the effective integration of economic and environmental considerations in decision-making processes in order to achieve ESD. The principals of ESD include:

- the precautionary principle
- intergenerational equity
- conservation of biological diversity and ecological integrity
- improved valuation, pricing and incentive mechanisms.

The IGAE recognises that the Australian Government has responsibility for negotiating and entering into international agreements concerning the environment, such as those for Ramsar-listed wetlands, and will work with the state and territory governments regarding the management of these areas.

2. Strategic assessment process

2.1 Overview

This strategic assessment has been undertaken in accordance with Part 10 of the EBPC Act, the TOR and the SAA between the Australian and Queensland governments.

As shown in Figure 3, two draft reports for the GBR coastal zone strategic assessment were initially prepared:

- a draft Program Report, which described the Queensland Government's coastal management, planning and development process with specific regard to the protection of MNES and OUV
- a draft Strategic Assessment Report, which assessed the effectiveness of the Program and presented the broad activities within the GBR coastal zone and potential impacts on MNES and OUV.

The two draft reports identified and assessed how the Program manages impacts on MNES and OUV in the GBR coastal zone and demonstrated how impacts are avoided, mitigated and offset.

As required by the TOR, an independent review on the draft strategic assessment reports was conducted prior to public consultation.

From 1 November 2013 to 31 January 2014, a joint public consultation process was undertaken, in conjunction with GBRMPA, seeking public comment on both the coastal and marine draft reports prepared by the Queensland Government and the GBRMPA.

This Supplementary Report and the revised Program Report take into account the matters raised by the independent review and public comments made during the consultation period. Together with the draft Strategic Assessment Report and a report on the public consultation, these documents are provided to the Minister for consideration when determining whether to endorse the Program. See Figure 2 and Table 1 for an outline of the GBR coastal zone strategic assessment process.

Figure 2 GBR coastal zone strategic assessment process

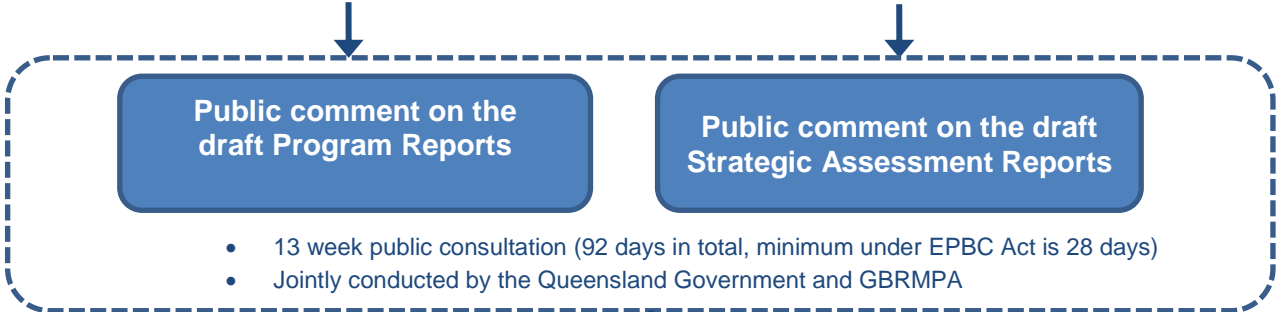
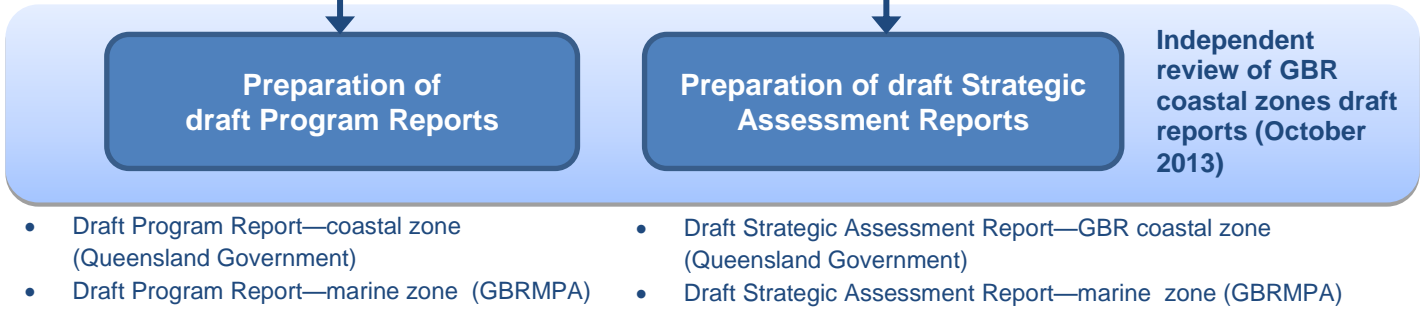
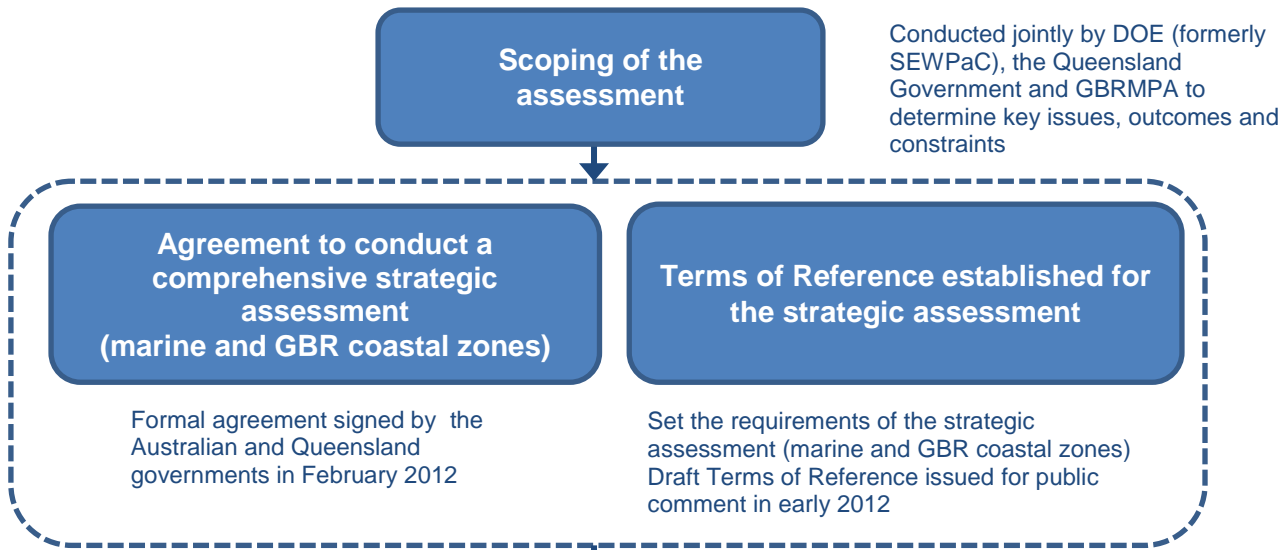


Table 1 GBR coastal zone strategic assessment timetable

Activity	Timing
GBR strategic assessment agreement	February 2012
Draft TOR released for public comment	18 February 2012 to 30 April 2012
Final TOR released	August 2012
Preparation of the draft reports for the GBR coastal zone strategic assessment	August 2012 to October 2013
Independent review report released on the draft reports for the GBR coastal zone strategic assessment	25 October 2013
GBR strategic assessment draft reports (marine and coastal) released for public comment	1 November 2013 to 31 January 2014
Report by independent third party on the GBR strategic assessment public consultation finalised	April 2014
Submission of Queensland's package of GBR coastal zone strategic assessment reports to the Minister, including the revised Program Report	Mid 2014

2.2 Independent review

An independent review of the GBR coastal zone strategic assessment draft reports was conducted in September to October 2013, just prior to their release for public consultation. The independent review was commissioned by DOE (formerly known as the Department of Sustainability, Environment, Water, Populations and Communities), and the independent review report was released in late October 2013 on the DOE website⁵.

The purpose of the independent review was to provide a rigorous independent assessment of the draft program and strategic assessment reports to ensure that the documents accurately described and demonstrated the effectiveness of the Program. It was conducted in response to public comments on the draft TOR calling for an independent evaluation of the comprehensiveness of the strategic assessment.

The independent review assessed the draft reports against the final TOR, the structure and cohesiveness of the reports, the breadth and depth of the information, its technical accuracy and the validity of the conclusions.

⁵ <http://www.environment.gov.au/resource/great-barrier-reef-coastal-zone-strategic-assessment-independent-review-report>

The findings of the independent review noted that the reports provided a good presentation of a large body of information. The independent review report stated:

'Strengths of the Strategic Assessment are its relatively concise format suitable for a wide audience, use of spatial mapping tools, analysis of terrestrial ecological values and detailed consideration of the linkages between land-based activities and the environmental health of the reef ecosystems.'

The independent review provided suggestions for improvement of the documents to enhance the presentation and to increase the depth and coverage of the assessment.

A number of recommendations in the independent review report were addressed in the draft reports prior to their release for public consultation. However, the short timeframe between the release of the independent review findings and the release of the draft reports did not allow for all of the findings to be addressed.

Consequently, this Supplementary Report and the revised Program Report address the outstanding recommendations from the independent review.

Appendix 2 of this report provides a table which lists the recommendations made by the independent review and the Queensland Government's response.

2.3 Public consultation

Public consultation on the draft strategic assessment reports prepared by both the Queensland Government and the GBRMPA, was conducted from 1 November 2013 to 31 January 2014; a total of 13 weeks. The consultation period provided the public and stakeholders the opportunity to review the draft reports and provide feedback on their content and recommendations for the future management of the GBR.

A joint consultation process was undertaken by the Queensland Government and the GBRMPA which reflects the collaborative management of the GBR and overlapping nature of the strategic assessment reports. A range of methods were used to maximise opportunities for the public to have their say.

Feedback received as part of the public consultation has informed the preparation of this Supplementary Report and the revised Program Report. Responses received in the public comment period were analysed in a number of ways to ensure the issues raised were accurately identified.

An independent third party also analysed the responses to develop a public consultation report which presents a summary of responses and an analysis of the high level themes from consultation. The independent report on the public consultation is presented to the Minister in conjunction with Queensland's package of final strategic assessment reports.

Appendix 1 of this report provides a detailed summary of the feedback received during the public consultation and the Queensland Government response where appropriate.

2.3.1 Consultation process

A range of consultation methods were implemented during the public consultation process. The Queensland Government and the GBRMPA worked together during the planning and operation of each method with the key aim of raising public and stakeholder awareness of the comprehensive strategic assessment and to encourage them to lodge submissions on the draft reports.

A dedicated website was created to support the public consultation containing copies of the draft reports, an online survey to capture feedback, and other materials providing information about the comprehensive strategic assessment.

Public notices advertising the public consultation were placed in national, state and local publications, including *The Australian*, *The Courier Mail*, *Australian Financial Review*, *The Cairns Post*, *Townsville Bulletin*, *Rockhampton Morning Bulletin* and *Gladstone Observer*. Electronic advertising was placed on *The Courier Mail* and *News.com.au* websites. The public consultation was also promoted through various Australian and Queensland government communication activities including websites, electronic newsletters and social media forums (Facebook and Twitter).

Community information sessions and regional briefings were conducted in November and December 2013 at Airlie Beach, Townsville, Cairns, Mackay, Rockhampton and Gladstone. In addition, a number of stakeholder engagement workshops and briefings were held by the Queensland Government and the GBRMPA, including an Indigenous stakeholder workshop and the GBRMPA Advisory Committee briefings. Presentations were also provided to the Queensland Resources Council, GBR Foundation Board, Australian Committee for International Union for Conservation of Nature, and the Reef Plan Partnership Committee.

Hard copies of the draft strategic assessment reports were displayed in 30 libraries across Queensland, six Queensland Government offices and five GBRMPA offices. Copies of the reports were also provided on CD to community members and stakeholders upon request.

2.3.2 Outcomes from consultation

The public consultation generated a large number of submissions relating to the management of the GBR and the draft GBR coastal zone strategic assessment reports. Being a joint consultation with the GBRMPA, comments were also received on matters relevant to the draft GBR region strategic assessment reports prepared by the GBRMPA. In addition, some comments received extended to matters outside the scope of the comprehensive strategic assessment.

In relation to the feedback received on the Queensland Government's draft strategic assessment reports, a detailed analysis has been conducted with discussion of particular themes and comments and the Queensland Government response. This is located at Appendix 1 of this Supplementary Report.

Generally, the themes emerging from the consultation included comments about:

- the management of the GBR and the effectiveness of particular pieces of legislation, regulation, programs and initiatives
- ensuring the reef and its biodiversity is maintained and protected for future generations
- port and coastal development and their potential impact on the reef environment, particularly in relation to dredging
- agricultural and mining impacts on water quality of the GBR
- cumulative impacts and how they can be better addressed in project assessment and approval processes in the GBR
- environmental offsets policies and how they should be implemented in the GBR
- fisheries management in the GBRMP
- recognition of traditional owner cultural heritage and their contribution to the management of the reef and GBR coastal zone.

The feedback and comments received have been analysed and have assisted in informing the preparation and finalisation of this Supplementary Report and the revised Program Report.

Consultation statistics

Total number of submissions received: 6 616

Of the total submissions:

- **6 009** petition submissions across 5 campaigns
- **362** online survey submissions
- **240** email submissions
- **3** postal submissions
- **1** hand-delivered submission

Total number of website visits during the consultation period: 6 452 visitors

Of the total visits:

- **92 per cent** were from Australia
- Of the Australian visitors, the majority were from Queensland (**63 per cent**), New South Wales (**16 per cent**) and Victoria (**10 per cent**)
- People from **74** other countries visited the website, with the majority from the United States of America, Great Britain, Canada and Germany

2.4 Final reports

2.4.1 Methodology for finalising the reports

Queensland's final strategic assessment reports, comprising of the revised Program Report, this Supplementary Strategic Assessment Report, draft Strategic Assessment Report, and an independently prepared report on the outcomes of the public consultation, have been developed in accordance with the SAA, TOR and Endorsement Criteria and are presented for the Minister's consideration. This includes responding to public comments and the issues and concerns they raised, addressing recommendations in the independent review, and feedback received from DOE on the draft reports.

There were a number of steps taken in developing the content for the final reports. Firstly, the independent review report was examined and each recommendation considered. Some recommendations had been addressed prior to the draft reports being subject to public consultation. However, the review did suggest that the documents needed more detail and analysis on certain topics and greater clarity on how the Program would work.

Public comments were also analysed by both an independent third party and the Queensland Government to identify the key issues raised. For each of the key issues a response strategy was determined and in some cases this meant collating and developing additional information to respond to the concerns raised (e.g. fisheries management). In other cases, it meant examining and rewriting text in either this Supplementary Report or the revised Program Report to ensure the information presented was clear and easily understood. Another type of response was to amend or add a commitment to ensure the issue was addressed and the Program was robust and comprehensive.

The information provided in the draft Strategic Assessment Report was also reviewed and some updates have been provided in this Supplementary Report to clarify and better explain the material (e.g. the Mahogany Glider update in Appendix 6).

This report contains additional, new or amended information which should be considered together with the draft Strategic Assessment Report and the revised Program Report as the final package of reports for the strategic assessment of the GBR coastal zone. No changes have been made to the draft Strategic Assessment Report. Where appropriate, changes identified through the public consultation process have been incorporated into this Supplementary Report.

The Program Report was revised to strengthen management arrangements and to provide greater clarity in describing the Program.

2.4.2 Meeting the Terms of Reference

Table 2 establishes how Queensland's package of strategic assessment reports address the TOR as set out in the SAA. It identifies the chapters and sections contained in each document relating to specific TOR to demonstrate the reports' compliance with the TOR.

Table 2 GBR coastal zone strategic assessment reports and the TOR

GBR strategic assessment coastal zone Terms of Reference	Program Report	Supplementary Report	Draft Strategic Assessment Report
1. Purpose and description of the Program			
The Strategic Assessment Report must include an overview of the Program including its purpose and the area in which it will be implemented. For the purposes of the strategic assessment, the life of the Program is 25 years.	Section 1.1 Section 1.3. Chapter 2	Section 1.3 Chapter 3	Chapter 6
The Program Report will include:			
1. the purpose of the Program	Section 1.1 Section 2.3	Section 3.1 Section 3.2 Section 3.3	Section 1.3 Chapter 6
2. a description of the area to which the strategic assessment applies (the strategic assessment area)	Section 1.3	Section 1.3	Section 1.4
3. the component legislation, plans, policies and other material that make up the Program including program commitments	Chapter 3	Section 3.2 Chapter 4 Chapter 5	Chapter 6 Chapter 7 Section 9.5
4. the likely activities that will occur under the Program	Section 1.4	Section 3.4	Section 5.2
5. the state and regional context (environmental, social, and economic) in which the Program operates, including activities outside the strategic assessment area that may influence the Program	Section 1.5 Section 1.7	Section 1.3 Section 3.4	Chapter 2 Chapter 8
6. other relevant national, state or regional planning or management frameworks that affect the Program	Section 2.1 Section 2.2	Section 3.4 Chapter 4	Section 5.2 Chapter 7
7. a description of how the Program identifies, protects and manages matters of national environment significance (MNES)	Chapter 4 Chapter 5 Chapter 6	Chapter 4	Chapter 7

GBR strategic assessment coastal zone Terms of Reference	Program Report	Supplementary Report	Draft Strategic Assessment Report
8. identification of how long the Program will be in effect and the process for review of the Program, including adaptive management	Section 1.1 Section 3.6.2 Chapter 5 Chapter 8	Section 3.2	Section 6.1 Chapter 9
9. identification of the relevant authorities responsible for the implementation of the Program.	Chapter 3 Chapter 7	Section 3.4 Chapter 4	Section 9.4 Section 9.5
2. Matters of National Environmental Significance			
2.1 Identification of MNES including OUV	Chapter 3	Chapter 4	Chapter 3 Chapter 4 Chapter 5
2.2 Identification and analysis of the potential impacts	Chapter 3	Section 3.5	Chapter 2 Chapter 5 Chapter 9
2.3 Measures to avoid, mitigate and offset impacts	Chapter 3	Chapter 4	Chapter 5 Chapter 7 Chapter 9
2.4 Demonstration of the Program	Chapter 3	Chapter 4	Chapter 7 Appendices – Demonstration case studies 1 to 8
2.5 Recommendations for changes to the Program	Chapter 3 Chapter 7	Chapter 4	Chapter 8 Chapter 10
3. Promotion Ecologically Sustainable Development	Chapter 2	Section 3.1	Section 9.3
4. Adaptive management: addressing uncertainty and managing risk	Chapter 2 Section 3.6.2	Chapter 4	Chapter 9
5. Auditing and reporting	Section 3.6.2 Section 3.7.3 Section 3.7.4 Chapter 8		Chapter 9
6. Review, modification or abandonment	Chapter 8		Chapter 9
7. Endorsement Criteria	Section 1.1.2 Chapter 4 Chapter 5 Chapter 6		
8. Independent review*		Section 2.2 Section 2.4 Appendix 2	Section 3.10.5
9. Information sources	References	References	Section 3.10.2 References Appendices
10. Engagement^		Section 2.3 Section 2.4 Appendix 1	Section 3.10

* Queensland's draft reports were subject to independent review. The revised Program Report and Supplementary Report have been prepared in consideration of the feedback and comments received. The specific recommendations from the independent review and the Queensland Government response are contained in Appendix 2 of this Supplementary Report. The independent review report is available at <http://www.environment.gov.au/system/files/resources/797b46e9-af09-48ab-835b-2a5350f89ba1/files/qbr-strat-assessment-ind-review-report.pdf>.

^Queensland's draft strategic assessment reports were subject to public consultation. The revised Program Report and Supplementary Report have been prepared in consideration of the feedback and comments received. A summary of public comments and specific Queensland Government responses are contained in Appendix 1 of this Supplementary Report. An independently prepared report on the outcomes of the public consultation is also included as part of Queensland's final strategic assessment reports package.

3. Queensland Government Program

3.1 Overview

The Queensland Government is committed to ensuring that development in the GBR coastal zone occurs in a sustainable manner and that the unacceptable impacts on MNES and OUV do not occur.

The Queensland Government draws on legislation, policies, plans and programs to manage the impacts of activities in the GBR coastal zone. In particular, the Queensland Government's planning and development processes provide the context for management actions, government plans and policies and longer-term, action-oriented programs for managing the GBR coastal zone.

The 'avoid, mitigate, offset' hierarchy is used to ensure ESD is embedded in the Program and manages the impacts of current and future development. Figure 2 outlines the 'avoid, mitigate, offset' hierarchy.

Additional steps including adaptive management strategies are critical to provide positive long-term outcomes for MNES and OUV in both current and future developments within the GBR coastal zone. Enhancing MNES includes rehabilitating degraded ecosystems or restoring cleared ecosystems. Queensland contributes significant resources to enhancing MNES which have been impacted by historical land use practices.

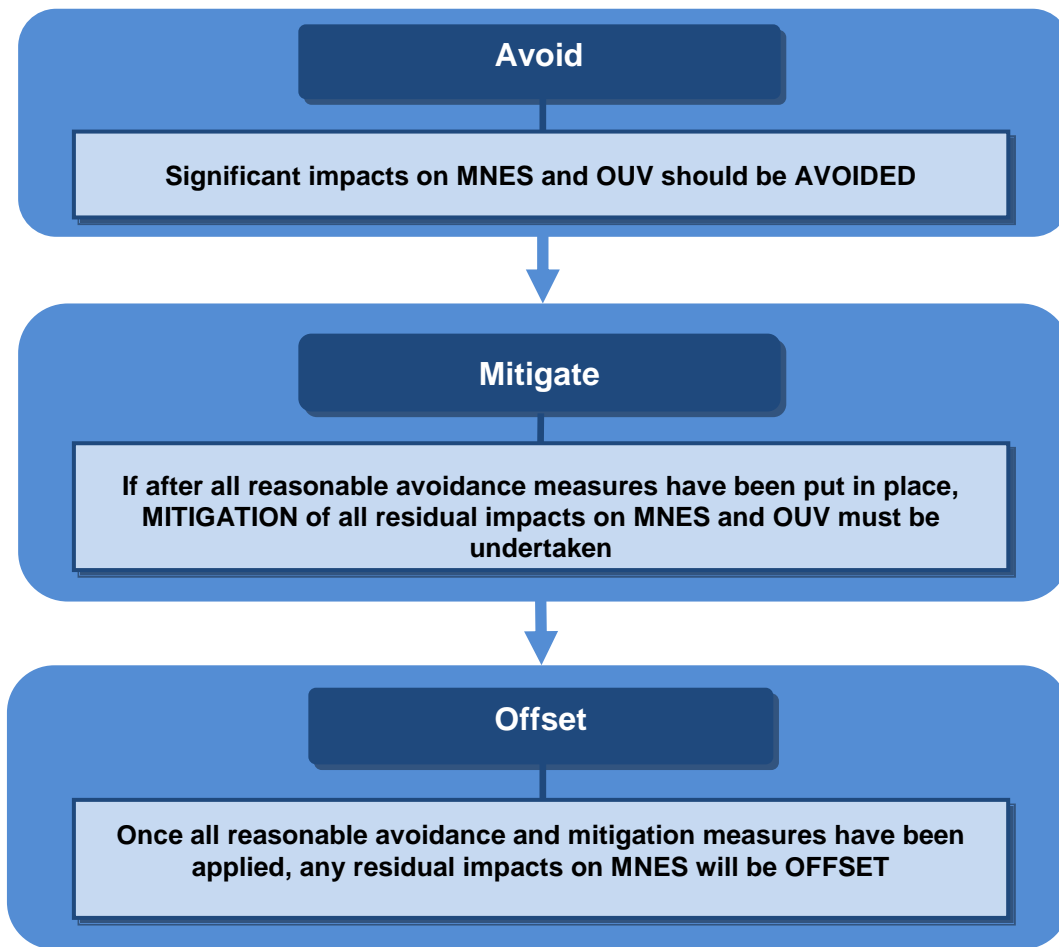
The Program seeks to facilitate ESD to balance economic wellbeing and environmental considerations. As outlined in the draft strategic assessment reports, the Program is designed to identify, protect and manage environmental values across the entire state. However, specific consideration is afforded to the GBR coastal zone given its unique values and its world heritage status.

The principles of ESD, outlined in the IGAE and section 3A of the EPBC Act, are adopted within Queensland Government decision-making.

Principles of Ecologically Sustainable Development

- Decision-making processes should effectively integrate both long-term and short-term economic, environmental, social and equitable considerations.
- If there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.
- The principle of inter-generational equity—that the present generation should ensure that the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations.
- The conservation of biological diversity and ecological integrity should be a fundamental consideration in decision-making.
- Improved valuation, pricing and incentive mechanisms should be promoted.

Figure 3 The 'avoid, mitigate, offset' hierarchy



3.2 How the Program protects MNES and OUV

The Program describes the planning and development context in which approval recommendations are made. It is supported by a range of management tools designed to achieve the Program objectives including legislation, policies, plans and programs, both existing and new, and a range of commitments.

The Program for the GBR coastal zone comprises:

- a series of commitments designed to enhance environmental outcomes, in particular for the protection and management of MNES and OUV over the next 25 years
- a set of management and development assessment tools that support continued improvement in the delivery of legislation, policies, plans and programs governing development activities.

The continued development, refinement and enhancement of existing programs and policies relevant to the GBR coastal zone attempt to build on its successes, remove weaknesses and fill any identified gaps to deliver improved outcomes which are measurable, transparent and sustainable over the 25-year life of the Program.

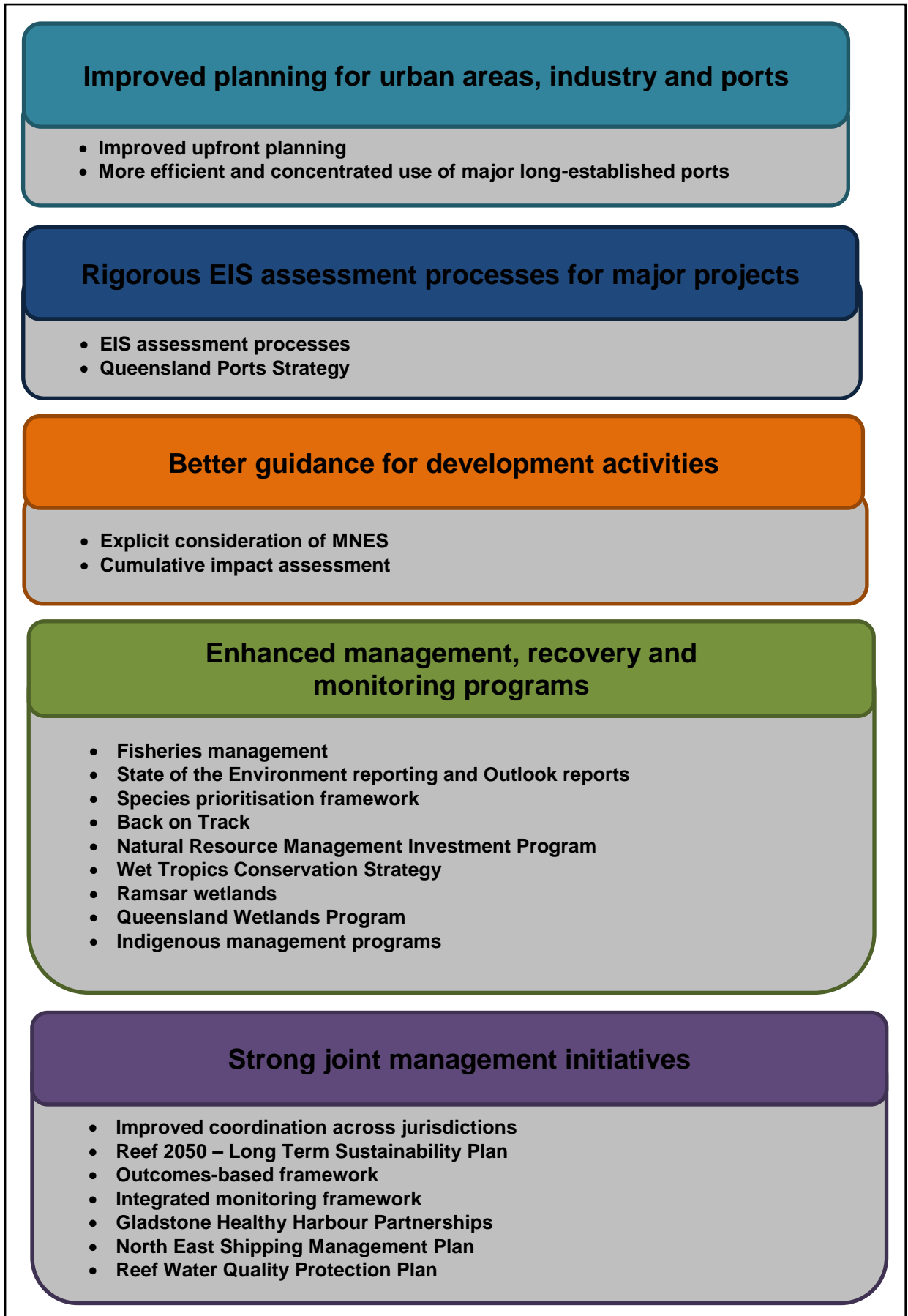
The Program protects and manages environmental values across Queensland, and in particular in the GBR coastal zone. It provides for the consideration of MNES and OUV in the GBR coastal zone.

The Program **delivers five strategic outcomes** to ensure the identification, protection and enhancement of MNES and OUV in the GBR coastal zone:

- **improved planning** for urban areas, industry and ports
- **rigorous EIS assessment processes** for major projects
- **better guidance** for development activities
- **enhanced management, recovery and monitoring** programs
- **strong joint management** initiatives.

Figure 4 details the strategic outcomes of the Program.

Figure 4 Strategic outcomes of the Program



3.3 Benefits of the Program

The benefits of the GBR coastal zone strategic assessment include outcomes that will enable:

- enhanced protection of MNES and OUV as they relate to the GBR coastal zone
- enhanced management of the GBRWHA and adjacent coastal zone
- social and economic benefits for the Queensland and Australian communities.

3.3.1 Enhanced protection of MNES and OUV in the GBR coastal zone

Through the implementation of the Program, the Queensland Government will protect MNES and OUV in the GBR coastal zone. As part of the Program, the Queensland Government applies robust EIS assessment processes to ensure that any development in the GBR coastal zone occurs in a sustainable manner and that unacceptable impacts on MNES do not occur.

The principles of ESD, outlined in the IGAE and Section 3A of the EPBC Act, are adopted within the Queensland Government's decision making relating to environmental management. Through the IGAE Queensland agrees to the:

'...the adoption of sound environmental practices and procedures, as a basis for ecologically sustainable development, will benefit both the Australian people and environment, and the international community and environment. This requires the effective integration of economic and environmental considerations in decision-making processes, in order to improve community well-being and benefit future generations'.⁶

Essentially, the overarching policy intent of the Program is to achieve ESD in the GBR coastal zone in accordance with the IGAE by integrating environmental considerations into decision-making processes at all levels.

The Queensland Government commits to undertaking further actions toward the protection of MNES and OUV, such as:

- extending its protected areas over time through the use of environmental offsets to ensure protection of a range of ecosystems and species and to improve protection for MNES in the GBR coastal zone
- working with the Australian Government to develop MNES and cumulative impact assessment guidelines
- developing an integrated monitoring program with the Australian Government to monitor and improve information about the condition and trend of MNES in the GBR coastal zone
- incorporating MNES condition and trend reporting into Queensland's State of the Environment Reporting

⁶ <http://www.environment.gov.au/node/13008>

- implementation of the Queensland Ports Strategy (QPS) which concentrates port development to Priority Port Development Areas (PPDAs) for the next 10 years
- the requirement that PPDAs prepare master plans that will address potential environmental impacts of proposed port development and port activities, including consideration of potential marine and cumulative impacts, MNES and OUV
- the prohibition of dredging within and adjoining the GBRWHA for the development of new, or the expansion of existing port facilities outside PPDAs, for the next 10 years.

3.3.2 Enhanced management arrangements

The IGA provides a framework for the Australian and Queensland governments to work together to manage and protect the GBR. The GBR Ministerial Forum was established in July 2011 under the IGA with representation from both governments, to facilitate and oversee the implementation and achievement of the objectives of the IGA.

Consequently, the Queensland Government is committed to supporting the Australian Government in fulfilling its obligations in relation to the status of the GBR as a WHA. This includes working in accordance with the *Operational Guidelines for the Implementation of the World Heritage Convention* and providing the Australian Government with any information it requires to fulfil its reporting and review requirements to the WHC.

Additionally, the Queensland Government is working with the Australian Government to develop and implement the Reef 2050 Plan which is an overarching framework to guide the protection and management of the GBR. The plan comprises of two components:

- Reef 2050 – Long Term Sustainability Plan (LTSP)
- Reef Trust.

The LTSP will draw on the marine and coastal components of the comprehensive strategic assessment and provide an overarching framework to guide the protection and management of the GBRWHA from 2015 to 2050.

The LTSP will build on the successful Reef Water Quality Protection Plan and the strong foundation of management already in place. It will target identified areas of action and seek to address gaps for the future management of the GBR.

The Reef Trust will combine both Australian Government and private funds to focus on improving coastal habitat and water quality throughout the GBR and adjacent catchments. The Australian Government is committing an initial contribution of \$40 million to the Reef Trust to address key threats to the reef. Reef Trust funding will be provided to farmers and land managers to implement techniques to reduce run-off to the GBR catchment. Additional actions are also planned to control Crown-of-Thorns Starfish (COTS) outbreaks and reduce the incidence of new outbreaks through partnerships between managing agencies and marine tourism operators.

A National Dugong and Turtle Protection Plan is also being established under the Reef 2050 Plan. It will provide greater protection from poaching activity, illegal hunting and marine debris to dugong and turtle populations. The Australian Government Reef Programme (formerly Reef Rescue) will be delivered as a component of the National Landcare Programme and will build on the success of the first phase of Reef Rescue.

A number of commitments and measures to strengthen the Program have also been identified to enhance the management arrangements between the Australian and Queensland governments for the GBRWHA and adjacent GBR coastal zone. These include:

- joint efforts to improve mapping for the identification of MNES
- a consistent national listing of threatened species
- shared outcomes and targets for the protection of the GBR and OUV
- integrated monitoring, compliance and reporting programs to obtain improved information about MNES and their condition and trend
- joint development of guidelines for project proponents and decision makers in relation to the assessment of cumulative impacts
- joint development of an outcomes-based framework for the GBRWHA.

3.3.3 Social and economic benefits for the Queensland community

The GBRWHA covers an area of 348 000 square kilometres which is approximately equivalent to the size of Italy or Japan. More than one million people reside in communities throughout the GBR coastal zone and 60 per cent of the population is concentrated in the regional centres of Cairns, Mackay, Rockhampton and Townsville. The GBRWHA and key areas within the GBR coastal zone support a diverse range of social, cultural and economic activities, environmental biodiversity, heritage values and Indigenous cultural heritage values.

The GBR coastal zone makes a significance contribution toward Queensland's economic growth and supports a range of industry sectors, some of which are dependent on the environmental characteristics of the GBRWHA. Through tourism, recreation, commercial fishing and scientific research, the WHA contributes around \$5.4 billion every year and supports around 67 000 jobs. Approximately two million people visit the reef each year from all over the world, and around 80 per cent of these tourism activities occur within only seven per cent of the GBR region.⁷

Other industries use or are located in the GBR region such as shipping, ports, aquaculture and defence, and coastal communities adjacent to the reef include extensive agricultural industries. Significant elements of the resources industry are located inland of the GBR coastal zone and rely on ports within the GBR coast to link with international markets.

⁷ <http://www.reeffacts.qld.gov.au/tourism/>

The first IGA established between the Queensland and Australian governments in 1979, known as the Emerald Agreement, set out how the two governments would work together to jointly manage the GBR. At the time, it was agreed that it was the policies of the respective governments to prohibit mining and drilling within the GBRWHA.

Very limited mining occurs in the GBR coastal zone adjacent to the GBR. Operations that do occur are limited to silica mining at Cape Flattery and magnetite mining north of Rockhampton. Small silica sand reserves near Mourilyan Harbour are being investigated for development. There are no operating coal mines in or in close proximity to the GBR coastal zone and no major coal reserves.

The GBR coastal zone encompasses a number of cultural sites that occur within the GBR's land and sea country important to the Aboriginal and Torres Strait Islander peoples in the GBR region. For many Aboriginal and Torres Strait Islander peoples there is a profound connection between natural and cultural values, and their land and sea estates. The Queensland Government acknowledges this value and the importance the GBR coastal zone has to Indigenous communities from both a heritage and contemporary use perspective.

Balancing the sustainable growth of the region and the protection of the environment is an important objective for the Queensland Government and is sought through a system that effectively governs economic and social development in the GBR coastal zone. This is achieved through appropriate planning and EIS processes that manage activities and protect the unique environmental values of the GBR.

3.4 Activities

3.4.1 Introduction

The following description of urban, industrial, port and aquaculture development activities is intended to provide an indication of the range of activities covered by the Program seeking endorsement. The scale of these activities would have to be such that a significant impact on MNES is likely in order to require assessment through the EIS process.

3.4.2 Urban development

Urban development refers to the construction or expansion of a town or city. This includes the construction of residential and non-residential buildings (e.g. shops and industrial facilities) and associated infrastructure such as roads and rail lines, water supply and sewerage pipelines, telecommunications, electricity supply and other service infrastructure. Urban development may also require the construction of water infrastructure such as dams or weirs and wastewater treatment plants to service urban development areas. Urban development also includes the construction of recreational areas such as parks and public swimming pools. The scale of development can range from expanding a suburb to a construction of a new urban centre with large residential, commercial and industrial areas.

The activities associated with urban development is dependent on the type of development, the location and the scale of the area being developed, and the proposed future use of the site. Typical activities associated with construction and expansion of urban infrastructure include site preparation works which may involve removal of existing vegetation, grubbing (removal of organic matter from the soil), stripping topsoils, removal of land forms such as undulations in the landscape and filling the site with material to level and stabilise the site. For sites near waterways, bulk earthworks may also be undertaken to change the nature of the site such as raising the height to provide clearance for overland flows during flooding events. Other site preparation works include laying pipelines for water, stormwater, sewage and gas.

Construction works are typically undertaken using a range of construction plant and machinery including heavy vehicles and other civil works equipment.

Ongoing activities in urban centres include the consumption of water and energy and the generation of waste (e.g. sewerage and domestic wastes) and air emissions. Other ongoing activities include movement of people and the use of vehicles and other modes of transport.

The expansion of urban areas may result in an increase in the number of domestic animals and introduced plant species. The increase in impervious surfaces (e.g. roads, car parks and buildings) associated with the construction of urban structures can also result in the increased volumes of surface water runoff during heavy rainfall events.

3.4.3 Industrial development

Industrial development involves a similar process undertaken for the construction and expansion of urban development in terms of site preparation and construction works with similar ongoing uses.

The nature of the development and the activities generally include waste generation; handling, storage and use of potentially toxic materials; stockpiling and processing of materials; generation of sometimes large amounts of noise, light and other emissions; and construction of large infrastructure development for energy, water, transport and sewerage.

Commodity processing typically involves the handling and/or conversion of raw bulk material into more convenient, ready-to-use end products or ready-to-export end products. In the context of this report, commodity processing encompasses both the act of processing and the associated storage of materials at different stages.

3.4.4 Port development

Ports are development areas on waterways with facilities for loading and unloading cargo on ships and other marine vessels. The activities associated with port developments include:

- construction of terminals, loading and un-loading facilities
- storage and waste facilities, cargo holding facilities and material stockpiles
- vessel loading and unloading
- vessel anchoring
- shipping
- land reclamation
- dredging and dredge material relocation.

Construction is the process of building new port facilities or extending, maintaining or improving existing facilities. Construction-related port activities may include clearing, levelling, stockpiling, earthworks, building of structures and pile driving.

Activities undertaken while a vessel is at berth generally are described as vessel loading and unloading. This can include the physical process of loading and unloading commodities, cleaning, repairs, and the transfer of waste, fuel and supplies. Vessels may anchor for different time periods and purposes. Common activities undertaken when anchored include refuelling, transfer of supplies, vessel cleaning and other operational activities, general provisioning and scheduled on-board maintenance.

Land reclamation refers to the conversion of existing substrate by depositing materials to create land in a low-lying coastal area or water body such as a lake, estuary or ocean. In a port area, this process is often used to enable industrial expansion and it can also be used to create new land for residential, recreational or environmental purposes. The process of land reclamation is usually completed through the use of bund walls to create an enclosed area, which is then filled with substrate such as dredge material. Land reclamation may also present an alternative to sea relocation of dredged material, when the material displays the correct engineering properties for such purpose.

Dredging and spoil relocation

Dredging is the process of removing material from the sea bed in order to increase water depth, ensuring the safety of vessels and efficiency of port operations. Dredging can involve dredging of new areas, deepening or widening of existing channels and berth pockets for larger vessels to access, and ongoing dredging to facilitating the safe and efficient movement of vessels.

Dredge material can be relocated either onshore or in the ocean and is generally directed to areas of least environmental impact. The amounts and type of material removed, and the intensity and duration of the dredging campaign, varies considerably with the natural environment and port requirements.

Sea disposal of dredged material refers to the relocation of dredge material in the marine environment. The 1996 *Protocol to the Convention on the Prevention of Marine Pollution by Dumping of Wastes and other Matter 1972* (the London Protocol) prohibits dumping of wastes at sea, except for possibly acceptable wastes included in an annex to the treaty. Australia's obligations under the London Protocol are implemented through the *Environment Protection (Sea Dumping) Act 1981* (the Sea Dumping Act).

Under the Sea Dumping Act, dredged material that contains contaminants of certain types (such as heavy metals) or above specified proportions, must be disposed of on land.

3.4.5 Shipping

Shipping of goods both domestically and internationally is of great importance to regional and national economies. Many remote communities rely on ship transport for their goods. In the recent past, growth in demand for commodities such as coal has required an increase in shipping activity causing some concern in the community.

Shipping activities includes the movement of vessels within, around and between ports in order to facilitate the import and export of commodities. This can include tugboats and ancillary vessels and ocean-going ships.

3.4.6 Tourism development

For the purpose of this report, tourism developments activities are those associated with medium to large scale resort development and associated activities in the GBR coastal zone. Tourism development is typically located in coastal areas and islands and can range from small scale holiday houses to large scale integrated resorts.

Tourism development involves a similar process undertaken for the construction and expansion of urban development in terms of site preparation and construction works with similar ongoing uses.

In coastal areas and on islands, tourism development may also involve the construction of marinas or marine infrastructure (e.g. revetment walls, pontoons, boat ramps, jetties and moorings) which may involve the clearing of coastal habitat or marine plants, dredging activities and land reclamation. Ongoing activities associated with marine components include the movement of commercial and recreational vessels.

Tourism development may also include infrastructure such as golf courses and swimming pools which require the use of chemicals, including fertilisers, to maintain.

Golf courses are also maintained through the use of large volumes of water distributed through irrigation systems. The water used for irrigation purposes particularly on islands is often treated wastewater.

Ongoing recreational activities related to tourism developments on land include walking/hiking, camping, horse riding, mountain biking and the use of off-road vehicles and marine activities include recreational boating and fishing, snorkelling and swimming.

3.4.7 Agriculture

The agricultural sector is an important contributor to Queensland's economy. Queensland's agricultural industries are made up of:

- plant industries, including field crops, horticulture and forestry
- animal industries, including livestock and livestock products.

Queensland has the largest area of agricultural land of any Australian state and the highest proportion of land area in Australia dedicated to agriculture.

Agriculture is the predominant land use in Queensland. Approximately 85 per cent of the State is used for grazing and 2 per cent of the land area is used for cropping. Other agricultural industries (excluding forestry) each occupy less than 1 per cent of the State.

Queensland has in excess of 52 million hectares of native forest, comprising approximately one third of Australia's total native forests and the largest forested area of any Australian state or territory. Commercial native timber supply is sourced from approximately 20–40 per cent of this area, on both state-owned and private land, predominately in coastal and southern inland areas of Queensland. Native forests that produce commercial timber are generally also used for grazing and are managed as silvopastoral systems—production systems that combine forestry and grazing in a mutually beneficial way.

The activities associated with horticulture vary based on the type of agriculture, the location and the scale of the area being developed.

Agricultural activities have driven significant landscape change leading to both direct and indirect environmental impacts. The two primary impacts are the contribution agricultural land management practices make to poor catchment water quality and the impact of stock grazing in natural areas on biodiversity and environmental values. Other impacts include changes to fire regimes to benefit agricultural activities rather than ecosystems, the introduction of exotic grasses favoured by stock and limited management effort directed at environmental pests.

The 2013 Scientific Consensus Statement, prepared by over 40 leading scientists, identified that the decline in water quality from catchment runoff is the major cause of the current poor state of many of the key GBR ecosystems and that the three major risks are nitrogen, fine sediment and pesticide discharge. It also identified that the major source of the key pollutants is broadscale agriculture and that other sources such as urban, ports and shipping are relatively small but may be locally and over short time periods highly significant. In terms of risks, the consensus statement noted that overall, nitrogen poses the greatest risk to coral because of its influence on COTS outbreaks, while sediment poses the greatest risk to seagrass.

3.4.8 Fishing and aquaculture

Fishing

Fishing is a major commercial and recreational activity in the GBR coastal zone and marine park. Both recreational and commercial fishing contribute to the social and economic well-being of regions adjacent to the GBR.

Queensland has an extremely diverse range of fisheries that are targeted by both recreational and commercial fishers. Queensland produces approximately 50 per cent of Australia's prawns, crabs and scallops and 25 per cent of Australia's finfish (excluding tuna and salmonoids).

Fishing practices have varying levels of impact – trawling has high levels of by-catch which can include listed threatened species and can physically impact benthic habitats. Nets can potentially capture and injure or kill marine mammals and listed threatened species. Line fishing also produces by-catch and can capture listed species like turtles and sharks. Anchoring can cause damage to benthic communities and waste from boats can be an entanglement or ingestion risk for birds, fish and mammals.

Fisheries can also be impacted on by other development, such as when road, rail or water infrastructure creates barriers or reduces connectivity of aquatic environments. These barriers can impede fish species from moving between marine environments to upstream, freshwater environments to spawn or mature which can impact population growth rates.

Fishing also has impacts on the marine environment. These risks are managed using a range of regulations, legislation, compliance and education by the Queensland Department of Agriculture, Fisheries and Forestry (DAFF).

The impacts of fishing include the direct take or mortality of fish, which can lead to overfishing of a particular stock and/or disruption of the food chain, indirect mortality of non-target species, and physical impacts on marine environments. Changes in the abundance of fish species at all levels of the food chain can have an influence on food webs and ecosystem balance.

Aquaculture

Land-based aquaculture occurs in the GBR catchment principally for prawns, barramundi, red claw and freshwater fish. Activities related to aquaculture include construction of the ponds and ongoing use activities.

Clearing may be required on coastal lands or land adjacent to the estuarine parts of river systems to purpose-build earthen ponds. Saline water is pumped onto the farm where it is then gravity fed to a series of production ponds. Water drains from the ponds and enters a treatment pond whereby solid wastes settle out before water is discharged back to the sea. In some cases, some of this water is recirculated back through the farm system.

Systems used for the production of freshwater species are normally limited to freshwater ponds, tank, raceway and aquarium systems. In Queensland, there are six tank farms in operation that use a recirculation system to reduce the reliance on large quantities of water to maintain the health of cultured fish.

3.5 Impacts

3.5.1 Potential impacts to MNES from activities

The above description of activities provides an indication of the range of activities covered by the Program. While the following section describes the potential impacts of these activities, it is important to note that impacts will be avoided, mitigated or offset through the application of the Program.

The potential environmental impacts of activities are considered within a project's economic and social context and involves taking into consideration the principles of ESD to support a balance between development and environmental conservation. While the EIS process ensures that potential impacts from development activities are minimised, the Queensland Government supports a range of initiatives that seek to improve the environment including MNES. The initiatives are discussed in Chapter 4 of this report.

The specific nature and extent of impacts that may arise from the above activities on MNES are broad and wide-ranging. For instance, activities may have the potential to:

- reduce available land for population settlement, and for certain species or ecological communities
- fragment an existing population or ecological community
- adversely affect critical habitat for the survival of a species or ecological community potentially disrupting the lifecycle of species or ecological communities
- modify, destroy, remove, isolate or decrease the availability or quality of habitat or the environment, introduce disease, or interfere with the recovery of a species or ecological community
- modify or destroy abiotic (non-living) factors (such as water, nutrients, soil) necessary for an ecological community's survival, including reduction of groundwater levels, or substantial alternative of surface water drainage courses
- cause a substantial change in the species composition of an occurrence of an ecological community, including a decline or loss of functionally important species, e.g. through flora or fauna harvesting
- cause a substantial reduction in the quality or integrity of an occurrence of an ecological community, including but not limited to assisting invasive species that are harmful to the listed ecological community to become established
- cause regular mobilisation of chemicals or pollutants into an ecological community which kill or inhibit the growth of species in the ecological community
- cause a change in a hydrological regime or an environmental feature leading to a change in water quality or an adverse impact on ecosystem functioning or integrity
- impact on a population of a marine species or cetacean including its lifecycle and spatial distribution

-
- result in chemicals, heavy metals, or other potentially harmful substances accumulating in the marine environment such that biodiversity, ecological integrity, social amenity or human health may be adversely affected
 - cause a substantial adverse impact on heritage values.

The following tables show the sources of risk related to activities under the Program and links these to potentially affected matters protected under Part 3 of the EPBC Act.

Table 3 shows an overview of the activities under the Program and the related ‘sources of risk’ showing the link between the sources of risk, activities, and the potential impacts on MNES. There are many common sources of risk between these activities, and in most cases, there is a potential to impact many, if not all, MNES.

Table 4 provides a comprehensive breakdown of the potential impacts from each of the sources of risk. For each impact, the link is drawn between the impact and the species, groups of species or whole matters that are potentially affected.

These tables are to be read in conjunction with Chapter 5 of the draft Strategic Assessment Report.

Table 3 Development activities that potentially impact MNES

Sources of risk	Activities under the Program					Potentially affected matters
	Urban development	Tourism development	Industrial development	Aquaculture development	Port development	
Matters protected under EPBC Act WH - World heritage NH - National heritage Ramsar - Wetlands of international importance TSEC - Listed threatened species and communities MS - Listed migratory species CW - Commonwealth waters GBRMP - Great Barrier Reef Marine Park						
Land based						
Land clearing	X	X	X	X	X	WH, NH, Ramsar, TSEC, MS, CW, GBRMP
Earthworks	X	X	X	X	X	
Rock blasting	X	X	X	X	X	
Waterway diversions and water infrastructure	X	X	X	X	X	
Land reclamation	X	X	X	X	X	
Construction activities	X	X	X	X	X	
Port operations e.g. loading (land and water based)		X	X		X	
Dredge material relocation (land and water based)	X	X	X		X	
Point source pollution (land and water based)	X	X	X	X	X	
Non-point source pollution (land and water based)	X	X	X		X	
Ongoing use/operation of infrastructure (land and water based)	X	X	X	X	X	
Personal use of vehicles	X	X	X		X	
Domestic animals	X	X				
Storage of waste	X	X	X	X	X	
Water based						
Construction of marine infrastructure	X	X	X	X	X	WH, NH, Ramsar, TSEC, MS, CW, GBRMP
Dredging	X	X	X		X	
Anchorage		X	X		X	
Shipping	X	X	X		X	
Tourism						
Recreational and commercial marine traffic (non-shipping)	X	X	X	X	X	WH, NH, Ramsar, TSEC, MS, CW, GBRMP
Recreation and tourism in the GBR coastal zone	X	X				

Table 4 Assessment of potential impacts from development activities under the Program

Impact assessment	
Sources of risk	Impacts
Land clearing	<p>Terrestrial:</p> <ul style="list-style-type: none"> • <i>Removal of habitat</i> associated with the removal of vegetation, ground cover, habitat features (e.g. rocky outcroppings, fallen timber and hollows) resulting in the removal of foraging, breeding, refuge and roosting habitat and for threatened and migratory fauna, loss of coastal and wetland habitat for listed migratory and threatened bird species • <i>Removal or degradation of vegetation or landforms</i> which contribute to the OUV of WHAs (e.g. superlative natural beauty) • <i>Direct removal</i> of threatened ecological communities and/or threatened flora, reducing connectivity and increasing fragmentation of ecological communities and flora species • <i>Displacement and disturbance of fauna</i> resulting in the disturbance of foraging, roosting and breeding activities of threatened and migratory fauna • <i>Potential injury and mortality</i> to threatened and migratory fauna associated with direct physical interaction with machinery/equipment • <i>Degradation of surrounding habitat</i> including loss of diversity and fragmentation of habitat, edge effects (increased opportunity for weed growth and alteration of fauna communities), reducing resilience to ongoing and future threats (e.g. fire regimes) <p>Therefore, the matters that may be affected by these impacts are: WH, NH, Ramsar, TSEC, MS, CW, GBRMP</p>
	<p>Water:</p> <ul style="list-style-type: none"> • <i>Removal of groundcover</i> and reduction in pervious surfaces leading to <i>altered water quality</i> in receiving environments due to erosion and sedimentation (transport of sediment and plant material to receiving waterways via surface water runoff) • <i>Water quality impacts</i> associated with surface runoff <i>containing sediments</i>, including increased turbidity which may result in reduced light availability, increased temperatures, reduced dissolved oxygen availability resulting in the degradation of foraging habitat (e.g. seagrass) for marine threatened and migratory fauna • <i>Water quality impacts</i> associated with surface runoff containing <i>nutrient rich</i> sediment and organic matter resulting in algal blooms which may result in reduced light availability, reduced dissolved oxygen availability and toxic effects and subsequently the loss/degradation of foraging habitat (e.g. seagrass) for marine threatened and migratory fauna • <i>Sediment dispersal</i> (e.g. sediment plumes) impacting the superlative natural beauty and OUV of WHAs • <i>Direct sedimentation impacts</i> associated with surface runoff containing sediments resulting in the burial of aquatic flora and fauna and alteration of substrate • <i>Altered natural hydrological regimes</i> (including environmental flows, water retention, groundwater availability, salinity, exposure of acid sulphate soils) resulting in changes to wetland habitats and impacts to wetland-dependent species (e.g. migratory shorebirds) • <i>Reduced water quality</i> impacting on habitats and species which contribute to the OUV of the WHA and GBRMP (e.g., threatened and migratory marine species) <p>Therefore, the matters that may be affected by these impacts are: WH, NH, Ramsar, TSEC, MS, CW, GBRMP</p>
	<p>Cultural heritage:</p> <ul style="list-style-type: none"> • <i>Physical or indirect disturbances to Indigenous cultural heritage sites</i> (scar-trees) <p>Therefore the matters that may be affected by these impacts are: NH, GBRMP</p>

Impact assessment	
Sources of risk	Impacts
Earthworks (e.g. cutting and filling)	<ul style="list-style-type: none"> • <i>Disturbance of soil, erosion and sedimentation</i>, resulting in disturbance of acid sulphate and contaminated soil which may lead to acute and chronic effects on threatened coastal and aquatic fauna and flora • <i>Direct disturbance</i> through removal or burial of landforms or habitat supporting threatened or migratory species, or species directly • <i>Alteration of groundwater levels and quality</i> (salinity, acid sulphate leachate) resulting in degradation of habitat for threatened (and migratory) fauna and flora. • <i>Removal of wetland habitat</i> (reducing foraging, breeding and roosting habitat for migratory shorebirds) • <i>Physical or indirect disturbances to heritage areas</i> and archaeological sites • <i>Introduction of pests, weeds and disease</i> in construction materials which could reduce the extent of threatened flora or fauna species • <i>Restrict or inhibit the existing use of a heritage place as a cultural or ceremonial site</i> resulting in a loss of heritage values • <i>Altered natural hydrological regimes</i> (including environmental flows, water retention, groundwater availability) resulting in changes to wetland habitats and impacts to wetland-dependent species (e.g. migratory shorebirds) • <i>Direct sedimentation impacts</i> associated with surface runoff containing sediments resulting in the burial of aquatic flora and fauna and alteration of substrate • <i>Reduced water quality</i> impacting on habitats and species which contribute to the OUV of WHAs (e.g. threatened and migratory marine species). • <i>Removal or degradation of vegetation or landforms</i> which contribute to the OUV of WHAs (e.g. superlative natural beauty or geomorphology). <p>Therefore, the matters that may be affected by these impacts are: WH, NH, Ramsar, TSEC, MS, CW, GBRMP</p>
Rock blasting	<ul style="list-style-type: none"> • <i>Noise and vibration impacts</i> leading to disturbances and displacement of fauna (e.g. roosting migratory birds resulting in fragmentation of populations and reduction of connectivity) • <i>Air quality impacts</i> (e.g. dust) resulting in water quality impacts associated with dust deposition and direct impacts on threatened fauna and flora • <i>Direct or indirect disturbances</i> to OUV of WHAs and values of national heritage places (e.g. archaeological sites, visual landforms, noise) • <i>Direct disturbance through removal or burial of landforms or habitat</i> supporting threatened or migratory species, or species directly <p>Therefore, the matters that may be affected by these impacts are: WH, NH, Ramsar, TSEC, MS, CW, GBRMP</p>
Waterway diversions and water infrastructure (e.g. dams and weirs)	<ul style="list-style-type: none"> • <i>Alteration of flow and flooding regimes of waterways</i>, resulting in the alteration of estuarine habitat (e.g. distribution of mangroves, seagrass) and alteration of foraging habitat for threatened and migratory fauna • <i>Alteration to traditional landscapes</i> used by local Indigenous groups resulting in a loss of cultural heritage values • <i>Altered natural hydrological regimes</i> (including environmental flows, water retention, groundwater availability) resulting in changes to wetland habitats and impacts to wetland-dependent species (e.g. migratory shorebirds) • <i>Alteration of flow and flooding regimes of waterways</i>, altering terrestrial habitat and reducing habitat availability and quality for threatened and migratory fauna (e.g. silting /sedimentation) • <i>Altered natural hydrological regimes</i> (including environmental flows, water retention, groundwater availability) resulting in impacts to OUV of world heritage properties <p>Therefore, the matters that may be affected by these impacts are: WH, NH, Ramsar, TSEC, MS, CW, GBRMP</p>

Impact assessment	
Sources of risk	Impacts
Land reclamation	<ul style="list-style-type: none"> • <i>Permanent removal of marine plants or marine habitat</i> resulting in reduced habitat for threatened and migratory fauna (e.g. turtles, dugong, shorebirds) • <i>Removal or degradation</i> of terrestrial coastal habitat supporting threatened and migratory fauna species • <i>Reduced connectivity</i> between coastal and marine habitats (mangroves and seagrass and inshore corals) • <i>Altered hydrodynamics</i> leading to increased scouring of benthic substrate and bank erosion and resulting in the damage of inter-tidal habitat (e.g. mangroves and seagrass) • <i>Altered water quality</i> associated with <i>increased turbidity</i> which may result in reduced light availability, increased temperatures, reduced dissolved oxygen availability causing distress to threatened (and migratory) marine fauna and flora • <i>Reduced aesthetics of the landscape</i> resulting in the degradation of the OUV of world heritage properties and values of national heritage places (e.g. loss of natural beauty) • <i>Direct removal</i> of threatened ecological communities and/or threatened flora, reducing connectivity and increasing fragmentation of ecological communities and flora species • <i>Direct disturbance through removal or burial of landforms or habitat</i> supporting threatened or migratory species, or species directly • <i>Disturbance of soils, erosion and sedimentation</i>, disturbance of acid sulphate and contaminated soil which may lead to acute and chronic effects on threatened coastal and aquatic fauna • <i>Alteration of groundwater levels and quality</i> (salinity, acid sulphate leachate) resulting in degradation habitat for threatened and migratory fauna <p>Therefore, the matters that may be affected by these impacts are: WH, NH, Ramsar, TSEC, MS, CW, GBRMP</p>
Construction activities – terrestrial (including use of construction equipment and vehicles)	<ul style="list-style-type: none"> • <i>Removal or degradation</i> of terrestrial coastal habitat supporting threatened and migratory fauna species, leading to fragmentation of populations • <i>Disturbance of threatened and migrating species</i> associated with the use of construction equipment and vehicles such as noise and vibration, air quality (e.g. dust, carbon and other greenhouse gas emissions), light pollution, pollutants (e.g. oils leaks and spills), spread of pests and weeds and disease leading to displacement of species and reduction of connectivity • <i>Obstruction or barriers to access of traditional lands</i> of local Indigenous groups resulting in a loss of cultural heritage values • <i>Reduced aesthetics of the landscape</i> resulting in the degradation of the OUV of world heritage properties and values of national heritage places (e.g. loss of natural beauty) • Spread of pests and weeds resulting in <i>degradation of threatened ecological communities</i> and reducing resilience to ongoing and future threats • <i>Spread of disease</i> impacting the health of threatened species (e.g. chytrid fungus affecting frogs) and flora, as well as ecological communities • <i>Potential injury and mortality</i> to threatened and migratory fauna associated with direct physical interaction with equipment and vehicles • <i>Alteration of flow and flooding regimes of waterways</i>, altering terrestrial habitat and reducing habitat availability and quality for threatened and migratory fauna • <i>Water quality impacts</i> associated with surface runoff <i>containing sediments</i>, increasing turbidity which may result in reduced light availability, increased temperatures and reduced dissolved oxygen availability resulting in the degradation of foraging habitat (e.g. seagrass) for marine threatened and migratory fauna • <i>Direct or indirect disturbances</i> to the OUV of WHAs and the values of national heritage places (e.g. temporarily or permanently reducing the superlative natural beauty or integrity) <p>Therefore, the matters that may be affected by these impacts are: WH, NH, Ramsar, TSEC, MS, CW, GBRMP</p>

Impact assessment	
Sources of risk	Impacts
Construction of marine infrastructure (e.g. trestles, jetties, marinas, pontoons, moorings)	<ul style="list-style-type: none"> • <i>Permanent or temporary removal or disturbance to marine plants or marine habitat</i> resulting in reduced habitat for threatened and migratory fauna (e.g. turtles, dugong, shorebirds) • <i>Disturbance of threatened and migrating species</i> associated with construction such as noise and vibration, light pollution (if used at night), pollutants (e.g. oils leaks and spills), leading to displacement of species and increased fragmentation between populations • <i>Noise and vibration impacts</i> associated with the drilling of pilings leading to disturbances and displacement and potential for injury and mortality of threatened and migratory species including dugong and turtles • <i>Altered hydrodynamics</i> leading to increased scouring of benthic substrate and bank erosion and resulting in the damage of intertidal habitat (e.g. mangroves and seagrass) • <i>Water quality impacts</i> (turbidity, suspended sediments, sedimentation), removal and alteration of seabed habitat resulting in the loss of foraging habitat (seagrass) for threatened and migratory fauna • <i>Potential injury and mortality</i> to threatened and migratory fauna associated with direct physical interaction with equipment and construction vessels • <i>Altered availability</i> of traditional hunting resources for local Indigenous groups, reducing cultural values in a national heritage area • <i>Direct or indirect disturbances</i> to the OUV of WHAs and the values of national heritage places (e.g. impacts to natural geological or geomorphological processes such as longshore sediment movement) • <i>Air quality impacts (dust)</i> resulting in water quality impacts associated with dust deposition resulting in disturbance and fragmentation of populations of threatened and migratory species <p>Therefore, the matters that may be affected by these impacts are: WH, NH, Ramsar, TSEC, MS, CW, GBRMP</p>
Dredging	<ul style="list-style-type: none"> • <i>Removal of, or disturbance to, marine habitat</i> and potential for injury and mortality of threatened and migratory species • <i>Displacement of marine threatened and migratory species</i> associated with dredging such as noise and vibration, light pollution (if used at night), pollutants (e.g. oils leaks and spills) which can decrease connectivity of populations • <i>Altered behavioural patterns</i> of threatened and migratory marine fauna (e.g. feeding, foraging, breeding) leading to increased fragmentation between populations • <i>Water quality impacts</i> including turbidity and deposition of suspended sediment, disturbance and re-suspension of contaminants, reducing light availability, increased temperatures and reduced dissolved oxygen availability resulting in the degradation of foraging habitat (e.g. seagrass) for marine threatened and migratory fauna • <i>Altered hydrodynamics</i> leading to increased scouring of benthic substrate and bank erosion and resulting in the damage of intertidal habitat (e.g. mangroves and seagrass) • <i>Disturbance to fauna</i> associated with the use of dredge equipment • <i>Injury or mortality of fauna</i> associated with direct interactions with dredge equipment • <i>Noise and vibration impacts</i> associated with the use of dredge equipment leading to disturbances and potential for injury and mortality of threatened and migratory species including dugong and turtles • <i>Direct or indirect disturbances</i> to the OUV of WHAs and the values of national heritage places (e.g. impacts to natural geological or geomorphological processes such as longshore sediment movement) <p>Therefore the matters that may be affected by these impacts are: WH, NH, Ramsar, TSEC, MS, CW, GBRMP</p>

Impact assessment	
Sources of risk	Impacts
Dredge material disposal including initial and ongoing impacts (this will vary in scale and composition of dredge material)	<p>Disposal on land:</p> <ul style="list-style-type: none"> • <i>Direct disturbance</i> (e.g. through removal or burial) of landforms or habitat supporting threatened or migratory species • <i>Disturbance of soils, erosion and sedimentation</i>, disturbance of acid sulphate and contaminated soil which may lead to acute and chronic effects on coastal and aquatic fauna • <i>Water quality impacts</i> associated with surface runoff <i>containing sediments</i>, increasing turbidity which may result in reduced light availability, increased temperatures and reduced dissolved oxygen availability resulting in the degradation of foraging habitat (e.g. seagrass) for marine threatened and migratory fauna • <i>Alteration of groundwater quality</i> (e.g. salinity, acid sulphate leachate) resulting in degradation habitat for threatened and migratory fauna • <i>Discharge</i> to receiving waterways from dredge material treatment facilities (e.g. increased levels of suspended sediments in the water column) resulting in the <i>degradation of habitat</i> for threatened and migratory species and threatened ecological communities • <i>Permanent or temporary disturbance to terrestrial plants or habitat</i> resulting in reduced habitat and decreased connectivity of populations of threatened and migratory fauna (e.g. water mouse, rainbow bee-eater) • <i>Permanent or temporary disturbance to threatened ecological communities</i> resulting in reduction of values and integrity of the community • <i>Air quality impacts</i> (e.g. dust) resulting in water quality impacts associated with dust deposition resulting in disturbance and fragmentation of populations • <i>Air quality impacts</i> (e.g. odours) resulting in impacts to natural values of world heritage properties • <i>Alteration of coastal landforms</i> which contribute to the OUV of WHAs (e.g. superlative natural beauty). • <i>Altered hydrodynamics associated with spoil used for coastal rehabilitation works</i> (e.g. beach nourishment) leading to altered intertidal habitat (e.g. mangroves and seagrass) <p>Sea disposal:</p> <ul style="list-style-type: none"> • <i>Direct disturbance</i> and alteration of seabed habitat (e.g. through removal or burial) resulting in the loss of marine foraging or breeding habitat supporting threatened or migratory species, possible fragmentation and reduction in connectivity • <i>Disturbance, injury or mortality of threatened fauna</i> associated with direct interaction with equipment during relocation • <i>Altered behavioural patterns</i> of threatened and migratory marine fauna (e.g. feeding, foraging, breeding, migration) leading to increased fragmentation between populations • <i>Water quality impacts associated with relocation</i>, such as increased turbidity which may result in reduced light availability, increased temperatures and reduced dissolved oxygen availability as well as the potential for contaminants to be released resulting in the degradation of foraging habitat (e.g. seagrass) for marine threatened and migratory fauna • <i>Noise and vibration impacts</i> associated with vessels and equipment, leading to disturbance and displacement and potential for injury or mortality of threatened and migratory species including dugong and turtles <p>Therefore, the matters that may be affected by these impacts are: WH, NH, Ramsar, TSEC, MS, CW, GBRMP</p>

Impact assessment	
Sources of risk	Impacts
Port operations (including loading and unloading activities and cruise ships)	<ul style="list-style-type: none"> • <i>Light pollution</i> impacts on foraging, breeding and roosting of threatened and migratory species • <i>Habitat disturbance</i> associated with the introduction and spread of marine pests carried on hulls or in ballast water • <i>Altered behavioural patterns</i> of threatened and migratory marine fauna (e.g. feeding, foraging, breeding, migration) leading to increased fragmentation between populations • <i>Noise and vibration impacts</i> from ship loading and other operational activities on threatened and migratory fauna (e.g. roosting shorebirds, dugongs, dolphins and turtles) including displacement and physical damage to hearing (particularly marine mammals) • <i>Water quality impacts</i> associated with acute and chronic oil and hydrocarbon spills, discharge of oily bilge water and waste, debris and litter, and other ship-sourced pollutants associated with anti-fouling paints which degrade habitat and qualities of the GBRMP • <i>Water and sediment quality impacts</i> from cleaning, repairs and cargo spillage and ship movements degrading habitat for threatened and migratory species • <i>Air quality impacts</i> from airborne dust (including coal dust) or other contaminants mobilised during ship loading impacting terrestrial threatened and migratory species • <i>Reduced aesthetics of the landscape</i> resulting in the degradation of the OUV of WHAs and values of national heritage places (e.g. loss of natural beauty) <p>Therefore, the matters that may be affected by these impacts are: WH, NH, Ramsar, TSEC, MS, CW, GBRMP</p>
Anchorage	<ul style="list-style-type: none"> • <i>Damage to habitat</i> in the GBRMP and commonwealth marine areas (e.g. seagrass, corals) • Reduced aesthetics of the natural landscape resulting in the degradation of the OUV of world heritage properties and national heritage values (e.g. loss of natural beauty) • <i>Water and sediment quality impacts</i> from cleaning, repairs and cargo spillage reducing habitat quality for threatened and migratory species <p>Therefore, the matters that may be affected by these impacts are: WH, NH, TSEC, MS, CW, GBRMP</p>

Impact assessment	
Sources of risk	Impacts
Shipping	<ul style="list-style-type: none"> • <i>Reduced water quality</i> associated with ship-sourced pollutants (e.g. waste, sewerage, plastic waste, emissions, anti-fouling compounds, oil spills) resulting in the short or long-term degradation of habitat and physical health of threatened and migratory fauna • <i>Disturbances</i> to inshore marine fauna due to noise and vibration associated with vessel movement within port channels • <i>Disturbance to marine fauna</i> due to artificial lights leading to changes in migratory behaviours • <i>Reduced water quality</i> associated with ballast water disposal including ballast tank sediments impacting threatened and migratory marine fauna • <i>Marine pest incursions</i> from species attached to ship hulls which could reduce the extent of native species and/or change the natural surrounding including water quality, resulting in the degradation of habitat for inshore marine fauna species • <i>Collision</i> (e.g. boat strike) resulting in injury and mortality of marine fauna (particularly turtles and dugong) and reduction of traditional hunting sources for local Indigenous groups • <i>Bank erosion and scouring of seabed</i> associated with vessel wakes resulting in the degradation of foraging habitat (e.g. seagrass) and roosting habitat (e.g. mangroves) for threatened and migratory fauna • <i>Damage to habitat</i> associated with accidental groundings, anchoring and mooring (e.g. seagrass, corals) • <i>Direct or indirect disturbances</i> to the OUV of WHAs and the values of national heritage places (e.g. temporarily or permanently reducing the superlative natural beauty) <p>Therefore, the matters that may be affected by these impacts are: WH, NH, Ramsar, TSEC, MS, CW, GBRMP</p>
Point sources of pollution (e.g. wastewater discharge, discharge from settlement ponds)	<ul style="list-style-type: none"> • <i>Water quality impacts from sewerage effluent and grey water</i> (increased nutrient levels and contaminants in receiving waterways leading to increased algae growth, reduced light availability seagrass and inshore corals, smothering seagrass, coral and benthic habitat), toxic algae blooms (e.g. mortality of aquatic fauna) resulting in the <i>degradation or loss of foraging and breeding habitat or migration pathways</i> for threatened and migratory fauna (e.g. dugongs and turtles) • <i>Direct or indirect disturbances</i> to ecological values contributing to the GBRMP and OUV of WHAs, and the values of national heritage places (e.g. temporarily or permanently reducing the ecological integrity of natural systems) <p>Therefore, the matters that may be affected by these impacts are: WH, NH, Ramsar, TSEC, MS, CW, GBRMP</p>
Non-point sources of pollution (e.g. stormwater runoff, irrigation activities)	<ul style="list-style-type: none"> • Increased volume of stormwater runoff and <i>reduced water quality</i> associated with the transport of sediments and contaminants to receiving waterways resulting in the <i>degradation of habitat</i> for threatened and migratory species • Increased runoff <i>containing debris and litter</i> leading to injury and mortality of threatened and migratory marine fauna • <i>Reduced surface and groundwater water quality</i> resulting from seepage of septic tank effluent, fuel from fuel storage resulting in the <i>degradation of habitat</i> for threatened and migratory species • End-use impacts associated with water used for irrigation of golf courses and landscaped areas. This involves increased runoff containing pesticides, herbicides and other chemicals entering receiving waterways and downstream water quality impacts on wetlands, coastal and marine habitats resulting in <i>degradation of habitat</i> for threatened species and migratory species • <i>Direct or indirect disturbances</i> to ecological values contributing to the GBRMP and OUV of WHAs, and the values of national heritage places (e.g. temporarily or permanently reducing the ecological integrity of natural systems) <p>Therefore, the matters that may be affected by these impacts are: WH, NH, Ramsar, TSEC, MS, CW, GBRMP</p>

Impact assessment	
Sources of risk	Impacts
Use of personal and commercial vehicles	<ul style="list-style-type: none"> • <i>Potential injury and mortality</i> to threatened and migratory fauna associated with direct physical interaction with equipment and vehicles • <i>Disturbance to threatened and migratory species</i> associated with construction equipment and vehicles such as noise and vibration, air quality (e.g. dust, carbon and other greenhouse gas emissions), light pollution (if used at night), pollutants (e.g. oils leaks and spills) • Spread of pests, weeds and disease resulting in <i>degradation of ecological communities</i> and reducing resilience to ongoing and future threats • <i>Reduced aesthetics of the landscape</i> resulting in the degradation of OUV of WHAs and national heritage values (e.g. loss of natural beauty) <p>Therefore, the matters that may be affected by these impacts are: TSEC, MS, WH, NH, Ramsar, CW, GBRMP</p>
Domestic animals	<ul style="list-style-type: none"> • <i>Disturbance, injury and mortality</i> of threatened and migratory fauna, for example through pet interactions with quolls or cassowaries • Spread of pests, weeds and disease resulting in <i>degradation of ecological communities</i> and reducing resilience to ongoing and future threats • <i>Displacement of species</i> from habitat leading to fragmentation of populations • <i>Direct or indirect disturbances</i> to ecological values contributing to the OUV of the Wet Tropics WHAs, and the values of national heritage places (e.g. dogs interacting with cassowaries as a value of the world heritage property) <p>Therefore, the matters in particular that may be affected by these impacts are: WH, NH, Ramsar TSEC, MS, CW, GBRMP</p>
Ongoing use impacts – including operation and maintenance of infrastructure	<ul style="list-style-type: none"> • <i>Wastewater discharge</i> contributing to water quality impacts including increased rates of sedimentation and nutrients (impacting on seagrass and inshore corals) • <i>Disturbance of species</i> associated with operation and maintenance such as noise and vibration, air quality, light pollution, pollutants (e.g. oils leaks and spills) • <i>Altered behavioural patterns</i> of threatened and migratory marine fauna (feeding, foraging, breeding, migration) leading to increased fragmentation between populations • <i>Introduction and spread of pests, weeds and disease</i> leading to displacement of species and reduction of connectivity between populations • <i>Water quality impacts</i> associated with surface runoff containing sediments and increasing turbidity, which may lead to reduced light availability, increased temperatures and reduced dissolved oxygen availability resulting in the degradation of foraging habitat (e.g. seagrass) for marine threatened and migratory fauna • <i>Alterations to fire regimes leading to degradation</i> of terrestrial coastal habitat supporting threatened and migratory fauna species, potentially fragmenting populations and decreasing resilience • <i>Reduced aesthetics of the landscape</i> resulting in the degradation of OUV of WHAs and national heritage values (e.g. loss of natural beauty) • <i>Potential injury and mortality</i> to threatened and migratory fauna associated with direct physical interaction with equipment and vehicles <p>Therefore, the matters that may be affected by these impacts are: WH, NH, Ramsar, TSEC, MS, CW, GBRMP</p>

Impact assessment	
Sources of risk	Impacts
Storage of waste (e.g. domestic, regulated and hazardous wastes)	<ul style="list-style-type: none"> • <i>Water quality impacts</i> associated with runoff from storage areas containing litter and debris, hydrocarbons and other contaminants which degrades habitat, reducing quality and availability for threatened and migratory marine species • <i>Reduced surface and groundwater water quality</i> resulting from seepage of septic tank effluent, fuel or waste from storage areas, resulting in the <i>degradation of habitat</i> for threatened and migratory species • <i>Direct or indirect disturbances</i> to ecological values contributing to the GBRMP and OUV of WHAs, and the values of national heritage places (e.g. temporarily or permanently reducing the ecological integrity of natural systems) • <i>Air quality impacts</i> (e.g. odours) resulting in impacts to natural values of world heritage properties <p>Therefore, the matters that may be affected by these impacts are: WH, NH, TSEC, MS, Ramsar, CW, GBRMP</p>
Recreational and commercial marine vessel traffic	<ul style="list-style-type: none"> • <i>Disturbances to marine fauna</i> (e.g. from noise associated with vessels) potentially leading to fragmentation of populations, reduction in connectivity, reduction in foraging, breeding and dispersal areas • <i>Altered behavioural patterns</i> of threatened and migratory marine fauna (e.g. feeding, foraging, breeding, migration) leading to increased fragmentation between populations • Bank erosion and scouring of seabed associated vessel wakes resulting the <i>degradation of foraging habitat</i> for threatened and migratory fauna • Increased <i>debris and litter</i> leading to injury and mortality of threatened and migratory marine fauna • <i>Reduced water quality</i> associated with minor spills and anti-fouling paints resulting in the <i>degradation of habitat</i> and physical health of threatened and migratory fauna • <i>Reduced water quality</i> from accidental waste discharge (e.g. effluent, sewerage, bilge), resulting in the <i>degradation of habitat</i> for threatened and migratory species • <i>Collision</i> (e.g. boat strike) resulting in injury and mortality of marine fauna (particularly turtles and dugong) • <i>Damage to habitat</i> associated with accidental groundings impacting the ecological values contributing to the GBRMP and OUV of WHAs, and the values of national heritage places (e.g. temporarily or permanently reducing the ecological integrity of natural systems) • <i>Disturbances, or mortality, of threatened and migratory species</i> resulting in the reduction of access to traditional hunting sources for local Indigenous groups <p>Therefore, the matters that may be affected by these impacts are: WH, NH, Ramsar, TSEC, MS, CW, GBRMP</p>
<p>Recreation and tourism in the GBR coastal zone:</p> <p>Water activities including snorkelling, diving, swimming, recreational fishing</p> <p>Land activities including off-road driving, cycling, bush walking, camping, recreational fishing and swimming (vessel-based risks and impacts are discussed above)</p>	<ul style="list-style-type: none"> • <i>Disturbances to fauna</i> associated with noise and altered light regimes resulting in altered behavioural patterns of threatened and migratory marine fauna (e.g. feeding, foraging, breeding, migration) and increased fragmentation between populations • <i>Degradation of values associated with the GBRMP</i> associated with trampling, fire wood collection, erosion, spreading weeds and disease and increases in feral and domestic animals on islands and coastal areas • <i>Direct damage to habitat</i> (particularly coral) associated with water activities resulting in degradation of habitat for threatened and migratory fauna and degradation of world heritage and national heritage values • <i>Direct or indirect disturbances</i> to ecological values contributing to the GBRMP and OUV of WHAs, and the values of national heritage places (e.g. temporarily or permanently reducing the ecological integrity of natural systems) <p>Therefore, the matters that may be affected by these impacts are: WH, NH, Ramsar, TSEC, MS, CW, GBRMP</p>

4. The Program and MNES

The Program will ensure consideration and management of impacts on MNES and OUV in accordance with Part 3 of the EPBC Act.

The MNES that could be impacted by activities under the Program are:

- the world heritage values of declared world heritage properties
- the national heritage values of declared national heritage places
- the ecological character of wetlands of international importance
- listed threatened species and ecological communities
- listed migratory species
- Commonwealth marine area
- the Great Barrier Reef Marine Park.

4.1 World heritage

The World Heritage Convention was adopted by UNESCO in 1972 and Australia became a signatory to the Convention in 1974. The World Heritage List, established by the convention, comprises those parts of the world's cultural and natural heritage which are so important, that they are considered to be of outstanding value to humanity as a whole. This is known as OUV. State Parties to the Convention undertake to identify, protect, preserve and present this OUV.

The WHC adopts a Statement of OUV for each property on the World Heritage List. It is the key reference for the effective protection and management of the property.

To be considered of OUV, a property needs to:

- meet 1 or more of the 10 world heritage assessment criteria
- meet the world heritage conditions of integrity
- if a cultural property, meet the world heritage conditions of authenticity, and
- have an adequate system of protection and management to safeguard its future.

The Statement of OUV comprises a summary of the WHC's determination that the property has OUV and identifies the criteria under which the property was inscribed, including the assessments of the conditions of integrity or authenticity and of the requirements for protection and management in force.

Properties on the World Heritage List are protected under Part 3 of the EPBC Act as MNES and the matter protected is the property's world heritage values. For the purposes of the EPBC Act, a property's world heritage values are essentially the same as the Statement of OUV.

The two properties relevant to this strategic assessment are the GBRWHA and the Wet Tropics World Heritage Area (WTWHA). The statements of OUV, a description of values against the criteria and an analysis of condition and trend for these two WHAs were examined in the Queensland Government's draft Strategic Assessment Report in Section 4.2. Further detail on the GBRWHA is discussed in the complementary GBRMPA Strategic Assessment Report.

4.1.1 Protection of world heritage under the EPBC Act

World heritage values are the 'matter' protected under the EPBC Act, and a statement of OUV is essentially the list of a property's world heritage values. Under the EPBC Act, a declared world heritage property is an area that has either been included in the World Heritage List or declared as such by the Minister to be a world heritage property. The EPBC Act sets out that a property has world heritage values if it contains natural heritage or cultural heritage, as defined in the World Heritage Convention, where that heritage has OUV.

The two world heritage properties relevant to this strategic assessment include the GBR which is listed only for its natural heritage values, and the Wet Tropics listing was amended in 2012 to include the national Indigenous cultural values.

Natural heritage values can include features such as geology or geomorphological landscapes, biological and ecological values which have evolutionary significance, are rare or endangered or of endemic importance and places which have exceptional natural beauty or aesthetic characteristics.

Indigenous cultural heritage is made up of tangible and intangible elements of all cultural practices, resources and knowledge developed, nurtured and defined by Aboriginal and Torres Strait Islander peoples. Traditional Owners express their cultural heritage through their relationships with country, people, beliefs, knowledge, law and lore, language, symbols, ways of living, sea, land and objects, all of which arise from their spirituality.

A range of management arrangements are in place, or planned, for each Australian property on the World Heritage List. The arrangements include advisory committees and plans of management.

Assessment of activities under the EPBC Act

Under the EPBC Act, an action or class of actions cannot be approved if the action/s is inconsistent with:

- Australia's obligations under the World Heritage Convention
- the Australian World Heritage Management Principles (Schedule 5 of the EPBC Regulations)
- a plan that has been prepared for the management of the declared world heritage property under section 316 or as described in section 321 of the EPBC Act.

Additionally, an action or class of actions cannot be approved if the action/s would have an unacceptable impact on a world heritage property.

Whether an activity would have an unacceptable impact depends on the size, scale and intensity of any potential impacts and the values that may be affected. Under the EPBC Act Significant Impact Guidelines 1.1⁸, an activity is likely to have a significant impact on the world heritage values of a declared world heritage property if there is a real chance or possibility that it will cause:

- one or more of the world heritage values to be lost
- one or more of the world heritage values to be degraded or destroyed
- one or more of the world heritage values to be notably altered, modified, obscured or diminished.

Relevant documents that are considered when assessing the potential impacts and risks to world heritage properties include the Statement of OUV, any specific policy document such as the EPBC Act Referral Guidelines for the OUV of the Great Barrier Reef World Heritage Area⁹ and Plans of Management (if relevant).

EPBC Act Referral Guidelines for the OUV of the GBRWHA

The EPBC Act Referral Guidelines for the OUV of the GBRWHA have been developed to assist proponents of a development to determine whether an action needs to be referred to the Minister for consideration in relation to the GBRWHA. Guidance is provided on:

- the concept of OUV
- the types of actions that may require a referral
- how to avoid, reduce or manage impacts on the OUV of the GBRWHA.

Plans of management

Plans of management are used to formulate and implement planning so as to promote the wise use and conservation of world heritage properties. Plans of management should be consistent with the World Heritage Convention and the EPBC Regulations 2000 (Australian World Heritage Management Principles).

Section 316 of the EPBC Act states that the Australian Government is required to make a plan of management for world heritage properties entirely within one or more Commonwealth areas, but not within a Commonwealth Reserve. For all other world heritage properties, best endeavours are being used to ensure that there is a plan of management in place that is consistent with the EPBC Regulations 2000 (Australian World Heritage Management Principles).

According to the Australian World Heritage Management Principles, the primary purpose of management of a world heritage property is to identify, protect, conserve, present, transmit to future generations and, if appropriate, rehabilitate the world heritage values of the property.

4.1.2 Protection of world heritage under the Program

The Queensland Government has committed to identify, protect, conserve and transmit the OUV of world heritage properties to future generations.

⁸ <http://www.environment.gov.au/resource/significant-impact-guidelines-11-matters-national-environmental-significance>

⁹ <http://www.environment.gov.au/resource/draft-epbc-act-referral-guidelines-outstanding-universal-value-great-barrier-reef-world>

The Program contains a clear prohibition in relation to mining activities within the boundaries of the GBRWHA which is consistent with maintaining the OUV of these areas. Under the IGA, the Queensland Government has committed to not allowing mining activities in the GBRWHA.

Under the NC Act a mining interest (i.e. any activity authorised under the *Mineral Resources Act 1989*) cannot be granted in a national park. Mining is also a prohibited activity in the wet tropics area under the Wet Tropic Management Plan 1998 except if it is under a licence, permit or other authority given under the *Mineral Resources Act 1989*.

A case study on how the Coordinator-General assesses a mining application within a world heritage property is in Section 4.1.4.

Potential impacts of activities

Actions that are likely to have a significant impact on the values of a world heritage property will be addressed by the Program in the planning or development assessment process.

The potential impacts on any world heritage property are dependent on the world heritage values of that place and the location and nature of the action being proposed.

Assessment of activities through EIS processes

The Program outlines the planning process and describes the EIS processes that will be undertaken for activities in the GBR coastal zone. The EIS processes require proponents to identify and demonstrate that any impacts on a world heritage property will be sustainable and of an acceptable level.

The EIS processes require the preparation of EIS documentation and adequate opportunity for public consultation as described in the Program Report.

To assist proponents to satisfactorily consider world heritage properties in their preparation of EIS documents, the Queensland and Australian governments will work together to develop MNES guidelines that proponents will have regard to in preparing a project proposal and EIS documents.

The MNES guidelines will:

- guide proponents to DOE's Protected Matters Search Tool to determine if the project may be in, adjacent to or near a world heritage property
- direct proponents to the relevant guidance documents including statements of OUV, plans of management and EPBC Act guidance documents
- require proponents proposing activities that may potentially impact the GBRWHA to consider the EPBC Act Referral Guidelines for the OUV of the GBRWHA and any other guidance prepared in this regard
- require a description of the world heritage values that could be impacted by the proposed activity
- require an analysis of the potential risks and impacts to those values
- require identification of appropriate environmental management strategies
- guide proponents to the Australian Government's offset policy if there are offset requirements for MNES

- provide examples of what could be considered an unacceptable impact on a world heritage property.

The Queensland Government will work with the Australian Government, including GBRMPA, to develop a cumulative impact assessment guideline that will provide guidance to proponents undertaking a cumulative impact assessment.

Queensland Government responsibilities

In the planning and EIS process, the Queensland Government will have regard to relevant policy documents, guidelines, Statements of OUV and plans of management.

The Program applies the principles of ESD through the ‘avoid, mitigate, offset’ hierarchy when undertaking both planning and development assessment activities regarding potential impacts to world heritage.

The EIS processes will ensure a rigorous assessment of the proponent’s project proposal and documentation, including the appropriateness and acceptability of identified environmental management arrangements.

Outcome-based conditions applied to projects by the Queensland Government will outline minimum requirements while environmental management plans associated with projects will contain mandatory reporting and detailed mitigation measures required to minimise impacts as far as possible. Compliance measures can be applied to proponents who do not adhere to conditions.

The Program will also ensure an assessment of the proponent’s capability to implement the environmental management arrangements including monitoring, reporting, adaptive management and offset requirements.

The Australian Government’s offset policy will be implemented for MNES under the Program, ensuring a net benefit to MNES. The Queensland Government’s offset policy will be implemented for state matters.

4.1.3 Outcomes for world heritage under the Program

Regarding world heritage properties, the Queensland Government commits to:

- (1) not accepting any project proposal that involves mining in the GBRWHA
- (2) not approving a project that proposes activities that will contravene a plan of management for a world heritage Property or proposes unacceptable impacts to the world heritage values of a world heritage Property
- (3) ensuring there are no unacceptable impacts to world heritage properties resulting from developments that undertake an EIS process under the Program.

Other relevant commitments under the Program

The Program Report details other commitments that directly or indirectly support the protection of world heritage values including the implementation of the QPS, the North East Shipping Management Plan, ongoing monitoring and reporting including explicit consideration of MNES, and the LTSP and associated initiatives. The Program also supports the Queensland Government’s commitment for the protection of world heritage through initiatives such as the Gladstone Healthy Harbour Partnership and Queensland Wetlands and Wet Tropics Programs.

Case study 1—World Heritage: Prohibition of mining activity

4.1.4 Case study 1—World heritage: Prohibition of mining activity

This case study is a hypothetical scenario and does not relate to any existing or proposed project. It has been written to show how the EIS process of the SDPWO Act can be used to manage impacts of future projects on MNES. The scenario presented in the case study is assumed to be of a scale that warrants declaration as a coordinated project under the SDPWO Act.

Purpose

The purpose of this case study is to demonstrate how the Program would be applied to ensure there are no unacceptable impacts on world heritage sites.

For ease of illustration, this case study uses the example of how the SDPWO Act operates to protect WHA controlling provisions under the EPBC Act (controlling provisions). Note, a live EIS project proposal undergoing an assessment under this SDPWO Act would consider all relevant MNES covered by the Program.

This case study specifically refers to a proposed tin mine to show how the Program, in particular the EIS process under the SDPWO Act, would be applied to protect world heritage sites from mining.

The EIS process under the SDPWO Act is in practice a thorough and rigorous process that considers the social, economic and environmental effects of a project, including impacts on MNES and OUV. This case study has been developed to show how the Program would protect world heritage sites using mining as an example. Through the EIS process the Coordinator-General considers all environmental values affected by the project with specific reference to MNES.

Scenario

A proponent is seeking approval for a new metalliferous mining activity in a national park area within the Wet Tropics World Heritage Area (WTWHA).

Development of the tin and tungsten deposits would be by conventional, metalliferous, open-cut mine using diesel powered equipment, mining scheelite ore with a waste to ore ratio of approximately four to one. Up to 1 M tonnes of ore would be mined per year for at least 10 years. Waste rock would be dumped in out of pit landforms currently downhill of the mine.

Major activities of the project include ore processing, tailings management, waste rock, stormwater drainage and storage, transport, water supply, power and waste management. As this is a high rainfall area the effect of seasonal rainfall on water management on site to prevent the release of unauthorised contaminants from the site is a critical consideration. Thus, the activity has the potential to have a significant impact on the integrity of the WTWHA and its OUV.

In this case the Coordinator-General decided not to declare the project a coordinated project under section 26(1) of the SDPWO Act. The reasons for the Coordinator-General's decision were based on the findings that the proposal would be inconsistent with relevant planning schemes or policy frameworks of a local government, the

Case study 1—World Heritage: Prohibition of mining activity

Queensland or Australian governments (section 27(1)(b)); and relevant Queensland Government policies and priorities (section 27(1)(c)).

As the proposed location of the mine is within a national park, this activity would not be permitted. Under the *Nature Conservation Act 1992* a mining interest (i.e. any activity authorised under the *Mineral Resources Act 1989*) cannot be granted in relation to a national park. Mining is also a prohibited activity in the wet tropics area under the Wet Tropic Management Plan 1998 except if it is under a licence, permit or other authority given under the *Minerals Resource Act 1989*.

It was also determined that the project would not be consistent in meeting:

- Outcomes of the *Wet Tropics Management Authority Strategic Plan 2013-2018* in meeting Australia's international obligations under the WH Convention which are to ensure the protection, conservation, presentation, rehabilitation, and transmission to future generations, of the natural heritage of the area. The project would not meet Australia's international obligations under the Convention as it would have the potential to adversely affect the integrity of the Area and its OUV.
- Management principles for national parks. Under the *Nature Conservation Act 1992* a national park is managed to provide to the greatest possible extent, for the permanent preservation of the area's natural condition and the protection of the area's cultural resources and values; and to ensure that the only use of the area is nature-based and ecologically sustainable.
- The desired regional outcome for the natural environment of the *Far North Queensland Regional Plan 2009-2031*: The region's terrestrial and aquatic natural assets, which include the Wet Tropics and Great Barrier Reef World Heritage Areas, are protected and enhanced to increase their resilience to the impacts of climate change. The project would be expected to have an adverse impact on biological and ecological values of the WTWHA by fragmenting, isolating or substantially damaging habitat that is important for the conservation of biological diversity in the WTWHA and thereby impacting on areas resilience to threats such as climate change.

The Coordinator-General would not declare a coordinated project that is inconsistent with local, Queensland and Australian Government policy frameworks and relevant planning schemes which are based on preventing unacceptable impacts on WHAs.

Case study 2—World Heritage, GBR Marine Park and Commonwealth marine areas: Resort development

4.1.5 Case study 2—World heritage, GBR Marine Park and Commonwealth marine areas: Resort development

This case study is a hypothetical scenario and does not relate to any existing or proposed project. It has been written to show how the EIS process of the SDPWO Act can be used to manage impacts of future projects on MNES. The scenario presented in the case study is assumed to be of a scale that warrants declaration as a coordinated project under the SDPWO Act.

Purpose

The purpose of this case study is to demonstrate how the Program would be applied to ensure there are no unacceptable impacts on the OUV and integrity of the GBRWHA, GBRMP and Commonwealth marine environment.

For ease of illustration, this case study uses the example of how the SDPWO Act would protect the GBRWHA, GBRMP and Commonwealth marine environment which are MNES controlling provisions under the EPBC Act (sections 12 and 15A; 24B and 24C; and 23 and 24A respectively). It is important to note that an actual assessment under this SDPWO Act would fully consider all relevant MNES covered by the Program.

This case study specifically refers to the GBRWHA, GBRMP and the Commonwealth marine environment to demonstrate how the Program, and in particular the EIS process under the SDPWO Act, would be applied to identify the potential impacts of resort development and measures to protect OUV and integrity of the GBRWHA, GBRMP and Commonwealth marine environment.

The EIS process under the SDPWO Act is a thorough and rigorous process that considers the social, economic and environmental effects of a project, including impacts on MNES and OUV. Through the EIS process, the Coordinator-General considers all environmental values affected by the project, including specific references to MNES.

As discussed in Chapter 3 of this report, resort development activities generally involve land clearance and earthworks to prepare the site, construction works and then ongoing activities associated with the operation of the resort (e.g. sewage treatment, potable water treatment, solid waste management, operation of marine vessels including the ferry, daily tours/fishing charters and private boats). These activities could lead to run-off of contaminated water on to the reef and would increase the risk of vessel collisions with marine mega-fauna (e.g. turtles, dugong and dolphins) and disturbances to marine fauna associated with vessel movements and noise.

Resort development in the GBR coastal zone may also involve tidal works (including dredging) for the development of marinas. Such works can result in water quality impacts (i.e. increased turbidity and suspended sediment concentrations, which may result in a reduction in light for light dependent ecosystems such as seagrass and corals) and may also result in direct disturbances to the marine environment (e.g. removal of seagrass). Development in the GBR coastal zone may also result in visual amenity impacts which have the potential to impact on OUV of the WHA.

Case study 2—World Heritage, GBR Marine Park and Commonwealth marine areas: Resort development

The activities associated with a resort development project create the potential to impact on multiple MNES. Details of these activities, the associated risks and their impacts are included in Table 2 and 3.

This case study outlines the process from initial application by a developer to the licensing and development approval process as well as conditioning, monitoring, reporting and auditing.

Scenario

A proponent is seeking approval for development of a resort on an island in the Whitsunday Islands which is located within the GBRWHA and is surrounded by the GBRMP. The proposal includes:

- new hotel comprising 100 rooms and day spa
- 500 low-rise tourism resort villas and 100 apartments
- retail village with a mix of cafes, restaurants, clothing shops
- marina comprising 150 berths and yacht club (servicing fishing charters, daily tours to the reef and privately owned vessels)
- ferry terminal providing regular daily services to the mainland and to other Islands in the Whitsunday group
- conservation area.

As the project will require multiple approvals at the local, state and Commonwealth levels and would involve significant capital investment, the proponent has applied to the Coordinator-General for the project to be declared a coordinated project under the SDPWO Act. Due to the project's scope and complexity and the potential significant environmental effects of the project, including on the GBRWHA, GBRMP and Commonwealth marine environment, the Coordinator-General is likely to declare this a coordinated project for which an EIS is required, under Part 4 of the SDPWO Act.

The project has the potential to cause impacts to elements of the terrestrial and marine environment which are important to the OUV and integrity of the GBRWHA and the values of the GBRMP including but not limited to impacts on water quality, species and their habitats and visual amenity.

As the proposed development site is not located within a Commonwealth marine area the project is not expected to directly impact on the Commonwealth marine environment. However, the project may have indirect impact on the commonwealth marine environment from increased recreational boating activity (e.g. fishing charters and day tours). The activity therefore has the potential to have a significant impact on the GBRWHA, GBRMP and Commonwealth marine environment.

1. Determine the likelihood of a significant impact on MNES and subsequent assessment process

At the application stage, the proponent must provide an Initial Advice Statement (IAS) which describes the proposal and discusses potential environmental impacts of the project, on both the general environment and MNES, including GBRWHA, GBRMP and Commonwealth marine environment.

Case study 2—World Heritage, GBR Marine Park and Commonwealth marine areas: Resort development

The proponent would use the Australian Government's Protected Matters Search Tool for identifying potentially relevant MNES in the project area and assessing potential impacts.

The IAS would need to include a description of the project's key components and the proposed construction and operational activities, a description of the GBRWHA, GBRMP and Commonwealth marine environment values likely to be impacted by the project, the nature and extent of likely impacts and an outline of proposed measures that will be implemented to reduce impacts on these values.

From the information provided in the IAS, the Coordinator-General must be able to gain an understanding of the potential scale and nature of the impacts to GBRWHA, GBRMP and Commonwealth marine environment values that would be associated with the proposed project.

The content of the IAS informs the preparation of the terms of reference (TOR) for the EIS, which would include specific references to the GBRWHA, GBRMP and Commonwealth marine environment.

For the GBRWHA MNES, the TOR will require that the EIS:

- identify and describe the characteristics and values of the GBRWHA that are likely to be impacted by the project. Values include, but are not restricted to: water quality, exceptional natural beauty and aesthetic importance of the area, species of conservation significance and the significant regional habitat for listed threatened and migratory species
- provide an assessment of the relevant impacts of the proposed development on the characteristics and values, and how this in turn impacts on the overall values of the GBRWHA including reference to the statement of OUV for the GBRWHA
- describe the relevant impacts of the proposal on the integrity and outstanding universal value of the GBRWHA, including, but not limited to, impacts as a result of changes to coastal processes and water quality, and visual amenity impacts
- assess the impacts of the proposed development against relevant reports and documents published as part of the GBR and GBR coast strategic assessments
- describe the residual impacts of the proposed development after all proposed avoidance and mitigation measures are taken into account. Where residual impacts to the outstanding universal value of the GBRWHA are likely to be significant, include proposed offsets consistent with the EPBC Act Environmental Offsets Policy.

For projects potentially impacting on the GBRMP, the TOR will require that the EIS:

- identify and describe the environment in the GBRMP that is likely to be impacted by the project
- provide an assessment of the relevant impacts of the proposed development on the environment in the GBRMP with regard to: the object of the EPBC Act; the object of the *Great Barrier Reef Marine Parks Act 1975*; and the *Great Barrier Reef Marine Park Regulations 1983*

Case study 2—World Heritage, GBR Marine Park and Commonwealth marine areas: Resort development

- describe the residual impacts of the proposed development after all proposed avoidance and mitigation measures are taken into account. Where residual impacts to the environment in the GBRMP are likely to be significant, include proposed offsets consistent with the EPBC Act Environmental Offsets Policy.

For projects potentially impacting on Commonwealth marine areas, the TOR will require that the EIS:

- identify and describe the Commonwealth marine environment that is likely to be impacted by the project
- provide an assessment of the relevant impacts of the proposed development on the Commonwealth marine environment with regard to: the object of the EPBC Act; the object of the marine bioregional plan; and the object of Australian IUCN reserve management principles
- describe the residual impacts of the proposed development after all proposed avoidance and mitigation measures are taken into account. Where residual impacts to the Commonwealth marine environment are likely to be significant, include proposed offsets consistent with the EPBC Act Environmental Offsets Policy.

The Coordinator-General's 'coordinated project' declaration will ensure that a resort development activity with the potential to cause significant environmental impacts on MNES such as the GBRWHA and GBRMP would be assessed through an EIS process under the SDPWO Act.

2. Assess the adequacy of the information provided and make an informed decision

The proponent must prepare the EIS according to the TOR provided by the Coordinator-General which would include specific and detailed information on the potential impacts on the GBRWHA, GBRMP and Commonwealth marine environment as the relevant MNES. The proponent would be required to address MNES in a standalone chapter of the EIS.

The adequacy of the TOR to cover all matters that must be addressed in the EIS is reviewed by the Coordinator-General, state government advisory agencies and the public, including key stakeholders, through a public consultation process on the draft TOR.

The proponent would be directed to the MNES guidelines (Commitment 6) and to the *EPBC Act referral guidelines for the outstanding universal value of the Great Barrier Reef World Heritage Area* which provide guidance on how impacts on the GBRWHA, GBRMP and Commonwealth marine environment will need to be addressed to adequately meet EPBC Act requirements.

The proponent would need to use the DOE's Protected Matters Search Tool to determine the boundaries of the GBRWHA, GBRMP and the Commonwealth marine environment in relation to their project and any other MNES that may be impacted by the project. In doing so, the proponent would also need to consider the EPBC Act Significant Impact Guidelines for the GBRWHA, GBRMP and the Commonwealth marine environment and other relevant guidelines to determine the potential impacts of

Case study 2—World Heritage, GBR Marine Park and Commonwealth marine areas: Resort development

the project. These documents would also assist the proponent to determine the general characteristics of the site, potential impacts and other threats.

After using the above policy and guidance documents, the proponent would need to undertake on-the-ground studies, surveys and research. Many of the studies undertaken will require an assessment covering all seasons of a year. These ground truthing activities will ensure there is accurate, site-specific identification of the EPBC Act protected matters of the area and the potential impacts on those MNES.

The EIS would need to provide a description of the resort development activity, in this case the resort components (including all elements of the resort development and the operational activities of the resort that are essential for informing the nature and scale of the activity), a full description of all emissions, characteristics of the potentially impacted area with specific reference to the GBRWHA (OUV and integrity), GBRMP and the Commonwealth marine environment. It must also include and any other activities in the location (proposed, approved or already undertaken) impacting on the immediate environment or adjacent waters which may affect the GBRWHA (OUV and integrity), GBRMP and Commonwealth marine environment.

The EIS describes the level of impact of the project on the GBRWHA, GBRMP and the Commonwealth marine environment while also having regard to other activities in the area contributing to those impacts. The EIS gives due consideration to the residual and cumulative impacts caused by the project in the context of the existing environmental condition in the area.

The description of the activity and its impacts on the GBRWHA (OUV and integrity), GBRMP and Commonwealth marine environment and the description of other activities impacting on these must be sufficient to inform the risk assessment of potential impacts on the GBRWHA and GBRMP and Commonwealth marine areas. This includes existing condition and threats and associated susceptibility to impacts potentially associated with the project.

In describing the values of the GBRWHA (including OUV), GBRMP and Commonwealth marine environment, and the potential impacts within the EIS, the proponent would need to consider the *EPBC Act Significant Impact Guidelines* (for the GBRWHA, GBRMP, Commonwealth marine environment), relevant conservation advice, threat abatement plans (e.g. marine debris) and recovery plans for species that are important to the value of the GBRWHA, GBRMP, and marine bioregional plans for Commonwealth marine reserves.

The EIS must provide sufficient information to enable the Coordinator-General to determine whether reasonable measures are being proposed to avoid and mitigate impacts on the GBRWHA, GBRMP and the Commonwealth marine environment and whether any significant residual impacts will require an offset.

To ensure that adequate information has been provided in the EIS, state government advisory agencies, including but not limited to DEHP, DAFF, the Department of National Parks, Recreation, Sport and Racing (DNPRSR) and local government are specifically invited to make a submission on the EIS during the public consultation period. Briefings are held with advisory agencies to provide guidance on the EIS contents and critical issues.

Case study 2—World Heritage, GBR Marine Park and Commonwealth marine areas: Resort development

These agencies would provide specialist advice on potential impacts associated with the resort development and the appropriateness and likely effectiveness of the identified mitigation measures and where appropriate suggest possible offsets, monitoring and auditing requirements.

The proponent must give consideration to all comments made in the consultation phase including those from advisory agencies and the public. The proponent may alter the design of the project to reduce the environmental impact in response to submissions.

If the Coordinator-General is not satisfied that the EIS provides sufficient information on environmental impacts to undertake an adequate evaluation of the project, specifically the GBRWHA (OUV and integrity), GBRMP and Commonwealth marine environment in this case, additional information would be requested from the proponent.

For example, the Coordinator-General may not be satisfied that the EIS provides sufficient information on the management of visual amenity and water quality impacts and will request the proponent to provide additional information. Whilst reviewing the draft additional material, the Coordinator-General may seek advice from advisory agencies on the adequacy of the additional information, particularly in addressing matters raised in submissions on the EIS, including public submissions.

The advisory agencies recommend approval conditions for the Coordinator-General's consideration during the preparation of the evaluation report on the EIS.

Offsets

As this project involves potential impacts on turtles and dugong which are important values of the GBRWHA, GBRMP and the Commonwealth marine environment including a potential risk of boat strike and the removal of important foraging habitat (e.g. seagrass), the EIS would be required to include a draft offsets strategy proposal for the Coordinator-General's consideration.

The offsets strategy would need to describe the proposed offsets for these residual impacts to demonstrate how it will provide an appropriate benefit for these species. Offsets may also be required for the loss of world heritage or other values.

The Australian Government offset policy would be used when determining the adequacy of the offset proposal to compensate for residual significant impacts to the species that are values to the GBRWHA, GBRMP and Commonwealth marine environment.

Once the Coordinator-General considers that the EIS provides sufficient information to appropriately assess the impacts of the project and the acceptability of the impacts on the GBRWHA, GBRMP and Commonwealth marine environment, the process proceeds to the evaluation stage.

The Coordinator-General will not accept an EIS that does not provide adequate information regarding the values of and potential impacts on the GBRWHA, GBRMP and the Commonwealth marine environment, and the inclusion of appropriate mitigation strategies (including offsets for residual impacts) which reduce impacts to an acceptable level.

Case study 2—World Heritage, GBR Marine Park and Commonwealth marine areas: Resort development

3. Public consultation occurs in a transparent manner and outcomes are addressed in the EIS

The EIS process includes at least one opportunity for the public to be consulted on the potential impacts of the project, and proposed avoidance, mitigation and offsets measures. Public comment can be sought on the draft TOR and must be sought on the EIS. Where a project has changed significantly since the EIS public consultation phase, further public consultation may be sought on additional information requested by the Coordinator-General.

Public consultation must be notified via various methods including media releases, newspaper advertisements, webpage updates, public displays at libraries and letters to local, state and federal members, Queensland and Australian government Ministers, and relevant state advisory agencies. Under the SDPWO Act, statutory public notices are required for each public consultation process to ensure the public is formally notified of the opportunity to provide submissions on the EIS.

Meetings may be arranged by the Coordinator-General's office between the proponent, advisory agencies and key stakeholders to resolve any technical issues for the project (e.g. dredge material placement options) and/or to gain advice on other matters of interest or concern. Advisory agencies for this project that may be involved in such meetings would include but not limited to DEHP, DAFF and DNRM.

The EIS would be finalised, taking into account all the comments received during the consultation period and any other submission the Coordinator-General accepts.

The Coordinator-General will not accept a final TOR, EIS or additional information to the EIS that has not addressed the comments received during any public consultation process undertaken.

4. Determination of project acceptability—no unacceptable impacts on MNES

Step 1 – Coordinator-General's report

The Coordinator-General's report would determine that the proponent has adequately identified, avoided and mitigated the proposed environmental impacts, including those on the GBRWHA, GBRMP and Commonwealth marine environment, and where significant residual or cumulative impacts after avoidance and mitigation strategies have been implemented, that an offset strategy has been included.

The Coordinator-General will recommend conditions to ensure that there will not be unacceptable impacts to the GBRWHA, GBRMP and Commonwealth marine environment. The conditions would include the implementation of an agreed offsets strategy in accordance with the EPBC Act offsets strategy and any state offsets determined by the Coordinator-General.

Case study 2—World Heritage, GBR Marine Park and Commonwealth marine areas: Resort development

The Coordinator-General will not recommend that a project proceeds if it will result in unacceptable impacts to the GBRWHA, GBRMP and Commonwealth marine environment; or if it is inconsistent with a threat abatement plan or recovery plan relating to species that are important to the GBRWHA, GBRMP and Commonwealth marine environment (e.g. *Recovery Plan for Marine Turtles in Australia* and the *Threat Abatement Plan for the Impacts of Marine Debris on Vertebrate Marine Life*).

The Coordinator-General will also consider the conservation advice in regards to any species important to the GBRWHA, GBRMP and Commonwealth marine environment (e.g. *Approved Conservation Advice for Dermochelys coriacea [Leatherback Turtle]*).

Step 2 – Development approvals and conditioning

The Coordinator-General's report on the EIS is not an approval in itself. When completed, this report is sent to the Integrated Development Assessment System assessment manager and other assessment managers as supporting information for their consideration regarding development approval applications through the *Sustainable Planning Act 2009* (SP Act).

The proponent is also required to obtain all other development approvals and licences from local authorities (e.g. building approvals and material change of use approvals) and state government agencies (e.g. environmental authority, marine parks permit, fauna damage mitigation permit).

The conditions to protect the GBRWHA, GBRMP and Commonwealth marine environment outlined in the Coordinator-General's report will gain legal effect once they are attached to a development approval given under other specific legislation (e.g. SP Act or under the EPBC Act).

The assessment manager ultimately decides whether development approvals are granted for the proposed project. The assessment manager has the ability to refuse the project, even if the Coordinator-General's evaluation report has recommended that the project proceed.

If approvals are granted, the assessment managers must attach the Coordinator-General's conditions in regards to the GBRWHA, GBRMP and Commonwealth marine environment to the granted development approval, where appropriate.

The assessment manager may also impose further conditions on the development approvals in regards to the GBRWHA, GBRMP and Commonwealth marine environment, provided that they are not inconsistent with the conditions stated in the Coordinator-General's evaluation report.

In this case, the resort development project would require development approvals including but not limited to:

- preliminary approval for material change of use to override the planning scheme (section 242 of the SP Act)
- authorisation and sales permit/s before taking, destroying, accessing, sampling, quarrying or removing any forest products or quarry material extractive resources owned by the State unless an exemption applies under another Act—taking, destroying, accessing, sampling and quarrying resources—*Forestry Act 1959*

Case study 2—World Heritage, GBR Marine Park and Commonwealth marine areas: Resort development

- development permit for operational works—vegetation clearing—*Land Act 1994* and *Vegetation Management Act 1999*
- development permit for operational works—tidal works under the *Coastal Protection and Management Act 1995*
- development approval and environmental authority for relevant environmentally relevant activities (ERA)—*Environmental Protection Act 1994* and associated regulation and policies, including ERA 8—chemical storage, ERA 16—extractive activities including dredging and ERA 63—sewage treatment
- development permit for operational works—taking or interfering with water—*Water Act 2000*
- development permit for operational works—taking water from aquifers—*Water Supply (Safety and Reliability) Act 2008*
- development permit for operational works—if aspects of project that may impact on the a property as listed on the Queensland Heritage Register— *Queensland Heritage Act 1992*
- permit to carry out activities—aspects of project that may impact on areas or objects of Aboriginal cultural heritage significance—*Aboriginal Cultural Heritage Act 2003*.

The proposed offset strategy would also require endorsement by DEHP to ensure offsets for impacts to the GBRMP are appropriate and adequate.

Enforcement of conditions attached to a development approval is the responsibility of the assessment manager or the nominated responsible State agency.

Potential conditions

Possible outcome-focused conditions that could be applied through SPA or EP Act approvals to protect the GBRWHA and GBRMP from impacts of resort development may include, but are not limited to:

- Visual amenity condition. Building heights must not exceed three storeys for all buildings, with the exception of the buildings within the marina precinct and the resort hotel which must not exceed 5 storeys or 23 metres in height (whichever height is lower).
- Colour schemes and design. Buildings' colour schemes and design must blend in with the geography and vegetation of the surrounding area as outlined in the code of development
- Lighting. All lighting fixtures must be installed to prevent upward light spill.
- Water quality condition. A Receiving Environment Monitoring Program (REMP) must be developed and implemented to monitor, identify, describe and respond to any adverse impacts to:
 - surface water quality
 - water flows
 - aquatic flora and fauna
 - any receiving waters.

Case study 2—World Heritage, GBR Marine Park and Commonwealth marine areas: Resort development

- Listed threatened species' condition. Prior to the commencement of construction activities, a suitably qualified person must develop impact avoidance and mitigation management measures that maximise the ongoing protection and long-term conservation of EPBC Act listed matters known or likely to occur within the project area. Mitigation management measures must be supported by a program of monitoring and reporting to facilitate adaptive management, be consistent with the provisions of the NC Act and be implemented for all stages of the project construction and operations.
- Land use condition. The design and location of infrastructure must, to the greatest extent practicable, minimise:
 - adverse impacts to the functioning and biodiversity of ecosystems
 - adverse impacts to soil structure and soil quality
 - the clearing of native vegetation associated with the project
 - a Property Vegetation Management Plan (PVMP) which is consistent with section 11 of the *Vegetation Management Regulation 2012* must be implemented on the site.
- Offsets plan condition. The proponent must prepare a site based offsets plan to address significant residual impacts on the GBRWHA and GBRMP and Commonwealth marine environment. The offsets plan must be approved by the Coordinator-General, and implemented within one year of commencement of construction, or as directed by the Coordinator-General.

Case study 2—World Heritage, GBR Marine Park and Commonwealth marine areas: Resort development

Receiving Environment Monitoring Program

The REMP must include periodic monitoring for the effects of any release on the receiving environment as a result of contaminant releases to waters from the site.

The REMP must:

- assess the condition or state of receiving waters spatially within the REMP area, considering background water quality characteristics based on accurate and reliable monitoring data that takes into consideration temporal variation (e.g. seasonality)
- establish parameters to be monitored including but not limited to turbidity and Total Suspended Solids (TSS), nutrients, metals and metalloids and justify:
 - the parameters chosen
 - assumptions and choices made in preparation of the REMP.
- be designed to facilitate assessment against water quality objectives for the relevant environmental values that need to be protected
- detail monitoring locations and water quality indicators pertinent to the sensitive receptor types and locations that have been designed to:
 - determine the baseline condition of water quality and sensitive receptors (i.e., corals and seagrass meadows) within the zone of influence to a sufficient resolution to be capable of reliably detecting lethal and sublethal (stress) impacts
 - develop or adopt locally-relevant trigger values for key water quality indicators including turbidity
 - provide on-line real-time monitoring capability for key sediment plume-related indicators (including but not limited to turbidity, pH, EC).
- specify the frequency and timing of sampling required in order to reliably assess ambient conditions and to provide sufficient data to derive site specific background reference values in accordance with the *Environmental Protection (Water) Policy 2009* (Proserpine River, Whitsunday Island and O'Connell River Basins Environmental Values and Water Quality Objectives) (DEHP 2013)
- include, where appropriate, monitoring of metals/metalloids in sediments (in accordance with ANZECC and ARM CANZ 200027 and/or the most recent version of Australian Standard 5667.1)
- apply procedures and/or guidelines from ANZECC and ARM CANZ 2000 and other relevant guideline documents
- describe sampling and analysis methods and quality assurance and control
- justify all assumptions and choices made in preparation of the REMP.
- be implemented for a minimum of 12 months prior to commencement of construction activity and not cease until construction is completed.

A report outlining the findings of the REMP, including all monitoring results and interpretations must be prepared and made publicly available on the proponent's website annually, within one month of its completion and remain for the duration of the action. The first report must be published prior to the commencement of construction. This report must include an assessment of background reference water quality in the REMP area compared against the water quality objectives established in the REMP.

After at least 12 months of implementation of the REMP, the proponent must set discharge criteria for relevant parameters, against which future discharges from marina must be monitored.

Case study 2—World Heritage, GBR Marine Park and Commonwealth marine areas: Resort development

Step 3 – Monitoring, compliance and auditing

Monitoring, compliance and auditing will be determined based on the conditions imposed by the Coordinator-General and other assessment manager(s) for the relevant development approvals with consideration to the following:

- any conditions or recommendations imposed by the Coordinator-General are legally enforceable
- compliance with 'stated conditions' from the Coordinator-General is monitored and enforced by the relevant administering authority
- conditions apply to anyone who undertakes the project, including the project proponent and the proponent's agents, contractors, subcontractors or licensees
- project proponents are also required to engage an independent and suitably qualified person/s to conduct a third party audit of compliance with imposed conditions. The audit reports must be submitted to the Coordinator-General for review.

The Coordinator-General will enforce compliance with 'imposed' conditions outlined in his report for a coordinated project approved under the SDPWO Act and utilise the auditing process to ensure that the appropriate monitoring activity is undertaken.

4.2 National heritage

The National Heritage List is a list of places of outstanding heritage significance to Australia. It comprises places with natural, historic and/or Indigenous cultural values. Each place in the National Heritage List has been assessed by an independent body, the Australian Heritage Council, to determine whether the place has national heritage values. The Environment Minister makes the final decision on whether a place is listed. Under the EPBC Act, a place is included on the National Heritage List if the Minister is satisfied that the place meets one or more of the national heritage criteria prescribed in the EPBC Regulations. The listed values are then gazetted.

The national heritage places relevant to this strategic assessment are the GBR and Wet Tropics national heritage places. The description of national heritage values and an analysis of condition and trend for these two national heritage areas were examined in the Queensland Government's draft Strategic Assessment Report. Further detail on the GBR national heritage places is in the complementary strategic assessment reports prepared by the GBRMPA.

4.2.1 Protection of national heritage under the EPBC Act

A variety of management arrangements are in place, or planned, for each Australian national heritage place on the National Heritage List.

Under the EPBC Act an action or class of actions cannot be approved if the action/s is inconsistent with:

- National Heritage Management Principles (Schedule 5B of the EPBC Regulations)
- an agreement to which the Australian Government is party in relation to the national heritage place
- a plan that has been prepared for the management of the national heritage place under section 324S or as described in section 324 of the EPBC Act.

An action or class of actions also cannot be approved if the action/s would have a clearly unacceptable impact on a national heritage place.

Whether the action/s would have an unacceptable impact depends on the size, scale and intensity of its potential impacts and the values that may be affected. Under the EPBC Act Significant Impact Guidelines 1.1, an action is likely to have a significant impact on the national heritage values of a gazetted national heritage place if there is a real chance or possibility that it will cause:

- one or more of the national heritage values to be lost
- one or more of the national heritage values to be degraded or damaged
- one or more of the national heritage values to be notably altered, modified, obscured or diminished.

Assessment of activities under the EPBC Act

When assessing the impacts of an activity on a national heritage places, the assessment process should look at the full range of gazetted values and identify those values likely to be affected by the activity. The proponent will then need to examine how the national heritage value might be affected and determine how impacts can be addressed and substantially reduced. The proponent needs to also provide adequate opportunity for public consultation.

Relevant documents will be considered when assessing whether a project is likely to have an impact on a national heritage place, including plans of management for the place. Relevant documents that should be considered when assessing the potential impacts and risks to a national heritage place include:

- gazettal instruments
- plans of management (where available).

Gazettal instrument

Heritage values of a place include the place's natural and cultural environment, having aesthetic, historic, scientific or social significance, or other significance for current and future generations of Australians. To be listed as national heritage values it must be able to be shown that they reach the level of significance of 'outstanding value to the nation' against listed criteria and that this must be able to be established through a comparative analysis. If a place is determined to be included in the National Heritage List then the Environment Minister must by instrument published in the gazette:

- the assessed place or part of the assessed place
- the national heritage values of the assessed place, or that part of the assessed place, that are specified in the instrument.

Plans of management

To ensure the ongoing protection of a national heritage place, a management plan should be prepared that sets out how the heritage values of the site will be protected or conserved. Plans need to be consistent with the National Heritage Management Principles which are set out in the EPBC Regulations. Plans are required to be reviewed every 5 years.

Where a national heritage place is in a state or territory, the Australian Government must endeavour to ensure that a management plan is prepared and implemented in cooperation with the relevant state or territory government. The Environment Minister is responsible for preparing plans of management for national heritage places in Commonwealth areas.

4.2.2 Protection of national heritage under the Program

The Queensland Government is committed to the outstanding value to the nation of Queensland's national heritage places is identified, protected, conserved, presented and transmitted to future generations of Australians.

The Program provides for an assessment of impacts and risks of an activity on national heritage place values, in accordance with the national heritage criteria.

Potential impacts of activities

The Program will address the impacts from activities under the Program, including projects undertaking EIS processes under the SDPWO Act and the EP Act.

These activities have the potential to impact national heritage values through variety of sources depending on the location and nature of the activity. An activity taken outside the boundary of a national heritage place can potentially impact the place's listed values.

The potential impacts on a national heritage site are dependent on the values of that place and the location and nature of the action. The summary of the sources of risk, the potential impacts and the MNES that may be affected are outlined in Tables 3 and 4.

Assessment of activities under the Program

The Program describes the EIS process that will be undertaken for activities under the Program. The Queensland Government's assessment process will require proponents to identify and demonstrate that any impacts on a national heritage property will be of an acceptable level and that there be adequate opportunity for consultation on EIS documentation.

To assist proponents to satisfactorily consider national heritage places in their preparation of EIS documents, Queensland will develop MNES guidelines, in conjunction with the Australian Government, that proponents will have regard to in preparing a project proposal and EIS documents.

The MNES guidelines will:

- guide proponents to DOE's Protected Matters Search Tool to determine if their projects may be in, adjacent to or near a national heritage property
- direct proponents to the relevant guidance documents including gazettal instruments, plans of management and EPBC Act guidance documents
- require a description of the national heritage values that could be impacted by the proposed activity
- require an analysis of the potential risks and impacts to these values
- require identification of environmental management strategies
- guide proponents to the Australian Government's offset policy if there are offset requirements for MNES
- provide examples of what could be considered an unacceptable impact on a national heritage property.

The Queensland Government will work with the Australian Government, including GBRMPA, to develop a cumulative impact assessment guideline that will provide guidance to proponents undertaking a cumulative impact assessment.

Queensland Government responsibilities

The Queensland Government Program ensures that development approved under the Program will not have an unacceptable impact on national heritage places.

When undertaking assessments, the Queensland Government will have regard to relevant policy documents, guidelines, gazettal instruments and plans of management.

The Program will ensure an assessment of the proponent's project proposal and EIS documentation, including the appropriateness and acceptability of identified environmental management arrangements. The proponent will have to demonstrate they have applied the 'avoid, mitigate, offset' hierarchy in considering and responding to potential impacts to national heritage.

Outcome-based conditions applied to projects by the Queensland Government will outline minimum requirements while environmental management plans associated with projects will contain mandatory reporting and detailed mitigation measures required to minimise impacts as far as possible. Compliance measures can be applied to proponents who do not adhere to conditions.

The Program will also ensure an assessment of the proponent's capability to implement the proposed environmental management arrangements and any conditions, including monitoring, reporting, adaptive management and offset requirements.

The Australian Government's offset policy will be implemented for MNES under the Program, ensuring a net benefit to MNES. The Queensland Government's offset policy will be implemented for state matters.

4.2.3 Outcomes for national heritage under the Program

Regarding national heritage places, the Queensland Government commits to:

- (1) not approving a project that proposes activities that will contravene a plan of management for a national heritage property or proposes unacceptable impacts to the national heritage values of a national heritage property.
- (2) ensuring there are no unacceptable impacts to national heritage places resulting from developments that undertake an EIS process under the Program.

Other relevant commitments under the Program

The Program Report details other commitments that directly or indirectly supports the protection of national heritage values including guidelines for consulting with Indigenous people in relation to their cultural heritage and traditional use, ongoing monitoring and reporting activities, and the LTSP and associated initiatives.

4.3 Great Barrier Reef Marine Park

The GBRMP is an MNES protected under Part 3 of the EPBC Act from any activities undertaken in the GBRMP; and any activities taken outside the GBRMP which is likely to have a significant impact on the environment in the GBRMP.

The Australian Government is responsible for the management of the GBRMP, established under the *Marine Park Act 1975* within the GBR region. The GBRMP extends over 2 300 kilometres along the Queensland coastline and covers approximately 344 400 square kilometres. The GBRMP generally extends over Queensland State coastal waters to the low-water mark, and, under the 1979 Offshore Constitutional Settlement, vesting of title and powers over these coastal waters is subject to the operation of the *Great Barrier Reef Marine Park Act 1975*.

Queensland is responsible for the management of the GBR Coast Marine Park, covering approximately 63 000 square kilometres, which is established under the MP Act. This is contiguous with the GBRMP and covers the area between low and high water marks and many waters within the limits of the State of Queensland. There are around 980 islands and cays within the boundaries of the GBRMP. The majority of the islands fall within the jurisdiction of Queensland and almost half of these are national parks under the NC Act. There are around 70 islands that are owned by the Australian Government and form part of the Marine Park.

The GBRMP environment includes marine waters, airspace above those waters, seabed features and all marine biota within those areas. The marine environment also includes social and cultural values, including recreational opportunities, amenity, cultural heritage, conservation and scientific significance.

- (a) Under the EPBC Act and the Program the 'environment' is defined as:
- (b) ecosystems and their constituent parts, including people and communities
- (c) natural and physical resources
- (d) the qualities and characteristics of locations, places and areas
- (e) heritage values of places
- (f) the social, economic and cultural aspects of a thing mentioned in paragraph (a), (b), (c) or (d).

4.3.2 Protection of the Great Barrier Reef Marine Park under the EPBC Act

Under the EPBC Act, when assessing impacts to the GBRMP, all elements of the 'environment' must be considered to the extent that they apply. It is important to note that the definition of the 'environment' in section 528 of the EPBC Act is not narrow and is not limited to elements of the natural environment. Also the role and interests of Indigenous peoples in promoting the conservation and ecologically sustainable use of natural resources and promoting the co-operative use of Indigenous peoples' knowledge of biodiversity and Indigenous heritage are recognised in the assessment of the environment. The environment of the GBRMP may be examined using the definition in the EPBC Act.

Ecosystem is defined separately in section 528 of the EPBC Act as being a 'dynamic complex of plant, animal and micro-organism communities and their non-living environment interacting as a functional unit.'

The definition of 'environment' encompasses both ecosystems as a whole and parts of an ecosystem. Those parts of an ecosystem can include people and communities. As such, the relationship between organisms and their environment may also fit into the definition of environment. Factors such as dependence, interdependence or a symbiotic relationship can point to an ecosystem, which would be included under this part of the definition of 'environment'.

Species form an important part of the GBRMP. Section 250 of the EPBC Act relates to protection of certain marine species that occur naturally in a Commonwealth marine area. This protection is in addition to, and separate from the protection of listed threatened and migratory species under the EPBC Act.

In many circumstances, species will be listed as a marine species as well as a listed migratory and/or threatened species. Cetaceans (whales, dolphins and porpoises) are protected in the Commonwealth marine area under Part 13 of the EPBC Act.

For a list of marine species and cetaceans subject to this strategic assessment, see Appendix 3.

The impacts on naturally occurring and physical resources can be considered. These include impacts such as:

- reduced biological diversity or change species composition on reefs, seamounts or in other sensitive marine environments
- altered water circulation patterns by modification of existing landforms or the addition of artificial reefs or other large structures
- substantially damaging or modify large areas of the seafloor or ocean habitat, such as seagrass
- releasing oil, fuel or other toxic substances into the marine environment in sufficient quantity to kill larger marine animals or alter ecosystem processes.

Section 528 of the EPBC Act defines 'place' to include:

- a location, area or region or a number of locations, areas or regions
- a building or other structure, or group of buildings or other structures (which may include equipment, furniture, fittings and articles associated or connected with the building or structure, or a group of buildings or structures)
- in relation to the protection, maintenance, preservation or improvement of a place – the immediate surroundings of a thing in paragraph (a) or (b)
- 'Heritage values of places'.

Heritage values include any element of a place's natural and cultural environment that has aesthetic, historic, scientific, social or other significance, for current and future generations.

Elements to consider include significant buildings and structures, landscapes, sites, routes, aesthetic qualities, surface and sub-surface archaeology, sacred sites, traditions, significant plants, animals, ecological communities and geological formations. Consider their potential significance to Indigenous and non-Indigenous people. The sensitivity of heritage values will vary greatly.

Indigenous heritage value is that which is of significance to Indigenous persons in accordance with their practices, observances, customs, traditions, beliefs or history. In relation to Heritage, Indigenous peoples are recognised as the primary source of information on the value of their heritage. The sensitivity and value of Indigenous heritage are identified through consultation with the Indigenous people that are potentially affected. Impacts on particular species of plants or animals or on elements of the landscape may have a significant impact on Indigenous cultural heritage. Impacts on Indigenous cultural heritage can also occur without physical disturbance to a site.

The heritage values of a place are different to listed values for a world heritage property and/or a national heritage property. Heritage values do not have to be listed to be considered as part of the 'environment', but listed values may be. Heritage values of a place are concerned with the surrounding natural and cultural environment of a

particular (non-listed) place. Heritage values may include intangible qualities such as wilderness values, visual values and cultural values. The heritage values of a place are matters of fact to be determined from the circumstances of the matter at hand.

For the marine environment it is necessary to consider the places identified on the Commonwealth Heritage List, established under the EPBC Act. The Commonwealth, comprises natural, Indigenous and historic heritage places which are either entirely within a Commonwealth area, or outside the Australian jurisdiction and owned or leased by the Commonwealth or a Commonwealth Authority; and which the Australian Environment Minister is satisfied have one or more Commonwealth Heritage values. For a full list of Commonwealth Heritage places in the marine area subject to this strategic assessment and the Program, see Appendix 3.

Another important heritage feature of the Commonwealth marine area is underwater cultural values. Shipwrecks and associated relics are protected under the *Historic Shipwrecks Act 1976* (the Shipwreck Act). There are more than 1300 historic shipwrecks in Queensland waters. The Shipwrecks Act protects all shipwrecks and associated relics that are 75 years or older, regardless of whether their physical location is known. Shipwrecks younger than 75 years old can be individually declared protected.

The social, economic and cultural aspects of the 'environment' as defined under section 528 of the EPBC Act are factored into when considering impacts to the environment. This includes impacts to local people and communities from any activity. For example, impacts to human uses, such as recreational and tourism values would also be considered under the Program where relevant.

Under the EPBC Act, an action should not be approved if it would result in unacceptable impacts to the environment in the GBRMP.

Under the EPBC Act, a person must not take an action in the GBRMP or outside the GBRMP, will have or is likely to have a significant impact on the environment without an approval.

Assessment of activities under the EPBC Act

When assessing the impacts of an activity in the GBRMP, the assessment process would identify any part of the environment that is likely to be affected by the action, examine how the environment might be affected and provide adequate opportunity for public consultation. Relevant documents that will be considered when assessing whether a project is likely to have an impact on the marine environment, included but are not limited to:

- plans of management
- recovery plans
- threat abatement plans
- conservation advices
- wildlife conservation plans
- gazettal instruments
- bioregional plans.

Plans of management for the Great Barrier Reef

The *Great Barrier Reef Marine Park Act 1975* is the primary legislative instrument relating to the GBRMP. Other Australian and Queensland Government legislation also applies.

The *Great Barrier Reef Marine Park Zoning Plan 2003* provides for a range of ecologically sustainable recreational, commercial and research opportunities and for the continuation of traditional activities. The entire GBRMP is covered by this zoning plan which identifies where particular activities are permitted and where some are not permitted. The zoning plan separates conflicting uses, with 33 per cent of the Marine Park afforded marine national park status where fishing and collecting is not permitted. In high use areas near Cairns and the Whitsunday Islands, special Plans of Management are in place in addition to the underlying zoning plan. In addition, other Special Management Areas have been created for particular types of protection, such as the Dugong Protection Areas.

In most of the adjoining waters, the Queensland Government provides complementary zoning in virtually all the GBRWHA.

4.3.3 Protection of the Great Barrier Reef Marine Park under the Program

The Queensland Government is committed to ensuring that the OUV of the GBRMP, as a world heritage property, is identified, protected, conserved, presented and transmitted to future generations. The environmental, biodiversity and heritage values of the GBRMP are protected and conserved for the long term, consistent with the objects of the *Great Barrier Reef Marine Park Act 1975*.

The conservation values for the GBRMP are identified in zoning plans and other management arrangements administered by GBRMPA and these would provide the most relevant documents to use in assessment of a project.

In addition to the detail provided in GBRMPA's strategic assessment documents key components of the Commonwealth marine environment were discussed in Section 4.2 in the Queensland Government's draft Strategic Assessment Report. This discussion included identification of heritage values, ecological processes, important habitats and distinctive species.

Potential impacts of activities

Impacts from development activities will be addressed by the Program. Activities have the potential to impact the GBRMP through variety of sources depending on the location and nature of the action.

The potential impacts on the GBRMP are dependent on the supporting and critical components (e.g. a particular threatened or listed species), processes (for example breeding activities) and services (e.g. provision of a key habitat) that are components of the 'environment' of the area. The summary of the sources of risks, potential impacts and MNES that may be affected is outlined in Tables 3 and 4.

Assessment of activities under the Program

The Queensland Government's EIS processes will require proponents to identify and demonstrate that any impacts on the Commonwealth marine environment will be of an acceptable level.

The assessment and approval process outlined in the Queensland Government Program requires the preparation of EIS documentation and adequate opportunity for consultation.

To ensure the assessment reflects the Australian Government definition of 'whole of the environment', Queensland will ensure the consideration of marine species and Commonwealth Heritage.

To assist proponents to satisfactorily consider the commonwealth marine environment in their preparation of EIS documents, Queensland will develop MNES guidelines, in conjunction with the Australian Government, that proponents will have regard to in preparing a project proposal and EIS documents.

The MNES guidelines will:

- guide proponents to DOE's Protected Matters Search Tool to determine if their projects may be in, adjacent to or near the Commonwealth marine environment
- direct proponents to the relevant guidance documents including plans of management and EPBC Act guidance documents
- require proponents proposing activities that may potentially impact the commonwealth marine environment to particularly consider GBRMPA's zoning and management plans, as well as guidance or policy documents regarding the marine environment
- require a description of the marine environment, including listed marine species and any listed commonwealth Heritage places that could be impacted by the proposed activity
- require an analysis of the potential risks and impacts to the environment
- require identification of appropriate environmental management strategies
- guide proponents to the Australian Government's offset policy if there are offset requirements for MNES
- provide examples of what could be considered an unacceptable impact on a commonwealth marine environment.

The Queensland Government will work with the Australian Government, including GBRMPA, to develop a cumulative impact assessment guideline that will provide guidance to proponents undertaking a cumulative impact assessment.

Queensland Government responsibilities

In undertaking assessments, the Queensland Government will have regard to relevant policy documents, guidelines and management plans made by DOE and GBRMPA.

The Program will ensure a rigorous assessment of the proponent's project proposal and EIS documentation, including the appropriateness and acceptability of identified environmental management arrangements. The proponent will have to demonstrate they have used the 'avoid, mitigate, offset' hierarchy in considering and responding to potential impacts to the ecological character of Ramsar wetlands.

Outcome-based conditions applied to projects by the Queensland Government will outline minimum requirements while environmental management plans associated with projects will contain mandatory reporting and detailed mitigation measures required to minimise impacts as far as possible. Compliance measures can be applied to proponents who do not adhere to conditions.

The Program will also ensure an assessment of the proponent's capability to implement the environmental management arrangements including monitoring, reporting, adaptive management and offset requirements.

The Australian Government's offset policy will be implemented for MNES under the Program, ensuring a net benefit to MNES. The Queensland Government's offset policy will be implemented for state matters.

4.3.4 Outcomes for the Great Barrier Reef Marine Park under the Program

Regarding the GBRMP, the Queensland Government commits to:

- (1) not accepting an EIS that proposes activities that will contravene a plan of management for the GBRMP or proposes unacceptable impacts to the environment of the GBRMP
- (2) ensuring there are no unacceptable or unsustainable impacts to the GBRMP resulting from developments that undertake an EIS process under the Program.

Other relevant commitments under the Program

The Program Report details other commitments that directly or indirectly support the protection of the GBRMP, including supporting the Reef Water Quality Protection Plan, joint field management programs, ongoing monitoring and reporting activities, and the LTSP and associated initiatives.

4.4 Commonwealth marine area

The Commonwealth marine area extends beyond the outer edge of Queensland waters, generally some 3 nautical miles (or 5.5 kilometres) from the coast, to the boundary of Australia's exclusive economic zone, generally around 200 nautical miles from shore.

4.4.1 Protection of a Commonwealth marine area under the EPBC Act

The Commonwealth marine environment is an MNES protected under Part 3 of the EPBC Act from any activities undertaken in a Commonwealth marine area; and any activities taken outside a Commonwealth marine area which is likely to have a significant impact on the environment in a Commonwealth marine area.

The marine environment includes marine waters, airspace above those waters, seabed features and all marine biota within those areas. The marine environment also includes social and cultural values, including recreational opportunities, amenity, cultural heritage, conservation and scientific significance.

Under section 528 of the EPBC Act and in the Program, the ‘environment’ is defined as:

- (a) ecosystems and their constituent parts, including people and communities
- (b) natural and physical resources
- (c) the qualities and characteristics of locations, places and areas (d) heritage values of places
- (d) the social, economic and cultural aspects of a thing mentioned in paragraph (a), (b) or (c).

The conservation values of Commonwealth marine areas are designated in a Bioregional Plan or other plans of management.

Potential impacts of activities

Activities that may have the following impacts on the Commonwealth marine area must be considered:

- result in a known or potential pest species becoming established in the Commonwealth marine area
- modify, destroy, fragment, isolate or disturb an important or substantial area of habitat such that an adverse impact on marine ecosystem functioning or integrity in a Commonwealth marine area results
- have a substantial adverse effect on a population of a marine species or cetacean including its life cycle (e.g. breeding, feeding, migration behaviour, life expectancy) and spatial distribution
- result in a substantial change in air quality or water quality (including temperature) which may adversely impact on biodiversity, ecological integrity social amenity or human health
- result in persistent organic chemicals, heavy metals, or other potentially harmful chemicals accumulating in the marine environment such that biodiversity, ecological integrity, social amenity or human health may be adversely affected or
- have a substantial adverse impact on heritage values of the Commonwealth marine area, including damage or destruction of an historic shipwreck.

Queensland Government responsibilities

The jurisdictional and management boundaries in the marine area are complex, with the GBRWHA and the GBRMP made up of both state waters and Commonwealth marine areas. GRMPA’s strategic assessment of the GBR Region provides a thorough assessment of pressures, conditions and trends in the marine environment.

The Queensland Government acknowledges the GRMPA’s work and draws on its strategic assessment report, zoning plans and management plans for the GBRMP for the marine elements of the GBR coastal zone strategic assessment.

4.4.2 Outcomes for Commonwealth marine areas under the Program

Regarding the Commonwealth marine area, the Queensland Government commits to:

- (1) not accepting an EIS that proposes activities that will contravene a plan of management for the Commonwealth marine area or proposes unacceptable impacts to the Commonwealth marine environment
- (2) ensuring there are no unacceptable or unsustainable impacts to the Commonwealth marine area resulting from developments that undertake an EIS process under the Program.

Other relevant commitments under the Program

The Program Report details other commitments that directly or indirectly support the protection of the Commonwealth marine area, including supporting the Reef Water Quality Protection Plan, joint field management programs, ongoing monitoring and reporting activities and the LTSP and associated initiatives.

4.5 Listed threatened species

Listed threatened species are those species that are listed under the EPBC Act. Actions that have a significant impact on four of the listing categories - 'extinct in the wild', 'critically endangered', 'endangered', and 'vulnerable' - are prohibited without approval. The definitions of these categories are provided in section 179 of the EPBC Act as follows:

- (2) *A native species is eligible to be included in the **extinct in the wild** category at a particular time if, at that time:*
 - (a) *it is known only to survive in cultivation, in captivity or as a naturalised population well outside its past range; or*
 - (b) *it has not been recorded in its known and/or expected habitat, at appropriate seasons, anywhere in its past range, despite exhaustive surveys over a time frame appropriate to its life cycle and form.*
- (3) *A native species is eligible to be included in the **critically endangered** category at a particular time if, at that time, it is facing an extremely high risk of extinction in the wild in the immediate future, as determined in accordance with the prescribed criteria.*
- (4) *A native species is eligible to be included in the **endangered** category at a particular time if, at that time:*
 - (a) *it is not critically endangered; and*
 - (b) *it is facing a very high risk of extinction in the wild in the near future, as determined in accordance with the prescribed criteria.*
- (5) *A native species is eligible to be included in the **vulnerable** category at a particular time if, at that time:*
 - (a) *it is not critically endangered or endangered; and*
 - (b) *it is facing a high risk of extinction in the wild in the medium-term future, as determined in accordance with the prescribed criteria.*

The Queensland Government's draft Strategic Assessment Report discussed the listed threatened species in Queensland and analysed the condition and trend of a number of threatened species in the GBR coastal zone. The current and projected trends differ between species. Where a decline in the condition of a species was noted it was primarily due to clearing of habitat and other anthropogenic threats. It is also acknowledged that habitat alone can only provide a guide for assessment and future projections. For a list of threatened species subject to the GBR coastal zone strategic assessment and the Program see Appendix 3.

4.5.1 Protection of listed threatened species under the EPBC Act

Under the EPBC Act, an action or class of actions should not be approved if it would be inconsistent with:

- Australia's obligations under the (i) Biodiversity Convention; (ii) the Apia Convention; (iii) Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)
- a recovery plan for the species or a threat abatement plan.

Assessment of an action must also have regard for approved conservation advice available for a species or community.

Proponents will have regard to the significant impact criteria in EPBC Act Significant Impact Guidelines 1.1 for critically endangered, endangered and vulnerable species that may or are likely to be impacted by the activity, in the context of demonstrating acceptable levels of impacts.

Whether the action/s would have an unacceptable impact is a function of the significance of its potential impacts. Under the EPBC Act Significant Impact Guidelines, an action is likely to have a significant impact on a listed threatened species based on its species listing category. Further information on the level of significant impact under each species listings category is outlined below:

Extinct in the wild species

An action is likely to have a significant impact on extinct in the wild species if there is a real chance or possibility that it will:

- adversely affect a captive or propagated population or one recently introduced/reintroduced to the wild or
- interfere with the recovery of the species or its reintroduction into the wild.

Critically endangered or endangered species

An action is likely to have a significant impact on a critically endangered or endangered species if there is a real chance or possibility that it will:

- lead to a long-term decrease in the size of a population
- reduce the area of occupancy of the species
- fragment an existing population into two or more populations
- adversely affect habitat critical to the survival of a species
- disrupt the breeding cycle of a population
- modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline
- result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat
- introduce disease that may cause the species to decline or
- interfere with the recovery of the species.

Vulnerable species

An action is likely to have a significant impact on a vulnerable species if there is a real chance or possibility that it will:

- lead to a long-term decrease in the size of an important population of a species
- reduce the area of occupancy of an important population
- fragment an existing important population into two or more populations
- adversely affect habitat critical to the survival of a species
- disrupt the breeding cycle of an important population
- modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline
- result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat
- introduce disease that may cause the species to decline or
- interfere substantially with the recovery of the species.

'Habitat critical to the survival of a species or ecological community' refers to areas that are necessary:

- for activities such as foraging, breeding, roosting, or dispersal
- for the long-term maintenance of the species or ecological community (including the maintenance of species essential to the survival of the species or ecological community, such as pollinators)
- to maintain genetic diversity and long term evolutionary development or
- for the reintroduction of populations or recovery of the species or ecological community.

Such habitat may be, but is not limited to: habitat identified in a recovery plan for the species or ecological community as habitat critical for that species or ecological community; and/or habitat listed on the Register of Critical Habitat maintained by the Minister under the EPBC Act.

A 'population of a species' is defined under the EPBC Act as an occurrence of the species in a particular area. In relation to critically endangered, endangered or vulnerable listed threatened species, occurrences include but are not limited to:

- a geographically distinct regional population, or collection of local populations or
- a population, or collection of local populations, that occurs within a particular bioregion.

Environmental assessment

Environmental assessment under the EPBC Act requires analysis of the potential impacts (direct, indirect and cumulative) to listed threatened species or their habitat and adequate opportunity for consultation. Relevant documents that are considered when assessing the potential impacts and risks to listed threatened species include:

- recovery plans
- threat abatement plans
- conservation advice.

Recovery plans

The Australian Minister for the Environment may make or adopt and implement recovery plans for threatened fauna, threatened flora (other than conservation dependent species) and threatened ecological communities (TECs) listed under the EPBC Act. Recovery plans set out the research and management actions necessary to stop the decline of, and support the recovery of, listed threatened species or threatened ecological communities. The aim of a recovery plan is to maximise the long term survival in the wild of a listed threatened species or ecological community.

Recovery plans should state what must be done to protect and restore important populations of listed threatened species and habitat, as well as how to manage and reduce threatening processes. Recovery plans achieve this aim by providing a planned and logical framework for key interest groups and responsible government agencies to coordinate their work to improve the plight of listed threatened species and/or ecological communities.

Threat abatement plans

The EPBC Act provides for the identification and listing of key threatening processes. Key threatening processes threaten or may threaten the survival, abundance or evolutionary development of a native species or ecological community. For example, invasive species listed as key threatening processes are predation by the European red fox, feral rabbits or unmanaged goats.

The assessment of a threatening process as a key threatening process is the first step to addressing the impact of a particular threat under Australian Government law. The Australian Minister for the Environment may decide whether to have a threat abatement plan for a threatening process in the list of key threatening processes established under the EPBC Act.

Threat abatement plans provide for the research, management, and any other actions necessary to reduce the impact of a listed key threatening process on native species and ecological communities. Implementing the plan should assist the long term survival in the wild of affected native species or ecological communities. Threat abatement plans contain objectives and actions which relate to mitigating or reversing the impacts of a key threatening process.

Conservation advice

When a native species or ecological community is listed as threatened under the EPBC Act, conservation advice is developed to assist its recovery. Conservation advice provides guidance on immediate recovery and threat abatement activities that can be undertaken to ensure the conservation of a newly listed species or ecological community.

Conservation advice includes practical on-the-ground activities that can be implemented by local communities, natural resource management groups or interested individuals, such as landholders.

Conservation advice may also include broader management actions which can be undertaken by organisations such as local councils, government agencies or non-government organisations, to protect the listed threatened species or ecological community on a regional level.

4.5.2 Protection of Listed Threatened Species under the Program

The Queensland Government is committed to the survival and conservation status of listed threatened species and ecological communities being promoted and enhanced.

Through implementing a robust EIS process supported by a strong policy framework the Queensland Government will ensure that urban, industrial, tourism, port or aquaculture developments under the Program will not have an unacceptable or unsustainable impact on listed threatened species.

Potential impacts of activities

The Program will address the impacts from activities under the Program including those related to development for which an EIS is being prepared under the Program.

These activities have the potential to impact listed threatened species through variety of sources depending on the location and nature of the action. Potential impacts on listed threatened species include direct or indirect impacts to those species, or impacts to species' habitat. The summary of all the sources risks and impacts is outlined in Tables 3 and 4.

Assessment of activities through EIS processes

The Queensland Government's EIS processes will require proponents to identify and demonstrate that any impacts on listed threatened species and ecological communities will be of an acceptable level.

The EIS processes outlined in the Queensland Government Program requires the preparation of documentation and adequate opportunity for consultation.

To assist proponents to satisfactorily consider listed threatened species and ecological communities in their preparation of EIS documents, the Queensland Government will direct proponents to the EPBC Act Referral Guidelines for the OUV of the GBRWHA and work with the Australian Government to develop MNES guidelines that proponents will have regard to when preparing a project proposal and EIS documents. The guidelines will:

- guide proponents to DOE's Protected Matters Search Tool to determine if their projects may be in, adjacent to or near environment that be used or habitat for listed threatened species
- direct proponents to the relevant guidance documents including recovery plans, threat abatement plans or conservation advices and any other EPBC Act guidance documents
- require a description of the habitat for listed threatened species that could be impacted by the proposed activity and the use of the environment by the listed threatened species
- require an analysis of the potential risks and impacts to this environment and habitat
- require identification of appropriate environmental management strategies
- guide proponents to the Australian Government's offset policy if there are offset requirements for MNES

- provide examples of what could be considered an unacceptable impact on a listed threatened species.

The Queensland Government will work with the Australian Government, including GBRMPA, to develop a cumulative impact assessment guideline that will provide guidance to proponents undertaking a cumulative impact assessment.

Queensland Government responsibilities

In undertaking assessments, the Queensland Government will have regard for relevant policy documents, recovery plans, threat abatement plans, conservation advice and DOE guidelines.

The Program will ensure a rigorous assessment of the proponent's project proposal and EIS documentation, including the appropriateness and acceptability of identified environmental management arrangements. The proponent will have to demonstrate they have used the 'avoid, mitigate, offset' hierarchy in considering and responding to potential impacts to listed threatened species.

Outcome-based conditions applied to projects by the Queensland Government will outline minimum requirements while environmental management plans associated with projects will contain mandatory reporting and detailed mitigation measures required to minimise impacts as far as possible. Compliance measures can be applied to proponents who do not adhere to conditions.

The Program will also ensure an assessment of the proponent's capability to implement the environmental management arrangements including monitoring, reporting, adaptive management and offset requirements.

The Australian Government's offset policy will be implemented for MNES under the Program, ensuring a net benefit to MNES. The Queensland Government's offset policy will be implemented for state matters.

4.5.3 Outcomes for listed threatened species under the Program

Regarding listed threatened species, the Queensland Government commits to:

- (1) not approving a project that is inconsistent with a recovery plan or threat abatement plan for a listed threatened species or ecological community
- (2) having regard to any approved conservation advice in relation to a listed threatened species before approving a project
- (3) not accepting a project that will result in unacceptable impacts to a listed threatened species.

Other relevant commitments under the Program

The Program Report details other commitments that directly or indirectly support the protection of listed threatened species, including prioritising actions to recover species, working to achieve consistent national listing of threatened species, undertaking on-the-ground actions that deliver long-term benefits for threatened species, joint field management programs, ongoing monitoring and reporting activities, and the LTSP and associated initiatives.

Case study 3—Listed threatened species: Residential development

4.5.4 Case study 3—Listed threatened species: Residential development

This case study is a hypothetical scenario and does not relate to any existing or proposed project. It has been written to show how the EIS process of the SDPWO Act can be used to manage impacts of future projects on MNES. The scenario presented in the case study is assumed to be of a scale that warrants declaration as a coordinated project under the SDPWO Act.

Purpose

The purpose of this case study is to demonstrate how the Program would be applied to ensure there are no unacceptable impacts on listed threatened species

For ease of illustration, this case study uses the example of how the SDPWO Act operates to protect listed threatened species which is a controlling provision under the EPBC Act (sections 18 and 18A). Note, a real assessment under this SDPWO Act would fully consider all relevant MNES covered by the Program.

The EIS process under the SDPWO Act is in practice a thorough and rigorous process that considers the social, economic and environmental effects of a project, including impacts on MNES and OUV. This case study has been developed to show how the Program would protect a listed threatened species using residential development as an example. Through the EIS process, the Coordinator-General considers all environmental values affected by the project, with specific reference to MNES.

As discussed in Chapter 3.4 of this report, residential development activities generally involve land clearance and earthworks to prepare the site, construction works and then ongoing activities associated with use of the site. Ongoing activities such as increased vehicle traffic have the potential to impact on threatened fauna through collisions, and additional noise and light associated impacts. The operation of the residential area may also impact on listed threatened species by introducing domestic pets which have the potential to injure or displace these fauna.

The activities associated with a residential development project create the potential to impact multiple MNES. These activities, associated risks and their impacts are discussed in detail in Tables 3 and 4.

This case study outlines how matters of MNES would be considered for environmental approvals under the SDPWO Act EIS process from the initial application by a proponent through to the granting of development approvals, conditioning, monitoring, reporting and auditing.

Scenario

A proponent is seeking approval for a 14-lot residential development proposed at Mission Beach on freehold land adjacent to the coast. This development is within a rural zone that contains rainforest habitats. The property is bounded by rural properties to the south and west, a coastal esplanade reserve and beach front to the east, and a residential development to the north. This project will require clearing of remnant vegetation and subsequent works to construct roads, fencing, headworks and other associated infrastructure for the development. In this case, the project has the potential

Case study 3—Listed threatened species: Residential development

to have a significant impact on a listed threatened species—the endangered Southern Cassowary (*Casuarius casuarius johnsonii*).

Potential impacts on this species include the clearing of habitat critical to cassowary survival by decreasing the quality and availability of habitat to the species. Earthworks and construction activities may cause further disturbance to the species associated with noise and movement of machinery. Ongoing activities in the residential development may increase pests, weeds and disease and disturbance through pet and human traffic.

1. Determine the likelihood of a significant impact on MNES and subsequent assessment process

At the application stage, the proponent must provide an IAS which describes the proposal and discusses all of the potential environmental impacts of the project on both the general environment and MNES.

The proponent would use the DOE's Protected Matters Search Tool for identifying potentially relevant MNES in the project area and assessing potential impacts.

The information provided in the IAS would provide an understanding of the potential scale and nature of the project impacts on the cassowary.

The proponent would be required to prepare an IAS which provides a full description of the proposed construction and operational activities, a description of the values of the site, the nature and extent of likely impacts on listed threatened species and a description of measures that will be implemented to avoid, reduce, manage or offset any relevant impacts on listed threatened species.

The IAS identifies the project will result in impacts to the endangered cassowary associated with clearing works during construction and consequential ongoing disturbances associated with residential activity (e.g. noise and domestic pets).

Due to the potential significant environmental effects of the project on listed threatened species, such as the cassowary, this type of project would be declared a coordinated project for which an EIS is required and would be assessed under Part 4 of the SDPWO Act.

The content of the IAS informs the preparation of the TOR for the EIS, thus there would be specific reference to the cassowary as an MNES. The TOR for coordinated projects will reflect the requirement to consider the values and impacts to EPBC Act listed threatened species (where relevant) and other relevant MNES. The Coordinator-General's 'coordinated project' declaration will ensure that any project that is likely to have significant impacts on a listed threatened species such as the cassowary, will be assessed through the EIS process under the SDPWO Act.

The Queensland Government would not accept an IAS that does not provide adequate information on the proposed activities and the potential impacts they may have on listed threatened species.

Case study 3—Listed threatened species: Residential development

2. Assess the adequacy of the information provided and make an informed decision

The proponent must prepare an EIS which addresses the requirements outlined in the TOR provided by the Coordinator-General which would include specific and detailed information on the cassowary, as an MNES.

The adequacy of the EIS in covering all matters required by the TOR is reviewed by the Coordinator-General, state government advisory agencies, DOE, and the public, including key stakeholders (through a public consultation process on the draft TOR).

The EIS would need to address the requirements of the TOR, the EIS must provide a sufficient description of listed threatened species including the cassowary, such as a description of the occurrence of this species within the project area and a description of important habitat types, seasonality of the species and whether there are any critical life stages such as foraging and breeding activities that are likely to be affected.

The proponent would need to use the DOE's Protected Matters Search Tool to determine where the cassowary occurs in relation to their project, and any other MNES that may be impacted by the project.

The EIS would need to provide a description of the residential development (including all elements of the activity that are essential for informing the nature and scale of the activity), the characteristics of existing environment, particularly habitat for listed threatened species including cassowaries, and any other activities (proposed, approved or already undertaken) impacting on the environment, and the level of impact the project would have on the environment and the southern cassowary.

The EIS describes the level of impact of the project on listed threatened species while also having regard for other activities in the area contributing to those impacts. The project gives due consideration to the residual and cumulative impacts caused by the project in the context of the existing environmental condition in the area.

The description includes sufficient information about the cassowary to inform the risk assessment including the known and potential extent and condition of remaining populations, life stages and associated susceptibility to impacts potentially associated with the project.

The description of the activity, existing environment and description of other activities impacting on the environment must be sufficient to inform the assessment and demonstrate that there would not be any unacceptable impacts or risks on the southern cassowary.

The considerations in defining acceptable impacts would include the EPBC Act Significant Impact Guidelines in relation to listed threatened species, the EPBC Act Policy Statement for the Endangered Southern Cassowary (*Casuarius casuarius johnsonii*) Wet Tropics Population, the *National Recovery plan for the Southern Cassowary* and relevant threat abatement plans (*Threat Abatement Plan for Predation, Habitat Degradation, Competition and Disease Transmission by Feral Pigs* and *Threat Abatement Plan for the Reduction in Impacts of Tramp Ants on Biodiversity in Australia and its Territories*). These documents would assist the proponent to determine the general characteristics of the site, the potential impacts and other threats.

Case study 3—Listed threatened species: Residential development

The EIS must provide enough information to demonstrate that the proposal would not be inconsistent with the above plans.

After using the above policy and guidance documents, the proponent would need to undertake on-the-ground studies, surveys and research. Many of the studies undertaken will require an assessment covering all seasons of a year. These ground-truthing activities will ensure there is accurate, site-specific identification of the environmental values of the area impacted by the project and the potential impacts on those values from the activity being proposed.

The EIS must provide enough information to determine whether reasonable measures as being proposed to avoid and mitigate impacts on the cassowary and whether significant residual impacts on the cassowary are still likely to occur after avoidance and mitigation.

To ensure that adequate information has been provided in the EIS, state government advisory agencies, including but not limited to the DEHP and DAFF, would be invited to make a submission on this EIS during the public consultation period. These agencies would provide specialist advice on the potential impacts of the residential development and the appropriateness and the likely effectiveness of identified mitigation measures and where appropriate suggest possible offsets, monitoring and auditing requirements.

The proponent is required to give consideration to all comments made in the consultation phase including those from advisory agencies and the public. The proponent may alter the design of the project to address comments.

In this instance no further information would be required. However, if the Coordinator-General is not satisfied that the EIS provides sufficient information to undertake an adequate evaluation of the project, additional information from the proponent would be requested.

Where an EIS requires additional information, the Coordinator-General may seek advice from advisory agencies on the adequacy of the additional information, particularly in addressing matters raised in submissions on the EIS, including public comment. Advisory agencies may also suggest conditions to ensure that adequate mitigation strategies are implemented to minimise the impacts of the project to an acceptable level for consideration during the preparation of the Coordinator-General's report on the EIS. All conditions outlined by the Coordinator-General would be attached to the Development Approvals sought for the project.

Environmental offsets

As this project is likely to have significant residual impacts on the cassowary after avoidance and mitigation, the EIS would be required to include a draft offset strategy proposal for the Coordinator-General's consideration. The removal of essential habitat for the cassowary caused by this residential development project would require an offset strategy to ensure that there is no net loss of habitat for this species.

The offset strategy proposal would need to describe the offset and demonstrate how it will provide an appropriate benefit to compensate for any residual impact on the cassowary.

Case study 3—Listed threatened species: Residential development

The Australian Government offsets policy and comments made by advisory agencies would be considered when determining the adequacy of the offset proposal to compensate for significant residual impacts to the Southern Cassowary.

Once the Coordinator-General considers that the EIS provides sufficient information to appropriately assess the impacts of the project and the acceptability of the impacts on listed threatened species, the process proceeds to the evaluation stage.

The Coordinator-General will not accept an EIS that does not provide adequate information on the environmental values and potential impacts, as well as appropriate mitigation strategies (including offsets) to reduce impacts on listed threatened species to an acceptable level.

3. Public consultation occurs in a transparent manner and outcomes are addressed in the EIS

The EIS process includes a public consultation process. Public comment can be sought on the draft TOR and/or EIS, including additional information requested by the Coordinator-General. Public consultation will be notified via various methods including media release, newspaper advertisements, webpage update, public display at libraries, letters to local, state and federal members, Queensland and Australian Government ministers and relevant state advisory agencies. Under the SDPWO Act, statutory public notices are required for each public consultation process to ensure the public is formally notified of the opportunity to provide submissions on the EIS.

Meetings may be arranged by the Coordinator-General's office between the proponent, advisory agencies and key stakeholders to resolve any technical issues for the project (e.g. appropriate selection of a location for discharging treated wastewater) and/or to gain advice on other matters of interest or concern. Advisory agencies for this project that may be involved in such meetings would include but not limited to for this project include the DEHP, DNRM, DNRM, DNPRSR and the Wet Tropics Management Authority.

Submissions on the EIS may include advice on the project's potential environmental effects and whether the strategies proposed by the proponent would effectively manage the project's impacts to an acceptable level.

The EIS would be finalised, taking into account the comments received during the consultation period. The Coordinator-General will not accept a final TOR or EIS that has not addressed the comments received during any public consultation process undertaken.

4. Determination of project acceptability – no unacceptable impacts on MNES

Step 1 – Coordinator-General's report

The Coordinator-General's evaluation report would make an assessment on whether the proponent has adequately avoided and mitigated all impacts including those on listed threatened species, specifically the cassowary and evaluates whether the offset strategy proposed is appropriate to offset the significant residual impact on the cassowary.

Case study 3—Listed threatened species: Residential development

As the Coordinator-General considers whether the information provided is sufficient and may recommend the project proceed, subject to conditions. The conditions would include the implementation of an offset strategy. The Coordinator-General will not recommend a project proceed if it will result in unacceptable impacts to the cassowary; or is inconsistent with a threat abatement plan or recovery plan relating to a listed threatened species.

Additionally, the Coordinator-General will consider the conservation advice in regards to Threatened Ecological Communities (TECs).

Step 2 – Development approvals and conditioning

The Coordinator-General's report is not an approval in itself. Once completed, it is sent to the Integrated Development Assessment System (IDAS) assessment manager, for consideration regarding the required development approval applications through the SP Act.

Coordinated project proponents are still required to obtain all other development approvals and licences from local authorities (e.g. building approvals and material change of use approvals) and state government agencies (e.g. an environmental authority).

The conditions to protect listed threatened species outlined in the Coordinator-General's report will gain legal effect once they are attached to a development approval given under other specific legislation (e.g. SP Act).

The assessment manager ultimately decides whether development approvals are granted for the proposed project. The assessment manager has the authority to refuse the project, even if the Coordinator-General's evaluation report has recommended that the project proceed.

If development approvals are granted, the assessment manager must attach the Coordinator-General's conditions in regards to listed threatened species to the approval, where appropriate.

The assessment manager may impose further conditions on the development approval to ensure the impacts on listed threatened species are mitigated. These conditions cannot be inconsistent with the conditions stated in the Coordinator-General's report.

Conditions may be used to resolve information gaps or direct the proponent to undertake further work before development approvals can be given.

In this case the residential development project would require development approvals including, but not limited to, those for:

- reconfiguring a lot, or operational work associated with reconfiguring a lot within a coastal management area
- operational work resulting in clearing of native vegetation (Native Vegetation Clearing Code)
- operational work that is high impact earthworks in a GBR wetland protection area (Coastal Protection Code).

In addition, approval to destroy 'protected plants' under the NC Act would also be required.

Case study 3—Listed threatened species: Residential development

The State Development Assessment Provisions (SDAP) set out the code requirements for development assessed by the State. The most relevant codes for this proposal are the Native Vegetation Clearing Code and the Coastal Protection Code.

The purpose of the Native Vegetation Clearing Code is to regulate the clearing of native vegetation within Queensland in order to conserve remnant vegetation, prevent loss of biodiversity and maintain ecological processes. A performance outcome includes that there will be no clearing of vegetation as a result of the material change of use or reconfiguration of a lot.

The purpose of the Coastal Protection Code is to ensure tidal works and development in the coastal management district is managed to: protect and conserve environmental, social and economic coastal resources; and enhance the resilience of coastal communities to coastal hazards. Performance outcomes include residential development to be located outside of high coastal hazard areas, maintain vegetation on coastal landforms, and minimise the need for erosion control structures.

The proposed offset strategy would require endorsement of DEHP to ensure offsets for impacts to listed threatened species such as the cassowary are appropriate and adequate.

The Coordinator-General will not recommend that a project proceeds unless the assessment manager is satisfied that adequate conditions can be enforced to reduce environmental impacts on listed threatened species, for example the cassowary, to an acceptable level.

The Coordinator-General will not recommend that a project proceeds if it is inconsistent with a threat abatement plan or recovery plan for a listed threatened species; or is inconsistent with Australia's obligations under the Biodiversity Convention, the Apia Convention, or CITES.

The Queensland Government will ensure the EIS process and conditions applied to development approvals will ensure no unacceptable impacts to listed threatened species will result from the project.

Potential conditions

Possible outcome-focused conditions that could be applied to protect listed threatened species from impacts of residential development include, but are not limited to:

- **Offset plan condition.** The proponent must prepare a site based offset plan to address significant residual impacts on listed threatened species. The offset plan must be approved by the Coordinator-General and DEHP and be consistent with the EPBC Act environmental offsets policy.
- **Listed threatened species condition.** Prior to the commencement of construction activities, a suitably qualified person must develop impact mitigation and management measures that maximise the ongoing protection and long-term conservation of listed threatened species known or likely to occur within the project area. Mitigation and management measures must be supported by a program of monitoring and reporting to facilitate adaptive management, be consistent with the provisions of the NC Act and be implemented for all stages of the project construction and operations.

Case study 3—Listed threatened species: Residential development

- Water resources conditions. The Water Resources (Wet Tropics) Plan 2013 outcomes (including environmental flow objectives and water allocation security objectives) must be maintained or achieved. Watercourse diversions must be undertaken in accordance with relevant DNRM guidelines.
- Water resources monitoring condition. A water resources monitoring program must be prepared by a suitably qualified person to measure and report on any direct or indirect impacts on water resources attributable to the project activities.
- Contingency plan condition. A risk-based contingency plan must be prepared by a suitably qualified person that details the response measures, and their associated timeframes, that would be undertaken by the proponent in the event that impacts on water resources attributable to the project activities exceed predictions.
- Land use condition. The design and location of infrastructure must, to the greatest extent practicable, minimise:
 - adverse impacts to the functioning and biodiversity of ecosystems.
 - adverse impacts to soil structure and soil quality
 - clearing of native vegetation associated with the project.

A Property Vegetation Management Plan (PVMP) which is consistent with section 11 of the *Vegetation Management Regulation 2012* must be implemented on the site.

Step 3 – Monitoring, compliance and auditing

Monitoring, compliance and auditing will be determined based on the conditions imposed by the Coordinator-General and other assessment manager(s) for the relevant development approvals with consideration to the following:

- any conditions or recommendations imposed by the Coordinator-General are legally enforceable
- compliance with 'stated conditions' from the Coordinator-General is monitored and enforced by the relevant administering authority
- conditions apply to anyone who undertakes the project, including the project proponent and the proponent's agents, contractors, subcontractors or licensees
- project proponents are also required to engage an independent and suitably qualified person/s to conduct a third-party audit of compliance with imposed conditions. The audit reports must be submitted to the Coordinator-General for review.

The Coordinator-General will enforce compliance with all conditions imposed on a coordinated project approved under the SDPWO Act and utilise the auditing process to ensure that the appropriate monitoring activity is undertaken.

Compliance with 'stated conditions' in the Coordinator-General's report is the responsibility of the administering authority, or the nominated responsible State agency.

4.6 Threatened Ecological Communities

Listed TECs are those ecological communities that are listed under the EPBC Act by instrument of Government Gazette under one of the following categories:

- critically endangered
- endangered
- vulnerable.

Ecological communities that are considered matters protected under Part 3 of the EPBC Act (under section 18 and 18A) are those that are listed as 'critically endangered', or 'endangered'. The definitions of these threatened ecological communities categories are provided in section 182 of the EPBC Act as follows:

- 'Critically endangered' – An ecological community that is facing an extremely high risk of extinction in the wild in the immediate future, as determined in accordance with the prescribed criteria in Division 7.1 of the EPBC Regulations.
- 'Endangered' – an ecological community that is not critically endangered and is facing a very high risk of extinction in the wild in the near future as determined in accordance with the prescribed criteria in Division 7.1 of the EPBC Regulations.

There are currently two 'critically endangered' ecological communities that have been identified as being potentially present along the Queensland coast. These are:

- Littoral Rainforest and Coastal Vine Thickets of Eastern Australia
- Lowland Subtropical Rainforest on Basalt Alluvium in North-East New South Wales and South East Queensland.

As well as five listed 'endangered' ecological communities:

- Brigalow (*Acacia harpophylla* dominant and co-dominant)
- Broad leaf tea-tree (*Melaleuca viridiflora*) woodlands in high rainfall coastal north Queensland
- Coolibah - Black Box Woodlands of the Darling Riverine Plains and the Brigalow Belt South Bioregions
- Weeping Myall Woodlands
- Semi-evergreen vine thickets of the Brigalow Belt (North and South) and Nandewar Bioregions.

The impacts to these communities would be considered under the Program.

4.6.1 Protection of Threatened Ecological Communities under the EPBC Act

Ecological communities are unique and naturally occurring groups of plants and animals. Their presence can be determined by survey.

Habitat critical to the survival of a species or ecological community refers to areas that are necessary:

- for activities such as foraging, breeding, roosting, or dispersal
- for the long-term maintenance of the species or ecological community (including the maintenance of species essential to the survival of the species or ecological community, such as pollinators)
- to maintain genetic diversity and long term evolutionary development, or
- for the reintroduction of populations or recovery of the species or ecological community.

Such habitat may be, but is not limited to: habitat identified in a recovery plan for the species or ecological community as habitat critical for that species or ecological community; and/or habitat listed on the Register of Critical Habitat maintained by the Minister under the EPBC Act.

Assessment of activities under the EPBC Act

Whether the action/s would have an unacceptable impact depends on the significance of its potential impacts. Under the EPBC Act Significant Impact Guidelines, an action is likely to have a significant impact on a critically endangered or endangered ecological community if there is a real chance or possibility that it will:

- reduce the extent of an ecological community
- fragment or increase fragmentation of an ecological community, for example by clearing vegetation for roads or transmission lines
- adversely affect habitat critical to the survival of an ecological community
- modify or destroy abiotic (non-living) factors (such as water, nutrients, or soil) necessary for an ecological community's survival, including reduction of groundwater levels, or substantial alteration of surface water drainage patterns
- cause a substantial change in the species composition of an occurrence of an ecological community, including causing a decline or loss of functionally important species, for example through regular burning or flora or fauna harvesting
- cause a substantial reduction in the quality or integrity of an occurrence of an ecological community, including, but not limited to:
 - assisting invasive species, that are harmful to the listed ecological community, to become established
 - causing regular mobilisation of fertilisers, herbicides or other chemicals or pollutants into the ecological community which kill or inhibit the growth of species in the ecological community or
 - interfere with the recovery of an ecological community.

Under the EPBC Act, an action or class of actions should not be approved if it would be inconsistent with:

- Australia's obligations under the (i) Biodiversity Convention; (ii) the Apia Convention; (iii) Convention on International Trade in Endangered Species of Wild Fauna and Flora
- a recovery plan for the community or a threat abatement plan.

Assessment of an action must also have regard to any approved conservation advice for the community.

4.6.2 Protection of Threatened Ecological Communities under the Program

The Program is committed to the survival and conservation status of listed ecological communities being promoted and enhanced through the conservation of critical habitats and other relevant measures contained in relevant plans or advices.

Through implementing a robust EIS process supported by a strong policy framework, the Queensland Government will ensure there will be no unacceptable impacts resulting from development activities to listed TEC.

Potential impacts of activities

Impacts from development activities will be addressed by the Program. The activities have the potential to impact listed ecological communities through a variety of sources depending on the location and nature of the action.

Potential impacts on listed ecological communities include direct or indirect impacts to those elements that make up the ecological community or habitat for the ecological community. The summary of the sources of risks, potential impacts and the MNES that may be impacted are outlined in Tables 3 and 4.

Assessment of activities through EIS processes

The Program describes the EIS processes that will be undertaken for activities under the Program.

The proposed new MNES guidelines will assist proponents to satisfactorily consider threatened ecological communities when preparing a project proposal and EIS documents. The MNES guidelines will:

- make reference to consideration of the listing category and protection of the listed ecological community
- direct proponents to DOE's Protected Matters Search Tool to determine if their projects may be in, adjacent to or near an ecological community
- direct proponents to the relevant guidance documents to be considered by titleholders in preparing EIS documentation such as recovery plans, threat abatement plans, conservation advice and EPBC Act guidance documents
- require an analysis of the potential risks and impacts to this environment and habitat
- require identification of appropriate environmental management strategies
- guide proponents to the Australian Government's offset policy if there are offset requirements for MNES

- provide examples of what could be considered an unacceptable impact on an ecological community.

The Queensland Government will work with the Australian Government, including GBRMPA, to develop a cumulative impact assessment guideline that will provide guidance to proponents undertaking a cumulative impact assessment.

Queensland Government responsibilities

In undertaking assessments, the Queensland Government will have regard for relevant policy documents, recovery plans, threat abatement plans, conservation advice and DOE guidelines.

The Program will ensure a rigorous assessment of the proponent's project proposal and EIS documentation, including the appropriateness and acceptability of identified environmental management arrangements. The proponent will have to demonstrate they have used the 'avoid, mitigate, offset' hierarchy in considering and responding to potential impacts to listed threatened species.

Outcome-based conditions applied to projects by the Queensland Government will outline minimum requirements while environmental management plans associated with projects will contain mandatory reporting and detailed mitigation measures required to minimise impacts as far as possible. Compliance measures can be applied to proponents who do not adhere to conditions.

The Program will also ensure an assessment of the proponent's capability to implement the environmental management arrangements including monitoring, reporting, adaptive management and offset requirements.

The Australian Government's offset policy will be implemented for MNES under the Program, ensuring a net benefit to MNES. The Queensland Government's offset policy will be implemented for state matters.

4.6.3 Outcomes for Threatened Ecological Communities under the Program

Regarding listed threatened ecological communities, the Queensland Government commits to:

- (1) not approving a project that proposes activities that will result in unacceptable impacts to an ecological community
- (2) not approving an activity that is inconsistent with a recovery plan or threat abatement plan for an ecological community
- (3) having regard to any approved conservation advice in relation to an ecological community before approving a project
- (4) not accepting a project that will result in unacceptable or unsustainable impacts to a listed threatened ecological community.

Other relevant commitments under the Program

The Program Report details other commitments that directly or indirectly support the protection of threatened ecological communities, including the Queensland Wetlands and Wet Tropics programs, joint field management programs, ongoing monitoring and reporting activities, and the LTSP and associated initiatives.

Case study 4—Listed threatened ecological communities: Industrial development

4.6.4 Case study 4—Listed threatened ecological communities: Industrial development

This case study is a hypothetical scenario and does not relate to any existing or proposed project. It has been written to show how the EIS process of the SDPWO Act can be used to manage impacts of future projects on MNES. The scenario presented in the case study is assumed to be of a scale that warrants declaration as a coordinated project under the SDPWO Act.

Purpose

The purpose of this case study is to demonstrate how the Program would be applied to ensure there are no unacceptable impacts on listed threatened ecological communities (TECs).

For ease of illustration, this case study uses the example of how the SDPWO Act operates to protect TEC, which are a part of the listed threatened species and communities EPBC Act controlling provision (sub-sections 18 and 18A). Note, a real assessment under this SDPWO Act would fully consider all relevant MNES covered by the Program.

This case study specifically refers to a hypothetical proposal for a hydroelectric power station to show how the Program, in particular the EIS process under the SDPWO Act, would be applied to protect listed threatened species and TEC from impacts of development.

The EIS process under the SDPWO Act is in practice a thorough and rigorous process that considers the social, economic and environmental effects of a project, including impacts on MNES and OUV. This case study has been developed to show how the Program would protect listed TEC using an industrial development as an example. Through the EIS process the Coordinator-General considers all environmental values affected by the project with specific reference to MNES.

As discussed in Chapter 3 of this report, industrial development activities generally involve land clearance and earthworks to prepare the site, construction works and then ongoing activities such as maintenance and use of the site. Construction and operational activities associated with an industrial development can generate a range of emissions (air, noise and water) which have the potential to impact on the environment.

The activities associated with an industrial development project have the potential to impact multiple MNES. These activities, associated risks and their impacts are discussed in detail in Tables 3 and 4.

This case study outlines how matters of MNES would be considered under the environmental approvals process under the SDPWO Act from the initial application by a proponent through the EIS process to the granting of the development approvals as well as conditioning, monitoring, reporting and auditing.

Scenario

A proponent is seeking approval for a hydroelectric power station in the Wet Tropics. The proposal is for a series of hydro-electric generators to be installed immediately

Case study 4—Listed threatened ecological communities: Industrial development

downstream of an existing dam. The proposed development is in an area that contains the endangered broad leaf tea tree (*Melaleuca viridiflora*) woodlands in high rainfall coastal north Queensland (tea tree TEC).

The project has a range of potential impacts, including the potential removal of the tea tree TEC, reducing the area of occupancy and modifying the quality of the environment. Additionally, because the activity may impact on flow regimes, this project may impact on the duration of inundation (flooding) events that are important to the lifecycle of this ecological community. Thus, the activity has the potential to have a significant impact on the protected matter—listed ecological community (endangered).

1. Determine the likelihood of a significant impact on MNES and subsequent assessment process

At the application stage, the proponent must provide an IAS which describes the proposal and discusses all potential environmental impacts of the project on both the general environment and MNES.

The proponent would use DOE's Protected Matters Search Tool to identify potentially relevant MNES in the project area and assessing potential impacts.

The information provided in the IAS would provide an understanding of the potential scale and nature of the project impacts including impacts on MNES.

The proponent would be required to prepare an IAS which provides a full description of the proposed construction and operational activities, a description of the values of the site, the nature and extent of likely impacts on listed threatened species and a description of measures that will be implemented to avoid, mitigate or offset any relevant impacts on listed threatened species.

The IAS identifies the project will result in the removal and degradation of areas of the endangered tea tree TEC *in high rainfall coastal north Queensland*. No other TEC is identified in the project site or in areas that may be indirectly affected by the project.

Due to the potential significant environmental effects of the project, including on the tea tree TEC, the Coordinator-General would declare this a 'coordinated project' for which an EIS is required, under Part 4 of the SDPWO Act.

The content of the IAS informs the preparation of the TOR for the EIS, thus there would be specific reference to the endangered broad leaf tea tree woodlands as an MNES.

The content of the IAS informs the preparation of the TOR for the EIS, thus there would be specific reference to the tea tree TEC. The TOR for coordinated projects will reflect the requirement to consider the values and impacts to nationally listed TEC (where relevant) and other relevant MNES.

The Coordinator-General's 'coordinated project' declaration will ensure that an industrial development activity with the potential to cause significant environmental impacts on MNES such as a threatened ecological community (e.g. tea tree TEC), would be assessed through an EIS process under the SDPWO Act.

The Queensland Government would not accept an IAS that does not provide adequate information on the proposed activities and the potential impacts it may have on listed ecological communities.

Case study 4—Listed threatened ecological communities: Industrial development

2. Assess the adequacy of the information provided and make an informed decision

The proponent must prepare an EIS which addresses the requirements outlined in the TOR provided by the Coordinator-General which would include specific and detailed information on the tea tree TEC, as an MNES.

The adequacy of the EIS in covering all matters required by the TOR is reviewed by the Coordinator-General, state government advisory agencies, DOE, and the public, including key stakeholders (through a public consultation process on the draft TOR).

The EIS would need to provide a description of the industrial development activity, in this case the hydroelectric power station, including all elements of the station and generators that are essential for informing the nature and scale of the activity. It would also need to describe the characteristics of the potentially impacted area with specific reference to the tea tree TEC, and any other activities in the location (proposed, approved or already undertaken) impacting on the immediate environment or downstream which may affect threatened ecological communities.

The description must also include sufficient information about the tea tree TEC to inform a risk assessment, including the known and potential extent and condition of remaining community, life stages and associated susceptibility to impacts potentially associated with the project (e.g. altered duration of inundation events).

To find this information, the proponent would be directed to the MNES guidelines (Commitment 6) which will provide guidance on how threatened ecological communities will need to be addressed to adequately meet EPBC Act requirements. The proponent would also be directed to the DEHP website which contains information on ecosystems and habitats.

The proponent would need to use the DOE's Protected Matters Search Tool to determine where the tea tree TEC occurs in relation to their project, and any other MNES that may be impacted by the project.

The proponent would need to consider the EPBC Act Significant Impact Guidelines (for threatened ecological communities), relevant threat abatement plans (*Threat abatement plan for disease in natural ecosystems caused by *Phytophthora cinnamomi**) and conservation advices (*Approved Conservation Advice for the Broad Leaf Tea-tree (*Melaleuca viridiflora*) Woodlands in High Rainfall Coastal North Queensland*). These documents would assist the proponent to determine the general characteristics of the site, the potential impacts and other threats.

The EIS provides enough information to demonstrate that the proposal would not be inconsistent with the above plans.

After using the above policy and guidance documents, the proponent would need to undertake on-the-ground studies, surveys and research. Many of the studies undertaken will require an assessment covering all seasons of a year. These ground-truthing activities will ensure there is accurate, site-specific identification of the environmental values of the area impacted by the project and the potential impacts on those values from the activity being proposed.

Case study 4—Listed threatened ecological communities: Industrial development

The EIS describes the level of impact of the project on TEC, while also having regard to other activities in the area contributing to those impacts. The EIS gives due consideration to the residual and cumulative impacts caused by the project in the context of the existing environmental condition in the area.

The description of the activity, its potential impacts on the tea tree TEC and the description of other activities impacting on the TEC must be sufficient to inform the assessment and demonstrate that there would not be any unacceptable impacts or risks to the tea tree TEC (and other MNES and OUV).

The EIS must provide enough information to enable the Coordinator-General to determine whether reasonable measures are being proposed to avoid and mitigate impacts on TEC, including the tea tree TEC, and whether significant residual impacts are still likely to occur after avoidance and mitigation. Sufficient detail must also be provided on the timing and the expected effectiveness of the mitigation measures.

To ensure that adequate information has been provided in the EIS, state government advisory agencies, including but not limited to the DEHP and DAFF, would be invited to make a submission on this EIS during the public consultation period. These agencies would provide specialist advice on the potential impacts of the industrial development and the appropriateness and the likely effectiveness of identified mitigation measures and where appropriate suggest possible offsets, monitoring and auditing requirements.

The proponent is required to give consideration to all comments made in the consultation phase including those from advisory agencies and the public. The proponent may alter the design of the project to reduce the environmental impact in response to submissions.

In this case no further information would be required, however, if the Coordinator-General is not satisfied that the EIS provides sufficient information on environmental impacts, specifically the impacts on the tea tree TEC in this case, to undertake an adequate evaluation of the project, additional information from the proponent would be requested.

Where an EIS requires additional information, the Coordinator-General may seek advice from advisory agencies on the adequacy of the additional information, particularly in addressing matters raised in submissions on the EIS, including public comment. Advisory agencies may also suggest conditions to ensure that adequate mitigation strategies are implemented to minimise the impacts of the project to an acceptable level for consideration during the preparation of the Coordinator-General's report on the EIS. All conditions outlined by the Coordinator-General would be attached to the development approvals sought for construction of the project.

Environmental offsets

As this project involves the removal of tea tree TEC with considerable significant residual impacts, the EIS would be required to include a draft offset strategy proposal for the Coordinator-General's consideration.

The offset strategy proposal would need to describe the offset for the impacts to the tea tree TEC and demonstrate how it will provide an appropriate benefit to compensate for the residual impacts on the tea tree TEC.

Case study 4—Listed threatened ecological communities: Industrial development

The Australian Government offsets policy and comments made by advisory agencies would be considered when determining the adequacy of the offset proposal to compensate for residual significant impacts to the tea tree TEC.

Once the Coordinator-General considers that the EIS provides sufficient information to appropriately assess the impacts of the project and the acceptability of the impacts on TECs, the process proceeds to the evaluation stage.

The Coordinator-General will not accept an EIS that does not provide adequate information on the environmental values, potential impacts, and appropriate mitigation strategies (including offsets) to reduce impacts, on TECs (e.g. tea tree TEC).

3. Public consultation occurs in a transparent manner and outcomes are addressed in the EIS

The EIS process includes a public consultation process. Public comment can be sought on the draft TOR and/or EIS, including additional information requested by the Coordinator-General. Public consultation must be notified via various methods. This would include media releases, newspaper advertisements, webpage updates, public displays at libraries and letters to local, state and federal members, Queensland and Australian Ministers and relevant state advisory agencies. Under the SDPWO Act, statutory public notices are required for each public consultation process to ensure the public is formally notified of the opportunity to provide submissions on the EIS.

Meetings may be arranged by the Coordinator-General's office between the proponent, advisory agencies and key stakeholders to resolve any technical issues for the project (e.g. management measures to ensure environmental flows are maintained) and/or to gain advice on other matters of interest or concern. Advisory agencies for this project that may be involved in such meetings would include but not limited to DNRM, DEHP and DAFF. Submissions on the EIS from advisory agencies may include advice on: the project's potential environmental impacts, including on TEC; whether the EIS adequately addresses the TOR; and whether the strategies proposed by the proponent would effectively manage the project's impacts to an acceptable level.

The EIS would be finalised, taking into account the comments received during the consultation period.

The Coordinator-General will not accept a final TOR or EIS that has not addressed the comments received during the public consultation process undertaken.

4. Determination of project acceptability - no unacceptable impacts on MNES

Step 1 – Coordinator-General's report

The Coordinator-General's report would determine that the proponent has adequately avoided and mitigated all impacts, including those on the tea tree TEC, and where significant residual or cumulative impacts on the tea tree TEC are likely, after avoidance and mitigation strategies have been implemented that an offset strategy be included.

The Coordinator-General ensures through the conditions outlined in the report, that there will not be unacceptable impacts on the tea tree TEC and its associated values (e.g. environmental flows are met to maintain a hydrological regime required for the survival of the tea tree TEC).

Case study 4—Listed threatened ecological communities: Industrial development

As the Coordinator-General considers the information provided is sufficient and may recommend that the project proceed, subject to conditions. The conditions would include the implementation of an offset strategy.

The Coordinator-General will not recommend that a project proceeds if it will result in unacceptable impacts to threatened ecological communities, including the tea tree TEC; or if it is inconsistent with a threat abatement plan or recovery plan relating to TEC, for example the tea tree TEC.

Additionally, the Coordinator-General will consider the conservation advice provided in regard to TECs.

Step 2 – Development approvals and conditioning

The Coordinator-General's report is not an approval in itself. Once completed, it is sent to the IDAS assessment manager as supporting information, for consideration regarding the required development approval applications through the SP Act.

Coordinated Project proponents are still required to obtain all other development approvals and licences from local authorities (e.g. building approvals and material change of use approvals) and state government agencies (e.g. an environmental authority).

The conditions to protect TEC outlined in the Coordinator-General's report will gain legal effect once they are attached to a development approval given under other specific legislation (e.g. SP Act).

The assessment manager ultimately decides whether development approvals are granted for the proposed project. The assessment manager has the authority to refuse the project, even if the Coordinator-General's evaluation report has recommended that the project proceed.

If development approvals are granted, the assessment manager must attach the Coordinator-General's conditions in regards to TEC to the approval, where appropriate.

The assessment manager may impose further conditions on the development approvals to ensure the impacts on the tea tree TEC are mitigated. These conditions cannot be inconsistent with the conditions stated in the Coordinator-General's report.

Conditions may be used to resolve information gaps or direct the proponent to undertake further work before development approvals can be given.

In this case, the industrial development project would require development approvals including but not limited to:

- material change of use of premises, reconfiguring a lot, operational works involving vegetation clearing (Native Vegetation Clearing Code) and building, plumbing and drainage work
- operational works that involves taking or interfering with water from a watercourse, lake or spring, or from a dam constructed on a watercourse or lake (Water Resources Code)
- relevant environmentally relevant activities under the EP Act associated with the project (ERA code).

Case study 4—Listed threatened ecological communities: Industrial development

The proposed offset strategy would also require endorsement of DEHP to ensure offsets for impacts to TEC are appropriate and adequate.

Potential conditions

Possible outcome-focused conditions that could be applied to protect TEC from impacts of industrial development may include, but are not limited to:

- **Offset plan condition.** The proponent must prepare a site based offset plan to address significant residual impacts on TECs. The offset plan must be approved by the Coordinator-General and DEHP and be consistent with the EPBC Act environmental offsets policy and implemented within two years of commencement of construction, or as directed by the Coordinator-General.
- **TECs' condition.** Prior to the commencement of construction activities, a suitably qualified person must develop impact mitigation and management measures that maximise the ongoing protection and long-term conservation of TEC known or likely to occur within the project area. Mitigation and management measures must be supported by a program of monitoring and reporting to facilitate adaptive management, be consistent with the provisions of the NC Act and be implemented for all stages of the project construction and operations.
- **Water resources conditions.** The Water Resources (Wet Tropics) Plan 2013 outcomes (including environmental flow objectives and water allocation security objectives) must be maintained or achieved. Watercourse diversions must be undertaken in accordance with relevant DNRM guidelines.
- **Water resources monitoring condition.** A water resources monitoring program must be prepared by a suitably qualified person to measure and report on any direct or indirect impacts on water resources attributable to the project activities.
- **Contingency plan condition.** A risk-based contingency plan must be prepared by a suitably qualified person that details the response measures, and their associated timeframes, that would be undertaken by the proponent in the event that impacts on water resources attributable to the project activities exceed predictions.
- **Land use condition.** The design and location of infrastructure must, to the greatest extent practicable, minimise:
 - adverse impacts to the functioning and biodiversity of ecosystems
 - adverse impacts to soil structure and soil quality
 - the clearing of native vegetation associated with the project.

A PVMP which is consistent with section 11 of the *Vegetation Management Regulation 2012* must be implemented on the site.

Case study 4—Listed threatened ecological communities: Industrial development

Step 3 – Monitoring, compliance and auditing

Monitoring, compliance and auditing will be determined based on the conditions imposed by the Coordinator-General and other assessment manager(s) for the relevant development approvals with consideration to the following:

- any conditions or recommendations imposed by the Coordinator-General are legally enforceable
- compliance with 'stated conditions' from the Coordinator-General is monitored and enforced by the relevant administering authority
- conditions apply to anyone who undertakes the project, including the project proponent and the proponent's agents, contractors, subcontractors or licensees
- project proponents are also required to engage an independent and suitably qualified person/s to conduct a third party audit of compliance with imposed conditions. The audit reports must be submitted to the Coordinator-General for review.

The Coordinator-General will enforce compliance with all conditions imposed on a coordinated project approved under the SDPWO Act and utilise the auditing process to ensure that the appropriate monitoring activity is undertaken.

Compliance with 'stated conditions' in the Coordinator-General's report is the responsibility of the administering authority, or the nominated responsible State agency.

4.7 Listed migratory species

Listed migratory species protected under the EPBC Act pass through or over Australian waters during their annual migrations. Examples of listed migratory species are shorebirds (many of which breed in the northern hemisphere), sea birds (e.g. albatrosses and petrels), mammals (e.g. whales) and reptiles (e.g. sea turtles).

The list of migratory species established under section 209 of the EPBC Act comprises:

- migratory species which are native to Australia and are included in the appendices to the Bonn Convention (Convention on the Conservation of Migratory Species of Wild Animals Appendices I and II)
- migratory species included in annexes established under the Japan-Australia Migratory Bird Agreement (JAMBA) and the China-Australia Migratory Bird Agreement (CAMBA)
- native, migratory species identified in a list established under, or an instrument made under, an international agreement approved by the Minister, such as the Republic of Korea-Australia Migratory Bird Agreement (ROKAMBA).

The Queensland Government's draft Strategic Assessment Report and the GBRMPA's strategic assessment reports also discussed listed migratory species, including values, condition and trend. For a list of migratory species subject to this strategic assessment and the Program, see Appendix 3.

4.7.1 Protection of migratory species under the EPBC Act

Under the EPBC Act, an action or class of actions should not be approved if it would be inconsistent with:

- the Bonn Convention
- CAMBA
- JAMBA
- an international agreement approved under section 209(4) of the EPBC Act.

When assessing the impacts of an activity on a listed migratory species, the EPBC Act requires a description of the environment that must identify any habitat for listed migratory species that is likely to be affected by the proposed activity and the use of the environment by listed migratory species (e.g. including information such as Biological Important Areas identified in the National Conservation Values Atlas).

Proponents should also have regard to the significant impact criteria for listed migratory species in the EPBC Act Significant Impact Guidelines in determining acceptable levels.

An area of 'important habitat' for a listed migratory species is:

- (a) habitat utilised by a migratory species occasionally or periodically within a region that supports an ecologically significant proportion of the population of the species
- (b) habitat that is of critical importance to the species at particular life-cycle stages

- (c) habitat utilised by a migratory species which is at the limit of the species range
- (d) habitat within an area where the species is declining.

Whether an activity would have an unacceptable impact is a function of the significance of its potential impacts. Under the EPBC Act Significant Impact Guidelines 1.1, an action is likely to have a significant impact on listed migratory species if there is a real chance or possibility that it will result in:

- substantially modify (including by fragmenting, altering fire regimes, altering nutrient cycles or altering hydrological cycles), destroy or isolate an area of important habitat for a listed migratory species
- result in an invasive species that is harmful to the listed migratory species becoming established in an area of important habitat for the listed migratory species
- seriously disrupt the lifecycle (breeding, feeding, migration or resting behaviour) of an ecologically significant proportion of the population of a listed migratory species.

The EPBC Act requires analysis of the potential impacts (direct, indirect and cumulative) to listed migratory species or their habitat and adequate opportunity for consultation. Relevant documents that should be considered when assessing the potential impacts are:

- migratory species when also referred to as listed threatened species
- wildlife conservation plans

Wildlife conservation plans

The Minister may make a wildlife conservation plan for the purposes of the protection, conservation and management of the following:

- (a) a listed migratory species that occurs in Australia or an external territory
- (b) a listed marine species that occurs in Australia or an external territory
- (c) a species of cetacean that occurs in the Australian Whale Sanctuary
- (d) a conservation dependent species.

A wildlife conservation plan must provide for the research and management actions necessary to support survival of the listed migratory species, marine species, species of cetacean or conservation dependent species concerned. Plans may cover one or more species.

4.7.2 Protection of migratory species under the Program

The Program will endeavour to ensure that the survival and conservation status of listed migratory species will be promoted and enhanced.

Potential impacts of activities impacts

The Program will address the impacts from activities under the Program, including projects undertaking EIS assessment processes under the SDPWO Act and the EP Act.

These activities have the potential to impact listed migratory species through variety of sources depending on the location and nature of the action. Potential impacts on listed migratory species include direct or indirect impacts to those species, or impacts to species' habitat.

Assessment of activities through EIS processes

The Program describes the EIS process that will be undertaken for activities under the Program.

The assessment and approval process outlined in the Program requires the preparation of EIS documentation and adequate opportunity for consultation.

To assist proponents to satisfactorily consider listed migratory species in their preparation of EIS documents, Queensland will work with the Australian Government to develop MNES guidelines that proponents will have regard for in preparing a project proposal and EIS documents. The guidelines will:

- guide proponents to DOE's Protected Matters Search Tool to determine if their projects may be in, adjacent to or near habitat for listed migratory species
- direct proponents to the relevant guidance documents including recovery plans, conservation advices, plans of management and EPBC Act guidance documents
- require a description of the listed migratory species that could be impacted by the proposed activity
- require an analysis of the potential risks and impacts to those species
- require identification of appropriate environmental management strategies
- guide proponents to the Australian Government's offset policy if there are offset requirements for MNES
- provide examples of what could be considered an unacceptable impact on listed migratory species.

The Queensland Government will work with the Australian Government, including GBRMPA, to develop a cumulative impact assessment guideline that will provide guidance to proponents undertaking a cumulative impact assessment.

Queensland Government responsibilities

In undertaking assessments, Queensland will have regard to relevant policy documents and guidelines.

The Program will ensure a rigorous assessment of the proponent's project proposal and EIS documentation, including the appropriateness and acceptability of identified environmental management arrangements. The proponent will have to demonstrate they have used the 'avoid, mitigate, offset' hierarchy in considering and responding to potential impacts to listed migratory species.

Outcome-based conditions applied to projects by the Queensland Government will outline minimum requirements while environmental management plans associated with projects will contain mandatory reporting and detailed mitigation measures required to minimise impacts as far as possible. Compliance measures can be applied to proponents who do not adhere to conditions.

The Program will also ensure an assessment of the proponent's capability to implement the environmental management arrangements including monitoring, reporting, adaptive management and offset requirements.

The Australian Government's offset policy will be implemented for MNES under the Program, ensuring a net benefit to MNES. The Queensland Government's offset policy will be implemented for state matters.

4.7.3 Outcomes for listed migratory species under the Program

Regarding listed migratory species, the Queensland Government commits to:

- (1) not approving a project that proposes activities that are inconsistent with above mentioned agreements and any relevant Recovery Plans, Conservation Advices or other EPBC Act requirements
- (2) not approving any project that will result in unacceptable impacts to a listed migratory species or an area of important habitat for a listed migratory species.

Other relevant commitments under the Program

The Program Report details other commitments that directly or indirectly support the protection of listed migratory species, including the Queensland Wetlands and Wet Tropics programs, joint field management programs, ongoing monitoring and reporting activities, and the LTSP and associated initiatives.

Case study 5—Listed migratory species and ecological communities: Mining activity

4.7.4 Case study 5—Listed migratory species and ecological communities: Mining activity

This case study is a hypothetical scenario and does not relate to any existing or proposed project. It has been written to show how the EIS process of the EP Act can be used to manage impacts of future projects on MNES. The scenario presented in the case study is assumed to be of a scale that warrants declaration as a coordinated project under the EP Act.

Purpose

The purpose of this case study is to demonstrate how the Program would be applied to ensure there are no unacceptable impacts on listed TEC and migratory species.

For ease of illustration, this case study uses the example of how the Queensland environmental approvals system under the EP Act, (particularly the EIS process) would be applied to protect listed TEC and migratory species which are controlling provisions under the EPBC Act (sections 18 and 18A and 20 and 20A respectively) from impacts of resource projects. It is important to note that an actual assessment under this EP Act would fully consider all relevant MNES covered by the Program.

Mining projects can involve a range of activities that have the potential to impact on the environment. Such activities include land clearing and earthworks to prepare the site and ongoing activities associated with the extraction of resource materials, operation of processing facilities and associated infrastructure and general use of the site. Extraction often involves mining below the water table.

Most modern mining techniques have high water demands for extraction, processing, and waste disposal. Vehicles and equipment used during the construction and operation may impact on fauna by direct disturbances associated with noise and air emissions which may result in the disruption of behavioural patterns (e.g. breeding cycles, migration) of fauna.

This case study specifically outlines how matters of MNES would be considered under the environmental approvals process under Queensland's EP Act, from initial environmental application by a proponent through the EIS process to the granting of the environmental approval, as well as conditioning, monitoring, reporting and auditing.

Scenario

A proponent is seeking approval for a new silica and heavy mineral sands (zircon, rutile and ilmenite) mining project in Cape York region in Far North Queensland. The project would involve the extraction of 1 million tonnes of material/per year.

Environmental attributes in the area include:

- extensive aeolian (wind formed) dune fields with extensive diversity of dune landforms (including examples of counter-wall dunes and large elongate parabolic dunes)
- littoral rainforest and coastal vine thickets communities which provide significant habitat for threatened plants and animals
- areas supporting a large roosting population of the little tern and two endemic rare skink species.

Case study 5—Listed migratory species and ecological communities: Mining activity

The project would result in the potential removal of the critically endangered littoral rainforest and coastal vine thickets of eastern Australia TEC and the potential disturbance of roosting habitat of little tern (*Sterna albifrons*) which is listed as a marine and migratory species under the EPBC Act. The proposed activity, therefore, has the potential to have a significant impact on MNES—specifically listed TECs and listed migratory species under the EPBC Act.

1. Determine the likelihood of a significant impact on MNES

The proposed project was determined to have the potential to have significant impacts on MNES, including listed TECs and listed migratory species.

Requirement for EIS for proposed major resource projects

In Queensland, resource activities, such as silica mining, are Environmentally Relevant Activities (ERA) that may only be carried out by a person holding or operating under an environmental authority (EA) issued under the EP Act, and a resource tenement granted under relevant resource legislation, e.g. the *Mineral Resources Act 1989* or the *Petroleum and Gas (Production and Safety) Act 2004*. A mining lease (the tenure which permits mining operations to commence) cannot be issued until an EA for a resource activity is approved. The Director-General of DEHP is the chief executive of the EP Act and the administering authority for ERA (excluding some prescribed ERA devolved to local government and DAFF).

For the proposed silica mining project the proponent would be required to make a site specific application for an EA under the EP Act. This type of application (i.e. site specific application) is required if any of the proposed ERA for the EA are ineligible ERA (i.e. do not meet the eligibility criteria for a standard application). In addition to the mining activities, the EA application for the silica mining project would need to consider any proposed activities that are directly associated with, or facilitate or support, the mining activities and which would (where they are not conducted on a mining tenement) otherwise require approval under the EP Act as ERA. For this project, these would likely include extractive and screening activities (ERA 16), chemical storage (ERA 8), bulk material handling (ERA 50) and waste disposal (ERA 60).

Before the administering authority can decide the EA application, the EP Act requires that the project's likely environmental impacts be assessed and measures proposed to avoid or minimise any adverse impacts. Large-scale resource projects usually trigger assessment by EIS. The EIS process under the EP Act is a thorough and rigorous process that considers the social, economic and environmental effects of a project, including where relevant, impacts on MNES.

After an EA application is made by the proponent, the administering authority for the EP Act (DEHP) must assess whether an EIS is required for the proposed resource activity. An EIS may be required for projects that would involve:

- a significant environmental impact
- a high level of uncertainty about potential impacts
- a high level of public interest or is likely to contribute substantially to cumulative impacts even if the project on its own would not have a significant impact.

Case study 5—Listed migratory species and ecological communities: Mining activity

Any proposed large-scale resource projects trigger the need for an EIS if the project met any of the EIS triggers in the DEHP guideline, 'Triggers for environmental impact statements under the Environmental Protection Act 1994 for mining, petroleum and gas activities (EIS trigger guideline). A decision may be made to require an EIS even if no EIS criteria are triggered, if DEHP or the Queensland Minister for Environment and Heritage Protection, having regard to the standard criteria determines that the project applied for would involve:

- a significant environmental impact
- a high level of uncertainty about potential impacts
- a high level of public interest, or
- potentially substantial cumulative impacts.

For the proposed silica mining project, DEHP would determine that an EIS assessment is required as the proposed project would meet the following triggers in the EIS triggers guideline, being:

- The proposed project would have a significant impact on Category A or Category B sensitive environmental areas.
- Under the EP Act, a Category A includes the GBR region under the *Great Barrier Reef Marine Park Act 1975*. Category B areas are important areas that are subject to international conventions that Australia is a signatory including the Convention on the Conservation of Migratory Species of Wild Animals and the Convention Concerning the Protection of the World Cultural and Natural Heritage. Category B areas also include areas that contain endangered regional ecosystems.
- The project would be considered to potentially have a significant impact on both Category A and B sensitive environmental areas.
- The proposed project would involve activities in a marine area. In this case the project is likely to involve activities in a marine area associated with vessel movements from the port.

Standard criteria

The standard criteria under the EP Act (Schedule 4) are:

- the principles of ESD, as set out in the National Strategy for Ecologically Sustainable Development
- any applicable environmental protection policy
- any applicable national, state or local government plans, standards, agreements or requirements
- any applicable environmental impact study, assessment or report
- the character, resilience and values of the receiving environment
- all submissions made by the applicant and submitters
- the best practice environmental management for activities under any relevant instrument, or proposed instrument
- the financial implications of the requirements under an instrument, or proposed instrument, mentioned in paragraph (g) of the EP Act, schedule 4, as they

Case study 5—Listed migratory species and ecological communities: Mining activity

would relate to the type of activity or industry carried out, or proposed to be carried out, under the instrument

- the public interest
- any applicable site management plan
- any relevant integrated environmental management system or proposed integrated environmental management system
- any other matter prescribed under a regulation.

2. Adequate information is provided to assess the activity, its potential impacts and mitigation strategies during the EIS process

The proponent may arrange a pre-design/pre-lodgement meeting with DEHP before lodging an application for an EA. The purpose of the pre-design/pre-lodgement meeting is to assist the proponent in identifying relevant environmental issues and the principles of sustainable development early in the planning stage and to assist DEHP in understanding the level of impact or significance of the project.

To initiate the EIS process under the EP Act, the proponent for the proposed silica mining project would be required to submit a draft TOR to DEHP using DEHP's generic TOR. The TOR for an EIS must include the matters necessary for ensuring the assessment of the project under the EIS provides enough information about the project and its relevant impacts to allow decision-making. The TOR would require an assessment of the values and impacts to listed TECs and threatened species (i.e. littoral rainforest and coastal vine thickets of eastern Australia and the little tern).

The proponent must also provide a description of the project and operational land (often referred to as the initial advice statement) and all information required under section 71 and section 41(3) of the EP Act and sections 6 and 7 of the *Environmental Protection Regulation 2008* (EP Regulation). This also assists stakeholders and the local community to determine their level of interest in the project. The document would scope the potential impacts to be investigated in an EIS, including impacts on threatened ecological communities, marine and migratory species.

The draft TOR would be publically notified and comments received during the notification period would be provided to the proponent. The proponent must, within the period prescribed under a regulation, give the chief executive of the EP Act—a written summary of the comments; a statement of the proponent's response to the comments; and any amendments of the draft terms of reference the proponent proposes because of the comments. DEHP would decide whether or not the responses provided by the proponent were adequate. The chief executive would then finalise the TOR and publish the TOR notice.

Within two years of the Queensland Government finalising the TOR, the proponent would be required to submit an EIS for the proposed silica mine project. The EIS must meet the requirements of the EP Act and EP Regulation and address all matters outlined in the TOR for the project. The EIS must identify and assess expected adverse and beneficial environmental, social and economic impacts of the project and include suitable planning, mitigation and monitoring measures to manage any adverse impacts of the project.

Case study 5—Listed migratory species and ecological communities: Mining activity

When determining the significance of an impact, the EIS must take into account the scale, intensity, duration, frequency and irreversibility of the impact, and the risk of environmental harm. Scientific and specialist studies undertaken in response to the TOR must provide details of the methodology, reliability, assumptions and scientific conclusions used to predict the potential adverse and beneficial impacts. Offsets must be identified where residual impacts from development on an area possessing Matters of State Environmental Significance (MSES) cannot be avoided or minimised. The EIS must include a stand-alone assessment report for MNES.

The EIS would need to include an outline of the TECs and migratory species values associated with the site, predict the nature and extent of likely impacts and an outline of measures that would be implemented to avoid, reduce or manage the impacts on the littoral rainforest and coastal vine thickets of eastern Australia and the little tern. Proposed mitigation measures for impacts on MNES must be consistent with those proposed under Queensland legislation. Any residual impacts on MNES must be offset according to Australian Government requirements (i.e. EPBC Act Environmental Offsets Policy 2012¹⁰).

To ensure that adequate assessment of MNES have been undertaken, the proponent would need to refer to relevant EPBC Act guidelines (e.g. Significant Impact Guidelines—Matters of National Environmental Significance, the Species Profile and Threats Database (SPRAT) for the coastal vine thicket ecological community and the little tern).

3. Public consultation occurs in a transparent manner and outcomes are taken into account during the EIS process

Public notices are used to advertise the start of the public review period for the TOR and EIS under the EP Act. For the proposed silica mine project, the public notices would be placed on the DEHP web site and in newspapers circulating in Australia, Queensland and the area of the proposed project site. DEHP (for the TOR stage) and the proponent (for the EIS stage) would also be required to notify all affected parties (as defined in section 38 of the EP Act) that the TOR/EIS is available. This would usually be done by mail and would include: people who hold land on, or adjacent to, the proposed tenure; any registered native title body corporate or claimant, or a representative Aboriginal/Torres Strait Islander body; and the relevant local government authority.

At various stages in the EIS process, DEHP would also seek advice from advisory bodies. For this purpose, an advisory body is an individual or organisation that is requested to provide advice to DEHP within the extent of their areas of responsibility, interest and expertise. The option to use advisory bodies is consistent with DEHP's aim to ensure the final TOR and the EIS are comprehensive, and adequately assess impacts on matters relevant to the interests and requirements of all key agencies and interested parties. Members of the advisory body may be individuals with specific expertise and may include: federal and state government departments; local government authorities; statutory authorities and academic institutions; industry

¹⁰ <http://www.environment.gov.au/system/files/resources/12630bb4-2c10-4c8e-815f-2d7862bf87e7/files/offsets-policy.pdf>

Case study 5—Listed migratory species and ecological communities: Mining activity

organisations, community groups (including environmental groups) and special interest groups (including recognised landowner and Indigenous organisations).

The proponent would be encouraged to also undertake community consultation with members of the public and regional councils and undertake a regular and ongoing consultation process with the Traditional Owners (if relevant) during the public submission period of the EIS. The proponent may also circulate information about the project to the community through meetings, phone calls, letters and emails.

Submissions received from the public, affected and interested persons and advisory bodies during the EIS public notification periods would be provided to the proponent. The proponent would be required to respond to these comments and make any amendments to the submitted EIS as a result of the submissions.

The chief executive would not accept a final TOR or EIS that has not been subject to a comprehensive public consultation process and where all public comments have been considered in the preparation of the final documentation.

4. Determination of the project's acceptability—finalisation of the EIS process

Step 1 – EIS assessment report

The chief executive of the EP Act can only allow the EIS document to proceed if it considers that the EIS addresses the final TOR in an acceptable form; if the proponent's response to the EIS submissions was adequate; and that the proponent has made all appropriate amendments to the submitted EIS because of the submissions.

If the chief executive of the EP Act decided to allow the EIS to proceed to the final stage of the EIS process, DEHP would prepare an EIS assessment report. In preparing an EIS assessment report (as per section 58 of the EP Act), the chief executive must consider the following:

- the final TOR for the EIS
- the submitted EIS
- the submitted supplementary EIS or any amendments to the EIS
- additional information submitted
- the amended environmental management plan
- all properly made submissions and any other submissions accepted by the chief executive
- the standard criteria (standard criteria includes ESD)
- any other matter prescribed under a regulation.

The EIS assessment report must:

- address the adequacy of the EIS in addressing the final TOR
- address the adequacy of any environmental management plan for the project
- make recommendations about the suitability of the project
- recommend any conditions on which any approval required for the project may be given
- contain another matter prescribed under a regulation.

Case study 5—Listed migratory species and ecological communities: Mining activity

The EIS assessment report would need to provide an assessment of the adequacy of the submitted EIS in addressing MNES under the EPBC Act. This is provided as a stand-alone chapter in the EIS assessment report.

The EIS process for the proposed mine under the EP Act would be completed when the proponent is given a copy of the EIS assessment report. A decision approval recommendation is then made on whether the proposed silica mining project is refused or approved with appropriate conditions.

Step 2 – Environmental approvals and conditioning

Conditions setting of environmental performance requirements—environmental approvals

After the EIS process is complete (i.e. provision of the EIS assessment report to the proponent) the following environmental approvals may be required by the proponent before operations can commence for the proposed silica mining project:

On the mining lease:

- Following completion of the EIS process, the chief executive of the EP Act is required to decide to either approve the EA application for a resource activity with conditions or to refuse it as part of the decision stage. The completed EIS forms the application documents used in this decision. A notice of the decision (including draft EA if decision to approve application) would be provided to the applicant and any submitters to the EIS. The submitter may give objection to the notice (section 182 of the EP Act) or request referral to the Land Court (section 183 of EP Act). The administering authority must refer the application to the Land Court for objection decisions. Issuing of the EA under the EP Act allows the tenure to be granted under *Mineral Resources Act 1989*.
- Other approvals for activities such as plumbing, building or drainage work (e.g. operational works (tidal works) applications) to be carried out on the mining tenement would be required under a combination of other legislation, including the SP Act.

Off the mining lease:

- If the proponent proposes to conduct any prescribed ERA off the mining tenement, it would be required to apply for an EA under the SP Act (e.g. ERA 16—extractive and screening activities, ERA 50—bulk material handling). A development permit under SP Act for a material change of use may also be required for some prescribed ERA (that are not mobile and temporary ERA). The proponent would apply to the assessment manager using the IDAS process. The assessment manager for the development application is determined from schedule 3 of the *Sustainable Planning Regulation 2009*. The assessment manager would normally be the relevant local government where the development is assessable against the local government planning scheme (e.g. material change of use). Otherwise the assessment manager would be the chief executive of DSDIP.

Case study 5—Listed migratory species and ecological communities: Mining activity

Deciding an environmental authority application

In deciding whether or not to approve an EA application under the EP Act (for ERA for the resource activities on the mining tenure and any prescribed ERA off the mining lease), the administering authority must comply with:

- the criteria for decision under section 175 or section 176 of the EP Act, including any properly made submission about the application
- the standard criteria in the EP Act
- any responses to an information request
- prescribed matters set out in the Environmental Protection Regulation 2008 including:
 - section 51, matters to be considered for environmental management decisions
 - section 52, conditions to be considered for environmental management decisions
 - section 53, matters to be considered for decisions imposing monitoring conditions
 - section 55, release of water or waste to land
 - section 56, release of water, other than stormwater, to surface water
 - section 57, release of stormwater
 - section 60, activity involving storing or moving bulk material
 - section 62, activity involving acid-producing rock
 - section 64, activity involving indirect release of contaminants to groundwater.

Additionally, for ERA devolved to local government, the local government may have specific assessment criteria relevant to local environmental values.

The administering authority would give consideration to these regulatory requirements in the context of specific information about the environmental impacts of a particular project provided in the application documents for an EA (or an EIS if relevant). For the EA for the resource activity, the EIS documents form the application documents upon which DEHP decides. For any prescribed ERA off the mining lease, the proponent would be encouraged to provide sufficient information in the EIS process to assist the chief executive in their decisions, however the EIS would not automatically form the application documents. The chief executive in this instance may request further information during the IDAS process.

The grounds for refusal of the EA are outlined in section 318H of the EP Act and include matters such as the applicant's environmental record or any disqualifying event which may have occurred for the particular individual or corporation applying. Under the EP Act, applications for ERA must be refused if:

- the applicant is not a registered operator
- the administering authority is the assessment manager or concurrence agency for an associated development application and is either refusing the development application or giving a preliminary approval only.

Case study 5—Listed migratory species and ecological communities: Mining activity

Additionally, the chief executive may refuse the application if:

- the applicant is not suitable due to their environmental record
- a disqualifying event has happened to:
 - the applicant
 - a partner of the applicant
 - any of the corporation's executive officers
 - another corporation where any of the applicant's corporation is, or has been executive officers.

Potential conditions

If the EA application is approved, the administering authority would impose environmental management conditions. The conditions that are imposed on the EA must meet the requirements under section 203 to 210 of the EP Act, where applicable. The EA conditions set the environmental performance requirements that the proponent must comply with. They would relate to the operation of the activity and also cover rehabilitation requirements. Conditions in an EA would generally state what is and what is not permitted as part of the activity. Model conditions which have been developed for specific industries would be applied, where appropriate, and/or any other conditions which are required or considered necessary or desirable by the administering authority.

Possible outcome-based conditions that could be applied to the project may include:

- Water quality and groundwater conditions: Contaminants that will, or have the potential to cause environmental harm must not be released directly or indirectly to any waters as a result of the authorised mining activities, except as permitted under the conditions of this environmental authority. If contaminants are permitted to be release to surface or groundwater, then the location and limits of the timing, quantity and quality would be specified. A receiving environmental monitoring program would also be required.
- Land resource condition: Treatment and management of acid sulfate soils must comply with the current edition of the Queensland Acid Sulfate Soil Technical Manual.
- Rehabilitation requirements: Landform stability and management of on-site and off-site impacts post mining to ensure the land is fit for the intended post-mine landuse.
- Offset plan condition: An environmental offset condition may require works or activities to be carried out on land on which a relevant activity for the EA is carried out or on other land in the state. An environmental offset condition may require a monetary payment to an environmental offset trust. If the EA holder has entered into an agreement about an environmental offset, an environmental offset condition may require the holder to comply with the agreement. The EA holder may enter into an agreement with the administering authority or another entity to establish the obligations, or secure the performance, of a party to the agreement about a condition. The holder of an EA entering into an agreement includes the holder entering into an agreement before the EA is issued.

Case study 5—Listed migratory species and ecological communities: Mining activity

Operation of the activity

The proponent for the silica mining project would be required to submit a plan of operations to the administering authority at least 20 business days before carrying out any activities on the mining lease. It is an offence to carry out activities on a relevant mining or petroleum lease without a plan of operations that complies with section 288 of the EP Act.

The purpose of a plan of operations is to clearly and transparently state the way in which the conditions of an EA will be complied with. The plan of operations contains information about where activities would be carried out, an action program which demonstrates how the holder of the EA would comply with conditions, a rehabilitation program and a proposed amount of financial assurance. The plan of operations must include a:

- description of all resources activities that will take place on the site during the time frame covered by the plan
- proposed program of actions to comply with EA conditions
- rehabilitation program for land disturbed or land that will be disturbed during the period of the plan
- proposed amount of financial assurance based on the guidelines for calculating financial assurance
- compliance statement describing how much you have complied with your EA conditions.

For the purposes of meeting the requirements of section 288(1)(a)(iii) of the EP Act, the description of the land to which the plan applies must include identification of:

- any environmentally sensitive areas
- any state-significant biodiversity values
- any endangered, vulnerable, rare or near threatened wildlife species
- dominant ecosystems, topographic features, and soils
- watercourses, wetlands, springs (including relevant environmental values), river improvement trust asset areas and wild river declaration areas and floodplains.

A compliance statement is required under section 288(1)(d) of the EP Act. The purpose of the compliance statement is to state the extent to which the plan of operations complies with the conditions of the EA.

Step 3 – Monitoring, compliance and auditing environmental performance

Compliance with the conditions of an EA is monitored and enforced by the relevant administering authority (e.g. DEHP for the EA of a resource activity and local government for some devolved ERA). Failure to comply with the EA conditions is a breach of the EA and there are various compliance enforcement actions available under the EP Act (e.g. transitional environmental programs, environmental protection orders, direction, clean-up and cost-recovery notices).

Case study 5—Listed migratory species and ecological communities: Mining activity

The administering authority may cancel or suspend an EA if certain events occur. These events are specified in section 278 of the EP Act. For example, an EA can be cancelled or suspended if the holder of an EA is convicted of an environmental offence. In the event that the administering authority proposes to cancel or suspend an EA, they would be required to give notice outlining the proposed action and the grounds or reasons for the proposed action.

4.8 Ramsar wetlands

Under the Ramsar Convention, a wide variety of natural and human-made habitat types ranging from rivers to coral reefs can be classified as wetlands. These wetlands include swamps, marshes, billabongs, lakes, salt marshes, mudflats, mangroves, coral reefs, fens, peat bogs, or bodies of water—whether natural or artificial, permanent or temporary. Water within these areas can be: static or flowing; fresh, brackish or saline; and can include inland rivers and coastal or marine water to a depth of six metres at low tide. Underground wetlands are also recognised.

The Ramsar Convention encourages the designation of sites containing representative, rare or unique wetlands, or wetlands that are important for conserving biological diversity. Once designated, these sites are added to the convention's List of Wetlands of International Importance and become known as 'Ramsar sites'. In designating a wetland as a Ramsar site, countries agree to establish and oversee a management framework aimed at conserving the wetland and ensuring its wise use. Wise use under the convention is broadly defined as maintaining the ecological character of a wetland. Wetlands can be included on the List of Wetlands of International Importance because of their ecological, botanical, zoological, limnological or hydrological importance.

For a wetland to be designated to this list it must satisfy one or more of the criteria for identifying wetlands of international importance.

Queensland has five sites recognised under the international Convention on Wetlands of International importance especially as Waterfowl Habitat (Ramsar Convention) — Bowling Green Bay, Shoalwater and Corio Bays, Great Sandy Strait, Moreton Bay and Currawinya Lakes. The Convention is an international treaty which aims to halt the world wide loss of wetlands and conserve those that remain through wise use and management. Ramsar wetlands are also recognised under the EPBC Act and principles for their management are outlined in Schedule 6 of that Act.

As a signatory to the Ramsar Convention, Australia has a number of obligations, including maintaining the ecological character of sites and notifying the Convention Secretariat of changes to ecological character. It is these aspects that must be considered when managing Queensland protected areas that contain a Ramsar site.

In the draft Strategic Assessment Report, the values of the two Ramsar wetlands were discussed – Bowling Green Bay and Shoalwater and Corio Bay – as these are located in the GBR coastal zone.

4.8.1 Protection of Ramsar Wetlands under the EPBC Act

Australian Ramsar Management Principles

Under the Australian Ramsar Management Principles, one of the primary purposes of Ramsar wetland management is to maintain the ecological character of the wetland. Under sections 16 and 17B of the EPBC Act, any action that is likely to result in a significant impact on the ecological character of a Ramsar wetland requires approval.

Ecological character is defined by the Ramsar Convention Resolution IX.1 (Annex A) as the combination of the ecosystem components, processes and benefits and

services that characterise the wetland at a given point in time (i.e. the time of delegation) (Ramsar Convention Resolution VI.1, paragraph 2.1).

Under the EPBC Act, an action should not be approved if it would be inconsistent with:

- maintaining the ecological character of the wetland or
- providing for the conservation and sustainable use of the wetland.

Whether the action/s would have an unacceptable impact is a function of the significance of its potential impacts. Under the EPBC Act Significant Impact Guidelines, an action is likely to have a significant impact on the ecological character of the declared Ramsar wetland if there is a possibility that it will result in:

- areas of the wetland being destroyed or substantially modified
- a substantial and measurable change in the hydrological regime of the wetland, e.g. substantial change to the volume, timing, duration, and frequency of ground and surface water flows to and within the wetland
- the habitat of lifecycle of native species, including invertebrate fauna and fish species, dependent upon the wetland being seriously affected
- a substantial and measurable change in the water quality of the wetland – for example a substantial change in the level of salinity, pollutants, or nutrients in the wetland, or water temperature which may adversely impact on biodiversity, ecological integrity, social amenity or human health
- an invasive species that is harmful to the ecological character of the wetland being established (or an existing invasive species being spread) in the wetland.

Relevant documents that should be considered when assessing the potential impacts and risks to a Ramsar site include:

- Ramsar information sheets
- Ecological Character Descriptions
- Plans of management.

Ramsar information sheets

Contracting Parties to the Ramsar Convention are required to provide a Ramsar Information Sheet for all sites designated as wetlands of international importance under the Ramsar Convention. Ramsar Information Sheets need to be provided to the Ramsar Secretariat at the time of nomination of a site to the List of Wetlands of International Importance. Furthermore, parties to the Ramsar Convention have a commitment to provide updated Ramsar Information Sheet information for all of their Ramsar sites at intervals of six years or when there are any significant changes in the sites' ecological character.

The Ramsar information sheet provides essential data on each designated Wetland of International Importance, in order to allow analysis of Ramsar-listed wetlands around the world, provide baseline data for measuring changes in the ecological character of wetlands listed under the Ramsar Convention, and provide material for publications which inform the public about Ramsar sites. Under the EPBC Act, the detailed written description of a designated wetland in the Ramsar Information Sheet legally defines the 'declared Ramsar wetland'.

Ecological Character Descriptions

Ecological Character Descriptions (ECDs) supplement the description of the ecological character contained in the Ramsar Information Sheet submitted under the Ramsar Convention for each listed wetland. Collectively, they form an official record of the ecological character of the site.

ECD describe the ecological character of a wetland at the time of its listing as a Wetland of International Importance. The description of ecological character is a requirement under the Ramsar Convention and the Australian Ramsar Management Principles.

The Ecological Character Description for a Ramsar wetland is also used to:

- assist in implementing Australia's obligations under the Ramsar Convention, as stated in Schedule 6 (Managing wetlands of international importance) of the EPBC Regulations 2000, including to describe and maintain the ecological character of declared Ramsar wetlands in Australia.
- assist any person considering a proposed activity that may impact on a declared Ramsar wetland.

Plans of management

Plans of management are used to formulate and implement planning so as to promote the wise use and conservation of wetlands. Plans of management should be consistent with the Ramsar Convention, Schedule 6 of the EPBC Regulations 2000 (the Australian Ramsar Management Principles) and relevant *National Guidelines for Ramsar Wetlands – Implementing the Ramsar Convention in Australia*.

Section 328 of the EPBC Act states that the Commonwealth is required to make plans of management for Ramsar sites entirely on Commonwealth land but not within a Commonwealth Reserve. For all other Ramsar wetlands best endeavours are being used to ensure that there is a management plan in place that is consistent with the Australian Ramsar Management Principles (Schedule 6 of the EPBC Regulations).

According to the Australian Ramsar Management Principles, the primary purpose of management of a Ramsar wetland is to describe and maintain the ecological character of the wetland. Additionally, the EPBC Regulations note that before an action is taken, the likely impact on the wetlands ecological character should be assessed.

4.8.2 Protection of Ramsar wetlands under the Program

The Queensland Government is committed to maintaining the ecological character of each Ramsar wetland, and conservation and sustainable use of each wetland is promoted for the benefit of humanity in a way that is compatible with maintenance of the natural properties of the ecosystem. This is to be achieved through the implementation of ecosystem approaches, within the context of sustainable development.

Through implementing processes such as a robust EIS process supported by a strong policy framework, the Queensland Government will ensure that developments under the Program will not have an unacceptable impact on Ramsar wetlands.

Queensland Government Policies

The SPP defines matters of state interest in land use planning and development. The applicable state interests under the SPP for consideration are Economic growth and Environment and heritage with the following outcomes for:

- Agriculture – Planning protects the resources on which agriculture depends and supports the long-term viability and growth of the agriculture sector (including protecting fisheries resources from development that compromises long-term fisheries productivity and accessibility).
- Biodiversity – Matters of environmental significance are valued and protected, and the health and resilience of biodiversity is maintained or enhanced to support ecological integrity.
- Coastal environment – The coastal environment is protected and enhanced, while supporting opportunities for coastal-dependent development, compatible urban form, and safe public access along the coast.
- Water quality – The environmental values and quality of Queensland waters are protected and enhanced. The water quality objectives for Bowling Green Bay Ramsar site are currently being developed by DEHP in consultation with the community.

Wetland environmental values under the *Environmental Protection Regulation 2008* (Qld) are described as the qualities of a wetland that support and maintain the following are environmental values:

- the health and biodiversity of the wetland's ecosystems
- the wetland's natural state and biological integrity
- the presence of distinct or unique features, plants or animals and their habitats, including threatened wildlife, near threatened wildlife and rare wildlife under the NC Act
- the wetland's natural hydrological cycle
- the natural interaction of the wetland with other ecosystems, including other wetlands.

Potential impacts of activities

Impacts from activities will be addressed by the Program. Activities have the potential to impact Ramsar sites through variety of sources depending on the location and nature of the action.

The potential impacts on any Ramsar wetland are dependent on the supporting and critical components (e.g. flora or fauna present in the wetland), processes (for example breeding activities) and services (e.g. provision of a key habitat) that make up the ecological character of a wetland. The summary of all the sources risks and impacts is outlined in Tables 3 and 4.

The Program Report describes the Program, including the EIS assessment and approval process that will be undertaken for activities under the Program. The Queensland Government's assessment processes will require proponents to identify and demonstrate that any impacts on a Ramsar wetland will be of an acceptable level.

To assist proponents to satisfactorily consider Ramsar wetlands in their preparation of EIS documents, Queensland will develop MNES guidelines, in conjunction with the

Australian Government, that proponents will have regard to in preparing a project proposal and EIS documents. The guidelines will:

- guide proponents to DOE's Protected Matters Search Tool to determine if their projects may be in, adjacent to or near a Ramsar wetland
- direct proponents to the relevant guidance documents including Ramsar information sheets, plans of management and EPBC Act guidance documents
- require proponents proposing activities that may potentially impact a Ramsar wetland to particularly consider any relevant draft or final ECD
- require a description of the Ramsar wetland's ecological characteristics that could be impacted by the proposed activity
- require an analysis of the potential risks and impacts to the ecological character
- require identification of appropriate environmental management strategies
- guide proponents to the Australian Government's offset policy if there are offset requirements for MNES
- provide examples of what could be considered an unacceptable or unsustainable impact on a Ramsar wetland property.

The Queensland Government will work with the Australian Government, including GBRMPA, to develop a cumulative impact assessment guideline that will provide guidance to proponents undertaking a cumulative impact assessment.

Queensland Government responsibilities

Through EIS processes, Queensland will have regard for relevant policy documents, guidelines, Ramsar information sheets, Ecological Character Descriptions and plans of management of the Australian Government.

EIS processes ensure a rigorous assessment of the proponent's project proposal and EIS documentation, including the appropriateness and acceptability of identified environmental management arrangements. The proponent will have to demonstrate they have used the 'avoid, mitigate, offset' hierarchy in considering and responding to potential impacts to the ecological character of Ramsar wetlands.

Outcome-based conditions applied to projects by the Queensland Government will outline minimum requirements while environmental management plans associated with projects will contain mandatory reporting and detailed mitigation measures required to minimise impacts as far as possible. Compliance measures can be applied to proponents who do not adhere to conditions.

The Program will also ensure an assessment of the proponent's capability to implement the environmental management arrangements including monitoring, reporting, adaptive management and offset requirements.

The Australian Government's offset policy will be implemented for MNES under the Program, ensuring a net benefit to MNES. The Queensland Government's offset policy will be implemented for state matters.

4.8.3 Outcomes for Ramsar wetlands under the Program

Regarding Ramsar wetlands, the Queensland Government commits to:

- (1) not accepting an EIS that proposes activities that will contravene a plan of management for a Ramsar wetland or proposes unacceptable impacts to the ecological character of a Ramsar wetland
- (2) ensuring there are no unacceptable or unsustainable impacts to Ramsar wetlands resulting from urban, industrial, aquaculture, port and tourism developments that undertake an EIS process under the Program.

Other relevant commitments under the Program

The Program Report details other commitments that directly or indirectly support the protection of Ramsar wetlands, including the Queensland Wetlands and Wet Tropics programs, joint field management programs, ongoing monitoring and reporting activities, and the LTSP and associated initiatives.

5. Implementation of commitments

The Queensland Government is committed to ensuring that development in the GBR is appropriately managed to ensure it maintains or enhances the OUV for which it was declared a WHA.

Consequently, the Queensland Government is working to strengthen its legislative and regulatory framework aimed at managing and protecting the GBR coastal zone and the commitments outlined in both the revised Program Report and this Supplementary Report have been developed to respond to the key challenges facing the GBR.

The development of the LTSP was requested by the WHC and will build on the findings of the comprehensive strategic assessment and bring relevant programs and activities under one plan to ensure greater coordination, efficiency and effectiveness of efforts to protect and manage the GBR. It will be the primary implementation mechanism to deliver future joint commitments and actions within the GBRMPA on a range of management issues.

Table 5 is a list of the Queensland Government's final strategic assessment commitments and contains details of their implementation mechanism and current status.

Table 5 Implementation of commitments

No.	Commitment	Implementation mechanism	Status
1	The Queensland Government will complete regional plans in the GBR coastal zone where there is a gap and continue to update other regional plans to ensure they respond to the latest information and pressures.	DSDIP	Commenced
2	The Queensland Government will maintain and work to add to its protected area estate and continue to provide funding for protected area management in the GBR coastal zone.	DNPRSR	Ongoing
3	The Queensland Government will undertake on-ground actions which will deliver long-term benefits for threatened species.	DEHP / DPC / LTSP	Ongoing
4	The Queensland Government will introduce legislation to implement key actions of the QPS. The legislation will concentrate development at five PPDA's and introduce port master planning which will incorporate environmental considerations and community engagement. The QPS also prohibits dredging within and adjoining the GBRWHA for the development of new, or the expansion of existing port facilities outside PPDA's, for the next 10 years.	DSDIP	Commence by late 2014

No.	Commitment	Implementation mechanism	Status
5	The Queensland Government will meet the EPBC Act requirements set out in Table 5 in the revised Program Report.	Queensland Government	Ongoing
6	The Queensland Government is committed to working with the Australian Government, including GBRMPA, to develop MNES guidelines for proponents to consider when assessing impacts on MNES during the EIS processes under the Program.	DPC / LTSP	Commence by early 2015
7	The Queensland Government will apply the Australian Government Offsets Policy until the Queensland Offsets Framework is accredited by the Australian Government. Offsets guidelines that deliver net benefits will be prepared for application by planning and development decision-makers in consultation with the Australian Government.	DEHP / DSDIP	Commence by end 2014
8	The Queensland Government will develop an offsets register to spatially identify areas used as offsets under Queensland legislation and priority areas for future offsets.	DEHP	Commence by end 2014
9	The Queensland Government will develop a single Direct Benefit Management Plan for the GBRWHA consistent with the accredited Queensland Offsets Framework.	DEHP / DPC / LTSP	Commence by early 2015
10	The Queensland Government will use the Australian Government 'Protected Matters Search Tool' in conducting planning and making EIS decisions related to EPBC Act protected matters.	DEHP / DSDIP	Ongoing
11	The Queensland Government will ensure that stringent conditions addressing MNES and OUV will be incorporated into approval recommendations.	DEHP / DSDIP	Ongoing
12	The Queensland Government will prioritise actions to recover species, taking into account national recovery plans, threat abatement plans and conservation advice.	DEHP / DPC / LTSP	Ongoing
13	The Queensland Government will continue to work with the Australian Government and other states and territories to achieve consistent national listing of threatened species.	DEHP	Ongoing

No.	Commitment	Implementation mechanism	Status
14	The Queensland Government will require project proponents to apply the Australian Government's guidelines for consulting with Indigenous peoples in relation to cultural heritage and the management of traditional use. The Australian Government guidelines will be developed in cooperation with Queensland and the State will also explore ways to streamline Indigenous consultation processes between the two governments.	DEHP / DSDIP	Commence by early 2015
15	The Queensland Government will work with the Australian Government, including GBRMPA, to develop guidelines for proponents to consider when assessing cumulative impacts on MNES in the GBRWHA.	DPC / LTSP	Commence by early 2015
16	The Queensland Government will ensure that fisheries are managed for the purpose of ecological sustainability, supported by the ongoing collection of commercial and recreational data through various monitoring programs.	DAFF / DPC	Ongoing
17	The Queensland Government will incorporate reporting on MNES into Queensland State of the Environment reporting.	DEHP	Commence 2015
18	The Queensland Government is providing \$12 million over three years in grants under the Everyone's Environment Grants program.	DEHP	Commenced
19	The Queensland Government will provide \$30 million of NRM funding to the reef for biodiversity, wetlands, water quality, coastal risk, sustainable agriculture and weeds and pest management projects over the next five years. This will support the sustainable management of natural resources and help protect significant natural assets.	DNRM	Commenced
20	The Queensland Government will continue to support programs that improve the OUV of the Wet Tropics World Heritage Area.	DEHP / Wet Tropics Management Authority / DNPRSR	Ongoing

No.	Commitment	Implementation mechanism	Status
21	The Queensland Government will continue to support the Queensland Wetlands Program to deliver a range of new mapping, information and decision-making tools and products to enable local, state and federal government agencies, landowners, regional natural resource management bodies and conservation groups to protect and manage wetlands into the future.	DEHP	Ongoing
22	The Queensland Government is committed to providing 40 new Indigenous Land and Sea Rangers in Queensland over three years, bringing the total number of Indigenous Land and Sea Rangers to 80.	DEHP	Commenced
23	The Queensland Government will continue to work closely with GBRMPA to increase the implementation of complementary actions across protected area jurisdictions, including the streamlining of assessment and joint permitting processes, the formulation of joint park user policies, and discouraging repeat offending.	DNPRSR / DPC	Ongoing
24	The Queensland Government will continue to fund and support ongoing joint field management activities with the Australian Government, including GBRMPA.	DNPRSR / DPC	Ongoing
25	The Queensland Government will advise the Australian Government of any proposed changes of substance to the Program and will prepare a MNES Impact Statement in such cases.	DEHP / DSDIP	Ongoing
26	The Queensland Government will report to the Australian Government regarding proposed developments that may impact upon world heritage properties to ensure Australia's international obligations continue to be met.	DEHP / DSDIP	Ongoing
27	The Queensland Government will report annually to the Great Barrier Reef Ministerial Forum on implementation of the Reef 2050 – Long Term Sustainability Plan.	DPC / LTSP	Commencing 2015
28	The Queensland Government will work with the Australian Government, including GBRMPA, to develop a Reef 2050 – Long Term Sustainability Plan for the GBRWHA by the end of 2014 and ensure its implementation.	DPC / LTSP	Commenced

No.	Commitment	Implementation mechanism	Status
29	The Queensland Government will work with the Australian Government, including GBRMPA, to develop an outcomes-based framework for the GBRWHA as part of the Reef 2050 – Long Term Sustainability Plan.	DPC / LTSP	Commence by early 2015
30	The Queensland Government will work with the Australian Government, including GBRMPA, to establish an integrated monitoring framework and program for the GBRWHA as part of the Reef 2050 – Long Term Sustainability Plan.	DPC / LTSP	Commence by early 2015
31	The Queensland Government will continue to work with industry and other stakeholders in Gladstone Harbour through the Gladstone Healthy Harbour Partnership to ensure open and accountable management of Gladstone Harbour, including annual reporting on ecosystem health and future actions underpinned by rigorous monitoring and science.	DEHP	Ongoing
32	The Queensland Government is committed to reducing the risk of shipping incidents and potential pollution of the marine environment, including implementing its responsibilities as part of the North East Shipping Management Group.	DTMR (Marine Safety Queensland)	Ongoing
33	The Queensland Government is committed to funding of \$55 million over the next five years to develop, promote and install best management practice systems to improve reef water quality.	DEHP / DPC	Commenced
34	The Queensland Government will continue to fund and support the Reef Water Quality Protection Plan and the associated Paddock to Reef monitoring program to help achieve the long-term goal of no detrimental impact from the quality of water entering the GBR. Consideration will be given to the inclusion of other pollutants other than broadscale land use during the Plan's next review in 2018.	DPC / LTSP	Ongoing

Appendix 1: Summary of public submissions and Queensland Government responses

Theme	Topic	Summary of public comment	Queensland Government response
General	Strategic Assessment process	<p>A number of submitters congratulated the Queensland Government on the strategic assessment and the work that went into developing the draft reports. Submitters advised that the reports provided a good assessment of scientific knowledge.</p> <p>Some criticised the draft strategic assessment reports for not providing details of the authors of the reports. Two strategic assessments for the marine and coastal components also raised concerns for them in relation to scope and methodology. Some considered there was inconsistency between the two strategic assessments regarding crossover issues such as inshore waters, coastal ecosystems, ports and islands.</p> <p>Some submitters suggested that a single strategic assessment covering both the marine and coastal components be prepared to present a holistic view and to demonstrate collaboration between both governments.</p> <p>Some suggested a moratorium on the approval of development projects until the strategic assessments are endorsed.</p>	<p>Technical advice, both from within and outside government, was applied during the preparation of Queensland's draft strategic assessment reports as well as the best available expertise, data and research. The Australian Department of the Environment (DOE) and the Great Barrier Reef Marine Park Authority (GBRMPA) were also consulted and provided advice. The author of the reports is the Queensland Government.</p> <p>The two strategic assessments recognise the jurisdictional responsibilities between the Queensland Government and GBRMPA and were undertaken to simplify the assessment and presentation. Considerable effort was made to ensure consistency. Both strategic assessments will directly inform the Reef 2050 – Long Term Sustainability Plan (LTSP) for the Great Barrier Reef World Heritage Area (GBRWHA).</p> <p>A moratorium on development approvals was not put in place for natural justice reasons. The Queensland Government has a rigorous development assessment process already in place to manage development and protect the environment.</p>

Theme	Topic	Summary of public comment	Queensland Government response
	Strategic Assessment Terms of Reference	Some submitters questioned the Queensland Government's adherence to the strategic assessment Terms of Reference (TOR) and suggested that the reports be reviewed against the TOR prior to finalisation. No specific TOR references were provided.	The Queensland Government draft reports were independently reviewed by a contractor commissioned by the Australian Government. That review concluded the majority of the TOR was addressed in the draft reports. The few identified gaps in the TOR have been addressed in the final strategic assessment reports.
	Strategic Assessment public consultation	<p>Some submitters criticised the fact that no public comment was sought during the development of the Queensland Government's draft reports.</p> <p>Indigenous stakeholders raised concerns about the joint consultation held in late 2013 and early 2014 and stated that the consultation period was too short.</p> <p>Some concerns were raised regarding the time taken to draft the reports. Some submitters stated the draft reports were too long to easily review and provide feedback on. Others stated there were difficulties in obtaining hard copies.</p> <p>Key stakeholders requested that they continue to be consulted on all relevant aspects to the strategic assessment, including the LTSP, offsets policy review, cumulative impact assessment guidelines, proposed ports legislative changes and port master planning guidelines.</p>	<p>The draft strategic assessment reports prepared by the Queensland Government and GBRMPA were released for public consultation by the Australian Minister for the Environment on 1 November 2013 for a 13 week (92 days) period, which was 64 days over the minimum requirement for public consultation under the <i>Environment Protection and Biodiversity Conservation Act</i> (EPBC Act).</p> <p>The length of the draft reports is commensurate with the requirements of the TOR and the scale and nature of the strategic assessment. The reports were made available via a number of websites, including a project specific website. CDs were available upon request and hard copies located at various locations throughout Queensland.</p> <p>Community information sessions and regional briefings were held to inform the public and advise on how to make a submission. A specific forum was held for Indigenous stakeholders.</p> <p>The Queensland Government will continue to consult with the public and key stakeholders on a range of policy initiatives relating to the GBRWHA.</p>
	Alignment of Queensland and	Some submitters were concerned that the draft strategic assessment reports prepared by the	The Queensland Government and GBRMPA worked closely during the finalisation of the draft

Theme	Topic	Summary of public comment	Queensland Government response
	GBRMPA reports	Queensland Government and GBRMPA contained anomalies and some of the information presented was inconsistent. Comments were also made that the two reports had a different narrative and different conclusions in relation to the overall health of the Great Barrier Reef (GBR).	strategic assessment reports to ensure consistency in the information presented and to avoid duplication of information and data. This work has continued during the finalisation of the respective reports to address perceived assessment gaps or confusion about jurisdictional boundaries.
	Strategic Assessment outcomes	Some submitters were supportive of the forward commitments described in Queensland's draft strategic assessment reports while others sought further information and clarity regarding their establishment, funding and governance arrangements. Some also highlighted specific initiatives they would like to see as part of the Queensland Program.	<p>The Queensland Government is working to strengthen its legislative and regulatory framework aimed at managing and protecting the GBR coastal zone and the commitments outlined in the final strategic assessment reports have been developed to respond to the key challenges facing the GBR.</p> <p>Suggestions for additional commitments have been reviewed and feedback taken on board where appropriate. Some suggestions related to programs and activities already being undertaken and this feedback will be considered as part of their ongoing management and review.</p> <p>As per Commitment 28, the Queensland Government is working with the Australian Government, including GBRMPA, to develop the LTSP. The findings of the strategic assessment will directly inform the development of the LTSP.</p>
	Addressing World Heritage Committee concerns	<p>Some submitters commended the Australian and Queensland governments' efforts in undertaking the strategic assessment and praised the draft reports as a constructive response to the WHC request.</p> <p>Some stated that the draft strategic assessment reports did not meet WHC's expectations though and called for greater emphasis on cumulative impacts of particular projects and for a clear set of actions to</p>	<p>The Queensland Government is committed to supporting the Australian Government in fulfilling its obligations in relation to the GBR's status as a World Heritage Area (Commitment 26).</p> <p>The Queensland Government is working with the Australian Government, including GBRMPA, to develop the LTSP (Commitment 28). The LTSP will include an outcomes-based framework for the</p>

Theme	Topic	Summary of public comment	Queensland Government response
		address WHC concerns and improve the overall health of the GBR.	<p>GBRWHA that contains desired outcomes and targets for protecting Matters of National Environmental Significance (MNES) and its Outstanding Universal Value (OUV) (Commitment 29).</p> <p>Additionally, the Queensland Government will work with the Australian Government, including GBRMPA, to develop guidelines for proponents to consider when assessing cumulative impacts on MNES in the GBRWHA (Commitment 15).</p>
	Queensland and Australian government resourcing	Some submitters commented that the draft strategic assessment reports did not contain funding or resourcing commitments. Some called for greater levels of funding towards the protection of the GBR and requested a similarly funded strategy to that provided for the Murray Darling River Basin. Some concerns were raised about the resourcing of particular management programs and initiatives with calls for additional funding and staffing.	Each year, the Queensland Government invests approximately \$35 million in programs and initiatives aimed at the protection of the GBR. This investment includes support for the Reef Water Quality Protection Plan, regional Natural Resource Management groups, the Gladstone Healthy Harbour Partnership, the Queensland Wetlands Program, joint field management programs with the Australian Government and GBRMPA, Indigenous management programs, fisheries management programs, scientific and research projects, and enforcement and compliance actions.
MNES	World heritage	<p>Submitters generally acknowledged the GBRWHA as an important national and international natural asset. Some stated that the GBRWHA is not being adequately protected in line with Australia's obligations to the WHC and stated that the Queensland Program and its commitments were not adequate to protect its World Heritage status.</p> <p>Some submitters suggested that management practices be focussed on enhancing MNES rather than on offsetting residual impacts. Some raised</p>	<p>The Queensland Government is committed to ensuring the OUV of Queensland's World Heritage properties is identified, protected and conserved. All development proposals must meet the highest environmental standards. The 'avoid, mitigate, offset' approach is central to the Queensland Government's protection regime.</p> <p>The Queensland Government will not accept any project proposal that involves mining in the GBRWHA; not approve a project that proposes</p>

Theme	Topic	Summary of public comment	Queensland Government response
		<p>concerns that the risks to the GBR from activities such as port and industrial development were not fully addressed in the draft strategic assessment reports.</p>	<p>activities that will contravene a plan of management for the GBRWHA or proposes unacceptable impacts to world heritage values; and will ensure that there are no unacceptable impacts to the GBRWHA from proposed developments that undertake an EIS process under the Program.</p> <p>The Queensland Government has committed to strengthen protection of the GBR through improvements to the Government's planning, development and coastal management processes, including the development of guidelines for assessing impacts on MNES (Commitment 6), the use of the Australian Government's 'Protected Matters Search Tool' (Commitment 10), and ensuring that conditions addressing MNES and OUV are incorporated into approval recommendations (Commitment 11).</p>
	National heritage	<p>Some submitters raised concerns about the projected condition for national heritage as poor and felt that there was inadequate emphasis on Indigenous cultural heritage and values.</p> <p>One submitter noted that the GBR was placed on the National Heritage List without formal assessment in line with national heritage criteria.</p>	<p>The Queensland Government is committed to ensuring the OUV of Queensland's national heritage places is identified, protected and conserved.</p> <p>The Queensland Government will not approve projects that contravene a national heritage plan of management or propose unacceptable impacts to national heritage values.</p> <p>The Queensland Government acknowledges feedback received during public consultation regarding Traditional Owner cultural heritage and values. Content has been provided in this Supplementary Report in response to the comments.</p>

Theme	Topic	Summary of public comment	Queensland Government response
	Great Barrier Reef Marine Park (GBRMP)	<p>Some submitters commended the strategic assessment as being an important step to improving the health of the GBRMP. Some raised concerns about the projected condition for the GBRMP as poor, and specific concerns about the GBRMP south of Cooktown and the inshore, coastal and adjacent terrestrial ecosystems of the region.</p> <p>Some submitters suggested improvements for protecting the GBRMP through better alignment between national and state processes, stronger collaboration across all levels of government and with industry, and greater effort to reverse declining water quality in the GBRMP.</p>	<p>The Queensland Government is committed to ensuring the OUV of the GBRWHA is protected and conserved for future generations.</p> <p>The Queensland Government will not approve a project that proposes activities that will contravene a plan of management for the GBRMP or proposes unacceptable impacts to world heritage values; and will ensure that there are no unacceptable impacts to the GBRMP from proposed developments that undertake an EIS process under the Program.</p> <p>Each year, the Queensland Government invests approximately \$35 million in programs and initiatives aimed at the protection of the GBR and the GBRMP. This investment includes support for the Reef Water Quality Protection Plan, regional Natural Resource Management groups, the Gladstone Healthy Harbour Partnership, the Queensland Wetlands Program, joint field management programs with the Australian Government and GBRMPA, Indigenous management programs, fisheries management programs, scientific and research projects, and enforcement and compliance actions.</p> <p>The Queensland Government is working with the Australian Government, including GBRMPA, to develop the LTSP (Commitment 28) that will include an outcomes-based framework for the GBRWHA that contains desired outcomes and targets for protecting MNES and OUV (Commitment 29).</p>
	Listed threatened species and	Some submitters raised concerns about listed threatened species and communities (TSCs) in the	The Queensland Government is committed to the survival and conservation status of listed TSCs and

Theme	Topic	Summary of public comment	Queensland Government response
	communities	GBR. Comments included the need for improved mapping of listed TSCs; the belief that there was not enough focus on TSCs that do not have MNES classification; concern about the impact of recent amendments to the <i>Vegetation Management Act</i> on TSCs; and suggestions that the listed TSCs under the EPBC Act be aligned with Queensland legislation. Some submitters also raised detailed issues about listed TSCs in specific locations in the GBR coastal zone.	<p>ensuring their protection is promoted and enhanced. All development proposals must meet the highest environmental standards. Project that would result in unacceptable impacts to a listed TSC will not be approved.</p> <p>The Queensland Government will not recommend for approval a project or activity that is inconsistent with a recovery plan or threat abatement plan for a listed TSC; will have regard for any approved conservation advice in relation to a listed TSC when assessing a project; and will not accept a project that will result in unacceptable impacts to a listed TSC.</p> <p>The Queensland Government will prioritise actions to recover species, taking into account national recovery plans, threat abatement plans and conservation advice (Commitment 12), and will continue to work with the Australian Government and other states and territories to achieve consistent national listing of threatened species (Commitment 13).</p> <p>Amendments to the <i>Vegetation Management Act</i> in May 2013 were introduced to balance agricultural production with environmental protection. The changes retained key environmental protections and landholders are not able to clear land indiscriminately. The reef watercourse protections remain in place and land clearing practices are extensively monitored to ensure they are appropriate.</p>
	Migratory species	Some submitters were concerned about the	The Queensland Government is committed to the

Theme	Topic	Summary of public comment	Queensland Government response
		<p>projected condition for migratory species as poor, and raised concerns about the data presented in the draft strategic assessment reports.</p> <p>Comments included criticism that the analysis of migratory species in the GBR coastal zone was limited to birds and it should be extended to include those in the marine zone; perceived anomalies in the assessments of extent, condition and trends in relation to migratory species and their habitat; and the need for improved mapping of migratory species and their habitat.</p>	<p>survival and conservation status of migratory species and that the habitat they rely on is promoted and enhanced.</p> <p>The Queensland Government will not approve a project or activity that is inconsistent with a recovery plan, threat abatement plan or the requirements of the EPBC Act in relation to migratory species; and not recommend for approval a project that will result in unacceptable impacts to migratory species or an area of important habitat for migratory species.</p> <p>Comments relating to the information presented in the draft strategic assessment reports have been considered and further information or additional detail provided in both the revised Program Report and/or this Supplementary Report.</p> <p>Specific information relating to migratory species in the marine zone is also addressed in the strategic assessment reports prepared by GBRMPA.</p>
	Ramsar wetlands	<p>Some submitters called for a greater emphasis on the protection of Ramsar wetlands and the need for tailored policies and programs to protect them. Some commented on the data used to report on the condition and trend of Ramsar wetlands in the GBR coastal zone.</p> <p>Other specific comments included calls for the recognition of Ramsar wetlands in legislation; the recognition of wetlands in the Caley Valley and Fitzroy Delta as Ramsar wetlands; and the need for a broader assessment of wetlands in Queensland to assist the analysis of the overall health of the GBR.</p>	<p>The Queensland Government is committed to ensuring the ecological character of Ramsar wetlands are maintained and protected.</p> <p>The Queensland Government will not recommend for approval a project that contravenes a plan of management for a Ramsar wetland or would result in unacceptable impacts on a Ramsar wetland, and ensure there are no unacceptable impacts to Ramsar wetlands from proposed developments that undertake an EIS process under the Program. Commitments 20 and 21 detail how the Queensland Government will continue to support the</p>

Theme	Topic	Summary of public comment	Queensland Government response
			<p>Queensland Wetlands Program and other programs that improve the OUV of the Wet Tropics WHA.</p> <p>The State Planning Policy (SPP) also protects GBR wetlands by ensuring development is regulated to prevent the loss or degradation of wetland environmental values, and ensuring wetlands continue to function.</p> <p>Comments relating to the information presented in the draft strategic assessment reports have been considered and further information or additional detail provided in both the revised Program Report and/or this Supplementary Report.</p>
Specific protected matters / OUV attributes	OUV	<p>Some submitters raised concerns about the general decline in the GBRWHA’s outstanding universal value (OUV) and the impact of particular projects on OUV.</p> <p>Some questioned the ability of the Queensland Program to protect MNES and OUV while the difficulty of offsetting OUV was noted. Other submitters suggested the need for a clear framework of responsibility for OUV and that management actions be undertaken to protect OUV.</p>	<p>The Queensland Government is committed to ensuring the OUV of the GBRWHA is protected and conserved for future generations. Queensland will utilise and direct project proponents to consider the Australian Government EPBC Act referral guidelines for the OUV of the GBRWHA.</p> <p>Key legislation reflects the requirements of the EPBC Act by ensuring that specific consideration be given to MNES and OUV under EIS assessment processes and enable planning activities to consider MNES and OUV. These EIS processes apply the ‘avoid, mitigate, offset’ hierarchy. The application of project conditions are designed to ensure that there are no unacceptable impacts on MNES and OUV.</p> <p>The Queensland Government is working to strengthen the identification and enhanced assessment of MNES and OUV. This includes the</p>

Theme	Topic	Summary of public comment	Queensland Government response
			development of guidelines for assessing impacts on MNES (Commitment 6), the use of the Australian Government's 'Protected Matters Search Tool' (Commitment 10), and ensuring that conditions addressing MNES and OUV are incorporated into approval recommendations (Commitment 11).
	Ecosystem health	Some submitters noted the decline in overall health of the GBR ecosystem south of Cooktown and suggested this coincided with greater development and human use of the southern coast. Some stated that the resilience of the entire GBR system had been eroded as a result and suggested greater collaboration between levels of government to reverse the declining trend.	<p>The Queensland Government is committed to improving the ecosystem health of the GBR.</p> <p>Each year, the Queensland Government invests approximately \$35 million in programs and initiatives aimed at the protection of the GBR. This investment includes support for the Reef Water Quality Protection Plan, regional Natural Resource Management groups, the Gladstone Healthy Harbour Partnership, the Queensland Wetlands Program, joint field management programs with the Australian Government and GBRMPA, Indigenous management programs, fisheries management programs, scientific and research projects, and enforcement and compliance actions.</p> <p>The Queensland Government is working with the Australian Government, including GBRMPA, to develop the LTSP (Commitment 28) that will include an outcomes-based framework for the GBRWHA that contains desired outcomes and targets for promoting overall ecosystem health (Commitment 29).</p>
	Turtles and dugongs	Some submitters raised concerns about the potential impacts of development on turtle and dugong populations. Some cited impacts from fishing practices; a decline in seagrass; light pollution; boat strikes; destruction of nesting areas and feeding	The Queensland Government is committed to ensuring turtle and dugong populations in the GBR coastal zone are identified, protected and conserved.

Theme	Topic	Summary of public comment	Queensland Government response
		<p>habitat; illegal trade and traditional hunting.</p> <p>Some submitters stated there is a need for coordinated action to protect turtles and dugongs and some stated current management arrangements were inadequate.</p>	<p>As part of the Australian Government's Reef 2050 Plan, the Queensland Government will work with the Australian Government and Traditional Owners on a Dugong and Turtle Protection Plan. The plan will improve protection of dugong and turtle populations in Far North Queensland and the Torres Strait Islands from the threats of poaching, illegal hunting and marine debris.</p> <p>The Australian and Queensland governments are also working with Traditional Owner communities and funding a program to help stop environmental damage from feral pigs with the aim of protecting turtle populations along the Queensland coast. The program will utilise Traditional Owner knowledge to identify key turtle nesting sites that will be considered priority areas for feral pig control efforts.</p>
	Mahogany glider	<p>Some submitters raised concerns about the assessment of the mahogany glider presented in the draft strategic assessment reports. Some stated that there was a lack of references or sources in the assessment, and some considered the statements about habitat distribution and condition and trend to be unsubstantiated.</p> <p>Submitters considered that using land use and conservation status as proxies for determining condition and trend was not adequate given the range of threats to the glider, including the impact of cyclones on habitat, weeds, grazing, invasive species, vegetation changes and habitat fragmentation which were not taken into account.</p> <p>Some submitters suggested that active conservation</p>	<p>The Queensland Government is committed to the survival and conservation status of listed TSCs and ensuring their status is promoted and enhanced.</p> <p>The Queensland Government will not recommend for approval a project or activity that is inconsistent with a recovery plan or threat abatement plan for a listed TSC; or that will result in unacceptable impacts to a listed TSC.</p> <p>The Queensland Government will prioritise actions to recover species, taking into account national recovery plans, threat abatement plans and conservation advice (Commitment 12). Accordingly, the Mahogany Glider Recovery Plan is currently being jointly reviewed by the Queensland Department of Environment and Heritage Protection</p>

Theme	Topic	Summary of public comment	Queensland Government response
		<p>management and the further implementation of the Mahogany Glider Recovery Plan was the best way to protect the mahogany glider.</p>	<p>(DEHP) and DOE. An updated Plan is likely to be finalised by the end of 2014.</p> <p>Comments relating to the information presented in the draft strategic assessment reports have been considered and further information or additional detail provided in the revised Program Report and/or this Supplementary Report.</p>
	Cassowary	<p>Similar to the mahogany glider comments, some submitters had reservations about the assessment of the cassowary presented in the draft strategic assessment reports. Submitters commented that the cassowary is subject to a range of threats, including road kills, habitat fragmentation, disease, weeds, climate change and attacks by dogs which were not referenced in the GBR coastal zone draft strategic assessment reports.</p> <p>Some submitters noted concerns about ongoing coastal development as well as alleging that large amounts of cassowary habitat clearing have occurred as part of recent cyclone 'clean-ups'.</p> <p>Implementation of the Cassowary Recovery Plan was cited as the best way forward to protect the cassowary.</p>	<p>The Queensland Government is committed to the survival and conservation status of listed TSCs and ensuring their status is promoted and enhanced.</p> <p>The Queensland Government will not recommend for approval a project or activity that is inconsistent with a recovery plan or threat abatement plan for a listed TSC; or that will result in unacceptable impacts to a listed TSC.</p> <p>The Queensland Government will prioritise actions to recover species, taking into account national recovery plans, threat abatement plans and conservation advice (Commitment 12). Accordingly, the Cassowary Recovery Plan is currently being jointly reviewed by DEHP and DOE. An updated Plan is likely to be finalised by the end of 2014.</p> <p>Comments relating to the information presented in the draft strategic assessment reports have been considered and further information or additional detail provided in the revised Program Report and/or this Supplementary Report.</p>
	Coral reefs and seagrass	<p>Some submitters raised concerns about the health of coral reefs in the GBR, citing recent coral cover loss</p>	<p>The Queensland Government will continue to fund and support the Reef Water Quality Protection Plan</p>

Theme	Topic	Summary of public comment	Queensland Government response
		<p>and the decline of inshore and mid-shelf reefs. Some called for measures to improve water quality in the GBR and others cited impacts from terrestrial pollution, crown of thorns starfish, fishing, ocean acidification and carbon dioxide production.</p> <p>Some submitters raised concerns about the health and resilience of seagrass, with suggestions that water quality in the GBR needs to be improved to protect seagrass. Some were concerned about the effect of the loss of seagrass on turtles and dugongs, while others commented that seagrass was recovering in Gladstone Harbour as a result of recently implemented best-practice monitoring actions.</p>	<p>to help achieve the long-term goal of no detrimental impact from the quality of water entering the GBR (Commitments 33 and 34).</p> <p>Feedback and comments received on the Reef Water Quality Protection Plan will be considered as part of the Reef Plan’s ongoing operations and activities. The next review of Reef Plan is due to occur by 2018 and suggestions to expand its scope to sources of pollutants other than broadscale land use will be considered at that time.</p> <p>The Queensland Government is working with the Australian Government, including GBRMPA, to develop the LTSP (Commitment 28) that will include an outcomes-based framework that contains desired outcomes and targets for protecting the GBR (Commitment 29).</p>
	Other MNES/OUV attributes	Some submitters raised concerns about the general health of a number of specific MNES and OUV attributes, such as fish, dolphins, whales, terrestrial and migratory birds, bats and flying foxes. These submitters commented on the information presented in the draft strategic assessment reports or stated that there was insufficient information. Some also cited particular impacts and/or called for enhanced management actions to map, monitor and protect these MNES/OUV attributes.	<p>The Queensland Government is committed to ensuring that all MNES and the OUV of the GBR is protected and conserved. Queensland will direct project proponents to consider the EPBC Act guidelines, including for the OUV of the GBRWHA.</p> <p>The Queensland Government is strengthening management of GBR coastal zone through commitments aimed at the better identification and enhanced assessment of MNES and OUV. This includes the development of guidelines for assessing impacts on MNES (Commitment 6), the use of the Australian Government’s ‘Protected Matters Search Tool’ (Commitment 10), and ensuring that conditions addressing MNES and OUV are incorporated into approval</p>

Theme	Topic	Summary of public comment	Queensland Government response
Terrestrial issues and drivers	Port development and associated dredging	<p>Some submitters discussed port development, including dredging and spoil relocation, and stated that these topics were not adequately covered in both Queensland and GBRMPA’s draft strategic assessment reports.</p> <p>Some called for a more comprehensive discussion of ports, including their historical presence on the Queensland coast and their importance for regional economies and Australia’s trade prospects. Others raised concerns that potential impacts from port development were not highlighted enough in the reports, including anchorages and anchor drag, coal dust, marine rubbish, noise and light, altering tidal flows, dredging, release of contaminants, water quality and habitat destruction and degradation.</p> <p>Some submitters requested certainty around the future of port and industrial development in the GBR, and supported the consolidation of port infrastructure, best practice port management and maximising the use of current port precincts before expansion into new areas.</p> <p>Some submitters stated that the draft Queensland Ports Strategy did not adequately respond to the threats to the GBR and called for any ports-related legislation to have explicit consideration of environmental factors.</p> <p>Some supported a ban on port development along the GBR coast while the strategic assessment was being undertaken, while many others were</p>	<p>recommendations (Commitment 11).</p> <p>The Queensland Ports Strategy (QPS) is the Queensland Government’s blueprint for managing and improving the efficiency and environmental management of the state’s port network over the next 10 years (Commitment 4).</p> <p>The QPS includes a commitment by the Queensland Government to concentrate port development to within the long-established major port areas within or adjoining the GBRWHA (that is the ports of Abbot Point; Gladstone; Hay Point and Mackay; and Townsville).</p> <p>The QPS also prohibits dredging within and adjoining the GBRWHA, for the development of new or the expansion of existing port facilities outside of priority port development areas for the next 10 years (to 2024).</p> <p>The QPS requires the development of port master plans that will contain an environmental management framework to manage land and marine-based environmental values including MNES, OUV, Matters of State Environmental Significance and cumulative impacts. Preparing these rigorous master plans will become a statutory requirement for the major bulk commodity ports.</p> <p>By early 2015, the Queensland Government will introduce legislative changes into Parliament to secure the commitment to major port reform. This legislation will regulate future port development in a coordinated and responsible manner.</p>

Theme	Topic	Summary of public comment	Queensland Government response
		<p>concerned about recent Australian Government and GBRMPA decisions regarding port development at the Port of Abbot Point. Some also highlighted concerns about potential port developments in Keppel Bay, Fitzroy, Port Alma and Cape York (Wongai and Princess Charlotte Bay).</p> <p>There was a wide range of opinions regarding dredging and spoil relocation associated with port development. Some submitters considered dredging to be a large threat to the health of the GBR and called for a suspension or moratorium on capital dredging and spoil relocation in the GBRWHA. Some suggested that more research and scientific study is required into the impacts from dredging to assist in informing future regulation and management processes.</p>	<p>A moratorium on port development and dredging approvals was not put in place for natural justice reasons. The Queensland Government has a rigorous development assessment process already in place to manage development and protect the environment.</p>
	Urban development	<p>Some submitters expressed concerns about increases in coastal populations and tourism developments, while others raised specific concerns about actual or planned coastal development projects and their potential impacts on the GBR.</p> <p>Some submitters discussed impacts from urban run-off, stormwater and sewerage on water quality in the GBR and suggested these issues required a greater management response by all levels of government. It was also suggested that urban run-off, stormwater and sewerage be included as part of the monitoring activities undertaken under the Reef Water Quality Protection Plan.</p>	<p>Key legislation reflects the requirements of the EPBC Act by ensuring that specific consideration be given to MNES and OUV under EIS assessment processes and enable planning activities to consider MNES and OUV. These EIS processes apply the 'avoid, mitigate, offset' hierarchy. The application of project conditions are designed to ensure that there are no unacceptable impacts on MNES and OUV.</p> <p>The Queensland Government will continue to fund and support the Reef Water Quality Protection Plan to help achieve the long term goal of no detrimental impact from the quality of water entering the GBR (Commitments 33 and 34).</p> <p>Feedback and comments received on the Reef</p>

Theme	Topic	Summary of public comment	Queensland Government response
			<p>Water Quality Protection Plan will be considered as part of the Reef Plan’s ongoing operations and activities. The next review of Reef Plan is due to occur by 2018 and suggestions to expand its scope to sources of pollutants other than broadscale land use will be considered at that time.</p> <p>The Queensland Government is working with the Australian Government, including GBRMPA, to develop the LTSP (Commitment 28) that will include an outcomes-based framework for the GBRWHA that contains desired outcomes and targets for protecting MNES and OUV (Commitment 29).</p>
	Industrial development	<p>Some submitters expressed support for the protection of undeveloped areas of the GBR coastal zone by excluding industrial development and implementing ‘no-go’ zones.</p> <p>Some submitters raised concerns about water quality issues from industrial development as well as referenced specific proposed industrial developments proposed in the GBR coastal zone. Some also raised concerns around the impacts of industrial development on particular species and ecological communities in the GBR.</p>	<p>Key legislation reflects the requirements of the EPBC Act by ensuring that specific consideration be given to MNES and OUV under EIS assessment processes and enable planning activities to consider MNES and OUV. These EIS processes apply the ‘avoid, mitigate, offset’ hierarchy. The application of project conditions are designed to ensure that there are no unacceptable impacts on MNES and OUV.</p> <p>The Queensland Government will continue to fund and support the Reef Water Quality Protection Plan to help achieve the long term goal of no detrimental impact from the quality of water entering the GBR (Commitments 33 and 34).</p> <p>Feedback and comments received on the Reef Water Quality Protection Plan will be considered as part of the Reef Plan’s ongoing operations and activities. The next review of Reef Plan is due to occur by 2018 and suggestions to expand its scope</p>

Theme	Topic	Summary of public comment	Queensland Government response
			<p>to sources of pollutants other than broadscale land use will be considered at that time.</p> <p>The Queensland Government is working with the Australian Government, including GBRMPA, to develop the LTSP (Commitment 28) that will include an outcomes-based framework for the GBRWHA that contains desired outcomes and targets for protecting MNES and OUV (Commitment 29).</p>
	Agriculture	<p>Some submitters noted that historical land practices continue to negatively affect the GBR, mainly in regards to poor water quality as a result of agricultural runoff.</p> <p>Some acknowledged the success of the Reef Water Quality Protection Plan in working to improve water quality through better agricultural management practices. Some suggested the Plan should be accelerated and enhanced as a result.</p> <p>Some submitters raised concerns about recent changes to the <i>Vegetation Management Act</i> with regard to clearing on agricultural land. Some also raised concerns about the potential expansion of agriculture, particularly in Cape York, and the impacts this could have on GBR water quality.</p>	<p>Each year, the Queensland Government invests approximately \$35 million in programs and initiatives aimed at the protection of the GBR. This investment includes \$6 million a year to support on-ground actions through regional Natural Resource Management groups, as well as \$5.4 million to support graziers and cane growers to develop best management programs for their farms. Almost \$9 million over five years has also been spent on more than 40 research projects to give graziers and cane growers more information and tools so that they can develop an action plan for improvements on their properties.</p> <p>The Queensland Government will continue to fund and support the Reef Water Quality Protection Plan to help achieve the long-term goal of no detrimental impact from the quality of water entering the GBR (Commitments 33 and 34).</p> <p>Feedback and comments received on the Reef Water Quality Protection Plan will be considered as part of the Reef Plan's ongoing operations and activities. The next review of Reef Plan is due to occur by 2018 and suggestions to expand its scope</p>

Theme	Topic	Summary of public comment	Queensland Government response
			<p>to sources of pollutants other than broadscale land use will be considered at that time.</p> <p>Amendments to the <i>Vegetation Management Act</i> in May 2013 were introduced to balance agricultural production with environmental protection. The changes retained key environmental protections and landholders are not able to clear land indiscriminately. The reef watercourse protections remain in place and land clearing practices are extensively monitored to ensure they are appropriate.</p>
	Mining	<p>Some submitters raised concerns about the impacts of mining activities in GBR catchments with references to particular areas (Fitzroy, Corio Bay, Broadsound-Shoalwater, The Narrows) or particular types of mining (including coal, coal seam gas, shale oil, sand, salt). Some identified impacts from mining activities on poor water quality in the GBR, particularly from planned and 'emergency' mine water discharges into inland river systems. Other impacts of mining were also identified, including coal dust, port development and increased shipping.</p> <p>Some submitters were concerned about the growth of the mining and resources industry in Queensland and stated that mining should be restricted or capped in order to protect the GBR. Some also commented on the link between mining and the use of fossil fuels and its potential effect on climate change as a major risk to the GBR.</p>	<p>The Queensland Government prohibits mining activity in the GBRWHA and rigorously conditions any potential downstream impacts from mining activity outside the World Heritage Area.</p> <p>Key legislation reflects the requirements of the EPBC Act by ensuring that specific consideration be given to MNES and OUV under EIS assessment processes and enable planning activities to consider MNES and OUV. These EIS processes apply the 'avoid, mitigate, offset' hierarchy. The application of project conditions are designed to ensure that there are no unacceptable impacts on MNES and OUV.</p> <p>The Queensland Government will continue to fund and support the Reef Water Quality Protection Plan to help achieve the long-term goal of no detrimental impact from the quality of water entering the GBR (Commitments 33 and 34).</p> <p>Feedback and comments received on the Reef</p>

Theme	Topic	Summary of public comment	Queensland Government response
			<p>Water Quality Protection Plan will be considered as part of the Reef Plan’s ongoing operations and activities. The next review of Reef Plan is due to occur by 2018 and suggestions to expand its scope to sources of pollutants other than broadscale land use will be considered at that time.</p> <p>Temporary Emission Licences (TELs) temporarily modify specified conditions of an environmental authority to allow mine water discharges to occur if an applicable event or series of events occurs. A flood or bushfire are examples of an applicable event. A TEL does not remove the need for mine operators to manage their sites in accordance with the conditions of their environmental authority or apply retrospectively to contaminant releases. The establishment of TELs was an important part of the Queensland Government’s response to the natural disasters of 2010/11 and the recommendations of the Flood Commission of Inquiry.</p> <p>The Queensland Government is working with the Australian Government, including GBRMPA, to develop the LTSP (Commitment 28) that will include an outcomes-based framework for the GBRWHA that contains desired outcomes and targets for protecting MNES and OUV (Commitment 29).</p>
Marine / GBR specific issues and drivers	Fishing and aquaculture	Some submitters raised issues relating to fisheries management in the GBR with calls for the need for further information and assessment of commercial and recreational fishers activities in the region. Specific concerns included the impacts of population growth; the total level of extraction from the GBR system; latency in certain fisheries; growth in	<p>The Queensland Government acknowledges feedback received during public consultation and additional information about fisheries management is included in this Supplementary Report.</p> <p>The Queensland Government is currently undertaking a wide-ranging review of fisheries</p>

Theme	Topic	Summary of public comment	Queensland Government response
		<p>recreational fishing; the accuracy of reporting processes; and limited available information about spawning aggregations.</p> <p>Some submitters presented information about the community and economic benefits of both recreational and commercial fishing while some submitters raised concerns about traditional use and the regulation of traditional fishing in the GBR. Some raised concerns about the management practices of Fisheries Queensland and suggested there is a need for increased compliance and enforcement activities of both the commercial and recreational sectors.</p> <p>Some submitters stated that the examination of fishing activities in the draft strategic assessment reports needed to be more comprehensive, while others raised concerns about the impacts from aquaculture activities in the GBR.</p>	<p>management in Queensland to deliver a better system for the State’s commercial and recreational fishers. The purpose of the review is to simplify the current management system and promote a sustainable fisheries resource for all Queenslanders.</p> <p>The review will examine the entire approach to fisheries management in Queensland. An independent consultant has been appointed, with guidance from a Ministerial Advisory Committee, and consultation is occurring with commercial, recreational, conservation and Traditional Owner groups. The findings of the review are due to be provided to the Queensland Government by the end of 2014.</p> <p>The Queensland Government will ensure that fisheries are managed for the purpose of ecological sustainability, supported by the ongoing collection of commercial and recreational data through various monitoring programs (Commitment 16).</p> <p>With regard to aquaculture, key legislation reflects the requirements of the EPBC Act by ensuring that specific consideration be given to MNES and OUV under EIS assessment processes and enable planning activities to consider MNES and OUV. These EIS processes apply the ‘avoid, mitigate, offset’ hierarchy. The application of project conditions are designed to ensure that there are no unacceptable impacts on MNES and OUV.</p>
	Tourism/recreation	Some submitters highlighted the critical importance	The Queensland Government acknowledges the

Theme	Topic	Summary of public comment	Queensland Government response
		<p>of the GBR and its world heritage status to the tourism industry, particularly the commercial marine tourism sector. These submitters stated that any major loss of ecological value in the GBR would have significant implications for the tourism industry.</p> <p>Some submitters raised concerns about tourism infrastructure projects in the GBR and stated that there was a need for proposed projects to be carefully assessed and their impacts managed to ensure environmental values are protected.</p> <p>Many tourism-related submitters stated that the interests of the tourism industry and its reliance on the conservation of the GBR should be a high priority for all levels of government.</p>	<p>importance of the GBR for Queensland’s tourism industry.</p> <p>Tourism activities in the GBR are subject to stringent approvals and regulations to ensure they are undertaken sustainably and within strict environmental conditions.</p> <p>Key legislation reflects the requirements of the EPBC Act by ensuring that specific consideration be given to MNES and OUV under EIS assessment processes and enable planning activities to consider MNES and OUV. These EIS processes apply the ‘avoid, mitigate, offset’ hierarchy. The application of project conditions are designed to ensure that there are no unacceptable impacts on MNES and OUV.</p>
	Shipping	<p>Some submitters raised concerns about the impacts associated with shipping in the GBR. Specific references were made to groundings and anchorage drags; waste and debris management, the introduction of exotic species, and the potential release of ship-sourced contaminants.</p> <p>The North East Shipping Management Plan currently being developed by the Australian Government in consultation with the Queensland Government was raised by some submitters as an important management tool for managing shipping-related risks within the GBR by both industry and environmental groups.</p> <p>Some submitters stated that the draft strategic</p>	<p>The Queensland Government is committed to reducing the risk of shipping incidents and potential pollution of the marine environment by implementing its responsibilities as part of the North East Shipping Management Group (Commitment 32).</p> <p>The Queensland Government acknowledges feedback received during public consultation and additional information about shipping management is included in this Supplementary Report.</p>

Theme	Topic	Summary of public comment	Queensland Government response
		assessment reports did not adequately examine shipping activities and shipping management in the GBR.	
	Crown-of-thorns starfish (COTS)	Some submitters raised concerns about COTS outbreaks in the GBR and stated that nutrient run-off and poor water quality entering the reef system was to blame. Consequently, these submitters suggested more efforts were needed to improve water quality in general as well as specific actions to combat COTS outbreaks.	<p>The Queensland Government will continue to fund and support the Reef Water Quality Protection Plan to help achieve the long-term goal of no detrimental impact from the quality of water entering the GBR (Commitments 33 and 34).</p> <p>Feedback received on the Reef Water Quality Protection Plan will be considered as part of the Reef Plan's ongoing operations and activities. The next review of Reef Plan is due to occur by 2018 and suggestions to expand its scope to sources of pollutants other than broadscale land use will be considered at that time.</p> <p>The Queensland Government is working with the Australian Government, including GBRMPA, to develop the LTSP (Commitment 28) that will include an outcomes-based framework that contains desired outcomes and targets for protecting the GBR (Commitment 29).</p> <p>The Queensland Government is investing \$1 million to control COTS and the Australian Government's Reef Trust will allocate a further \$2 million to be invested with the Reef and Rainforest Research Centre for direct work to help eradicate COTS.</p>
	Traditional use	Some submitters raised concerns about the information presented in the draft strategic assessment reports about traditional use and sought greater recognition of Traditional Owner cultural heritage and rights and interests enshrined in law.	The Queensland Government acknowledges feedback received during public consultation regarding the importance of the GBR region to traditional owners and traditional uses in the GBR region.

Theme	Topic	Summary of public comment	Queensland Government response
		<p>Some submitters called for greater Traditional Owner involvement in the management of the GBR, including increased participation in field management activities and representation on relevant stakeholder groups. Some also stated that there is a need to better protect dugong and turtles given their importance to Traditional Owner culture and traditional economy.</p>	<p>Commitment 14 states the Queensland Government will require project proponents to apply the Australian Government’s guidelines for consulting with Indigenous people in relation to cultural heritage and the management of traditional use. The Australian Government guidelines will be developed in cooperation with Queensland and the State will also explore ways to streamline Indigenous consultation processes between the two governments.</p> <p>The Queensland Government is committed to providing 40 new Indigenous Land and Sea Rangers in Queensland over three years, bringing the total number of Indigenous Land and Sea Rangers to 80 (Commitment 22).</p> <p>As part of the Australian Government’s Reef 2050 Plan, the Queensland Government will work with the Australian Government and Traditional Owners on a Dugong and Turtle Protection Plan. The plan will work to protect dugong and turtle populations in Far North Queensland and the Torres Strait Islands from the threats of poaching, illegal hunting and marine debris.</p> <p>The Australian and Queensland governments are working with Traditional Owner communities and funding a program to help stop environmental damage from feral pigs with the aim of protecting turtle populations along the Queensland coast. The program will utilise Traditional Owner knowledge to identify key turtle nesting sites that will be</p>

Theme	Topic	Summary of public comment	Queensland Government response
	Research activities	<p>Some submitters supported increased research activities to better understand the overall health of the GBR and how best to improve its current condition and future trend. Some suggested increased funding for these activities with specific references to marine ecosystems, the impacts of contaminated water from rivers flowing into the GBR, Keppel Bay Islands, measures to avoid loss of fish stocks, cumulative impacts on MNES, and opportunities to increase the resilience of the reef following recent extreme weather events.</p> <p>Some submitters stated there is a need for greater integration of monitoring and research efforts by the Australian and Queensland governments. Some called for the development of relationships with research institutions for this purpose and also for a more strategic approach to research activities being undertaken.</p>	<p>considered priority areas for feral pig control efforts.</p> <p>Each year, the Queensland Government invests approximately \$35 million in programs and initiatives aimed at the protection of the GBR. This investment includes support for the Reef Water Quality Protection Plan, regional Natural Resource Management groups, the Gladstone Healthy Harbour Partnership, the Queensland Wetlands Program, joint field management programs with the Australian Government and GBRMPA, Indigenous management programs, fisheries management programs, scientific and research projects, and enforcement and compliance actions.</p> <p>The Queensland Government is working with the Australian Government, including GBRMPA, to develop the LTSP (Commitment 28) that will include an outcomes-based framework for the GBRWHA that contains desired outcomes and targets for protecting MNES and OUV (Commitment 29). The LTSP will also establish an integrated monitoring and reporting framework that will coordinate monitoring and reporting activities in the GBR (Commitment 30).</p>
	Climate impacts and extreme weather	<p>Some submitters stated that climate impacts and extreme weather events present the most significant risks to the GBR. Some acknowledged statements in the draft strategic assessment reports that climate impacts and extreme weather were outside the report's scope, while others stated that the reports provided inadequate information about climate impacts and extreme weather.</p> <p>Some submitters raised concerns about the mining</p>	<p>The Queensland Government is committed to managing the impacts of climate impacts on Queensland's economy, communities, infrastructure and the environment in a responsible and cost-effective way.</p> <p>Current initiatives to build resilience include helping coastal communities better prepare for rising sea levels, storm tide and erosion; providing climate data on rainfall levels and weather patterns to</p>

Theme	Topic	Summary of public comment	Queensland Government response
		<p>industry, particular coal mining, and the link between carbon emissions and climate impacts. Some suggested that a project's potential greenhouse gas emissions and the effect this may have on the GBR should be included in the assessment of the project.</p>	<p>support long-term agricultural productivity; and providing data about projected changes in temperature, rainfall and weather patterns for specific regions including those in the GBR. These measures build on ongoing work by the Department of Science, Information Technology, Innovation and the Arts on climate variability, climate change, and extreme weather.</p>
	<p>Catchment run-off</p>	<p>Some submitters commented on the risk of sediments flowing into the GBR from agricultural runoff and raised general concerns about associated water quality impacts. Some stated that current management practices regarding catchment runoff are not sufficient to protect the GBR, while some commended the improvements in water quality achieved through agricultural run-off reduction projects such as the Reef Water Quality Protection Plan.</p> <p>Some submitters highlighted potential water quality impacts from urban stormwater, mining and ship-sourced contaminants and suggested that management arrangements for these should be developed and implemented.</p>	<p>Each year, the Queensland Government invests approximately \$35 million in programs and initiatives aimed at the protection of the GBR. This investment includes \$6 million a year to support on-ground actions through regional Natural Resource Management groups, as well as \$5.4 million to support graziers and cane growers to develop best management programs for their farms. Almost \$9 million over five years has also been spent on more than 40 research projects to give graziers and cane growers more information and tools so that they can develop an action plan for improvements on their properties.</p> <p>The Queensland Government will continue to fund and support the Reef Water Quality Protection Plan to help achieve the long term goal of no detrimental impact from the quality of water entering the GBR (Commitments 33 and 34).</p> <p>Feedback received on the Reef Water Quality Protection Plan as part of the public consultation are noted and will be considered as part of the Reef Plan's ongoing operations and activities. The next review of Reef Plan is due to occur by 2018 and suggestions to expand its scope to sources of</p>

Theme	Topic	Summary of public comment	Queensland Government response
			<p>pollutants other than broadscale land use will be considered at that time.</p> <p>The Queensland Government is working with the Australian Government, including GBRMPA, to develop the LTSP (Commitment 28) that will include an outcomes-based framework for the GBRWHA that contains desired outcomes and targets for protecting MNES and OUV (Commitment 29). The LTSP will also establish an integrated monitoring and reporting framework that will coordinate monitoring and reporting activities in the GBR (Commitment 30).</p>
	Ecologically Sustainable Development (ESD)	<p>Some submitters supported the application of the principles of ESD as part of the Queensland Program, particularly the precautionary principle and the principle of intergenerational equity.</p> <p>Some submitters suggested the principles of ESD had not been adequately presented in the draft strategic assessment reports and requested clarity on how the Queensland Program applies ESD.</p>	<p>The Queensland Program delivers upon the ESD principles outlined in the Intergovernmental Agreement on the Environment 1992 (IGAE) of:</p> <ul style="list-style-type: none"> • the precautionary principle • intergenerational equity • conservation of biological diversity and ecological integrity • improved valuation, pricing and incentive mechanisms. <p>The Queensland Government Program achieves the principles of ESD through decision-making processes that effectively integrate both long-term and short-term economic, environmental, social and equitable considerations.</p> <p>The Queensland Program, through its administration of EIS processes under key legislation, upholds ESD in assessing projects and</p>

Theme	Topic	Summary of public comment	Queensland Government response
			<p>setting conditions for effective environmental management through the ‘avoid, mitigate, offset’ hierarchy. The use of this approach ensures that approved projects and activities will not have unacceptable impacts on MNES and OUV in the GBR coastal zone.</p> <p>The Queensland Government acknowledges feedback received during public consultation about ESD and additional information has been provided in both the revised Program Report and this Supplementary Report.</p>
Queensland Reports and Program	Queensland’s draft strategic assessment reports	<p>There was a wide range of comments on the draft Program Report and draft Strategic Assessment Report.</p> <p>Some submitters stated that the draft reports were comprehensive and logical and presented relevant information clearly and concisely. However, some submitters raised concerns about the contents of the draft reports and suggested changes or the inclusion of additional or updated information.</p> <p>Key areas referenced as requiring further examination were cumulative impacts; the assessment of condition and trend; the mapping of MNES; traditional owner cultural heritage; Ramsar sites; and the impacts of certain activities such as port development, shipping and fishing. Specific concerns were also raised about certain information presented and/or the data/tables produced, as well as the reports’ overall conclusions.</p> <p>Some submitters stated that the draft Program</p>	<p>Comments about the contents of the draft Program Report and draft Strategic Assessment Report have been noted and every effort made to ensure Queensland’s final strategic assessment reports consider and address the comments with the aim of achieving endorsement by the Australian Minister for the Environment under the EPBC Act.</p> <p>A revised Program Report and a Supplementary Strategic Assessment Report has been prepared as part of Queensland final strategic assessment documentation and feedback received on the draft reports has been taken into account during their preparation and finalisation. Additional or updated information aimed at addressing feedback has been provided in this Supplementary Report.</p>

Theme	Topic	Summary of public comment	Queensland Government response
		<p>Report did not adequately describe recent changes to Queensland legislation and policies regarding vegetation management, access to national parks, and agriculture production doubling by 2040. Some stated the draft report did not reflect a view that the environment is a priority for the Queensland Government.</p> <p>Some submitters raised concerns about the draft strategic assessment reports not being comprehensive and covering all aspects relevant to the overall health of the GBR. Some called for more clarity on the jurisdictional arrangements between the Queensland and Australian governments while others sought greater recognition of the role of local management in GBR management.</p> <p>Some submitters stated that the draft strategic assessment reports did not meet the requirements of the EPBC Act regarding endorsement by the Australian Minister for the Environment.</p>	
	Queensland Program	<p>A wide range of comments were received about the Queensland Program. Many of the comments made by submitters have been detailed in other sections of this table under their specific subject or theme.</p> <p>Some submitters stated that the Program as a whole was not sufficient to protect the GBR and suggested actions or initiatives that they felt would improve or strengthen the Program. These suggestions have been detailed and addressed in other sections of this table.</p>	<p>The Queensland Government appreciates feedback on the Queensland Program as a whole and the suggestions received from the public and stakeholders. All feedback has been considered and further information or additional detail provided in both the revised Program Report and/or this Supplementary Report to address it where appropriate. Specific issues raised by submitters in relation to the Queensland Program as a whole have also been addressed in other sections of this table.</p> <p>The overarching policy intent of the Queensland</p>

Theme	Topic	Summary of public comment	Queensland Government response
			<p>Program is to achieve ESD by integrating environmental considerations into Government decision-making processes at all levels. The Queensland Government is committed to ensuring that any development in the GBR coastal zone occurs in a sustainable manner and that unacceptable impacts on MNES do not occur through the Queensland Program.</p> <p>The Queensland Government is working to strengthen its GBR coastal zone management frameworks and the Queensland's final strategic assessment reports include commitments designed to build on and strengthen the Queensland Program. The Queensland Government is also working with the Australian Government, including GBRMPA, to develop the LTSP (Commitment 28) which will contain targets and outcomes and priority actions to achieve them.</p>
	Queensland Ports Strategy	<p>Some submitters were supportive of the development of the QPS, particularly its commitment to establish Priority Port Development Areas (PPDAs) and prohibit dredging for the development of new, or the expansion of existing port facilities to those port areas for the next 10 years.</p> <p>Some submitters raised concerns about the QPS. Concerns raised include location-specific issues such as the Port of Abbot Point and Port of Gladstone; the life of the QPS (10 years) when the Queensland Program is for 25 years; the fact major port developments currently undergoing assessment are exempted from the restrictions on dredging; that the draft QPS lacked detail about major initiatives and</p>	<p>The Queensland Government acknowledges feedback received during public consultation regarding the QPS and additional information has been provided in this Supplementary Report.</p> <p>The QPS is the Queensland Government's blueprint for managing and improving the efficiency and environmental management of the state's port network over the next 10 years (Commitment 4).</p> <p>The QPS includes a commitment by the Queensland Government to concentrating port development to within the long-established major port areas within or adjoining the GBRWHA (within the GBR coastal zone the ports of Abbot Point;</p>

Theme	Topic	Summary of public comment	Queensland Government response
		<p>included unclear language; and that dredge material associated with development within PPDAs could potentially be approved for dumping outside of PPDAs.</p> <p>Some submitters stated that the draft strategic assessment reports did not provide sufficient information about the QPS and its major initiatives and commitments.</p>	<p>Gladstone; Hay Point and Mackay; and Townsville).</p> <p>The QPS also prohibits dredging within and adjoining the GBRWHA, for the development of new or the expansion of existing port facilities outside of priority port development areas for the next 10 years (to 2024).</p> <p>The QPS requires the development of port master plans will contain an environmental management framework to manage land and marine-based environmental values including MNES, OUV, Matters of State Environmental Significance and cumulative impacts. Preparing these rigorous master plans will become a statutory requirement for the major bulk commodity ports.</p> <p>By early 2015, the Queensland Government will introduce legislative changes into Parliament to secure the commitment to major port reform. This legislation will regulate future port development in a coordinated and responsible manner.</p>
	Queensland planning	<p>Some submitters indicated support for the inclusion of MNES as a matter of state interest under Queensland's new State Planning Policy (SPP). The commitment to complete in regional plans in the Great Barrier Reef coastal zone where there is a gap was also supported.</p> <p>Some submitters raised concerns that the SPP placed a burden on local government as the entity responsible for initial assessment processes and called for additional resourcing of local governments. Concerns were also raised about recent planning</p>	<p>Queensland's new SPP came into effect in December 2013. A single SPP provides a consolidated and comprehensive view of the state's interests and provides clarity to local government on making or amending local planning instruments or assessing development applications. The SPP helps streamline assessment and approval processes for local government and empowers them to plan for their own communities.</p> <p>The SPP explicitly states that matters of environmental significance are to be valued and</p>

Theme	Topic	Summary of public comment	Queensland Government response
		<p>reforms in Queensland, including the removal of third party and public interest provisions to appeal planning decisions, and the removal of mandatory public consultation processes for some development types.</p>	<p>protected, and the making or amending of a planning scheme by a local government must integrate this state interest by considering MNES and the requirements of the EPBC Act.</p>
	<p>Reef Water Quality Protection Plan and joint field management</p>	<p>Some submitters commended the success of the Reef Water Quality Protection Plan as the main policy instrument to manage water quality from broad scale land use in the GBR region. Some stated that it demonstrates the effectiveness of a collaborative approach between government, industry organisations and regional Natural Resource Management bodies.</p> <p>Some submitters called for changes to Reef Plan, including the extension of its scope to other major impacting industries such as urban, industrial, port and mining development. There were also calls for Reef Plan to focus on other significant threats to the GBR such as coral bleaching and COTS outbreaks.</p> <p>Some submitters called for greater investment in Reef Plan on the part of all parties, including increased funding from government, and that the methodology used to determine targets and goals needs to be more clearly demonstrated and scientifically peer-reviewed.</p> <p>Some submitters commented on joint field management programs in the GBR region and raised specific concerns about the adequacy of penalties for non-compliance and repeat offenders, particularly in relation to illegal fishing and poaching.</p>	<p>The Queensland Government will continue to fund and support the Reef Water Quality Protection Plan to help achieve the long term goal of no detrimental impact from the quality of water entering the GBR (Commitments 33 and 34).</p> <p>Feedback and comments received on the Reef Water Quality Protection Plan will be considered as part of the Reef Plan's ongoing operations and activities. The next review of Reef Plan is due to occur by 2018 and suggestions to expand its scope to sources of pollutants other than broadscale land use will be considered at that time.</p> <p>Commitment 23 details how the Queensland Government will continue to work closely with GBRMPA to increase the implementation of complementary actions across protected area jurisdictions, including the streamlining of assessment and joint permitting processes, the formulation of joint park user policies, and discouraging repeat offending.</p> <p>Commitment 24 states that the Queensland Government will continue to support ongoing joint field management activities with the Australian Government, including GBRMPA.</p> <p>Additionally, the Queensland Government is</p>

Theme	Topic	Summary of public comment	Queensland Government response
		<p>Some submitters stated that current field management programs were under resourced and that staffing levels at relevant government agencies were insufficient to carry out compliance and enforcement actions.</p>	<p>working with the Australian Government, including GBRMPA, to develop the LTSP (Commitment 28) that will establish an integrated monitoring and reporting framework for the GBR (Commitment 30).</p>
	Offsets	<p>Some submitters indicated support for the alignment of Queensland's offsets policy with that of the Australian Government. There was also general support for the establishment of a Reef Trust to coordinate the delivery of offsets across the GBR while some submitters called for investment decisions under Reef Trust to be open and publicly accountable via an offsets register.</p> <p>Some submitters raised concerns about types of offsets with some stating that cash-based offsets or research projects as offsets are inadequate. Some stated that a lack of available baseline data brings into question how measurements for offsets and impacts can be determined.</p> <p>A number of submitters stated that offsets should be a last resort rather than standard practice, and some stated that offsets should have a direct benefit to the relevant degraded area (e.g. same bioregion or local government area). There were also calls for offsets to be secured in advance of any project impacts to ensure overall ecological function is maintained.</p>	<p>The Queensland Government is developing a single Environmental Offsets Framework for Queensland, due to commence later in 2014. The framework will replace five existing Queensland Government offset policies, while retaining a focus on environmental protection. It will provide clarity for Queenslanders as a 'one-stop-shop' for environmental offsets, clearly establishing what an offset is and how an offset may be delivered.</p> <p>A key part of the framework will be a new Queensland Environmental Offsets Policy which will establish a simplified and more scientific-based approach to determining an offset obligation and provide greater flexibility in offset delivery choices. The policy will apply to prescribed activities regulated under existing legislation and prescribed environmental matters. This more strategic approach will lead to greater benefits for the environment by limiting residual impacts from development on areas possessing significant biodiversity values.</p> <p>The Queensland Government will apply the Australian Government's EPBC Act Environmental Offsets Policy until the Queensland Environmental Offsets Framework is finalised (Commitment 7). Offset guidelines that deliver net benefits will be prepared for application by planning and</p>

Theme	Topic	Summary of public comment	Queensland Government response
			<p>development decision-makers in consultation with the Australian Government.</p> <p>The Queensland Government will also develop an offsets register to spatially identify areas used as offsets under Queensland legislation and priority areas for future offsets (Commitment 8), and will develop a single Direct Benefit Management Plan for the GBRWHA consistent with the Queensland Environmental Offsets Framework (Commitment 9).</p> <p>Matters relating to Reef Trust, its establishment and future operation are a matter for the Australian Government.</p>
	Cumulative impacts	<p>Submitters were generally supportive of the commitment to work with the Australian Government to develop guidelines for proponents to consider when assessing cumulative impacts in the GBRWHA.</p> <p>Some submitters stated that there is a need for the guidelines to be based on rigorous research and scientific study. Some called for greater detail about the guidelines and sought more information about how they will define, identify and quantify cumulative impacts, while others raised concerns about the guidelines not being enforceable by legislative.</p> <p>Industry stakeholders requested that they be consulted during the development of the guidelines, and some noted that the master planning guidelines for PPDAs to be developed under the QPS will promote the consideration of cumulative impacts.</p>	<p>The Queensland Government will work with the Australian Government, including GBRMPA, to develop guidelines for proponents to consider when assessing cumulative impacts on MNES in the GBRWHA (Commitment 15).</p> <p>Feedback received during the strategic assessment public consultation process will assist in informing the preparation of these guidelines and all matters raised will be considered. Stakeholders will also be consulted during the guidelines' development.</p> <p>The Queensland Government is working with the Australian Government, including GBRMPA, to develop the LTSP (Commitment 28) that will include an outcomes-based framework for the GBRWHA that contains desired outcomes and targets for protecting MNES and OUV (Commitment 29).</p>
	Monitoring and compliance	Some acknowledged the success of Reef Plan and stated that its monitoring activities had increased	The Queensland Government will continue to fund and support the Reef Water Quality Protection Plan

Theme	Topic	Summary of public comment	Queensland Government response
		<p>understanding of land and catchment management impacts on the GBR.</p> <p>Some submitters stated that monitoring and compliance activities across the GBR need to be enhanced to obtain a greater understanding of the reef's overall health. Industry stakeholders requested that the findings also be made publicly available for use when preparing project assessments.</p> <p>Some submitters raised concerns about recent monitoring and compliance activities undertaken in relation to Gladstone Harbour.</p>	<p>to help achieve the long-term goal of no detrimental impact from the quality of water entering the GBR (Commitments 33 and 34).</p> <p>Feedback and comments received on the Reef Water Quality Protection Plan will be considered as part of the Reef Plan's ongoing operations and activities.</p> <p>Commitment 23 details how the Queensland Government will continue to work closely with GBRMPA to increase the implementation of complementary actions across protected area jurisdictions, including the streamlining of assessment and joint permitting processes, the formulation of joint park user policies and discouraging repeat offending.</p> <p>Additionally, the Queensland Government is working with the Australian Government, including GBRMPA, to develop the LTSP (Commitment 28) that will establish an integrated monitoring and reporting framework for the GBR (Commitment 30).</p> <p>The Queensland Government will continue to work with industry and other stakeholders in Gladstone Harbour through the Gladstone Healthy Harbour Partnership to ensure open and accountable management of Gladstone Harbour, including annual reporting on ecosystem health underpinned by monitoring and science (Commitment 31).</p>
	Queensland Government governance	Some submitters raised issues of governance under the Queensland Program and suggested the establishment of a steering committee to oversee	In March 2014, the Queensland Government established a stand-alone Environment Taskforce to work on strategic whole-of-government

Theme	Topic	Summary of public comment	Queensland Government response
		<p>implementation of the commitments given the range of Queensland Government agencies involved. These submitters also stated that implementation arrangements should include stakeholder consultation.</p> <p>Some submitters raised specific concerns in relation to governance issues and perceived inadequacies on behalf of both the Australian and Queensland governments in monitoring recent activities in Gladstone Harbour.</p>	<p>environmental projects relevant to the GBR. The Taskforce will consolidate and drive strategic environmental policy work and coordinate implementation of initiatives aimed at promoting the protection and management of the GBR.</p> <p>The Queensland Government is working with the Australian Government, including GBRMPA, to develop the LTSP (Commitment 28). The LTSP will rely on a partnership between all levels of government and relevant stakeholders and a Partnership Group has been established to discuss and reach agreement on the plan's contents. Stakeholder groups will also be invited to identify and implement some of the LTSP's actions to recognise that a whole-of-community approach is needed to ensure protection of the GBRWHA. This is consistent with the partnership model used for the Reef Water Quality Protection Plan.</p> <p>The Great Barrier Reef Ministerial Forum is overseeing the development and future implementation of the LTSP. It is a forum made up of Australian and Queensland government ministers with environment and natural resource management portfolios. Annual reports on the implementation of the Program commitments and initiatives under the LTSP will be provided to the Great Barrier Reef Ministerial Forum.</p> <p>The Queensland Government will continue to work with industry and other stakeholders in Gladstone Harbour through the Gladstone Healthy Harbour Partnership to ensure open and accountable</p>

Theme	Topic	Summary of public comment	Queensland Government response
	Recent changes to Queensland legislation and policy	<p>Some submitters raised concerns about recent changes to Queensland’s legislative and regulatory framework and potential impacts on the GBR.</p> <p>Some submitters were concerned about recent changes to the <i>Vegetation Management Act</i> and stated that these will enable more vegetation clearing which could lead to loss of habitat and increased sediment flows into the GBR.</p> <p>Some were concerned about amendments to the <i>Environmental Protection Act</i> which established Temporary Emission Licences and to the <i>Water Act</i> which remove the requirement for riverine protection permits. These submitters generally considered these changes to be a negative outcome for the protection of MNES and the GBR.</p>	<p>management of Gladstone Harbour, including annual reporting on ecosystem health underpinned by monitoring and science (Commitment 31).</p> <p>Changes to the <i>Vegetation Management Act</i> in May 2013 were introduced to strike an important balance between agricultural production and environmental protection and to reduce unnecessary regulation and duplication of legislation. The changes retained key environmental protections and landholders are still not able to clear land indiscriminately. The reef watercourse protections in North Queensland remain in place and the Government continues to monitor land clearing practices and enforce tough penalties where breaches have occurred.</p> <p>Temporary Emission Licences (TELs) temporarily modify specified conditions of an environmental authority to allow for a release of certain contaminants to occur if an applicable event or series of events occurs. A flood or bushfire are examples of an applicable event. A TEL does not remove the need for operators to manage their sites in accordance with the conditions of their environmental authority or apply retrospectively to contaminant releases. The establishment of TELs was an important part of the Queensland Government’s response to the natural disasters of 2010/11 and the recommendations of the Flood Commission of Inquiry.</p> <p>The removal of provisions in the <i>Water Act</i> in May 2013 requiring a riverine protection permit means that landholders no longer need to obtain a permit to remove vegetation on a watercourse. There is no</p>

Theme	Topic	Summary of public comment	Queensland Government response
			evidence that this has resulted in any large scale clearing of riverine vegetation or has caused significant degradation to watercourses in Queensland.
	Environmental Impact Statement process	Some submitters commended the Environmental Impact Statement (EIS) processes under the Queensland Program and stated it is rigorous assessment system which identifies environmental values, impacts and commitments by project proponents. However, some submitters stated the process could be enhanced by ensuring EISs are transparent, independently reviewed and held to consistent standards of environmental protection.	Key legislation reflects the requirements of the EPBC Act by ensuring that specific consideration be given to MNES and OUV under EIS assessment processes and enable planning activities to consider MNES and OUV. These EIS processes apply the 'avoid, mitigate, offset' hierarchy. The application of project conditions are designed to ensure that there are no unacceptable impacts on MNES and OUV. Feedback on the EIS processes under the Program will be considered as part of the Queensland Government's ongoing legislative and regulatory review activities.
	Individual port developments – Abbot Point	A significant number of submitters raised concerns about the Australian Government's decision to approve development works at the Port of Abbot Point and associated dredging and spoil relocation activities at a deep-water location. Many of these submitters were community members and stakeholders calling on GBRMPA to not approve a dredging permit for the development works.	The Abbot Point proposal was subject to the most comprehensive state and federal assessment process ever undertaken and 95 environmental conditions have been applied, including the relocation of dredge material well away from coral reefs and other sensitive coastal areas, rigorous water quality and marine life monitoring, and a strict marine and shipping management plan.

Appendix 2: Summary of independent review findings and Queensland Government responses

The purpose of the independent review was to provide a rigorous independent assessment of the draft program and strategic assessment reports to ensure that the documents accurately described and demonstrated the effectiveness of the Program.

The findings of the independent review noted that the reports provided a good presentation of a large body of information. It provided some suggestions for improvement of the documents to enhance the presentation and to increase the depth and coverage of the assessment.

A number of recommendations in the independent review report were addressed in the draft reports prior to their release for public consultation. However, the short timeframe between the release of the independent review findings and the release of the draft reports did not allow for all of the findings to be addressed.

#	Reference	Comment	Action	Response
DRAFT Program Report - version as at 13/09/13				
1	General comments	The Program Report is generally well structured, particularly Chapters 1 to 3. Where cross references are provided in the existing documents between the Program Report and Assessment Report, they greatly assist the reader with interpretation of the intended message.	To improve readability and useability for a wider audience, consideration should be given to opportunities to include more specific references to key sections in the Strategic Assessment Report. For example, Chapter 4.4 of the Program Report has strong linkages with Chapters 7.6.4 and 7.6.5 of the Strategic Assessment Report.	Where possible additional referencing was included prior to the release of the draft reports for public consultation. The revised Program Report has been revised and the Supplementary Report written to provide supplementary information to the draft Strategic Assessment Report with a focus on addressing comments from the independent review and public consultation. Both reports include information on the commitments made by the Queensland Government to deliver its Program.
2	General	The Program Report refers to the World	The inclusion of a brief description of the	The brief description regarding the relevant

#	Reference	Comment	Action	Response
	comments	Heritage Committee's recommendations in several sections, without providing a description or background (indicating a level of assumed knowledge).	background of the World Heritage Committee's consideration of the Great Barrier Reef and the strategic assessment would enhance understanding for a broad audience.	WHC's recommendations has been provided in Chapter 1 of the Supplementary Report and Chapter 1 of the revised Program Report.
3	General comments	There is some confusion and overlap in describing Foundational Management, Strengthened Management and Forward Commitments. Some of the Forward Commitments relate to ongoing programs that have been in place for many years, and don't appear to be committing to anything new (e.g. FC14 – continuation of support for joint field management activities). Use of the term 'proposed program' (e.g. on page 15) in the future tense adds to the confusion about what is actually in place. Further information on the legal or policy status of Forward Commitments would be helpful.	<p>For clarity, it is recommended that:</p> <ul style="list-style-type: none"> • Chapter 4 – Foundational Management focus on describing legislation, policies and programs that are currently in effect. Ideally a commencement date should be provided, particularly when referring to new or amended measures introduced recently (i.e. within the last 12 months) so that a more accurate baseline can be determined. • Chapter 5 – Strengthened Management should focus on describing proposed new or amended legislation, policies and programs currently in draft or scheduled to be developed within the life of the Program. • Chapter 6 – Forward Commitments should focus on new or ongoing monitoring, reporting, review and continual improvement strategies, including timing and resourcing commitments where possible. It is understandable that some Forward Commitments may lack detail at this 	Where possible, recommended actions were addressed prior to the public consultation process. The revised Program Report has been rewritten combining Forward Commitments, Management Commitments and Recommended Improvements outlined in the draft Program Report to clearly present the commitments under the Queensland Government Program Chapter 7 of the revised Program Report and Chapter 5 of the Supplementary Report include a summary of the Program commitments.

#	Reference	Comment	Action	Response
			stage of the Program, but key objectives should be clear.	
4	General comments	Reference to Matters of State Environmental Significance (MSES) mapping in the present tense causes confusion about the currency of this tool, which is not yet available.	Give consideration to referencing MSES mapping in Strengthened Management.	The MSES mapping tool is available on the Department of State Development, Infrastructure and Planning (DSDIP) website (www.dsdip.qld.gov.au/about-planning/state-planning-policy-guidance-material.html). MSES and policy relating to MSES is included in the State Planning Policy which came into effect on 2 December 2013.
5	General comments	The Program Report makes good use of tables and figures to assist in illustrating key messages. The majority of tables and figures are well presented and useful. However, a small number of tables and figures do not seem to have a clear purpose or are not easily understood. For example, Chapter 2 of the Program Report, Figure 1 includes the boundaries of NRM regions, making it difficult to identify the boundary of the Great Barrier Reef coastal zone and catchment (the primary purpose of the figure). This is prior to any NRM regions being introduced in the text.	It would be beneficial to show the Natural Resource Management (NRM) boundaries on a later figure to avoid confusion, and simplify Figure 1 to include the Great Barrier Reef coastal zone and Great Barrier Reef catchment only.	Separate maps showing NRM boundaries and catchments were included in the draft Strategic Assessment Report released for public consultation. The Supplementary Report provides a number of relevant figures and tables to provide clarity for the reader. It presents only those tables which are central to the focus of the Program. The comprehensive map of the Great Barrier Reef coastal zone and NRM regions have been included in the revised Program Report and Supplementary Report to demonstrate the geographic area.
6	General comments	Additional referencing of certain information presented in the Program Report would contribute to improving the validity of the Report. For example, on page 22 "Protected areas also provide a stronghold for threatened species."	A reference for this statement and /or more specific detail (e.g. percentage of threatened species currently represented in the conservation estate) would be beneficial.	Additional referencing has been included where possible.

#	Reference	Comment	Action	Response
7	General comments	There are some aspects of the Program where a duplication of effort between the State and Commonwealth seems to exist (e.g. dugong management).	Explain how this is managed and whether there is duplication of effort in areas of overlapping responsibility.	<p>The Queensland Government has a strong history of joint management of the GBR with the Australian Government, including the GBRMPA. An intergovernmental agreement on the GBR, which articulates the roles and responsibilities of both governments, has been in place since 1979, and was updated in 2009.</p> <p>Chapter 1 of the revised Program Report and Supplementary Report describes the management arrangements for the GBR and how the two governments work together.</p> <p>The Reef 2050—Long-Term Sustainability Plan (LTSP) will also identify management arrangements for the GBRWHA, as discussed in Chapter 3 of the revised Program Report.</p>
8	General comments	The description of support programs would benefit from expansion to include further detail and strengthen the Program description.	Expand the description of support programs and clarify that the programs are not coordinated and integrated with the prime focus on the health of the Great Barrier Reef.	Supporting programs for protection of the GBR are described in Chapter 3 of the revised Program Report.
9	Executive Summary	The statement about restricting significant port development to within existing port limits to 2022 may mislead some readers. Port limits are generally extensive and substantial expansion could occur within existing port limits. The magnitude of “significant development” is also unclear.	It is recommended that further text be added to clarify that considerable expansion is possible within existing port limits, but that new ports won’t be established under the policy. Where possible, explain what is meant by “significant” port development	A discussion on ports has been incorporated in Chapter 3 of the Supplementary Report in line with the Queensland Ports Strategy (QPS). A key action under the QPS is the prohibition of dredging within and adjoining the GBRWHA, for the development of new, or the expansion of existing port facilities outside five Priority Port Development Areas (PPDAs), for the next 10 years.

#	Reference	Comment	Action	Response
10	Page vi Program Report	States that the Australian Government has direct responsibility for dredge spoil disposal.	It should be noted that the State also has responsibility. Examples include through the issue of marine park permits (which are jointly assessed) and the issue of licences and approvals for ERAs.	State processes regarding issuing of license and approvals for Environmentally Relevant Activities (ERAs) have been reflected in Chapter 3.4 of the revised Program Report.
11	Chapter 2 Introduction	The timeframe for the Program is clearly specified. Sub-Chapter - 2.4 states that the specified timeframe for implementation of the Program is 25 years.	It is recommended that discussion of Strengthened Management measures and Forward Commitments should refer to this timeframe and the likely timing of changed management arrangements for each commitment, if this is known.	The implementation status of commitments is outlined in Chapter 7 of the revised Program Report.
12	Chapter 4 Foundational management	Discussions in Sub-Chapter 4.3 could more clearly differentiate between measures to “avoid, mitigate and offset” impacts on MNES and measures to “avoid, mitigate and offset” impacts on environmental values that may be aligned with MNES. As correctly mentioned elsewhere in Chapter 4, the current planning framework in Queensland is not designed to explicitly “identify, avoid, mitigate and offset” impacts on MNES.	Provide further clarification in the text that until measures proposed to strengthen management of MNES are incorporated more broadly into Queensland’s planning framework, any benefits to MNES afforded by the current framework are largely coincidental. The exception to this would be in the case of current EIS processes under the <i>State Development and Public Works Organisation Act 1971</i> (SDPWO Act) and <i>Environmental Protection Act 1994</i> (EP Act) which are accredited under the EPBC Act and therefore provide more explicit consideration of MNES.	Chapter 3 of the revised Program Report outlines information on Queensland’s planning activities and EIS processes under the SDPWO Act and EP Act relating to the protection of MNES and OUV. The case studies in Chapter 4 of the Supplementary Report demonstrate the EIS processes under the two acts relating to major projects and the protection of MNES and OUV. Chapter 5 and Chapter 6 of the revised Program Report specifically address how the Program operates to protect MNES and OUV.
13	Chapter 4 Foundational management	Sub-Chapter 4.4.2 states that “Queensland’s planning system provides for consideration of MNES and environmentally sensitive areas...”. However, the current planning framework, which should be described as part of the foundational management	Text should be amended to clarify any confusion.	Chapter 3 of the revised Program Report outlines how consideration of MNES occurs within Queensland’s planning activities and EIS processes under the SDPWO Act and EP Act. See note against Comment 12 above for additional information.

#	Reference	Comment	Action	Response
		arrangements, does not explicitly provide for consideration of MNES, therefore this statement could be misleading.		
14	Chapter 4 Foundational management	It is unclear how many trading ports are in the Great Barrier Reef coastal zone. Page 25 of the Program Report says 10, but page I-4 of the Abbot Point demonstration case says there are 11.	Clarify the number of trading ports in the Great Barrier Reef coastal zone for consistency.	There are twelve ports in the Great Barrier Reef coastal zone, 10 of which are classified as trading ports, one is a community port (Quintell Beach) and one is a non-trading port that services the cruise shipping industry (Cooktown). This and further information on ports in the Great Barrier Reef coastal zone is provided in the draft Strategic Assessment Report in Chapter 5.2.4.
15	Chapter 4 Foundational management	The explanations provided for key legislation governing coastal development in the Program Report are confusing and do not clearly define the differences and interrelationships between these Acts. There is also a general lack of detail in relation to key assessment processes and requirements. In Chapter 4 of the Program Report, the Table 4 caption refers to five core pieces of development legislation but only three pieces of legislation are illustrated (the SP Act and EP Act are not shown). The “Assessment” and “Approval and conditions” lines refer to the responsible entity, but it may be more relevant to nominate assessment and decision criteria so that the reader can determine the level of consideration of MNES.	For Sub-Chapter 4.5 a summary table could be useful to provide a comparison of the five core pieces of development legislation and could replace much of this section and potentially Table 4 or Sub-Chapter 4.5.2. The table could summarise each Act: the purpose of the Act, the responsible authority, typical assessment triggers (including statutory and voluntary EIS triggers), common types of development, assessment process (e.g. EIS or IDAS, whether it considers MNES or is accredited under EPBC Act), assessment criteria (e.g. local planning scheme, SPPs, project specific TOR and whether these consider MNES), other functions (e.g. plan making / development scheme making process) and relationship with other Acts (e.g. post-EIS approvals, subsequent exemptions).	Refer to Chapter 3 of the revised Program Report for clarification. This feedback was noted. The Program has been amended during finalisation and, where relevant to the revised Program, these comments have been addressed.

#	Reference	Comment	Action	Response
16	Chapter 4 Foundational management	Sub-Chapter 4.5.1.6: Table 3 - Other legislation that minimises impacts on MNES requires amendment or further clarification in relation to some key functions. There are some gaps and errors in the description of legislation. Also this Chapter is generally focussed on development approvals rather than other legislative tools used to manage the Great Barrier Reef coastal zone.	<ul style="list-style-type: none"> • <i>Coastal Protection and Management Act 1995</i>: There is no mention of the role in declaring coastal management districts (CMDs) and erosion prone areas, nor in assessment of tidal works and works in CMDs. • <i>Vegetation Management Act 1999</i>: The statement “prohibits broad-scale clearing” requires clarification throughout the report to confirm that this specifically refers to broad-scale clearing for agriculture as the VM Act does not prohibit broad-scale clearing for all purposes (e.g. exempt development such as mining activities, coordinated projects). It is noted that amendments resulting from the <i>Vegetation Management Framework Amendment Act 2013</i> once in effect later this year, will also allow some broad-scale clearing for high value agriculture. The term ‘Protects remnant vegetation’ could be more accurately described as regulating the clearing of vegetation to conserve remnant vegetation. • <i>Nature Conservation Act 1992</i>: The statement that the Act includes a Dugong Conservation Plan is not correct. The previous dugong conservation plan and a separate conservation plan for dolphins and whales have been replaced by new provisions in the <i>Nature Conservation (Wildlife Management) Regulation 2006</i>. • <i>Torres Strait Islander Cultural Heritage</i> 	This feedback was noted. The Program has been amended during finalisation and, where relevant to the revised Program, these comments have been addressed.

#	Reference	Comment	Action	Response
			<p><i>Act 2003</i> has similar functions as the <i>Aboriginal Cultural Heritage Act 2003</i> and this should be reflected in the table. Key functions that could be outlined include: the recognition, protection and conservation of Torres Strait Islander cultural heritage, recognition of Torres Strait Islander ownership of Torres Strait Islander human remains and cultural heritage, establishing a duty of care for activities that may harm Torres Strait Islander cultural heritage, and establishing a database and a register for recording Torres Strait Islander cultural heritage.</p> <ul style="list-style-type: none"> • <i>Water Act 2000</i>: does not outline the role in assessment of development involving taking or interfering with water, or the role in regulating the filling and excavation in watercourses. • <i>Land Protection (Pest and Stock Route) Management Act 2002</i>: does not outline the role in declaring pest animals and plants, management of pest plants, management of pest plants and animals on private land as well as state land. • <i>Recreation Areas Management Act 1995</i> should reference the updated <i>Recreation Areas Management Act 2006</i>. • There is no mention of the <i>Wild Rivers Act 2005</i> or the <i>Queensland Heritage Act 1992</i> • <i>Environmental Protection Act 1994</i>: 	

#	Reference	Comment	Action	Response
			Agricultural Environmentally Relevant Activities (ERAs) are not discussed.	
17	Sub-Chapter 4.5.3.1	The Queensland jurisdiction for fisheries management, including in Commonwealth waters could be explained. There is also no mention of recreational fishing, which is a major activity in the Great Barrier Reef coastal zone.	Include further detail on the jurisdiction of Queensland in fisheries management and in the management of recreational fishing.	Information on fisheries management has been provided in Chapter 3 of the revised Program Report and a paper on fisheries in the Great Barrier Reef coastal zone is in Appendix 5 of the Supplementary Report.
18	Sub-Chapter 4.5.3.2	The shipping management Sub-Chapter addresses only traffic management.	Include discussion of other issues such as the discharge of waste from vessels.	Impacts from shipping are discussed in Chapter 3 of the Supplementary Report. Chapter 3 in the revised Program Report provides information on the Queensland Government Program regarding shipping management.
19	General comments	In-stream waterway barriers and diversions impacting on natural flow regimes receive only passing mention regarding the legislation, policies and guidelines that relate to these issues.	Include more details, with reference to the <i>Fisheries Act 1994</i> and <i>Water Act 2000</i> .	Information on the <i>Fisheries Act 1994</i> has been provided in a paper on fisheries in the Great Barrier Reef coastal zone in Appendix 5 of the Supplementary Report. Information on the <i>Water Act 2000</i> supports the mitigation of impacts on MNES as outlined in the draft Program Report (Chapter 3.5)
20	Chapter 4 Foundational management	In relation to Chapter 4 the following amendments are recommended.	<ul style="list-style-type: none"> Sub-Chapter 4.5.1.1 incorrectly identifies the Single Assessment and Referral Agency rather than the State Assessment and Referral Agency as responsible for the assessment of development applications involving State triggers. Sub-Chapter 4.5.1.1: The description of the SP Act does not describe the 	<p>References to the State Assessment and Referral Agency in the draft reports were updated prior to the public consultation process.</p> <p>The description of the EP Act in the revised Program Report and Supplementary Report has been amended.</p> <p>Fisheries management is discussed in</p>

#	Reference	Comment	Action	Response
			<p>community infrastructure designation.</p> <p>Sub-Chapter 4.5.1.1: The <i>Nature Conservation Act 1992</i> and <i>Marine Parks Act 2004</i> are stated to have been integrated with the SP Act. This is not currently correct as these Acts are not yet integrated with the SP Act.</p> <ul style="list-style-type: none"> • Sub-Chapter 4.5.1.3: The description of the EP Act suggests that ERAs are assessed under the Act's EIS process whereas most ERAs won't involve an EIS but rather assessment of an Environmental Authority application under the EP Act and possible development permit under the SP Act. This could potentially be misleading as to the level of assessment and consideration of MNES afforded to ERAs. • Sub-Chapter 4.5.1.3: Reference to the EP Act does not mention some key functions of this Act, including the role of prescribing ERAs (including Agricultural ERAs), establishing general environmental duties, environmental protection policies and dealing with contaminated land matters all of which have some relevance to mitigating impacts in the Great Barrier Reef coastal zone. • Sub-Chapter 4.5.1.6: Although integrated to some extent into the SP Act, the <i>Coastal Protection and</i> 	<p>Chapter 3 of the revised Program Report and in a paper on fisheries in the Great Barrier Reef coastal zone in Appendix 5 of the Supplementary Report, including the role of the <i>Fisheries Act 1994</i> in managing Great Barrier Reef coastal zone development.</p>

#	Reference	Comment	Action	Response
			<p><i>Management Act 1995</i> and <i>Fisheries Act 1994</i> have a more prominent role in managing development in the Great Barrier Reef coastal zone than is suggested by the discussion in Chapter 4 and may warrant a more detailed description.</p> <ul style="list-style-type: none"> Sub-Chapter 4.8 refers to several ERAs which are no longer defined as ERAs (e.g. concrete batching, motor vehicle works) following amendments to the EP Act through the <i>Environmental Protection (Greentape Reduction) and Other Legislation Amendment Act 2012</i>. 	
21	Chapter 4 Foundational management	Sub-Chapter 4.8 – The difference between responsive and reactive compliance activities is not well described and hard to understand. There is also little information about compliance activities within marine parks, which would seem highly relevant to this section.	Provide further details on the number of patrol days and the risk based compliance planning process used by GBRMPA and QPWS. Is the existing investment in compliance enough to maintain resilience of the Great Barrier Reef, by reducing illegal activities?	Further information on the Queensland Government’s compliance activities, including reference to marine parks, is provided in Chapter 4 of the Supplementary Report Refer to GBRMPA’s strategic assessment reports for further information on marine parks management
22	Chapter 5 Strengthened Management	Chapter 5 of the Program Report does not specifically mention the Queensland Government’s plans to introduce new planning legislation as part of its overall reform of the planning and development system to facilitate “more streamlined assessment and approval processes, and remove unnecessary red tape.” This adds to the confusion about what constitutes	Describe the Queensland Government’s plans in more detail.	Updated prior to the public consultation process.

#	Reference	Comment	Action	Response
		Foundational Management, Strengthened Management and Forward Commitments.		
23	Chapter 5 Strengthened Management	Sub-Chapter 5.2.2.2 suggests that the Queensland Ports Strategy will “establish a master planning framework for Queensland ports, with consistent principles for environmental, social and economic planning” but does not specify what these principles might be and what they will be consistent with (will it be the principles of ESD?). Similarly, this section refers to “strengthening the effectiveness of environmental management at ports” but does not provide any detail on how this will be achieved.	Provide further detail on specific principles under the master planning framework. Provide further detail on how the key actions identified will be achieved.	The content of the guideline for port master planning under the QPS is to be developed. As stated in the QPS, the guideline will consider relationships beyond traditional port boundaries, operational, economic, environmental and social issues including supply chain connections and surrounding land uses.
24	Chapter 5 Strengthened Management	Sub-Chapter 5.2.2.3 indicates that the proposed Guideline for MNES will “identify circumstances in which planned development would be considered to have an unacceptable or unsustainable impact on MNES” but does not specify what these circumstances might be.	Provide further detail.	Information, including the purpose and general content on the proposed MNES guideline, is provided in Chapter 3 of the revised Program Report.
25	Chapter 5 Strengthened Management	Sub-Chapter 5.2.3 states that “the approach to assessing projects through the development assessment process ... has been previously accredited by the Australian Government”. This statement is not entirely correct in that not all development assessment processes in Queensland are accredited under the bilateral agreement. Only EIS processes under the SDPWO Act, EP Act and SP	Amend text to clarify.	The revised Program Report addresses this in Chapter 3.

#	Reference	Comment	Action	Response
		Act are accredited.		
26	Chapter 7 Implementation and Governance	In relation to Chapter 7 - Table 12, the following amendments are recommended.	<ul style="list-style-type: none"> The Department of State Development, Infrastructure and Planning (DSDIP) Supporting Policies and Plans should include the State Development Assessment Provisions. The Department of Agriculture, Fisheries and Forestry (DAFF) responsibilities should include assessment and approval for works involving disturbance of marine plants, development in declared fish habitat areas and waterway barrier works under the <i>Fisheries Act 1994</i> as well as assessment and approval of certain ERAs. It is noted that DSDIP through the State Assessment and Referral Agency (SARA) is now primarily responsible for these tasks, however similar responsibilities are still identified with the Department of Environment and Heritage Protection (DEHP) and the Department of Natural Resources and Mines (DNRM) even though these also have been transferred to DSDIP. There should be consistency and it may be more accurate to identify that DSDIP has primary responsibility for these assessment roles with support from the other agencies. <p>Other Legislation should include the <i>Land Protection (Pest and Stock Route)</i></p>	Amendments were reflected where possible in the draft reports prior to public consultation. See Chapter 2 of the revised Program Report and Chapter 4 of the Supplementary Report.

#	Reference	Comment	Action	Response
			<i>Management Act 2002.</i>	
DRAFT Strategic Assessment Report - version current as at 13/09/13				
27	General comments	The glossary definition of cumulative impacts refers to foreseeable pressures. On page 4, it says that the assessment targets emerging risks. However, the assessment generally only looks at past and present pressures, trends and condition.	The report would benefit from consideration of future trends, or scenarios, and evaluation of the likely future effectiveness of the Program in those scenarios.	Chapter 7 of the revised Program Report describes the implementation of the Program commitments. Chapter 8 of the revised Program Report outlines the Queensland Government's approach to measuring performance and governance of the Program. Case studies in Chapter 4 of the Supplementary Report demonstrate the operation of the Program through hypothetical scenarios.
28	General comments	The description of existing and emerging risks to the Great Barrier Reef associated with climate change would be improved with further expansion.	Some further discussion is recommended on increasing the resilience of the Great Barrier Reef in response to climate change, particularly in light of the 25 year life of the Program.	Long-term management actions to improve resilience are outlined in Chapter 3 of the revised Program Report, in particular the LTSP and the Reef Water Quality Protection Plan.
29	General comments	Ocean acidification is only briefly mentioned in the reports, and warrants further discussion in the context of managing for resilience.	Expand the discussion and assessment of ocean acidification. The statement on page 78 of the Assessment Report that ocean acidification "dissolves the calcium carbonate on reefs" should be revised. Ocean acidification (which is the water becoming less alkaline rather than more acidic) reduces the availability of calcium ions, thereby reducing calcification, rather than dissolving reefs.	It is acknowledged that this comment is correct.
30	General comments	The Terms of Reference refers to "matters of MNES including OUV", but the methods are fundamentally based on protected matters search tool results,	Expand consideration of MNES to consider OUV not picked up by the protected matters search tool. Discuss any limitations of the application of these values to the analysis.	The protection of OUV along with MNES is comprehensively acknowledged throughout the revised Program Report and Supplementary Report. The proposed

#	Reference	Comment	Action	Response
		which do not incorporate a number of aspects of the Great Barrier Reef World Heritage Area OUV, such as natural beauty and aesthetics (criterion vii) and island morphologies (criterion ix).		MNES guidelines, as discussed in Chapter 3 of the revised Program Report, will draw significantly from the Australian Government's OUV guidelines.
31	General comments	There is limited assessment of the effectiveness of fisheries management in the Great Barrier Reef coastal zone, which is a State Government responsibility.	Include information on fisheries management.	Information on fisheries management has been updated and provided in Appendix 5 of the Supplementary Report.
32	General comments	When referring to severe weather events like floods, reference should be made to the anthropogenic factors in such impacts, to avoid misinterpretation that such impacts are solely natural.	Revise and clarify where appropriate.	This was clarified in the draft reports prior to being released for public consultation.
33	General comments	The assessment lacks a clear and robust conceptual framework. It purports to use a driver-activity-impact/pressure - effect framework (see page 29) but this is not applied consistently or with any depth of analysis. There is also a critical part missing: how the management responses embodied in the Program address adverse effects. Logically this would include interventions at the driver-activity levels but the approach to avoid-mitigate-offset appears to focus very much on the end stages of the process. The lack of a clearly thought out conceptual framework is especially apparent in Fig. 5.4-1, which shows a number of activities and a limited number of pressures/impacts (nutrient	Explain the causal relationships between activities and pressures/impacts, including their relative importance, more clearly. Leading on from Sub-Chapter 5.4 and Figure 5.4-1, outline some sort of conceptual framework that relates the Program – i.e., specific management measures to the driver-activity-pressure/impact hierarchy to show the interventions target the environmental impact process. A robust overall conceptual framework that relates the Program interventions to the driver-activity-impact/pressure sequence would also provide an improved tool to analyse how robust the Program might be with respect to foreseeable future changes, since future	Chapter 3.5 of the Supplementary Report discusses potential impacts of activities within the scope of the Program to MNES and OUV. Case studies in Chapter 4 of the Supplementary Reports demonstrate how the Program protects MNES and OUV in hypothetical development scenarios (in terms of the activities within the scope of the Program) and discuss the consideration of development activities and their potential impacts on MNES and OUV.

#	Reference	Comment	Action	Response
		and sediment flows, freshwater flows, algal blooms). Despite the title of Sub-Chapter 5.4, there are no clear links in the figure (or accompanying text) to which activities are most important to which pressures. Some activities (e.g. shipping) appear unrelated to the pressures/impacts shown in the figure, and a wide range of pressures/impacts are not included. The absence of fisheries in the figure reflects the general lack of attention to fisheries throughout the assessment. Chapter 6 does not have clear links with Chapter 5.	scenarios for drivers and activities can be developed.	
34	General comments	The assessment report describes a Great Barrier Reef that is in significant decline, despite the existence of successful management programs for many years, such as Reef Plan. Many MNES are in poor condition or have a declining trend, despite the efforts of existing management actions.	Further discussion on the adequacy of existing management measures is recommended. Links to the adequacy of forward management commitments in addressing the declining condition and trend are recommended to strengthen the conclusions of the assessment.	This discussion was updated prior to the reports being released for public consultation. The operation of the Queensland Government Program to protect MNES and OUV is described in Chapter 3 of the revised Program Report and Chapter 4 of the Supplementary Report.
35	General comments	There are only limited pieces of information presented on the cultural heritage values of Indigenous people in the Great Barrier Reef coastal zone. While MNES do not appear to strongly reference cultural heritage values, some further recognition of the cultural values of the Great Barrier Reef coastal zone and of the involvement of traditional owners in their management would be appropriate. Cultural heritage values are only given	Expand the consideration of cultural heritage values, and include a description of how traditional owners interact with the Queensland Government when implementing the Program.	The consideration of cultural heritage values was updated prior to the reports being released for public consultation. A paper on Indigenous issues is provided in the Appendix 4 of the Supplementary Report

#	Reference	Comment	Action	Response
		approximately 2 pages of description.		
36	General comments	Further analysis of existing offsets arrangements is warranted to provide evidence for the conclusions in the assessment.	Provide data on the number of offsets under the existing Program, their average size and condition.	The new Environmental Offsets Framework is discussed in Chapter 3 of the Program Report. Until accredited by the Australian Government, the Queensland Government will apply the Australian Government Offsets Policy. Comprehensive aggregated data is not readily available.
37	Chapters 4-7	The assessment results are spread across several Chapters and a summary would be helpful. There is a large gap between the description of assessment methods in Chapter 3 and the presentation of results in subsequent Chapters. It is difficult to recall the methods described in Chapter 3 when reviewing Chapters 7, 8 and 9.	A summary table providing a complete representation of all assessment ratings would also be helpful in visualising the overall picture. It is also recommended that consideration be given to presenting only brief generic methods in Chapter 3, and describing the methods applying specifically to each Chapter in that particular Chapter. This might result in some repetition so would need to be evaluated further prior to adoption. The purpose of such restructuring would be to have the methods readily available within the same Chapter as the assessment results, removing the need to constantly refer back to Chapter 3.	Noted.
38	General comments	Figure 4.2-1 and 1.4-1 seem to be identical and repeated.	Evaluate need for both figures.	These figures were updated prior to the public consultation process.
39	General comments	The strategic assessment has a strong focus on urban and infrastructure development. Aspects of the Program not related to development are given less emphasis, such as fisheries, aquaculture,	Broaden the focus of the Program and assessment to consider these activities. Expand the assessment of ecological processes.	Activities under the Program (as discussed in Chapter 1 of the revised Program Report and Chapter 3 of the Supplementary Report) reflect the mixed use character of the Great Barrier Reef coastal zone. The

#	Reference	Comment	Action	Response
		agriculture and tourism. Assessment of ecological processes is also limited, except in the case of nitrogen and COTS outbreaks.		activities include urban development, industrial development, port development, shipping, agriculture, tourism and recreational use and fishing and aquaculture.
40	General comments	Analysis of land use is focussed on protected areas and urban areas, which collectively comprise approximately 35% of the Great Barrier Reef coastal zone. There is little description provided on land use within the remaining 65%. Agricultural land use is not broken down or subject to detailed analysis in the way that other land uses are.	Provide further information on land uses within the Great Barrier Reef coastal zone, with a particular focus on agriculture.	This information was updated and an infographic developed prior to the reports being released for public consultation. It outlines the development activities in the Great Barrier Reef coastal zone.
41	Chapter 1 Background	Sub-Chapter 1.4 - page 5, the text causes confusion as to whether the Commonwealth marine area (Great Barrier Reef Marine Park) is in or out of the Great Barrier Reef coastal zone. It is mentioned in the bullet list of areas to be included then mentioned again in a different context in the following sentence.	Clarify the extent to which the Commonwealth marine area is included.	Commonwealth marine areas are an MNES within the scope of the Program. Chapter 6 of the revised Program Report and Chapter 4 of the Supplementary Report discuss how the Program protects Commonwealth marine areas in relation to impacts of activities within the scope of the Program. A case study relating to Commonwealth marine areas demonstrating the operation of the Program is in Chapter 4 of the Supplementary Report.
42	Chapter 1 Background	Sub-Chapter 1.6 - More information on the accreditation process for actions as part of the strategic assessment would be useful. The information provided does not appear to be correct (in relation to the use of the term 'accredit' rather than 'endorse').	Provide further information about the proposed accreditation or endorsement process and/or explain how the Program Report, once approved might be implemented.	This section was updated prior to the public consultation process. The strategic assessment process is clarified in in Chapter 2 of the revised Program Report and Chapter 1 of the Supplementary Report.

#	Reference	Comment	Action	Response
43	Sub-Chapter 1.3	The section titled 'Objectives and Purpose of the strategic assessment' only provides a high level description of the purpose and benefits of the strategic assessment. No objectives are provided.	A series of specific and measureable objectives in this section would improve understanding of the aims of the assessment. These could also be referenced in the conclusions Chapter, to demonstrate that the objectives have been achieved.	As a systems level assessment, the Queensland Government's Great Barrier Reef coastal zone strategic assessment documentation provides 'systems level' outcomes. Further detailed objectives will be developed as part of the LTSP. Information on the LTSP is in Chapter 4 of the Supplementary Report.
44	Page 18 of Assessment Report	Improved presentation of historic and projected population trends in each of the LGAs would improve the reader's context for pressures that may relate to population changes. This section would also be enhanced by a summary of economic contribution by each industry sector (tourism, agriculture, resources). The data presented are inconsistent with respect to the spatial scale covered, direct vs. total contribution.	Revise where possible to improve the information provided.	Noted.
45	Page 94 of Assessment Report	The map on page 94 is very difficult to interpret.	Better clarity of boundaries and shading is recommended.	Noted.
46	Chapter 3 Assessment and approach	Sub-Chapter 3.5.1 - It would be worth noting that much shorebird habitat (feeding and roost sites) is devoid of vegetation (naturally or cleared). Has this been considered in the assessment of environmental values?	Investigate whether this has been considered and clarify in text.	Noted. The EIS process under the SDPWO Act and EP Act, as described in the revised Program Report, would ensure that all potential shorebird habitat would be considered in an assessment of environmental values under the EIS processes of these Acts.

#	Reference	Comment	Action	Response
47	Chapter 3 Assessment and approach	The definition of the 'partially effective' rating of management effectiveness is very broad which has led to a large number of management programs being rated as 'partially effective'. This makes it difficult to assess the true effectiveness of the Program.	Consider revising the definition, including another category or providing a qualitative description of where within the spectrum of this rating each assessment lies.	Noted.
48	Chapter 3 Assessment and approach	The selection of threatened species to be assessed in the Strategic Assessment Report could be improved with a reordering of the steps listed in Sub-Chapter 3.5.	Swapping step 3 with step 4 would focus the refinement of the potential species to be assessed on the basis of location before applying other non-ecological or location parameters.	This section was updated prior to the public consultation process. Chapter 6 of the revised Program Report and Chapter 4 of the Supplementary Report discuss how the Program protects listed threatened species from potential impacts of activities within the scope of the Program. A case study demonstrating the operation of the Program relating to listed threatened species is in Chapter 4 of the Supplementary Report.
49	Chapter 4, Table 4.8-2	Migratory species habitat rated as 'poor'.	Re-evaluate rating. The information presented would support a 'good' rating.	This rating was updated prior to the public consultation process.
50	Chapter 4, Values of the Great Barrier Reef coastal zone and their extent, condition and trend	The assessment of the trend and condition of listed species has been based on the proportion of habitat that is located in national parks and minimal use areas, on the assumption that these areas provide a level of protection that is higher than non-protected or higher use areas. While at a landscape scale this approach is a sound assumption, the assessment of condition and trend does not recognise localised threats to listed species.	The ratings for condition and trend shown in Table 4.7-2 should be reviewed to capture an assessment of the status of the species in areas that are outside national parks and minimal use areas, which are also targeted by the Program. As the Report is currently presented, the condition and trend of listed species and TEC located outside national parks and minimal use areas does not appear to be specifically considered and assessed in the discussion and rating tables.	Noted. The draft Strategic Assessment Report (SAR) is not being revised. A description of how the Program protects listed threatened species can be found at Chapter 6 of the revised Program Report and Chapter 4 of the Supplementary Report. Papers with relevant updates on mahogany gliders and cassowaries are in Appendix 6 and 7 of the Supplementary Report.

#	Reference	Comment	Action	Response
			For example, the cassowary condition is shown in Table 4.7-2 as being 'very good' and the trend of the species is rated as 'improving'. The cassowary case study in Sub-Chapter 7.6.3.1 of the Strategic Assessment Report describes the factors that affect the cassowary survival. These are "the loss, fragmentation and modification of habitat, vehicle strikes, dog attacks, human interactions, pigs, disease and natural catastrophic events".	
51	Chapter 5 Pressures and impacts on MNES	Sub-Chapter 5.3.2.3 - Photosystem II inhibiting herbicides would benefit from an initial definition or description. Scientists will understand this term but the general public may need more of an explanation.	Better define the meaning of photosystem II herbicides.	Noted.
52	Chapter 5 Pressures and impacts on MNES	Sub-Chapter 5.3.5 - Boat strikes are discussed mainly for dugong, but are generally more common for marine turtles, which are also listed species and MNES. Also artificial light can disorient or repel nesting adult turtles, as well as hatchlings.	Include turtles in discussion of risks from boat strikes as well as dugong. Include nesting turtles in discussion of risks of lighting on turtle nesting beaches.	Risks to turtles including from marine traffic was updated in the draft SAR (Chapter 5) prior to public comment.
53	Chapter 5, Table 5.4-1	Bowling Green Bay Ramsar Site is assessed as High Effect when considering Loss of Habitat and Connectivity; Pest and Weed Species. This rating does not align with the condition and trend assessment in Sub-Chapter 4.4.1.	Check information used to determine rating and revise as necessary.	The rating for 'loss of habitat and connectivity' was updated prior to the public consultation process to a 'very low rating' (draft SAR page 4-94 – Table 4.4.1). It is acknowledged that the effect of pest and weed species was not discussed in the draft SAR Chapter 4.4.1. The rating reflects information in the Bowling Green Bay

#	Reference	Comment	Action	Response
				National Park Management Plan. http://nprsr.qld.gov.au/managing/plans-strategies/pdf/bowling-green-bay-national-park-2000.pdf
54	Chapter 5, Table 5.4-2	Port development and dredging rated as having a very high effect on water quality, the same as agriculture. Dredging and port development are highly regulated and their impact is local when considered project by project, as noted in the Assessment Report on page 168 when referring to the 2013 Scientific Consensus Statement. This rating requires further justification or explanation. If it is based on the cumulative impacts of ports spread throughout the Great Barrier Reef, then this should be highlighted in the accompanying text.	Review rating for consistency with other activities and assessments relating to port development and dredging.	The rating was downgraded in the version for public consultation to 'high effect', the same as for urban and industrial. A discussion on ports and dredging, including potential impacts, is in Chapter 3 of the Supplementary Report. Chapter 3 of the revised Program Report discusses the Program's approach to protecting MNES and OUV with full consideration of these activities.
55	Chapter 5, Table 5.4-2	Land and resource management is rated as having a very high effect on pests, weed species and modified fire regimes. This does not reflect the positive influence of land resource management on these issues.	Review rating and revise.	The rating of 'very high' aligns with description of land and resource management activities are on page 5-167 of the draft SAR.
56	Page 294, Dugong Demonstration Case Snapshot	The 'effective' rating is not consistent with the very poor condition of dugong and their habitat.	A rating of 'partially effective' overall would be more appropriate, as described in the detailed Dugong Demonstration Case.	Noted.
57	Chapter 5 Pressures and impacts on	Pie charts in Figure 5.3-3 need further explanation and don't match the accompanying text. For example, the text says that Wet Tropics is higher risk for	Check accuracy of information in pie charts and relate to text.	This inaccuracy is noted.

#	Reference	Comment	Action	Response
	MNES	seagrass than the Fitzroy, but the pie charts suggest the opposite.		
58	Chapter 7 Program effectiveness	Sub-Chapter 7.6.2 - To what extent has protection of the Great Barrier Reef guided the national park acquisition process for the past 20 years?	Provide information on the past or proposed plans for national park acquisitions to be guided by outcomes for the Great Barrier Reef.	Noted, however this information is not available.
59	Chapter 7 Program effectiveness	Sub-Chapter 7.6.3.1 - protected areas are a real strength of the program, as explained on page 245 of the Assessment Report. To achieve their purpose, protected areas require management, as noted on page 247 of the Assessment Report. Sub-Chapter 7.6.4.6 - Table on page 256 gives "management" a high grading, yet there is very little information about how protected areas are managed in the documents, and in particular, about the scale or quantum of the investment in management.	Provide further information on the effectiveness of protected area management activities. How actively are protected areas in the Great Barrier Reef coastal zone managed? Provide information to justify the high grading for management. For example, what proportion of the estate is subject to active fire and pest management activities? What is the scale of such management? Evaluate the effectiveness of the Program in managing protected areas and provide a more detailed assessment of its adequacy in achieving the benefits assumed by the establishment of protected areas. Discuss whether current and future management activities for marine, island and terrestrial protected areas are targeted at the material issues for protection of the Great Barrier Reef and sufficiently resourced to achieve improved resilience.	Further information on protected area management is provided in Chapter 3 of the revised Program Report.
60	Chapter 7 Program effectiveness	It is difficult to evaluate the effectiveness of the Program without specific environmental targets, which are only described for water quality.	Provide further information to justify the management effectiveness ratings and focus the descriptions on the outcomes that are necessary to protect MNES.	Noted, however under a 'systems-level' assessment, management effectiveness was rated against grading statements rather than specific targets.
61	Chapter 7	The commitment to the development of	The Report would benefit from a detailed	MSES and policy relating to MSES is

#	Reference	Comment	Action	Response
	Program effectiveness	Matters of State Significance (MSES) is a promising suggestion and a step toward integration of Queensland and Australian Government description and assessment of matters of state and national environmental significance (Sub-Chapter 7.5.1).	description of how the development of MSES would be undertaken and how MSES and MNES would operate to avoid, minimise impacts and offset unavoidable impacts.	included in the State Planning Policy which came into effect on 2 December 2013. Both MNES and MSES are considered in the EIS process and the QPS's port master planning process as outlined in Chapter 3 of the Supplementary Report.
62	Chapter 8, Table 8.7-1	The projected condition ratings do not correspond to the appropriate colours, making it unclear what the assessments are.	Revisit rating for 'GBRWHA, beaches and coastlines, inshore coral reefs, seagrass meadows and shorebirds'.	The table in the report released for public comment does not include a rating for 'GBRWHA, beaches and coastlines, inshore coral reefs, seagrass meadows and shorebirds'.
63	Chapter 9 Adaptive management	Sub-Chapter 9.3 refers to a long term strategic plan for the Great Barrier Reef World Heritage Area to guide joint management in the future. It is unclear what the purpose or objectives of this plan will be.	Is the long-term strategic plan the same as the long term sustainability plan mentioned in other sections of the Program Report? Further clarification in the text is recommended. Further clarification of the purpose, objectives and likely content of the Long-term Sustainability Plan would provide important context for the reader.	This information was updated prior to the public consultation process. Discussion and detail on the LTSP is in Chapter 3 of the revised Program Report.
64	Chapter 9 Adaptive management	The discussion of ESD is very brief and it is not clear how the principles of ESD are applied in the Program.	More detailed analysis is recommended of the principles of ESD and how they are addressed by the Program. How are the principles applied in the SP Act?	There is a discussion on ESD and how the principles are applied in this strategic assessment in Chapter 2 of the revised Program Report.
65	Chapter 9 Adaptive management	There is limited detail in the descriptions of plans to adapt management to address risk and uncertainty. Further information on the priority areas for conservation would assist in achieving consistency with the Terms of Reference.	Provide further detail on adaptive management and priority areas for conservation.	Chapter 3 of the revised Program Report outlines adaptive management mechanisms under the Program.
66	Page 27 of	The purpose of the diagram showing	Review purpose and need for diagram and	Noted.

#	Reference	Comment	Action	Response
	Assessment Report	boundaries of MNES is not clear. It is repeated throughout the document. There are no natural heritage places shown, yet these are mentioned in text. Some of the boundaries depicted in the figure are incorrect.	check the location of boundaries.	
67	Page 135 of Assessment Report	Refers to only 1800 ha of habitat for migratory species. This sounds too low.	Check accuracy of figure and revise if necessary.	Noted. Through the EIS process habitat for migratory species will be identified and considered in decision making as discussed in Chapter 6 of the revised Program Report and Chapter 4 of the Supplementary Report. A case study demonstrating the operation of the Program relating to listed migratory species is in Chapter 4 of the Supplementary Report.
68	Page 21 Assessment Report	What is the dugong research and monitoring program?	Include details of this program.	Noted. The draft SAR is not being revised. A description of how the Program protects listed threatened species can be found at Chapter 6 of the revised Program Report and Chapter 4 of the Supplementary Report.
69	Page 62 of Assessment Report	It is notable that the ports sector was not included in the Queensland Stakeholder Reference Group, considering the issues discussed regarding the impacts and management of ports.	Include a description of engagement activities with the ports sector.	This information was updated prior to the public consultation process to reflect that the ports sector was engaged as part of the Stakeholder Reference Group.
70	Page 138 of Assessment Report	The text box on nutrients and blooms appears out of context, without background on the extent, severity and	Revise to provide further clarity.	This text box was updated prior to the public consultation process.

#	Reference	Comment	Action	Response
		frequency of such blooms (which are not particularly common on the Great Barrier Reef). Also the summary description in the assessment box refers to volumes of flow (which are natural). It is the quality of the discharge that is of concern.		
71	General comments	<p>There is not much detail provided for some key topics of public interest within the report. Port development and the management of dredging and spoil disposal are given only a brief mention in the assessment report, despite being an activity upon which key concerns of the public and UNESCO have been raised.</p> <p>There is also little information upon which to base an assessment of how effective national and marine park management is in enhancing resilience in the Great Barrier Reef coastal zone. While the management activities are described, more detail would be useful to indicate to the reader the extent or magnitude of the management activities implemented.</p>	<p>More information could be provided on:</p> <ul style="list-style-type: none"> • Port development and shipping activities. This could include reference to the National Assessment Guidelines for Dredging (NAGD). • Management activities within National Parks and the Great Barrier Reef Marine Park 	<p>Chapter 3 of the Supplementary Report includes information on port development, dredging and shipping, with a focus on potential impacts. Chapter 3 of the revised Program Report discusses the Program's approach to protecting MNES and OUV with full consideration of these activities. Information on joint management arrangements within and adjacent to the GBRWHA is in Chapter 1 of the revised Program Report. Information on protected areas management is provided in Chapter 3 of the revised Program Report.</p>
72	Page 140 of Assessment Report	Sub-Chapter 4.9.4 does not present evidence that demonstrates an impact on MNES that would support the conclusion on condition and trend. See also summary on page 151.	Provide further details of the process of impact on MNES.	<p>Noted.</p> <p>Chapter 3 of the Supplementary Report contains impact assessments relating to activities within the scope of the Program.</p>
73	Page 167 of Assessment Report	Sub-Chapter 5.2.4.3 would benefit from the addition of further detail. While it is agreed that impacts of dredging and	More detailed information is recommended.	Chapter 3 of the Supplementary Report includes information on dredging, with a focus on potential impacts.

#	Reference	Comment	Action	Response
		disposal are localised, at least on a project by project basis, this is a key area of public interest and a more detailed description is warranted.		
74	Page 168 of Assessment Report	Sub-Chapter 5.2.4.4 would benefit from the addition of further detail. For example oil spills and groundings are not specifically mentioned in terms of shipping risks.	More detailed information is recommended about the risks of shipping, including oil spills and groundings.	Chapter 3 of the Supplementary Report includes information on shipping, with a focus on potential impacts.
75	Page 180 of Assessment Report	Further explanation of the links between land use and ecosystem function is warranted, in the context of the Wet Tropics region being mostly intact and subject to effective management, yet water quality risks are the highest of the regions.	Provide further explanation of apparent inconsistency.	Acknowledge the inconsistency in the draft SAR. Chapter 3 of the Supplementary Report contains impact assessments relating to activities within the scope of the Program. Chapter 3 of the revised Program Report discusses the Program's approach and commitment for the management of the Wet Tropics World Heritage Area. Further information on water quality risks can be found on the Reef Water Quality Protection Plan's website: http://www.reefplan.qld.gov.au/about/scientific-consensus-statement/water-quality-risks.aspx
76	Pages 193 and 194 of Assessment Report	The assessment process leading to the tables presented on pages 193 and 194 of the Assessment Report has not been well explained and doesn't differentiate between spatial scales.	Clarify assessment process and consider spatial scale.	Noted. The draft SAR is not being revised.
77	Pages 48, 237 and 253 of Assessment Report	It is unclear what is meant by high protection marine park zones. Are these Marine National Park and Conservation Park Zones? Page 237 of the	Clarify what is meant by these terms in regard to zoning.	Noted. The draft SAR is not being revised.

#	Reference	Comment	Action	Response
		Assessment Report also refers to marine conservation areas in Table 7.6-1. Are these the same as high protection marine park zones? See also page 253 of the Assessment Report where it is stated that 38.7% of the Great Barrier Reef Coast Marine Park is considered protected?		
78	Page 224 of Assessment Report	First paragraph of Sub-Chapter 7.3.1 states that the avoid, mitigate, offset approach is the basis of the Endorsement Criteria for the Program. However, this is only part of the Endorsement Criteria. The remaining Endorsement Criteria are not systematically covered in the strategic assessment.	Provide further detail to address the other Endorsement Criteria.	Information on how the Program meets the Endorsement Criteria is in Chapter 4 and 5 of the revised Program Report.
79	Page 265 of Assessment Report	In Sub-Chapter 7.6.7.2, the description mostly corresponds to grading statement for 'Effective' on page 56 (except that it refers to impacts being 'identified and considered' rather than 'avoided') but the grade is 'Partially effective'	Review the assessment and/or associated description.	The inconsistency in grading has been noted.
80	Page 281 of Assessment Report	There is no grading system for cumulative impacts defined in the methodology (Sub-Chapter 3.8, including Table 3.8-1, pages 52-57). Instead cumulative impacts are considered in the grading statements for 'very effective' and 'partially effective' in avoiding impacts. With regard to cumulative impacts, the description on page 281 (Cumulative impacts are considered upfront) corresponds to the grading statement for 'very effective' with	Reassess the grading and description in Sub-Chapter 7.9.2.	Noted. The grading statement considered most applicable was applied.

#	Reference	Comment	Action	Response
		regard to avoiding impacts.		
81	Page 57 of Assessment Report	Although the methodology in Table 3.8-1 provides grading statements for 'resourcing, monitoring, and compliance', these components of effectiveness are not addressed in the assessment.	Consider assessment of these program effectiveness measures.	Noted. Monitoring activities, reporting mechanism and performance measuring and governance of the Program is outlined in Chapter 3 and Chapter 8 of the revised Program Report.
82	Page 230 of Assessment Report	More summary text is necessary to provide evidence for the 'very effective' rating of Enhance MNES.	Provide further justification for the rating.	Noted. Enhanced management, recovery and monitoring a one of the strategic outcomes of the Queensland Program. The plans and program under this outcome are discussed in Chapter 3 of the revised Program Report
83	Page 316 of Assessment Report	The colour coding of ratings in Table 8.7-1 are inconsistent. It is unclear what the projected condition is meant to be for some values. The projected condition of Great Barrier Reef World Heritage Area is rated as 'very poor', yet some improvement on the current condition is predicted in Sub-Chapter 8.2.4.	Check ratings and colours.	This table was updated prior to the public consultation process.
84	Appendices	Individual appendices are difficult to locate and the appendices would benefit from a table of contents.	Include a table of contents for the appendices.	Noted. The Supplementary Report includes a list of appendices in the table of contents.

Appendix 3: MNES

World heritage properties

The *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) outlines in Part 3 the requirement for approval of activities with a significant impact on a declared world heritage property.

A person must not take an action that has or is likely to have a significant impact on the world heritage values of a declared world heritage property.

World heritage properties that could be impacted by activities under the Program:

- Great Barrier Reef World Heritage Area
- Wet Tropics of Queensland World Heritage Area

National heritage

The section 15B of the EPBC Act outlines actions that are prohibited without approval.

National heritage places that could be impacted by activities under the Program:

- Great Barrier Reef
- Wet Tropics of Queensland

Wetlands of international importance

The EPBC Act outlines section 16 states that a person must not take an action that has, will have, or may have a significant impact on the ecological character of a declared Ramsar wetland without approval.

Ramsar wetlands that could be impacted by activities under the Program:

- Bowling Green Bay
- Shoalwater and Corio Bays Area

Listed threatened species and communities

Section 18 of the EPBC Act state that a person must not take an action that has, will have or is likely to have a significant impact on the following categories of listed threatened species without approval:

- 'Extinct in the wild'
- 'Critically endangered'
- 'Endangered'
- 'Vulnerable'

Section 18 also states that a person must not take an action that has, will have or is likely to have a significant impact on the following categories of listed threatened communities without approval:

- 'Critically endangered'
- 'Endangered'.

Listed threatened species and ecological communities that could be impacted by activities under the Program

NOTE: CE = Critically Endangered, E = Endangered; all other species listed as vulnerable.

- Birds
 - Australasian Bittern (*Botaurus poiciloptilus*) (E)
 - Australian Fairy Tern (*Sternula nereis nereis*)
 - Australian Painted Snipe (*Rostratula australis*) (E)
 - Black-breasted Button-quail (*Turnix melanogaster*)
 - Black-browed Albatross (*Thalassarche melanophris*)
 - Black-throated Finch (southern) (*Poephila cincta cincta*) (E)
 - Buff-breasted Button-quail (*Turnix olivii*) (E)
 - Campbell Albatross (*Thalassarche melanophris impavida*)
 - Chatham Albatross (*Thalassarche eremita*) (E)
 - Coxen's Fig-Parrot (*Cyclopsitta diophthalma coxeni*) (E)
 - Crimson Finch (white-bellied) (*Neochmia phaeton evangelinae*)
 - Golden-shouldered Parrot (*Psephotus chrysopterygius*) (E)
 - Gouldian Finch (*Erythrura gouldiae*) (E)
 - Herald Petrel (*Pterodroma heraldica*) (CE)
 - Kermadec Petrel (western) (*Pterodroma neglecta neglecta*)
 - Masked Owl (northern) (*Tyto novaehollandiae kimberli*)
 - Red Goshawk (*Erythrotriorchis radiatus*)
 - Salvin's Albatross (*Thalassarche cauta salvini*)
 - Shy Albatross, Tasmanian Shy Albatross (*Thalassarche cauta cauta*)
 - Southern Cassowary (Australian), Southern Cassowary (*Casuarius casuarius johnsonii*) (E)
 - Southern Giant-Petrel (*Macronectes giganteus*) (E)
 - Squatter Pigeon (southern) (*Geophaps scripta scripta*)
 - Star Finch (eastern), Star Finch (southern) (*Neochmia ruficauda ruficauda*) (E)
 - White-bellied Storm-Petrel (Tasman Sea), White-bellied Storm-Petrel (Australasian) (*Fregetta grallaria grallaria*)
 - White-capped Albatross (*Thalassarche cauta stadi*)

- Yellow Chat (Dawson) (*Epthianura crocea macgregori*) (CE)
- Fish
 - Honey Blue-eye (*Pseudomugil mellis*)
 - Lake Eacham Rainbowfish (*Melanotaenia eachamensis*) (E)
 - Opal Cling Goby (*Stiphodon semoni*) (CE)
- Frogs
 - Armoured Mistfrog (*Litoria lorica*) (CE)
 - Common Mistfrog (*Litoria rheocola*) (E)
 - Kuranda Tree Frog (*Litoria myola*) (E)
 - Lace-eyed Tree Frog (*Nyctimystes dayi*) (E)
 - Mountain Mistfrog (*Litoria nyakalensis*) (CE)
 - Waterfall Frog, Torrent Tree Frog (*Litoria nannotis*) (E)
- Mammals
 - Bare-rumped Sheath-tail Bat (*Saccolaimus saccolaimus nudicluniatus*) (CE)
 - Brush-tailed Rabbit-rat, Brush-tailed Tree-rat, Pakooma (*Conilurus penicillatus*)
 - Burrowing Bettong (Shark Bay), Boodie (*Bettongia lesueur lesueur*)
 - Greater Large-eared Horseshoe Bat (*Rhinolophus philippinensis (large form)*) (E)
 - Grey-headed Flying-fox (*Pteropus poliocephalus*)
 - Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) (*Phascolarctos cinereus (combined populations of Qld, NSW and the ACT)*)
 - Large-eared Pied Bat, Large Pied Bat (*Chalinolobus dwyeri*)
 - Mahogany Glider (*Petaurus gracilis*) (E)
 - Northern Bettong (*Bettongia tropica*) (E)
 - Northern Hopping-mouse, Woorrentinta (*Notomys aquilo*)
 - Northern Quoll (*Dasyurus hallucatus*) (E)
 - Proserpine Rock-wallaby (*Petrogale persephone*) (E)
 - Semon's Leaf-nosed Bat, Greater Wart-nosed Horseshoe-bat (*Hipposideros semoni*) (E)
 - South-eastern Long-eared Bat (*Nyctophilus corbeni*)
 - Spectacled Flying-fox (*Pteropus conspicillatus*)
 - Spotted-tailed Quoll or Yarri (North Queensland subspecies) (*Dasyurus maculatus gracilis*) (E)
 - Water Mouse, False Water Rat, Yirrkoo (*Xeromys myoides*)

- Plants (with common names)
 - a palm (*Hydriastele costata*)
 - a sedge (*Eleocharis retroflexa*)
 - a shrub (*Cyclophyllum costatum*)
 - an aquatic herb (*Aponogeton prolifer*) (E)
 - an orchid (*Cepobaculum carronii*)
 - an orchid (*Durabaculum mirbelianum*) (E)
 - an orchid (*Durabaculum nindii*) (E)
 - Ant Plant (*Myrmecodia beccarii*)
 - Antelope Orchid (*Ceratobium antennatum*) (E)
 - Black Ironbox (*Eucalyptus raveretiana*)
 - Blue Tassel-fern (*Phlegmariurus dalhousieanus*) (E)
 - Bluegrass (*Dichanthium setosum*)
 - Byfield Matchstick (*Comesperma oblongatum*)
 - Cape York Vanda (*Vanda hindsii*)
 - Cardwell Beard Orchid (*Calochilus psednus*) (E)
 - Cardwell Midge Orchid (*Genoplesium tectum*) (E)
 - Cooktown Orchid (*Dendrobium bigibbum*)
 - Cooktown Orchid (*Vappodes phalaenopsis*)
 - Cossinia (*Cossinia australiana*) (E)
 - Dwarf Butterfly Orchid, Cooktown Orchid (*Vappodes lithocola*) (E)
 - Glen Geddes Bloodwood (*Corymbia xanthope*)
 - Hairy-joint Grass (*Arthraxon hispidus*)
 - Hann Gardenia (*Gardenia psidioides*)
 - Holly-leaved Graptophyllum, Mt Blackwood Holly (*Graptophyllum ilicifolium*)
 - Lesser Swamp-orchid (*Phaius australis*) (E)
 - Miniature Moss-orchid, Hoop Pine Orchid (*Bulbophyllum globuliforme*)
 - Mt Berryman Phebalium (*Phebalium distans*) (CE)
 - Mt Larcom Silk Pod (*Parsonsia larcomensis*)
 - Myola Palm, Myola Archontophoenix (*Archontophoenix myolensis*) (E)
 - Native Moth Orchid (*Phalaenopsis rosenstromii*) (E)
 - Pale Chandelier Orchid (*Acriopsis emarginata*)
 - Rat's Tail Tassel-fern (*Phlegmariurus filiformis*) (E)
 - Rock Tassel-fern, Water Tassel-fern (*Phlegmariurus squarrosus*) (E)
 - Siah's Backbone, Sia's Backbone, Isaac Wood (*Streblus pendulinus*) (E)

- Square Tassel Fern (*Phlegmariurus tetrastichoides*)
- Swamp Lily, Greater Swamp-orchid (*Phaius tancarvilleae*) (E)
- Thin Feather Orchid (*Tropilis callitrophilis*)
- Three-leaved Bosistoa, Heart-leaved Bosistoa, Yellow Satinheart, Heart-leaved Bonewood (*Bosistoa transversa* s. Lat.)
- Velvet Jewel Orchid (*Zeuxine polygonoides*)
- Water Tassel-fern (*Phlegmariurus marsupiiformis*)
- Wedge-leaf Tuckeroo (*Cupaniopsis shirleyana*)
- Yarwun Whitewood (*Atalaya collina*) (E)
- Plants (without common names)
 - *Actephila foetida*
 - *Aponogeton bullosus* (E)
 - *Aponogeton proliferus* (E)
 - *Asplenium wildii*
 - *Cajanus mareebensis* (E)
 - *Calophyllum bicolor*
 - *Canarium acutifolium* var. *Acutifolium*
 - *Canthium costatum*
 - *Carronia pedicellata* (E)
 - *Cepobaculum carronii*
 - *Cepobaculum johannis*
 - *Chingia australis* (E)
 - *Crepidium lawleri* (E)
 - *Ctenopteris walleri*
 - *Cycas megacarpa* (E)
 - *Cycas ophiolitica* (E)
 - *Cycas silvestris*
 - *Cyperus cephalotes* (E)
 - *Dendrobium lithocola* (E)
 - *Diplazium cordifolium*
 - *Diplazium pallidum* (E)
 - *Dipodium pictum* (E)
 - *Drosera prolifera*
 - *Durabaculum mirbelianum* (E)
 - *Durabaculum nindii* (E)

-
- *Eleocharis retroflexa*
 - *Endiandra cooperana* (E)
 - *Eremochloa muricata* (E)
 - *Fimbristylis adjuncta* (E)
 - *Gardenia actinocarpa* (E)
 - *Germainia capitata*
 - *Grammitis reinwardtii*
 - *Gulubia costata*
 - *Huperzia lockyeri*
 - *Marsdenia brevifolia*
 - *Medicosma obovata*
 - *Myriophyllum coronatum*
 - *Neisosperma kilneri*
 - *Neoroepera buxifolia*
 - *Omphalea celata*
 - *Oreodendron biflorum*
 - *Ozothamnus eriocephalus*
 - *Phaius pictus*
 - *Pimelea leptospermoides*
 - *Plectranthus gratus*
 - *Polyscias bellendenkerensis*
 - *Pultenaea setulosa*
 - *Quassia bidwillii*
 - *Rhinerrhizopsis matutina*
 - *Ristantia gouldii*
 - *Sankowskya stipularis* (E)
 - *Sarcochilus roseus*
 - *Sauropus macranthus*
 - *Syzygium velarum*
 - *Tephrosia leveillei*
 - *Toechima pterocarpum* (E)
 - *Vrydagzynea paludosa* (E)
 - *Xanthostemon formosus* (E)
 - Reptiles
 - Collared Delma (*Delma torquata*)

- Dunmall's Snake (*Furina dunmalli*)
- Fitzroy River Turtle, Fitzroy Tortoise, Fitzroy Turtle, White-eyed River Diver (*Rheodytes leukops*)
- Flatback Turtle (*Natator depressus*)
- Green Turtle (*Chelonia mydas*)
- Hawksbill Turtle (*Eretmochelys imbricata*)
- Leatherback Turtle, Leathery Turtle, Luth (*Dermochelys coriacea*) (E)
- Loggerhead Turtle (*Caretta caretta*) (E)
- Olive Ridley Turtle, Pacific Ridley Turtle (*Lepidochelys olivacea*) (E)
- Ornamental Snake (*Denisonia maculata*)
- Yakka Skink (*Egernia rugosa*)
- Sharks
 - Dwarf Sawfish, Queensland Sawfish (*Pristis clavata*)
 - Great White Shark (*Carcharodon carcharias*)
 - Green Sawfish, Dindagubba, Narrowsnout Sawfish (*Pristis zijsron*)
 - Grey Nurse Shark (east coast population) (*Carcharias taurus* (east coast population)) (CE)
 - Largetooth Sawfish, Freshwater Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish (*Pristis pristis*)
 - Speartooth Shark (*Glyphis glyphis*) (CE)
 - Whale Shark (*Rhincodon typus*)
- Whales
 - Blue Whale (*Balaenoptera musculus*) (E)
 - Humpback Whale (*Megaptera novaeangliae*)
 - Southern Right Whale (*Eubalaena australis*) (E)
- Ecological Communities
 - Brigalow (*Acacia harpophylla* dominant and co-dominant) (E)
 - Broad leaf tea-tree (*Melaleuca viridiflora*) woodlands in high rainfall coastal north Queensland (E)
 - Coolibah - Black Box Woodlands of the Darling Riverine Plains and the Brigalow Belt South Bioregions (E)
 - Littoral Rainforest and Coastal Vine Thickets of Eastern Australia (CE)
 - Lowland Rainforest of Subtropical Australia (CE)
 - Semi-evergreen vine thickets of the Brigalow Belt (North and South) and Nandewar Bioregions (E)
 - Weeping Myall Woodlands (E)

Listed migratory species

Section 20 of the EPBC Act requires approval of activities that has or will have or is likely to have a significant impact on a listed migratory species.

Listed migratory species that could be impacted by activities under the Program:

NOTE: * Denotes that species is also a listed threatened species.

- Birds
 - Barn Swallow (*Hirundo rustica*)
 - Bar-tailed Godwit (*Limosa lapponica*)
 - Black-browed Albatross (*Thalassarche melanophris*)*
 - Black-faced Monarch (*Monarcha melanopsis*)
 - Black-naped Tern (*Sterna sumatrana*)
 - Black-tailed Godwit (*Limosa limosa*)
 - Black-winged Monarch (*Monarcha frater*)
 - Bridled Tern (*Sterna anaethetus*)
 - Broad-billed Sandpiper (*Limicola falcinellus*)
 - Brown Booby (*Sula leucogaster*)
 - Campbell Albatross (*Thalassarche impavida*)*
 - Caspian Tern (*Sterna caspia*)
 - Cattle Egret (*Ardea ibis*)
 - Chatham Albatross (*Thalassarche eremita*)*
 - Common Noddy (*Anous stolidus*)
 - Common Sandpiper (*Actitis hypoleucos*)
 - Curlew Sandpiper (*Calidris ferruginea*)
 - Double-banded Plover (*Charadrius bicinctus*)
 - Eastern Curlew (*Numenius madagascariensis*)
 - Eastern Great Egret , White Egret (*Egretta alba*)
 - Flesh-footed Shearwater, Fleishy-footed Shearwater (*Puffinus carneipes*)
 - Fork-tailed Swift (*Apus pacificus*)
 - Great Frigatebird, Greater Frigatebird (*Fregata minor*)
 - Great Knot (*Calidris tenuirostris*)
 - Greater Sand Plover, Large Sand Plover (*Charadrius leschenaultii*)
 - Grey Plover (*Pluvialis squatarola*)
 - Grey-tailed Tattler (*Heteroscelus brevipes*)
 - Latham's Snipe, Japanese Snipe (*Gallinago hardwickii*)
 - Lesser Crested Tern (*Sterna bengalensis*)

- Lesser Frigatebird, Least Frigatebird (*Fregata ariel*)
- Lesser Sand Plover, Mongolian Plover (*Charadrius mongolus*)
- Little Curlew, Little Whimbrel (*Numenius minutus*)
- Little Tern (*Sterna albifrons*)
- Marsh Sandpiper, Little Greenshank (*Tringa stagnatilis*)
- Masked Booby (*Sula dactylatra*)
- Oriental Plover, Oriental Dotterel (*Charadrius veredus*)
- Pacific Golden Plover (*Pluvialis fulva*)
- Painted Snipe (*Rostratula benghalensis (sensu lato)*)*
- Pin-tailed Snipe (*Gallinago stenura*)
- Rainbow Bee-eater (*Merops ornatus*)
- Red Knot, Knot (*Calidris canutus*)
- Red-footed Booby (*Sula sula*)
- Red-necked Stint (*Calidris ruficollis*)
- Roseate Tern (*Sterna dougallii*)
- Ruddy Turnstone (*Arenaria interpres*)
- Rufous Fantail (*Rhipidura rufifrons*)
- Salvin's Albatross (*Thalassarche salvini*)*
- Sanderling (*Calidris alba*)
- Sarus Crane (*Grus antigone*)
- Satin Flycatcher (*Myiagra cyanoleuca*)
- Sharp-tailed Sandpiper (*Calidris acuminata*)
- Shy Albatross, Tasmanian Shy Albatross (*Thalassarche cauta cauta*)
- Southern Giant-Petrel (*Macronectes giganteus*)*
- Spectacled Monarch (*Symposiachrus trivirgatus*)
- Streaked Shearwater (*Calonectris leucomelas*)
- Terek Sandpiper (*Xenus cinereus*)
- Wedge-tailed Shearwater (*Puffinus pacificus*)
- Whimbrel (*Numenius phaeopus*)
- White-bellied Sea-Eagle (*Haliaeetus leucogaster*)
- White-capped Albatross (*Thalassarche steadi*)
- White-throated Needletail (*Hirundapus caudacutus*)
- Wood Sandpiper (*Tringa glareola*)
- Dugong (Dugong dugon)
- Other Cetaceans

- Indo-Pacific Humpback Dolphin (*Sousa chinensis*)
- Irrawaddy Dolphin (*Orcaella heinsohni*)
- Reptiles
 - Flatback Turtle (*Natator depressus*)*
 - Green Turtle (*Chelonia mydas*)*
 - Hawksbill Turtle (*Eretmochelys imbricata*)*
 - Leatherback Turtle, Leathery Turtle, Luth (*Dermochelys coriacea*)*
 - Loggerhead Turtle (*Caretta caretta*)*
 - Olive Ridley Turtle, Pacific Ridley Turtle (*Lepidochelys olivacea*)*
 - Salt-water Crocodile, Estuarine Crocodile (*Crocodylus porosus*)
- Sharks
 - Giant Manta Ray, Chevron Manta Ray, Pacific Manta Ray, Pelagic Manta Ray, Oceanic Manta Ray (*Manta birostris*)
 - Great White Shark (*Carcharodon carcharias*)*
 - Longfin Mako (*Isurus paucus*)
 - Porbeagle, Mackerel Shark (*Lamna nasus*)
 - Shortfin Mako, Mako Shark (*Isurus oxyrinchus*)
 - Whale Shark (*Rhincodon typus*)*
- Whales
 - Antarctic Minke Whale, Dark-shoulder Minke Whale (*Balaenoptera bonaerensis*)
 - Blue Whale (*Balaenoptera musculus*)*
 - Bryde's Whale (*Balaenoptera edeni*)
 - Humpback Whale (*Megaptera novaeangliae*)*
 - Killer Whale, Orca (*Orcinus orca*)
 - Southern Right Whale (*Eubalaena australis*)*
 - Sperm Whale (*Physeter macrocephalus*)

Commonwealth marine areas

The EPBC Act outlines in Part 3 the requirement for approval of activities in Commonwealth marine areas affecting the environment.

A person must not take in a Commonwealth marine area an action that has, will have or is likely to have a significant impact on the environment.

A person must not take outside a Commonwealth marine area but in the Australian jurisdiction an action that has or will have a significant impact on the environment in a Commonwealth marine area or is likely to have a significant impact on the environment in a Commonwealth marine area.

Fishing in State or Territory waters managed by Commonwealth:

A person must not take in the coastal waters (as defined in the *Fisheries Management Act 1991*) of a State or the Northern Territory an action that is fishing (as defined in the *Fisheries Management Act 1991*); and is included in the class of activities forming a fishery (as defined in that Act) that is managed under the law of the Commonwealth as a result of an agreement made under section 71 or 72 of that Act before the commencement of this section; and that has or will have, or is likely to have a significant impact on the environment in those coastal waters.

Listed marine species that may be impacted by activities under the Program:

- Birds
 - Australian Pratincole (*Stiltia isabella*)
 - Barn Swallow (*Hirundo rustica*)
 - Bar-tailed Godwit (*Limosa lapponica*)
 - Black Noddy (*Anous minutus*)
 - Black-browed Albatross (*Thalassarche melanophris*)
 - Black-faced Monarch (*Monarcha melanopsis*)
 - Black-naped Tern (*Sterna sumatrana*)
 - Black-tailed Godwit (*Limosa limosa*)
 - Black-winged Monarch (*Monarcha frater*)
 - Black-winged Petrel (*Pterodroma nigripennis*)
 - Black-winged Stilt (*Himantopus himantopus*)
 - Bridled Tern (*Sterna anaethetus*)
 - Broad-billed Sandpiper (*Limicola falcinellus*)
 - Brown Booby (*Sula leucogaster*)
 - Campbell Albatross (*Thalassarche impavida*)
 - Caspian Tern (*Sterna caspia*)
 - Cattle Egret (*Ardea ibis*)
 - Chatham Albatross (*Thalassarche eremita*)
 - Common Noddy (*Anous stolidus*)
 - Common Sandpiper (*Actitis hypoleucos*)
 - Crested Tern (*Sterna bergii*)
 - Curlew Sandpiper (*Calidris ferruginea*)
 - Double-banded Plover (*Charadrius bicinctus*)
 - Eastern Curlew (*Numenius madagascariensis*)
 - Flesh-footed Shearwater, Fleishy-footed Shearwater (*Puffinus carneipes*)
 - Fork-tailed Swift (*Apus pacificus*)

- Great Egret, White Egret (*Ardea alba*)
- Great Frigatebird, Greater Frigatebird (*Fregata minor*)
- Great Knot (*Calidris tenuirostris*)
- Greater Sand Plover, Large Sand Plover (*Charadrius leschenaultii*)
- Grey Plover (*Pluvialis squatarola*)
- Grey-tailed Tattler (*Heteroscelus brevipes*)
- Latham's Snipe, Japanese Snipe (*Gallinago hardwickii*)
- Lesser Crested Tern (*Sterna bengalensis*)
- Lesser Frigatebird, Least Frigatebird (*Fregata ariel*)
- Lesser Sand Plover, Mongolian Plover (*Charadrius mongolus*)
- Little Curlew, Little Whimbrel (*Numenius minutus*)
- Little Ringed Plover (*Charadrius dubius*)
- Little Tern (*Sterna albifrons*)
- Magpie Goose (*Anseranas semipalmata*)
- Marsh Sandpiper, Little Greenshank (*Tringa stagnatilis*)
- Masked Booby (*Sula dactylatra*)
- Oriental Plover, Oriental Dotterel (*Charadrius veredus*)
- Osprey (*Pandion haliaetus*)
- Pacific Golden Plover (*Pluvialis fulva*)
- Painted Snipe (*Rostratula benghalensis (sensu lato)*)
- Pectoral Sandpiper (*Calidris melanotos*)
- Pin-tailed Snipe (*Gallinago stenura*)
- Rainbow Bee-eater (*Merops ornatus*)
- Red Knot, Knot (*Calidris canutus*)
- Red-capped Plover (*Charadrius ruficapillus*)
- Red-footed Booby (*Sula sula*)
- Red-necked Avocet (*Recurvirostra novaehollandiae*)
- Red-necked Stint (*Calidris ruficollis*)
- Red-tailed Tropicbird (*Phaethon rubricauda*)
- Roseate Tern (*Sterna dougallii*)
- Ruddy Turnstone (*Arenaria interpres*)
- Ruff (Reeve) (*Philomachus pugnax*)
- Rufous Fantail (*Rhipidura rufifrons*)
- Salvin's Albatross (*Thalassarche cauta salvini*)
- Sanderling (*Calidris alba*)

- Satin Flycatcher (*Myiagra cyanoleuca*)
- Sharp-tailed Sandpiper (*Calidris acuminata*)
- Shy Albatross, Tasmanian Shy Albatross (*Thalassarche cauta cauta*)
- Silver Gull (*Larus novaehollandiae*)
- Southern Giant-Petrel (*Macronectes giganteus*)
- Spectacled Monarch (*Monarcha trivirgatus*)
- Streaked Shearwater (*Calonectris leucomelas*)
- Swinhoe's Snipe (*Gallinago megala*)
- Terek Sandpiper (*Xenus cinereus*)
- Wandering Tattler (*Heteroscelus incanus*)
- Wedge-tailed Shearwater (*Puffinus pacificus*)
- Whimbrel (*Numenius phaeopus*)
- White-bellied Sea-Eagle (*Haliaeetus leucogaster*)
- White-capped Albatross (*Thalassarche cauta steadi*)
- White-throated Needletail (*Hirundapus caudacutus*)
- Wood Sandpiper (*Tringa glareola*)
- Dugong (*Dugong dugon*)
- Fish
 - Anderson's Pipefish, Shortnose Pipefish (*Micrognathus andersonii*)
 - Australian Messmate Pipefish, Banded Pipefish (*Corythoichthys intestinalis*)
 - Banded Pipefish, Ringed Pipefish (*Doryrhamphus dactyliophorus*)
 - Barred Short-bodied Pipefish, Girdled Pipefish (*Choeroichthys cinctus*)
 - Beady Pipefish, Steep-nosed Pipefish (*Hippichthys penicillus*)
 - Belly-barred Pipefish, Banded Freshwater Pipefish (*Hippichthys spicifer*)
 - Bentstick Pipefish, Bend Stick Pipefish, Short-tailed Pipefish (*Trachyrhamphus bicoarctatus*)
 - Blue-speckled Pipefish, Blue-spotted Pipefish (*Hippichthys cyanospilos*)
 - Bluestripe Pipefish, Indian Blue-stripe Pipefish, Pacific Blue-stripe Pipefish (*Doryrhamphus excisus*)
 - Brock's Pipefish (*Halicampus brocki*)
 - Cleaner Pipefish, Janss' Pipefish (*Doryrhamphus janssi*)
 - D'Arros Pipefish (*Cosmocampus darrosanus*)
 - Davao Pughead Pipefish (*Bulbonaricus davaoensis*)
 - Double-end Pipehorse, Double-ended Pipehorse, Alligator Pipefish (*Syngnathoides biaculeatus*)

- Duncker's Pipehorse (*Solegnathus dunckeri*)
- Fijian Banded Pipefish, Brown-banded Pipefish (*Corythoichthys amplexus*)
- Flagtail Pipefish, Masthead Island Pipefish (*Doryrhamphus negrosensis*)
- Flat-face Seahorse (*Hippocampus planifrons*)
- Gibbs' Pipefish (*Festucalex gibbsi*)
- Girdled Pipefish (*Festucalex cinctus*)
- Glittering Pipefish (*Halicampus nitidus*)
- Hairy Pipefish (*Urocampus carinirostris*)
- Hedgehog Seahorse (*Hippocampus spinosissimus*)
- Javelin Pipefish (*Lissocampus runa*)
- Kellogg's Seahorse, Great Seahorse (*Hippocampus kelloggi*)
- Madura Pipefish, Reticulated Freshwater Pipefish (*Hippichthys heptagonus*)
- Manado Pipefish, Manado River Pipefish (*Microphis manadensis*)
- Maxweber's Pipefish (*Cosmocampus maxweberi*)
- Mother-of-pearl Pipefish (*Vanacampus margaritifer*)
- Mud Pipefish, Gray's Pipefish (*Halicampus grayi*)
- Offshore Pipefish (*Micrognathus natans*)
- Orange-spotted Pipefish, Ocellated Pipefish (*Corythoichthys ocellatus*)
- Ornate Ghostpipefish, Harlequin Ghost Pipefish, Ornate Ghost Pipefish (*Solenostomus paradoxus*)
- Pacific Short-bodied Pipefish, Short-bodied Pipefish (*Choeroichthys brachysoma*)
- Painted Pipefish, Reef Pipefish (*Nannocampus pictus*)
- Pale-blotched Pipefish, Spined Pipefish (*Phoxocampus diacanthus*)
- Pallid Pipehorse, Hardwick's Pipehorse (*Solegnathus hardwickii*)
- Paxton's Pipefish (*Corythoichthys paxtoni*)
- Pig-snouted Pipefish (*Choeroichthys suillus*)
- Pygmy Seahorse (*Hippocampus bargibanti*)
- Red-hair Pipefish, Duncker's Pipefish (*Halicampus dunckeri*)
- Reef-top Pipefish (*Corythoichthys haematopterus*)
- Reticulate Pipefish, Yellow-banded Pipefish, Network Pipefish (*Corythoichthys flavofasciatus*)
- Ribboned Pipehorse, Ribboned Seadragon (*Haliichthys taeniophorus*)
- Robust Ghostpipefish, Blue-finned Ghost Pipefish, (*Solenostomus cyanopterus*)
- Samoan Pipefish (*Halicampus matafaae*)
- Sawtooth Pipefish (*Maroubra perserrata*)

- Schultz's Pipefish (*Corythoichthys schultzi*)
- Sculptured Pipefish (*Choeroichthys sculptus*)
- Shortpouch Pygmy Pipehorse (*Acentronura tentaculata*)
- Short-tail Pipefish, Short-tailed River Pipefish (*Microphis brachyurus*)
- Softcoral Pipefish, Soft-coral Pipefish (*Siokunichthys breviceps*)
- Spiny Pipehorse, Australian Spiny Pipehorse (*Solegnathus spinosissimus*)
- Spiny Seahorse, Thorny Seahorse (*Hippocampus histrix*)
- Spiny-snout Pipefish (*Halicampus spinirostris*)
- Spotted Seahorse, Yellow Seahorse (*Hippocampus kuda*)
- Straightstick Pipefish, Long-nosed Pipefish, Straight Stick Pipefish (*Trachyrhamphus longirostris*)
- Thorntail Pipefish, Thorn-tailed Pipefish (*Micrognathus brevirostris*)
- Three-keel Pipefish (*Campichthys tricarinatus*)
- Tiger Pipefish (*Filicampus tigris*)
- Tryon's Pipefish (*Campichthys tryoni*)
- Western Spiny Seahorse, Narrow-bellied Seahorse (*Hippocampus angustus*)
- Whiskered Pipefish, Ornate Pipefish (*Halicampus macrorhynchus*)
- White's Seahorse, Crowned Seahorse, Sydney Seahorse (*Hippocampus whitei*)
- Widebody Pipefish, Wide-bodied Pipefish, Black Pipefish (*Stigmatopora nigra*)
- Zebra Seahorse (*Hippocampus zebra*)
- Reptiles
 - a sea krait (*Laticauda colubrina*)
 - a sea krait (*Laticauda laticaudata*)
 - a seasnake (*Hydrophis vorisi*)
 - Beaked Seasnake (*Enhydrina schistosa*)
 - Black-banded Robust Seasnake (*Hydrophis melanosoma*)
 - Black-headed Seasnake (*Hydrophis atriceps*)
 - Dubois' Seasnake (*Aipysurus duboisii*)
 - Elegant Seasnake (*Hydrophis elegans*)
 - Flatback Turtle (*Natator depressus*)
 - Freshwater Crocodile, Johnston's Crocodile, Johnston's River Crocodile (*Crocodylus johnstoni*)
 - Green Turtle (*Chelonia mydas*)
 - Hawksbill Turtle (*Eretmochelys imbricata*)
 - Horned Seasnake (*Acalyptophis peronii*)

- Large-headed Seasnake (*Hydrophis pacificus*)
- Leatherback Turtle, Leathery Turtle, Luth (*Dermochelys coriacea*)
- Loggerhead Turtle (*Caretta caretta*)
- Olive Ridley Turtle, Pacific Ridley Turtle (*Lepidochelys olivacea*)
- Olive Seasnake (*Aipysurus laevis*)
- Olive-headed Seasnake (*Disteira major*)
- Salt-water Crocodile, Estuarine Crocodile (*Crocodylus porosus*)
- Slender Seasnake (*Hydrophis gracilis*)
- Small-headed Seasnake (*Hydrophis mcdowelli*)
- Spectacled Seasnake (*Disteira kingii*)
- Spine-bellied Seasnake (*Lapemis hardwickii*)
- Spine-tailed Seasnake (*Aipysurus eydouxii*)
- Spotted Seasnake, Ornate Reef Seasnake (*Hydrophis ornatus*)
- Stokes' Seasnake (*Astrotia stokesii*)
- Turtle-headed Seasnake (*Emydocephalus annulatus*)
- Yellow-bellied Seasnake (*Pelamis platurus*)

Listed cetaceans (protected by Division 3, Part 13 of the EPBC Act) that may be impacted by Activities under the Program include:

NOTE: Listed cetaceans which are limited to those cetaceans which are not otherwise listed threatened, migratory or marine species

- Blainville's Beaked Whale, Dense-beaked Whale (*Mesoplodon densirostris*)
- Bottlenose Dolphin (*Tursiops truncatus (sensu stricto)*)
- Common Dolphin, Short-beaked Common Dolphin (*Delphinus delphis*)
- Cuvier's Beaked Whale, Goose-beaked Whale (*Ziphius cavirostris*)
- Dwarf Sperm Whale (*Kogia simus*)
- False Killer Whale (*Pseudorca crassidens*)
- Fraser's Dolphin, Sarawak Dolphin (*Lagenodelphis hosei*)
- Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin (*Tursiops aduncus*)
- Long-snouted Spinner Dolphin (*Stenella longirostris*)
- Melon-headed Whale (*Peponocephala electra*)
- Minke Whale (*Balaenoptera acutorostrata*)
- Pygmy Killer Whale (*Feresa attenuata*)
- Pygmy Sperm Whale (*Kogia breviceps*)
- Risso's Dolphin, Grampus (*Grampus griseus*)
- Rough-toothed Dolphin (*Steno bredanensis*)

-
- Short-finned Pilot Whale (*Globicephala macrorhynchus*)
 - Spotted Dolphin, Pantropical Spotted Dolphin (*Stenella attenuata*)
 - Strap-toothed Beaked Whale, Strap-toothed Whale, Layard's Beaked Whale (*Mesoplodon layardii*)
 - Striped Dolphin, Euphrosyne Dolphin (*Stenella coeruleoalba*)

Commonwealth Heritage places

The EPBC Act outlines in Part 3 the requirement for approval of actions with significant impact on Commonwealth Heritage places.

A person must not take an action that has, will have or is likely to have a significant impact on the environment in a Commonwealth Heritage place.

Commonwealth Heritage places that could be impacted by activities under the Program:

- ABC Radio Studios
- Dent Island Lightstation
- Lady Elliot Island Lightstation
- Low Island and Low Islets Lightstation
- North Reef Lightstation
- Shoalwater Bay Military Training Area
- Tully Training Area

Great Barrier Reef Marine Park

The EPBC Act outlines in Part 3 the requirement for approval of activities in the GBRMP affecting the environment.

A person must not take in the GBRMP an action that has, will have or is likely to have a significant impact on the environment.

A person must not take an action outside the GBRMP but in the Australian jurisdiction that has, will or is likely to have a significant impact on the environment in the GBRMP.

Listed marine species that may be impacted by activities under the Program:

- Birds
 - Australian Pratincole (*Stiltia isabella*)
 - Barn Swallow (*Hirundo rustica*)
 - Bar-tailed Godwit (*Limosa lapponica*)
 - Black Noddy (*Anous minutus*)
 - Black-browed Albatross (*Thalassarche melanophris*)
 - Black-faced Monarch (*Monarcha melanopsis*)
 - Black-naped Tern (*Sterna sumatrana*)
 - Black-tailed Godwit (*Limosa limosa*)
 - Black-winged Monarch (*Monarcha frater*)
 - Black-winged Petrel (*Pterodroma nigripennis*)
 - Black-winged Stilt (*Himantopus himantopus*)
 - Bridled Tern (*Sterna anaethetus*)
 - Broad-billed Sandpiper (*Limicola falcinellus*)
 - Brown Booby (*Sula leucogaster*)
 - Campbell Albatross (*Thalassarche impavida*)
 - Caspian Tern (*Sterna caspia*)
 - Cattle Egret (*Ardea ibis*)
 - Chatham Albatross (*Thalassarche eremita*)
 - Common Noddy (*Anous stolidus*)
 - Common Sandpiper (*Actitis hypoleucos*)
 - Crested Tern (*Sterna bergii*)
 - Curlew Sandpiper (*Calidris ferruginea*)
 - Double-banded Plover (*Charadrius bicinctus*)
 - Eastern Curlew (*Numenius madagascariensis*)
 - Flesh-footed Shearwater, Fleishy-footed Shearwater (*Puffinus carneipes*)
 - Fork-tailed Swift (*Apus pacificus*)

- Great Egret, White Egret (*Ardea alba*)
- Great Frigatebird, Greater Frigatebird (*Fregata minor*)
- Great Knot (*Calidris tenuirostris*)
- Greater Sand Plover, Large Sand Plover (*Charadrius leschenaultii*)
- Grey Plover (*Pluvialis squatarola*)
- Grey-tailed Tattler (*Heteroscelus brevipes*)
- Latham's Snipe, Japanese Snipe (*Gallinago hardwickii*)
- Lesser Crested Tern (*Sterna bengalensis*)
- Lesser Frigatebird, Least Frigatebird (*Fregata ariel*)
- Lesser Sand Plover, Mongolian Plover (*Charadrius mongolus*)
- Little Curlew, Little Whimbrel (*Numenius minutus*)
- Little Ringed Plover (*Charadrius dubius*)
- Little Tern (*Sterna albifrons*)
- Magpie Goose (*Anseranas semipalmata*)
- Marsh Sandpiper, Little Greenshank (*Tringa stagnatilis*)
- Masked Booby (*Sula dactylatra*)
- Oriental Plover, Oriental Dotterel (*Charadrius veredus*)
- Osprey (*Pandion haliaetus*)
- Pacific Golden Plover (*Pluvialis fulva*)
- Painted Snipe (*Rostratula benghalensis (sensu lato)*)
- Pectoral Sandpiper (*Calidris melanotos*)
- Pin-tailed Snipe (*Gallinago stenura*)
- Rainbow Bee-eater (*Merops ornatus*)
- Red Knot, Knot (*Calidris canutus*)
- Red-capped Plover (*Charadrius ruficapillus*)
- Red-footed Booby (*Sula sula*)
- Red-necked Avocet (*Recurvirostra novaehollandiae*)
- Red-necked Stint (*Calidris ruficollis*)
- Red-tailed Tropicbird (*Phaethon rubricauda*)
- Roseate Tern (*Sterna dougallii*)
- Ruddy Turnstone (*Arenaria interpres*)
- Ruff (Reeve) (*Philomachus pugnax*)
- Rufous Fantail (*Rhipidura rufifrons*)
- Salvin's Albatross (*Thalassarche cauta salvini*)
- Sanderling (*Calidris alba*)

- Satin Flycatcher (*Myiagra cyanoleuca*)
- Sharp-tailed Sandpiper (*Calidris acuminata*)
- Shy Albatross, Tasmanian Shy Albatross (*Thalassarche cauta cauta*)
- Silver Gull (*Larus novaehollandiae*)
- Southern Giant-Petrel (*Macronectes giganteus*)
- Spectacled Monarch (*Monarcha trivirgatus*)
- Streaked Shearwater (*Calonectris leucomelas*)
- Swinhoe's Snipe (*Gallinago megala*)
- Terek Sandpiper (*Xenus cinereus*)
- Wandering Tattler (*Heteroscelus incanus*)
- Wedge-tailed Shearwater (*Puffinus pacificus*)
- Whimbrel (*Numenius phaeopus*)
- White-bellied Sea-Eagle (*Haliaeetus leucogaster*)
- White-capped Albatross (*Thalassarche cauta steadi*)
- White-throated Needletail (*Hirundapus caudacutus*)
- Wood Sandpiper (*Tringa glareola*)
- Dugong (*Dugong dugon*)
- Fish
 - Anderson's Pipefish, Shortnose Pipefish (*Micrognathus andersonii*)
 - Australian Messmate Pipefish, Banded Pipefish (*Corythoichthys intestinalis*)
 - Banded Pipefish, Ringed Pipefish (*Doryrhamphus dactyliophorus*)
 - Barred Short-bodied Pipefish, Girdled Pipefish (*Choeroichthys cinctus*)
 - Beady Pipefish, Steep-nosed Pipefish (*Hippichthys penicillus*)
 - Belly-barred Pipefish, Banded Freshwater Pipefish (*Hippichthys spicifer*)
 - Bentstick Pipefish, Bend Stick Pipefish, Short-tailed Pipefish (*Trachyrhamphus bicoarctatus*)
 - Blue-speckled Pipefish, Blue-spotted Pipefish (*Hippichthys cyanospilos*)
 - Bluestripe Pipefish, Indian Blue-stripe Pipefish, Pacific Blue-stripe Pipefish (*Doryrhamphus excisus*)
 - Brock's Pipefish (*Halicampus brocki*)
 - Cleaner Pipefish, Janss' Pipefish (*Doryrhamphus janssi*)
 - D'Arros Pipefish (*Cosmocampus darrosanus*)
 - Davao Pughead Pipefish (*Bulbonaricus davaoensis*)
 - Double-end Pipehorse, Double-ended Pipehorse, Alligator Pipefish (*Syngnathoides biaculeatus*)

- Duncker's Pipehorse (*Solegnathus dunckeri*)
- Fijian Banded Pipefish, Brown-banded Pipefish (*Corythoichthys amplexus*)
- Flagtail Pipefish, Masthead Island Pipefish (*Doryrhamphus negrosensis*)
- Flat-face Seahorse (*Hippocampus planifrons*)
- Gibbs' Pipefish (*Festucalex gibbsi*)
- Girdled Pipefish (*Festucalex cinctus*)
- Glittering Pipefish (*Halicampus nitidus*)
- Hairy Pipefish (*Urocampus carinirostris*)
- Hedgehog Seahorse (*Hippocampus spinosissimus*)
- Javelin Pipefish (*Lissocampus runa*)
- Kellogg's Seahorse, Great Seahorse (*Hippocampus kelloggi*)
- Madura Pipefish, Reticulated Freshwater Pipefish (*Hippichthys heptagonus*)
- Manado Pipefish, Manado River Pipefish (*Microphis manadensis*)
- Maxweber's Pipefish (*Cosmocampus maxweberi*)
- Mother-of-pearl Pipefish (*Vanacampus margaritifer*)
- Mud Pipefish, Gray's Pipefish (*Halicampus grayi*)
- Offshore Pipefish (*Micrognathus natans*)
- Orange-spotted Pipefish, Ocellated Pipefish (*Corythoichthys ocellatus*)
- Ornate Ghostpipefish, Harlequin Ghost Pipefish, Ornate Ghost Pipefish (*Solenostomus paradoxus*)
- Pacific Short-bodied Pipefish, Short-bodied Pipefish (*Choeroichthys brachysoma*)
- Painted Pipefish, Reef Pipefish (*Nannocampus pictus*)
- Pale-blotched Pipefish, Spined Pipefish (*Phoxocampus diacanthus*)
- Pallid Pipehorse, Hardwick's Pipehorse (*Solegnathus hardwickii*)
- Paxton's Pipefish (*Corythoichthys paxtoni*)
- Pig-snouted Pipefish (*Choeroichthys suillus*)
- Pygmy Seahorse (*Hippocampus bargibanti*)
- Red-hair Pipefish, Duncker's Pipefish (*Halicampus dunckeri*)
- Reef-top Pipefish (*Corythoichthys haematopterus*)
- Reticulate Pipefish, Yellow-banded Pipefish, Network Pipefish (*Corythoichthys flavofasciatus*)
- Ribboned Pipehorse, Ribboned Seadragon (*Haliichthys taeniophorus*)
- Robust Ghostpipefish, Blue-finned Ghost Pipefish, (*Solenostomus cyanopterus*)
- Samoan Pipefish (*Halicampus matafaae*)
- Sawtooth Pipefish (*Maroubra perserrata*)

- Schultz's Pipefish (*Corythoichthys schultzi*)
- Sculptured Pipefish (*Choeroichthys sculptus*)
- Shortpouch Pygmy Pipehorse (*Acentronura tentaculata*)
- Short-tail Pipefish, Short-tailed River Pipefish (*Microphis brachyurus*)
- Softcoral Pipefish, Soft-coral Pipefish (*Siokunichthys breviceps*)
- Spiny Pipehorse, Australian Spiny Pipehorse (*Solegnathus spinosissimus*)
- Spiny Seahorse, Thorny Seahorse (*Hippocampus histrix*)
- Spiny-snout Pipefish (*Halicampus spinirostris*)
- Spotted Seahorse, Yellow Seahorse (*Hippocampus kuda*)
- Straightstick Pipefish, Long-nosed Pipefish, Straight Stick Pipefish (*Trachyrhamphus longirostris*)
- Thorntail Pipefish, Thorn-tailed Pipefish (*Micrognathus brevirostris*)
- Three-keel Pipefish (*Campichthys tricarinatus*)
- Tiger Pipefish (*Filicampus tigris*)
- Tryon's Pipefish (*Campichthys tryoni*)
- Western Spiny Seahorse, Narrow-bellied Seahorse (*Hippocampus angustus*)
- Whiskered Pipefish, Ornate Pipefish (*Halicampus macrorhynchus*)
- White's Seahorse, Crowned Seahorse, Sydney Seahorse (*Hippocampus whitei*)
- Widebody Pipefish, Wide-bodied Pipefish, Black Pipefish (*Stigmatopora nigra*)
- Zebra Seahorse (*Hippocampus zebra*)
- Reptiles
 - a sea krait (*Laticauda colubrina*)
 - a sea krait (*Laticauda laticaudata*)
 - a seasnake (*Hydrophis vorisi*)
 - Beaked Seasnake (*Enhydrina schistosa*)
 - Black-banded Robust Seasnake (*Hydrophis melanosoma*)
 - Black-headed Seasnake (*Hydrophis atriceps*)
 - Dubois' Seasnake (*Aipysurus duboisii*)
 - Elegant Seasnake (*Hydrophis elegans*)
 - Flatback Turtle (*Natator depressus*)
 - Freshwater Crocodile, Johnston's Crocodile, Johnston's River Crocodile (*Crocodylus johnstoni*)
 - Green Turtle (*Chelonia mydas*)
 - Hawksbill Turtle (*Eretmochelys imbricata*)
 - Horned Seasnake (*Acalyptophis peronii*)

- Large-headed Seasnake (*Hydrophis pacificus*)
- Leatherback Turtle, Leathery Turtle, Luth (*Dermochelys coriacea*)
- Loggerhead Turtle (*Caretta caretta*)
- Olive Ridley Turtle, Pacific Ridley Turtle (*Lepidochelys olivacea*)
- Olive Seasnake (*Aipysurus laevis*)
- Olive-headed Seasnake (*Disteira major*)
- Salt-water Crocodile, Estuarine Crocodile (*Crocodylus porosus*)
- Slender Seasnake (*Hydrophis gracilis*)
- Small-headed Seasnake (*Hydrophis mcdowelli*)
- Spectacled Seasnake (*Disteira kingii*)
- Spine-bellied Seasnake (*Lapemis hardwickii*)
- Spine-tailed Seasnake (*Aipysurus eydouxii*)
- Spotted Seasnake, Ornate Reef Seasnake (*Hydrophis ornatus*)
- Stokes' Seasnake (*Astrotia stokesii*)
- Turtle-headed Seasnake (*Emydocephalus annulatus*)
- Yellow-bellied Seasnake (*Pelamis platurus*)

Listed cetaceans (protected by Division 3, Part 13 of the EPBC Act) that may be impacted by activities under the Program include:

NOTE: Listed cetaceans which are limited to those cetaceans which are not otherwise listed threatened, migratory or marine species

- Blainville's Beaked Whale, Dense-beaked Whale (*Mesoplodon densirostris*)
- Bottlenose Dolphin (*Tursiops truncatus (sensu stricto)*)
- Common Dolphin, Short-beaked Common Dolphin (*Delphinus delphis*)
- Cuvier's Beaked Whale, Goose-beaked Whale (*Ziphius cavirostris*)
- Dwarf Sperm Whale (*Kogia simus*)
- False Killer Whale (*Pseudorca crassidens*)
- Fraser's Dolphin, Sarawak Dolphin (*Lagenodelphis hosei*)
- Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin (*Tursiops aduncus*)
- Long-snouted Spinner Dolphin (*Stenella longirostris*)
- Melon-headed Whale (*Peponocephala electra*)
- Minke Whale (*Balaenoptera acutorostrata*)
- Pygmy Killer Whale (*Feresa attenuata*)
- Pygmy Sperm Whale (*Kogia breviceps*)
- Risso's Dolphin, Grampus (*Grampus griseus*)
- Rough-toothed Dolphin (*Steno bredanensis*)

-
- Short-finned Pilot Whale (*Globicephala macrorhynchus*)
 - Spotted Dolphin, Pantropical Spotted Dolphin (*Stenella attenuata*)
 - Strap-toothed Beaked Whale, Strap-toothed Whale, Layard's Beaked Whale (*Mesoplodon layardii*)
 - Striped Dolphin, Euphrosyne Dolphin (*Stenella coeruleoalba*)

Commonwealth Heritage places

The EPBC Act outlines in Part 3 the requirement for approval of actions with significant impact on Commonwealth Heritage places.

A person must not take an action that has, will have or is likely to have a significant impact on the environment in a Commonwealth Heritage place.

Commonwealth Heritage places that could be impacted by activities under the Program:

- ABC Radio Studios
- Dent Island Lightstation
- Lady Elliot Island Lightstation
- Low Island and Low Islets Lightstation
- North Reef Lightstation
- Shoalwater Bay Military Training Area
- Tully Training Area

Appendix 4: Traditional Owners within the GBR coastal zone

Introduction

The Terms of Reference for the GBR coastal zone strategic assessment include Endorsement Criteria that require that the strategic assessment:

- recognises the role of Indigenous peoples in the conservation and ecologically sustainable use of Australia's biodiversity
- promotes the use of Indigenous people's knowledge of biodiversity with involvement of, and in co-operation with, the owners of the knowledge.

The Australian Government commissioned Sinclair Knight Merz (SKM) to undertake an independent review of the draft reports for the GBR coastal zone strategic assessment in October 2013. This review found that:

'The description of the distribution, significance and management of Indigenous cultural values of the Great Barrier Reef could be further expanded to provide greater recognition of the role played by Indigenous peoples in the management of their traditional lands and sea-country. While it is recognised that the four world heritage listing criteria for the Great Barrier Reef relate to natural heritage, some further description of the cultural landscapes and heritage values of the Great Barrier Reef and their management by traditional owners would seem warranted given the depth and breadth of the Strategic Assessment and the limited description provided in the draft documents.'

The independent review also recommended the following action:

'Expand the consideration of cultural heritage values, and include a description of how traditional owners interact with the Queensland Government when implementing the Program.'

Feedback provided through the public consultation process that was undertaken on the draft strategic assessment reports prepared by the Queensland Government and the Great Barrier Reef Marine Park Authority (GBRMPA) also sought greater recognition of Traditional Owner cultural heritage, including rights and interests enshrined in law.

This Supplementary Report therefore provides additional information on Traditional Owner cultural heritage values and the involvement of Traditional Owners in the management of environmental values in the Great Barrier Reef (GBR).

Traditional Owners and the strategic assessment

Australia's Aboriginal and Torres Strait Islander people have enduring spiritual and cultural connections to the natural environment. As the Traditional Owners of Australia's natural environment, their connection to their land and sea country spans thousands of years.

The GBR region is home to approximately 70 Traditional Owner groups, all with unique connections and heritage values related to the reef and GBR coastal zone, and these

groups are located along the Queensland coast from the eastern Torres Strait Islands in the north to near Bundaberg in the south.

Aboriginal and Torres Strait Islander people are inextricably linked to their land and sea country through their living culture and traditions, including their stories and song lines, sites of cultural significance and important saltwater ceremonies. Aboriginal peoples have a well-developed knowledge about the natural world.

Traditional knowledge is a critical component in the conservation and ecologically sustainable use of Queensland's biodiversity. The diversity of traditional knowledge also means it can fulfil multiple purposes from the regulation of natural resources based on cultural practices and belief, to the maintenance of culturally and biologically significant sites. When combined with modern techniques, traditional knowledge can enhance the identification and preservation of sites that have high biological and/or ecological value, making traditional knowledge invaluable for protecting the GBR coastal zone.

The Queensland Government's GBR coastal zone strategic assessment relates to matters of land and coast as distinct from the GBRMPA's strategic assessment, which relates to marine matters. This arbitrary distinction between the two programs has been problematic when attempting to address matters of Traditional Owners' involvement in the management of the reef. For many Aboriginal and Torres Strait Islander people there is a seamless flow between natural and cultural values and their land and sea estates and jurisdictional boundaries are often not recognised as a result.

There are both similarities and differences between the ways Aboriginal and Torres Strait Islander groups use the land and sea in their customary practices. Each group has their own distinctive culture and identity, and often within groups there are many more clans and kinship groups whose discrete characteristics further distinguish one from the other.

Contemporary Indigenous use

Activities such as hunting, fishing and gathering have a significant role in the cultural life and economy of Indigenous communities in the GBR region. In remote locations, Indigenous peoples continue to rely on marine resources for a substantial part of their diet. Seafood consumption by Torres Strait Islanders on the Island of Mer for example is among the highest in the world¹¹. This finding is consistent with numerous studies of the contribution of subsistence activities to Indigenous peoples' socio-economic welfare. Beyond subsistence fishing, marine resources within the GBR region also support cultural values.

Turtle and dugong hunting is an important aspect of the Indigenous economy and cultural life in the Great Barrier Reef World Heritage Area (GBRWHA) and is based on collectively accumulated ecological knowledge, skills and continued cultural association with the species¹². GBRMP zoning plans require dugong and turtle hunting permits which are granted to Indigenous peoples for customary purposes. However, permits

¹¹ Neitschmann, B., 1983, Traditional Sea Territories, Resources and Rights in Torres Strait, In *A Sea of Small Boats* (ed J. Cordell), Cultural Survival Inc. Cambridge, Mass.

¹² Williams, R., 1996, Who's listening and Who's learning? Aboriginal and Torres Strait Islander knowledge of turtle and dugong in the Great Barrier Reef Marine Park regions, *Ecopolitics IX Conference Perspectives on Indigenous Peoples Management of Environmental Resources: papers and resolutions*, Northern Land Council, Casuarina, 113-117.

may not be required under section 211 of the *Native Title Act 1993* (Cth) in some areas where “native title rights and interests exist.”

Little is known about the current status of Indigenous fishing and shell collecting in the GBRWHA in terms of effort, impact on the sustainability of resources and contribution to local and regional gross value of fisheries production¹³. It is also unclear how significant the contribution of subsistence fishing is to overall fisheries production.

A survey undertaken by the Australian Bureau of Statistics in 1994 indicated that 11 per cent of the 49 500 Indigenous people involved in unpaid work engaged in hunting, fishing and gathering¹⁴. A recent study of subsistence activities on Cape York Peninsula indicates that as much as 80 per cent of protein is derived from fishing and hunting. This is a significant contribution to the diet, health and economy of people in remote communities where the availability of alternative food items is irregular and often of poorer quality. Some economic analyses of Indigenous fishing have been undertaken in the Torres Strait¹⁵ and Cape York Peninsula¹⁶. These studies show that subsistence activities contribute a significant part of the household income.

Information on the level of subsistence fishing and hunting in urban areas is yet to be investigated, although anecdotal evidence suggests that it may be substantial and linked to the importance of seafood in the diet of Indigenous peoples as well as being a culturally significant activity.

Recognition of Traditional Owner rights and interests

Native title is the recognition by Australian common law that Indigenous groups have rights and interests to their land under their traditional laws and customs. Native title rights and interests may include rights to:

- live on the area
- access the area for traditional purposes, such as camping or conducting ceremonies
- visit and protect important places and sites
- hunt, fish and gather food or traditional resources such as water, wood and ochre
- teach law and custom on country.

In some areas, native title has been deemed to be extinguished, such as on freehold land, but in other areas, native title may continue to be active and recognised in law by the Federal Court of Australia.

The *Native Title Act 1993* (Cwlth) sets up processes to determine where native title exists, how future activity impacting upon native title may be undertaken, and to provide compensation where native title is impaired or extinguished. The Act gives

¹³ Altman, J., Arthur WS., and Bek, H., 1994, 'Indigenous participation in commercial fisheries in Torres Strait: a preliminary discussion', CAEPR Discussion Paper No. 73. Centre for Aboriginal Economic Policy.

¹⁴ Madden, R., 1995, National Aboriginal and Torres Strait Islander Survey 1994: Detailed Findings. Australian Bureau of Statistics, Canberra.

¹⁵ Altman, J., Arthur WS., and Bek, H., 1994, 'Indigenous participation in commercial fisheries in Torres Strait: a preliminary discussion', CAEPR Discussion Paper No. 73. Centre for Aboriginal Economic Policy.

¹⁶ Asafu-Adjaye, J., 1994, 'Cape York Land use Strategy: Traditional activities project report', Indigenous management of land and sea project and traditional activities project: Draft report to the Cape York Peninsula Land Use Strategy, (ed. J Cordell), Department of Anthropology and Sociology, University of Queensland, St Lucia.

Indigenous Australians who hold native title rights and interests—or who have made a native title claim—the right to be consulted and, in some cases, to participate in decisions about activities proposed to be undertaken on the land. Indigenous Australians have been able to negotiate benefits for their communities through native title, including in relation to employment opportunities and cultural heritage protection.

Cultural heritage is made up of tangible and intangible elements of all cultural practices, resources and knowledge developed, nurtured and defined by Aboriginal and Torres Strait Islander people. Traditional Owners express their cultural heritage through their relationships with country, people, beliefs, knowledge, law and lore, language, symbols, ways of living, sea, land and objects, all of which arise from their spirituality. Heritage values have been passed down through generations and to others as part of expressing their cultural and spiritual identity.

Legally recognising the rights of Traditional Owners to access and use their traditional Country and resources is an important aspect of Indigenous cultural heritage. As part of the Program, legislation is in place to recognise and protect Indigenous cultural heritage in Queensland, including the GBR region:

- *Aboriginal Cultural Heritage Act 2003*
- *Torres Strait Islander Cultural Heritage Act 2003*

The main purpose of these Acts is to provide effective recognition, protection and conservation of Aboriginal and Torres Strait Islander cultural heritage in Queensland. The Acts define Aboriginal or Torres Strait Islander cultural heritage as anything that is:

- a significant Aboriginal or Torres Strait Islander area in Queensland; or
- a significant Aboriginal or Torres Strait Islander object in Queensland; or
- evidence of archaeological or historic significance, of Aboriginal or Torres Strait Islander occupation of an area of Queensland.

An area or object is significant because of either or both of the following:

- Aboriginal or Torres Strait Islander tradition
- the history including contemporary history of any Aboriginal or Torres Strait Islander party for the area.

The Acts:

- provide blanket protection of areas and objects of traditional, customary, and archaeological significance
- recognise the key role of Traditional Owners in cultural heritage matters
- establish practical and flexible processes for dealing with cultural heritage in a timely manner.

The Queensland Department of Aboriginal and Torres Strait Islander and Multicultural Affairs (DATSIMA) maintains a cultural heritage database and register of recorded cultural heritage places. Cultural heritage sites do not need to be recorded on the register, and are protected under both Acts whether or not they are registered.

The Acts also require anyone who carries out a land-use activity to exercise a duty of care. Land users must take all reasonable and practicable measures to ensure their activity does not harm Aboriginal or Torres Strait Islander cultural heritage.

The duty of care under Queensland's Indigenous cultural heritage legislation applies to any activity where Aboriginal or Torres Strait Islander cultural heritage is located. This includes cultural heritage located on freehold land and regardless of whether or not it has been identified or recorded in a database.

Consultation with the Aboriginal or Torres Strait Islander party for an area may be necessary if there is a high risk that the activity may harm Aboriginal or Torres Strait Islander cultural heritage.

The cultural heritage duty of care can be met by acting:

- in compliance with gazetted cultural heritage duty of care guidelines
- under an approved Cultural Heritage Management Plan (CHMP) developed under Part 7 of both Acts
- under a native title agreement or another agreement with an Aboriginal or Torres Strait Islander party that addresses cultural heritage
- in compliance with native title protection conditions (for low-impact mineral exploration)—but only if the conditions address cultural heritage.

Any land user can develop and seek approval for a CHMP under both Acts. A CHMP is an agreement between a land user (sponsor) and Traditional Owners (endorsed party). The plan explains how land use activities can be managed to avoid or minimise harm to Aboriginal or Torres Strait Islander cultural heritage. A CHMP must be developed and approved when an environmental impact statement is required for a project. However, any land user can voluntarily develop and seek to have a CHMP approved, even when there is no legal requirement to do so.

Indigenous cultural heritage is also recognised in the Queensland State Planning Policy which explicitly states that places of Indigenous cultural heritage are to be conserved for the benefit of the community and future generations. This includes the requirement that the making and/or amending of a planning scheme in Queensland must consider and integrate matters of Indigenous cultural heritage that support the requirements of the Aboriginal Cultural Heritage Act and the Torres Strait Islander Cultural Heritage Act.

For Aboriginal and Torres Strait Islander people in the GBR region, there are a number of cultural sites that occur within the GBR's land and sea country. These include sacred sites, ceremonial sites, burial grounds, rock art sites, middens, fish traps, cultural landscapes and story places. Today trade networks, beliefs, music, art, creation stories, traditional lore and customs maintain a living culture.

Management agreements

Traditional use of marine resources agreements

Traditional Use of Marine Resources Agreements (TUMRA) describe how Traditional Owner groups work with Australian and Queensland governments to manage traditional use activities in sea country. A TUMRA may describe, e.g. how Traditional Owner groups wish to manage their take of natural resources (including protected species), their role in compliance and their role in monitoring the condition of plants and animals and human activities, in the GBRMP¹⁷.

TUMRAs play an important role in enabling traditional Indigenous use of marine resources within their sea country. These agreements describe how Traditional Owner groups manage the natural resources (including protected species) and their role in compliance and monitoring activities relating to the condition of plants, animals and human activities within the GBRMP.

A TUMRA is a formal agreement developed by Traditional Owner groups and accredited by the GBRMPA and the Queensland Government. The agreement describes how Traditional Owner groups work with the government to manage traditional use activities in their sea country.

TUMRAs are developed by a steering committee elected by the Traditional Owner group. The steering committee documents the desired role of their group in managing their sea country and the role they want the Australian and Queensland Governments to take. All members of the group must agree with the document before it can be accredited. For example, a TUMRA may describe how Traditional Owner groups wish to limit their take of turtle and dugong, their role in monitoring plants and animals, and their involvement in observing human activities in their sea country. A TUMRA may also describe ways to educate the public about traditional connections to sea country, and to educate other members of a Traditional Owner group about managing their sea country.

By working together to develop and implement a TUMRA, Traditional Owner groups are able to better achieve their aims for managing their sea country. While the TUMRA approach recognises and addresses a complex array of Indigenous rights and interests, it can also address marine management and legislative issues in a culturally appropriate and scientifically valid manner.

TUMRAs also have the great advantage in that they present an adaptive approach. As the capacity of the Traditional Owners increases, their responsibilities can grow accordingly. In addition, it presents a process where relationships with the GBRMPA and the Queensland Government can be maintained and built upon through time, and difficulties can be negotiated.

Indigenous Land Use Agreements

An Indigenous Land Use Agreement (ILUA) is an agreement between a native title group and others, including government agencies, about the use and management of their land and sea country. These agreements are intended to be flexible, practical

¹⁷ <http://www.gbrmpa.gov.au/our-partners/traditional-owners/traditional-use-of-marine-resources-agreements>

agreements and may be negotiated over areas where native title has, or has not yet, been determined.

ILUAs might cover:

- native title holders agreeing to a future development or future acts
- how native title rights coexist with the rights of other people
- access to an area
- extinguishment of native title by surrender to government
- compensation for loss or impairment of native title.

ILUAs can also cover cultural heritage issues, the provision of public works and infrastructure, and employment and economic opportunities for native title groups. They also mean that negotiations can be conducted to suit the particular circumstances of different Traditional Owner groups.

ILUA's were first introduced after amendments to the Native Title Act in 1998. The Native Title Act states who must and who may be a party to each type of ILUA. Making sure that the right people and organisations are party to the ILUA is essential for registering an ILUA. If the right people are not a party, then the agreement cannot be registered by the National Native Title Tribunal (NNTT).

The NNTT ensures that proponents make sure that reasonable efforts have been made to identify all potential native title holders for the agreement area, and that those identified have authorised the making of the agreement. As of 19 February 2014, the NNTT had 533 ILUAs registered in Queensland¹⁸. When an ILUA is registered, it binds all native title holders and participating parties to the terms of the agreement.

There is currently one ILUA in use within the GBRMP. The agreement between the Australian Government, via GBRMPA, and the Kuuku Ya'u People is the first Marine Park ILUA. The agreement recognises Traditional Owner native title rights and interests in managing nearly 2 000 kilometres of sea with the GBRMP in an area just north Lockhart River.

Indigenous Protected Areas

An Indigenous Protected Area (IPA) is an area voluntarily declared as protected by the traditional custodians of the region. The concept was developed in the late 1990s through collaboration between the Australian Government and Indigenous landholders. Indigenous communities managing IPAs achieve conservation and sustainability goals for country, as well as maintaining their culture¹⁹. The Australian Government and, in some instances, state or territory agencies provide funding and support.

Indigenous communities apply to the Australian Government for support to consult with their community and other stakeholders on whether an IPA is the right future for their country. They then apply to the Australian Government for support to consult with their community and other stakeholders on what an IPA declaration would mean for them. Indigenous landowners thinking about establishing an IPA on their land can access

¹⁸ <http://www.nntt.gov.au/INDIGENOUS-LAND-USE-AGREEMENTS/SEARCH-REGISTERED-ILUAS/Pages/Search.aspx>

¹⁹ <http://www.environment.gov.au/Indigenous/ipa/>

government support for legal advice and other advice on cultural heritage and conservation aspects of their proposed IPA.

There are 60 declared IPAs covering just over 48 million hectares across Australia²⁰. Despite this, few marine IPAs have been declared. The first IPA to extend over a marine area was the Dhimurru IPA in Arnhem Land. Although land-based IPAs may not continue onto adjacent waters, significant management activities may be carried out in coastal waters.

There are currently two IPAs located within the GBR coastal zone. The Mandingalbay Yidinji IPA encompasses a small section of both the Wet Tropics and the GBRWHA in north Queensland, just east of Cairns across Trinity Inlet. It is made up of a number of protected areas that were joined up following recognition of native title over the Mandingalbay Yidinji country in 2006. The Djunbunji Land and Sea Program through the Djunbunji Rangers manage this country on behalf of the Mandingalbay Yidinji people.

The Giringun region IPA is a voluntary declaration by the Djiru, Bandjin, Gulnay, Girramay, Warrgamay, Warungnu, Gugu Badhun and Nywaigi (with the support of Jirrbal) Traditional Owners. The country within the Giringun region Indigenous Protected Area forms part of the Wet Tropics and the GBRWHA.

Management techniques such as dugong and turtle monitoring, removal of ghost nets and fisheries surveillance may be undertaken in these areas. Like other protected areas, management tools for IPAs include a range of legislative and non-legislative management techniques, with the greatest effort directed towards non-legislative tools such as education, monitoring, research and interpretation, rather than enforcement.

Sea country plans

ILUAs, IPAs and TUMRAs may be just one part of a broader sea country plan. Sea country planning is the process whereby Traditional Owners and/or other local Indigenous peoples develop their goals and strategies to manage, conserve and use their coastal and marine environments and resources. A sea country plan combines the priorities and aspirations of Traditional Owners with others with an interest in their sea country, including government. The sea country planning process encourages people and organisations to work together towards sustainable management of marine environments²¹.

Sea country plans can focus on specific areas, rather than being applied universally along a coastline, to capture the aspirations of specific groups. However, sea country plans do not have any statutory authority unlike ILUAs, IPAs and TUMRAs. It is often quick and easy to implement some actions suggested in sea country plans, while other actions may require more lengthy discussion and development. Following the preparation of a sea country plan, the establishment of an IPA, TUMRA or ILUA may form the next step towards a robust sea country framework.

An adaptive and flexible approach to partnerships is required to acknowledge the different levels of participation and knowledge among Traditional Owner groups in managing country. The concept of co-management has formed the platform for

²⁰ <http://www.environment.gov.au/Indigenous/ipa/>

²¹ Department of the Environment, Water, Heritage and the Arts 2008, *Pathways to sea country planning: a guide for Indigenous peoples and organisations*, Australian Government, Canberra.

managing country in the region since the 1990s, and has helped form a number of ongoing partnerships between Traditional Owners, government authorities and other stakeholders.

Under these arrangements and through organised partnership projects, a range of activities are undertaken to promote the conservation of biodiversity and Matters of National Environmental Significance (MNES) in the GBR. In the GBR coastal zone in particular, the Queensland Government's Indigenous Land and Sea Ranger Program funds the employment of a number of Indigenous land and sea rangers throughout North Queensland. The program increases Indigenous participation in environmental management with rangers ensuring the unique ecologies of Queensland's natural environment, including the MNES and Outstanding Universal Value (OUV) of the GBRWHA, are protected through activities such as:

- managing weeds and feral animals
- performing fire management actions
- collecting data on protected species and habitats
- preserving cultural sites and stories
- supporting disaster recovery efforts
- managing visitor activity and education
- helping manage national parks

Ranger activities are tailored to meet local needs and are negotiated between local communities, landowners, Traditional Owners and government agencies. There is a strong emphasis on providing appropriate training and support to rangers and their communities to equip them with the skills and knowledge to look after their local natural environment. Ranger positions are full-time and are an important employment opportunity, particularly in remote communities.

The Queensland Government has committed to employing 40 new Indigenous Land and Sea rangers, bringing the total number of rangers across Queensland to 80 by 2015. The Government also funds a Junior Ranger program which brings traditional and modern values for looking after country into the school curriculum. Students learn about managing the natural environment by working directly with Indigenous Land and Sea Rangers in classroom activities and field experiences.

Another program aimed at promoting traditional owner participation in environmental management is the Indigenous Sea Country Management Grants Program. The program is funded by the Australian Government and is administered in Queensland by DEHP. The program provides Queensland Traditional Owner groups with grants ranging from \$15 000 to \$200 000 to support the development of sustainable management practices in relation to dugong, turtles and other marine resources.

Under Reef 2050, the Australian Government also commits to working with the Queensland Government and Traditional Owners on a Dugong and Turtle Protection Plan. The plan will work to protect dugong and turtle populations in Far North Queensland and the Torres Strait Islands from the threats of poaching, illegal hunting and marine debris. This follows Traditional Owner groups voluntarily reducing traditional hunting activities of dugong and turtles in response to extreme weather events in 2010-11 that caused dramatic increases in dugong and turtles deaths.

In addition, the Australian and Queensland governments recently announced joint funding of \$7 million over four years for an initiative to work with traditional owner communities to help stop environmental damage from feral pigs and protect turtle populations along the Queensland coast. The GBRWHA is home to three endangered turtle species and in some areas along the coast up to 90 per cent of turtle nests are lost to predation by feral pigs²². The program will utilise Traditional Owner knowledge to identify key turtle nesting sites that will then be considered priority areas for feral pig control efforts. Feral pigs also cause a large amount of damage to other ecosystems and wildlife and it is envisaged that the Program will benefit a wide range of animals and birds in the GBR coastal zone as well.

Aboriginal and Torres Straits Islander groups are keen to have their traditional claim to ownership of marine estates legally recognised. The recognition of sea rights is not only a matter of identity and compensation for past wrongs, but also an avenue to claim management responsibility for the protection of important sites and to develop an economic base from the use of marine and coastal resources²³.

Indigenous peoples have expressed strong views on the principles underlying the management of the environment which arise from differing views of nature and the place of humans. From an Indigenous perspective, coastal landscapes and seascapes are part of an integrated cultural domain to which affiliated groups belong, and from which they get their identity and customary rights to own and exploit other resources.

In all, the Program strongly encourages participation of Aboriginal and Torres Strait Islander people in managing the GBR coastal zone, and recognises the special rights and interests of Traditional Owners. Their knowledge of biodiversity and the cultural values of the area are recognised and promoted through legislation and activities to conserve biodiversity and MNES within the GBR coastal zone.

Providing Traditional Owners with access to their land and sea country to manage their cultural heritage is critical to ensuring the well-being of Aboriginal and Torres Strait Islander communities in the region. Facilitating partnership programs to achieve this also can potentially enhance economic, social and environmental outcomes for Aboriginal and Torres Strait Islanders within the GBR coastal zone.

In the context of the strategic assessment, ongoing partnerships between Traditional Owner groups and governments provide an important contribution to the protection of MNES and OUV of the GBR. Many of the remote areas within the GBR coastal zone that are adjacent to the GBR are managed by Aboriginal and Torres Strait Islander communities, including shire councils. Developing processes for ongoing negotiation and engagement with Aboriginal and Torres Strait Islander communities, shire councils and Traditional Owner groups is also important for recognising the cultural heritage values of the GBR and helping to protect MNES and OUV.

²² <http://statements.qld.gov.au/Statement/2014/2/18/feral-pigs-targeted-to-save-endangered-turtles>

²³ Bergin, A., 1993, Aboriginal and Torres Strait Islander interests in the Great Barrier Reef Marine Park: A Report to the Great Barrier Reef Marine Park Authority. Research Publication. Great Barrier Reef Marine Park Authority, Townsville.

Potential future opportunities

In further recognition of Traditional Owner connection to land and sea country in the GBR region and adjacent GBR coastal zone, the Queensland Government will work with the Australian Government to consider and publish guidelines for project proponents when consulting with Indigenous peoples in relation to cultural heritage and the management of traditional use activities. The guidelines would work to ensure the recognition of the role and interests of Indigenous peoples in promoting the conservation and ecologically sustainable use of natural resources and promote the cooperative use of Indigenous peoples' knowledge of biodiversity and Indigenous heritage.

Appendix 5: Fisheries in the Great Barrier Reef coastal zone

Purpose of this paper

The purpose of this paper is to respond to the recommendations of the independent review of the Queensland Government's draft strategic assessment reports and to address feedback received as part of the public consultation conducted on the draft reports. Both the independent review and submissions received as part of the public consultation suggested there were some information gaps in the draft reports regarding fisheries management in the Great Barrier Reef (GBR) coastal zone.

Introduction

Fishing is a major activity in the GBR coastal zone. Within the Great Barrier Reef Marine Park (GBRMP), the state has responsibility for the management of fishing and aquaculture activities. Fisheries in the GBRMP are not managed separately to the other fisheries in Queensland, however, specific arrangements are developed and applied as required.

Commercial fishing

Commercial fishing activity in the GBRMP is important to regional and state economies generating approximately \$200 million annually. New commercial fishing licences have not been issued since the 1980s and anyone wishing to commercially fish must purchase an existing fishing business. Broadly, permitted commercial fisheries in the Marine Park are broken into five categories:

- trawl (Ocean Otter, River Beam) fishery targeting prawns and scallops
- pot (trap) fishery targeting estuarine mud crabs
- net fishery targeting estuarine and coastal fish
- line fishery targeting coral reef fish
- hand collection fishery targeting lobster, sea cucumber, trochus, aquarium fish and soft and hard corals.

The size of commercial fishing boats able to operate in the GBRMP is generally limited to less than 20 meters and activities are governed through a combination of rules including closed areas, seasonal closures, size limits and limits on the size and amount of fishing apparatus that can be used. In addition quotas have been introduced into many commercial fisheries. A quota system is now used to help manage otter trawling and the harvest of fish such as coral trout, tropical rock lobster, trochus, hard corals, grey mackerel, sea cucumber, shark, red throat emperor, Spanish mackerel and all other coral reef fish.

Management controls are supported by scientific monitoring that enable fishery independent sampling of key fish species, allowing estimates of age and size of fish in particular stocks through time. This can then be used with catch and effort data from commercial and recreational fishers in scientific stock assessment processes to model stock abundance and health. The work is also used as the basis for annual stock status

assessments which utilises all available information to inform a risk based assessment process and determine if additional management action is required.

More information can be found at www.daff.qld.gov.au/fisheries/commercial-fisheries

Recreational fishing

Queensland's fisheries resources are recognised as being important for local communities and tourism. Recreational fishing is an important pastime for many people who live adjacent to the GBRMP or who are visiting the region. More than 700 000 people are estimated to fish for recreation in Queensland each year, catching more than 8 500 tonnes of fin fish, crabs and prawns. Recreational fishing is limited through restrictions on the amount of fishing apparatus that can be used, the size of fish that can be kept and the numbers of fish that can be kept. In addition, area and seasonal closures apply to protect important habitats for juvenile fish or fish that may be spawning. Compliance of recreational fishers with fisheries regulations is considered high - over 94 per cent.

More information can be found at www.daff.qld.gov.au/fisheries/recreational

Current condition

Key fish stocks are monitored and assessed annually. Assessments are undertaken in accordance with stock status methodologies developed with the assistance of other Australian fisheries jurisdictions. From 2014 fish stocks will be determined in line with the Australian stock status processes first used in 2013.

These assessments can conclude that stocks are either: sustainably fished, uncertain, undefined or overfished. Currently only one fish is considered to be overfished in Queensland, snapper (*Pagrus auratus*), typically found in more temperate waters to the south of the GBRMP. Other species found in the GBRMP have been assessed as uncertain. This is where there are inconsistent or contradictory signals in the information available that preclude a determination of stock status with any degree of confidence. In these cases further monitoring is often undertaken and new information may also be sought in order to improve status determination.

More information can be found at www.daff.qld.gov.au/fisheries/monitoring-our-fisheries/data-reports/sustainability-reporting

Each commercial fishery is also assessed and accredited by the Australian Government under *the Environment Protection and Biodiversity Conservation Act 1999* (the EPBC Act). This provides an independent assessment process that ensures fisheries are operating in a sustainable manner and accredits the fisheries for export markets.

More information can be found at www.daff.qld.gov.au/fisheries/monitoring-our-fisheries/data-reports/sustainability-reporting/sewpac-conditions-and-recommendations-progress

Impacts and risks of fishing

Generally, impacts of fishing include the direct take or mortality of fish, which can lead to overfishing of a particular stock and/or disruption of the food chain, indirect mortality of non-target species, and physical impacts on marine environments. Changes in the abundance of fish species at all levels of the food chain can have an influence on food webs and ecosystem balance.

Fishing practices have varying levels of impact - trawling has high levels of by-catch which can include listed threatened species and can physically impact benthic habitats. Nets can potentially capture and injure or kill marine mammals and listed threatened species. Line fishing also produces by-catch and can capture listed species like turtles and sharks. Anchoring can cause damage to benthic communities and waste from boats can be an entanglement or ingestion risk for birds, fish and mammals.

Fisheries management reforms since the introduction of the *Fisheries Act 1994* (Qld) have made significant improvements to the status of fish stocks within the GBRMP. However, in addition to the successes, there remain three areas of ongoing concern:

- the capture of species of conservation interest by some commercial fisheries operating within the GBRMP. These include dugong, dolphins, shark, rays and sea snakes
- the use of commercial fishing nets in the GBRMP and the question “is gill netting a sustainable practice?”
- the effects of extreme weather events (particularly cyclones and floods) reducing catch rates or ‘fishability’ in large areas and leading to large-scale movements of significant proportions of fishing fleets in some sectors.

Many of the recent reforms have aimed to address these concerns by capping or reducing commercial take of certain species or restricting where and how fishing can occur, but many concerns persist in the community and many believe that more steps need to be taken.

Aquaculture

In the catchments adjacent to the GBRMP other fisheries activities can also have an impact. Aquaculture is a strictly controlled activity with discharges monitored and controlled to prevent nutrients from entering catchments. There remain risks of high nutrient discharges from extreme weather events which are mitigated through rigorous design and assessment processes.

Other risks are also evident from invasive and noxious fish. Regulations are in place, supported by enforcement and education initiatives, to control the types and numbers of fish that can be released into natural systems.

Impact of other development on fisheries

Fisheries can also be impacted on by other development, such as when road, rail or water infrastructure creates barriers or reduces connectivity of aquatic environments. These barriers can impede fish species from moving between marine environments to upstream, freshwater environments to spawn or mature which can impact population growth rates.

How the Program protects MNES

Legislation

Fisheries are managed according to the Fisheries Act. The Act was one of the first acts in the world to adopt the principles of Ecological Sustainable Development (ESD) as an objective.

The Fisheries Act provides for the management of fisheries resources and fisheries habitats in order to allow the sustainable harvest of fish species while preserving fish stocks and critical habitats for use by future generations.

The purposes of the Fisheries Act are to be achieved through:

- the management and protection of fish habitats
- the management of commercial, recreational and Indigenous fishes
- the management of aquaculture.

Overall, the Fisheries Act regulates fishing, damage to marine plants and development in declared fisheries habitat areas in Queensland.

Through its integration with the *Sustainable Planning Act 2009* (SP Act), the Fisheries Act ensures assessment of land-based activities that have the potential to damage fish habitat areas and marine plants. This includes developments upstream that may change waterways or impact on fisheries productivity, such as dams, weirs or other potential barriers.

The *Fisheries Regulation 2008* adds the requisite detail for the mechanisms created by the Fisheries Act, including size limits, bag limits, closed seasons, closed waters and protected areas, great restrictions, noxious fish, protected species and protected sexes.

Mechanisms relevant to MNES

The main mechanisms available under the Fisheries Act to achieve its purposes are:

- commercial fishing licences – these are subject to specific controls
- fisheries management plans and regulations – such plans may make declaration regulating specific matters including the taking, purchase, sale, possession or use of particular fish, and how fish may be regulated. It should be noted that under management plans, a declaration may be made regulating the use of fishing apparatus in dugong protection areas
- resource allocation authorities for aquaculture activities – when assessing a development application for a fisheries development approval under the SP Act, the chief executive must consider the potential impact of the development on aquaculture activities. There are a variety of conditions on fisheries development applications relating to aquaculture including conditions relating to the fisheries resources for which the aquaculture may be carried out, minimising or preventing the risk of escape or accidental release of fisheries resources and construction and operation of any aquaculture furniture used in the aquaculture
- fisheries development approvals for in-stream barriers – conditions of approvals require developments in the first instance to mitigate impacts by providing for the passage of fish (for example a fish way). This is important for many Australian fish species that require access to both fresh and saltwater systems as part of their life cycle
- codes of practice for fisheries activities including aquaculture.

Buy backs

In addition to management reforms the Queensland Government has taken direct action to reduce commercial fishing pressure. In 2012 a program, valued at \$9 million, commenced to buy back commercial gill net licences. These netting licences are the cause of significant concern in the recreational fishing and conservation communities who believe the take of shark, other animals of conservation interest and important recreational fish species are too high. The netting buyback has removed 69 netting licences to date which should lead to improved recreational fishing and conservation outcomes as well as improved profitability for those commercial fishers who remain in the fishery.

Compliance and enforcement

Management is supported by education and compliance activities. Compliance activities include on-water and on-shore activities. For commercial fishers their on-water activities and catch reporting are monitored, while for recreational fishers their catch and activity is monitored. Actions for those found in breach can include on the spot fines, fines imposed by a court, confiscation of fishing gear (e.g. boat) and the suspension or cancellation of a licence in the case of a commercial fisher.

Penalties apply under the Fisheries Act for:

- beginning development without a permit for assessable development prescribed under the SP Act that is making a material change of use of premises for aquaculture
- making a material change of use of premises for aquaculture without a resource allocation authority
- unlawful release of fisheries resources, or causing fisheries resources to be released into Queensland waters.

It should be noted that the Fisheries Act does allow for destruction of aquaculture fisheries resources if they pose a significant threat to other fisheries resources or fish habitat. A stop order may also be issued by an inspector to stop or delay fisheries resources from escaping.

It is a defence in a proceeding relating to the taking, using or keeping of fisheries resources, or using of fish habitats for a person to prove that they are of Aboriginal or Torres Strait Islander origin who at the time of the action was acting under custom for the purpose of a personal, domestic or non-commercial communal need of the Aboriginal or Torres Strait Islander community concerned.

Future initiatives

The Queensland Government is currently undertaking a wide-ranging review of fisheries management in Queensland to deliver a better system for the State's commercial and recreational fishers. The purpose of the review is to simplify the current management system and promote a sustainable fisheries resource for all Queenslanders.

The review will examine the entire approach to fisheries management in Queensland. An independent consultant has been appointed, with guidance from a Ministerial Advisory Committee, and consultation is occurring with commercial, recreational, conservation and Traditional Owner groups. The findings of the review are due to be provided to the Queensland Government by the end of 2014.

Further information can be found at www.daff.qld.gov.au/fisheries/consultations-and-legislation/reviews-surveys-and-consultations/fisheries-management-review

Appendix 6: Mahogany glider update

Significance

The mahogany glider, *Petaurus gracilis*, is one of Australia's most threatened arboreal mammals²⁴. This species is listed as 'endangered' in Queensland under the *Nature Conservation Act 1992* and is 'endangered' nationally under the *Environment Protection and Biodiversity Conservation Act 1999*. It is ranked as a critical priority under the Queensland Department of Environment and Heritage Protection (DEHP) *Back on Track* species prioritisation framework²⁵.

Distribution

The species was first discovered in 1886 but was not seen again until its rediscovery in 1989²⁶. Despite extensive surveys they have only been found in recent years in a narrow and highly fragmented band of mixed open forests, mixed woodlands, generally under 120 metres in elevation and extending 140 kilometres from Toomulla, North of Townsville to the Hull River (east of Tully), and up to 40 kilometres inland²⁷. The known distribution is within the Wet Tropics region but outside of the Wet Tropics World Heritage Area (WHA).

There is estimated to be 1 500 mahogany gliders remaining in the wild with five large relatively intact habitat areas and three small, isolated and highly fragmented habitat areas identified in the Recovery Action Plan (see Figure 1). It is estimated that a minimum of 800 individuals in an area of at least 8 000 hectares is required for the long-term viability of mahogany gliders.

Habitat requirements

Suitable habitat for mahogany gliders includes open woodland with a lack of invasive weeds to enable gliding. A relatively complex habitat containing acacia, albizia, melaleuca, eucalypts and bloodwoods is required to provide a suitable variety of plant foods to supply a year-round supply of food resources. Food sources include primarily nectar pollen and sap but also acacia arils, lerps, honeydew and insects. The grass tree, *Xanthorrhoea johnsonii*, is a significant food source²⁸.

²⁴ Parsons, M. and Latch, P. 2007. Recovery Plan for the mahogany glider *Petaurus gracilis*. Report to the Department of the Environment, Water, Heritage and the Arts, Canberra. Environmental Protection Agency, Brisbane.

²⁵ <http://www.ehp.qld.gov.au/wildlife/prioritisation-framework/index.html>

²⁶ Jackson, S. M. 1999. Preliminary predictions of the impacts of habitat area and catastrophes on the viability of Mahogany Glider *Petaurus gracilis* populations. *Pacific Conservation Biology* Vol. 5:56-62. Surrey Beatty & Sons, Sydney

²⁷ https://www.ehp.qld.gov.au/wildlife/threatened-species/endangered/endangered-animals/mahogany_glider.html

²⁸ Parsons, M. and Latch, P. 2007. Recovery Plan for the mahogany glider *Petaurus gracilis*. Report to the Department of the Environment, Water, Heritage and the Arts, Canberra. Environmental Protection Agency, Brisbane.

The main canopy and sub-canopy trees are eucalypts, bloodwoods and paperbarks and less commonly swamp mahogany and turpentine with an open mid-stratum of smaller trees and shrubs (e.g. wattles, forest siris, golden parrot tree, black she-oak, and pandanus) and a grassy ground stratum in which grass trees may be present. The mahogany glider requires a relatively open forest structure for efficient gliding and tends to avoid dense vegetation such as rainforest.

Mahogany gliders also make occasional use of rainforest habitats that have emergent species and monotypic stands of *Eucalyptus platyphlla*, *Melaleuca viridiflora* or *Melaleuca quinquenervia* that are likely to be important on a seasonal basis.²⁹

Key issues

Habitat extent

The mahogany glider's habitat has been extensively cleared for agriculture, particularly sugar cane, with only 20 per cent (110 000 hectares) of pre-European clearing habitat remains^{30 31}. Around four per cent of this habitat is intact and located in protected areas managed by the Queensland Parks and Wildlife Service (QPWS). The introduction of vegetation clearing laws in the early 2000s has slowed the clearing of woody vegetation with no measurable difference between 2006 and 2009. The remaining habitat areas outside of the protected areas are highly fragmented and subject to many pressures including altered fire regimes, weed invasion and grazing pressure which result in the loss of non-woody vegetation that mahogany gliders depend on for food sources³².

Much of the non-protected habitat is on privately owned or state leasehold lands managed primarily for agricultural production, principally grazing.

Areas that have been cleared of woody vegetation are not recognised under the State Planning Policy as habitat for mahogany gliders but some would provide an ecological link between isolated habitat areas.

Development

Development and the associated infrastructure such as transport and power corridors can impact on mahogany gliders directly through loss and fragmentation of habitat and indirectly through the introduction of threats such as altered fire regimes and feral wildlife. Avoiding development in the five relatively intact habitat areas and the three smaller habitat areas is a key principle of the legislative program (see Figure 1). Where development does occur, the impacts are well known and can be mitigated by appropriate design and management.

²⁹ Jackson, S. M. 1999. Preliminary predictions of the impacts of habitat area and catastrophes on the viability of Mahogany Glider *Petaurus gracilis* populations. *Pacific Conservation Biology* Vol. 5:56-62. Surrey Beatty and Sons, Sydney.

³⁰ Kemp, J.E., Lovatt, R.J., Bahr, J.C. Kahle, C.P. and Appleman, C.N. 2007 Preclearing vegetation of the coastal lowlands of the Wet Tropics Bioregion, North Queensland *Cunninghamia* 10, 285-329

³¹ https://www.ehp.qld.gov.au/wildlife/threatened-species/endangered/endangered-animals/mahogany_glider.html

³² Jackson, S. M. 1999. Preliminary predictions of the impacts of habitat area and catastrophes on the viability of Mahogany Glider *Petaurus gracilis* populations. *Pacific Conservation Biology* Vol. 5:56-62. Surrey Beatty & Sons, Sydney

Extreme weather events

This part of the Wet Tropic coast is frequently subject to extreme weather events. The area has been directly affected by several large cyclones over the last 10 years which has caused major habitat impacts. While these weather events are natural, historic loss and fragmentation of habitat through agricultural development has meant that remaining habitat areas are less resilient to these events. Additionally, it is predicted that cyclone events will increase in intensity over time, placing greater pressure on the remaining extent of remnant habitat.

In response to the severe damage to mahogany glider habitat west of the Bruce Highway to the north of Mengua Creek (see figure 9: area 5 Cardwell coastal region) caused by Tropical Cyclone Yasi in February 2011, DEHP responded by installing supplementary feeding stations and den boxes, and establishing a long-term monitoring program to research responses to the storm damage with assistance from James Cook University and World Learning³³. While the future of mahogany gliders in this area is uncertain there are positive signs of recovery with DEHP officers discovering two pouch young during monitoring of nest boxes just north of Cardwell.

Altered fire regimes

There is evidence of rainforest encroachment of open forests in national parks that are not subject to regular fires. Once rainforest is established, the emergent non-rainforest trees die off and the area ceases to be habitat for mahogany gliders. It is estimated that up to 30 per cent of habitat in national parks is subject to encroachment by rainforests and will no longer be suitable for mahogany gliders.³⁴

The shift from harvesting sugar cane by fire to green harvesting has also led to a reduced fire regime in cane growing areas resulting in the thickening of forests and the loss of understory species.

The presence of weeds will often inhibit the growth of grasses that are necessary to maintain a regular fire regime. The higher intensity of a fire in an area infested with weeds may lead to the destruction of understory plants that are vital to the survival of mahogany gliders. Even in areas managed primarily for conservation purposes, there has been a widespread sharp decline in mammals across northern Australia that have been attributed to altered fire regimes and predation by feral animals.³⁵

Transport and linear infrastructure corridors

Mahogany gliders are highly mobile and need continuous vegetation cover to move around. Major transport routes are a barrier to the movement of mahogany gliders; however, they have learnt to use power poles, artificial launching poles and natural emergent trees to cross roads railways and power line easements³⁶. The average glide is 40 metres with maximum glides of up to 50 metres having been recorded. Road corridors and cleared easements that are more than 40 metres wide create barriers to movement of mahogany gliders.

³³ Department of Environment and Heritage Protection 2014 Mahogany Glider

³⁴ Parsons, M. and Latch, P. 2007. Recovery Plan for the mahogany glider *Petaurus gracilis*. Report to the Department of the Environment, Water, Heritage and the Arts, Canberra. Environmental Protection Agency, Brisbane.

³⁵ Australian Government 2011 Australian SoE Report 2011

³⁶ Department of Environment and Heritage Protection 2014 Mahogany Glider; Department of Environment and Heritage 2012 Framework for evaluating aquatic ecosystem connectivity, Queensland Government, Brisbane

Predation by feral animals, road kills and entanglement on barb wire fences

Mahogany gliders may be killed by cats, by vehicles or entanglement in barb wire fences. Some mahogany gliders have been killed crossing roads. Landholders are encouraged to replace the top strand of barb wire on a fence with plain wire to avoid injury. On average two gliders require rehabilitation each year.³⁷

Mahogany Glider Recovery Action Plan

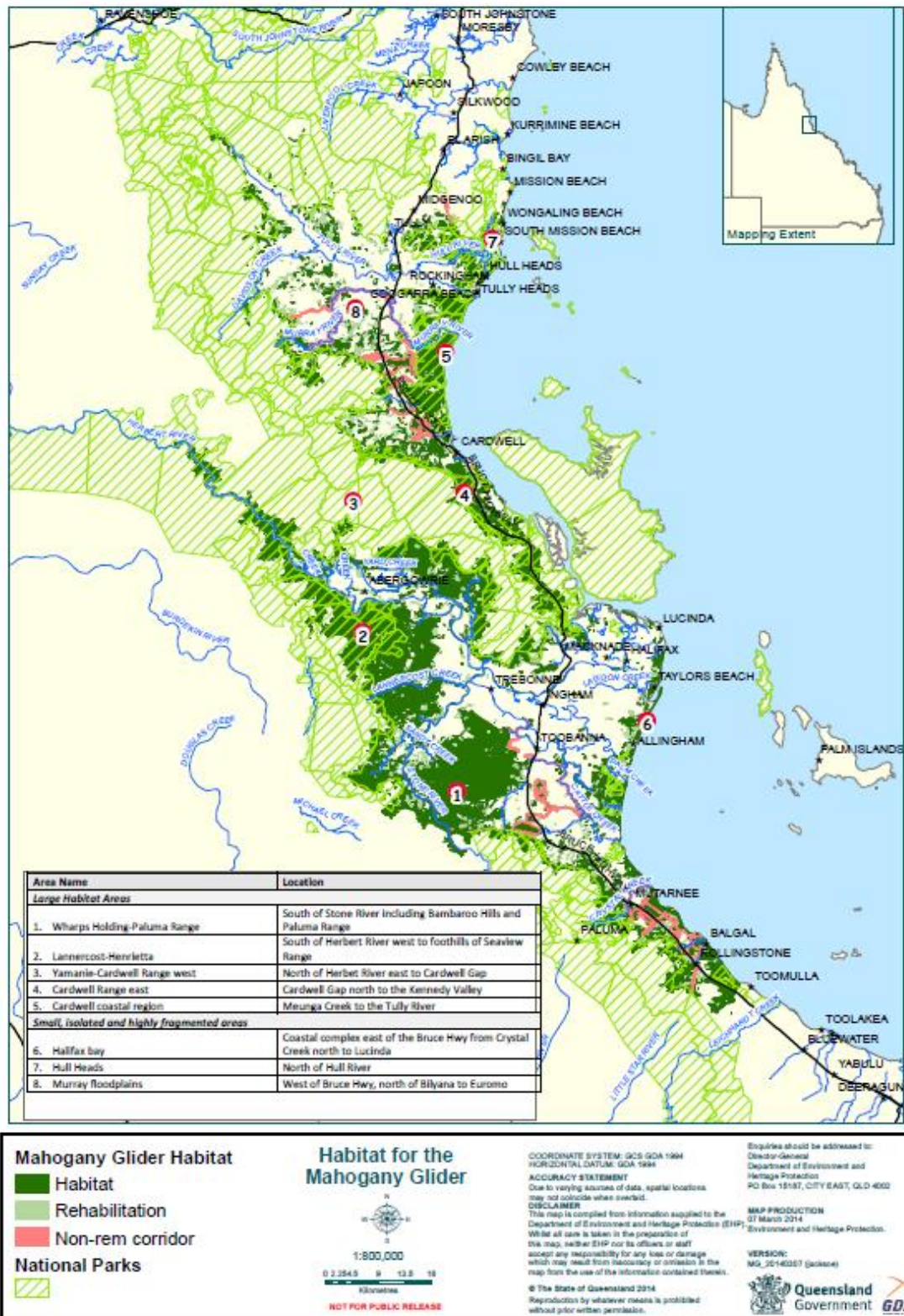
A Mahogany Glider Recovery Action Plan is currently being reviewed by DEHP and DOE. The existing plan maps habitat and describes threatening processes. At the time of writing the Recovery Action Plan, there was no agreed conceptual framework to consider connectivity and ecological processes. However since that time, the Great Barrier Reef Marine Park Authority, the Australian Department of the Environment and DEHP have developed conceptual models and frameworks to begin to map ecological processes which help planners, managers and land holders understand the linkages in the landscape. A key principle of the framework is that connectivity needs to be linked to overall management objectives. This will enable a better understanding as to why areas are important for the long-term viability of a species. This information will enable more targeted assessments and conditioning. The Mahogany Glider Recovery Action Plan is expected to be updated by late 2014.

Far North Queensland Regional Plan 2000–2031

The Far North Queensland Regional Plan 2009–2031 identifies ‘strategic rehabilitation areas’, which are critical landscape linkages that are presently cleared or heavily fragmented. The objective of identifying these areas is to guide where landholders and stakeholders can direct habitat restoration. Plantings in strategically important landscape linkages have already been undertaken using trees and shrubs grown through a nursery program at local primary schools.

³⁷ Department of Environment and Heritage Protection 2014 Mahogany Glider

Figure 5 Mahogany glider habitat



Appendix 7: Cassowary update

Significance

The southern cassowary, *Casuarius casuarius johnsonii* (the cassowary), is the largest vertebrate in Australian rainforests³⁸. The cassowary is listed as 'endangered' nationally under the *Environment Protection and Biodiversity Conservation Act 1999* (Cwlth). Under the *Queensland Nature Conservation Act 1992*, its wet tropic population is listed as 'endangered', while its Cape York population is listed as 'vulnerable' and it is ranked as a critical priority under the Queensland Department of Environment and Heritage Protection (DEHP) *Back on Track* species prioritisation framework³⁹.

Distribution

The cassowary is a large flightless bird that lives in the rainforests, melaleuca swamps and mangrove forests of far north Queensland. It is an important seed disperser of rainforest plants, with the capacity to swallow and spread seeds that are too large for other animals.

Cassowaries are now found in two populations, one in Cape York and another in the Wet Tropics. On Cape York, they occur in the vine forests of the McIlwraith and Iron ranges and in the less extensive vine forests north of Shelburne Bay. In the Wet Tropics they are widely distributed from Cooktown to just north of Townsville. The total population in the Wet Tropics has been estimated to be 1 500 mature individuals in 2001. The core habitat is in the coastal lowlands between Ingham and Mossman and in the uplands of the coastal ranges including the southern Atherton Tablelands.

Habitat requirements

Cassowaries require a high diversity of native trees to provide a year-round supply of fleshy fruits. Cassowaries are usually solitary, and the size of their home ranges appears to vary between 0.52 square kilometres and 2.35 square kilometres. Although they are found primarily in rainforest and associated vegetation, the cassowary requires habitat containing woodlands and swamps to ensure a year round supply of fleshy fruits.

Primary threats

The Recovery Plan for the Southern Cassowary⁴⁰ identified a number of threats which are outlined below:

- **Habitat loss:** Most of the habitat associated with the cassowary occurs within GBR coastal zone. Of the 372 000 hectares of regional ecosystems are associated with this species' habitat, 58 per cent occurs in national parks and state forests, 40 per cent occurs in non-urban areas protected under the *Queensland Vegetation Management Act 1999* and one per cent occurs in urban areas. In the Wet Tropics, cassowaries are distributed widely from Cooktown to

³⁸ Francis, H. J. Crome and Moore, L.A. 1990. Cassowaries in North-eastern Queensland: Report of a survey and a Review and Assessment of their status and Conservation and Management Needs, CSIRO, Atherton

³⁹ <http://www.ehp.qld.gov.au/wildlife/prioritisation-framework/index.html>

⁴⁰ Latch, P. 2007. Recovery Plan for the southern cassowary *Casuarius casuarius johnsonii*. Report to the Department of the Environment, Water, Heritage and the Arts, Canberra. Environmental Protection Agency, Brisbane

Paluma Range. Approximately 89 per cent of their remaining essential habitat lies within protected tenures in the Wet Tropics.

- **Habitat fragmentation:** Cassowary populations are susceptible to habitat fragmentation and can be lost from isolated patches that are vulnerable to clearing surrounding vegetation and the introduction of threats. For example, cassowaries have gone from most of the protected areas on the Atherton Tableland⁴¹. Cassowary numbers in the Wet Tropics have been greatly reduced due to clearing of habitat for agriculture and cane production. On the coastal lowlands, populations have become isolated where there is pressure from urban expansion, tourism developments and associated transport and infrastructure corridors.

Habitat loss from vegetation clearing is considered to have caused a loss of more than 30 per cent of the population in the last three generations (44 years). The creation of protected areas has preserved much of the remaining cassowary habitat, however ongoing population decline in isolated patches is still likely due to other habitat impacts such as road kill, disease, and dog attack and feral pigs⁴².

- **Habitat degradation:** The selective clearing of forests can increase the risk of severe fire which can destroy rainforest communities particularly where they occur on steep slopes. The presence of weeds in fire disturbed areas may inhibit the growth of woodland vegetation that is necessary to ensure cassowaries have a year round food supply of fleshy fruits. Pond Apple, *Annona glabra*, is a semi-deciduous woody tree that cassowaries will eat. However, it is a highly invasive weeds that can displace native vegetation that cassowaries depend on to maintain a year round food source. The dominance of this one pest species destroys the ecological processes that support the diversity of species in ecosystems.
- **Road and traffic:** Road mortality is considered to have a highly significant impact on the cassowary population. Although mitigation strategies can be employed in discreet areas, the cumulative effect of multiple highways, roads and railway tracks is a threat to the long-term viability of cassowary populations. During 2001–05, 76 per cent of cassowary casualties were attributed to road kills.
- **Dog attacks:** Dog attacks are known to have killed cassowaries but the levels of attacks across the Wet Tropics region is unknown. During 1992–2005, six cassowaries were reported to be killed at Mission Beach by dogs.
- **Hand feeding:** Hand feeding is considered to be a threat to cassowaries as it encourages cassowaries to congregate in areas where road traffic and dog attack threats are highest. Hand feeding cassowaries also desensitises them to humans, increasing the risk of attacks on humans.
- **Diseases:** The possibility of an avian disease remains a threat to cassowaries particularly if they become stressed or malnourished due to habitat fragmentation.

41 Francis, H. J. Crome and Moore, L.A. 1990. Cassowaries in North-eastern Queensland: Report of a survey and a Review and Assessment of their status and Conservation and Management Needs, CSIRO, Atherton

42 Garnet, S. Szabo, J. and Dutson, G. 2010 The Action Plan for Australian Birds 2010 CSIRO Publishing

-
- **Extreme weather events:** This part of the Wet Tropics coast is frequently subject to extreme weather events. The area has been directly affected by several large cyclones over the last 10 years which has caused major habitat impacts. While these weather events are natural, historic loss and fragmentation of habitat through agricultural development has meant that remaining habitat areas are less resilient to these events. Additionally, it is predicted that cyclone events will increase in intensity over time, placing greater pressure on the remaining extent of remnant habitat.
 - **Development:** Development and the associated infrastructure, such as transport and power corridors, can impact on cassowaries directly through loss and fragmentation of habitat and indirectly through the introduction of threats such wild dogs and vehicle strikes. Avoiding development in the relatively intact habitat areas is critical to enable core cassowary populations to survive. Where development does occur the impacts are well known and can be mitigated by appropriate design and management. Where there are residual impacts that cannot be avoided or mitigated an offset is required.

The Recovery Plan for the southern cassowary is currently being reviewed by DEHP and the Australian Department of the Environment and is expected to be updated by late 2014.

References

- (1) Strategic Assessment Agreement between the Commonwealth of Australia and the State of Queensland 2012
<http://www.environment.gov.au/system/files/pages/e166e5b7-bd7f-4bc5-9807-ba263e248632/files/s146-gbr-strategic-assessment-qld.pdf>
- (2) World Heritage Committee decision 2011, Great Barrier Reef (Australia) (N154)
<http://whc.unesco.org/en/decisions/4418/>
- (3) Great Barrier Reef coastal zone Strategic Assessment - Terms of Reference
<http://www.dsdp.qld.gov.au/resources/report/great-barrier-tor.pdf>
- (4) Great Barrier Reef Intergovernmental Agreement 2009
<http://www.environment.gov.au/topics/marine/great-barrier-reef/protecting-reef/intergovernmental-agreement>
- (5) Independent Review of the Great Barrier Reef coastal zone Draft Strategic Assessment Reports
<http://www.environment.gov.au/resource/great-barrier-reef-coastal-zone-strategic-assessment-independent-review-report>
- (6) Intergovernmental Agreement on the Environment 1992
<http://www.environment.gov.au/node/13008>
- (7) Reef Facts 2014 - Tourism
<http://www.reeffacts.qld.gov.au/tourism/>
- (8) Significant Impact Guidelines 1.1 – Matters of National Environmental Significance 2013
<http://www.environment.gov.au/resource/significant-impact-guidelines-11-matters-national-environmental-significance>
- (9) EPBC Act referral guidelines for the Outstanding Universal Value of the Great Barrier Reef World Heritage Area 2014
<http://www.environment.gov.au/resource/epbc-act-referral-guidelines-outstanding-universal-value-great-barrier-reef-world-heritage>
- (10) EPBC Act Environmental Offsets Policy 2012
<http://www.environment.gov.au/system/files/resources/12630bb4-2c10-4c8e-815f-2d7862bf87e7/files/offsets-policy.pdf>
- (11) Neitschmann, B., 1983, Traditional Sea Territories, Resources and Rights in Torres Strait, In A Sea of Small Boats (ed J. Cordell), Cultural Survival Inc. Cambridge, Mass.

-
- (12) Williams, R., 1996, Who's listening and Who's learning? Aboriginal and Torres Strait Islander knowledge of turtle and dugong in the Great Barrier Reef Marine Park regions, Ecopolitics IX Conference Perspectives on Indigenous Peoples Management of Environmental Resources: papers and resolutions, Northern Land Council, Casuarinam, 113-117.
- (13) Altman, J., Arthur WS., and Bek, H., 1994, 'Indigenous participation in commercial fisheries in Torres Strait: a preliminary discussion', CAEPR Discussion Paper No. 73. Centre for Aboriginal Economic Policy.
- (14) Madden, R., 1995, National Aboriginal and Torres Strait Islander Survey 1994: Detailed Findings. Australian Bureau of Statistics, Canberra.
- (15) Altman, J., Arthur WS., and Bek, H., 1994, 'Indigenous participation in commercial fisheries in Torres Strait: a preliminary discussion', CAEPR Discussion Paper No. 73. Centre for Aboriginal Economic Policy.
- (16) Asafu-Adjaye, J., 1994, 'Cape York Land use Strategy: Traditional activities project report', Indigenous management of land and sea project and traditional activities project: Draft report to the Cape York Peninsula Land Use Strategy, (ed. J Cordell), Department of Anthropology and Sociology, University of Queensland, St Lucia.
- (17) Great Barrier Reef Marine Park Authority – Traditional Use of Marine Resources Agreements 2014
<http://www.gbrmpa.gov.au/our-partners/traditional-owners/traditional-use-of-marine-resources-agreements>
- (18) National Native Title Tribunal – Indigenous Land Use Agreements 2014
<http://www.nntt.gov.au/INDIGENOUS-LAND-USE-AGREEMENTS/SEARCH-REGISTERED-ILUAS/Pages/Search.aspx>
- (19) Department of the Environment – Indigenous Protected Areas 2014
<http://www.environment.gov.au/Indigenous/ipa/>
- (20) Department of the Environment – Indigenous Protected Areas 2014
<http://www.environment.gov.au/Indigenous/ipa/>
- (21) Department of the Environment, Water, Heritage and the Arts 2008, Pathways to sea country planning: a guide for Indigenous peoples and organisations, Australian Government, Canberra.
- (22) Queensland Government Media Release – 18 February 2014
<http://statements.qld.gov.au/Statement/2014/2/18/feral-pigs-targeted-to-save-endangered-turtles>
- (23) Bergin, A. 1993. Aboriginal and Torres Strait Islander interests in the Great Barrier Reef Marine Park: A Report to the Great Barrier Reef Marine Park Authority. Research Publication. Great Barrier Reef Marine Park Authority, Townsville.
- (24) Parsons, M. and Latch, P. 2007. Recovery Plan for the mahogany glider *Petaurus gracilis*. Report to the Department of the Environment, Water, Heritage and the Arts, Canberra. Environmental Protection Agency, Brisbane.

-
- (25) Back on Track species prioritisation framework 2012
<http://www.ehp.qld.gov.au/wildlife/prioritisation-framework/index.html>
- (26) Jackson, S. M. 1999. Preliminary predictions of the impacts of habitat area and catastrophes on the viability of Mahogany Glider *Petaurus gracilis* populations. Pacific Conservation Biology Vol. 5:56-62. Surrey Beatty and Sons, Sydney.
- (27) Mahogany Glider, Department of Environment and Heritage Protection 2012
https://www.ehp.qld.gov.au/wildlife/threatened-species/endangered/endangered-animals/mahogany_glider.html
- (28) Parsons, M. and Latch, P. 2007. Recovery Plan for the mahogany glider *Petaurus gracilis*. Report to the Department of the Environment, Water, Heritage and the Arts, Canberra. Environmental Protection Agency, Brisbane.
- (29) Jackson, S. M. 1999. Preliminary predictions of the impacts of habitat area and catastrophes on the viability of Mahogany Glider *Petaurus gracilis* populations. Pacific Conservation Biology Vol. 5:56-62. Surrey Beatty and Sons, Sydney.
- (30) Kemp, J.E., Lovatt, R.J., Bahr, J.C, Kahle, C.P. and Appleman, C.N. 2007. Preclearing vegetation of the coastal lowlands of the Wet Tropics Bioregion, North Queensland Cunninhamia 10, 285-329.
- (31) Mahogany Glider, Department of Environment and Heritage Protection 2012
https://www.ehp.qld.gov.au/wildlife/threatened-species/endangered/endangered-animals/mahogany_glider.html
- (32) Jackson, S. M. 1999. Preliminary predictions of the impacts of habitat area and catastrophes on the viability of Mahogany Glider *Petaurus gracilis* populations. Pacific Conservation Biology Vol. 5:56-62. Surrey Beatty and Sons, Sydney.
- (33) Mahogany Glider, Department of Environment and Heritage Protection 2012
https://www.ehp.qld.gov.au/wildlife/threatened-species/endangered/endangered-animals/mahogany_glider.html
- (34) Parsons, M. and Latch, P. 2007. Recovery Plan for the mahogany glider *Petaurus gracilis*. Report to the Department of the Environment, Water, Heritage and the Arts, Canberra. Environmental Protection Agency, Brisbane.
- (35) Australian State of the Environment 2011
<http://www.environment.gov.au/science/soe/2011>
- (36) Mahogany Glider, Department of Environment and Heritage Protection 2012
https://www.ehp.qld.gov.au/wildlife/threatened-species/endangered/endangered-animals/mahogany_glider.html
- (37) Mahogany Glider, Department of Environment and Heritage Protection 2012
https://www.ehp.qld.gov.au/wildlife/threatened-species/endangered/endangered-animals/mahogany_glider.html
- (38) Francis, H. J. Crome and Moore, L.A. 1990. Cassowaries in North-eastern Queensland: Report of a survey and a Review and Assessment of their status and Conservation and Management Needs, CSIRO, Atherton

-
- (39) Back on Track species prioritisation framework 2012
<http://www.ehp.qld.gov.au/wildlife/prioritisation-framework/index.html>
- (40) Latch, P. 2007. Recovery Plan for the southern cassowary *Casuarius casuarius johnsonii*. Report to the Department of the Environment, Water, Heritage and the Arts, Canberra. Environmental Protection Agency, Brisbane.
- (41) Francis, H. J. Crome and Moore, L.A. 1990. Cassowaries in North-eastern Queensland: Report of a survey and a Review and Assessment of their status and Conservation and Management Needs, CSIRO, Atherton
- (42) Garnet, S. Szabo, J. and Dutson, G. 2010. The Action Plan for Australian Birds 2010, CSIRO Publishing.

Department of State Development, Infrastructure and Planning

**PO Box 15009
City East Queensland 4002
Australia**

**info@dsdip.qld.gov.au
www.dsdip.qld.gov.au**