Conservation status of Croatian Bats compared to other EU member states call for unified approach

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Introduction

ec.europa.eu/environment/nature/knowledge/rep_habitats/index_en.htm#heading2013/18

European Commission > Environment

NATURE & BIODIVERSITY

- EU Biodiversity Policy
- EU Nature Legislation
- Natura 2000 Network
- Species protection
- Green Infrastructure
- Invasive Alien Species
- Farming for biodiversity
- Global biodiversity
- Wildlife Trade
- Animal welfare / Conservation
- Climate Change
- Partnerships
- Knowledge Base

Habitats Directive reporting

The State of Nature in the EU – Article 17 reporting

Article 17 requires Member States to report every six years about the progress made with the implementation of the Habitats Directive. As the main objective of the directive is on maintaining and restoring a favourable conservation status for habitat types & species of community interest, monitoring & reporting under Article 17 is focusing on capturing the status and trends of these habitat types and species.

Monitoring of conservation status is an obligation arising from Article 11 of the Habitats Directive for all habitats (as listed in Annex I) and species (as listed in Annex II, IV and V) of Community interest. Consequently this provision is not restricted to Natura 2000 sites and data need to be collected both inside and outside the Natura 2000 network to achieve a full appreciation of conservation status.

Then, the Commission pools all the data from the national reports together, with the help of the European Environment Agency and the European Topic Centre on Biological Diversity, in order to see how well the protected species and habitats are faring across the EU. The results of this EU assessment are published in the 'State of Nature in the EU' report. Since 2015 the progress reporting under the Birds Directive is streamlined with the Habitats Directive and integrated in the State of Nature report.

	Reporting period	National report (EU report)	Main focus
4.	2013 - 2018	2019 (2020)	Third assessment of conservation status and trends, birds included. Input to final assessment of EU Biodiversity Strategy to 2020.

Introduction

Introduction – Conservation Status

Actual data

Distribution

Per each biogeoregion
Literature/Source

Range

Population Size

CS

Habitat size & quality

Future prospects

Estimation

Estimation

Favourable reference values
FRR – km^2
FRP – units (ind., 1x1km^2)

- *minimum*
- *maximum*
- *best single value*
- *aeq – approx. equal*
- *mt - more then*
- *mmt – much more than*
- *lt – less than*
- *X – unknown*

Data quality (range, pop., habitat, trends)
a) Complete survey or a statistically robust estimate
b) Based mainly on extrapolation from a limited amount of data
c) Based mainly on expert opinion with very limited data
d) Insufficient or no data available

Short term trend (12 years)
- *Direction*
- *Magnitude*

Pressures & Threats

Codes listed

Conservation measures

Introduction – CS 2013 – 2018

Data quality and completeness scoring in Article 17

Scoring criteria - missing & unknown information
- 🔴 >25% missing or unknown information
- 🟡 10 to 25% missing or unknown information
- 🟢 <10% missing or unknown information

Scoring criteria - methods used
- 🔴 >50% based on expert opinion or not available
- 🟡 any other combination
- 🟢 >50% complete survey and >67% complete/partial survey

Missing or unknown information

Austria	🟡
Belgium	🟡
Bulgaria	🟡
Croatia	🔴
Cyprus	🟡
Czechia	🟢
Denmark	🟡

Methods used

Austria	🟡
Belgium	🟡
Bulgaria	🟡
Croatia	🔴
Cyprus	🟡
Czechia	🟢
Denmark	🟡

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https://tableau.discomap.eea.europa.eu/t/Natureonline/views/DataqualitycompletenessforArticle17/Article17Dataqualitycompleteness?:showAppBanner=false&:display_count=n&:showVizHome=n&:origin=viz_share_link&:isGuestRedirectFromVizportal=y&:embed=y

NATURE & BIODIVERSITY

EU Biodiversity Policy ▶

EU Nature Legislation ▶

Natura 2000 Network ▶

Species protection ▼

Introduction

Wild Birds ▶

Species under
Habitats Directive ▼

  Introduction

  EU Species Red Lists

  EU species action plans

  EC Guidance on species
  protection

  Large Carnivores ▶

Green Infrastructure

Invasive Alien Species

EU Species Action Plans for selected species

In 2008 the Commission began to support the development of Species Action Plans for selected species listed in the Habitats Directive. The plans are intended to be used as a tool for identifying and prioritising measures to restore the populations of these species across their range within the EU. They provide information about the status, ecology, threats and current conservation measures for each species and list the key actions that are required to improve their conservation status in Europe. Each Plan is the result of an extensive process of consultation with individual experts in Europe.

The plans are intended to assist Member States in the conservation of these species but they not legally binding documents nor do they engage the Member States beyond their existing legal commitments under this Directive.

- *Action Plan for the Conservation of the Common Midwife Toad Alytes obstetricans in the EU*
- *Action Plan for the Conservation of the Danube Clouded Yellow Colias myrmidone in the EU*
- *Action Plan for the Conservation of the European Ground Squirrel Spermophilus citellus in the European Union*

The EU multi-species Action plan for the conservation of all bat species in the European Union (2018-2024) aims to support implementation of conservation measures to enhance the status of the 45 bats species protected under the Habitats directive. The document provides baseline data on the status of the species in the EU, scientifically-based recommendations to promote and support their conservation and establishes priorities in bat species conservation.

- *EU Action plan for the conservation of all bat species in the European Union (2018-2024)*
- *Complementary document to the EU Action plan for the conservation of all bat species in the European Union (2018-2024)*
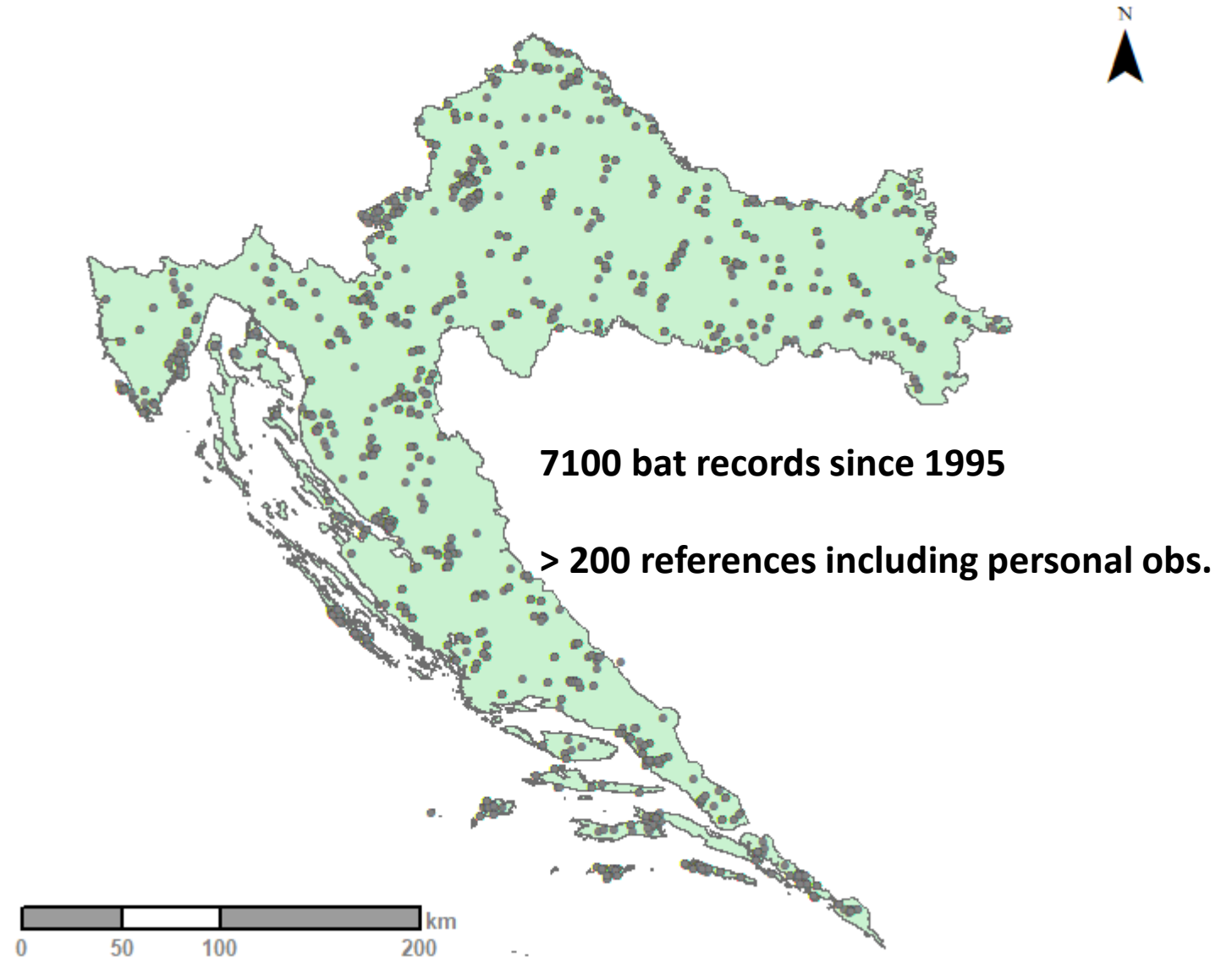
Methodology

- Croatia: 33 bat species recorded

- 3 biogeographical regions: Continental, Alpine and Mediterranean

- Around 7100 bat records since 1995 upon strict validation procedure were analysed

- Distribution maps were made taking into account distances due to critical feeding areas and commuting routes based on EUROBATS publication and other sources

- Pressures and threats: disturbance in roosts and hunting habitat, forest management, agriculture, wind energy development, light pollution, water management and climate change

- Conservation measures, although known on international level, are not systematically implemented on a national level

Methodology

Kyheröinen, E.M., S. Aulagnier, J. Dekker, M.-J. Dubourg-Savage, B. Ferrer, S. Gazaryan, P. Georgiakakis, D. Hamidovic, C. Harbusch, K. Haysom, H. Jahelková, T. Kervyn, M. Koch, M. Lundy, F. Marnell, A. Mitchell-Jones, J. Pir, D. Russo, H. Schofield, P.O. Syvertsen, A. Tsoar (2019), **Guidance on the conservation and management of critical feeding areas and commuting routes for bats**. EUROBATS Publication Series No. 9. UNEP/EUROBATS Secretariat, Bonn, Germany, 109 pp.;
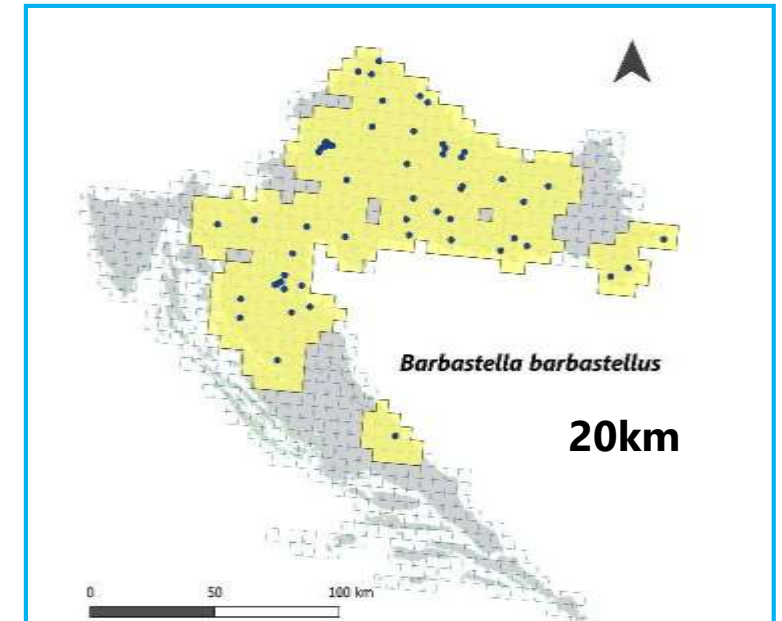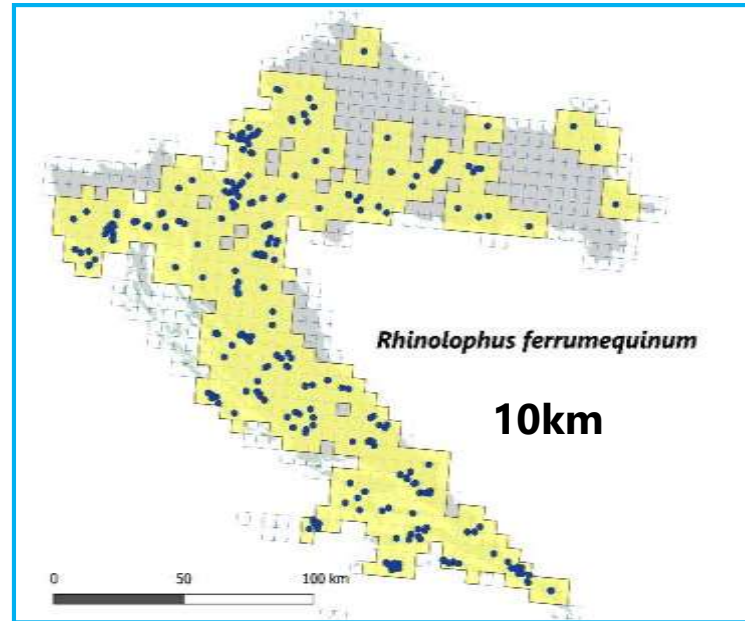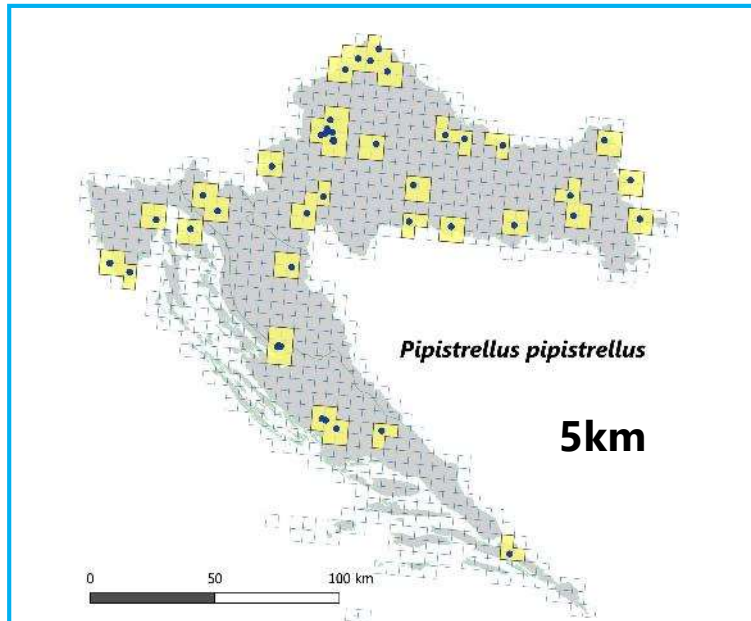*Hypsugo savii* **– Marina Kipson personal obs**.
Plecotus kolombatovici **according Schofield et al. 2019**

7100 bat records since 1995

> 200 references including personal obs.

Methodology – pressures and threats/habitat quality

1. Antolović, J., Frković, A., Grubešić, M., Holcer, D., Vuković, M., Flajšman, E., Grgurev, M., Hamidović, D., Pavlinić, I. i Tvrtković, N. (2006), 'Crvena knjiga sisavaca Hrvatske', Ministarstvo kulture, Državni zavod za zaštitu prirode, Zagreb.

2. Barova, S. & Streit A. (ur.) (2018), 'Action Plan for the Conservation of All Bat Species in the European Union, 2018 – 2024', European Commission & EUROBATS,

3. Dietz, C., von Helversen O. & Nill, D. (2009), 'Bats of Britain, Europe and Northwest Africa. A & C Black, London.

4. Hamidović, D., Lindić, V., & Krstinić, P. (2015), 'Kada i da li ljudi i šišmiši mogu dijeliti isto sklonište?', Zbornik sažetaka 12. Hrvatskog biološkog kongresa / Klobučar, G., Kopjar, N., Gligora Udovič M., Lukša, Ž., Jelić D. (ur.), Zagreb, Hrvatsko biološko društvo. 24-25.

5. Jeremić, J., Hamidović, D., Dumbović-Mazal, V., Jelić, K., Korša, A. (2017), ' Izvješće o provedbi Sustava za dojavu i praćenje uhvaćenih, usmrćenih, ozlijeđenih i bolesnih strogo zaštićenih životinja u razdoblju 2014. – 2016. godine, Hrvatska agencija za okoliš i prirodu.

6. Mitchell-Jones, A. J., Bihari, Z., Masing, M. & Rodrigues, L. (2007), 'Protecting and managing underground sites for bats', EUROBATS Publication Series No. 2, (English version). UNEP / EUROBATS Secretariat, Bonn, Germany, 38 pp.

7. Rnjak d., Rnjak G., Maslać M., Hanžek N. (2016), 'Stručna podloga za Plan upravljanja speleološkim objektima na širem području NP „Krka" u svrhu praćenja i očuvanja faune šišmiša', GEONATURA d.o.o. / Baseline study for the Managment plan of speleological objects in the wider area of the National Park Krka for the monitoring and conservation of bat fauna, GEONATURA d.o.o

8. Rodrigues, L. Bach, M.-J. Dubourg-Savage, B. Karapandža, D. Kovač, T. Kervyn, J. Dekker, A. Kepel, P. Bach, J. Collins, C. Harbusch, K. Park, B. Miscevski, J. Minderman (2015), 'Guideline for consideration of bat sin wind farm projects – Revision 2014. EUROBATS Publication Series No. 6 (English version)', UNEP/EUROBATS Secretariat, Bonn, Germany, 133 pp.

9. Rodrigues, L. et al. (2018), 'Report of the Intersessional Working Group on Wind Turbines and Bat Populations', Doc.EUROBATS.StC14-AC23.9.Rev.2,

10. Voigt, C.C., C. Azam, J. Dekker, J. Ferguson, M. Fritze, S. Gazaryan, F. Hölker, et al. (2018), 'Guidelines for Consideration of Bats in Lighting Projects.' EUROBATS Publication Series. Bohn, Germany: UNEP/EUROBATS Secretariat, 2018.

11. Žvorc P., Kipson M., Hamidović D. (2017), 'Cave Vrlovka in Croatia and tourism - yes or no? - recommendations based on bat fauna research', u: 14th European Bat Research Symposium - EBRS 2017 Abstract Book (ur. Hutson A.M. Lina P. H.C.), Donostia, The Basque Country, 1-5 August 2017: 202. (Poster).

Results – Baseline for Range - Croatia

Pipistrellus pipistrellus

5km

Rhinolophus ferrumequinum

10km

Barbastella barbastellus

20km

Results

Species	Range 10x10km				Population size 1x1km			Population size - 1x1km in Natura 2000		
	Total	**ALP**	**MED**	**CON**	**ALP**	**MED**	**CON**	**ALP**	**MED**	**CON**
Barbastella barbastellus	**42500**	**9700**	**5500**	**31100**	**12**	**2**	**46**	11	2	23
Eptesicus nilssonii	7600	7600			5					
Eptesicus serotinus	29900	4900	6400	20200	9	13	52			
Hypsugo savii	14600	1300	11300	2600	5	54	12			
Miniopterus schreibersii	65300	11900	34600	23900	7	60	22			
Myotis alcathoe	3300	1800	500	1300	9	1	5			
Myotis bechsteinii	8700	2100	2000	5500	8	6	20	8	5	14
Myotis blythii	44900	10900	29900	9100	9	45	7			
Myotis brandtii	10100	3700		600	7		9			
Myotis capaccinii	36500	11600	24200	5800						
Myotis dasycneme	3600			3600						
Myotis daubentonii	26300	2600	900	24100	2	1	53			
Myotis emarginatus	37900	5800	20100	14600						
Myotis myotis	54800	11100	21400	27200						
Myotis mystacinus	14400	3000	4300	8200	18	18	26			
Myotis nattereri	11300	2600	4700	4800	9	15	15			
Nyctalus lasiopterus	25600		15300		6					
Nyctalus leisleri	51300	9500	23300	22600	12	21	27			
Nyvctalus noctula	61300	9400	19000	37000	11	15	94			
Pipistrellus kuhlii	26200	1700	9700	15500	4	40	66			
Pipistrellus nathusii	1670	1400	7800	8200	2	12	17			
Pipistrellus pipistrellus	**12600**	**1500**	**3300**	**8200**	**7**	**12**	**31**			

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Results

Species	type	biogeoregion	Population size - individuals	Population size in Natura 2000
Miniopterus schreibersii	nursery	ALP	**2200**	**2200**
	hibernation	ALP	7	7
	nursery	CON	**31000**	**31000**
	hibernation	CON	24012	24000
	nursery	MED	12300	11300
	hibernation	MED	**24000**	**24000**
Rhinolophus blasii	nursery	MED	**350**	**350**
	hibernation	MED	150	150
Rhinolophus euryale	nursery	ALP	**688**	**685**
	hibernation	ALP	6	6
	nursery	CON	**1086 (1090)**	**1016 (1020)**
	hibernation	CON	159	159
	nursery	MED	**3117 (3125)**	**2892 (2900)**
	hibernation	MED	463	463
Rhinolophus ferrumequinum	**nursery**	**ALP**	**258 (260)**	258 (260)
	hibernation	ALP	169	77
	nursery	CON	2426	1159
	hibernation	**CON**	**5137 (5150)**	5083 (5090)
	nursery	MED	441	441
	hibernation	**MED**	**4134 (4200)**	3479 (3500)

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Pressures, HR, all bat species

A - Agriculture

B - Forestry

C - Extraction of resources
D - Energy production ...
E - Transport development&operation

F - Development, construction and use of residential, commercial, industrial and recreational infrastructure and areas

I - Alien and problematic species
J - Mixed source pollution
K - Human-induced changes in water regimes
N - Climate change

Continental biogeographical region

pressures   threats

A02, A03, A05, A06, A14, A21, A25, A26, B01, B02, B06, B07, B08, B09, B10, B20, B23, C01, D02, E01, F02, F07, F24, I04, J01, K01, N05
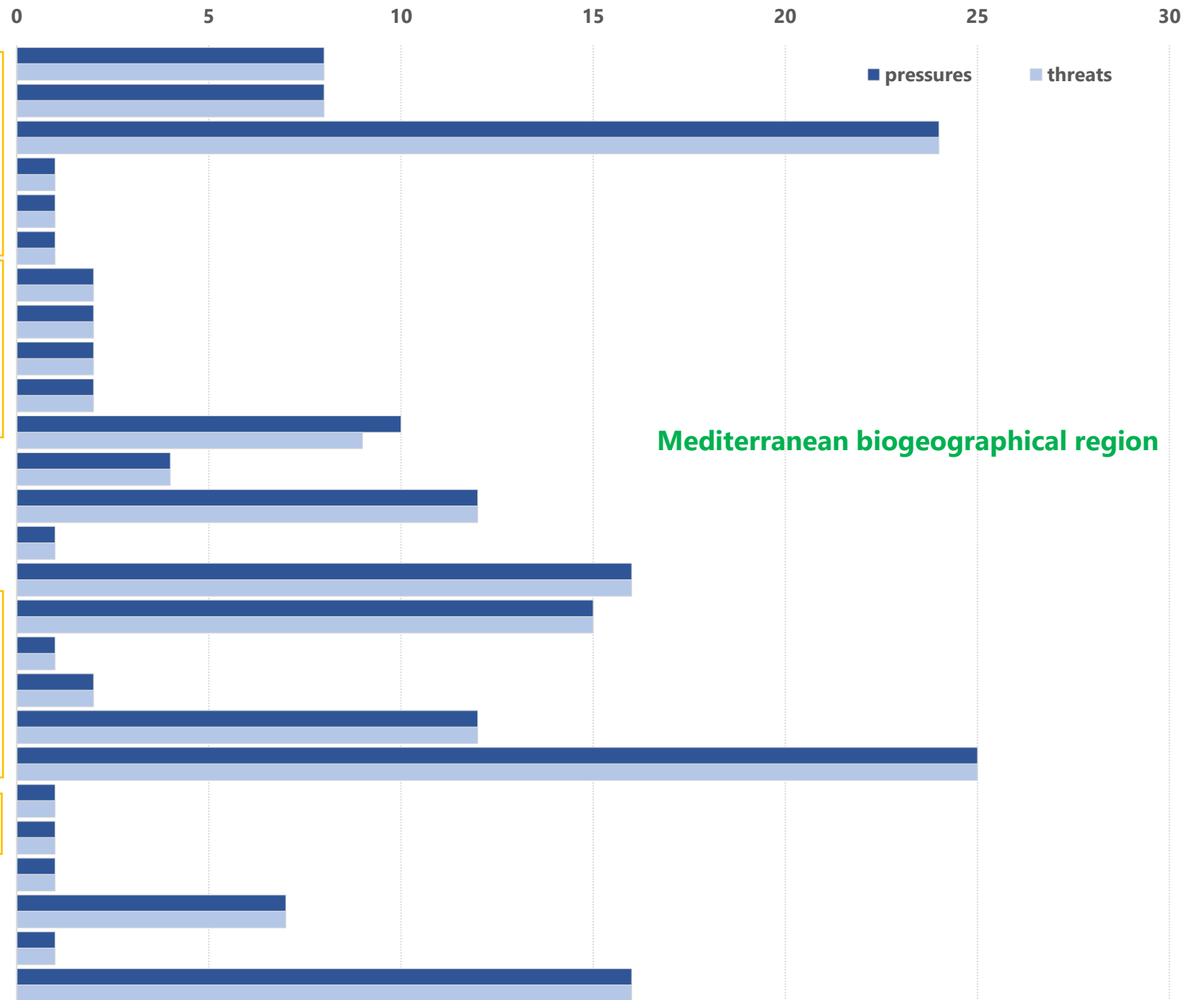
Pressures, HR, all bat species

A - Agriculture

B - Forestry

C - Extraction of resources
D - Energy production ...
E - Transport development&operation

F - Development...

J - Mixed source pollution

Alpine biogeographical region

- pressures
- threats

A05, A06, A21, A26, B06, B07, B08, B09, B15, B20, B23, C01, D02, E01, F02, F24, J01

Pressures, HR, all bat species

Mediterranean biogeographical region

A - Agriculture

B - Forestry

C - Extraction of resources
D - Energy production ...
E - Transport development&operation

F - Development...

H - Military action, public safety measures, and other human intrusions
I - Alien and problematic species
J - Mixed source pollution
K - Human-induced changes in water regimes
N - Climate change

Categories: A05, A06, A21, A23, A25, A26, B06, B07, B08, B09, B20, C01, D01, D02, E01, F02, F03, F04, F07, F24, H05, H06, I04, J01, K01, N05

Legend: pressures, threats

Species name and code	Biogeoregions		
	ALP	**CON**	**MED**
Barbastella barbastellus (1308)	PRE (U2)	PRE (U1)	OCC (XX)
Eptesicus nilssonii (1313)	OCC (XX)		
Eptesicus serotinus (1327)	PRE (U2)	PRE (U2)	PRE (U2)
Hypsugo savii (5365)	PRE (U2)	PRE (U2)	PRE (U2)
Miniopterus schreibersii (1310)	PRE (U1)	PRE (U1)	PRE (U1)
Myotis alcathoe (5003)	SCR (XX)	SCR (XX)	SCR (XX)
Myotis bechsteinii (1323)	PRE (U2)	PRE (U2)	PRE (U2)
Myotis blythii (1307)	PRE (U1)	PRE (U2)	PRE (U1)
Myotis brandtii (1320)	PRE (U2)	PRE (U2)	
Myotis capaccinii (1316)	PRE (U1)	PRE (U2)	PRE (U1)
Myotis dasycneme (1318)		PRE (U2)	
Myotis daubentonii (1314)	PRE (U2)	PRE (U2)	OCC (XX)
Myotis emarginatus (1321)	PRE (U2)	PRE (U2)	PRE (U1)
Myotis myotis (1324)	PRE (U2)	PRE (U1)	PRE (U1)
Myotis mystacinus (1330)	SCR (U2)	PRE (U2)	SCR (U2)
Myotis nattereri (1322)	PRE (U2)	PRE (U2)	PRE (U2)
Nyctalus lasiopterus (1328)			OCC
Nyctalus leisleri (1331)	PRE (U2)	PRE (U2)	PRE (U2)
Nyctalus noctula (1312)	PRE (U2)	PRE (U2)	PRE (U2)
Pipistrellus kuhlii (2016)	PRE (XX)	PRE (U2)	PRE (U2)
Pipistrellus nathusii (1317)	MAR (XX)	PRE (U2)	PRE (U2)
Pipistrellus pipistrellus (1309)	PRE (U2)	PRE (U2)	PRE (U2)
Pipistrellus pygmaeus (5009)	PRE (U2)	PRE (U2)	PRE (U2)
Plecotus auritus (1326)	PRE (U2)	PRE (U2)	MAR (XX)
Plecotus austriacus (1329)	PRE (U2)	PRE (U2)	
Plecotus kolombatovici (5011)			PRE (U2)
Plecotus macrobullaris (5012)	PRE (U2)	PRE (U2)	PRE (U2)
Rhinolophus blasii (1306)			PRE (U1)
Rhinolophus euryale (1305)	PRE (U1)	PRE (U2)	PRE (U1)
Rhinolophus ferrumequinum (1304)	PRE (U2)	PRE (U1)	PRE (U1)
Rhinolophus hipposideros (1303)	PRE (U2)	PRE (U2)	PRE (U2)
Tadarida teniotis (1333)			PRE (U2)
Vespertilio murinus (1332)	PRE (U2)	PRE (U2)	PRE (U2)

FV - Favourable

U1 - Unfavourable - inadequate

U2 - Unfavourable - bad

XX - Unknown

PRE - present
MAR - marginal
OCC - occuring
SCR – scientific reserve

Methodology – comparison of 3 bat species

Pipistrellus pipistrellus, Rhinolophus ferrumequinum, Barbastella barbastellus

Pipistrellus nathusii

In shortage of cute Pipistrellus pipistrellus photo

Legend

- ⬛ (grey) P_pipistrellus_ Art17_species_distribution_2013_2018_MS
- 🟥 (red) P_pipistrellus_ Art17_species_distribution_2013_2018_MS
- 🟧 (orange) P_pipistrellus_ Art17_species_distribution_2013_2018_MS
- 🟩 (green) P_pipistrellus_ Art17_species_distribution_2013_2018_MS
- Steppic_BiogeoRegions2016
- Pannonian_BiogeoRegions2016
- Mediterranean_BiogeoRegions2016
- Macaronesian_BiogeoRegions2016
- Continental_BiogeoRegions2016
- Boreal_BiogeoRegions2016
- BlackSea_Regions2016
- Atlantic_BiogeoRegions2016
- Arctic_BiogeoRegions2016
- Anatolian2016
- Alpine_BiogeoRegions2016
- Outside_Europe_BiogeoRegions2016

Map: Eurobats
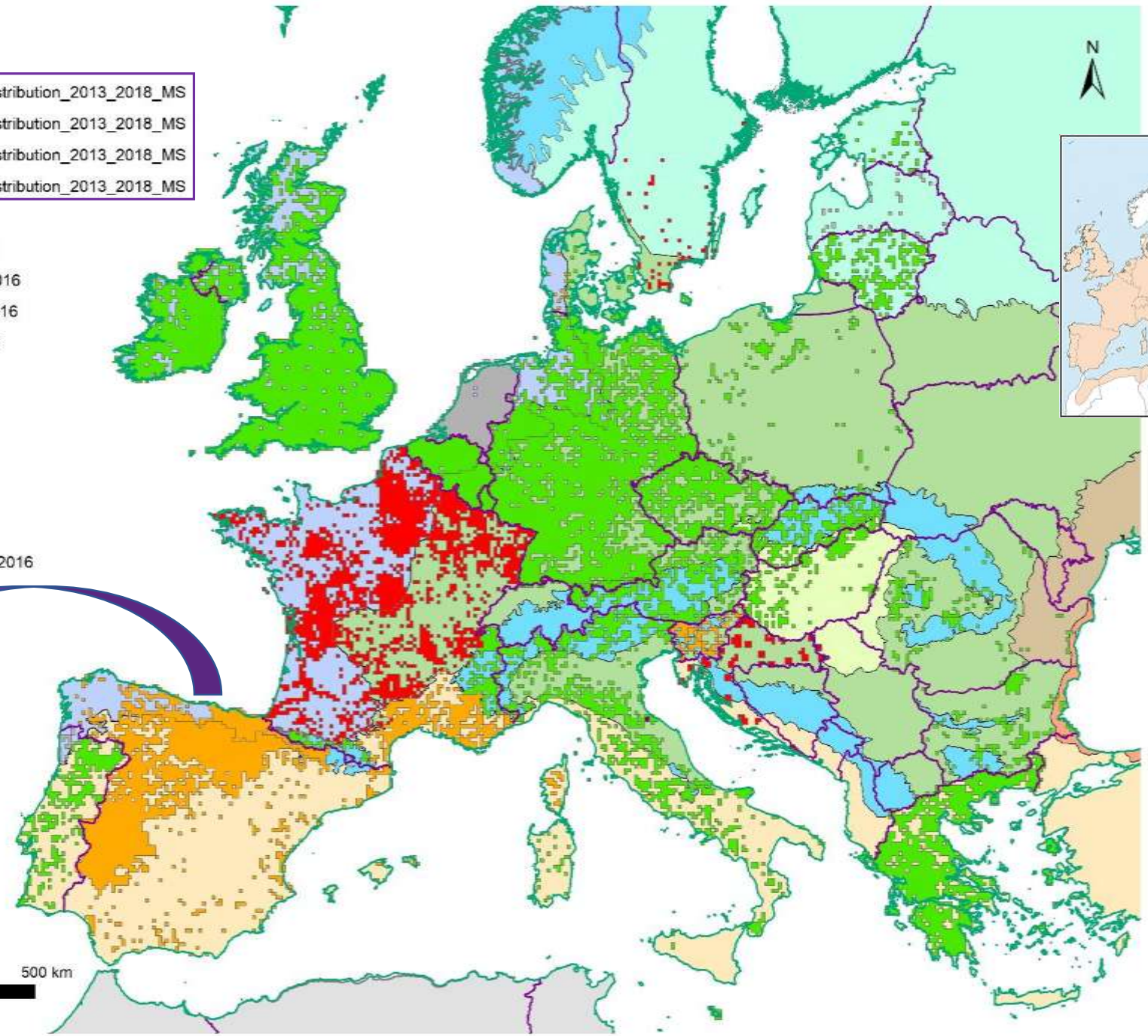
ALP	FV
ATL	U1
BLS	FV
BOR	XX
CON	U1
MED	U1
PAN	FV
STE	FV
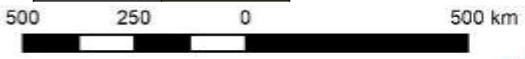
500 250 0 500 km

country	region	reference publication year (most recent)	Database(s) yes/no	range surface area	complementary favourable range	population date	population size min	population size max	population estimate type	complementary favourable population
HR	**ALP (U2)**	**2019**	**yes**	**1500**	**mmt**	**1998-2018**	**7(1×1)**		**minimum**	**mmt**
PL	ALP	2013	no	3000	aeq	2001-2017	1200(1×1)		minimum	x
DE	ALP	n/a	no	4155	4155	2012-2017	3747(1×1)	3747	estimate	70(5×5)
SI	ALP	2018	no	7656	aeq	1994-2018	138(1×1)	159(1×1)	estimate	mt
ES	ALP	2017	no	9800	mt	2007-2018	68(1×1)	6800(1×1)	estimate	6800(1×1)
RO	ALP	n/a	no	14400	aeq	2013-2018	1000(1×1)	5000(1×1)	minimum	aeq
SK	ALP	2012	no	16899.69	aeq	2013-2018	1228(1×1)	1228(1×1)	estimate	aeq
BG	ALP (FV)	2015	no	22500	22500	2007-2018	57(1×1)		minimum	57(1×1)
FR	ALP (FV)	2018	no	26400	aeq	2012-2017	500000(1×1)	1000000(1×1)	minimum	lt
AT	ALP	2016	yes	34700		2000-2018	1074(1×1)		minimum	x
IT	ALP	2018	yes	63100	aeq	2012-2018	3000(1×1)	90000(1×1)	estimate	aeq
DK	ATL	n/a	no	5054						x
PT	ATL	2013	no	5900	5900	2010-2018	40(1×1)		minimum	5900(1×1)
BE	ATL	2017	yes	22500		2013-2017	2462(1×1)		estimate	aeq
NL	ATL	2017	yes	46700	aeq	2012-2017	8952(1×1)		estimate	aeq
ES	ATL	2018	no	50800	mt	2007-2018	275(1×1)	27500(1×1)	estimate	27500(1×1)
DE	ATL (FV)	2014	no	72298	72298	2006-2018	43399(1×1)	43399	minimum	**898,5(5×5)**
IE	**ATL (FV)**	**2018**	**no**	**79300**	**79300**	**2007-2018**	**3637(1×1)**		**minimum**	**1070000ind**
FR	ATL (U2)	2018	no	145900	aeq	2012-2018	1500000(1×1)	3000000(1×1)	minimum	mt
UK	ATL (FV)	2018	no	233480	230973	1994-2018	31559(1×1)		minimum	aeq
BG	BLS	2015	no	7100	7100	2007-2018	30(1×1)		minimum	30(1×1)

country	region	reference publication year (most recent)	Database(s) yes/no	range surface area	complementary favourable range	population date	population size min	population size max	population estimate type	complementary favourable population
LU	CON	2019	yes	4000	aeq	2013-2018	2787(1×1)		estimate	2787(1×1)
HR	**CON (U2)**	**2019**	**yes**	**8200**	**mmt**	**1998-2018**	**31(1×1)**		**minimum**	**mmt**
DK	CON	n/a	no	11196						x
SE	CON (U2)	2011	no	11200	15000	2007-2018	36(1×1)		estimate	1000ind
SI	CON (U1)	2018	no	12616	aeq	1994-2018	100(1×1)	121(1×1)	estimate	mt
BE	CON	n/a	yes	15000		2013-2018	1300(1×1)		minimum	aeq
AT	CON	2018	yes	19600		2000-2018	449(1×1)		minimum	x
RO	CON	2014	no	35400	aeq	2013-2018	2000(1×1)	5000(1×1)	minimum	aeq
PL	CON	2016	no	44300	aeq	2001-2017	16800(1×1)		estimate	x
BG	CON	2015	no	77100	77100	2007-2018	351(1×1)		minimum	351(1×1)
CZ	CON	2019	no	82400		2007-2018	6546(1×1)		estimate	6546(1×1)
IT	CON (FV)	2018	yes	90000	aeq	2012-2018	5000(1×1)	150000(1×1)	estimate	aeq
FR	CON (U2)	2018	no	103500	aeq	2012-2017	2000000(1×1)	4000000(1×1)	minimum	mt
DE	CON	2017	no	290880	290880	2006-2018	210428(1×1)	210428	estimate	2157(5×5)
MT	MED	2018	no	409	aeq	2010-2018	119(1×1)		estimate	aeq
HR	**MED (U2)**	**2019**	**yes**	**3300**	**mmt**	**1998-2018**	**12(1×1)**		**minimum**	**mmt**
CY	MED	2018	yes	9689		2013-2018	15(1×1)	100(1×1)	estimate	aeq
FR	MED (U1)	2018	no	48400	aeq	2012-2017	800000(1×1)	1200000(1×1)	minimum	aeq
PT	MED (FV)	2017	no	74500	74500	2010-2018	1101(1×1)		minimum	74500(1×1)
GR	MED (FV)	2006	no	114202	aeq	2015	90605(1×1)		estimate	aeq
IT	MED	2018	yes	132600	aeq	2012-2018	4500(1×1)	140000(1×1)	estimate	aeq
ES	MED	2016		300700	mt	2007-2018	1528(1×1)	152800(1×1)	estimate	152800

Distribution

Methodology	AT	BE	BG	CY	CZ	DE	DK	EE	ES	FI	FR	GR	HR	HU	IE	IT	LT	LU	LV	MT	NL	PL	PT	RO	SE	SI	SK	UK	Total
completeSurvey		2			2			1	3	1	4				1						1							1	16
estimateExpert						3												1							2				6
estimatePartial	2		3	1			2					1	3	1		3	1		1	1		2	2	3		2	2		30
Total	**2**	**2**	**3**	**1**	**2**	**3**	**2**	**1**	**3**	**1**	**4**	**1**	**3**	**1**	**1**	**3**	**1**	**1**	**1**	**1**	**1**	**2**	**2**	**3**	**2**	**2**	**2**	**1**	**52**

Favourable reference population

Methodology	AT	BE	BG	CY	CZ	DE	DK	EE	ES	FI	FR	GR	HR	HU	IE	IT	LT	LU	LV	MT	NL	PL	PT	RO	SE	SI	SK	UK	Total
										1																			1
absentData							2																						2
completeSurvey		1			2										1													1	5
estimateExpert	1					1					3		3	1		3	1	1	1						2	2			19
estimatePartial	1	1	3	1		2		1	3		1	1								1	1	2	2	3			2		25
Total	**2**	**2**	**3**	**1**	**2**	**3**	**2**	**1**	**3**	**1**	**4**	**1**	**3**	**1**	**1**	**3**	**1**	**1**	**1**	**1**	**1**	**2**	**2**	**3**	**2**	**2**	**2**	**1**	**52**

Habitat size & quality trend

Methodology	AT	BE	BG	CY	CZ	DE	DK	EE	ES	FI	FR	GR	HR	HU	IE	IT	LT	LU	LV	MT	NL	PL	PT	RO	SE	SI	SK	UK	Total
										1																			1
absentData																**3**		**1**	**1**		**1**								**6**
completeSurvey					2																								2
estimateExpert	**2**	**2**		**1**		**2**	**2**	**1**			**4**		**3**		**1**							**2**	**2**		**2**	**2**			**26**
estimatePartial			3			1			3			1		1			1			1				3			2	1	17
Total	**2**	**2**	**3**	**1**	**2**	**3**	**2**	**1**	**3**	**1**	**4**	**1**	**3**	**1**	**1**	**3**	**1**	**1**	**1**	**1**	**1**	**2**	**2**	**3**	**2**	**2**	**2**	**1**	**52**

Pipistrellus pipistrellus - continental biogeoregion - **pressures**
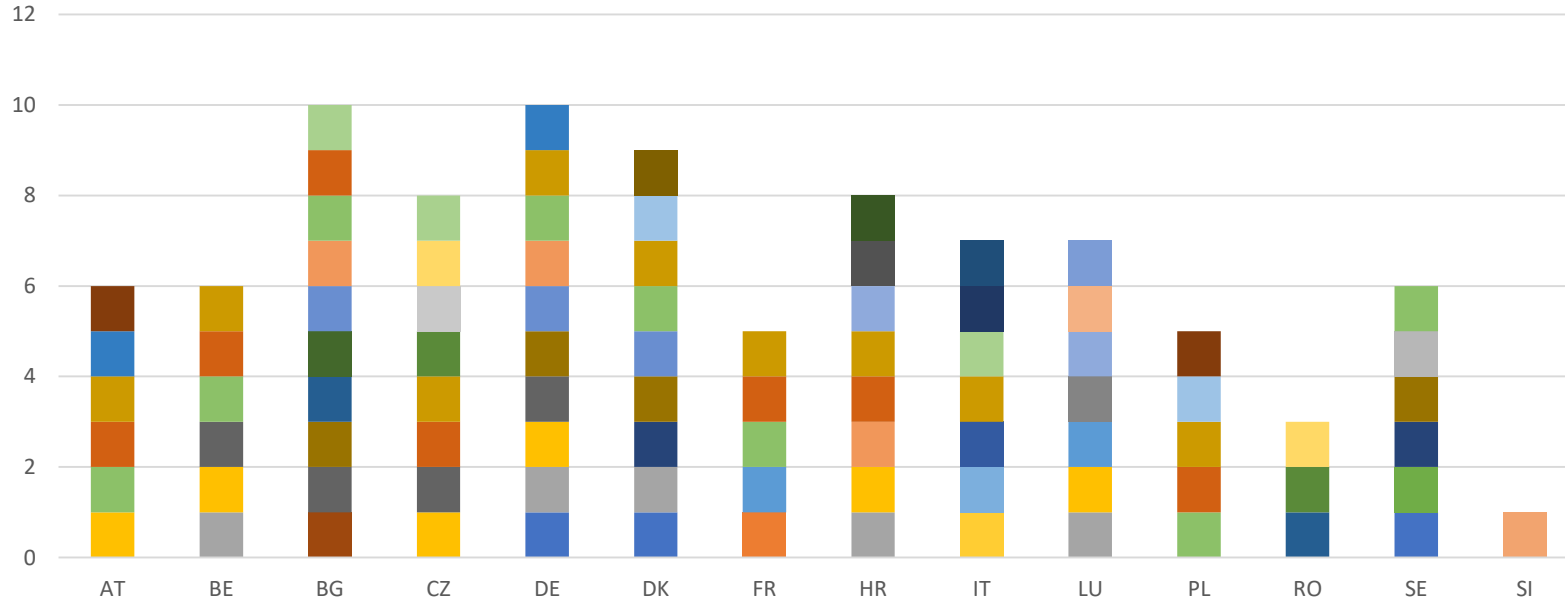
AT	FV
BE	FV
BG	FV
CZ	FV
DK	FV
DE	FV
FR	U2
HR	U2
IT	FV
LU	FV
PL	FV
RO	FV
SE	U2
SI	U1

CON	U1

Pipistrellus pipistrellus - continental biogeoregion - **conservation measures**
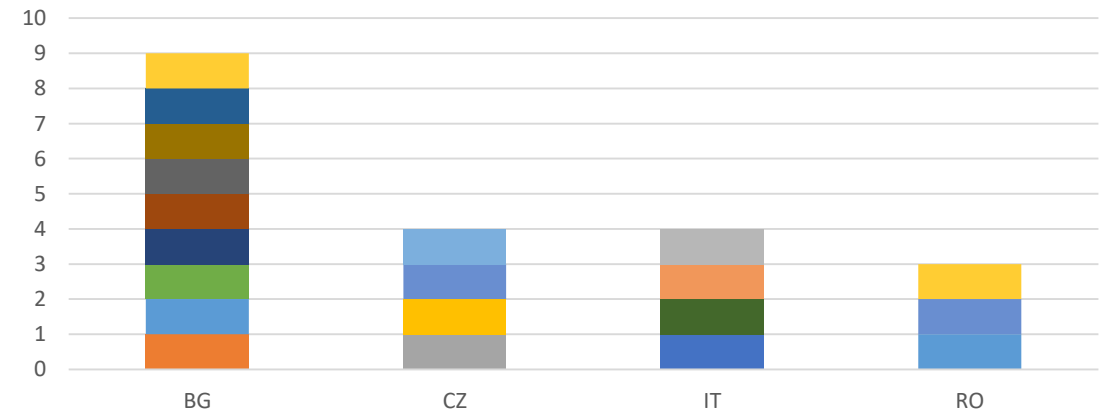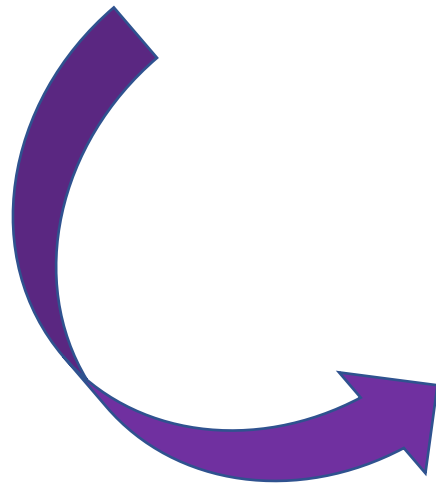
Legend

	Rh_ferrumequinum_species_distribution_2013_2018_MS
	Rh_ferrumequinum_species_distribution_2013_2018_MS
	Rh_ferrumequinum_species_distribution_2013_2018_MS
	Rh_ferrumequinum_species_distribution_2013_2018_MS
	Steppic_BiogeoRegions2016
	Pannonian_BiogeoRegions2016
	Mediterranean_BiogeoRegions2016
	Macaronesian_BiogeoRegions2016
	Continental_BiogeoRegions2016
	Boreal_BiogeoRegions2016
	BlackSea_Regions2016
	Atlantic_BiogeoRegions2016
	Arctic_BiogeoRegions2016
	Anatolian2016
	Alpine_BiogeoRegions2016
	Outside_Europe_BiogeoRegions2016

Map: Eurobats

ALP	U1
ATL	U1
BLS	FV
CON	U1
MED	U1
PAN	U1
STE	FV
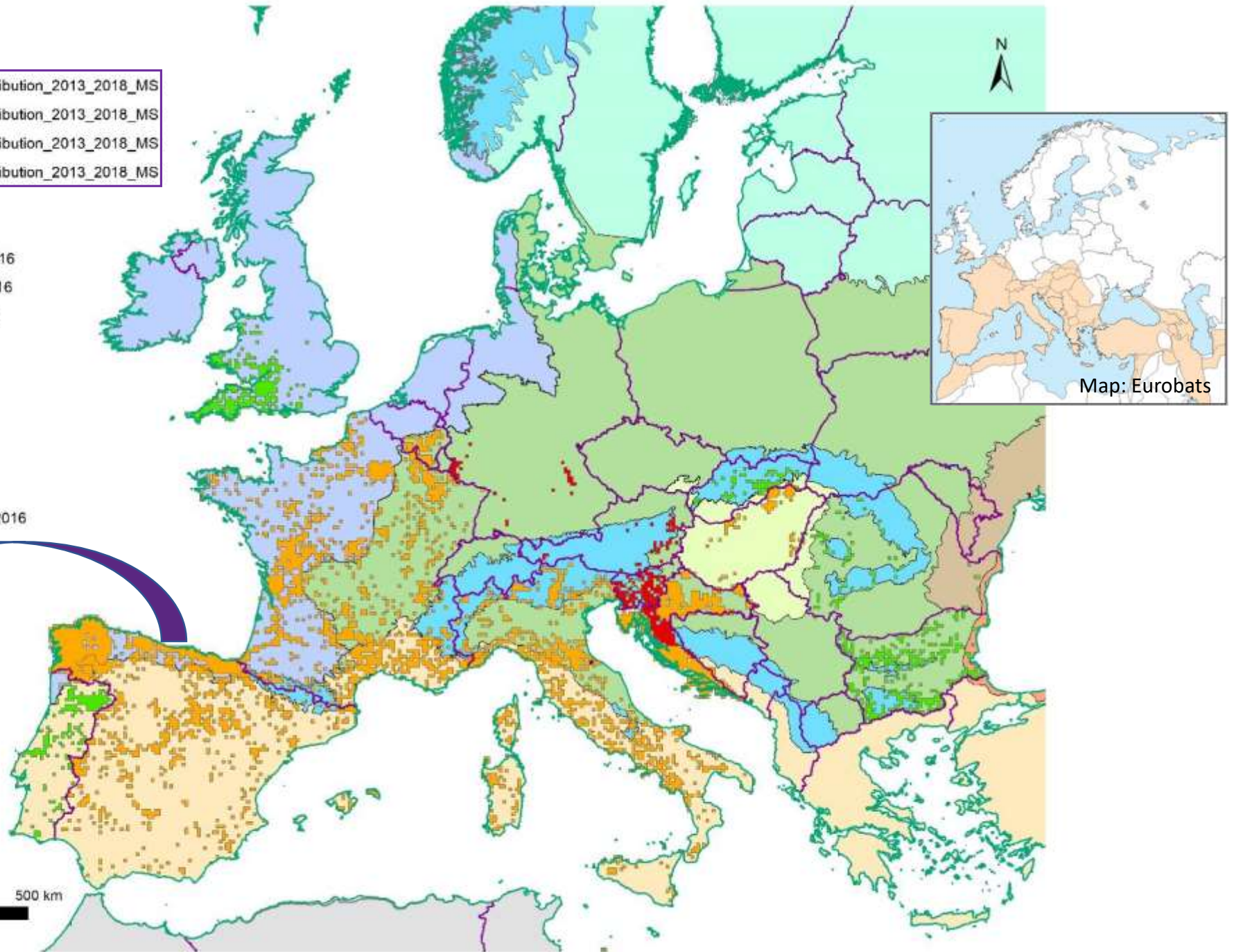
500   250   0   500 km

country	region	reference publication year (most recent)	Database(s) yes/no	range surface area	complementary favourable range	population date	population size min	population size max	population estimate type	complementary favourable population
AT	ALP	2018	yes	3700	mmt	2017			estimate	mmt
SK	ALP	2015	no	7373,81	aeq	2013-2018	331	3131	estimate	aeq
SI	ALP	2018	no	7622	aeq	1994-2018	333		minimum	80(1×1)
ES	ALP	2018	no	8800	x	2007-2018	713		minimum	700
RO	ALP (FV)	n/a	no	10000	aeq	2013-2018	10000	20000	minimum	aeq
HR	ALP (U2)	2019	yes	10200	mt	1995-2018	260		minimum	mmt
FR	ALP	2018	no	21900	aeq	2012-2017	500	1000	mean	lt
BG	ALP	2015	no	26000	26000	2007-2018	2600	3600	minimum	2600
IT	ALP	2018	yes	53200	aeq	2012-2018	6000	15000	estimate	mt
BE	ATL	2018	yes	2300	mmt	2007-2018	1	5	estimate	mmt
PT	ATL	n/a	no	2800	2800	2010-2018				x
UK	ATL (FV)	2018	yes	43015	43015	1995-2017	9245	18530	estimate	12951
ES	ATL (U1)	2018	no	71100	aeq	2007-2018	450		minimum	1500
FR	ATL	2016	no	155100	aeq	2012-2017	47000	50000	mean	aeq
NL	ATL	n/a	no							
BG	BLS	2015	no	9200	9200	2007-2018	1100	3500	minimum	1100
PL	CON	n/a	no	100	x	2001-2018	1		minimum	x
CZ	CON	2017	yes	900	mmt	2007-2018	1	5	estimate	mmt
AT	CON	2018	yes	1700	mmt	2018	18		minimum	mmt
LU	CON	2013	no	2500	aeq	2013-2018	400	450	interval	mt
DE	CON	2008	no	9453	16062	2006-2018	176	398	mean	mmt(bfem)
SI	CON (U2)	2018	no	11374	aeq	1994-2018	577		minimum	195(1×1)
BE	CON (U1)	2018	yes	11599	aeq	2007-2018	750	2000	estimate	2000iwin
RO	CON	n/a	no	15100	aeq	2013-2018	10000	15000	minimum	aeq
HR	CON	2019	yes	20600	mt	1995-2018	5150		minimum	aeq
IT	CON (U1)	2018	yes	93900	aeq	2012-2018	15000	30000	estimate	mt
BG	CON (FV)	2015	no	97400	97400	2007-2018	13000	18000	minimum	13000
FR	CON (U1)	2018	no	103000	aeq	2012-2017	15000	16000	mean	lt

Distribution

Methodology	AT	BE	BG	CY	CZ	DE	ES	FR	GR	HR	HU	IT	LU	NL	PL	PT	RO	SI	SK	UK	Total
															1						1
completeSurvey		2			2		3	4					1							1	13
estimatePartial	2		3	1		1			1	3	1	3		1		2	4	2	2		26
Total	2	2	3	1	2	1	3	4	1	3	1	3	1	1	1	2	4	2	2	1	40

Favourable reference population

Methodology	AT	BE	BG	CY	CZ	DE	ES	FR	GR	HR	HU	IT	LU	NL	PL	PT	RO	SI	SK	UK	Total
															1						1
completeSurvey	1	1			2	1		2					1					2		1	11
estimateExpert								1				3		1		1					6
estimatePartial	1	1	3	1			3	1	1	3	1					1	4		2		22
Total	2	2	3	1	2	1	3	4	1	3	1	3	1	1	1	2	4	2	2	1	40

Habitat size & quality trend

Row Labels	AT	BE	BG	CY	CZ	DE	ES	FR	GR	HR	HU	IT	LU	NL	PL	PT	RO	SI	SK	UK	Total
															1						1
absentData		1					1		1	3			1								**7**
completeSurvey					2																2
estimateExpert	2	1		1		1		4				3		1		2					**15**
estimatePartial			3				2				1						4	2	2	1	15
Total	2	2	3	1	2	1	3	4	1	3	1	3	1	1	1	2	4	2	2	1	40
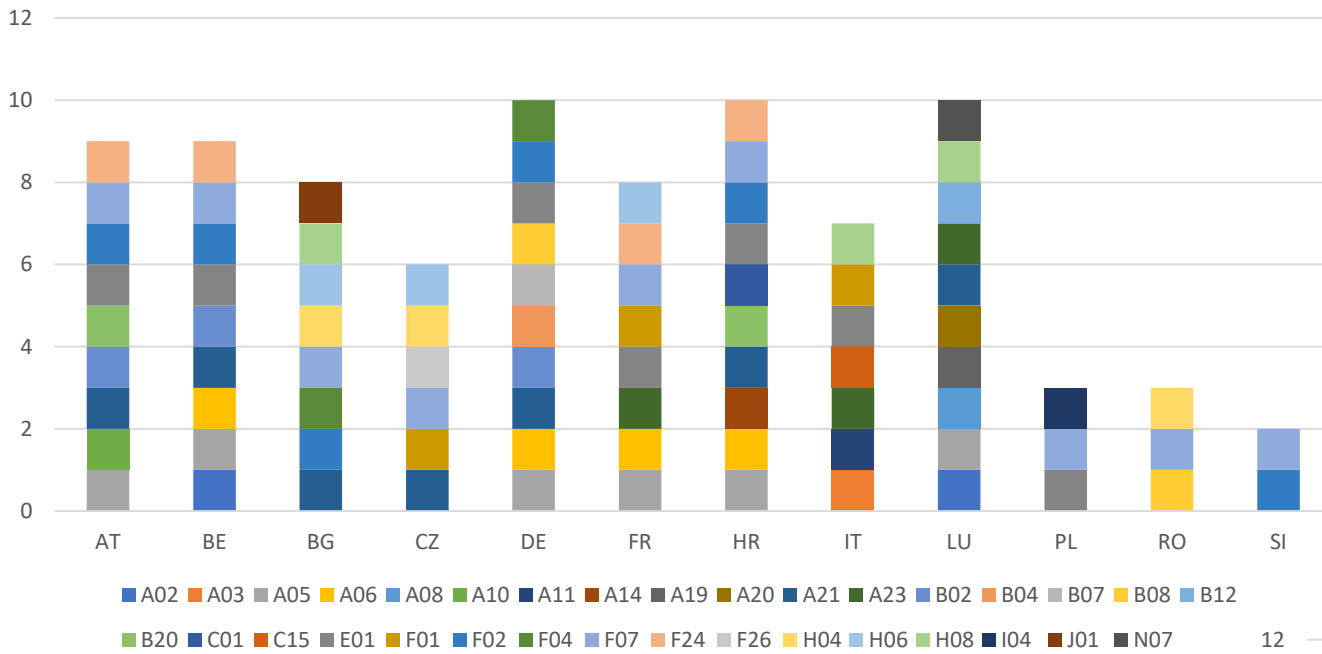
Rh. ferrumequinum - continental biogeoregion - **pressures**

AT	**U2**
BE	**U1**
BG	**FV**
CZ	**U2**
DE	**U2**
FR	**U1**
HR	**U1**
IT	**U1**
LU	**U1**
PL	**XX**
RO	**FV**
SI	**U2**

CON	**U1**
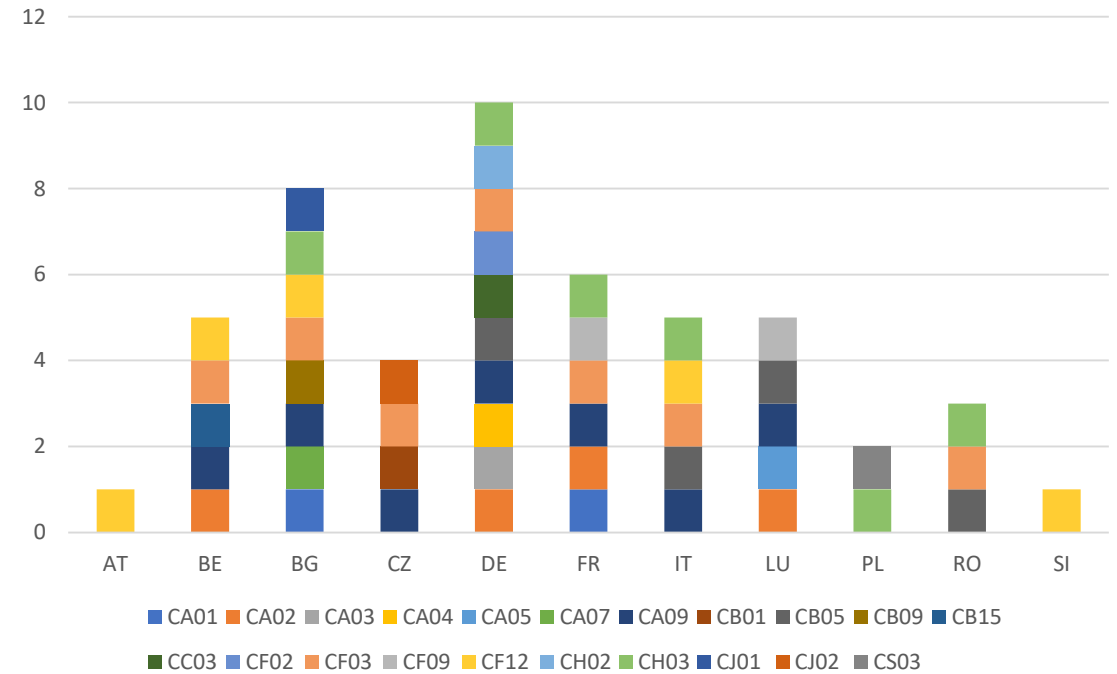
Rh. ferrumequinum - continental biogeoregion - **conservation measures**
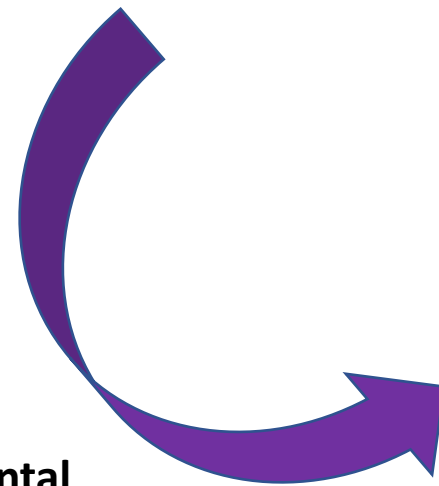
INTERNATIONAL BAT NIGHT 2020

Barbastella barbastellus

Bat of the Year 2020

Legend	
■ (grey)	Barbastella_Art17_species_XX_2013_2018_MS
■ (red)	Barbastella_Art17_U2_2013_2018_MS
■ (orange)	Barbastella_Art17_U1_2013_2018_MS
■ (green)	Barbastella_Art17_FV_2013_2018_MS
■	Steppic_BiogeoRegions2016
■	Pannonian_BiogeoRegions2016
■	Mediterranean_BiogeoRegions2016
■	Macaronesian_BiogeoRegions2016
■	Continental_BiogeoRegions2016
■	Boreal_BiogeoRegions2016
■	BlackSea_Regions2016
■	Atlantic_BiogeoRegions2016
■	Arctic_BiogeoRegions2016
■	Anatolian2016
■	Alpine_BiogeoRegions2016
■	Outside_Europe_BiogeoRegions2016

Map: Eurobats

ALP	U1
ATL	XX
BLS	U1
BOR	U1
CON	U1
MAC	U1
MED	U1
PAN	U1
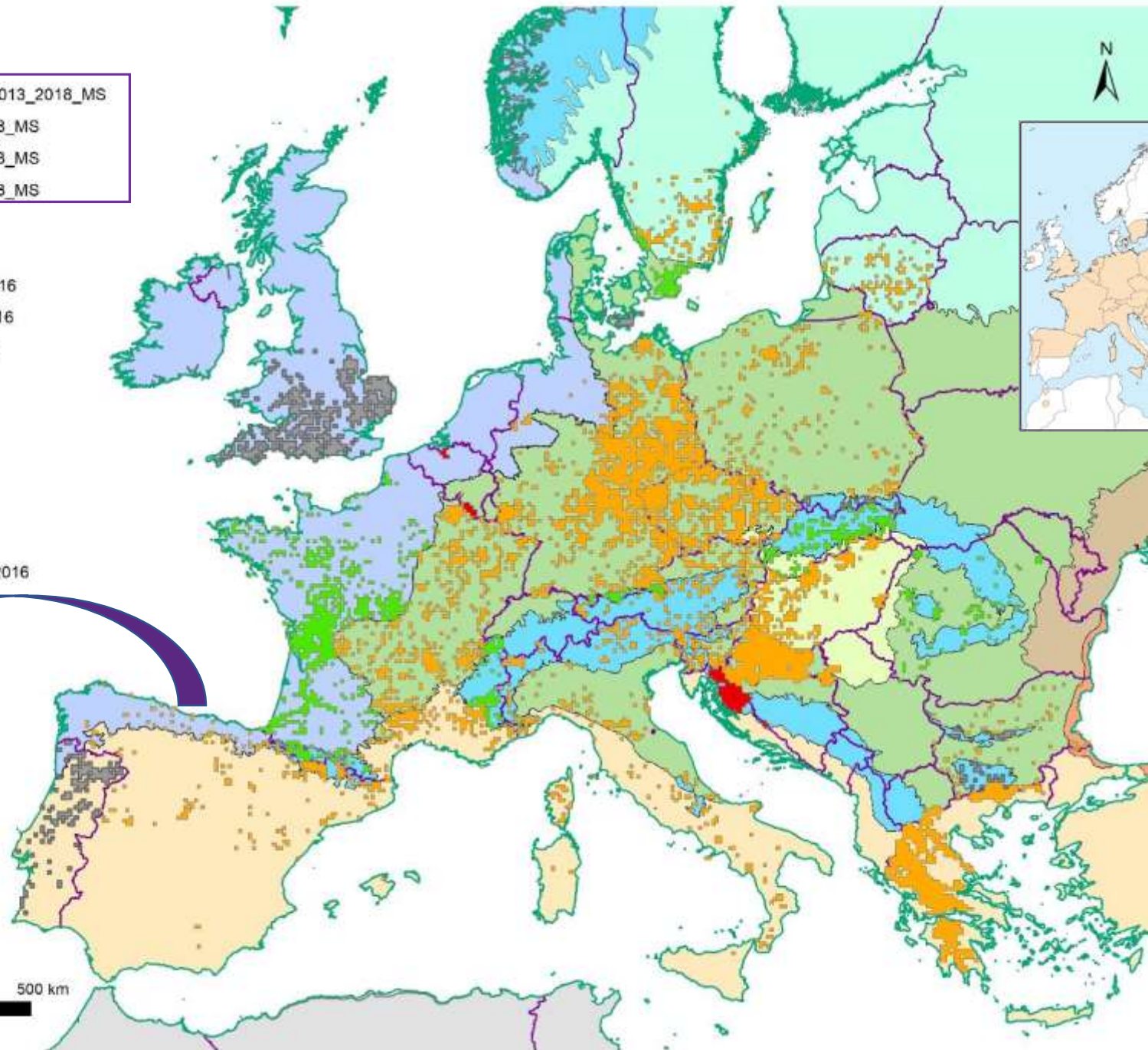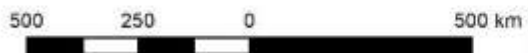
500   250   0   500 km

country	region	reference publication year (most recent)	Database(s) yes/no	range surface area	complementary favourable range	population date	population size min	population size max	population estimate type	complementary favourable population
DE	ALP	n/a	yes	4007	4007	2006-2017	25ind	100ind	estimate	aeq
PL	ALP	2017	yes	6000	aeq	2018	25loc		minimum	x
SI	ALP	2015	no	7656	aeq	2007-2018	50(1×1)		minimum	mt
HR	ALP (U2)	2019	yes	9700	mt	1995-2018	12(1×1)		minimum	mmt
ES	ALP	2018	no	12900	aeq	2007-2018	208ind		minimum	54(10×10)
AT	ALP	2016	no	14800	aeq	2018	550ind		minimum	mt
RO	ALP	n/a	no	15300	aeq	2013-2018	1000ind	2500ind	minimum	aeq
SK	ALP	2012	no	15892,73	aeq	2013-2018	50000ind	100000ind	estimate	aeq
FR	ALP	2018	no	17000	aeq	2013-2018	5000ind	10000ind	mean	aeq
BG	ALP	2015	no	25200	25200	2007-2018	6000ind	12500ind	minimum	10225ind
IT	ALP	2018	yes	44100	aeq	2012-2018	4500ind	22000ind	estimate	mt
BE	ATL	2018	yes	500	mmt	2013-2017	100ind	200ind	estimate	mmt
PT	ATL	2013	no	3000	4100	2010-2018	8(1×1)		minimum	x
DE	ATL	n/a	yes	8807	mt	2006-2017	57loc		estimate	x
ES	ATL	2018	yes	26100	aeq	2007-2018	47(10×10)		minimum	44(10×10)
UK	ATL	2018	no	74189	74189	1995-2017	5000ind		estimate	x
FR	ATL	2017	no	211500	aeq	2013-2018	5000ind	10000ind	mean	aeq
NL	ATL	n/a	no							aeq
BG	BLS	2015	no	8400	8400	2007-2018	1000ind	2500ind	minimum	1500ind

Distribution

Methodology	AT	BE	BG	CZ	DE	DK	ES	FR	GR	HR	HU	IT	LT	LU	LV	NL	PL	PT	RO	SE	SI	SK	UK	Total
																1								1
completeSurvey		2		2			4																1	9
estimateExpert					3															2				5
estimatePartial	2		3			1		4	1	3	1	3	1	1	1		2	2	2		2	2		31
Total	**2**	**2**	**3**	**2**	**3**	**1**	**4**	**4**	**1**	**3**	**1**	**3**	**1**	**1**	**1**	**1**	**2**	**2**	**2**	**2**	**2**	**2**	**1**	**46**

Favourable reference population

Methodology	AT	BE	BG	CZ	DE	DK	ES	FR	GR	HR	HU	IT	LT	LU	LV	NL	PL	PT	RO	SE	SI	SK	UK	Total
																1								1
absentData						1																		1
completeSurvey		2		2			1										1							6
estimateExpert	1							1		3		2			1					2		2	1	13
estimatePartial	1		3		3		3	3	1		1	1	1	1			1	2	2		2			25
Total	**2**	**2**	**3**	**2**	**3**	**1**	**4**	**4**	**1**	**3**	**1**	**3**	**1**	**1**	**1**	**1**	**2**	**2**	**2**	**2**	**2**	**2**	**1**	**46**

Habitat size & quality trend

Methodology	AT	BE	BG	CZ	DE	DK	ES	FR	GR	HR	HU	IT	LT	LU	LV	NL	PL	PT	RO	SE	SI	SK	UK	Total
																1								1
absentData										**1**		**1**					**1**						**1**	**4**
completeSurvey				2			1																	3
estimateExpert	**2**	**1**			**2**	**1**	**3**	**3**		**2**		**2**	**1**	**1**	**1**			**2**		**2**	**1**			**24**
estimatePartial		1	3		1			1	1		1						1		2		1	2		14
Total	**2**	**2**	**3**	**2**	**3**	**1**	**4**	**4**	**1**	**3**	**1**	**3**	**1**	**1**	**1**	**1**	**2**	**2**	**2**	**2**	**2**	**2**	**1**	**46**
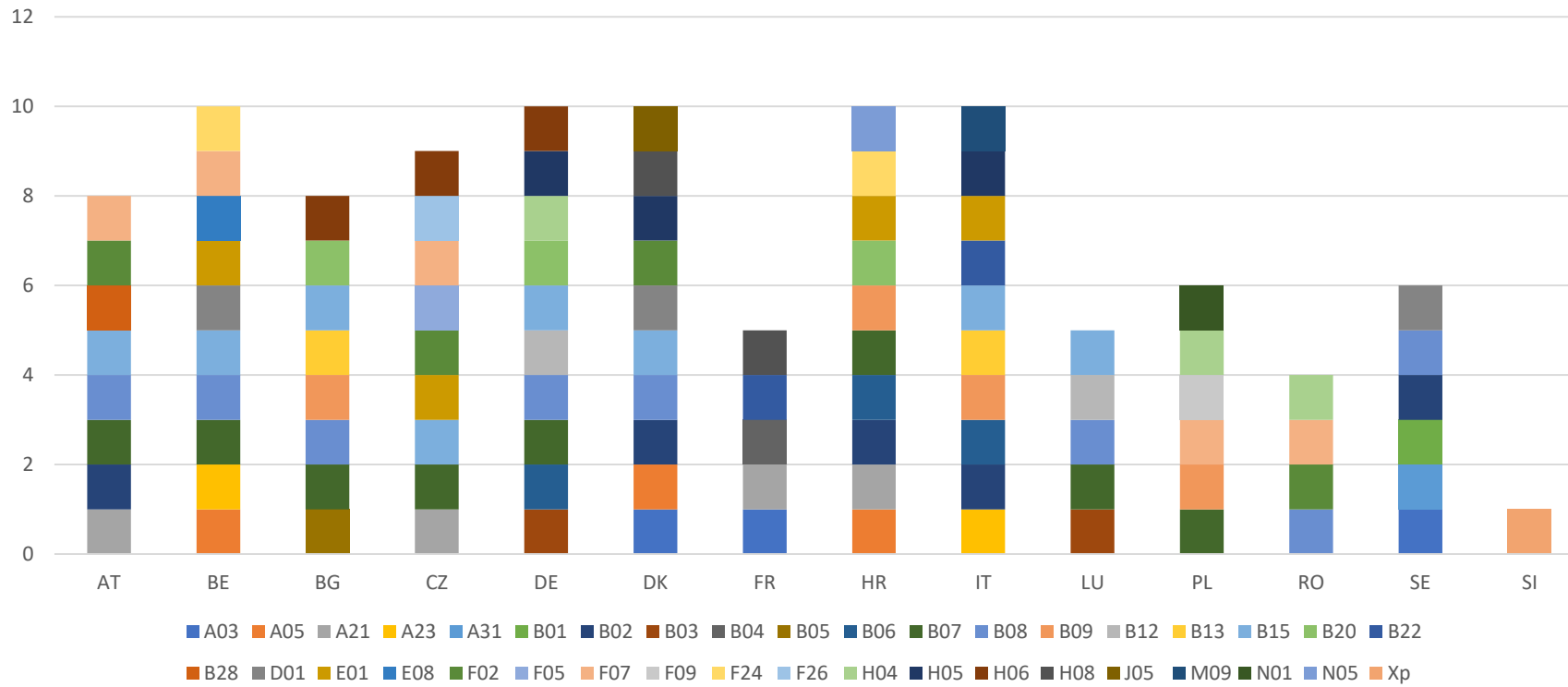
Barbastella barbastellus - continental biogeoregion - **pressures**

AT	U1
BE	U2
BG	U1
CZ	U1
DE	U1
DK	XX
FR	U1
HR	U1
IT	U1
LU	U2
PL	U1
RO	FV
SE	FV
SI	U1

CON	U1

Barbastella barbastellus - continental biogeoregion - **conservation measures**
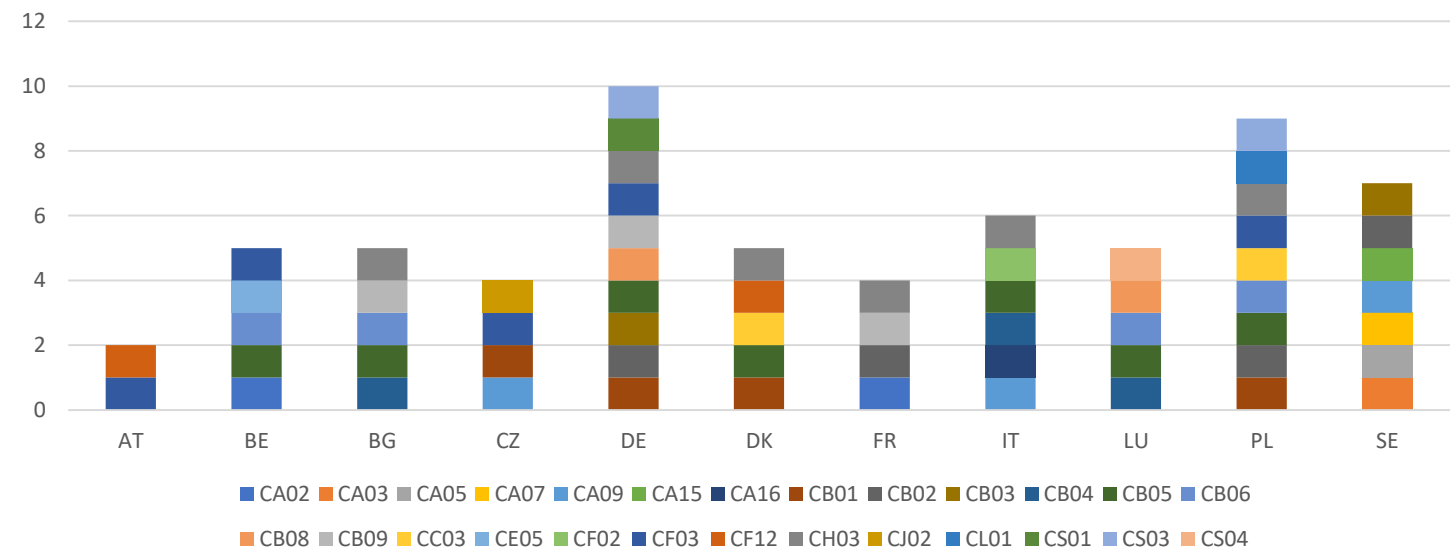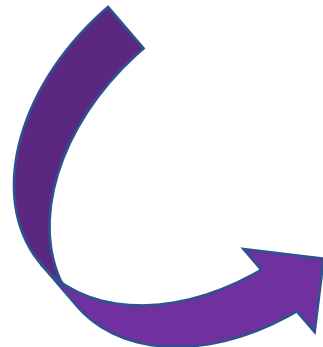
Conclusions

- It is **impossible to evaluate data** behind the range size, population size and trends based on publicly available data and sources listed
- **Favourable population size** is **not comparable between MS**
- **Habitat size and quality** is highly **subjective value**
- **Trends** are not well **elaborated –** lack of monitoring data and analyses

Therefore

Conservation statuses between MS are not comparable and extrapolations at the biogeographical level are biased

Is Conservation status just a policy obligation or scientific and expert analyses?

Suggestions

- Data on **bat numbers and localities** should be **available/more transparent**

- **Distribution** should account for **bat** movement data

- **Favourable population size** – should be based on **unified** approach

- **Population units** should be based on bat ecology – and not as numbers of 1x1km

- **Habitat size and quality** needs mutual approach based on roosting ecology, hunting habitats, critical feeding areas, level of habitat fragmentation and disturbance as well as pollution....

- **Levels of data quality and trend estimation** should be more specified and described with cited or described methodologies – (especially **extrapolations**)

- **Evaluators of conservation status** should be cited so they can be contacted for future analyses

- **Whole process** has to be more transparent with maximum possible **unified approach**

Acknowledgements

Thank you very much
for your attention!!!

REALLY, REALLY, REALLY
F A T   B A T .

NISAMTAPIR.