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1 Editorial

The reported rabies cases of the 2nd quarter 2012 are presented in tables. A number of countries that have successfully used oral rabies vaccination (ORV), e.g. Hungary, Slovakia, Estonia, and Latvia reported zero cases for this quarter. Most notably, Croatia which started large scale ORV in 2011 also reported the lowest number for a quarter since more than a decade, indicating the effect of ORV. Otherwise, while the upsurge of rabies in the Małopolskie voivodship in Poland seems controlled (See RBE IV/2010), rabies cases are still reported from the adjacent Podkarpackie voivodship.

Interestingly, among the 9 bat rabies cases reported is a second case of Bokeloh Bat Lyssavirus (BBLV), this time detected in a Natterer's bat in France. Also, in Spain a *Miniopterus schreibersii* tested positive and preliminary results by the team of Juan Echevarria suggest that this virus represents yet another novel lyssavirus named Lleida bat lyssavirus (LLBLV). The scientific paper(s) on this novel virus will be much appreciated.

The first miscellaneous article provides first-hand information on the rabies situation in Jordan. The report was prepared following a workshop on rabies prevention and control in Amman funded by the European Union.

Those who wanted to make use of the sequences available on NCBI sequence database may have experienced problems as often several sequence entries for an individual virus exist, caused by duplication of data by different submitting laboratories and limited or absent submission details, resulting in extensive searches of the literature to collate the relevant data. The second article introduces a newly developed, easily searchable, on-line sequence database for lyssaviruses, which combines all necessary information on the virus, the sequence and further laboratory information.

Conrad Freuling
Thomas Müller

2 Summary of Rabies Cases in Europe

RABIES CASES 2nd QUARTER 2012 01.04.12-30.06.12

Name	Code	Total	Wildlife	Domestic animals	Bats	Human
Albania	ALB	0	0	0		
Austria	AUT	0	0	0		
Belarus	BLR	98	53	45		
Belgium	BEL	0	0	0		
Bosnia - Hercegovina	BIH	1	1	0		
Bulgaria	BGR	0	0	0		
Croatia	HRV	30	26	4		
Cyprus	CYP	0	0	0		
Czech Republic	CZH	0	0	0		
Denmark	DNK	0	0	0		
Estonia	EST	0	0	0		
Finland	FIN	0	0	0		
France	FRA	0	0	0		
Germany	DEU	5	0	0	5	
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	0	0	0		
Lithuania	LTU	1	0	1		
Luxembourg	LUX	0	0	0		
Macedonia	MKD	0	0	0		
Malta	MLT	0	0	0		
Moldova	MDA	27	4	23		
Montenegro	MNE	0	0	0		
Norway	NOR	0	0	0		
Poland	POL	32	23	8	1	
Portugal	PRT	0	0	0		
Romania	ROU	87	55	32		
Russian Federation	RUS	365	197	166		2
Serbia	SRB	1	1	0		
Slovak Republic	SVK	0	0	0		
Slovenia	SVN	1	1	0		
Spain	ESP	1	0	0	1	
Sweden	SWE	0	0	0		
Switzerland + Lichtenstein	CHE	0	0	0		
The Netherlands	NED	2	0	0	2	
Turkey	TUR	148	29	119		
Ukraine	UKR	282	96	186		
United Kingdom	UNK	1	0	0		1
TOTAL		1082	486	584	9	3

Wildlife: excluding bats

3 Miscellaneous Articles

3.1 Rabies in Jordan

N. Johnson[1], M. Hannatleh[2] and A. Muhaidat[3]

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[2.]Department of VeterinaryMinistry of Agriculture, Jordan.
[3.]Vaccine and Sera Department, Ministry of Health, Jordan.

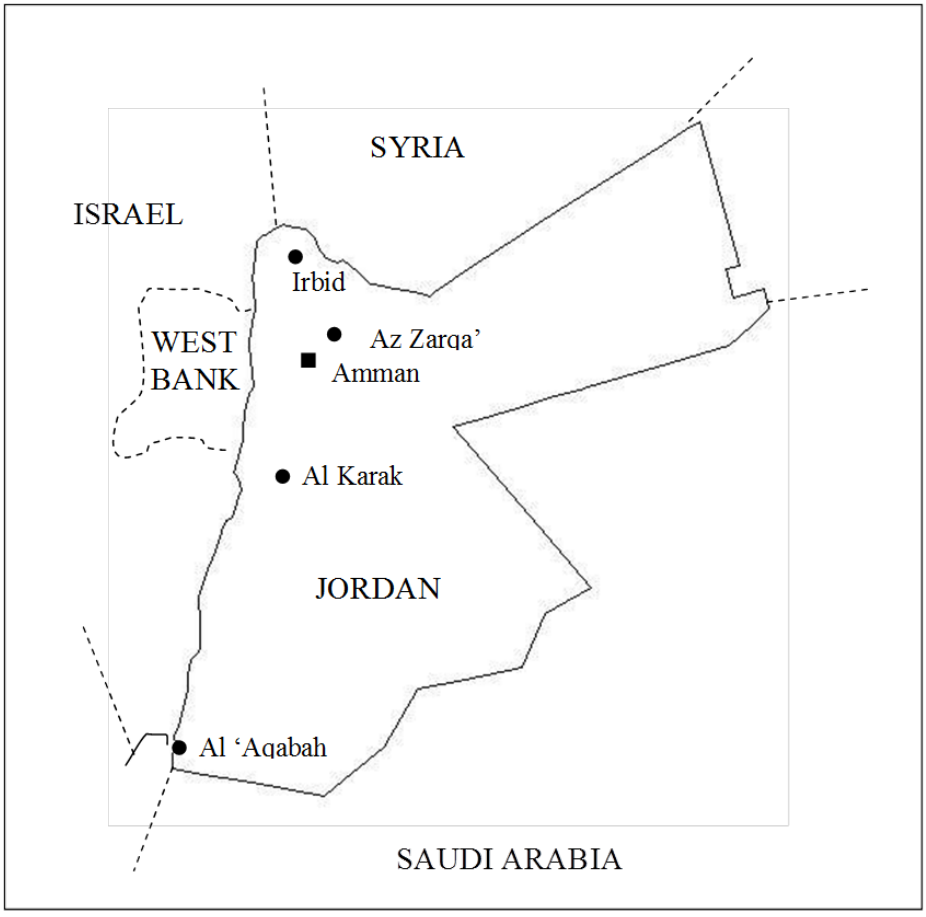
This report was prepared following a workshop on rabies prevention and control in Jordan funded by the European Union. It was held in Amman, 1st - 5th July 2012. The workshop was attended by veterinarians and scientists based throughout the country with responsibility for rabies control and diagnosis.

Rabies is present throughout the Middle East and Jordan is no exception. The disease is characterized by occasional outbreaks originating from the stray dog population. Jordan is almost 90,000 km2 with extensive land borders with Syria, Iraq, Saudi Arabia, Israel and the West Bank area controlled by the Palestinian Authority. It has a short coastline on the Red Sea in the south. The climate is dominated by two seasons, a hot dry summer with daytime temperatures over 30oC and a cool, wet winter. The majority of the country, particularly the eastern regions, is desert with less than 200mm annual rainfall. The country has a population of approximately 6.5 million, mainly in the cities such as the capital Amman (pop. 2.8 million), Az Zarqa (pop. 1.6 million) and Irbid (pop. 660,000). Agriculture is dominated by sheep and goat farming with donkeys, camels and horses used to carry goods.

Rabies control is the responsibility of a number of government ministries including Health and Agriculture. Diagnosis of rabies virus in samples, mainly domestic and wild animals, is conducted by the Vaccine and Sera Department of the Department of Health. The principal test in use is the fluorescent antibody test (Dean et al., 1996) with reverse transcriptase chain reaction (RT-PCR) being introduced as a second test (Faizee et al., 2012). Other laboratories including those of the Ministry of Agriculture and the University of Science and Technology, Irbid, are also developing this capacity. In the case of bites by dogs or wildlife, people are treated with standard post-exposure prophylaxis (PEP, inactivated vaccine & rabies immunoglobulin), which is provided free of charge by the government. As a result human infection is very rare. The last case of human rabies was recorded in 1996 (Faizee et al., 2011). In 2007, fifty cases of rabies were reported with 28 (56%) being in dogs. Other species affected included cattle (23%), sheep (8%) and goats (7%). This represents a large increase compared to the single case reported in 2003. The majority of cases were reported from the north-west of the countries although incidents of rabies were reported from most provinces.

The only phylogenetic study using samples detected in Jordan compared these to a larger panel from Israel (David et al., 2007). This study included six sequences (complete nucleoprotein gene) from samples derived from north-west Jordan (Table 1). All sequences were derived from non-reservoir

species from 1998/99. In brief, the phylogeny revealed that at the time, three lineages of RABV were present in Jordan. Two co-circulated in the extreme north with a further lineage to the south, represented by a single isolate recovered from a rabid donkey from the city of Al Karak. All three lineages were present in Israel to the west suggesting trans-border movement of rabies reservoirs.



The key reservoir for rabies in Jordan is the stray or 'feral' dog with no human ownership. There are no clear figures for the number of such dogs in Jordan although an estimate in 1994 suggested a figure of 24,000 (Yakobson et al., 2004). There are a small number of licensed animals, particularly within urban areas. Farmers often own dogs for protection of property and livestock. Control of stray dogs, irrespective of rabies, is a challenge to the municipal authorities in Jordan as they can be a nuisance to the human population and in extreme cases attack and kill livestock. In one report a pack of stray dogs killed seven sheep in one attack (Moutaz Ziadeen, personal communication). Active measures such as poisoning and shooting have been used in the past but are now banned by law unless there is suspicion of rabies. Currently the only active measures are a pilot study in the Amman municipality

(covering the urban area of the capital) to apply animal birth control (ABC) to the stray dog population at a single welfare centre on the outskirts of the city using sterilization of both male and female dogs. These are vaccinated against rabies, ear-tagged and released after a short recovery period close to the site of capture. During the first two years of the project, over 2000 dogs have been sterilized. It is unclear what effect this is having on the dog population or the proportion of the population that has been treated. However, it does offer an opportunity to map the location of the stray dog population and their longevity in this environment through recaptures. Accurate estimates of the size and turnover of such populations would be essential information to plan future control strategies. Key indicators of success are difficult to identify but for this project they include monitoring the levels of public complaints concerning stray dogs and changes to the number of dog bites to humans that are reported. Based on the success of this project further centers would be needed in other urban municipalities, such as the northern cities to implement ABC in their stray dog populations.

Further activities that could also be enhanced include improved cooperation between ministries of government, enhanced surveillance for rabies to improve the understanding of the epidemiology of rabies in Jordan, particularly in the reservoir species involved (dogs or wildlife). This information is vital to focus limited resources on control on particular species in the most affected areas rather than diluting these throughout the country in locations where they may not be needed. Another element to control rabies in Jordan is that of maintaining awareness to encourage members of the public to report rabid animals and obtain rabies PEP in the case of an animal bite. One aspect of this is the distribution of leaflets offering information on the dangers of rabies, responsible dog ownership and the ABC program. Finally, consideration should be given to controlling the food supply to stray dogs by encouraging the general public and municipalities to dispose of food waste in a way that reduces its accessibility to the stray dog population.

A further issue raised during the workshop was the appropriate response to dog bites and attacks on domestic livestock, especially when the status of the biting animal is not known. Possible options ranged from no action, wound management, vaccination of the animal (and/or all other livestock at the location), through to destruction of the animal. In these scenarios, a risk-based approach is needed, taking into account of the current status of rabies in an area. Here again, active surveillance and rapid dissemination of this information is needed in Jordan. Also clear instruction on livestock vaccination, including access to veterinary vaccines, both pre- and post-exposure, is needed. There is little guidance on PEP for animals although investigations from the United States have conducted follow-up studies of rabies exposed animals. In an evaluation of rabies prophylaxis of domestic animals in Texas, over 1000 animals, including 119 livestock, were investigated following exposure to a rabid animal (Wilson et al., 2010). None of the animals given PEP developed rabies suggesting that this course of action is effective in treating exposed livestock. The guidelines developed for treatment of exposed animals are:

1. Immediately vaccinate livestock that have been exposed to a rabid animal.
2. Isolate the animal for 90 days.
3. Administer booster doses at 3 and 8 weeks whilst in isolation.

In the case of pre-vaccinated animals, it is recommended that the animal is revaccinated immediately, confined for a period of 45 days and isolated from humans and other animals. If rabies is endemic, pre-vaccination of animals is recommended for public health and economic reasons.

Jordan is in a strong position to control and potentially eliminate rabies. The veterinary and human medicine infrastructure is in place with a diagnostic capacity to support surveillance. This needs to be focused on assessing the actual scale of the stray dog population, including its size, location and turnover. In this, the data generated from the ABC program will be very important, and this project needs ongoing support to maximize the benefits from its activities. Such information is critical to assess the scale and location of the problem of stray dogs and inform the resources needed to address it such as the number of vaccines needed and the number of sterilizations required to affect the dog population. It will also enable markers of success to be established to demonstrate the efficiency of particular measures and hopefully secure access to future funding.

Surveillance is critical to understanding the distribution and level of RABV circulation in Jordan. This is of particular importance to a country such as Jordan with long, porous borders that are likely to be crossed by RABV infected animals. The phylogenetic study of David and co-workers suggests this occurred during the 1990s (David et al., 2007). Future linkage of sequence analysis to diagnostic testing for rabies will enable the rabies viruses present in Jordan to be monitored for changes that may indicate importation of new strains. Rabies oral vaccination programs along the borders such as that along the Israeli border will help in this although may not be effective in preventing movement by stray dogs.

The workshop participants discussed these issues and proposed the following recommendations for developing a rabies elimination plan for Jordan:

1. Strengthen communication between responsible authorities within the country including ministries such as Agriculture, Health and Planning. Other key stakeholders are the municipalities who have responsibility for dog control.
2. Establish clear guidelines and procedures for preparation of samples and diagnosis. Data gathered should be reported on an annual basis to assess the distribution of rabies within Jordan and detection of trends that may indicate an increase or decrease in disease prevalence or the success of control measures.
3. Continue measures to raise awareness towards rabies within the general public but particularly in those groups that are at increased risk of contact with rabies animals such as children and farmers.
4. Development of a coordinated rabies elimination plan that involves all key stakeholders who can champion the plan and secure sufficient funding to implement it.

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3.2 Lyssavirus Sequence Database

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The success of any rabies control policy would depend heavily on the rapid and accurate diagnosis and epidemiological analysis of the initial cases, e.g. to confirm the source of an imported case or exclude a vaccine related case. Genetic sequences of confirmed diagnostic isolates can be used in association with other sequence data from simultaneous outbreaks or from existing databases to produce accurate epidemiological information. Published virus sequences are available on NCBI Nucleotide for lyssviruses. However, there are often several sequence entries for an individual virus, duplication of data by different submitting laboratories and limited or absent submission details, resulting in extensive searches of the literature to collate the relevant data. We describe a newly developed, easily searchable, on-line sequence database for

lyssaviruses, which combines the virus, sequence and laboratory information necessary to assist authorities to deal with rabies epizootics, incursions and importations.

In collaboration with the National Consortium for Zoonosis Research (NCZR) and FLI, AHVLA have developed an online sequence database to enable easy searches of all available lyssavirus sequences with downloadable outputs. The lyssavirus sequence database is freely available on-line at http://www.zoonosis.ac.uk/Rabies/Home. The database captures lyssavirus sequences which have been published in NCBI Nucleotide (Figure 1). The entire database is updated monthly from NCBI Nucleotide. Where possible, the database will automatically map the sequences to genomic region, viral species, host species, geographical location, collection date and laboratory affiliation. The mapping programme has been optimised to recognise the variations employed by submitting laboratories when providing sequence details. For example, several descriptions have previously been used to refer to the 'polymerase gene' i.e. L, L gene, L-gene, Large protein, RNA Dependent RNA Polymerase. Also variations exist for hosts, countries, laboratories and date format. By mapping the variables we have significantly reduced the chances of missing published sequences and provided a universal platform for searching the database. Regardless of this extensive variable mapping, a proportion of sequences are still not automatically mapped by the software, resulting in manual input from qualified staff.

Pathogen	No. of sequences	N Gene	P Gene	M Gene	G Gene	L Gene
aravan virus	2	2	1	1	1	1
australian bat lyssavirus	77	37	40	4	28	5
bokeloh bat lyssavirus	1	1	1	1	1	1
duvenhage virus	41	15	7	8	13	4
european bat lyssavirus	83	0	0	0	46	0
european bat lyssavirus 1	284	215	8	0	29	9
european bat lyssavirus 2	58	31	13	13	26	14
ikoma lyssavirus	3	1	0	0	0	0
irkut virus	3	1	2	2	2	2
khujand virus	1	1	1	1	1	1
lagos bat virus	91	34	19	20	25	5
lyssavirus ozernoe (irkut virus)	1	1	1	1	1	1
mokola virus	63	37	13	9	17	8
rabies virus	14819	8508	1600	648	4347	778
rabies virus (era)	1	0	0	0	1	0
shimoni bat virus	1	1	1	1	1	1
west caucasian bat virus	1	1	1	1	1	1

Figure 1: Summary table from the lyssavirus database indicating the number of submitted sequences for each lyssavirus species. The database currently contains 15,530 sequences.

Sequences are frequently unmapped to the database fields due to omissions in sequence data submissions (e.g. citing European Bat Lyssavirus but not specifying which species, or not using a universally accepted description of the genetic region). Therefore, we would like to encourage all authors of lyssavirus sequence submissions to review their historic entries and update them with any missing data. This database will allow authors to review their submissions using the 'author's last name' search, or search under the submitting institute name. For future submissions, we strongly recommend using the most recent version of the standardised sequence submission software, Sequin, obtained from the NCBI website (www.ncbi.nlm.nih.gov/projects/Sequin/), which will harmonise sequence submissions and encourage submitting laboratories to include all essential data, including collection date, virus species, host species and country of isolation. Sequin is being continuously updated, resulting in a more user-friendly interface. We recommend submitters to use the following Genbank entries as guidance for future submissions to ensure the correct information is captured:

Full Genome submission: JX193798, EU293115, GU170201
Partial Gene submission: JF973737, JF973800

The database has been designed to be user friendly and intuitive. Search outputs can be saved as a map, Excel file or Fasta file to enable the user to easily retrieve datasets onto their desktop for further analysis. Furthermore, entries can be analysed using BLAST to determine sequence identities. Further downstream applications, including the provision of sequence alignments and phylogenetic analyses, are currently in development. We encourage the use of this database by the lyssavirus community and any suggestions for improvements are welcomed, please contact the corresponding author.

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4 Distribution of Rabies in Europe

Country summaries of rabies cases, 2nd quarter 2012

01.04.12-30.06.12

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		17	16	5	1		1	5		45	40	6											7	53			98
Belgium	BEL	*									0														0			0
Bosnia - Hercegovina	BIH										0	1													1			1
Bulgaria	BGR	*									0														0			0
Croatia	HRV		2		2						4	25					1								26			30
Cyprus	CYP	*									0														0			0
Czech Republic	CZH	*									0														0			0
Denmark	DNK	*									0														0			0
Estonia	EST	*									0														0			0
Finland	FIN	*									0														0			0
France	FRA	*									0														0			0
Germany	DEU										0														0	5		5
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	*									0														0			0
Lithuania	LTU				1						1														0			1
Luxembourg	LUX	*									0														0			0
Macedonia	MKD	*									0														0			0
Malta	MLT	*									0														0			0
Moldova	MDA		5	4	10		3	1			23	4													4			27
Montenegro	MNE	*									0														0			0
Norway	NOR	*									0														0			0
Poland	POL		4	3	1						8	21	1				1								23	1		32
Portugal	PRT	*									0														0			0
Romania	ROU		13	4	13	1	1				32	52								2	1				55			87
Russian Federation	RUS		67	65	28	2	1		3		166	150	23		3		3	2					5	11	197		2	365
Serbia	SRB										0	1													1			1
Slovak Republic	SVK	*									0														0			0
Slovenia	SVN										0	1													1			1
Spain	ESP										0														0	1		1
Sweden	SWE	*									0														0			0
Switzerland + Lichtenstein	CHE	*									0														0			0
The Netherlands	NED										0														0	2		2
Turkey	TUR		55	12	40	6	5	1			119	26				1		1	1						29			148
Ukraine	UKR		66	100	18		1			1	186	78	3		3	2	7	1						2	96			282
United Kingdom	UNK										0														0		1	1
TOTAL			229	204	118	10	11	3	8	1	584	399	33	0	6	3	12	4	1	2	1	0	5	20	486	9	3	1082
PER CENT			21,2%	18,9%	10,9%	0,9%	1,0%	0,3%	0,7%	0,1%	54,0%	36,9%	3,0%	0,0%	0,6%	0,3%	1,1%	0,4%	0,1%	0,2%	0,1%	0,0%	0,5%	1,8%	44,9%	0,8%	0,3%	100%

* no cases ** no data

4.1 Rabies cases per country and administrative units, 2nd quarter 2012

01.04.12-30.06.12

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			
BELARUS																										
Brest		1							1	1	1											1	3			4
Gomel	3	7	1				1		12	3	1											1	5			17
Grodno	4	1		1					6	8	2											1	11			17
Minsk	5	2				1			8	7	1											2	10			18
Mogelev	3	2					1		6	16	1											1	18			24
Vitebsk	2	3	4				3		12	5												1	6			18
TOTAL	17	16	5	1	0	1	5	0	45	40	6	0	0	0	0	0	0	0	0	0	0	7	53	0	0	98
PER CENT	17,3%	16,3%	5,1%	1,0%	0,0%	1,0%	5,1%	0,0%	45,9%	40,8%	6,1%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	7,1%	54,1%	0,0%	0,0%	100%
BOSNIA - HERCEGOVINA																										
* no region specified									0	1													1			1
TOTAL	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
PER CENT	0,0%	0,0%	0,0%	0,0%	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%	100,0%	0,0%	0,0%	100%
CROATIA																										
Dubrovacko - Neretvanska									0						1								1			1
Krapinsko - Zagorska									0	1													1			1
Pozesko - Slovanska									0	1													1			1
Sibensko - Kninska									0	5													5			5
Sisacko - Moslovacka			2						2	4													4			6
Splitsko - Dalmatinska	1								1	7													7			8
Zadarska									0	2													2			2
Zagreb	1								1	3													3			4
Zagrebacka									0	2													2			2
TOTAL	2	0	2	0	0	0	0	0	4	25	0	0	0	0	1	0	0	0	0	0	0	0	26	0	0	30
PER CENT	6,7%	0,0%	6,7%	0,0%	0,0%	0,0%	0,0%	0,0%	13,3%	83,3%	0,0%	0,0%	0,0%	0,0%	3,3%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	86,7%	0,0%	0,0%	100%
THE NETHERLANDS																										
Gelderland									0														0	1		1
Noord-Holland									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	2	0	2
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%
SPAIN																										
Lleida									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%

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
GERMANY																											
Berlin-West,Stadt									0														0	3		3
Bremen,Stadt									0														0	1		1
Saarlouis									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	5	0	5
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%
LITHUANIA																											
Utenos			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%
MOLDOVA																											
Moldova	5	4	10		3	1			23	4													4			27
TOTAL	5	4	10	0	3	1	0	0	23	4	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	27
PER CENT	18,5%	14,8%	37,0%	0,0%	11,1%	3,7%	0,0%	0,0%	85,2%	14,8%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	14,8%	0,0%	0,0%	100%
POLAND																											
Lubelskie									0	2													2			2
Malopolskie	1								1														0			1
Mazowieckie									0														0	1		1
Podkarpackie	2	2							4	17					1								18			22
Podlaskie	1	1	1						3	2	1												3			6
TOTAL	4	3	1	0	0	0	0	0	8	21	1	0	0	0	1	0	0	0	0	0	0	0	23	1	0	32
PER CENT	12,5%	9,4%	3,1%	0,0%	0,0%	0,0%	0,0%	0,0%	25,0%	65,6%	3,1%	0,0%	0,0%	0,0%	3,1%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	71,9%	3,1%	0,0%	100%
SERBIA																											
* no region specified									0	1													1			1
TOTAL	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
PER CENT	0,0%	0,0%	0,0%	0,0%	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%	100,0%	0,0%	0,0%	100%
SLOVENIA																											
Goriska									0	1													1			1
TOTAL	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
PER CENT	0,0%	0,0%	0,0%	0,0%	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%	100,0%	0,0%	0,0%	100%
UNITED KINGDOM																											
* no region specified									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	0	1	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%	0,0%	100,0%	100%

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
ROMANIA																											
Alba	1	1							2	2													2			4
Arges									0	3													3			3
Bacau									0	1									1				2			2
Bistrita-Nasaud	2								2	6													6			8
Botosani	1		1						2	3													3			5
Brasov									0	2													2			2
Buzau			1		1				2									1					1			3
Calarasi	1	1							2														0			2
Caras-Severin				1					1														0			1
Cluj			3						3	4													4			7
Dambovita	1								1	1													1			2
Galati	1								1														0			1
Gorj			3						3	6													6			9
Harghita									0	2								1					3			3
Hunedoara									0	1													1			1
Ialomita									0	1													1			1
Iasi	2		4						6	3													3			9
Maramures		1							1														0			1
Mures	1								1	3													3			4
Neamt									0	1													1			1
Olt	1	1							2														0			2
Salaj			1						1	4													4			5
Sibiu	1								1														0			1
Suceava									0	1													1			1
Tulcea									0	1													1			1
Vaslui									0	2													2			2
Vrancea	1								1	5													5			6
TOTAL	13	4	13	1	1	0	0	0	32	52	0	0	0	0	0	0	0	2	1	0	0	0	55	0	0	87
PER CENT	14,9%	4,6%	14,9%	1,1%	1,1%	0,0%	0,0%	0,0%	36,8%	59,8%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	2,3%	1,1%	0,0%	0,0%	0,0%	63,2%	0,0%	0,0%	100%

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																										
Adygeja resp.	1								1														0			1
Astrahanskja obl.	4	6	1						11														0			11
Belgorodskja obl.	2	2							4	2													2			6
Brjanskaja obl.	3	1							4	4													4			8
Cuvasskaja resp.	1	1							2	2													2			4
Dagestan resp.	1		5						6				1										1			7
Ivanovskaja obl.	1	2							3	2													2			5
Jaroslavskaja obl.	2								2	13													13			15
Kabardino-Balkanskaja resp.			3						3														0			3
Kaliningradskaja obl.	1	1							2													2	2			4
Kaluzskaja obl.	1	2	2						5	6												2	8			13
Kostromskaja obl.									0	1													1			1
Krasnodarskij kr.		2		1					3	1													1			4
Kurskaja obl.	1								1													1	1			2
Lipeckaja obl.	1	1	1						3	3													3			6
Marij El resp.		1			1				2														0			2
Mordovija resp.									0	1					1								2			2
Moskovskaja obl.	8	13							21	46	3										1		50			71
Moskva g.							2		2	1													1		1	4
Nizegorodskaja obl.									0	2													2			2
Novgorodskaja obl.	1								1	3	1												4			5
Orlovskaja obl.		3	1						4	2													2			6
Penzenskaja obl.	1	4	2						7	3											2		5			12
Pskovskaja obl.	2								2	5	3											2	10			12
Rjazanskaja obl.									0	1													1			1
Rostovskaja obl.	2	2					1		5	2													2			7
Samarskaja obl.	2	2							4	2													2			6
Saratovskaja obl.		1							1	3													3			4
Severnaja Osetija-Alanija resp.	3		7						10													2	2			12
Smolenskaja obl.	5	3	2	1					11	11	4										2		17			28
Stavropol'skij kr.		1	2						3	1			2										3			6
Tambovskaja obl.	1								1	4													4			5
Tul'skaja obl.	4	2							6	5												1	6			12
Tverskaja obl.	16	8							24	15	11				2	2						1	31		1	56
Ul'janovskaja obl.		2							2	2													2			4
Vladimirskja obl.		2							2	4													4			6
Volgogradskaja obl.	2		1						3		1												1			4
Voronezskaja obl.	1	3	1						5	3													3			8
TOTAL	67	65	28	2	1	0	3	0	166	150	23	0	3	0	3	2	0	0	0	0	5	11	197	0	2	365
PER CENT	18,4%	17,8%	7,7%	0,5%	0,3%	0,0%	0,8%	0,0%	45,5%	41,1%	6,3%	0,0%	0,8%	0,0%	0,8%	0,5%	0,0%	0,0%	0,0%	0,0%	1,4%	3,0%	54,0%	0,0%	0,5%	100%

4.2 Rabies cases per country and administrative units, 2nd quarter 2012 (continued) 01.04.12-30.06.12

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			
TURKEY																											
Adana	1								1														0			1
Adiyaman	1		1						2														0			2
Afyon	1	1		1					3	1													1			4
Agri	1								1														0			1
Ankara	8		2						10	5													5			15
Antalya	2		2		1				5	1													1			6
Ardahan			1						1														0			1
Aydin		3	3						6	3						1	1						5			11
Balikesir	1	2	1		1				5	2													2			7
Bilecik		1							1														0			1
Bingöl			1						1														0			1
Bursa	1								1	1													1			2
Çanakkale	1		5	1	1				8	2													2			10
Diyarbakir	3			1					4														0			4
Elazig	1								1	1													1			2
Erzincan	1		1						2														0			2
Erzurum	3								3														0			3
Gaziantep	1	1	1	1					4														0			4
Giresun	4								4														0			4
Hatay	1								1														0			1
Içel	1								1														0			1
Igdir	11		7		2				20														0			20
Istanbul	2		1						3														0			3
Izmir	1	2	2	1		1			7	3				1									4			11
K.Maras			1						1	1													1			2
Karaman	1								1														0			1
Kars			2						2														0			2
Konya	5	1	7						13	1													1			14
Kütahya	1								1	1													1			2
Malatya									0	1													1			1
Manisa	1	1							2	2													2			4
Mardin			2	1					3														0			3
Mugla	1								1	1													1			2
TOTAL	55	12	40	6	5	1	0	0	119	26	0	0	0	1	0	1	1	0	0	0	0	0	29	0	0	148
PER CENT	37,2%	8,1%	27,0%	4,1%	3,4%	0,7%	0,0%	0,0%	80,4%	17,6%	0,0%	0,0%	0,0%	0,7%	0,0%	0,7%	0,7%	0,0%	0,0%	0,0%	0,0%	0,0%	19,6%	0,0%	0,0%	100%

4.2 Trend tables

4.2.1 Comparison of the reporting quarter (II/2012) with the previous quarter (I/2012)

NAME	Total			Wildlife			Domestic animals			Bats			Human		
	II 2012 (no.)	I 2012 (no.)	Difference	II 2012 (no.)	I 2012 (no.)	Difference	II 2012 (no.)	I 2012 (no.)	Difference	II 2012 (no.)	I 2012 (no.)	Difference	II 2012 (no.)	I 2012 (no.)	Difference
Albania															
Austria															
Belarus	98	143	-45	53	91	-38	45	51	-6					1	-1
Belgium															
Bosnia - Hercegovina	1	1		1	1										
Bulgaria															
Croatia	30	54	-24	26	49	-23	4	5	-1						
Cyprus															
Czech Republic															
Denmark															
Estonia															
Finland															
France															
Germany	5		5							5		5			
Greece															
Hungary															
Iceland															
Ireland															
Italy															
Latvia															
Lithuania	1	4	-3		3	-3	1	1							
Luxembourg															
Macedonia		3	-3		2	-2		1	-1						
Malta															
Moldova	27	48	-21	4	11	-7	23	37	-14						
Montenegro		1	-1					1	-1						
Norway															
Poland	32	36	-4	23	32	-9	8	4	4	1		1			
Portugal															
Romania	87	154	-67	55	124	-69	32	29	3					1	-1
Russian Federation	365	311	54	197	165	32	166	145	21				2	1	1
Serbia	1	12	-11	1	12	-11									
Slovak Republic															
Slovenia	1	1		1	1										
Spain	1	1						1	-1	1		1			
Sweden															
Switzerland + Lichtenstein															
The Netherlands	2	8	-6					1	-1	2	7	-5			
Turkey	148	96	52	29	15	14	119	81	38						
Ukraine	282	541	-259	96	241	-145	186	300	-114						
United Kingdom	1		1										1		1
TOTAL	1082	1414	-332	486	747	-261	584	657	-73	9	7	2	3	3	0

Wildlife: excluding bats

II/2012 (no.), I/2012 (no.): number of cases

Difference: no. of cases in II/2012 minus cases in I/2012

4.2.2 Comparison of the reporting quarter (II/2012) with the same quarter of the previous year (II/2011)

NAME	Total			Wildlife			Domestic animals			Bats			Human		
	II 2012 (no.)	II 2011 (no.)	Difference	II 2012 (no.)	II 2011 (no.)	Difference	II 2012 (no.)	II 2011 (no.)	Difference	II 2012 (no.)	II 2011 (no.)	Difference	II 2012 (no.)	II 2011 (no.)	Difference
Albania															
Austria															
Belarus	98	355	-257	53	238	-185	45	117	-72						
Belgium															
Bosnia - Hercegovina	1	4	-3	1	2	-1		2	-2						
Bulgaria		1	-1		1	-1									
Croatia	30	85	-55	26	75	-49	4	10	-6						
Cyprus															
Czech Republic															
Denmark															
Estonia															
Finland															
France		2	-2								2	-2			
Germany	5	3	2							5	3	2			
Greece															
Hungary															
Iceland															
Ireland															
Italy															
Latvia															
Lithuania	1	4	-3		3	-3	1	1							
Luxembourg															
Macedonia		5	-5		5	-5									
Malta															
Moldova	27	3	24	4		4	23	3	20						
Montenegro		3	-3		3	-3									
Norway															
Poland	32	19	13	23	14	9	8	4	4	1	1				
Portugal															
Romania	87	44	43	55	24	31	32	20	12						
Russian Federation	365	471	-106	197	236	-39	166	234	-68				2	1	1
Serbia	1	12	-11	1	9	-8		3	-3						
Slovak Republic															
Slovenia	1		1	1		1									
Spain	1	1								1	1				
Sweden															
Switzerland + Lichtenstein															
The Netherlands	2	4	-2							2	4	-2			
Turkey	148	90	58	29	14	15	119	76	43						
Ukraine	282	218	64	96	70	26	186	148	38						
United Kingdom	1		1										1		1
TOTAL	1082	1324	-242	486	694	-208	584	618	-34	9	11	-2	3	1	2

Wildlife: excluding bats

II/2012 (no.), II/2011 (no.): number of cases
Difference: no. of cases in II/2012 minus cases in II/2011

* no data

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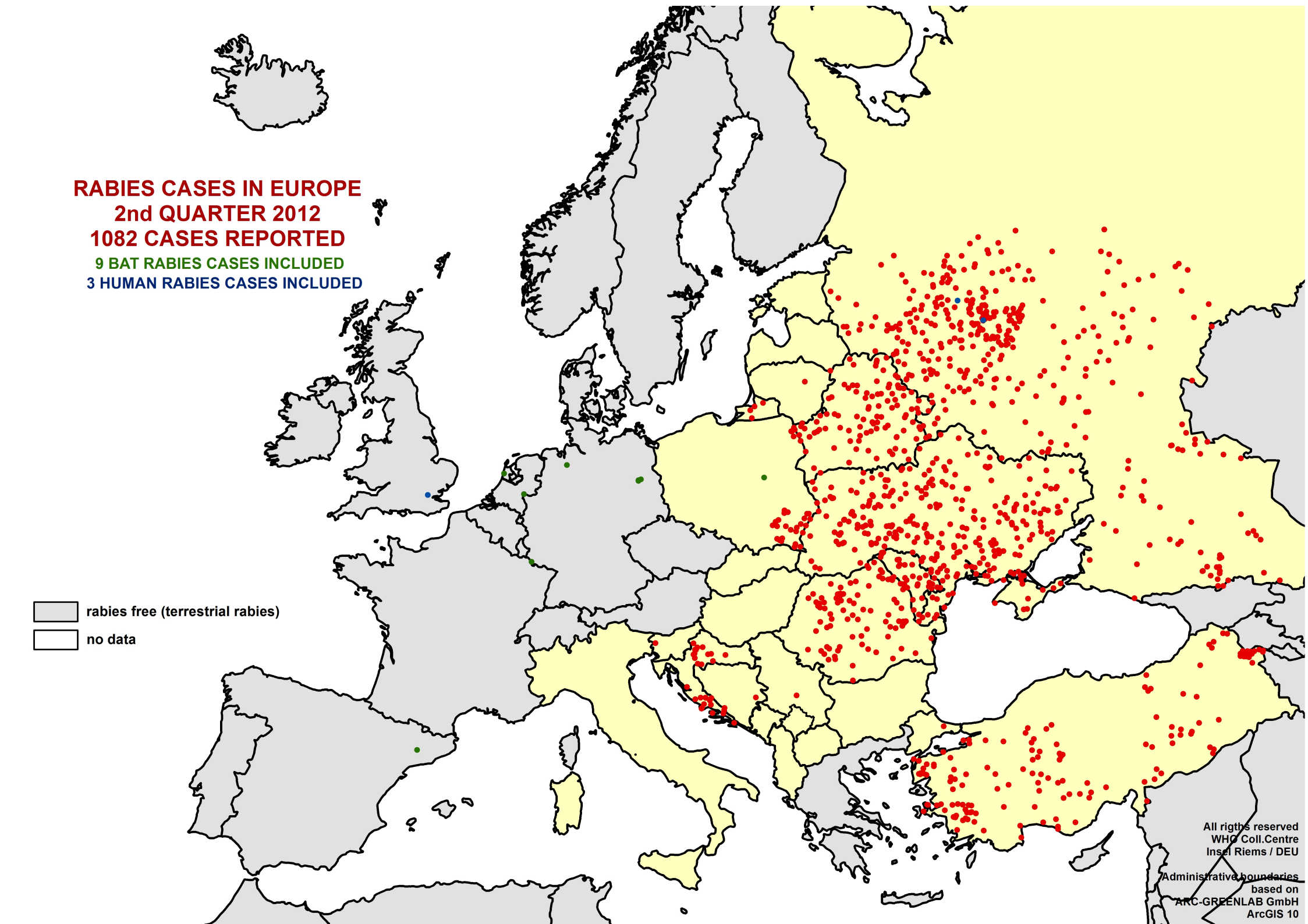
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1082 CASES REPORTED
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