

RECOVERY OUTLINE

Gouldian Finch

1	Family	Ploceidae
2	Scientific name	<i>Erythrura gouldiae</i> (Gould, 1844)
3	Common name	Gouldian Finch
4	Conservation status	Endangered: C2b

5 Reasons for listing

The population size of this species is conservatively estimated to be about 2,500 mature individuals at the start of breeding season, with all individuals in the same genetic sub-population and continuing to decline (Endangered: C2b). If the population is significantly fragmented, then no sub-population indisputably contains more than 250 mature individuals (so could be C2a).

	Estimate	Reliability
Extent of occurrence	100,000 km ²	medium
trend	decreasing	medium
Area of occupancy	10,000 km ²	low
trend	decreasing	high
No. of breeding birds	2,500	low
trend	decreasing	high
No. of sub-populations	1	medium
Generation time	2 years	medium

6 Intraspecific taxa

None recognised. Initial genetic work has found no genetic variation across range (Heslewood, *et al.*, 1998). Further analysis with more sensitive genetic probes has begun (M. Elphinstone).

7 Past range and abundance

Northern Australia from Cape York Peninsula through north-west Queensland and the northern Northern Territory to the Kimberley Region of Western Australia (Blakers *et al.*, 1984, Dostine, 1998, Franklin, 1999).

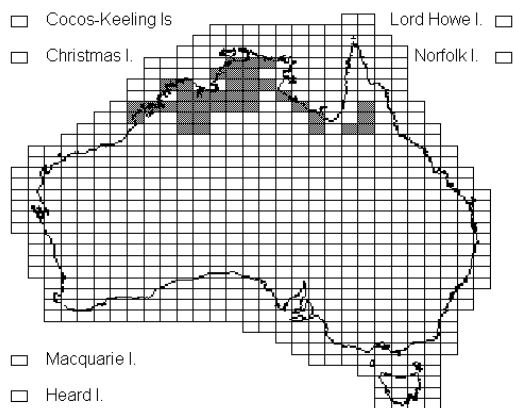
8 Present range and abundance

Known to occur regularly at a few sites in Queensland, with a few incidental sightings. More numerous in the Northern Territory and Western Australia, but records also scattered (Evans and Bougher, 1987, Dostine, 1998). Evidence of a continuing decline (Franklin, 1999), even at best-known site near Katherine (M. Lewis).

9 Ecology

Gouldian Finches live in open tropical woodland that has a grassy understorey, often in hilly areas. They nest exclusively in tree hollows, the species of tree used varying between locations: Snappy Gum *Eucalyptus brevifolia* used in western, and Territory Salmon Gum *E. tintinnans* in eastern Northern Territory (Tidemann

et al., 1992a). Clutch size averages 5.2, and pairs may raise several clutches in a season, but productivity averages 1.5 fledglings per pair (Tidemann *et al.*, 1999). Gouldian Finches feed almost exclusively on grass seed. During the dry season, they feed on annual grasses such as *Sorghum*. Various perennial grasses are taken through the wet season (Tidemann, 1989, Dostine, 1998).



10 Threats

Infection with a parasitic mite *Sternostoma tracheacolum* (Tidemann *et al.*, 1992b, Bell, 1996) was long thought to be one of the principal reasons for decline, but it is now considered that any increased mortality from parasites is probably indicative of a broader change at the landscape level that has affected a range of granivore species (Dostine, 1998, Franklin, 1999). Mining may also adversely affect birds at a local scale (M. Lewis) and trapping may have had a local effect in the past (Dostine, 1998). Availability of nesting habitat and low breeding success are not thought to be limiting (Tidemann *et al.*, 1999). Cattle grazing and altered fire regimes are thought the most likely landscape processes to have affected the species, either because cattle prevent grass from producing seed that is essential to the finch, or because the finches need patchy burning and the fire history of the landscape has become too uniform (Dostine, 1998).

11 Information required

- 11.1 Characterise habitat at a regional scale using GIS analysis.
- 11.2 Determine relationship between burning pattern, grazing and Gouldian Finch survival.

- 11.3 Increase understanding of diet and foraging ecology in relation to patterns of resource availability and at a variety of sites.
- 11.4 Analyse feeding and breeding habitat at a regional scale.
- 12 Recovery objectives
- 12.1 Stabilise or increase population size as a result of remedial management action at three key sites.
- 13 Actions completed or under way
- 13.1 A Recovery Plan has been completed.
- 13.2 Regional Operations Groups have been established in all three states.
- 13.3 A database of all known records of the Gouldian Finch has been collated and is being maintained.
- 13.4 Patterns of distribution, habitats, potential threats and conservation status of savanna granivorous birds have been reviewed.
- 13.5 Persistence at sites throughout known range is being monitored.
- 13.6 Techniques for habitat rehabilitation are being developed.
- 13.7 The project is being coordinated through a Recovery Team.

14 Management actions required

- 14.1 Undertake strategic surveys of suitable habitat.
- 14.2 Obtain indices of population size at key sites.
- 14.3 Liaise with land managers about appropriate land management.
- 14.4 Manage significant sites appropriately.
- 14.5 Develop management guidelines for land managers.
- 14.6 Promote the Recovery Program.

15 Organisations responsible for conservation

Environment Australia, Parks and Wildlife Commission of the Northern Territory, Queensland Parks and Wildlife Service, Western Australian Department of Conservation.

16 Other organisations involved

World Wide Fund for Nature (Australia), Jawoyn Association, Birds Australia, Department of Defence, Cooperative Research Centre for Sustainable Development of Tropical Savannas, Northern Territory University, Threatened Bird Network, Threatened Species Network, fire management agencies, bird-watching societies, pastoralists, other indigenous groups.

17 Staff and financial resources required for recovery to be carried out ¹

<i>Staff resources required 2001-2005</i>	1.0	<i>Project Officer</i>
	1.5	<i>Technical Officer</i>
<i>Financial resources required 2001-2005</i>		

<i>Action</i>	<i>Conservation agencies</i>	<i>Other funding sources</i>	<i>Total</i>
<i>Characterise habitat at a regional scale</i>	\$11,300	\$1,000	\$12,300
<i>Determine relationship between burning pattern, grazing and Gouldian Finch survival</i>	\$198,900	\$61,200	\$260,100
<i>Increase understanding of diet and foraging ecology</i>	\$75,500	\$18,200	\$93,700
<i>Analyse feeding and breeding habitat</i>	\$29,000	\$10,000	\$39,000
<i>Develop techniques for habitat rehabilitation</i>	\$0	\$30,000	\$30,000
<i>Liaise with land managers about appropriate land management.</i>	\$11,400	\$41,500	\$52,900
<i>Undertake strategic surveys of suitable habitat</i>	\$37,000	\$92,000	\$129,000
<i>Obtain indices of population size at key sites</i>	\$90,000	\$33,000	\$123,000
<i>Monitor persistence at sites throughout current range</i>	\$55,000	\$25,000	\$80,000
<i>Manage significant sites in an appropriate manner</i>	\$167,300	\$36,000	\$203,300
<i>Develop management guidelines for land managers</i>	\$15,600	\$0	\$15,600
<i>Promote the Recovery Program</i>	\$35,000	\$20,000	\$55,000
<i>Operate the Recovery Team and evaluate performance</i>	\$55,000	\$0	\$55,000
<i>Total</i>	\$781,000	\$367,900	\$1,148,900

¹ Based on Dostine (1998)

18 Bibliography

- Bell, P. J. 1996. Survey of the nasal mite fauna (Rhinonyssidae and Kytoditidae) of the Gouldian Finch, *Erythrura gouldiae*, and some co-occurring birds in the Northern Territory. *Wildl. Res.* 23:675-686.
- Blakers, M., Davies, S. J. J. F. and Reilly, P. N. 1984. *The Atlas of Australian Birds*. RAOU and Melbourne University Press, Melbourne.
- Dostine, P. 1998. Gouldian Finch Recovery Plan. Environment Australia, Canberra.
- Evans, S. M. and Bougher, A. R. 1987. The abundance of estrildid finches at waterholes in the Kimberley (WA). *Emu* 87:124-127.
- Franklin, D. C. 1999. Evidence of disarray amongst granivorous bird assemblages in the savannas of northern Australia, a region of sparse human settlement. *Biol. Conserv.* 90:53-68
- Heslewood, M. M., Elphinstone, M. S., Tidemann, S. C. and Baverstock, P. R. 1998. Myoglobin intron variation in the Gouldian Finch *Erythrura gouldiae* assessed by temperature gradient gel electrophoresis. *Electrophoresis* 19:142-151.
- Tidemann, S. C. 1989. Relationships between finches and pastoral practices in northern Australia. Pp. 305-315 in *Granivorous Birds in the Agricultural Landscape*. J. Pinowski and J. D. Summers-Smith (eds). PWN-Polish Scientific Publishers, Warsaw.
- Tidemann, S.C., Boyden, J., Elvish, R., Elvish, J. and O'Gorman, B. 1992a. Comparison of the breeding sites and habitat of two hole-nesting estrildid finches, one endangered, in northern Australia. *J. Trop. Ecol.* 8:373-388.
- Tidemann, S. C., McOrist, S., Woinarski, J. C. Z. and Freeland, W. J. 1992b. Parasitism of wild Gouldian Finches *Erythrura gouldiae* by the air sac mite *Sternostoma tracheacolum*. *J. Wildl. Diseases* 20:80-84.
- Tidemann, S.C., Lawson, C., Elvish, R., Boyden, J. and Elvish, J. 1999. Breeding biology of the Gouldian Finch *Erythrura gouldiae*, an endangered finch of northern Australia. *Emu* 99:191-199.

Comments received from

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