

21st Meeting of the Standing Committee

Videoconference, 29 June 2023

Record of the 27th Meeting of the Advisory Committee



1. **Attendance**

This is listed in Annex 1 to the record.

2. **Opening Remarks:**

The Chair of the Advisory Committee, Professor Danilo Russo (Italy), opened the meeting and gave the floor to the representative of Bosnia and Herzegovina in the Advisory Committee, Dr. Jasminko Mulaomerović.

Dr. Mulaomerović was pleased that the meeting was finally taking place in Sarajevo after the delay caused by the COVID-19 pandemic. He hoped the delegates enjoyed the excursion to Bijambare protected landscape organised the day before and expressed his hopes for the success of the AC meeting.

The AC-Chair also welcomed the participants. He conveyed his gratefulness to the host country for its hospitality as well as the Secretariat for its support in organising the meeting. While Professor Russo was delighted to finally be in Sarajevo and see all the AC delegates in person, he was mourning the loss of a dear colleague and friend, Mr. Tony Hutson, who passed away on February 16, 2023. Mr. Hutson was an outstanding naturalist and an extremely kind person. To the memory of Mr. Hutson, a condolence book would be displayed during the meeting that everybody could sign. Professor Russo asked the participants for a minute of silence for Mr. Hutson.

Lastly, Mr. Streit, EUROBATS Executive Secretary, addressed the delegates and expressed his pleasure to finally hold this in-person meeting after three years of delay. He had not given up the idea of organising the meeting in Bosnia and Herzegovina as the country was known for its rich biodiversity, especially for bats, as well as for its excellent NGOs that were doing tremendous work. It was important to honor their engagement and the

endeavors. Mr. Streit thanked all the delegates for their efforts to come to the meeting and commented upon the large participation – not only from the Parties but also from the NGOs from the entire Balkan region and beyond. Mr. Streit was looking forward to a fruitful meeting. In conclusion, he mentioned that the budget discussions during the last Meeting of the Parties (MoP) were particularly difficult, the reason for which was high inflation and the dire financial situation it caused in many European countries. Though there was a will, it was not possible to accommodate everything the Parties wanted to see covered in the budget. One of the major consequences was that there were no funds foreseen by the budget for the organization of the AC meetings in the following two years. Unless there were additional funds becoming available, the AC meetings in 2024 and 2025 could not take place in person. While Mr. Streit was hoping that an expected accession of Spain could provide the additional income needed, he invited the delegates to do their best to make this meeting a success so that the governments could see how valuable the AC meetings were and to make efforts to secure the funds for the organization of an in-person AC meeting next year.

3. Adoption of the Agenda

The AC-Chair asked whether there were any objections or comments to the agenda. There being no objections, it was adopted.

4. Adoption of the Rules of Procedure

There being no comments on the rules of procedure, these were also adopted. Mr. Streit explained that the Standing Committee agreed, unless there was a change in the rules of procedure, that the rules did not need to be adopted again at every meeting. There being no objections to this proposal, it was agreed that the Advisory Committee would do the same.

5. Election of Chair and Vice-Chair

Professor Russo announced that he was not going to propose himself again for the position of the Chair of the Advisory Committee. He believed in the value of a turn-over in leading positions and asked the Parties for proposals for the positions of the AC Chair and Vice-Chair. Georgia proposed Germany, and this was seconded by Luxembourg, Italy, and Ukraine. Professor Russo congratulated Ms. Ruth Petermann for being elected as the Chair of the

Advisory Committee. Further, the Parties were asked for proposals for the position of the Vice-Chair. The Netherlands proposed Finland and this proposal was seconded by Portugal, Estonia, as well as Serbia. Ms. Eeva-Maria Tidenberg was congratulated on being elected as the Vice-Chair of the Advisory Committee. Before stepping down as the AC-Chair, Professor Russo thanked his Vice-Chair, Ms. Petermann, for her great work and support as well as extended his appreciation to all the AC delegates for their hard work, especially during the difficult years of the pandemic – Not only did it make handling the work of AC difficult, but it also harmed the public image of bats, which needed to be defended. Professor Russo concluded by thanking the Secretariat for its assistance and support.

Ms. Ruth Petermann was pleased and honored the Advisory Committee elected her as Chair. She also thanked Professor Russo for the last four years of having worked together as his Vice-Chair. She had big shoes to fill and was happy to accept the challenge, especially with Ms. Tidenberg on her side. Ms. Tidenberg also expressed her gratitude for this opportunity and was looking forward to working together with Ms. Petermann in helping the AC progress its work further.

6. **Summary Reports by Parties, Non-Party Range States and NGOs**

Below listed are the written reports the Secretariat received from the AC27 delegates to be included in the record.

ALBANIA:

Albania is a country rich in bats. So far, 32 species of bats have been recorded, while *Eptesicus nilssonii* might also be present in Albania (acoustic evidence at two-three locations).

New roosting sites (hibernacula) have been discovered for several species such as *Rhinolophus euryale*, *Rh. blasii*, *Rh. hipposideros*, *Rh. ferrumequinum*, *Miniopterus schreibersii*, *Myotis capaccinii*, *M. myotis*. Monitoring of key underground roosting sites has been carried out.

National Red List for wild fauna is being revised, and conservation status of bats is being updated. The new updated Red List includes all 32 species of bats present in Albania, while in the Red List of 2013 only 16 species of bats were assessed.

Surveys have been conducted in areas to be affected by large infrastructure development projects (such as Skavica Hydropower Dams along the Drini River) to search for potential important roosting sites for bats and the results have been incorporated into ESIA document, along with avoidance and mitigation measures for bats.

Bats are included as special taxa for assessment in all infrastructure development projects, including renewable energy projects (hydro, wind, and solar energy).

A management plan for Treni's cave (Prespa National Park), an important underground roost for bats inside the park, has been recently prepared and adopted by the Prespa National Park Authority.

The Government of Albania, Ministry of Infrastructure, has adopted the EUROBATS Guidelines on Bats and Wind Turbines, asking all companies interested in wind energy generation in Albania to be fully in compliance with the guidelines while presenting their technical offer and EIA report, by undertaking one year pre-construction surveys on bats in areas where wind farms are allowed and proposed to be constructed. In addition, no plans for construction of wind farms inside the protected areas are allowed or permitted by the Ministry of Tourism and Environment and the Ministry of Infrastructure.

BOSNIA AND HERZEGOVINA:

There are 32 species of bats present in Bosnia and Herzegovina of which 27 species are protected in the entity Republika Srpska, while in the entity of Federation of Bosnia and Herzegovina only 19 species are protected. Although the need to protect all known bat species in accordance with the signed agreement on the protection of bats has been repeatedly pointed out, there have been no reactions from the relevant entity ministries. The International Bat Night was celebrated in Zavidovići. Additionally, a project on the largest colony of *Barbastella barbastellus* in the Dinarides has been completed, and within the project, the third regional meeting of bat workers has been organised.

CYPRUS:

In Cyprus there are, until today, nineteen bat species formally known to exist on the island and all of them are protected through legislation and the relevant

Directive of the European Union. This number may be amended as the research on the species occurring in Cyprus is still ongoing. Many of these species are found in the Natura 2000 sites declared according to the Habitats Directive and the efforts are focusing on the enhancement on the measures for their protection.

Among the known species found in Cyprus, a very important species is the Egyptian fruit bat *Rousettus aegyptiacus*. Cyprus is the only European Union country that hosts this specific species, and this fact is a great privilege but, at the same time, a very big responsibility for its conservation and protection. As the only fruit eating bat in Cyprus, it has suffered continuous victimisations from farmers, since it was believed to be causing damages to their crops. As a result, the population of the species came down to very low numbers making the authorities in Cyprus take measures to enhance the protection of bats and to recover their populations.

This winter, new research has started for *Rousettus aegyptiacus* by the team of Dr. Dina Dechmann from the Max Planck Institute of Animal Behavior and the Cypriot authorities. The aim of this research is to find out an answer to the following questions:

1. What is the availability of different food plants the Egyptian fruit bats eat during different seasons?
2. Do the Egyptian fruit bats in winter feed on food that is also available in summer? This can indicate that winter food is an "emergency solution" and only consumed while other food is not available (as has been shown for example in another African fruit bat, *Eidolon helvum*).
3. Does *Rousettus aegyptiacus* in winter switch their food species from day to day to obtain the nutrients they need or does each individual have a preferred food choice?
4. Are food plants predictable in their fruiting patterns or ephemeral? For example, wild figs often do not fruit regularly and thus a map of fig trees is not sufficient to know where food will be available and when.
5. Do bats in winter use social information either to defend patches of food together or to always have information available about where food sources are?

6. Are there differences in food choice between the sexes? For example, spermatogenesis and pregnancy/lactation are energetically costly - what does *Rousettus aegyptiacus* need during these time periods?
7. How do colonies of *Rousettus aegyptiacus* differ in their food choices depending on the conditions in their cave and the local food landscape?

For this purpose, the team will track *Rousettus aegyptiacus* from different caves repeatedly to collect the information outlined above. The tracking devices used are newly developed ICARUS WildFi tags. They collect several types of data, i.e.:

- GPS (as soon as the bats leave the cave to save battery) to show foraging locations
- Acceleration data throughout a 24-hour-cycle. This allows describing behaviour (was the bat flying, climbing on a tree, resting, etc.) and energy consumption.
- Proximity data throughout a 24-hour-cycle to show how close bats are to each other and whether social proximity in the cave predicts who forages together
- temperature
- air pressure
- humidity

The data can be remotely downloaded so recapture of the bats is not necessary. Several of these features are completely novel and have not been used on any other animal yet.

Another research on bats has also started in Cyprus, with the Cyprus authorities and the University of St. Andrew in Scotland, to sequence the genomes of all living bat species (approximately 1,400 species in total). The main goal of this initiative, be the Bat1K consortium, is to uncover the genes and genetic mechanisms behind the unusual adaptations of bats, and essentially mine the bat genome to uncover their secrets.

Finally, during the implementation of the project entitled “Managing of Natura 2000 network in Cyprus and shaping a sustainable future” with project acronym “LIFE IP PHYSIS”, monitoring of bats is ongoing.

CZECH REPUBLIC:

Czech Republic continues its monitoring and survey programs, including long term monitoring of hibernacula and maternity colonies, short term monitoring of bats in buildings and trees, and local surveys. Cooperation of Poland, Czech Republic, and Slovakia within the frameworks of the “LIFE PODKOWIEC PLUS” project concerning *Rhinolophus hipposideros* continues.

After the COVID-19 pandemic, the educational programs for public and schools are again taking place in large numbers. NGOs ČESON and Nyctalus have given more than 140 lectures in schools and have held more than 70 events for general public. International Bat Nights have taken place on almost 40 sites. Also, activities that were created during the pandemic and paying attention to the restrictions then in place (based on small groups or family activities) have continued, e.g., “bat geocaching series”, “bat public surveyors”, etc.

The delegation of the Czech Republic is deeply sad to announce that RNDr. Vladimír Hanák, Csc., one of the most famous Czech zoologists and chiropterologists, passed away on December 17, 2022.

DENMARK:

The results from the last national monitoring programme have been compiled (<https://dce2.au.dk/pub/SR530.pdf>). The trends in distribution and occupancy on 196 sites across Denmark are monitored once every six years using acoustics to record species. Generally, the occupancy and distribution of the 17 bat species in Denmark are stable. Western barbastelle seems to be increasing its range. However, counts of emerging two biggest hibernacula in limestone mines show that, in one of them, the hibernating population of the pond bat and Daubenton's bats have declined for 50 percent since 2009. In the other big hibernacula, the number of Daubenton's bats have slightly declined, while the pond bat population is stable. Bat numbers in two small hibernacula are stable. Just last week a hibernating *Myotis myotis* was observed in one of the large limestone mines. Possibly a vagrant individual as none were caught last spring at the location.

There is pressure to develop wind power even further, particularly offshore. Large projects on strategic assessment and development of sensitivity maps have started.

ESTONIA:

The renewal of the action plan for bat protection in Estonia is ongoing – The document is almost complete, some rearranging must be done before the public hearings.

The national guidelines on wind turbines and bat populations are being put together in cooperation with the Environmental Agency, the Estonian Fund for Nature, the Environmental Board, and the Ministry of the Environment. The guidelines are based on the EUROBATS Publication Series No.6 and the draft has been assembled in cooperation with Latvia.

The Environmental Agency has started a pilot campaign to monitor bats that hibernate in close proximity to people – in city and countryside cellars. The results have been good, almost 200 individual observations have been submitted for over 400 individual bats. Also, various pictures have been collected and the citizen science monitoring will continue in the upcoming years.

New challenges are related to the REPowerEU initiative and Estonia's wind energy goals. An ongoing countrywide sensitivity mapping is taking place as well as meetings on impact assessment conditions, methodology and mitigation measures.

FINLAND:

Since the last report given at MoP9, due to the short time between the two meetings, there is not much to report. In February 2023, Ms. Anna Blomberg from Bat Lab Finland defended her PhD thesis on white nose disease with the title "A Palearctic contribution to the bat fungal disease puzzle - Environmental factors, host communities, overwintering habitats and climate change contribute to the manifestation of white-nose disease" (<https://www.utupub.fi/handle/10024/174207>).

Concerning monitoring, a new acoustic monitoring scheme run by volunteers is to be launched in spring 2023. AudioMoth recorders will be provided to the volunteers around the country. The Finnish Museum of Natural History Luomus will coordinate the scheme along with other bat monitoring programmes. Finally, wind energy is a very topical subject in the country, as it is all over Europe.

GERMANY:

As already reported during previous meetings, several government-funded projects are still in progress. Some of them are to be finalised within the next 12 months, e.g. the project on the barbastelle or on the grey long-eared bat, which examines in particular the role of its insect prey.

A new project on Leisler's bat has just started, taking, among others, the following research questions into focus: its distribution range in Central Europe during summer, mating, and winter, its migrations routes, and the parameters for habitat/roost selection. The results will be used for the preparation of a species action plan for Leisler's bat. This plan will recommend spatially differentiated, suitable protection and promotion measures to improve the conservation status.

The project "BATLAS" saves bat count data and evaluates them automatically. The data helps monitoring the development of bat populations in Germany. In this project, previously unpublished data are standardised using modern statistical methods and combined with published data to estimate annual population sizes on a nationwide scale. Under the name BATLAS, an online platform has been developed that secures and automatically evaluates bat count data and displays the current distribution of species. The platform is intended to help monitor the development of bat populations in Germany.

Additionally, a new project called "BATTREND" is about to begin. Its aim is to evaluate existing monitoring methods and to develop and test new methods to get reliable data on the conservation status of bat populations.

On March 3, 2023, the German government passed the final amendment to the Spatial Planning Act (ROG). The legislative package also adopted regulations of the **Council Regulation (EU) 2022/2577 of 22 December 2022 laying down a framework to accelerate the deployment of renewable energy**, which had to be transposed into the national law. New paragraphs were formulated for this purpose. Specifically, it is stipulated that in wind energy areas which have already undergone a Strategic Environmental Assessment (SEA) at the time of designation, and which are not located in a Natura 2000 site, a nature conservation area, or a national park, the obligation to conduct an Environmental Impact Assessment (EIA) and a species protection assessment for wind turbines is waived in the approval procedure.

To ensure species protection, the competent authority must order proportionate avoidance and mitigation measures based on existing data. Otherwise, operators must make a financial contribution to a species assistance programme.

HUNGARY:

A wide range of bat conservation activities has been carried out in Hungary since the last meeting, including research, practical conservation, and education (public awareness raising). A brief overview of these is presented below.

Research activities:

- A countrywide monitoring programme was launched in 2004 which includes the long-term survey on the trends in bat populations to introduce effective conservation management based on the collected data. The programme involves regular monitoring of hibernating sites (e.g., caves, mine tunnels), summer roosts in buildings (e.g., churches, castles), swarming sites, the regular checking of the roosts of Schreibers' bat (*Miniopterus schreibersii*) and the monitoring of the impact of different bat conservation activities. The programme is still ongoing. In 2022, 49 different hibernating sites (caves or mine tunnels), 141 roosts in buildings, 9 swarming sites and 9 roosts of Schreiber's bat were surveyed. Most of the statistical analyses have not indicated significant changes in population sizes, but the decline in the number of greater and lesser mouse-eared bats (*Myotis myotis* and *M. blythii*) is alarming.
- An increasing number of solar farms are being deployed in Hungary and their ecological effects are largely unknown. Previous behavioural experiments have proven that smooth surfaces such as solar panels act as sensory traps for bats and insects, increasing collision risk, and suggesting that solar farms may affect local ecosystems in a complex way. With bioacoustics methods the effects of solar farms have been tested in Hungary.
- Research on the effects and conservational importance of stables has also been carried out.

- The effects of different silviculture methods in hilly areas have been studied with acoustic methods.
- Large-scale virological investigation of the Hungarian bats is an ongoing project. This includes many aspects of virology, from screening for new pathogens to studying the effects of different ecological and behavioural traits on bat viromes.
- Outstanding results have been achieved in the research of *Lloviu cuevavirus* (LLOV), which possibly caused massive die-offs in the Iberian Peninsula in the early 2000s. In 2016, LLOV was also detected during the investigation of *Miniopterus schreibersii* mortalities in Hungary. In 2022, significant new information was gained about the distribution, biology, genetics, and pathogenic potential of the virus. Most importantly, unpublished evidence suggests that the virus is present in several other European countries.
- Microclimate is measured at 10 different sites to assess and evaluate the impact of climate change on bats in maternity roosts.

Conservation activities:

- At least 30 summer roosts in buildings have been cleaned and maintained for bats.
- The extensive renovation of churches has reached an enormous scale, posing a threat to many bat colonies. Progress has been made in regulating the renovation of buildings, but these rules are often neglected. Only a few buildings have been renovated in a suitable way.
- Numerous bat boxes and other artificial roosts have been placed in forests and on buildings to mitigate the loss of roosting places.
- In 2022, the bat rescue work continued in several rehabilitation centres in Hungary.
- As an indirect conservation activity, but a relevant achievement, a guide entitled '*Public lighting and wildlife protection*' was published in 2019. The publication includes a section on bats. This is a professional guide for nature conservation authorities and national park directorates to support decision-making on applications for the installation or replacement of

outdoor lights or light sources. Even though this guideline is not binding, nature conservation authorities and national park directorates use it for environmental impact assessment, other ecological assessments, project planning, etc.

Public awareness raising activities:

- International Bat Nights have been organized by national park directorates and NGOs.
- Permanent and temporary poster and photo exhibitions have been organised by national park directorates and the BirdLife Hungary Mammal Working Group.
- More than 50 presentations and lectures have been held in schools and other places.
- News about bats (e.g., *'The bat species of the month'* series) and different guidelines on the protection of bats (e.g., how to save bats, how to make bat boxes) are published regularly on the website of BirdLife Hungary (<https://www.mme.hu/tevekenyseg/denevervedelem>).
- A webcam has been installed in an attic to show the life of a bat colony.

IRELAND:

The 10th Irish Bat Conference took place just a couple of weeks before AC27. It was attended by over 100 delegates and was held over two days. The first day consisted of scientific talks – including two excellent key-note presentations by Professor Fiona Mathews and Dr. Hugo Rebelo on wind farms and climate change respectively. The 2nd day was made up of workshops. The conference was opened by a Minister of Heritage, which was an unusual and uplifting experience. The Minister has conducted bat surveying and is very supportive of bat conservation.

A new 6-year contract to manage the Irish bat monitoring programme began in 2022. The contract was won by Bat Conservation Ireland, the national bat NGO. The programme contains four separate monitoring schemes, covering 7 of Irish 9 species. Monitoring methods for the two remaining species – *Myotis mystacinus* and *Myotis nattereri* – are still being tested.

Data collection on the migratory behaviour of *Nathusius pipistrelles* has been initiated. This work has been accelerated because of the growing interest in offshore wind farm development, especially on the east coast of Ireland. As part of this work, the ringing of *Nathusius pipistrelles* has also started and some radio-tracking work on them will be undertaken this summer to try and find maternity roosts.

The implementation of the Species Action Plan for the Lesser Horseshoe Bat is underway. All the important stakeholders are involved in the steering committee (the Forestry industry, Department of Agriculture, Historic properties, Local authorities and, of course, the National Parks & Wildlife Service) and, so far, it has been a very positive and constructive experience.

ISRAEL:

1. After ten years of running the National Monitoring Plan for Israel's Bat Species, during which more than 100 sites (roost and foraging sites) throughout the country are surveyed annually, the monitoring plan is currently being reviewed by the Israel Nature & Parks Authority (INPA), for the purpose of adjusting its objectives and introducing advanced technological monitoring tools.
2. Eight species of bats have been discovered so far in mandatory post-construction mortality surveys using trained dogs at three windfarms which are now operational: *Pipistrellus kuhlii*, *Pipistrellus pipistrellus*, *Rhinolophus ferrumequinum*, *Rhinopoma cystops*, *Rhinopoma microphylum*, *Tadarida teniotis*, *Taphozous nudiventris* and *Myotis mystacinus*. Two windfarms have exceeded their annual take permit issued by INPA, and this incompliance is currently being investigated by the Ministry of Environment and is also pending a court ruling.
3. INPA together with the Environmental Ministry and the Society for Protection of Nature (an NGO) have published a comprehensive planner's guide for mitigating the ecological effects of light pollution in open landscapes (in Hebrew). EUROBATS guidelines are referenced and implemented in this document.

4. INPA has compiled draft guidelines for the evacuation of Egyptian fruit bats, *Rousettus aegyptiacus*, from abandoned buildings prior to their demolition. The aim is to share these guidelines with the EUROBATS Bat Rescue and Rehabilitation Working Group.

ITALY:

The University of Naples Federico II is leading the IUCN reassessment of the status of bats in Europe for the European Red List. Overall, the picture is not especially optimistic, with several species whose conservation status has worsened. Ongoing research is focusing on the ecosystem services provided by bats in farmland and on the ecology of bats on small islands such as Pantelleria, where small bat populations of species that are precious from the conservation viewpoint still exist and are threatened by wildfires and touristic development. Finally, Rome will host the final meeting of the EU-funded Climbats COST Action focusing on the effects of climate change on ecosystem services provided by bats in agriculture.

LUXEMBOURG:

Efforts to protect the 21 bat species occurring in Luxembourg are ongoing. The Lesser horseshoe bat (*Rhinolophus hipposideros*) has been recorded in front of an abandoned iron mine near the country's border, giving hope for the reappearance of this species in Luxembourg after an absence of 30 years. During winter, restoration work was carried out on the roof of a building where the last nursing colony of *R. ferrumequinum* is located, with the aim of preserving the building as the only reproduction site for this species in the country. Another point worth mentioning is that the National Nature Protection Program (PNPN3) has been approved by the government. It will be running from 2023-2030, with main goals being the conservation and restoration of habitats of endangered species of bats.

MOLDOVA:

Bat monitoring, new sites:

In 2022-2023, the monitoring of important bat sites was conducted at 12 locations. A new bat hibernation site was found near the cellars of Cricova, consisting of abandoned stone mines with 4 entrances. In late February 2022,

4 bat species were recorded (*Myotis daubentonii*, *M. mystacinus*, *Plecotus auritus* and *P. austriacus*) of which *Myotis daubentonii* was dominant.

In the same period, in the older Cricova mine, which is known as an important bat roost since the 1960s, a rather high diversity (8 species) of bats was registered: *Rhinolophus hipposideros*, *Myotis daubentonii*, *M. mystacinus*, *M. dasycneme*, *M. bechsteinii*, *Eptesicus serotinus*, *Plecotus auratus*, and *P. austriacus*. This mine has been regularly surveyed over the last 10 years.

In February 2023, a new site was found, a limestone mine located near the town of Soldanesti. Here, the largest hibernation colony of *Myotis blythii* was registered – about 800 individuals. Other species recorded in the mines were *Rhinolophus hipposideros*, *Myotis daubentonii*, *M. mystacinus*, *M. dasycneme*, *Plecotus auritus*.

At the end of February 2022 and 2023, in the mines near the Saharna monastery, a high bat diversity was discovered: *Rhinolophus hipposideros*, *Myotis daubentonii*, *M. blythii*, *Eptesicus serotinus*, *Plecotus auritus*, *P. austriacus*, and the critically endangered species *Barbastella barbastellus*. This mine is the only known site in Moldova where *B. barbastellus* hibernate.

In the same period, in a mine located in the village of Saharna, 6 species were registered: *Rhinolophus hipposideros*, *Myotis daubentonii*, *M. blythii*, *M. dasycneme*, *Plecotus auritus*, *P. austriacus*, and the critically endangered species *M. bechsteinii*, recorded for the first time in this site in 2023. Thus, the Saharna site is the northernmost location of *M. bechsteinii* in Moldova.

A new site was found in the same region – a small mine in the village of Stohnaia, where two species were detected (*Myotis daubentonii* and *M. dasycneme*).

At the end of November 2022, in the Mascauti mines, 7 species were observed: *Rhinolophus hipposideros*, *Myotis daubentonii*, *M. dasycneme*, *M. bechsteinii*, *Eptesicus serotinus*, *Plecotus auratus*, and *P. austriacus*. In the opposite part of the village, a new site (small mine) was found, where three bat species were registered - *Myotis daubentonii*, *M. mystacinus*, *M. bechsteinii*.

Maternity colonies

In the mines near the Saharna monastery, the existence of a maternity colony of the species *R. hipposideros* was confirmed. In June 2022, over 200 very active pregnant females were observed flying through the underground passages. One individual of *B. barbastellus* and 3 individuals of *P. austriacus* were also observed. All bats were located near the entrance, up to about 80 meters, where the temperature was not lower than 13-15 degrees Celsius.

In the Gordinești mines, the maternity colony of the species *M. blythii* counted about 700 females with juveniles. These were one to two weeks old and did not fly independently. Several, very emaciated juveniles hung motionless from the ceiling, and another six juveniles were observed in a large pile of guano. The very dry conditions in May-June 2022 and the lack of precipitation led to the reduction of the trophic resources of the bats, as a result, the females did not have enough reserves to raise their young and they were abandoned.

Bat rescue and rehabilitation:

In January 2022, four individuals of *Pipistrellus kuhlii* were extracted from a basement of an administrative building in the Telecentru district of Chisinau and were moved to an abandoned building near the Institute of Zoology in Chisinau.

In November 2022, 12 individuals of *Nyctalus noctula* were collected from an attic of a tall apartment building in the Telecentru district of the city of Chisinau.

In December 2022, a large colony of *Nyctalus noctula* was found on a balcony of an apartment in Chisinau. The individuals were brought in a tall bucket. Unfortunately, almost half of 167 individuals were dead. The ones that survived were moved to an empty building near the Institute of Zoology. The dead individuals were measured, weighed, and stored in a refrigerator for further analysis and sampling.

In February 2022, material about bats, their importance, and rehabilitation was prepared for a local TV channel. The information was presented in the TV show called „Codul Eco” on TV Moldova

(https://www.youtube.com/watch?v=8uoYrqLtLdY&ab_channel=TeleradioMoldova)

Scientific events:

- Scientific International Conference "The Museum and Scientific Research", the 29th Edition, Oltenia Museum, Craiova, Romania, September 15-17, 2022. Plenary presentation: Bat fauna from the limestone mines of the Cricova-Goian area of the Ichel River Basin, Republic of Moldova.
- National Conference with international participation „Life sciences in the dialogue of generations: Connections between Universities, Academia and Business Community”, Chisinau, Republic of Moldova, September 29-30, 2022. Oral presentation: Bat fauna (Mammalia, Chiroptera) from the limestone mines of Molovata Nouă.
- National Conference dedicated to the academic Boris Melnic, February 13, 2023. Oral presentation: Actual state of chiroptera at the underground sites of Cupcini.

Publications:

1. Nistoreanu V., Caldari V., Larion A., Dibolscaia N. Bat fauna (Mammalia: Chiroptera) from Saharna limestone mines, Republic of Moldova. Buletinul Academiei de Științe a Moldovei. Științele vieții. 2022, No 2 (346), p. 64-71.
2. Nistoreanu V., Larion A., Caldari V., Dibolscaia N. The bat fauna from the limestone mines of the Cricova-Goian area of the Ichel River Basin, Republic of Moldova. Oltenia journal for studies in Natural sciences. Oltenia Museum, Craiova, Romania, 2022, Tom. 38, No. 1, p. 127-132.
3. Nistoreanu V., Caldari V., Larion A., Dibolscaia N. Bats – our unknown friends. CEP USM, Chisinau, 2022, 73 p. (in Romanian)

In June 2022, the PhD thesis by Vladislav Caldari with the title „Bats (Chiroptera, Mammalia) from the underground shelters of the Republic of Moldova” was successfully defended. This is the first PhD thesis on bats in the Republic of Moldova.

MONTENEGRO:

Bat research in Montenegro has made significant progress in the recent years, resulting in an increase in the total number of known bat species to 32. Most of the bat surveys have been conducted as part of a national initiative for identifying the most important Natura 2000 habitats. This effort has yielded valuable information on bat species distribution and has identified significant winter and maternity roosts. Moreover, the first steps in bat conservation have

been taken through the Biodiversity Action Plan for the capital city area (Podgorica), which involved the installation of a bat-friendly entrance in Magara cave. Additionally, the first International Bat Night was organized in 2021 in conjunction with the exhibition called "Some wings are made of magic", while the second International Bat Night was celebrated in 2022 by making a song with authentic bat sounds.

In 2022, a bat inventory of previously unexplored parts of Montenegro was conducted with the assistance of the Dutch Mammal Society and the Slovenian biology students' organisation. The results of the inventory will be presented to relevant organisations throughout the year. However, the lack of a relevant national bat monitoring system means that the conservation status of all bat species remains unknown.

To support bat conservation in Montenegro, it is crucial to collect further data and establish a monitoring program for at least critical bat colonies. Additionally, there is a need to enhance the capacity of local bat workers.

NETHERLANDS:

- 2023 has been proclaimed the year of the pond bat in the Netherlands.
- The Dutch ministry, provincial conservation authorities, and bat scientists have started an initiative to coordinate conservation efforts for the pond bat and to implement conservation measures.
- A scheme for training and licencing fieldworkers is being implemented in a cooperation between bat ecologist, consultants, and education specialists from the Universities for Applied Sciences.
- In a mutual gain approach, a covenant between stakeholders regarding onshore wind park development (industry, competent authorities, nature conservation organisations) is being drafted, including standard monitoring practises based on the perceived risk of bat casualties and further strengthening of bat populations.
- A research programme furthering monitoring and effective mitigation of the impact of wind turbines on bats is being implemented and is focussing on a real risk analysis, standardisation of pre-construction assessments, standardisation of monitoring protocols, improvement of algorithm to inform curtailment, population effects, and predicting of bat migration.

- A research programme aimed at enhancing monitoring data to assess conservation status indicators is being implemented. The programme focusses on species vulnerable to different forms of energy transition in and around built-up areas, excluding wind energy. It prioritises species with unfavourable conservation status. Monitoring methods are being piloted for the national monitoring, and data are being generated to assess conservation status indicators.
- Different models of collecting data are being tested and further developed, from expert judgement, fieldwork, to data modelling of landscape and roost potential. Modelling is becoming an increasingly important element in a multi-method approach.
- A research programme to enhance conservation evidence for measures taken to mitigate negative effects from energy transition and carbon emission reduction measures is implemented and focussing on three species (*Pipistrellus pipistrellus*, *Eptesicus serotinus*, and *Myotis dasycneme*) and on measures that can be widely implemented.
- Research on the impact of artificial light at nights (ALAN) on bats and the possibilities to mitigate effects is ongoing and is currently concentrating on dose/effect relationships and threshold values.
- A commission arranging for bats to be able to enter and use buildings as a roost has been included in the official building regulations. Details on relative quantities of roosts per building surface are being developed.
- Research regarding bats and offshore wind parks at the North Sea is ongoing.
- Research assessing the potential effects of solar panels and solar parks on species is ongoing.

NORWAY:

Bat research in Norway is carried out by universities as well as independent researchers. The research group at the Norwegian University of Life Sciences (NMBU) carries out basic studies of bat-habitat relationships and applied studies of impacts of human land use, including wind turbines and forestry. The NMBU group has also collected faecal samples for the Norwegian

Veterinary Institute, for the purpose of virus screenings. The Norwegian University of Science and Technology (NTNU) research group studies bat physiology, physiology of torpor, and individual-level responses to environmental change. Research activities carried out by independent researchers include spatial prediction modelling of some bat species (based on acoustic monitoring), impacts of lighting of church buildings, and single-species studies of e.g., northern bats *Eptesicus nilssonii*.

Local scale surveys and monitoring are carried out yearly by the Norwegian Zoological Society (NZF) and individual bat workers and researchers, using acoustics, hibernacula surveys, and inspection of bat boxes. There is no national scale monitoring of bats in Norway. Currently, there is no bat rehabilitation centre in Norway.

NMBU, NZF, and individual bat researchers have carried out dissemination and outreach activities such as bat walks and popular science lectures aimed at planners and the general public. For 2023, the Norwegian Environmental Agency (NEA) has granted funding for production of an information leaflet about bats and lighting of churches.

National guidelines for pre-construction assessments and post-construction monitoring of impacts of wind turbines on bats will be developed in 2023 by the NMBU upon the assignment from the NEA.

PORTUGAL:

Two new species have been confirmed for mainland Portugal, namely *Myotis alcaethoe* and *Myotis crypticus*.

The Mammals Red Data Book has been prepared and will be launched on April 17, 2023. Compared to the last edition from 2005, there have been some changes in the species list, namely *Myotis nattereri* has been replaced by *M. escalerae*, *Eptesicus serotinus* has been divided into *E. serotinus* and *E. isabellinus*, and two new species have been added to the list (*Myotis alcaethoe* and *Myotis crypticus*). Two out of the three species considered as critically endangered in the last edition of the Red Data Book, namely *Rhinolophus mehelyi* and *Rhinolophus euryale*, have been downgraded to endangered, after the roost monitoring data collected since 1987 have been analysed. Only *Myotis blythii* remains critically endangered.

For the first time, a big survey all over the country has been carried out, particularly in Natura 2000 areas. 180 survey points have been selected and capturing of bats with nets has been done at all survey points. Additionally, three acoustic stations around those survey points have been sampled using AudioMoths. More than 22,000 new records have, thus, been registered.

Due to COVID-19 restrictions, the cave-dwelling bats monitoring program was suspended in the maternity season of 2020 and the whole year of 2021. The monitoring programme was resumed in January 2022, with some restrictions in place, e.g., only vaccinated persons who performed daily COVID tests were allowed to visit roosts of national importance and were required to use disposable masks and gloves whenever bats were observed. As of January 2023, new restrictions have been implemented for visiting roosts of national importance. Visitors must now undergo daily COVID testing and wear disposable masks and gloves when within two meters of bats.

Several educational activities have been conducted in mainland Portugal, even during the pandemic. A Portuguese translation of the bat comic “Bono’s adventures, the great migration” is being prepared, and it will be sent to the Secretariat.

Despite the interruption of the organisation of International Bat Nights in 2020 and 2021 due to the pandemic, the Madeira Autonomous Region celebrated International Bat Night in 2022. The LIFE4BEST-ORs project entitled "Use of the endangered Madeira Pipistrelle as one of the emblematic species of the Natura 2000 Conservation SAC Laurissilva of Madeira (PTMAD0001)" has been concluded. The main objective of this project was to improve the conservation status of *Pipistrellus maderensis*. Main actions developed comprised monitoring and inventory, identification of pressures and threats, elaboration of an action plan for the conservation of the species and raising public awareness. Total funding amounted to about 40,000 EUR and the project lasted for 16 months, between July 2021 and October 2022.

The LIFE “Natura@night” project, which is currently in progress, aims to reduce light pollution that affects protected areas of archipelagos of Madeira, Azores, and the Canary Islands, and mitigate its impacts on the areas’ protected species. One of the main goals is to study the impacts of light pollution on seabirds, nocturnal butterflies, and bats. The project also intends

to update information on the abundance and distribution of nine bat species. A bioacoustic and capture method will be used to identify the species and to study their activity. Several other education, capacity-building, and monitoring activities related to bats have also taken place.

The LIFE IP Azores Natura project, which runs from 2019 to 2027, continues in the Azores Autonomous Region, with a specific focus on assessing the distribution and conservation needs of *Nyctalus azoreum*. This project action began in 2022, with a specialised services contract for field inventory, mapping, and data processing of bat species existing in the Azores, as well as the development of the Regional Action Plan for *Nyctalus azoreum*. Additionally, International Bat Night has been incorporated in the public awareness component of this LIFE project in the recent years. In 2021 and 2022, International Bat Night was promoted through field trips for the general public, which included demonstrations of the monitoring methodologies in some Azorean urban areas and protected areas.

As some Azorean schools have been showing interest in building and installing artificial roosts for bats, LIFE IP Azores Natura project has organised a workshop on this topic. The workshop took place within the last *Regional Meeting of Environmental Education and Eco-Schools*, held in March 2023 on Terceira Island, which is an annual meeting bringing together teachers with environmental educators from the government, municipalities, and NGOs.

ROMANIA:

The monitoring of key underground roosts has continued in Romania within the framework of several projects and/or has been done voluntarily by several bat NGOs. The national bat monitoring programme collected data until December 2022 for reporting under Art. 17 of the Habitats Directive. Nationwide, bat experts have taken part in POIM projects (Large Infrastructure Operational Programme), in order to create or to renew the management plans of Natura 2000 sites. Within the framework of these activities, new colonies have been discovered, even large nurseries, but also serious declines in the size of some continentally important bat colonies have been observed.

Wilderness Research and Conservation NGO, together with the Visul Luanei Foundation and the Wild Animal Rehabilitation Centre from Bucharest, Romania, have successfully rescued and rehabilitated 83 bats that were either

injured or trapped in various residential areas. The rescued bats primarily consisted of *Nyctalus noctula*, but there were also cases of *Pipistrellus kuhlii*, *Pipistrellus pipistrellus* and *Vespertilio murinus*. Furthermore, several *Nyctalus noctula* colonies were excluded from residential buildings before the work on thermal insulation took place, ultimately rescuing over 1,200 individuals.

WRC organised two large educational events as part of the Bucharest Science Festival and European Researchers' Night, where they had a stand and provided bat walks and presentations to diverse audiences. Additionally, throughout the year, the team also gave multiple bat talks in primary and high-schools.

Romanian bat experts regularly attend international conferences, such as the 18th International Congress of Speleology in Savoie Mont Blanc in July 2022, where they give presentations of publish papers (Chachula O. et al.).

The Myotis Bat Conservation Group actively participates in the survey and monitoring of multiple Natura 2000 sites in Romania, with a special focus on Harghita County, where they conduct surveys of both overground and underground bat roosts during key seasons and undertake the longest swarming monitoring in Romania at the caves of the Vârghiş Gorge.

The Centre for Bat Research and Conservation (CBRC) continued its work on two transboundary and international projects in 2022. One of the projects, funded by the Conservation Leadership Programme and involving the CBRC, the Myotis Group, and the National History Museum of Belgrade, aims to promote transboundary conservation of *Rhinolophus* species in the Romanian – Serbian Iron Gates region. The project will be completed in 2023. The CBRC is also gathering data for the upcoming second edition of the Atlas of European Mammals. Additionally, the Centre is also supplying full-night ultrasound data for the project of the National Museum of Natural History (Paris, France) “Bat Migration Routes in Europe”. The CBRC is an associated beneficiary in the international LIFE+ project “LIFE PODKOWIEC PLUS: Back to the forest – holistic conservation of bat breeding habitats”, in collaboration with bat NGOs from Poland, Czech Republic, and Slovakia:

<https://lifepodkowiectowers.pl/en/>. The project is coordinated by the Polish PTPP “Pro Natura” and is going to run from 2021-2026. In Romania, the CBRC is working on the conservation of cave colonies in two Natura 2000 sites. The

Centre also promotes bat conservation through the Bat of the Year initiative, with *Plecotus austriacus* as Bat of the Years 2022-2023 in Romania. Additionally, the CBRC with the Myotis Group co-organized the 5th Romanian National Bat Conference in October 2022, with international attendees and sponsorship from Pettersson.

SERBIA:

There have been no significant news or changes since MoP9. The Ministry of Environmental Protection is responsible for environmental issues in Serbia, including EUROBATS. There is still a total of 32 bat species in the national fauna. Following the publication of the *Bat Fauna of Serbia* in 2021, the first national bat atlas is being prepared. The first Red Book of Mammals of Serbia, including 15 bat species, is also being prepared as a joint effort of several institutions and the entire mammalogist community of Serbia but is still due to be published. The national mammalogist community also takes part in the preparations of the *Atlas of European Mammals*. All these new publications will include new data on the distribution of bats in Serbia which has been collected since 2017. In 2022, the International Bat Night was, as usually, organised by the Natural History Museum in Belgrade, this time taking place online.

SLOVAK REPUBLIC:

In the Slovak Republic, bats (currently 28 bat species occur in Slovakia) are protected under the Act No. 543/2002 Coll. on Nature and Landscape Protection and the new Regulation of the Ministry of Environment of the Slovak Republic No.170/2021 Coll. According to a new Regulation of the Ministry of Environment of the Slovak Republic No. 170/2021 Coll., among other things, the social value of individuals of bat species has increased.

The Red List categorisation for bat species recorded in Slovakia before 2001 was assessed in 2001 National Red List of Mammals (Žiak & Urban 2001) and no new categorisation has been made in the last years. The draft Red List of Carpathian Mammals (including bats) has been compiled for the Carpathian region in seven countries (coordinated by Slovak specialists) within the BioREGIO Carpathians project:

www.cwi.sk/files/zbornik_cervene_zoznamy_final.pdf).

The State Nature Conservancy of the Slovak Republic (SNC SR) in cooperation with universities and other experts is currently intensively working on the preparation of a new red list, which is expected to be issued in 2023.

An overview of the conservation status of habitats and species is available online to both experts and public at the website: www.biomonitoring.sk. Monitoring data represent the basis for the development of reports on the status of species and habitats of European interest according to Article 17 of the Habitats Directive. The official results of the reporting are available in the publication "*Conservation status of habitats and species of Community interest in the period of 2013 – 2018 in the Slovak Republic*" (link at the website: Monografia_reporting_art17_2013_2018.pdf (sopsr.sk)).

In the Slovak Republic, the realised monitoring consists of repeated collection of data in the field, using standardised methods on defined areas, so-called permanent monitoring localities. For the purpose of collection, processing, evaluation, and publishing of the data from field monitoring, a IT system has been developed – "*Comprehensive Information and Monitoring System*" (CIMS), which is managed by the professional staff of the SNC SR. Monitoring is performed by the SNC SR (including the Slovak Caves Administration) as well as in cooperation with members of non-governmental organisations (e.g., Slovak Bat Conservation Society, Slovak Speleological Society). Monitoring is also taking place in 2023.

In 2022, the Nature and Landscape Protection Documentation entitled "*Principles for the Protection of Species and Habitats of European Importance in Natura 2000 Sites*" (link: <https://www.minzp.sk/files/sekcia-ochranyprirodyakrajiny/natura2000/zasady-starostlivosti-2022.pdf>) was approved by the Ministry of the Environment of the Slovak Republic. The documentation was prepared by SNC SR in cooperation with other experts.

An EU member state is responsible for monitoring species of European interest and their habitats, as well as reporting on their protection status to the European Commission every six years. The SNC SR is working on designating protected areas covering all Natura 2000 sites. In 2017, new protected areas covering Natura 2000 sites with bat species protection were established. Other Natura 2000 sites with bat species protection are already in place, overlapping with existing protected areas (buildings with bat roosts are not included in this

network). The total area has increased from 11.9 to 12.6 percent of the territory of the Slovak Republic, and the total number of Sites of Community Importance (SCIs) has increased to 642 SCIs (76 of them are for bats). In 2022, the third addition to the national list of European importance was approved by the Slovak government. Furthermore, the documentation of nature and landscape protection is being developed for Natura 2000 sites, with particular protection goals for the SCIs objects.

A lot of management activities have been carried out e.g., reconstruction of the entrance of the mines, cleaning of the church`s attics, clearing of guano from the attics of many churches. A lot of activities have been realised in co-operation with members of the speleological groups e.g., cleaning and closing of underground sites, elimination of the activities leading to disturbance of bats in their roosts.

As far as projects are concerned, it should be mentioned that the project "[Raising environmental awareness in local communities by joint conservation of bats in cross border regions of Hungary, Slovakia, Romania and Ukraine \(2020 – 2022 HUSKROUA/1702_6.1_0021\)](#)" will focus on the protection of bats in the targeted region, by conducting concrete conservation action such as proper assessment of the endangered bat populations, making alternative shelters of bat colonies (bat boxes, warning chambers). The project will also focus on the protection of cultural value such as the protection of the religious objects in churches (cleaning the churches from bat guano). Public awareness raising actions will be implemented: a mobile exhibition, common workshops for bat boxes preparation with representatives of the local community, production of a documentary movie dedicated to bats. (Source: https://netopiere.sk/sk/page/aktualne_projekty.html).

Another ongoing project (implemented by the NGO Slovak Bat Conservancy Society) is the LIFE project called „LIFE PODKOWIEC PLUS: back to the forest - holistic conservation of bat breeding habitats 2021 – 2026 (LIFE20 NAT/PL/001427)“ (<https://lifepodkowiectowers.pl/en>), which aims at sustaining and improving the conservation status of threatened bat species in Central and Eastern Europe through:

- Protecting and improving important roosts for nine bat species (*Myotis myotis*, *Myotis bechsteinii*, *Myotis emarginatus*, *Myotis capaccinii*, *Rhinolophus hipposideros*, *Rhinolophus euryale*, *Miniopterus schreibersii*, *Rhinolophus mehelyi*, *Barbastella barbastellus*),
- Shifting from reactive to proactive approach in bat protection,
- Strengthening institutional support for bat conservation.

The lesser horseshoe bat (*Rhinolophus hipposideros*) has been chosen as the flagship species for the project because it is found throughout the whole project area. Additionally, it is a connecting point of several successful conservation measures, the extent of which is widely known and accepted by the public. The project will be implemented in Poland, Czech Republic, Romania, Slovakia.

The scientific research is performed especially at the Institute of Forest Ecology of the Slovak Republic, Academy of Sciences in the city of Zvolen, NGO Slovak Bat Conservancy Society, SNC SR (specifically the Slovak Caves Administration), and several universities in cooperation with animal rescue centres. In Slovakia, the rehabilitation of handicapped individuals of all species of bats is ensured through a network of rescue facilities. Chiropterological seminars were organized in 2018 and 2022 by the NGO Slovak Bat Conservation Society. The promotion work includes mainly organising International Bat Night events – State Nature Conservancy of the Slovak Republic as well as the NGO Slovak Bat Conservation Society have organised public meetings within the International Bat Night initiative. International Bat Night events are being organised in August in Slovakia by more and more organisations and are each year more successful in terms of the number of events, number of visitors, and media coverage.

SLOVENIA:

Slovenian bat monitoring continues to show loss or degradation of bats roosts in the buildings of cultural heritage (BCH). Despite all communication done in the last 20 years and the restoration efforts of particular roosts, the loss is alarming, particularly for *Myotis myotis* maternity roosts. On the brighter side, first technical improvement of the bat roosts in BCH (implemented in LIFE integrated project for enhanced management of Natura 2000 in Slovenia,

LIFE17 IPE/SI/000011, and cohesion projects „POHORKA“ and „PIVKA.KRAS.PRESIHA“) will enhance acceptance of bats by managers of BCH. Additionally, work has continued on creating a systematic approach to helping managers of BCH deal with accumulations of bat guano. International Bat Night in Slovenia was widespread and well attended, as well as other activities organised or coordinated by SDPVN – Slovenian Association for Bat Research and Conservation. Slovenian bat experts are maintaining strong collaborative relationships with their colleagues in the region.

SWITZERLAND:

2022 was the year of going back to some normality in the activities, and some important projects at the national level could make significant progress:

1. Development of services, recommendations, and tools available for bat protection:
 - Some 236 flight corridors have been modelled that connect important bat roosts in settlements with the hunting habitats: in 2022, the mapped results were validated by experts and made available, mainly to the public authorities, on a national GIS desk. They represent a fundamental parameter of the dark network, part of the Swiss ecological infrastructure.
 - Another bat specific layer is under construction for the national GIS desk: a map of roosts (in settlements and underground) classified according to their importance (national, regional, and local). In 2022, common criteria were defined and validated by the experts. Once online, this layer will be available to the public authorities and will issue automatic warning when projects might impact the roosts or their surroundings.
 - A sequencing service has been offered to the monitoring teams to genetically identify the species of undefined roosts (guano samples) or found individuals. This service is especially useful for *Plecotus* species, which are difficult to observe.
 - The *Swiss Bat Bioacoustic Group* SBBG continues its activity on the standards for bioacoustic evidence validation and on training.

2. Operational activity:
 - A winter bioacoustic pilot project is taking place for the second year to follow bat activity during selected nights.
3. Public relations:
 - With regards to International Bat Night, after 2 years with little activity, more than 3,000 persons took part in the 20 events organised nationwide.

UKRAINE:

The time after the MP9 in October 2022 was very hard for Ukraine. Because of the ongoing war of Russia against Ukraine, and all the consequences of the Russian military invasion and constant massive attacks, a lot of bat research or conservation activities have been paused or stopped. However, Ukrainian scientists and conservationists have continued to work as far as possible.

According to the information received from the administration of some national nature parks and nature reserves, the scientific staff of protected areas have continued monitoring biodiversity, including bats, under conditions of military law (in the regions where it was safe). The data received have been regularly included in the Chronicles of nature which protected areas used to issue annually and report to the Ministry of Environmental Protection and Natural Resources of Ukraine.

Ukrainian bat scientists have carried out processing of the previously collected data for their publishing and integration into the global scientific and knowledge databases.

Some projects (in collaboration and support of European partners) are under development (in particular “Bat migrations in Europe” coordinated by the CESCO laboratory of the French Museum of Natural History, Paris).

UNITED KINGDOM:

1. Species Trend Information:

The status of the UK’s bat species is monitored by the National Bat Monitoring Programme (NBMP) carried out by the Bat Conservation Trust (BCT) on behalf of the Joint Nature Conservation Committee (JNCC) and supported and steered by the Statutory Nature Conservation Bodies

(SNCBs), namely Natural England, Natural Resources Wales, Northern Ireland Environment Agency, and Nature Scot. The results of the 2022 National Bat Monitoring Programme are due to be announced by the BCT in May 2023. The previous survey – [National-Bat-Monitoring-Programme-Annual-Report-2021.pdf \(bats.org.uk\)](https://www.bats.org.uk/wp-content/uploads/2021/06/National-Bat-Monitoring-Programme-Annual-Report-2021.pdf) - indicated that populations of those UK bat species monitored are stable or recovering.

2. Legislation and Policy:

The Environment Act 2021 sets out clear statutory targets for the recovery of the natural world in four priority areas: air quality, biodiversity, water, and waste. For biodiversity there are now four legally binding targets: halt the decline in species abundance by 2030, reverse the decline in species abundance by 2042, reduce the risk of species extinction by 2042, and restore or create in excess of 500,000 hectares of wildlife-rich habitat outside of current protected sites by 2042. These targets will help to reverse declines of iconic British species to include several UK bat populations¹.

The revised draft of the Scottish Biodiversity Strategy was released in December 2022. The strategy sets out a clear ambition for Scotland to be Nature Positive by 2030, and to have restored and regenerated biodiversity across the country by 2045.

3. Bat Related Projects:

Natural England (NE) have been trialling a new approach to bat licensing through the *Bat Earned Recognition* Pilot. The pilot looked to streamline the licensing process through accrediting ecologists, enabling them to have greater discretion to progress low risk cases, estimated to be up to 90 percent of all applications. This aims to provide better outcomes for bats through more timely decisions. Evaluation of the pilot suggests that the accreditation can play a role in raising professional standards. The pilot is now moving to a transition stage as a potentially wider rollout of the approach is being sought for.

¹ Noctule, Soprano Pipistrelle, Brown Long-Eared Bat, Greater Horseshoe Bat, Lesser Horseshoe Bat, Pipistrelle Bat, Daubenton's Bat and Natterer's Bat

The “Bats in Churches” project (a partnership between Natural England, Historic England, the Church of England, the Churches Conservation Trust, and the Bat Conservation Trust) has been working hard to find workable solutions that both protect bats and enable churches to manage impacts without prohibitive costs. The project has worked with volunteers to carry out surveys at over 750 churches to understand the impact of bats and has provided support and funding to 108 churches to create practical, tailored solutions. The project also serves as a pilot for the Bats in Churches Class Licence which allows suitably qualified ecologists to test novel approaches to bat management that would not be permitted under a normal protected species licence. It acknowledges the complicated nature of bat management in historic churches, allowing innovation and creative problem solving.

Although the “Back from the Brink” Project has recently ended, NE worked with the Bat Conservation Trust (BCT) to enhance foraging habitat across the Grey Long-Eared Bat species range in Devon. Habitat connectivity was increased between roosts and foraging grounds. The project raised awareness of the species with landowners. The project also improved monitoring of the species to establish long-term population trends.

The “Natur am Byth” partnership is Wales’ flagship Green Recovery project. It unites nine environmental charities with Natural Resources Wales (NRW) to deliver the country’s largest natural heritage and outreach programme to save species from extinction and reconnect people to nature. Among the species which will receive particular focus are lesser horseshoe and barbastelle bats.

NatureScot continues to support the Scottish Bat Project run by the BCT. Over the last year, much of the focus has been on building capacity amongst volunteer bat workers to support surveillance of *Pipistrellus nathusii* in Scotland, in order to help clarify the species’ status there.

Species on the Edge is a major four-and-a-half-year partnership between NatureScot and seven nature conservation charities (Rethink Nature), all dedicated to improving the fortunes of 37 priority species found along Scotland's coast and islands. Among the 9 key projects is the one

focusing on island populations of *Pipistrellus pipistrellus*, *P. pygmaeus*, *Plecotus auritus* and *Myotis daubentonii*.

4. Guidance and Research:

Following the publication of the Bats and Wind Turbines research project undertaken by the University of Exeter, guidance has been produced which provides best practice information for developers, planners, and ecological consultants where bats might be impacted by wind turbine development. This document was updated in 2021.

The UK SNCBs have provided detailed input to the new Bat Mitigation Guidelines which are due to be published online by the Chartered Institute of Ecology and Environmental Management (CIEEM) later this year. This document updates the previous UK guidance and provides a comprehensive review of the subject, with case examples.

The SNCBs have also provided input to the revised 4th edition of the Bat Survey Guidelines which are due to be published by the BCT later this year.

NON-PARTY RANGE STATES

ARMENIA:

The bat specialists' group at Yerevan State University is dedicated to further advancing bat research and conservation activities in Armenia. As part of the education activities, a series of events have been organized at multiple universities across Armenia. These events included the distribution of calendars, stickers, and booklets, as well as presentations on bats.

The monitoring of wintering roosts has continued and a new wintering colony of *Miniopterus* has been found in northern Armenia.

During a trip with Norwegian colleagues into the northern part of Armenia, the presence of *Cimex lectularius* (Cimicidae, Heteroptera), a bug associated with bats, has been discovered in both Armenian and Georgian regions.

AZERBAIJAN:

Over the past six months, since the last MoP, no significant progress has been made regarding the ratification of the EUROBATS Agreement by the

Azerbaijani government. One more introduction/ brainstorming meeting related to EUROBATS has taken place between the relevant scientists and the representatives of the Ministry of Environment and National Resources (MENR). Currently, the focus is still on the Convention on the Conservation of Migratory Species of Wild Animals (CMS) rather than EUROBATS and it is being considered as the key step to proceed further.

From the research studies perspective, a couple of projects on ESIA baseline data collection associated with some mining projects and proposed wind farms options have continued.

The draft of the 3rd edition of the National Red Data Book has been completed by the Azerbaijan National Academy of Sciences as per request of MENR and will be published by the end of April 2023. The third edition of the Red Data Book includes 10 bat species, while the 1st edition had three, and the 2nd edition from 2013 12 bat species.

A number of new hibernation sites as well as summer roosts for seven bat species have been identified over the period of 2022-2023 and have been used to update cadaster maps on bats localities within the project called “Beyond species”, conducted in cooperation with the Berlin Museum für Naturkunde.

LEBANON:

Bat monitoring has continued, albeit at a slow pace. The economic situation has had an impact on human recreational activities, which has had a positive effect on some cave-dwelling bat populations. For instance, a colony of *Miniopterus schreibersii* has returned to a cave. Additionally, two colonies of fruit bats have been discovered. One new species (Barbastelle species) has been added to the bat fauna of Lebanon, so that there are now 22 confirmed bat species.

In spring 2022, a project on mammal diversity started, which included bats in seven Himas (small, protected areas managed by the municipality) in Lebanon. A new colony of *Rousettus aegyptiacus* was discovered in one of the Himas. In addition, Bat Safe Gates were established in critical bat caves located in urban areas.

MOROCCO:

Out of the thirty bat species found in Morocco, at least eighteen fall within the range of European bats. Moroccan interest in bats remains strong, with ongoing research focused on their ecology and distribution, including several master's and doctoral theses.

There is also an important partnership program between mammal-focused NGOs and speleologists in Morocco to conserve cave biodiversity. Bats are an integral part of all conferences and activities organised by Moroccan speleologist.

Considering the increased expansion of wind turbine projects in Morocco, it is mandatory to follow EUROBATS guidelines. Monitoring of bats' mortalities in wind farms during the operational phase is now becoming unavoidable.

A bat study programme is currently being established in collaboration with the Museum of Natural History of Gibraltar and a Spanish NGO. The programme aims to conduct an inventory and evaluation of bat populations in northern Morocco, while also verifying the possibilities of migration of *Miniopterus schreibersii* between the two shores of the Mediterranean Sea.

Further studies are required to update the bat fauna of Morocco, in addition to the urgently required efforts for public/schools and policymakers awareness raising.

SPAIN:

The Spanish government seems to be in the process of officially ratifying the EUROBATS Agreement.

The following tasks undertaken during the period 2022/2023 should be highlighted:

- The Ministry of Environment has recently approved the initiation of a new project to prepare the official Atlas of the Spanish Bats in the following years. Fieldwork will be carried out by professionals in all the Spanish Autonomous Communities and regions. Analyses and data storage will be centrally dealt with by the research team of the Natural Sciences Museum of Granollers.

- A new working group within the Spanish Bat Society (SECEMU) has recently been established to compile all the available information on *Rhinolophus mehelyi* and to reassess its conservation status.
- Some members of SECEMU have actively participated in the IUCN bat species reassessment sessions.
- Another working group has been formed to assess the risks and opportunities arising from the increase in photovoltaic energy projects and the upcoming solar energy power stations that will be built in Spain.
- Certain steps have been taken to establish the first national bat call library.
- With regard to educational initiatives, more than 91 International Bat Night events and many other activities have been organised across the country, either coordinated by SECEMU or by local groups. The SECEMU's website has been updated and is open to include new information, footage or news provided by any member (<https://secemu.org/>).
- Regarding bats and wind turbines, the Bat and Wind Turbines commission has reviewed 340 impact assessment studies and has presented allegations to approximately 60 wind farm projects across the country which did not count with proper risk (or impact) assessments or did not present appropriate mitigation tasks. Although the allegations are not always followed, the most common improvement due to allegations includes the variation of the start-up of wind turbines above certain wind thresholds and the study of mortality using trained dogs. The working group has highlighted the lack of mortality data for many regions.
- The *Journal of Bat Research & Conservation*, edited by the Spanish Bat Society, published its 15th issue (2022) with a total of 14 new manuscripts from several countries across the globe. The editorial team and associate reviewers have been partly renewed. Using the journal to disseminate scientific studies and actively contributing to it is encouraged. Link: <https://secemu.org/journal-of-bat-research-and-conservation/all-issues/>
- A new online tool to store and handle bat research data and monitoring counts has been openly published on www.batmonitoring.org. The tool

has been designed to be appropriate and efficient in all the countries included in the EUROBATS Agreement and is currently fully functional and operational. The services include the repository for data from capture sessions, roost counts (both under- and overground), passive acoustic monitoring, bat box inspections and waterway surveys.

- If no other candidates are available, the research team hosted in the Natural Sciences Museum of Granollers has shown interest in organising and hosting the next European Bat Research Symposium in Catalonia during the summer of 2024. This has been discussed and preliminarily agreed with Mr. Peter Lina, and the previous conference hosts (Dr. Thomas Lilley, Dr. Christian Voigt and Dr. Emma Teeling).
- Many other scientific projects from independent research teams are being conducted: from the establishing of monitoring programmes using citizen science to specific marking projects of forest-dwelling species like *Nyctalus lasiopterus*, etc. If more specific information is required, please contact the SECEMU secretariat by email.

TÜRKİYE:

There is currently no news regarding the ratification of the EUROBATS Agreement. The "Acoustic Anatolia", an acoustic monitoring study which aims at identifying bat migration between Europe and Asia, is ongoing. In addition, a new conservation project focusing on protecting threatened cave-dwelling bats by establishing a network among caving groups is set to launch in 2023.

OBSERVERS

Sports & Science Research Club “Atom” (SNIK Atom), Bosnia and Herzegovina

The club is based in Zavidovići, a small town in northeastern Bosnia. It is primarily a speleological society and most of its activities are related to exploring caves and pits in Bosnia and Herzegovina, however, it is especially dedicated to the research of Konjuh and Tajan mountains. In the recent years, Atom has been actively involved in bat research on these mountains in collaboration with the Center for Karst and Speleology, and this has become part of the club's regular activities.

Over a hundred speleological sites on the above mentioned mountains have been explored by the association. Among the most significant findings, the discovery of a large colony of *Rhinolophus ferrumequinum* in Odušak cave in Suha on Tajan mountain and a large colony of *Barbastella barbastellus* in Uvir cave on Konjuh mountain should be highlighted. According to the club's knowledge, the latter is the largest colony of this species in the Dinaric Alps.

Center for Karst and Speleogogy (CKRS), Bosnia and Herzegovina

The Center for Karst and Speleology is located in Sarajevo and its members carry out most of their activities in connection to the research and protection of bats in Bosnia and Herzegovina. In addition to the activities already mentioned in the report of Bosnia and Herzegovina, it is worth mentioning the completion of the winter census, which has continuously been implemented for the last ten years throughout the country. Another highlight is that the publication of a new issue of the journal *Hypsugo* – Journal for research of bats of the Balkans, which is currently in the press. On the Center's website, there is a phone number which the citizens who need advice about injured bats or bats in residential buildings can call. In addition to the Center for Karst and Speleology, there is also a Bat Marking Center.

Association of Biology Students in Bosnia and Herzegovina

The goal of the association is to bring together students from all universities in Bosnia and Herzegovina, i.e., the Universities of Sarajevo, Banja Luka, Mostar, and Tuzla. The activities carried out by the association offer students acquisition of practical skills and knowledge in the field of biology through mentoring support and the organisation of student camps and conferences.

Within the camps, and under the guidance of mentors, a special section for students interested in bat research is being organised. So far, bats have been explored around Kozara mountain, the town of Stolac, mount Prenj, "Una" National Park, around the town of Bijeljina, on Matinski vis near the town of Zepce, and in Mokra Megara cave near Maglaj.

Croatian Biospeleological Society (CBSS)

Since 2020, the Croatian Biospeleological Society has continued to conduct monitoring of activity and abundance of bat fauna in the complex of the Benedictine monastery and Maximilian's residence on the island of Lokrum,

where 11 bat species are present, with *Plecotus kolombatovici*, *Rhinolophus hipposideros* and *Myotis mystacinus* in focus. This project is being conducted in collaboration with the colleagues from the Vincent Wildlife Trust and Bernwood Ecology. To protect the bat fauna and facilitate the renovation of the monastery, designated bat rooms and spaces have been designed to preserve the bats inside the building even after the renovation. This project is one of the first instances in Croatia where bat specialists have been involved in the planning period, working with architects and renovators to design bat-designated areas.

Apart from that project, from 2019 onwards, CBSS has also been conducting monitoring of bats in the Plitvice Lakes National Park in four selected caves and one above-ground facility, in various seasons according to the presence of maternity or migratory colonies and hibernating individuals. With the long-term monitoring of bat species and their population trends within the Plitvice Lakes National Park, a better overview of their dynamics, potential threats, and the environmental changes that could threaten bats could be obtained.

CBSS has also conducted bat research in the Special Forest Reserve Motovun with the aim of identifying bat species present in the reserve, the emphasis being on *Barbastella barbastellus*. The society also continued the long-term monitoring in Veternica Cave in the Nature Park Medvednica during 2020, as well as sampling in Čulumova cave for the project “Research on the presence of SARS-2 coronavirus in different species of animals in the Republic of Croatia”, a preliminary survey of the bat fauna in Lokvarka cave, as well as research on bat species and sex composition in the National Park Mljet.

CBSS has been participating in Climbats COST Action through meetings, recommendations, and data sharing from Croatia to help identify species likely to be most responsive to climate change across Europe and habitats that are going to be gained or lost for bats due to the climate crisis.

CBSS has published one more scientific and popular book “The Cave Type Localities Atlas of Croatian Fauna”, where bats were also mentioned for caves listed as internationally important underground sites for bats.

Geonatura - Consultancy in Nature Protection, Croatia

Geonatura has specialised in consultancy services for nature protection, and, among others, it includes a bat research group which has conducted more than 60 different projects in the last 10 years concerning bat fauna baseline surveys and monitoring. In 2023, Geonatura published a paper on reducing bat mortality at wind farms using site-specific mitigation measures, based on a case study in the Mediterranean region. The consultancy continues to work on methods to design effective mitigation measures for bats on wind farms. Since December 2021, Geonatura has also been working together with its associates for the Croatian Ministry of Economy and Sustainable Development to develop a proposal of national bat monitoring programme and collect new data for bat species to report under Article 17 of the Habitats Directive. Monitoring methods will include roost surveys, mist netting near freshwater bodies, bat activity monitoring using ultrasound detectors and other additional methods. For this purpose, more than 250 roosting sites and 43 mist netting locations were surveyed within last year, along with 49 locations surveyed with acoustic monitoring. The program and the report on survey results will be finalised in September 2023.

French Museum of Natural History

The bat team of the CESCO laboratory at the French Museum of Natural History is specialised in research on bat ecology and conservation. Publications from the end of 2022 – beginning of 2023 concern the comparison of the efficiency of methods for the mitigation of effects wind turbines have on bats and a collaboration in the database of European bat traits. Two PhD theses have been defended: Ms. Camille Leroux studied the attractive and repulsive effects of wind turbines on bats, and Ms. Léa Mariton studied the effect of light pollution on bat nightly phenology. The bat team currently collaborates in an offshore monitoring programme of bat activity in the Atlantic. It also pursues the coordination of the French citizen science program for the acoustic monitoring of bat populations, Vigie-Chiro, and the coordination of the training programme for bat capture. The Museum also continues to coordinate the project “Bat Migration Routes in Europe”, in which more than 60 collaborators from 29 different countries are included. Since March 2023, the CESCO laboratory collaborates with the CEFE laboratory at the French

National Centre for Scientific Research. The aim of this project is to develop a scientific method for the prioritisation of the conservation stakes of bat species, with the aim to produce maps of priority areas for bat conservation at the French national scale. This project has the support of the French Mammal Society (SFEPM).

Leibniz Institute for Zoo and Wildlife Research (IZW), Germany

Over the past year, IZW has continued its research on migratory bats in collaboration with Prof. Pētersons from Latvia and, particularly, on offshore bat migration with NABU Mecklenburg-Vorpommern; a project financed by the German Federal Agency for Nature Conservation.

IZW has finalised two projects funded by the German Federal Environmental Foundation (DBU), one on bat-wind turbine interactions and a second on the effect of wind turbines in forests on local bird and bat assemblages, the latter in collaboration with the University of Marburg. Some papers have already been published (Reusch et al. 2022, 2023; Ellerbrok et al. 2022). These studies show an attraction effect of wind turbines close to bat roosts, and a general avoidance behaviour of bats toward wind turbines at some distance to roosts. Notably forest specialist bats, such as those from the genus *Myotis*, responded negatively to the presence of wind turbines at forested sites (Ellerbok et al. 2022).

IZW has started a project on the response behaviour of long-eared bats toward artificial light at nights, which was funded by the German Federal Agency for Nature Conservation.

The Institute has, partly in collaboration with the Federal Association of Bat Experts in Germany, offered training workshops, among others, on CEF measures for bat roosts (in German, 30 participants), light pollution and bats (in English, 30 participants; in German, 70 participants), the impact of novel lighting schemes on bats (470 participants).

IZW has edited and published a German open-access book on evidence-based wildlife management (Voigt 2023), in which two chapters deal with bats, one on light pollution and the second on wind turbines in forests.

Lastly, in collaboration with the EUROBATS Secretariat and the corresponding IWG, the IZW has organized an online conference (2nd IBROS) on 'Diurnal and seasonal movements of bats' with about 270 participants.

References:

Ellerbrok, J. S., Delius, A., Peter, F., Farwig, N., & Voigt, C. C. (2022). Activity of forest specialist bats decreases towards wind turbines at forest sites. *Journal of Applied Ecology*, 59(10), 2497-2506.

Reusch, C., Lozar, M., Kramer-Schadt, S., & Voigt, C. C. (2022). Coastal onshore wind turbines lead to habitat loss for bats in Northern Germany. *Journal of Environmental Management*, 310, 114715.

Reusch, C., Paul, A. A., Fritze, M., Kramer-Schadt, S., & Voigt, C. C. (2023). Wind energy production in forests conflicts with tree-roosting bats. *Current Biology*.

Voigt, C.C. (2023) Evidenzbasiertes Wildtiermanagement. <https://link.springer.com/book/10.1007/978-3-662-65745-4>

Naturalis Biodiversity Center (NBC), the Netherlands

As reported at MoP9, an extensive research project in the Netherlands on zoonoses in bats, called "Zoonoses in the Night", is in its final phase. This project has been carried out by a consortium consisting of several scientific institutions involved in medical, veterinarian, and bat studies.

A new consortium of scientific institutions is now planning a new project called OIKBAT to study bat borne zoonoses in a changing environment.

The overall goal of the project is predicting and preventing future epidemics or even pandemics originating from bat viruses, while protecting bat diversity and ecosystem services, following a One Health approach.

BatLife Macedonia, North Macedonia

After the complaint organised through the Bern Convention Secretariat and the Council of Europe, with regards to the first operational wind farm in North Macedonia financed by KfW (Germany) in 2015 without any bat and bird survey report, BatLife Macedonia has been blacklisted in North Macedonia for any project engagement or support. Since then, the European Commission has continued a search for proper bat collision data, but without any success.

Dr. Luisa Rodrigues, Senior Advisor, Portugal

The celebration of the 36th Anniversary of the Protection and Monitoring of Bats in mainland Portugal will take place on April 21, 2023, at 15h (UTC+1). There

will be a live transmission starting at 14:45 (UTC+1). The formal session will be held in Cine-Teatro de Alcanena (100 km North of Lisbon). After this session, the participants will move to Centro Ciência Viva do Alviela (<https://alviela.cienciaviva.pt/>), for a reception. The participants may visit the center which has a permanent exhibition on bats. In the center there is also a bat observatory, and the visitors may see the bats roosting in a cave nearby without disturbing them

([https://videocast.fccn.pt/live/fccn/morcegos_na_web_1](https://videocast.fccn.pt/live/fccn/morcegos_na_web_1;);
https://videocast.fccn.pt/live/fccn/morcegos_na_web_2). If the participants wish to do so, a walk to the entrance of the cave may be organised to observe the emerging of bats with bat detectors. All AC27 delegates and their families are invited to participate in this celebration.

Several merchandising materials are being commercialized. All profits will be used to pay expenses for the monitoring work done by volunteers and, if possible, to pay for small projects on bat protection. T-shirts may be ordered at <https://forms.gle/K8DtasKq9o843wGz5>.

Institute for Biological Research “Siniša Stanković” (IBRSS), Serbia

The Institute is in the final stage of the transboundary project called “Transboundary Conservation of Horseshoe Bats in the Romanian-Serbian Iron Gates”, conducted in collaboration with the Centre for Bat Research and Conservation from Romania and funded by the Conservation Leadership Programme. In January 2023, there was a joint winter monitoring of caves in Eastern Serbia (Serbian-Romanian team), during which the mounting of informative and warning boards near the most important roost within the Iron Gates area started. The remaining boards were then mounted in March 2023. Currently, IBRSS is preparing an interactive educational corner about bats in the visitors’ center of the Iron Gates National Park in Donji Milanovac, Serbia.

In summer 2022, tissue and guano samples of medium-sized horseshoe bats were collected from caves in Serbia as part of the project “Using molecular techniques to develop and inform on the distribution of medium-sized horseshoe bats” funded within the framework of the EUROBATS Project Initiative. Project partners are the Institute for Biological Research “Siniša Stanković” (Serbia), the Centre for Bat Research and Conservation (Romania) and the Vincent Wildlife Trust (UK, project leader Dr Patrick Wright). Earlier

this year the project partners were informed that species-specific primers had successfully been developed, and that analysis of remaining samples was ongoing.

The institute has continued to actively promote bats and bat research in Serbia with appearance in several radio programmes.

BatLife Sweden

BatLife Sweden is a non-profit organisation consisting now of 280 members. BatLife Sweden's purpose is to increase interest and spread knowledge about bats and to contribute to their conservation. The majority of the work of the organisation is carried out across its working groups by volunteers.

During 2022, the association organised several Zoom courses in bat morphology, identification, and sound analysis, both for beginners and for more advanced members. These courses attracted many new members. The association also organised other courses during the year, such as a bat handling course for professionals and a study trip to Germany to see bats less common or not present in Sweden. Furthermore, the association organised a summer workshop focusing on sharing knowledge of and practicing different acoustic survey techniques. BatLife Sweden also had its annual bat conference in Uppsala (the Swedish Bat Conference), the second in the series. It ran over three days in November 2022 with around 40 lectures (in Swedish and English) and 150 attendees from all over Europe, with plenary lectures from the neighboring Nordic countries, France, and Germany. The 2023 conference is planned to be held in Jönköping, in southern Sweden, in November 2023.

During 2022, the association's work with the Swedish Bat Monitoring Network continued. Long-term monitoring of bats was carried out at eight stations. The work with the station at Ottenby (which is financed by WWF) has continued during this year, where the association also employed a project manager to be responsible for the station.

Last year, BatLife Sweden also established local bat groups across Sweden and these groups organised various events for the International Day for Biological Diversity and International Bat Night, with 12 events organised for

IBN. They also arranged a sound analysis workshop and a behind the scenes visit to the Swedish Natural History Museum to see the bat collections.

BatLife Sweden also continued to engage with international projects during 2022. This included collaborating with the Paris Museum of Natural History in the project “Bat Migration Routes in Europe” and participating in the Swedish-Finnish project “Kvarken bats”, which was focused on studying the migration routes of *Pipistrellus nathusii*.

A consultation working group in BatLife Sweden has recently been formed as well. This group will receive and answer to questions from authorities and private individuals. This could, for example, be with regard to proposed wind farms or to provide advice concerning appropriate bat inventories required during a development project.

Vincent Wildlife Trust (VWT), United Kingdom

The Trust continues to focus on the management of its 37 nature reserves for horseshoe bats across England, Wales, and the Republic of Ireland. In 2022, this involved the completion of a programme of government-financed work to enhance the roosts in England by modifying them to be more resilient to the effects of climate change. Early signs indicate that these enhancements are readily used by the bats, and the Trust is now in the early stages of researching the effects of this work. A similar programme of roost enhancements is underway across the VWT’s reserves in Wales, and there is a plan to work with the colleagues in Ireland to carry out a similar process.

The Trust is also focusing on the range expansion of greater horseshoe bats in Britain. In collaboration with the Sussex Bat Group, the VWT has almost completed the renovation work to secure the most easterly known roost of this species facilitating the recovery of the historic range. Mr. Anthony Hutson worked extensively with the Trust on this project and a specialised viewing hide will be dedicated to his memory. The VWT has also carried out improvements to a roosting site in North Wales, which is a recent range expansion for greater horseshoes and the most northerly maternity site of this species in the world.

Funding from the EUROBATS Projects Initiative is being used for a pilot project developing a technique for identifying medium sized horseshoe bats using environmental DNA. The fieldwork was conducted in 2022 by the VWT and the

colleagues from Romania and Serbia, and the analysis will be undertaken at the University of Sussex.

The VWT PhD programme, in collaboration with the University of Sussex, currently hosts two PhDs on bats, with a third due to start in 2023. The PhD researching Barbastelle is in the final stages and has involved a successful detection of new maternity colonies using acoustic methods. The other project is now in the second year and involves the use of novel telemetry techniques to assess the permeability of landscapes to rare bat species. The latest PhD will focus on manipulating movements of bats across landscapes using acoustic lures and deterrents to circumnavigate barriers to connectivity.

The new multi-partner conservation programme “Natur am Byth”, on which the Trust is leading on a project on Barbastelle, is approaching the delivery phase and a project officer is due to be recruited to carry out conservation work on the geographically isolated population of bats in Pembrokeshire.

In Ireland, the VWT staff are currently in the process of implementing the actions underlined during the Species Action Plans for lesser horseshoe bats which will involve a series of roost assessments and monitoring training. Last year, six bespoke lesser horseshoe roosts were constructed to improve roosting opportunities where there were gaps in distribution.

Scientific papers published in 2022 and 2023, related to bats, include:

Palacios, M.B., Kitching, T., Wright, P.G., Schofield, H. and Glover, A., 2023. Exclusion of barn owls *Tyto alba* from a greater horseshoe bat *Rhinolophus ferrumequinum* roost in Devon, UK. *Conservation Evidence Journal*, 20, pp. 8 – 12.

Wright, P.G., Kitching, T., Hanniffy, R., Palacios, M.B., McAney, K. and Schofield, H., 2022. Effect of roost management on populations trends of *Rhinolophus hipposideros* and *Rhinolophus ferrumequinum* in Britain and Ireland. *Conservation Evidence Journal*, 19, pp.21-26.

Bat Conservation Trust (BCT), United Kingdom

Last year, the BCT launched a pilot of the British Bat Survey (BBatS), which is a passive acoustic monitoring survey. The aim of this structured survey is to plug the gaps in bat monitoring, by focusing efforts to collect data in underrepresented regions and habitats. It also aims to improve population trend estimation for species where data is lacking from the current National

Bat Monitoring Programme. Planning for the beta year 1 in 2023 is underway, with the launch of the survey planned for mid-May 2023.

Over the past year, the BCT has led on or contributed to a number of guidance documents:

- Guidance on mitigating the impacts of artificial lighting on bats has been updated through the steering group comprising a cross sector of industry experts and the BCT. The guidance is due to be officially launched in April 2023.
- BCT has been working on the fourth edition of Bat Surveys for Professional Ecologists: Good Practice Guidelines. This is due to be published in the autumn 2023.
- The Trust has also been working with a partner to producing guidelines for bat surveys with IR cameras.
- The BCT has set up a working group to discuss Bat Surveys on Large-Scale Maintenance Projects. A guidance document is now being drafted to inform this type of local authority work. It will be published later in the year, after review by the statutory nature conservation bodies.
- >The BCT has sat on the advisory group for updating the “Bat Mitigation Guidelines”.

The Trust is partner in three research projects related to bats and insects – two are looking at the drivers and repercussions of UK insect population declines, and the links between insect population changes and insect predator populations (bats and birds). A further study is looking at valuing ecosystem services provided by UK bats under climate change.

The BCT has continued to collaborate with international colleagues in relation to bats and diseases, including through participation in the IUCN SSC Bat Specialist Group’s One Health Working Group, as well as working with UK governmental organisations on disease surveillance and communications. The Trust has recently secured funding for a collaborative project. “Don’t Blame Bats – Setting the Story Straight” aims to provide engaging, accurate and science-based information about bats and diseases, using effective storytelling to tackle the increase in misinformation and misuse of research findings in relation to bats and diseases in the UK and internationally.

The UK report has highlighted some of the other larger projects that BCT has been working on in the past year, for example, the “Bats in Churches” project, “Natur am Byth”, “Species on the Edge” and the “Earned Recognition” scheme.

BatLife Europe

BatLife Europe had its partner meeting in January 2023. At this meeting 13 partner organisations and one collaborating organisation were represented. Seven trustees were elected (Mr. Ulrich Hüttmeir - Austria, Dr. Marlot Jonker - Netherlands, Mr. Markus Melber - Germany, Ms. Donna Mullen - Ireland, Ms. Kit Stoner - UK, Dr. Philippe Théou -Albania, Ms. Heather Wood - Sweden). Ms. Kit Stoner was elected as Chair and interim Treasurer; the treasurer role has subsequently been filled by Dr. Marlot Jonker and Ms. Heather Wood was elected Secretary. The association is still keen to have more trustees from Eastern Europe, so those interested should contact BatLife Europe at [batlifeurope\(at\)bats.org.uk](mailto:batlifeurope(at)bats.org.uk) for more information. The candidates will need to be nominated by a partner organisation, but they do not necessarily need to work for them.

The first trustee meeting of 2023 was held in February and will be held on a monthly basis going forward. The main aim for the meeting was to identify priority actions for the coming year, with a plan to develop a new three-year strategy for BatLife Europe later in the year. These plans will be communicated to the partner organisations next month.

Additionally, BatLife Europe is starting to plan for BatLife Bat of the Year 2024. As in the previous years, the infographics for social media will be prepared. BatLife Europe also plans to increase its social media presence and update the website to reflect its current activities. Along with that, the association is currently planning a regular webinar series to be launched this year and is discussing a European wide project for partners to monitor autumn activity of noctules in collaboration with Markus Melber in Germany.

7. **Secretariat Report:**

Mr. Streit referred to the written report available on the EUROBATS website. The Executive Secretary explained that, due to the budgetary constraints, Dr. Suren Gazaryan, EUROBATS Scientific Officer, had returned to working at 80 percent post-occupancy, while one of the administrative assistants' post-occupancy had been increased to 80 percent. The assistants were alternating working at 80 percent until an easier solution for equitable sharing of the work could have been found.

Mr. Streit also mentioned that the publication series continued to be in high demand. There were new publications in the pipeline, two of which had already been sent to the focal points for their comments and endorsement. These two publications were the guidelines on consideration of bats in traffic infrastructure projects and the guidelines on bats, insulation, and lining materials. Already during MoP8 it was decided that the endorsement of new guidelines could take place in written procedure if the guidelines were not completed in time to be endorsed at an MoP. The Executive Secretary thanked the authors and the entire IWGs who had produced these important, up to date, and useful guidelines. The third publication under preparation was the guidelines on bat rehabilitation, however, already at this point, it was obvious that the number of publications would be increasing further.

Mr. Streit stated that under the EUROBATS Projects Initiative (EPI), a number of projects continued to be implemented. This number got slightly reduced during the pandemic, however, there were good signals that the scope of the projects to be funded under EPI could be enlarged: On top of the regular programme, additional funds could be received for projects in the thematic area of the protection of colonies, flight corridors, hunting areas, etc. because these were particular priorities for one Party that was considering making additional voluntary funds available for supporting EPI projects. The full list of the topics of interest would be made available on the EUROBATS website.

8. **Election of Chair and Members of the EPI Evaluation Group**

It was explained that Dr. Stephane Aulagnier (France), who had been the Chair of the EPI Evaluation Group during the past quadrennium, was willing to continue holding this post. Considering there being a few new focal points, Mr. Streit wanted to explain the purpose and functioning of this group. He stated

that, for the sake of transparency, the selection of the projects to be financed under EPI was not done by the Secretariat but by the EPI Evaluation Group which was elected by the Advisory Committee, and which was using certain criteria to rank the project proposals received by the Secretariat. In the order of ranking and dependent on the availability of funds, the Secretariat was only taking care of the necessary administration to be able to transfer the funding to the implementing partners. After this explanation, the floor was opened for proposals.

Ms. Daniela Hamidović (Croatia) stated that some improvements in the work of the group were necessary, e.g., the reports from the conducted EPI projects should be published on the EUROBATS website, i.e., the website should be updated with the results of the recently completed projects. Also, the members of the EPI Evaluation Group should be better informed on the aftermaths of their ranking, i.e. which projects were financed in the end. Ms. Hamidović also suggested that the new members of the group should not be elected directly, but that it was necessary to have the group meet first and have these issues discussed. The group could speed up the evaluation process. Also, the members used different criteria when ranking the projects and these matters had to be solved first. Dr. Lena Godlevska (Ukraine) supported the proposal of Ms. Hamidović. Dr. Ferdia Marnell (Ireland) suggested that it would be good if either the group or the Chair could produce a report on the lessons learnt, so that this information could be passed on to the new members. Finally, it was agreed that the election of the Chair and the members of the EPI Evaluation Group should be postponed until there was a chance for its former members to meet via Zoom, since Dr. Aulagnier could not attend the AC meeting in person. During its meeting, the group decided, that, to speed up the process, it was necessary to shift the deadline for proposals' submission to the 1st of September each year. All group members should send the evaluations to the convenor by the 1st of October the latest, so that the final evaluation could be compiled and sent to the EUROBATS Secretariat by the end of October.

It was also agreed that the Secretariat should prepare a short paragraph for applicants to make them aware that they could expect a response regarding the financing of their projects by the spring of the following year (March or April).

Finally, it was decided that, in addition to the existing members including Prof. Stéphane Aulagnier (convenor), Prof. Zuhair Amr (Jordan), Dr. Lena Godlevska, Ms. Daniela Hamidović, Mr. Peter Lina (Netherlands), Prof. Branko Micevski (North Macedonia), and Mr. Ioseb Natradze (Georgia), two more members should be added to the EPI Evaluation Group. After some consultations, Dr. Noam Leader (Israel) and Ms. Eeva-Maria Tidenberg accepted to join the group, thus allowing it to cover the entire range of the EUROBATS Agreement.

9. **Reports from the Intersessional Working Groups of the Past Quadrennium**

The Intersessional Working Groups (IWG) were asked to report on their activities and what had been achieved during the past quadrennium.

Dr. Adrià López-Baucells (Spain), convenor of the **IWG on Monitoring and Indicators**, explained that the group primarily focused on updating the guidelines for surveillance and monitoring of European bats, 3rd edition (EUROBATS Publication Series No. 5). Though the update was not ready for MoP9, the group was planning to finalise the guidelines by the end of 2023.

The IWG had met several times remotely due to the COVID-19 pandemic, but most of the work had been done individually by several group members and communicated via e-mail. In general terms, the work had been advancing slowly but steadily. Most of the work had been done in close collaboration with the Working Group 2, established in the European Climbats COST Action, whose main aim was to design an optimised network of monitoring stations capable of detecting early signals of species distribution shifts due to climate change. The availability of Short-Term Scientific-Grants (STSMs) for young researchers provided great opportunities to push this aspect forward in the project context.

Part of the work done and the new draft guidelines were presented and discussed during the last COST Action meeting in Romania, and the idea was to present an even more advanced document in Rome during the next and last Climbats meeting. Due to this interaction of the two working groups, the joined members list (WG2 from the Climbats and IWG from EUROBATS) had recently been updated.

Regarding the guidelines update, the first aim was to compile general information about monitoring programmes carried out in the European region. During the last few years, basic, mainly methodological, information had been collected on all current monitoring programmes across Europe (available in the online database: [LINK](#)). However, some countries still did not provide the information, and efforts were being made to gather as much data as possible before the end of the project, which was approaching fast. In case some country/information/detail was missing, the IWG convenor should be contacted to add it. At this stage, the "free editing" option of the table was blocked to avoid any accidental loss of information.

The second objective was to update the guidelines main text, based on the collected information, and redesign them to make them more user-friendly and practical in the field, with updated information about all methodologies. The main idea was that the new guidelines would follow a very instinctive order and information flow:

- In Chapter 1, the reader would find a short, broad introduction to bat monitoring;
- In Chapter 2, the reader would choose a species to obtain the best protocol to monitor its populations;
- In Chapter 3, the reader would have all the details of the protocol, including the techniques involved;
- In Chapter 4, the reader would find the settings, specificities and recommendations of each technique;
- In Chapter 5, the reader would learn how to store the data;
- In Chapter 6, the reader would be informed about different ways to analyse the data to obtain trends;
- In Chapter 7, the reader would be offered a summary of monitoring programmes that had been or were currently carried out in Europe.

The IWG and WG2 currently had a last STSM candidate working on chapters 6 and 7, which should be finished by the end of May 2023. Chapter 4 still needed input from some specialists, and the outstanding work for chapters 3 and 4 was still being reviewed and corrected. The guidelines draft could be found here: [LINK](#).

Regarding the optimised network to detect species distribution shifts across Europe that had been carried out within the European Climabats COST Action project, Dr. Francisco Amorim, Dr. Federica Roscioni, and Dr. Francesco Belluardo had been leading the analyses during the past months. During the last meeting in Romania, the results of this network were also presented. Some members requested to have access to more detailed information, especially regarding the protected areas and maps used in the analyses, etc., to check for suitability. For any other technical questions regarding the analyses, Dr. Amorim should be contacted.

Finally, the creation of the www.batmonitoring.org platform had been presented to the IWG members as a new tool to be used by both professionals and amateurs to collect, store, and handle bat research data (roosts visits, capture data, passive acoustic monitoring, bat boxes inspections and waterway surveys).

LINKS:

Guidelines draft: [LINK](#)

Monitoring programmes information: [LINK](#)

Online tool to store and handle bat monitoring data: [LINK](#)

Dr. Luísa Rodrigues (Portugal), who convened the **IWG on Bats and Wind Turbines** until January 10, 2022, reported that, until that date, the IWG usually presented reports to the AC meetings which had previously been circulated and approved by all its members. The convenor also organised for the second revision of the guidelines to be presented to MoP9 and arranged for the work to be done between February and June 2022. Unfortunately, Dr. Rodrigues was not able to coordinate the preparation of the guideline's revision due to a health problem and, in January 2022, she informed the IWG members that the only way to get the revised guidelines on time to be presented to MoP9 was to find another coordinator. Fortunately, Professor Fiona Mathews (United Kingdom) offered to take over the work on revising the guidelines and later she volunteered to act as an interim convenor of the IWG. Dr. Rodrigues thanked Professor Mathews for being an interim coordinator/ convenor during her absence and invited Professor Mathews to report on the IWG's activities since January 2022. Professor Mathews explained that, following the IWG meeting held via Zoom on May 10, 2022, the IWG agreed that a new resolution should be put forward at MoP9. The new resolution was drafted to emphasise the

need for better monitoring, mitigation, and data collection in offshore and repowering schemes. The IWG had also noted a widespread lack of appropriate monitoring, mitigation, and supply of information on wind turbine casualties across many countries, and additional reminders of relevant policies and directives were, therefore, added to the resolution. In addition, some aspects of wording were changed to improve clarity and to provide a greater imperative for action. Resolution 9.4 Wind Energy and Bat Populations was accepted at MoP9 in Brijuni, Croatia, October 10 – 13, 2022.

In Resolution 9.4, the Secretariat and Advisory Committee were requested to:

1. Continue compiling relevant information, including methods to assess the impact of wind power generation on bat populations;
2. Update the generic guidelines, now available as EUROBATS Publication Series No. 6, by the 10th Meeting of the Parties.

A request was circulated to the AC members for volunteers to participate in the writing of the guidelines' chapters, and to participate in a review group. A compilation of data on bat fatalities, guidelines and implementation of mitigation and post-construction monitoring was provided in the report for this AC meeting, available on the EUROBATS website as Doc.EUROBATS.AC27.6.Rev.1, together with a summary of the scientific evidence relevant to the topic.

Professor Russo, as one of the co-convenors of the **IWG on Evaluation Criteria for Assessment Reports**, stated that the task of this IWG had been accomplished as the group had come up with a resolution presenting an assessment checklist for the authorities to make use of when proving the assessment reports for completeness and soundness. Thus, the work of this IWG had been completed.

The convenor of the **IWG on Insect Decline as Threat to Bat Populations in Europe**, Mr. Jacques Pir (Luxembourg), reported that much literature on diets of 52 bat species had been compiled and that during AC27 the IWG would need to discuss how this data should be dealt with and which direction the group should take.

One of the co-convenors of the **IWG on Bat Rescue and Rehabilitation**, Dr. Lena Godlevska, reported that the group was finalising the guidelines and that it received some updates during the last MoP. The Convenor hoped that the text could be finalised during the following year.

The convenor of the **IWG on Bats, Insulation, and Lining materials**, Dr. Helena Jahelková (Czech Republic), explained that the final draft of the guidelines document had already been circulated among the EUROBATS focal points. She was informed that there were still some updates to be done and she asked the delegates to read the circulated draft and forward her any comments.

Dr. Henry Schofield (Vincent Wildlife Trust, United Kingdom), the convenor of the **IWG on Purpose-Built Man-Made Roosts**, stated that the IWG submitted the final report at the MoP in Croatia. The convenor also continued to collect instances of purpose-built roost, of which there were more and more examples. Since Dr. Schofield was retiring from the Vincent Wildlife Trust at the end of the week, if the IWG was to continue its work, it would be necessary to find another convenor.

One of the co-convenors of the **IWG on Bats and Climate Change**, Ms. Hamidović, informed the delegates that the IWG had a small meeting during MoP9 and presented AC27 the report prepared by Dr. Orly Razgour, Dr. Xavier Puig Montserrat, Dr. Adrià López-Baucells, and herself.

Dr. Orly Razgour was collecting literature on the impact of climate change on bats. This already resulted in a published systematic review of bat responses to climate change: <https://doi.org/10.1111/brv.12893> .

With reference to the Climbats (<https://climbats.eu/>), the following update was made:

Working group 1 (WG1) had completed the systematic review of the literature on bat responses to climate change. The manuscript had been published in Biological Reviews (<https://doi.org/10.1111/brv.12893>). WG1 had also completed compiling the trait database for European bats (EuroBaTrait 1.0), which had been accepted for publication, subject to minor revisions in scientific data. WG1 had also generated species distribution models for 37 European

bats species under present and future conditions. The models were being used to calculate changes in patterns of diversity, community composition and functional diversity. These models would inform the monitoring programme designed by WG2 and WG3's analysis of impacts of climate change on the provision of ecosystem services by European bats. Finally, WG1 was currently analysing temporal trends in bat morphology over the past few decades in response to climate change based on extensive datasets collected from its members. Once the analysis was complete, the results would be summarised for publication.

Working group 2 (WG2) continued collecting basic information (methodological mainly) on current monitoring programmes across Europe (information collected was available at:

<https://docs.google.com/spreadsheets/d/13CDVzAkWEZHfqcS8M2wX2GRZBDP0EXjvehHVmUjHWE/edit?usp=sharing>). Regarding the optimised network to detect species distribution shifts across Europe, Dr. Francisco Amorim, Dr. Federica Roscioni, and Dr. Francesco Belluardo had been leading the analyses during the last months. The first results of this network were presented and were still under development.

Working group 3 (WG3) had compiled a database on the molecular evidence of pest prey-bat predator interactions in Europe from both published and unpublished sources. WG3 had also completed a systematic review of the literature on the methods to value the regulatory ecosystem services provided by bats in agroecosystems, from which it was currently designing a conceptual framework to provide a state of the art and knowledge gaps that should encourage further research. Finally, WG3 had done a systematic review on the published data on the biology, ecology, and economic impact of a set of eight economically relevant pest species that frequently appear in the diet of European bats. This data was being used to generate pest distribution models in cooperation with WG1, and to produce prey-predator mismatch maps for the present and for different climate change scenarios. These maps would be used to assess how the regulatory services that bats provide in Europe would likely be affected by the climate change.

During MoP9 in Brijuni in October 2022, based on the Resolution 9.7: Implementation of the Conservation and Management Plan (2023 – 2026), the work of the IWG was to be continued and the group would meet during AC27 to discuss its next steps.

For the report of the **IWG on Autecological Studies**, the Chair referred the delegates to the document which had been submitted for MoP9 by Professor Aulagnier, the convenor of this IWG.

Dr. Ferdia Marnell reported on the progress achieved by the **Ad hoc Working Group on the Guidelines for the Implementation of the Agreement**. Dr. Marnell mentioned that the first such document, which represented a summary of all the resolutions, was produced eight years ago and an updated guidance was produced four years ago and circulated to all the Parties and Non-Party Range States. A new version was needed, taking into account the changes from the last MoP. The lead author of this guidance was Mr. Tony Hutson. It was planned for the guidelines to be finalised in winter 2022, however, with the passing away of Mr. Hutson, Dr. Marnell and Ms. Petermann needed to complete the work. The draft was in an advanced stage and Dr. Marnell expected the guidelines to be ready within the following few weeks.

One of the co-convenors of the **IWG on the Impact of Roads and Other Traffic Infrastructures on Bats**, Mr. Branko Karapandža (Serbia), reported on behalf of the IWG convenor, Ms. Jean Matthews (United Kingdom). The draft guidance the IWG produced had been circulated via email by the Secretariat. The document submitted had not yet been proof-read and some additional information still needed to be included by the main authors. There would be an opportunity to comment on the draft at a meeting of the IWG during AC27, or to submit comments via email by May 15, 2023. The IWG wanted to thank all those who had been involved in providing information for the publication.

The convenor of the **IWG on Daily and Seasonal Movements of Bats**, Dr. Christian Voigt (Leibniz Institute for Wildlife and Zoo Research, Germany), reported that between January 24 and 25, 2023, he organised a digital conference as part of the International Bat Research Online Symposium (IBROS) conference series on the theme of the IWG to review the literature on

the daily and seasonal movements of European bats. This was a kick-start to launch a volume of EUROBATS publication series on the topic in the future. Accordingly, the IWG refrained from listing newly cited papers in a separate effort.

Dr. Voigt as the convenor of the **IWG on Light Pollution and Bat Conservation** reported that he contributed to the production of the guidelines organised by the Convention on the Conservation of Migratory Species to reduce the impact of artificial light at night on insects, bats, and birds. The IWG reviewed the literature and compiled a list of new papers published since the last AC meeting.

Professor Paul Racey (United Kingdom), the convenor of the **IWG on Communication, Bat Conservation and Public Health**, reported on an instance when the IWG filed a complaint in November 2022 to one of the two top scientific journals in the world called “Nature”. The journal, unfortunately, did not hire only scientists but also journalists to write its articles. Ms. Smirti Malapati produced an article “Why do bats keep infecting people?”, whose misleading title and egregious errors attracted other media outlets to point to bats as a possible source of viruses with pandemic potential. It opened a flood gate of negative articles about bats in the popular press. Unfortunately, the IWG did not manage to bring “Nature” to publish the IWG’s letter and correct its mistake, though such attempts had been successful in the past.

10. **Discussion on Work Plan Priorities and the Future Operation of the Advisory Committee and**

11. **Establishment of Intersessional Working Groups**

Based on the work plan priorities identified in the Conservation and Management Plan, a need for the following Intersessional Working Groups was identified:

1. **IWG on Bats and Climate Change**
2. **IWG on Monitoring and Indicators**
3. **IWG on Bats and Light Pollution**
4. **IWG on Monitoring of Daily and Seasonal Movements of Bats**
5. **IWG on Bats and Wind Turbines**

6. **IWG on Bats, Insulation, and Lining Materials**
7. **IWG on Purpose-Built Roosts**
8. **IWG on Insect Decline as a Threat to Bat Populations in Europe**
9. **IWG on Communication, Bat Conservation and Public Health**
10. **IWG on Autecological Studies**
11. **IWG on Bats Rescue and Rehabilitation**
12. **IWG on Education**
13. **IWG on Bat Health and Immunological Fitness (later named Bats and One Health)**
14. **Ad hoc Working Group on Improving Methodologies of Assessment of Favourable Conservation Status in Bats**
15. **Ad hoc EPI Evaluation Group**
16. **Ad hoc Working Group on Amendment of the Annex to the Agreement**
17. **Ad hoc Working Group on the Guidelines for the Implementation of the Agreement**

There was also a discussion if, in addition to the above mentioned IWGs, the **IWG on Conservation and Management of Important Underground Sites for Bats** should be re-established. The necessity to update the guidelines for protecting and managing of underground roosts for bats, published in 2007, was considered. Further it was discussed whether it was important to investigate the underground sites database, since the data was probably old. Suggestions were also made not only to record the sites but to consider the bat populations in these underground sites, and whether the numbers of bats in the caves were improving or deteriorating. The Chair reminded the delegates that there was a resolution in place which said that every eight years the Parties should update their databases on the underground sites. This update was due a few months ago and Germany had submitted data to the Secretariat. Finally, it was agreed that a meeting of the IWG on underground sites should take place during AC27, at which it should be decided how this topic could be handled.

Dr. Rodrigues informed the Advisory Committee of the practice occurring in Portugal where tree holes were being filled with foam to prevent wasp nesting there. This practice was potentially fatal for bats and, since this topic could not be considered within the IWG on Insulation and Lining Materials, Dr. Rodrigues proposed creating another working group as this problem possibly

occurred in other countries as well. Dr. Andzej Kepel (NGO Salamandra, Poland) expressed his opinion that all the known and new anthropogenic traps for bats could be tackled by one working group, the aim of which could be producing guidelines that would deal with a review of anthropogenic traps for bats. This proposal was supported by Dr. Jahelková. Finally, there was a consensus that there was no need for a separate working group on filling tree holes and Ms. Hamidović proposed that the Secretariat could write a letter of concern regarding the practice/malpractice described by Dr. Rodrigues. However, it was decided that an **IWG on Anthropogenic Deadly Traps for Bats** could be established.

Referring to resolution 5.7 and guidelines for the protection of **overground roosts**, in particular roosts in buildings of cultural heritage importance, Mr. Primož Presetnik (Slovenia) suggested the AC members should discuss this specific topic and whether it was possible to prepare a report on the state of the art of the knowledge and to collect practises or showcases. It could probably be sufficient to prepare an annex to the existing resolution without updating the guidelines. Ultimately, it was agreed that a meeting during AC27 should be held on this topic as well.

It was also discussed whether there was a necessity to establish a working group on the **potential impact of solar power plants on bats**. The topic was related to the work of the IWG on Insect Decline, however, if it was to be included in the work of this IWG, its terms of reference would be vast. Further, considering the existence of other threats to bats arising from renewable energy infrastructures, it was proposed to establish a working group that would deal with energy transition infrastructures apart from wind turbines. Lastly, it was agreed that delegates interested in this topic should meet during AC27 to consider whether a separate working group could be installed.

Furthermore, the topic of bat **species recovery and re-introduction** as well as the topic of invasive species were also brought up, however, it was decided that, since there were plenty of topics to start with, the choice whether or not to further dwell into these issues should be postponed to the last day of AC27, after the IWGs had held their meetings.

Following points were also raised during the discussion:

- Dr. Rodrigues suggested to prepare – together with other senior advisors – a document with general recommendations for convening intersessional working groups.
- Ms. Hamidović raised the point that the production of guidelines did not necessarily need to imply that the work of an IWG would be completed. The groups could still meet and could follow the literature, effective conservation measures, and store this information either in the cloud or on the shared drive so as to avoid having a big gap in case the matter became topical again.
- Mr. Presetnik requested the Secretariat, during the following four years, to prepare a document on how the AC intersessional working groups functioned. The document should start with the MoP and dissolving of the IWGs, explain the procedure for the first AC and the establishing of the working groups, and end with the last meeting before the MoP and the preparation of the resolutions for the conservation and management plan. This should be a short document with a special note explaining that whatever was not covered under the resolutions would not be a priority for the next quadrennium.

12. **Reports from Working Groups Convened during the AC27 Meeting**

The **IWG on Light Pollution and Bats** met on March 27, 2023, and the previous convenor, Dr. Christian Voigt, thanked the IWG members for their support over the past four years. Sweden proposed that Dr. Voigt should continue as convenor of the IWG. This proposal was supported by other members of the assembly, and there being no other candidates, Dr. Voigt accepted the vote and thanked for the trust placed in him.

The newly appointed convenor then summarised the tasks on which the IWG was to focus according to the recent resolution.

Firstly, the IWG should compile information from the relevant literature on light pollution and bats. The convenor showed a list of sub-topics in the respective areas where IWG members could sign up as responsible persons. Several subtopics were added to this list, such as bat vision, technical developments, new lighting challenges and solutions. This list would be distributed to the

members of the IWG. Secondly, the convenor discussed with the plenary the need to revise the guidelines. The IWG members agreed that the guidelines should be revised, however this revision should not start until more scientific evidence was available. Dr. Voigt suggested that the start of the revision be reconsidered at the next AC meeting in 2024.

The auditorium briefly discussed whether another questionnaire was needed, but it was rejected at this stage.

Finally, the IWG decided to archive working documents, such as the literature review, on the internet platform managed by the EUROBATS Secretariat. The convenor asked the Secretariat to send the access link to the IWG members, which agreed to do so.

The meeting of the **IWG on Education** started with the presentation given by the convenor, Dr. Hossein Zohoori (Iran). He explained that, upon his suggestion, the IWG was established during AC19 in Heraklion. The agreed aims of the IWG were providing guidelines on bat education programs and awareness raising that should consider different approaches, efforts, and possibilities in education, as well as providing training and adequate materials for educators.

The IWG intended to:

- Collect best practice examples from all countries;
- Focus on basic education (preschool, kindergarten, and primary);
- Ask the Secretariat for a dedicated web-based working space;
- Contact experts and international organisations with relevant experience in education;
- Create a questionnaire to be distributed to the Parties and Non-Party Range States to collect information on the topic;
- Eventually provide translation of documents in other languages and make them available in the web-based working space;
- Customise the resource materials to make them relevant to the countries concerned;
- Provide help in linguistic, stylistic, and scientific editing of documents.

The IWG had already managed to gather materials from EUROBATS members as much as possible, as well as gather the AC members' opinions

and ideas. Additionally, the first educational material had been collected and it was considered to produce an educational clip, for which some samples (e.g., short bat movie) had been provided.

The group further planned to publish the first educational material in different languages, to prepare an educational video clip with all members' participation and to translate the short video into different languages.

As the main obstacles identified, the IWG listed the lack of funds, time, and cooperation. However, as the group believed that education was the key to bat conservation and that without education and public awareness all academic research would remain in libraries, the IWG was determined to keep working and finish what it had started.

Finally, the IWG concluded that since the convenor was steering the work of the group remotely, it would be good to appoint a co-convenor, Professor Mounir Abi-Said (Lebanon), who would work in close contact with Dr. Zohoori. It was also agreed that no new tasks would be added to the agenda of the group and that it would focus on fulfilling its initial plan.

Being elected as the convenor of the **IWG on Conservation and Management of Important Underground Sites for Bats**, Dr. Szilárd Bücs (Romania), reported that the focus of this IWG would be on underground and ground covered structures that were adopted by bats as roosts (caves, mines, fortifications, cellars, etc.), and that were not purposely built for bats. The main aim would be to gather information about proven bat conservation measures in these locations, which could be either direct (grilles, gates, fences, etc.) or indirect (warning boards, CCTV cameras, etc.). The final output of the work would be an online section on the EUROBATS webpage, nested within the key underground sites section, containing best practices organised by keywords (species, location types, conservation measure types). The IWG would also explore the possibilities of updating and improving the database of key underground sites.

The following steps included:

1. Creating simple online questionnaire to gather information in a standardised format, including information about threats;

2. Finding appropriate format / possibilities for this information to be included on the EUROBATS website;
3. Actual gathering of case studies (disseminating the questionnaire to experts); and
4. Online publishing of gathered evidence / best practices.

Depending on the progress achieved in time and on the results, the need of updating the guidelines for protection and management of underground sites for bats would be considered. The deadline for the work was agreed to be the last AC meeting before MoP10.

Mr. Tom Kitching and Dr. Henry Schofield (Vincent Wildlife Trust, United Kingdom) were elected as co-convenors of the **IWG on Purpose-built Bat Roosts**. The group's members met during AC27 to discuss the case studies in the most recent review document (October 2022) and recognised the growing number of examples across Europe.

The members highlighted the need for a dynamic database where case studies could be uploaded to an accessible space on the EUROBATS website, and the need for recommendations for people looking to undertake a project.

Furthermore, the idea arose to create a standardised format for submissions of additional case studies by colleagues outside of the IWG and to be a searchable resource of examples for specific bat species.

Lastly, it was also discussed that monitoring data should be a requirement for any case-study submissions, so that successes and failures could be assessed and reported in a comparable way.

During the meeting of the **IWG on Bats and One Health (established as Bat Health and Immunological Fitness)**, Dr. Sasan Fereidouni (Iran) who was elected as convenor of the IWG, presented his vision of the IWG's work and tasks, which was followed by an interesting discussion on this topic. There was an agreement to change the name of the working group into "Bats and One Health". Dr. Christian Voigt suggested collecting literature data to the extent possible. The task following that would be to create a guideline for individuals working with bats to keep the species/individuals and colonies healthy. It was also suggested to check the information on mass mortality in national reports made for MoP9.

Within the short time available, the following tasks were identified for the IWG, with the possibility of adding other tasks in the future:

- Collection of data on real pathogens of bats including parasites, viruses, bacteria, and fungi;
- Special work on White Nose disease in Europe and collection of data on eco-immunological factors that make the fungi less pathogenic in Europe compared to the United States;
- Special work and recommendation on Rabies in European bats, and newly emerged strains such as the Caucasian strain;
- Recommendation on how to handle bats to reduce the potential for pathogen transmission among individual bats and bat colonies;
- Recommendation and guideline for bat pathogens monitoring studies without a need to kill bats or in some studies to even capture bats;
- Comparison of guidelines for handling bats during Covid-19 pandemic and generating an updated version based on the four years' experience with the pandemic;
- Collection of data regarding immunology and health parameters studies in bats;
- Organisation of seasonal online meetings.

During AC27, the **IWG on Monitoring and Indicators** was officially re-established, and it was decided that Dr. Adrià López-Baucells should be the convenor of the group, with Dr. Ivana Budinski (Serbia) as the co-convenor. The objective for the upcoming period would be finalising the update of the guidelines (EUROBATS Publication Series No. 5) on which some members of the group had been working during the past two-three years. As soon as this aim was achieved, the IWG would be dissolved.

During the meeting, the online public database with specificities and methodological details of current monitoring programmes across Eurobats was presented and discussed. New countries showed interest in providing information during the upcoming months. The countries that had not yet provided data were requested to do so as soon as possible.

The new draft of the guidelines was briefly presented, and the structure of the chapters explained in detail. For more information about the guidelines, please refer to the report of the IWG from the past quadrennium.

Finally, the monitoring protocols easiest to apply for new practitioners to monitor bat populations were discussed and decided for all species recognised by EUROBATS and included in the Guidelines (Resolution 9.2: Amendment of the Annex to the Agreement).

LINKS:

Guidelines draft: [LINK](#)

Monitoring programmes information: [LINK](#)

Online tool to store and handle bat monitoring data: [LINK](#)

Referring to Resolution 9.7: Implementation of the Conservation and Management Plan (2023 – 2026), **the IWG on Bats and Climate Change** decided during its meeting that the following should be focused upon:

- The Parties should cooperate on assessments of bat vulnerability to climate change at the EUROBATS range level;
- The Parties should monitor changes in species migration, hibernation, reproductive and range-shift patterns and consequent species interactions;
- The Advisory Committee should collate relevant scientific evidence of climate change influence on bats and, if appropriate, develop guidelines for the most urgent actions identified;
- The Advisory Committee, if needed, should cooperate with IUCN SSC Climate Change Specialist Group;
- The Advisory Committee should identify knowledge gaps and research priorities relating to the impacts of climate change on bats.

With reference to Resolution 8.7: Bats and Climate Change, referring also to Resolutions 7.10: Bat Rescue and Rehabilitation, 8.3: Monitoring of Daily and Seasonal Movements of Bats, and 8.8: Guidelines for Bat Rescue and Rehabilitation, it was pointed out that:

- The Parties should monitor changes in species migration, hibernation, reproductive and range-shift patterns, and consequent species interactions, as well as increasing mortality and injury rates due to extreme weather events.

Thus, the future tasks of the IWG would include:

1. Presenting and maintaining, where available, the work of the Climbats COST Action (ending in 2023) through the IWG (range shifts of bats species in the EUROBATS range due to climate change, loss of ecosystem services, bat trait dataset and monitoring network);
2. Creating a list of vulnerable bats species – possible communication with the IUCN SSC Climate Change Specialist Group;
3. Updating the questionnaire (coordinated by Professor Fiona Mathews) – two more questions in the questionnaire should be developed:
 - Regarding change in the behaviour of hibernating bats;
 - Regarding adaptation of existing overground roosts to counterpart the overheating;

The questionnaire should be circulated by the Secretariat to more than 500 bat expert members in its database;

4. Trying to involve more experts in the work of the IWG, depending and based on the responses received to the questionnaire;
5. Organising the chapters of the IWG report in the way similar to the IWG on Bats and Windfarms, with sub-convenors on each topic;
6. Collecting more of the published evidence on potential impact of climate change on bats (including emergent diseases for bats and parasite overload);
7. Continue systematically collecting relevant literature in order to update the state of knowledge and knowledge gaps and to update the overview of impacts of climate change on bats;
8. Gathering information on mortality due to extreme weather events (connection with rehabilitation centres);
9. Establishing close cooperation with other IWGs covering the needed information (migration, monitoring, rehabilitation, overground roosts etc...).

The IWG on Daily and Seasonal Movements of Bats met during AC27 and the previous convenor, Dr. Christian Voigt, thanked the IWG members for their support over the past four years. The Netherlands proposed Dr. Christian Voigt and Dr. Ivana Budinski as co-convenors of this IWG for the next quadrennium. This proposal was supported by other members of the plenum. There being no

other candidates, Dr. Voigt and Dr. Budinski accepted the vote and thanked for the trust placed in them.

In continuation, Dr. Voigt summarized the past work of the IWG, most importantly the online conference organised in January 2023 about the topic of the IWG with 270 participants. He pointed out that current efforts did not focus on listing publications. Dr. Voigt then detailed the plans for creating a book as part of the EUROBATS publication series. He mentioned that potential authors had already been contacted, but more were needed. Current introductory chapters included a) general concept of movement ecology, b) bat navigation c) bat orientation by echolocation and function guilds of European bats. The core chapters would focus on d) daily movements and e) seasonal movements of bats. With respect to the latter two chapters, the past conference had methodological focal topics, most specifically radiotracking studies (Dr. Ivana Budinski), GPS studies (Dr. Manuel Roeleke), Acoustic studies (Ms. Charlotte Roemer), stable isotope studies (Dr. Christian Voigt), banding studies (Dr. Gunārs Pētersons). Dr. Budinski described in more depth her efforts in compiling the information from radiotracking studies. She had created a metadata document where people could add data from peer-reviewed radiotracking studies. The available data from radio-tracking studies were highly variable and thus data compilation was time-consuming, and the resulting information was not necessarily comprehensive. Nonetheless, the effort bore the potential to create highly needed data for stakeholders. The co-convenor then called for volunteers to contribute to that effort. As a response, several present members of the IWG signed in. It was suggested to write a brief description about the goal of this activity, and the convenors agreed to do so. Further, Dr. Budinski would specify the date for a meeting to explain to interested IWG members how to add data to the metadata file. Dr. Voigt outlined the time schedule for creating a draft of the book. A first (in-person) meeting was planned for early 2024 to revise the first passages. The idea was to finish such a publication within a one-year period, i.e., in early 2025. The convenors asked for volunteers to contribute to the writing of this publication and several attendants expressed their interest. The list with their names would be distributed at a later stage.

Dr. Luisa Rodrigues, former convenor of the **IWG on Bats and Wind Turbines**, acknowledged Professor Fiona Mathews for her excellent work as interim convenor between January and October 2022, including the preparation of the IWG's reports presented to AC26 and AC27 and the draft resolution presented to MoP9.

Dr. Rodrigues informed that she was willing to continue convening the IWG and suggested to invite Mr. Branko Karapandža as co-convenor. The suggestion was unanimously accepted.

Taking into consideration the terms of reference for the IWG included in Resolution 9.4, the IWG would continue to prepare annual reports to present to the AC meetings and would prepare the second revision of the "Guidelines for consideration of bats in wind farms projects".

Mr. Herman Limpens drew the meeting participants' attention to the Council Regulation (EU) 2022/2577 of 22 December 2022 laying down a framework to accelerate the deployment of renewable energy

<https://eur03.safelinks.protection.outlook.com/?url=https%3A%2F%2Feur-lex.europa.eu%2Feli%2Freg%2F2022%2F2577%2Foj&data=05%7C01%7Cana.thiel%40eurobats.org%7C46b08da925744c9ce9ae08db306bc52b%7Cb3e5db5e2944483799f57488ace54319%7C0%7C0%7C638157011648023763%7CUnknown%7CTWFpbGZsb3d8eyJWIjojMC4wLjAwMDAiLCJQIjojV2luMzliLCJBTil6lk1haWwiLCJXVC16Mn0%3D%7C3000%7C%7C%7C&sdata=knphLW1yvyzHKreucLSYWD55bvJ6UI%2F7pFa%2FHCqVeMYY%3D&reserved=0>, and it was decided that the Secretariat should prepare a note which would

be circulated among administrative Focal Points who could recommend their governments to send a letter to the European Commission based on this note. Possible future changes in regulation and practice of renewable energy development were discussed as these could have consequences for established practices related to the impacts of wind turbines on bats.

The former convenor of the **IWG on Communication, Bat Conservation and Public Health**, Professor Paul Racey, gave a presentation on the first day of the AC about an unsuccessful attempt to persuade the journal Nature to correct errors in a journalistic article which said that bats were the source of SARS-CoV-2.

Those interested in the work of this IWG met on the last day of the AC and confirmed that they wished the IWG to continue and that Professor Racey should be re-appointed as convenor. Attempts to identify a co-convenor were not successful.

The meeting considered several further examples of errors that had appeared in the scientific literature about the role of bats as virus vectors.

An increasing problem was the prevalence of preprints of papers which had not yet been formally refereed. If errors were found and pointed out to the authors or editors, there was a possibility that they would be corrected.

The **IWG on Bat Rescue and Rehabilitation** had a good and fruitful meeting. The recent updates of the document were considered, and the text was looked through. It was agreed to slightly rearrange the structure of the document and few sections that could be updated were identified. The IWG members also agreed on a list of few additional study cases which should be included. The plan for the work of the IWG for the upcoming months was adopted by the attendees of the meeting. The updated document would be circulated among the IWG members, and, afterwards, it would be forwarded for language corrections. This document would then be presented for consideration of the Advisory Committee.

The meeting of the **IWG on Anthropogenic Deadly Traps for Bats** was attended by 15 persons, of which 10 expressed their wish to participate in the work of the group on a permanent basis. Dr. Andrzej Kepel was chosen as the convenor of the IWG.

Regarding the terms of reference for the IWG, it was considered that, following the recommendation of the EUROBATs Parties contained in Resolution 9.7: Implementation of the Conservation and Management Plan (2023-2026), in particular the priorities:

- "The Advisory Committee should promote research into the causes of population declines in certain bat species" (2.c.6);
- "The Advisory Committee should continue to develop guidelines and training materials for educational programmes" (5.a.2);

the tasks of the IWG should include:

1. Collecting examples of significant anthropogenic deadly traps for bats;

2. Providing details on each type of these traps, such as bat species at risk, seasons when the risk appears, preliminary assessment of the degree of threat, regional specifics (if applicable), examples, pictures, references, etc.;
3. Collecting and evaluating practices for preventing, reducing the impact of, or eliminating the effects of these traps;
4. Developing guidelines or other training materials summarising the examples collected and suggesting measures for educating various stakeholders.

It was decided that the work plan of the IWG should include:

1. Preparation of an online form for reporting risks;
2. Suggestion of risks and mitigation methods by IWG members;
3. Consultation on the list and solutions with various stakeholders (e.g., national experts, rehabilitation centres, NGOs, conservation authorities) – Facebook profile would be considered;
4. Preparation of a summary (draft guidelines or other educational material).

During all stages of work, the IWG members would discuss by means of written comments in an online database, by e-mails, during meetings on online platforms and in in-person meetings during Advisory Committee sessions.

The convenors of the former Ad hoc Working Group to Review the Methodology of Assessing Conservation Status of Bat Species in the Article 17 reports, Mr. Herman Limpens (Netherlands) and Ms. Daniela Hamidović, reported that, after the first online meeting in 2021, and a pause since, the group met during AC27 to receive feedback from the AC members if the group should continue its work as an IWG. The participants of the meeting agreed that the IWG should be established to include all Parties and Non-Party Range States and that it should be renamed into the **IWG on Improving Methodologies of Assessment of Favourable Conservation Status in Bats**.

The terms of the group were revisited and re-established.

In accordance with Target 4 of the EU Bat Action plan (Issue: *Lack of capacity or common approach to assess bats population trends and defining*

conservation status; Target: *Capacity building sufficiently developed with common approaches to assess population trends and bat's conservation statutes*), this group planned to:

1. Analyse current practices based on publicly available data, as in the EEA platform from 2019 -2024 period Article 17 Reporting, as well as the availability of (robust/non-robust) data and methods and estimators to assess the viability-data needed and compile the information in a scientific paper;
2. Give examples of good practice per parameter assessment;
3. Make recommendations to improve practice regarding bats for data assessment for the viability indicators, and the thereof derived assessment of favourable conservation status;
4. Propose capacity building to improve data assessment and evaluation of favourable conservation status;
5. Explore possibility of having EUROBATS as an observer in the Expert Group of Reporting under Nature Directives (in the meantime comments were to be made through members of the Expert Group of each country).

It was also suggested that the group may use the outcomes of the work of the IWG on Monitoring and Indicators regarding current practices across EUROBATS based on the questionnaire that had already been circulated by Climbats COST Action WG2 to EUROBATS experts.

It was further agreed to:

- Analyse the current practice and quality of the assessments from the period 2013-2018 available on EEA webpage;
- Analyse the current problems through a questionnaire and literature research (relevant literature on 'assessment and/or estimation of viability data', 'methods to interpret them in the sense of favourable conservation status' or 'knowledge gaps'). The questionnaire would be produced and circulated among the members of the IWG. A second revised questionnaire may be circulated among all Party and Non-Party Range States;
- Collect examples of attempts, success and failure, to go beyond 'expert judgement' in the interpretation of data on favourable conservation status;

- Ask IWG members, scientific focal points, and observers for names of experts who might be invited to take part in the IWG;
- Look at the structure and approach of other IWGs (e.g., on monitoring and indicators, light pollution, wind turbines) as an example for structuring the work of the IWG;
- Organise the work on OneDrive (available through the Secretariat).

The **Ad hoc Working Group on the Guidelines for the Implementation of the Agreement** met twice during AC27. The updates and corrections to the new Implementation Guidelines document, which take into account changes arising from MoP9, were completed and the final text had been submitted to the Secretariat for formatting and publication on the EUROBATS website.

The AC members interested in the topic of the protection of overground roosts with particular reference to roosts in buildings of cultural heritage importance met during AC27 and agreed on their order of business. Firstly, the group reacquainted itself with the resolution 5.7 (MoP6). Secondly, the members described some recent difficulties with conservation of bat roosts in buildings of cultural heritage and some other larger buildings in public ownership, revealing large scale challenges with maintaining bat roosts in a favorable conservation status. Therefore, it was unanimously agreed to establish the **IWG on the Protection of Overground Roosts with Particular Reference to Roosts in Buildings of Cultural Heritage Importance**. Mr. Primož Presetnik and Dr. Ferdia Marnell were nominated and accepted as convenor and co-convenor. As the last order of the business, the group agreed on a five-step approach for its work in the next quadrennium:

1. Reviewing of the topic (analysis of national reports, gathering new examples of good and bad practices, addressing possible additional questions, e.g., drafting a possible letter of concern to the Parties and Non-Party Range States) [1st year]
2. If needed, creating a simple online questionnaire to gather additional information in a standardised format [2nd-3rd year]
3. Finding possibilities for gathered information to be included on the EUROBATS website [3rd -4th year]
4. Online publishing of an analysis report on the topic [4th year]

5. Deciding on the next steps (e.g., if Resolution 5.7 and its guidelines needed updating and/or other pieces of advice to be presented to MoP10 were necessary) [4th year]

Lastly, the members of the IWG divided their work under task no. 1, which was to be completed by the next AC meeting in 2024.

A group of delegates met to discuss the formation of a new **IWG on Strategic Planning for the Restoration of Species Across Their Former European Range**.

Considering the terms of reference for the IWG, it was pointed out that, according to the Conservation and Management Plan, Resolution 9.7, Section 4 (d), the AC should review the information available on the restoration of bat populations to their former geographical ranges.

Restoration of native ecosystems was an area of emerging interest. Current resolutions all focused on the remediation of threats to bats in their current locations but did not consider how to improve the conservation status of bats by facilitating recolonisation of former ranges. The restoration of habitats to facilitate range shifts was also a priority in the context of climate-change.

The aim of the IWG was to review existing evidence with a view to proposing a new resolution for the 10th Meeting of the Parties if the evidence showed this to be appropriate.

Possible objectives discussed were:

1. Reviewing the information on the restoration of bat populations to their former geographical ranges;
2. Collating literature on interventions designed to extend bat ranges, including reconnection of habitats, provision of 'steppingstone' roosts, and translocations;
3. Identifying priority species that were known to have had significant range contractions and/or were at particular risk from climate-change;
4. Context – enhancing habitat/improving connectivity via directives/policies e.g., Convention on Biodiversity or EU proposed regulation on nature restoration law.

During the discussion it was underlined that exchange of information between different relevant working groups (overground roosts, climate change, etc.) would be very important to capitalise on synergies and to minimise duplication.

The group of delegates interested in **Potential Impacts of Solar Power Plants** on bats also met during AC27. There was a consensus about the need to have an IWG on this topic, mostly due to the lack of research into the impacts of solar farms on bats. However, no one of the present delegates volunteered to convene the group. Ms. Heather Wood (BatLife Sweden and BatLife Europe) suggested she could co-convene if a suitable convenor could be found. There were some research groups in France and the Netherlands working on the topic and it was agreed to contact these groups to see if any of their members would be willing to coordinate the IWG externally. If a suitable convenor would be found, the first steps would be to identify the literature to the effects of solar farms on bats.

BatLife Europe also held a short informal meeting on March 28, 2023. It was attended by both BatLife partners and other interested delegates. Ms. Kit Stoner (Bat Conservation Trust, United Kingdom) as Chair and Ms. Heather Wood as Secretary outlined the draft plans for BatLife Europe for the coming year and requested feedback from those attending. Plans included Bat of the Year, an increase in highlighting partner activities on social media, a series of webinars for partners and an autumn noctule monitoring project. More details would be sent to the partners in April 2023. The attendees provided useful feedback on these activities, as well as emphasised the need for more communication, both to and between the partners, and for increasing awareness of BatLife Europe. There was also an opportunity for people to ask questions about BatLife.

13. **Date and venue of the 28th Meeting of the Advisory Committee**

Since the budget resolution did not foresee funds for the organization of the Advisory Committee meetings in the second and the third year of the quadrennium, the discussion on this agenda point needed to be postponed.

14. **Any other business**

There were no points raised under this agenda item.

15. Adoption of the record of the Meeting

After some rephrasing, the record was unanimously adopted.

16. Close of Meeting close

Mr. Streit thanked the delegates for an excellent meeting and their valuable contributions and expressed his hope that it would be possible to hold another in-person meeting next year. He, also, once again thanked the hosts from Bosnia and Herzegovina for having welcomed the AC27 Meeting.

Ms. Petermann expressed her gratefulness to Mr. Streit and his team for preparing the meeting but also to all the AC delegates for their hard work and to Ms. Tidenberg for her support. The Chair was glad for the opportunity to see the delegates in person again and was hoping for a quadrennium different to the previous one. The AC had set a lot of ambitious tasks, and Ms. Petermann wished the delegates would keep that spirit throughout the quadrennium and pursue the specified assignments. She promised she would keep reminding the delegates of these tasks, especially the convenors. There being no further business, the meeting ended at 17:52

27th Meeting of the Advisory Committee

Sarajevo, Bosnia and Herzegovina, 27 – 29 March 2023

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27th Meeting of the Advisory Committee

Sarajevo, Bosnia and Herzegovina, 27 – 29 March 2023

Working Groups of the Quadrennium 2023-2026¹



Bats and Climate Change

Daniela Hamidović, Hugo Rebelo, Adrià López Baucells, Ivana Budinski, Emrah Çoraman, Liliana Ferreira, Fiona Mathews, Orly Razgour, Danilo Russo, Kit Stoner, Heather Wood.

Monitoring and Indicators

Adrià López-Baucells, Ivana Budinski, Mounir Abi-Said, Ferdinand Bego, Laurent Biraschi, Katherine Boughey, Philip Briggs, Szilárd-Lehel Bücs, Emrah Çoraman, Johnny de Jong, Aline Dépraz, Katrine Eldegard, Morten Elmeros, Astghik Ghazaryan, Lena Godlevska, Mohamed Habib, Daniela Hamidović, Helena Jahelková, Branko Karapandža, Andrzej Kepel, Noam Leader, Andrea Lešová, Herman Limpens, Peter Lina, Ferdia Marnell, Fiona Mathews, Branko Micevski, Vojo Milanović, Marie Nedinge, Ruth Petermann, Jacques Pir, Primož Presetnik, Dina Rnjak, Luísa Rodrigues, Charlotte Roemer, Danilo Russo, Marcel Schillemans, Kit Stoner, Eeva-Maria Tidenberg, Heather Wood, Vida Zrnčić.

Bats and Light Pollution

Christian Voigt, Mounir Abi-Said, Laurent Biraschi, Emrah Çoraman, Katrine Eldegard, Morten Elmeros, Jo Ferguson, Daniela Hamidović, Helena Jahelková, Noam Leader, Andrea Lešová, Herman Limpens, Fiona Mathews, Branko Micevski, Marie Nedinge, Jacques Pir, Danilo Russo, Kit Stoner, Heather Wood.

¹ The names of the working group members are listed below, with the convenors' names written in bold.

Monitoring of Daily and Seasonal Movements of Bats

Christian Voigt, Ivana Budinski, Adrià López Baucells, Johnny de Jong, Katrine Eldegard, Mohamed Habib, Fiona Mathews, Charlotte Roemer.

Bats and Wind Turbines

Luísa Rodrigues, Branko Karapandža, Mounir Abi-Said, Abdulaziz Alagaili, Zuhair Amr, Lothar Bach, Petra Bach, Kévin Barré, Rita Bastos, Adrià López Baucells, Ferdinand Bego, Joana Bernardino, Laurent Biraschi, Jan Collins, Emrah Çoraman, Johnny de Jong, Jasja Dekker, Niels de Zwarte, Marie-Jo Dubourg-Savage, Katrine Eldegard, Morten Elmeros, Joris Everaert, Marcus Fritze, Simon Gauthier, Lena Godlevska, Mohamed Habib, Daniela Hamidović, Christine Harbusch, Anna Nele Herdina, Johanna Hurst, Andrzej Kepel, Christian Kerbiriou, Thierry Kervyn, Hubert Krättli, Noam Leader, Herman Limpens, Peter Lina, Helene Lindahl, Dragoş Ştefan Măntoiu, Fiona Mathews, Jean Matthews, Mirna Mazija, Markus Melber, Branko Micevski, Vojo Milanović, Lara Millon, Ioseb Natradze, Marie Nedinge, Kirsty Park, Maris Pärn, Ruth Petermann, Gunārs Pētersons, Jacques Pir, Üllar Rammul, Robert Raynor, Dina Rnjak, Charlotte Roemer, Dino Scaravelli, Marcel Schillemans, Laurent Schley, El Ayachi Sehhar, Wael Shohdy, Aliaksei Shpak, Kit Stoner, Eeva-Maria Tidenberg, Triinu Tõrv, Christian Voigt, Katherine Walsh.

Purpose-Built Roosts

Henry Schofield, Tom Kitching, Mounir Abi-Said, Adrià López Baucells, Ferdinand Bego, Laurent Biraschi, Jean Collins, Emrah Çoraman, Johnny de Jong, Sehhar El Ayachi, Katrine Eldegard, Morten Elmeros, Lena Godlevska, Mohamed Habib, Daniela Hamidović, Helena Jahelková, Andrzej Kepel, Noam Leader, Herman Limpens, Peter H. C. Lina, Helene Lindahl, Fiona Mathews, Mirna Mazija, Vojo Milanović, Ioseb Natradze, Marie Nedinge, Maris Pärn, Ruth Petermann, Jacques Pir, Robert Raynor, Dina Rnjak, Charlotte Roemer, Kit Stoner, Eeva-Maria Tidenberg, Christian Voigt.

Communication, Bat Conservation and Public Health

Paul Racey, Adrià López Baucells, Ivana Budinski, Morten Elmeros, Astghik Ghazaryan, Lena Godlevska, Mohamed Habib, Andrzej Kepel, Peter Lina, João Pargana, Luísa Rodrigues, Danilo Russo.

Bats Rescue and Rehabilitation

Lena Godlevska, Helena Jahelková, Ivana Budinski, Sasan Fereidouni, Astghik Ghazaryan, Mohamed Habib, Nijat Hasanov, Andrzej Kepel, Noam Leader, Peter H. C. Lina, Mirna Mazija, Marie Nedinge, Victoria Nisteanu, Kit Stoner.

Education

Hossein Zohoori, Mounir Abi-Said, Daniela Hamidović, Luzia Sousa, Cristina Vieira.

Improving Methodologies of Assessment of Favourable Conservation Status in Bats

Herman Limpens, Daniela Hamidović, Szilárd-Lehel Bücs, Branko Karapandža, Helene Lindahl, Fiona Mathews, Jacques Pir, Primož Presetnik, Dina Rnjak, Luísa Rodrigues.

Conservation and Management of Important Underground Sites for Bats

Szilárd-Lehel Bücs, Adrià López Baucells, Ferdinand Bego, Ivana Budinski, Emrah Çoraman, Aline Dépraz, Astghik Ghazaryan, Lena Godlevska, Daniela Hamidović, Helena Jahelková, Andrzej Kepel, Noam Leader, Peter H. C. Lina, Fiona Mathews, Mirna Mazija, Branko Micevski, Anthony Mitchell-Jones, Ioseb Natradze, Marie Nedinge, Victoria Nisteanu, Ruth Petermann, Primož Presetnik, Luísa Rodrigues, Vida Zrnčić.

Bats and One Health

Sasan Fereidouni, Elena Erotokritou, Astghik Ghazaryan, Lena Godlevska, Nijat Hasanov, Peter Lina, Victoria Nisteanu, Paul Racey, Christian Voigt.

Strategic Planning for the Restoration of Species Across Their Former European Range

Fiona Mathews, Adrià López Baucells, Szilárd-Lehel Bücs, Ivana Budinski, Emrah Çoraman, Sehhar El Ayachi, Katrine Eldegard, Tom Kitching, Herman Limpens, Ferdia Marnell, Mirna Mazija, Ruth Petermann, Luísa Rodrigues, Henry Schofield, Heather Wood, Vida Zrnčić.

Protection of Overground Roosts

Primož Presetnik, Ferdia Marnell, Adrià López Baucells, Ferdinand Bego, Szilárd-Lehel Bücs, Johnny de Jong, Aline Dépraz, Sehhar El Ayachi, Astghik Ghazaryan, Lena Godlevska, Daniela Hamidović, Nijat Hasanov, Helena Jahelková, Magdalena Janeš, Branko Karapandža, Andrea Lešová, Herman Limpens, Peter H. C. Lina, Helene Lindahl, Mirna Mazija, Branko Micevski, Kit Stoner.

Anthropogenic Deadly Traps for Bats

Andrzej Kepel, Astghik Ghazaryan, Lena Godlevska, Mohamed Habib, Helena Jahelková, Branko Karapandža, Marie Nedinge, Luísa Rodrigues, Danilo Russo.

Potential Impact of Solar Power Plants

(convenor should be elected at the next IWG meeting)

Mounir Abi-Said, Szilárd-Lehel Bücs, Magdalena Janeš, Branko Karapandža, Mirna Mazija, Vojo Milanović, Marie Nedinge, Maris Pärn, Heather Wood.

Bats, Insulation, and Lining Materials

(IWG did not meet during AC27 so that the membership is not updated)

Helena Jahelková, Herman Limpens, Kit Stoner, Ferdinand Bego, Martin Celúch, Marie-Jo Dubourg-Savage, Jo Ferguson, Lena Godlevska, Daniela Hamidović, Janusz Hejduk, Andrzej Kepel, Hubert Krättli, Andrea Lešová, Peter Lina, Lauri Lutsar, Dragoş Ştefan Măntoiu, Fiona Mathews, Markus Melber, Branka Pejić, Gunārs Pētersons, Primož Presetnik, Marina Radonjić, Marcel Schillemans, Christian Voigt.

Insect Decline as Threat to Bat Populations in Europe

(IWG did not meet during AC27 so that the membership is not updated)

Jacques Pir, Mounir Abi-Said, Stéphane Aulagnier, Rasit Bilgin, Laurent Biraschi, Markus Dietz, Katrine Eldegard, Sasan Fereidouni, Daniela Hamidović, Ludo Holsbeek, Hubert Krättli, Herman Limpens, Fiona Mathews, Tony Mitchell-Jones, Victoria Nistreanu, Ruth Petermann, Orly Razgour, Hugo Rebelo, Henry Schofield, Kit Stoner, Kati Suominen, Libuše Vlasáková, Christian Voigt, Heather Wood.

Autecological Studies

(IWG did not meet during AC27 so that the membership is not updated)

Stéphane Aulagnier, Lena Godlevska, Daniela Hamidović, Peter Kanuch, Branko Karapandža, Thierry Kervyn, Mirna Mazija, Primož Presetnik, Luisa Rodrigues, Danilo Russo, Dino Scaravelli.

Ad hoc Working Group on the Amendment of the Annex to the Agreement

(currently without convenor and IWG did not meet during AC27 so that the membership is not updated)

Stéphane Aulagnier, Emrah Çoraman, Aurora Dibra, Suren Gazaryan, Astghik Ghazaryan, Lena Godlevska, Helena Jahelková, Javier Juste, Friederike Spitzenberger.

Ad hoc Working Group on the Guidelines for the Implementation of the Agreement

(currently without convenor)

Ferdia Marnell, Ruth Petermann.

Ad hoc EPI Evaluation Group

Stéphane Aulagnier, Zuhair Amr, Lena Godlevska, Daniela Hamidović, Noam Leader, Peter Lina, Branko Micevski, Ioseb Natradze, Eeva-Maria Tidenberg.