

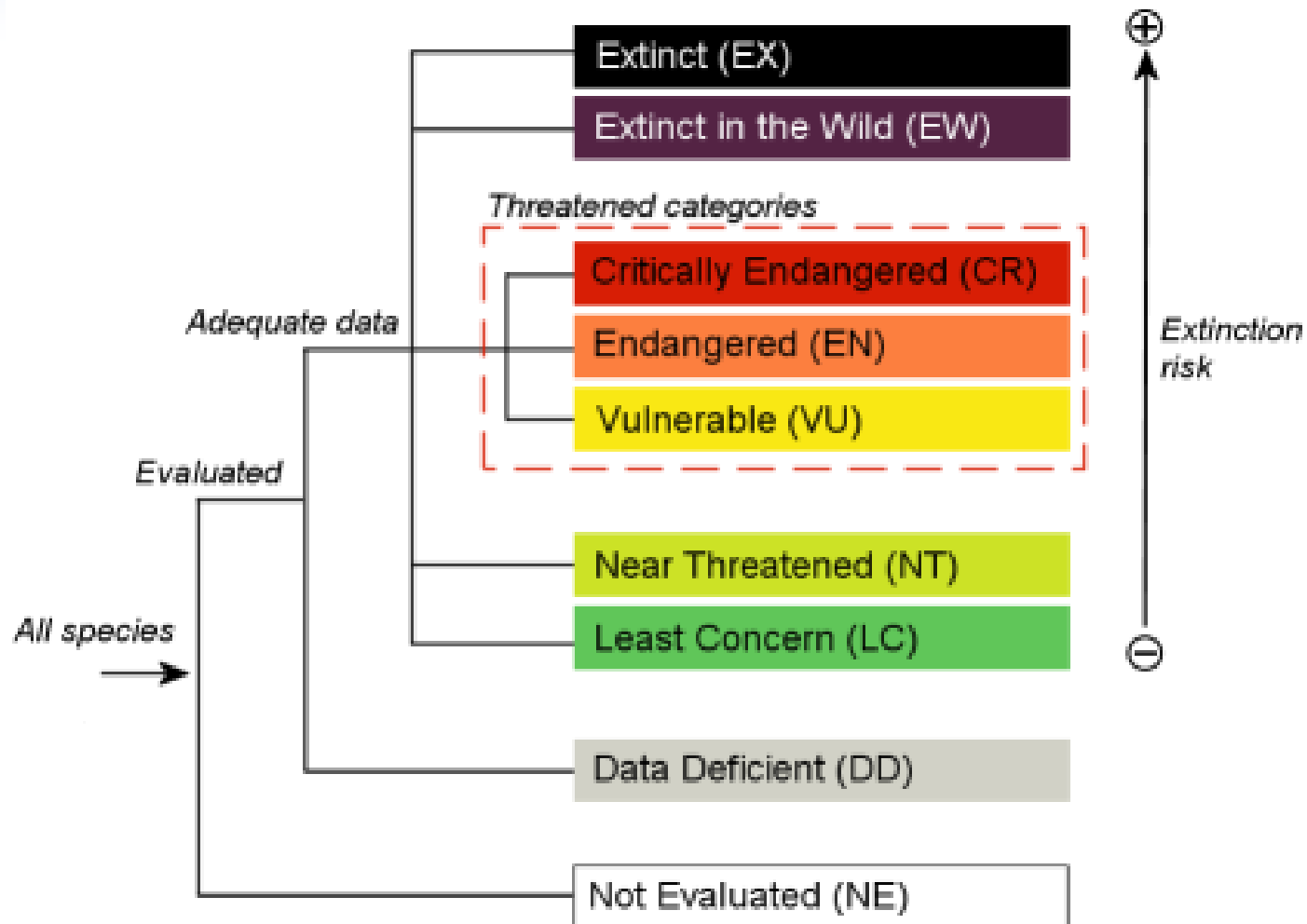
Ants and the Red List – the workshop

John Fellowes & Carsten Brühl, ANeT 2009, Cibodas, Indonesia





Red List categories





An ant example

Taxonomy [\[top\]](#)

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	INSECTA	HYMENOPTERA	FORMICIDAE

Scientific Name: *Aneuretus simoni*

Species Authority: Emery, 1893

Common Name/s:
English – Sri Lankan Relict Ant



Assessment Information [\[top\]](#)

Red List Category & Criteria:	Critically Endangered B1+2c ver 2.3
Year Assessed:	1996
Annotations:	Needs updating
Assessor/s	Social Insects Specialist Group
History:	1994 – Insufficiently Known (IUCN) 1990 – Insufficiently Known (IUCN 1990) 1988 – Insufficiently Known 1986 – Insufficiently Known (IUCN Conservation Monitoring Centre 1986) 1983 – Insufficiently Known

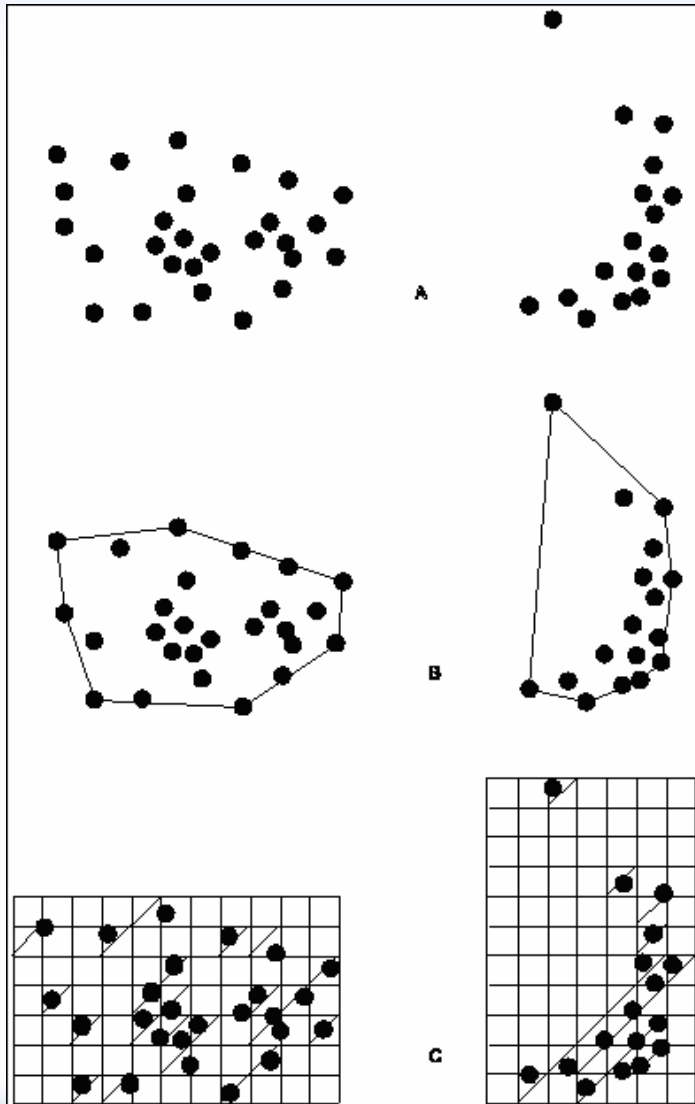


Criteria

- ✿ A: Reduction in population size
- ✿ B: Small geographic range
 - B1 Extent Of Occurrence
 - B2 Area of Occupancy



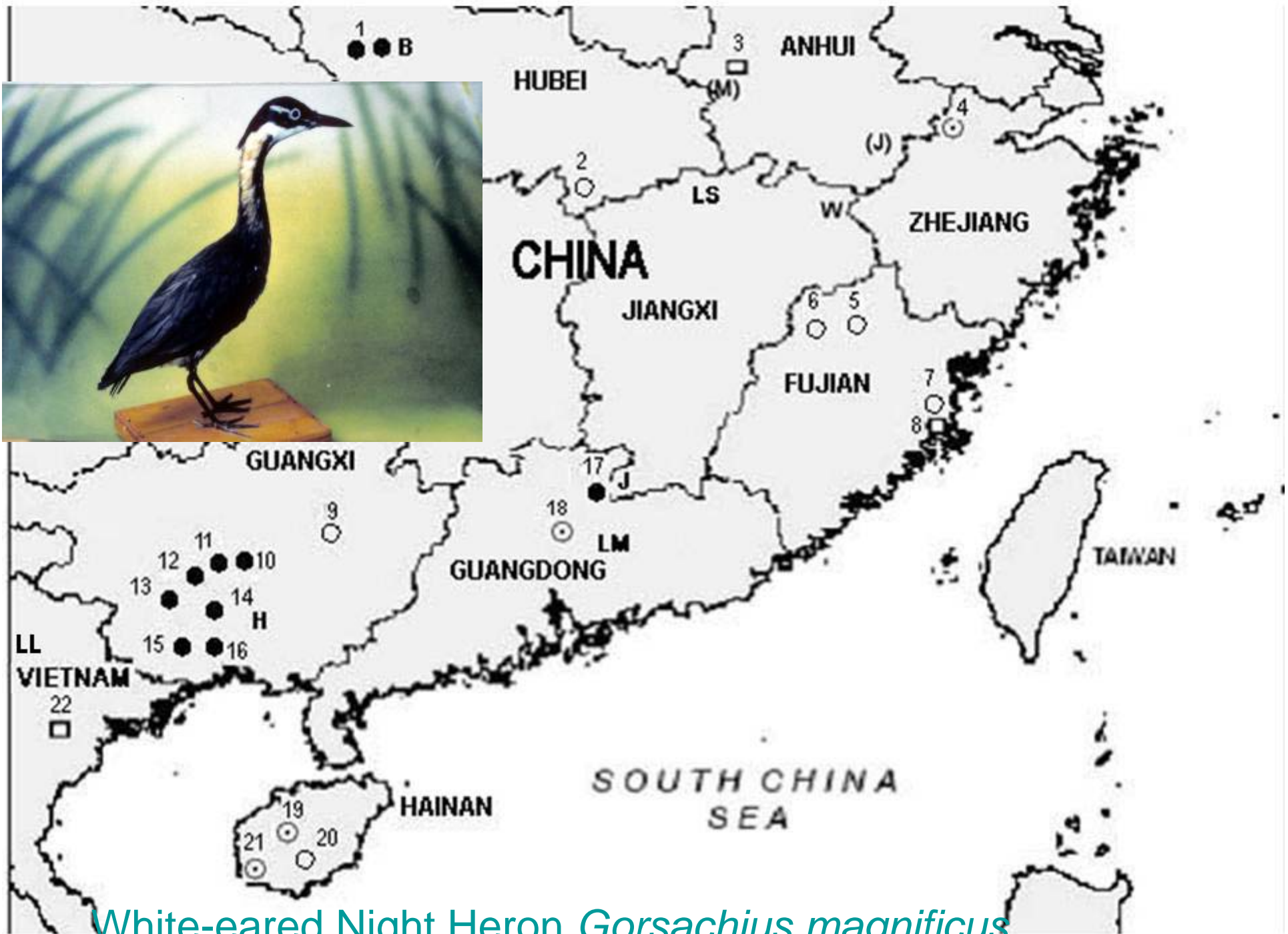
Terminology



Distribution records

Extent of occurrence

Area of occupancy





Criteria

- ✱ A: Reduction in population size
- ✱ B: Small geographic range
 - B1 Extent Of Occurrence
 - B2 Area of Occupancy
- ✱ C: Small and declining population
- ✱ D: Very small population
- ✱ E: Low population viability



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Steps for the assessment

 Is it Critically Endangered CR ?

 EN

 VU



Steps for the assessment

 CR x

 Is it Endangered EN ?

 VU



Steps for the assessment

✿ CR x

✿ EN x

✿ Is it Vulnerable VU ?



Steps for the assessment

✿ CR x

✿ EN x

✿ VU x

✿ Is it Near Threatened NT?



A: Reduction in population size

1. An observed, estimated, inferred or suspected population size reduction of **90%** over the last 10 years or three generations, whichever is the longer, where the causes of the reduction are clearly reversible AND understood AND ceased, based on (and specifying) any of the following:
 - (a) direct observation
 - (c) a decline in area of occupancy, and/or quality of habitat
 - (e) the effects of introduced taxa, hybridization, pathogens, pollutants, competitors or parasites.



A: Reduction in population size

2. An observed, estimated, inferred or suspected population size reduction of **80%** over the last 10 years or three generations, whichever is the longer, where the reduction or its causes may not have ceased OR may not be understood OR may not be reversible, based on (and specifying) any of (a) to (e) under A1. **past**



A: Reduction in population size

3. A population size reduction of **80%, projected or suspected to be met** within the next 10 years or three generations, whichever is the longer (up to a maximum of 100 years), based on (and specifying) any of (b) to (e) under A1. future



A: Reduction in population size

4. An observed, estimated, inferred, projected or suspected population size reduction of 80% over any 10 year or three generation period, whichever is longer (up to a maximum of 100 years in the future), where the time period must include both the past and the future, and where the reduction or its causes may not have ceased OR may not be understood OR may not be reversible, based on (and specifying) any of (a) to (e) under A1. **spanning past - future**



A: Reduction in population size

Dilemma:

- ✂ More information on generation time needed.
- ✂ Should we reflect the existing variation (1-17 years Hölldobler & Wilson 1990)?
- ✂ Details of percentage habitat loss and degradation over time needed.



B: Geographic range (B1 or B2 or both)

B1 (extent of occurrence): Extent of occurrence estimated to be less than 100 km², and estimates indicating at least two of a–b:

- a. Severely fragmented or known to exist at only a single location
- b. Continuing decline, observed, inferred or projected, in any of the following:
 - (i) extent of occurrence
 - (ii) area of occupancy
 - (iii) area, extent and/or quality of habitat
 - (iv) number of locations or subpopulations
- c. Extreme fluctuations in any of the following:
 - (i) extent of occurrence
 - (ii) area of occupancy
 - (iii) number of locations or subpopulations



B: Geographic range (B1 or B2 or both)

B2. Area of occupancy estimated to be less than 10 km², and estimates indicating at least two of a–c:

- a. Severely fragmented or known to exist at only a single location.
- b. Continuing decline, observed, inferred or projected, in any of the following:
 - (i) extent of occurrence
 - (ii) area of occupancy
 - (iii) area, extent and/or quality of habitat
 - (iv) number of locations or subpopulations
- c. Extreme fluctuations in any of the following:
 - (i) extent of occurrence
 - (ii) area of occupancy
 - (iii) number of locations or subpopulations



D. Population size

- * estimated to number fewer than 50 mature individuals = colonies



Criteria - overview

	CR	EN	VU	NT	LC	DD
Extent of occurrence km ²	<100	<5.000	<20.000		>20.000	
Area of occupancy km ²	10	500	2.000		>2.000	
Estimated decline (stopped)	90%	70%	50%			
Estimated decline (ongoing)	80%	50%	30%			
Fragmentation	severe	severe	severe			
Known locations related to threat	1	5	10			
Continuing decline	yes	yes	yes			
Estimated population size mature indiv. (=colonies)	50	250	1000			
Restrictedness km ²			20			
Location			5			



What information do we need for each species?

- ✱ Generation time
- ✱ Distribution pattern
- ✱ Habitat affiliation (type and strenght)
- ✱ Habitat decline

Is this information available for the majority of species?



Assessment of Least Concern LC

1 Is the **extent of occurrence** greater than 25,000 km²
(approx. the size of Hainan) ?

A yes 2

B no

2 Is **area of occupancy** greater than 2,500 km² ?

A yes 3

B no

3 Is **estimated decline** (e.g. due to habitat loss) over 3
generations below 25%?

A yes Least Concern LC



Examples



Formica rufa

- ✱ A Estimated Decline (ED) below 30%
- ✱ B1 Extent of occurrence (EOO) > 20,000 km²
- ✱ B2 Area of occupancy (AOO) > 2,000 km²

LC



Aneuretus simoni

A2 ED above 50% forest habitat decline in the last 15 years

c decline in area of occupancy / quality of habitat

B1 EOO < 5,000 km²

a severely fragmented less than 5 locations

b (iii) continuing decline ?

B2 AOO < 500 km²

a severely fragmented less than 5 locations

b (iii) continuing decline ?

EN



Aneuretus simoni

Why not CR? (but maybe almost)

- ✖ Can't assume 80% in 10 years or 3 generations
- ✖ Can't assume EOO less than 100 km²
- ✖ Can't assume AOO less than 10 km²



Camponotus gigas

Distribution Sumatra, Borneo up to Thailand.
Mangrove to lower montane forest.

Lowland forest cover in Sumatra is completely lost
in the last 20 years, declines for Borneo are high.

A2-4 ED above 50% (or even above 80%?)

c decline in area of occupancy / quality of habitat

B1 EOO > 20,000 km²

B2 AOO > 2,000 km²

EN



Myrmica draco

Only recorded from Mount Maoershan in Guangxi, altitude 1850 – 1930 m. Highest mountain in S China. Living on top of mountain. Global warming projections with 1 C warming result in altitudinal shift of 150 m in 10 years and therefore could eliminate the only known population.

A3 ED above 80%

- c decline in area of occupancy / quality of habitat
- e effects of pollutants

B1 EOO < 100 km²

- a known to exist in a single location
- b (iii) continuing decline

CR

B2 AOO < 10 km² ?