

RECOVERY OUTLINE

Christmas Island Frigatebird

1	Family	Fregatidae
2	Scientific name	<i>Fregata andrewsi</i> Mathews, 1914
3	Common name	Christmas Island Frigatebird
4	Conservation status	Critically Endangered: A2ce, B1+2bce

5 Reasons for listing

A decrease in population size of more than 80% over the next three generations (30 years) is predicted (Critically Endangered: A2) from of a decline in habitat quality (c) and the current rate of spread of introduced ants (e). The already tiny area of occupancy is restricted to one location (B1), which may be further reduced in area (2b), quality (c) and number of mature individuals in occupation (e)

	Estimate	Reliability
Extent of occurrence	4,000,000 km ²	high
trend	stable	high
Area of occupancy	3 km ²	high
trend	stable	high
No. of breeding birds	4,500	medium
trend	stable	medium
No. of sub-populations	1	high
Generation time	10 years	low

6 Intraspecific taxa

None described.

7 Past range and abundance

Endemic to Christmas I., Indian Ocean. Colonies probably once spread from north-eastern coast at Margaret Beaches to North East Point with a separate colony where Golf Course now situated. Since at least 1940s, breeding fragmented into three colonies: Golf Course (40 ha), Cemetery (65 ha), and Dryers (66 ha; Stokes, 1984, 1988). Since first estimates in 1940s (Gibson-Hill, 1947), population has been consistently in the range of 1,000 to 2,000 pairs (Stokes, 1988), except for an estimate of 100-1,000 pairs in the 1970s (van Tets, 1975). Foraging in low densities over the Indian Ocean and throughout the Indo-Malay Archipelago (Dunn and Hill, 1997).

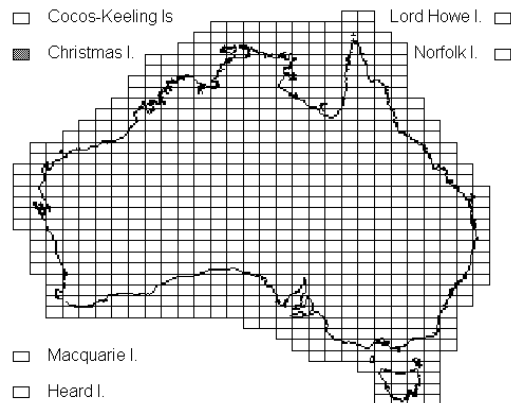
8 Present range and abundance

Total population last estimated in 1985 as 1,600 pairs, with 850 nest at Golf Course, 370 nests at Cemetery, and 100 nest at Dryers (Stokes, 1988). Since then, numbers at Dryers has decreased to 30 (Dunn and Hill, 1997).

9 Ecology

The Christmas Island Frigatebird nests in tall forest trees, particularly the Indian Almond *Terminalia catappa*, that are sheltered from the prevailing south-eastern

trade winds (Stokes, 1988), and can probably produce only one fledgling every two years (Dunn and Hill, 1997). The species forages over relatively warm, low salinity waters, taking flying fish, squid and other marine creatures, and stealing food from other birds on the wing (Pocklington, 1979, Marchant and Higgins, 1990).



10 Threats

The number and size of colonies on Christmas I. have decreased because of human disturbance. About 90 ha of breeding colony were cleared before 1946 (Stokes, 1988) and the major colony at Flying Fish Cove (Nelson, 1972) was abandoned, apparently because of continuing dust fall-out from phosphate dryers. Most nests are now located in a single colony and thus the species is more vulnerable to cyclones or the rare forest fire than when there were several colonies. Previously, poaching was thought to have been a threat (Nelson, 1975), but this ceased in the 1980s (Stokes, 1988). Until the mine tailings ponds dried, a few birds drowned in them each year (Stokes, 1988). The latest, and possibly most serious, threat is from the introduced Yellow Crazy Ant *Anoplolepis gracilipes* which is thought to occupy 15-18% of the island (D. Slip) and may still be spreading rapidly. These ants are not only likely to prey directly on nestlings, but may alter the whole ecology of the island by killing the Red Crab *Gecarcoidea natalis*, the dominant life-form, and by farming scale insects which damage the trees (O'Dowd *et al.*, 1999). It is not known whether they have reached the frigate-bird nesting areas.

- 11 Information required**
- 11.1 Refine techniques for controlling Yellow Crazy Ants.
- 11.2 Develop appropriate techniques to monitor the total breeding population size.
- 11.3 Analyse existing data on breeding biology and success.
- 11.4 Investigate effects of dust on the Dryers breeding colony.
- 11.5 If total breeding population size is significantly reduced, investigate causes of decline.
- 11.6 Assess impact of longline fishing.
- 12 Recovery objectives**
- 12.1 To ensure long-term survival of the species.
- 12.2 To control Yellow Crazy Ant.
- 12.3 To increase population viability by recolonisation of former areas of breeding habitat.
- 12.4 To implement bird-safe fishing practices in the Christmas I. and Cocos-Keeling Is Exclusive Economic Zone (costs covered under albatrosses and giant-petrels, so not listed in table below).
- 13 Actions completed or under way**
- 13.1 Christmas Island National Park has been extended to include two of the three current breeding colonies.
- 13.2 A three year research program has been initiated and staff have been dedicated to ant control
- 13.3 A Draft Recovery Plan has been prepared (Dunn and Hill, 1997).
- 14 Management actions required**
- 14.1 Monitor total breeding population size.
- 14.2 Implement education program amongst Christmas Island community.
- 14.3 Ameliorate effects of dust on the Dryers breeding colony.
- 14.4 Negotiate protection of all known and potential nesting habitat and appropriate buffers.
- 14.5 If necessary, implement appropriate management in feeding habitat.
- 14.6 Form a Recovery Team and implement the Recovery Plan.
- 15 Organisations responsible for conservation**
Environment Australia (including Wildlife Australia Branch; Parks Australia North; Christmas Island Rainforest Rehabilitation Program).
- 16 Other organisations involved**
Australian Fisheries Management Authority (AFMA), Christmas Island Phosphates Pty. Ltd., Christmas Island Shire Council.

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

<i>Staff resources required 2001-2005</i>	<i>0.3</i>	<i>Project Officer (monitoring)</i>
	<i>1.0</i>	<i>Project Officer (crazy ants) ²</i>
	<i>0.2</i>	<i>Project Officer (foraging) ³</i>
	<i>0.1</i>	<i>Technical Officer (monitoring)</i>
	<i>4.0</i>	<i>Technical Officer (crazy ants) ²</i>
	<i>1.0</i>	<i>Technical Officers (fisheries observers) ³</i>
	<i>0.1</i>	<i>Education officer ⁴</i>

Financial resources required 2001-2005

<i>Action</i>	<i>Conservation agencies</i>	<i>Other funding sources</i>	<i>Total</i>
<i>Develop survey methodology and analyse breeding data</i>	\$41,700	\$0	\$41,700
<i>Survey population size</i>	\$115,000	\$0	\$115,000
<i>Survey effects of reduced dust levels</i>	\$15,000	\$0	\$15,000
<i>Negotiate nesting habitat protection</i>	\$10,000	\$0	\$10,000
<i>Rehabilitate vegetation ^{4,5}</i>	\$81,400	\$940,000	\$1,021,400
<i>Institute education program ⁴</i>	\$10,000	\$0	\$10,000
<i>Control crazy ants ²</i>	\$250,000	\$12,000	\$262,000
<i>Locate and manage of feeding areas ³</i>	\$47,000	\$0	\$47,000

<i>Monitor longlining</i> ³	\$70,000	\$0	\$70,000
<i>Recovery Team</i> ⁴	\$3,500	\$0	\$3,500
Total	\$643,600	\$952,000	\$1,595,600

1 Based largely on Dunn and Hill (1997)

2 Costs shared with all 10 threatened Christmas Island taxa

3 Annual costs may vary following the first year's monitoring of the longline fishery; costs shared among Abbott's Booby, Masked Booby (eastern Indian Ocean) and Christmas Island Frigatebird

4 Costs shared among Abbott's Booby, Christmas Island Frigatebird, Christmas Island Owl and Christmas Island Goshawk

5 Major funding derived from levy which varies from year to year depending on amount of phosphate exported

18 Bibliography

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