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1. Editorial

During recent decades the front of the fox rabies epidemic move south on the Balkan peninsula, however for yet unknown reasons has not spread further south. The recent emergence of fox rabies in the Former Yugoslavian Republic of Macedonia showed that this is no permanent situation. During EU-coordinated meetings a joint effort of all countries affected, i.e. FYROM, Bulgaria and Greece was agreed. Greece that had the last indigenous rabies case in 1987 started an increased surveillance along the border with FYROM and Bulgaria.

The second article is a summary on the latest virus discoveries that indicated a higher diversity of the lyssavirus genus. With Shimoni bat virus (SHIBV) and Ikoma virus (IKOV) two new African lyssaviruses were discovered, the isolation of the Bokeloh bat lyssavirus in a Natterers bat from Germany indicates, that lyssaviruses may be circulating unrecognized in areas with a seemingly intensive surveillance as in Central Europe.

As usual, the rabies surveillance data is presented in tables and a map. Also, the area covered by oral rabies vaccination in Europe is provided.

Conrad Freuling
Thomas Müller

2. Summary of Rabies Cases in Europe

RABIES CASES 4th QUARTER 2011 01.10.11-31.12.11

Name	Code	Total	Wildlife	Domestic animals	Bats	Human
ALBANIA	ALB	0	0	0	0	0
AUSTRIA	AUT	0	0	0	0	0
BELARUS	BLR *	-	-	-	-	-
BELGIUM	BEL	0	0	0	0	0
BOSNIA - HERCEGOVINA	BIH	2	1	1	0	0
BULGARIA	BGR	0	0	0	0	0
CROATIA	HRV	98	63	35	0	0
CYPRUS	CYP	0	0	0	0	0
CZECH REPUBLIC	CZH	0	0	0	0	0
DENMARK	DNK	0	0	0	0	0
ESTONIA	EST	0	0	0	0	0
FINLAND	FIN	0	0	0	0	0
FRANCE	FRA	0	0	0	0	0
GERMANY	DEU	3	0	0	3	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	1	0	0	0	1
LATVIA	LVA	1	0	1	0	0
LITHUANIA	LTU	4	4	0	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	35	9	26	0	0
MONTENEGRO	MNE	9	8	1	0	0
NETHERLANDS	NED	1	0	0	1	0
NORWAY	NOR	0	0	0	0	0
POLAND	POL	40	32	8	0	0
PORTUGAL	PRT	0	0	0	0	0
ROMANIA	ROU	151	118	33	0	0
RUSSIAN FEDERATION	RUS	458	216	240	0	2
SERBIA	SRB	9	7	2	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	72	14	58	0	0
UKRAINE	UKR	626	301	325	0	0
UNITED KINGDOM	UNK	0	0	0	0	0
TOTAL		1510	773	730	4	3

Wildlife: excluding bats * NO DATA

3. Miscellaneous Articles

3. 1 Rabies Monitoring and Surveillance Programme in Greece *

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Preamble

In early December 2011, the Greek authorities were informed that rabies was detected in foxes in FYROM, very close to the borders with Greece. An urgent programme of rabies monitoring and surveillance was immediately decided to be implemented all along the northern borders of Greece with neighboring countries in order to identify animal rabies cases at an early stage. The programme was forwarded for financing by EU Commission and approved.

Historical data

Greece maintained a rabies free disease status since 1987. This stage was gradually achieved thanks to drastic measures implemented during the previous decades, which were characterized by a serious epidemiological situation concerning rabies.

In fact, during the decade 1951-1960, the rabies cases verified among domestic animals, mainly among dogs, reached 8.226 and 53 deaths in humans. During the decade 1961-1970, the epidemiological situation was clearly changing as cases among domestic animals were reduced to 3004, while two deaths in humans were verified only. Since 1970 no more cases in humans were reported.

The data of the decade 1971-1980 indicate that the disease prevalence was at low levels as only 242 animal cases were identified. In 1981, three cases in dogs were reported and one each in the years 1982, 1983 and 1987.

Rabies among wild animals, during the decades considered, remained at very low levels as no more than 10 cases among foxes were identified.

The decreasing rate of the disease during the period considered, is attributed to certain interconnecting factors/measures taken by the competent authorities. These were as follows:

a. Large scale vaccination of dogs

During the period 1951-1986, the number of dogs vaccinated in the context of compulsory, free-of-charge campaigns reached 1.479.715 animals. During the following years the country-wide compulsory vaccinations were suspended, however, these continued along the borders with Albania, FYROM, Bulgaria and Turkey up to 30 km back inland. Voluntary vaccination is always encouraged and almost all owned dogs are regularly vaccinated.

b. Very low level prevalence of rabies among wild life
This fact offered the possibility for the gradual formation of a dog population immunised, in its large part, through regular vaccinations.

c. Stray dog population control
Extensive control was performed during the '80s and the '90s in the context of the joint echinococcosis-rabies control programme. The situation remains under acceptable control thanks to the collaboration with municipalities and animal welfare associations.

d. Awareness of the community
Besides the 53 human deaths that occurred during the first decade, 98.521 persons were submitted to anti-rabies treatment and several other thousands during the following years. This situation highly alarmed the population who corresponded to the authorities efforts for the implementation of prevention and educational measures and activities.

Legal norms for rabies in Greece
Rabies is a notifiable disease and owned dogs and cats should be vaccinated. This vaccination is performed by private veterinarians.
In accordance to EU Directive, no 2003/99/EU, a monitoring and surveillance system is implemented and reported to the European Commission through the electronic data base of the European Food Safety Authority. Up to 2011 all data reported, based on laboratory diagnosis, were negative for rabies virus identification.
In the context of a permanent collaboration, municipalities, animal welfare associations, state veterinary and public health services and the community are regularly updated and encouraged to implement the appropriate monitoring and preventive measures each time indicated.

The rabies monitoring and surveillance programme
The purpose of the programme is the epidemiological surveillance and investigation of probable introduction of rabies infected animals into the country. This activity became necessary due to the epidemiological situation in the neighboring Balkan countries where rabies is endemic with reported cases mainly among wildlife.
The programme will be implemented during 2012 and is expected to have nine-month duration. It will include 16 prefectures along the Northern and Eastern borders of the country and in a certain distance inland.
The basic foundation of the programme are the implementation of two parallel cycles/sectors of passive surveillance activities, consisting on the systematic collection of samples from dead domestic and wild animals. For the scopes of the programme they are designed as "targets animal species and as such valuable indicator animal for the purpose of investigating eventual rabies virus appearance.
The main focus will be on red foxes as this wildlife species has the highes incidence for rabies in comparison with other animal species..
Based on the above-mentioned criteria, it was decided to collect the highest possible number of samples from the fox population. Additional samples will also be collected from other rabies suspect wild and domestic animals, such as jackals, wolves, dogs, cats, other wild carnivorous, bovine, goats, sheep, swine.
In accordance to state and private reports the density of fox population and sub-population in the country is

estimated to reach 0.3/km^2, 1.7/km^2 for jackals, and 2/km^2 for wolves, respectively.
However, considering the lack of specific data regarding the population size of target animals random sampling was chosen. More specifically, for the arithmetic value (N=545) of fox samples needed, a statistical approach was used for the sample size selection, taking into consideration the following parameters: (a) population size=9.000 individuals; (b) percentage of prevalence; (c) confidence limit=95% .
All samples collected in the frame of this programme will be forwarded timely to the National Reference Laboratory for Rabies, for the implementation of the necessary laboratory tests and the special diagnosis techniques and virus identification.

Notification of the disease
Any physical or legal entity involved in live animals management is obliged to immediately notify the local veterinary services of any rabies suspect case in wild or domestic animals towards implementing immediately all the necessary procedures for further investigation of the suspected or diseased animals.
Private veterinarians operating in the programme's implementation area are obliged to immediately notify the local veterinary authorities of any suspected clinical case.
In case of no immediate notification, penalties are imposed in accordance to the Ministerial Decree for the implementation of the programme.

Identification of animals and registration of holdings
For the scopes of the programme the registration and identification of dogs and cats of the area is imposed. Moreover, preventive vaccination of dogs and cats and of other carnivores aged more than 3 months, which are not previously vaccinated or the date of the yearly vaccination has been over passed, must be assured, under the condition of no contact or possible contact with animal positive for rabies.
Specific technical details are included for an as much as possible accurate implementation of the programme.

3. 2 Updates on the diversity of the Lyssavirus genus

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Rabies is caused by the negative-stranded ssRNA-viruses of the *Lyssavirus* genus, family *Rhabdoviridae* of the order Mononegavirales. According to the International Committee on Taxonomy of Viruses (ICTV) the genus *Lyssavirus* is delineated into different virus species based on demarcation criteria such as genetic distances, antigenic patterns in reactions with panels of antinucleocapsid monoclonal antibodies or polyclonal sera, and ecology (including geographic distribution and host range; see table).

Lyssavirus species segregate into phylogroups (Badrane et al., 2001; Banyard et al., 2011). Phylogroup I includes Rabies virus (RABV), Duvenhage virus (DUVV), European bat lyssaviruses, type 1 and 2 (EBLV-1 and 2, respectively), Australian bat lyssavirus (ABLV), Aravan virus (ARAV), Khujand virus (KHUV), and Irkut virus (IRKV) (Hanlon et al., 2005). Phylogroup II includes Lagos bat virus (LBV), Mokola virus (MOKV), and Shimoni bat virus (SHIBV) (Badrane et al., 2001; Kuzmin et al., 2010). West Caucasian bat virus (WCBV) does not cross-react serologically with any of the two phylogroups and was proposed as a member of an independent Phylogroup III (Hanlon et al., 2005; Kuzmin et al., 2005).

In the past decades, novel lyssaviruses that are all associated with insectivorous bats were discovered in Eurasia, including Irkut virus (IRKV), Aravan virus (ARAV), Khujand virus (KHUV) and West Caucasian bat virus (WCBV) (Arai et al., 2003; Kuzmin et al., 2005; Kuzmin et al., 2003). Although only single isolates from bats exist for each species, IRKV caused a human rabies death. In recent years, three divergent lyssaviruses have also been identified. In 2009 a bat associated lyssavirus called **Shimoni bat virus (SHIBV)** was isolated from the insectivorous Commerson's leaf-nosed bat (*Hipposideros commersoni*) in Kenya. The adult female bat was found dead in a cave in south coastal Kenya and tested positive in direct fluorescent antibody test (dFAT). SHIBV was shown to be pathogenic to laboratory mice and hamsters via intracranial and intramuscular inoculation routes, and was related to LBV and MOKV. Based on the available demarcation criteria, SHIBV is now considered a viral species within *Lyssavirus* genus (ICTV, 2012).

In 2010 a novel bat lyssavirus was detected in a Natterer's bat (*Myotis nattererii*) in Germany and was named **Bokeloh bat lyssavirus (BBLV)** (Freuling et al., 2011) The bat was initially found during daytime in November 2009 and was taken to a bat handler for rehabilitation and eventual return to the wild. In February 2010 the bat began to behave aggressively, showed targeted, directed approach

to any moving object, and tried vigorously to bite. Ten days after the recognition of first clinical signs the bat succumbed and was submitted for rabies diagnosis. Initial dFAT results were corroborated by RTCIT and immune-histochemistry. However, the reaction pattern of the isolate performed with a panel of 10 anti-nucleocapsid mAbs in cell-culture clearly differentiated the isolated virus from EBLV-1 and 2 and other lyssaviruses based on positive reactions of monoclonal antibodies. Also, EBLV-1 / 2 specific RT-PCR and realtime RT-PCR failed to detect viral RNA and only a hemi-nested RT-PCR gave a positive result. Subsequently, partial and full genome sequence analysis supported the results of monoclonal typing (Freuling et al., 2011). Presently, comparative pathogenicity studies to between BBLV and EBLVs are being undertaken
.

Virus species	**Potential vector/reservoir**	**Distribution**
Rabies virus (type species)	Carnivores (worldwide); bats (Americas)	Worldwide (except several islands)
Lagos bat virus	Frugivorous bats (*Megachiroptera*)	Sub-Saharan Africa
Mokola virus	? (isolated from Shrews)	Sub-Saharan Africa
Duvenhage virus	Insectivorous bats	Sub-Saharan Africa
European bat lyssavirus 1	Insectivorous bats (*Eptesicus serotinus*)	Europe
European bat lyssavirus 2	Insectivorous bats (*Myotis daubentonii, M. dasycneme*)	Europe
Australian bat lyssavirus	Frugivorous/insectivorous bats (*Megachiroptera/Microchiroptera*)	Australia
Aravan virus	Insectivorous bats (*Myotis blythi*)	Central Asia
Khujand virus	Insectivorous bats (*Myotis mystacinus*)	Central Asia
Irkut virus	Insectivorous bats (*Murina leucogaster*)	East Siberia
West Caucasian bat virus	Insectivorous bats (*Miniopterus schreibersi*)	Caucasian region
Shimoni bat virus	*Hipposideros commersoni*	East Africa
Bokeloh bat lyssavirus*	Insectivorous bats *(Myotis nattereri)*	Europe
Ikoma lyssavirus*	*? (isolated from Civettictis civetta)*	Africa

*not yet approved by ICTV

In May 2009, an African civet (*Civettictis civetta*) suspected of having rabies was killed in the Serengeti National Park, Kenya. In an unprovoked attack the civet had bitten a child, who was treated and given a post-exposure rabies vaccine. Results of laboratory testing, i.e the dFAT and a direct rapid immunohistochemistry test (dRIT) were positive for lyssavirus-specific antigen. When further analyzed at the Animal Health and Veterinary Laboratories Agency (AHVLA, Weybridge, UK) the isolated virus named **Ikoma Lyssavirus (IKOV)** was genetically significantly different from all previously known lyssaviruses with distant relatedness to WCBV (Marston et al., 2012).

Concerns remain regarding the effectiveness of current human rabies vaccines against this new lyssavirus given a general lack of evidence for adequate protection of licensed biologics against non-phylogroup I lyssaviruses (Both et al., 2012). Further studies will be undertaken to address these concerns.

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4. Distribution of Rabies in Europe

4.1 Country summaries of rabies cases, 4th quarter 2011 01.10.11-31.12.11

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	**									0														0			0
Belgium	BEL	*									0														0			0
Bosnia - Hercegovina	BIH				1						1	1													1			2
Bulgaria	BGR	*									0														0			0
Croatia	HRV			1	2	3	29				35	63													63			98
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	3		3
Greece	GRC	*									0														0			0
Hungary	HUN	*									0														0			0
Iceland	ISL	*									0														0			0
Ireland	IRE	*									0														0			0
Italy	ITA										0														0		1	1
Latvia	LVA					1					1														0			1
Lithuania	LTU										0	1	2			1									4			4
Luxembourg	LUX	*									0														0			0
Macedonia	MKD	*									0														0			0
Malta	MLT	*									0														0			0
Moldova	MDA		7	3	15	1					26	8							1						9			35
Montenegro	MNE		1								1	8													8			9
Norway	NOR	*									0														0			0
Poland	POL		1	3	4						8	27	1			1	2						1		32			40
Portugal	PRT	*									0														0			0
Romania	ROU		10	6	10	2	5				33	115	1				2								118			151
Russian Federation	RUS		87	107	42		3	1			240	158	45		6	1	1	2	1	1				1	216		2	458
Serbia	SRB			1			1				2	7													7			9
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		17	3	27	6	5				58	10			2	2									14			72
Ukraine	UKR		99	146	66	1	11			2	325	277	10	3	1	2	8								301			626
United Kingdom	UNK	*									0														0			0
TOTAL			**222**	**270**	**167**	**14**	**54**	**1**	**0**	**2**	**730**	**675**	**59**	**3**	**9**	**7**	**13**	**2**	**2**	**1**	**0**	**0**	**1**	**1**	**773**	**4**	**3**	**1510**
PER CENT			14.7%	17.9%	11.1%	0.9%	3.6%	0.1%	0.0%	0.1%	48.3%	44.7%	3.9%	0.2%	0.6%	0.5%	0.9%	0.1%	0.1%	0.1%	0.0%	0.0%	0.1%	0.1%	51.2%	0.3%	0.2%	100%

* no cases ** no data

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	130	103	60	3	3	1		1	301	574	80		2	2	20	2						11	691		1	993
Belgium	BEL *									0														0			0
Bosnia - Hercegovina	BIH	4		2		2				8	8													8			16
Bulgaria	BGR									0	1													1			1
Croatia	HRV	3	7	5	5	32				52	320					2			1					323			375
Cyprus	CYP *									0														0			0
Czech Republic	CZH *									0														0			0
Denmark	DNK *									0														0			0
Estonia	EST									0		1												1			1
Finland	FIN *									0														0			0
France	FRA	1								1														0	6		7
Germany	DEU									0														0	11		11
Greece	GRC *									0														0			0
Hungary	HUN									0														0	2		2
Iceland	ISL *									0														0			0
Ireland	IRE *									0														0			0
Italy	ITA									0	1													1		1	2
Latvia	LVA				1					1														0			1
Lithuania	LTU	1		1						2	4	7			1									12			14
Luxembourg	LUX *									0														0			0
Macedonia	MKD									0	4			2										6			6
Malta	MLT *									0														0			0
Moldova	MDA	15	5	19	1	2	2			44	17							1						18			62
Montenegro	MNE	1				1				2	13												1	14			16
Norway	NOR *									0														0			0
Poland	POL	8	10	14			1	1		34	103	2			4	9				2		1	1	122	4		160
Portugal	PRT *									0														0			0
Romania	ROU	41	20	23	5	8	1			98	234	1				2	3	2	1			1		244			342
Russian Federation	RUS	386	333	161	5	54	1	23		963	827	140		11	5	8	15	3	4	2		2	17	1034		10	2007
Serbia	SRB	2	3	1	1	1				8	38													38			46
Slovak Republic	SVK *									0														0			0
Slovenia	SVN *									0														0			0
Spain	ESP									0														0	2		2
Sweden	SWE *									0														0			0
Switzerland + Lichtenstein	CHE *									0														0			0
The Netherlands	NED									0														0	7		7
Turkey	TUR	99	10	109	12	21				251	38			7	3			1						49			300
Ukraine	UKR	276	401	122	3	22	1		2	827	542	22	4	2	4	25							3	602	1		1430
United Kingdom	UNK *									0														0			0
TOTAL		**967**	**892**	**517**	**36**	**146**	**7**	**24**	**3**	**2592**	**2724**	**253**	**4**	**24**	**19**	**66**	**20**	**7**	**6**	**4**	**0**	**4**	**33**	**3164**	**33**	**12**	**5801**
PER CENT		16.7%	15.4%	8.9%	0.6%	2.5%	0.1%	0.4%	0.1%	44.7%	47.0%	4.4%	0.1%	0.4%	0.3%	1.1%	0.3%	0.1%	0.1%	0.1%	0.0%	0.1%	0.6%	54.5%	0.6%	0.2%	100%

* no cases ** no data

4.3 Rabies cases per country and administrative units, 4th quarter 2011 01.10.11-31.12.11

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
BOSNIA - HERCEGOVINA																											
Bosnia-Hercegovina			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%
CROATIA																											
Bjelovarsko - Bilogorska									**0**	2													**2**			**2**
Koprivnisko - Krizevaska									**0**	2													**2**			**2**
Krapinsko - Zagorska									**0**	1													**1**			**1**
Osjesko - Baranjska									**0**	3													**3**			**3**
Pozesko - Slovanska			1	1	2				**4**	8													**8**			**12**
Sisacko - Moslovacka		1	1	2	27				**31**	18													**18**			**49**
Splitsko - Dalmatinska									**0**	7													**7**			**7**
Varazdinska									**0**	11													**11**			**11**
Viroticko - Podravska									**0**	1													**1**			**1**
Vukovarsko - Srijemska									**0**	2													**2**			**2**
Zadarska									**0**	2													**2**			**2**
Zagrebacka									**0**	6													**6**			**6**
TOTAL	**0**	**1**	**2**	**3**	**29**	**0**	**0**	**0**	**35**	**63**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**63**	**0**	**0**	**98**
PER CENT	0.0%	1.0%	2.0%	3.1%	29.6%	0.0%	0.0%	0.0%	35.7%	64.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	64.3%	0.0%	0.0%	100%
GERMANY																											
Hamburg,Stadt									**0**														**0**	1		**1**
Leer									**0**														**0**	1		**1**
Sankt Wendel									**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**	**3**	**0**	**3**
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%
ITALY																											
Mantova									**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%
LATVIA																											
Kraslava r.				1					**1**														**0**			**1**
TOTAL	**0**	**0**	**0**	**1**	**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%	0.0%	100.0%	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%

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			
ROMANIA																											
Arad									**0**	5													**5**			**5**
Bistrita-Nasaud									**0**	5													**5**			**5**
Botosani				1					**1**	1													**1**			**2**
Brasov			1						**1**	13													**13**			**14**
Buzau									**0**	2													**2**			**2**
Calarasi	1				1				**2**	1													**1**			**3**
Caras-Severin	1								**1**	1													**1**			**2**
Covasna									**0**	1													**1**			**1**
Dambovita	1	1							**2**	4													**4**			**6**
Galati									**0**	1													**1**			**1**
Giurgiu									**0**	1													**1**			**1**
Gorj									**0**	6													**6**			**6**
Harghita	2								**2**	5													**5**			**7**
Hunedoara									**0**	4													**4**			**4**
Iasi									**0**	8													**8**			**8**
Maramures		1							**1**	2													**2**			**3**
Mures		1							**1**	4													**4**			**5**
Neamt									**0**	1													**1**			**1**
Olt		1		1	4				**6**														**0**			**6**
Prahova		1							**1**	6													**6**			**7**
Salaj	1		1						**2**	3													**3**			**5**
Satu Mare	2								**2**	2													**2**			**4**
Sibiu	1								**1**	11													**11**			**12**
Suceava	1		6						**7**	23					2								**25**			**32**
Tulcea									**0**		1												**1**			**1**
Valcea									**0**	3													**3**			**3**
Vaslui		1	2						**3**														**0**			**3**
Vrancea									**0**	2													**2**			**2**
TOTAL	**10**	**6**	**10**	**2**	**5**	**0**	**0**	**0**	**33**	**115**	**1**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**118**	**0**	**0**	**151**
PER CENT	6.6%	4.0%	6.6%	1.3%	3.3%	0.0%	0.0%	0.0%	21.9%	76.2%	0.7%	0.0%	0.0%	0.0%	1.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	78.1%	0.0%	0.0%	100%
POLAND																											
Lubelskie									**0**	3													**3**			**3**
Malopolskie		2	1						**3**	11					1						1		**13**			**16**
Podkarpackie	1		2						**3**	11	1				1								**13**			**16**
Podlaskie		1							**1**					1									**1**			**2**
Slaskie									**0**	1													**1**			**1**
Warminsko-Mazurskie			1						**1**	1													**1**			**2**
TOTAL	**1**	**3**	**4**	**0**	**0**	**0**	**0**	**0**	**8**	**27**	**1**	**0**	**0**	**1**	**2**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**32**	**0**	**0**	**40**
PER CENT	2.5%	7.5%	10.0%	0.0%	0.0%	0.0%	0.0%	0.0%	20.0%	67.5%	2.5%	0.0%	0.0%	2.5%	5.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.5%	0.0%	80.0%	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																											
Astrahanskja obl.	2	9							11														0			11
Belgorodskja obl.	8	7			1				16	8													8			24
Brjanskaja obl.	2	1							3	4													4			7
Cecenskaja resp.			2						2	1													1			3
Cuvasskaja resp.		3	1						4							1							1			5
Dagestan resp.			6						6														0			6
Ivanovskaja obl.									0						1								1			1
Jaroslavskaja obl.	2	2							4	5	3												8			12
Kabardino-Balkanskaja resp.	2	2							4														0			4
Kaliningradskaja obl.	1								1	1													1			2
Kalmykija resp.	2	1							3														0			3
Kaluzskaja obl.	3	3	2						8	17	4												21			29
Karacaevo-Cerkesskaja resp.	1		1						2								1						1			3
Krasnodarskij kr.	2								2	1			2										3		1	6
Kurskaja obl.			2						2	2	1												3			5
Lipeckaja obl.	1	2	9						12	8													8			20
Marij El resp.			1						1														0			1
Mordovija resp.									0	2													2			2
Moskovskaja obl.	8	6			1				15	46	13											1	60			75
Moskva g.		1							1														0			1
Nizegorodskaja obl.		2							2	2													2			4
Orlovskaja obl.	1	2	1						4														0			4
Penzenskaja obl.	2	1	2			1			6	8													8			14
Pskovskaja obl.	1								1	4	4			1									9			10
Rjazanskaja obl.	1	1							2	1													1			3
Rostovskaja obl.	2	4	1						7	8			2										10			17
Samarskaja obl.	3								3	2								1					3			6
Saratovskaja obl.	4	7	1						12	5													5			17
Severnaja Osetija-Alanija resp.	6	3	4						13														0			13
Smolenskaja obl.	8	5	1		1				15	10	13		2										25			40
Stavropol'skij kr.	8	5	2						15														0			15
Tambovskaja obl.		1	1						2	3													3			5
Tul'skaja obl.	8	8	3						19	10						1							11			30
Tverskaja obl.	5								5	1	7												8		1	14
Ul'janovskaja obl.	2	1							3	1													1			4
Vladimirskja obl.	1	5							6	6													6			12
Volgogradskaja obl.	1	23	1						25	1													1			26
Voronezskaja obl.		2	1						3	1													1			4
TOTAL	**87**	**107**	**42**	**0**	**3**	**1**	**0**	**0**	**240**	**158**	**45**	**0**	**6**	**1**	**1**	**2**	**1**	**1**	**0**	**0**	**0**	**1**	**216**	**0**	**2**	**458**
PER CENT	19.0%	23.4%	9.2%	0.0%	0.7%	0.2%	0.0%	0.0%	52.4%	34.5%	9.8%	0.0%	1.3%	0.2%	0.2%	0.4%	0.2%	0.2%	0.0%	0.0%	0.0%	0.2%	47.2%	0.0%	0.4%	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
TURKEY																											
Adiyaman	1								**1**														**0**			**1**
Antalya			1						**1**														**0**			**1**
Aydin		1	3						**4**	2													**2**			**6**
Balikesir		1	1						**2**														**0**			**2**
Çanakkale			2						**2**														**0**			**2**
Diyarbakir	1			1					**2**														**0**			**2**
Elazig			3	1					**4**	1			1										**2**			**6**
Erzincan	1				1				**2**														**0**			**2**
Erzurum	1		1						**2**														**0**			**2**
Eskisehir	1				2				**3**														**0**			**3**
Giresun	1								**1**														**0**			**1**
Gümüshane			1						**1**														**0**			**1**
Hatay			1	1					**2**														**0**			**2**
Isparta		1							**1**														**0**			**1**
Istanbul	1								**1**														**0**			**1**
Izmir	2		4		2				**8**	1				1									**2**			**10**
Kars	2								**2**				1										**1**			**3**
Konya	3		6						**9**	6				1									**7**			**16**
Malatya				1					**1**														**0**			**1**
Manisa			1						**1**														**0**			**1**
Mardin	1			1					**2**														**0**			**2**
Sanliurfa	1		3	1					**5**														**0**			**5**
Trabzon	1								**1**														**0**			**1**
TOTAL	**17**	**3**	**27**	**6**	**5**	**0**	**0**	**0**	**58**	**10**	**0**	**0**	**2**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**14**	**0**	**0**	**72**
PER CENT	23.6%	4.2%	37.5%	8.3%	6.9%	0.0%	0.0%	0.0%	80.6%	13.9%	0.0%	0.0%	2.8%	2.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	19.4%	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%
LITHUANIA																											
Utenos									**0**		2												**2**			**2**
Vilniaus									**0**	1				1									**2**			**2**
TOTAL	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**2**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**0**	**0**	**4**
PER CENT	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	25.0%	50.0%	0.0%	0.0%	25.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	100%
MONTENEGRO																											
Montenegro	1								**1**	8													**8**			**9**
TOTAL	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**8**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**8**	**0**	**0**	**9**
PER CENT	11.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	11.1%	88.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	88.9%	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			
UKRAINE																											
Avtonomnaya Respublika Krym		2							**2**	1													**1**			**3**
Bolynskaja o.		1	1						**2**	1													**1**			**3**
Cherkasskaja o.	4	12	7		1				**24**	9	2												**11**			**35**
Chernigovskaja o.	4	9	1						**14**	2	3												**5**			**19**
Chernovitskaja o.	2	4							**6**	1													**1**			**7**
Dnepropetrovskaja o.	2	7	2						**11**	8	1												**9**			**20**
Donetskskaja o.	15	11	5		2				**33**	23	1												**24**			**57**
Ivano-Frankovskaja o.	1								**1**	2													**2**			**3**
Khar'kovskaja o.	4	6							**10**	3													**3**			**13**
Khersonskaja o.		4	3		1				**8**	1		1											**2**			**10**
Khmel'nitskaja o.	9	7	11	1	1				**29**	28					2								**30**			**59**
Kirovogradskaja o.	12	11	4		3				**30**	18		1	1		1								**21**			**51**
Kiyev g.	5	2							**7**	3													**3**			**10**
Kiyevskaja o.	3	19	2						**24**	1					2								**3**			**27**
Luganskaja o.	5	4	2		1				**12**	3													**3**			**15**
L'vovskaja o.									**0**	2													**2**			**2**
Nikolayevskaja o.		3	3						**6**	5													**5**			**11**
Odesskaja o.	3	7	1						**11**	8													**8**			**19**
Poltavskaja o.		2							**2**	2													**2**			**4**
Rovenskaja o.		2							**2**	1													**1**			**3**
Sumskaya o.	5	8	5		1				**19**	2													**2**			**21**
Ternopol'skaja o.	6	5	2					1	**14**	5					1								**6**			**20**
Vinnitskaja o.	5	10	4					1	**20**	127				2	1								**130**			**150**
Zakarpatskaja o.		2							**2**	1													**1**			**3**
Zaporozhskaja o.	8	4	6		1				**19**	12	3				1								**16**			**35**
Zhitomirskaja o.	6	4	7						**17**	8		1											**9**			**26**
TOTAL	**99**	**146**	**66**	**1**	**11**	**0**	**0**	**2**	**325**	**277**	**10**	**3**	**1**	**2**	**8**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**301**	**0**	**0**	**626**
PER CENT	15.8%	23.3%	10.5%	0.2%	1.8%	0.0%	0.0%	0.3%	51.9%	44.2%	1.6%	0.5%	0.2%	0.3%	1.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	48.1%	0.0%	0.0%	100%
SERBIA																										
Serbia		1			1				**2**	7													**7**			**9**
TOTAL	**0**	**1**	**0**	**0**	**1**	**0**	**0**	**0**	**2**	**7**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**7**	**0**	**0**	**9**
PER CENT	0.0%	11.1%	0.0%	0.0%	11.1%	0.0%	0.0%	0.0%	22.2%	77.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	77.8%	0.0%	0.0%	100%
MOLDOVA																										
Moldova	7	3	15	1					**26**	8							1						**9**			**35**
TOTAL	**7**	**3**	**15**	**1**	**0**	**0**	**0**	**0**	**26**	**8**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**9**	**0**	**0**	**35**
PER CENT	20.0%	8.6%	42.9%	2.9%	0.0%	0.0%	0.0%	0.0%	74.3%	22.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.9%	0.0%	0.0%	0.0%	0.0%	0.0%	25.7%	0.0%	0.0%	100%

4.4 Summary of animals tested for rabies in Europe (total 2011)

Animal Tested 01.01.11-31.12.11

Name	Code	Total	Wildlife	Domestic animals	Bats	Remarks
ALBANIA	ALB	0				
AUSTRIA	AUT*	626	576	17	33	
BELARUS	BLR	211	40	171	0	
BELGIUM	BEL*	544	42	486	16	
BOSNIA - HERCEGOVINA	BIH	96	35	61	0	
BULGARIA	BGR	804	789	15	0	
CROATIA	HRV	4850	4253	597	0	
CYPRUS	CYP*	0				
CZECH REPUBLIC	CZH*	3308	3090	204	14	
DENMARK	DNK*	17	1	6	10	
ESTONIA	EST	245	190	55	0	
FINLAND	FIN*	513	466	34	13	
FRANCE	FRA*	1624	106	1238	280	
GERMANY	DEU*	11458	10679	661	118	
GREECE	GRC*	8	0	8	0	
HUNGARY	HUN	5456	4650	788	18	
ICELAND	ISL*	0				
IRELAND	IRE*	0				
ITALY	ITA	6669	5604	854	211	
LATVIA	LVA	549	432	117	0	
LITHUANIA	LTU	859	670	189	0	
LUXEMBOURG	LUX*	0				
MACEDONIA	MKD	166	164	2	0	
MALTA	MLT*	0				
MOLDOVA	MDA	78	9	50	19	
MONTENEGRO	MNE	67	67	0	0	
NETHERLANDS	NED*	182	10	15	157	
NORWAY	NOR*	0				
POLAND	POL	26048	24179	1720	149	
PORTUGAL	PRT*	0				
ROMANIA	ROU	214	102	112	0	
RUSSIAN FEDERATION	RUS	0				
SERBIA	SRB	351	158	192	1	
SLOVAK REPUBLIC	SVK	3623	3322	299	2	
SLOVENIA	SVN	184	158	26	0	
SPAIN	ESP*	162	54	54	54	
SWEDEN	SWE*	0				
SWITZERLAND + LIEC.	CHE*	105	28	49	28	
TURKEY	TUR	828	42	784	2	
UKRAINE	UKR	10936	7518	3410	8	
UNITED KINGDOM	UNK*	446	1	9	436	
TOTAL		81227	67435	12223	1569	

Wildlife: excluding bats * rabies free

4.5 Trend tables

4.5.1 Comparison of the reporting quarter (IV/2011) with the previous quarter (III/2011)

NAME	Total			Wildlife			Domestic animals			Bats			Human		
	IV 2011 (no.)	III 2011 (no.)	Difference	IV 2011 (no.)	III 2011 (no.)	Difference	IV 2011 (no.)	III 2011 (no.)	Difference	IV 2011 (no.)	III 2011 (no.)	Difference	IV 2011 (no.)	III 2011 (no.)	Difference
Albania															
Austria															
Belarus	*	**292**		*	194		*	97		*			*	1	
Belgium															
Bosnia - Hercegovina	**2**	**7**	**-5**	1	4	-3	1	3	-2						
Bulgaria															
Croatia	**98**	**55**	**43**	63	53	10	35	2	33						
Cyprus															
Czech Republic															
Denmark															
Estonia															
Finland															
France		**5**	**-5**					1	-1		4	-4			
Germany	**3**	**5**	**-2**							3	5	-2			
Greece															
Hungary		**2**	**-2**								2	-2			
Iceland															
Ireland															
Italy	**1**		**1**										1		1
Latvia	**1**		**1**				1		1						
Lithuania	**4**	**1**	**3**	4		4		1	-1						
Luxembourg															
Macedonia		**1**	**-1**		1	-1									
Malta															
Moldova	**35**	**7**	**28**	9	3	6	26	4	22						
Montenegro	**9**	**4**	**5**	8	3	5	1	1							
Norway															
Poland	**40**	**47**	**-7**	32	32		8	12	-4		3	-3			
Portugal															
Romania	**151**	**64**	**84**	118	42	76	33	25	8						
Russian Federation	**458**	**404**	**54**	216	208	8	240	191	49				2	5	-3
Serbia	**9**	**5**	**4**	7	4	3	2	1	1						
Slovak Republic															
Slovenia															
Spain		**1**	**-1**								1	-1			
Sweden															
Switzerland + Lichtenstein															
The Netherlands	**1**		**1**							1		1			
Turkey	**72**	**83**	**-11**	14	12	2	58	71	-13						
Ukraine	**626**	**248**	**378**	301	103	198	325	144	181		1	-1			
United Kingdom															
TOTAL	**1510**	**1231**	**568**	**773**	**659**	**308**	**730**	**553**	**274**	**4**	**16**	**-12**	**3**	**6**	**-2**

Wildlife: excluding bats

IV/2011 (no.), III/2011 (no.): number of cases

Difference: no. of cases in IV/2011 minus cases in III/2011

* no data

4.5.1 Comparison of the reporting quarter (IV/2011) with the previous quarter (III/2011)

NAME	Total			Wildlife			Domestic animals			Bats			Human		
	IV 2011 (no.)	IV 2010 (no.)	Difference	IV 2011 (no.)	IV 2010 (no.)	Difference	IV 2011 (no.)	IV 2010 (no.)	Difference	IV 2011 (no.)	IV 2010 (no.)	Difference	IV 2011 (no.)	IV 2010 (no.)	Difference
Albania															
Austria															
Belarus	*	**305**		*	207		*	98		*			*		
Belgium															
Bosnia - Hercegovina	**2**	**1**	**1**	1		1	1	1							
Bulgaria															
Croatia	**98**	**146**	**-48**	63	127	-64	35	19	16						
Cyprus															
Czech Republic															
Denmark															
Estonia															
Finland															
France		**2**	**-2**								2	-2			
Germany	**3**		**3**							3		3			
Greece															
Hungary		**2**	**-2**		2	-2									
Iceland															
Ireland															
Italy	**1**	**2**	**-1**		2	-2							1		1
Latvia	**1**	**1**			1	-1	1		1						
Lithuania	**4**	**11**	**-7**	4	11	-7									
Luxembourg															
Macedonia															
Malta															
Moldova	**35**	**20**	**15**	9	5	4	26	15	11						
Montenegro	**9**	**7**	**2**	8	5	3	1	2	-1						
Norway															
Poland	**40**	**107**	**-67**	32	91	-59	8	16	-8						
Portugal															
Romania	**151**	**83**	**68**	118	58	60	33	25	8						
Russian Federation	**458**	**869**	**-411**	216	436	-220	240	431	-191				2	2	
Serbia	**9**	**23**	**-14**	7	21	-14	2	2							
Slovak Republic															
Slovenia															
Spain															
Sweden															
Switzerland + Lichtenstein															
The Netherlands	**1**	**1**								1	1				
Turkey	**72**	**53**	**19**	14	4	10	58	49	9						
Ukraine	**626**	**519**	**107**	301	185	116	325	334	-9						
United Kingdom															
TOTAL	**1510**	**2152**	**-337**	**773**	**1155**	**-175**	**730**	**992**	**-164**	**4**	**3**	**1**	**3**	**2**	**1**

Wildlife: excluding bats

IV/2011 (no.), IV/2010 (no.): number of cases
Difference: no. of cases in IV/2011 minus cases in IV/2010

* no data

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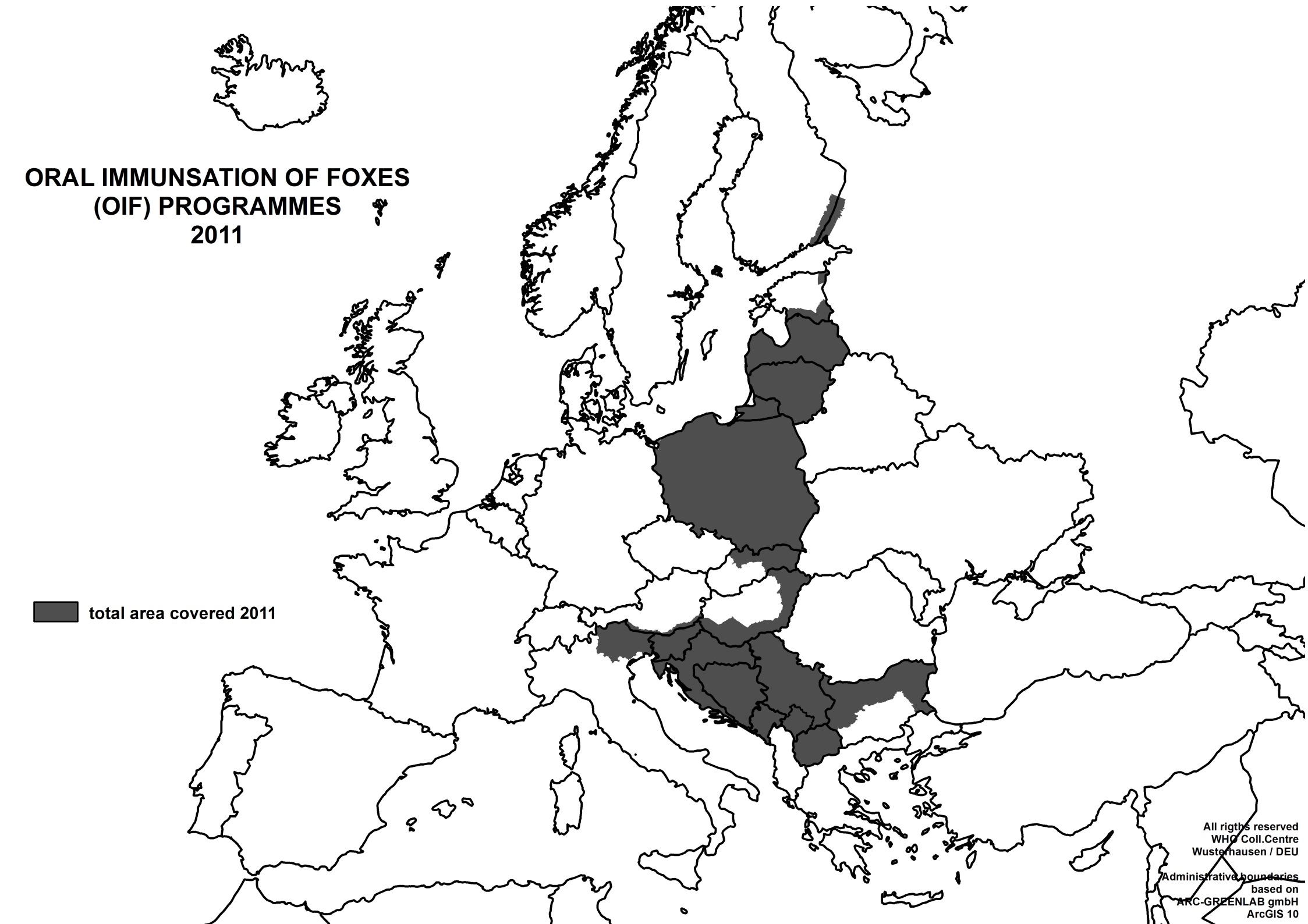
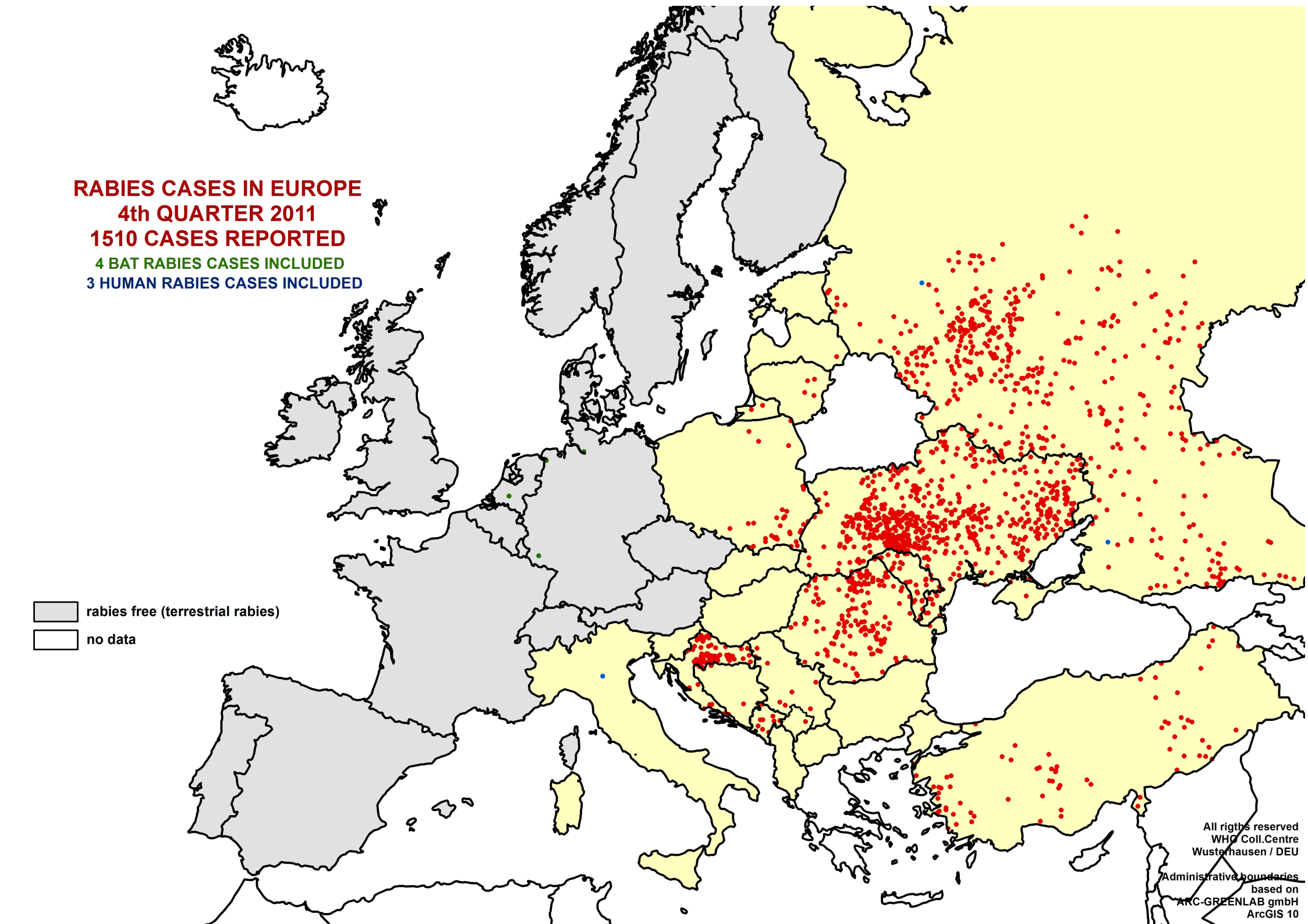
Please inform the editor about changes of contact details!

ORAL IMMUNSATION OF FOXES (OIF) PROGRAMMES 2011



Administrative boundaries based on ARC-GREENLAB gmbH ArcGIS 10


RABIES CASES IN EUROPE
4th QUARTER 2011
1510 CASES REPORTED
4 BAT RABIES CASES INCLUDED
3 HUMAN RABIES CASES INCLUDED
rabies free (terrestrial rabies)
no data
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Administrative boundaries
based on
ARC-GREENLAB gmbH
ArcGIS 10