

**Butterfly Conservation Europe
Activity report 2023**



Butterfly
CONSERVATION EUROPE

Butterfly Conservation Europe Activity Report 2023



Photo: Chris van Swaay



Butterfly Conservation Europe Activity Report 2023



BCE on 20 February 2024

Board: Sam Ellis (chair), Chris van Swaay (secretary), Martin Wiemers (treasurer), Simona Bonelli, Evrim Karaçetin, Constanti Stefanescu, Nigel Bourn, Anu Tiitsaar and Lars Pettersson.

European Policy Advisor: Sue Collins

Head of Development: Martin Warren

Advisors to the board: Irma Wynhoff, Miguel Munguira, Josef Settele, Dirk Maes, Aidan Whitfield, Rudi Verovnik, Martina Šašić, Cristina Sevilleja, Mike Prentice and Holly Mynott.

Production

Butterfly Conservation Europe, www.bc-europe.eu
P.O. Box 506, NL-6700 AM Wageningen, Netherlands

Preferred citation

Ellis, S., Van Swaay, C.A.M., Wiemers, M., Pettersson, L.B, Bonelli, S., Karaçetin, E., Stefanescu, C., Tiitsaar, A., Bourn, N., Collins, S., Wynhoff, I., Settele, J., Maes, D., Verovnik, R., Šašić, M., Whitfield, A., Sevilleja, C., Munguira, M., Prentice, M. & Warren, M.S. (2024). Butterfly Conservation Europe. Activity Report 2023. Report VS2024.011, Butterfly Conservation Europe & De Vlinderstichting/Dutch Butterfly Conservation, Wageningen.

February 2024



BCE board and advisors in a zoom-meeting, April 2023. From left to right: Irma Wynhoff, Sam Ellis, Martina Šašić, Miguel Munguira, Dirk Maes, Anu Tiitsaar, Holly Mynott, Martin Warren, Chris van Swaay, Martin Wiemers, Evrim Karaçetin, Constanti Stefanescu, Simona Bonelli, Josef Settele, Nigel Bourn, Lars Pettersson, Rudi Verovnik, Sue Collins, Aidan Whitfield and Cristina Sevilleja. Not on the photo: Mike Prentice (EBG).

Contents

Introduction..... 4

SPRING project update..... 6

eBMS 8

Moth monitoring under SPRING 11

Global butterfly monitoring 13

European moth Red List..... 14

European butterfly Red List..... 15

Influencing European policies 16

40% of moths are threatened in Flanders (northern Belgium)!..... 19

European Butterflies Group 20

Website 23

Social media 23

Acknowledgements..... 23

Introduction

By Sam Ellis, Chair, BC Europe

A warm welcome to our annual report on the activities of BC Europe during 2023. The Board met twice during the year, in April and October, the former online and the latter a hybrid meeting held in Bologna. I am very pleased to report that Anu Tiitsaar, of the University of Tartu, Estonia joined the Board this year, our first representative from the Baltic States.



During 2023 BC Europe continued its involvement with several exciting projects all of which are focused on ensuring Europe's butterflies and moths are effectively conserved. Sue Collins and Martin Warren report below on the SPRING project which concluded in January 2024. The main objective of SPRING was to establish a European pollinator monitoring scheme and BC Europe was involved in several project tasks. Cristina Sevilleja and Martin Warren then outline the continued development of the European Butterfly Monitoring Scheme (eBMS) and Chris van Swaay describes the progress with moth monitoring trials undertaken to see how a European moth monitoring scheme might operate.

The two EU-funded, IUCN-led projects to review the threat status of European butterflies and moths continued during 2023 and both will be published in 2024. Throughout the year, BC Europe and its Network Partners continued to provide their expertise reviewing the preliminary assessments, checking national/regional distribution checklists and providing data updates. Martin Warren outlines progress with what will become the third European

Butterfly Red List. With so many more macro-moth species than butterflies, the first ever European moth Red List is a substantially larger project and Jurriën van Deijk reports on the excellent progress being made by the project team.

A project to establish a global butterfly monitoring scheme, is slowly beginning to take shape and Holly Mynott, Butterfly Conservation's (BC) International Officer, provides an update on progress. Finally, Mike Prentice of BC's European Butterflies Group describes two important survey projects in Romania and Spain undertaken by the group last year.

Thanks to our policy advisers, Sue Collins and Aidan Whitfield, BC Europe continues to play a very active role influencing environmental policy decisions in the EU. The main highlights of their work are also reported below.

Every five years BC Europe produces a Priority Action Plan (PAP) which outlines our objectives and the tasks which we aim to complete during that period. It includes actions to maintain our highly valued network of Partners; advocate better European policies for Lepidoptera; create an eBMS covering the whole of Europe and an effective database on Lepidoptera distributions; take practical action to

conserve threatened and widespread species; raise awareness of Lepidoptera and their role in creating a healthy ecosystem; and increase our capacity to raise funds and run projects.

Aidan Whitfield has completed a review of the 2019-2024 PAP and it is remarkable how much has been achieved during this period with limited resources. Arguably the most significant is the establishment of butterfly monitoring schemes in all EU countries, but there have also been many gains in developing partnerships, advocacy, encouraging surveys and recording, species conservation and raising awareness. At the last Board meeting we began the process of drafting a PAP for 2024-2029. Not surprisingly this is equally ambitious as the previous PAP and we aim to adopt the plan at our next Board meeting in April 2024. Alongside the PAP, BC Europe has also looked carefully at fundraising options to help meet those ambitious targets.

Finally, I would like to thank all the BC Europe Board members and advisors for their hard work and support during the year. 2024 will be another critical year for conserving Lepidoptera and other insects. We look forward to playing our part in meeting this challenge.

SPRING project update

By Sue Collins and Martin Warren



The EU funded Parliamentary Preparatory Action project SPRING (Strengthening Pollinator Recovery through INDicators and monitorinG) continued in its second full year, building on the Parliamentary Pilot Project ABLE (Assessing ButterFLies in Europe) and testing the implementation of the European Pollinator Monitoring Scheme framework (EU-PoMS), in several EU Member States. The project continued to make good progress and will finish at the end of January 2024.

The EU PoMs framework, developed by an EU Expert Group, proposed a Minimum Viable Scheme (MVS) for monitoring bees, hoverflies and butterflies through transects and pan-traps; a module for monitoring all insect biodiversity through Malaise traps; plus an optional modules for monitoring moths, using LED light traps and image recognition identification of macro moth species; and for monitoring rare and threatened pollinator species. The work was carried out across the EU and is helping to build further capacity among professionals, volunteers, nature agencies, universities, NGOs and policy makers to monitor the status of Europe's crucial wild insect pollinators. The continued development of the European Butterfly Monitoring Scheme (eBMS) is a major part of this wider scheme and is covered in the following section.

SPRING is divided into 5 main tasks. Task 1 is the continued development of the eBMS by BC Europe and its partners, especially UKCEH, de Vlinderstichting, UFZ and existing and new BNMS coordinators across the EU. With essential support from Cristina Sevilleja, BCE Network development lead, Sue Collins, European Environmental Policy Advisor and MEP Martin Hosek and Assistant Monika Verdonck, BCE has found, trained and supported expert volunteers to establish BMS in 6 additional Member States - completing the network across the EU. We also updated the Grassland Butterfly Indicator for the EU Biodiversity Strategy 2030 Implementation Dashboard and for the EU sustainable Development Indicators.

Task1 also included an analysis of the focus of existing pollinator citizen science initiatives and the challenges and opportunities experienced across Europe. This has been led by Miranda Bane and Michael Pocock of UKCEH. A Fit Count App for monitoring flower visitation by pollinators was also developed by UK CEH and trialled in several countries. Task 2 is a training element led by Naturalis to disseminate taxonomic knowledge and develop online courses to build capacity to accurately identify wild insect pollinators, especially bumble bees, solitary bees and hoverflies as well as butterflies. An online Pollinator Academy has been developed. Task 3 includes field trials of the EU-PoMs MVS with pan traps and transects. Task 4 was the moth monitoring trials led by Chris van Swaay of Dutch BC (see below). Task 5 covers communications. The overall project is managed by Josef Settele at UFZ and David Roy at UKCEH.

The project ended with a conference in January 2024 in Brussels and online. This was attended by the EU Commission, EEA, Member State representatives, other stakeholders and the SPRING project team. Experiences and lessons learned were shared and we advocated the strengthening of eBMS and the rollout of moth monitoring. The Conference went very well, showcasing results through science, practical action and capacity building. It showed the partnership in a very good light. MEP Martin Hosjek, Vice President of the EU Parliament and sponsor of the SPRING PPA, closed the Conference, thanking the project team, partners and volunteers for all their work. He underlined the importance of following up on the lessons from SPRING and mainstreaming implementation of monitoring of butterflies and other pollinators across the whole EU and strengthening action for

recovery. He confided that he thought highly of BCE's Butterfly Count App and would be using it himself in the Summer to monitor butterflies in Slovakia's meadows and would be encouraging fellow Parliamentarians to promote it too – as one tangible product, resulting from an EU Parliament funded project, which connects citizens directly with the EU and its policy priorities for nature recovery. We sincerely hope there will be additional funding soon for rolling out some more pollinator monitoring across the EU, including for the eBMS and moth monitoring, which has been widely praised.

Further details on the SPRING project can be found on the SPRING website:
<https://www.ufz.de/spring-pollination/index.php?en=49053>

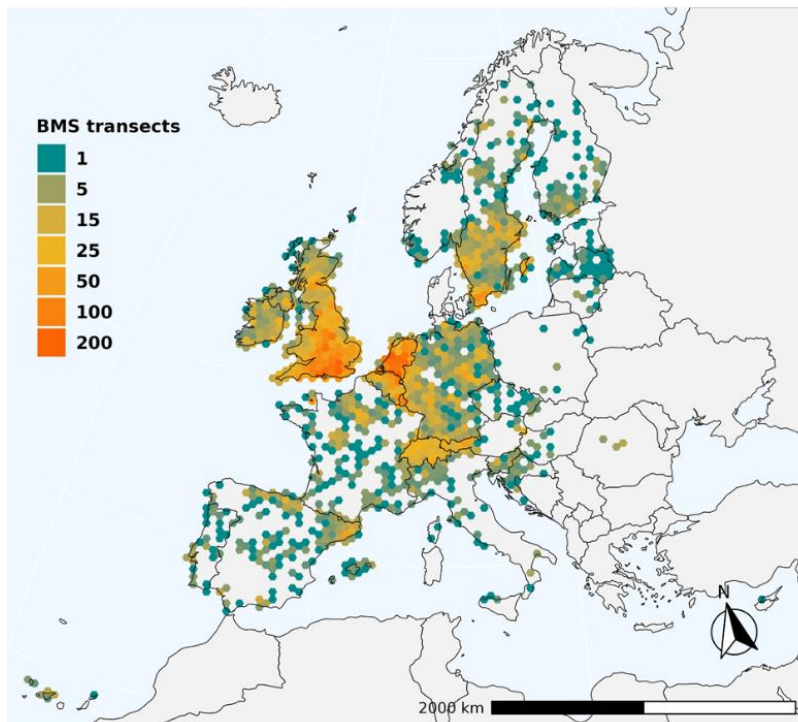
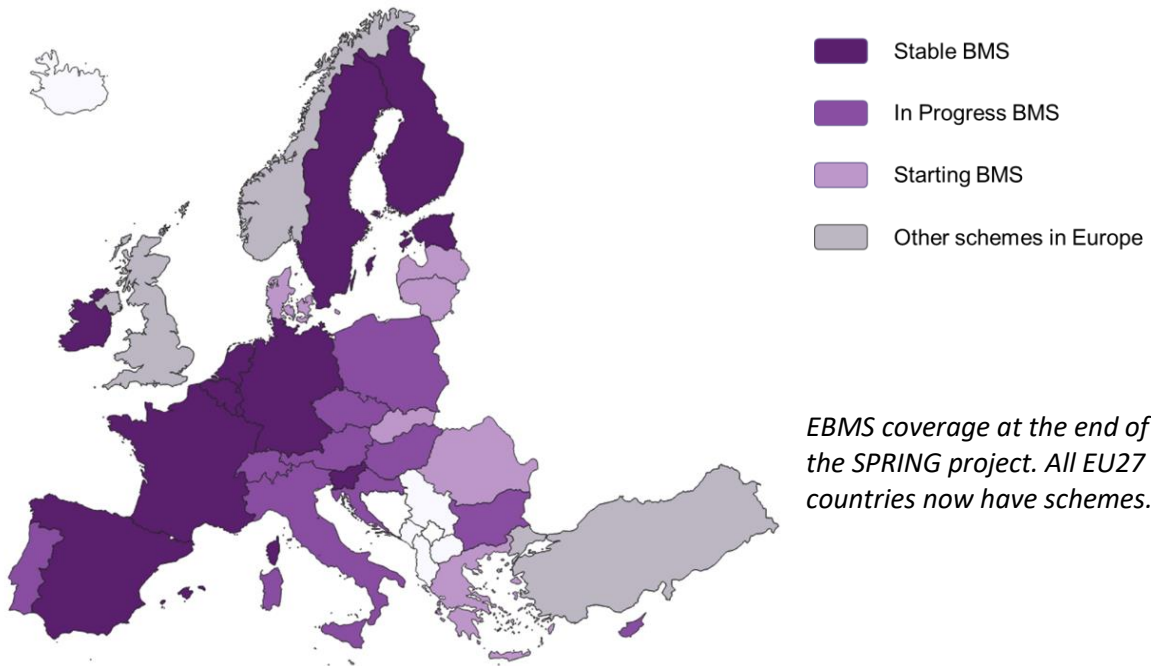


Phengaris alcon, a rare species which has not only needs Gentians, but also species species of ants.

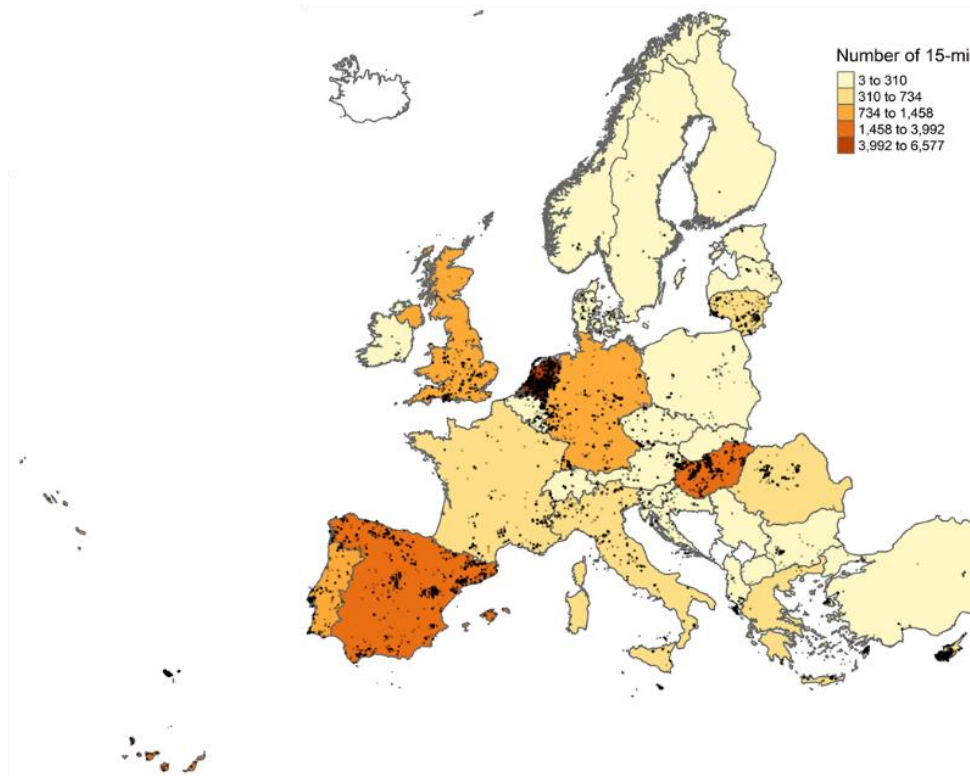
eBMS

By Cristina Sevilleja and Martin Warren

Great progress has been made with expanding the eBMS thanks to funding from the SPRING project. We are pleased to report that the main objective to complete coverage of all 27 EU Member States has been achieved with new schemes starting in Denmark, Lithuania, Latvia, Slovakia, Romania and Greece. Most of these are still very small and have little or no funding, but co-ordinators have been appointed and counts have started.



The eBMS database has been growing rapidly and we now have over 13,000 established transects across Europe, covering over 19,000km and being walked by over 10,000 volunteers. The database contains 16 million counts as at 2021 and covers 329 species.



Distribution of 15 minute counts across Europe (up to 2023)

The ButterflyCount app has been greatly improved and translated into 25 different languages. A new moth function has been added to allow entry of moth records, backed by an image recognition software to aid correct identification. The 15 minute counts have proved very popular with over 23.472 now completed across Europe.

We have provided training and support to national co-ordinators, especially in the new and developing countries. The eBMS [website](#) has been translated into 23 languages and is now used by countries as far afield as Japan. New identification guides have been produced to help volunteers identify typical species for their region. Guides to difficult species have also been produced in many languages.

We are now actively seeking funds to continue supporting the eBMS when the SPRING project funding ends in January 2024. We have held discussions with the EuropaBON project which is charged with investigating how to build a biodiversity monitoring network across Europe.



They have made submissions to the EU and we hope that they are successful in obtaining funds for the eBMS to continue its good work.

We would like to thank everyone who has helped make the eBMS a success, there are so many people in so many countries doing great work. Each of you is important and making invaluable contributions to helping us understand this crucial aspect of biodiversity.



Gonepteryx maderensis: a butterfly restricted to the EU/Europe threatened with extinction.

Moth monitoring under SPRING

By Chris van Swaay, Dutch BC

There is growing evidence that moths and other nocturnal pollinators have an important role in the pollination of plants, including many used for food production. So far, most studies have focused on diurnal pollinating insects, as bees, butterflies and hoverflies, largely ignoring nocturnal insects.

As most moths are nocturnal insects, making them a serious challenge to monitor, as visual methods (as e.g. transect counts as with butterflies) are not possible. Furthermore, there are a large number of species, making identification a serious issue. In addition, the distribution and ecology of many species is still unknown, especially of the so-called micromoths.



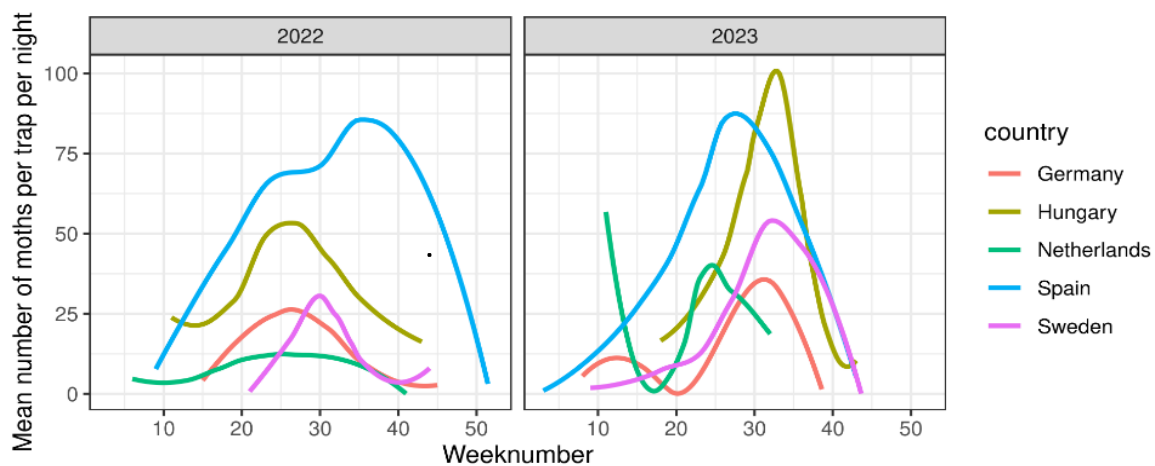
LED trap used in the SPRING

Recent developments in image recognition have made it possible to identify more and more species of plants and animals from photos. Online web portals such as iNaturalist.org and observation.org offer image recognition as one of the ways to identify the species from photo. This works especially well for moths, probably because photos of moths are generally made in the same way, and as a result they show the same position as the photos used to train such models. These models make it possible for relatively unskilled volunteers or professionals to monitor moths and participate in large scale monitoring of moths.

In the SPRING project the focus was on the [LED traps](#), which are cheap and simple light traps running on powerbanks, which can be used by volunteers, farmers, nature-reserve warden and anyone interested in the monitoring of moths. The traps can be set, automatically switch on at sunset and off at sunrise via a simple light detector, and can be emptied in the early morning, when all moths in the trap can be photographed before release. The person emptying the trap does not have to be able to identify the moths, though practically they will develop identification skills during the season.

When using the ButterflyCount app (available on the iPhone app store and Android Google Play) moths can be photographed in the app, and the image recognition provided by Naturalis/observation.org will automatically classify the moths to species level when possible. Moths which cannot be identified by the AI are stored and can later be checked by moth experts.

Image recognition so far works especially well in NW Europe, but as more and more countries join in, and the AI gets more and more training data, the quality of the image recognition will improve in the rest of Europe as well.



Mean number of moth traps per night per country in 2022 and 2023

The tests for moth monitoring have shown that it is also possible to monitor moths in areas with short nights (as in N Europe in June), even with the relatively simple and cheap LED traps. However, in countries as Hungary and Spain numbers can be high in summer (see figure) making it a challenge to empty the traps in the morning. Using traps with a stronger lamp will increase the numbers in the trap even further, so the low power of the LED traps to attract moths is an advantage in that respect.

A power analysis of the Dutch moth monitoring data has shown that when moth traps are set on 12 nights a year (e.g. every two weeks from April-September) around 25 traps are enough to detect a significant trend in the total number of moths. This number might be higher in countries with a complex geography, as different mountain ranges or different climate zones.

Conclusions

The work for SPRING has made it clear that the monitoring of moths is ready to be used on a European level:

- Moths have a high number of species.
- They are important pollinators.
- There is a tested method to monitor them, which can easily be rolled to other countries and areas.
- To detect a significant trend in the total number of moths in a country or region, around 25 traps are needed which are set at least 12 times a year.
- There is a website and an app to enter all data into the eBMS database.
- Trends can be calculated using the same methods as for butterflies.
- These trends can be combined to indicators, just as we already do for butterflies.

Everything is ready to start monitoring moths at a European or EU scale.

Global butterfly monitoring

By Holly Mynott (Butterfly Conservation, UK)

Butterfly Conservation Europe worked with Butterfly Conservation (UK), IUCN SSC Butterfly & Moth Specialist Group, UK Centre for Ecology and Hydrology, de Vlinderstichting and the Zoological Society of London to organise a Symposium at the 9th Biology of Butterflies Conference in Prague, Czech Republic, titled “Butterfly monitoring, trends and indicators: towards a global network.” This Symposium drew talks on butterfly monitoring in various countries and continents: India, Mexico, USA, Malaysia, Nigeria, Israel, China, Europe, Germany, and Bangladesh. Keynote speakers were Krushnamegh Kunte (National Centre for Biological Sciences, India) and Chris van Swaay (de Vlinderstichting, Netherlands).



Progress is continuing towards developing a preliminary Global Butterfly Indicator, to describe the state of the world’s butterflies. The aim is to gather global butterfly monitoring datasets and publish an index in the Living Planet Index and/or Living Planet Report. Researchers and conservationists across Europe, and in countries such as Australia, Japan, South Korea, St. Eustatius and Vietnam, have shared data. The project has highlighted the lack of existing data in some of the world’s most biodiverse areas.



Some of the Biology of Butterflies Conference in Prague organizers, chairs and speakers from all over the world. Photo: Monika Böhm

European moth Red List

By Jurriën van Deijk, Dutch BC

The project team of Jurriën van Deijk, Chris van Swaay, Mark Parsons, Phil Sterling and the IUCN are making excellent progress towards producing Europe's first ever moth Red List. The project focuses on approximately 3,100 macro-moths plus the only Habitats Directive micro-moth *Glyphipterix loricatella*. At this stage they have combined data from GBIF with other national and sometimes private databases to calculate of the Area of Occupancy and the Extent of

Occurrence. These data did not cover all of Europe equally well, and therefore, thanks to Juan Gallego-Zamorano, the existing data was used to make predicted distribution maps using a species distribution model. This has ensured that there are now distribution maps for all species for which we have some data. Species with limited distribution data were summarised in a questionnaire and for each region the experts were asked how common the species was in their region and to assign a trend category. By combining this information, we produced a draft Red List assessment. The species that were classified as threatened were discussed per geographical region with largely the same experts to gain a better insight into the European trend and to discuss possible threats. The current summary of the Red List assessments is that approximately 16% of species are at some level threatened in Pan-Europe. In the EU27 this percentage is slightly higher at 19%. To illustrate the assessments, Chris Manley contacted many photographers to collect images of 2,907 species, with most of them featuring live specimens. At this moment we are combining all the information and uploading it to the online IUCN portal and a summary report will be published during 2024.

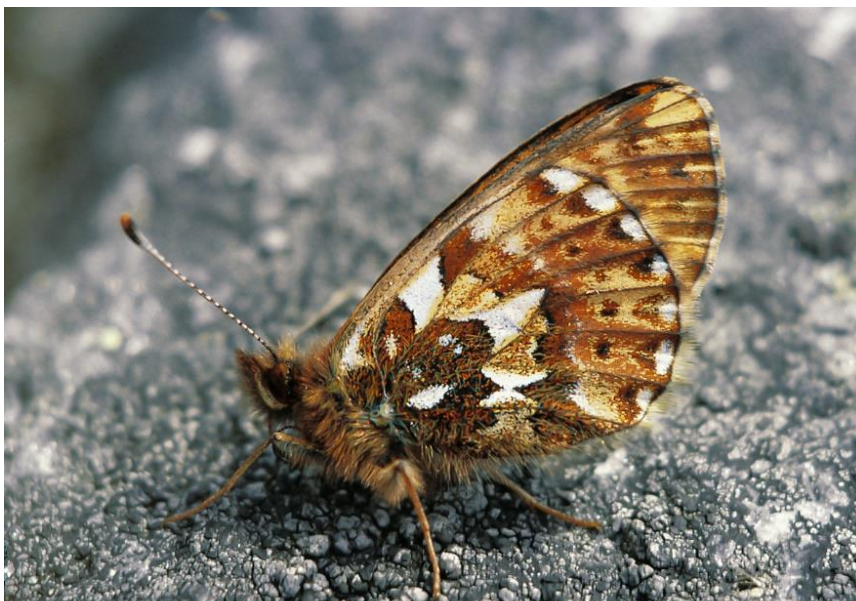
Moths on the Red List: From left top to right bottom: Actias isabellae (photo: H Ziegler), Enterpia roseocandida (photo: Michel Kettner), Lythria sanguinaria (photo: Daniel Morel) and Stygia australis (photo: Yeray Monasterio)



European butterfly Red List

By Martin Warren, BC Europe

The core team of Chris van Swaay, Sam Ellis and myself completed our work on a new European Butterfly Red List at the end of 2023. The new list has been compiled from a variety of data sources: 1) Calculations of Area of Occupancy and Extent of Occurrence from distribution data gathered from public sources such as GBIF, Observado, iNaturalist and Lepidiv, supplemented by data provided on request by BC Europe Partners; 2) An analysis of distribution trends from this data; 3) Species trend data from the eBMS where available. From these data, provisional assessments were made and discussed at 5 bioregional workshops with experts in December 2022. We have refined and checked these assessments during 2023 with individual experts and entered detailed data on every species on the IUCN, Species Information System website. These are now being checked by IUCN experts so that we can publish the findings in early 2024.



Boloria chariclea: one of several Arctic Alpine species threatened by loss of habitat due to climate change (photo: Nils Ryrholm)

Although the exact numbers are yet to be finalised, the overall results will show a substantial increase in the number of threatened species since the last assessment in 2010. Many species continue to be threatened by habitat loss and degradation, but several species have been added due to the serious impact of climate change, which is now really beginning to affect their survival. In the Boreal and northern Alpine zone, several species are threatened by tree and scrub encroachment on open tundra and bog habitats, while in the Mediterranean zone, several species are threatened by wildfires and vegetation change due to extended droughts. A summary report will be published during 2024.

Influencing European policies

By Sue Collins and Aidan Whitfield, European Environmental Policy Advisors, BC Europe

BCE has continued to participate actively in the **EU Biodiversity Platform** meetings – the EU governance process, chaired by the Commission, with Member States, EEA, JRC and other Stakeholders to guide and support implementation of the EU Biodiversity Strategy. We have also participated in the **EU Expert Sub-Groups on Monitoring and Assessment and on Pollinators; as well as NADEG**, supporting implementation of the Habitats Directive. In all these meetings we share knowledge about butterflies and moths and their habitats and the challenges and opportunities facing them. And we advocate more urgent and intensive work to halt and reverse declines and to strengthen field monitoring to evaluate EU and MS policies and practices and deliver sustained and effective management and restoration actions.

The year has been dominated by the development of the new draft **EU Nature Restoration Law (NRL)**, which is probably the most important piece of biodiversity legislation since the 1992 Habitats Directive. When finally approved, the NRL will be the main mechanism for implementing the EU's ambitious [Biodiversity Strategy for 2030](#).



We have worked with NGO colleagues in the [European Habitats Forum](#) to ensure this legislation is as robust as possible, despite attempts to get it watered down by various interest groups across Europe. The draft proposal aims to put measures in place to restore at least 20% of the EU's land and sea areas by 2030, and all ecosystems in need of restoration by 2050. It sets specific, legally binding targets and obligations for nature restoration in each of the listed ecosystems — from agricultural land and forests to marine, freshwater and urban ecosystems. There are two provisions of particular interest to BC Europe: Article 8 is a legally binding obligation to restore pollinator populations, reversing pollinator decline by 2030 and improving populations of pollinators thereafter. Article 9 requires Member States to put in place measures to improve biodiversity in agricultural ecosystems by 2030 with butterfly monitoring and the Grassland Butterfly Index (calculated at Member State level), as one of the measures of success they can use.

We are delighted that after considerable debate the draft Law was [approved](#) by the European Parliament, Commission and Council in November and is expected to go for final sign off by Parliament early in 2024. There were some compromises, but many key elements remain intact,

including the EU Grassland Butterfly Index which is one of the indicators used on the [EU Biodiversity Strategy Dashboard](#).

The Commission has also been working on a voluntary “**Pledges**” programme to improve the implementation of the existing Habitats Directive (HD). Member States are asked to put forward Pledges to carry out specific new measures to extend Protected Areas and improve connectivity, including for “Umbrella” and Red List Species; and to improve the conservation status of particular Habitats Directive listed habitats and species, which are in an unfavourable Conservation Status and show a declining trend. The Commission has organised a series of Biogeographical Region Seminars to promote the pledges process and improve their quality. Our French Partner, Office Pour les Insectes et leur Environnement (OPIE), represented BC Europe at the Atlantic Region Seminar in Germany in September. Together we developed a Poster for the knowledge market. So far, two Atlantic Member States have included some Lepidoptera in their Pledges. We have also worked with our partners in Lithuania who participated in the Boreal Region Pledge Seminar in Finland during November and Martin Wiemers represented BCE at the Macaronesian Seminar in the Canary Islands. The pledges process was instituted by the EU Commission to encourage early restoration action by Member States while the draft NRL was being developed and debated. If, as expected, the draft NRL is adopted in 2024 the commitments made in their Pledges are likely to be taken forward in the Member States’ Nature Restoration Plans.

Another major area of work is the EU’s **New Deal for Pollinators, a revision, published in January 2023, of the 2018 EU Pollinators Initiative**. The New Deal for Pollinators was strongly endorsed by a Resolution of the European Parliament in November. We are especially pleased that the resolution makes specific mention of the decline in grassland butterflies and under Item 54 it *“Calls on the Commission and the Member States to ensure coordination and the accessibility of all necessary means to maintain and improve the European Butterfly Monitoring Schemes across the EU, including by increasing butterfly transects, monitoring rare and threatened species, using real-time reporting technology, and providing long-term financial assistance to their appointed coordinators; calls on the Commission and the Member States to launch and maintain a public EU database that will be required for the future EU pollinator monitoring scheme.”*



BCE Board Members and Advisors are involved in several **Task Forces** set up under the revised EU Pollinators Initiative, including those on Monitoring and Indicators (Chris van Swaay); Pollinators and Agriculture (Lars Pettersson); Protected Areas and Connectivity (Simona Bonelli – who is also Co-Chair, with the Commission, of this Task Force); on Typical Species of Natura 2000 Habitats (Dirk Maes); and Strategies and Plans (Sue Collins). These Task Forces could be influential in relation to future reform of the Common Agricultural Policy (CAP) and getting conservation measures for butterflies, moths, bees and hoverfly species not listed in the HD Annexes, included in N2K site management plans and funded in future.

The European Environment Agency (EEA) will be drawing up a list of **pollinating insects that are typical of Habitats Directive Annex 1 habitats**, and MSs will then be expected to prevent the decline of these species. We will discuss this in the EU Pollinator Task Force and when the list is out for consultation, we will review the butterfly and moth species that have been proposed and respond accordingly. Another crucial action is the **mapping of Key Pollinator Areas** and there is an opportunity for each BC Europe partner to produce lists of Important Butterfly and Moth Areas in their Member State, using the methodology produced by de Vlinderstichting for the Netherlands (see [report](#)). The information can be fed into the EU Pollinator Working Group, chaired by Simona.

Finally, we have held meetings with the European Biodiversity Observation Network (EuropaBON) about their proposals to establish a **European Biodiversity Observation Centre**. We have worked with colleagues in the European Bird Census Council to recommend that the existing bird and butterfly monitoring schemes are supported in the EuropaBON proposals and used as exemplars of monitoring networks for other taxa. Our current EU funding for the European Butterfly Monitoring Scheme finishes when the SPRING project ends in January 2024, and **it is vital that we secure long term funding to maintain and develop the eBMS schemes, manage the data they produce and keep updating and developing further butterfly indicators.**

40% of moths are threatened in Flanders (northern Belgium)!

By Dirk Maes (INBO) & Wim Veraghtert (Natuurpunt Studie)

Lepidoptera evoke an image of sunny, flower-filled grasslands, heaths, or forest edges for most people. However, this picture applies mainly to butterflies that are active during the day, of which there are only about 75 species in Flanders. With nearly 2000 species (more than 1200 so-called micro-moths) and almost 750 macro-moths, moths are a much more diverse but less known and therefore less studied group of insects than butterflies. Moths are ecologically important insects, serving both as bulk food for birds and bats, and as nocturnal pollinators. In recent decades, citizen scientists have gathered increasingly more data on the distribution of moths, often using light traps (see photo). These traps use UV light to attract moths, which then get caught in the trap. At dawn, the light trap is checked, all species are identified, and then released again.



Light trap at the border of the Haller Forest

With the help of data collected by numerous voluntary "moth catchers," researchers from Natuurpunt Studie, INBO, the Flemish Butterfly Working Group, and the Flemish Association for Entomology recently compiled the first Red List of moths in Flanders (Veraghtert et al. 2023). A comparison of the current distribution (2013-2022) with that of the period 1980-2012 revealed that no less than 40% of the 717 examined species are threatened to some extent or have already disappeared from Flanders. Specifically, 39 species are Regionally Extinct, 41 are Critically Endangered, 82 are Endangered, and 42 are Vulnerable. Additionally, 84 species are Near Threatened, and 393 species are of Least Concern Risk. For 36 species, there is currently Insufficient Data available to determine a Red List category. Especially, species typical of nutrient-poor and/or wet habitats such as heaths and marshes are threatened due to the high levels of nitrogen deposition in Flanders. Migratory and Mediterranean species on the other hand showed the strongest increase in distribution probably due to climate warming.

The Kentish Glory (Endromis versicolora), a threatened species of heathlands in Flanders (Joachim Pintens)



Veraghtert W, Maes D, Sierens T, Herremans M, Merckx T, Wullaert S, Vantieghem P & Swinnen KRR (2023) Rode Lijst van de macro-nachtvlinders in Vlaanderen 2023. Rapporten van het Instituut voor Natuur- en Bosonderzoek 2023 (6). Instituut voor Natuur- en Bosonderzoek, Brussel. <https://doi.org/10.21436/inbor.90533517>. [in Dutch, but with distribution maps of all species]

European Butterflies Group

By Mike Prentice, Chair, EBG

The European Butterflies Group (EBG) is a “virtual” branch of Butterfly Conservation for those members who have a particular interest in European butterflies and moths. EBG regularly organises surveys to assist with the conservation of particularly endangered species and cooperates with Butterfly Conservation Europe in encouraging members to record and monitor whether regularly or on a casual basis when abroad.

In 2023 we were able to resume fieldwork which had been hampered by the COVID pandemic and trips were organised to survey for Nevada Grayling *Pseudochazara williamsi* and Danube Clouded Yellow *Colias myrmidone*.

As well as carrying out fieldwork, EBG members supported the projects on the Red Lists of both butterflies and moths by supplying photographs for the latter and undertaking endemism analysis by Martin Davies for the Butterfly Red List.

Nevada Grayling *Pseudochazara williamsi*

The initiative for the Nevada Grayling surveys came from Butterfly Conservation Europe and EBG was happy to supply volunteers to work with the Spanish organisers, Jose Miguel Barea Azcon and Javier Olivares. The eight EBG volunteers joined Jose Miguel and Javier and their team of four students and researchers to search for Nevada Grayling in the Sierra Nevada and nearby sierras.

After fruitless surveys on the first two days the group visited El Buitre a high plateau at the eastern end of the Sierra Nevada where Nevada Grayling were found in good numbers. After spending a couple of hours counting adults,

surveying for larval food-plant and walking transects, the group descended and on the way down found Andalusian Anomalous Blue *Polyommatus violetae* which had recently emerged. As well as Nevada Grayling, notable other species seen on the plateau included Zulich's Blue *Agrides zullichi*, Nevada Blue *Polyommatus golgus* and Spanish Argus *Aricia morronensis*.

The group found no Nevada Grayling on the following two days despite intensive searches at altitude and in fiercely hot weather on the Sierras de Orce, Maria and la Sagra. On day 6 the group travelled to the Sierra de Baza where *williamsi* were again found in good numbers with plentiful foodplant. The seventh day was spent at high altitude on El Chullo and although foodplant was plentiful no *williamsi* were found – perhaps the group visit was too early.



Pseudochazara williamsii (Dave Wright)

On the eighth day the group visited the Loma de Papeles but very strong winds and extreme heat (42 degrees) limited the number of species flying and *williamsi* was not recorded.

The Spanish team also carried out surveys before and after the EBG team's visit and in total only found *williamsi* in acceptable densities at 3 locations (including those above). The timing of surveys of this kind can be difficult as butterfly emergence particularly at altitude is hard to predict. The survey results suggest that the species is in decline and that further surveys should be carried out in 2024.



The recording team in Spain

Danube Clouded Yellow *Colias myrmidone*

For many years EBG has been working with colleagues in Germany and Romania to locate and count colonies of *myrmidone* in Romania, one its last strongholds in Europe. As a result of earlier work, the Romanian government scheduled 3 areas as Sites of Community Interest which should give the species some measure of protection



Colias myrmidone (Keith Woonton)

Romania is a country where extensive agriculture is still practised and although this is sadly changing one can still see horses and carts on the roads and in the fields, and traditional haystacks rather than haybales. *Colias myrmidone* relies upon grassland and the edges of light woodland which are grazed, but not too heavily grazed, so that the larval foodplant can thrive without being eaten by the grazing animals. There are still large areas of grassland and many grazing animals with little evidence currently of abandonment seen elsewhere in eastern Europe.

In 2023 EBG organised 2 trips to Romania timed to coincide with the *myrmidone* broods that fly in May and August. Using maps provided by our German colleagues which predicted likely sites where *myrmidone* might be found, the EBG volunteers surveyed a total of 19 sites in the May visit and 10 sites in the August visit.

Colias myrmidone were found on both trips, some on sites already known and some on new sites. Interestingly the numbers seen in May were higher than in August which is not normally the case but the weather during our August visit was cloudier (and wetter) than normal and *myrmidone* do not tend to fly in overcast weather. This made the task harder and some sites were visited more than once since the absence of sightings of *myrmidone* on cloudy days was not definitive.

On one of the sites surveyed in May we counted 47 *myrmidone* where previously there had been only one recorded and this led to an intensive search in August on some nearby sites that had not been previously surveyed and on two of which *myrmidone* were found. In 2024 further visits to this area will be undertaken to look for more new sites.

In addition to the *myrmidone* surveys time was allocated to finding and photographing other species including Spinose Skipper *Muschampia cribrellum*, Black Ringlet *Erebia melas*, Pallas's Fritillary *Argynnis laodice* and Fenton's Wood White *Leptidea morsei* amongst many others.

Future plans

In 2024 we plan to revisit Romania and the Sierra Nevada to carry out further surveys for *Colias myrmidone* and *Pseudochazara williamsi*. We have identified further species from the draft Red List which are amongst the most threatened including *Hipparchia tilosi*, *Chazara prieuri* and *Pseudochazara orestes* and we plan to fund surveys for these species either by EBG members or by local experts or volunteers.



Website

We are continuing to update the new BC Europe [website](#) after the old one was hacked just over a year ago. We are grateful to De Vlinderstichting for hosting our new site, which will hopefully be far more secure.

Social media

Our social media following continues to grow steadily: our Facebook page now has over 4,000 followers (www.facebook.com/ButterflyConservationEurope) and our Twitter (@europebutterfly) account has grown to almost 3,000 followers. We are very grateful to Cristina Sevilleja and Irma Wynhoff for running these accounts.

Acknowledgements

We are very grateful for the ongoing financial support of Butterfly Conservation (UK) and Dutch Butterfly Conservation (De Vlinderstichting). We would also like to thank the Board and Partners of BC Europe who give their time freely.

