

Published by
Lord Howe Island Board
Bowker Avenue/ P O Box 5
Lord Howe Island, NSW 2898
Telephone: (02) 65632066
Facsimile: (02) 65632127
Email: administration@ihib.nsw.gov.au



© Lord Howe Island Board (LHIB)

Information contained in this report may be copied or reproduced for study, research information or educational purposes, subject to the inclusion of an acknowledgement of the source.

Disclaimer

Every effort has been made to ensure that the information provided in this report is current at the time of publication. The participating Organisations and persons associated with preparation of this report do not assume liability of any kind whatsoever resulting from the use and or reliance upon its contents. In particular, this report does not purport or seek to provide a complete comprehensive statement of all relevant legal obligations and legislation applicable to concerned parties. Independent professional advice on all matters discussed in this report should be obtained prior to using any instrument or making any decision based on information summarised in this report. The views expressed in this report should not necessarily be taken to represent the views of the participating Organisations.

This project was supported by Lord Howe Island Board, through funding from the Australian Government's Caring for our Country.

Authors:

Planning for People
P O Box 837,
Jindabyne NSW 2627
Telephone: (02) 64562722
Facsimile: (02) 64562422
Email: janetmackay@planningforpeople.com.au

Cover image

© Michael Legge-Wilkinson
www.michaelleggewilkinson.com.au

CONTENTS

CONTENTS	1
Abbreviations.....	2
EXECUTIVE SUMMARY.....	3
Part A Context.....	5
1. Introduction	5
2. Purpose of the Strategic Plan	7
3. World Heritage Values.....	8
3.1 Superlative natural phenomena	8
3.2 Biodiversity values.....	8
3.3 Other significant features	9
4. Management Background	10
4.2 Ownership, control and administration.....	13
4.3 Coordination and consultation arrangements	17
Part B Strategies for the Future	18
5.1 Vision	18
5.2 Strategic Approach	18
5.3 Management Strategies.....	20
A. Protection and Management.....	20
B. Biodiversity Conservation and Ecosystem Integrity	23
C. Scenic Protection.....	27
D. Sustainable Use of Natural Resources.....	28
E. Sustainable Living	30
F. Visitor Management and Presentation.....	32
G. Information and Resources for Management.....	34
H. Community Engagement	36
5.4 Review and Evaluation	38
References	39

Abbreviations

AFMA	Australian Fisheries Management Authority
AQIS	Australian Quarantine Inspection Service
DECCW	NSW Department of Climate Change, Environment and Water
DEWHA	Department of Environment, Water, Heritage and the Arts (Commonwealth)
LHI	Lord Howe Island
LHIB	Lord Howe Island Board
LHIG	Lord Howe Island Group
LHIMP	Lord Howe Island Marine Park
MPA	NSW Marine Parks Authority
NRCMA	Northern Rivers Catchment Management Authority

EXECUTIVE SUMMARY

The Lord Howe Island Group (LHIG) was inscribed on the World Heritage List in 1982 in recognition of its superlative natural landscapes and scenery and its rich terrestrial and marine biodiversity as an outstanding example of an island ecosystem developed from submarine volcanic activity.

This Strategic Plan provides a ten year overarching framework for consistent and coordinated management of the LHIG World Heritage Property by the Lord Howe Island Board and the various NSW and Commonwealth government agencies with responsibilities in the area. It is intended to ensure that day-to-day management of the Property complies with Australia's obligations under the World Heritage Convention to protect, conserve, rehabilitate, present and transmit World Heritage values. The Plan is also based on the Australian World Heritage Management Principles agreed to by the Commonwealth, State and Territory Governments.

The Strategic Plan replaces a previous Strategic Plan which was adopted in 2000. It builds upon the approaches developed in the previous Plan and includes strategies to address new knowledge and changed situations.

Maintaining the integrity of the World Heritage values of the LHIG, which have been largely untouched by human influences, faces major challenges. These include:

- ◆ achieving consistent and coordinated management approaches between several management agencies operating in a remote location;
- ◆ protecting biodiversity values vulnerable to threats from introduced plants, animals and organisms and degradation from pollution;
- ◆ minimising the intrusion of essential human development on the spectacular scenic beauty of Lord Howe Island;
- ◆ achieving sustainable settlement of the limited areas available on Lord Howe Island while protecting World Heritage values, maintaining the quality of life of the Island community, and offering a range of opportunities for visitors to experience and appreciate World Heritage values;
- ◆ obtaining and utilising the resources necessary to protect World Heritage values in an isolated location.

Key actions in this Strategic Plan are:

- ◆ updating of legislation, regulations, statutory instruments and management plans so they remain current and take account of new knowledge and changed situations;
- ◆ development of interagency, integrated plans for marine biodiversity and fisheries management (there is already an integrated plan for terrestrial biodiversity management);
- ◆ development of a coastal management plan to address ecological interactions at the land-sea interface and climate change, including impacts on the Lord Howe Island lagoon and coral reef;

- ◆ continued improvement in quarantine planning, education, enforcement and resources;
- ◆ providing opportunities for community involvement in implementation and ongoing management of the islands World Heritage values;
- ◆ continued progress towards sustainable land, energy and water systems on Lord Howe Island;
- ◆ planning for enhancements to interpretation for visitors on World Heritage values;
- ◆ introduction of an accreditation scheme for commercial tour operators;
- ◆ improved opportunities for research and monitoring of the integrity of World Heritage values, threatening processes and visitor use;
- ◆ a strategy to improve the resources available for management of World Heritage values.

The Strategic Plan provides for development of a plan to address the potential impacts of climate change in the light of emerging knowledge of climate trends which are likely to result in rising air and sea surface temperatures, drier winter and spring conditions, and sea level rises in the LHIG.

Part A. Context

1. Introduction

The Lord Howe Island Group (LHIG) is an area of spectacular island landscapes and rich terrestrial and marine ecosystems located 700 kilometres north east of Sydney. In 1982, the LHIG was inscribed on the World Heritage List under the United Nations' World Heritage Convention in recognition of its superlative natural phenomena and its rich terrestrial and marine biodiversity as an outstanding example of an island ecosystem developed from submarine volcanic activity.

The LHIG World Heritage Property covers an area of 146,300 hectares comprised of Lord Howe Island, the Admiralty Islands (North Rocks, Tenth of June, South Island and Roach Island), Mutton Bird Island, Blackburn Island, Gower Island, Balls Pyramid and offshore islets) and 145,000 hectares of marine environment (see Figure 1).

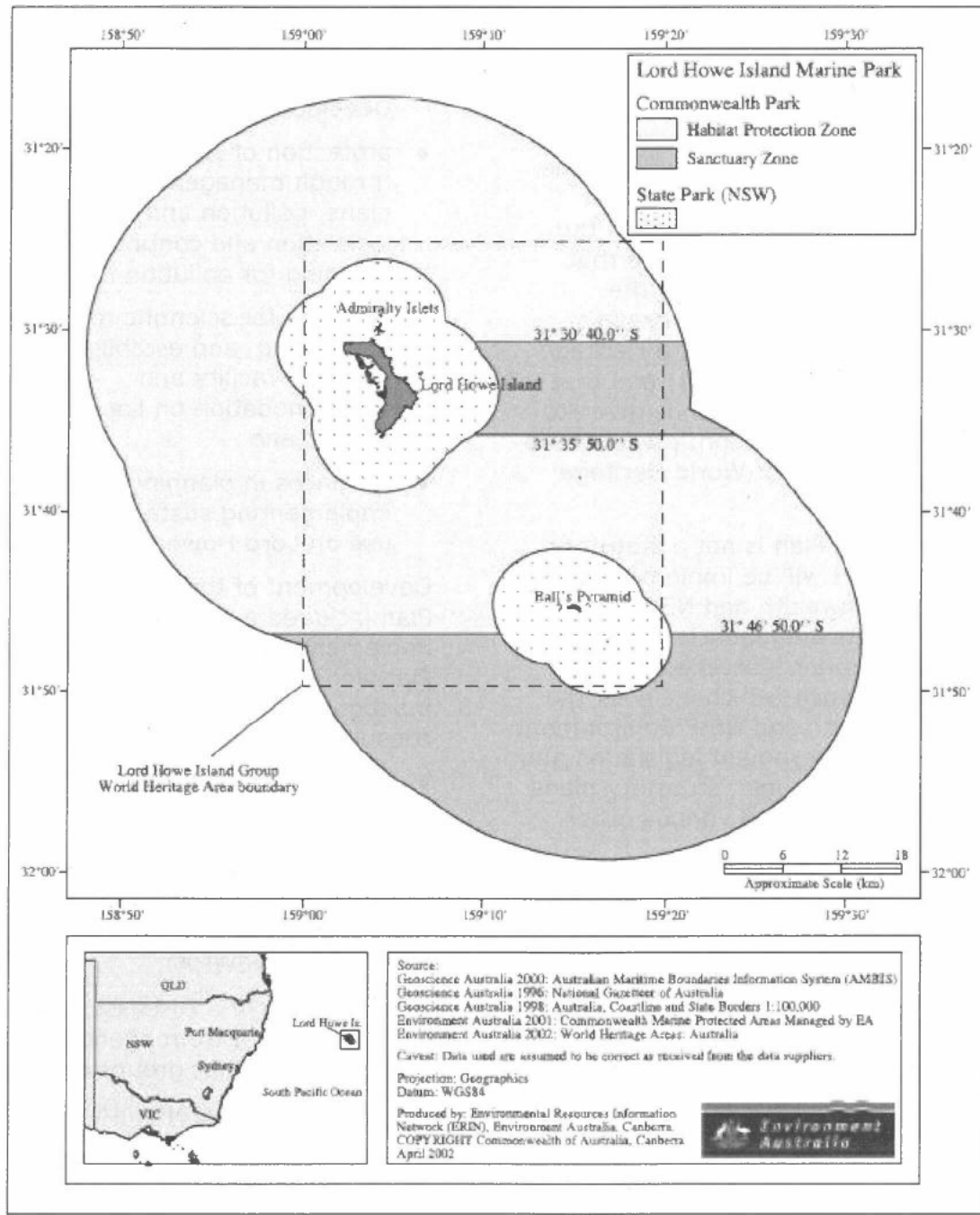
Lord Howe Island, the largest island in the LHIG, has an area of 1,455 hectares and is 11 km long and 2.8 km wide at its widest point. Prior to its discovery in 1788 and subsequent settlement in 1833, Lord Howe Island and the other islands in the Group remained isolated from human influences.

Lord Howe Island is the only settled island in the Group, with a resident population of about 350 people. The Island community plays a vital role in continued protection of the island's outstanding natural values.

Tourism provides the major income for the Island community, with up to 16,000 people visiting the Island annually. Palm seed export is also important for the island economy. Agricultural activities and fishing provide some food, but most of the island's food and materials are imported by air or by sea freight from Port Macquarie in New South Wales.

The islands in the Group are part of the State of New South Wales. Seventy-five percent of the main island and all of the outlying islands are protected for conservation purposes as a Permanent Park Preserve.

The majority of the marine areas on the World Heritage Property are protected by the Lord Howe Island Marine Park (LHIMP) which covers both NSW State Coastal Waters (within 3 nautical miles of land) and Commonwealth Waters outside the 3 mile limit.



Source: Environment Australia, 2002

Figure 1: Lord Howe Island Group World Heritage Property and Marine Park boundaries

2. Purpose of the Strategic Plan

This Strategic Plan provides a ten year overarching framework for consistent and coordinated management of the LHIG World Heritage Property by the various NSW and Commonwealth agencies with responsibilities in the area. It is intended to ensure that day-to-day management of the Property complies with Australia's obligations under the World Heritage Convention (see section 4) and that appropriate consideration is given to protection, conservation, presentation and transmission of World Heritage values.

The Strategic Plan is not a statutory document. It will be implemented by the Commonwealth and NSW Governments and agencies through the Environment Protection and Heritage Council (which includes the Commonwealth and NSW Environment Ministers), government legislation and planning instruments, statutory plans of management, and various other plans and policies.

This Strategic Plan replaces the 2000 Strategic Plan for Management for the LHIG World Heritage Property (Manidis Roberts, 2000). Many of the management structures and controls, which were a major focus of that previous Strategic Plan, have been put in place. Significant achievements include:

- ◆ establishment of the LHI Marine Park and development of related Commonwealth and NSW management and zoning plans;
- ◆ a range of plans and measures for biodiversity management and control of pest species and other threats, quarantine and rehabilitation;
- ◆ updating of land use and development controls in the Local

Environment Plan and Development Control Plan;

- ◆ protection of shipping impacts through management and zoning plans, pollution and quarantine legislation and contingency planning for pollution incidents;
- ◆ planning for scientific research and monitoring, and establishment of a research facility and accommodation on Lord Howe Island; and
- ◆ advances in planning for and implementing sustainable resource use on Lord Howe Island.

Development of this new Strategic Plan included a review of implementation of the 2000 Strategic Plan and consultation with management agencies. The consultation process comprised:

- ◆ interviews and workshops with representatives and staff of the Lord Howe Island Board (LHIB), the NSW Marine Park Authority (MPA), the Department of Environment, Water, Heritage and the Arts (DEWHA);
- ◆ circulation of a Discussion Paper for comment from agencies and key stakeholder groups on LHI;
- ◆ discussion on draft with LHI Board;
- ◆ exhibition of a Draft Strategic Plan for comment from agencies, stakeholders and the community.

The approaches in this Strategic Plan build on the 2000 Plan and address ongoing and new knowledge, threats, management needs, and issues. The Plan also addresses the potential impacts of climate change in the light of emerging knowledge of climate trends.

3. World Heritage Values

The LHIG was inscribed on the World Heritage List under two of the criteria for natural values of outstanding universal significance:

- (vii) containing superlative natural phenomena or areas of exceptional natural beauty and aesthetic importance;
- (x) containing the most important and significant natural habitats for in-situ conservation of biological diversity, including those containing threatened species of outstanding universal value from the point of view of science or conservation.

3.1 Superlative natural phenomena

The LHIG is an outstanding example of an oceanic island of volcanic origin containing features, formations and areas of exceptional natural beauty and aesthetic importance. The World Heritage values include:

- ◆ the exceptional diversity of spectacular and scenic landscapes within a small land area; and
- ◆ outstanding underwater vistas, including reefs considered to be among the most beautiful in the world.

On Lord Howe Island, the towering volcanic mountains of Mount Gower (875 metres) and Mount Lidgbird (777 metres) provide a spectacular backdrop to the low-lying centre of the island and the clear lagoon and its fringing reef. The coast of the island is a constantly changing vista of the reef and lagoon, sandy beaches, boulder beaches, sea caves, scree slopes and massive cliffs. Tall sea cliffs and stacks provide spectacular vistas on the offshore islands,

especially the tall narrow Bas Pyramid, which rises vertically from the ocean to 551 metres in height.

3.2 Biodiversity values

The LHIG is an outstanding example of an oceanic island of volcanic origin with a unique biota of plants and animals and important and significant natural habitats for in-situ conservation of biological diversity. Its World Heritage values include:

- ◆ its high diversity of vegetation communities;
- ◆ the diversity of indigenous vascular plants, comprising at least 241 species, including many species of conservation significance, many of which are endemic to the island group;
- ◆ the diversity of birds, comprising 164 bird species, including species of conservation significance and many endemic species (such as the well known Lord Howe Island Woodhen, which is one of the few examples of successful in situ recovery of a species from the brink of extinction);
- ◆ seabird breeding habitats which together comprise one of the major breeding sites in the southwest Pacific, including four species of conservation significance;
- ◆ a rich diversity and high levels of endemism of terrestrial invertebrates, including spiders, snails and the large and spectacular Lord Howe Island Phasmid which survives on Balls Pyramid;
- ◆ the unusual combination of tropical and temperate marine flora and fauna, including many species at their distributional limits, reflecting

the extreme latitude of the coral reef ecosystems which are the southern-most true coral reefs in the world;

- ◆ the diversity of marine benthic algae species, which include many endemic species;
- ◆ the diversity of marine fish species including at least 500 species of which 400 are inshore species and 15 are endemic; and
- ◆ the diversity of marine invertebrate species, including more than 83 species of corals and 65 species of echinoderms of which 70% are tropical, 24% are temperate and 6% are endemic.

3.3 Other significant features

The LHIG contains other significant features which are integral to the protection of its World Heritage values. These include:

- ◆ its geodiversity and the geological and geomorphologic processes underpinning its spectacular scenic values;
- ◆ the ecological and biological processes and the ecosystems

which support its high terrestrial and marine biodiversity; and

- ◆ its significance for scientific research and education, including as an isolated island group which was one of the last to experience human settlement.

The Lord Howe Island residents, many of whom are descended from the early settlers, form a unique community with a strong sense of identity and community based on their history and isolation. The unique Island lifestyle and its safe, quiet, unpolluted and beautiful surroundings are highly valued by the community. Retention and recognition of the Island community's values and lifestyle will be important in maintaining their contribution and support to protection of World Heritage values.

As the major contributor to the Island's economy, tourism is a significant aspect of Island life and a major way in which the LHIG's World Heritage values are presented to the wider public. Sustainable management of tourism is vital to the protection of World Heritage values

4. Management Background

4.1 World Heritage Management Obligations

World Heritage Convention

The World Heritage Convention, which was adopted in 1972 by the United Nations Educational, Scientific and Cultural Organization (UNESCO), provides for the declaration of heritage of outstanding universal cultural and natural value as part of the World Heritage List. The Convention and the associated Operational Guidelines (UNESCO, 2008) provide guidance for the protection and conservation of World Heritage properties.

As a signatory to the World Heritage Convention, Australia has obligations under Article 5, including:

- ◆ to protect, conserve and present the World Heritage values of the property;
- ◆ to integrate the protection of the area into a comprehensive planning program;
- ◆ to give the property a function in the life of the Australian community;
- ◆ to conduct scientific and technical research and develop operating methods to counteract threats to World Heritage values; and
- ◆ to take appropriate scientific, technical, legal, administrative and financial measures necessary for achieving the foregoing objectives.

Convention signatories are also required to submit regular reports to UNESCO on the actions taken in applying the Convention. Ongoing monitoring and evaluation of management actions and the condition of a World Heritage Property

is required to fulfil the reporting requirements.

Integrity (defined by the Operational Guidelines as the wholeness and intactness of the heritage values) is an essential attribute for a World Heritage property. For properties (such as the LHIG) listed for their outstanding natural values, biophysical processes and landform, features should be relatively intact and human activities (including those of local communities) should be 'consistent with the outstanding universal value of the area where they are ecologically sustainable' (UNESCO, 2008, section 90).

EPBC Act requirements

The Australian Government has enacted measures for implementation of its World Heritage obligations under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). Under section 12 of that Act, an action likely to have a significant impact on World Heritage values may only be taken if it is:

- ◆ approved in accordance with an Australian Government environmental impact assessment process or an accredited State environmental impact assessment process (the NSW process under the Environmental Protection and Assessment Act 1979 in the case of LHIG);
- ◆ approved under a management plan accredited by the Australian Government Environment Minister.

Substantial penalties are provided for breaches of these provisions.

For World Heritage properties within States, section 321 of the EPBC Act

requires the Australian Government and its agencies to use its best endeavours to ensure that plans for managing the property are not inconsistent with Australia's obligations under the World Heritage Convention and the Australian World Heritage Management Principles.

This Strategic Plan takes account of the new Australian World Heritage Management Principles, reproduced below.

Australian World Heritage Management Principles

The Australian World Heritage Management Principles, in Schedule 5 of the *Environment Protection and Biodiversity Conservation Regulations 2000*, provide guidelines for management of Australia's World Heritage Properties. The Management Principles require a World Heritage Property to be managed in accordance with Australia's obligations under the World Heritage Convention. They also require one or more management plans to be prepared for each Property which include:

- ◆ statement of the World Heritage values of the Property;
- ◆ provision for public consultation;
- ◆ mechanisms and actions for protection of World Heritage values and dealing with impacts and threats on those values;
- ◆ integration of Commonwealth, State and local government responsibilities for the Property;
- ◆ continuing monitoring and reporting.

The Commonwealth, State and Territory Governments have recently agreed to new World Heritage Management Principles as part of the Australian World Heritage Intergovernmental Agreement. At the time this Strategic Plan was being prepared, the inclusion of the new Principles in the EPBC Regulations was being considered as part of the review of the EPBC Act.

**Australian World Heritage Management Principles
(as incorporated in the Australian World Heritage
Intergovernmental Agreement)**

1. The objectives of management arrangements for Australia's World Heritage properties are to identify, protect, conserve, present, and transmit to future generations Australia's cultural and natural heritage of outstanding universal value, in accordance with Australia's obligations under the World Heritage Convention.
2. Jurisdictions with responsibility for managing a World Heritage property must have a World Heritage management system or management plan in place. This system or plan must ensure that the integrity and authenticity of the property at the time of inscription are maintained or enhanced.
3. The World Heritage management system or management plan may vary according to cultural and other jurisdictional and cross-jurisdictional factors. An effective World Heritage management system or management plan will:
 - a) identify the outstanding universal value and potential threats to the property;
 - b) document the legal, scientific, technical, administrative, and financial and visitor strategies which will be adopted and implemented to protect, conserve, and present the property for current and future generations;
 - c) be developed in the context of legislative and policy instruments and the social and economic value of the property;
 - d) identify the community, stakeholders and other partners, including Traditional Custodians, and how they will participate in property management and decision-making;
 - e) document what research is required to better understand the values and threats to the property and the effectiveness of management actions;
 - f) use a risk management approach to prioritise strategies within the management system or management plan;
 - g) develop an implementation plan and allocate resources in accordance with the identified strategic priorities;
 - h) assist in building knowledge and capacity within both staff and community members to implement the management system or plan;
 - i) document a cycle of planning, review, monitoring, evaluation and reporting of the management system or plan;
 - j) in the case of a cross-jurisdictional or serial nomination, provide details of any mechanisms for co-ordinated management; and
 - k) assess the impact of proposed strategies on the outstanding universal value to ensure the strategies are acceptable and sustainable.

4.2 Ownership, control and administration

The LHIG World Heritage Property comes within the jurisdiction of the NSW and Australian Governments.

The islands and the marine areas within three nautical miles of land are part of the State of NSW and subject to NSW laws and administrative arrangements. The islands are all NSW Crown Land. There is no freehold title, and members of the Island community hold land under leasehold tenure. Seventy-five percent of the main island and all of the outlying islands are part of the Permanent Park Preserve established under the *Lord Howe Island Act 1953*.

Care, control and management of the islands and coral reefs within one marine league from the low-water mark come within the jurisdiction of a statutory body, the Lord Howe Island Board (LHIB), established under the *Lord Howe Island Act 1953*. The LHIB reports directly to the NSW Minister for Climate Change, Environment and Water.

The Lord Howe Island Marine Park (LHIMP) covers both NSW and Commonwealth Waters and is managed by both jurisdictions. The LHIMP (State Waters) covers NSW State Coastal Waters, which comprise the seabed and waters from the three nautical mile limit to the mean high water mark along island shores and the limit of tidal influence in creeks

(see Figure 1). The LHIMP (State Waters) is managed by the NSW Marine Park Authority.

The part of the LHIG World Heritage Property outside the three nautical mile limit is within the jurisdiction of the Commonwealth Government. The majority of this area is within Australia's Territorial Waters (within twelve nautical miles of land) and is contained within the LHIMP (Commonwealth Waters), managed by Department of Water, Heritage and Environment (DEHWA). Two small sections which extend beyond the 12 nautical mile line into Australia's Exclusive Economic Zone (see Figure 1).

The Australian Government also has policy and legislative roles and responsibilities related to implementation of the World Heritage provisions of the EPBC Act, fisheries management and custom and quarantine requirements (as Lord Howe Island is a 'port of first entry' for arrivals from outside Australia).

Table 1 provides a summary of the main NSW and Commonwealth government agencies regularly involved in management of the LHIG World Heritage Property. Several other agencies are involved in management of the Property as required.

Table 1: LHIG World Heritage Property management agencies

Agency/Body	Roles and Responsibilities
NSW Government	
Lord Howe Island Board	<p>Established under the <i>Lord Howe Island Act 1953</i>, with responsibility for care, control and management of the islands, including:</p> <ul style="list-style-type: none"> • protection of World Heritage values; • protection of cultural heritage values; • administration of all Crown Land, including the Permanent Park Preserve; • development control; • provision of community services and infrastructure; • delivery of sustainable tourism. <p>Consist of 7 members, of whom 4 are elected Islander community members and 3 members appointed by the Minister.</p> <p>LHIB undertakes quarantine inspections and provides information and education regarding quarantine issues (NSW Police undertake customs inspections on behalf of the Australian Customs and Border Protection Service).</p>
NSW Department of Climate Change, Environment and Water (DECCW)	<p>Biodiversity and threatened species conservation on the islands under the <i>NSW Threatened Species Conservation Act 1995</i>.</p> <p>Marine reptiles and mammals under the <i>NSW National Parks and Wildlife Act 1974</i>.</p> <p>Provides advice and assistance to the LHIB on management of the Permanent Park Preserve.</p>
NSW Marine Parks Authority	<p>Manages LHIMP (State Waters) in accordance with the <i>NSW Marine Parks Act 1997</i>.</p>
NSW Maritime	<p>Marine safety, regulation of commercial and recreational boating, marine pollution and oversight of port operations.</p> <p>Conducts checks of boats, sets up marker buoys.</p>
NSW Industry & Investment	<p>Regulation of commercial and recreational fisheries and marine threatened species (except for marine mammals and reptiles) under <i>NSW Fisheries Management Act 1994</i>.</p>
Northern Rivers Catchment Management Authority (NRCMA)	<p>Coordination of natural resource management in north east NSW under <i>Catchment Management Authorities Act 2003</i>.</p> <p>LHI included within its boundaries.</p>
Australian Museum	<p>Long term association with Lord Howe Island scientific research. Processes and identifies samples for the LHIB.</p>
Commonwealth Government	
Department of the Environment, Water, Heritage and the Arts	<p>Management of LHIMP (Commonwealth Waters) under the provisions of the EPBC Act.</p> <p>Protection of threatened species under the EPBC Act.</p> <p>Protection of migratory species and their habit under international agreements.</p> <p>Implementation of World Heritage provisions of EPBC Act.</p>
Australian Fisheries Management Authority	<p>Management of fisheries in Commonwealth waters under the <i>Commonwealth Fisheries Management Act 1991</i>.</p>
Australian Quarantine Inspection Service (AQIS)	<p>Responsible for quarantine controls at international borders. Lord Howe Island is a 'port of first entry' proclaimed under the <i>Quarantine Proclamations Act 1998</i>. Inspections of boats and aircraft conducted by LHIB and local Police.</p>

Planning for day-to-day management is governed by several statutory instruments and plans and a number of non-statutory plans (see Tables 2 and 3).

Table 2: Statutory instruments and plans applying to LHIG World heritage property

Statutory Instrument/Plan	Description and status
Lord Howe Island Local Environment Plan, 2010	<p>Prepared under the NSW <i>Environmental Planning and Assessment Act 1979</i> for the area administered by the LHIB, it regulates and provides strategies for:</p> <ul style="list-style-type: none"> • conservation of World Heritage values; • environmental and biodiversity management; • sustainable resource use; • conservation of local heritage values; • sustainable island development, including tourism; • land use planning.
LHI Development Control Plan	<p>Provides detailed prescriptions for development approvals in accordance with the LEP.</p>
Lord Howe Island Biodiversity Management Plan, 2007	<p>Constitutes a formal National and NSW Recovery Plan for endangered and vulnerable species under the EPBC Act and the NSW <i>Threatened Species Conservation Act 1995</i>. Both statutory and non-statutory components - see Table 3 for non-statutory aspects.</p>
Lord Howe Island Permanent Park Preserve, Draft Plan of Management (January 2009)	<p>Required under the <i>Lord Howe Island Act 1953</i> (to be prepared in accordance with national park requirements under NSW <i>National Parks and Wildlife Act 1974</i>). Draft Plan awaiting formal adoption.</p>
Operational Plan for LHIMP (NSW Waters), 2004	<p>Prepared by NSW Marine Parks Authority under NSW <i>Marine Parks Act 1997</i>. General strategies for conservation and sustainable use of the Marine Park area, coordination with other relevant authorities, and community information. Under review in 2010.</p>
Zoning Plan for LHIMP (NSW Waters), 2004	<p>Prepared by NSW Marine Parks Authority under NSW <i>Marine Parks Act 1997</i>. Zoning plan for biodiversity protection and sustainable use, specifying Sanctuary, Special Use and Habitat Protection Zones. Under review in 2010.</p>
LHIMP (Commonwealth Waters) Management Plan, 2002	<p>Required under EPBC Act. Provides for protection of World Heritage values, a zoning scheme that aligns with the zones in the NSW sector of the Marine Park, and liaison and coordination with other agencies and stakeholders. Expired in 2009. Under review by DEHWA in 2010.</p>

Table 3: Non statutory plans and strategies applying to LHIG World Heritage Property

Plan/Strategy	Description/Responsible agency
Biodiversity and threat management - general	
Lord Howe Island Quarantine Strategy, 2003	LHIB Covers importation of animal, plant and other material. Provides quarantine inspection arrangements.
Biodiversity and threat management - terrestrial	
Lord Howe Island Biodiversity Management Plan 2007 (both statutory and non-statutory components)	Prepared by NSW DECCW in association with LHIB, Australian Museum and DEWHA. Covers threats and management actions for protection of overall biodiversity and rare and significant species.
Weed Management Strategy	LHIB Outlines methods and resources to deliver eradication of priority weeds.
Draft Rodent Eradication Plan, 2009	LHIB Awaiting finalisation and funds for implementation.
Draft Revegetation Strategy 2010	LHIB Outlines methods and priorities for rehabilitation works. Largely focuses on revegetation. 2010 plan updates previous draft..
Draft Bush Fire Risk Management Plan, 2010	NSW Rural Fire Service Prepared in accordance with the Rural Fires Act and identifies community assets at risk of fire and sets out a 5 year program to reduce those risks.
Biodiversity and threat management - marine	
LHIMP (NSW Waters) Invasive Marine Pest Management Plan, 2009	NSW Marine Park Authority. Relates only to State Waters.
Pollution control	
Lord Howe Island Marine Oil and Chemical Spill Contingency Plan, 2003	Prepared by NSW Waterways Authority. Provides for coordinated responses to incidents by the relevant management agencies, including LHIB, Marine Parks Authority, DECCW.
Waste Minimisation Strategy	LHIB Covers recycling and establishment of a bio-waste facility.
Research and monitoring	
Research Policy 2010	LHIB Outlines research priorities that are consistent with the LHIBMP and LHIMP plans
LHIMP Research and Monitoring Plan 2010-2015	NSW Marine Park Authority Applies to State Waters section of the Marine Park.

4.3 Coordination and consultation arrangements

At the inter-governmental level, coordination and policy making related to LHIG World Heritage Properties is made by the Environment Protection and Heritage Council (EPHC), which includes the Australian and NSW Environment Ministers. The EPHC performs this role for all World Heritage Properties in Australia.

The LHIB is tasked as the 'responsible administration' for the World Heritage Property and acts as the coordinator for planning and management of the Property. A Memorandum of Understanding between the LHIB and NSW Marine Parks Authority provides for coordinated management of the islands and State Waters component of the Marine Park.

Planning for, and implementation of, sustainable tourism is assisted by the Lord Howe Island Tourism Association, which is comprised of representatives of the LHIB and tourism operators.

A Biodiversity Management Plan Implementation Group, chaired by DECCW and including the LHIB and 2 LHI community reps oversees implementation of the Biodiversity Management Plan.

Community and stakeholder consultation is undertaken by the LHIB in relation to its planning and management activities. Four of the Board members are elected from the local community.

Stakeholder advice and a consultation mechanism for the Marine Park is provided by the Lord Howe Island Marine Parks Advisory Committee, established by the NSW Marine Parks Authority. The Committee is comprised of representatives of the Commonwealth Government (DEWHA), conservation, science, tourism industry, charter fishers, scuba divers, recreational fishers, LHIB and the community.

Part B Strategies for the Future

5.1 Vision

The following Vision and Guiding Principles have been adopted for the LHIG World Heritage Property. This is the same Vision adopted in the 2000 Strategic Plan, divided into its key points to improve its readability.

Vision

The Lord Howe Island Group World Heritage Property will retain its outstanding universal natural values in perpetuity. Its ecosystems, biota and exceptional natural beauty will be respected, protected and conserved by government agencies, the Island's residents, visitors to the area, and the industries which use the resources of the area.

Guiding Principles

1. The Property will be transmitted to future generations unimpaired, with its values restored where there has been damage or deterioration caused by human activity.
2. The best available scientific evidence will contribute to sustainable ecosystem management.
3. Residents and visitors alike will appreciate and enjoy its landscapes and ecosystems.
4. Commonwealth and State government institutions and laws will protect the area, and these governments will provide the most secure future possible for this World Heritage Property through funding and other resources to support management.

5. The unique living community of people who live on Lord Howe Island and manage its resources will incorporate the ethos of an ecologically sustainable lifestyle within the World Heritage Property as an example to other communities.

5.2 Strategic Approach

The 2000 Strategic Plan divided strategies according to five goals based on the World Heritage obligations of protection, conservation, rehabilitation, presentation and transmission of World Heritage values; and a sixth goal seeking to integrate the Island community in management of World Heritage values.

This new Plan organises strategies and actions according to eight related issue areas and goals for ease of reference by managers and other readers.

A. Protection and Management

– to ensure ongoing protection of World Heritage values through appropriate tenure, statutory, management and planning arrangements and consistent approaches by management agencies.

B. Biodiversity Conservation and Ecological Integrity

– to ensure that the integrity of the LHIG's outstanding biodiversity, natural marine and terrestrial habitats (one of the criterion for World Heritage listing of the LHIG) and associated ecological processes is maintained.

- C. Scenic Protection** – to maintain the spectacular natural beauty of the LHIG World Heritage Property (the second criterion for World Heritage listing).
- D. Sustainable Use of Natural Resources** – to ensure that terrestrial and marine natural resources are used in a sustainable manner which does not degrade World Heritage values.
- E. Sustainable Living** – to ensure that Island development, population and environmental impacts are kept at a sustainable level that protects World Heritage values.
- F. Visitor Management and Presentation** – to achieve sustainable tourism and recreational use which contributes to the protection of World Heritage values and provides visitors with quality opportunities to appreciate those outstanding values.
- G. Information and Resources for Management** – to ensure that management of World Heritage values is supported by the best available scientific research and information and adequate resources.
- H. Community Engagement** – to provide for the ongoing engagement of the Island community, and recognition of the community's values, in protection and presentation of World Heritage values.

This Strategic Plan builds upon the approach in the 2000 Strategic Plan, taking account of experience in implementation of the previous Plan and actions that have been completed. Many core strategies and actions in the previous Plan are continued and new strategies and actions are included to address new and changed situations. The Plan incorporates strategies and actions to fulfil Australia's World Heritage obligations in relation to the LHIG World Heritage Property, and includes measures to implement the new Australian World Heritage Management Principles.

The Plan is intended to be implemented over ten years, after which time it will be reviewed and a new Strategic Plan developed. The priority for actions in the Plan are classified as:

- ◆ High (H) – actions which are critical for management arrangements (e.g. plans or actions which provide a framework for other actions, funding) or to address significant present threats;
- ◆ Moderate (M) – actions to address identified potential or future threats or which are dependent of other prior actions;
- ◆ Low (L) – actions which do not need to be completed immediately;
- ◆ Ongoing – continuing actions which are important for protection of World heritage values (e.g. implementation and review of legislation and plans)

5.3 Management Strategies

A. Protection and Management

Key Issues

Boundary

The Lord Howe Island Marine Park was established by the NSW and Australian Governments after the LHIG was inscribed on the World Heritage List. The boundaries of the World Heritage Property do not align with the boundaries of the Commonwealth Waters section of the Marine Park (see Figure 1). This has implications for administrative and management practicality and consistency. Nor does the Property boundary cover all of the marine areas relevant to the values, particularly the undersea geological structure known as the 'Lord Howe Rise' and the associated relatively shallow marine ecosystem.

Ways to improve the alignment of the Property boundary with the Marine Park should be investigated. The Commonwealth's Marine Biodiversity Planning process may offer an opportunity for this investigation.

Regulatory arrangements

To provide ongoing and effective protection of the World Heritage Property, statutory and regulatory arrangements for the area need to provide for the protection of World Heritage values and for consistent cross-tenure and cross-agency approaches. Legislation and statutory instruments and plans should remain current and reflect changed conditions and new knowledge. The relevant statutory management, zoning and operational plans for the Permanent Park Preserve and the Marine Park were all at various stages of review at the time of preparation of this

Strategic Plan and replacement plans need to be adopted as a high priority.

The *Lord Howe Island Act 1953* is under review, which may result in changes relevant to the World Heritage Property. Any amendments to that Act may need to be reflected in the Lord Howe Island Regulations and the Lord Howe Island Local Environment Plan (LEP). The statutory plans for the terrestrial and marine parks are all under review, and replacement plans need to be adopted.

Continued enforcement of the provisions of the *Marine Pollution Act 1987* and contingency planning for oil and chemical spills are important to protect the environment of the World Heritage Property from pollution.

Coordination

Clear and agreed coordination arrangements between agencies with responsibilities in the area are also desirable to ensure consistent and cooperative management across the World Heritage Property. While operational coordination mechanisms are provided in plans such as the Biodiversity Management Plan, greater clarity on overall agency roles and management consistency is needed at the agency level. The 2000 Strategic Plan provided for development of Memoranda of Understanding (MOUs) between management agencies. One MOU has been developed between the LHIB and NSW Marine Parks Authority.

Goal

Ongoing protection of World Heritage values is ensured through appropriate tenure, statutory, management and planning arrangements and consistent approaches by management agencies.

Strategies

1. Ensure all World Heritage values are incorporated within the World Heritage Property boundary.
2. Ensure that World Heritage values are protected through a current and consistent regulatory and planning framework.
3. Develop interagency coordination arrangements to clarify responsibilities and ensure consistent and coordinated management of World Heritage values.

Desired Outcomes

- ◆ All World Heritage values are incorporated within the World Heritage Property boundary and a consistent administrative regime is in place.
- ◆ World Heritage values are managed in a collaborative and consistent manner by all responsible agencies.

Actions

No.	Actions	Priority	Agency
A1	Investigate adjustment of the Property boundary to better incorporate values and, as far as possible, align with the LHI Marine Park boundaries.	L	DEWHA LHIB
A2	Review and amend legislation, regulations, statutory instruments and statutory plans as necessary and according to legislative requirements to ensure consistent protection of World Heritage values.	Ongoing	All
A3	Review <i>Lord Howe Island Regulations 2004</i> to reflect anticipate amendments to the <i>Lord Howe Island Act 1953</i> .	M	LHIB DECCW
A4	Review the Lord Howe Island Local Environment Plan & Development Control Plan.	H	LHIB NSW Dept Planning
A5	Finalise and adopt the revised Plan of Management for the LHI Permanent Park Preserve.	H	LHIB DECCW
A6	Complete review of Operation Plan and Zoning Plan for LHIMP (State Waters) and adopt new plans.	H	MPA
A7	Complete review of the Management Plan for LHIMP (Commonwealth Waters) and adopt new plan.	H	DEWHA
A8	Prior to adoption of the new statutory plans for the LHI Permanent Park Preserve and LHIMP, consider the need to amend the plans to: <ul style="list-style-type: none"> • reflect this Strategic Plan, where relevant; • provide for protection of the LHIG's World Heritage values in accordance with Australia's World 	H	LHIB DECCW MPA DEWHA

No.	Actions	Priority	Agency
	Heritage obligations; <ul style="list-style-type: none"> • incorporate the new Australian World Heritage Management Principles for an effective management plan; • facilitate consistent and cooperative management of the LHIG World Heritage Property at the strategic and operational levels. 		
A9	Review the NSW Marine Park Regulations if necessary to incorporate any changes related to the new LHIMP zoning and management plans.	M	MPA
A10	Prepare a management plan for Stevens Reserve on Lord Howe Island.	L	LHIB
A11	Continue to enforce the <i>Marine Pollution Act 1987</i> in relation to shipping.	Ongoing	NSW Maritime
A12	Maintain a contingency plan for marine oil/chemical spills and appropriate equipment and trained personnel.	Ongoing	LHIB MPA DECCW
A13	Develop MOUs confirming responsibilities and providing for consistent and coordinated management of the World Heritage Property, including with: <ul style="list-style-type: none"> • DEWHA and LHIB on WH management • DEWHA (MOU with NSW MPA) on management of LHIMP (Commonwealth Waters); • DECCW/LHIB on biodiversity management; • Northern Rivers Catchment Management Authority and LHIB on terrestrial natural resource management. 	H	LHIB DEWHA DECCW NRCMA
A14	Consider the need for an overarching committee representing key agencies to guide implementation of this Strategic Plan and consistent management of the LHIG World Heritage Property.	H	LHIB MPA DEWHA DECCW

B. Biodiversity Conservation and Ecosystem Integrity

Key Issues

The isolation of the LHIG at the junction of tropical and temperate latitudes has led to the exceptional biodiversity which is one of the bases of the area's World Heritage listing. However, the isolation under which species and ecosystems evolved means the area's biodiversity is vulnerable to disturbance by human activities, habitat loss and the spread of introduced plants, animals and organisms – as demonstrated by the rate of species loss that followed human settlement and the introduction of weeds and feral animals.

Integrated biodiversity management

The Lord Howe Island *Biodiversity Management Plan 2007* (BMP) provides an integrated cross-agency approach to management of the terrestrial biodiversity of the LHIG, in particular the significant and threatened species and communities of the islands. The holistic ecosystem approach in the BMP enables common threatening processes, significant ecological areas, biodiversity 'hot spots', threatened areas and priority management sites to be identified and management actions and research to be prioritised accordingly. It assists an efficient use of resources through management of common threats and prioritisation of actions.

Biodiversity conservation in the marine areas of the LHIG is achieved through the provisions of the EPBC Act, the *Marine Parks Act 1997*, the *Fisheries Management Act 1994*, and individual threatened species recovery plans and the LHIMP zoning schemes. Terrestrial processes and impacts (such as runoff waters, the condition of estuaries and coastal erosion) also

have implications for lagoon and reef ecosystems.

Development of an interagency, integrated marine biodiversity management plan (similar to the BMP) would assist in achieving a consistent and coordinated approach to marine biodiversity conservation.

Existing threats

In addition to the BMP, several operational plans address the impacts of threatening processes and restoration of degraded areas – the Weed Eradication Strategy, Revegetation Strategy and a draft Rodent Eradication Plan for Lord Howe Island; and an Invasive Pest Management Plan for the LHIMP.

Progress has been made in management of threats to biodiversity, including the elimination of feral pigs and cats and rehabilitation of disturbed areas. Intensive efforts and ongoing funding over several years are now required to eradicate the Ship Rat and House Mouse (which threatens bird, plant and insect populations) and control invasive weeds which pose a serious threat to native plant communities and animal habitat.

Potential introduction of new organisms

The potential introduction of new exotic animals, plants and other organisms (such as pathogens and diseases) from boats (e.g. on hulls and in ballast water), aircraft, cargo and passengers is a major ongoing threat to the terrestrial and marine biodiversity of the LHIG. Shipping impacts and the importation of plants, animals and materials are regulated through maritime and quarantine legislation, the Lord Howe Island Regulations and quarantine inspections. Improved resourcing for

quarantine enforcement and education and improved coordination between the responsible agencies is desirable to ensure effective enforcement of quarantine procedures.

Further action is needed to minimise the introduction and spread of the damaging root fungus *Phytophthora cinnamomi*, and other species on Lord Howe Island, which may be transported to the Island from spores attached to soil or root material on footwear and hiking poles.

Coastline and lagoon

A gap exists in planning for the interface between coastal areas and the Lord Howe Island lagoon and associated coral reefs. The environmental condition of the coastal areas and estuaries of Lord Howe Island is critical to protect the biodiversity and environmental quality of the lagoon and reefs. The lagoon area is vulnerable to pollution and nutrients in runoff and groundwater, impacts from intermittently closed estuaries, erosion and impacts from visitor use.

Climate change

The LHIG is expected to experience rising air and sea surface temperatures, drier winter and spring conditions, and sea level rises as a consequence of climate change (Australian National University, 2009). Specific research is required on climate change impacts on the World Heritage Property. Potential impacts extend across the terrestrial and marine environments and include:

- ◆ a rising cloud layer which may affect the viability of cloud forest on the mountains and associated endemic species, and reduce water flows to vegetation at lower levels;
- ◆ rising sea levels affecting coastal habitat, erosion and island infrastructure;

- ◆ decline in some seabird populations (e.g. Flesh-footed Shearwater) due to changes in marine population dynamics and food availability;
- ◆ impacts of warmer ocean temperatures and increased ocean acidity on cold-water reef systems, shallow water and marine shelf fish population and marine invertebrates;
- ◆ increased threats from invasive species (e.g. introduced Ship Rat, Crown of Thorns Starfish which is natural to the area, many weed species) and possible new risks from organisms in ballast water and on vessel hulls previously killed by cold water;
- ◆ coral bleaching.

Monitoring

Ongoing monitoring of plant and animal populations and communities is required to assess the integrity of the LHIG's biodiversity and alert managers to new threats and impacts. While biodiversity monitoring is addressed in the Biodiversity Management Plan 2007 and the LHIMP Research and Monitoring Plan, additional resources are required to extend the range of monitoring programs and review priorities.

Goal

The integrity of the LHIG's outstanding biodiversity, natural marine and terrestrial habitats and associated ecological processes is maintained.

Strategies

1. Develop and implement consistent and coordinated approaches to biodiversity conservation across the LHIG World Heritage Property.
2. Minimise and manage the impacts of threatening processes to

maintain the integrity of World Heritage values and natural ecosystems.

3. Obtain necessary resources to implement priority actions detailed in management plans.
4. Prevent the introduction of new species and organisms which have the potential to degrade World Heritage values.
5. Ensure that measures are developed to manage potential new threatening processes, including climate change.
6. Encourage and provide adequate resources for research and monitoring of biodiversity condition and threatening processes.

Desired Outcomes

- ◆ Native plant and animal populations and communities are maintained at levels to ensure their ongoing viability in the wild.
- ◆ No new species and organisms with the potential to degrade World Heritage values have been introduced.
- ◆ Degraded values are restored or reinstated.
- ◆ Responses are developed to manage potential threats to World heritage values.
- ◆ Pest species are eradicated where possible

Actions

No.	Actions	Priority	Agency
B1	Continue to conserve the integrity of ecosystems in the LHIG World Heritage property through implementation of all relevant plans and strategies.	Ongoing	LHIB MPA DEWHA DECCW
B2	Continue to implement the <i>LHI Biodiversity Management Plan 2007</i> .	Ongoing	LHIB DECCW DEWHA
B3	Develop an interagency, integrated biodiversity management plan for marine biodiversity within the LHIG World Heritage Property.	H	MPA DEWHA DECCW LHIB
B4	Review and implement the LHI Weed Eradication Strategy	H	LHIB
B5	Finalise and implement the LHI Rodent Eradication Plan.	H	LHIB
B6	Seek secure ongoing funding and resources over several years for intensive rodent and weed eradication programs.	H	LHIB
B7	Implement the LHIMP Invasive Pest Management Plan.	Ongoing	MPA
B8	Review and update the LHI Quarantine Strategy, including: <ul style="list-style-type: none"> • mechanisms for coordination between relevant agencies; • rapid response protocols; 	H	LHIB AQIS MPA NSW Maritime

No.	Actions	Priority	Agency
	<ul style="list-style-type: none"> resource needs for effective implementation. 		
B9	Engage with AQIS to obtain resources necessary for quarantine implementation.	H	LHIB AQIS
B10	Develop and deliver targeted education material and training to suppliers, stevedores, arriving passengers and the community (as appropriate).	H	LHIB
B11	Develop guidelines and education material on Phytophthora control. Implement a strategy to control spread of Phytophthora spp	H	LHIB
B12	Develop a Lord Howe Island coastal management plan that addresses runoff, erosion, estuary management, biodiversity conservation and habitat protection along the coast and in the lagoon and reef. Link the coastal management plan with relevant terrestrial and marine plans and strategies and climate change management plan.	H	LHIB DECCW MPA
B13	Develop a climate change management plan that includes research on potential impacts; monitoring requirements; risk assessment; and actions to reduce potential threats or cope with potential change (e.g. seed banks).	M	LHIB DECCW MPA DEWHA
B14	Continue and extend biodiversity research and monitoring to cover priority populations and communities and current and potential threatening processes.	H	LHIB DECCW MPA DEWHA
B15	Encourage and seek funding and resources for priority biodiversity and threatening process monitoring (see also Actions G1 – G3).	H	LHIB DECCW MPA DEWHA
B16	Finalise and implement the draft LHI Revegetation Strategy 2010.	Ongoing	LHIB
B17	Continue wetland restoration work and develop environmental and flood triggers for mechanical openings.	Ongoing	LHIB
B18	Complete and implement the LHI Bushfire Risk Management Plan.	H	LHIB NSW Rural Fire Service

C. Scenic Protection

Key Issues

The spectacular natural beauty of the island landscapes and underwater vistas is one of the values for which the LHIG was inscribed on the World Heritage List.

The scenic attraction of the LHIG is a major element in its tourism appeal, underpinning tourism's major contribution to the island economy.

Protection and conservation of terrestrial and marine scenic values has been provided by the management and operational plans for the Permanent Park Preserve and the Marine Park (under review at the time of preparation of this Strategic Plan). Rehabilitation of degraded vegetation is also assisting to restore scenic values within and on the edge of the settled areas.

Scenic values on Lord Howe Island are vulnerable to visual impacts from inappropriate development and introduced exotic tree species that out compete native vegetation. Minimisation of scenic impacts is

addressed in the LHI LEP, Development Control Plan, application of the Building Code of Australia and the LHI Building Code. The possible need for an extended airport runway to cope with new aircraft is a potential future threat to scenic values (see Action F10). Establishment of alternative technologies also have the potential to create intrusive visual impacts.

Goal

Maintain the spectacular natural beauty of the LHIG World Heritage Property.

Strategies

1. Ensure that conservation of scenic values is considered and addressed in all planning, management and development processes.

Desired Outcomes

- ◆ New developments including road upgrading do not degrade scenic values

Actions

No.	Actions	Priority	Agency
C1	Provide for protection of scenic values in new management and operational plans being developed for the Permanent Park Preserve and LHIMP.	H	LHIB DECCW MPA DEWHA
C2	Continue to implement Revegetation Strategy and Weed Management Strategy to rehabilitate degraded areas as necessary.	Ongoing	LHIB
C3	Review the LHI Local Environment Plan and Development Control Plan to ensure there is appropriate provision for protection of scenic values in relation to potential developments.	H	LHIB

D. Sustainable Use of Natural Resources

Key Issues

Agriculture and extractive industries

Agricultural and natural resource activities on Lord Howe Island include food production for local consumption, the economically important palm seed export industry (utilising plantations and harvesting from the Permanent Park Preserve) and extractive industries for local construction. In the limited area available on the island, sustainable practices and levels of use are critical to prevent adverse impacts on the biodiversity and scenic aspects of the Island's World Heritage values. Adverse impacts can include weed and animal pest introduction, vegetation clearance and vegetation windshear and canopy dieback adjacent to cleared areas. Impacts associated with agricultural production are addressed in the BMP and LHI Revegetation Strategy.

The extent of agricultural land is governed by the zoning plan under the LHI LEP. Constraint mapping identifying prime agricultural land is required. Further action is required to address sustainable usage of non-productive agricultural land.

There is no current mineral or petroleum exploration or mining within or near the World Heritage Property. In the LHI Marine Park, exploration and mining are regulated under the EPBC Act and NSW *Marine Parks Act 1997* and, at the time of preparation of this Plan, were prohibited unless allowed under an approved management plan (for Commonwealth Waters) or an Act of Parliament (in NSW Waters). Part 5 Division 1 79 of LHI Regs Removal or destruction of substances forming part of the island – require approval of board to remove any stone, rock,

shell, earth, sand, clay or gravel on the island.

Should exploration proposals within or near the World Heritage Property be made in the future, action is needed to alert Australian and NSW agencies responsible for mineral and petroleum exploration of the need to protect World Heritage values.

Fishing

Commercial and recreational fishing occurs in both Commonwealth and NSW Waters within the World Heritage Property. Sustainable fishing practices are important to maintain viable fish populations and ensure conservation of fish habitat and food species.

The LHIMP zoning scheme prohibits fishing in sanctuary zones and limits fishing activities in habitat protection zones and establishes bag and size limits for recreational fishing. Commercial fishing is governed by regulations under the NSW *Fisheries Management (General) Regulation 2002*.

However, licensing of commercial fishing (including charter operators who sell their catch) and active enforcement of fishing regulations is required to ensure fishing remains sustainable.

Development of an interagency, integrated fisheries management plan for both Commonwealth and State waters within the World Heritage Property is desirable to achieve a consistent approach to sustainable fishing, enforcement and protection of World Heritage values.

Tourism

Tourism largely relies on the island's natural resources which provide significant economic benefits to the island's community and environment.

An environmental levy on tourists provides funds for on-ground management of environmental impacts.

Goal

Natural resources are used and managed in a sustainable manner which does not degrade World Heritage values.

Strategies

1. Implement ecologically sustainable management of, and control of threatening processes on, agricultural land.

2. Ensure use of island natural resources is sustainable and consistent with the protection of World Heritage values.
3. Ensure fisheries management is sustainable, consistent with the protection of World Heritage values and coordinated across management agencies.
4. Enforce fisheries regulations and requirements.

Desired Outcomes

- ◆ Natural resources are sustainably managed and resource use does not degrade World Heritage values.

Actions

No.	Actions	Priority	Agency
D1	Implement actions in the Biodiversity Management Plan and Revegetation Strategy to control threatening processes related to agricultural land and rehabilitate degraded areas.	Ongoing	LHIB Community
D2	Undertake a review of lands suitable for sustainable agriculture as part of a comprehensive review of the LHI LEP 2010.	H	LHIB
D3	Work with NSW Agriculture to develop and provide advice to landholders on ecologically sustainable agricultural practices.	Ongoing	LHIB NSW Agriculture
D4	Assess new technology in the palm seed industry for potential ecological impacts.	Ongoing	LHIB NSW Industry & Investment
D5	Continue regulation of the island extractive industry to minimise impacts on World Heritage values.	Ongoing	LHIB
D6	Develop a voluntary agreement with Commonwealth and NSW government agencies responsible for mineral and petroleum exploration recognising the World Heritage values of the LHIG.	L	LHIB MPA DEWHA
D7	Liaise with NSW Industry & Investment to establish LHI as a Class 1 Fishery, licensing of commercial fishing operators and a system and resources for enforcement of fishing regulations.	H	LHIB MPA DEWHA
D8	Develop an interagency, integrated fisheries management plan for sustainable fisheries management in Commonwealth and State waters relevant to the LHIG. The plan should include measures for consistent management and enforcement between agencies, consider population biology and habitat requirements and identify research and monitoring needs.	H	LHIB MPA NSW Industry & Investment DEWHA AFMA
D9	Undertake a review of the current permit/licensing system for commercial fishing on Lord Howe Island.	H	LHIB NSW Food Authority

E. Sustainable Living

Key Issues

On Lord Howe Island, there is limited land suitable for settlement and limited water and energy resources. Fuel for electricity production and for vehicles and boats and most food and construction material has to be imported. The potential for uncontrolled development to degrade the island's scenic values and terrestrial, lagoon and reef ecosystems is high. Therefore, limitation of the number of residents and the development footprint is critical to protect World Heritage values on and near the island. Efficient, low impact energy and waste management systems are also important to reduce environmental impacts, reduce costs (such as fuel imports) and protect the future quality of life for island residents.

The LHI LEP addresses population levels by placing limits on the total number of new dwellings that can be approved. The LEP also controls the type and location of island infrastructure and facilities.

Implementation of housing controls while ensuring there is adequate provision for island residents and staff needed to operate facilities and services is an ongoing issue.

Progress towards sustainable living has been made with the development of a Waste Management Plan and installation of a bio-waste facility. Fuel efficient diesel generators and solar hot water and some solar power systems have reduced reliance on costly and potentially polluting diesel generation, while an investigation into renewable power options has been conducted.

With limited surface water, groundwater is an important source of potable water. Groundwater

extraction is currently unregulated. There is a risk of groundwater pollution and faecal contamination from runoff and wastewater disposal. Groundwater drawdown may also result in vegetation degradation due to lower water tables and saltwater intrusion. Pollutants in runoff and groundwater may also adversely affect lagoon and coral reef ecosystems.

Vehicle numbers and use are managed according to the Lord Howe Island Vehicle Policy. Applications to import or transfer and use a vehicle must demonstrate a genuine need for the import or transfer, and use of a vehicle and the type of vehicle selected. Vehicle applications must show they are in the public interest and minimise environmental impact on both the natural and built environments. Increases in vehicle numbers have the potential to impact the islands scenic amenity and sustainability. Investigation into alternative transport options need to be developed.

Goal

Island development, population and environmental impacts are kept at a sustainable level that protects World Heritage values.

Strategies

1. Ensure that the resident LHI population remains at a level that can be sustainably supported on the limited area available while protecting World Heritage values and maintaining quality of life.
2. To the extent feasible, provide efficient and non-polluting energy systems that are compatible with the protection of World Heritage values.

3. Manage water supplies and wastewater in a way that minimises ecological impacts and protects World Heritage values.
 4. Ensure that the number of motor vehicles on the island is strictly limited by demonstrated need and that priority is given to the most energy efficient vehicles, including, where practicable, those powered by alternative, environmentally-sustainable technologies.
- ◆ There is an increase in the sustainability of energy production and use.
 - ◆ Groundwater quality and quantity is monitored and protected.
 - ◆ No adverse impacts occur on terrestrial, lagoon and reef ecosystems due to runoff and groundwater changes
 - ◆ The LHI vehicle population is limited to a sustainable level with emphasis on clean, green technology

Desired Outcomes

- ◆ The LHI population is maintained at a sustainable level.

Actions

No.	Actions	Priority	Agency
E1	Continue limitations on residential housing in the reviewed LHI LEP.	H	LHIB
E2	Conduct an investigation into the population numbers that can be sustainably supported on Lord Howe Island while protecting World Heritage values and maintaining quality of life.	M	LHIB DoP
E3	Review and update the LHI Waste Management Plan.	H	LHIB
E4	Continue to pursue energy efficient systems and alternative power sources that are compatible with protection the range of World Heritage biodiversity and scenic values.	Ongoing	LHIB
E5	Complete and implement a sustainable wastewater strategy for Lord Howe Island which is compatible with protection of World Heritage values.	H	LHIB
E6	Develop and implement a 'total water cycle' management approach and monitoring plan.	H	LHIB
E7	Continue research on sustainable water management needs.	Ongoing	LHIB
E8	Undertake planning to minimise growth in the number and use of motor vehicles.	M	LHIB
E9	Investigate strategies for greater use of environmentally sustainable vehicles.	M	LHIB

F. Visitor Management and Presentation

Key Issues

Tourism is vital for the island economy and contributes to the World Heritage obligation of presentation of the Property's values, in ways that enhance visitor appreciation of and support for those values."

Tourism impacts

Careful management of tourism is essential to protect the values on which it is based, continue to provide experiences appropriate to a pristine natural environment, and protect the islander way of life. Impacts on sensitive ecosystems and habitats can include browsing, predation and trampling, spread of invasive plants and pathogens, litter, taking of marine species, pollution from boats, pollution from solid waste and wastewater and disturbance of seabird rookeries. Given the small size of Lord Howe Island, tourism infrastructure and facilities also have the potential to detract from its scenic beauty and add to the pressure on the island's ecosystems and limited natural resources.

Visitor numbers

The LHI LEP restricts development of tourist accommodation on Lord Howe Island to accommodate a maximum of 400 visitors at any time. Control of visitor impacts and activities in specific areas is addressed in the draft plan of management for the Permanent Park Preserve and zoning, operational and management plans for the LHI Marine Park (under review at the time of preparation of this Strategic Plan). However, ongoing monitoring and research is required to improve knowledge of the environmental and social impacts of tourism. The recent introduction of cruise ships to the island has the potential to impact on the island

experience as well as increase numbers of visitors.

A corridor system for monitoring actual visitor numbers including persons staying in tourist accommodation to ensure there will be no more than 400 persons at any one time.

Communication and interpretation

Improved communication of World Heritage values to visitors and residents and the need for conservation and minimal impact behaviour are important ways to fulfil World Heritage obligations, enhance visitor experiences and minimise impacts. A consistent approach to communication and interpretation and an enhanced range of quality interpretation products needs to be developed. An accreditation scheme for commercial tour operators will also ensure that high quality and consistent messages are delivered by tour guides and that guided activities are conducted with the appropriate environmental controls. The NSW Parks Eco Pass scheme provides a possible model for an accreditation scheme.

Promotion

The World Heritage status of the LHIG is a significant attraction for many visitors and could be used more effectively to develop and promote tourism outcomes which contribute to the environmental and economic sustainability of the LHIG. A coordinated approach to tourism promotion between tourism organisations and operators is needed, as well as greater use of the internet (a major and increasing source of information for prospective tourists) for information and promotion.

Air transport

The vast majority of visitors and residents travel to Lord Howe Island by air. The length of the airport runway is a potential issue, as the aircraft currently operating on the route are being phased out. Extension of the runway, if required to accommodate replacement aircraft, is a potential threat to scenic values and environmental conditions. The future plans for aircraft operations on the Island need to be determined and options investigated that minimise impacts on World Heritage values.

Goal

Tourism and recreation in the LHIG is sustainable, contributes to protection of World Heritage values and provides visitors with quality opportunities to understand and appreciate its outstanding values

Strategies

1. Ensure that measures are in place to monitor and manage visitor impacts on World Heritage values.
2. Ensure there is consistent and accurate communication and interpretation of World Heritage values across the spectrum of visitor activities.
3. Develop a coordinated approach to promotion of the LHIG as a World Heritage destination.

Desired Outcomes

- ◆ Any adverse impacts from tourist activities or tourism infrastructure are prevented or minimised.
- ◆ Visitors to the LHIG understand, appreciate and protect its World Heritage values.
- ◆ Tourism in the LHIG is environmentally and economically sustainable.

Actions

No.	Actions	Priority	Agency
F1	Continue limiting visitor numbers to a maximum of 400 people at a time.	Ongoing	LHIB
F2	Introduce a system for visitor number monitoring on Lord Howe Island.	M	LHIB
F3	Develop a strategy for visitor impact management across the LHIG, including research and monitoring of visitor impacts.	M	LHIB MPA DEWHA DECCW
F4	Develop and implement a Communications and an Interpretation Plan for the LHIG based on current best practice to ensure that World Heritage values are communicated to visitors and residents in ways that are accurate, entertaining and which encourage further enquiry."	H	LHIB MPA DEWHA DECCW
F5	Develop an accreditation scheme for commercial tour operators.	H	LHIB DECCW MPA
F6	Implement interpretation activities (such as seasonal Discovery tours) that present World Heritage values and showcase work on the protection of values.	M	LHIB MPA
F7	Develop an appropriate visitor website for the LHIG, incorporating interpretation of, World Heritage values and information on visitor experiences, quarantine and management requirements.	H	LHIB MPA DEWHA LHI

No.	Actions	Priority	Agency
			Tourism Association
F8	Develop a coordinated approach to tourism promotion and planning between the LHIB, marine park managers, tourism organisations and tourism operators. Introduce an environmental sustainability rating system for accommodation providers.	H	LHIB MPA DEWHA LHI Tourism Association Tourism NSW
F9	Continue to work with tourism organisations and operators on inclusion of information on World Heritage values and their conservation on tourism websites and brochures.	Ongoing	LHIB LHI Tourism Association Tourism NSW
F10	Liaise with the Lord Howe Island airline operator to investigate future proposals and runway requirements for aircraft on the Lord Howe Island route. Investigate future air and sea transport options that minimise impacts on World Heritage values.	M	LHIB
F11	Review existing LHIB cruise ship policy and effectiveness to protect WH values and experience	H	LHIB

G. Information and Resources for Management

Key Issues

Research and monitoring

Scientific research and information about threats, impacts and system dynamics is essential for conservation of World Heritage values and is one of the obligations for management of World Heritage properties under the World Heritage Convention.

Monitoring of the condition of the Property is required as a basis for periodic reports to the World Heritage Committee.

There are provisions for research and monitoring in several plans and strategies related to the LHIG. The Biodiversity Management Plan addresses terrestrial research priorities and forms a basis for seeking and responding to approaches with universities and other research institutions. The Biodiversity Management Plan Implementation Group also provides advice on

terrestrial research needs and priorities. A Research and Monitoring Plan 2010-15 is in place for the LHIMP (State Waters). All research and monitoring in the NSW section of the Marine Park is approved by the MPA's Research and Monitoring Committee.

The LHI Board has developed a research priorities policy, which defaults to the BMP and the Marine Parks Authority to establish research directives. A research and accommodation facility has also been established on LHI to provide for visiting researchers.

However, the above mechanisms could be enhanced through the development of an interagency, integrated biodiversity management plan covering marine ecosystems within the World Heritage property and establishing a reporting procedure to the commonwealth.

Resources

Additional resources are needed by the LHIB and management agencies to maximise protection of World Heritage values through research, monitoring and management actions. The small size of the Island community means that the resources available to it are small in comparison to the task of managing the World Heritage Property. Secure ongoing funding (rather than short term grants) is also required to ensure the continuity of research, monitoring and management programs (e.g. weed eradication).

A range of measures should be investigated to improve the availability of resources for management of the World Heritage Property. Potentially, these might include improved base resourcing for the key management agencies; establishment of a LHIG foundation or trust for fund raising; and improvements in the financial efficiency and cost returns of LHIB operations.

Goal

Management of the LHIG’s World Heritage values is supported by the best available scientific research and information and adequate resources.

Strategies

1. Ensure adequate planning and resourcing of natural and social science research and monitoring required to assist management of World Heritage values.
2. Ensure adequate long term funding is provided to the LHIB and other management agencies to fulfil obligations to protect the LHIG’s World Heritage values.
3. Investigate alternative funding arrangements, partnerships and financial efficiencies to improve resources available for research, monitoring and management of World heritage values.

Desired Outcomes

- ◆ Adequate long term resources and funding are available for protection of World Heritage values.

Actions

No.	Actions	Priority	Agency
G1	Review the effectiveness of current planning, coordination and resourcing of natural and social science research and monitoring within the LHIG World Heritage Property. Develop an integrated strategy for research and monitoring that addresses prioritisation, coordination, encouragement of research and provision of resources.	H	LHIB DECCW MPA DEWHA
G2	Investigate partnership arrangements with research institutions to improve the level and continuity of research activities and assist in the provision of management advice.	H	LHIB DECCW MPA DEWHA Australian Museum & other institutions
G3	Seek Commonwealth and NSW Government commitments to ongoing funding for management of the Permanent Park Preserve and LHI Marine Park and for priority research, monitoring and management programs aimed at protection of World Heritage values.	H	LHIB DECCW MPA DEWHA

No.	Actions	Priority	Agency
G4	Prepare a long term LHIB financial strategy aimed at improving the Board's resources, including consideration of strategies for improving income, cost recovery and operational efficiency.	H	LHIB
G5	Investigate establishment of a Foundation or Trust for raising/accepting funds and resources for protection of the LHIG World Heritage Property.	H	LHIB DECCW MPA DEWHA
G6	Investigate a partnership with the Foundation for National Parks & Wildlife directed at resourcing conservation projects in the LHIG.	H	LHIB DECCW MPA DEWHA

H. Community Engagement

Key Issues

The Island community plays a vital role in protecting and presenting the LHIG's World Heritage values. This was acknowledged by the 2000 Strategic Plan for Management for the LHIG World Heritage Property, which sought to ensure compatibility between the Island community's lifestyle and values and the actions taken to protect World Heritage values.

This approach is continued in this Strategic Plan. The Island community should continue to be informed, consulted and engaged in decision making and management actions related to the World Heritage Property. The values and lifestyle of the Island community should also continue to make a significant contribution to the Island visitor experience and be integrated into the presentation of World Heritage values and planning for their protection.

Community based monitoring and land restoration programs are potential opportunities to involve and educate the community on World Heritage values. Several community based monitoring programs have been implemented.

Goal

The Lord Howe Island community is actively engaged and its values are recognised in protection and presentation of World Heritage values.

Strategies

1. Ensure that the unique local community values are included in presentation of the LHIG's values.
2. Ensure that impacts on local community values and lifestyle are considered in decision making and planning related to World Heritage values.
3. Consult and inform the LHI community in relation to key decisions affecting World heritage values and community values and lifestyle.
4. Assist the local community to participate in management of World Heritage values.
5. Liaise with the Lord Howe Island Central School and other relevant educational institutions to include study of LHIG World Heritage Property values in relevant key learning areas of the NSW Schools syllabus.

Desired Outcomes

- ◆ Active engagement and support by the Lord Howe Island community in protection and presentation of World Heritage values.
- ◆ Active engagement and support by the Lord Howe Island community at all age levels in the protection and presentation of World Heritage values

Actions

No.	Actions	Priority	Agency
H1	Include local community values in on-island interpretation and presentation of values and in development of an LHIG communication and interpretation plan (see Action F4).	Ongoing	LHIB
H2	Include an assessment of the impacts on the local community and its values in decisions related to World Heritage.	Ongoing	LHIB DECCW MPA DEWHA
H3	Consult the local community in relevant World Heritage decision making and planning processes including, as appropriate, community forums on specific issues.	Ongoing	LHIB DECCW MPA DEWHA
H4	Regularly inform the Island community about the condition of the World Heritage Property and implementation of this Strategic Plan, and provide opportunities for comments on performance.	Ongoing	LHIB
H5	Provide opportunities and training (e.g. in bush regeneration) for the local community to participate in monitoring and other programs for protection of World Heritage values.	Ongoing	LHIB DECCW MPA DEWHA
H6	Encourage teaching of LHIG World Heritage values in relevant key learning areas of the NSW schools syllabus at the Lord Howe Island Central School and other relevant educational institutions	Ongoing	LHIB DECCW, MPA DEWHA DET

5.4 Review and Evaluation

This Strategic Plan for the LHIG World Heritage Property will be reviewed in 10 years from the date of approval or as required and a new Plan will be prepared by the LHIB, in conjunction with NSW and Commonwealth agencies with management responsibilities within the area of the Property.

The review of this Plan will include an evaluation of:

- ◆ success in protecting World Heritage values and maintaining
- the integrity of the LHIG World Heritage Property;
- ◆ implementation of actions, including reasons for non-implementation;
- ◆ success in developing consistent and coordinated approaches between management agencies;
- ◆ adequacy of resources;
- ◆ perceived usefulness of the Strategic Plan.

References

Australian National University (2009) *Implications of climate change for Australia's World Heritage properties: A preliminary assessment*. A report to the Department of Climate Change and the Department of the Environment, Water, Heritage and the Arts by the Fenner School of Environment and Society, the Australian National University

Department of Environment and Climate Change (NSW) (2007) *Lord Howe Island Biodiversity Management Plan*, Department of Environment and Climate Change (NSW).

Environment Australia (2002) *Lord Howe Island Marine Park (Commonwealth Waters) Management Plan*, Commonwealth of Australia, Canberra.

Lord Howe Island Board (2009) *Lord Howe Island Permanent Park Preserve: Draft Plan of Management*, Department of Environment and Climate Change (NSW), January 2009.

Manidis Roberts (2000) *Lord Howe Island Group World Heritage Property: Strategic plan for management 2000 - 2005*.

Marine Parks Authority (NSW) (2004a) *User's Guide to the Zoning Plan - Lord Howe Island Marine Park*, Marine Parks Authority (NSW).

Marine Parks Authority (NSW) (2004b) *Operational Plan for the Lord Howe Island Marine Park*, Marine Parks Authority (NSW), August 2004,

UNESCO (1972) *Convention Concerning the Protection of the World Cultural and Natural Heritage*, United Nations Educational, Scientific and Cultural Organisation.

UNESCO (2008) *Operational Guidelines for the Implementation of the World Heritage Convention*, United Nations Educational, Scientific and Cultural Organisation, January 2008.

Attachment Q Link to Wildlife Conservation Plan for Migratory Shorebirds

<http://environment.gov.au/biodiversity/publications/wildlife-conservation-plan-migratory-shorebirds-2016>

Northern NSW Assessment Section Review of the Chemicals and Biotechnology Assessments Section Species Risk Assessment of the LHI Rodent Eradication Project (EPBC 2016/7703)

Chemicals and Biotechnology Assessments Section Risk Assessment

Species and Status	Exposure likelihood	Consequences or impact	Risk	Northern NSW Assessment Section Review
Primary Exposure				
Buff-banded rail (<i>Gallirallus philippensis</i>) LHI Act and NP&W Act (P)	Likely	Major	Very high	Listed marine Not EPBC listed
Common blackbird (<i>Turdus merula</i>) LHI Act and NP&W Act (P)	Likely	Major	Very high	Not EPBC listed
LHI silvereve (Zosterops lateralis tephropleurus) TSC Act (V)	Likely	Major	Very high	Not EPBC listed
Mallard (<i>Anas platyrhynchos</i>) LHI Act and NP&W Act (P)	Likely	Major	Very high	Not EPBC listed
Pacific black duck (<i>Anas superciliosa</i>) LHI Act and NP&W Act (P)	Likely	Major	Very high	Not EPBC listed
Purple swamphen (<i>Porphyrio porphyrio</i>) EPBC Act (Ma)	Likely	Major	Very high	Listed marine Not EPBC listed
Secondary Exposure				
Australian kestrel (<i>Falco cenchroides</i>) EPBC Act (Ma)	Likely	Major	Very high	Listed marine Not EPBC listed
LHI currawong (<i>Strepera graculina crissalis</i>) EPBC and TSC Acts (V)	Likely for species not captured.	LHI Board has proposed to capture and hold 50 to 60% of the LHI currawong population. Therefore, there may be measureable effects on individuals and minor harm to the local population. Therefore,	Medium	Listed vulnerable EPBC Act Risk for this species is low if the Taronga Captive Management Program is implemented and the baiting program proceeds as described

Species and Status	Exposure likelihood	Consequences or impact	Risk	Northern NSW Assessment Section Review
		consequences or impacts will be minor.		in the Public Environment Report. The potential impacts on this species and proposed mitigation measures are assessed in the Department's Recommendation Report.
Sacred kingfisher (<i>Todiramphus sanctus</i>) EPBC Act (Ma)	Likely	Major	Very high	Listed marine Not EPBC listed
Southern giant petrel (<i>Macronectes giganteus</i>) EPBC Act (E, Mi, Ma)	Likely	Major	Very high	Listed marine, migratory EPBC listed endangered 4 records of this species on LHI prior to 1965, 3 of which were beach-cast. Sighting around Balls Pyramid between 1978 and 1980. No significant impacts are expected for this species *see note at end of table
White-faced heron (<i>Ardea novaehollandiae</i>) LHI Act and NP&W Act (P)	Likely	Major	Very high	Not Listed EPBC Act, Not listed marine, Not listed migratory
Primary and Secondary Exposure				
LHI woodhen (<i>Gallirallus sylvestris</i>) TSC Act (E) and EPBC Act (V)	Primary or secondary brodifacoum exposure due to diet is likely for species not captured.	The LHI Board has proposed mitigation measures for the woodhen by capturing and holding 80 to 85% of the population. Therefore, the consequences for this species will be insignificant.	Low	Listed vulnerable EPBC Act (likely to be upgraded to endangered by early August 2017) Risk for this species is low if the Taronga Captive Management Program is implemented and the baiting program proceeds as described in the Public Environment Report. The potential impacts on this species and

Species and Status	Exposure likelihood	Consequences or impact	Risk	Northern NSW Assessment Section Review
				proposed mitigation measures are assessed in the Department's Recommendation Report.

Species and status	Consequence or impact	Exposure likelihood	Risk	Northern NSW Assessment Section Review
High risk				
Emerald dove (<i>Chalcophaps indica</i>); LHI Act and NP&W Act (P)	Major	Possible primary exposure	High risk	Not Listed EPBC Act, Not listed marine, Not listed migratory
Swift parrot (<i>Lathamus discolor</i>); EPBC Act (E, Ma) and TSC Act (E)				Listed critically endangered EPBC Act Listed marine One record only/of a dead vagrant bird found in 1968 on LHI. This species breeds in Tasmania and winters on the Australian mainland. Significant impacts on this species are unlikely.

Species	Exposure likelihood	Consequence or impact	Risk	Northern NSW Assessment Section Review
Freshwater				
Fish: longfin eel, short-finned eel and common jollytail	Primary exposure to brodifacoum possible. Secondary exposure of freshwater vertebrate species to brodifacoum is unknown.	Major	<i>Risk will be at worst be high for primary exposure and unknown (high) from secondary exposure.</i>	Longfin eel Not Listed EPBC Act, Not listed marine, Not listed migratory Short-finned eel Not Listed EPBC Act, Not listed marine, Not listed migratory Common jollytail Not Listed EPBC Act, Not listed marine, Not listed migratory

* The Southern Giant Petrel has a circumpolar range from Antarctica to approximately 20° S and is a common visitor off the NSW coast. The species is an opportunistic scavenger and predator, scavenging from fishing vessels and on animal carcasses on land. This species breeds on six Australian sub-Antarctic or Antarctic islands (islands claimed by Australia).

Giant Petrels are rare vagrants to the LHIG having only been recorded on four occasions and it is unlikely any individuals will be present during the baiting period. In accordance with the

Department's significant impact guidelines 1.1 a significant impact on the Southern Giant Petrel is considered unlikely.

s22

From: s22
Sent: Monday, 10 July, 2017 12:15 PM
To: s22
Subject: FW: LHI summary tables [DLM=For-Official-Use-Only]

Regards

s22

From: s22
Sent: Friday, 7 July 2017 3:10 PM
To: s22 <[redacted]@[redacted].au>; [redacted]@[redacted].au
Subject: FW: LHI summary tables [DLM=For-Official-Use-Only]

Hi s22 and s22

See below. Grateful please if you could please now consider, for those species that are EPBC Act listed species, whether this is relevant for our assessment. From what I can see, there may be different approaches to consideration of the presence or not of some of these on LHI. We should use our EPBC methods and processes in our assessment.

thanks

s22

From: s22
Sent: Friday, 7 July 2017 3:05 PM
To: s22 <[redacted]@[redacted].au>; [redacted]@[redacted].au
Cc: s22 <[redacted]@[redacted].au>
Subject: LHI summary tables [DLM=For-Official-Use-Only]

Hello s22 and s22,

As requested. Tables (or parts of tables) listing birds we assessed as at high or very high risk. Freshwater fish also were also assessed as high risk for the primary exposure pathway but not EPBC (threatened). Let me know if you have any questions.

s22

Key: Ma = marine, Mi = migratory, P = protected, V = vulnerable, E = endangered, CE = critically endangered. Threatened Species Conservation Act 1995 (TSC Act), Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act), Lord Howe Island Act 1953 (LHI Act) and National Parks and Wildlife Act 1974 (NP&W Act).

Exposure Assessment

Species and Status	Presence on LHI Group during the LHI REP		Diet and feeding ^a	Bait pellet uptake observed	Reported mortalities in previous baiting programs	Likelihood of significant brodifacoum exposure
	Population and presence on LHI Group ^a	Breeding ^a				
Primary Exposure						
Buff-banded rail (<i>Gallirallus philippensis</i>)	There was no population	There was no particular breeding	Diet consists of snails, crabs, insects, worms	There is evidence that these	Two deaths on Cabbage Tree Island	Primary brodifacoum exposure is

Species and Status	Presence on LHI Group during the LHI REP		Diet and feeding ^a	Bait pellet uptake observed	Reported mortalities in previous baiting programs	Likelihood of significant brodifacoum exposure
	Population and presence on LHI Group ^a	Breeding ^a				
LHI Act and NP&W Act (P)	information available for these birds on LHI Group. Introduced to LHI in the late 19 th century.	information available for the LHI Group. Yet, according to LHI Board (2016a) and Lord Howe Island Museum (2017) these birds are proficient island colonisers with good reproductive output.	and spiders, as well as opportunistically on dead fish, seeds and fruit. Feeding occurs morning and evening along water's edge on outgoing tide (Miskelly 2013).	birds consumed bait in the non-toxic baiting trial (LHI Board 2007).	after baiting (Priddel, Carlile et al. 2000). A large number of mortalities have been seen in same genus weka (<i>Gallirallus australias</i>) in New Zealand baiting (LHI Board 2016a).	<i>likely</i> due to diet, evidence of bait pellet uptake and mortalities linked to baiting.
Common blackbird (<i>Turdus merula</i>) LHI Act and NP&W Act (P)	No population information is available for this species or information on when the birds are present on the LHI Group.	There was no particular breeding information available for the LHI Group.	Diet includes earthworms, insects, spiders, snails, and slugs (Miskelly 2013). Snails and slugs have been observed to feed on bait pellets (LHI Board 2007).	Evidence of bait consumption in the non-toxic bait trial (LHI Board 2007).	No information available.	Primary brodifacoum exposure is <i>likely</i> due to evidence of bait pellet uptake.
LHI silvereye (<i>Zosterops lateralis tephroleura</i>) TSC Act (V)	According to a record from 1974 there are between 100 and 1,000 pairs within the LHI Group.	Breeding season is from spring to summer.	This species has a diet of fruit, seeds and insects.	LHI silvereye were negative for pyranine fluorescence during the LHI non-toxic baiting trail (LHI Board 2007).	Previous studies shown silvereye may be exposed to bait because carcasses were found during and after baiting in New Zealand (Eason and Spurr 1995).	It is <i>likely</i> that this species will be subject to primary brodifacoum exposure. While the species showed no bait uptake in the LHI non-toxic baiting trial, there is a link between silvereye deaths and brodifacoum baiting elsewhere.
Mallard (<i>Anas platyrhynchos</i>)	No population information	No specific breeding information	Diet of gastropods, invertebrates,	Evidence of bait consumption	Large number of mortalities	Significant primary brodifacoum

Species and Status	Presence on LHI Group during the LHI REP		Diet and feeding ^a	Bait pellet uptake observed	Reported mortalities in previous baiting programs	Likelihood of significant brodifacoum exposure
	Population and presence on LHI Group ^a	Breeding ^a				
LHI Act and NP&W Act (P)	is available for this species on the LHI Group.	available for the LHI Group.	crustaceans, worms, seeds and plant matter (main part of the diet) (Swanson, Meyer et al. 1985).	(LHI Board 2007).	have been observed in baiting programs (Table 7)	exposure is likely due to diet. Supported by evidence of bait uptake and the large number of mortalities in baiting programs.
Pacific black duck (<i>Anas superciliosa</i>) LHI Act and NP&W Act (P)	Recorded on LHI as stragglers since 1852. There is reportedly currently <20 on LHI but this population information may be up to 10 years old and not reflect current population.	There is a record of ducks breeding on LHI in 1941 but no other specific information on when breeding occurs on the LHI Group (Lord Howe Island Museum 2017).	The diet of this species consists of plant material (90% of diet; seeds and soft tips of most aquatic plant species), insect larvae, freshwater snails and worms (Miskelly 2013).	Evidence of bait consumption for other species of ducks (LHI Board 2007).	Mortalities of various duck species observed during baiting programs (Table A4, Appendix 4 and Table A7, Appendix 6).	Significant primary brodifacoum exposure is likely during the LHI REP due to diet, observed bait uptake for ducks and previous mortalities linked to baiting.
Purple swamphen (<i>Porphyrio porphyrio</i>) EPBC Act (Ma)	First recorded on LHI in the 1880s. However, no population information is available for this species. According to the Lord Howe Island Museum (2017) this species is present mainly in the settlement areas of LHI (swamps, orchards and gardens).	No specific information on when breeding occurs on the LHI Group.	The birds diet consists of soft shoots of reeds and rushes and small animals, such as frogs and snails, as well as eggs and sometimes ducklings (Birdlife Australia 2017).	No evidence of bait uptake during the non-toxic baiting trial (LHI Board 2007).	Large losses of similar bird pukeko (<i>Porphyrio melanotus</i>) in New Zealand baiting (Table A8).	Significant primary brodifacoum exposure is likely due to diet, i.e., direct uptake of bait pellets. Supported by evidence of mortalities linked to baiting.

Secondary Exposure

Species and Status	Presence on LHI Group during the LHI REP		Diet and feeding ^a	Bait pellet uptake observed	Reported mortalities in previous baiting programs	Likelihood of significant brodifacoum exposure
	Population and presence on LHI Group ^a	Breeding ^a				
Australian kestrel (<i>Falco cenchroides</i>) EPBC Act (Ma)	No population information was available, but the birds first recorded on LHI in 1940.	There was no particular breeding information available for the LHI Group.	High food chain predator	No information available.	No information available.	Significant secondary brodifacoum exposure is likely due to diet as a high food chain predator that preys on mice.
LHI currawong (<i>Strepera graculina crissalis</i>) EPBC and TSC Acts (V)	LHI currawong flocks in developed areas of LHI Group in autumn and winter but can be present all over LHI and nearby islets all year round. The population of LHI currawong in the LHI Group is reportedly 215 ± 11 birds and that there has been no empirical evidence of an historical decline in this population. This information is from 2009.	These birds breed (October to December) in the forested hills of LHI (highest nest densities are on slopes of Mount Gower and Erskine Valley with breeding sites close to water and gullies). Breeding success is relatively low, i.e., <42% of nests produce fledglings.	The diet of this species consists of fruits, seeds, snails, insects, the chicks of other bird species (including woodhen), and rodents.	There is no evidence of primary uptake.	Pied currawong death observed after Cabbage Tree Island baiting (Priddel, Carlile et al. 2000).	Significant secondary brodifacoum exposure is likely , especially if the birds eat rats or mice. ^b
Sacred kingfisher (<i>Todiramphus sanctus</i>) EPBC Act (Ma)	No population information is available for this species, which may have	No specific information on when breeding occurs on the LHI Group.	The diet of this species consists mainly of fish and invertebrates, as well as reports that kingfishers	No information available.	No information available.	Significant secondary brodifacoum exposure through diet (mice) is likely .

Species and Status	Presence on LHI Group during the LHI REP		Diet and feeding ^a	Bait pellet uptake observed	Reported mortalities in previous baiting programs	Likelihood of significant brodifacoum exposure
	Population and presence on LHI Group ^a	Breeding ^a				
	colonised LHI in the late 19 th century.		will prey on mice.			
Southern giant petrel (<i>Macronectes giganteus</i>) EPBC Act (E, Mi, Ma)	4 records of this species on LHI prior to 1965 and 3 of which were beach-cast. Sighting around Balls Pyramid between 1978 and 1980. The bird observation data is old (i.e., >10 years) and hence may not reflect the current situation.	No specific information on when breeding occurs on the LHI Group.	Opportunist scavenger and predator that feeds on birds and mammal carcasses. Also catches and kills live birds and cephalopods. May also consume crustaceans, kelp, fish, jellyfish, and rabbits (Department of the Environment and Energy 2017).	No information available.	Some deaths of southern giant petrel have been observed in aerial baiting programs (Table A7, Appendix 6), including Macquarie Island baiting (Table A4, Appendix 4).	Significant secondary brodifacoum exposure through diet if present during the LHI REP is likely . Supported by evidence of mortalities linked to baiting.
White-faced heron (<i>Ardea novaehollandiae</i>) LHI Act and NP&W Act (P)	No population information is available for this species and it is not clear if the species will be present during the LHI REP.	No specific information on when breeding occurs on the LHI Group.	This birds feeds on fish, insects and amphibians (Birdlife Australia 2017). This species may also eat mice (LHI Board 2016a).	No information available.	No information available.	Significant secondary brodifacoum exposure through diet is likely , as they may eat mice.
Primary and Secondary Exposure						
LHI woodhen (<i>Gallirallus sylvestris</i>) TSC Act (E) and EPBC Act (V)	The LHI woodhen population estimated to be between 220 and 230 individuals and 71 to 74 breeding pairs in 1997, i.e., 20 years ago. While the population of woodhen is purported	Breeding times can vary throughout the year and pairs can have multiple broods during the breeding season. Breeding success is better in the settled areas of the LHI than the southern	These birds eat mainly worms (80% of diet), insect larvae, gastropods and crustaceans, as well as small amounts of plant material. They may also eat eggs, seabird chicks and rodents (LHI Board 2016a, Department of the Environment	Woodhen were seen to ingest baits during the non-toxic baiting trail (LHI Board 2007).	A large number of mortalities have been seen in a similar bird (same genus) weka (<i>Gallirallus australias</i>) in New Zealand baiting (LHI Board 2016a). In	Significant primary or secondary brodifacoum exposure due to diet is likely . ^b

Species and Status	Presence on LHI Group during the LHI REP		Diet and feeding ^a	Bait pellet uptake observed	Reported mortalities in previous baiting programs	Likelihood of significant brodifacoum exposure
	Population and presence on LHI Group ^a	Breeding ^a				
	to remain relatively static over the last ten years there is no information to support this (Department of Environment and Climate Change 2007, LHI Board 2016a)	mountains with approximately 60% of juveniles die in their first year.	and Energy 2017).		New Zealand, weka are considered birds most at risk of both primary and secondary poisoning (Eason and Spurr 1995).	

The emerald dove (*Chalcophaps indica*) and the swift parrot (*Lathamus discolor*) that feed on seeds. But, the emerald dove has been found to be selective to bait pellets uptake, i.e., will not eat the green pellets proposed for use in the LHI REP (LHI Board, 2007). Therefore, it was decided that the likelihood of significant brodifacoum exposure for the emerald dove is possible. Because there was no information about the bait uptake of the swift parrot and no reports of mortalities linked to brodifacoum baiting likelihood of significant brodifacoum exposure for the swift parrot has also been categorised as possible.

Species and status	Population and presence on LHI Group ^a	Diet and feeding ^a
Possible		
Emerald dove (<i>Chalcophaps indica</i>) LHI Act and NP&W Act (P)	There was no information on the population and movements of this species on LHI Group.	Eats seeds and plants but there was evidence of bait uptake through prior exposure in the non-toxic bait trial (Board 2007). This bird species has been shown to be selective of colour in bait pellets, i.e., will not eat the green pellets proposed for use in the LHI REP (LHI 2007).
Swift parrot (<i>Lathamus discolor</i>) EPBC Act (E, Ma) and TSC Act (E)	One record only and that is of a dead bird found in 1968.	Diet of mainly nectar from flowering eucalypts, as well as some psyllids and lerps, seeds and flowers (Birdlife Australia 2017).

Risk Assessment

Species and Status	Exposure likelihood	Consequences or impact	Risk	Northern NSW Assessment Section Review
Primary Exposure				
Buff-banded rail (<i>Gallirallus philippensis</i>)	Likely	Major	Very high	

Species and Status	Exposure likelihood	Consequences or impact	Risk	Northern NSW Assessment Section Review
LHI Act and NP&W Act (P)				
Common blackbird (<i>Turdus merula</i>) LHI Act and NP&W Act (P)	Likely	Major	Very high	
LHI silvereye (<i>Zosterops lateralis tephroleura</i>) TSC Act (V)	Likely	Major	Very high	
Mallard (<i>Anas platyrhynchos</i>) LHI Act and NP&W Act (P)	Likely	Major	Very high	
Pacific black duck (<i>Anas superciliosa</i>) LHI Act and NP&W Act (P)	Likely	Major	Very high	
Purple swamphen (<i>Porphyrio porphyrio</i>) EPBC Act (Ma)	Likely	Major	Very high	
Secondary Exposure				
Australian kestrel (<i>Falco cenchroides</i>) EPBC Act (Ma)	Likely	Major	Very high	
LHI currawong (<i>Strepera graculina crissalis</i>) EPBC and TSC Acts (V)	Likely for species not captured.	LHI Board has proposed to capture and hold 50 to 60% of the LHI currawong population. Therefore, there may be measureable effects on individuals and minor harm to the local population. Therefore, consequences or impacts will be minor.	Medium	
Sacred kingfisher (<i>Todiramphus sanctus</i>) EPBC Act (Ma)	Likely	Major	Very high	
Southern giant petrel (<i>Macronectes giganteus</i>) EPBC Act (E, Mi, Ma)	Likely	Major	Very high	
White-faced heron (<i>Ardea novaehollandiae</i>) LHI Act and NP&W Act (P)	Likely	Major	Very high	
Primary and Secondary Exposure				

Species and Status	Exposure likelihood	Consequences or impact	Risk	Northern NSW Assessment Section Review
LHI woodhen (<i>Gallirallus sylvestris</i>) TSC Act (E) and EPBC Act (V)	Primary or secondary brodifacoum exposure due to diet is likely for species not captured.	The LHI Board has proposed mitigation measures for the woodhen by capturing and holding 80 to 85% of the population. Therefore, the consequences for this species will be insignificant.	Low	

Species and status	Consequence or impact	Exposure likelihood	Risk	Northern NSW Assessment Section Review
High risk				
Emerald dove (<i>Chalcophaps indica</i>); LHI Act and NP&W Act (P)	Major	Possible primary exposure	High risk	
Swift parrot (<i>Lathamus discolor</i>); EPBC Act (E, Ma) and TSC Act (E)				

Species	Exposure likelihood	Consequence or impact	Risk	Northern NSW Assessment Section Review
Freshwater				
Fish: long-finned eel, short-finned eel and common jollytail	Primary exposure to brodifacoum possible. Secondary exposure of freshwater vertebrate species to brodifacoum is unknown.	Major	<i>Risk will be at worst be high for primary exposure and unknown (high) from secondary exposure.</i>	

s22 : | Chemical Assessor

Chemicals and Biotechnology Assessments Section | Chemicals and Waste Branch
 Environment Standards Division | Department of the Environment
 GPO Box 787 Canberra ACT Australia 2601 | www.environment.gov.au
 P: +s22 | F: s22 | E: s22

Site visit for EPBC 2016/7703 - EPBC: 2016/7703 Lord Howe Island Rodent Eradication Project, NSW

Prepared by:

Departmental Officers Attending:

s22 [redacted] – Assistant Director, Northern NSW Assessments, ESD

s22 [redacted] – Assessment Officer, Northern NSW Assessments, ESD

Proponent Representatives Attending (variously):

- s47F [redacted]
- s47F [redacted]
- s47F [redacted]
- s47F [redacted]

Local Residents Attending (variously):

- s47F [redacted]
- [redacted]
- [redacted]
- [redacted]
- [redacted]
- [redacted]
- [redacted]
- [redacted]
- [redacted]

Commented s22]: Red = Can't remember is they were involved in rodent as well as wind farm.

Executive Summary

Departmental officers initiated a visit to Lord Howe Island to inspect a number of features and localities across the island potentially impacted by two projects under assessment: EPBC 2016/7790 Lord Howe Island Renewable Energy Project - Stage 2 Wind Turbines, at that time with a pending referral decision; and EPBC 2016/7703 Lord Howe Island Rodent Eradication Project, NSW at that time under active assessment (Stage 3). This report focuses on activities attributable to the rodent eradication component of the site visit. Specific objectives were: to gain a greater understanding of the project, view a number of sites in its context to understand potential impacts to world heritage values, national heritage values, threatened species and ecological communities and migratory species; meet with the proponent; and meet with supporters and objectors of the project to test views identified in public submissions received in response to the referral, the preliminary environment report and correspondence that had been received by the Minister. **Outcome? Better conditions**

s22

TRIP LOCATION OVERVIEW

Objectives and Actions Taken

Departmental officers visited Lord Howe Island between 15 and 19 March 2017. Time of attendance was delayed by some three weeks given difficulties in aligning key proponent personnel on the island and in securing accommodation. March has anecdotally low levels of migratory bird activity with the exception of Providence petrels (*Pterodroma solandri*) which are returning to the island and 'prospecting' (nest preparation and mate reunion) and Flesh footed shearwaters (*Ardenna carneipes*). An overall itinerary of the visit is provided at [Attachment A](#).

Wednesday 15 March 2017

Lord Howe Island Phasmid viewing

In the afternoon of Wednesday 15 March 2017, Departmental officers were shown the captive breeding pens of the Lord Howe Island phasmid (*Dryococelus australis*) - Critically Endangered ([Attachment B, Figure 1](#)). Currently the phasmid is only found on balls pyramid and is thought to be extinct on the main island and islets. If the eradication programme is successful this species will be reintroduced to the main island.

Briefly discussed with s47F at this time were

- Impact of rat predication – Rats had gnawed through the floor of the captive breeding pen and eaten most of the specimens.

Thursday 16 March 2017

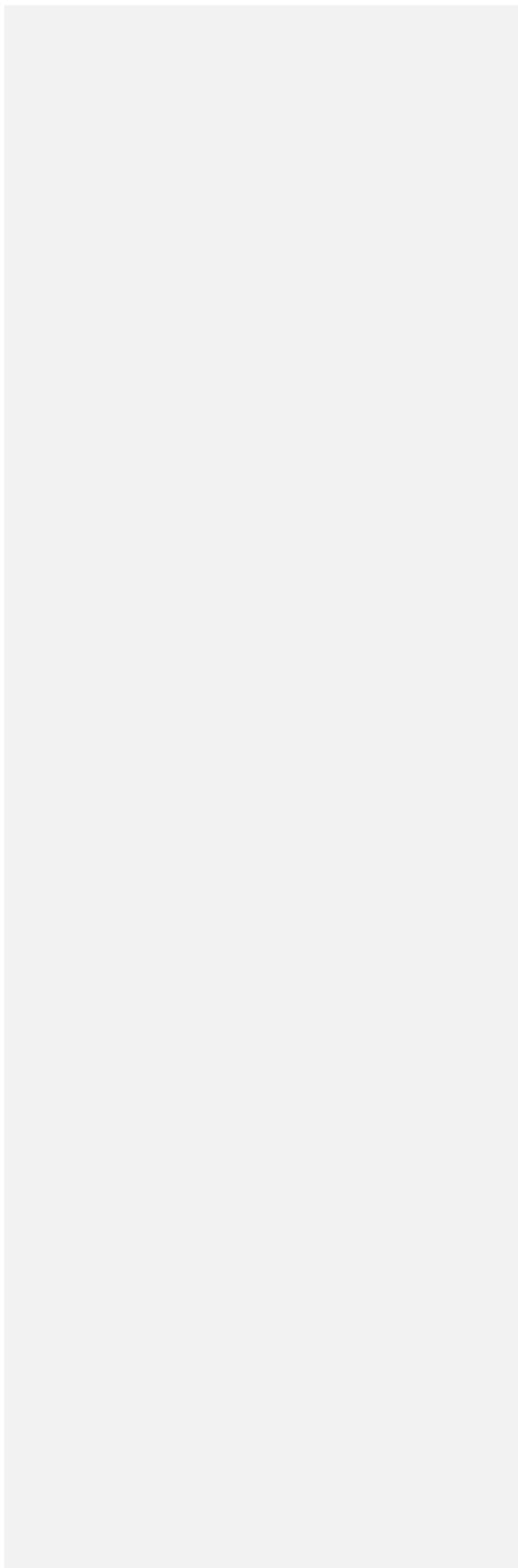
Mt Gower

On the morning of the 16 of March Officers undertook



ok a hike to the summit of Mt Gower

[Redacted text block containing multiple lines of greyed-out text with yellow highlights and 's22' markers]



s22

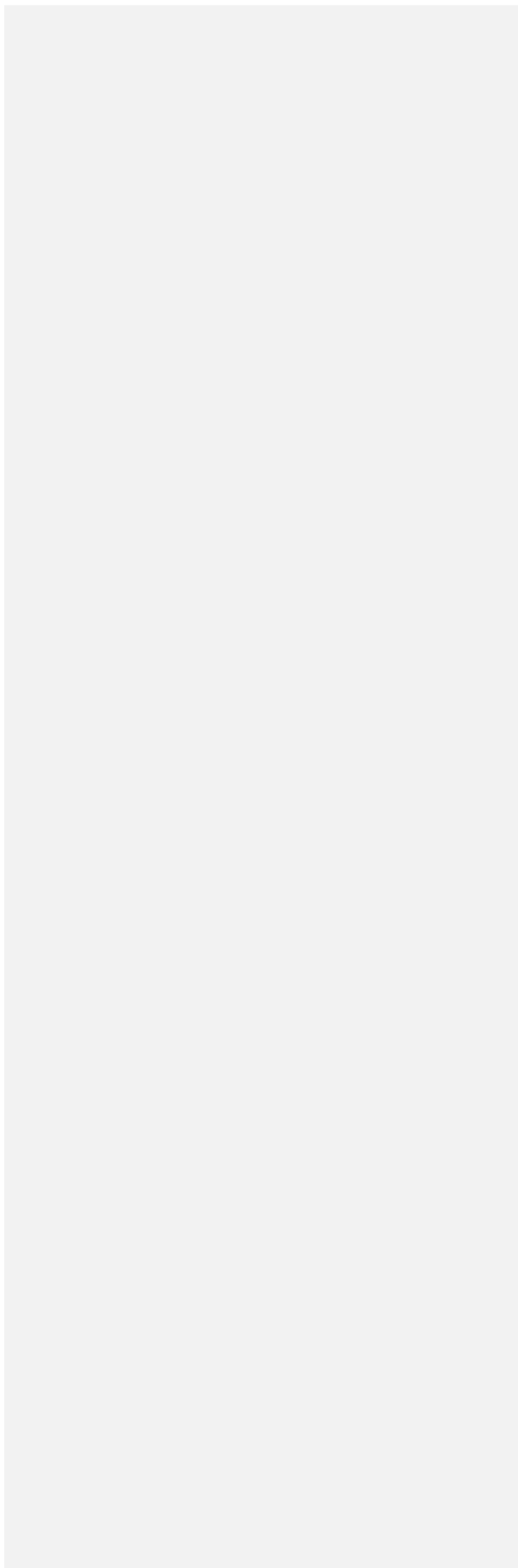
[Redacted text block]

s22

[Redacted text block]

s22

[Redacted text block]



s22

[Redacted text block]

s22

[Redacted text block]

[Redacted text block]

[Redacted text block]

Friday 17 March 2017

Island circum-navigation: s47F [Redacted], s47F [Redacted] (7am – 10 am)

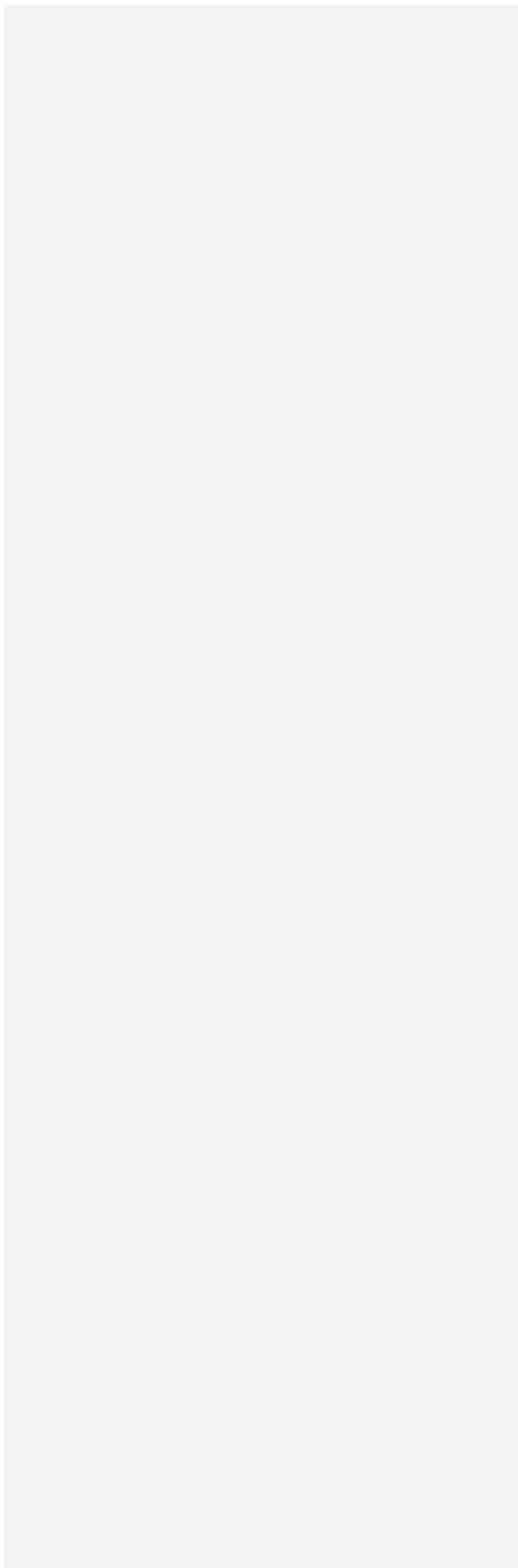
s22

[Redacted text block]

s22

s22

[Redacted text block]



s22

s22

Saturday 18 March 2017

Northern island walk – Malabar track and Kim’s lookout (7am – 8.30am)

Rat Ramble -

Get s22 to write this bit as I was not there.

Photos can be included

s22 undertook

Sunday 19 March 2017

Visit debrief – s47F - Anchorage restaurant (11.30am -12.30pm)

Met with s47F to discuss the site visit (both projects). Regarding EPBC: 2016/7703, a recap of where the project was in the assessment process and the timeframes that are stipulated within the Act.

s22

Island departure – 3.00pm

Key Findings

s22

s22

Prepared by:

s22

Assistant Director
Northern NSW Assessments Section
Assessments (NSW, ACT) and Fuel Branch
12 May 2017

Approved by:

.....
Kim Farrant
Assistant Secretary
Assessments (NSW, ACT) and Fuel Branch

May 2017

Attachment A:
Timetable for visit to Lord Howe Island re: EPBC: 2016/7703 Lord Howe Island Rodent Eradication Project, NSW §22

Day 1 - Wednesday 15th March

1.40pm	Arrival Lord Howe Island - §47F to meet us at the airport.
§22 	
	
	

Day 2 - Thursday 16th March

6am - 2pm	Walk Mt Gower to gauge the most difficult terrain / mountainous area that will have Brodifacoum pellets broadcast over (EPBC: 2016/7703).
§22 	
 	
 	
 	

Day 3 - Friday 17th March

7am – 10am	Circumnavigation of the Island to view cliff lines that are to have Brodifacoum broadcast over and view and commonwealth marine area that may be impacted by runoff (EPBC: 2016/7703).
10.30am - 1.30pm	Look at different regions and terrain of the island including forested areas, marine areas and the township that will be impacted due to the eradication programme. Look at the water supply of the island and mitigation measures that are to be taken when Brodifacoum is spread. View aviary in which the Lord Howe Island Currawong and Woodhen are proposed to be housed over the course of the project (EPBC: 2016/7703).
2:00-2:45 Location: LHI Museum	Meet - §47F . Opponents of the REP (EPBC: 2016/7703)
3:00-4:00 Location: LHI Museum	Meet - §47F - Advocates of the project (EPBC: 2016/7703)
4:00-5:30 Location: LHI Museum	Meet with the community working group for the rodent eradication project (EPBC: 2016/7703). Subsequent to this meeting hold one on one discussions with both advocates and opponents of the project.
5:45-6:30 Location: LHI Museum	Meet with §47F - Opponents of the REP

Day 4 - Saturday 18th March

8am – 9am	Possible Breakfast with §47F .
-----------	--

Day 5 – Sunday 19th March

2.45 pm	Leave Lord Howe Island
---------	------------------------

Attachment B: Site visit photographs

Figure 1:



Figure 2

Figure 3

Figure 4:

Figure 5:

Figure 6:

Figure 7:

Figure 8:

Figure 9:

Figure 10:

Figure 11: