



Consultation Document on Listing Eligibility and Conservation Actions

***Hypotaenidia sylvestris* (Lord Howe woodhen)**

You are invited to provide your views and supporting reasons related to:

- 1) the eligibility of *Hypotaenidia sylvestris* (Lord Howe woodhen) for inclusion on the EPBC Act threatened species list in the Endangered category; and
- 2) the necessary conservation actions for the above species.

Evidence provided by experts, stakeholders and the general public are welcome. Responses can be provided by any interested person.

Anyone may nominate a native species, ecological community or threatening process for listing under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) or for a transfer of an item already on the list to a new listing category. The Threatened Species Scientific Committee (the Committee) undertakes the assessment of species to determine eligibility for inclusion in the list of threatened species and provides its recommendation to the Australian Government Minister for the Environment.

Responses are to be provided in writing either by email to:
species.consultation@environment.gov.au

or by mail to:

The Director
Marine and Freshwater Species Conservation Section
Wildlife, Heritage and Marine Division
Department of the Environment
PO Box 787
Canberra ACT 2601

Responses are required to be submitted by 2 September 2016.

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General background information about listing threatened species

The Australian Government helps protect species at risk of extinction by listing them as threatened under Part 13 of the EPBC Act. Once listed under the EPBC Act, the species becomes a Matter of National Environmental Significance (MNES) and must be protected from significant impacts through the assessment and approval provisions of the EPBC Act. More information about threatened species is available on the Department's website at:

<http://www.environment.gov.au/biodiversity/threatened/index.html>

Public nominations to list threatened species under the EPBC Act are received annually by the Department. In order to determine if a species is eligible for listing as threatened under the EPBC Act, the Committee undertakes a rigorous scientific assessment of its status to determine if the species is eligible for listing against a set of criteria. These criteria are available on the Department's website at:

<http://www.environment.gov.au/system/files/pages/d72dfd1a-f0d8-4699-8d43-5d95bbb02428/files/tssc-guidelines-assessing-species-2015.pdf>

As part of the assessment process, the Committee consults with the public and stakeholders to obtain specific details about the species, as well as advice on what conservation actions might be appropriate. Information provided through the consultation process is considered by the Committee in its assessment. The Committee provides its advice on the assessment (together with comments received) to the Minister regarding the eligibility of the species for listing under a particular category and what conservation actions might be appropriate. The Minister decides to add, or not to add, the species to the list of threatened species under the EPBC Act. More detailed information about the listing process is at:

<http://www.environment.gov.au/biodiversity/threatened/nominations.html>

To promote the recovery of listed threatened species and ecological communities, conservation advices and where required, recovery plans are made or adopted in accordance with Part 13 of the EPBC Act. Conservation advices provide guidance at the time of listing on known threats and priority recovery actions that can be undertaken at a local and regional level. Recovery plans describe key threats and identify specific recovery actions that can be undertaken to enable recovery activities to occur within a planned and logical national framework. Information about recovery plans is available on the Department's website at:

<http://www.environment.gov.au/biodiversity/threatened/recovery.html>

Information about this consultation process

Responses to this consultation can be provided electronically or in hard copy to the contact addresses provided on Page 1. All responses received will be provided in full to the Committee and then to the Australian Government Minister for the Environment.

In providing comments, please provide references to published data where possible. Should the Committee use the information you provide in formulating its advice, the information will be attributed to you and referenced as a 'personal communication' unless you provide references or otherwise attribute this information (please specify if your organisation requires that this information is attributed to your organisation instead of yourself). The final advice by the Committee will be published on the Department's website following the listing decision by the Minister.

Information provided through consultation may be subject to freedom of information legislation and court processes. It is also important to note that under the EPBC Act, the deliberations and recommendations of the Committee are confidential until the Minister has made a final decision on the nomination, unless otherwise determined by the Minister.

Hypotaenidia sylvestris

Lord Howe woodhen

Taxonomy

Conventionally accepted as *Hypotaenidia sylvestris* (Sclater 1869).

Hypotaenidia sylvestris (del Hoyo & Collar 2014) was previously placed in the genus *Gallirallus*.

Species/Sub-species Information

Description

The Lord Howe woodhen is a medium-sized flightless rail with an olive-brown body and bright chestnut wings with narrow dark brown bars on the primary and primary covert feathers. It has grey-brown legs and a long downward-curved bill that is brown at the tip and pink at the base. Males and females are similar in appearance, but females are smaller than males (length: male 34–42 cm; female 32–37 cm). Adults weigh approximately 500 g. Adults have red irides and juveniles have dark irides (Marchant & Higgins 1993).

Distribution

The Lord Howe woodhen is endemic to Lord Howe Island (Marchant & Higgins 1993). When discovered in 1788, the Lord Howe woodhen was described as common and distributed from sea-level to the tops of the two mountains on the Island. From the mid-19th century, the species was confined to summit regions of Mt Gower and Mt Lidgbird (Hutton 1991). Following control of threats, captive-bred birds were reintroduced to lowland sites in the 1980s (Miller & Mullette 1985).

The Lord Howe woodhen currently occurs on the summit of Mt Gower, Big Slope, Little Slope, Grey Face and Far Flats with about half the population in the settlement area (Department of Environment and Climate Change (NSW) 2007).

Relevant Biology/Ecology

The Lord Howe woodhen is sedentary and highly territorial (Marchant & Higgins 1993). On Mt Gower, the Lord Howe woodhen occurs in gnarled mossy forest. At lower altitudes, the species mostly occurs in megaphyllous broad sclerophyll forest, particularly kentia palm (*Howea forsterana*) forests on, or immediately down slope of, areas of igneous geology. The Lord Howe woodhen also occurs in vegetation associated with residences where supplementary food is available. The species is rarely found in rainforest (Department of Environment and Climate Change (NSW) 2007; Garnett et al., 2011; Marchant & Higgins 1993).

The Lord Howe woodhen forages amongst leaf litter, rotten logs, moss and lichens, feeding on worms, molluscs and invertebrates (Marchant & Higgins 1993). The species is also known to scavenge on residential waste, and prey upon providence petrel chicks and eggs, and rodents (Department of Environment and Climate Change (NSW) 2007).

The Lord Howe woodhen is monogamous and usually occurs in pairs. Pairs build 3-4 nursery nests on the ground under thick vegetation or in petrel burrows. The breeding season for the Lord Howe woodhen varies between years but females generally lay between August and January and continue raising young until April. In captivity clutch size is 1-4 eggs. Both parents incubate eggs for 20-23 days, and brood and feed chicks. Chicks fledge at 28 days. Females may lay another clutch as soon as 30 days after the initial clutch. Juveniles reach adult size at 12 months, but may start breeding at nine months (Department of Environment and Climate Change (NSW) 2007; Marchant & Higgins 1993). Maximum longevity of the Lord Howe woodhen is nine years (Brook et al., 1997) and generation length is estimated to be 3.4 years (BirdLife International 2013).

Threats

Table 1 – Threats

Threat factor	Threat type	Threat status	Evidence base
Invasive species			
Predation by masked owls (<i>Tyto novaehollandiae castanops</i>)	known	current	Masked owls were introduced to Lord Howe Island in the 1920s to control black rats. Masked owls prey on Lord Howe woodhens and are likely to be responsible for a major decline in numbers of Lord Howe woodhens using Little Slope in 1989. Masked owl predation remains a threat to the Lord Howe woodhen (Department of Environment and Climate Change (NSW) 2007; Garnett et al., 2011).
Poisoning from baiting program for black rat (<i>Rattus rattus</i>)	known	current	Lord Howe woodhens are at high risk of primary and secondary poisoning from bait containing brodifacoum when the Lord Howe Island Rodent Eradication Program (EPBC 2016/7703) is undertaken (Lord Howe Island Board 2016).
Predation by black rats (<i>Rattus rattus</i>)	potential	-	Black rats may predate on Lord Howe woodhen eggs and chicks (Department of Environment and Climate Change (NSW) 2007). However, the threat of rat predation on the Lord Howe woodhen has not been demonstrated.
Habitat degradation and predation by pigs (<i>Sus scrofa</i>)	known	past	<p>Pigs have been identified as the limiting factor for the Lord Howe woodhen's distribution. Historically, the Lord Howe woodhen was restricted to the humid cloud forests of Mt. Gower and Mt. Lidgbird. Pigs are known to prey on Lord Howe woodhens and cause substantial habitat degradation making areas of the island unsuitable for foraging and breeding by Lord Howe woodhens (Garnett et al., 2011; Miller & Mullette 1985).</p> <p>Pigs were eradicated from Lord Howe Island in the early 1980s and no longer threaten the Lord Howe woodhen (Department of Environment and Climate Change (NSW) 2007).</p>
Predation by cats (<i>Felis catus</i>)	known	past	Feral and domestic cats preyed on Lord Howe woodhens, particularly in the northern and central parts of the island following settlement. Cats have been eradicated from the island and no longer threaten the Lord Howe woodhen (Department of Environment and Climate Change (NSW) 2007).
Habitat degradation by goats (<i>Capra hircus</i>)	known	past	Goats are known to cause habitat degradation making areas of the island unsuitable for foraging and breeding by Lord Howe woodhens (Garnett et al., 2011). Goats are likely to have contributed to historical displacement of Lord Howe woodhens.

Human settlement			
Hunting	known	past	Lord Howe woodhens were the principal food for early settlers and hunting is likely to have caused a severe decline in the Lord Howe woodhen population in the early years following settlement (Garnett et al., 2011).
Native species			
Competition with buff-banded rails (<i>Gallirallus philippensis</i>)	suspected	current	Buff-banded rails re-colonised the island in the 1970s and compete with Lord Howe woodhens for food and territories. Buff-banded rails are known to be in conflict with Lord Howe woodhens during the mating season and have temporarily expelled Lord Howe woodhens from settlement territories (Garnett et al., 2011).
Population and distribution			
Single population	potential	-	Lord Howe woodhens comprise a single population found only on Lord Howe Island, making the species vulnerable to threats such as novel diseases, invasive species and stochastic events.

Assessment of available information in relation to the EPBC Act Criteria and Regulations

Criterion 1. Population size reduction (reduction in total numbers)			
Population reduction (measured over the longer of 10 years or 3 generations) based on any of A1 to A4			
	Critically Endangered Very severe reduction	Endangered Severe reduction	Vulnerable Substantial reduction
A1	≥ 90%	≥ 70%	≥ 50%
A2, A3, A4	≥ 80%	≥ 50%	≥ 30%
A1	<p>based on any of the following</p> <ul style="list-style-type: none"> (a) direct observation [except A3] (b) an index of abundance appropriate to the taxon (c) a decline in area of occupancy, extent of occurrence and/or quality of habitat (d) actual or potential levels of exploitation (e) the effects of introduced taxa, hybridization, pathogens, pollutants, competitors or parasites 		
A2			
A3			
A4			

Evidence:

The Lord Howe woodhen population is considered to be stable with no projected continuing decline (Garnett et al., 2011). Historically, the species underwent a significant decline following settlement of Lord Howe Island, with fewer than ten breeding pairs in the 1970s. However, the population increased through the 1980s and 1990s following the eradication of feral pigs and a successful captive breeding programme (Brook et al., 1997).

The data presented above appear to demonstrate the species is not eligible for listing under this criterion. However, the purpose of this consultation document is to elicit additional information to better understand the species' status. This conclusion should therefore be considered to be tentative at this stage, as it may be changed as a result of responses to this consultation process.

Criterion 2. Geographic distribution as indicators for either extent of occurrence AND/OR area of occupancy			
	Critically Endangered Very restricted	Endangered Restricted	Vulnerable Limited
B1. Extent of occurrence (EOO)	< 100 km ²	< 5,000 km ²	< 20,000 km ²
B2. Area of occupancy (AOO)	< 10 km ²	< 500 km ²	< 2,000 km ²
AND at least 2 of the following 3 conditions indicating distribution is precarious for survival:			
(a) Severely fragmented OR Number of locations	= 1	≤ 5	≤ 10
(b) Continuing decline observed, estimated, inferred or projected in any of: (i) extent of occurrence; (ii) area of occupancy; (iii) area, extent and/or quality of habitat; (iv) number of locations or subpopulations; (v) number of mature individuals			
(c) Extreme fluctuations in any of: (i) extent of occurrence; (ii) area of occupancy; (iii) number of locations or subpopulations; (iv) number of mature individuals			

Evidence:

The extent of occurrence is estimated at 34 km², and the area of occupancy is estimated at 28 km². These figures are based on the mapping of point records from 1996 to 2016, obtained from state governments, museums, Birdlife Australia and CSIRO. The extent of occurrence was calculated using a minimum convex hull, and the area of occupancy calculated using a 2x2 km grid cell method, based on the IUCN Red List Guidelines 2014 (DotE 2016).

Garnett et al. (2011) estimate the extent of occurrence and area of occupancy to be 15 km². These figures are based on data obtained from Birds Australia databases and Atlas data. The extent of occurrence was calculated using a minimum convex polygon. The area of occupancy was calculated using 1 km² grid squares. Areas of sea were excluded if they fell within the polygon.

The Lord Howe woodhen is considered to occur in one location, making the geographic distribution of the species very restricted. However, the population is considered stable and at carrying capacity. The distribution of the species is not fragmented and there is no information to suggest that there have been extreme fluctuations in the species' distribution or abundance (Garnett et al., 2011).

The data presented above appear to demonstrate the species is not eligible for listing under this criterion. However, the purpose of this consultation document is to elicit additional information to better understand the species' status. This conclusion should therefore be considered to be tentative at this stage, as it may be changed as a result of responses to this consultation process.

Criterion 3. Population size and decline

	Critically Endangered Very low	Endangered Low	Vulnerable Limited
Estimated number of mature individuals	< 250	< 2,500	< 10,000
AND either (C1) or (C2) is true			
C1 An observed, estimated or projected continuing decline of at least (up to a max. of 100 years in future)	Very high rate 25% in 3 years or 1 generation (whichever is longer)	High rate 20% in 5 years or 2 generation (whichever is longer)	Substantial rate 10% in 10 years or 3 generations (whichever is longer)
C2 An observed, estimated, projected or inferred continuing decline AND its geographic distribution is precarious for its survival based on at least 1 of the following 3 conditions:			
(a) (i) Number of mature individuals in each subpopulation	≤ 50	≤ 250	≤ 1,000
(a) (ii) % of mature individuals in one subpopulation =	90 – 100%	95 – 100%	100%
(b) Extreme fluctuations in the number of mature individuals			

Evidence:

Garnett et al. (2011) estimate the Lord Howe woodhen population contains 150 mature individuals. The population is considered to be stable with no projected continuing decline (Garnett et al., 2011). There is no information to suggest there have been extreme fluctuations in the number of mature individuals.

The data presented above appear to demonstrate the species is not eligible for listing under this criterion. However, the purpose of this consultation document is to elicit additional information to better understand the species' status. This conclusion should therefore be considered to be tentative at this stage, as it may be changed as a result of responses to this consultation process.

Criterion 4. Number of mature individuals

	Critically Endangered Extremely low	Endangered Very Low	Vulnerable Low
Number of mature individuals	< 50	< 250	< 1,000

Evidence:

Garnett et al. (2011) estimate the Lord Howe woodhen population contains 150 mature individuals based on an estimate of 71-74 breeding pairs. The total population is estimated to be 220 individuals (Garnett et al., 2011) which is the total carrying capacity for the island (Brook et al., 1997).

The data presented above appear to demonstrate that the species is **eligible for listing as Endangered** under this criterion. However, the purpose of this consultation document is to elicit additional information to better understand the species' status. This conclusion should therefore be considered to be tentative at this stage, as it may be changed as a result of responses to this consultation process.

Criterion 5. Quantitative Analysis			
	Critically Endangered Immediate future	Endangered Near future	Vulnerable Medium-term future
Indicating the probability of extinction in the wild to be:	≥ 50% in 10 years or 3 generations, whichever is longer (100 years max.)	≥ 20% in 20 years or 5 generations, whichever is longer (100 years max.)	≥ 10% in 100 years

Evidence:

Population viability analysis using VORTEX suggests a ten percent probability of the species' extinction in the wild within 100 years (Brook et al., 1997).

The model is considered to have used appropriate assumptions and parameters for estimating risk of extinction in the wild.

The data presented above appear to demonstrate that the species is **eligible for listing as Vulnerable** under this criterion. However, the purpose of this consultation document is to elicit additional information to better understand the species' status. This conclusion should therefore be considered to be tentative at this stage, as it may be changed as a result of responses to this consultation process.

Conservation Actions

Recovery Plan

A recovery plan is currently in place. The *Recovery Plan for the Lord Howe Woodhen (Gallirallus sylvestris)* (NSW National Parks and Wildlife Service) includes the following objectives:

- maintain and where possible, increase the population of Lord Howe woodhens on Lord Howe Island;
- establish a Lord Howe Island recovery team to co-ordinate the implementation and ongoing review of the recovery plan;
- involve the Lord Howe Island community in monitoring, management, habitat rehabilitation and threat abatement;
- develop a plan for establishing and resourcing an on-island captive breeding facility in the event of a substantial reduction in Woodhen numbers; and
- establish captive populations at sites other than Lord Howe Island as insurance against catastrophe affecting the wild population.

The recovery plan ceases on 1 April 2017.

Primary Conservation Actions

- Ensure there is no decrease in population size or area of occupancy.

Conservation and Management Priorities

Invasive species

- Undertake the Lord Howe Island Rodent Eradication Program using baiting methods to eradicate black rats on Lord Howe Island.

Breeding, propagation and other *ex situ* recovery action

- Prior to implementation of the Lord Howe Island Rodent Eradication Program, capture an appropriate number of Lord Howe woodhens to place into captivity to avoid mass mortality within the population. Following completion of the program, release captive individuals into appropriate habitat on the island, only when all baits and carcasses have broken down.

Stakeholder Engagement

- Engage with the local community to provide information about the species and the importance of conservation actions.

Survey and Monitoring priorities

- Monitor black rats and masked owls prior to, during and after the Lord Howe Island Rodent Eradication Program to determine their impact to Lord Howe woodhens.
- Monitor the progress of conservation actions, including the effectiveness of management actions and adapt them if necessary to contribute to the species' recovery.

Information and Research priorities

- Assess competition between Lord Howe woodhens and buff-banded rails to determine the level of threat to Lord Howe woodhens, and to inform future management actions.

Collective list of questions – your views

1. Can you provide any additional or alternative references, information or estimates on longevity and generation length?
2. Has the survey effort for this species been adequate to determine its adult population size?
3. Do you accept the estimate provided of the total population size of the species?
4. Is the distribution as described valid? If not, can you please provide an estimate or additional information on the current geographic distribution?
5. Do you agree that the way the current extent of occurrence and/or area of occupancy have been estimated is appropriate?
6. Do you agree that the threats listed are correct and that their effect on the species is significant?
7. To what degree are the identified threats likely to impact on the species in the future?
8. What planning, management and recovery actions are currently in place supporting protection and recovery of the species? To what extent have they been effective?
9. What additional planning, management and recovery actions should be put in place in the future to support the protection and recovery of the species?
10. What individuals or organisations are currently, or potentially could be, involved in management and recovery of the species?
11. Can you provide additional data or information relevant to this assessment?

References cited in the advice

- Brook, B. W., Lim, L., Harden, R. & Frankham, R. (1997). How secure is the Lord Howe Island Woodhen? A population viability analysis using VORTEX. *Pacific Conservation Biology* 3, 125–133.
- Department of the Environment (DotE) (2016). Area of Occupancy and Extent of Occurrence for *Gallirallus sylvestris*. Unpublished report, Australian Government Department of the Environment, Canberra.
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- Miller, B. J., & Mullette. K. J. (1985). Rehabilitation of an endangered Australian bird: the Lord Howe Island Woodhen *Tricholimnas sylvestris* (Selater). *Biological Conservation* 34, 55–95.

Other sources cited in the advice

- BirdLife International (2013). *Hypotaenidia sylvestris*. The IUCN Red List of Threatened Species. Viewed 8 July 2016. Available on the internet at:
<http://www.iucnredlist.org/details/22692395/0>