Butterfly Monitoring Scheme

una metodologia per il monitoraggio dei lepidotteri a supporto dell'iniziativa europea sugli impollinatori

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Zoolab – Dipartimento di Scienze della Vita e Biologia dei Sistemi - Università degli Studi di Torino

Butterfly Conservation Europe

Roma, 24 Febbraio 2020

Gli insetti sono in drammatico declino

Butterfly CONSERVATION EUROPE

PLOS ONE

RESEARCH ARTICLE

More than 75 percent decline over 27 years in total flying insect biomass in protected areas

Caspar A. Hallmann[1]*, Martin Sorg[2], Eelke Jongejans[1], Henk Siepel[1], Nick Hofland[1], Heinz Schwan[2], Werner Stenmans[2], Andreas Müller[2], Hubert Sumser[2], Thomas Hörren[2], Dave Goulson[3], Hans de Kroon[1]

1 Radboud University, Institute for Water and Wetland Research, Animal Ecology and Physiology & Experimental Plant Ecology, PO Box 9100, 6500 GL Nijmegen, The Netherlands, 2 Entomological Society Krefeld e.V., Entomological Collections Krefeld, Marktstrasse 159, 47798 Krefeld, Germany, 3 University of Sussex, School of Life Sciences, Falmer, Brighton BN1 9QG, United Kingdom

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Biological Conservation 232 (2019) 8–27

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Biological Conservation

journal homepage: www.elsevier.com/locate/biocon

Review

Worldwide decline of the entomofauna: A review of its drivers

Francisco Sánchez-Bayo[a,*], Kris A.G. Wyckhuys[b,c,d]

[a] School of Life & Environmental Sciences, Sydney Institute of Agriculture, The University of Sydney, Eveleigh, NSW 2015, Australia
[b] School of Biological Sciences, University of Queensland, Brisbane, Australia
[c] Chrysalis, Hanoi, Viet Nam
[d] Institute of Plant Protection, China Academy of Agricultural Sciences, Beijing, China

PNAS

Climate-driven declines in arthropod abundance restructure a rainforest food web

Bradford C. Lister[a,1] and Andres Garcia[b]

[a]Department of Biological Sciences, Rensselaer Polytechnic University, Troy, NY 12180; and [b]Estación de Biología Chamela, Instituto de Biología, Universidad Nacional Autónoma de México, 47152 Chamela, Jalisco, Mexico

Edited by Nils Christian Stenseth, University of Oslo, Oslo, Norway, and approved September 10, 2018 (received for review January 8, 2018)

Global Change Biology

INVITED LETTER TO THE EDITOR | Free Access

"Insectageddon": A call for more robust data and rigorous analyses

Chris D. Thomas, T. Hefin Jones, Sue E. Hartley

First published: 01 March 2019 | https://doi.org/10.1111/gcb.14608 | Cited by: 1

SECTIONS PDF TOOLS SHARE

As members of that subset of the human population who love insects, we have been alarmed by a recent publication reporting their global decline and impending extinction (Sánchez-Bayo & Wyckhuys, 2019), and the accompanying media furore. Indeed, there has

Non esistono schemi di monitoraggio a lungo termine pan europei

"Since the European Commission shows a growing interest for biodiversity monitoring, the time is there to start a European Dragonfly Monitoring Scheme. The success of the European Butterfly Indicator (coordinated by Butterfly Conservation Europe) can serve as an example"

"A pan-European recording scheme, as provided by observation.org, can become an ideal basis for obtaining better distribution maps of Orthoptera species"

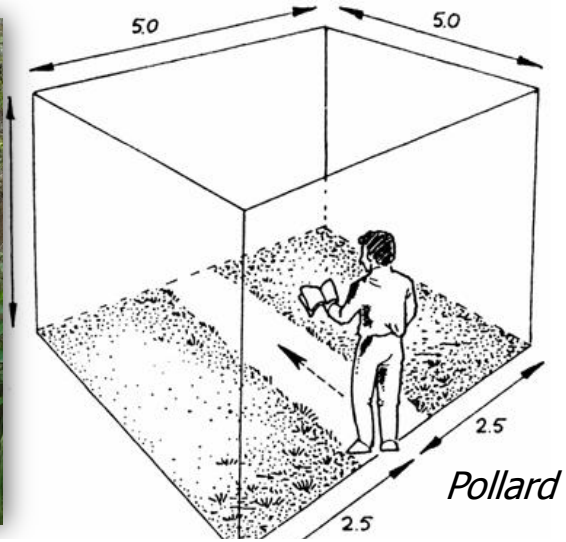

The **Crau Plain Grasshopper** (*Prionotropis rhodanica*) is endemic to the Crau Steppe in southern France and it occurs only in stone steppe habitat. In the past, this Critically Endangered species declined mainly due to the destruction of its habitat with the remaining population likely to be smaller than 5,000 mature individuals. A conservation plan has recently been developed for this species. ©Laurent Tatin.

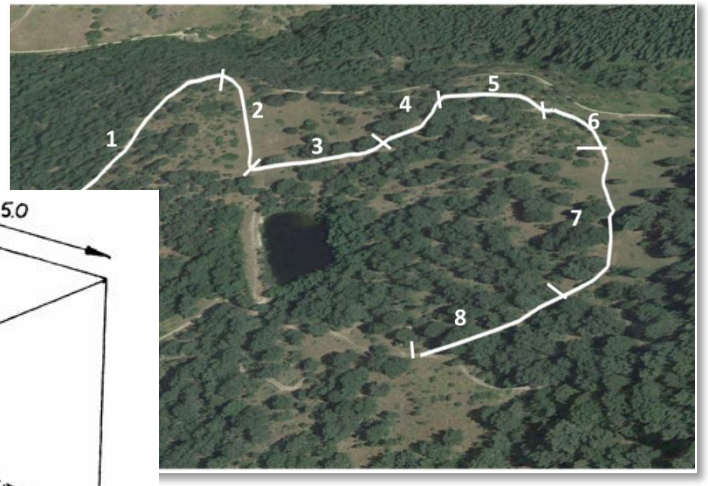
eBMS

European Butterfly Monitoring Scheme

European Butterfly Monitoring Scheme

http://www.butterfly-monitoring.net/mydata





Pollard walk – Pollard and Yates 1993

The European Butterfly Monitoring Scheme (eBMS) was formed by Butterfly Conservation Europe in April 2016 to bring together data from the Butterfly Monitoring Schemes from different countries into a single database. The work is coordinated by the Centre for Ecology and Hydrology in the UK.

There are well organised active schemes in Europe in many countries, from Finland in the north until Spain in the south. In eBMS data from all these schemes is collected together to analyse and produce the population trends of the European species.

Every moment eBMS is growing and including more partners, new partners that use the website as a national website or sharing the data directly to the database. All the collaborators, volunteers and suppliers of data are decisive for the knowledge of European Butterflies.

eBMS

Butterfly CONSERVATION EUROPE

English

eBMS | Butterfly Monitoring | eBMS background | My scheme | My Data | eBMS data | ABLE | Log in

Welcome

https://butterfly-monitoring.net/

Become a volunteer counting butterflies!

Help us counting butterflies, it will increasing the knowledge of butterflies and we could protect them better. There are already thousands of volunteers throughout Europe helping in butterfly conservation.

If you would like to join to eBMS and collaborate in the Butterfly Monitoring Scheme you just need to register. Follow **this link** to the My Data section and you will find a Quick Guide for setting up butterfly monitoring.

- Join one of the biggest citizen science network
- Monitoring butterflies in your area, you will contribute to science

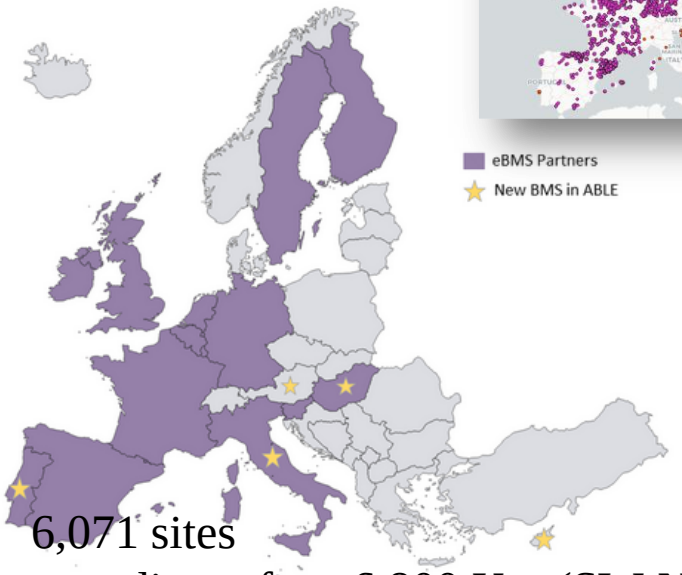
New Butterfly Monitoring Schemes:

During this year 2019 ABLE project did a great progress in the creation of new Butterfly Monitoring Schemes and including existing schemes in the network of eBMS.

- New schemes created in 2019 were in *Portugal*, *Austria* and *Cyprus* with a great welcome in the society and many volunteers
- Schemes joined to eBMS network: *Hungary*, *Italy*, and *Slovenia* providing data to the central database and increasing the number of transects.

The ABLE project helped to several of these schemes promoting butterfly monitoring with several workshops, training seminars and material for volunteers. Many new butterfly transects have been created this year and many more will start next year to cover more European area and determine the situation of butterflies in Europe. We thank to all the volunteers willing to collaborate and to all the effort provided by coordinators and collaborators. We will continue working for butterfly conservation!

Map shows the eBMS network status in Nov.2019 and new BMS developed/created in 2019 with ABLE



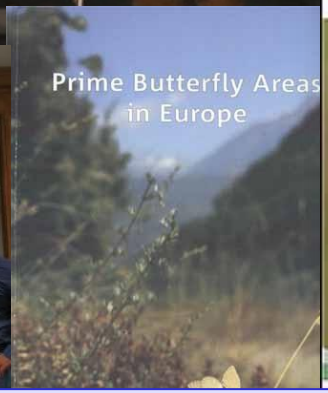
6,071 sites
a gradient of ca. 6,800 Km (SW-NE)

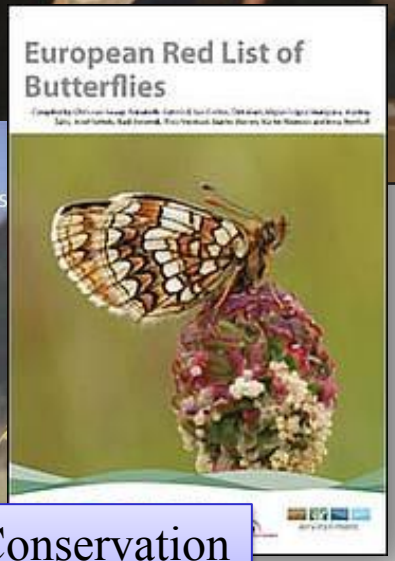
Profile of a new BMS coordinator - ABLE Newsletter 2019

eBMS Network - ABLE Newsletter 2019

Il BMS italiano nasce in Europa grazie all'input della Butterfly Conservation Europe

BCE Board Committee - 2019



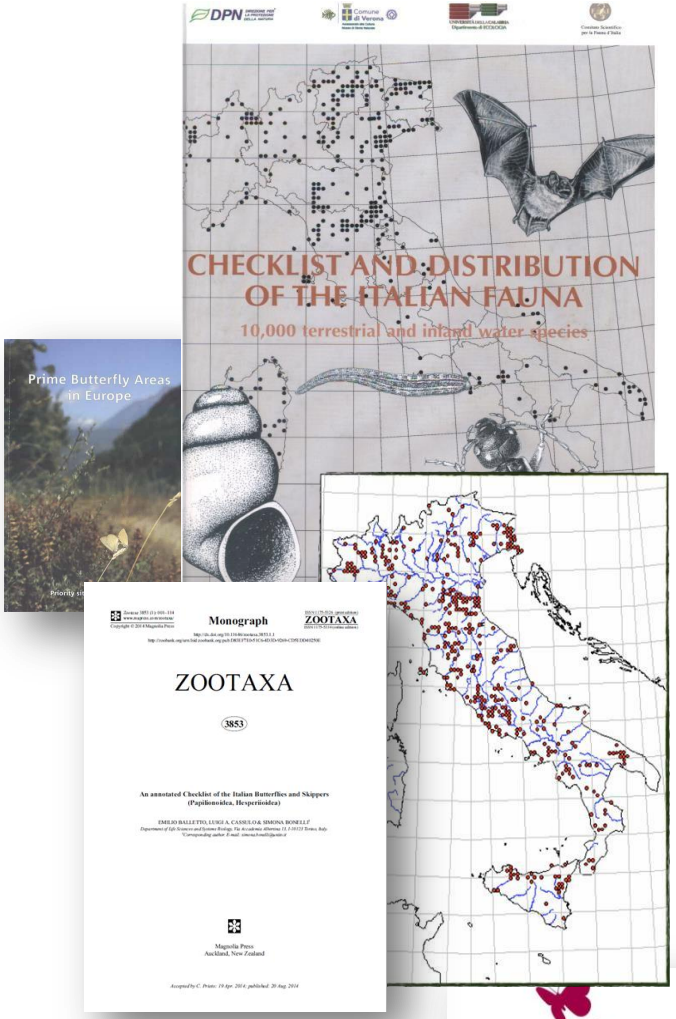


BCE's Mission: Conservation of Butterflies

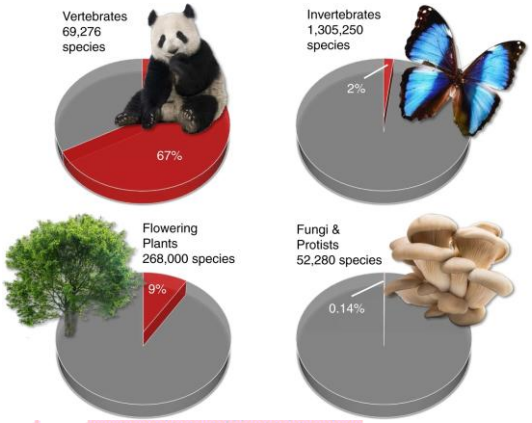
Inaugural Meeting on BCE - Laufen, 29-31 October 2007
Bavarian Academy for Nature Conservation and Landscape Management (ANL)

Il BMS italiano nasce grazie a progetti nazionali che hanno reso possibile la raccolta dati sulle farfalle italiane

- ✓ 1999 - Red Data Book of European Butterflies (van Swaay & Warren 1999)
- ✓ 2003 - Prime Butterfly Areas in Europe (van Swaay & Warren 2003)
- ✓ 2006 - Balletto E., Bonelli S., Cassulo L., (2006). Insecta Lepidoptera Papilionoidea.*In*: S. Ruffo e F. Stoch (Eds) -- Checklist and Distribution of the Italian Fauna.. 10.000 terrestrial and inland water species 2^nd and revised edition -- Memorie del Museo Civico di Storia Naturale di Verona, 2° serie, Sez. Scienze della Vita. 17: 257-261, 280 tav. su CD-ROM.
- ✓ 2014 - Balletto, E., L. A. Cassulo & S. Bonelli. An annotated Checklist of the Italian Butterflies and Skippers (Papilionoidea, Hesperiioidea). Zootaxa, 3853 (1): 1-114



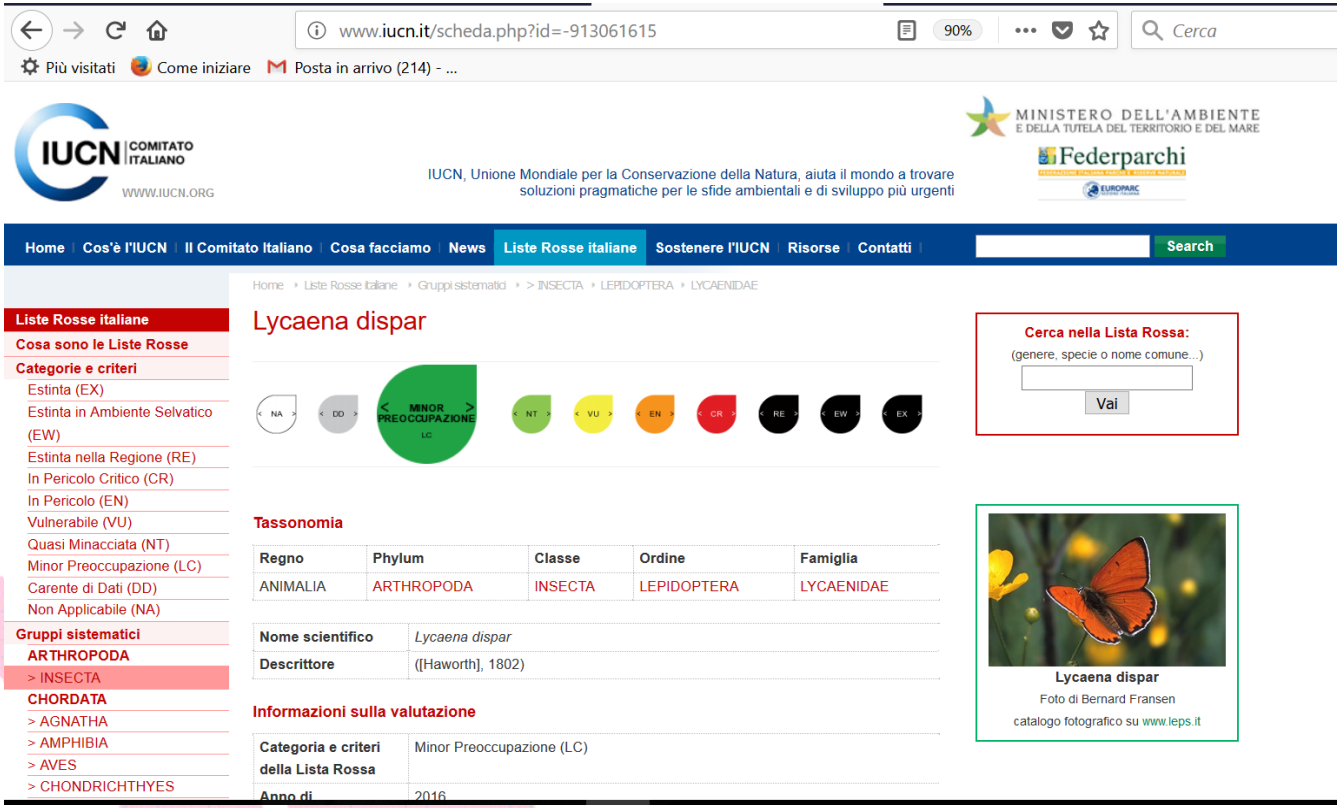
Il BMS italiano nasce grazie a progetti nazionali e consente alla fauna italiana di essere conosciuta e valutata



Eisenhauer, N., Bonn, A., & Guerra, C. A. (2019). Recognizing the quiet extinction of invertebrates. *Nature communications*, *10*(1), 50.

Bonelli S.; Casacci L.P. ; Barbero F. ; Cerrato C.; Dapporto L.; Sbordoni V. ; Scalercio S.; Zilli A.; Battistoni A.; Teofili C.; Rondinini C.; Balletto E. (2018)- THE FIRST RED LIST OF ITALIAN BUTTERFLIES. Insect Conservation and Diversity, 11 (5): 506-521

La prima Lista Rossa delle Farfalle italiane



http://www.iucn.it/liste-rosse-italiane.php


Foto © Marta Ella


Foto © Valentina Lai


Foto © Mario Raviglione


Foto © Sara Canterino

Bonelli S.; Casacci L.P. ; Barbero F. ; Cerrato C.; Dapporto L.; Sbordoni V. ; Scalercio S.; Zilli A.; Battistoni A.; Teofili C.; Rondinini C.; Balletto E. (2018)- THE FIRST RED LIST OF ITALIAN BUTTERFLIES. Insect Conservation and Diversity, 11 (5): 506-521

La prima Lista Rossa delle Farfalle italiane

Least Concern (LC) species

Foto © Marco Gherlenda

..ma ENDANGERED per la Red List europea

Foto © Sara Canterino

Foto © Davide Piccoli

J Insect Conserv
DOI 10.1007/s10841-014-9736-3

ORIGINAL PAPER

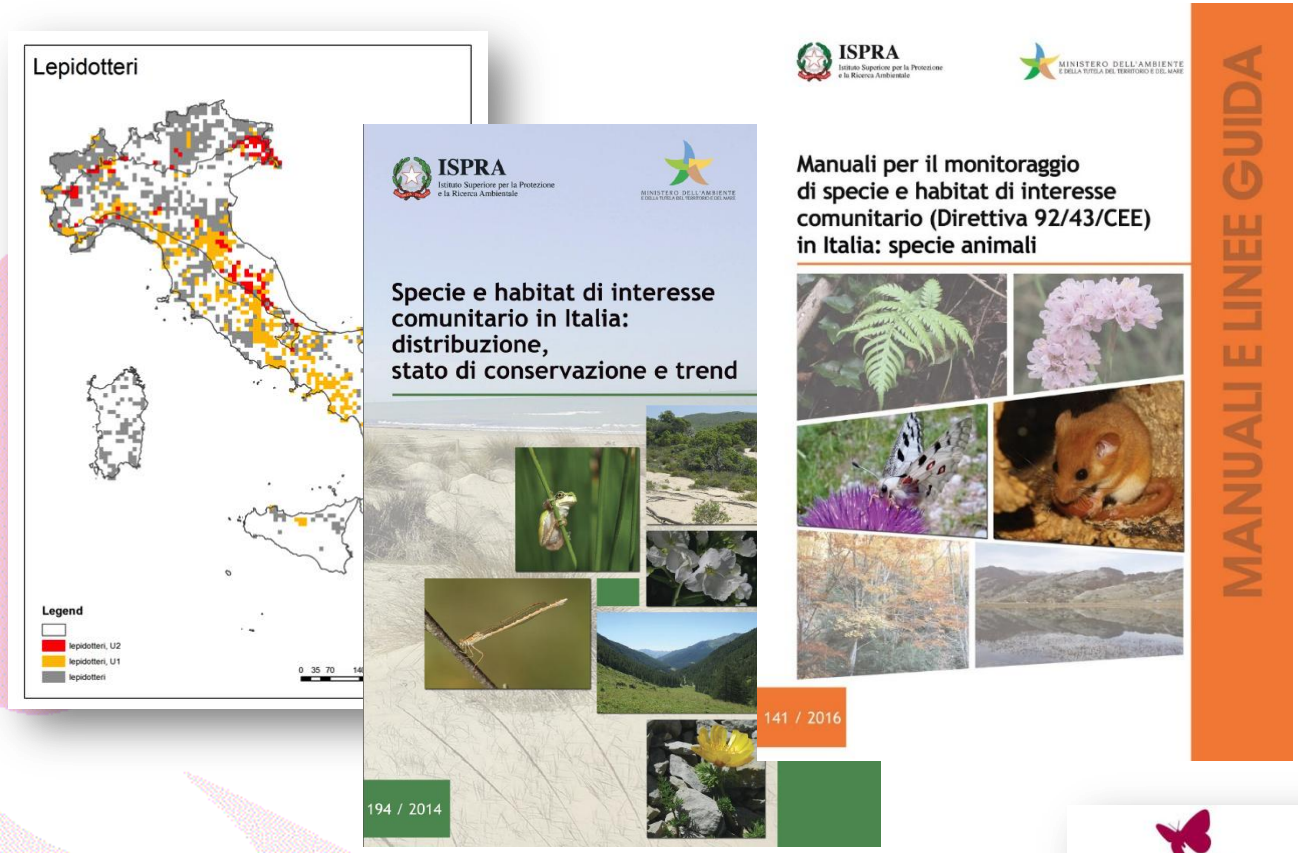
Winter-green host-plants, litter quantity and vegetation structure are key determinants of habitat quality for *Coenonympha oedippus* in Europe

Tatjana Čelik · Markus Bräu · Simona Bonelli · Cristiana Cerrato · Branko Vreš · Emilio Balletto · Christian Stettmer · Matthias Dolek

Alcune sono minacciate solo in una parte dell'areale italiano. Ad esempio alcune specie come *Parnassius apollo* sono in declino negli Appennini, ma restano abbondanti sull'arco alpino.

Bonelli S.; Casacci L.P. ; Barbero F. ; Cerrato C.; Dapporto L.; Sbordoni V. ; Scalercio S.; Zilli A.; Battistoni A.; Teofili C.; Rondinini C.; Balletto E. (2018)- THE FIRST RED LIST OF ITALIAN BUTTERFLIES. Insect Conservation and Diversity, 11 (5): 506-521

BMS nasce anche dalla necessità di pianificare la raccolta dati per redigere l'ASSESSMENT ai sensi dell'art 17 per specie protette dalla Direttiva Habitat



16 Specie in Direttiva Habitat
60% delle specie protette in Europa (29)

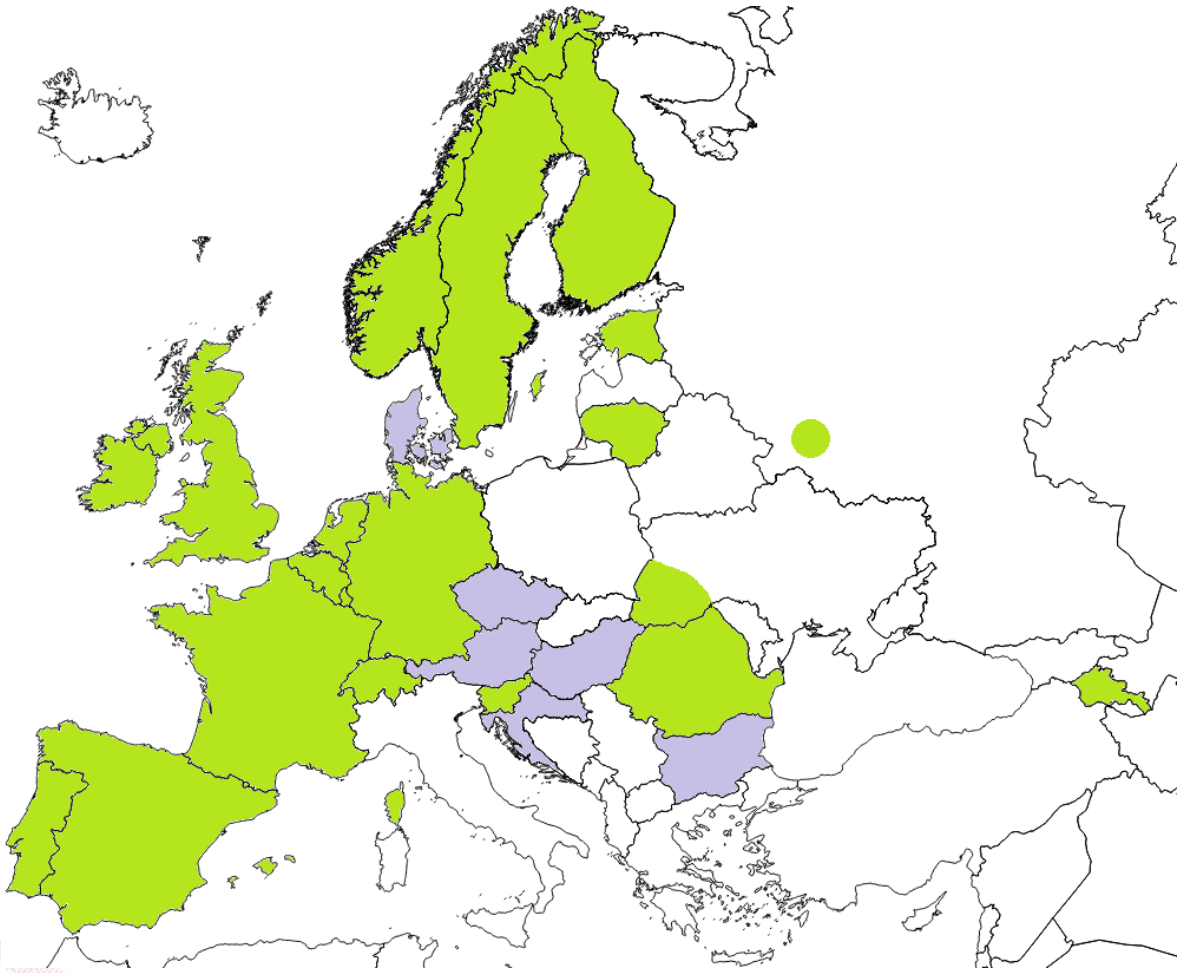
Butterfly CONSERVATION EUROPE

BMS italiano viene fortemente incoraggiato dalla Butterfly Conservation Europe anche attraverso azioni concrete: il progetto ABLE

Butterfly CONSERVATION EUROPE

ABLE

ABLE project
Assessing ButtefLies in Europe

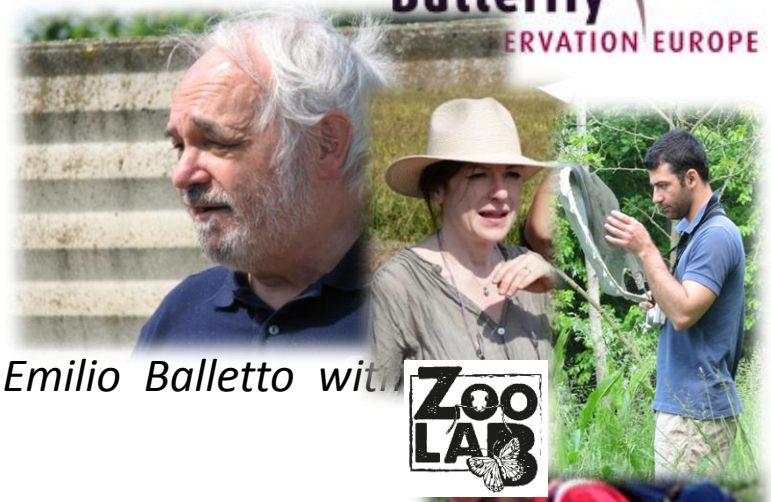


BMS si realizza attraverso sinergie già esistenti

BARCODING ITALIAN BUTTERFLIES

http://www.barcodingitalianbutterflies.eu

Butterfly CONSERVATION EUROPE



- ✓ ZOOLAB – University of Turin (*Simona Bonelli & Emilio Balletto wit… Luca P. Casacci*)

- ✓ ZEN LAB- University of Florence (*Leonardo Dapporto & Alessandro Cini*)

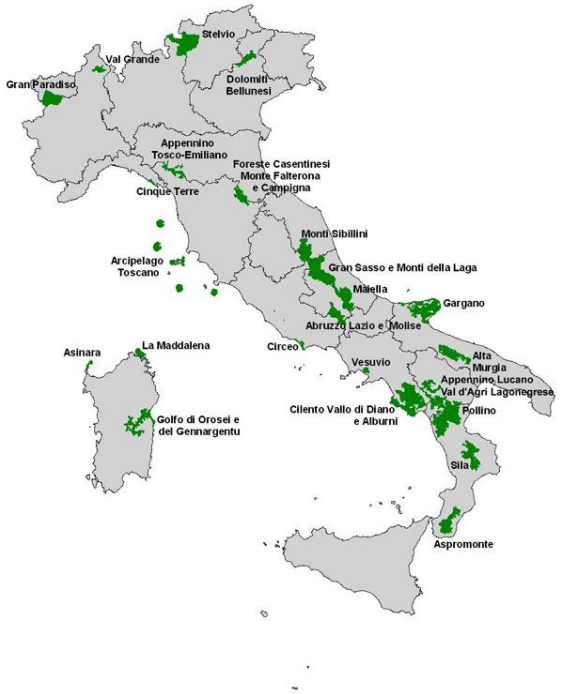
Numerical Experimental Zoology

- ✓ Unità di Ricerca per la Selvicoltura in Ambiente Mediterraneo di Cosenza (CRA-SAM) (*Stefano Scalercio*)

http://www.butterflyweek.com/it/

CHI HA ADERITO

BMS italiano viene proposto per la prima volta ai parchi nazionali nel 2018

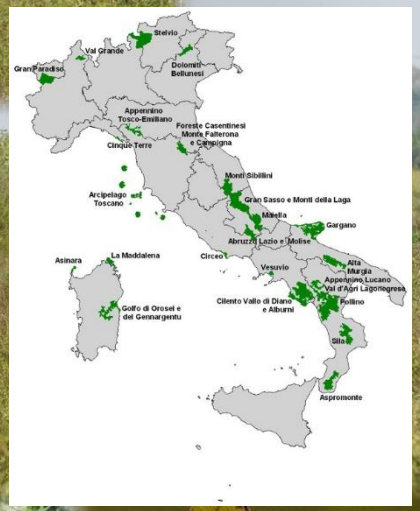


BMS Italia:

- First meeting in March 2019
  Proponiamo l'idea di un transetto per ciascun parco nazionale
- 500 m
- Ciascun transetto replicato ogni 15 giorni da Maggio ad Agosto
- I parchi regionali sono i benvenuti!

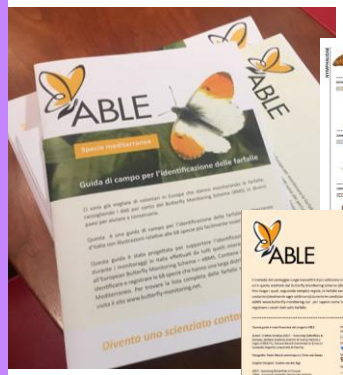
Dati opportunistici raccolti in tessuti urbani, agrosistemi e aree ripristinate saranno fondamentali

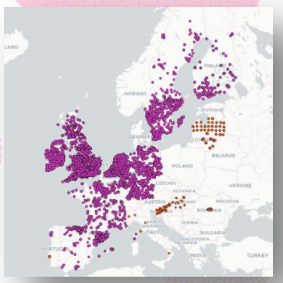
Il BMS italiano coinvolge in primis le aree protette. I Parchi Nazionali e regionali possono assicurare un monitoraggio a lungo



Il Parco Nazionale del Gran Paradiso è il primo Parco ad unirsi al progetto e a registrare un transettto permanente

Nel 2018 abbiamo lanciato il Butterfly Monitoring Scheme Italiano e nel 2019 grazie al support di ABLE :





- Abbiamo tradotto in italiano la pagina web del Sistema e la app per l'inseriemento dei dati
- Abbiamo organizzato 5 workshop coinvolgendo più di 400 persone
- Abbiamo prodotto 4 mini-guide da campo per 4 differenti regioni che abbiamo testato durante i worshops
- Abbiamo dedicato molto tempo alla diffusione con i media
- Ad oggi abbiamo registrato più di 20 transetti

Butterfly Monitoring Scheme Italia Workshop 2019

Italian BMS National Workshop

Italian Butterfly monitoring Scheme started in 2019 with the organization of five Workshops:

1st BMS National Workshop on 21st June located in Sila National Park.

2nd BMS National Workshop on 8th August located in Gran Sasso e Monti della Laga National Park.

3rd BMS National Workshop on 19th July in Gran Paradiso National Park.

4th BMS National Workshop on 7th September in Elba Island (Porto Ferraio).

5th BMS National Workshop on 10th September in Ticino Park.

Il progetto italiano viene selezionato come buon esempio

Profile of a new BMS co-ordinator: Simona Bonelli

An interview with one of the new BMS coordinators in Europe, **Simona Bonelli** from Italy. Simona Bonelli is a biologist with a PhD in agricultural entomology in the Agronomy Faculty and nowadays she is a Professor at the Department of Life Sciences and Systems Biology at Turin University. She tells us what she did preparing and organising the Italian BMS and hopes that the positive results could motivate other countries to join and start a BMS.

The Italian BMS started in 2018 and since then it hasn't stopped growing. Italy is one of the priority countries in the ABLE project and, in this interview, we asked to the main coordinator several questions about the creation of a BMS, what was necessary to create it and what was her experience.

How did you start to work with butterflies?

I started 20 years ago when I met **Emilio Balletto**. He is a big expert on Italian butterflies. He was involved in European level initiatives and when Butterfly Conservation Europe (BCE) was created, he was the contact of Italy for many years. Thanks to him I was introduced to BCE and the other butterfly experts of Europe.

After finishing my Postdoc, I came back to the Science Faculty and applied to an open permanent position with Emilio Balletto, focused on butterfl

What do you think is important to start a new BMS?

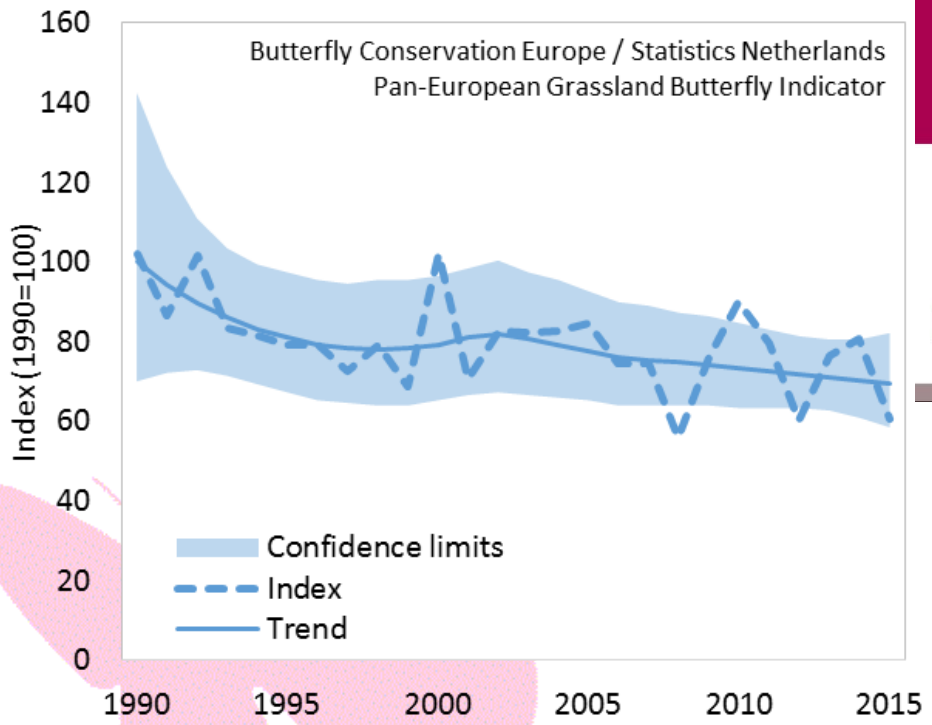
You have to think carefully about **organisation**. Italy is a big country, and very long. There are differences inside the country, from North to South, from West to East, every region is different from many point of views: habitats, climate, and also people. It is important to cover your entire country (not only one part), and you have to keep in mind, at least in Italy, there are strong regional differences. Italy has differences in heterogeneity of habitats, in terms of climatic conditions, elevations… if you don't think how to manage these differences from the beginning, you will probably fail.

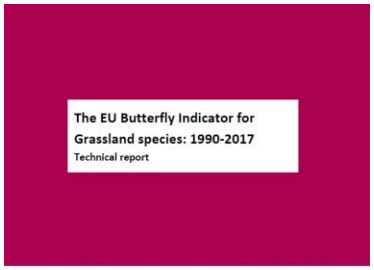
Another important key to overcoming problems was to find people in other parts of the country who were interested, motivated and believed in the project. There were some people on my list, but one was close to retirement. I focused my attention on **Leonardo Dapporto** and **Stefano Scalercio**. I had worked before with them in many initiatives (EU, Red List) and I thought both were good candidates for being Regional coordinators of the Italian BMS. Fortunately, they agreed.

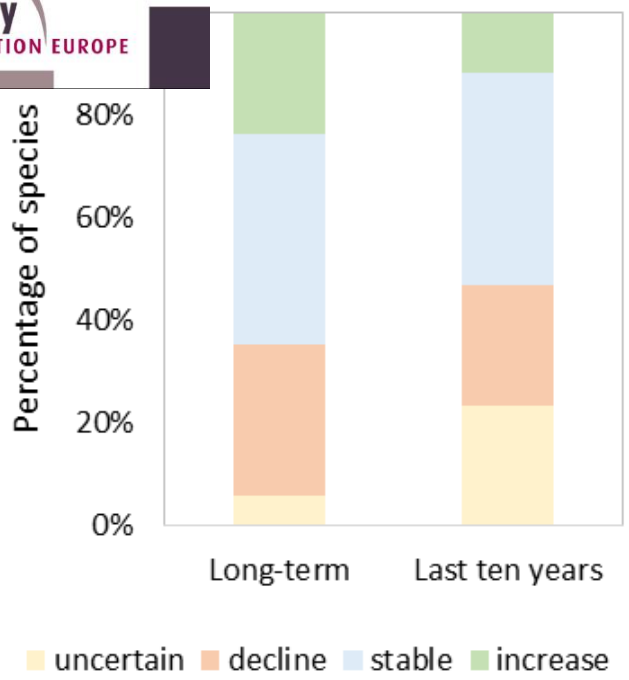
Stefano (in red) talking in the Sila workshop

Simona and Leonardo discussing in a workshop

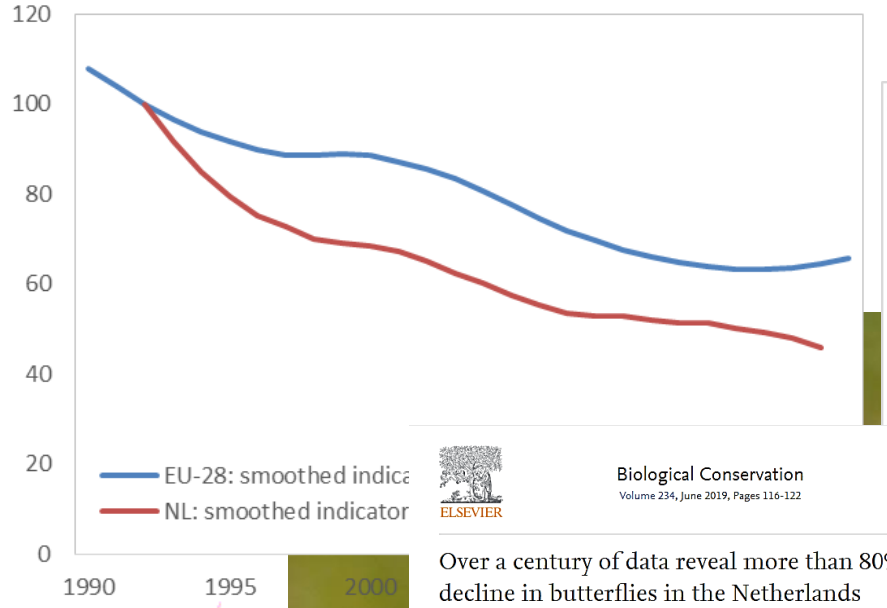
Il prossimo European Grassland Indicator conterrà anche dati italiani

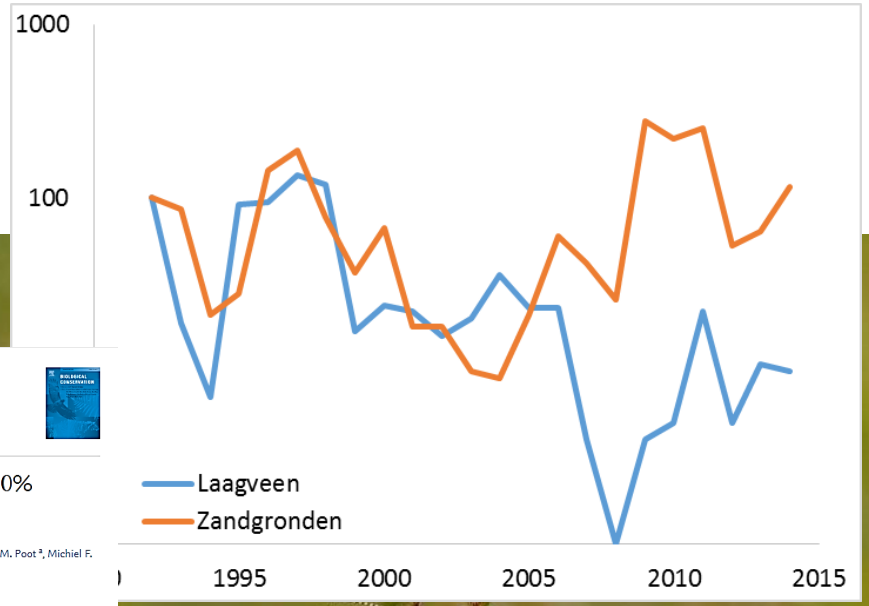






Confrontare trend locali con trend nazionali o regionali



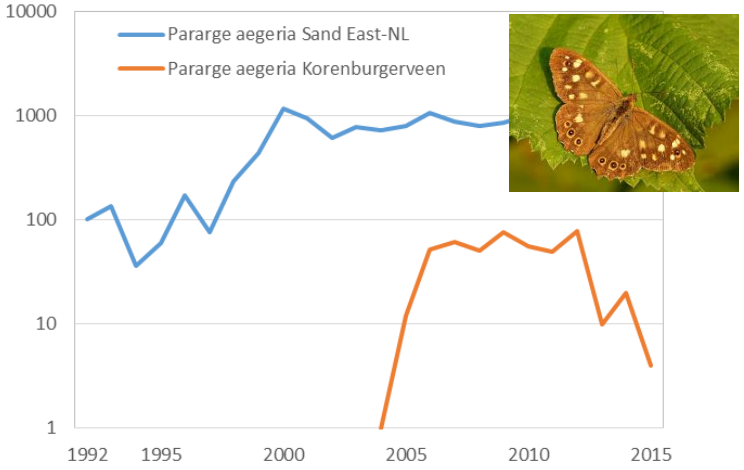


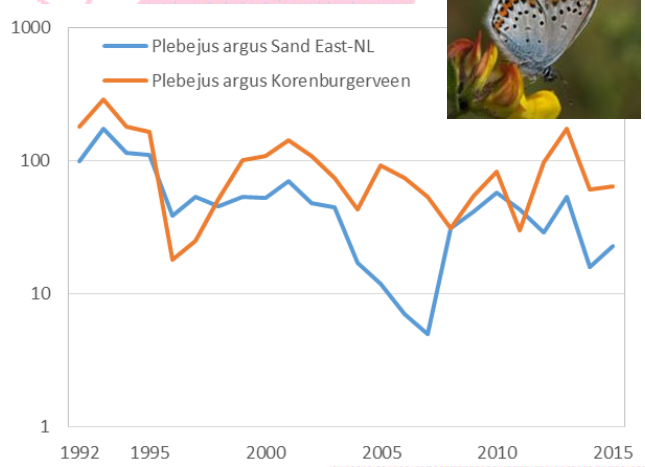
Comparare il trend nazionale con quello europeo
Comparare trend tra habitat differenti di una stessa area
Comparare un'area con il trend nazionale
Comparare località diverse di stesse aree biogeografiche

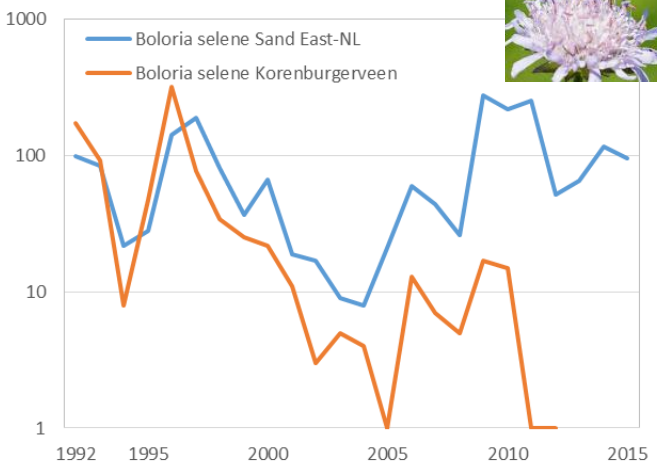
BMS metterà a punto:

- Urban butterfly indicator
- Farmland butterfly indicator

Confrontare trend locali con trend regionali per singole specie







Prossimi passi e nodi cruciali

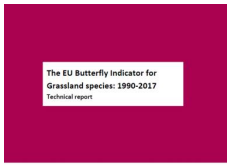
Produrre il I Butterfly National Indicator for grassland

Avviare percorsi di tutoraggio per le Aree protette, le NGO, gli agricoltori, i privati cittadini, gli student etc…….impegnati in un transetto per aprire e gestire un proprio account, campionare le farfalle, utilizzare la app…….

Organizzare altri 4-5 workshops per coprire il territorio Italiano

Organizzare dei corsi per i volontari che svolgono i transetti per il riconoscimento di gruppi di specie criptiche (ad esempio un corso sul genere *Erebia* per i transetti alpini

Incrementare il numero di transetti

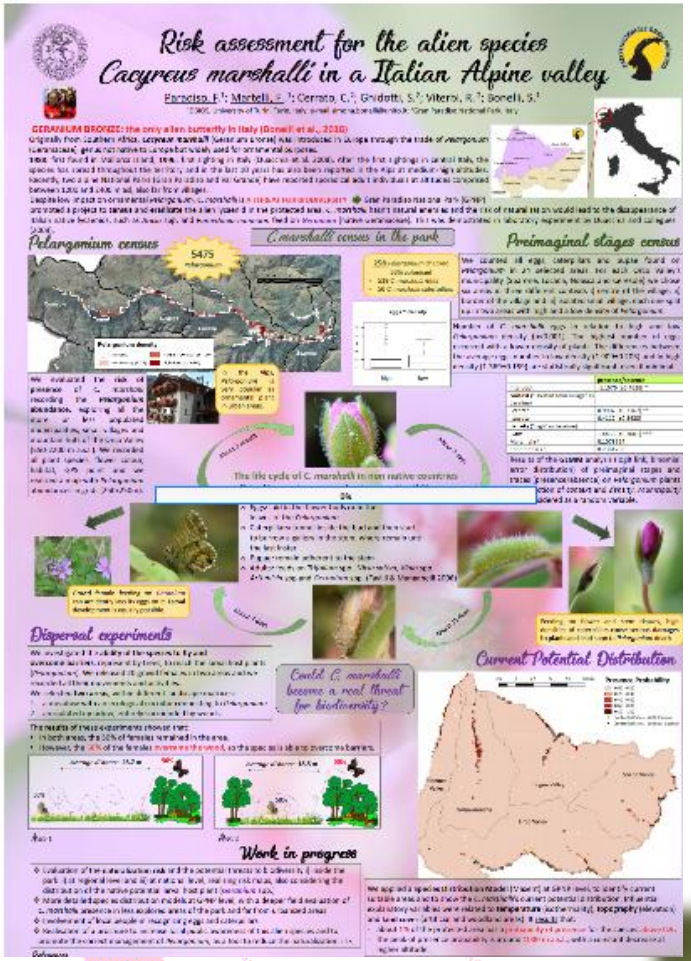


Butterfly
CONSERVATION EUROPE

Grazie per l'attenzione

Farfalle diurne: specie aliene

Il licenide dei gerani *Cacyreus marshalli* una minaccia per la biodiversità



Biodivers Conserv
DOI 10.1007/s10531-008-9350-3

ORIGINAL PAPER

Can the Geranium Bronze, *Cacyreus marshalli*, become a threat for European biodiversity?

Ambra Quacchia · Chiara Ferracini · Simona Bonelli · Emilio Balletto · Alberto Alma

Journal of Insect Conservation
https://doi.org/10.1007/s10841-018-00124-8

ORIGINAL PAPER

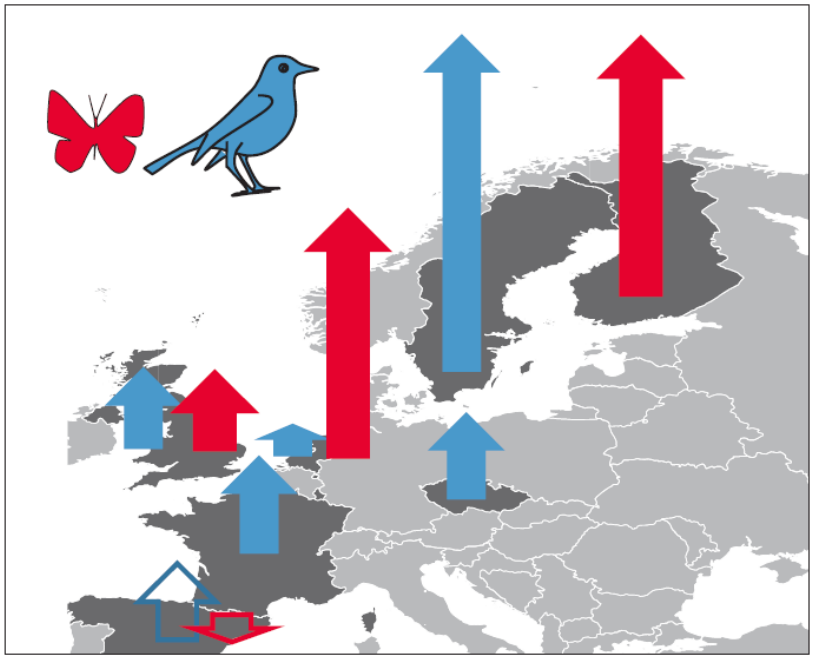
CrossMark

From Africa to the Alps: risk assessment on an invasion by *Cacyreus marshalli* (Butler, 1898)

Paradiso Federica[1] · Martelli Francesca[1] · Cerrato Cristiana[2] · Ghidotti Silvia[2] · Viterbi Ramona[2] · Canterino Sara[3] · Ferracini Chiara[4] · Bonelli Simona[1]

Received: 1 September 2018 / Accepted: 21 December 2018

Butterflies are on the move



Europe: butterfly (and bird) communities shifting rapidly northwards.

Butterflies = 114 km N shift (1990-2008) but 135 km lag behind climate shift

Devictor *et al.* (2012) Uncertainty in thermal tolerances and climatic debt. *Nature Climate Change*, 2 (9). 638-639