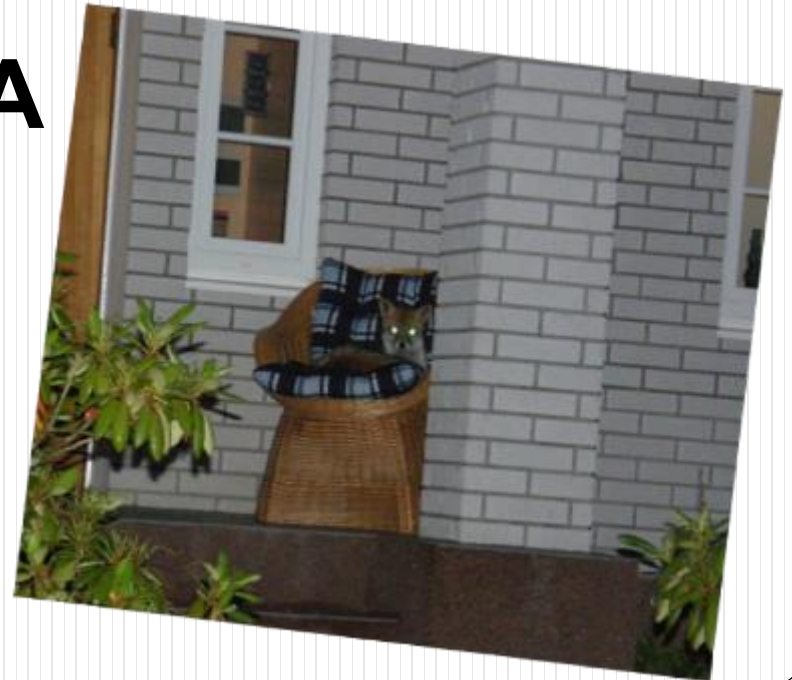


# Results of the implementation of the Rabies co-financed eradication programme in 2013

## ESTONIA

Veterinary and Food Board  
of Estonia

PAFF Committee, 6-7 October  
2014, Brussels



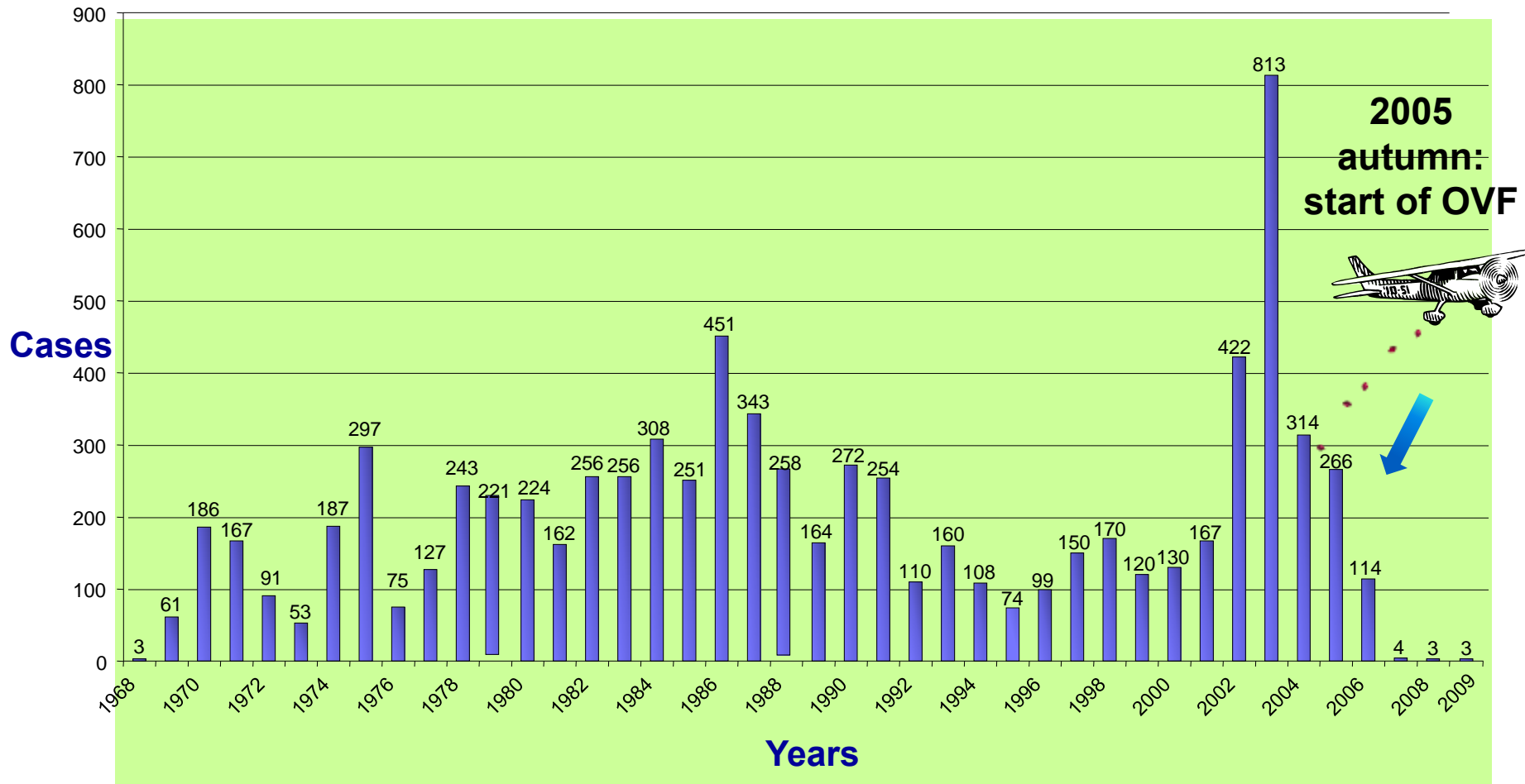
# Legal framework of the programme

- **EU legal basis:**
  - **Commission Decision 2009/470/EC**
  - **Commission Decision 2012/716/EU**
  - **Commission Decision 2013/766/EU**
  - **Commission Decision 2013/403/EU**
- **Estonian legal basis:**
  - **Infectious Animal Disease Control Act (16 June 1999)**
  - **Regulation of Minister of Agriculture No 67 (20. November 2000) “Rules for Rabies Prevention”**
  - **State Program of Rabies Eradication approved by Degree of DG of Veterinary and Food Board 09.03.2011 no. 63**
  - **State Program of Monitoring and Surveillance of Infectious Diseases approved annually by CVO**

# Rabies in Estonia in 20th century

- **Urban rabies**
  - After II World War, ~300 cases recorded annually
  - Written records go back to 1950 – 1959
  - Infection spread by pet animals mainly, no wildlife involvement
- **Compulsory vaccination of dogs and cats since 1953 (ongoing)/combined with execution of stray animals in the past**
- **1960 – 1967- rabies-free period**
- **Sylvatic rabies since 1968**
  - First cases of in southern-east part of country
  - Peaks in infection curve every 3-5 years
- **Human cases since II World War:**
  - 1947-1986- 27 in total
  - Peaks in 1949-5 cases, 1950-8 cases
  - Last human case in Järva county in 1986, source of infection-deer.

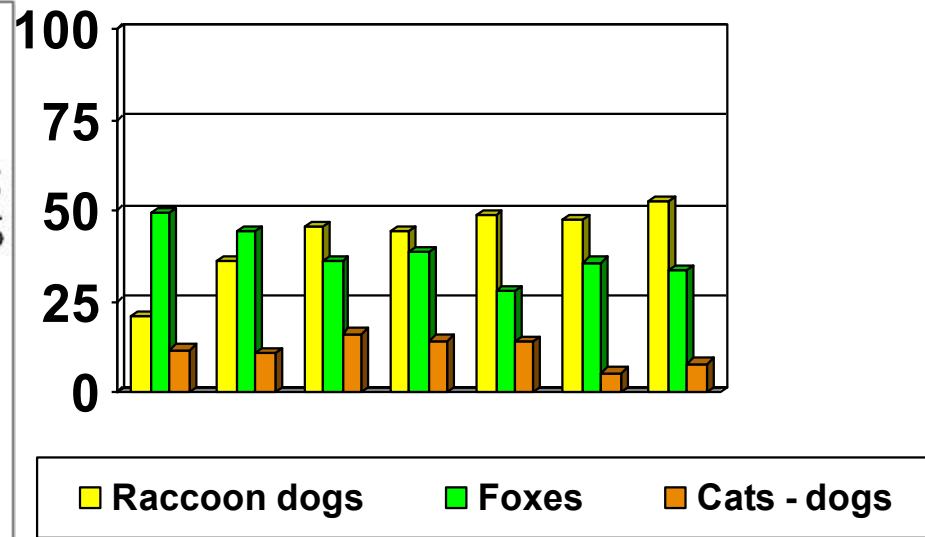
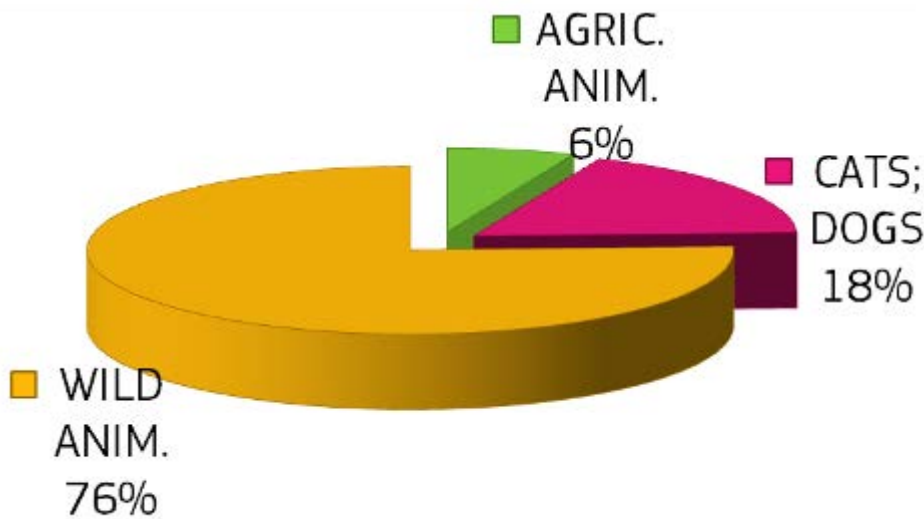
# Spread of sylvatic rabies in Estonia 1968- 2010



# Species affected

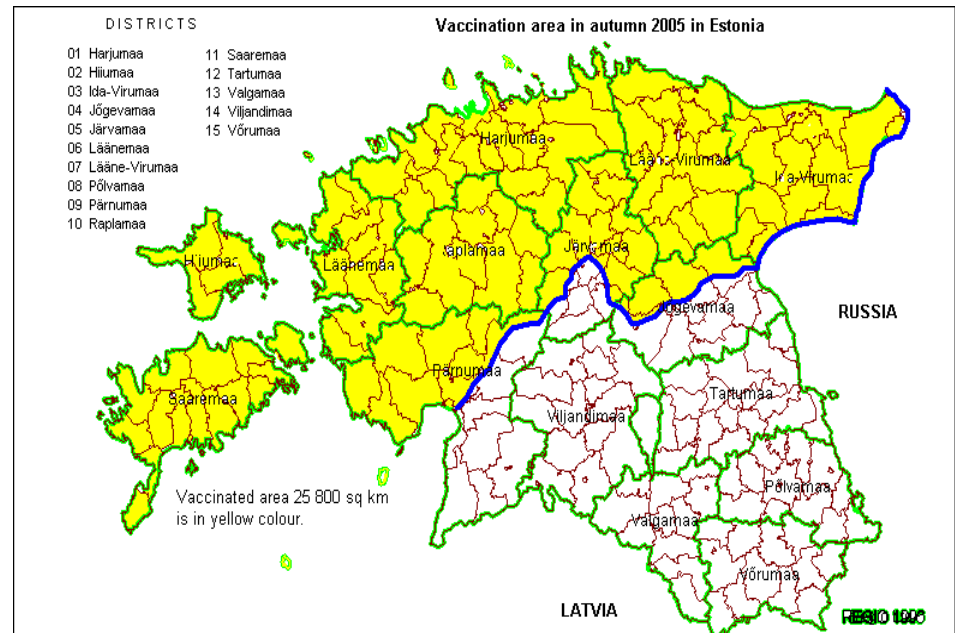
Species affected 1968-2011

Cases in different species 2000-2006 (in %)



# First OV in year 2005

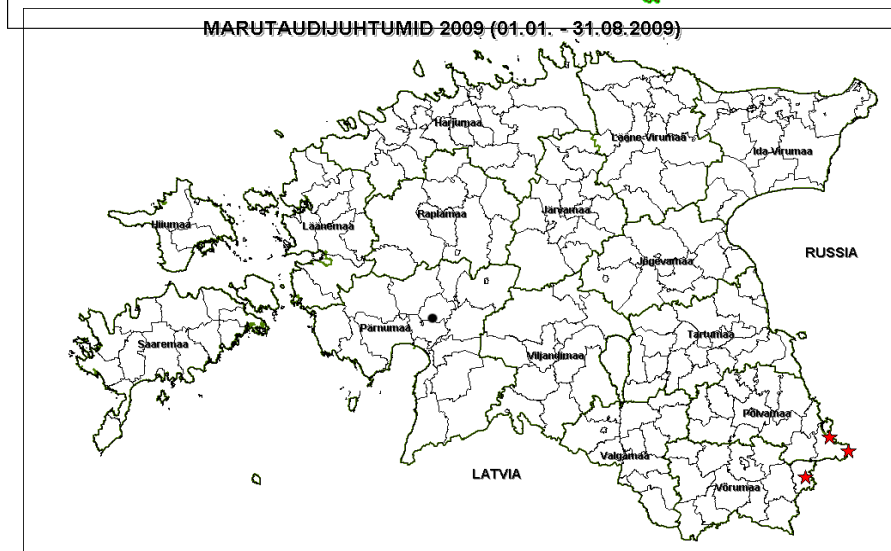
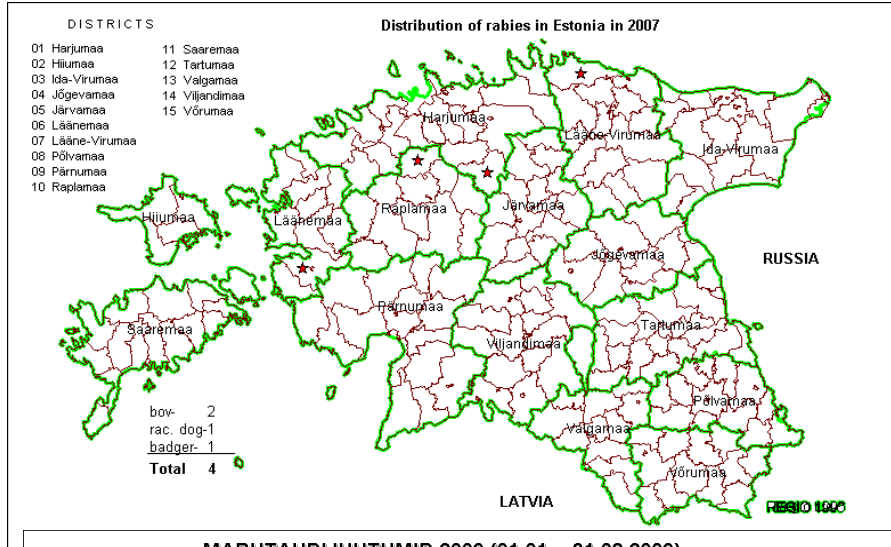
- First large-scale OV in autumn 2005
- 25 540 km<sup>2</sup> area, northern part of Estonia
- Borders of the vaccination area, natural and artificial barriers of disease spreading
  - roads
  - lake Peipsi
  - river Narva



# **Full-scale OV in 2006-2010**

- **2006-2010 - vaccination in total territory of Republic (45 226 km<sup>2</sup>)**
- **Area suitable for dropping ~43 000 km<sup>2</sup>**
- **Two seasonal campaigns**
- **Aerial distribution method solely**
- **500-600 m distance between parallel flight lines**
- **Density in use 20 baits/km<sup>2</sup>**

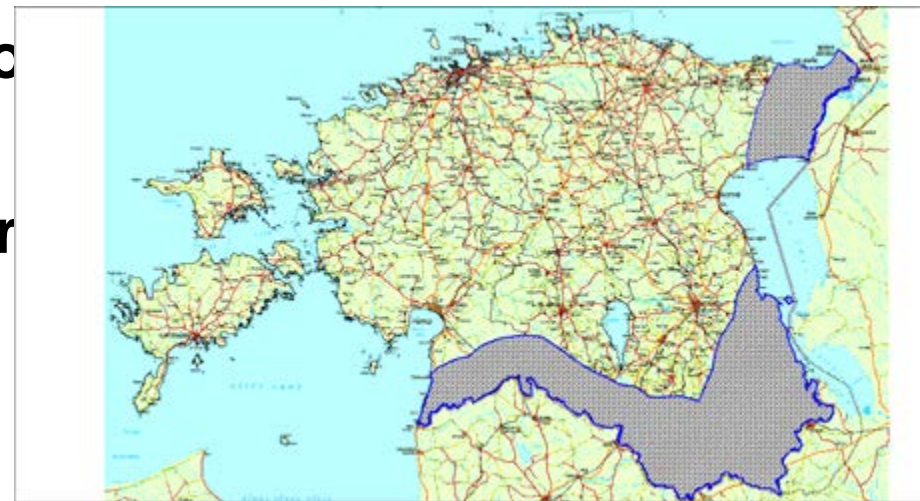
# Rabies cases in 2007, 2008, 2009, 2011





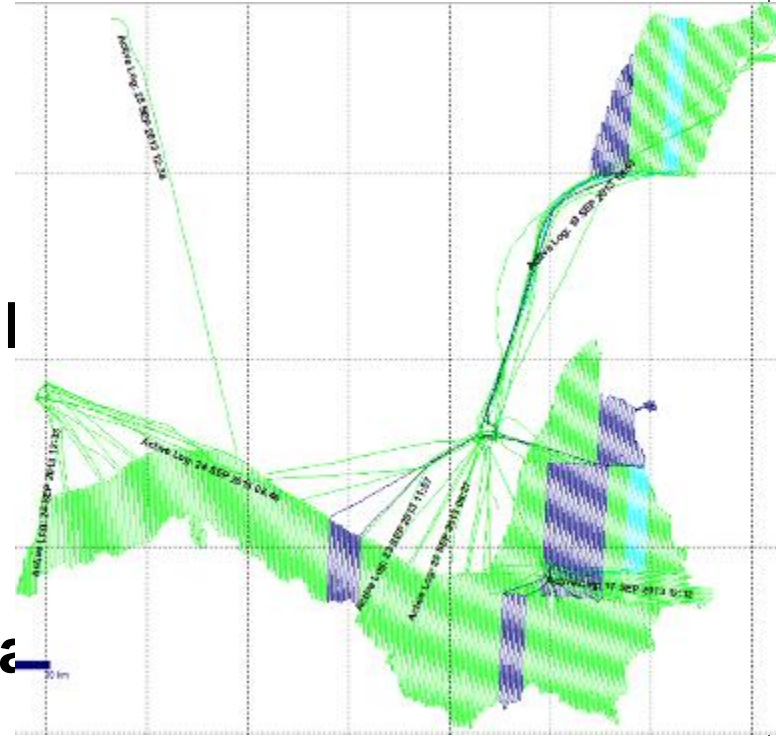
# Buffer-zone OV since 2011...

- Immune belt created since spring 2011 to prevent reintroduction of rabies from neighbouring infected regions
- Territory of buffer –zone: 9 325 sq km.
- Depth of immune –belt:
  - 30 km in north –east near river Narva (Leningrad region)
  - 50 km in south-east (Pskov region)
  - 20 km in south (Latvia)
  - Urban areas, roads, water bodies and wet fields excluded from area.



# OV of wildlife in 2013 (1)

- OV conducted in buffer-zone
- Area 9 325 sq km
- 2 campaigns per year:
  - Spring - from 13<sup>th</sup> to 21<sup>th</sup> May
  - Autumn- 16<sup>th</sup> to 25<sup>th</sup> of Septeml
- Baiting density: 20 baits/km<sup>2</sup>
  - Rabigen SAG2 baits
  - 373 400 baits distributed in total
    - 186 600 baits in spring
    - 186 800 baits in autumn
- Distribution by fixed-wing planes type Cessna 172
- Dropping lines distance- 600m
- Altitude form ground – 100- 150 m
- Flight speed – 160 - 180 km/h



# OV of wildlife in 2013 (2)

- **Territory divided into 42 distribution regions**
- **GPS system (GARMIN 196 and Aera 500) for tracking**
- **Bait- dropping carried out by trained staff by hand**
- **No additional manual distribution**
  
- **10 samples from all vaccine batches (10 in total) sent to ANSES Nancy for titration**
  - **results available before start of OV**
  - **all batches suitable for distribution**
- **Continuous checks on maintenance of cold-chain**
  - **Refrigerated lorry in airfields**
  
- **Efficiency control ( July 2013– March 2014)**
  
- **Passive surveillance all year round**

# Evaluation of vaccination campaigns efficacy

**Investigations in VFL Tartu Central Laboratory  
(also in Tallinn Department till autumn 2013)**

- **Rabies prevalence**
  - **passive surveillance (authorised vets, hunters)**
  - **active surveillance (hunters)**
  - **Methods in use FAT, PCR, bioassay-CC**
- **Bait consumption: tetracycline marks in canines**
  - **Age determination of all tested animals**
- **Immunisation: titration of rabies antibodies by ELISA**
- **Genotyping of positive cases, if any**
- **Sample collection ratio planned:**
  - **4 suspected /indicator animals /100 km<sup>2</sup> of total territory**
  - **4 animals/100 km<sup>2</sup> for detection of bait-uptake and seroconversion in OV area**

# Rabies situation in 2013

- **Since April 2013 Estonia is officially rabies-free country**
- **Number of reservoir animals tested for virus: 1733**
  - **369 foxes**
  - **1364 raccoon dogs**
- **Number of suspected animals tested for virus: 193**
  - **wildlife- 164**
  - **domestic- 29**

**No virus positive animal detected among suspected cases of all species; indicator animals and healthy population of foxes/rac. dogs.**

# Results of marker detection in 2013

- **Hunting density achieved – 3,9 animals per 100 sq km.**

Species	Head		
	Samples collected	results	
		Pos	Neg
racoon dog	340	285	55
fox	91	75	16
<b>Total</b>	<b>431</b>	<b>360</b>	<b>71</b>

- **~84% of tested animals consumed the baits**
  - ~ 82 % of foxes
  - ~ 84 % of racoon dogs

# Results of seroconversion in 2013

- ELISA (Bio-Rad Platelia) test used
- The average sampling density achieved 4,5 animals per 100 sq km

Species	Blood		
	Samples collected	results	
		Pos	Neg
racoon dog	331	158	173
fox	87	40	47
<b>total</b>	418	<b>198</b>	<b>220</b>

- ~47% of tested animals found positive
  - ~ 46% of foxes
  - ~ 48% of racoon dogs

# Financial aspects 2013

- **All main costs in total (VAT incl): 608 089 €**
- **Vaccine supply + distribution 430 144€**
- **Samples collection 28 566 €**
- **Laboratory investigations 147 136 €**
- **Information campaign 2 243 €**
- **Eligible costs in total (VAT excl.): 461 021 €**
- **Maximum amount of Community co-financing  
(Commission Decision 2012/716/EC):  
620 000 EUR**

**Amount reimbursed: 348 537 €**



# OV in year 2014

- **OV in buffer zone (9350 km<sup>2</sup>) along the borders with Russian Federation, Latvian Republic continued**
  - **Spring campaign enforced 5<sup>th</sup> to 14<sup>th</sup> of May**
  - **Autumn campaign enforced 15<sup>th</sup> to 24<sup>th</sup> of September**
- **Similar distribution strategy, baiting density, vaccine e.c.**
- **Monitoring of OV (bait consumption. herd immunity) started in July**

● **Rabies-freedom retained**



**Thank you for attention!**