



**Environmental
Consultants Pty Ltd**
ACN 108 390 01ABN 37 108 390 012

Risk assessment of the import of birds into Tasmania

Report prepared for

**The Department of Primary Industries,
Parks, Water and Environment**

by Katrina Jenz, Luke Finley and Barry Baker

March 2011

This publication should be cited as:

Jenz, K., Finley, L. and Baker, G.B. (2011) Risk assessment of the import of birds into Tasmania. Latitude 42 Environmental Consultants Pty Ltd. Hobart, Tasmania.

Risk assessment of the import of birds into Tasmania

March 2011

Introduction

This report was commissioned to assess the risk of particular species of live birds establishing in Tasmania, and the risks they may pose to the environment should feral populations establish.

In consultation with DPIPWE, a list of 87 species was assessed to determine 50 priority species (see Attachment A) for which a risk assessment was required. Risk assessments on the 50 species were then conducted using the Bomford model (Bomford 2008). Of those 50 species, 9 were assessed as high priority, requiring a comprehensive review of their biology and ecology and a more detailed report on their risk assessments. These 9 reports are in addition to this report.

In order to provide 50 risk assessments in a short timeframe it was agreed that the assessments would be based on information from the publication *Handbook of the Birds of the World* (del Hoyo *et al* 1994, 1997 & 2010) and review of additional literature would be kept to a minimum. However, to complete the assessments it was necessary to obtain additional information from Higgins (1996), Higgins and Davies (1999), Higgins *et al* (2006), Long (1981) and various websites.

Risk assessment

Dr Mary Bomford developed a risk assessment model for terrestrial vertebrates and birds (Bomford 2008). This scientifically based model assesses the establishment and pest potential of exotic species of birds and terrestrial mammals by addressing a number of factors. These factors, adapted to be applicable to Tasmania, include:

- Risks posed by captive or released individuals - assessment of the risk to people

from individual escapees and the risk to public safety from individual captive animals

- Climate match - a good match between Tasmanian climate and that in a species' natural geographic range enhances the likelihood of establishment.
- Geographic range - species having large natural geographic ranges are more likely to establish.
- Invasive history - species that are known to have established feral populations elsewhere may have the potential to do so in Tasmania.
- Taxonomic group - species of certain taxonomic groups are more likely to establish than are others.
- Likelihood of hybridisation - species of certain taxonomic groups are more likely to hybridise with relatives of the same genus among Tasmanian native birds
- Competition with native fauna for tree hollows - species that nest or shelter in tree hollows are considered to be a greater threat to native animals and birds
- Overseas environmental pest status - species that are known to have caused declines in native species populations or degradation to natural communities may have potential to do so in Tasmania
- Climate match to areas with susceptible native species - overlap of the suitable climate for the species in Tasmania and the range of susceptible native species increases the potential to impact on native species In Tasmania
- Overseas primary production pest status - species known to have damaged crops or other primary production may have potential to do so in Tasmania
- Climate match to susceptible primary production - overlap of the suitable climate for the species in Tasmania and the range of susceptible commodities increases the potential to impact on crops or other primary production in Tasmania
- Spread of disease - it is considered that birds play a role in the spread of disease or parasites to other animals
- Harm to property - assessment of the risk of the species inflicting damage to property by chewing, burrowing, polluting with droppings or nest material
- Harm to people - assessment of the risk of the species causing harm to people or annoying people

Previous assessments

The Australian Vertebrate Pests Committee maintains a list of exotic vertebrate animals in Australia (VPC 2007). All species on this list form a definitive record of the non-indigenous vertebrate mammals, birds, amphibians and reptiles held in Australia under State and Territory legislation. This list is aimed for use as a reference by the Vertebrate Pests Committee and Commonwealth, State and Territory agencies in controlling the entry, movement and keeping of exotic vertebrate animals.

The Vertebrate Pests Committee assigns an exotic species to a threat category, three risk scores are calculated: the risk that (1) an escaped or released individual would harm people, (2) escaped or released individuals would establish a wild free-living population (3) the species would be a pest if a wild population did establish. These three risk scores are then used to assign the exotic species to one of four threat categories: extreme, serious, moderate or low. The risk assessment method

used, was Bomford, M. (2003) *Risk Assessment for the Import and Keeping of Exotic Vertebrates in Australia*. Bureau of Rural Sciences, Canberra.

Using the risk assessment model Bomford 2008, we assessed the risk of importation of 50 species of birds into Tasmania. Several of these species have also been assessed by the Vertebrate Pests Committee (VPC 2007) using the previous model, Bomford 2003. The species assessed by the Vertebrate Pest Committee were for the risk of importation into the whole of Australia (see Attachment A).

Ascertain the potential risk to the Tasmanian environment of importing live birds

Tasmania is a small island ecosystem that has evolved with a high degree of isolation from other systems. As a result, Tasmania's environment and primary production is vulnerable to the impact of exotic species.

There are several aspects to the potential to cause harm to the environment, including the likelihood of escape and establishment, as well as harm to the environment in the event of establishment. The Bomford model (Bomford 2008) considers three factors to assess the level of risk posed by a species:

1. Risks posed by captive or released individuals

Factors include security of premises, keeping restrictions and community and keeper attitudes. Some members of the community feel that it is cruel to keep animals or birds confined, which can lead to wilful or accidental release. Natural disasters and accidents can allow release even from the most secure cages. It is hard to control their keeping and to detect breaches, and even harder to locate and remove the escapees. Hence there is a risk of escape or release.

The danger posed to humans by captive or released individuals is used to estimate the public safety risk ranking. Assessment of the risk to people from individual escapees takes into account whether individuals could harm people (A1-A2 of the Bomford model). It is considered that all 50 species of birds assessed are unlikely to attack causing injury requiring hospitalisation. It is also unlikely that public safety issues may arise from irresponsible use of any product obtained from any of the 50 species of birds assessed.

2. Likelihood of establishment

The overseas and mainland distribution, including the entire native and introduced range, for each species was mapped using the web version of CLIMATCH (<http://adl.brs.gov.au:8080/Climatch/climatch.jsp>). Climate match scores for each species were then calculated for Tasmania. Scores ranged from 0 to 30 giving establishment risk ranks from very low to extreme (see attached CLIMATCH spreadsheets for each species).

Assessment of the risk of becoming established should the species be released was determined for all species by addressing factors B1-B4 of the Bomford model. In addition to the climate match, this included consideration to the size of the overseas range of the species and whether introduced populations have established overseas or on mainland Australia.

Establishment risk ranks were determined for all species and ranged from low to extreme.

3. Consequence of establishment in Tasmania

Assessment of the risk of becoming a pest should the species become established was determined for all species by addressing factors C1-C11 of the Bomford model.

This included consideration of overseas environmental pest status, climate match with susceptible native species or communities, whether the species has damaged crops or primary production overseas and climate match to susceptible primary production.

Pest risk ranks were determined for all species and ranged from low to extreme.

Assignment to threat categories

This report assesses the risk of 50 species of birds establishing in Tasmania and the risks they may pose to the environment should they establish feral populations. The three scores against each species were used to assign a threat category using the rules for combining scores specified by Bomford (2008). In summary, the risk that these species, if imported, may establish in Tasmania and become threat to the environment is extreme for 3 species, serious for 15 species, moderate for 19 species and low for 13 species (see Attachment B).

Spreadsheets for the risk assessment and for the climate match for each species are also attached to this report.

References

- Bomford, M (2008) *Risk Assessment Models for the Establishment of Exotic Vertebrates in Australia and New Zealand*. Invasive Animals Cooperative Research Centre, Canberra
- BirdLife International (2011) IUCN Red List for birds. Downloaded from <http://www.birdlife.org/> Accessed March 2011
- Birdworld (2011) Yellow-tailed black cockatoo, white-tailed black cockatoo and red-tailed black cockatoo information page. Downloaded from http://www.birdworld.com.au/bw_bird_index.php?birdid=Funereus&birdg=Calyptorhynchus Accessed March 2011
- del Hoyo J., Elliott A. and Sargatal J. eds. (1994) *Handbook of Birds of the World Vol 2: New World Vultures to Guinea Fowl*. Lynx Edicions, Barcelona
- del Hoyo J., Elliott A. and Sargatal J. eds. (1997) *Handbook of Birds of the World Vol 4: Sangrouse to Cuckoos*. Lynx Edicions, Barcelona
- del Hoyo J., Elliott A. and Christie D.A. eds. (2010) *Handbook of Birds of the World Vol 15: Weavers to New World Warblers*. Lynx Edicions, Barcelona
- Encyclopedia of Life, available from <http://www.eol.org/> Accessed March 2011
- Global Biodiversity Information System, GBIF (2011). Downloaded from <http://data.gbif.org/species/> Accessed March 2011
- Higgins P.J. (1999) *Handbook of Australian, New Zealand and Antarctic Birds, Vol 4: Parrots to Dollarbird*. Oxford University Press, Melbourne
- Higgins P.J. and Davies S.J.J.F. (1996) *Handbook of Australian, New Zealand and Antarctic Birds, Vol 3: Snipe to Pigeons*. Oxford University Press, Melbourne
- Higgins P.J., Peter J.M. and Cowling S.J. (2006) *Handbook of Australian, New Zealand and Antarctic Birds, Vol 7: Boatbill to Starlings*. Oxford University Press, Melbourne

Long, J.L. (1981) *Introduced birds of the world*. Agricultural Protection Board of Western Australia, AH and AW Reed Pty Ltd, Wellington, New Zealand

Vertebrate Pest Committee (2007) List of exotic vertebrate animals in Australia, revised 2007,

Wikipedia, Downloaded http://en.wikipedia.org/wiki/Main_Page Accessed March 2011

Attachment A

Threat categories assigned by the Vertebrate Pests Committee (2007) for the whole of Australia using risk assessment model, Bomford 2003

Common Name	Species Name	VPC threat category
Parakeet, Red fronted	<i>Cyanoramphus novaezelandiae</i>	Serious
Parrot, Ringneck Indian	<i>Psittacula krameri manillensis</i>	Extreme
Partridge, Chukar	<i>Alectoris chukar</i>	Serious
Pheasant, Ring-necked (Common pheasant) - Low Priority	<i>Phasianus colchicus</i>	Extreme
Quail, Bob White	<i>Colinus virginianus</i>	Extreme
Redpol, Common	<i>Carduelis flammea</i>	Extreme
Dove, Ruddy Ground (Talpacoti)	<i>Columbina talpacoti</i>	Extreme
Dove, White Barbary	<i>Streptopelia risoria</i>	Extreme for <i>S.roseogrisea</i> Serious for <i>S.decaocto</i>
Finch, Black-headed Nun (Tricolored Munia)	<i>Lonchura malacca</i>	Extreme
Finch, Cordon Bleu (red cheeked Cordonbleu)	<i>Uraeginthus bengalus</i>	Serious
Finch, Cut Throat	<i>Amadina fasciata</i>	Serious
Finch, Green Singing (yellow fronted canary)	<i>Serinus mozambicus</i>	Serious
Finch, Greenfinch Oriental (Grey-capped Greenfinch)	<i>Carduelis sinica</i>	Moderate
Finch, Red Hooded Siskin	<i>Carduelis cucullata</i>	Serious
Finch, Yellow Siskin (Eurasian Siskin)	<i>Carduelis spinus</i>	Moderate
Finch, Saint Helena Waxbill	<i>Estrilda astrild</i>	Extreme
Finch, Java Sparrow	<i>Padda oryzivora</i>	Serious
Napolean weaver	<i>Euplectes afer</i>	Serious
Weaver, Red Bishop, Grenadier Weaver	<i>Euplectes orix</i>	Extreme
Black Headed Caique	<i>Pionites melanocephala</i>	Moderate
Conure, Nanday (Black-hooded Parakeet)	<i>Nandayus nenday</i>	Extreme
Parakeet, Derbyan	<i>Psittacula derbiana</i>	Serious

Attachment B: Risk Assessment Results

	Common Name	Species Name	A. Risks posed by captive or released individuals	B. Risk of Establish - ment	C. Risk of becoming a pest	Threat category	Climate SCORE	Range (from CLIMATCH)
Full Risk Assessments								
1	Lorikeet, Rainbow	<i>Trichoglossus haematodus</i>	Not Dangerous	Serious	Extreme	Extreme	21	2,484,229
2	Parakeet, Red fronted	<i>Cyanoramphus novaezelandiae</i>	Not Dangerous	Moderate	Serious	Serious	21	269,260
3	Parrot, Quaker (monk parakeet)	<i>Myopsitta monachus</i>	Not Dangerous	Extreme	Serious	Extreme	17	5,701,269
4	Parrot, Ringneck Indian	<i>Psittacula krameri manillensis</i>	Not Dangerous	Extreme	Serious	Extreme	17	7,556,848
5	Partridge, Chukar	<i>Alectoris chukar</i>	Not Dangerous	Serious	Moderate	Serious	19	3,880,568
6	Pheasant, Ring-necked (Common pheasant) - Low Priority	<i>Phasianus colchicus</i>	Not Dangerous	Extreme	Moderate	Extreme	29	11,804,012
7	Pigeon, Crested	<i>Ocyphaps lophotes</i>	Not Dangerous	Moderate	Moderate	Moderate	15	4,991,048

Attachment B: Risk Assessment Results

	Common Name	Species Name	A. Risks posed by captive or released individuals	B. Risk of Establish - ment	C. Risk of becoming a pest	Threat category	Climate SCORE	Range (from CLIMATCH)
8	Quail, Bob White	<i>Colinus virginianus</i>	Not Dangerous	Serious	Moderate	Serious	13	19,769,953
9	Redpol, Common	<i>Carduelis flammea</i>	Not Dangerous	Extreme	Serious	Extreme	30	33,109,820
Short Assessments								
Cockatoos								
1	Cockatoo, Gang Gang	<i>Callocephalon fimbriatum</i>	Not Dangerous	Moderate	Moderate	Moderate	24	208,441
2	Cockatoo, Major Mitchell	<i>Cacatua leadbeateri</i>	Not Dangerous	Low	Moderate	Moderate	13	2,771,217
3	Cockatoo, Red-tailed Black	<i>Calyptorhynchus banksii</i>	Not Dangerous	Low	Moderate	Moderate	11	3,427,273

Attachment B: Risk Assessment Results

	Common Name	Species Name	A. Risks posed by captive or released individuals	B. Risk of Establish - ment	C. Risk of becoming a pest	Threat category	Climate SCORE	Range (from CLIMATCH)
4	Cockatoo, White-tailed Black (Short Billed, Carnaby's)	<i>Calyptorhynchus latirastris</i>	Not Dangerous	Low	Moderate	Moderate	7	142,774
5	Cockatoo, Yellow-tailed Black (Yellow-tailed)	<i>Calyptorhynchus (Zanda) funereus</i>	Not Dangerous	Serious	Serious	Extreme	24	1,142,419
6	Dove, Ruddy Ground (Talpacoti)	<i>Columbina talpacoti</i>	Not Dangerous	Low	Low	Low	6	9,425,856
7	Dove, White Barbary	<i>Streptopelia risoria</i>	Not Dangerous	Serious	Moderate	Serious	16	813,894
Finches (Australian)								
8	Finch, Diamond firetail	<i>Stagonopleura guttata</i>	Not Dangerous	Moderate	Low	Moderate	24	1,198,148
9	Finch, Double Barred (Bicheno's Finch, Owl Finch)	<i>Taeniopygia bichenovii</i>	Not Dangerous	Moderate	Low	Moderate	24	2,865,377
10	Finch, Emblema (Painted Firetail)	<i>Emblema picta</i>	Not Dangerous	Low	Low	Low	0	1,160,972
11	Finch, Plum Head	<i>Neochmia modesta</i>	Not Dangerous	Low	Low	Low	11	1,413,696
12	Finch, Red-browed Firetail	<i>Neochmia temporalis</i>	Not Dangerous	Serious	Low	Serious	24	897,691

Attachment B: Risk Assessment Results

	Common Name	Species Name	A. Risks posed by captive or released individuals	B. Risk of Establishment	C. Risk of becoming a pest	Threat category	Climate SCORE	Range (from CLIMATCH)
Finches (International)								
13	Finch, Black-headed Nun (Tricolored Munia)	<i>Lonchura malacca</i>	Not Dangerous	Low	Low	Low	0	841,798
14	Finch, Cordon Bleu (red cheeked Cordonbleu)	<i>Uraeginthus bengalus</i>	Not Dangerous	Moderate	Low	Moderate	7	8,030,656
15	Finch, Cut Throat	<i>Amadina fafciata</i>	Not Dangerous	Moderate	Low	Moderate	7	8,744,710
16	Finch, Green Singing (yellow fronted canary)	<i>Serinus mozambicus</i>	Not Dangerous	Moderate	Moderate	Moderate	8	20,663,634
17	Finch, Greenfinch Oriental (Grey-capped Greenfinch)	<i>Carduelis sinica</i>	Not Dangerous	Low	Low	Low	0	7,750,457
18	Finch, Orange Cheeked Waxbill	<i>Estrilda melpoda</i>	Not Dangerous	Low	Low	Low	1	5,101,510

Attachment B: Risk Assessment Results

	Common Name	Species Name	A. Risks posed by captive or released individuals	B. Risk of Establish - ment	C. Risk of becoming a pest	Threat category	Climate SCORE	Range (from CLIMATCH)
19	Finch, Red Hooded Siskin	<i>Carduelis cucullata</i>	Not Dangerous	Low	Low	Low	0	218,379
20	Finch, Red Strawberry (Red Avadavat, Red Munia)	<i>Amandava amandava</i>	Not Dangerous	Moderate	Low	Moderate	1	3,916,326
21	Finch, Yellow Siskin (Eurasian Siskin)	<i>Carduelis spinus</i>	Not Dangerous	Serious	Moderate	Serious	24	20,812,217
22	Finch, Saint Helena Waxbill	<i>Estrilda astrild</i>	Not Dangerous	Serious	Low	Serious	9	16,068,352
23	Finch, Java Sparrow	<i>Padda oryzivora</i>	Not Dangerous	Moderate	Low	Moderate	1	304,804
24	Napolean weaver	<i>Euplectes afer</i>	Not Dangerous	Moderate	Low	Moderate	7	20,778,589

Attachment B: Risk Assessment Results

	Common Name	Species Name	A. Risks posed by captive or released individuals	B. Risk of Establish - ment	C. Risk of becoming a pest	Threat category	Climate SCORE	Range (from CLIMATCH)
25	Weaver, Red Bishop, Grenadier Weaver	<i>Euplectes orix</i>	Not Dangerous	Low	Low	Low	3	3,419,877
Lorikeets								
26	Lorikeet, Little	<i>Glossopsitta pusilla</i>	Not Dangerous	Low	Moderate	Moderate	17	728,495
27	Lorikeet, Purple-crowned	<i>Glossopsitta porphyrocephala</i>	Not Dangerous	Low	Moderate	Moderate	17	866,055
28	Lorikeet, Scaly-breasted	<i>Trichoglossus chlorolepidotus</i>	Not Dangerous	Low	Moderate	Moderate	16	1,233,061
Parrots								
29	Parrot, Ringneck Australian (Port Lincoln parrot)	<i>Barnardius zonarius zonarius</i>	Not Dangerous	Low	Serious	Serious	16	5,293,772
30	Partridge, Red-legged	<i>Alectoris rufa</i>	Not Dangerous	Serious	Serious	Extreme	23	1,546,492
31	Pigeon, Wonga	<i>Leucosarcia melanoleuca</i>	Not Dangerous	Low	Low	Low	23	506,249
32	Black Headed Caique	<i>Pionites melanocephala</i>	Not Dangerous	Low	Low	Low	0	742,534

Attachment B: Risk Assessment Results

	Common Name	Species Name	A. Risks posed by captive or released individuals	B. Risk of Establish - ment	C. Risk of becoming a pest	Threat category	Climate SCORE	Range (from CLIMATCH)
33	Queen of Bavaria Conure	<i>Guaruba guarouba</i> (aka <i>Aratinga auarouba</i>)	Not Dangerous	Low	Low	Low	0	86,219
34	Conure, Nanday (Black-hooded Parakeet)	<i>Nandayus nenday</i>	Not Dangerous	Low	Moderate	Moderate	0	1,413,904
Rosellas								
35	Rosella, Crimson	<i>Platycercus elegans</i>	Not Dangerous	Serious	Serious	Extreme	24	772,353
36	Rosella, Western (Stanley Rosella, Earl of Derby's parakeet or Yellow-cheeked parakeet)	<i>Platycercus icterotis</i>	Not Dangerous	Low	Moderate	Moderate	7	265,826
37	Rosella, Adelaide	<i>Platycercus adelaidae</i>	Not Dangerous	Moderate	Serious	Serious	5	~40000
38	Rosella, Blue Cheeked	<i>Platycercus adscitus</i>	Not Dangerous	Low	Moderate	Moderate	1	1,329,795
39	Rosella, Golden Mantle	<i>Platycercus eximius</i>	Not Dangerous	Serious	Serious	Extreme	24	905,506

Attachment B: Risk Assessment Results

	Common Name	Species Name	A. Risks posed by captive or released individuals	B. Risk of Establish - ment	C. Risk of becoming a pest	Threat category	Climate SCORE	Range (from CLIMATCH)
40	Rosella, Northern (Brown's Parakeet or Smutty Rosella)	<i>Platycercus venustus</i>	Not Dangerous	Low	Low	Low	0	637,902
Parakeet								
41	Parakeet, Derbyan	<i>Psittacula derbiana</i>	Not Dangerous	Low	Low	Low	0	133,244