

Is Flanders still Europe's worst case scenario? A new IUCN Red list of Flemish butterflies

Dirk Maes (INBO)

Wouter Vanreusel, Ilf Jacobs (Natuurpunt)

Koen Berwaerts (Vlinderwerkgroep)

Hans Van Dyck (UCL)



inbo

Instituut voor Natuur- en Bosonderzoek
Research Institute for Nature and Forest



Vlinderwerkgroep
natuurpunt
www.vlinderwerkgroep.be

UCL

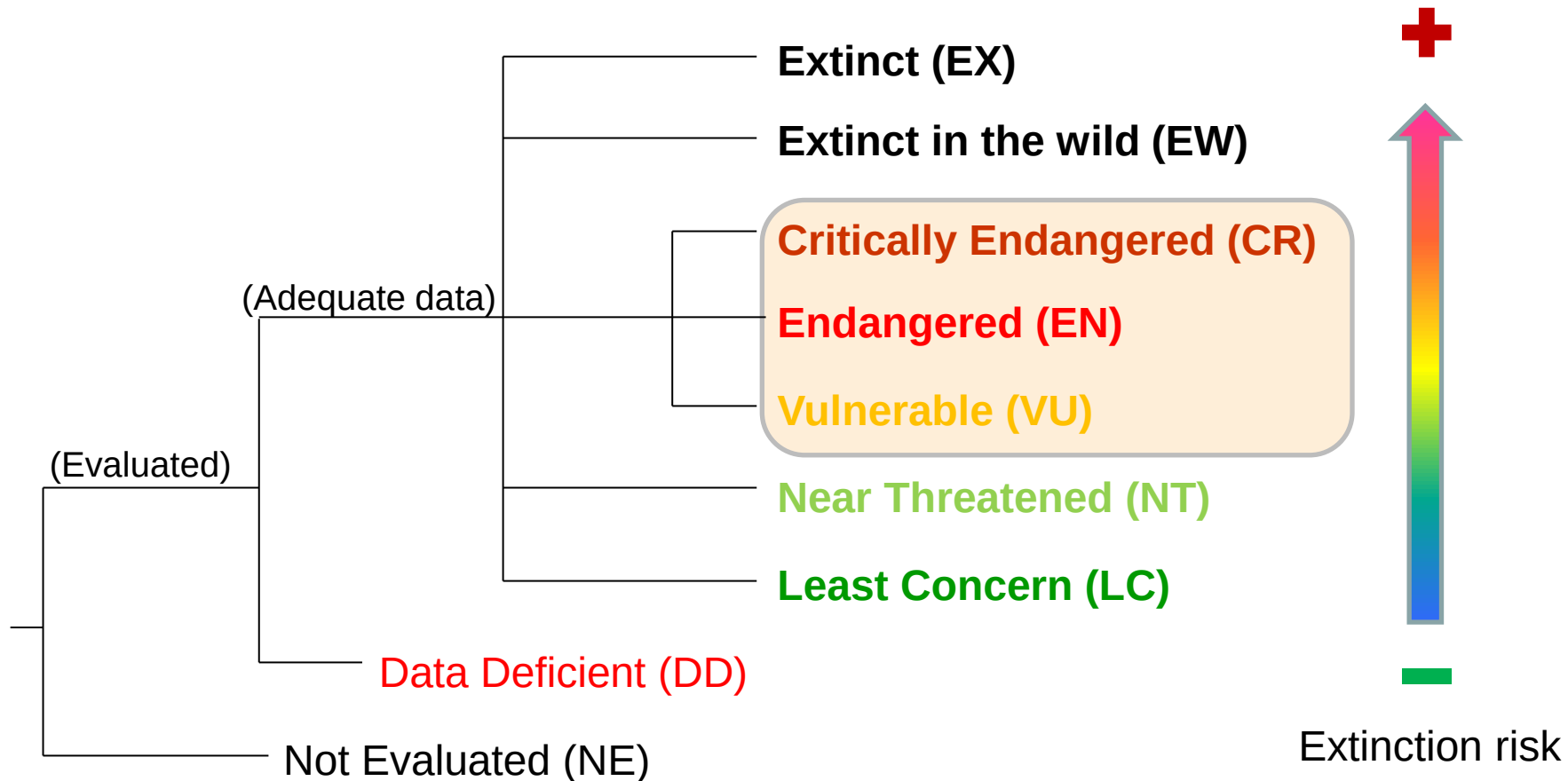
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What is an IUCN Red List?



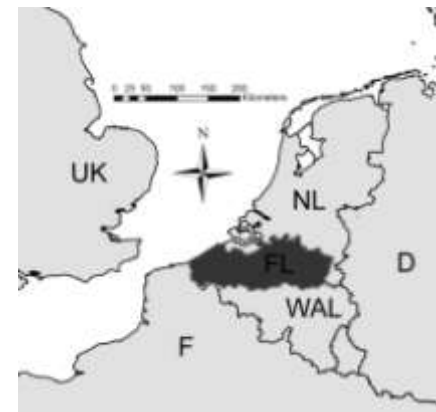
- International Union for the Conservation of Nature
- Assesses extinction risk



5 IUCN criteria

- **Criterion A**
 - Declining population
- **Criterion B**
 - Geographic range size
 - + fragmentation, decline and/or fluctuations
- **Criterion C**
 - Small population size
 - + fragmentation, decline and/or fluctuations
- **Criterion D**
 - Very small population or very restricted distribution
- **Criterion E**
 - Quantitative analysis of extinction risk

- **Criterion A** (Declining population)
 - Period 1991-2000 vs. 2001-2010
 - Trend in distribution using 1 x 1 km² grid cells
- **Criterion B** (Geographic range size)
 - Number of occupied 1 x 1 km² grid cells > 2001
- **Rescue effect**
 - Lower Red List category if species can be “saved” from neighbouring regions
 - Netherlands and/or Wallonia (S-Belgium)
 - If not threatened there ...



Applied in Flanders

- **Category** **CR** **EN** **VU** **NT**

- **Criterion A: Declining population**

Decline	≥80%	50-80%	30-50%	20-30%
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- **Criterion B: Geographic range size (Area of Occupancy)**

# 1 x 1 km ² grid cells	<10	10-500	500-2 000	2 000-3 000
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And at least 2 of the 3 subcriteria (a)–(c)

- a (i) strongly fragmented
 - (ii) # locations 1 1-5 6-10 11-20
 - b (ii) declining population trend
 - (iii) declining habitat quality
 - c (iv) extreme fluctuations in the number of mature individuals
-

The Red List of Flemish butterflies

Regionally extinct (20)

Aporia crataegi
Argynnis adippe
Argynnis aglaja
Argynnis niobe
Boloria euphrosyne
Boloria selene
Coenonympha hero
Coenonympha tullia
Euphydryas aurinia
Heteropterus morpheus
Hipparchia statilinus
Leptidea reali
Limenitis populi
Melanargia galathea
Melitaea athalia
Melitaea diamina
Phengaris teleius
Plebejus idas
Pyrgus armoricanus
Spialia sertorius

Critically Endangered (6)

Melitaea cinxia
Nymphalis antiopa
Nymphalis polychloros
Phengaris alcon
Pyrgus malvae
Satyrrium ilicis

Endangered (5)

Apatura iris
Hesperia comma
Hipparchia semele
Lasiommata megera
Plebejus argus

Vulnerable (7)

Callophrys rubi
Cyaniris semiargus
Erynnis tages
Lycaena tityrus
Satyrrium w-album
Thymelicus lineola
Thymelicus sylvestris

Near Threatened (7)

Aglais urticae
Carterocephalus palaemon
Cupido minimus
Gonepteryx rhamni
Issoria lathonia
Leptidea sinapis
Limenitis camilla

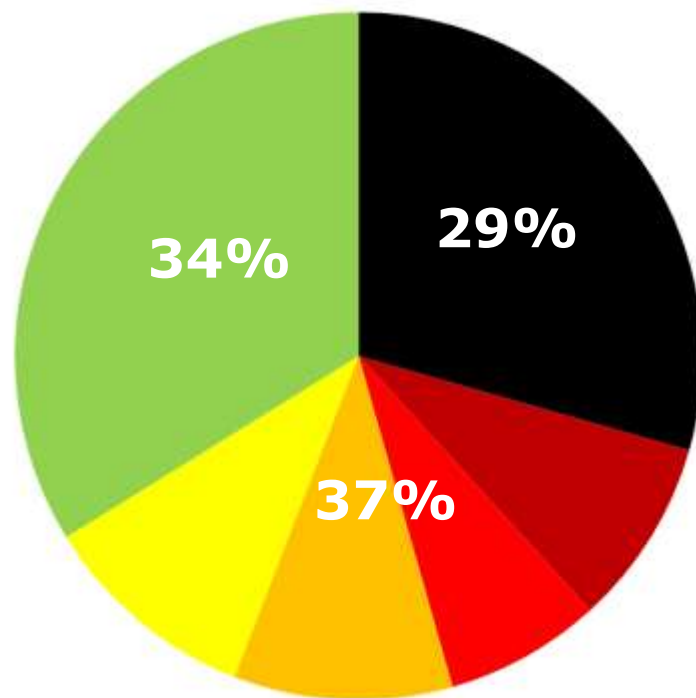
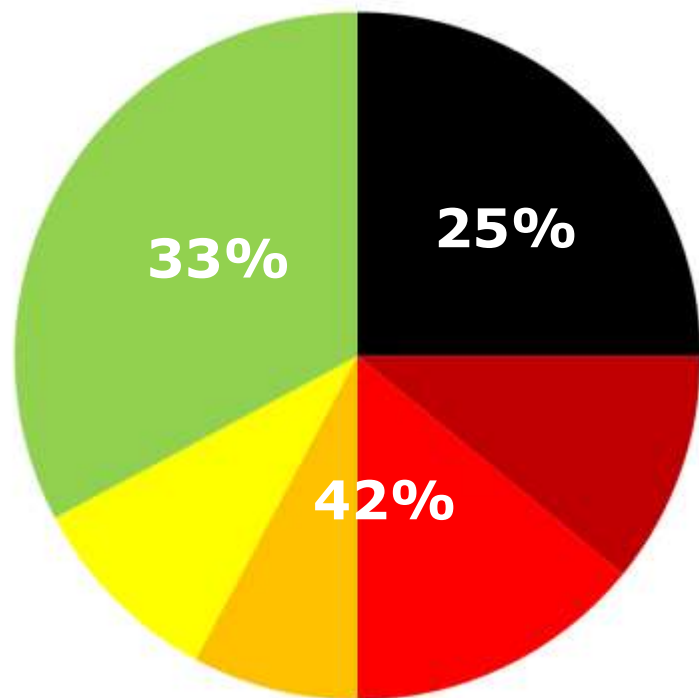
Least Concern (23)

Aglais io
Anthocharis cardamines
Aphantopus hyperantus
Araschnia levana
Argynnis paphia
Aricia agestis
Carcharodus alceae
Celastrina argiolus
Coenonympha pamphilus
Colias crocea
Colias hyale
Lycaena phlaeas
Maniola jurtina
Neozephyrus quercus
Ochlodes sylvanus
Papilio machaon
Pararge aegeria
Pieris brassicae
Pieris napi
Pieris rapae
Polygonia c-album
Polyommatus icarus
Pyronia tithonus
Thecla betulae
Vanessa atalanta
Vanessa cardui

Compared with the previous list

Red List 1999

Red List 2011



Extinct or threatened: 67%

Extinct or threatened: 66%

Are we still Europe's worst case scenario?



Winners on the Red List

- New, new, new ...!
 - *Carcharodus alceae*
- Woodland species
 - *Argynnis paphia*
 - *Satyrrium w-album*
 - *Thecla betulae*
- Grassland species
 - *Cyaniris semiargus*
 - *Erynnis tages*
 - *Issoria lathonia*
 - *Lycaena tityrus*



Some of the winners



Carcharodus alceae (LC)

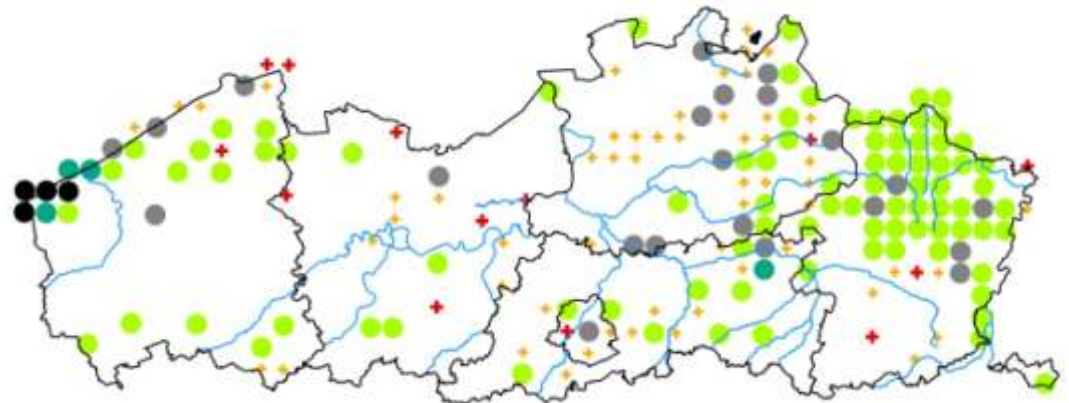
- + = only before 1991
- + = only before 2001
- = since 1991
- = since 2001
- = always present



Even in my garden in 2011 !



Issoria lathonia (NT)



... and losers



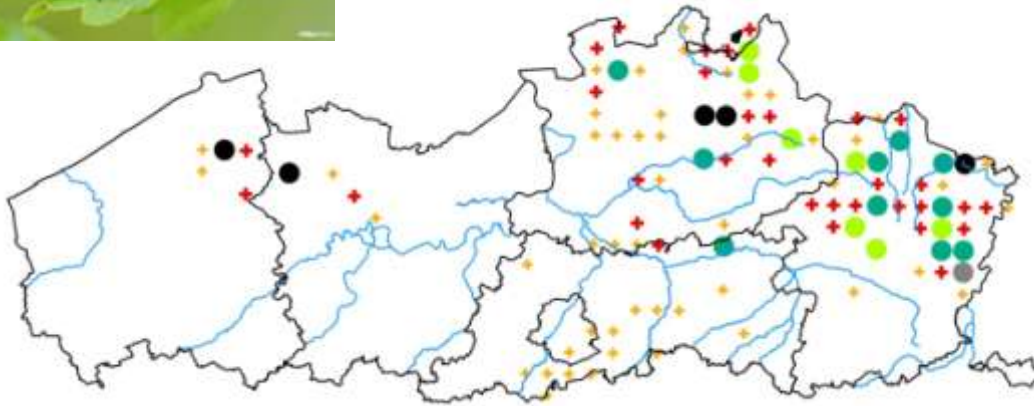
- Extinct species
 - *Boloria selene*
 - *Coenonympha tullia*
 - *Heteropterus morpheus*
 - *Melanargia galathea*
- Heathland species
 - *Phengaris alcon*
 - *Satyrium ilicis*
- Woodland species
 - *Nymphalis polychloros*
- Grassland species
 - *Melitaea cinxia*
- "Common" species
 - *Aglais urticae*
 - *Gonepteryx rhamni*
 - *Lasiommata megera*
 - *Thymelicus lineola*



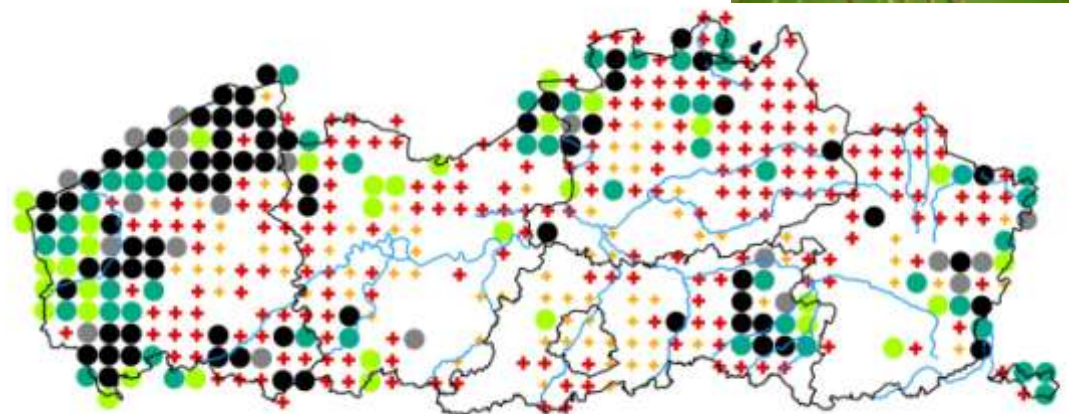
Some of the losers

Satyrium ilicis (CR)

- + = only before 1991
- + = only before 2001
- = since 1991
- = since 2001
- = always present

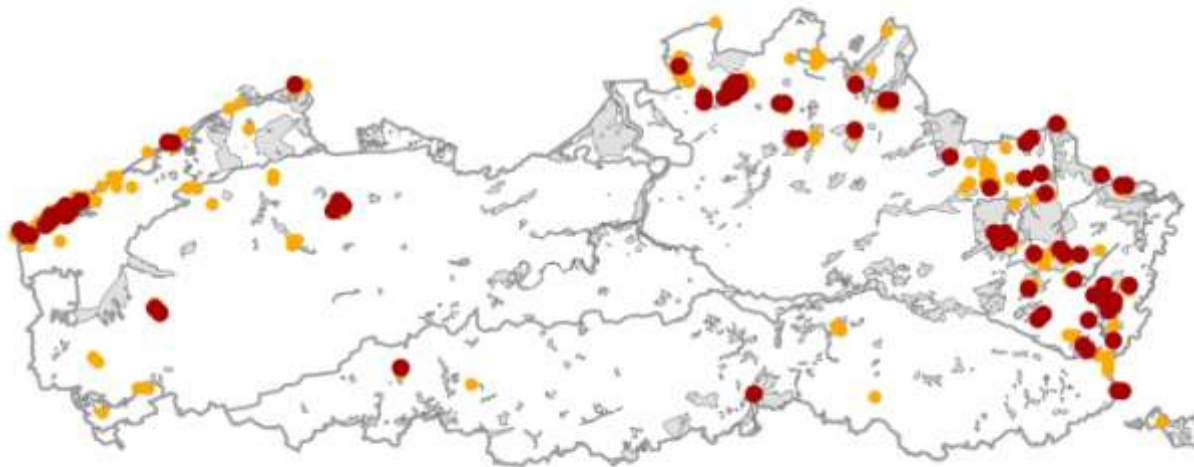


Lasiommata megera (EN)



Policy

- Species action plans
 - *H. semele*, *L. megera* & *S. ilicis*
- Hotspots for butterflies in Flanders
 - Per grid cell
 - Weighted sum of Red List species



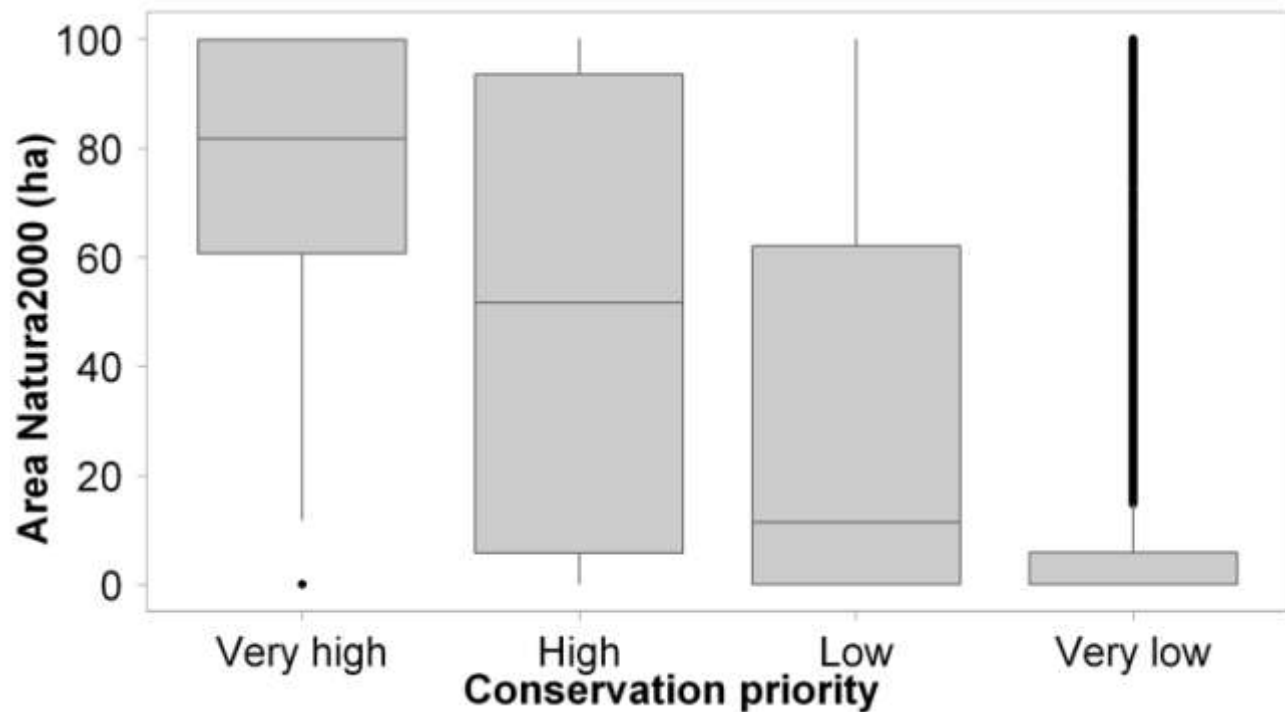
■ = Natura 2000



Protected areas



- Protected areas are imported
 - Even when protected for other species!



Management

- Focus
 - Red List species
 - (Protected) areas
- But: also “common” species
 - Different approach/scale
 - Different land owners



Climate change ...

- Species to be expected
 - *Cupido argiades*
 - *Brentis daphne*
- Which species will get here?
 - Translocations?



Conclusion

- Some species fared better ...
- But more species continued to decline!
- Need for appropriate management & policy
 - Species
 - Areas



Thank you!

Maes D., Vanreusel W., Jacobs I., Berwaerts K. & Van Dyck H.
(2012) Applying IUCN Red List criteria at a small regional level:
a test case with butterflies in Flanders (north Belgium).
Biological Conservation **145**, 258-266.

dirk.maes@inbo.be

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Jeroen Mentens – **Vildaphoto**

