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1 Editorial

In this last issue for 2012 we present the total numbers of rabies cases for this year, the number of animals tested as well as the report for the 4th quarter. The number of reported rabies cases increased in comparison with the previous year by more than 300 cases, to a total of 6,185. The main driver for this increase is the rabies situation in Poland where cases in the last quarter have reached a level that was last seen in 2002. In response to this situation the EU-taskforce already held a meeting in Warsaw in December 2012 (report can be found here: http://ec.europa.eu/food/animal/diseases/eradication/docs/rabies_subgroup_11_12122012_report_en.pdf) and recommended corrective actions.

Another worrisome development is the emergence of rabies in Greece. The detection of a rabies case in the former Yugoslavian Republic of Macedonia (FYROM) close to the Greek border in 2011 already indicated that rabies is at the door. The Greek surveillance efforts as response was published in the RBE IV/2012 issue. Oral rabies vaccination (ORV) need to be applied as soon as possible to stop the spread of the disease in Greece and to avoid jeopardizing rabies control efforts on the Balkan peninsula.

Interestingly, a bat rabies case was reported from the Spanish exclave Melilla in North Africa. We are hoping to provide further information, e.g. on the lyssavirus species and the chiropteran host in an upcoming issue of the RBE.

The first article highlights the successful project to control rabies on the Phillipine island of Bohol. The project continues to serve as a model for "One Health" and was achieved through the joint efforts of local and national government of the Philippines, contributions from donors, and the dedicated efforts of experts from the sectors of public health, education, animal health and agriculture, environment, legislation, and non-government partners.

Conrad Freuling
Thomas Müller

2 Summary of Rabies Cases in Europe

RABIES CASES

4th QUARTER 2012

01.10.12 - 31.12.12

Name	Code	Total	Wildlife	Domestic animals	Bats	Human
ALBANIA	ALB	0	0	0	0	0
AUSTRIA	AUT	0	0	0	0	0
BELARUS	BLR	153	97	56	0	0
BELGIUM	BEL	0	0	0	0	0
BOSNIA - HERCEGOVINA	BIH	3	3	0	0	0
BULGARIA	BGR	0	0	0	0	0
CROATIA	HRV	21	21	0	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	1	0	0	1	0
GERMANY	DEU	1	0	0	1	0
GREECE	GRC	9	7	2	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	0	0	0	0	0
LITHUANIA	LTU	0	0	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	73	8	65	0	0
MONTENEGRO	MNE	0	0	0	0	0
NETHERLANDS	NED	3	0	0	3	0
NORWAY	NOR	0	0	0	0	0
POLAND	POL	121	100	20	1	0
PORTUGAL	PRT	0	0	0	0	0
ROMANIA	ROU	147	99	48	0	0
RUSSIAN FEDERATION	RUS	724	342	381	0	1
SERBIA	SRB	6	5	1	0	0
SLOVAK REPUBLIC	SVK	0	0	0	0	0
SLOVENIA	SVN	1	1	0	0	0
SPAIN	ESP	3	0	2	1	0
SWEDEN	SWE	0	0	0	0	0
SWITZERLAND + LIEC.	CHE	0	0	0	0	0
TURKEY	TUR	96	7	88	0	1
UKRAINE	UKR	751	319	432	0	0
UNITED KINGDOM	UNK	0	0	0	0	0
TOTAL		2113	1009	1095	7	2

Wildlife: excluding bats

3 Miscellaneous Articles

3.1 A One Health Model for elimination of canine-mediated human rabies in Bohol Philippines

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This brief article summarizes the recently published manuscript describing a successful One Health approach to tackling canine-mediated human rabies. The complete article can be downloaded from: <http://www.plosntds.org/article/info%3Adoi%2F10.1371%2Fjournal.pntd.0001891>).

INTRODUCTION

A One Health rabies elimination and control project was conducted on Bohol Island, Philippines between 2007-2010. Bohol is an island province with a population of 1.3 million inhabitants located in the Visayas region of the Philippines and is surrounded by canine-rabies endemic regions with frequent boat traffic travelling to nearby rabies endemic islands. Prior to the initiation of the Bohol Rabies Prevention and Elimination Project (BRPEP), Bohol recorded an average of 10 human rabies deaths per year and ranked 4th highest province for human rabies fatalities in the country. The aim of the Bohol project was to develop a sustainable programme that would eliminate the principal source of human infection, i.e. rabies in unvaccinated dogs, and to improve surveillance activities in order to provide early detection of infected dogs that may have been transported back into the province.

The BRPEP integrated expertise from several sectors within the province of Bohol that were required to successfully establish the programme including: agriculture; public health and safety; education; environment; legal affairs; as well

as interior and local government. Activities of the BRPEP included increasing local community involvement; improving dog population control; promoting responsible pet ownership; implementing mass dog vaccination; improving dog bite management for human patients; initiating veterinary quarantine for suspect rabid animals that exposed humans; and instituting a risk management system that included improved diagnostic capacity, disease surveillance and monitoring. Partnerships were established to secure the required funding and included financial support from the national, provincial and local governmental units of the Philippines, dog owners, NGOs, regional office of the WHO, UBS Optimus Foundation, and the Global Alliance for Rabies Control. The management of the BRPEP was under the direction of the Governor of Bohol. In order to maintain consistency, parallel organizations consistent with the provincial BRPEP were established at the municipal and village level.

PROGRAMME COMPONENTS

The BRPEP was built on the existing national regulation framework for rabies control and animal welfare

identified as the Anti-Rabies Act of 2007. Additionally, the Governor of Bohol passed the Provincial Ordinance No 2007-012 to strengthen provincial adherence to the national rabies control initiative by establishing implementation bodies at the provincial, municipal and village levels.

All communication for public health activities associated with the BRPEP was coordinated through the provincial government and a specific handbook detailing the programme strategy was developed and distributed to maintain consistency across all levels of implementation. A Knowledge, Attitudes and Practices (KAP) survey was conducted to evaluate change in awareness among 300 households on Bohol. Because children were especially unaware of rabies and how to prevent infection, a school-based educational programme was created and implemented with close

cooperation with the Department of Education. Teachers and educational professionals were involved in developing specific curricula utilizing rabies prevention as a model for five different subjects, i.e Math, Science, English, Filipino and Social Science.

In August of 2007, a mass dog vaccination programme was initiated by the Governor of Bohol and led by Provincial Veterinary Office. Teams responsible for dog vaccination were organized at the provincial and municipal levels. Mop-up dog vaccination campaigns were also conducted in areas where the initial coverage was less than adequate. Dog population and movement control was implemented in compliance with the National Rabies Programme and Animal Welfare Act.



Figure 1: Map showing the Philippines and the Bohol island (indicated by black arrow)

In order to improve patient access to PEP, 4 new Animal Bite Treatment Centers (ABTC) were established, in addition to the two existing ABTCs, on Bohol. Training for administration of PEP for medical professionals was conducted under the auspices of the national rabies referral center of the Department of Health located in the Research Institute for Tropical Medicine, Metro Manila.

To improve surveillance, animals involved in potential human exposures were observed for 14 days. In the event that the animal developed clinical signs of rabies, it was euthanized and submitted for testing at the Regional Animal Disease Diagnostic Laboratory in Cebu, on the adjacent island province. Training on the Direct Rapid Immunohistochemical Test (dRIT) to enable improved diagnosis on Bohol was conducted by an expert from the US Centers for Disease Control and Prevention Rabies Unit.

RESULT OF THE PROGRAMME

The BRPEP successfully reduced the burden of human rabies and between 2008 - 2010, with the number of human deaths reduced from approximately 10 per year to 0. One suspect human case was reported in November 2010 and one canine case was confirmed in April 2011. The fact that Bohol remains surrounded by rabies endemic islands provides continuous opportunities for the importation of infected dogs. Improved surveillance activities along ports and other official channels of entry have enabled the government to monitor animals legally entering Bohol but clearly, there are opportunities for dogs to enter unofficially via small fishing boats. Therefore, the office of the

provincial veterinarian continues to remain vigilant in investigating any suspect cases. The improved surveillance has permitted the mobilization of 'mop-up' vaccination campaigns when required and has effectively prevented rabies from spreading back across the island.

The total cost of the 3-year project was \$450,000 US funded through the government, major donors and NGOs. Additional funding to ensure sustainability has been realized through a small dog registration fee. For around \$1 per dog, the dog receives a registration card, vaccination against rabies and a collar and dog tag. In the event of a bite injury by a registered and vaccinated dog, the post-exposure prophylaxis is subsidized by the Government according to the provincial ordinance. These incentives and a strong community involvement programme with emphasis on responsible pet ownership has ensured that dog registration rates are high and the community has taken ownership of this programme. Income from dog owners' registration fees continues to help financially maintain the programme as all funds raised through the fees are delivered back into the BRPEP to support community based activities. Programme sustainability has been approached through a variety of activities focusing on advocacy, public awareness, child education, legislation and dog registration. Most importantly, sustainability is also maintained by improved community involvement including local volunteers. The number of citizens involved in rabies prevention and control across the island of Bohol has increased from 140 prior to the initiation of the programme to over 15,000 at the present time. In 2011, the BRPEP was awarded the prestigious Galing

Pook Award for its achievement by the Honorable Benigno Aquino III, the President of the Philippines. The BRPEP continues to serve as a model for "One Health" and was achieved through the joint efforts of local and national government of the Philippines, contributions from donors, and the dedicated efforts of experts from the sectors of public health, education, animal health and agriculture, environment, legislation, and non-government partners.

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Davlin S, Lapid SM, Miranda ME, Murray K. (in press) Factors associated with dog rabies vaccination in Bohol, Philippines: Results of a cross-sectional cluster survey conducted during the island-wide rabies elimination campaign. *Zoonoses and Public Health*.

3.2 Announcement: 2nd edition of the book on Dogs, Zoonoses and Public Health

This 2nd edition provides an even more comprehensive account of the changing world and our culturally and individually diverse relationships with “man’s best friend”, the domestic dog. The size of the world dog population is unknown but is positively correlated to that of the human population. Based on a number of observations it could be as high as one-tenth of the world human populations, with 700 million dogs. A majority of those dogs, particularly in parts of Africa, the Middle East, and Latin America, are or are regarded as strays.

People’s attitudes regarding dogs vary greatly from being only beneficial to humans to being a serious public health nuisance. As dogs are present and closely associated with humans and/or their activities in almost all places, most people will have a strong stand regarding their role and impact on human society.

A number of studies have demonstrated that the human-dog bond has a positive impact on human health, child development, and the quality of life. The use of dogs as companion animals, and companion animal medicine, are increasingly being recognized as important areas contributing to the betterment of human health. Dogs may permit people to live healthier, happier lives, and recent studies have shown the benefits dogs impart to many segments of the population including children, elderly people, those isolated by stigmatizing diseases such as AIDS, and the handicapped.

However, there are problems and dogs contribute to zoonotic

infections and they foul pavements and public parks. They pose a public health nuisance through bites; harassment of pets, livestock and wildlife; their persistent barking particularly at night; scavenging from garbage sites; and their involvement in traffic accidents.

The positive and negative attributes polarize people’s opinions about dogs. Because of the strong opinions held on both sides it is difficult to get a balanced view, but whatever one’s opinion, dogs are now an important part of our society in every corner of the world. Appropriate solutions to the issues, adhering with international animal welfare principles, need to be found: a number of solutions are provided in different chapters in this book.

The book aims to give a comprehensive account of the complex public health aspects of the relationship between humans and dogs. As well as a chapter focusing on dogs and rabies, chapters on the Dog-human relationship, The Benefits of the Human-Dog Relationship, Dog associated problems, Dog Population Management, Zoonosis Prevention, Control and Elimination in Dogs and Fertility Control in Dogs would all be relevant to those interested in rabies control. The book also aims to examine how our interaction with dogs in different cultures and socio-economic conditions facilitates both beneficial and harmful processes, and how the zoonotic diseases with a high health burden especially rabies are currently being controlled.

4 Distribution of Rabies in Europe

4.1 Country summaries of rabies cases, 4th quarter 2012

01.10.12 - 31.12.12

Country		Domestic animals									Wildlife															bat	Human cases	total		
Name	Code	dog	cat	cattle	equine	goat	sheep	pig	stray dog	other	subtotal	fox	raccoon	dog	raccoon	wolf	badger	marten	other mustelids	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	6	16	25	1	1			7		56	68	25		2			2								97			153	
Belgium	BEL *										0															0			0	
Bosnia - Hercegovina	BIH										0	3														3			3	
Bulgaria	BGR *										0															0			0	
Croatia	HRV										0	20			1											21			21	
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	1		1	
Germany	DEU										0															0	1		1	
Greece	GRC	2									2	7														7			9	
Hungary	HUN *										0															0			0	
Iceland	ISL *										0															0			0	
Ireland	IRE *										0															0			0	
Italy	ITA *										0															0			0	
Kosovo	XXK *										0															0			0	
Latvia	LVA *										0															0			0	
Lithuania	LTU *										0															0			0	
Luxembourg	LUX *										0															0			0	
Macedonia	MKD *										0															0			0	
Malta	MLT *										0															0			0	
Moldova	MDA	8	4	49	1	3					65	7					1								8			73		
Montenegro	MNE *										0															0			0	
Norway	NOR *										0															0			0	
Poland	POL	4	8	7		1					20	94				1	4					1			100	1		121		
Portugal	PRT *										0															0			0	
Romania	ROU	12	8	18	3	7					48	96			1					2					99			147		
Russian Federation	RUS	115	139	104	4	12	2	5			381	255	69		2	4	3	4	1			2			342		1	724		
Serbia	SRB		1								1	5													6			6		
Slovak Republic	SVK *										0														0			0		
Slovenia	SVN										0	1													1			1		
Spain	ESP	2									2														0	1		3		
Sweden	SWE *										0														0			0		
Switzerland + Lichtenstein	CHE *										0														0			0		
The Netherlands	NED										0														0	3		3		
Turkey	TUR	28	5	50	1	4					88	7													7		1	96		
Ukraine	UKR	114	192	110	3	13					432	291	15		4		4	1						4	319			751		
United Kingdom	UNK *										0														0			0		
TOTAL		291	373	363	13	41	2	12	0	1095	854	109	0	10	5	14	5	3	0	3	0	0	0	6	1009	7	2	2113		
PER CENT		13.8%	17.7%	17.2%	0.6%	1.9%	0.1%	0.6%	0.0%	51.8%	40.4%	5.2%	0.0%	0.5%	0.2%	0.7%	0.2%	0.1%	0.0%	0.1%	0.0%	0.0%	0.0%	0.3%	47.8%	0.3%	0.1%	100%		

4.2 Country summaries of rabies cases, 2012 total

Country		Domestic animals										Wildlife										bat	Human cases					
		dog	cat	cattle	equine	goat	sheep	pig	stray dog	other	subtotal	fox	raccoon dog	raccoon	wolf	badger	marten	other mustelides	other carnivores	wild boar	roe deer		red deer	fallow deer	other	subtotal	Human cases	total
Name	Code																											
Albania	ALB	2								2														0		2		
Austria	AUT	*								0														0		0		
Belarus	BLR		71	65	46	4	4	1	14	205	235	48		3		3	1	1	1				9	301	1	1	508	
Belgium	BEL	*								0														0		0		
Bosnia - Hercegovina	BIH									0	6													6		6		
Bulgaria	BGR	*								0														0		0		
Croatia	HRV		5	3	12		1			21	140		1		2				2					145		166		
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	9	9		
Germany	DEU									0														0	14	14		
Greece	GRC		2							2	7													7		9		
Hungary	HUN									0														0	1	1		
Iceland	ISL	*								0														0		0		
Ireland	IRE	*								0														0		0		
Italy	ITA	*								0														0		0		
Kosovo	XXK	*								0														0		0		
Latvia	LVA		1		1					2														0		2		
Lithuania	LTU			1	1					2	1	2												3		5		
Luxembourg	LUX	*								0														0		0		
Macedonia	MKD			1						1				2										2		3		
Malta	MLT	*								0														0		0		
Moldova	MDA		30	20	87	1	16	1		155	25				1	2							1	29		184		
Montenegro	MNE			1						1														0		1		
Norway	NOR	*								0														0		0		
Poland	POL		13	14	10		1			38	200	2		2	10	1				1				216	3	257		
Portugal	PRT	*								0														0		0		
Romania	ROU		52	30	40	5	9	3		139	305		2		1	3	2	4	1					318		458		
Russian Federation	RUS		301	356	184	6	21	2	23	893	784	148		8	5	8	9	5	1	3		6	26	1003		1900		
Serbia	SRB			1						1	17													1	18		19	
Slovak Republic	SVK	*								0														0		0		
Slovenia	SVN									0	3													3		3		
Spain	ESP		5							5														0	2	7		
Sweden	SWE	*								0														0		0		
Switzerland + Lichtenstein	CHE									0														0		1	1	
The Netherlands	NED		1							1														0	16		17	
Turkey	TUR		188	30	194	10	17			439	51		2	1		1	1						1	57		497		
Ukraine	UKR		359	562	201	8	25	2		1161	737	28	2	11	8	32	2			1			13	834		1995		
United Kingdom	UNK									0														0		1	1	
TOTAL			1030	1084	776	34	94	9	37	4	3068	2511	228	2	29	16	57	19	9	8	6	0	6	51	2942	46	9	6065
PER CENT			17.0%	17.9%	12.8%	0.6%	1.5%	0.1%	0.6%	0.1%	50.6%	41.4%	3.8%	0.0%	0.5%	0.3%	0.9%	0.3%	0.1%	0.1%	0.1%	0.0%	0.1%	0.8%	48.5%	0.8%	0.1%	100%

4.3 Rabies cases per country and administrative units, 4th quarter 2012
01.10.12 - 31.12.12

Location	Domestic animals										Wildlife											bat	Human cases	total				
	dog	cat	cattle	equine	goat	sheep	pig	stray dog	other	subtotal	fox	raccoon	dog	raccoon	wolf	badger	marten	other mustelides	other carnivores	wild boar	roe deer				red deer	fallow deer	other	subtotal
BOSNIA - HERCEGOVINA																												
Tuzlanski									0	3															3			3
TOTAL	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3
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%	0,0%	100,0%	0,0%	0,0%	100%	
CROATIA																												
Karlovacka									0	1															1			1
Primorsko - Goranska									0	2															2			2
Sibensko - Kninska									0					1											1			1
Splitsko - Dalmatinska									0	1															1			1
Varazdinska									0	3															3			3
Zagreb									0	5															5			5
Zagrebacka									0	8															8			8
TOTAL	0	0	0	0	0	0	0	0	0	20	0	0	0	1	0	0	0	0	0	0	0	0	0	21	0	0	21	
PER CENT	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	95,2%	0,0%	0,0%	0,0%	4,8%	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%	
GERMANY																												
Lichtenfels									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	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%	0,0%	100,0%	0,0%	100%	
FRANCE																												
Aquitaine									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	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%	0,0%	100,0%	0,0%	100%	
GREECE																												
Kastoria	1								1																0			1
Kilkis									0	4															4			4
Kozani									0	1															1			1
Pella	1								1	2															2			3
TOTAL	2	0	0	0	0	0	0	0	2	7	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	0	9	
PER CENT	22,2%	0,0%	0,0%	0,0%	0,0%	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%	0,0%	77,8%	0,0%	0,0%	100%	
POLAND																												
Lubelskie									0	2															2			2
Malopolskie		1			1				2	18															18			20
Podkarpackie	4	7	7						18	74				1	4							1			80			98
Pomorskie									0																0	1		1
TOTAL	4	8	7	0	1	0	0	0	20	94	0	0	0	1	4	0	0	0	0	0	1	0	0	100	1	0	121	
PER CENT	3,3%	6,6%	5,8%	0,0%	0,8%	0,0%	0,0%	0,0%	16,5%	77,7%	0,0%	0,0%	0,0%	0,8%	3,3%	0,0%	0,0%	0,0%	0,0%	0,8%	0,0%	0,0%	0,0%	82,6%	0,8%	0,0%	100%	

4.3 Rabies cases per country and administrative units, 4th quarter 2012 (continued)

01.10.12 - 31.12.12

Location	Domestic animals										Wildlife															bat	Human cases	total		
	dog	cat	cattle	equine	goat sheep	pig	stray dog	other	subtotal	fox	raccoon dog	raccoon	wolf	badger	marten	other mustelids	other carnivores	wild boar	roe deer	red deer	fallow deer	other	subtotal							
BELARUS																														
Brest		1	1					2	1	1					1											3			5	
Gomel	1	4	7		1		1	14	11	3		2														16			30	
Grodno		5	2	1			1	9	22	6				1												29			38	
Minsk	1	4	6				3	14	16	2																18			32	
Mogilev	3	1	1					5	14	3																17			22	
Vitebsk	1	1	8				2	12	4	10																14			26	
TOTAL	6	16	25	1	1	0	7	0	56	68	25	0	2	0	2	0	0	0	0	0	0	0	0	0	0	97	0	0	153	
PER CENT	3,9%	10,5%	16,3%	0,7%	0,7%	0,0%	4,6%	0,0%	36,6%	44,4%	16,3%	0,0%	1,3%	0,0%	1,3%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	63,4%	0,0%	0,0%	100%	
MOLDOVA																														
Moldova	8	4	49	1	3			65	7					1												8			73	
TOTAL	8	4	49	1	3	0	0	0	65	7	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	8	0	0	73	
PER CENT	11,0%	5,5%	67,1%	1,4%	4,1%	0,0%	0,0%	0,0%	89,0%	9,6%	0,0%	0,0%	0,0%	0,0%	1,4%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	11,0%	0,0%	0,0%	100%	
UKRAINE																														
Avtonomnaya Respublika Krym	1	1						2																		0			2	
Bolynskaja o.	3	3						6	11																	1	12		18	
Cherkasskaja o.	8	9	2		1			20	13																		13		33	
Chernigovskaja o.	3	20	6					29	3	1																	4		33	
Chernovitskaja o.	1	1	2					4																			0		4	
Dnepropetrovskaja o.	8	19	9		2			38	17																		17		55	
Donetskaja o.	14	7	13					34	19	1																	20		54	
Ivano-Frankovskaja o.	1		1					2	2																		2		4	
Kharkovskaja o.	5	9	7		3			24	7	1																	8		32	
Khersonskaja o.	7	9	6		1			23	5	5																	10		33	
Khmel'niškaja o.	5	14	17	1				37	18																		18		55	
Kirovogradskaja o.	4	6	3		1			14	11	1																	12		26	
Kiyevskaja o.	1	10						11	4																		4		15	
Luganskaja o.	1	1			1			3	3																		3		6	
L'vovskaja o.	4	1						5	12																		12		17	
Nikolajevskaja o.	2	7	6		1			16	6	1																	7		23	
Odesskaja o.	8	9	9		1			27	17			1		1													19		46	
Poltavskaja o.	1	4						5																			0		5	
Rovenskaja o.	3	1						4	1																		1		5	
Sumskaja o.	1	3	3	1				8		2																	2		10	
Ternopol'skaja o.		4						4	8															1			9		13	
Vinnitskaja o.	14	18	4					36	104					3													107		143	
Zakarpatskaja o.	1							1	1																		1		2	
Zaporozhskaja o.	9	26	18		2			55	18	2		3			1												24		79	
Zhitomirskaja o.	9	10	4	1				24	11	1															2	14			38	
TOTAL	114	192	110	3	13	0	0	0	432	291	15	0	4	0	4	1	0	0	0	0	0	0	0	0	0	4	319	0	0	751
PER CENT	15,2%	25,6%	14,6%	0,4%	1,7%	0,0%	0,0%	0,0%	57,5%	38,7%	2,0%	0,0%	0,5%	0,0%	0,5%	0,1%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,5%	42,5%	0,0%	0,0%	100%	

4.3 Rabies cases per country and administrative units, 4th quarter 2012 (continued)

01.10.12 - 31.12.12

Location	Domestic animals										Wildlife										bat	Human cases	total						
	dog	cat	cattle	equine	goat	sheep	pig	stray dog	other	subtotal	fox	raccoon	dog	raccoon	wolf	badger	marten	other mustelides	other carnivores	wild boar				roe deer	red deer	fallow deer	other	subtotal	
TURKEY																													
Agri	2		6		1					9															0		9		
Ankara	1		2						3	1															1		4		
Artvin	1								1																0		1		
Aydin			4						4																0		4		
Balikesir	1		2						3																0		3		
Bingöl			3						3																0		3		
Bursa									0	1															1		1		
Diyarbakir	1		1		1				3																0		3		
Elazig	1	2	2						5	1															1		6		
Erzurum	3		1						4																0		4		
Eskisehir		1							1																0		1		
Giresun	4								4																0		4		
Halay	1		1						2																0		2		
Igdir	5		9		1				15																0		15		
Istanbul	3								3																0		3		
Izmir			4		1				5	1															1		6		
Kütahya			1						1																0		1		
Malatya	1	2	1						4	1															1		5		
Manisa			3	1					4	1															1		5		
Nevesehir			1						1																0		1		
Sanliurfa			4						4																0	1	5		
Sirnak	1								1																0		1		
Tunceli			3						3																0		3		
Usak									0	1															1		1		
Van	1		2						3																0		3		
Zonguldak	2								2																0		2		
TOTAL	28	5	50	1	4	0	0	0	88	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	1	96	
PER CENT	29,2%	5,2%	52,1%	1,0%	4,2%	0,0%	0,0%	0,0%	91,7%	7,3%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	7,3%	0,0%	1,0%	100%	
SPAIN																													
Ciudad Autonoma de Melilla	2								2																	0	1	3	
TOTAL	2	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	3
PER CENT	66,7%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	66,7%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	33,3%	0,0%	100%	
THE NETHERLANDS																													
Friesland									0																	0	1	1	
Groningen									0																	0	2	2	
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	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%	0,0%	100,0%	0,0%	100%		

4.3 Rabies cases per country and administrative units, 4th quarter 2012 (continued)

01.10.12 - 31.12.12

Location	Domestic animals										Wildlife										bat	Human cases	total				
	dog	cat	cattle	equine	goat sheep	pig	stray dog	other	subtotal	fox	raccoon dog	raccoon	wolf	badger	marten	other mustelides	other carnivores	wild boar	roe deer	red deer				fallow deer	other	subtotal	
ROMANIA																											
Alba	1								1	3														3			4
Arad		2							2															0			2
Arges									0	4														4			4
Bacau			1						1	4														4			5
Bihar					6				6	2														2			8
Bistrita-Nasaud	1								1	11														11			12
Botosani			4						4	5						1								6			10
Braila		1							1															0			1
Brasov									0	1														1			1
Buzau		1	2						3	8														8			11
Calarasi	2								2	1														1			3
Cluj									0	2														2			2
Constanta									0	2														2			2
Covasna									0	1														1			1
Dambovita									0	3		1												4			4
Galati									0	2														2			2
Giurgiu		1		1					2															0			2
Gorj	1		1	1					3															0			3
Harghita									0	3						1								4			4
Ialomita		1							1															0			1
Iasi	1								1	5														5			6
Maramures									0	1														1			1
Mures			1						1	6														6			7
Neamt			1						1	2														2			3
Olt		1			1				2															0			2
Prahova	1		1						2	1														1			3
Salaj									0	4														4			4
Satu Mare	1								1	1														1			2
Suceava	1	1	5						7	14														14			21
Tulcea	1		1						2	3														3			5
Valcea				1					1	1														1			2
Vaslui	1		1						2	3														3			5
Vrancea	1								1	3														3			4
TOTAL	12	8	18	3	7	0	0	0	48	96	0	0	1	0	0	0	2	0	0	0	0	0	0	99	0	0	147
PER CENT	8,2%	5,4%	12,2%	2,0%	4,8%	0,0%	0,0%	0,0%	32,7%	65,3%	0,0%	0,0%	0,7%	0,0%	0,0%	0,0%	1,4%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	67,3%	0,0%	0,0%	100%
SERBIA																											
* no region specified		1							1	5														5			6
TOTAL	0	1	0	0	0	0	0	0	1	5	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	6
PER CENT	0,0%	16,7%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	16,7%	83,3%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	83,3%	0,0%	0,0%	100%

4.3 Rabies cases per country and administrative units, 4th quarter 2012 (continued)

01.10.12 - 31.12.12

Location	Domestic animals										Wildlife															bat	Human cases	total		
	dog	cat	cattle	equine	goat	sheep	pig	stray dog	other	subtotal	fox	raccoon dog	raccoon	wolf	badger	marten	other mustelides	other carnivores	wild boar	roe deer	red deer	fallow deer	other	subtotal						
RUSSIAN FEDERATION																														
Astrahanskaja obl.	1	10								11																1			12	
Belgorodskaja obl.	16	25	6	1	1					49	26															2			77	
Brjanskaja obl.	1	2	4				1			8	8	4																	20	
Cecenskaja resp.			15							15																			15	
Cuvasskaja resp.		2								2	3																		5	
Dagestan resp.		1	3	1						5			1																6	
Ivanovskaja obl.		1								1													1						2	
Jaroslavskaja obl.										0	5	4																	9	
Kabardino-Balkanskaja resp.			1					1		2																			2	
Kaliningradskaja obl.		1								1	1																		2	
Kalmykija resp.	1									1	2																		3	
Kaluzskaja obl.	1	3	1		1					6	5	2																	13	
Kostromskaja obl.										0	1																		1	
Krasnodarskij kr.		1								1																			1	
Kurskaja obl.	4	7	3							14	15	2																	31	
Lipeckaja obl.	4	8	6		1					19	34				1														54	
Marj El resp.		1								1																			1	
Mordovija resp.	1		1							2	1																		3	
Moskovskaja obl.	6	5			2		1			14	32	15		1															62	
Moskva g.		1								1	1																		2	
Nizegorodskaja obl.	3	3	1							7	14		1																22	
Orlovskaja obl.	2	3	4							9	3	1		1															14	
Penzenskaja obl.	3	3	6		2		2			16	13																		29	
Pskovskaja obl.	2									2	4	5		2															13	
Rostovskaja obl.	4	2	4							10	3																		13	
Saratovskaja obl.	13	11	3	1	1		1			30	14				1	1													46	
Severnaja Osetija-Alanija resp.	8	2	6				1			17	1																		18	
Smolenskaja obl.	3	1								4		4											1						9	
Stavropolskij kr.	8	4	7							19	5						1												25	
Tambovskaja obl.	6	2	20	1	2					31	29																		60	
Tuŕskaja obl.	5	9	3							17	2	1				1													21	
Tverskaja obl.	1	5	1							7	9	28				1													46	
Uljanovskaja obl.	7	4	2							13	18					1													32	
Vladimirska obl.		4								4	1																		5	
Volgogradskaja obl.	5	2	3							10	1	1																	12	
Voronezskaja obl.	10	16	4		2					32	4	1																	38	
TOTAL	115	139	104	4	12	2	5	0	381	255	69	0	2	4	3	4	1	1	0	2	0	0	2	0	2	0	0	342	724	
PER CENT	15,9%	19,2%	14,4%	0,6%	1,7%	0,3%	0,7%	0,0%	52,6%	35,2%	9,5%	0,0%	0,3%	0,6%	0,4%	0,6%	0,1%	0,0%	0,3%	0,0%	0,0%	0,0%	0,3%	0,0%	0,0%	0,0%	0,0%	47,2%	100%	
SLOVENIA																														
Podravska									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	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%	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%	0,0%	100,0%	0,0%	100%

4.4 Summary of animals tested for rabies in Europe (total 2012)

Name	Code	Total	Wildlife	Domestic animals	Bats	Remarks
ALBANIA	ALB					no data
AUSTRIA	AUT*	3044	2922	122	0	
BELARUS	BLR	419	97	322	0	
BELGIUM	BEL*	530	48	374	108	
BOSNIA - HERCEGOVINA	BIH	85	64	21	0	
BULGARIA	BGR	798	784	14	0	
CROATIA	HRV	5601	4523	1076	2	
CYPRUS	CYP*					
CZECH REPUBLIC	CZH*	3533	3274	249	10	
DENMARK	DNK*	17	0	3	14	
ESTONIA	EST	224	164	56	4	
FINLAND	FIN*	708	640	36	32	
FRANCE	FRA*	2001	68	1578	355	
GERMANY	DEU*	6791	6221	467	103	
GREECE	GRC*	234	171	61	2	
HUNGARY	HUN	4889	4191	681	17	
ICELAND	ISL*	0				no data
IRELAND	IRE*	0				no data
ITALY	ITA	6668	5929	736	3	
LATVIA	LVA	189	133	56	0	
LITHUANIA	LTU	549	373	176	0	
LUXEMBOURG	LUX*	0				no data
MACEDONIA	MKD	425	408	17	0	
MALTA	MLT*	0				no data
MOLDOVA	MDA	110	23	85	2	
MONTENEGRO	MNE	22	20	2	0	
NETHERLANDS	NED*	208	6	25	177	
NORWAY	NOR*	0				
POLAND	POL	25320	23437	1779	104	
PORTUGAL	PRT*	2	0	2	0	
ROMANIA	ROU	0				no data
RUSSIAN FEDERATION	RUS	0				no data
SERBIA	SRB	216	112	103	1	
SLOVAK REPUBLIC	SVK	3666	3410	255	1	
SLOVENIA	SVN	2161	2056	105	0	
SPAIN	ESP*	234	88	53	93	
SWEDEN	SWE*					no data
SWITZERLAND + LIEC.	CHE*	74	14	45	15	
TURKEY	TUR	845	19	826	0	
UKRAINE	UKR	13381	9651	3717	13	
UNITED KINGDOM	UNK*	410	0	2	408	
TOTAL		83354	68846	13044	1464	

4.5 Trend tables

4.5.1 Comparison of the reporting quarter (IV/2012) with the previous quarter (III/2012)

NAME	Total			Wildlife			Domestic animals			Bats			Human		
	IV 2012 (no.)	III 2012 (no.)	Difference	IV 2012 (no.)	III 2012 (no.)	Difference	IV 2012 (no.)	III 2012 (no.)	Difference	IV 2012 (no.)	III 2012 (no.)	Difference	IV 2012 (no.)	III 2012 (no.)	Difference
Albania		2	-2					2	-2						
Austria															
Belarus	153	114	39	97	60	37	56	53	3		1	-1			
Belgium															
Bosnia - Hercegovina	3	1	2	3	1	2									
Bulgaria															
Croatia	21	61	-40	21	49	-28		12	-12						
Cyprus															
Czech Republic															
Denmark															
Estonia															
Finland															
France	1	8	-7							1	8	-7			
Germany	1	8	-7							1	8	-7			
Greece	9		9	7		7	2		2						
Hungary		1	-1								1	-1			
Iceland															
Ireland															
Italy															
Kosovo															
Latvia															
Lithuania															
Luxembourg															
Macedonia															
Malta															
Moldova	73	36	37	8	6	2	65	30	35						
Montenegro															
Norway															
Poland	121	68	53	100	61	39	20	6	14	1	1				
Portugal															
Romania	147	70	77	99	40	59	48	30	18						
Russian Federation	724	413	311	342	253	89	381	160	221				1		1
Serbia	6		6	5		5	1		1						
Slovak Republic															
Slovenia	1		1	1		1									
Spain	3	2	1				2	2		1		1			
Sweden															
Switzerland + Lichtenstein		1	-1											1	-1
The Netherlands	3	4	-1							3	4	-1			
Turkey	96	146	-50	7	6	1	88	140	-52				1		1
Ukraine	751	421	330	319	178	141	432	243	189						
United Kingdom		*			*			*			*			*	
TOTAL	2113	1356	757	1009	654	355	1095	678	417	7	23	-16	2	1	1

Wildlife: excluding bats

IV/2012 (no.), III/2012 (no.): number of cases

Difference: no. of cases in IV/2012 minus cases in III/2012

4.5.2 Comparison of the reporting quarter (IV/2012) with the same quarter of the previous year (IV/2011)

NAME	Total			Wildlife			Domestic animals			Bats			Human		
	IV 2012 (no.)	IV 2011 (no.)	Difference	IV 2012 (no.)	IV 2011 (no.)	Difference	IV 2012 (no.)	IV 2011 (no.)	Difference	IV 2012 (no.)	IV 2011 (no.)	Difference	IV 2012 (no.)	IV 2011 (no.)	Difference
Albania															
Austria															
Belarus	153	*	153	97	*	97	56	*	56		*			*	
Belgium															
Bosnia - Hercegovina	3	2	1	3	1	2		1	-1						
Bulgaria															
Croatia	21	98	-77	21	63	-42		35	-35						
Cyprus															
Czech Republic															
Denmark															
Estonia															
Finland															
France	1		1							1		1			
Germany	1	3	-2							1	3	-2			
Greece	9		9	7		7	2		2						
Hungary															
Iceland															
Ireland															
Italy		1	-1											1	-1
Kosovo															
Latvia		1	-1					1	-1						
Lithuania		4	-4	4		-4									
Luxembourg															
Macedonia															
Malta															
Moldova	73	35	38	8	9	-1	65	26	39						
Montenegro		9	-9		8	-8		1	-1						
Norway															
Poland	121	40	81	100	32	68	20	8	12	1		1			
Portugal															
Romania	147	151	-4	99	118	-19	48	33	15						
Russian Federation	724	458	266	342	216	126	381	240	141				1	2	-1
Serbia	6	9	-3	5	7	-2	1	2	-1						
Slovak Republic															
Slovenia	1		1	1		1									
Spain	3		3				2		2	1		1			
Sweden															
Switzerland + Lichtenstein															
The Netherlands	3	1	2							3	1	2			
Turkey	96	72	24	7	14	-7	88	58	30				1		1
Ukraine	751	626	125	319	301	18	432	325	107						
United Kingdom															
TOTAL	2113	1510	603	1009	773	236	1095	730	365	7	4	3	2	3	-1

Wildlife: excluding bats IV/2012 (no.), IV/2011 (no.): number of cases Difference: no. of cases in IV/2012 minus cases in IV/2011, *no data

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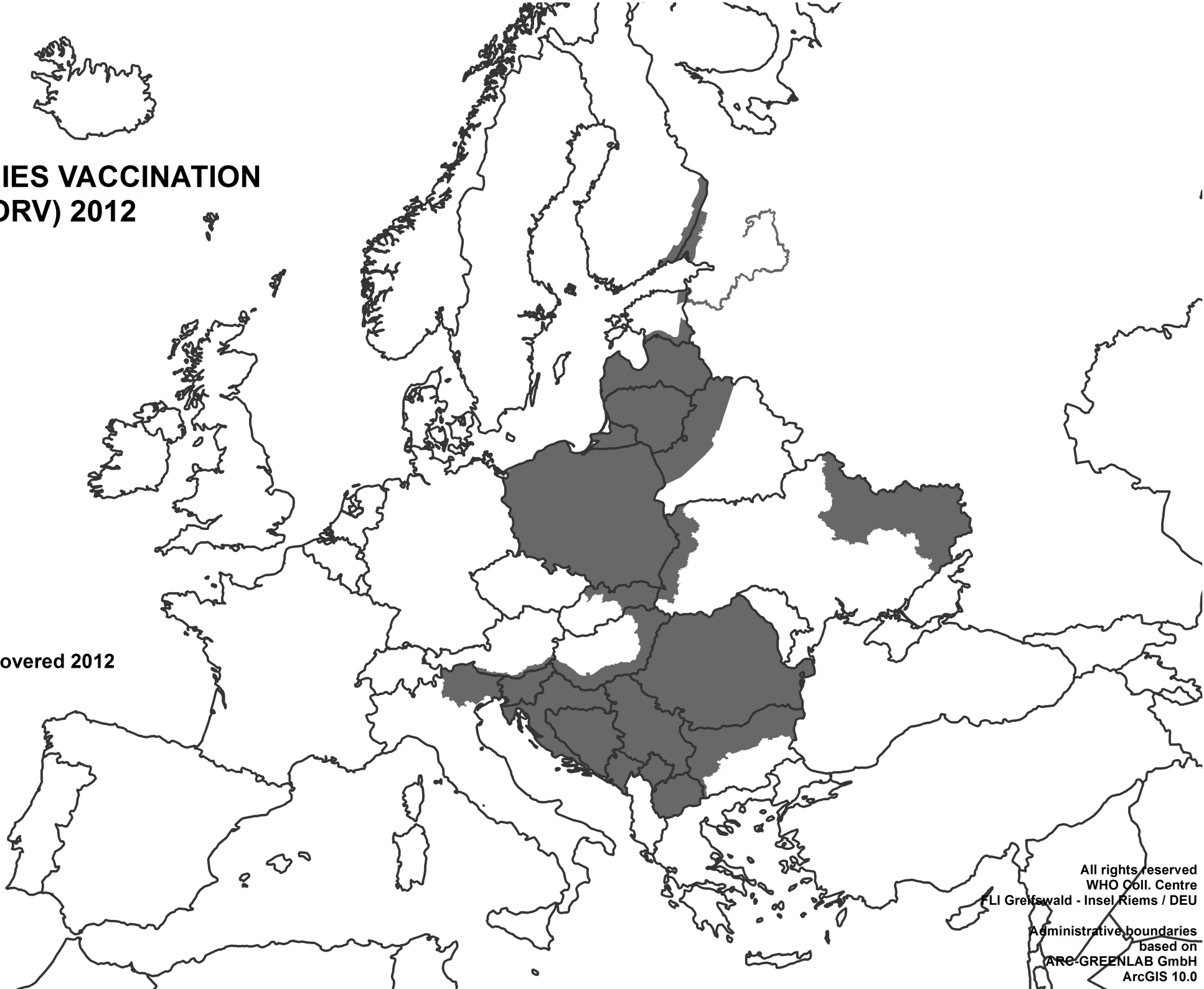
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**Please inform the editor about
changes of contact details!**

ORAL RABIES VACCINATION (ORV) 2012

 total area covered 2012



RABIES CASES IN EUROPE
4th QUARTER 2012
2113 CASES REPORTED
7 BAT RABIES CASES INCLUDED
2 HUMAN RABIES CASES INCLUDED

 rabies free (terrestrial rabies)

