NATIONAL REPORT ON THE IMPLEMENTATION OF THE AGREEMENT ON THE CONSERVATION OF BATS IN EUROPE (EUROBATS) 2010 - BELGIUM

A: GENERAL INFORMATION

Party: BELGIUM (3 Regions)
Date of Report: August 2010
Period Covered by Report: 2007 - 2009

Competent Authority: combined effort

- Flemish Agency for Nature and Forests ANB
- Service public de Wallonie (SPW) Direction générale de l'Agriculture, des Ressources naturelles et de l'Environnement (DGARNE)
- Brussels Institute for Environment IBGE-BIM, Brussels Capital region,.

B: STATUS OF BATS WITHIN THE TERRITORY OF THE PARTY

1. SUMMARY DETAILS OF RESIDENT SPECIES.

Regular and yearly counts on the known and larger (caves and brick fortresses) or smaller (bunkers, ice cellars) hibernation sites, and the monitoring of summer maternity colonies are the basis for the evaluation of the status of resident bat species in Belgium. Efforts are done by NGOs (Natuurpunt, Natagora) and local authorities in the 3 Regions. A large amount of conservation activities in Belgium is due to the efforts of volunteers. The Belgian delegation to the Eurobats Agreement would like to express their thanks for all this excellent work.

Most of these standardised monitoring goes back tens of years, resulting in a highly comparable set of data on the evolution of bat numbers in Belgium. We may, however assume that numbers of bats counted in hibernation should be at least doubled to arrive at real numbers. The same applies for colonies: by far not all maternity colonies are known. For tree dwelling species, very few colonies are known so that numbers are not likely to be estimated.
The obligatory reporting under Article 17 of the EU Habitat Directive was the first combined effort on the European level to evaluate the trend over the past 10-20 years of population sizes and areal, habitat quality and availability, threats and overall prospects of all species and habitats under Annex II and IV of the Habitat Directive. For both the Atlantic biogeographical zone of Belgium (North of the line Sambre-Meuse) and the Continental biogeographical zone (South of this line) the combined data yield an overall status of, in our case all bat species (Table 1). In both zones population estimates are based on hibernation site and summer colony observations. For the Continental region, also standard census monitoring was included in a semi-quantitative population estimate based on positive 5x5 km map grids. Due to the by far smaller number of mainly man-made hibernation quarters (large and small) a qualitative estimation of population numbers was made for the Atlantic zone (roughly Flanders and Brussels). Non cave dwelling species were estimated based on a fair knowledge of summer colonies of species. Species trend evaluations were based only on comparable sets of date compared with reference to the year 1990. *Myotis mystacinus/brandtii* and *Plecotus auritus/austriacus* were considered impossible to separate in this type of evaluation and therefore jointly evaluated. *Eptesicus nilsonii* status in Belgium is at the moment still unclear.

Detailed species report can be found at:
http://biodiversity.eionet.europa.eu/article17/speciesreport/?group=TWFtbWFscw%3D%3D&country=BE&region=ATL
and

http://biodiversity.eionet.europa.eu/article17/speciesreport/?group=TWFtbWFscw%3D%3D&country=BE&region=CON

Species	BE Atlantic			BE Continental		
	Pop. estimate (numbers)	Pop. Evolution ref year 1990	Species Future prospects	Population size 5x5 positive grids	Pop. Evolution ref year 1990	Species Future prospects
Barbastella barbastellus (Annex II)	<10	unknown	unknown	1-3 grids	unknown	bad
Eptesicus serotinus	600-1500*	favourable	good	20	st. quo	unknown
Myotis bechsteinii (Annex II)	<10	st. quo	unknown	30	favourable	unknown
Myotis mystacinus/brandtii	2270-4000*	favourable	good	60-83	st. quo	good
Myotis dasycneme	50-100*	favourable	good	10-16	unfavourable	unknown
Myotis daubentonii	3.900-8000*	favourable	good	50-75	favourable	good
Myotis emarginatus (Annex II)	370-750	favourable	good	30-41	st. quo	unknown
Myotis myotis (Annex II)	<20	unknown	unknown	40-56	st. quo	unknown
Myotis nattereri	1.580-3200*	favourable	good	30-44	st. quo	unknown
Nyctalus leisleri	<20	unknown	unknown	1-2	unknown	unknown
Nyctalus noctula	min. 1.300	unknown	good	unknown	unknown	unknown
Pipistrellus nathusii	min. 4.000	unknown	good	unknown	unknown	unknown
Pipistrellus pipistrellus	min. 375.000	st. quo	good	unknown	unknown	good
Pipistrellus pygmaeus (not Hab.Directive)	unknown	unknown	unknown	unknown	unknown	unknown
Plecotus auritus/austriacus	min. 3.600	favourable	good	70-91	st. quo	good
Rhinolophus ferrumequinum	1-2 now extinct	st. quo	bad	30-43	st. quo	poor
Rhinolophus hipposideros	0	st. quo	bad	5-13	unfavourable	bad
Vespertilio murinus (winter migration)	<10	unknown	unknown	unknown	unknown	unknown

Table 1: summarized data of bat species status, for both the Atlantic and Continental biogeographical zones within Belgium; 2007 compared reference year 1990. Figures with * indicate that numbers reported under the Habitat Directive Reporting were minimal counts (hibernation or colonies) and that real figures may be twice as high.

20 species are considered as resident for Belgium, of which *Barbastella barbastellus* is extremely rare and both Rhinolophus species have either disappeared (Atlantic) or are in sharp decline (continental) with poor to bad prospects to the future.
All 3 species show records going back to beginning of the 20th century of by far larger hibernating numbers (Kervyn et al., 2009). Both species of Rhinolophus in particular were also significantly more abundant in terms of colonies and sizes of colonies, especially in the continental zone of Belgium.
Historical data for a larger number of natural caves in the continental zone show that even when the current status is considered reasonably favourable for bats as a whole, by far larger numbers of bats were found hibernating in the 1920-40ies. There is little doubt that changes in prey abundance and prey composition in a changing agricultural and with changing landscapes have had a considerable impact on overall bat abundance in Belgium.

For several species a comparison by numbers or by grids can not always be made accurately (Pipistrellus sp., Nyctalus sp., *Vespertilio murinus*) so that a comparison with the 1990 status cannot be made. Almost all bat species hibernating in underground sites or fortresses showed a favourable population trends over the last 2 decades. At least for the Atlantic zone this is a result of major investments into bat protection and hibernation site management as a joint effort by regional authorities, local and even town governments and NGOs. Most of the larger hibernation quarters are or owned by NGOs or authorities, and have a management scheme for the protection of bats. For most smaller hibernation quarters protective measures are in place. With management schemes under development under the Habitat Directive in order to achieve a favourable state of conservation of species and habitats, this situation will tend at least to be stabilized, if not improved. For the Atlantic zone, especially *Eptesicus serotinus* and *Myotis emarginatus* seem to be increasing in terms of known maternity colonies. Even then the number of known colonies is limited to 40 (*Eptesicus serotinus average size 15 animals*) and 10 (*Myotis emarginatus average size 40-50 bats).*
For the continental zone, with many natural underground hibernation sites, most cave dwelling bat species estimations are either favourable (*Myotis bechsteinii, Myotis daubentonii)* or are at a status quo.
As to species future prospects estimations, which is based on expected evolutions in species numbers, available area, level of threats, protective measures of colonies and hibernation sites for most bat species the prospects are either favourable or due to a lack of information of some aspects impossible to make.

2. LEGAL AND RED LIST STATUS OF RESIDENT BAT SPECIES

All 3 Regions in Belgium have a legal framework in place to ensure an adequate protection of bat species, roosting and hibernation sites. Given the fact that almost all bat species (except *P.pygmaeus* which has been too recently identified as a separate species) are either listed as Annex II or IV under the EU Habitats Directive, all species are supposed to have the highest level of legal protection possible. Drivers such as degradation of hunting habitats and lessened food availability, loss of roost, maternity or hibernation sites, or disturbance of commuting routes are however not always easy to be taken along in environmental assessments, let alone in local planning. Further guidance on the methodologies on how to evaluate possible impacts on known bat roosts or hibernation sites and commuting routes is needed.

Table 2 gives and overview on the current red list status of bat species in the 3 Regions of Belgium. Whereas the Walloon Region applies the general IUCN classification, Flanders and the Brussels Capital region still rely on a classification predating IUCN guidelines.

Species	**Flanders & Brussels** (Criel et al 1994)	**Wallonia** (IUCN categories)
Barbastella barbastellus	0 no longer present	CR critically endangered
Eptesicus serotinus	not endangered	EN endangered
Eptesicus nilsonii	status unknown	DD data deficient
Myotis bechsteinii	1 critically endangered	DD data deficient
Myotis brandtii	2 endangered	LC least concerned
Myotis dasycneme	2 endangered	EN endangered
Myotis daubentonii	not endangered	LC least concerned
Myotis emarginatus	1 critically endangered	EN endangered
Myotis myotis	1 critically endangered	EN endangered
Myotis mystacinus	3 probably endangered	LC least concerned
Myotis nattereri	3 probably endangered	EN endangered
Nyctalus leisleri	1 critically endangered	DD data deficient
Nyctalus noctula	Not endangered	DD data deficient
Pipistrellus nathusii	3 probably endangered	DD data deficient
Pipistrellus pipistrellus	not endangered	LC least concerned
Pipistrellus pygmaeus	status unknown	DD data deficient
Plecotus auritus	3 probably endangered	VU vulnerable
Plecotus austriacus	2 endangered	VU vulnerable
Rhinolophus ferrumequinum	0 no longer present	CR critically endangered
Rhinolophus hipposideros	0 no longer present	CR critically endangered
Vespertilio murinus	status unknown	DD data deficient

Table 2. Red List Status of bat species in Belgium – situation 2009. Flanders and Brussels classified along (Criel, 1994). 0a = regionally extinct (over 30 years – uitgestorven), 0b = probably regionally extinct (vermoedelijk uitgestroven), 1 = critically endagered (ernstig bedreigd), 2 = endagered (bedreigd), 3 = probably endagered (vermoedelijk bedreigd), 4 = infrequent (zeldzaam). Wallonia a red list classification along IUCN classification Extinct (EX) - Extinct in the Wild (EW) - Critically Endangered (CR) - Endangered (EN) - Vulnerable (VU) - Near Threatened (NT) - Least Concern (LC) - Data Deficient (DD - Not Evaluated (NE)

3. STATUS, DISTRIBUTION OF, AND PRESSURES AND THREATS TO INDIVIDUAL BAT SPECIES

Codes on critical habitats, pressures and threats are the codes used in Article 17 reporting under the European Union Habitat and Bird Directives

3.1 *Barbastella barbastellus*

Barbastella barbastellus is considered highly rare for Belgium. Begin of the 20th century, *Barbastella barbastellus* was known from 150 hibernating sites in Belgium, most of them in the Continental biogeographical zone. The last 15 years the species was found in only 5 locations, usually as individuals or in very small numbers. The species needs caves not open to the public, and related objects for hibernation habitat and dead wood tree cavities for summer residence.
For the Atlantic zone, the most optimistic current population estimate would be 10 animals. For the Continental zone, the species was only found in only 1-3 grids (max 0.1%) varying along years, a strong decrease when compared to the pre 1990 period.
Among main pressures and threats identified are 110 Use of pesticides, 162 artificial planting and 166 removal of dead and dying trees;
Overall there are bad prospects, the species is likely to be become extinct in both biogeographical zones.

3.2 *Eptesicus serotinus*

Eptesicus serotinus is considered common for the whole of Belgium. The summer hunting habitats and the hibernation sites for this species are not fully know, although that caves not open to the public, and related artificial undergrounds (8310) are often used during hibernation. Most summer colonies are found in church attics and comparable objects. In total 40 maternity colonies are known from the Atlantic zone. Based on colony counts, the population for the Atlantic zone is estimated at in between 600 and 1500 at the start of the reproduction season and increased over the past 15 years. The species was reported in over 90% of grids of the Atlantic zone. The status of the species in the continental zone is less known. The species was reported in 5% of the Atlantic zone grids, but the overall abundance is probably higher. Future prospects for *Eptesicus serotinus* are considered good for the Atlantic zone, due to management schemes of summer colonies, and unknown for the continental zone of Belgium.
The main pressures and threats identified for the species were 110 Use of pesticides 150 Restructuring agricultural land holding 151 - removal of hedges and copses 164 - forestry clearance 165 - removal of forest undergrowth and 401 - continuous urbanisation

3.3 *Myotis bechsteinii*

The species is not common in Belgium and seems very much linked to 8310 natural and man made limestone caves for hibernation but also for swarming summer behaviour. Although hardly documented for Belgium, (dead) tree cavities in forests are thought to be of major importance for *Myotis bechsteinii* in terms of roost and maternity colonies. Hence the species was found in only 5 grids (1%) in the Atlantic zone and 30 grids (8 %) from the continental zone. Individual hibernating animals were among others found in underground sites near Brussels. *Myotis bechsteinii* is probably under-detected in forests. Colonies should be numerous but were not yet found. Population trends are stable in the Atlantic zone and increasing in the continental zone of Belgium.
Main pressures and threats for were identified as 164 - forestry clearance 165 - removal of forest undergrowth 162 - artificial planting and 166 - removal of dead and dying trees
The overall future prospects of the species are unknown.

3.3 *Myotis mystacinus* and 3.4 *Myotis brandtii*

Based on hibernation counts both species are considered fairly common. Both species cannot be distinguished in hibernation and are therefore considered together. A subset of summer caught animals of both species yielded a 5/3 ratio (n=84, 10 years) of mystacinus vs brandtii.
Winter habitats for the species are 8310 caves not open to the public, and related objects. In summer forest tree cavities are considered important. Both species supposed to show a continuous summer range, and a discontinuous winter distribution related to a discontinuous distribution of hibernation sites. Both species are found in significant numbers in almost all larger (>50 m2) hibernation sites (18-19th century fortresses; natural and lime caves).
The population of both species joint, through winter counts, is estimated at 2270-4000 individuals for the Atlantic zone. Both species are found in summer and winter combined in roughly 30% of the grids, and 15-20% of the grids for the continental zone. For the Atlantic zone the Natura2000 sites of brick fortresses around the city of Antwerp and the lime caves South of the province of Limburg are crucial for the survival of the species in the Atlantic zone of Belgium.
The range and population status in the Atlantic zone increased over the past decades, and seem to be stable for the continental zone.
Main pressures and threats identified are 101 - modification of cultivation practices 110 Use of pesticides 150 Restructuring agricultural land holding 151 - removal of hedges and copses 164 - forestry clearance 165 - removal of forest undergrowth 166 - removal of dead and dying trees 401 - continuous urbanisation and 990 - Other natural processes
Future prospects for the species are good overall.

3.5 *Myotis dasycneme*

The species is not a common species in Belgium and is linked to 8310 caves not open to the public, and related
objects for hibernation and larger river and canals as summer hunting grounds.
Based on winter counts and summer distribution, the species seems to increase in numbers in the Atlantic zone (estimate 50-100 animals) but are decreasing slightly in the continental zone of Belgium (found in 10-16 grids = max 8%).
Given the high level of hibernation site management future prospects for *Myotis dasycneme* are good for the Atlantic zone and unknown for the South of the country.
Main pressures and threats identified were 110 Use of pesticides and 701 - water pollution and light pollution over hunting grounds (no code).

3.6 *Myotis daubentonii*

Based on hibernation counts the species is considered fairly common. Winter habitats for the species are 8310 caves not open to the public, and related objects. In summer forest tree cavities are of upmost important as was identified by the PhD of G. Kapfer (2008) on territorial tree and pond use. Both species supposed to show a continuous summer range, and a discontinuous winter distribution related to a discontinuous distribution of hibernation sites. Both species are found in significant numbers in almost all larger (>50 m2) hibernation sites (18-19th century stone fortifications; natural and lime caves).
The population of the species from winter counts is estimated at 3.900-8000 individuals for the Atlantic zone, the species is found in summer and winter combined in over 90% of the Atlantic zone grids, and 50-75 or 13-19% of 5x5 km grids for the continental zone. For the Atlantic zone the Natura2000 sites of stone fortifications around the city of Antwerp and the lime caves South of the province of Limburg are crucial for the survival of the species in the Atlantic zone of Belgium.
The range and population status increased for both biogeographical zones of Belgium, with favourable prospects overall.
Main pressures for the species were identified to be 110 Use of pesticides and 701 - water pollution and light pollution over hunting grounds (no code).

3.7 *Myotis emarginatus*

Although well studied, and with several known colonies, the species is still considered rare in Belgium. crucial habitats for the species 8310 Caves not open to the public, and related objects (hibernation habitat), alluvial valleys, clear forests, copses, orchards, parks, gardens and habitation roofs (no code).
The whole of the Belgium is considered a favourable area for the species. Still, the species is only found in 5% of the Atlantic zone grids and max. 10 % of grids in the continental zone.
For the Atlantic zone, 10 colonies are known with in total 400-500 animals. Maximum total hibernation count for the Atlantic zone is 370 and rising over the past decade due too good management practices, almost all individuals are found in larger (>50 m2) hibernation objects (18-19th century stone fortifications, lime caves).
Future prospects for the species are good (Atlantic zone) and unknown (continental zone)
Main pressures and threats identified are 101 - modification of cultivation practices 110 Use of pesticides 150 Restructuring agricultural land holding 151 - removal of hedges and copses 164 - forestry clearance 165 - removal of forest undergrowth 401 - continuous urbanisation and 990 Other natural processes

3.8 *Myotis myotis*

The species is very rare in the Atlantic zone, but fairly common in the continental zone of Belgium. Crucial habitats for the species are 8310 Caves not open to the public, and related objects (hibernation), artificial cavities, habitation roofs, and parks, fields, meadows, clear forests (no codes).
In the Atlantic zone, the species is found hibernating in 2% of the 5x5 km grids, mostly single individuals. No colonies are known. The population in the continental zone seems stable covering 10-14% of 5x5 km grids, mostly hibernating places but also few known colonies.
The future prospects for the species is unknown

Pressures and threats were identified to be 101 - modification of cultivation practices, 110 Use of pesticides and 151 - removal of hedges and copses, 164 - forestry clearance.

3.10 *Myotis nattereri*

Is a fairly common species in both biogeographical regions. Crucial winter habitats are 8310 Caves not open to the public, and related objects, and in summer artificial cavities and habitations, clear forests, ridges and forest tree cavities (no codes).
The range and population trend for the Atlantic zone is favourable with an estimated population of 1.580-3200 bats covering 30% of grids. Due to good hibernation site management practices, future prospects for the species are favourable. In the continental zone, range and populations are stable, covering 30-40 grids (7-10 %) with unknown future prospects.
Main pressures and threats identified are 101 - modification of cultivation practices 110 Use of pesticides 150 Restructuring agricultural land holding 151 - removal of hedges and copses 164 - forestry clearance 165 - removal of forest undergrowth 401 - continuous urbanisation

3.11 *Nyctalus leisleri*

The status of the species in Belgium is not very well known. The species is highly dependant on good forest practices providing sufficient tree cavities and seems to be found only in a limited number of locations, possibly as a result of competition with *Nyctalus noctula*. The species is known from 13 5x5 km grids (3%) in the Atlantic zone and just 2 grids in the continental zone of Belgium (1.4%) with unknown population sizes or trends. The largest concentration is found in the Sonien Forest near Brussels and neighbouring forest patches. Although largely understudied, pressures and threats identified to the species are considered 110 - Use of pesticides, 164 - forestry clearance, 165 - removal of forest undergrowth and 166 - removal of dead and dying trees. With respect to this, as is the case for all tree dwelling species, *Nyctalus leisleri* might suffer large losses from a unbalanced policy of removing non native softwood trees such as *Quercus rubrum* from parks, tree lanes and forests.
The future prospects of the species are unknown.

3.12 *Nyctalus noctula*

Although by far more common, the actual status of *Nyctalus noctula* in Belgium is not known. The species is equally dependant on good forest practices providing sufficient tree cavities and is found in deciduous forests.
The range and population trends seem to be stable in the Atlantic zone, the species being found in 50% of UMT grids. Given the large area the species is found in, future prospects for the Atlantic zone are favourable. Distribution and trend in the continental zone is still unclear, hence also future prospects. The species might equally suffer large losses from a careless policy of removing of softwood trees such as *Quercus rubrum* from parks, tree lanes and forests.
Pressures and threats identified to the species are considered 110 Use of pesticides, 164 - forestry clearance, 165 - removal of forest undergrowth and 166 - removal of dead and dying trees.

3.13 *Pipistrellus nathusii*

The habitat use of *P. nathusii* in Belgium, and the distribution of species within the Pipistrellus group is still not fully clear. Nevertheless, by now, *P. nathusii* is considered a fairly common species that is found basically near forested wet patches, lakes and swamps. The species is reported in 30% of grids of the Atlantic zone, but not yet studied in the continental zone of Belgium. It is to be expected that *P.nathusii* will be quite common also there.
Trends cannot be given due to the fact that the species is rather newly found in Belgium.
Overall prospects for the species are somehow in between favourable to unknown.
Suspected pressures and threats include 101 - modification of cultivation practices, 110 Use of pesticides, 150 Restructuring agricultural land holding, 151 - removal of hedges and copses, 164 - forestry clearance and 165 - removal of forest undergrowth.

3.14 *Pipistrellus pipistrellus*

P. pipistrellus is by far the most numerous species although it is almost impossible to evaluate trends in the overall population let alone to compare with historical species abundances. The species ecology is common knowledge. The whole of the night landscape seems to be subdivided into *P. pipistrellus* territories, with exception perhaps of pine forests where almost no bat activity is seen. The range of the species covers the whole of the 29975 km2 of the BE territory. For the Atlantic zone, monitoring results suggest at least 2 *P. pipistrellus* hunting per square kilometer of territory, resulting in a minimal favourable reference population 375000 *P. pipistrellus*. Range and populations show stable recent trends, but are not fully studied in the continental zone.
Given the extent of the population, future prospects for the species are favourable in the Atlantic zone. There is no reason to assume a decline of population in the near future. For the continental zone no conclusion can be made at this moment.
Apart from lack of hiding places in newly build houses and compounds, pressures and threats include 101 - modification of cultivation practices 110 Use of pesticides, 151 - removal of hedges and copses, 164 - forestry clearance and 165 - removal of forest undergrowth

3.15 *Pipistrellus pygmaeus*

The species is by now regularly found in both the Atlantic zone and continental zone of Belgium. Monitoring activities do however, not yet allow any conclusion on the status or trends of *Pipistrellus pygmaeus.* Therefore future prospects are unknown.

3.16 *Plecotus auritus* and 3.17 *Plecotus austriacus*

Both *Plecotus* species are considered together given the fact that a distinction between is hard to make without capturing the animals. From the available capture studies, it seems that *P. auritus* is by far the more abundant species with a ratio from 35 to 1 to *P. austriacus*.
Crucial habitats for the species 8310 Caves not open to the public (hibernation), artificial cavities, dead tree cavities in forests, habitation roofs and especially church attics. The species also seems to be favoured by park landscapes in an ever more urbanizing country.
The species is reported from 75% of grids in the Atlantic zone with minimum population is estimated at 2600 *Plecotus* deducted from 100 known summer colonies of *P. auritus*, 15 for *P. austriacus*. The population trend seems to increase, in part due to management and collaboration schemes for church attics. Future prospects for the species are favourable, especially when e.g. church attic renovation projects now tend to take into account possible impacts on bat colonies.
Both *Plecotus* species joint are reported from 18 to 23% of the grids in the continental zone, with numerous colonies, especially in church attics and other older buildings. Both species combined are evaluated positive for the near future.
Despite a positive overall evaluation, apart from threats to colonies in case of renovation of church attics, pressures and threats still include 101 - modification of cultivation practices, 110 Use of pesticides, 150 Restructuring agricultural land holding, 151 - removal of hedges and copses, 164 - forestry clearance, 165 - removal of forest undergrowth and 166 - removal of dead and dying trees.

3.18 *Rhinolophus ferrumequinum*

The historic range of the species Belgium has always been confined to the continental zone, with exception of some lime caves bordering the zone. One isolated historical record was North of Brussels.
Critical habitats for the species are 8310 Caves not open to the public (hibernation), artificial cavities, hedges and copses; clear forests, deciduous forest edges, meadows with hedgerows and parks for foraging grounds. The last *R. ferrumequinum* was seen in the Atlantic zone in 1995 with little prospect for the species to return. The species can therefore be considered extinct for the Belgian Atlantic zone.
Also for the continental zone, even though the population size seems to be stable over the last decade, prospects of the species are poor. Depending of the year, *R. ferrumequinum* is found in 8-11% of the 5x5 km grids of the Belgian continental zone.

Important and well documented pressures and threats include 101 - modification of cultivation practices,110 Use of pesticides,150 Restructuring agricultural land holding, 151 - removal of hedges and copses, 164 - forestry clearance, 165 - removal of forest undergrowth and 401 - continuous urbanisation

3.19 *Rhinolophus hipposideros*

The species is extinct for over 30 years in the Belgian Atlantic zone (last record 1975). Historical records show healthy populations in the first half of the 20th century. The species is not likely to return in the shorter term. The species is still found in 5-13 of the continental zone grids (1-3%) but is in sharp decline during the past 2 decades. Future prospects for the species in the continental zone are bad. The species is likely to be become extinct in the Belgian Continental biogeographical region.
Crucial habitats include 8310: Caves not open to the public, and related objects (hibernation), artificial cavities, habitation roofs, meadows with hedgerows and deciduous forests.
Documented pressures and threats include 110 Use of pesticides, 164 - forestry clearance, 165 - removal of forest undergrowth and 166

3.20 *Vespertilio murinus*

The species is unknown from the Belgian continental zone. Only few encounters were made in the Atlantic zone, almost all found in small strip along the sea coast. It is unclear whether or not these encounters are related to migration behaviour or that satellite populations from the larger Northern population established itself in the Belgian Atlantic zone.
Status, trends and prospects for the species are unknown.

C. MEASURES TAKEN TO IMPLEMENT ARTICLE III OF THE AGREEMENT

4. Consideration given to habitats which are important to bats.

In all 3 Regions, actions are taken to put in place legal instruments to implement Article 1 of the Habitat Directive ensuring "to maintain or restore a favourable conservation status of species of community interest". All but one Belgian bats are either included in the Annex IV (maintain or restore) Annex II (+ designate special zones of conservation) of the Habitat Directive.
The different phases to achieve this exercise include an evaluation of the current state of conservation of species and habitats, schemes on what would needed to maintain or restore this status, and where to implement plans, public consultations and political endorsement for protection or restoration programmes.
The final phase will include a translation of measures, restoration and management schemes on the field, mostly within Natura2000 areas, without being an exclusive feature. Completion of implementation schemes is scheduled for 2010. Bats are included in several of Natura 2000 management schemes. Few Natura 2000 sites in Belgium (stone fortifications around the city of Antwerp and lime caves in the Province of Limburg) are centred almost exclusively on bats.

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

Specific actions to promote the conservation of bats are done on a regular basis in the Brussels, Walloon and Flemish region in a close collaboration of the nature authorities with local NGO bat groups. In particular 'the Night of the Bat' which brings together several evening and night time activities on bats in many places, each year attracts hundreds of families for a first contact with bats.
Within the LIFE+ project Bat Action, which started in 2007 and will finish 2011, a series of promotional activities were scheduled, folders printed, local authorities involved in the protection of bat roosts or hibernation sites.
The bat working groups of Natagora and Natuurpunt are key partners, not only for monitoring or census activities but also to bring bats to the larger audience.

6. Additional action undertaken to safeguard populations of bats.

Over the last years, a many targeted actions where undertaken, many of them mounting collaboration schemes with local authorities, provinces, church boards all aiming not only at raising awareness but also at liability when dealing with European protected species. Special emphasis is put on the protection of maternity colonies in (semi) public buildings, with implications on e.g. products that can be used for timber treatment on church attics and similar constructions, when and how to start renovation works can take place and which rules have to be respected in terms of bats (included in EIA procedures).
In the Flemish region, continuous efforts are being made to acquire, either by the Agency for Nature or Forest or by the NGO Natuurpunt of the remaining large hibernation sites that are still in private hands.
EIA assessment procedures in all regions on e.g. wind mill farms include a monitoring for possible effects on bat commuting routes. However more guidance and streamlining, notably from the Eurobats protocol, will be needed.
More also needs to be done to convince the forestry sector of the impact caused by the clearing of softwood hence of hollow trees from forests and parks. More efforts will have to be made to locate and protect bat colony trees against logging.

7. Research and policy initiatives relating to the conservation and management of bats.

Research activities on bats in Belgium are, by lack of leading university group, not very extensive. However, several undergraduate and doctoral studies on bat ecology and bat diet were completed. Many research activities are carried out by the NGO bat working groups, resulting in both peer and non-peer reviewed papers.
- The LIFE+ project bat Action, being a collaboration scheme between the Flemish Agency for Nature and Forest and the NGO Natuurpunt is a major driving force for all kind of initiatives relating to bat conservation and bat management in the Flemish Region. Regular census counts and standard hibernation counts are continued, leading to time series of more then 20 years.
- The identification of areas of major interest for the conservation of bats is conducted through an Interreg project concerning the (Belgian and French) Lorraine regions.
- A benchmark study on all known underground sites in the Walloon Region that are suitable for hibernation (Lamotte, 2007) is a major contribution in the further elaboration of protection and management schemes.
- The Brussels region launched a broad scale initiative in order to monitor bat activity on all of the capital territory. The survey is carried out partially by traditional census methods, partially by car based and bicycle monitoring.
- Bat rabies monitoring is still ongoing under co-ordination of the National Institute for Public Health.
- A major publication was realised on the evolution over a longer time span (50 years) of bat hibernation in major underground sites in the Walloon Region (Kervyn *et al*. 2009). While numbers of some species (*M. mystacinus/brandti, M. daubentoni, M. emarginatus*) increased as compared to the 1940-ies, both species of Rhinolophus, *B. barbastellus* and *M. myotis* strongly declined in this part of their historical area. In fifty years, the diversity of hibernating bat populations has halved.
- The Walloon region, in collaboration with Natagora, is applying a *R. hipposideros* action plan around the relict maternity colonies.
- A symposium was held on *M. emarginatus (Antwerp, November 2009) w*hich was attended by participants from all over the EUROBATS area (org. VZZ, Natuurpunt, Natagora, LIFE+ and Province of Antwerp).
- The Walloon region initiated a research project with the veterinary faculty of the University of Liège, in order to reduce the impact of antiparasitic drugs on non-target insects on which bats prey. First results of this innovative research projects are due to 2011.

D. FUNCTIONING OF THE AGREEMENT

8. Co-operation with party and range states.

Regular exchanges take place in terms or joined field monitoring and hibernation counts with bat groups in Poland, France and Romania. Joint study effort on movements of e.g. *M. dasycneme* is ongoing with the Netherlands.
The already mentioned Interreg project combines efforts on bat research in the Belgian and French Lorraine regions.
A joint training programme from the Flemish Region with the leading Romanian bat NGO, enabling to census for data on bat abundance and habitat use in Natura2000 sites in Romania was approved but has to be implemented 2010.

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F. REFERENCE WEB SITES

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- http://environnement.wallonie.be/eew/tablematiere.aspx
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- http://www.natuurenbos.be/nl-be/Projecten/Bataction.aspx
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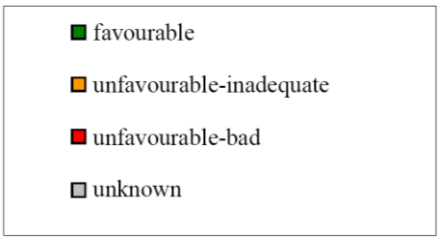
G. ANNEXES

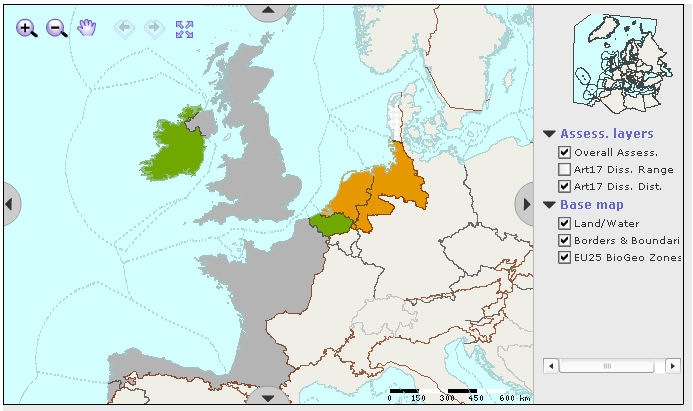
ANNEX 1

http://biodiversity.eionet.europa.eu/article17 provides more details of the Member State assessments of conservation status and the biogeographical assessment (including maps and data sheets) and a detailed technical report.
In this report, the outcome of the assessments made on the conservation status of a habitat or species is presented in one of four categories: 'favourable' (green), 'unfavourable inadequate' (amber), 'unfavourable bad' (red) or 'unknown' (grey).

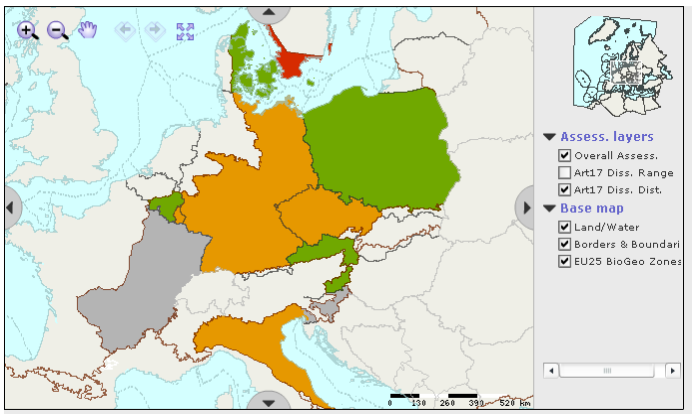


http://biodiversity.eionet.europa.eu/article17/speciesreport/?group=TWFtbWFscw%3D%3D&country=BE&region=ATL

http://biodiversity.eionet.europa.eu/article17/speciesreport/?group=TWFtbWFscw%3D%3D&country=BE&region=CON



Whole of the atlantic biogeographical region, example *M. mystacinus*



Whole of the continental biogeographical region, example *M. mystacinus*

ANNEX 2

POPULATION DEMOGRAPHICS , details

ATLANTIC REGION

on basis of hibernation census counts - not included *P.pygmaeus*

Species		Range (km²)				Population				Habitat (km²)				Future prosp.	Overall asses.
		Surface	%XR	Trend	Ref.	Size&Unit	%XP	Trend	Ref.	Area	%XH	Trend	Suitable		
Barbastella barbastellus	map	156	0.1	=	~156	1 - 10 indiv.	N/A	X	>10	N/A	N/A	X	N/A	Unk.	XX
Eptesicus serotinus	map	18784	4.9	=	18784	6000 - 6000 indiv.	N/A	+	6000	N/A	N/A	X	N/A	Good	FV
Myotis bechsteinii	map	301.5	0.2	=	301.5	1 - 10 indiv.	N/A	=	>10	N/A	N/A	X	N/A	Unk.	XX
Myotis brandtii	map	18829	7.6	=	18829	600 - (600) indiv.	N/A	+	600	N/A	N/A	X	N/A	Good	FV
Myotis dasycneme	map	18829	19.5	=	18829	1 - 80 indiv.	N/A	+	N/A	N/A	N/A	X	N/A	Good	FV
Myotis daubentonii	map	18829	3	=	~18829	(3900) - 3900 indiv.	N/A	+	~3900	N/A	N/A	X	N/A	Good	FV
Myotis emarginatus	map	18829	10.6	=	18829	1 - 370 indiv.	N/A	+	370	N/A	N/A	X	N/A	Good	FV
Myotis myotis	map	996.1	0.4	=	996.1	1 - 20 indiv.	N/A	X	>20	N/A	N/A	X	N/A	Unk.	XX
Myotis mystacinus	map	18829	4	=	18829	1 - 1470 indiv.	N/A	+	1470	N/A	N/A	X	N/A	Good	FV
Myotis nattereri	map	18829	3.5	=	18829	(1580) - 1580 indiv.	N/A	+	1580	N/A	N/A	X	N/A	Good	FV
Nyctalus leisleri	map	324.8	0.1	=	324.8	20 - (20) indiv.	N/A	X	>20	N/A	N/A	X	N/A	Unk.	XX
Nyctalus noctula	map	18829	5.4	=	18829	1300 - (1300) indiv.	N/A	X	>1300	N/A	N/A	X	N/A	Good	U1
Pipistrellus nathusii	map	18786	8.8	=	18786	1 - 4000 indiv.	N/A	X	>4000	N/A	N/A	X	N/A	Good	U1
Pipistrellus pipistrellus	map	18662	2.8	=	18662	(375000) - 375000 indiv.	N/A	=	375000	N/A	N/A	X	N/A	Good	FV
Plecotus auritus	map	18829	3.3	=	18829	3500 - (3500) indiv.	N/A	+	3500	N/A	N/A	X	N/A	Good	FV
Plecotus austriacus	map	18829	10.1	=	18829	100 - (100) indiv.	N/A	+	>100	N/A	N/A	X	N/A	Good	U1
Rhinolophus ferrumequinum	map	98.5	0	=	>>98.5	1 - 2 indiv.	N/A	=	>>2	N/A	N/A	X	N/A	Bad	U2
Rhinolophus hipposideros	map	N/A	N/A	=	>>	N/A indiv.	N/A	=	>>	N/A	N/A	X	N/A	Bad	U2
Vespertilio murinus	map	148	0.4	=	>148	10 - (10) indiv.	N/A	X	>10	N/A	N/A	X	N/A	Unk.	U1

CONTINENTAL REGION

Population: on basis of positive 5x5 km grids - not included *P.pygmaeus*

Species		Range (km²)				Population				Habitat (km²)				Future prosp.	Overall asses.
		Surface	%XR	Trend	Ref.	Size&Unit	%XP	Trend	Ref.	Area	%XH	Trend	Suitable		
Barbastella barbastellus	map	316	0	-	~5000	1 - 3 grids	N/A	-	~30	N/A	N/A	N/A	N/A	Bad	U2
Eptesicus serotinus	map	9229	1	=	9229	20 - (20) grids	N/A	=	N/A	N/A	N/A	N/A	N/A	Unk.	XX
Myotis bechsteinii	map	7056	1.3	=	7000	30 - (30) grids	N/A	+	N/A	N/A	N/A	N/A	N/A	Unk.	XX
Myotis brandtii	map	10925	1.6	=	10000	60 - 83 grids	N/A	=	75	N/A	N/A	N/A	N/A	Good	FV
Myotis dasycneme	map	4762	1.2	=	5000	10 - 16 grids	N/A	-	30	N/A	N/A	N/A	N/A	Unk.	U2
Myotis daubentonii	map	11349	1.2	=	~10000	50 - 75 grids	N/A	+	~75	N/A	N/A	N/A	N/A	Good	FV
Myotis emarginatus	map	10561	4.3	=	10000	30 - 41 grids	N/A	=	50	N/A	N/A	N/A	N/A	Unk.	U1
Myotis myotis	map	10392	1.3	=	10000	40 - 56 grids	N/A	=	60	N/A	N/A	N/A	N/A	Unk.	U1
Myotis mystacinus	map	10925	1.3	=	10000	60 - 83 grids	N/A	=	75	N/A	N/A	N/A	N/A	Good	FV
Myotis nattereri	map	10973	1.2	=	10000	30 - 44 grids	N/A	=	50	N/A	N/A	N/A	N/A	Unk.	U1
Nyctalus leisleri	map	275.9	0	X	N/A	1 - 2 grids	N/A	X	N/A	N/A	N/A	N/A	N/A	Unk.	XX
Nyctalus noctula	map	N/A	N/A	X	N/A	N/A x	N/A	X	N/A	N/A	N/A	X	N/A	Unk.	XX
Pipistrellus nathusii	map	N/A	N/A	N/A	N/A	N/A x	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	XX
Pipistrellus pipistrellus	map	11293	1.2	=	10000	N/A x	N/A	N/A	100	N/A	N/A	N/A	N/A	Good	XX
Plecotus auritus	map	10990	1.3	=	10000	70 - 91 grids	N/A	=	90	N/A	N/A	N/A	N/A	Good	FV
Plecotus austriacus	map	10990	1.5	=	10000	70 - 91 grids	N/A	=	90	N/A	N/A	N/A	N/A	Good	FV
Rhinolophus ferrumequinum	map	10230	5.7	=	10000	30 - 43 grids	N/A	=	50	N/A	N/A	N/A	N/A	Poor	U1
Rhinolophus hipposideros	map	2632	1	-	8000	5 - 13 grids	N/A	-	50	N/A	N/A	N/A	N/A	Bad	U2
Vespertilio murinus	map	N/A	N/A	X	N/A	N/A x	N/A	X	N/A	N/A	N/A	X	N/A	Unk.	XX