

Global Red-Listing of Insects: Ladybirds as a Case Study

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BRC Recorders' Day
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Photo: Richard Naylor



**UK Centre for
Ecology & Hydrology**



**UK
Ladybird Survey**



More than 44,000 species are threatened with extinction

That is still 28% of all assessed species.

AMPHIBIANS

41%



MAMMALS

26%



CONIFERS

34%



BIRDS

12%



SHARKS & RAYS

37%



REEF CORALS

36%



SELECTED CRUSTACEANS

28%



REPTILES

21%



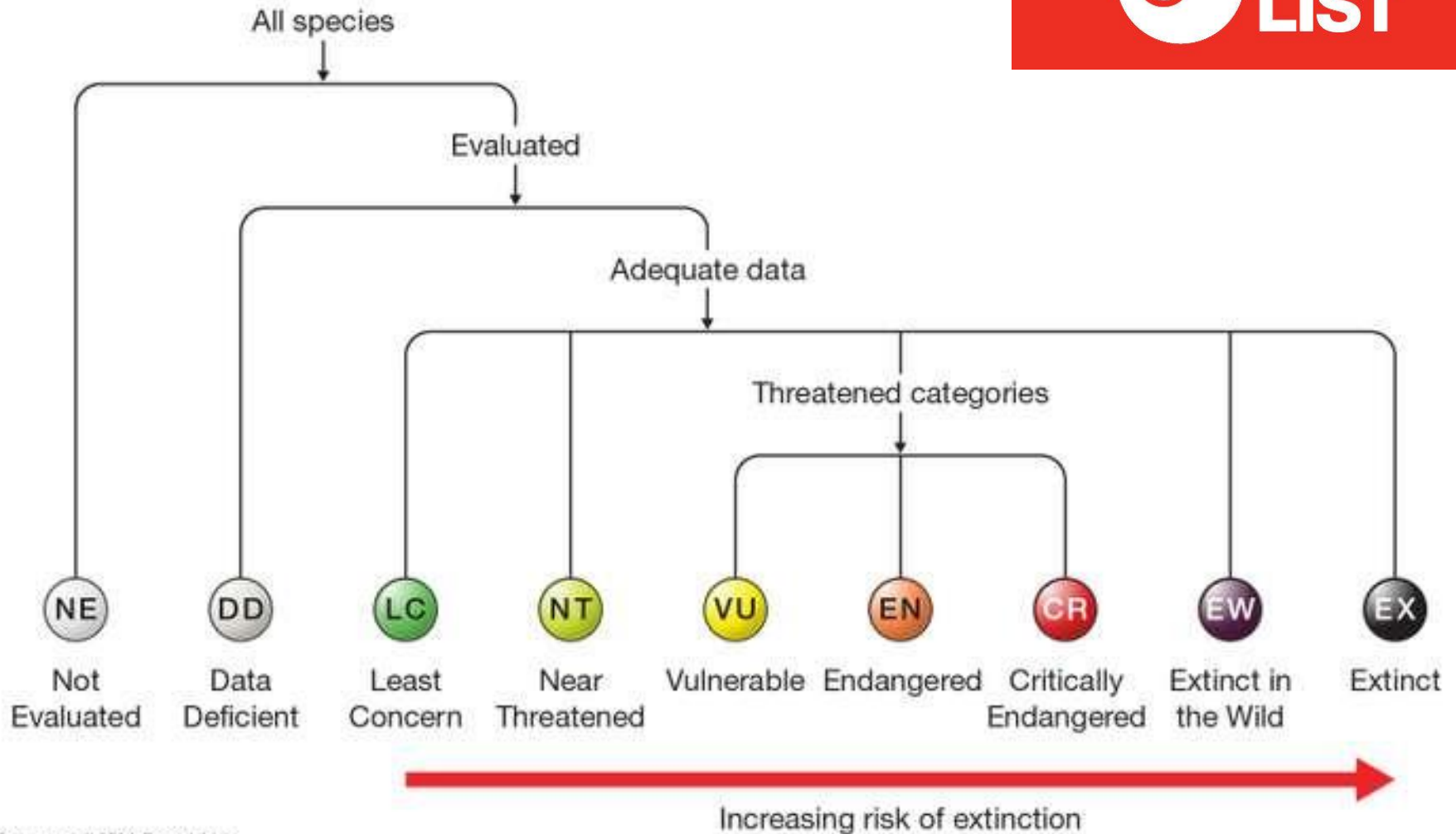
CYCADS

70%



feedback

Red List categories





Red List importance

- Guiding scientific **research**
- Informing **policy**
- Influencing **resource allocation**
- Informing **conservation planning**
- Raising **awareness**

IUCN specialist groups: invertebrates



SSC Groups

Directory Amphibians & Reptiles Birds Fishes **Invertebrates** Plants & Fungi Mammals Disciplinary Groups

Invertebrates

- + Bumblebee
- Butterfly
- + Cave Invertebrate
- Coral
- + Dragonfly
- Firefly
- Freshwater Crustacean
- + Grasshopper
- Hoverfly
- Horseshoe Crab
- Ladybird
- Mayfly, Stonefly and Caddisfly
- Mid Atlantic Islands Invertebrate
- Mollusc
- South Asian Invertebrate
- Spider and Scorpion

Invertebrates

Bumblebee



Butterfly



Cave Invertebrate



Freshwater Crustacean



Grasshopper



Hoverfly



Coral



Dragon



Horseshoe Crab



Ladybird



Mayfly, Stonefly and Caddisfly



Mid Atlantic Islands Invertebrate



Mollusc



South Asian Invertebrate



The good news: 94% Odonata
assessed!



Image: [Ken Billington](#)

The bad news: ~1% insects assessed



Order	No. species assessed for Red List	Global species	% Assessed
Odonata	6,224	6,650	93.6%
Orthoptera	1,495	24,481	6.1%

The bad news: ~1% insects assessed



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Odonata	6,224	6,650	93.6%
Orthoptera	1,495	24,481	6.1%
Lepidoptera	1,666	158,570	1.1%
Coleoptera	1,840	392,415	0.5%
Hymenoptera	679	152,677	0.4%

The bad news: ~1% insects assessed



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Coleoptera	1,840	392,415	0.5%
Hymenoptera	679	152,677	0.4%
Diptera	366	160,591	0.2%
Hemiptera	61	104,165	0.1%
All other orders	133	50,000	0.3%
Total	12,464	1,049,549	1.2%

Beetles assessed, by family

Coleoptera family	No. species assessed
Scarabaeidae	946
Cerambycidae	120
Carabidae	116
Elateridae	96
Dytiscidae	66
Geotrupidae	50
Tenebrionidae	45
Zopheridae	29
Anthribidae	28
Curculionidae	26
Lucanidae	24
Erotylidae	17
Cleridae	17
Eucnemidae	16
Mycetophagidae	14
Staphylinidae	12
Oedemeridae	10
Cetoniidae	10

Chrysomelidae = 3
Coccinellidae = 0



Image: *Phanaeus daphnis* (Scarabaeidae)
[Udo Schmidt](#)



Ladybird assessments – initial target 100 species

- Europe (30 species)
- North America (30 species)
- Central America (10 species)
- South America (10 species)
- Africa & Middle East (10 species)
- Oriental region (10 species)

Possible flagship species



Europe:

Coccinella quinquepunctata

Image PMJB

N. America:

Coccinella novemnotata



Species selection – prioritizing



- Common species?
- Rare species? (But limited data?)
- Species with partially unknown distributions?
- Species with known limited distributions?

Species with known limited distributions – e.g. ladybird in Chile



Mimoscymnus islanegrensis - Assessment Information:

Red List Category & Criteria: VU D2

Justification:

Mimoscymnus islanegrensis has only been found on the northern slope of the Quebrada de Córdova (a creak), in an area 20 m wide and no more than 300 m long, adjacent to summer homes. It is found abundantly in November-December of each year in the first 30 m of the creak, and sporadically towards the interior of it, always on the Southern South America native plant *Eupatorium glechonophyllum* Less (Compositae). It has been searched by several entomologists both in the creak and in nearby ravines of similar structure, where the same plant is present, without success.

Geographic Range:

This species has a very restricted distribution: Isla negra, San Antonio, Chile. Only found in the northern slope of Quebrada de Córdova in Central Chile, in a very restricted area of 20 x 300 m)

Country Occurrence: Chile



Species selection – issues

- Data availability / data gaps
- Lack of people to participate
- Time consuming!
- Global / regional scale differences
- Lots of uncertainty



MINOR REVIEW

Testing the applicability of regional IUCN Red List criteria on ladybirds (Coleoptera, Coccinellidae) in Flanders (north Belgium): opportunities for conservation

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Abstract. 1. Red Lists assess the extinction risk of species and are an important tool to prioritise species conservation and management measures. Worldwide, quantitative IUCN criteria are used to estimate the threat status of species at the regional level.

2. In Flanders (north Belgium), about 70 000 distribution records of ladybirds were collected in 36% of all the grid cells ($1 \times 1 \text{ km}^2$) since 1990 during a large-scale citizen-science project.

3. Applying the IUCN criteria to the 36 resident 'conspicuous' ladybirds in Flanders resulted in two *Regionally Extinct* species, three *Endangered* species and

Ladybird species being assessed: European region

No.	Species	Status
1	<i>Hippodamia tredecimpunctata</i>	Written
2	<i>Coccinella magnifica</i>	Written
3	<i>Coccinella quinquepunctata</i>	Written
4	<i>Coccinella hieroglyphica</i>	Written
5	<i>Adalia decempunctata</i>	Written
6	<i>Adalia bipunctata</i>	Written
7	<i>Chilocorus bipustulatus</i>	Written
8	<i>Chilocorus canariensis</i>	Written
9	<i>Chilocorus renipustulatus</i>	Written
10	<i>Calvia quatuordecimguttata</i>	Written
11	<i>Propylea quatuordecimpunctata</i>	Written
12	<i>Harmonia axyridis</i>	Written
13	<i>Halyzia sedecimguttata</i>	Not started
14	<i>Harmonia quadripunctata</i>	Not started
15	<i>Myzia oblongoguttata</i>	Not started
16	<i>Vibidia duodecimguttata</i>	Not started
17	<i>Clitostethus arcuatus</i>	Not started

Further reviews
needed before
upload to Red List
system



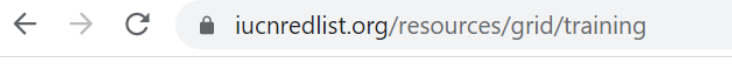
Hippodamia tredecimpunctata

Image PMJB

IUCN Red List training



- www.iucnredlist.org/resources/online



▼ Red List Training

Online



RED LIST TRAINING – ONLINE

Online Red List Training

A free online IUCN Red List Training course is available for anyone who would like to learn more about red listing.

Workshops



RED LIST TRAINING – WORKSHOPS

IUCN Red List Training Workshops

Red List training can be provided through IUCN Red List Assessor Training workshops.

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- António Onofre Soares
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- Jirislav Skuhrovec

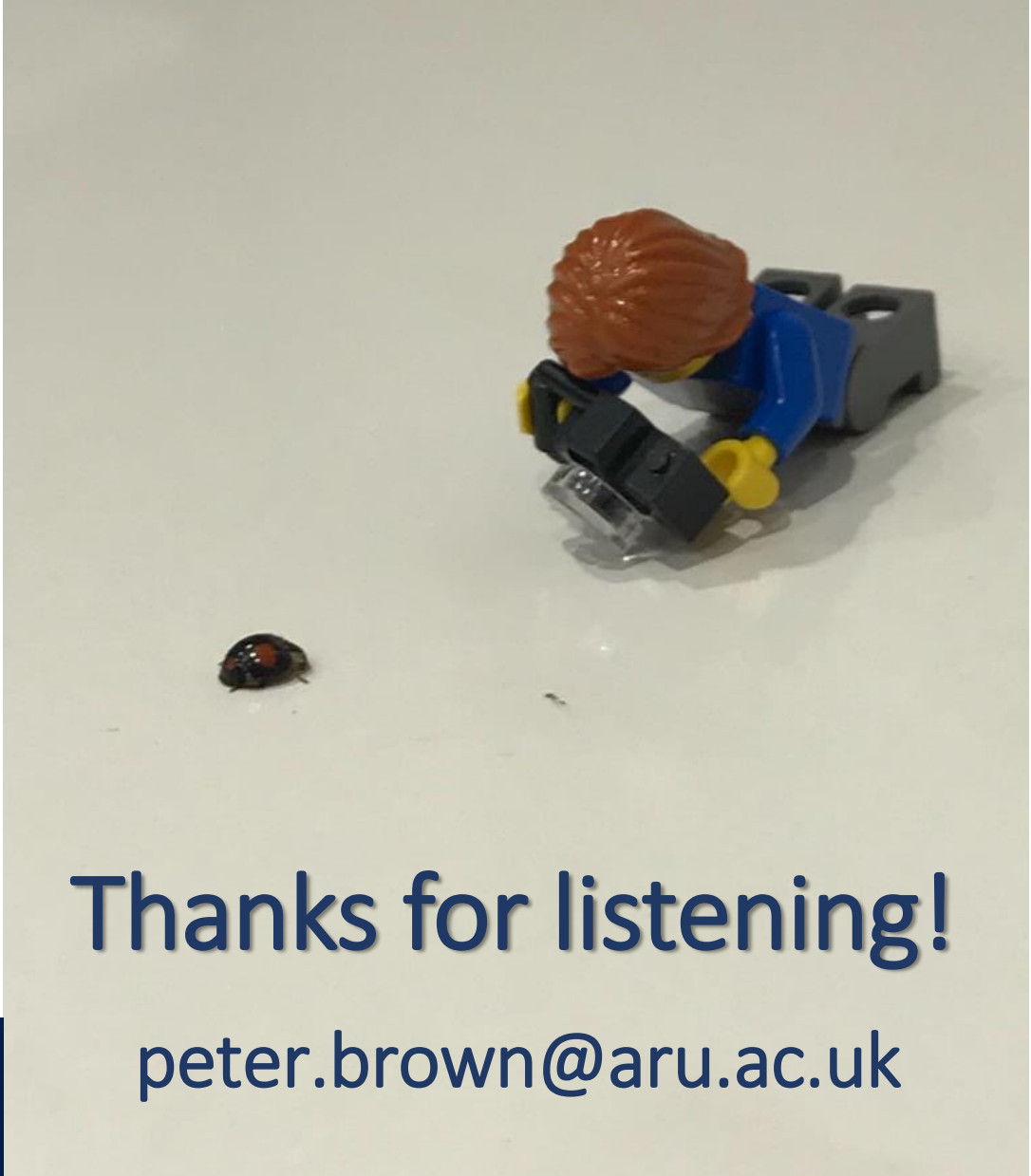


Image: David Moorman

Thanks for listening!
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