



LE GOUVERNEMENT
DU GRAND-DUCHÉ DE LUXEMBOURG
Administration de la nature et des forêts



EUROBATS
6th Session of the Meeting of Parties
20th-22nd September 2010, Prague, Czech Republic

LUXEMBOURG
National Report on the Implementation on the
‘European Bat Agreement’

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11th August 2010

A. General information

Name of the Party: Luxembourg
Date of Report: 11th August 2010
Period Covered: May 2006 - May 2010
Competent Authority:

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B. Status of bats within the territory of the Party

B.1. Summary details of resident species

19 bat species have been recorded in Luxembourg. One species *Rhinolophus hipposideros* is unfortunately considered to be extinct. This leaves the current number of bat species in Luxembourg at 18.

species	National red list status (cat.:	number of known summer roosts	number of known winter roosts
1. <i>Rhinolophus ferrumequinum</i>	1	1	18
2. <i>Rhinolophus hipposideros</i>	0	--	--
3. <i>Barbastella barbastellus</i>	1	--	1
4. <i>Eptesicus nilssonii</i>	DD	(1)	0
5. <i>Eptesicus serotinus</i>	3	>16	9
6. <i>Myotis bechsteinii</i>	2	12	10
7. <i>Myotis brandtii</i>	1	(1)	57*
8. <i>Myotis daubentonii</i>	3	0	17

Species (continued)	National red list status (cat.:)	number of known summer roosts	number of known winter roosts
9. <i>Myotis emarginatus</i>	1	9	4
10. <i>Myotis myotis</i>	2	13	34
11. <i>Myotis mystacinus</i>	2	1(2)	57*
12. <i>Myotis nattereri</i>	2	3	3
13. <i>Nyctalus leisleri</i>	3	2	0
14. <i>Nyctalus noctula</i>	2	0	3
15. <i>Pipistrellus nathusii</i>	DD	0	0
16. <i>Pipistrellus pipistrellus</i>	V	>50	3
17. <i>Plecotus auritus</i>	3	6	11
18. <i>Plecotus austriacus</i>	2	14	11
19. <i>Vespertilio murinus</i>	DD	0	0

Categories.:

0 => extinct; 1 => threatened by extinction; 2 => highly threatened; 3 => threatened; V => near threatened; DD => data deficiency

* no discrimination of *Myotis mystacinus/brandtii* were made during winter census

More information can be found in the atlas on the distribution of bats in Luxembourg, published in 2002: Harbusch, C., E. Engel & J.B. Pir (2002) Die Fledermäuse Luxemburgs (Mammalia: Chiroptera) Ferrantia 33: 149 pp. ISSN 1682-5519.

The atlas (in German) presents information on ecology, distribution (winter and summer distribution maps) and threats for each species in Luxembourg. A summary in French and English is also available. The atlas can be downloaded at <http://www.mnhn.lu/recherche/ferrantia/publications/Ferrantia33.pdf>.

B. 2. Status and Trends

For the status of species: see also the atlas above.

Red List of bat species in Luxembourg

Family Rhinolophidae

Rhinolophus

1. *Rhinolophus ferrumequinum* (SCHREBER, 1774); Cat.: 1: Threatened by extinction
2. *Rhinolophus hipposideros* (BECHSTEIN, 1800); Cat.: 0: Extinct

Family Vespertilionidae

Barbastella

3. *Barbastella barbastellus* (SCHREBER, 1774); Cat.: 1: Threatened by extinction

Eptesicus

4. *Eptesicus nilssonii* (KEYSERLING & BLASIUS, 1839); Data deficiency
5. *Eptesicus serotinus* (SCHREBER, 1774); Cat.: 3: Threatened

Myotis

6. *Myotis bechsteini* (KUHLE, 1817); Cat.: 2: Highly threatened
7. *Myotis brandtii* (EVERSMANN, 1845); Cat.: 1: Threatened by extinction
8. *Myotis daubentonii* (KUHLE, 1819); Cat.: 3: Threatened

9. *Myotis emarginatus* (GEOFFREY, 1806); Cat.: 1: Threatened by extinction

10. *Myotis myotis* (BORKHAUSEN, 1797); Cat.: 2: Highly threatened

11. *Myotis mystacinus* (KUHLE, 1817); Cat.: 2: Highly threatened

12. *Myotis nattereri* (KUHLE, 1817); Cat.: 2: Highly threatened

Nyctalus

13. *Nyctalus leisleri* (KUHLE, 1817); Cat.: 3: Threatened

14. *Nyctalus noctula* (SCHREBER, 1774); Cat.: 2: Highly threatened

Pipistrellus

15. *Pipistrellus nathusii* (KEYSERLING & BLASIUS, 1839); Data deficiency

16. *Pipistrellus pipistrellus* (SCHREBER, 1774); Cat. V : Potentially endangered

Plecotus

17. *Plecotus auritus* (LINNAEUS, 1758); Cat.: 3: Threatened

18. *Plecotus austriacus* (FISCHER, 1829); Cat.: 2: Highly threatened

Vespertilio

19. *Vespertilio murinus* LINNAEUS, 1758; Data deficiency

B.3. Habitats and roost sites

Due to the lack of an official survey and monitoring program, only the last roosting site of *Rhinolophus ferrumequinum* (150 females) and *Myotis emarginatus* (830 females) in the southeast of Luxembourg has been surveyed regularly since 1982. The Ministry of Environment has started an action plan for the protection of this vital colony in 2005, but the project couldn't be carried out so far.

There has been no monitoring of the success of previous bat protection programs (LIFE-program) in Luxembourg.

In the period covering the present report, all known colonies of *Myotis myotis* in Luxembourg have been monitored. The “*Station Biologique de l'Ouest*” is working on a monitoring program of 17 roosting colonies in the Western part of Luxembourg since 2005. For the project “*Action Combles & Clochers*”, where lofts and attics of 75 churches have been opened for bats, the presence of bats is monitored on by putting white plastic sheets on the floor, and then checking for bat droppings on a regular basis.

In May 2005, the *Administration de la nature et des forêts* started a three-year research project to investigate roosting sites of *Myotis bechsteinii* in representative Luxembourg forests. Twelve nursing colonies with 28-70 females could be found and over 37 roosting trees were marked to protect them from timber logging. The project is supposed to generate an appropriate conservation plan for this tree-dwelling species.

A study to investigate forest dwelling bat species and their roosting sites has been carried out by the *Administration de la nature et des forêts* and is still ongoing (*Musée national d'histoire naturelle*).

A project to secure entrances for bats in the old iron mines in the South of Luxembourg has started 2006 with the responsible persons of Arcelor-Mittal and the *Inspection du Travail et des Mines*. The *Administration de la nature et des forêts* has worked out 3 possibilities to combine safety measures for people with conservation measures for bats. This project plans to secure 150 iron mine entrances. The first 13 entrances were secured in 2009, and in 2010, 20 entrances will be accessible for bats after their definitive closing for people. This project will guarantee long-term accessibility to important hibernation sites in the south of the country.

In 2010, a large scale national monitoring program of biodiversity, including bats, was installed by the MDDI (Ministry of sustainable development, department of environment) and the CRP Gabriel Lippmann. Reproduction sites as well as hibernating sites of six bat species will be monitored: *R. ferrumequinum* (1 colony), *M. emarginatus* (8), *M. myotis* (12), *M. bechsteinii* (12) *B. barbastella* (1) and *E. serotinus* (6). Moreover, data on bat population trends are recorded by line-transects in a certain number of random chosen quadrates of representative landscapes and

habitats in Luxembourg.

B.4. Threats

All threats to bat populations presented in the last report are still remaining.

Several important roosting sites of *Myotis myotis* and *Myotis emarginatus* have been or are being renovated within the next years. Due to efforts of the *Administration de la nature et des forêts*, most of the colonies could be conserved on the short term, but due to a missing professional 'fulltime' structure, the conservation of these colonies is not guaranteed in the long term.

Despite progress in bat protection, Luxembourg bat populations continue to face serious threats by a still growing economy: urbanization projects, construction of bypass roads, loss of insect biodiversity due to intensive agriculture, sometimes loss of roosting sites due to intensive forest management, etc.

B. 5. Data Collection, analysis, interpretation and dissemination

The data of national bat survey project (e.g. monitoring, research projects, impact studies, etc.) is collected by the *Musée national d'histoire naturelle* in the national database RECORDER 2000. All available bat data (up to 2001) are published in the atlas of bats of Luxembourg (Harbusch et al. 2002, see above).

C. Measures taken to implement article III of the Agreement

C. 6. Legal Measures taken

The Bat Agreement came into force at 5th August 1993. All bat species are protected by law in Luxembourg (law of 19th January 2004 and ruling of 9th January 2009). A five-year nature protection plan was presented in May 2007 by the Ministry of Environment. Within this framework, the Mammal Group of the *Musée national d'histoire naturelle* proposed action plans for various endangered bat species (*Rhinolophus ferrumequinum*, *Myotis emarginatus* and *Myotis myotis*).

C.7. Sites identified and protected

Whereas the major roosting sites of house dwelling bats and most of the underground hibernating sites are well known, the same is not true for tree-roosting bats. For this reason, a scientific project was set up in 2006 to identify key sites for tree living bats (e.g. *Myotis bechsteinii*) in forests in Luxembourg. Moreover, new nursing colonies are detected in urban areas through public awareness campaigns, f.ex. a nursing colony of several hundred *Myotis emarginatus* in Luxembourg-Rollingergrund in 2008.

Further awareness campaigns are planned for the next years.

C.8. Consideration given to important bat habitats

A solution to secure the last reproduction colony of *Rhinolophus ferrumequinum* in Luxembourg has to be found urgently.

C. 9. Promotion Activities

A certain number of presentations and bat detector excursions were organized during the past 4 years:

- ☒ In July 2006 the Xth European Bat Night was organized at the *Ecole de musique de Clervaux*
- ☒ In July 2008 the XIIth European Bat Night was organized, as in 2006, at the *Ecole de musique de Clervaux*. This event took place in parallel action to the Stihl Timbersport Series.
- ☒ In 2007 and 2009, Luxembourg didn't organize the Bat-Night due to a combination of circumstances.

Interested people watched live infrared camera transmission from a mixed nursing colony of *Myotis myotis*. This was followed by a bat detector watch. Over 250 people in 2006 and almost 1000 people in 2008 attended this happening and observed the *Myotis myotis* colony emerging from the roost. Infrared video projection, workshops for children and a bat-walk gave the visitors

an insight into the biology of bats.

Since the first organization of the event of the EBN, around 5.000-6.000 mostly young people have been informed about the aims of bat conservation.

In January 2010, the *Administration de la nature et des forêts* published a booklet about house-dwelling bats. The title of the publication (available only in German) is *Hausbewohnende Fledermäuse in Luxemburg*; it informs private owners on the importance of conservation of urban bats. This publication can be downloaded directly as a PDF at www.emwelt.lu

The publication about forest-dwelling bats, *Fledermäuse in den Wäldern Luxemburgs*, was reedited in 2006, as was the bat sticker for children.

The *Musée national d'histoire naturelle* reedited the LIFE-exhibition on bats species which informs about the general behavior and protection of bats.

C. 10. Responsible Bodies in Accordance with article III.5.

A responsible body in accordance with article III.5. of the Agreement is existing in Luxembourg in the name of the *Administration de la nature et des forêts*. Advice is given to people having bats in their houses. This happens in collaboration with the *Musée national d'histoire naturelle*.

A bat line (bat@anf.etat.lu) has been active since 2005, allowing members of the public as well as communes and government departments to consult bat experts to indicate presence of bats in their buildings, to get advice of all kind, or to ask for help in the case of disturbance by bats. Assistance will be given by personnel of the *Administration de la nature et des forêts* or of the *Musée national d'histoire naturelle* as well as by bat workers and staff of the “*Stations Biologiques*”. This bat-line is regularly used by the public and by the competent authorities for asking some device.

C. 11. Additional actions

The following conservation projects were not put in place specifically for bats, but most of them will benefit bats directly or indirectly. Most of them are located in Natura 2000 areas.

Natural forest reserves (RFI)

Enneschte Boesch, Bertrange; *Beetebuerger Boesch*, Bettembourg; *Laangmuer (Grengewald)*, Luxembourg; *Pëttenerboesch*, Mersch; *Grouf*, Schengen; *Haardt*, Dudelange; *Saueruecht*, Beaufort.

Extensive grazing projects

Syre, Mensdorf (46 ha); Alzette, Dumontshaff Schifflange (47 ha); Vallée de l'Ernz Noire, Grundhof (70 ha); Sûre, Pont Misère (85 ha); Haardt, Dudelange (20 ha); Belgrad, Frisange (28 ha); Mamertal, Schoenfels (17 ha); Beggen (10 ha).

River restoration projects

Alzette, Schifflange; Alzette, Walferdange; Alzette, Hesperange; Syre, Mensdorf; Mamer, Mamer; Chiers, Pétange.

Urban conservation projects

Brill, Mamer.

Moreover, actions have been taken to implement a reduction or even a complete stop of pesticide use in some urban areas, coupled with late mowing.

C. 12. Recent and ongoing protection programs (including research):

Protection:

The program *Combles et Clochers* (attics and church-towers) was carried out by *Stations Biologiques* under the supervision of the *Administration de la nature et des forêts* and financed by the MDDI. 75 church roofs and attics have been made accessible for bats in the country. This

program will hopefully be extended to all churches in Luxembourg (>395 churches).

Research:

- A research program on *Myotis emarginatus*, focusing on roosting and habitat preferences, was carried out from 2004 to 2008. The results of this research will lead to an action plan for this species.
- A three-year study on the presence of *Myotis bechsteinii* was carried out in representative forest ecosystems of Luxembourg. Three M.Sc. theses on the autecology of this species were carried out in the forest *Friemholz* near Echternach (in collaboration with the Universities of Trier, Leipzig and Ulm). A Ph.D. thesis financed by the National Research Fund currently analyses the habitat partitioning of four Bechstein bats' colonies in the *Friemholz* forest. As a result of this long term research program, forest practice should be adapted for oncoming forest management plans of the *Administration de la nature et des forêts*, to be more favourable for forest dwelling bat species.
- A five-year monitoring program is finished by the *Musée national d'histoire naturelle* on the occurrence of bats in forests.
- A research project about *Myotis emarginatus* has been carried out at the end of 2009: *Habitatnutzung der Wimperfledermaus in Luxemburg*. The results will be presented to the competent authorities in 2010.
- The research project *Epidémiosurveillance de la rage des chauves-souris des Régions des Trois Frontières B/L/F* was started in 2008 in collaboration with the AFSSA (France), and is still ongoing (2007-2012).

C. 13. Potential effects of pesticides

There has been until now no research on the effects of pesticides on bats in Luxembourg. A list of harmless timber treatment products is available upon demand.

D. Functioning of the Agreement

D.14. Co-operation with other Range States

Trans-boundary cooperation with the bat-workers of France, Germany and Belgium is taking place regularly. A trans-boundary study for passive survey of EBLV is realized (AFSSA (Nancy, F)) (see point C12 Research).

The annual voluntary contribution of Luxembourg allowed representatives and bat specialists of countries in financial transition to attend several IWG's (Rabies, etc.) and AC's.

By its annual voluntary contribution via EUROBATS, Luxembourg co-funded bat protection surveys and protection programs in Cyprus (2009), Bulgaria (2010) and Romania (2010).

D.15. Measures taken to implement the MOP-Resolutions

Resolution 2.1 - Consistent Monitoring Methodologies and Resolution 5.4.- Monitoring bats across Europe

Luxemburg contributed actively to the IWG by helping to develop consistent monitoring methods of two endangered bat species:

**Rhinolophus ferrumequinum*

**Myotis emarginatus*

Resolution 2.4 Transboundary Program: Habitat Proposals

Details of one of the most important underground roosts were forwarded to the relevant IWG.

Resolution 2.5 Geographical Scope of the Agreement

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Resolutions 2.7 and 3.3 – Format of National Reports

The report was prepared according to the new format.

Resolutions 2.8, 3.8 and 4.9 On the Implementation of the Conservation and Management Plan

Species action plans (PAE) were established for three bat species: *R. ferrumequinum*, *M. emarginatus* and *B. barbastellus* within the national plan for nature protection (PNPN) coming to end in 2011. The implementation of the species action plan of *R. ferrumequinum* started in 2010.

Resolutions 3.7- Amendment of the Agreement

The following amendments of the Agreement were brought in national legislation:

- ☒ *Loi du 6 mai 2000 portant approbation des amendements à l'Accord relatif à la conservation des chauves-souris en Europe, adoptés à la première session de la quatrième réunion des Parties, qui s'est tenue à Bristol, du 18 au 20 juillet 1995.*
- ☒ *Loi du 13 août 2002 portant approbation de l'Amendement à l'Accord relatif à la conservation des chauves-souris en Europe du 4 décembre 1991, adopté à la troisième réunion des Parties à Bristol du 24 au 26 juillet 2000.*

Resolutions 4.3- Guidelines for the Protection and Management of Important Underground Habitats

One major hibernating site of Luxembourg was included in the database of the IWG. Several meetings were held with the competent authorities and Arcelor-Mittal to preserve some 150 old mining entrances for bats in the south-west of the country.

Resolution 4.4 – Bat-Conservation and Sustainable Forest Management

As a result of the *Myotis bechsteinii* study, management recommendations for sustainable forest management will be transmitted to the ground personnel (foresters). Most public forests will be managed under the criteria of the forest labels PEFC and FSC.

Resolution 4.5 – Guidelines for the Use of Remedial Timber Treatment

Remedial Timber Treatment is not carried out in Luxembourg.

Resolution 4.6- Guidelines for the Issue of Permits for the Capture and Study of Captured Wild Bats

In Luxembourg, the issue of licences for the capture and study of bats is regulated by law (law of the 19th January 2004, articles 20 and 33). Details of this law can be put at the IWG's disposal. This law can be downloaded directly as a PDF at <http://www.legilux.public.lu/leg/a/archives/2004/0102901/0102901.pdf#page=2>.

Resolution 4.7- Wind Turbines and Bat Populations

A meeting with the competent authority in the Ministry of Environment was held in order to identify guidelines and no-go-areas for future construction of wind turbines in Luxembourg. Bat-workers should be involved at an early stage in the decision process. A map of *no-go* areas (areas of high bat species diversity or highly endangered bat species) was published together with a map established by bird specialists.