AGREEMENT ON THE CONSERVATION OF POPULATIONS OF EUROPEAN BATS (EUROBATS)

National report on implementation of the Agreement in the Czech Republic, 2010-2014

A. GENERAL INFORMATION

Name of Party: Czech Republic
Date of Report: July 2014
Period covered: 2010-2014

Competent Authority:
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Appointed Member of the Advisory Committee:
Helena Jahelková (since 2009)
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Membership in Intersessional Working Groups:
Bat Conservation and Sustainable Forest Management
Conservation of Key Underground Sites
Conservation and Management of Critical Feeding Areas and Commuting Routes
Impact of Roads and Other Traffic Infrastructures on Bats
Implementation of the Agreement
Lethal Fungal Infections
Monitoring and Indicators
Monitoring of Daily and Seasonal Movements of Bats
Bats and Insulation (co-convenor)
Bat rescue and Rehabilitation (convenor)

B. STATUS OF BATS WITHIN THE TERRITORY OF THE PARTY

1. Summary Details of Resident Species
27 bat species have been recorded in the Czech Republic: 20 species are considered to be resident, 2 species (*Myotis oxygnathus/blythii* and *M.dasycneme*) regularly occur in restricted area in winter, and 5 species are considered to be accidental (*Rhinolophus ferrumequinum,*

Nyctalus lasiopterus, Hypsugo savii, Pipistrellus kuhlii, Miniopterus schreibersii). In 2011 was confirmed occurrence of new species – *Miniopterus schreibersii*. Distribution in Table 1 is expressed in % of positive squares of all 678 squares (11 x 12km) which covered Czech Republic and are used in faunistics; data were updated on the base of Horáček & Uhrin (2010). Records of very rare *Rhinolophus ferrumequinum* and *Hypsugo savii* increased (found in south Moravia, 2013 in Prague), as well as winter records of *Pipistrellus nathusii*.

Tab1. List of species recorded in Czech Republic and their distribution in %.

Species	Distribution	Winter (W), Summer (S), maternity colonies (MC)
Rhinolophus ferrumequinum	1,8%	Occasionally W and S
Rhinolophus hipposideros	38,2%	W, S, MC
Miniopterus schreibersii	1x recorded	W
Myotis alcathoe	1,8%	S, MC, W
Myotis bechsteinii	21,5%	W, S, MC
Myotis blythii/oxygnathus	2,5%	W; occasionally S
Myotis brandtii	25,8%	W, S, MC
Myotis dasycneme	1,6%	Occasionally W and S
Myotis daubentonii	62,6%	W, S, MC
Myotis emarginatus	30%	W, S, MC
Myotis myotis	77,1%	W, S, MC
Myotis mystacinus	51,1%	W, S, MC
Myotis nattereri	40,6%	W, S, MC
Nyctalus lasiopterus	3x recorded	S
Nyctalus leisleri	15%	Occasionally W; S, MC
Nyctalus noctula	53,8%	W, S, MC
Eptesicus nilssonii	36,8%	W, S, MC
Eptesicus serotinus	57%	W, S, MC
Pipistrellus pipistrellus	24%	W, S, MC
Pipistrellus pygmaeus	13,7%	Occasionally W; S, MC
Pipistrellus nathusii	15,6%	Occasionally W; S, MC
Pipistrellus kuhlii	1x recorded	S
Hypsugo savii	1%	W, S
Vespertilio murinus	28,7%	W, S, MC
Plecotus auritus	67,5%	W, S, MC
Plecotus austriacus	62,9%	W, S, MC
Barbastella barbastellus	47,7%	W, S, MC

2. Status and Trends

The table below shows current status and trends of all bat species recorded in the Czech Republic. Populations of thermophile species have tendency to grow and inhabit new localities. The official Red List of all vertebrate species of the Czech Republic including bats was published in 2003 (Plesník et al. 2003).

Tab2. Status and trends of species recorded in Czech Republic.

Species	Red List CZ	IUCN 3.1	Status	Trends
Rhinolophus ferrumequinum	CR	LC	very rare	?
Rhinolophus hipposideros	EN	LC	relatively rare	+

Myotis bechsteinii	DD	NT	relatively common	?
Myotis oxygnathus	CR	LC	very rare	?
Myotis brandtii	0	LC	relatively common	?
Myotis dasycneme	CR	NT	very rare	?
Myotis alcathoe	Not eval.	DD	rare	?
Myotis daubentonii	0	LC	common	+
Myotis emarginatus	VU	LC	relatively common	+
Myotis myotis	VU	LC	common	+
Myotis mystacinus	0	LC	common	?
Myotis nattereri	0	LC	common	?
Nyctalus lasiopterus	Not eval.	NT	very rare	?
Nyctalus leisleri	DD	LC	relatively rare	?
Nyctalus noctula	0	LC	common	?
Eptesicus nilssonii	0	LC	common	+
Eptesicus serotinus	0	LC	common	?
Pipistrellus pipistrellus	0	LC	common	+
Pipistrellus pygmaeus	DD	LC	common	+
Pipistrellus nathusii	DD	LC	relatively common	+
Pipistrellus kuhlii	Not eval.	LC	very rare	?
Hypsugo savii	DD	LC	rare	?
Plecotus auritus	0	LC	common	?
Plecotus austriacus	0	LC	common	−
Vespertilio murinus	DD	LC	relatively common	0
Barbastella barbastellus	0	NT	relatively common	+

3. Habitats and Roost Sites

Landscape of Czech Republic is heterogeneous and includes temperate deciduous and coniferous forests, meadows, agricultural and urbanized lands, with sufficiency of water bodies or rivers. Two big karst areas in Moravia and Bohemia are used as regular hibernacula as well as smaller cave systems and abandoned mines occurring across country. Block of flats are used in some areas permanently, in the other areas they are used as hibernacula or during period of maternity colonies. In crevice species, tree crevices and hollows, supplemented with artificial roosts (crevices in buildings, bat boxes) are used in summer. Majority of originally cave species used quarter of various buildings (e.g. *Myotis myotis*, *Rhinolophus hipposideros*). Maternity colonies in caves are only exceptional. Recently, attention is paid to newly discovered roosts in highway bridges (spring-autumn, mainly *Myotis myotis*) and hollow bodies of dams (winter and autumn, about 5000 individuals of *Pipistrellus pipistrellus*).

4. Threats

a) Renovation, reconstruction or rearrangement of roofs and loft spaces in old buildings (churches, castles etc.) Due to economic development of the country, an increasing number of maternity roosts (especially those of *Myotis myotis* and *Myotis emarginatus*) are threatened by this factor. Although the species inhabiting this kind of shelters are provided with strict legislative protection, relevant nature conservation authorities are not always informed about the planned renovation.
b) Unsuitable methods of safeguarding of abandoned mines which host winter roosts of bats.

Important progress was achieved in the last triennium, and nowadays majority of these activities are realized after the consultation with nature conservation authorities.

c) Insulation of panel blocks of flat to warming rearrangements. In the last four years, this activity occurred in a large scale, and the influence on several species (mainly *Nyctalus noctula, P. pipistrellus/P. pygmeus*, *Vespertilio murinus*, *Eptesicus serotinus*) is critical. Those species used more and more different holes (between panels; above the windows; air-ducts) for both maternity colonies and wintering. The problem is closing of air-ducts and of all holes mentioned above.
d) Felling of the old hollow trees

5. Data collection, analysis, interpretation and dissemination

Observation of situation of habitats and species was implemented in Act No. 114/1992 on Nature Conservation and Landscape Protection and relevant authorities of nature protection are obligated to monitor their quality and trends. Monitoring scheme is coordinated by the Czech Bat Conservation Trust (CBCT, in Czech ČESON, *www.ceson.org*) with particular of Dr. Tomáš Bartonička. Both professional zoologists and volunteers are involved in the surveys. The bat monitoring programme presents one of the largest and most complex monitoring projects in the country. The programme is partly financially supported by the Agency for Nature and Landscape Protection (ANCLP CR; in Czech AOPK ČR). Recent regular monitoring programs include:

a) Monitoring of bat population in underground covers more than 600 sites, the method and timing (mid January -mid-February) follows the concept established and performed since 1969. The data are available from central database.
b) Monitoring of current status of more than 200 maternity roosts.
c) Monitoring of maternity colonies of pSCI species, with special emphasis on monitoring of nursery colonies of *Rhinolophus hipposideros, Myotis myotis* and *Myotis emarginatus* (NATURA 2000 species). Recent census covers 120 localities.
d) Monitoring of bat population in feeding grounds with aid of bat-detectoring at regular transects in 10 localities of national parks and protected areas.
e) Bat population at swarming sites as recorded by mist-netting (actually undertaken at 9 localities at May, July and September term on each).
f) Monitoring of bats in the cities, focused on roosts occurring in panel houses, database available on-line on CBCT websites
g) Monitoring of bats with *Pseudogymnoascus (Geomyces) destructans* infection during winter census
h) Bat banding is actually restricted to few special projects. The database of all former records (about 100,000 items) is currently available on-line to members of CBCT
i) Vespertilio, an international journal of chiropterology, is published yearly by the CBCT and the Slovak Group for Bat Protection (SON) opened to international public

An extensive scientific research concerning bats is traditionally performed in the professional institutions at Charles University Prague and Masaryk University Brno, as well as at the institutes of Academy of Science, and in National Museum Prague.
The projects covers (among other) e.g.

- systematics, biogeography and biology of bats in the Central Europe, Mediterranean and the Middle East in cooperation with local authorities
- fossil records of bats
- ecology, behaviour and reproductive strategies of selected species
- population of bats in the highway bridges focused on Myotis myotis
- Research focused on light pollution is starting
- Research focused on bats and diseases is starting
- host-parasite interactions of different bat species and *Cimicidae*

- complex survey of bats and their habitats concerning occurrence of *Geomyces destructans* (see below C.12)

In addition to professional publication output in scientific journals and presentation in international symposia, results of these research projects are presented at national Zoological Conferences held annually in Brno and at annual meetings of the CBCT.

C. MEASURES TAKEN TO IMPLEMENT ARTICLE III OF THE AGREEMENT

6. Legal measures taken to protect bats, including enforcement action

The legislative protection of all bat species of bats in the Czech Republic is ensured by up-dating of the Act No. 114/1992 on Nature Conservation and Landscape Protection from 2004. All species are protected and are included in critically endangered or endangered by novel regulation 175/2006 of regulation 395/1992. Exceptions (permits) to the Act are granted by competent authorities (Ministry of Environment, Ministry of Agriculture and regional authorities). Offence against the law is penalized by the Czech Environmental Inspection.

7. Sites identified and protected which are important to the conservation of bats

Current protection of bat sites in the Czech Republic is relatively good; many important hibernacula are designated as or included in Particularly Protected Areas (under the Act No. 114/1992 on nature conservation and landscape protection).

More extensive and more efficient protection of bat sites is provided within the NATURA 2000 network. There are 153 SCIs established only and/or partly (together with other species) for bats. Those SCIs include both important wintering sites and maternity colonies of bats´ species included in Habitats Directive.

In total, eight bat species listed in Annex II of the Habitats Directive occur in the Czech Republic. However, no sites are proposed for *Rhinolophus ferrumequinum* and *Myotis oxygnathus/blythii* whose occurrence in the country is very rare, rather of accidental character. The most important hibernation sites have been identified for *Rhinolophus hipposideros, Myotis myotis, M. emarginatus, M. dasycneme* and *Barbastella barbastellus.* Similarly, the most numerous nursery colonies have been listed in *R. hipposideros, Myotis myotis* and *M. emarginatus*. Therefore, most SCIs are shelters (winter or summer roosting sites). Due to the lack of data on maternity roosts of *Barbastella barbastellus* and on roosts of *Myotis bechsteinii*, several larger areas of well-preserved woodland, known to host these species (based on netting results), have been selected as SCIs.

8. Consideration given to habitats which are important to bats

See above.

9. Activities to promote the awareness of the importance of the conservation of bats

a) The International Bat Night (IBN) are regularly held in the country on more than 40 sites (castles, museums, ecocentres, etc) and number of people reaches up to 5000 participants. The events are organized by the CBCT in co-operation with other NGOs. The coordinator for EBN is Daniel Horáček, member of CBCT.

b) Across whole country, workshops specialized to problems of insulation of panel houses and renovation of buildings are held, coordinator is Petra Schnitzerová and Dita Weinfurtová, employees of CBCT; project "Náš soused netopýr" (The Bat is our Neighbour*), www.sousednetopyr.cz*

c) Series of postcards, folding picture-books and a hide-game with bat photos are continually published. These materials are used during European Bat Nights and other public education programs

d) Lectures for public with handicapped bats, organized by Nyctalus (www.nyctalus.cz, a CSOP local chapter which works exclusively with bats) and special workshops for animal-rescue centres concerning bat care. Number of lectures and programs for schools and public are also provided by CBCT.
e) Travelling exhibition organized by Ministry of Environment composed of children drawings and six rollups about bats and their life and conservation.
f) CBCT (ČESON) become a member of BatLife Europe in 2012.

10. Responsible bodies, in accordance with Article III.5 of the Agreement, nominated for the provision of advice on bat conservation and management

Czech Bat Conservation Trust (CBCT, in Czech ČESON), www.ceson.org; netopyr@ceson.org
Statutory representatives:
Ivan Horáček, Petr Benda, Radek Lučan, Tomáš Bartonička, Petra Schnitzerová
Address:
Národní muzeum
Václavské náměstí 68
115 79 Prague 1
Czech Republic

11. Additional action undertaken to safeguard populations of bats

Continual work in problems summarized in part B4. (care of current roosts in buildings, advisory bodies in case of renovation of buildings, management of underground roosts, heat padding and workshops for construction companies).

12. Recent and ongoing programs (including research and policy initiatives) relating to the conservation and management of bats. In the case of research, summaries of completed projects should be provided, giving references where possible and acknowledging the sources of funding.

a) The web pages of CBCT (*www.ceson.org*) were up-dated, new detailed pages about reconstruction and renovation of buildings, online database of block of flats with bat population
b) Web pages dealing with reconstruction and insulation of building were established and actualized (*www.sousednetopyr.org*)
c) Consulting centre which deal with bat problematic expanded its activity
d) Continual program of management of large breeding colonies of *Myotis myotis* and bat hibernacula
e) brochure „Bats in forests - Guidelines for foresters“ was published by ČESON (CBCT) in 2013 as an output of national project „Bats in forests“ http://www.ceson.org/document/brozura_netopyri_v_lesich.pdf
f) Methodology for Ministry of the Environment which concerns wind turbines in the Czech Republic was accepted
g) 4-years project focused on bats with *Pseudogymnoascus (Geomyces) destructans* infection includes labs and universities across the country and provides new information: http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0097224 http://www.jwildlifedis.org/doi/abs/10.7589/2014-03-058 http://www.jwildlifedis.org/doi/abs/10.7589/0090-3558-48.1.207
h) 3-years project focused on bats and utilization of different biotopes in the national park Krkonoše is finalized.
i)
j) Additionally, long-term monitoring program continues, see B5.

13. Consideration being given to the potential effects of pesticides on bats and their food sources, and efforts to replace timber treatment chemicals which are highly toxic to bats

No changes concerning the existing legislation (see the national report submitted in 2003). When permits (exceptions to the Act No. 114/1992 on Nature Conservation and Landscape Protection, see point 6) are granted by the Ministry of Environment for renovation of roofs and loft spaces in buildings inhabited by *Rhinolophus hipposideros* and *Myotis myotis* nursery colonies, they include prohibition of the use of timber treatment chemicals which are toxic to bats (these chemicals are listed in the permit).

D. FUNCTIONING OF THE AGREEMENT

14. Cooperation with other Range States

There is a good tradition of cooperation between the Czech Republic and Slovak Republic in research projects (especially hibernacula counts etc.).
In Mediterranean region, close cooperation was established with Parties and Non-Parties Range states (e.g. Cyprus, Lebanon, Syria, and Turkey) due to research of bats conducted by Czech scientists in this area.
Cooperation was also established with Croatia (research project on biology of *Hypsugo savii*), Bulgaria and Austria (research project on cryptic pipistrelles)

15. Measures taken to implement Resolutions adopted by Meetings of Parties

Resolution 2.2 - Consistent Monitoring Methodologies and Resolution 5.4 – Monitoring bats across Europe
Traditional long-term monitoring of underground hibernacula exists in Czech Republic since 1969. In last ten years, monitoring of maternity colonies, swarming roosts, detectoring in habitats started. Recently, monitoring of bats in panel houses was established. For details see B5

Resolution 2.4 – Transboundary Programme: Habitat Proposals
Databases of monitored roosts and habitats are available on www.ceson.org. Detailed results of particular surveys are published in Vespertilio, chiropterologic journal opened for public and available on www.ceson.org.

Resolution 2.5 – Geographical Scope of the Agreement
Diploma thesis on migration of bats along Moldau river was submitted

Resolutions 2.7 and 3.3 – Format of National Reports
The reports are prepared accordingly to the new format

Resolutions 2.8, 3.8, 4.9 and 5.10 – On the implementation of the conservation and management plan
See especially points of this report B 4, 5.

Resolution 3.5 - International Year of the Bat
To educate public, cooperation with scientific radio Leonardo on series devoted to bats and bat research was established. Number of lectures for public and clerks markedly increased since 2010. New propagation materials were pressed. Travelling exhibition about bats across the country started in 2011. For details see C9

Resolution 3.7 – Amendment of the Agreement
The Amendment was accepted by the Government in December 2001.

Resolutions 4.3 – Guidelines for the Protection and Management of Important Underground Habitats
Due to long-term census in bats hibernacula, all important underground habiattas are protected. The Eurobats brochure was translated in Czech language and will be availbale in next CBCT meeting.

Resolution 4.4 – Bat Conservation and Sustainable Forest Management
Observation of influence of fragmentation of forest to bat community was undertaken during 2007 and 2008. The study was focused on *Barbastella barbastellus, Plecotus auritus, Myotis mystacinus/brandtii, Myotis emarginatus/alcathoe, Myotis bechsteinii* and *Myotis myotis*.

Resolution 4.5 – Guidelines for the Use of Remedial Timber Treatment
No change, see C13.

Resolutions 4.6 and 5.5 – Guidelines for the Issue of Permits for the Capture and Study of captured wild Bats
The legislative protection of all bat species of bats in the Czech Republic is ensured by up-dating of the Act No. 114/1992 on Nature Conservation and Landscape Protection (regulations 349/2009 and 18/2010). All species are protected and are included in critically endangered or endangered by novel regulation 175/2006 of regulation 395/1992. Act No 246/1992 on protection of animals against maltreatment (novelized by 77/2006 and 312/2008) refers to individual bat protection. Keeping of handicapped bats and their participation on public education programs are treated by regulation 316/2009 and 5/2009.
Exceptions (permits) to the Act are granted by competent authorities (Ministry of Environment, Ministry of Agriculture, and regional authorities). Offence against the law is penalized by the Czech Environmental Inspection.

Resolutions 4.7 and 5.6 and 6.11. – Wind Turbines and Bat Populations
In 2007, document of Recommendation to limitation of activity of wind farms according to bat activity was published on CBCT web pages. Continuous survey is conducted. Developers should ensure a chiropterologic survey made by professionals.

Resolution 5.2 – Bats and Rabies in Europe
There is a program of vaccination of foxes and compulsory vaccination of all domestic animals. CR is considered to be land without classic rabies. In bats, EBLV and rabies were confirmed 4 times (1994, 2x 1999, 2005). No special survey of rabies and EBLV is conducted.

Resolution 5.7 – Guidelines for the protection of overground roosts, with particular reference to roosts in buildings of cultural heritage importance
The guidelines „Manual of reconstruction and renovation of buildings and bat conservation" was published in 2009 and electronically it is available on CBCT pages (www.ceson.org) and in www.ceson.org/document/brozura_Netopyri_v5.pdf
Moreover, workshops with construction firms are held across the country.

Resolution 6.6 Guidelines for the Prevention, Detection and Control of lethal fungal Infections in Bats
A long-term project for survey of Psedogymnoascus (Geomyces) destructans is running (see above, C.12.g)

Resolution No. 6.12 Bat Conservation and Sustainable Forest Management
New brochure **„**Bats in forests - Guidelines for foresters"was published (see above, C.12.e)

IMPORTANT LITERATURE SOURCES:

Hanák V., Anděra M. 2005: Atlas of the mammals of the Czech Republic. A Provisional version. V. Bats (*Chiroptera*) – Part 1. Horseshoe bats (*Rhinolophidae*), vespertilionid bats (*Vestertilionidae – Barbastella barbastellus, Plecotus auritus, Plecotus austriacus*). Národní muzeum,, Praha. 120 pp.
Hanák V., Anděra M. 2006: Atlas of the mammals of the Czech Republic. A Provisional version. V. Bats (*Chiroptera*) – Part 2. Vespertilionid bats (*Vestertilionidae – genus Myotis*). Národní muzeum,, Praha. 185 pp.
Anděra M., Hanák V. 2007: Atlas of the mammals of the Czech Republic. A Provisional version. V. Bats (*Chiroptera*) – Part 3. Vespertilionid bats (*Vestertilionidae – Vespertilio, Eptesicus, Nyctalus, Pipistrellus, Hypsugo*). Národní muzeum,, Praha. 172 pp.
Horáček I., Uhrin M. (eds). 2010: A tribute to bats. Lesnická práce, sro., 400 pp
Horáček I., Benda P (eds). 2010. 15th IBRC – The Conference manual. Lesnická práce, sro. 369 pp
Plesník J, Hanzal V., Brejšková L. (eds). 2003: Červený seznam savců České republiky /Red List of Mammals of the Czech Republic/. Příroda, Praha

Ministry of Environment: *www.mzp.cz*
Czech Bat Conservation Trust: *www.ceson.org*
Agency for Nature and Landscape Protection: *www.ochranaprirody.cz*
Czech Union of Nature Conservationists: *www.csop.cz*
Local chapter of CUNC "Nyctalus" dealing with bats: *www.nyctalus.cz*