

22nd Meeting of the Advisory Committee

Belgrade, Serbia, 27 – 29 March 2017

Record of the Meeting



1. Attendance

This is listed in Annex 1 to the Record, which is available at the Secretariat upon request.

2. Opening remarks

The Chair of the Advisory Committee, Dr. Ferdia Marnell, opened the meeting and invited the representative of the host government to address the delegates.

Mr. Dušan Ognjanović from the Ministry of Agriculture and Environmental Protection expressed his great pleasure at welcoming the delegates to Serbia on behalf of the Ministry. He thanked the Executive Secretary, Mr. Andreas Streit, for choosing the Republic of Serbia as the host of this meeting, as well as the secretariat for its support in the organisation of the meeting. Mr. Ognjanović informed the delegates that the State Secretary, Ms. Stana Božović, also expressed her thanks and gratitude to the organisers of the meeting and wished the delegates successful work.

Mr. Ognjanović further stated that the EUROBATS Agreement was the most important document of that kind in Europe, established within the framework of the Convention on the Conservation of Migratory Species of Wild Animals, representing a special implementation instrument of this Convention. The Republic of Serbia was in the procedure of the adoption of the law on ratification of the Agreement. There were 29 bat species from the EUROBATS list and at least four more potential species had been discovered in Serbia. All 29 species from the list were strictly protected by the national legislation. Upon EUROBATS' invitation, Serbia was represented in the Advisory Committee since 2000. Mr. Ognjanović concluded by stating that efforts would be made to support the implementation of regulations taken from the international agreements, and that the following three days would be used for a valuable exchange of experiences in nature protection policymaking. He wished the delegates a successful and pleasant stay in Belgrade.

The Chair of the Advisory Committee expressed his gratitude that Mr. Ognjanović found the time in his busy schedule to join the AC meeting. Dr. Marnell was glad that the meeting was taking place in Serbia, of whose fantastic scenery, rich history, and a long tradition of habitation and cultural history, the meeting participants could convince themselves during the excursion the day before. The Chair proceeded to inform the delegates that, unfortunately, the Vice-Chair, Dr. Danilo Russo, could not join the meeting as he was participating at a conference in North America. The Chair concluded by wishing the delegates a productive meeting.

Mr. Andreas Streit, the Executive Secretary of UNEP/EUROBATS, thanked the host government for having invited this meeting of the Advisory Committee to its country. It was a great pleasure to have worked with all EUROBATS focal points in Serbia on the preparation of the meeting. The meeting taking place in Serbia was a strong encouragement in the process of Serbia's accession – the hard work that was being done during the meeting would show the value of joining the Agreement. Mr. Streit looked forward to hearing from the reports of the delegates on the progress other Non-Party Range States were making with regards to joining the Agreement. The Executive Secretary finished by reminding the delegates of how crucial this meeting was in the preparation of draft resolutions and in finishing guidelines for the next Meeting of the Parties in 2018.

3. Adoption of the Agenda

The Agenda, Doc.EUROBATS.AC22.1, was adopted unanimously.

4. Adoption of the Rules of Procedure

The Chair drew attention to Doc.EUROBATS.AC22.3, and asked if there were any objections to the Rules of Procedure. There being no objections, the Rules were also adopted unanimously.

5. Summary reports by the Parties, Non-Party Range States and NGOs

Representatives of the Parties, Non-Party Range States, and Observers of the meeting gave a short report of their activities since AC20.

Albania has made progress regarding biodiversity and species protection. It is experiencing the positive impact of two moratoria approved by its government: on illegal hunting in 2013, and on forest protection and the prohibition of logging trees in

2014. Their effective implementation is having a positive effect on the habitat restoration and the rehabilitation of populations of some fauna, bats included.

Students from Shkodra, Tirana and Elbasani Universities have been involved in expeditions to the caves in middle Albania and one of them opened an exhibition on bat protection with photos of species and caves.

In Shkodra city, with the contribution of experts from the University, the municipality, and Shkodra Lake Forum, a local plan on biodiversity protection has been designed. The document has been approved by the city council. In the list of action plans for species and habitat management, bat species living in and around Shkodra Lake are included. During the implementation of these plans Albania will collaborate with colleagues from Montenegro and the EUROBATS family.

Belgium: The report highlights two news points since last year:

- The first case of rabies (EBLV1) in a bat was diagnosed by the Rabies Service of the Scientific Institute of Public Health in a serotine bat in September 2016;
- A new maternity roost of the barbastelle bat, the rarest bat species in Belgium, has been discovered in a broadleaved forest by the NGO Natagora, close to the French border. This was made possible thanks to the work of volunteers.

Bulgaria: Systematic monitoring of IBUH was not carried out in 2016 and only occasional visits were carried out. No new large hibernacula or important breeding bat sites were discovered and added to the list of sites monitored under the National Biodiversity Monitoring System. The Management plan of **Devetashkata Cave** – one of the top three internationally important bat roosts in Bulgaria was officially adopted in September 2016. In addition, a diploma student studied the impact of tourists on the breeding success of bats in this cave. A strong relationship between the number of visitors and the daily bat mortality was established. Altogether 525 non-volant juveniles were found dead under the breeding sites between mid-May and beginning of July. Artificial lightning (flashes, laser beams, etc.) was found to have the highest negative influence on the colonies of *Myotis myotis/blythii*, *Miniopterus schreibersii* and *Rhinolophus ferrumequinum*. Two master's theses on bats were successfully defended at the Faculty of Biology at the University of Sofia. In 2016 a National Program for Insulation of Buildings was initiated. Materials from BROZ (Bratislavské regionálne ochrannárske združenie) Slovakia regarding inclusion of mitigation measures for bats were translated by the Ministry of Environment and Water and later

provided to the Ministry of Regional Development and Public Works. Several voluntary based events within the framework of the 20th International Bat Night 2016 were held in six cities - in **Blagoevgrad** - by the Bulgarian Biodiversity Foundation, in **Ruse** - by the local Natural History Museum, in **Stara Zagora** and **Plovdiv** - by the Green Balkans NGO and in **Vratsa** - by the administration of the Vrachanski Balkan Nature Park.

Croatia: The State Institute for Nature Protection was merged with the Agency for Environmental Protection into the Croatian Agency for Environment and Nature (CAEN) in 2015. The Ministry for Environmental and Nature Protection became the Ministry for Environment and Energetics in 2016.

Croatian Natura sites are available through the Bioportal – Information System for Nature Protection website (<http://www.iszp.hr/>) together with habitat maps, protected areas, etc. The possible presence of *Rhinolophus mehelyi* was evaluated again in 2016 by Dr. N. Tvrtković and based on incorrect determination the species had previously been misidentified and is no longer in the checklist of bat species present in Croatia:

http://hrcak.srce.hr/index.php?show=clanak&id_clanak_jezik=236890&lang=en. The inventory of bats in the continental region has been finished, financed by EU NATURA 2000 Integration Project NIP (World Bank loan) and overall 52 10x10 km quadrants have been researched in the last 3 years. The Croatian fauna database as a part of the Nature Protection Information System is still under development and its finalisation is planned through EU Structural Funds. Another project planned through EU funds is a bat monitoring programme which is expected to start at the end of 2017. More public institutions responsible for protected nature management are planning to conduct bat monitoring based on the yearly review of their management plans by CAEN. Regular winter monitoring at the Veternica Cave did not reveal any new suspected cases of infection by *Pseudogymnoascus destructans*. However, this February, mortality of 1-2% of *Rhinolophus hipposideros* present in the cave was recorded for the first time by visiting cavers. In cooperation with Veterinary University – Clinique for veterinary pathology – post mortem analyses were performed on carcasses collected by the CAEN as well as the employees of Nature Park Medvednica, and the cave has been closed for all visits since the end of February. Tissue samples were sent to the Robert Koch Institute for viral analyses and results are expected in April 2017. The system for recording injured, dead and sick strictly protected species is under development in

CAEN and forms for recording are available online through CAEN website (<http://213.202.106.36/limesurvey/index.php/927612/lang-hr>). Injured and exhausted bats are being rehabilitated only in official rescue centres AWAP (<http://www.awap.hr/awap/content/view/75/57/>), with support of bat experts mostly from CAEN in cooperation with other bat NGOs. A draft report on the number of calls/records analysed for 2015 and 2016 will soon be available on the same website. CAEN issued negative opinions in the course of Appropriate Assessment procedures for three projects: The hydroelectric power plant Ombla (in the scope of Vilina Cave), a quarry near Gradusa cave, and a windfarm near Skarin Samograd cave. All caves are internationally important UNEP/EUROBATS underground roosts and Natura sites designated for bat species. Based on the opinion of CAEN, the Ministry rejected all three projects. Mitigation measure for the windfarm Jelinak are still being considered by the Ministry.

CAEN is also included in the preparation of the 2nd Atlas of European Mammals with one of the national coordinators. Furthermore, two Croatian bat experts are members of the Scientific Board of the 14th EBRS that will be held in the Basque Country in August 2017 (one from CAEN and one from Croatian Biospeleological Society). Overground roosts visited after calls from the public were analysed and presented in 2015 at the Croatian Biological Symposium, as well as internationally important UNEP/EUROBATS underground roosts in the course of EIA and AA procedures conducted by CEAN (both were presented by the CAEN employees). Another presentation on internationally important UNEP/EUROBATS underground roosts was presented at the first Geodiversity, Geoheritage and Geotourism Conference held in 2017. The results of a workshop on bats in 2014, financed by EPI, were presented at the National Krka symposium in 2015. International Bat Night is ongoing in more places each year and more public institutions responsible for protected nature management are incorporating it in their yearly plans.

Czech Republic: Bat monitoring and surveys:

Continuing and starting monitoring and survey programs:

- Long-term monitoring (about 800 hibernacula monitored; 120 maternity colonies);

- Short-term monitoring (occurrence of bats in insulated and not insulated blocks of flats across the whole country as well as bats in old trees in parks; occurrence of bats in gas heaters in Prague finished);
- Local surveys (occurrence of bats in old trees in parks and proposals for management).

Conservation:

Bats, Buildings and Insulation projects:

- Special consultancy line for companies planning insulation including survey of buildings before insulation (obligatory item in requests for donations to insulation programs);
- The second updated publication “Bats in building. Reconstruction and solving problems“ (88 pages) was distributed to offices, construction companies, project engineers and is electronically published at www.ceson.org/dokumenty.php;
- Continuing special workshops for stakeholders of building insulation projects, consultations by phone;
- Evaluation of efficiency of bat boxes installed on insulated blocks of flats (76% used whole year);
- Project “Learn the mysterious world of bats“ continues and is focused on conservation and public education using attractive touristic sites (mostly castles and chateaus) with bat colonies including geocaching:
www.napude.sousednetopyr.cz

Seasonal movements:

- Continuing in project “Methodology for Data Collection of Important Migratory Corridors of Birds and Flying Mammals in the Czech Republic“ and developing appropriate methodologies.

Bats and pathogens:

- Scientific project continues, with cooperation of animal rescue centers.

Bats and forests:

- New web pages about old trees management in parks and tree lanes and potential occurrence with bat colonies www.vestrome.sousednetopyr.cz.

Education, public events, promotion:

Most of promotion work is done by the NGO Czech Bat Conservation Trust (ČESON), locally also by the NGO Nyctalus. It includes mostly:

- New propagation and educational material (leaflets, booklets, postcards, workbooks);
- A DVD published in cooperation with NSEV Kladno-Čabárna, with bat echolocation and social calls “Voice of nights“;
- Various projects for schools, art and literary competition for children, IBN on 46 sites, plenty of public events with bats during the whole year;
- Scientific journal “Vespertilio“ published by CBCT every year, available online at www.ceson.org/publikace.php.

Finland: The processes of reporting for Article 17 of the Habitats Directive and for the Red List Assessment have started. For these processes updated distribution information of bat species in Finland can be used. The new distribution maps will hopefully also be published soon.

A rabid bat was found in Inkoo, Southern Finland, in October 2016. A female Daubenton’s bat behaving oddly was found by a member of the public. Later on, the bat died and was transferred for rabies tests to the Food Safety Authority Evira, where EBLV2 was confirmed. This is the second bat with confirmed EBLV2 found in Finland, the first one being in 2009, from southwestern Finland. A press release was given by Evira and it gained some publicity. However, the news coverage was mainly balanced, with no negative attitude towards bats.

Lastly, the Finnish Chiropterological Society (a bat conservation NGO) has been very active, organizing, for example, a seminar on *Myotis* species last year, and an excursion to Estonia in August, during the peak time of bat migration there. Recently, the NGO launched a campaign on bat boxes, inspired by the national campaign of one million bird boxes. Both campaigns are set up to celebrate the 100 Years of Finland (Finland as an independent republic 1917–2017). The bird box campaign was very successful and reached its ambitious target. The idea of the bat box campaign is to encourage people to build and set up bat boxes, as well as to monitor these boxes and report the results. More information on the NGO’s activities are available on its renewed website in Finnish and Swedish (www.lepakko.fi).

France: In 2016 the main issue was the completion of the third national action plan that will extend to 2025. The aim of this plan is to improve the conservation status of 19 species listed as priority species on the basis of five criteria: bat conservation status unfavourable in one biogeographical region following the Natura 2000 report, conservation status unknown in all biogeographical regions, EUROBATS resolutions, French Red List (including near threatened species), and decline of populations. Ten actions are included in the plan:

- Set up a national monitoring centre, useful for Natura 2000 and EUROBATS reporting;
- Monitor the health of bat populations;
- Integrate bats into land planning and restore the biological corridors;
- Protect underground and rock roosts;
- Protect roosts in buildings;
- Consider bats in transport infrastructures and civil engineering structures;
- Integrate bats into wind farm projects and exploitation;
- Improve the consideration of bats in the management of public and private forests;
- Consider bats in agricultural practices;
- Support bat conservationist networks, promote public awareness.

Website: <http://www.plan-actions-chiropteres.fr/>.

The secretary of the action plan, Audrey Tapiéro, left at the end of the year to take a new job. The French Federation of Nature Conservancy has appointed Valérie Srubel to replace her.

Georgia: From activities carried out in Georgia last year, the following activities should be highlighted:

- Presence of new species (*Tadarida teniotis*) for Georgia was confirmed through acoustic recordings;
- Bat species are being studied in western Georgia; in particular, in those areas where wind-farms are planned. By request from the client this study is being carried out according to the EUROBATS and BCT guidelines;

- Monitoring of known bat winter colonies has also been conducted.

Germany: Several Research and Development-Projects of the Federal Agency for Nature Conservation funded by the Ministry of Environment that were reported on at the last meetings are still ongoing or started lately, among these e.g. "Batmove", a project focusing on the offshore bat migration with regards to the impacts of wind turbines. Additionally, the NABU project "Batcities", funded by the BfN, aiming on awareness raising and gaining of new bat workers esp.in big cities like Hamburg and Berlin, has started.

The R+D Project on Bats and Wind turbines in forest was finished and published. The book (Hurst, J., Biedermann, M., Dietz, C., Dietz, M., Karst, I., Krannich, E., Petermann, R., Schorcht, W. & R. Brinkmann (2016): Fledermäuse und Windkraft im Wald. - Naturschutz und Biologische Vielfalt 153, Bonn - Bad Godesberg, 400 S. -in german with english summaries) contains the results of several field studies and recommendations to ensure a better protection of bats and their habitats in forests.

The report of the R+D Project "Identification of Bat Migration routes and corridors" is in press at the moment and already available as PDF (with english summary).

Ireland: The National Bat Monitoring Programme is continuing in Ireland. The Programme consists of four separate multi-annual monitoring schemes – car transect; waterways; lesser horseshoe bat summer and winter roosts, and brown long-eared bat maternity roosts. The population trends are generally stable if not positive. A pilot project to survey for *Myotis nattereri* and *M. mystacinus* in woodlands was begun in 2016 and will continue in 2017. These two species appear to occur at low densities across Ireland and no effective method of monitoring them robustly has been identified to date. The Irish government continues to work closely with the national bat NGO – Bat Conservation Ireland – on all bat monitoring schemes. Although *Pipistrellus nathusii* has been detected in the car transect surveys across Ireland for many years, and a number of roosts for the species are known in Northern Ireland, dedicated surveys in 2015/2016 have still failed to find any roosts for the species in the Republic of Ireland.

The *Atlas of Mammals in Ireland 2010-2015* was finally published in December 2016. This 200-page hardback book provides species accounts for all 72 species of terrestrial and marine mammals found in Ireland. Distribution maps are produced for all terrestrial species, including bats, at the 10x10km level. It also includes chapters

on the origins of the Irish mammal fauna, mammal research, legislation, and the future of mammals in Ireland. The book is available online from NHBS.

Israel:

1. The Israel Nature & Parks Authority (INPA) together with the Mammal Center of the Society for Protection of Nature in Israel (an NGO) continued expanding the National Monitoring Plan for Israel's bat species. During the fourth year of monitoring, almost 100 sites (roost and foraging sites) throughout the country were surveyed. No major changes from last year's monitoring were observed.
2. The INPA policy of closing bat-inhabited caves for human visitors during the winter months (1 Nov- 1 April) is now being revisited, following the collapse of a large bat colony in a major cave, inhabited by 3000 bats, mainly *Miniopterus schreibersii*. Monitoring of human activity in the cave has led to the finding of many visitors in early spring, when breeding occurs. The closure of this cave has, therefore, been extended to the end of June, and further investigation will be conducted in other important roosts.
3. Wind Farm Planning: The INPA together with the Environmental Ministry have submitted to the Israeli National Planning Commission a comprehensive methodology for minimizing risk to both bats and birds, which include sensitivity mapping, proper survey techniques and methodology, mortality thresholds, collision-risk modeling (for birds), requirements for an annual take permit by the INPA, post-construction surveys and commitment for increased monitoring and active measures if mortality thresholds are exceeded. The 2014 EUROBATS Guidelines for wind turbines have been translated to Hebrew for establishing guidelines for the Environmental Ministry. The EUROBATS guidelines have been implemented for both the planning and operational stages.
4. Only two small wind farms (11 and 14 turbines, 62 meter each) have started working in Northern Israel in 2016. Partial monitoring from May-November 2016 has already revealed significant mortality of 10 bats from 5 species (*Taphozous nudiventris* -2, *Rhinolophus ferrumequinum*, *Rhinopoma microphyllum*- 2, *Pipistrellus kuhlii* -4, *Rousettus aegyptiacus*).
5. Major efforts and success to combat light pollution in protected areas and with major infrastructure projects. Current knowledge of the effects on bats and other nocturnal wildlife is incorporated in addressing the issue.

6. International Bat Night was celebrated in four nature reserves throughout the country.

Latvia: Three-year-long projects to develop the Species Conservation Plans of the pond bat *Myotis dasycneme* and the barbastelle *Barbastella barbastellus* began at the end of 2016 and in January 2017 respectively.

International research collaboration continues with the bat research group of the Institute for Zoo and Wildlife Research (IWZ) led by Dr. Christian Voigt and with Dutch bat workers in studies on bat migration at the ornithological field station Pape, Institute of Biology, University of Latvia. More than 4800 Nathusius' bats and more than 700 pygmy bats were banded last autumn.

The traditional nature event called "Nature Concerthall" took place in two parks of Latvia in June and July 2016. The Nature Concerthall's musicians work closely with Latvian biologists in developing 12 new compositions each year which focus on the target species or target habitat of that year. The 10th Nature Concert was devoted to Long-eared bat *Plecotus auritus*. More than 10 000 people visited the concerts. Beside the concert, more than 10 interactive work stations about bats and their conservation issues were offered to the visitors. The Nature Concerthall received this year the Natura 2000 award for Communications (<http://www.natureconcerthall.com/>).

The first bat orientated NGO in Latvia, the Latvian Bat Research Society, was established in the beginning of 2017.

Luxembourg: Monitoring bats under the obligations of the EU Directive has continued, and management plans for all NATURA2000 sites, including specific protection actions for bats, have been established.

A new National Nature Protection Plan (PNPN 2017-2022) has been adopted by the parliament, including critical endangered bat species and consistent habitat and species conservation targets. *M. emarginatus* and *M. bechsteinii* are among the thirteen species highlighted as "proprietary" by the PNPN, and focus is placed on the protection of their habitats and commuting routes.

The species action plan for *R. ferrumequinum* has been continued by the Nature and Forest Administration, for example by changing spruce plantations to deciduous forests, by orchard replanting and installing extensive grazing projects. Last year the Ministry of Sustainable Development (Environment Department), the Natural History Museum of Luxembourg, together with the "Biological Station" SICONA, started a

pluri-annual Life grassland project with *Myotis emarginatus* as one of the flagship species, improving knowledge on colonies, and conservation measures by improving hunting areas in the West of Luxembourg. With the help of species-specific research financed by the Ministry of Sustainable Development, three new colonies of *M. emarginatus* have been discovered, bringing the number of the known colonies of this species up to twelve with some 1,650 females. A common transboundary research project is being carried out in 2016/17 to understand population genetics of Geoffroy's bat. Together with the Luxembourg Institute of Health (LIH) bat virus in guano have been assessed and the results are due to be published soon.

Although a lot of public awareness activities have been carried out over the year, unfortunately, for various reasons, there was no International Bat Night in Luxembourg in 2016, which will be changed in 2017.

Macedonia, FYR: There are already 30 bat species in Macedonia, FYR, and there is hope that very soon a few new species will be added to this list. The only organisation dealing with bats in Macedonia is BatLife Macedonia. The major activity for the last year was the EUROBATS EPI project regarding the problems concerning the first operational wind-farm in Macedonia. Apart from that BatLife Macedonia is cooperating and sometimes helped by the business sector in order to do some survey of bats, including inventory of some underground hibernating sites for bats.

The Netherlands: As of the 1st of January 2017, the new Nature Conservation Act is in force. The Netherlands has been working on insulation of buildings, speeding up the insulation process, while taking bats into account. Possibilities of the newly adopted Nature Conservation Act are being used. The new legislation also places responsibility at the province-level instead of the central government level for adhering to the Habitat Directive.

A first effort has been undertaken to assess the impact of wind turbines in the North Sea on migrating bats.

The so called 'area oriented' licensing for development is now being prepared under the new legislation and the first licences are in effect. Connected to that, new monitoring schemes for bats in urban areas are being researched and being allowed for the licensing. Adopting 'nature inclusive' building has been facilitated.

The process of updating Red Lists is starting. Monitoring schemes are being maintained. National trends for 2015 for all species are positive. Trends for *Nyctalus*

noctula, *Pipistrellus pipistrellus* and *Eptesicus serotinus* are not yet available, but first analysis shows that the newly developed monitoring scheme seems to fulfil the requirements of a good monitoring scheme.

The hibernation monitoring scheme showed a further decline in the largest hibernation site for *Myotis mystacinus* (from 1,200 to 128 individuals in five years). Causes have been partly researched (ongoing) but an explanation has not yet been found. Recently a large number of individuals of *Myotis dasycyneme* has been found dead in the walls of a maternity roost. The cause(s) is/are not known.

As of March 2017, Herman Limpens (Dutch Mammal Society) has been appointed as scientific focal point to UNEP/EUROBATS for the Netherlands.

Norway: The Norwegian Environment Agency continues to support a number of bat-related activities carried out by the Norwegian Zoological Society (NZF). These include, among others, winter and summer monitoring projects, bat box studies, operation of a bat rescue center, a bat help line and bat walks and talks aimed at the general public. The society makes use of internet, Facebook and YouTube in its information activities.

A new project initiative was accepted by the Environment Agency for funding during 2016. Called “*ScandBat*”, the project is a collaboration between the Norwegian University of Life Sciences (NMBU) and the NZF. It will focus on movements and habitat use for hunting, roosting, reproduction and hibernation of seven bat species in southeastern Norway (five common and two red listed species), taking the NZF a step further than the record collection and monitoring schemes that have dominated the Society’s bat-related activities so far. Field work will take place in 2017 and 2018, and recruitment of several master students is anticipated. Project funds amounts to NOK 2,900,000 (currently approximately € 316,000).

Although still insufficiently researched, there is increasing evidence that the Norwegian coast, at least from the Trondheimsfjord southwards, is of importance to migratory bats. *Pipistrellus nathusii*, only recorded in Norway for the first time about 25 years ago, occurs regularly, and in some numbers along much of this area in the autumn, particularly in the south. This raises concerns about the wind industry in Norway and the near-neglect of bats in planning and assessment of proposed development projects.

Possibly the rarest bat species in Norway and the only Norwegian bat that is on the IUCN Red List (as near threatened), *Barbastella barbastellus*, was not present in its normal hibernation site during the winter 2016/2017. This was, however, also the case two years before, but it reappeared the following season. Only one, occasionally two individuals are present, so whether we have a population or not is still unclear.

Poland: Conservation works in the second biggest bat winter roost in Poland – Szachownica cave – have been completed. The Life Plus project worth 2,5 million Euro was undertaken to strengthen the cave and protect it from collapse. About 2,000 bats from 10 species continue to use the cave after the works without any problems.

XXV Polish Bat Conference took place in Morsko in November 2016. About 140 participants were present and 40 presentations given.

XII Conference: The Forest at Night – the assessment of biodiversity was organized in Rogow in March 2016 (about 100 participants and five bat presentations).

Some important new legislation has been implemented in Poland concerning:

- demands for bat experts to prepare environmental risk assessments (higher education and practice);
- wind farms – minimum distance to human settlements and protected areas has been established as 10 times the height of a turbine. The price of green energy has been lowered, what almost stopped this kind of business.

Portugal: Bat research is ongoing in Portugal, covering several aspects of bat natural history and conservation biology.

Guidelines for consideration of bats in monitoring programs of wind turbines projects in mainland Portugal (first version prepared in 2004) have been updated with some aspects referred to in the EUROBATS Publication Series No. 6. A draft proposal was discussed with promoters, companies in charge of monitoring programs, bat experts and environmental authorities. The text was finished in February 2017 and it was very recently approved by the president of the Institute for the Conservation of Nature and Forests.

The project “QUIROPTÁRIO fora de portas”, developed by Centro Ciência Viva do Alviela - Science Center (CCVA) and sponsored by PO SEUR, has the main goal to develop pedagogical resources that raise awareness for bat conservation among young people and the school community. The main product of this project is the

website www.conhecemosmorcegos.pt, where scientific information is available in different formats, such as informative scripts, multimedia and educational supports for teachers. The project also includes a travelling exhibition for schools and the production of a book for children, both developed by CCVA. Another aim is the implementation of awareness actions about bat preservation, such as: (1) Scientific field trips for high school students, with an active participation of the students in bat awareness actions promoted in protected areas with researchers, (2) Awareness actions prepared by students for the public, with the research and gathering of different myths from the senior community, (3) A national competition for a stop motion video regarding bat preservation, (4) Talks with researchers in schools, and (5) Bat Nights all over of the country.

San Marino: After the publication of the National Mammal Atlas nothing really new happened in San Marino for bats. The legal protection for all the seventeen species and the awareness activities operated by the National Museum staff for schools and for the general public are ongoing. There were some tentative attempts to use a tunnel with major bat colonies as a touristic attraction, but that was confounded.

Slovak Republic: Currently 28 species of bats occur in Slovakia and no new species have been recognized. The Red List categorisation for bat species recorded in Slovakia was published in 2001 – the National Red List of Mammals – and no new categorisation has been made. Assessments of the status of the bat species according to Article 17 of Habitats Directive have been made for the purpose of reporting to the European Commission, but there have been insufficient data for most species, so that the final evaluation of the status is “unknown“. The State Nature Conservancy of the Slovak Republic (herebeafter “SNC“) in cooperation with the Slovak Bat Conservation Society, has carried out monitoring of all species of European importance – Natura 2000 species. In Slovakia six methods were used, census during the breeding period, census in underground wintering habitats, trapping in nets during summer period, mapping of occurrence by trapping near underground shelters in autumn, mapping of occurrence using ultrasound detector on transects, and census of bats flying out from attic hiding places. Data are collected occasionally by the professional staff of the SNC (including the Slovak Caves Administration activity in the support of the monitoring) as well as by members of non–governmental organisations (e.g. Slovak Bat Conservation Society, groups *Miniopterus* and groups of the Slovak Speleological Society). All reports and data are presented in publications which are available on the website of the SNC

of SR. The scientific research is performed especially at the Institute of Forest Ecology of the Slovak Republic, Academy of Sciences in Zvolen (project - *Swarming behaviour associated with group cohesion in tree-dwelling bats*), University in Bratislava, Univerzity in Košice (research project - *Study of selected pathogens in populations of insectivorous bats, Potentiation of vaccines against rabies and other lyssavirus infections using new type of adjuvants and investigation of selected bat pathogens in bat population*) and others. A lot of management activities have been carried out e.g. reconstruction of the entrance of the mines, clearing of guano from the attic of the churches. A lot of activities have been carried out 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 its roosts. The bats occurring in prefab houses and causing problems with house owners (cases occur almost in all larger towns) have been removed from the endangered roosts. The projects "Protection of Common Swift (*Apus apus*)" and "Bats in Buildings in Slovakia" as well as the project "Preparation and implementation of monitoring of habitats and species and improving the access to information to the public" have been finished. SNC of SR as an advisory agency to the Ministry of Environment and Slovak Bat Conservancy Society provide advice on bat conservation and management.

Slovenia: National bat monitoring continues and identified conservation issues for specific bat roosts are being implemented as soon as possible. Numerous public events are being organized by the Centre for Cartography of Fauna and Flora. Last year the 30th bat species – *Tadarida teniotis* – was recorded in the territory of Slovenia. The exponential growth of wind farm projects may pose a big challenge for bat conservations in the near future.

Sweden: For the first time in Sweden, a maternity roost of *Eptesicus serotinus* has been confirmed in the south of Sweden. The species is established in the country and seems to be moving north. It has now been found in many places in the southern third of Sweden.

Out of the nineteen bat species found in Sweden, more than half of them are currently on the country's Red Data List.

Monitoring of bats is an ongoing business, but still not the whole country has been covered. This means that there is not always certainty as to how far north some

species are distributed, though the tendency for several species seems to be that they move north, especially along the coasts and in the larger river valleys.

An interesting project on bats and infrastructures – roads and railroads – is ongoing.

There have also been new facts discovered as to which bat species in Sweden are likely to be the most vulnerable around wind turbines. There are ongoing projects concerning the impacts on bats around wind turbines and the distribution of insects, of high flying insects and bats and the possibility of reduced mortality of bats around wind turbines of different colours and hues. An update of the Swedish recommendations concerning bats and wind turbines is due in December 2107.

On International Bat Night on the 27th of August 2016, there were a number of very successful events carried out throughout Sweden. The positive interest in bats by the general public is clearly increasing.

Switzerland: Protection efforts remain on the level of the previous years thanks to the help of more than 600 volunteers and the support of the Swiss Government and all the 26 cantons. Despite that, several bat species remain under great pressure in densely populated Switzerland, especially those that use attics. More than 100 volunteers have been recruited and educated to take care of important roosts and to collect data according to a standardised procedure for all of Switzerland.

Further important developments and challenges in 2016 include:

- Incorporation of bat protection concerns into the action plan of *Swiss Biodiversity Strategy*;
- Evaluation project of GIS-based low-cost methods to identify potential flight corridors from settlements to hunting habitats;
- Consolidation of the Swiss Bat Bioacoustic Group SBBG to set validation standards for bioacoustical investigations;
- Wind energy: National Guidelines to take bats into account are expected to be published in 2017;
- Implementation of bats (distribution of species, biology, conservation) in a new Swiss Mammal Atlas Project (publication expected in 2020);
- *International Bat Night*. 35 events with more than 5,000 participants;
- New project on light pollution;
- *World Bat Library* of Geneva: 812 documents were submitted, that is 16,813 pages scanned. Compared to the previous year, this represents an increase of

63% of documents sent (and 48% of additional pages transmitted): work has been transmitted to the chiropterologists of Switzerland and the EUROBATS countries in Europe and other regions.

Ukraine: Experts and volunteers continued to develop bat research and conservation activities in Ukraine, some of which were conducted in close collaboration with colleagues from other countries. The activities included: inventory of bat fauna of protected areas, bat rescue and rehabilitation, public education, inventory of overground roosts, specification of bat species distribution, revealing of new and monitoring of known underground sites, lyssaviruses surveillance (together with the Netherlands), etc. Some of the projects were carried out due to the support of the Rufford Foundation and Eurobats Project Initiative. One of the projects, “Bats in the Carpathian Mountains”, was supported by the Frankfurt Zoological Society with the assistance of the Ukrainian Society for the Protection of Birds. Its main goal was to determine the diversity of bats in nine national parks of the Carpathian Mountains to show the importance of these areas for bats.

United Kingdom:

1. Species Trend Information

The National Bat Monitoring Programme 2015 results show that currently all species surveyed appear to be stable or increasing based on data from at least one survey. Populations of lesser horseshoe bat, greater horseshoe bat, common pipistrelle and soprano pipistrelle are considered to have increased, and serotine, noctule, brown long-eared bat and whiskered/Brandt's bat are considered to have been stable. There is some evidence to suggest that populations of Daubenton's bat and Natterer's bat have increased since the baseline year, but the evidence is currently inconclusive and further years of monitoring are needed to confirm these trends.
http://www.bats.org.uk/pages/nbmp_annual_report.html

2. Research projects

2.1 UK Wind turbines and bats research project - the final report was published in 2017. The final project report “Understanding the Risk to European Protected Species (bats) at Onshore Wind Turbine Sites to inform Risk Management” is available on the Defra website. Search for *WC0753* at <http://sciencesearch.defra.gov.uk>

Guidance to accompany the report is still being developed.

2.2 Review of British Mammals. This project will review the distribution and status of British mammal populations (last undertaken by Harris et al, in 1995). The project has been extended and is expected to be completed in April 2017 and will include an IUCN Red List assessment for Great Britain, England, Scotland and Wales.

2.3 Systematic survey of bats across southern Scotland using automatic detectors, focussing on *Nyctalus* spp and *Pipistrellus nathusii*. Fieldwork was undertaken between May and October 2016 across ~21,000km² of southern Scotland. The findings confirmed the presence of all the species known to be present, although Brandt's and whiskered bat records were not separated. The results also confirm the previously known distribution of the majority of species and analysis of the data has provided useful information on important species assemblages and concentrations of activity by all species in the region, notably by the two *Nyctalus* species. The final report is due to be published later in 2017. A related peer-reviewed scientific paper is also in preparation.

2.4 Bat mitigation projects. A review of the success of roost compensation measures undertaken under licence in Scotland was completed and the results published in [SNH Commissioned Report 928: Bats and Licensing: A report on the success of maternity roost compensation measures](#). Two projects are currently underway. BCT, as part of a three-year project (Bearing Witness for Wildlife), will be visiting sites where mitigation works were undertaken and monitoring their effectiveness. The Chartered Institute of Ecology and Environmental Management (CIEEM) and Exeter University are doing a meta-analysis into the effectiveness of common mitigation strategies used to protect bat populations impacted, or likely to be impacted, during development in the UK and Ireland. <http://www.cieem.net/bat-mitigation-strategies-research-project>

Short reports from the Non-Party Range States

Armenia: A survey on bat distribution in Armenia by using bat boxes has been accomplished. Fifty bat boxes were distributed in forests of Armenia.

Several educational trainings for students and for schoolchildren have been carried out. Seminars concerning bat biology, ecology and protection were done in 22 schools and four universities in different regions of Armenia.

For the first time in Armenia International Bat Night has been organized. It took place in Hrazdan canyon near Argel village. About 20 pupils and students spent the night with bats, listening to lecturers, catching, identifying and recording bats.

In assessment reports to the Ministry of Nature Protection, experts should include special information about bats separated from other mammals.

Austria: Some of the nine Austrian Länder protected a few buildings which host important maternity colonies as Natura 2000 sites. In the federal state Burgenland, the government and the Catholic church concluded a contract concerning mainly costs arising from bat protection.

The most important building which is now legally protected under Natura 2000-legislation is Castle Eggenberg in Styria. It hosts the last maternity colony of the Greater horseshoe bat in Austria. An EAFRD project to improve the entrance holes and to protect foraging grounds in the adjacent park has been submitted by the Nature Conservation Department of the Federal State Styria, but has not been approved yet. For this reason, one winter season has been lost for installing hot boxes, new exit holes, light barriers and cameras. Contact is being kept with German and Swiss colleagues who look after their last maternity colonies.

Another important building protected under Natura 2000 legislation is castle Lockenhaus in Burgenland. Each summer, it houses up to 700 female Geoffroy's bats. Phenology of this colony is being studied using light barriers and cameras.

The permanent bat exhibition in castle Lockenhaus is being complemented with an accessible cave where hibernation is explained. The exhibition is bilingual (German and Hungarian). Supporting programs are bat nights and a one-week holiday program for children who invent and perform stage plays concerning bat biology.

A travelling exhibition on bat biology and bat conservation for school classes runs with great success and will be extended into the next school year.

Azerbaijan: There was no obvious improvement towards the ratification of the EUROBATS Agreement as well as the CMS by the Azerbaijani Government in 2016. However, the efforts of the scientific community were continued to influence the regulatory body which is the MENR and the executive body MOEA to encourage and speed up the process or to bring this subject to the agenda of these organizations as a priority. Jointly with some NGO representatives, there have been three face to face meetings with the environmental authorities and the way forward has been discussed.

At the moment the focus is on the CMS rather than the EUROBATS Agreement, and it is being considered as the starting stage to proceed further.

From the scientific perspective, the research and investigation of bats in Azerbaijan is still being solely conducted by the Institute of Zoology, which is the only organization having some bat workers in this field. In 2016 the three-year program on the research of rodents and bats of south-eastern part of Azerbaijan was completed and reported to the ANAS. Starting from 2017, a new programme on existing and potential habitat range mapping of Red Data Book species will be launched. Four bat species with higher protection status will be covered also by the scope of the work. Other random but not regular field researches were carried out within the territory of Nakhchivan AR in 2016.

Number of educational sessions was organized by the NGO ECOSFERA for a dedicated group of people in Baku, in 2016, via close cooperation and support of a bat expert. An International Bat Night event took place in September, organised also by the NGO ECOSFERA.

Belarus: There have not been many bat news and events in Belarus since the previous AC meeting. However, *Pipistrellus kuhlii* has been registered in Minsk for the first time, and that is probably one of the most northern findings of this species in Europe.

The research on *N. lasiopterus* on the territory of Belarusian Palesse has started, supported by the Frankfurt Zoological Society and EUROBATS. Several years ago *N. lasiopterus* was excluded from the previous edition of the Red Data Book due to the lack of data and alleged absence of this species in Belarus, however, at the time being, propositions to include *N. lasiopterus* in the new edition of the Red Data Book are again being preparing. Moreover, research on species composition and genetic structure of *Pipistrellus* and *Myotis* species complexes is being conducted.

Concerning the progress of Belarus joining the Agreement, the Ministry of Natural Resources and Environmental Protection of Belarus continues to study the advisability of joining EUROBATS.

In addition, the following popularization activities have been carried out, such as International Bat Night events and popular bat-lecture, which have been held in several cities of Belarus. The IBN events are usually supported by APB-BirdLife Belarus.

Bosnia and Herzegovina: Winter monitoring of bats has continued and has been expanded to several new caves with large colonies in the northern part of the country. The pond bat, a new species for Bosnia and Herzegovina, has been found, so that there are now 30 species in total. The Center for Karst and Speleology has received permission from the government to be a center for ringing of bats. For the first time the center has received financial support from the government for annual monitoring of bats in Bosnia and Herzegovina. The Center has published two issues of *Hypsugo* for 2016, a new journal for publishing Balkan bat studies with a southwestern Balkan editorial board. Last year significantly more work was done with children from elementary schools. The Center has started an initiative with the Government of Bosnia and Herzegovina about joining the EUROBATS Agreement.

Iran: During the last two years, the Persia Bat Team has been able to accomplish:

- A number of student bat projects have been initiated and are in progress;
- Meetings have been held with NGOs, CMS, DOE, cave society, and biodiversity museum;
- The third and the fourth International Bat Nights were held;
- Child and Youth tele-education has been established by using social media applications such as Telegram under the name of Young Life Café;
- Bat education using social networking has started;
- Contact with Merlin Tuttle's organization about using his bat photos has been established;
- A weekly radio show about bat and wildlife education has started;
- Some scientific research about bat distribution in capital city and northern Iran has been initiated.

Additionally, Persia Bat Team announced that DOE had agreed to support their bat project by offering accommodation and transportation, given the team had an appropriate proposal and funding. On this note, Dr. Zohoori stated that the team would appreciate the support of other organizations to assist them with funding for their upcoming bat project in Iran.

Lebanon: Several activities were conducted in Lebanon during the past year:

- Working with the Ministry of the Environment and other NGOs to protect bat sites as a lot of them were destroyed due to the unstable situation in the country;
- Compilation on the bats fauna of Lebanon, their distribution, and ecto-parasites;
- Surveillance of the CoV on bats was still on going, and Dr. Kayali from the Human Link, Lebanon, intended to give a presentation on some of the results during AC22;
- International Bat Night was, as usual, successfully organized.

Morocco: The bat fauna of Morocco consists of about 30 species. At least 18 species are within the range of European bats such as *Pipistrullus pipistrellus*, *Eptesicus isabellinus*, *Rhinolophus ferrumequinum*, *Rhinolophus hipposideros*, *Rhinolophus euryale*, *Myotis capaccinii*, and *Myotis emarginatus*.

Since 2013, all Moroccan bats are protected by the environmental law of conservation of wild fauna and flora and their trade in Morocco has been controlled. All species are included in the local listings of CITES Annex IV. The regulations implementing this law are published.

Current research on Moroccan bats is focusing on their ecology and distribution, including some Masters students' theses. Further studies are required to update the bat fauna of Morocco.

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

A large awareness program is being prepared, targeting different levels such as public, NGOs, and policymakers. The main objective of this workshop is to promote awareness about bats and the importance of protecting them in northwest Africa by advising stakeholders along with researchers and creating a sustainable Maghreb Bats cooperation.

Saudi Arabia: The nationwide bat monitoring scheme continued in 2016 to cover the south-western part of the country since it is classified internationally as a hotspot. The research aim is to update the existing list of Saudi bats along with their distribution and status. Another main objective focused on the phylogeny and phylogeography of the captured species across Saudi Arabia as there is a crucial need to get detailed DNA sequences for the existing species. Monitoring will continue in 2017 to cover areas parallel to the west coast toward the north. Additionally, renewable energy projects

were implemented for the first time by installing wind turbines in the north-west and middle of Saudi Arabia during 2016/17. Other proposed wind turbines will be installed throughout the country over the next few years; thus, EUROBATS guidelines should be adopted for better assessment. Bat protection efforts continue as planned with several techniques such as bats houses, clay houses, vertical and horizontal plywood. Findings of these different practices will be communicated to the EUROBATS IWG on Man-made Purpose-built Bat Roosts.

Serbia: The Ministry of Agriculture and Environmental Protection is still responsible for environmental issues in Serbia. All the procedures within the Ministry in order to ratify the EUROBATS Agreement have been finalised; however, it is still being considered by the Government and not yet scheduled for ratification in the Parliament. Full funding of the bat roosts monitoring by the Ministry continues for the second year, and several important bat roosts (not previously known) have been found within the scope of this project. There is still a total of 30 bat species in the national fauna. The first PhD thesis on bats has been successfully defended in Serbia (by Milan Paunović at the Faculty of Biology, Belgrade University). The Serbian Academy of Sciences and Arts has initiated a publication on the Bat Fauna of Serbia. A bat research team gathered around the Natural History Museum and Wildlife Conservation Society “Mustela” has already summarised all the data on bats from Serbia, including its own, and has analysed the data from the faunistic perspective. Currently, the data and the analyses are being prepared for publication as a book, due by the middle of the year 2017. At the continuing requests from the AC members, copies of Serbian guidelines for bats and EIA are made available at the AC meeting.

Tunisia:

- Annual surveys were conducted during March-April and July-September in northern Tunisia; nevertheless, the access to the sites was limited due to the security situation.
- First record of *Nyctinomus aegyptiacus* for Tunisia has been published and further investigation is needed to explore its distribution area.
- A survey was conducted in 2016/2017 on corona virus involving eight species
- International Bat Night was celebrated at three sites in the period between 25 August and 7th September 2016, with 150 attendees for each site. Lectures and workshops for children were carried out, presentation for adult, as well as a tour

with a bat detector. Public media and social networks provided a good coverage in the local newspapers.

Turkey: Wind energy is becoming very popular in Turkey. There are around 170 active wind farms, 35 in construction and hundreds more in the licensing period. Good news is that bats have been started to be considered in the environmental impact assessments, which mainly follows the EUROBATS guidelines. However, these assessments are mostly related to the requirements of international funding agencies but not as a necessity of the national schemes. Governmental agencies are considering implementation of the related guidelines for national assessment and monitoring schemes.

Short reports from the Observers

Protection and Preservation of Natural Environment in Albania (PPNEA) – Mr. Philippe Theou submitted a written report before AC22, though PPNEA was not represented at the meeting: Since AC20 held in Montenegro, many activities on bat conservation have been organised in Albania by the civil society. The 3rd and the 4th Albanian Bat Nights were followed by many presentations in schools, within the framework of the VIS and GIZ (Gesellschaft für Internationale Zusammenarbeit) implemented activities in regional parks of north Albania.

In collaboration with an EU-funded project Natura 2000, data have been collected for the first time in many protected areas throughout the country, with trainings being organised for rangers and biodiversity specialists of the areas.

Many projects on cave tourism have followed to insure that the biodiversity of the Albanian caves, and especially bats, would not be impacted by economical activities. Collaboration with Slovenian colleagues has also taken place to ensure the protection of the cave fauna.

Additionally, former military bunkers and tunnels from the communist era have been particularly targeted for communication purposes. In the Sazan Island, key bunkers known to host *P.kolombatovicii* have been protected from invasive touristic activities in the framework of the project led by the French Conservatoire du Littoral. Further, in collaboration with the NGO Bunk'art and the N2000 project, an exhibition on biodiversity and bunkers has been installed in one of the main visited museums of the country.

Last February, a project implemented by the NGO Cultural Heritage Without Borders Albania and funded by the Swedish Cooperation started with the aim of improving the touristic experience of the UNESCO city Gjirokaster. This city is hosting one of the colonies designated by Albania to be a EUROBATS' important European site. Participants underlined the importance of protecting the colony, but also increasing the communication about bats using the castle, making it unique for the country.

Finally, communication tools were produced, including the Albanian version of the EUROBATS leaflet on Bats and Forest, and social media articles (Facebook page : Lakuriqët-e-Natës-Bats-in-Albania).

Green Balkans (Bulgaria): Green Balkans' "Building expert capacity for gathering data about bats in Bulgaria" project was implemented in 2016. The purpose of this project was building expert capacity for research and conservation of bats in Bulgaria, thus contributing to the quantity and quality of the data at the NBMS. The project achieved the following results: 20 new fieldwork assistants were trained in collecting data and entering this data via the public section of the NBMS; the expertise, knowledge, and skills of 20 biologists and fieldwork assistants, currently involved in bat research, were enhanced; 20 people were trained in bat sound identification; new data about underground sites were gathered; monitoring of bat boxes was implemented; the public awareness was raised. Within this project the first "Manual for Bat Calls Analysis" was printed in the country (Green Balkans would like to thank BCT and the London Zoological Society for the workshops organized in Bulgaria and some information used in the publication).

In 2016 the Green Balkans NGO campaign named "Wild Neighbours" was initiated. The campaign aimed at the popularization of the cities and buildings dwellings of protected species, to prevent the dramatic decline in bats and swift population caused by the national program for insulation of buildings, to change the buildings' insulation related regulations. Within the campaign the pilot for Bulgaria boxes for bats and swifts was made and would be installed, aimed at compensating for the lack of roosts, caused by insulation. Meetings with institutions were organised and press-releases on the topic were distributed. In 2016, the Green Balkans organised the Bat Night celebration in the cities of Plovdiv and Stara Zagora. The effort for the treatment of bats continued in the only official Wildlife Rescue and Rehabilitation Center. The publication of Český svaz ochránců přírody – *Medical care for bats* was translated from English and it was uploaded for public use. Tens of signals from people for bats in

distress as well as whole bat colonies were received and responded to. With the help of the colleagues and bat workers from Bulgaria, the work on the website for bat conservation in Bulgaria www.greenbalkans.org/prilepi continued. Presentations in schools and kinder gardens were made about the importance of bats, and the need for their protection. A press-release about the Bat of the Year campaign of BatLife Europe was distributed.

Croatian Biospeleological Society: During the previous year the Society has monitored several underground and overground sites. It has continued to carry out monitoring of cave Veternica, a Natura 2000 site. During the winter visit a certain number of dead bats were recorded, a situation Ms. Daniela Hamidović has already described. The Society hopes to resolve that situation soon so it can organize future actions. Also Croatian Biospeleological Society has conducted monitoring of bats in several underground sites in National Park Plitvice and overground roosts in Međimurje County.

The Society has conducted a survey of cave Vrlovka, also a Natura 2000 site. The survey revealed no possibility for opening the cave for tourists due to the presence of both nursery and hibernation colonies.

Apart from monitoring and surveys conducted at underground and overground sites, the Society has also carried out a survey of bat fauna on the island of Lokrum, a special forest reserve, near Dubrovnik city, after an interval of about 50 years.

Also during the last year, the Society's members participated actively in rehabilitation of bats as part of support and cooperation with the AWAP Association for wild animals protection. Additionally, the Society participated in European Bat Night events at several locations around Croatia (Zagreb, Plitvice National Park, Lokrum island).

Another important issue represented the question of mitigation implementation for the Jelinak wind farm posed by bat experts mostly from CBSS to the Ministry in 2016, which has still not been officially answered.

Tragus (Croatia): Association for Bat Conservation Tragus continued with the research of the bat fauna on selected localities in the National Park Brijuni, which resulted in 15 species being recorded on the island. Again, the most important result was the capture of *Nyctalus lasiopterus* – over 40 individuals were captured in a net, including a female, for the first time in Croatia. As a part of this project, International Bat Night was also organized.

EU NATURA 2000 Integration Project (NIP) – Inventory of bats in the continental region of Croatia has been finished. The project lasted for almost three years and research activities resulted in confirmation of 24 out of 28 expected bat species, 73 new roosts and altogether 1,423 new bat records for this region. Field research was carried out in 52 grid cells and Tragus provided key expert and conducted field research in 32 grids cells, while for 20 grid cells field research was carried out by Geonatura Ltd.

Traditionally, Tragus took part in the International Bat Night events in Nature Park Medvednica, ZOO Zagreb and Krapina (for Public institution for protected areas in Krapinsko-zagorska County). Our members led guided tours with bat-detectors, provided educational lectures and worked with children on creative activities (bat origami, bat tattoos for kids, etc.).

Tragus took part in research, conducted by Mirna Mazija as a freelance consultant, in four protected areas in Brodsko-posavska County, where eleven bat species were recorded, with high densities of *Barbastella barbastellus* and *Myotis bechsteinii* in virgin forest Prašnik. In 2017, Tragus started with the monitoring of bats in Vrlovka cave, which was used as a tourist cave since 1928, and where visitor infrastructure has been recently rebuilt, thus resulting in the need for the visitor's management plan to be defined. With a partner organisation Bioteka, Tragus works on citizen science projects to support bat populations in a wider area of Krka National Park.

Geonatura (Croatia): Geonatura is specialized in consultancy services for nature protection, inventory and monitoring. Among others, it has a team specialized in different types of bat fauna research. Since 2013, Geonatura has been conducting monitoring projects and baseline surveys, collecting new data on species composition, bat activity, habitat use, potential and current roosts, foraging areas and potential migration routes. Through post-construction monitoring at four wind farm locations in Croatia Geonatura has recorded more than 300 bat fatalities (more than 50 bats in 2016) and is currently working on methods to design effective mitigation measures to protect endangered bat populations. In 2016 Geonatura also produced an expert study as a baseline of a detailed Cave Management Plan for the wider area of Krka National Park with the purpose of bat fauna monitoring and conservation, which is the first management plan of this sort in Croatia.

SFEPM (France): The regional bat coordinators of the SFEPM met twice in 2016 to evaluate how to implement the 3rd national action plan for bats and its special focus on the greater noctule. A protocol for the study of this species in Southern France was set up.

During the two-month period (11th July - 11th September 2016) chosen for the International Bat Night focusing on bats and agriculture, the SFEPM recorded 295 events with more than 11,000 participants in 50% of the events.

In the autumn 2015 the French General Direction for Risks Prevention (DGPR) decided to choose as national recommendations the document produced by the wind energy. The SFEPM working group on bats and wind turbines could not accept some propositions made by the developers and decided to update its own guidelines for pre-construction impact assessment and post-construction monitoring and three documents were put online on the SFEPM website. The links are to be found in the 2017 report of the IWG on wind turbines.

NABU (Germany): NABU continues to intensify activities on communication and education. The NABU homepage already offers a variety of advice on bats, such as an elaborate helpline for frequently asked questions. Because of the growing necessity to advise people that have found young or injured bats, a central emergency call centre was established in 2016, called "Bat Hotline". In case of more specific problems, phone numbers of a network of regional bat experts are provided. An evaluation of the use of the hotline in 2016 shows that it is a very successful tool and, it will, therefore, be continued.

A project called "Bat cities", co-funded by the Federal Agency for Nature Conservation by means of the Federal Ministry, began in 2016. It aims at campaigning to promote bat protection in urban areas, as well as acquiring and training new bat workers, especially in cities. During the pilot phase in 2016, three cities (Berlin, Hamburg and Leipzig) were chosen to implement the project by offering workshops and seminars on bats. Further cities are encouraged to join the project in the long term.

In order to celebrate the 20th anniversary of International Bat Night during the last week-end of August 2016, regional and local NABU groups organized altogether about 100 Bat Nights all over Germany. The central event with several hundred people attending took place in Hesse.

The action „Bats welcome“ still continues in most of the Länder, and alone in Hesse more than 1,000 houses are now acknowledged.

Very recently a position paper of NABU on “Nature Friendly Use of Wind Energy“ has been published. Amongst others the paper is dealing with the possible negative effects of wind turbines on bats. Very detailed advice is given on how to avoid and mitigate negative impacts (e.g. by avoiding unfavourable sitings such as old growth forests), requesting high quality experts for impact studies and asking for a more adapted EIA law. The paper, thus, closely follows the stipulations of the actual EUROBATS guidelines on wind turbines and bats, and is available for download at:

https://www.nabu.de/imperia/md/content/nabude/energie/wind/170320_positionspapier_naturvertraegliche_nutzung_windenergie.pdf

The next national bat conference of NABU will be held from 7.-9. April 2017 in Wetzlar, expecting about 400 participants.

NABU is a founding member and trustee of BatLife Europe and continues to regularly follow the meetings.

Leibniz-Institute for Zoo and Wildlife Research – IZW (Germany): In 2016, the Leibniz Institute for Zoo and Wildlife Research (IZW) hosted a workshop about the effects of light pollution on bats in Berlin. This event was made possible by the generous support of the German Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (Bundesministerium für Umwelt, Naturschutz, Bau und Reaktorsicherheit BMUB). IZW would like to express its sincere gratitude for this financial contribution. The meeting consisted of a one-day public symposium with invited lectures that reported the current knowledge on the effects of light pollution on bats. This was followed by a two-day non-public workshop for the IWG members and symposium speakers to work on a draft guideline on how to mitigate the negative effects of artificial light on bats. This draft has been submitted at AC22 to the IWG members for further refinement.

In addition, IZW has organized another successful International Berlin Bat Meeting (Are Bats Special?) with about 320 participants from 32 countries. Owing to the generous support by EUROBATS, some members of the EUROBATS community from east European countries were supported by travel grants. On behalf of the recipients IZW wanted to thank EUROBATS for making this support possible.

The book “Bats in the Anthropocene: Conservation of Bats in a changing World”, which was co-sponsored by EUROBATS, has been downloaded so far more than 150.000 times. According to the Springer editor, “Bats in the Anthropocene” is the most successful e-book published by Springer.

In late 2016, IZW conducted a survey for the German Umweltbundesamt, to evaluate the effect of sticky traps as a cause of mortality for bats. The report has been recently submitted and a publication is in progress. The IZW is continuing its efforts in conducting applied research related to the conservation of bats. Further, it is involved in capacity building by teaching and advising students in the area of bat conservation and in advising stakeholders in bat-human conflicts.

Bundesverband für Fledermauskunde Deutschland e.V. (BVF, Germany): The Federal Association for Bat Expertise in Germany (BVF) had three main activities last year.

The first one dealt with qualification for consultants and standards for reports/surveys. A workshop carried out with the German Federal Agency for Nature Conservation and other German umbrella organizations led to a position paper. A working group of the BVF was currently working on dedicated references for the work with bats. A concentrated position paper for the work with bats was being published. Detailed guidelines dealing with bioacoustic monitoring, mistnetting, radiotelemetry and for house-dwelling bats would follow in the course of the year.

Another workshop discussed the necessary structure for data handling and biological databases to enhance the cooperation between NGOs and public authorities. With respect to the increasing number of volunteers and citizen scientists, new assessments on the submission of biological data and the underlying standards got new significance, but also the exchange between different – sometimes already existing database systems – had to be carried out. Minimum standards for comprehensive databases were discussed and the results would be published shortly.

Wind energy was still a subject of major interest. Representatives of the BVF stepped into a dialogue with other NGOs but also with authorities. A position paper regarding this topic was being developed and would soon be published. A dialogue forum between conservationists, authorities, and industry would be established soon,

organized by the Competence Centre for Nature Conservation and Energy Transition. The BVF intended to actively join this dialogue forum.

Human Link (Lebanon): The Middle East Respiratory Syndrome (MERS) was first identified in 2012 and is caused by MERS-CoV, named beta-coronavirus. Epidemiological studies revealed that the virus is zoonotic, that it is prevalent among camels, and that index human cases are among those individuals exposed to camels. Sequence analysis of MERS revealed that it is closely associated with beta-coronaviruses of bats rather than other human coronaviruses. Research indicated that some bat coronaviruses have genome fragments similar to MERS. Human Link has been conducting surveillance for coronaviruses in bat species of Lebanon, Egypt, and Tunisia. Its findings has indicated that coronaviruses are common in bats of these countries. Recent findings have shown that genome segments in the RdRp gene show similarity to MERS-CoV, however those findings need to be confirmed through further genetic analysis. Surveillance for coronaviruses in bats needs to be supported not only to understand the evolution of MERS, but to identify novel virus species that may be of public health concern.

Zoogdiervereniging/ Dutch Mammal Society (DMS, Netherlands): The Society has started a long running project, together with the industry and local authorities, to create awareness for roosting facilities for birds and bats and to show how they can easily be incorporated in new buildings. The project is a joint effort with Bird Protection Netherlands and facilities will be monitored for at least three years. As part of the project a website will be set up with examples and tips and tricks for these kinds of 'Nature inclusive' initiatives.

DMS has also started a project to create awareness of migration of *Myotis dasycneme*, and to show how several local authorities should and can work together to protect the migration route. DMS has provided maps showing points where conditions should be improved to keep a well-functioning migration route.

In several hibernation sites touristic activities are allowed. DMS has investigated what the impact on the hibernating bats is, and how the effects can be avoided, which is the first steps towards a comprehensive management plan for the underground hibernation sites. DMS has also started projects in several fortresses the usage of which is changing (to a more intense usage), in order to prevent negative effects on the function of these fortresses for (mainly swarming and hibernating) bats. In the

largest hibernation site for *Myotis mystacinus* the number of bats have dropped from 1,200 to 128 in five years. Several possible causes have been investigated, but so far no plausible cause has been detected. Further research is needed.

DMS contributed to International Bat Night, organised several educational activities and is continuing to train volunteers.

BatLife Europe: Since the last AC meeting, BatLife Europe has been engaged in four main activities, one of which was preparing an update of the European Hibernacula indicator. More detailed information on this is included in the report of the IWG on Monitoring and Indicators.

BatLife Europe also organized the Bat of the Year again in 2016 – it was the noctule. Within the framework of the BoY, BatLife Europe gives its partners a backbone for activities, such as postcards and a factsheet to hand out, and, for this year, a special project to collect data on day active noctules has been designed. It has been decided to prolong this species into 2017. BatLife Europe would appreciate to hear from other colleagues about the activities that have already been or will be undertaken in the year of the Noctule.

After many of the colleagues have put effort into the joint EU-EUROBATS Species Action Plan on Bats, BatLife Europe has been asking the DG Environment about the further process of adoption and implementation of the plan. Through informal channels BatLife Europe has heard that the plan has been postponed until after the EU REFIT process. Considering that the REFIT is over, BatLife Europe intends to again approach the EU about the further steps and the timeline, either directly or during the meetings of the DG with the NGO European Habitat Forum, of which BatLife Europe is a member.

BatLife Europe was also one of the partners in the creation of a (inter)national bat box monitoring database. This is an open database to collect, store, analyse and share results of monitoring bat boxes, both for professionals and volunteers. It is an initiative of a number of volunteers, the city of Utrecht, and the Mammal Society, with Batlife Europe. A basic version is now online at www.vleermuiskasten.nl, and it is being translated into English, German and French. The database will be expanded with more functionalities in the near future.

BatLife Europe is an umbrella organization for the 36 NGOs that are its partners, and is always ready to act on their behalf. BatLife Europe invited NGOs to contact it if they could make use of its support.

“Uniting the efforts of Romanian Bat Conservation” (Romania): In the 2014-2016 period significant discoveries were made regarding Romanian bat colonies, most notably in the Topolnița cave (7,400+ medium-sized *Rhinolophus*), Buhui cave (5,500+ bats), and in an abandoned building in Sasca Montană locality (nursery of 750+ bats of three species). Several of these sites are now protected through practical conservation work, especially overground roost in Transylvania and South-Western Romania. In this period the distribution of several species was also updated, especially that of *Rhinolophus mehelyi* and *Rhinolophus blasii*. The above discoveries and conservation works were done within the framework of the project “Protecting the horseshoe bats in Romania”, financed by the Conservation Leadership Programme, and the project “Long term conservation of bats in their anthropic environment by high involvement of local communities”, financed by EEA grants and Norway grants. To determine the long-term effect of conservation actions, monitoring of new and old sites is crucial, including that of closed caves and 300 bat boxes placed in North-Western Romania, within the framework of the LIFE project.

Awareness and education activities intensified in this period, resulting in an obvious positive change in the attitude of the public and the media towards bats and bat protection. A bat rehabilitation center was also opened in Bucharest, taking care of at least 470 bats in 2016, and involving more than 400 volunteers and an intensive media presence. However, the attitude of decision makers is rarely supportive, being mostly unpredictable, and sometimes bat-unfriendly. Continentally important roosts and high quality habitats are still threatened, with bat researchers not being part of official decision making structures.

In this period the Romanian bat research community has also diversified and expanded, but internal communication is slim to non-existent. Opinions differ regarding the methods of bat conservation and research, with no functional national bat monitoring, no joint database or long term data analysis. There is also a lack of communication from national representatives in international structures.

Based on this need of communication and joint positions, in 2015 the project “Uniting the efforts of Romanian bat conservation” was initiated by Szilárd Bücs within the

framework of the Klaus Toepfer Fellowship Programme. The program itself is a 400+ hour long intensive training at the International Academy of Nature Conservation, Island of Vilm, Germany, with the mandatory implementation of a project with local importance. Done on a voluntary basis and with funding obtained from sponsors and through crowdfunding (still ongoing), the project had the following main results:

- The 2nd National Bat Research Conference was organized in October 2016, after a ten year break;
- Communication channels were created for the bat research community;
- Ethical guidelines of Romanian bat research were jointly established by bat researchers;
- The public received recommendations in case of contact with bats (especially in caves);
- The most complex and diverse online resource about Romanian bats was launched in December 2016, at www.lilieci.ro, in three languages (Romanian, Hungarian, English);
- In March 2017 the first public vote took place to designate “Bat species of the year” in Romania, with *Plecotus auritus* being the winner for this year.

The impact of the project will be seen in the future, but it is certain that much needed communication channels have been established, bridges have been created between bat experts and the public, and the visibility of bat protection has been enhanced. The project coordinator wishes to thank the sponsors and contributors, especially Arbeitskreis Fledermaus Sachsen-Anhalt, Pettersson Elektronik AB, the Warwickshire Bat Group, Bund Freunde der Erde, Daisler Print House, and the Klaus Töepfer Fellowship Programme.

Institute for Biological Research Siniša Stanković (IBISS, Serbia): During the regular roost monitoring within the project “Monitoring of bat roosts and populations in Serbia” (Grant No. 401-00-200/2016-17, supported by Ministry of Agriculture and Environmental protection of Serbia) and bat ringing activities, IBISS has been collecting the faecal samples of bats in Serbia for virus detection. Virological analyses have been conducted in a cooperation with Gabor Kemenesi from the University of Pécs, Szentágothai Research Centre, Virological Research Group, Hungary. A novel rotavirus in *Miniopterus schreibersii* has been discovered, and results have been published in a paper:

Bányai K, Kemenesi G, Budinski I, Földes F, Zana B, Marton S, Varga-Kugler R, Oldal M, Kurucz K, Jakab F (2017) Candidate new rotavirus species in Schreiber's bats, Serbia. *Infection, Genetics and Evolution* 48: 19-26.

Also, some of the results have been presented at the International Meeting on Emerging Disease and Surveillance, that took place from the 4th till the 7th of November, 2016, in Vienna, Austria:

Kemenesi G, Zana B, Kurucz K, Vlaschenko AS, Kravchenko K, Budinski I, Szodoray, Görföl T, Bánai K, Jakab F (2017) High diversity of replication-associated protein encoding circular viruses in guano samples of European bats. *International Journal of Infectious Diseases* 53S: 122.

Further collaboration and sampling will continue in 2017.

There is an ongoing research of genetic population structure of Mediterranean horseshoe bats in Serbia, as well as phylogeography of this species on the Balkan peninsula.

In 2016, we started collaboration with the group of Dr. Danilo Russo (Wildlife Research Unit, Dipartimento di Agraria, Università degli Studi di Napoli Federico II, Portici (NA), Italy). Ivana Budinski spent five months in Italy participating in three different bat research projects. We published one paper, and two are in preparation:

Ancillotto L, Ariano A, Nardone V, Budinski I, Rydell J, Russo D (2017) Effects of free-ranging cattle and landscape complexity on bat foraging: Implications for bat conservation and livestock management. *Agriculture, Ecosystems and Environment* 241: 54-61.

Wildlife Conservation Society “Mustela” (Serbia): The general public in Serbia recognises the Natural History Museum in Belgrade and the “Mustela” society as centers in charge for bat research and conservation, although there is still no official Bat Rescue and Rehabilitation center in Serbia. With their combined efforts, the NHM and “Mustela” have succeeded to educate people to contact them in case of finding injured or young bats, and also in cases of bat colonies in their flats or settlements. Unusually high number of baby bats during summer 2016 fell from their nursery colonies, but “Mustela” is pleased to report that most of them were successfully raised and released in September 2016. The Society will try to conduct more systematic bat research on the territory of Serbia, and will continue to be involved in nursing and rehabilitation of bats, as in the previous years.

SECEMU /Spanish Bat Conservation Association: Firstly, the Association wanted to acknowledge the help of the EUROBATs secretariat that made the presence of the Spanish bat Society (SECEMU) possible at AC22.

During 2016, SECEMU coordinated the celebration of International Bat Night. IBN events were organized in many localities by Spanish local groups with the attendance of hundreds of people, which showed that IBN kept being a very successful tool to spread the importance of bat conservation for human lives.

Still, the most important event during the previous year was the celebration of the sixth Bat Conference by SECEMU, which was organized together with the Portuguese colleagues and was held in Portugal for the first time. The conference was also attended by the Gib-Bat Group from Gibraltar, and, for the first time, there was an opportunity to exchange experiences and share discussions among bat groups at the level of the whole Iberian Peninsula.

Additionally, the webpage of the Association was completely renewed (secemu.org) during 2016, and is becoming quite an active page, from where the publication “Barbastella” can be freely download and which will soon be available in English as well.

Finally, Secemu is actively collaborating in all the efforts that are taking place to achieve a full membership and signing of the Agreement by the Spanish government any time soon.

Vincent Wildlife Trust (United Kingdom): The core of the Vincent Wildlife Trust’s bat work continues to be the management and enhancement of its greater and lesser horseshoe bat reserves. The buildings used as roosts by these species continue to be enhanced for the bats, and the techniques VWT uses and advocates are increasingly being employed by ecological consultants in mitigation projects. VWT acts as an advisory body to other NGOs and environmental bodies undertaking roost creation and enhancement. The Trust is also working at a landscape scale to promote the conservation of these species. It is a partner in the Devon Greater Horseshoe Bat Project, which seeks to improve habitat connectivity and improve foraging for the species in south-west England. In Ireland the Trust is working in conjunction with the government developing pilot schemes to enhance landscape features and roosting opportunities for lesser horseshoe bats.

VWT has formed a partnership with Conservation Evidence to mutually promote the work of the two organisations. VWT will be the first of Conservation Evidence's 'Evidence Champions'.

VWT research activities include the funding of PhD studentships at British and Irish universities. Its Bechstein's bat research, on the genetic structure and population size of the species in Britain using a combination of molecular and landscape ecology tools (with the University of Exeter), is nearing completion and the results of this work will be presented at the European Bat Research Symposium (EBRS) in August 2017. Likewise, its studies of the population genetics of lesser horseshoe bats in Ireland (with Waterford Institute of Technology), is nearing completion. The preliminary finding of this joint project with the University of Exeter on landscape permeability issue for greater horseshoe bats will also be presented at the EBRS.

One issue the Trust would also like to raise at the AC is a potential area of conflict between greater and lesser horseshoe bats. As the populations of both these species in Britain recover, VWT is observing a range shift of greater horseshoe bats north into areas of Wales where it was previously unrecorded and an extension of the range of lesser horseshoe bats to the east in the English midlands. Although these range expansions are welcome one side effect of the population increase in greater horseshoes is that they are seeking out new roosting opportunities. Where small numbers of greater horseshoes are moving into buildings occupied by maternity colonies of lesser horseshoe bats, the latter are being either completely displaced or significant reductions in their colony size are being observing. The Trust would like to hear from the colleagues on the continent if they have been observing similar interactions between these species.

Bat Conservation Trust (United Kingdom):

BCT has continued to work with its NGO partners on influencing the 'REFIT' exercise, and was able to celebrate with other NGOs the fact that the EC Commission has now declared the Birds and Habitats Directives 'fit for purpose'. In the wake of the EU referendum in the UK, efforts have shifted to working to ensure that the protection of bats in the UK is not in any way eroded.

BCT has received funding from the Heritage Lottery Fund to undertake the development phase of a project on Bats and Churches. This project is in collaboration with Natural England, Historic England, Church of England and The Churches

Conservation Trust. It is hoped that this project will begin to address issues experienced by a small number of churches in England with large populations of bats.

BCT has recently started a new project: Bearing Witness for Wildlife. This comprises two parts: one builds on BCT's Investigations Project to include other native species where crime is considered to be a factor affecting their conservation. The other part will look at the effectiveness of roost mitigation through both desk studies and fieldwork. As part of this project, BCT held a Mitigation Case Studies Forum in January 2017. A report of this will be available in the next couple of months

6. Secretariat report

The Executive Secretary proceeded to give a short report and referred to the written version available as Doc.EUROBATS.AC22.4. He informed the participants that the Secretary, Ms. Kate Horn, was back from her extended maternity related leave. On the other hand, the working time of Dr. Suren Gazaryan, EUROBATS Scientific officer, had to be reduced to 50%. Mr. Streit explained that this was increasingly becoming a problem, especially in view of the workload Dr. Gazaryan had. Additionally, considering the intensity of the preparations for the next MoP, the Executive Secretary intended to request from the Standing Committee to consider the possibility of increasing the occupancy of this post to at least 80% during the following year, subject to the availability of funds. He advised the representatives of the Parties to encourage the administrative focal points of their countries to increase this post occupancy to a higher level at the next MoP. Mr. Streit expressed his hope that this situation would improve.

He proceeded to inform the delegates that no new accessions had occurred since the last AC meeting. It was obvious from the reports of the Range States that several countries were working on their accession, and Mr. Streit hoped that this would materialize before the next MoP.

Regarding the outreach activities of the secretariat, the Executive Secretary drew the delegates' attention to the EUROBATS Publication Series No. 6, whose French and German translations had become available. The secretariat had been receiving many orders for these publications, the demand for them had remained unchanged, as they were dealing with a very important topic on the agenda of bat conservation. The Executive Secretary also reminded the delegates that a special EUROBATS publication, Publication Series Number 7, had become available owing to Mr. Peter

Lina, all the delegates, as well as other experts who were not present at this meeting. This publication had become a success from the moment it was published, and not only was it highly demanded, but it also drew attention to all the other EUROBATS publications, so that in total more than 2,600 publications were shipped in the period from January till March 2017. The Executive Secretary thanked all delegates, especially Mr. Lina, for their tremendous work.

Special projects within the EPI framework continued to be equally successful. A number of projects were adopted with the voluntary contributions received from Germany, Switzerland, and Luxembourg. The results of these projects were published on the EUROBATS website to demonstrate how successful this small-scale funding programme was. The problems the secretariat was facing due to the introduction of the new financial system had been resolved in the meantime, and the Executive Secretary encouraged the delegates to keep submitting their proposals.

The online reporting system was already well established, though it was still under development. The next big challenge for it would be the following year, when the Parties had to submit their reports for the MoP. As this exercise would involve the delegates present at the meeting, Mr. Streit invited them to use this opportunity and discuss any issues with the Scientific Officer, or, at a later stage, to contact the secretariat in case of any doubts

Mr. Streit further informed the delegates that the final draft of the joint EU-EUROBATS Species Action Plan on Bats should have been sent to the EU Member States and experts for their final comments in the week before AC22. Mr. Streit stated that the plan was hopefully going to be adopted before summer 2017, but that this depended on the EU Commission.

In conclusion, Mr. Streit reported on a new contact that emerged only in the week before the meeting and was therefore not included in the secretariat report. It was contact with Interpol and it regarded the topic of wildlife crime, which while not directly concerned with the Agreement, could be interesting for the delegates as many of them were active in other spheres as well. Mr. Streit invited the participants to contact the secretariat if they heard of any instances of wildlife crime that had a transboundary character, such as illegal exports. The secretariat would then establish the link to Interpol.

In relation to the joint EU-EUROBATS Species Action Plan on Bats, the Chair asked the delegates if any of them had been contacted about it. In his opinion, the previous versions were weak and the consultants engaged did not seem to be bat experts. He was not excluding the possibility that the final version might be good, but he encouraged the delegates of the EU member states that were all represented at the Habitats Committee to look at the final version and pass their feedback to their representatives in the committee.

7. Reports from Intersessional Working Groups (IWG)

The Chair of the Advisory Committee asked the Convenors of the Intersessional Working Groups to report on the activities and progress of their groups since the last AC meeting. There were 16 IWGs in total.

1. IWG on Bat Conservation and Sustainable Forest Management:

The Convenor, Mr. Anthony Mitchell-Jones, was not present at AC22, but he had submitted a discussion paper before the meeting. There being no further remarks from other members of the IWG, the Chair concluded that this IWG would not meet during AC22. He also invited the delegates to contact either the secretariat or the Convenor himself if they had any comments on the paper.

2. IWG on Overground Roosts:

The Convenor, Dr. Stéphane Aulagnier, drew the delegates' attention to the discussion paper that he had submitted before AC22 (Doc.EUROBATS.AC22.5), and which the members of the IWG intended to discuss during their meeting. The paper represented a draft document that was intended to help the IWG prepare a resolution for the next MoP.

3. IWG on Monitoring and Indicators:

The Convenor, Dr. Jasja Dekker, explained that the IWG had been established to: 1. Develop, and periodically update, a pan-European population indicator based on existing data (through BatLife Europe); 2. Build capacity for monitoring in countries which did not have national monitoring schemes; 3. Develop a data sharing structure for monitoring data.

Between AC meetings work was mainly done on goal 1. On behalf of BatLife Europe Primoz Presetnik had been collecting trend information from those NGOs and/or states who expressed an interest to join the updated Hibernacula indicator. Participants had

received a document with an outline of the project, planning and the data requirements. Subsequently, the national trends they calculated and shared would be compiled into a new indicator.

So far data from ten participants had been received, with a further eight or possibly even eleven participants still preparing the data.

The software the IWG used for the trend calculations, TRIM, was now released as a free package in the statistical software R. This may make calculations of national trends easier.

4. IWG on Impact of Roads and Other Traffic Infrastructures on Bats:

The Convenor, Ms. Jean Matthews, reported that the IWG was working on the publication, the production of which had been delayed due to the fact that the publication of the CEDR reports had also been delayed. The IWG wanted to include the findings of these reports in their publication and had, therefore, put the timetable back. The Convenor invited the delegates to join the meeting of the IWG at which the results of the CEDR reports would be presented, and she also invited them to share further examples of case studies, particularly those referring to mitigation and monitoring, for inclusion in the publication.

The Chair then informed the delegates that AC22 was the last meeting at which Ms. Jean Matthews would participate as a delegate from the United Kingdom, but that she had kindly agreed to help finalise the publication.

5. IWG on Communication, Bat Conservation and Public Health:

The Convenor, Professor Paul Racey, explained that the report, available as Doc.EUROBATS.AC22.8, represented rather an exchange of information. He also asked the delegates to share any instance of false media reporting in their countries. The IWG intended to collate all that information and prepare appropriate responses, so that these were available to members, bat NGOs, and bat conservationists throughout Europe. He concluded by explaining that this request was triggered by an instance of inaccurate reporting by the BBC on a bat “plague” in Chile, and that it would be good to respond to such situations in a generic way.

6. IWG on Monitoring of Daily and Seasonal Movements on Bats:

The Convenor, Dr. Dino Scaravelli, explained that the IWG was busy collecting information, and that it would meet during AC22 to clarify what should be the target for the next MoP, since many projects were going on with different kind of results.

7. IWG on Purpose-built Man-Made Roosts:

The Convenor, Dr. Henry Schofield, informed the delegates that the IWG had collected the information that had been offered in the previous year from the Netherlands and Belgium, thus completing the set of information it needed. The IWG intended to meet at AC22 to try and wrap up its work.

8. IWG on Wind Turbines and Bat Populations:

The Convenor, Dr. Luisa Rodrigues, reported that a progress report on the work of the IWG (Doc.EUROBATS.AC22.10), including the analyses of the recently distributed questionnaires on implementation of mitigation and post-construction monitoring was submitted. The Convenor requested a meeting to discuss some points, such as (a) implementation of mitigation and post-construction monitoring, and (b) sensitivity maps, and also to discuss the work plan.

9. IWG on Bats and Light Pollution

The Convenor, Dr. Christian Voigt, was due to join the AC meeting at a later stage, and the Chair informed the delegates that the IWG would meet during AC22.

10. IWG on Quality of Assessments and Experience and Skills of Experts

A written summary was provided by the Convenors of this IWG.

The terms of reference of the IWG was Resolution 7.14, which instructed the AC to develop criteria of the required standard experience and skills of experts doing assessment studies on bats. Based on the results of AC21, where a draft table of necessary skills and knowledge had been developed, the IWG's aim was to develop a minimum criteria list for the next AC. There had been no major changes regarding the contents since the last meeting. The list would be prepared as an annex to the draft resolution to be prepared at the next AC meeting.

In the future process the IWG wanted to address the standards for the evaluation process.

As neither of the Co-Convenors could attend AC22, no meeting of this IWG was convened.

11 IWG on Conservation and Management of Critical Feeding Areas, Core Areas Around Colonies and Commuting Routes

The Convenor, Ms. Eeva-Maria Kyheröinen, reported that no real progress had been made between the two AC meetings, but that, since the IWG was close to the completion of its work, a small group of its members would meet during AC22 to finalise the work on the guidelines.

12 IWG on Bat Rescue and Rehabilitation for Bat Conservation, Research and Monitoring

The Convenor of the IWG, Dr. Helena Jahelková, explained that, at the time, the main goal of the IWG was the preparation of the guidelines on bat rescue and rehabilitation in view of bat conservation, public education and collection of faunistic data.

Particular items in the contents were discussed with the Co-Convenor, Dr. Lena Godlevska, and the first draft was rewritten to be better arranged. The following chapters of the draft guidelines were written: Introduction, basics for handling, transporting and keeping bats, FAQ (partly), bat rescue and rehabilitation used in bat research, conservation and public education (partly), occurrence data and monitoring, bats in public education, list of manuals and guidelines on bat rescue and rehabilitation, list of national bat rescue and rehabilitation centres, references. The documents of the IWG were available at EUROBATs workspace.

13 IWG on Bats, Insulation and Lining Materials

The Convenor of the IWG, Dr. Helena Jahelková, reported that the main goals of this IWG was to collect and share information on best practice for surveys, avoidance of fatalities and roost loss, as well as effective mitigation and compensation measures, and to develop guidelines. These particular chapters of the draft guidelines had been written: Introduction – bats and buildings in general, main threats, bat cycle and basic biology related to buildings insulation in general, pre-insulation survey (partly), methods and material used for insulation and the main threats and technical solutions for different types of insulation and compensation (partly), panel house insulation by polystyrene and foam, cavity insulation (partly), type of bat boxes, surveys of efficiency of the use of bat boxes on insulated houses (partly), list of companies offering bat

boxes for buildings (partly). The draft document was available at EUROBATs workspace.

14 IWG on Education

The Convenor, Dr. Hossein Zohoori, informed the delegates that the IWG was still compiling the list of existing examples of educational material, and, at the same time, trying to improve Life Café method for bat education and public awareness. The Convenor asked that the IWG members meet during AC22.

15. Ad hoc Working Group on the Annex to the Agreement

The Convenor, Mr. Tony Hutson, explained that the aim of this group was to consider potential amendments to the annex of species to which the Agreement applied. The Convenor already had a list of potential changes, and these would be discussed during the meeting of the group at AC22.

16. IWG on Autecological Studies

The Convenor, Dr. Stéphane Aulagnier, invited scientific focal points and observers to submit references and, at least, abstracts of projects conducted on autecology (roosts, migration, habitat and spatial use, foraging behaviour and diet) of priority species before the next AC meeting:

Rhinolophus blasii - *Eptesicus isabellinus* - *Plecotus kolombatovici* - *Plecotus sardus* - *Plecotus teneriffae* - *Nyctalus azoreum* - *Nyctalus lasiopterus* - *Pipistrellus hanaki* - *Pipistrellus maderensis* - *Myotis escalerae*.

A draft synthesis of the main results would be prepared for the next MoP.

Further to the reports of the IWGs on their activities since the last AC, there was a proposal for a new Working Group from Ms. Daniela Hamidović (Croatia). She explained that the IUCN Species Survival Commission's Bat Specialist Group, led by Prof. Tigga Kingston and Prof. Rodrigo Medellín, started a Bat Group Newsletter several years ago, and Prof. Paul Racey suggested that Ms. Hamidović should be the editor for the European region. The next issue was being prepared and was entirely dedicated to climate change and the challenges it brought to bat conservation, while seeking already acknowledged conservation evidence that had been recorded in bat populations. With the help of Dr. Hugo Rebelo from Portugal and several other experts, Ms. Hamidović prepared the article for the next issue of the IUCN Bat Specialist Group Newsletter, and it revealed that evidence already existed for *Pipistrellus kuhli*,

Pipistrellus nathusii, and *Hypsugo savii* with expansion of their ranges. Additionally, there was also still unpublished evidence of the negative trend for *Myotis daubentonii* recorded in the Czech Republic in the last 5 years due to harsh weather conditions. In the article Ms. Hamidović and Dr. Rebelo also tackled the questions of future directions and what should be done, and this could be the basis of the IWG that Ms. Hamidović and Dr. Rebelo would like to convene.

The Chair opened this proposal for discussion by reminding the participants that it was in the IWGs where the actual work of the AC was being done, and that it was by the output of the IWGs that the work of EUROBATS was being evaluated. The AC should not open up working groups lightly, as there were only so many IWGs that could be run simultaneously. On the other hand, climate change and bats were of great importance and it was quite a topical issue, probably of concern across all the Range States. The Chair asked the delegates for their comments on whether this issue should merit a working group.

Dr. Henry Schofield (Vincent Wildlife Trust) was in favour of opening this new IWG, as he considered this to be a very important topic area. Ms. Hamidović mentioned some of the broad changes in species movements, but also in Britain, on the national scale, some species had shown distinct movements in the last 10-15 years.

The Executive Secretary also strongly encouraged the establishing of the new IWG, and added that this topic was important on a higher political agenda as well, which might draw attention of new target groups to the work of EUROBATS.

The representative of Saudi Arabia, Dr. Abdulaziz Alagaili, was also in favour of the proposal. He mentioned that in Saudi Arabia the month of March was the breeding time of many bat species and that many new-born bats were dying because of climate change. If the temperature continued to rise, there would be even higher mortality during the critical period of breeding.

The Chair concluded that there was clearly great interest for the creation of this IWG. He suggested that an ad-hoc meeting be convened during AC22 with the view to setting up the new IWG. He also advised that clear terms of reference should be defined for the IWG: Climate change was a topic of general concern, but the question was if the IWG could achieve concrete results. If the group could define clear terms of reference that were specific and achievable, the Chair would recommend the AC to support the establishment of the new Working Group.

8. Reports from Working Groups convened during the Meeting

The Convenors of the IWGs were asked to submit a short report from their meetings.

1. IWG on Overground Roosts:

During the IWG meeting, the participants were presented with the proposal made available in document Doc.EUROBATS.AC22.5 in order to list the important overground roosts used by European bat species all over the year in all of the countries of the Eurobats Agreement for conservation purpose.

Firstly, at the question 'Which types of overground roosts?', they retained the six main types identified by the former IWG on bats in overground roosts: churches, castles/fortifications, houses/blocks of flats, barns/stables, bridges and trees. They suggested to add: monuments of cultural heritage, state and local administration buildings (schools, government buildings, libraries), abandoned or not finalized buildings, ruins, water towers.

Then, they discussed the criteria for identifying roosts of European importance. They agreed on a simple weighted scheme (number of bats * number of species * weight), without threshold, in order to be adapted to each country. The weight (1 or 2) should be issued from the European and Mediterranean Red List statuses, and the dependence of the species on overground roosts. For this purpose a table including all relevant species and updating the table published in Eurobats Publication Series No.4 would be prepared for discussion at the next AC meeting. Participants (and all scientific focal points and observers) were invited to send any relevant information to the first Co-Convenor of the IWG before AC23.

The following data would be required for each listed overground roost:

- Name of roost / site (or code number if the national authority considers the name to be confidential);
- Location (latitude, longitude, at least 10° x 10°);
- Type of roost / site (church, castle/fortification, etc.);
- Use by bats (all-year, maternity, other summer colony, hibernation, swarming, transient);
- Number of species recorded since 2010 (this date was discussed and agreed);

- Maximum number of bats of each species recorded on a single survey since 2010;
- Year of the last survey;
- Physical protection of the roost / site or other means of preventing unauthorised entry;
- Type of the legal protection of the roost / site if relevant (natural reserve, Natura 2000);
- Criteria used for listing this roost / site;
- Threats to the roost / site.

At the end of the meeting the IWG listed the main threats to overground roosts. The list would be provided after an additional check was done by the Co-Convenors.

2. IWG on Monitoring and Indicators:

During the meeting, the method used for calculating the European trend of hibernating bats was explained: The participants calculated national trends using TRIM, and they sent the outcomes of the trend analysis (trends, time totals, and standard errors) to the Coordinator, who with Statistics Netherlands calculated supernational and European trends per species. Thus, no original national data underlying the national trends needed to be shared.

BatLife Europe, in the person of Primoz Presetnik, had been collecting trend information from those NGOs and/or states who expressed an interest to join the updated Hibernacula indicator.

Participants were sent a document with an outline of the project, planning and the data requirements. Until the meeting, data from 11 participants had been received: Albania, Belgium, Bosnia and Herzegovina, Czech Republic, Estonia, France, Ireland, Latvia, Netherland, Slovenia and the United Kingdom. A number of other participants were at the process of collecting and analysing data. More on this topic could be found on <http://www.batlife-europe.info/publications-resources/>.

The software used for the trend calculations, TRIM, had been released as a free package in the statistical software R. This may make calculations of national trends easier. The package could be downloaded at <https://cran.r->

project.org/web/packages/rtrim/, where also links to publications explaining the methodology and a manual for the software could be found.

Subsequently, the members of the IWG suggested to work on European summer roost trends in the coming year, trends for detecting effects of pollution or forest decay. However, it was decided to first finish the current work and to survey the way the Range States were (nationally) monitoring bats in their countries. Armed with this information, the IWG would make a new work plan to be decided upon at AC 23.

Lastly, the Convenor explained the methodology that was used for calculating the European indicator. This method was explained in the report (see <http://www.eea.europa.eu/publications/european-bat-population-trends-2013>) as well as the paper on the first European bat indicator (Van der Meij et al., 2015. Return of the bats? A prototype indicator of trends in European bat populations in underground hibernacula. *Mammalian Biology* 80(3): 170-177), and it was not to be reported at AC22. Because the trend was build up hierarchically, it was possible to, for example, create trends for bats relying on forest to forage and/or roost, for bats that fed on water organism etc., and, in that way, build up indicators aimed at specific threats such as water pollution or forest loss.

The deliverables for the next AC of the IWG were set:

- An updated European bat hibernacula indicator;
- Results of a survey of the state of bat monitoring in the Range States.

Based on this, the IWG would decide at the next AC meeting whether it would advise the MoP to dissolve the IWG, or whether new goals were to be set.

3. IWG on Impact of Roads and Other Traffic Infrastructures on Bats:

The background to the IWG was described: It was established at the 12th Eurobats Advisory Committee Meeting in Budapest, Hungary, 7 – 8 May 2007.

In 2010, the 6th Meeting of the Parties (MOP6) to Eurobats requested the AC to develop and publish a EUROBATs booklet highlighting the effects of roads on bats, and providing guidance on minimising the impact of traffic infrastructure projects on bats.

A questionnaire was completed and the results collated in 2010. A further questionnaire was completed in 2014. The results and a literature review were published at AC19 on Crete.

Resolution 7.9 adopted at MoP7

- Urged Parties and Non-Party Range States to develop appropriate national or supranational guidelines, drawing on the general guidance to be published by the Advisory Committee;
- Requested the Advisory Committee to publish a EUROBATS booklet highlighting the effects of roads on bats and providing guidance on minimising the impact of transport infrastructure projects on bats.

Work Programme

Work had started on the draft publication, but had been awaiting the results of two recent research projects considering the impacts on bats of roads and other transport infrastructure (where data was available). These were the UK Defra report (Berthinussen and Altringham, 2015) which was described at AC21, and the Conference of European Directors of Roads report (Elemeros et al, 2016, available at: <http://bios.au.dk/om-instituttet/organisation/faunaoekologi/projekter/safe-bat-paths/documents/>). Jasja Dekker, one of the co-authors, presented the findings of the CEDR project for discussion.

Further, the outline of the publication was described with the author or co-ordinator:

Chapter 1 Introduction (Jean Matthews), Chapter 2 Literature Review (Primož Presetnik), Chapter 3 General Information on the impact of roads on bats (Branko Karapandža), Chapter 4 Road Construction and upgrading of existing roads (Jean Matthews / Hermann Limpens), Chapter 5 Avoidance, mitigation and compensation measures (Branko Karapandža), Chapter 6 Monitoring (Jean Matthews / Jasja Dekker), Chapter 7 Other transport infrastructures not covered in other chapters (Jean Matthews), Chapter 8 Conclusions and Recommendations (Jean Matthews / Branko Karapandža / Jasja Dekker, Primož Presetnik), Literature and Further Reading (Primož Presetnik, Jasja Dekker), Annexes including : Further Information (Summary tables of further information from questionnaire), Additional Case Studies.

Thought it was not proposed to produce another questionnaire before finalising the publication, the authors would welcome:

- Any additional information on species impacted by roads, or on mortality from countries that had not been included in previous reports to the AC. A revised list would be circulated;

- Any relevant information not included in the CEDR report;
- Case studies of pre-construction surveys, mitigation or post-construction monitoring;
- Examples or guidance relating to geographical areas / habitats (e.g. dry areas) not included in the CEDR research but relevant to the Eurobats area.

Additional information can be sent to the Convenor or to one of the chapter authors. A final draft of the publication would be available before AC23 with the aim of publishing the guidance before MoP8. The work of this IWG would then be completed.

4. IWG on Communication, Bat Conservation and Public Health

This IWG was preceded by a presentation on bat viruses in the Middle East by Dr. Kayali (from Human Link, Lebanon). The presentation was warmly received by the delegates and the Chair thanked Dr Kayali for his participation at the AC meeting. The Convenor, Professor Paul Racey, reported that this IWG needed to continue its work. During its meeting the information contained in the discussion paper was presented to the members and they were asked to report any instances of hostile media coverage to him, so that these could be used for the database operated by BCT.

5. IWG on Monitoring of Daily and Seasonal Movements on Bats

The following actions were identified to be pursued in the Working Group:

- Collect available literature to update species status regarding long distance movements, corridors, and stop over points;
- Identify the main knowledge gaps on species or geographical area;
- Review the ongoing research;
- Provide indications to the Parties for the next MoP to increase monitoring in transboundary movements.

After recalling these targets, the discussion was opened with a short abstract of the last contribution from the German Federal Agency on the work of Meschede et al. kindly provided by Ms. Ruth Petermann.

Additionally, Dr. Christian Voigt summarized the ongoing research on *P. nathusii* migrating along Baltic and Northern Sea coastal area and the ongoing research using stable isotopes for predicting the origin of bats and the connectivity of wintering and summer areas. Further, Mr. Gunārs Pētersons reviewed the banding activity at Pape

Bird Ringing Station in Latvia. Mr. Marcus Fritze recalled the ongoing research project on long distance movements of *P. nathusii* using rings and radiotags.

Dr. Christian Voigt underlined the necessity of urging the Parties to consider the importance of migration in relation to wind farm construction projects, as the impact was not only local but it also decreased the connectivity of wintering and summer habitats of bats. The negative impacts of windfarms on bat species in general, and on migratory species in particular, had to be considered over all geographical scales across Europe.

The Convenor also intended to ask for more information about ongoing projects in Finland and Estonia. Mr. Marcus Fritze asked about the possibility to distribute used frequencies for radiotagged bats in different countries to obtain information from transboundary projects. The Convenor also recalled the possibility of collecting ID numbers of pit tags for the same purpose.

The IWG then underlined how the use of complementary methods, such as, for example, acoustical monitoring of migratory bats, genetic approaches and banding data, should be considered to gather more information related to migratory behavior in more countries. The role of stopover (foraging grounds and/or maternity colonies) was still poorly known and needed more investigation.

It was decided to prepare a draft resolution for the next MoP that would be finalized at the next AC meeting as well as to prepare an annex with the above considerations with references.

6. IWG on Purpose-built Man-Made Roosts

At AC21 the IWG was informed about creation of numerous hibernacula in the Netherlands and Belgium. These projects included both the construction of purpose-built roosts and the adaptation of existing structures to enhance their suitability for bats. Details of these projects along with annual winter counts had been collated by the colleagues in these countries and were presented to the group. Some of these projects had been highly successful; however, the IWG had also been sent examples of projects from the same countries that had failed to attract any bats. The IWG discussed the importance of learning from these apparent failures, as well as of post monitoring of sites, as there often remained opportunities to retro-fit features for bats.

This point was re-enforced by a project to create two new roosts in Spain, one for greater horseshoe and another for lesser horseshoe bats. This project was mitigation

for the destruction of a building. Both new roosts had been occupied by the target colonies but the smaller roost for the lesser horseshoe bats had over-heated and required the retro-fitting of insulation to cool the interior.

Dr. Abdulaziz Alagaili presented information about new roosting opportunities for bats in Saudi Arabia and Mr. Boyan Petrov described plans to replace a derelict hotel on the Bulgarian Black Sea coast (home to about 6,000 bats) by a combination of retaining underground structures and providing a new purpose-built roost close by.

The group felt that the collection of examples of these structures was largely completed and a report with case studies of the best practice and recommendations would be submitted to the secretariat before AC 23 with a view to assessing this as a potential publication. The secretariat would also assist the members in drafting resolutions for the next MOP in 2018.

7. IWG on Wind Turbines and Bat Populations

Dr. Noam Leader, the coordinator of the subgroup on “Sensitivity maps”, presented a project conducted in Israel, regarding the preparation of maps of sensitive zones for bats taking into consideration wind farm projects. The methodology used in the Israeli bat sensitivity maps was based on distribution modelling of bats species and included factors such as important colony sites and natural water sources. Individual species maps were collated into a single 5X5 km grid map and also projected onto a landscape map. The map's intended use was only as a preliminary "concept" map that suggested relative sensitivity on a national scale, and needed verification during the planning process. The utility of such maps and the criteria used in their production was discussed. It was agreed that Dr. Noam Leader should prepare a detailed description of the project to include in the next report of the IWG, in order to help countries which wished to run similar projects.

Ms. Daniela Hamidović, the coordinator of the subgroup on “Implementation of mitigation and post-construction monitoring”, presented the results of the questionnaires on this subject. Taking into consideration that only 26 replies were received, out of 63 EUROBATS Range States, it was decided to resend the questionnaire to the countries that had not replied yet, and prepare a new synthesis to include in the next report of the IWG. Nevertheless, because the preliminary analysis shows that many of the Parties are not fully implementing the measures included in Resolution 7.5, it was decided to prepare a draft resolution during 23AC.

The work-plan and the membership of some sub-groups were slightly changed:

Sub-group	Coordinator (c) and members
Update/reorganizing of the list of references	Marie-Jo Dubourg-Savage (c) Laurent Biraschi
Compilation of data on bat mortality per country	Marie-Jo Dubourg-Savage (c) Lothar Bach
Updating of tables on monitoring studies done in Europe and on bats behaviour in relation to windfarms	Anna Nele Herdina (c) Laurent Biraschi Marie-Jo Dubourg-Savage
Mitigation and compensation measures	Joana Bernardino (c) Branko Karapandža Dino Scaravelli Lothar Bach Luisa Rodrigues Thierry Kervyn
Estimation of mortality rate taking into consideration predation, efficiency and controlled area; choose of best estimator for Europe	Rita Bastos (c) Dino Scaravelli Jasja Dekker Joana Bernardino Petra Bach
Impact of mortality rate on populations	Jasja Dekker (c) Christian Voigt Lothar Bach Rita Bastos Emra Çoraman
Deterrents	Lothar Bach (c) Branko Karapandža Dino Scaravelli Luisa Rodrigues
Maximum foraging distances of species	Marie-Jo Dubourg-Savage (c) Eeva-Maria Kyheröinen Dina Rnjak Zuhair Amr Christine Harbusch
Collect national guidelines	Andrzej Kepel (c) Branko Mićevski Dina Rnjak Jan Collins
Use of dogs vs humans during carcass searches	Dina Rnjak (c) Fiona Mathews Jan Collins Joana Bernardino Petra Bach
Comparing measurement of activity at ground level and rotor height	Lothar Bach (c) Jan Collins

	Johanna Hurst Marie-Jo Dubourg-Savage Petra Bach Thierry Kervyn
Small Wind Turbines	Kirsty Park (c) Lothar Bach
Offshore windfarms	Lothar Bach (c) Jasja Dekker Herman Limpens
Wind farms and forests	Christine Harbusch (c) Christian Voigt Andrzej Kepel Branko Karapandža Fiona Mathews Lothar Bach Thierry Kervyn Johanna Hurst Ruth Petermann
Implementation of mitigation and post-construction monitoring	Daniela Hamidović (c) Branko Micevski Per Ole Syvertsen Jasja Dekker
200m buffer distance to habitats particularly important for bats	Branko Karapandža (c) Noam Leader Mirna Mazija
Sensitivity maps	Noam Leader (c) Mirna Mazija

8. IWG on Bats and Light Pollution

During the IWG meeting at AC22, the Co-Convenor, Dr. Christian Voigt, reported on the work of the IWG since the last AC meeting.

The Co-Convenor summarized the comprehensive reviews that the leaders of different subgroups had performed. The review report was sent out to the IWG members in advance of AC22. The Co-Convenor asked the IWG members for additions or amendments. The auditorium did not request any further changes to the report. The Co-Convenor then asked if anyone would be willing to contribute to one of the two topics that had not been included in the review report so far ('Methods for impact assessment related to artificial light', 'Good practice examples'). Members of the IWG agreed to take over these tasks. The Co-Convenor thanked everyone who contributed to the previous review work.

Further, Dr. Voigt reported on the successful symposium and workshop on 'Light pollution and bats' held for the IWG members in late November 2016 at the IZW in Berlin. Dr. Voigt thanked the German BMUB for providing financial support for this event. Due to this support, it was possible to invite speakers who summarized the current state-of-the-art related to light pollution and bats. The Co-Convenor reported that the experts of the workshop drafted a resolution and a guideline for further discussion during AC22.

Dr. Voigt presented the draft resolution on light pollution and bats that was to be submitted to the Meeting of the Parties in 2018. The draft resolution was revised sentence by sentence during the IWG meeting. Dr. Voigt pointed out that this draft would further be revised and finalized during the upcoming 23rd meeting of the Advisory Committee.

Finally, Dr. Voigt reported on the progress in drafting a guideline related to light pollution and bats. He pointed out that this guideline was based on Resolution 7.3 adopted at MoP7, where, under 4, it was highlighted that 'with reference to the record of StC9-AC19 the Advisory Committee should finalize its guidelines on light pollution ...' and that because of Resolution 7.3 the draft guideline could be finalized without the need to submit it to the Meeting of the Parties in 2018. The draft guideline was sent out to the IWG members in advance of AC22. During the IWG meeting, Dr. Voigt listed the specific chapters of the draft guideline and asked the IWG members for their opinion on how to proceed with this draft. It was agreed that the subgroups that had

already worked on specific chapters should continue their work after the AC meeting. The Co-Convenor invited the IWG members to join the teams and several members were recruited for the finalization of the draft guideline. The Co-Convenor thanked all the authors who had already contributed or would contribute to the draft resolution and the draft guideline. It was agreed that he would decide on the specific deadline for finalization of the guideline after discussing this with the authors of the chapters.

Dr. Voigt thanked all the participants for their contributions and the constructive discussion.

9. IWG on Conservation and Management of Critical Feeding Areas, Core Areas Around Colonies and Commuting Routes

It was agreed that only a small number of group members would meet during AC22 to have a look at the guidance document and to discuss what still needed to be done to finalize it. This group, consisting of the Convenor – Ms. Eeva-Maria Kyheröinen, Dr. Jasja Dekker, Ms. Marie-Jo Dubourg-Savage and Mr. Per Ole Syvertsen, worked on the guidance document, revising some chapters of the first, general part of the guidance document.

The following steps were agreed on:

- The Convenor was to contact some of the species text authors as soon as possible, asking them to check and revise the texts based on comments and references received;
- An updated version was to be sent to all focal points in early May. Only comments with text suggestions were preferred at this stage;
- Feedback was to be requested by early June;
- A new version was to be prepared, taking comments into consideration;
- Proofreading was to be done;
- Guidance was to be sent to the secretariat for layout.

Several IWG members volunteered to do the proofreading. Assistance from the secretariat was needed in preparing the layout of the final draft. The secretariat had informed the group earlier that there were pictures (species and habitats) available for the guidance.

10. IWG on Bat Rescue and Rehabilitation for Bat Conservation, Research and Monitoring

During the meeting of the IWG the provisional text of the guidelines was discussed and new items were inserted to be included in the text. The work for the next months was specified and listed in the table. After AC22, a slightly rewritten version of the old questionnaires would be circulated among the Parties and Non-Party Range States to check and edit data, and the IWG asked the secretariate to distribute them via e-mail.

Chapter	Contributor
Introduction	Lena Godlevska
1. Review of BRR in Europe	Lena Godlevska
1.1. Countries	Lena Godlevska
1.2. Species	Lena Godlevska
1.3. Numbers	Lena Godlevska
1.4. Situations	Lena Godlevska
1.5. Legislation	Lena Godlevska
Case examples	Kit Stoner, Helena Jahelková, Ivana Budinski, Marie Nedinge, (Marcus Fritze)
2. Communication with public	
2.1. Basic advices	Helena Jahelková
2.2. FAQ	Kit Stoner -Daniela Hamidović- concerning rabies Peter Lina
3. Basics for handling, transporting and keeping bats	
3.1 Transporting bats	Helena Jahelková +photos Elena Tilova, Daniela Hamidović
3.2 Basics of handling with bat and colony	Helena Jahelková
3.2.1 Individual bat or few bats	Helena Jahelková
3.2.2 Bat colony	Helena Jahelková
3.2.3 Euthanasia	Peter Lina
3.3. Basics for keeping bats	Helena Jahelková
3.3.1 Temporary care	Helena Jahelková
3.3.2 Keeping permanent disabled bats	Helena Jahelková
3.4 Release into the wild	Helena Jahelková
3.5. Health risks for bat rehabilitators	Peter Lina
3. BRR for bat research, conservation and public education	Helena Jahelková
3.1. BRR for bat fauna monitoring	Helena Jahelková
Case study	Helena Jahelková, Lena Godlevska
3.2. Bat biology research	Helena Jahelková

Case study	Helena Jahelková, Kit Stoner
3.3. BRR for zoonotic research, histopathology and parasitology	Peter Lina
Case study	Peter Lina, (Helena Jahelková)
3.4. BRR for museum collection	Peter Lina
3.5. BRR for bat conservation	Lena Godlevska
Case study	Lena Godlevska, Helena Jahelková
3.6. BRR bats for public education	Kit Stoner
Case study	Kit Stoner, Helena Jahelková, Ivana Budinski
4. List of manuals and guidelines on bat rescue and rehabilitation	Lena Godlevska, all check information
4.1. General	Lena Godlevska, all check information
4.2. Regional	Lena Godlevska, all check information
5. List of national rescue and rehabilitation centers working with bats or contact points	Lena Godlevska, all check information
Literature	Lena Godlevska, all check information
A. Summarizing descriptions of bat rehabilitation approaches in different countries	Lena Godlevska, all check information
B. Estimation of numbers of received and released bats	Lena Godlevska, all check information
C. Bat rehabilitation records for collecting additional faunistic data	Lena Godlevska, all check information
Annex 1. Questionnaire	
Annex 2. EUROBATS Resolution 7.10	

11. IWG on Bats, Insulation and Lining Materials

During its meeting at AC22 the IWG discussed the contents of the guidelines and current changes of situations in the Party and Non-Parties Range States. The discussion focused mainly on pre-insulation survey and its efficiency in different countries and according to type of insulation method and speed of insulation. The IWG kindly asked the focal points of the Parties and Non-Party Range States to contact specialist in their countries, if they were present, to cooperate with the IWG. After AC22, a slightly rewritten version of old questionnaires would be circulated among the Parties and Non-Party Range States to check and edit data and the IWG asked the secretariat to distribute them via e-mail.

Chapter	contributor
Introduction	Helena Jahelková
1. Situation in Europe – overview	Helena Jahelková
1.1. Insulation of buildings and programs	Helena Jahelková

1.2. Fundings of insulation programs	Helena Jahelková
1.3. Bats species insulated buildings	Helena Jahelková
1.4. Possibilities of countries to interve the insulation	Helena Jahelková
2. Pre-insulation survey	Helena Jahelková
2.1 Pre-insulation survey scheme – slow and mediate rate of insulation (e.g. panel houses)	Helena Jahelková
Case example	Helena Jahelková
2.2 Pre-insulation survey scheme – rapid rate of insulation (e.g. private one-store houses)	Marcel Schillemans
Case example	Marcel Schillemans
3. Methods used in building insulation, main risks, technical solutions, and mitigation	
3.1. Polystyrene or glass-fibre boards	Helena Jahelková, Hubert Kraettli
3.1.1. Main threats to bats	Helena Jahelková
3.1.2. Technical solution	Helena Jahelková, Hubert Kraettli
3.1.3. Roost compensation	Helena Jahelková, Hubert Kraettli
Case examples	Helena Jahelková
3.2. „Wall on wall“ insulation= Zero-on-the-counter	Marcel Schillemans
3.2.1. Main threats to bats	Marcel Schillemans
3.2.2. Technical solution	Marcel Schillemans
3.2.3. Roost compensation	Marcel Schillemans
Case examples	Marcel Schillemans
3.3. Wall Cavity insulation	Marcel Schillemans
3.3.1. Main threats to bats	Marcel Schillemans
3.3.2. Technical solution	Marcel Schillemans
3.3.3. Roost compensation	Marcel Schillemans
Case examples	Marcel Schillemans
3.4. Other type of roof and wall insulation	Kit Stoner
3.4.1. Main threats to bats	Kit Stoner
3.4.2. Technical solution	Kit Stoner
3.4.3. Roost Compensation	Kit Stoner
Case examples	Kit Stoner
3.5. Bat boxes	Marcel Schillemans (include information of previous contributors)
3.5.1 Types of bat boxes available	Marcel Schillemans (include information of previous contributors)
3.5.2 Preconditions of installing new bat boxes	Marcel Schillemans
3.6. Breathable roofing membranes	Stacy Waring

3.6.1. Main threats for bats	Stacy Waring
3.6.2. Technical solution	Stacy Waring
3.6.3. Roost compensation	Stacy Waring
Case examples	Stacy Waring
4. Communication with public	
4.1. Special workshops for stakeholders, companies, officials	Helena Jahelková
4.2. Promotion	
4.3 IBN and bat events	
5. Post-insulation survey and and results of mitigation measurements	H.Jahelková
6. List of contacts and websites	
7. List of companies offering bat boxes	
8. References	

12. IWG on Education

The Convenor gave an overview of the IWG's previous work and guided the discussion.

IWG work plan:

- Collate a list of educational materials and links, and put on the EUROBATS website;
- Ask EUROBATS members to send lists of available materials in any languages;
- Provide general format for basic information diffusion, modelled for different ages and use, in particular, for class activities in school, bat nights, or other social events;
- Create a thesaurus of basic information for public awareness;
- Find and suggest a list of popular social media applications for dispersal of IWG results;
- Provide the basis to produce some attractive materials for children such as stickers, patch, etc.;
- Provide basic educational material for posters or pamphlets available to download to schools or other organizations.

The group agreed to meet electronically every three months to follow the evolution of the plan and to keep the members informed.

13. Ad hoc Group on Annex to the Agreement

An ad hoc Working Group met to discuss amendment of the Annex of Bat Species occurring in Europe to which the Agreement applies. The group reviewed potential changes to the list and also discussed differences between the Eurobats list and the species list being recognized by the forthcoming Atlas of European Mammals. A background information paper would be prepared to explain these potential changes and to give an opinion as to which should be included in a Resolution drafted for MoP8.

14. Ad hoc IWG on Bats and Climate Change

Upon the presentation of the article prepared for the next Issue of the IUCN SSC Bat Specialist Group Newsletter regarding Bats, climate change and challenges for conservation at a European level (authors: *Hugo Rebelo, Orly Razgour, Radek K. Lučan & Daniela Hamidovic*), a proposal for the establishment of the new IWG on Bats and Climate Change was presented to the AC auditorium. *“What is clear from current evidence and model projections is that climate change will be one of the major challenges for the survival of bat populations during this century. Only through the successful implementation of proactive measures will it be possible to address this potential threat”*. Upon discussion on the future actions in terms of preparation of background documentation and a draft resolution for the next AC, the Group was established and will be convened by Ms. Daniela Hamidović and Dr. Hugo Rebelo.

9. Presentations

During AC22 the following presentations were given:

- By Professor Paul Racey, “Are bats special as conservation targets?”;
- By Ms. Vida Zrnčić, Croatian Biospeleological Society, “Bat fauna survey in cave Vrlovka and the proposal of permanent monitoring”;
- By Ms. Ivana Budinski, Institute for Biological Research “Siniša Stanković”, University of Belgrade, Serbia, “Effects of free-ranging cattle and landscape complexity on bat foraging”;
- By Dr. Szilárd-Lehel Bücs, Project “Uniting the efforts of Romanian bat conservation”, who gave a speech with the same title;
- By Dr. Ghazi Kayali, PhD MPH, CEO, Human Link, Adjunct Assistant Professor, University of Texas, “The role of bats in MERS coronavirus infection” – this

presentation was given during the meeting of the IWG on Communication, Bat Conservation and Public Health;

- By Dr. Jasja Dekker, BatLife Europe, “Effectiveness of bat mitigation on roads” – this presentation was given during the meeting of the IWG on Impact of Roads and Other Traffic Infrastructures on Bats.

10. European Mammal Atlas

Dr. Friederike Spitzenberger gave an informative presentation on the new European Mammal Atlas which was being planned to update the previous one published in 1999. EUROBATS delegates were well represented on the Steering Group for the Atlas; as well as Dr Spitzenberger and Dr Tony Mitchell-Jones (who were part of the original Steering Group), Dr Laurent Schley (Luxembourg) and Dr Ferdia Marnell (Ireland) had been co-opted onto the new Steering Group. EUROBATS Range States and NGO representatives present at AC22 were encouraged to engage with the project and to contact Dr Mitchell-Jones if they were in a position to help with the collection of mammal data for their country.

11. Date and venue of the 23rd Meeting of the Advisory Committee

The Executive Secretary informed the delegates that the secretariat was in contact with one country considering to host the next meeting of the Advisory Committee, but he also asked whether there was any other country that would like to host AC23. Mr. Streit further explained that the organization of an AC meeting did not require much financial contribution or engagement from the host country. He invited both the Parties and the Non-Party Range States to volunteer as future AC hosts. The Executive Secretary was optimistic that by April 2017 both the host of the next session of the MoP and the host of the next AC meeting could be announced. The next meeting was going to be a joint meeting of the Advisory and the Standing Committees, which allowed for consultations between the two committees and a smoother organization of the Meeting of the Parties.

12. Any other business

Mr. Branko Karapandža presented a new bat journal launched in 2016: *Hypsugo – Journal for Bat Research of the Balkans* (Glasnik za istraživanje šišmiša Balkana). It was published biannually by several NGOs and edited by a small board from across the western Balkans (Slovenia, Croatia, Serbia, Bosnia and Herzegovina, Montenegro, and Albania). The journal was the latest and consistent result of intense

and more than a decade long cooperation between the bat workers from the region. Annual meetings of the Advisory Committee to UNEP/EUROBATS were crucial for the creation of this snowball, which started rolling when a group of people from all ex-Yugoslav republics met and immediately found a common ground. Since bat research in the region had intensified the need for a publication which would make those results available, the first semi-official annual bulletin was launched in 2013, mostly publishing results from Bosnia and Herzegovina. Good acceptance of the bulletin and growing experience of the editorial board raised their ambitions and, thus, after recruiting a few more members, Hysugo was born. Two issues of Hysugo had been published and were available for free as printed copies and as pdf:

<http://www.centarzakrs.ba/bh/literatura/224-hysugo.html>.

All usual types of manuscripts (articles, short communications, notes) presenting results of bat research were acceptable, as well as announcements and reports from symposia, workshops etc., original reviews of books and equipment, bibliographies, biographies, obituaries, etc., related to bats on the Balkans. Manuscripts should be in the local language (all linguistic standards were accepted – Bosnian, Croatian, Montenegrin and Serbian) with abstracts in English, but manuscripts in English were acceptable as well. AC members were invited to send their contributions.

Ms. Daniela Hamidović further proposed that the secretariat should approach the Holy See to appoint a focal point to the Agreement. The Executive Secretary explained that the Holy See did not normally engage in international conventions, but that he would pursue the issue finally. Dr. Dino Scaravelli informed that San Marino was planning a monitoring event in Vatican and promised to keep the Advisory Committee informed about the developments.

Dr. Helena Jahelková, the representative of the Czech Republic, drew attention to the question raised by Professor Racey in his presentation, referring to where the results of the research could be published, and she suggested the Czech journal “Vespertillio”.

13. Adoption of the record of the Meeting

The record was adopted unanimously.

14. Close of Meeting

The Chair of the Advisory Committee, Dr. Ferdia Marnell, thanked all the delegates for their hard work and cooperation over the course of AC22. He reminded the convenors

of the working groups that their work must necessarily continue after the meeting and requested working group participants to actively assist and support the convenors in their efforts to complete the working group tasks. There being no further business, the meeting was closed at 17:29.

22nd Meeting of the Advisory Committee

Belgrade, Serbia, 27 – 29 March 2017

IWG Attendance List



Attendance lists (with participants stated in random order) for the IWGs' meetings during AC22 in Belgrade (for membership lists see the Record of AC20):

Bat Rescue and Rehabilitation

Helena Jahelková*, Lena Godlevska*, Elena Stoeva, Serghei Andreev, Astghik Ghazaryan, Kit Stoner, Aliaksei Shpak, Daniela Hamidović, Peter H. C. Lina, Marcus Fritze, Ivana Budinski, Dragana Ilić, Branka Pejić, Nijat Hasanov.

Overground Roosts

Stéphane Aulagnier*, Primož Presetnik*, Ferdia Marnell, Nijat Hasanov, Lena Godlevska, Branka Pejić, Branko Karapandža, Pascal Moeschler, Thierry Kervyn, Jacques Pir, Christine Harbusch, Markus Melber, Szilard-Lehel Bücs, Luisa Rodrigues, Astghik Ghazaryan, Anthony Hutson, Helena Jahelková, Aliaksei Shpak, Daniela Hamidović, Mounir Abi Said, Awatef Abiadh, Peter H. C. Lina.

Monitoring and Indicators

Jasja Dekker*, Aurora Dibra, Per Ole Syvertsen, Jacques Pir, Emrah Çoraman, Mirna Mazija, Anthony Hutson, Jasminko Mulaomerović, Christine Harbusch, Janusz Hejduk, Luisa Rodrigues, Szilard-Lehel Bücs, Jean Matthews, Ferdia Marnell, Astghik Ghazaryan, Vida Zrnčić, Daniela Hamidović.

Bats, Insulation and Lining Materials

Helena Jahelková*, Mounir Abi Said, Nijat Hasanov, Branko Karapandža, Peter Lina, Markus Melber, Branka Pejic, Marcel Schillemans, Serghei Andreev, Aliaksei Shpak, Elena Stoeva, Kit Stoner.

Impact of Roads and Other Traffic Infrastructures on Bats

Jean Matthews*, Jasja Dekker, Primož Presetnik, Branko Karapandža, Sabina Ivanović, Vida Zrnčić, Thierry Kervyn, Aurora Dibra, Boyan Petrov, Stéphane Aulagnier, Ioseb Natradze, Gunārs Pētersons, Jacques Pir, Nijat Hasanov, Anthony Hutson, Paul Racey, Laurent Biraschi, Szilard-Lehel Bücs, Emrah Çoraman, Abdulaziz Alagaili, El Ayachi Sehhar, Jasminko Mulaomerović, Christine Harbusch, Christian Voigt, Markus Melber, Marcel Schillemans, Per Ole Syvertsen, Janusz Hejduk, Luisa Rodrigues, Marie Nedinge, Pascal Moeschler, Ferdia Marnell, Noam Leader, Eeva-Maria Kyheröinen, Dino Scaravelli.

Communication, Bat Conservation and Public Health

Convened by Paul Racey during the plenary session in the presence of all the AC participants.

Monitoring of Daily and Seasonal Movements on Bats

Dino Scaravelli*, Aurora Dibra, Ioseb Natradze, El Ayachi Sehhar, Abdulaziz Alagaili, Marie Nedinge, Jasminko Mulaomerović, Emrah Çoraman, Jean Matthews, Ivana Budinski, Dragana Ilić, Janusz Hejduk, Branko Micevski, Marcel Schillemans, Mirna Mazija, Elena Stoeva, Vida Zrnčić.

Purpose-built Man-Made Roosts

Henry Schofield*, Abdulaziz Alagaili, Boyan Petrov, Marie-Jo Dubourg-Savage, Christine Harbusch, Anthony Hutson, Branko Karapandža, Peter Lina, Jean Matthews, Jasminko Mulaomerović, Aliaksei Shpak, Elena Stoeva, Markus Melber, Astghik Ghazaryan, Luisa Rodrigues.

Wind Turbines and Bat Populations

Luisa Rodrigues*, Abdulaziz Alagaili, Aliaksei Shpak, Andrea Lešová, Awatef Abiadh, Branka Pejić, Branko Karapandža, Branko Micevski, Christian Voigt, Christine Harbusch, Daniela Hamidović, Dina Rnjak, Dino Scaravelli, Dragana Ilić, El Ayachi Sehhar, Elena Stoeva, Emrah Çoraman, Ioseb Natradze, Jacques Pir, Janusz Hejduk, Jasja Dekker, Jasminko Mulaomerović, Jean Matthews, Kit Stoner, Laurent Biraschi, Marcel Schillemans, Marie Nedinge, Marie-Jo Dubourg-Savage, Marcus Fritze, Markus Melber, Mirna Mazija, Mounir Abi-Said, Noam Leader, Pascal Moeschler, Per Ole Syvertsen, Primož Presetnik, Serghei Andreev, Szilárd-Lehel Bücs, Thierry Kervyn, Vida Zrnčić.

Bats and light pollution

Christian Voigt*, Thierry Kervyn, Noam Leader, Gunārs Pētersons, Daniela Hamidović, Branko Karapandža, Branko Micevski, Ferdia Marnell, Friederike Spitzenberger, Stéphane Aulagnier, Janusz Hejduk, Helena Jahelková, Lena Godlevska, Elena Stoeva, Ioseb Natradze, Jean Matthews, Marie Nedinge, Andrea Lešová, Marcel Schillemans, Marie-Jo Dubourg-Savage, Marcus Fritze, Christine Harbusch, Jasminko Mulaomerović, Henry Schofield, Kit Stoner, Paul Racey, Primož Presetnik, Mirna Mazija, Dina Rnjak, Anthony Hutson, Jasja Dekker, Javier Juste, Ivana Budinski, Dragana Ilić, Vida Zrnčić, Pascal Moeschler, Branka Pejić.

Education

Hossein Zohoori*, Dino Scaravelli, Nijat Hasanov, Laurent Biraschi, Serghei Andreev, Mounir Abi-Said, Awatef Abiadh, Kit Stoner, Peter H. C. Lina, Aliaksei Shpak, Szilard-Lehel Bücs, Astghik Ghazaryan.

Ad hoc WG on the Annex to the Agreement

Anthony Hutson*, Suren Gazaryan, Emrah Çoraman, Aurora Dibra, Friederike Spitzenberger, Stéphane Aulagnier, Javier Juste, Helena Jahelková, Lena Godlevska, Boyan Petrov, Astghik Ghazaryan, Jelena Burazerović.

Ad hoc WG on Bats and Climate Change

Convened by Daniela Hamidović in the presence of all the AC participants.

Members: Daniela Hamidović*, Hugo Rebelo*, Stéphane Aulagnier, Kit Stoner, Lena Godlevska, Helena Jahelková, Abdulaziz Alagaili, Aurora Dibra, Szilard-Lehel Bücs.