

THREAT ABATEMENT PLAN

To reduce the impacts of exotic rodents on biodiversity on Australian offshore islands of less than 100 000 hectares

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1. Summary

Rationale for a threat abatement plan

Human dispersal and colonisation over the last few millennia have spread four species of Eurasian rodents to many of the world's islands. These rodents are: ship, or black, rats (*Rattus rattus*); Norway, or brown, rats (*R. norvegicus*); Pacific rats (*R. exulans*); and house mice (*Mus musculus*). Together with other exotic pests, they are a major threat to native biodiversity on islands. Australian islands have been no exception, especially since European colonisation. Exotic rodents, particularly ship rats and perhaps mice, have been a key (and often the critical) cause of extinction, extirpation (local population loss) and decline of many native species, adverse changes to island ecosystems, as well as economic damage to island peoples' livelihoods and potentially to their health. The presence of rodents on islands also precludes many positive options to restore island values, and their presence on mainland Australia and elsewhere presents an ongoing risk to biodiversity. For Australian islands not currently invaded there is also a high risk.

Managing the threat from exotic rodents to island biodiversity therefore requires *in situ* management, by eradication or sustained control on invaded islands, reduction of the risk that rodent-free islands will be invaded, and/or timely reaction to invasions when quarantine is breached.

In 2006 the Australian Government listed exotic rodents on islands as a key threatening process under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and initiated the development of a threat abatement plan (hereafter the plan) for rats and mice on islands less than 100 000 ha in area. This plan and its background document (Commonwealth of Australia 2008) provide a national framework to guide and coordinate Australia's management of exotic rodents on islands to remove, mitigate and prevent their impacts on native species and ecological communities.

Objectives of the plan

The plan contains three objectives, and a series of actions that will be required to achieve them. Knowledge gaps and other constraints and uncertainties and the need for stakeholder commitment and capacity building are identified in each strategic objective. The objectives are:

- Eradicate exotic rodents from high-priority islands
- Mitigate the impacts of exotic rodents on biodiversity values on high-priority islands where they cannot be eradicated, and
- Prevent the invasion of islands currently free of exotic rodents.

Actions under the Threat Abatement Plan

The threat to biodiversity from exotic rodents on islands is clear but manageable. Generic actions and those required to achieve the objectives are noted in this plan. Each action is prioritised and presented with an assessment of the current 'state of play' and with ways to measure progress.

Outcomes of the actions

As the plan objectives are achieved the condition and trend of native species and communities on islands currently with exotic rodents will improve, and those on islands without rodents will not decline due to rodent impacts. Removal of exotic rodents will also open options for both natural recolonisation and active restoration of island ecosystems. Economic damage to residents' resources, the nuisance and unwanted effects, and potential risks to health caused by exotic rodents will be removed or abated.

In addition to these main outcomes, science-based and traditional knowledge (both indigenous and that of current island residents) will be used, where available, to inform feasibility and operational planning. This knowledge will be improved as the results of management are monitored, e.g. by adaptive management or 'learn-by-doing' approaches, leading to better-informed decisions and actions in the future. Implementation of the plan will also increase community awareness and engagement, and coordination across all tiers of government. This will result in Australians being better informed about the threat from exotic rodents and better motivated to continue the implementation.

2. Background

2.1 Threat abatement plans

The Australian Government develops threat abatement plans and facilitates their implementation under the EPBC Act. The Department of the Environment, Water, Heritage and the Arts promotes partnerships between government agencies and other stakeholders to implement actions identified in the plans.

A threat abatement plan for exotic rodents on islands can be quite focused because the sites for action are clearly identified, the control tools are available, the impacts of the rodents are mostly on biodiversity rather than on production values, and in many cases the pest can be eradicated. Nevertheless, each island has unique circumstances, not the least being the presence of people on many candidate islands. Therefore, like other plans, this plan also advocates the social and economic aspects of management.

Australia has seven islands, all with exotic rodents, larger than 100 000 ha, the cut-off size for this plan. However, eradication on islands this size is currently impracticable so, although they are excluded from this plan, that should not preclude sustained control at priority sites on these larger islands if that strategy is justified by local needs.

2.2 Exotic rodents on Australian islands

The four exotic rodent species in this threat abatement plan have variously invaded over 80% of the world's major island archipelagos, and have been responsible for many of the extinctions and ecosystem changes that have occurred on these important fragments and refuges for biodiversity. Exotic rodents continue to invade islands, but since the 1980s, when techniques to eradicate them were developed in New Zealand, the rate at which they have been eradicated has exceeded the rate of invasion of new islands. To date, invasive rodents have been eradicated from 350 islands in 21 countries around the world.

Australia has over 8300 islands under 100 000 ha, of which at least 113 are now known to have one or more species of exotic rodents. House mice, ship rats and the two together are by far the most common rodents on Australian islands. They have been eradicated from 39 islands, almost all from Western Australia.

About 27% of these 113 islands are connected to or within easy swimming distance (for a ship rat) of the mainland. Thus, eradication will be difficult on this subset of islands unless backed by effective 'border' control and quarantine measures.

About 57% of the islands are entirely or substantially managed under various reserved tenures, about 34% are privately owned or leased, and about 9% are owned by indigenous people. Many islands that are important for biodiversity have permanent residents. Thus governments, private citizens and indigenous groups have generic and island-specific interests in this plan. Some islands themselves are 'iconic' and many harbour high profile native species, so wider stakeholders include groups with a conservation focus, to private companies promoting ecotourism, as well as the wider Australian public – and for some islands, the international community.

2.3 Impacts on biodiversity

The contribution of islands to Australia's biodiversity assets is out of proportion to their area. This is due to continental islands often representing less-disturbed examples of mainland ecosystems and offering refuges for species threatened on the mainland. In addition, oceanic islands have high degrees of endemism and are thus unique evolutionary units in their own right. Both types of islands are key places for breeding marine birds, turtles and seals.

Seven lines of evidence prove that exotic rodents have and continue to adversely affect native biodiversity on Australian islands, prevent some restoration options and are a potential threat to island ecosystems currently free of exotic rodents. Exotic rodents:

- eat native species and compete for food
- carry diseases that may affect native animals
- drive some species endemic to the island to extinction
- extirpate some species from particular islands
- continue to threaten native species on many islands
- change ecosystems by more complex indirect effects by causing changes in species that 'engineer' the ecosystem – such as seabirds
- act as the primary prey for other exotic predators such as feral cats or foxes, which then threaten native species.

Of the two common rodents on Australian islands, ship rats are the most obvious threat judging by their known impacts to biodiversity on both Australian and other islands. For example, five birds endemic to Lord Howe Island had survived decades with mice but became extinct after the rats arrived in 1918. The effect of mice has been more subtle as they have not had such catastrophic effects on avian species. However, recent evidence from Gough Island (a British island in the Atlantic Ocean) shows that under some circumstances mice can kill large naïve prey such as albatross chicks. Mice are efficient predators of invertebrates (particularly spiders) but their impacts on these prey species at population levels remains unknown.

Exotic rodents are also social and economic pest on islands inhabited by people. For example, the palm seed horticultural industry on Lord Howe Island would benefit by over \$5 million over 30 years if ship rats could be eradicated.

2.4 Managing the threat

The options to manage exotic rodents on Australian islands are to eradicate them, to reduce them to some lower density over all or part of the island by sustained control, or to do nothing, when the first two options are unfeasible or do not deliver adequate benefits. Unlike some threats to biodiversity in Australia, the threat from exotic rodents on islands can in large part be removed at a realistic cost to provide clear and permanent benefits.

Managing invasion pathways and new incursions is also required for the islands undergoing eradication or control programs, as well as for islands without exotic rodents. The optimal way to reduce invasion risks – by pre-border, on-ship, or post-border actions – will depend very much on the particular risks, costs and consequences for each island.

The tools to achieve eradication are well-tested elsewhere in the world and in Western Australia. The tools to achieve sustained control are available but their optimal application needs to be refined for each case. The tools to limit, detect and manage invasions include the need for new policies to encourage or enforce quarantine practices and better methods to detect and intercept invasive rodents.

Australian agencies have eradicated exotic rodents from 39 islands and are currently planning to do so from four more: Macquarie, Lord Howe, Montague and Mutton Bird islands.

3. Threat abatement

3.1 Goal

The goal of this Threat Abatement Plan is to eliminate, or reduce to an acceptable level, the current and potential impacts of exotic rodents on offshore Australian islands, in order to maximise the chances of the long-term survival in nature of affected native species and ecological communities.

Successful eradication of exotic rodents on islands will also open opportunities for the natural return of some extirpated native species such as seabirds, for active restoration programs, or for the possibility of using some islands as biodiversity arks for species threatened on the mainland.

3.2 Objectives

The plan has three objectives, each of which requires a different emphasis for supporting information, research and stakeholder involvement and thus for actions.

The objectives are:

- Eradicate exotic rodents from high-priority islands
- Mitigate the impacts of exotic rodents on biodiversity values on high-priority islands where they cannot be eradicated, and
- Prevent the invasion of islands currently free of exotic rodents.

3.3 Actions

The following actions are proposed under the plan. They are in part sequential although different jurisdictions will be at different points along the process, and so the judgement about their relative priorities may vary between jurisdictions.

The first set of actions aims to provide better information on the conservation status of islands as these are affected by exotic rodents. The next two sets of actions prescribe alternative strategies (eradication or sustained control) that can be used to manage islands with exotic rodents. The fourth set of actions prescribes how to stop the problem getting worse and how to defend islands from which exotic rodents have been eradicated. The next set of actions introduces the social and cultural needs of islanders and other stakeholders to ensure they support actions to control rodents, benefit from them, and participate in ongoing management such as quarantine and surveillance. Finally, the actions identify the priority needs for research and information.

3.3.1 Actions to set priorities and plan strategic options

This group of actions covers the preliminary information needs and actions required to establish a basis for implementing the plan. The key questions the actions aim to answer are:

- Which islands, whose rodent status is unknown, might be of concern if they were present? These islands should be surveyed and brought into the following selection process should they be discovered to have exotic rodents.

- Which islands known to have exotic rodents are candidates for the preferred option of eradication and which, by implication, would require sustained control?
- Which islands that are candidates for eradication should be treated first, and where should sustained control be started?

Therefore, two sorts of actions need to be followed to answer these questions. The first is a prioritisation system to select islands for survey where information is lacking. The Department of the Environment Water, Heritage and the Arts has contracted the collation of data on the presence of vertebrate species (including exotic rodents) on Australian islands. However, significant uncertainties remain in the databases. Rodents may be present on some islands despite surveys but not found, or found but not noted in the literature. Rodents are known to be present on some islands but the species remains unclear. Many islands have not been surveyed. Setting national or regional priorities would be improved with more complete information on the presence/absence of particular exotic rodent species; and feasibility or operational planning for any island would require information on both the exotic rodents and non-target species. The current island databases should be updated periodically, and any islands with high-priority conservation values such as threatened species or unique communities, but with uncertain rodent status, should be checked as opportunity arises.

The second action aims to identify whether eradication is feasible. Past success on similar islands and species or analyses of the island-specific rules and constraints can be used to judge this. For these islands a second prioritisation process is required. Generally, precedence should be given to those where there is a clear current threat to native species or communities and where substantial benefits to the island's biodiversity would be expected if the rodents were eradicated. This rule tends to favour remote islands because of the vulnerability of their biota and their higher levels of endemism. However, cases can be made for eradication on in-shore islands by some jurisdictions either to act as arks for mainland biota or as demonstration or capacity-building sites.

Actions	Priority	Current state of play	Performance indicators
1. Complete state/territory island feral animal databases	High	Done for 5 jurisdictions (see Background Document)	Completed for all 7 jurisdictions and results collated and published
2. Survey high-priority islands (see Background Document for options to rank islands) with no current information on exotic rodents for the presence/absence of rodents	Medium	<i>Ad hoc</i> and unreliable information	Priority conservation islands identified and surveys planned and conducted
3. Formulate and circulate best-practice rules and examples to determine whether eradication is feasible	High	Several examples using current rules (see Background Document)	Future feasibility plans show good risk analyses and provide the basis for sound judgment by decision makers
4. Identify islands where eradication	Medium	Some islands listed	Priority islands for

is feasible		for eradication	eradication identified (see Background Document for options on ranking for eradication)
5. Develop a network of Australian and overseas technical experts	Medium	Informal (see Background Document)	Operational planners in agencies access network

3.3.2 Actions to achieve eradication

This group of actions flows from state and territory commitment to progress eradication as an option to manage exotic rodents on islands. Effective baiting protocols are available and the planning and operational skills can be acquired or developed.

Governments are currently planning to eradicate exotic rodents from two large islands (Macquarie and Lord Howe), and two small islands (Mutton Bird and Montague, in NSW). Success in eradicating rodents from the large islands would lead the world and give confidence that other Australian islands could be attempted with a high likelihood of success.

An outcome of these projects will be to strengthen and widen (past the current expertise in Western Australia) the capacity of Australian agencies to plan, conduct and monitor the eradication of exotic rodents. Developing institutional capacity is important as the program of management of exotic rodents on islands is likely to exceed the working life of those staff currently involved.

The direction of the recommended action to start the planning process for islands other than the four noted above will depend on success on the two large islands (Macquarie Island and Lord Howe Island). If rodents are eradicated from these two islands then other remote, large islands with significant biodiversity values at risk (e.g. Norfolk Island, Christmas Island and the Cocos group) might be considered. If the rodents are not eradicated from Macquarie Island or Lord Howe Island, then further research to identify the causes of failure and its solution would be required before attempting other large islands. The initial priorities might switch to achieving success on smaller islands perhaps with single species of exotic rodents as the priority.

The final actions in this section are to ensure the benefits of successful eradication of exotic rodents are measured, known to stakeholders and celebrated, successes are defended against re-invasion by rodents (expanded in section 3.4.4), and removal of exotic rodents is seen as an opportunity to manage other threats present on the island. The benefits of removing rodents will be island-specific. These might extend from the re-categorisation of a listed threatened species to a more secure category, to the contingent opportunities to return extirpated species to the island.

Actions	Priority	Current state of play	Performance indicators
6. Eradicate rodents from Lord Howe, Macquarie, Montague and Mutton Bird Islands	High	All in planning phase	Completed and outcomes analysed
7. Enhance skills to plan and conduct eradication operations in Australia	High	Current planning relies heavily on overseas advice	State agencies confident in their staff and capability, or know when to seek outside help
8. Eradicate exotic rodents on other islands where high-priority conservation benefits will accrue	High		States that have not attempted eradication begin to do so
9. Measure benefits of eradication	High	Done for some	Improvement in the status of affected species; public relations opportunities
10. Eradicate or control other pests on islands from which rodents are eradicated	High	Done for some	Other pests (see Table 3 in the Background Document) are managed

3.3.3 Actions to achieve sustained control

Sustained control is second best after eradication, but is required to protect biodiversity values on islands where eradication is not feasible or as a holding strategy to protect critically threatened species until an eradication campaign can be mounted. The time frame is either 'ongoing' or 'until eradication is proposed and achieved' for each island under this objective.

The key actions required are first to identify what control tools are available for use on Australian islands and to develop best practice for their application for sustained control. Second, there is a need to enhance the capacity of island residents and agencies to deliver sustained control and to monitor outcomes so that actions can be adapted as required.

Actions	Priority	Current state of play	Performance indicators
11. Review rodent control tools registered for use in Australia	High	No collation readily available	The best tools and application methods are identified and used
12. Promote trials to develop and test best-practice sequential use of rodent control tools on islands	High	Not tested	Efficacy of sustained control maintained at no increase in non-target or environmental cost
13. Train island residents or rangers as primary deliverers of sustained control on their islands	High	Done on some islands (Norfolk, Lord Howe)	Monitoring of control effort versus damage mitigation demonstrates efficacy

3.3.4 Actions to prevent invasion or reinvasion

There is a need to apply appropriate management to reduce the risks of invasion or reinvasion of islands by exotic rodents and to detect and deal with any failures of this management. The problem is that in the absence of data on these risks, costs and consequences it is unclear how to intervene in an optimal way.

The actions in this objective aim to develop appropriate procedures that can be applied and monitored in ways to clarify best-practice border management and responses to incursions on islands with different risk and consequence profiles.

Actions	Priority	Current state of play	Performance indicators
14. Develop generic contingency plans for reaction to any new rodent invasions	High	Overseas models	Contingency plans in place
15. Apply quarantine systems on rat-free islands and where eradication is achieved	High	Done for some (and see below)	Reinvasion rates low and managed
16. Develop island-specific contingency capabilities for islands at high risk of invasion	High	Some prepared for WA islands, Lord Howe, Christmas Islands	Invasion risks reduced
17. Reduce risk of rodents gaining access to key vessels at key ports	Medium	General port and ship quarantine	Key pathways identified and risks reduced
18. Identify and reduce the frequency of rodent infestation on key Australian vessels	Medium	No data available	Prevalence of infestation on key Australian vessels visiting priority islands decreased
19. Determine if there are data available on rodent species present on foreign boats and the risk that these will establish on Australian islands	Medium	General data for foreign vessels from AQIS	Analysis of risks completed
20. Develop and test on-island prophylactic strategies (e.g. permanent bait stations at high-risk sites) and reactive strategies (e.g. surveillance and prompt control after any detections of rodents) to detect and deal with incursions	High	Overseas trials	Incursions detected and intercepted
21. Develop fast response capabilities to react to shipwrecks on priority islands	Medium	Overseas models	Responsibilities in place and capability available
22. Actively involve island residents and ship owners in the management of incursion risks	High	Being developed, e.g. in oil industry in WA	Response time and capability enhanced

3.3.5 Actions to achieve outreach and public education

These actions aim to ensure the plan’s actions and outcomes are understood and actively supported by island residents, traditional owners and other interested parties. This support is important during feasibility planning for eradication to address potential concerns about the risks involved with control methods such as aerial poisoning, which by its nature is conducted by agencies or contractors. However, it is even more important to involve island residents and other parties in the ongoing management of reinvasion risks, quarantine and sustained control, which by its nature requires the active participation of the wider public.

Actions	Priority	Current state of play	Performance indicators
23. Promote stakeholder input and involvement as the Threat Abatement Plan is implemented	High	Currently for few non-government agencies	Plan widely accepted as an action resource
24. Actively consult with traditional owners of islands	High	Where it is done, it is not specifically related to the plan	Traditional owners actively involved and funded
25. Promote the conservation benefits of successful eradications to the wider Australian public	Medium		Reports in popular press
26. Identify boat owners who visit key islands, and develop an education package to ensure their vessels are free of rodents	Medium		Owners identified and publicity material accepted and acted upon

3.4 Research and information needs

Research on the management of exotic rodents on islands is being conducted in many countries and Australian researchers and managers need to access these results. However, within Australia three key information gaps are identified:

- The possibility that the presence of ship rats reduces the chance to eradicate mice needs to be tested and the causes identified. This is not just an Australian problem so researchers need to liaise with overseas colleagues to develop dual-species or one-at-a-time strategies for managing mice in the presence of ship rats.
- Best-practice use of toxic baits (and other control methods) and adequate monitoring protocols for sustained control options need to be formulated and tested.
- Information on the risks of invasion by exotic rodents on islands of different types needs to be gathered to develop a risk profile for key islands. Best-practice surveillance and intervention (by prophylactic measures such as permanent bait stations around wharfs, or reactive measures such as surveillance and prompt responses to detections) need to be developed, applied where appropriate, and tested over the long term.

Actions	Priority	Current state of play	Performance indicators
27. Determine why mice appear to be more difficult to eradicate in the presence of rats	Very high	Critical to know for current plans on Macquarie and Lord Howe. Some research begun in New Zealand	Hypotheses formulated, research plan developed, and funding committed
28. Develop best-practice guidelines for sustained control of rodents on islands	High	None	Island managers aware of and use best practice
29. Develop and test risk-based methods to detect and manage incursions by rodents	High	Limited research in New Zealand. New analytical tools are available but require application to rodents	Methods tested and used by managers

4. Implementation

4.1 Implementing the plan

The Department of the Environment, Water, Heritage and the Arts will work with other Australian Government departments, appropriate state/territory government representatives, and other individuals or groups with expertise, to facilitate the implementation of this plan. The Department will support a committee to oversee implementation of the plan.

Many islands with rodents, including some potentially high priority ones such as Lord Howe, Norfolk and Christmas Islands, are also inhabited by people. Involving these primary stakeholders is essential across all objectives, but for the eradication objective the particular need is at the planning level of decision making. The participation and support of island residents, where present, is a key factor in any eradication feasibility plan and their approval and support is more readily given if they are involved throughout the planning phases. The level of residents' involvement in the actual eradication operation (rather than the planning) depends on how the control is done. For example, large-scale aerial baiting requires technical skills beyond those available to island residents, and often beyond those within government agencies. Elsewhere in the world these skills are usually contracted to experts.

In contrast, ongoing actions under the sustained control and quarantine objectives will require active involvement of island residents or permanent ranger staff of governments in both planning and delivery of the control.

Indigenous people have an interest in many islands and own and live on many. Thus they are key stakeholders both during planning and as actions are developed on each island.

4.2 Duration and cost

This plan provides a framework that will guide stakeholders in determining and undertaking targeted priority actions. The level of investment in many of the actions will be determined by the level of resources that stakeholders commit to management of the problems caused by exotic rodents on islands, and therefore the cost of implementing the plan cannot be

quantified at this time. There may be budgetary or other constraints on achieving the objectives set out in this plan, and as knowledge changes the actions proposed in the plan may be modified over the life of the plan.

The plan has both finite (eradication of exotic rodents) and ongoing (sustained control and quarantine) objectives. The costs for eradication can be estimated for each island where this strategy is possible and then funds allocated as different islands are proposed, with deadlines identified by jurisdictions according to their respective capacities and priorities. Annual costs for the eradication actions will vary depending on the size and location of islands from millions of dollars for large remote islands to a few thousands of dollars on small accessible islands – and the budgets of funding agencies will need flexibility to meet such circumstances.

Costs for sustained control and ongoing routine quarantine would need to be maintained within base-line budgets, although perhaps at a declining level as eradications succeed and efficiencies improve.

Tasmania and New South Wales have committed to two large eradication projects (Macquarie and Lord Howe Islands respectively) and other jurisdictions might begin or recommence by selecting smaller islands where benefits would be clear and on which to develop planning and operational expertise. This proportion of the costs should fall as success removes islands from the list.

Traditionally, most funding for island eradications has come directly from relevant government agencies. However, increasingly around the world funding is being made available for one-off projects, such as eradication, from non-government and private donors and from industries paying to mitigate adverse effects of their actions. Eradication of rats to increase nesting success of seabirds has been funded from levies on commercial fisheries responsible for deaths of the adult birds, and industrial users of islands have offered to remit some of the conservation loss they cause by funding conservation projects.

4.3 Evaluating progress

The number of islands where exotic rodents are eradicated or effectively controlled and the trend in islands invaded will form short- and long-term proximal measures of the success of the plan. However, the real benefit of the plan will be measured by changes in the biodiversity condition of the islands, including improved conservation status for key island endemic species.

5. References

Commonwealth of Australia (2008) Background Document for the threat abatement plan to reduce the impacts of exotic rodents on biodiversity on Australian offshore islands of less than 100 000 ha. Department of the Environment, Water, Heritage and the Arts, Canberra.

Garnett, S.T. and Crowley, G.M. (2000) The action plan for Australian birds. Environment Australia, Canberra.

Appendix 1 Threatened species affected by exotic rodents on islands

The table includes Australian native species listed as threatened under the EPBC Act (bold) or in state/territory legislation or noted in *The Action Plan for Australian Birds* (Garnett and Crowley 2000). All the species listed are found only on islands or (in the case of seabirds) rely on islands for nesting, and all have exotic rodents as a threat. Those where exotic rodents are diagnosed as the main threat are marked with an asterisk. The implication is that all species on this list would benefit from the removal of rodents. For some this would essentially remove the threat, while for others further actions would be required to ensure the status of the species was improved.

Species	Island	Status
Woodhen (<i>Gallirallus sylvestris</i>)	Lord Howe	Vulnerable
Currawong (<i>Strepera gracilina crissalis</i>)	Lord Howe	Vulnerable
Kermadec petrel (<i>Pterodroma n. neglecta</i>)*	Lord Howe	Vulnerable
White-headed storm petrel (<i>Fregetta g. grallaria</i>)*	Lord Howe	Vulnerable
Gecko (<i>Christinus guentheri</i>)*	Lord Howe	Vulnerable
Skink (<i>Oligosoma lichiniger</i>)*	Lord Howe	Vulnerable
Land snail (<i>Placostylus bivaricosus</i>)*	Lord Howe	Endangered
Phasmid (<i>Dryococelus australis</i>)*	Lord Howe	Critically endangered
Cockroach (<i>Panesthia lata</i>)*	Lord Howe	Endangered
Green parrot (<i>Cyanoramphus novaezelandiae cookii</i>)*	Norfolk	Endangered
Golden whistler (<i>Pachycephala pectoralis xanthoprocta</i>)*	Norfolk	Vulnerable
Scarlet robin (<i>Petroica m. multicolor</i>)*	Norfolk	Vulnerable
Boobook (<i>Ninox novaeselandiae undulata</i>)	Norfolk	Endangered
Buff-banded rail (<i>Gallirallus philippensis andrewsi</i>)*	North Keeling	Endangered
Bat (<i>Pipistrellus murrayi</i>)	Christmas	Critically endangered
Goshawk (<i>Accipiter fasciatus natalis</i>)	Christmas	Endangered
Christmas thrush (<i>Turdus poliocephalus erythropleurus</i>)*	Christmas	Endangered
Shrew (<i>Crocidura attenuate trichura</i>)*	Christmas	Endangered
Gecko (<i>Lepidodactylus listeri</i>)*	Christmas	Vulnerable
Blind snake (<i>Typhlops exocoeti</i>)	Christmas	Vulnerable
Frigate bird (<i>Fregata andrewsi</i>)	Christmas	Vulnerable
Hawk owl (<i>Ninox natalis</i>)	Christmas	Vulnerable
Emerald dove (<i>Chalcophaps indica natalis</i>)	Christmas	Endangered
Shag (<i>Phalacrocorax purpurascens</i>)	Macquarie	Vulnerable
Southern giant petrel (<i>Macronectes giganteus</i>)	Macquarie	Endangered
Northern giant petrel (<i>Macronectes halli</i>)	Macquarie	Vulnerable
Blue petrel (<i>Halobaena caerulea</i>)	Macquarie	Vulnerable
Southern fairy prion (<i>Pachyptila turtur subantactica</i>)	Macquarie	Vulnerable

Species	Island	Status
Black-browed albatross (<i>Thalassarche melanophris</i>)	Macquarie	Vulnerable
Grey-headed albatross (<i>Thalassarche chrysostoma</i>)	Macquarie	Vulnerable
Rock hopper penguin (<i>Eudyptes chrysocome</i>)	Macquarie	Vulnerable
Royal penguin (<i>Eudyptes schlegeli</i>)	Macquarie	Vulnerable
White-headed petrel (<i>Pterodroma lessonii</i>)	Macquarie	Vulnerable
Soft-plumaged petrel (<i>Pterodroma mollis deceptornis</i>)	Macquarie	Vulnerable
Wilson's storm petrel (<i>Oceanites o. oceanicus</i>)	Macquarie	Vulnerable
Grey-backed storm petrel (<i>Oceanites nereis</i>)	Macquarie	Vulnerable
Antarctic prion (<i>Pachyptila desolata</i>)	Macquarie	Vulnerable

Species listed as threatened under the EPBC Act that occur on rodent-free islands but that are likely to be threatened (to various extents) if exotic rodents invade and establish:

Species	Island	Status
Burrowing bettong (<i>Bettongia lesueur</i>)*	Boodie	Vulnerable
Golden bandicoot (<i>Isoodon auratus</i>)*	Middle	Vulnerable
Round Island petrel (<i>Pterodroma arminjoniata</i>)	N. Keeling	Critically endangered
Herald petrel (<i>Pterodroma heraldica</i>)	Raine (Coral Sea)	Critically endangered
Hooded robin (<i>Melanodryas cucullata melvillensis</i>)	Tiwi islands	Endangered
Masked owl (<i>Tyto novaehollandiae melvillensis</i>)	Tiwi islands	Endangered
Gould's petrel (<i>Pterodroma l. leucoptera</i>)	Cabbage Tree	Endangered
Antarctic tern (<i>Sterna vittata bethunei</i>)	Stacks off Macquarie	Endangered
Antarctic tern (<i>Sterna v. vittata</i>)	Heard	Vulnerable
Bramble Cay melomys (<i>Melomys rubicola</i>)	Bramble Cay	Endangered
Western barred bandicoot (<i>Perameles b. bougainville</i>)		Endangered
Golden bandicoot (<i>Isoodon auratus barrowensis</i>)	Barrow	Vulnerable
Spectacled hare wallaby (<i>Lagorchestes c. conspicullatus</i>)	Barrow	Vulnerable
Barrow Island euro (<i>Macropus robustus isabellinus</i>)	Barrow	Vulnerable
Rufous hare wallaby (<i>Lagorchestes hirsutus bernieri</i>)	Bernier	Vulnerable
Rufous hare wallaby (<i>Lagorchestes hirsutus dorreeae</i>)	Dore	Vulnerable
Worm lizard (<i>Aprasia r. rostrata</i>)	Hermite	Vulnerable
Airlie Island ctenotus (<i>Ctenotus angusticeps</i>)	Airlie	Vulnerable
Lancelin skink (<i>Ctenotus lancelini</i>)	Lancelin	Vulnerable
Spiny-scale skink (<i>Egernia stokesii aethiops</i>)	Baudin	Vulnerable
Lesser noddy (<i>Anous tenuirostris melanops</i>)	Pelsaert, Wooded, Morlay	Vulnerable
Cape Barren goose (<i>Cereopsis novaehollandiae grisea</i>)	Recherche Archipelago	Vulnerable
Recherche rock wallaby (<i>Petrogale lateralis hacketti</i>)	Mondrian, Wilson, Westall	Vulnerable
Pearson rock wallaby (<i>Petrogale lateralis pearsonii</i>)	Pearson, Thistle,	Vulnerable

Species	Island	Status
	Wedge	
Imperial shag (<i>Leucocarbo atriceps nivalis</i>)	Heard	Vulnerable
Fairy wren (<i>Malurus leucopterus edouardi</i>)	Barrow	Vulnerable
Fairy wren (<i>Malurus l. leucopterus</i>)	Dirk Hartog	Vulnerable
Soft-plumage petrel (<i>Pterodroma mollis deceptornis</i>)	Maatsuyker	Vulnerable
Shy albatross (<i>Thalassarche cauta</i>)	Albatross (Bass Strait)	Vulnerable