RABIES BULLETIN EUROPE

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1. Editorial

In this issue we present the rabies cases in the 2nd quarter of 2007 reported to the WHO Collaborating Centre at the FLI in Wusterhausen, Germany. The total number of reported rabies cases in this quarter was 1285. This is less than in the previous quarter (n=2065) and less than in the same quarter 2006 (n=2120). Some remarkable declines in the rabies incidences in the Baltic countries Lithuania, Estonia and Latvia can be observed and this negative trend is mostly due to effects of oral rabies vaccination of wildlife. However, some countries face increasing numbers or rabies cases in previously non-infected areas. In Bulgaria 5 rabies cases were reported from central parts in and near Sofia for the first time in years in quarter I/2007. Rabies seems to have been established as 15 cases were registered in central regions in this quarter. If this movement further south continues, adjacent countries, like Macedonia and Greece should increase their rabies surveillance.

The first miscellaneous article covers the *Eurobats Agreement*. This important document sets the basis for Lyssavirus surveillance in Europe and for conservation and management of bats and their habitats at the same time. The second article provides insight information on the Belarusian post exposure prophylaxis (PEP) and case reports of bite inflictions by rabid wolves. We consider it our responsibility to bring any kind of information on currently implemented PEP schemes to the knowledge of the rabies community. The editors of the RBE would like to point out that the World Health Organization (WHO) neither endorse nor recommend the stated treatment protocol because it is not in compliance with WHO guidelines for PEP. This is expressed in an editorial note attached to the article.

Conrad Freuling

Erratum: For technical reasons, 2 bat rabies cases in France were not shown in issue 02/2006. They have been included to the database, available online.

2. SUMMARY OF RABIES CASES IN EUROPE

RABIES CASES 2nd QUARTER 2007 01.04.07 -30.06.07

Name	Code	Total	Wildlife	Domestic animals	Bats	Human
ALBANIA	ALB	0	0	0	0	0
AUSTRIA	AUT	0	0	0	0	0
BELARUS	BLR	170	124	46	0	0
BELGIUM	BEL	0	0	0	0	0
BOSNIA - HERCEGOVINA	BIH	8	6	2	0	0
BULGARIA	BGR	15	11	4	0	0
CROATIA	HRV	74	69	5	0	0
CYPRUS	CYP	0	0	0	0	0
CZECH REPUBLIC	CZH	0	0	0	0	0
DENMARK	DNK	1	0	0	1	0
ESTONIA	EST	1	0	1	0	0
FINLAND	FIN	0	0	0	0	0
FRANCE	FRA	1	0	0	1	0
GERMANY	DEU	1	0	0	1	0
GREECE	GRC	0	0	0	0	0
HUNGARY	HUN	0	0	0	0	0
ICELAND	ISL	0	0	0	0	0
IRELAND	IRE	0	0	0	0	0
ITALY	ITA	0	0	0	0	0
LATVIA	LVA	48	30	18	0	0
LITHUANIA	LTU	120	94	26	0	0
LUXEMBOURG	LUX	0	0	0	0	0
MACEDONIA	MKD	0	0	0	0	0
MALTA	MLT	0	0	0	0	0
MOLDOVA	MDA	0	*	*	*	*
MONTENEGRO	MNE	2	1	1	0	0
NETHERLANDS	NED	1	0	0	1	0
NORWAY	NOR	0	0	0	0	0
POLAND	POL	18	15	2	1	0
PORTUGAL	PRT	0	0	0	0	0
ROMANIA	ROU	18	8	10	0	0
RUSSIAN FEDERATION	RUS	365	145	219	0	1
SERBIA	SRB	29	25	4	0	0
SLOVAK REPUBLIC	SVK	0	0	0	0	0
SLOVENIA	SVN	0	0	0	0	0
SPAIN	ESP	0	0	0	0	0
SWEDEN	SWE	0	0	0	0	0
SWITZERLAND + LIEC.	CHE	0	0	0	0	0
TURKEY	TUR	88	4	84	0	0
UKRAINE	UKR	325	124	200	1	0
UNITED KINGDOM	UNK	0	0	0	0	0
TOTAL		1285	656	622	6	1

Wildlife: excluding bats *** no data**

3. Miscellaneous Articles

3.1 Eurobats Agreement

5th Session of the Meeting of Parties

Ljubljana, Slovenia, 4 – 6 September 2006

Resolution 5.2, Bats and Rabies in Europe

The Meeting of the Parties to the Agreement on the Conservation of Populations of European Bats (hereafter "the Agreement"),

Recalling that the Agreement's Conservation and Management Plan recognises that bats depend heavily on artificial structures for roosting and that their conservation depends on favourable human attitudes (Inf.EUROBATS.MoP2.14AnnexA, para 19);

Recalling that the Agreement's Conservation and Management Plan also encourages Parties and Range States to cooperate in the conservation and management of bats and their habitats (Inf.EUROBATS.MoP2.14AnnexA, para 24);

Noting the occurrence of Lyssaviruses (European Bat Lyssaviruses - variants of rabies viruses) in certain European bat species and that these bats may live in close association with humans;

Noting the negative public opinions that these viruses may encourage and their influence on bat conservation, including the association with sylvatic (or classic) rabies virus in the perspective of the medical and veterinary communities, the media and the general public;

Noting that European Bat Lyssaviruses (EBLVs) might be underreported in bat species across Europe as prevalence is routinely reported only in countries that have a regular surveillance programme;

Noting the extremely rare incidence of these viruses in humans or other non-bat wild and domestic mammals;

Noting the need to understand the dynamics, epidemiology and pathogenesis of these viruses and their distribution, hosts and incidence in European bat species;

Noting the results and recommendations of the European Workshop on Bat Rabies, Vilnius, Lithuania, 16 May 2004

(EUROBATS.Bat Rabies Workshop.Report);

Noting the Conclusions and Recommendations of the First International Conference 'Rabies in Europe', Kiev, Ukraine, 15-18 June 2005;

Noting the recommendations of the EU Med-Vet-Net Workpackage 5: Molecular Epidemiology of European Bat Lyssaviruses (which aims to obtain, sequence and archive EBLV isolates from countries throughout Europe, and to set up a database to register submission details and sequence data for EBLV isolates);

Noting the facility to test for these viruses through surveillance of a) bats involved in high risk (species known to carry the virus or where there is a lack of information) biting or scratching incidents in humans (or their companion animals), b) all or any dead or sick bats, and c) through sampling of blood and/or saliva from wild caught animals;

Noting the recommendations of Med-Vet-Net regarding protocols for surveillance;

Urges Parties and Range States to:

1. *Establish* a national bat rabies surveillance network in close collaboration with bat specialists, which should be based on a surveillance programme through

submission of bats that have died or been euthanized for welfare reasons, and/or by sampling of blood and saliva;
2. *Support* education efforts that reflect the best scientific advice available regarding the human health risks associated with bat rabies;
3. *Support* efforts to avoid overreaction to incidental bat bite exposures and to develop policies for determining the fate of bats involved in contact incidents with humans (and domestic animals such as cats);
4. *Ensure* that reasonable advice on precautions to avoid infection is available and implemented, including for the maintenance of colonies in buildings where rabies-positive bats have been recorded;
5. *Ensure* that rabies vaccination is compulsory or at least highly recommended for all people regularly handling bats;
6. *Maintain* collaboration with bat workers in the field, with respect to protocols for sampling and submission of specimens;
7. *Maintain* the use of standard record forms for the submission of bats for testing (Annex 1);
8. *Ensure* that the identification of submitted bats is confirmed by an appropriate authority;
9. *Ensure* that all test results are recorded, both negative as well as positive results;
10. *Attempt* to find a long-term depository for the tested specimens;
11. *Continue* efforts to develop national databases of bats tested, rabies exposures, treatments and outcomes;
12. *Adopt* recommendations of Med-Vet-Net regarding protocols for passive and active surveillance, the maintenance of appropriate databases of submissions and results, diagnostic tests, and of data of bats tested and viruses found (Annex 2);
13. *Ensure* comprehensive results of bats tested are submitted to WHO;
14. *Note* that some laboratories are able to carry out analysis of samples for countries where facilities are not available (especially for detailed virus typing);
15. *Make* results of scientific and epidemiological reports available in terms that are easily understood by the general public.

Annex 1. Standard form for submission of bats for rabies testing.

A standard form for bats submitted for rabies screening should include:

1. lab use only individual reference number

2. name and contact details for person or body submitting specimen

3. name and contact details of finder (if different from 2)

4. species, age, sex of bat if known

5. date and time of finding

6. date and time of death

7. location of finding (including address if appropriate)

8. map reference to finding locality

9. circumstances of finding (e.g. brought in by cat, found on lawn/pavement, seen hanging on wall for some days)

10. symptoms or condition when found (e.g. unable to fly, found dead)

11. cause of death if known (e.g. killed by cat, euthanised, died in captivity)

12. details of any biting or scratching incident involving a human or an animal

13. contact details of any human or animal involved in 12

14. contact details of any vet or medical doctor involved in 12

15. for lab use: date received, date tested, record of tests carried out (e.g. FAT, RTCIT, MIT, RT-PCR)

Annex 2. Passive and active surveillance of bat lyssavirus infections
Protocols based on recommendations of the EU Med-Vet-Net working group (*Rabies Bulletin Europe*, 2005 (4): 3.1)

3.2 Complex rabies post-exposure prophylactic treatment after severe wolf bites in Belarus

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Rabies is a fatal neurological disease. It is only preventable if adequate post exposure prophylaxis (PEP) is administered immediately after infection. Rabies prophylactic treatment is subject of ongoing research and further attention to the development of novel therapies for the treatment of rabies was drawn with the reported case of a girl who survived rabies [1]. Different therapeutic drugs and regimes have been tested since. However, the application of the same or adapted treatments was not able to cure any person with signs of clinical rabies. In this report we present our approach to PEP for people with severe bite inflictions by wolves on other animals in Belarus.

The Republic of Belarus is situated in the centre of Europe. The region borders the Russian Federation in the north and east, Ukraine in the south, Poland in the west and in the north-west with Lithuania and Latvia. Belarus has always been considered an endemic country for rabies, and the number of persons bitten by sick animals has been several times higher than in the adjacent countries both before and after World War II [2, 3, 4].

The number of rabies cases reported has significantly increased during the last years especially in the Gomel region. After the Chernobyl nuclear power accident rabies among animals has increased by more than 40 times, and 6 cases were registered in humans. Presumably, this development is caused by uncontrolled population growth of abandoned pets in this area in combination with an increase in the number of wild carnivores (wolves, foxes) due to good food resources and ceased hunting [5].

The most dangerous bites for humans were made by wolves (*Canis lupus*). For example, in 1996 one rabid wolf bit 14 dogs and 7 humans in 5 villages within hours. Wolves produce deep and wide wounds, especially causing severe head injuries, scalping and amputation of fingers. In such cases even after early administration of PEP rabies can develop. In 1996 a woman (63 years) was severely bitten by a rabid wolf in Svetlogorsk region of the Gomel district. She suffered from scalping, lost 3 fingers on the left and 2 fingers on the right hand, respectively, and her head presented a continuous shapeless wound. Nose, cheeks and lips were deformed by deep lacerations and punctures and multiple other wounds on her body were also surgically treated. The women was administered IgG (ERIG) in two doses of 22,5 ml and 45 ml, respectively. She also received a complete regime of rabies cell culture based vaccines. However, 2 months later, rabies with lethal outcome developed.

Considering these facts, RIEM started studies on antiviral drugs, which can actively suppress rabies virus replication and prolong incubation period to improve the vaccine effectiveness. After experiments with rabies virus (CVS) in a white mouse model, Rifampicin, Reserpin and Azaleptin were found to improve the survival of animals up to 50-70% and prolong the incubation period by 1.7-2.5 times in comparison with control animals [4, 6, 7].

As Reserpin and Azaleptin are not manufactured in Belarus, Rifampicin was choosen. Several studies showed its antiviral effects against various viruses including rabies virus [8, 9].

	Years					
	2001	2002	2003	2004	2005	2006
Number of people seeking medical help after animal bites	27415	26529	26050	25391	25603	26838
Total number of PEPs	6818 *(24,9%)*	6544 *(24,7%)*	6269 *(24,1%)*	8660 (34,1%)	9589 (37,5%)	11639 (43,4%)
Number of PEPs (%) after animals confirmed rabies positive ()	1388 *(5,1%)*	1164 *(4,4%)*	1344 *(5,2%)*	378 (1,5%)	751 (2,9%)	1796 (6,7%)
Total number of "complex" PEPs (vaccine, IgG, Rifampicin)	3259 (55,6%)	3794 (60,2%)	3923 (66,0%)	5555 (64,1%)	7210 (75,2%)	8394 (72,1%)
No. of people , who refused to get vaccination and only received Rifampicin (without IgG, vaccine)	–	16	137	234	996	1002

Table 1: Development of rabies PEP in Belrus 2001-2006

Since 1988 the application of Rifampicin with vaccine as part of the rabies post exposure prophylactic treatment was approved by the Pharmacologic Committee of the Ministry of Health of the Republic of Belarus. After bites of rabid or rabies suspected animals Rifampicin is administrated in a dose of 0.45-0.6 units per day (twice or three times per day) for 5-7 days. In cases of severe bites the dosage is increased to 0.9 daily for 10 days.

For the first time rifampicin as part of rabies PEP has been applied in 1992 under vital indications. The treatment was given to a woman (K., 65 years), bitten by a rabid wolf in Chechersk of the Gomel region. The woman suffered from multiple severe wounds. The head was totally scalped and her face showed perforating wounds in mouth and lower lip. Multiple deep wounds were found mainly on the upper extremities (fingers, hands) and the upper body (neck). During a life-saving surgical operation 27 sutures were necessary. Rifampicin was administrated because the severity of such wounds from rabid animals had been fatal before, even with proper PEP. From day one the patient was administrated rifampicin on 0,9 units per day for 7 days, anti-rabies IgG and course of anti-rabies vaccine as complex post exposure prophylaxis. After 35 days the patient was released from the hospital. Two and a half months later the last plastic surgery was successfully performed [4, 10, 11].

In 2003, a rabid wolf from the Gomel region attacked animals and 4 humans. The biting of the rabid wolf caused multiple wounds. One woman suffered from a fractured nose and lacerations of the right forearm. Another woman showed disintegrating facial wounds, open fracture of the nasal bone, total loss of the right auricle and the salivary gland. Similar wounds were seen on another victim. She also suffered from severe head injuries. The wolf's bites caused the amputation of the nose, the left auricle, the salivary gland and the right eye. Besides head injuries, lacerations on the right shoulder were recorded. The patient showed signs of a severe traumatic shock.

All victims were hospitalized and the wounds were treated with Rifampicin (dosage 0,9 for 9 days). Post exposure prophylactic treatment with vaccination and IgG treatment was given. All patients were released from hospital and did not succumb to rabies.

Rifampicin has been widely used in Belarus in most cases of bite inflictions by rabid

animals. During 15 years, no fatal human rabies case was reported after the administration of this complex prophylactic treatment with vaccine, IgG and Rifampicin. However, during the same time 17 human rabies cases were reported in the Republic of Belarus. Of these, 7 patients did not ask for medical help and the remaining 10 people were administered vaccination and IgG but without Rifampicin. These 10 people, who developed rabies despite PEP had milder wounds caused by wolves (n=3), cats (n=3), foxes (n=3) and a dog.

In Belarus Rifampicin is also used locally during the treatment of bites from rabid animals. With the use of Rifampicin wounds can be treated immediately with sutures and micro irrigators allowing the application of antibiotic solution during bandaging. Following this application, the wounds heal by first intention without suppuration and stitches can be removed on the 6th-8th day.

Now Rifampicin is given to all severely bitten humans in combination with vaccine and IgG (in 2006 – 3212 patients). Since 2002 some patients refused to get vaccination after animal bites. In these cases Rifampicin has been given solely. This therapy is requested increasingly, as seen in table one.

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Editorial Note

We are grateful for the Belarusian colleagues to provide insight information on their post-exposure prophylactic treatment regime and the interesting case reports on attacks of rabid wolves. The editors of the RBE would like to point out that the World Health Organization (WHO) neither endorse nor recommend this PEP protocol because it is not in compliance with WHO guidelines for PEP (for details see WHO Expert Consultation on Rabies, Techn.Rep.Series 931). Nonetheless, we consider it our responsibility to bring any kind of information on currently implemented PEP schemes to the knowledge of the rabies community. The authors were made aware of these facts but wanted to share their experience. Therefore, the published material is being distributed without warranty of any kind, either expressed or implied. The responsibility for the interpretation and use of the material lies with the reader and the authors. In no event shall the WHO or RBE be liable for damages arising from its use.

4 DISTRIBUTION OF RABIES IN EUROPE

4.1 Country summaries of rabies cases, 2nd quarter 2007

01.04.07-30.06.07

Country			Domestic animals									Wildlife																	
Name	Code		dog	cat	cattle	equine	goat sheep	pig	stray dog	other	subtotal	fox	racoon dog	racoon	wolf	badger	marten	other mustelides	other carnivores	wild boar	roe deer	red deer	fallow deer	other	subtotal	bat	Human cases	total
Albania	ALB	*									0														0			0
Austria	AUT	*									0														0			0
Belarus	BLR		9	18	16	2				1	46	105	10		3									6	124			170
Belgium	BEL	*									0														0			0
Bosnia - Hercegovina	BIH				1		1				2	6													6			8
Bulgaria	BGR		2	2							4	11													11			15
Croatia	HRV			3			2				5	68									1				69			74
Cyprus	CYP	*									0														0			0
Czech Republic	CZH	*									0														0			0
Denmark	DNK										0														0	1		1
Estonia	EST				1						1														0			1
Finland	FIN	*									0														0			0
France	FRA										0														0	1		1
Germany	DEU										0														0	1		1
Greece	GRC	*									0														0			0
Hungary	HUN	*									0														0			0
Iceland	ISL	*									0														0			0
Ireland	IRE	*									0														0			0
Italy	ITA	*									0														0			0
Latvia	LVA		7	10	1						18	21	5			2		2							30			48
Lithuania	LTU		10	10	6						26	44	33			1	10	3			2			1	94			120
Luxembourg	LUX	*									0														0			0
Macedonia	MKD	*									0														0			0
Malta	MLT	*									0														0			0
Moldova	MDA	**									0														0			0
Montenegro	MNE				1						1	1													1			2
Norway	NOR	*									0														0			0
Poland	POL				1				1		2	12	2				1								15	1		18
Portugal	PRT	*									0														0			0
Romania	ROU		6	1	1	1				1	10	4			2	1				1					8			18
Russian Federation	RUS		85	52	62		14	3	3		219	132	7		1	1	1		1					2	145		1	365
Serbia	SRB		2	1	1						4	25													25			29
Slovak Republic	SVK	*									0														0			0
Slovenia	SVN	*									0														0			0
Spain	ESP	*									0														0			0
Sweden	SWE	*									0														0			0
Switzerland + Lichtenstein	CHE	*									0														0			0
The Netherlands	NED										0														0	1		1
Turkey	TUR		53	4	14		13				84	1			1	1							1		4			88
Ukraine	UKR		83	83	30		3			1	200	104		5	4	2	6							3	124	1		325
United Kingdom	UNK	*									0														0			0
TOTAL			257	184	135	3	33	3	4	3	622	534	57	5	11	8	18	5	1	1	3	0	1	12	656	6	1	1285
PER CENT			20,0%	14,3%	10,5%	0,2%	2,6%	0,2%	0,3%	0,2%	48,4%	41,6%	4,4%	0,4%	0,9%	0,6%	1,4%	0,4%	0,1%	0,1%	0,2%	0,0%	0,1%	0,9%	51,1%	0,5%	0,1%	100%

* NO CASES ** NO DATA

4.2 Rabies cases per country and administrative units, 2nd quarter 2007 01.04.07-30.06.07

Location	Domestic animals									Wildlife																
	dog	cat	cattle	equine	goat sheep	pig	stray dog	other	subtotal	fox	racoon dog	racoon	wolf	badger	marten	other mustelides	other carnivores	wild boar	roe deer	red deer	fallow deer	other	subtotal	bat	Human cases	total
BELARUS																										
Brest	3	1	1					1	6	28			1										29			35
Gomel	1	3	3	1					8	16	3		2									1	22			30
Grodno	1	4							5	18												1	19			24
Minsk	2	5	2	1					10	8	3											2	13			23
Mogelev		2	6						8	25	1												26			34
Vitebsk	2	3	4						9	10	3											2	15			24
TOTAL	9	18	16	2	0	0	0	1	46	105	10	0	3	0	0	0	0	0	0	0	0	6	124	0	0	170
PER CENT	5,3%	10,6%	9,4%	1,2%	0,0%	0,0%	0,0%	0,6%	27,1%	61,8%	5,9%	0,0%	1,8%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	3,5%	72,9%	0,0%	0,0%	100%
BOSNIA - HERCEGOVINA																										
Banja Luka									0	4													4			4
Doboj									0	1													1			1
Sokolac			1						1														0			1
Srednjebosanski									0	1													1			1
Trebinje					1				1														0			1
TOTAL	0	0	1	0	1	0	0	0	2	6	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	8
PER CENT	0,0%	0,0%	12,5%	0,0%	12,5%	0,0%	0,0%	0,0%	25,0%	75,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	75,0%	0,0%	0,0%	100%
BULGARIA																										
Razgrad									0	1													1			1
Shumen									0	1													1			1
Silistra		2							2														0			2
Sofia	1								1														0			1
Sofia stolitsa	1								1	9													9			10
TOTAL	2	2	0	0	0	0	0	0	4	11	0	0	0	0	0	0	0	0	0	0	0	0	11	0	0	15
PER CENT	13,3%	13,3%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	26,7%	73,3%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	73,3%	0,0%	0,0%	100%
DENMARK																										
Vestsjællands amt									0														0	1		1
TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
PER CENT	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	100,0%	0,0%	100%
ESTONIA																										
Lääne			1						1														0			1
TOTAL	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
PER CENT	0,0%	0,0%	100,0%	0,0%	0,0%	0,0%	0,0%	0,0%	100,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	100%

4.2 Rabies cases per country and administrative units, 2nd quarter 2007 01.04.07-30.06.07

Location	Domestic animals									Wildlife															bat	Human cases	total
	dog	cat	cattle	equine	goat sheep	pig	stray dog	other	subtotal	fox	racoon dog	racoon	wolf	badger	marten	other mustelides	other carnivores	wild boar	roe deer	red deer	fallow deer	other	subtotal				
CROATIA																											
Bjelovarsko - Bilogorska									0	1													1				1
Brodsko - Posavska									0	2													2				2
Karlovacka									0	7													7				7
Krapinsko - Zagorska									0	5													5				5
Licko - Senjska									0	4													4				4
Osjesko - Baranjska									0	2													2				2
Pozesko - Slovanska		1							1	3													3				4
Primorsko - Goranska									0	5									1				6				6
Sibensko - Kninska									0	1													1				1
Sisacko - Moslovacka					2				2	14													14				16
Splitsko - Dalmatinska									0	9													9				9
Varazdinska									0	1													1				1
Viroticko - Podravska									0	1													1				1
Zagrebacka		2							2	13													13				15
TOTAL	0	3	0	0	2	0	0	0	5	68	0	0	0	0	0	0	0	0	1	0	0	0	69	0	0		74
PER CENT	0,0%	4,1%	0,0%	0,0%	2,7%	0,0%	0,0%	0,0%	6,8%	91,9%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	1,4%	0,0%	0,0%	0,0%	93,2%	0,0%	0,0%		100%
LATVIA																											
Aizkraukles r.		1							1		1												1				2
Aluksnes r.	2	1							3	4						2							6				9
Daugavpils r.	1	1							2														0				2
Dobeles r.									0	1	1												2				2
Jekabpils r.		1							1														0				1
Jelgavas r.			1						1														0				1
Kuldigas r.									0	1	1												2				2
Ludzas r.	2								2														0				2
Ogres r.	1								1														0				1
Preiiu r.	1								1	1	1												2				3
Rezeknes r.									0	2													2				2
Rigas r.									0	2													2				2
Saldus r.		3							3	2				2									4				7
Talsu r.									0	2													2				2
Tukuma r.		1							1	2	1												3				4
Valmieras r.		1							1	1													1				2
Ventpils r.		1							1	3													3				4
TOTAL	7	10	1	0	0	0	0	0	18	21	5	0	0	2	0	2	0	0	0	0	0	0	30	0	0		48
PER CENT	14,6%	20,8%	2,1%	0,0%	0,0%	0,0%	0,0%	0,0%	37,5%	43,8%	10,4%	0,0%	0,0%	4,2%	0,0%	4,2%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	62,5%	0,0%	0,0%		100%

4.2 Rabies cases per country and administrative units, 2nd quarter 2007 01.04.07-30.06.07

Location	Domestic animals									Wildlife																	
	dog	cat	cattle	equine	goat sheep	pig	stray dog	other	subtotal	fox	racoon dog	racoon	wolf	badger	marten	other mustelides	other carnivores	wild boar	roe deer	red deer	fallow deer	other	subtotal	bat	Human cases	total
LITHUANIA																											
Alytaus	1	2							3	14	5				4								23			26
Kauno	3	3	1						7	11	12				1	2			2			1	29			36
Klaipedos									0	1	1												2			2
Marijampoles		1							1	2	2				2								6			7
Panevezio	2	1	1						4	3													3			7
Siauliu	2	1	2						5	1	2				1								4			9
Taurages									0	1	1												2			2
Telsiu	1		1						2		2				1								3			5
Utenos		2							2	2	5			1	1								9			11
Vilniaus	1		1						2	9	3					1							13			15
TOTAL	10	10	6	0	0	0	0	0	26	44	33	0	0	1	10	3	0	0	2	0	0	1	94	0	0	120
PER CENT	8,3%	8,3%	5,0%	0,0%	0,0%	0,0%	0,0%	0,0%	21,7%	36,7%	27,5%	0,0%	0,0%	0,8%	8,3%	2,5%	0,0%	0,0%	1,7%	0,0%	0,0%	0,8%	78,3%	0,0%	0,0%	100%
POLAND																											
Lubelskie									0	1	1												2			2
Podkarpackie									0	2													2			2
Podlaskie									0	4													4	1		5
Warminsko-Mazurskie			1						1	5	1												6			7
Wielkopolskie							1		1						1								1			2
TOTAL	0	0	1	0	0	0	1	0	2	12	2	0	0	0	1	0	0	0	0	0	0	0	15	1	0	18
PER CENT	0,0%	0,0%	5,6%	0,0%	0,0%	0,0%	5,6%	0,0%	11,1%	66,7%	11,1%	0,0%	0,0%	0,0%	5,6%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	83,3%	5,6%	0,0%	100%
ROMANIA																											
Arad								1	1														0			1
Bacau									0	1													1			1
Brasov	1								1														0			1
Buzau	1								1														0			1
Cluj	1			1					2	1													1			3
Covasna									0					1				1					2			2
Hunedoara									0				1										1			1
Neamt	3	1							4														0			4
Sibiu									0				1										1			1
Tulcea			1						1														0			1
Vaslui									0	2													2			2
TOTAL	6	1	1	1	0	0	0	1	10	4	0	0	2	1	0	0	0	1	0	0	0	0	8	0	0	18
PER CENT	33,3%	5,6%	5,6%	5,6%	0,0%	0,0%	0,0%	5,6%	55,6%	22,2%	0,0%	0,0%	11,1%	5,6%	0,0%	0,0%	0,0%	5,6%	0,0%	0,0%	0,0%	0,0%	44,4%	0,0%	0,0%	100%

4.2 Rabies cases per country and administrative units, 2nd quarter 2007 01.04.07-30.06.07

Location	Domestic animals									Wildlife																	
	dog	cat	cattle	equine	goat sheep	pig	stray dog	other	subtotal	fox	racoon dog	racoon	wolf	badger	marten	other mustelides	other carnivores	wild boar	roe deer	red deer	fallow deer	other	subtotal	bat	Human cases	total
TURKEY																											
Adana	12		1						13												1		1			14
Aydin	3								3														0			3
Balikesir	4				1				5														0			5
Bayburt		1							1														0			1
Bingöl	1	1	1						3														0			3
Diyarbakir	1		1						2														0			2
Elazig	2	1	1						4														0			4
Erzincan		1							1														0			1
Erzurum	4		1						5				1										1			6
Gaziantep	3		1						4	1				1									2			6
Hatay	4		1						5														0			5
Istanbul	6		1						7														0			7
Izmir	1		2						3														0			3
Kars	1								1														0			1
Manisa	4								4														0			4
Mardin	1								1														0			1
Mugla			1						1														0			1
Mus	1								1														0			1
Sakarya	1								1														0			1
Sanliurfa	4		1						5														0			5
Sirnak					12				12														0			12
Usak			2						2														0			2
TOTAL	53	4	14	0	13	0	0	0	84	1	0	0	1	1	0	0	0	0	0	0	1	0	4	0	0	88
PER CENT	60,2%	4,5%	15,9%	0,0%	14,8%	0,0%	0,0%	0,0%	95,5%	1,1%	0,0%	0,0%	1,1%	1,1%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	1,1%	0,0%	4,5%	0,0%	0,0%	100%
THE NETHERLANDS																											
Gelderland									0														0	1		1
TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
PER CENT	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	100,0%	0,0%	100%
GERMANY																											
Berlin-West,Stadt									0														0	1		1
TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
PER CENT	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	100,0%	0,0%	100%

4.2 Rabies cases per country and administrative units, 2nd quarter 2007 01.04.07-30.06.07

Location	Domestic animals									Wildlife																	
	dog	cat	cattle	equine	goat sheep	pig	stray dog	other	subtotal	fox	racoon dog	racoon	wolf	badger	marten	other mustelides	other carnivores	wild boar	roe deer	red deer	fallow deer	other	subtotal	bat	Human cases	total
UKRAINE																											
Avtonomnaya Respublika Krym	1	1							2														0			2
Bolynskaja o.	1								1	2													2			3
Cherkasskaja o.	10	11							21	6				2									8			29
Chernigovskaja o.	3	10	4						17	1		1	1		1								4			21
Dnepropetrovskaja o.	4	4							8	5													5			13
Donetskskaja o.	7	8	3						18	12		1											13			31
Ivano-Frankovskaja o.	1							1	2														0			2
Khar'kovskaja o.		2							2	6													6			8
Khersonskaja o.	1	4	4						9	5		1											6			15
Khmel'nitskaja o.	8	5	1		1				15	15					2							1	18			33
Kirovogradskaja o.	2	2	2						6	3													3			9
Kiyevskaja o.	2	1							3	5													5			8
Luganskaja o.	1	1	2		1				5	2			1										3	1		9
Nikolayevskaja o.	1	1	1						3	1													1			4
Odesskaja o.	4	1							5	1													1			6
Poltavskaja o.	8	6	5						19	4													4			23
Rovenskaja o.	1	1							2														0			2
Sumskaya o.	4	7	1						12	3					1								4			16
Ternopol'skaja o.	5	3							8	3					2								5			13
Vinnitskaja o.	3	5							8	4													4			12
Zakarpatskaja o.	1	1							2													1	1			3
Zaporozhskaja o.	5	2	5		1				13	3		1	1										5			18
Zhitomirskaja o.	10	7	2						19	23		1	1									1	26			45
TOTAL	83	83	30	0	3	0	0	1	200	104	0	5	4	2	6	0	0	0	0	0	0	3	124	1	0	325
PER CENT	25,5%	25,5%	9,2%	0,0%	0,9%	0,0%	0,0%	0,3%	61,5%	32,0%	0,0%	1,5%	1,2%	0,6%	1,8%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,9%	38,2%	0,3%	0,0%	100%
SERBIA																											
Central Serbia	1		1						2	16													16			18
Vojvodina	1	1							2	9													9			11
TOTAL	2	1	1	0	0	0	0	0	4	25	0	0	0	0	0	0	0	0	0	0	0	0	25	0	0	29
PER CENT	6,9%	3,4%	3,4%	0,0%	0,0%	0,0%	0,0%	0,0%	13,8%	86,2%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	86,2%	0,0%	0,0%	100%
MONTENEGRO																											
Montenegro			1						1	1													1			2
TOTAL	0	0	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	2
PER CENT	0,0%	0,0%	50,0%	0,0%	0,0%	0,0%	0,0%	0,0%	50,0%	50,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	50,0%	0,0%	0,0%	100%
FRANCE																											
Bretagne									0														0	1		1
TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
PER CENT	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	100,0%	0,0%	100%

4.2 Rabies cases per country and administrative units, 2nd quarter 2007 01.04.07-30.06.07

Location	Domestic animals									Wildlife														bat	Human cases	total
	dog	cat	cattle	equine	goat sheep	pig	stray dog	other	subtotal	fox	racoon dog	racoon	wolf	badger	marten	other mustelides	other carnivores	wild boar	roe deer	red deer	fallow deer	other	subtotal			
RUSSIAN FEDERATION																										
Astrahanskja obl.	11	5	6				1		23	3	1		1		1							1	7			30
Belgorodskja obl.	8	8							16	6													6			22
Brjanskaja obl.			2						2	2													2			4
Cecenskaja resp.			8						8														0			8
Cuvasskaja resp.			1						1	6													6			7
Dagestan resp.	2		10		1				13	4													4			17
Kaliningradskaja obl.	2		1						3	2													2			5
Kalmykija resp.	1		2			1			4														0			4
Kaluzskaja obl.									0	4	1												5			5
Krasnodarskij kr.	14	5					1		20	1													1			21
Kurskaja obl.		1							1	3													3			4
Lipeckaja obl.	1	3							4	15													15			19
Mordovija resp.									0	6													6			6
Moskovskaja obl.	2								2	4													4			6
Nizegorodskaja obl.	2	2	1						5	6													6			11
Orlovskaja obl.		1							1														0			1
Penzenskaja obl.		1	1						2	10													10			12
Pskovskaja obl.									0	12													12			12
Rjazanskaja obl.	1								1	3													3			4
Rostovskaja obl.	8	4	4			2	1		19	2													2		1	22
Saratovskaja obl.	5	6	4		11				26	9				1									10			36
Severnaja Osetija-Alanija resp.	3		3						6	1													1			7
Smolenskaja obl.	3		2						5	8	2											1	11			16
Stavropol'skij kr.	7	4	9						20	1													1			21
Tambovskaja obl.	1								1	3													3			4
Tul'skaja obl.	2	6	1		1				10	4													4			14
Tverskaja obl.	2	1							3	9	3						1						13			16
Ul'janovskaja obl.	1	1							2	1													1			3
Vladimirskja obl.	2	1							3	1													1			4
Volgogradskaja obl.	2		6		1				9	2													2			11
Voronezskaja obl.	5	3	1						9	4													4			13
TOTAL	85	52	62	0	14	3	3	0	219	132	7	0	1	1	1	0	1	0	0	0	0	2	145	0	1	365
PER CENT	23,3%	14,2%	17,0%	0,0%	3,8%	0,8%	0,8%	0,0%	60,0%	36,2%	1,9%	0,0%	0,3%	0,3%	0,3%	0,0%	0,3%	0,0%	0,0%	0,0%	0,0%	0,5%	39,7%	0,0%	0,3%	100%

4.3 Trend tables

4.3.1 Comparison of the reporting quarter (II/2007) with the previous quarter (I/2007)

NAME	Total			Wildlife			Domestic animals			Bats			Human		
	II 2007 (no.)	I 2007 (no.)	Difference	II 2007 (no.)	I 2007 (no.)	Difference	II 2007 (no.)	I 2007 (no.)	Difference	II 2007 (no.)	I 2007 (no.)	Difference	II 2007 (no.)	I 2007 (no.)	Difference
Albania															
Austria															
Belarus	170	264	-94	124	186	-62	46	78	-32						
Belgium															
Bosnia - Hercegovina	8	9	-1	6	7	-1	2	2	0						
Bulgaria	15	13	2	11	10	1	4	3	1						
Croatia	74	204	-130	69	186	-117	5	18	-13						
Cyprus															
Czech Republic															
Denmark	1		1							1		1			
Estonia	1	1	0				1	1	0						
Finland															
France	1		1							1		1			
Germany	1		1							1		1			
Greece															
Hungary		1	-1		1	-1									
Iceland															
Ireland															
Italy															
Latvia	48	72	-24	30	47	-17	18	25	-7						
Lithuania	120	195	-75	94	145	-51	26	50	-24						
Luxembourg															
Macedonia															
Malta															
Moldova	*	*		*	*		*	*		*	*		*	*	
Montenegro	2	7	-5	1	7	-6	1		1						
Norway						0									
Poland	18	19	-1	15	16	-1	2	3	-1	1		1			
Portugal															
Romania	18	71	-53	8	54	-46	10	16	-6					1	-1
Russian Federation	365	478	-113	145	211	-66	219	267	-48				1		1
Serbia	29	69	-40	25	62	-37	4	7	-3						
Slovak Republic															
Slovenia		1	-1		1	-1									
Spain															
Sweden															
Switzerland + Lichtenstein															
The Netherlands	1	1	0							1	1	0			
Turkey	88	76	12	4	8	-4	84	68	16						
Ukraine	325	584	-259	124	293	-169	200	290	-90	1		1		1	-1
United Kingdom															
TOTAL	1285	2065	-780	656	1234	-578	622	828	-206	6	1	5	1	2	-1

Wildlife: excluding bats

II/2007 (no.), I/2007 (no.): number of cases
Difference: no. of cases in II/2007 minus cases in I/2007

* no data

4.3.2 Comparison of the reporting quarter (II/2007) with the same quarter of the previous year (II/2006)

NAME	Total			Wildlife			Domestic animals			Bats			Human		
	II 2007 (no.)	II 2006 (no.)	Difference	II 2007 (no.)	II 2006 (no.)	Difference	II 2007 (no.)	II 2006 (no.)	Difference	II 2007 (no.)	II 2006 (no.)	Difference	II 2007 (no.)	II 2006 (no.)	Difference
Albania		3	-3		1	-1		2	-2						
Austria															
Belarus	170	386	-216	124	321	-197	46	65	-19						
Belgium															
Bosnia - Hercegovina	8	21	-13	6	17	-11	2	4	-2						
Bulgaria	15	2	13	11	1	10	4	1	3						
Croatia	74	113	-39	69	104	-35	5	9	-4						
Cyprus															
Czech Republic															
Denmark	1	2	-1							1	2	-1			
Estonia	1	34	-33		31	-31	1	3	-2						
Finland															
France	1	2	-1							1	2	-1			
Germany	1	4	-3							1	4	-3			
Greece															
Hungary															
Iceland															
Ireland															
Italy															
Latvia	48	139	-91	30	123	-93	18	16	2						
Lithuania	120	615	-495	94	530	-436	26	85	-59						
Luxembourg															
Macedonia															
Malta															
Moldova*															
Montenegro	2	5	-3	1	5	-4	1		1						
Norway															
Poland	18	17	1	15	13	2	2	3	-1	1	1	0			
Portugal															
Romania	18	41	-23	8	29	-21	10	12	-2						
Russian Federation	365	276	89	145	123	22	219	153	66				1		1
Serbia	29	38	-9	25	36	-11	4	2	4						
Slovak Republic															
Slovenia															
Spain															
Sweden															
Switzerland + Lichtenstein															
The Netherlands	1	2	-1							1	2	-1			
Turkey	88	65	23	4	4	0	84	61	23						
Ukraine	325	355	-30	124	180	-56	200	175	25	1		1			
United Kingdom															
TOTAL	1285	2120	-835	656	1518	-862	622	591	33	6	11	-5	1	0	1

Wildlife: excluding bats

II/2007 (no.), II/2006 (no.): number of cases
Difference: no. of cases in II/2007 minus cases in II/2006

* no data

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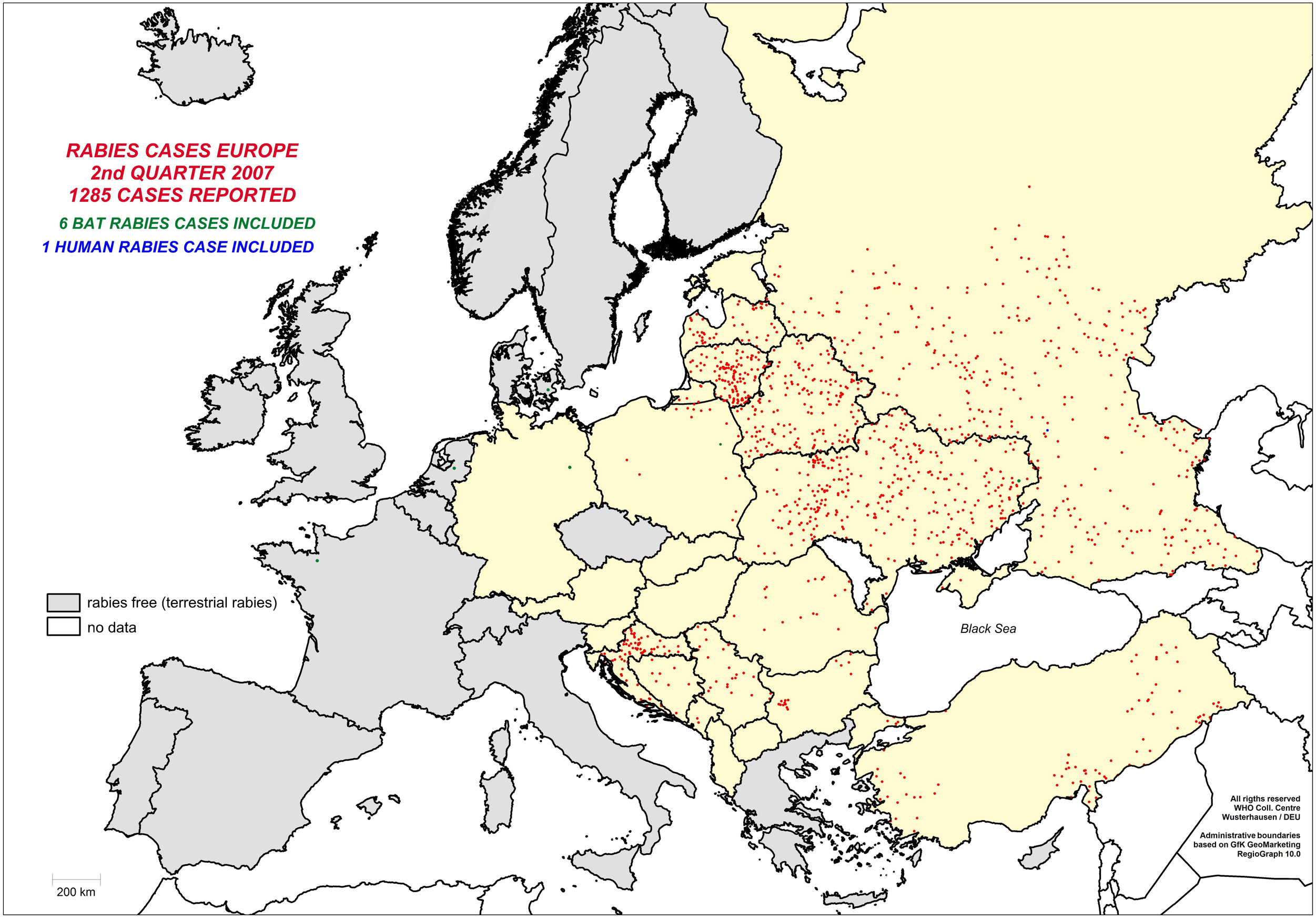
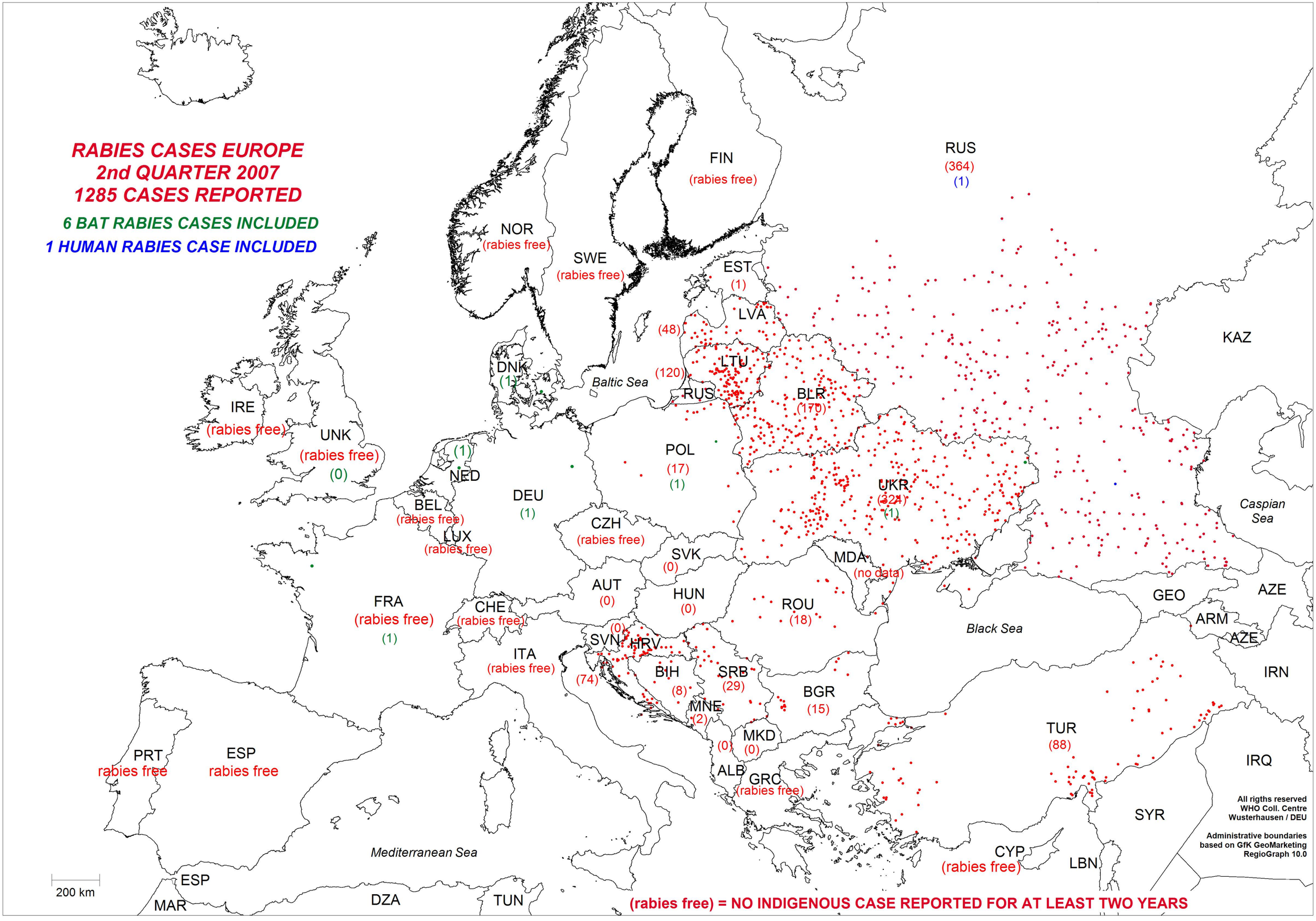

RABIES CASES EUROPE
2nd QUARTER 2007
1285 CASES REPORTED
6 BAT RABIES CASES INCLUDED
1 HUMAN RABIES CASE INCLUDED
rabies free (terrestrial rabies)
no data
Black Sea
200 km
All rigths reserved
WHO Coll. Centre
Wusterhausen / DEU
Administrative boundaries
based on GfK GeoMarketing
RegioGraph 10.0


RABIES CASES EUROPE
2nd QUARTER 2007
1285 CASES REPORTED
6 BAT RABIES CASES INCLUDED
1 HUMAN RABIES CASE INCLUDED
FIN
(rabies free)
RUS
(364)
(1)
NOR
(rabies free)
SWE
(rabies free)
EST
(1)
LVA
(48)
LTU
(120)
RUS
BLR
(170)
KAZ
DNK
(1)
Baltic Sea
IRE
(rabies free)
UNK
(rabies free)
(0)
(1)
NED
BEL
(rabies free)
LUX
(rabies free)
DEU
(1)
POL
(17)
(1)
UKR
(321)
(1)
Caspian Sea
CZH
(rabies free)
SVK
(0)
MDA
(no data)
AUT
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HUN
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ROU
(18)
GEO
AZE
ARM
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Black Sea
FRA
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