



REPUBLIC OF ESTONIA
VETERINARY AND FOOD BOARD

Results of the implementation of the Rabies co-financed eradication programme in 2014

ESTONIA

Standing Committee PAFF
9-10 September 2015
Brussels



Photo: Elmo Riig

History of rabies in Estonia

- After II Word War, urban rabies, no wildlife involvement, ~300 cases recorded annually
- Compulsory vaccination of pets since 1953
- 1960 – 1967- rabies-free period
- 1968: from southern-east sylvatic spread over the total territory of country
- Rabies transmitters:

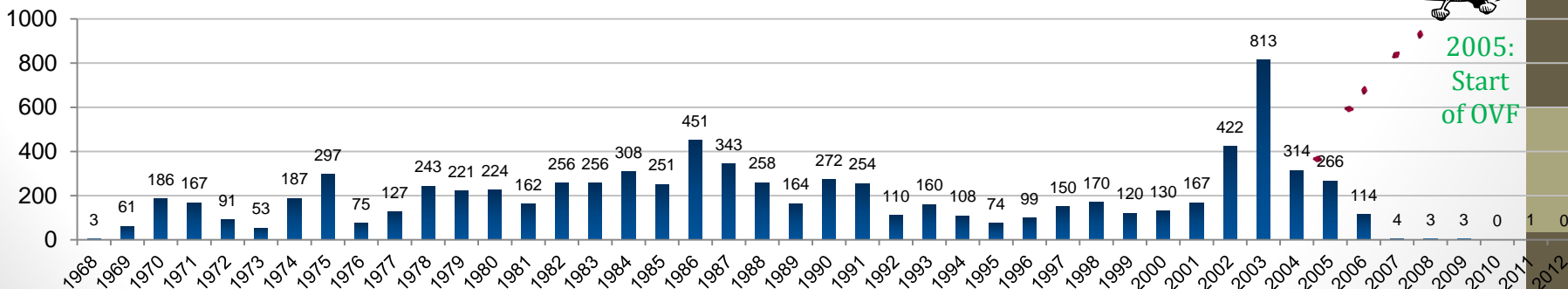
- Foxes (*vulpes vulpes*)
- Raccon dogs (*Nycterentes procyonoides*)



— Border with Russia: 294 Km

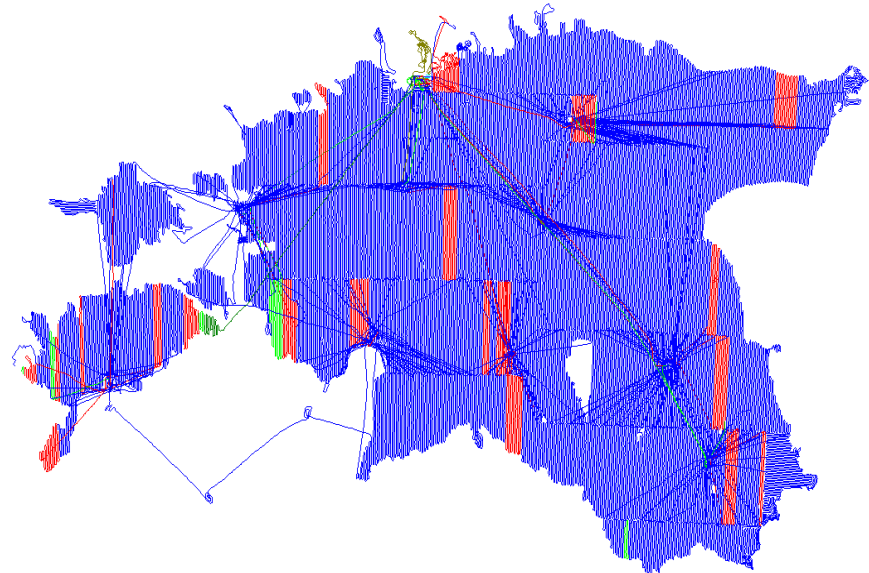
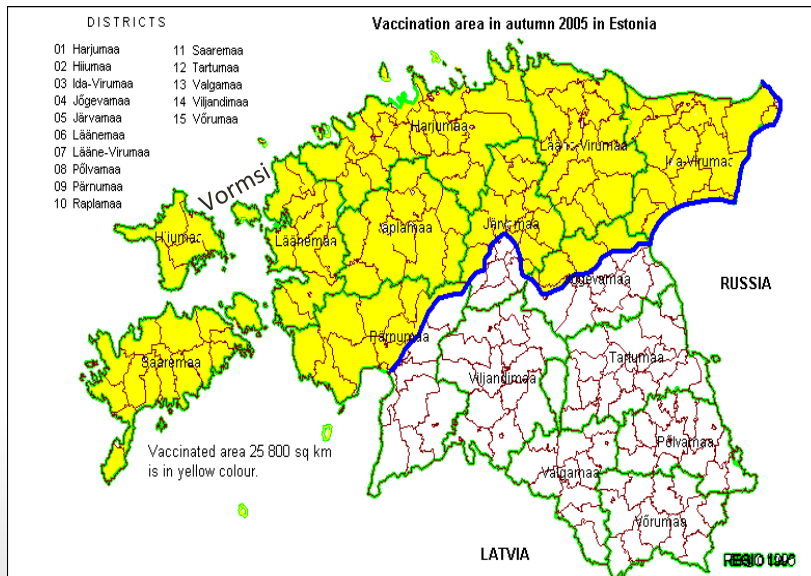
— Border with Latvia: 339 Km

Number of rabies cases (domestic and wildlife) in Estonia (1968-2012)



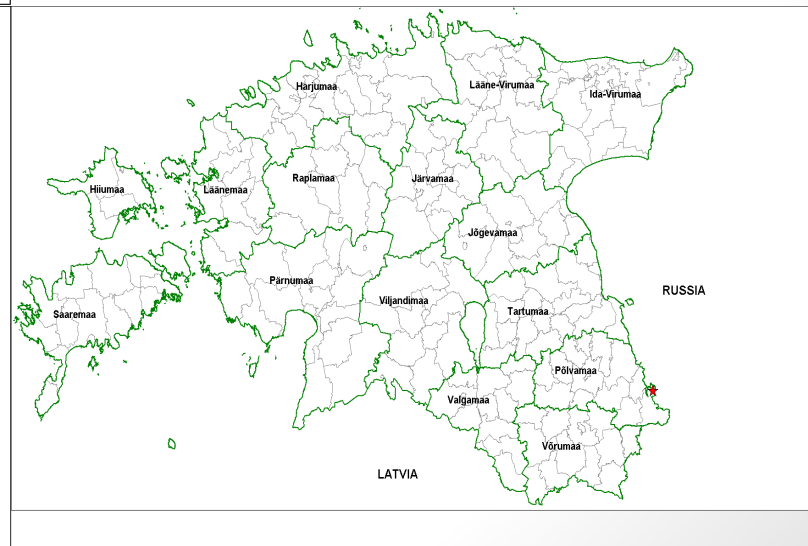
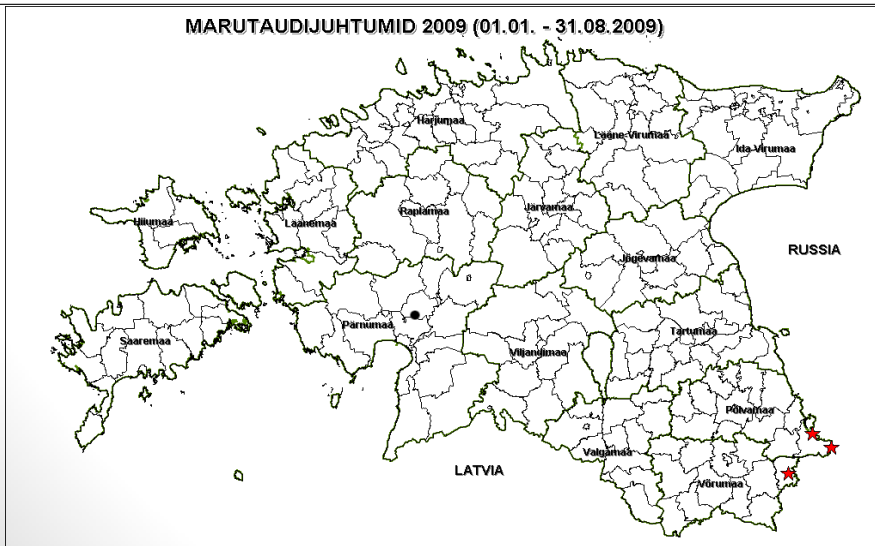
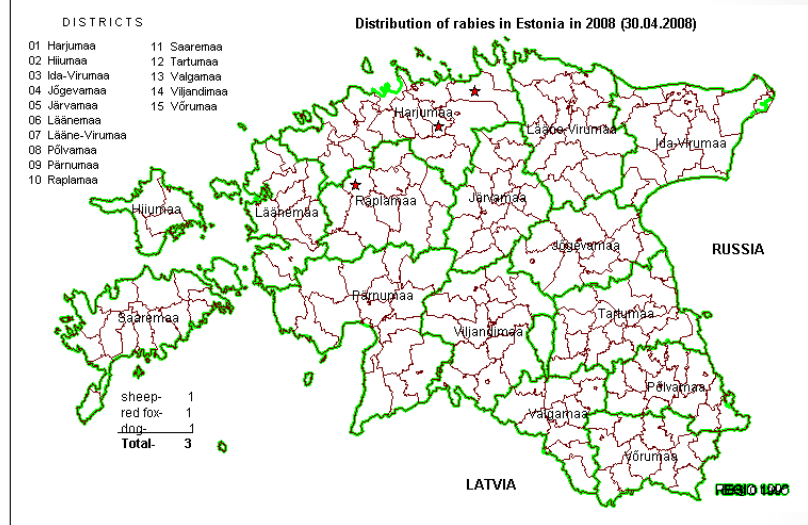
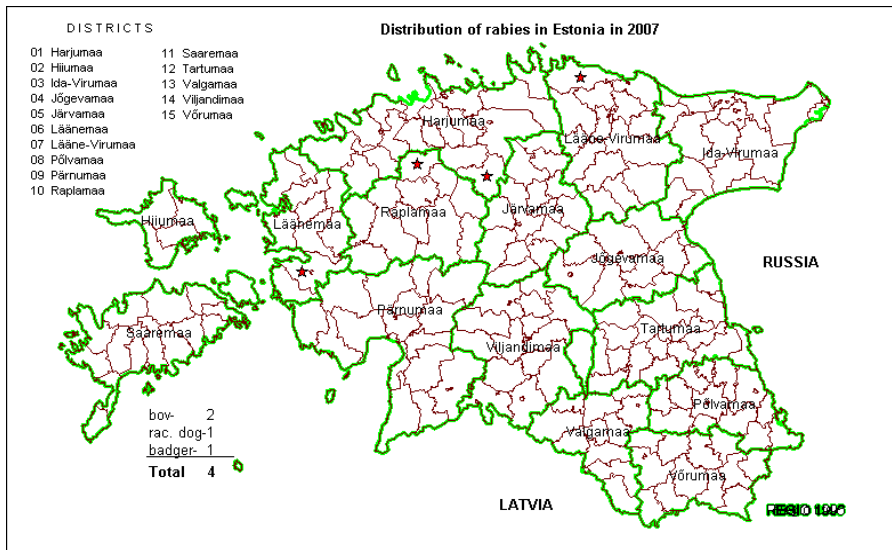
History of oral rabies vaccination (ORV)

- **June and September 2005 : feasibility trial of ORV by manual distribution in Vormsi Island (92 Km²)**
- **November 2005: first large scale ORV in Northern part of Estonia (25,540 Km²)**
- **2006-2010: Total territory covered by ORV (45,226 Km²)**
- **2011-2014: “Buffer zone” ORV (Latvia, Russia- 9,325 Km²)**



Rabies cases in 2007, 2008, 2009, 2011

- Last native case - March 2008, since then 4 cases in wildlife in short-range of south-eastern border with Pskov Region of RF



Legal framework of 2014 programme

- **EU legal basis:**

- **Commission Decision 2009/470/EC**
- **Commission Decision 2013/722/EU**
- **Commission Decision 2014/925/EU**

- **Relevant Estonian legal acts:**

- **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 2011-2015 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 (03.02.2014)**

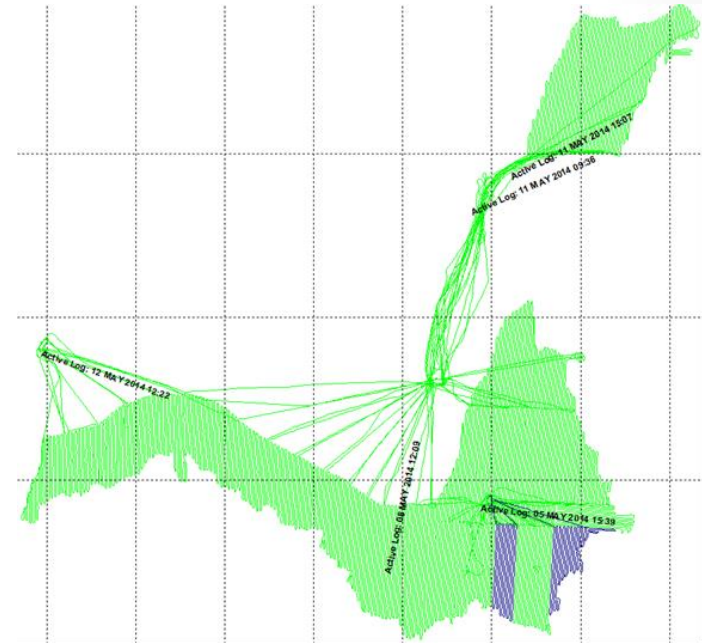
ORV in 2014, vaccination area

- Immune belt to prevent reintroduction of rabies from neighbouring infected regions (created since spring 2011 – autumn 2014)
- Territory of buffer –zone: 9 325 sq km
- Depth of immune –belt:
 - 30 km in north –east in coast of 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.



ORV in 2014, vaccination strategy (1)

- 2 seasonal campaigns per year:
 - Spring - from 5th to 14th May
 - Autumn- 15th to 24th of September
- Baiting density: 20 baits/km²
- Rabigen SAG2 baits
 - 373 300 baits distributed in total
 - 186 100 baits in spring
 - 187 200 baits in autumn



- Distribution by fixed-wing planes type Cessna 172 (2-3/per day)
- Bait- dropping carried out by trained staff by hand
- Dropping lines distance- 600m
- Altitude form ground – 100- 150 m
- Flight speed – 160 - 180 km/h

ORV in 2014, vaccination strategy (2)

- **GPS system (GARMIN Aera 500) to record flight data**
- **No additional manual distribution**
- **10 samples from all vaccine batches (8 in total) sent to ANSES Nancy for titration, results available before start of OV**
- **Refrigerated lorries (-20° C) at the airports (bait storage)**
- **Continuous checks on maintenance of cold-chain**
 - **Efficiency control (July 2014– March 2015)**
 - **Passive surveillance all year round**

Evaluation of vaccination campaign efficacy

Investigations in Veterinary and Food Laboratory Central Lab. in Tartu

- 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

- Sample collection ratio planned:
 - 4 suspected /indicator animals /100 km² of total territory
 - 4 animals/100 km² for detection of bait-uptake and seroconversion in ORV area

Surveillance in 2014

- **Number of reservoir animals tested for virus: 1682**
 - 458 foxes
 - 1224 raccoon dogs
- **Number of suspected animals tested for virus: 183**
 - wildlife- 136
 - domestic- 47

No virus positive animal detected among suspected cases of all species; indicator animals collected and healthy population of foxes/raccoon dogs sampled randomly.

No need for emergency ORV.

Since April 2013 until present time Estonia has been officially rabies-free country.

Results of marker detection in 2014

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

Species	Head		
	Samples collected	results	
		Pos	Neg
racoon dog	289	202	87
fox	92	68	24
Total	381	270	111

- ~71% of tested animals found positive
 - ~ 74 % of foxes
 - ~ 70 % of racoon dogs

Results of seroconversion in 2014

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

Species	Blood		
	Samples collected	results	
		Pos	Neg
racoon dog	284	100	184
fox	91	39	52
total	375	139	236

- ~37 % of tested animals found positive
 - ~ 43 % of foxes
 - ~ 35 % of racoon dogs

Financial aspects 2014

- **All main costs in total (VAT incl): 627 635 €**
- Vaccine supply + distribution 453 046 €
- Samples collection 25 407 €
- Laboratory investigations 146 891 €
- Information campaign 2 292 €
- **Eligible costs in total (VAT excl.): 466 479 €**

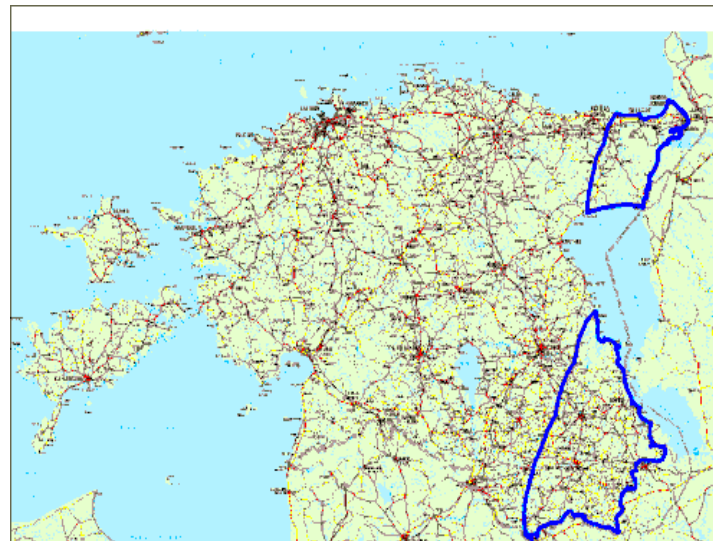
- **Maximum amount of Community co-financing (Commission Decision 2013/722 as amended by 2014/925/EU)**
460 000 EUR

ORV in year 2015

- **OV in buffer zone (6 200 km²) along the borders with Russian Federation, Latvian border excluded from ORV area**
 - Spring campaign enforced 11th to 16th of May
 - Autumn campaign begins 21.09.
- **Similar distribution strategy, baiting density, vaccine e.c.**
- **Monitoring of ORV (bait consumption, herd immunity) started in July**
- **Surveillance purely on suspected cases and indicator animals all year round.**

- **No rabies cases found since January 2011 until nowadays**

- **Rabies-freedom retained!**





Thank you for attention!