

# Invasive and expansive animal species in Šumava NP Czech Republic



**Tomas Lorenc**

**National Park  
Šumava  
Administration**

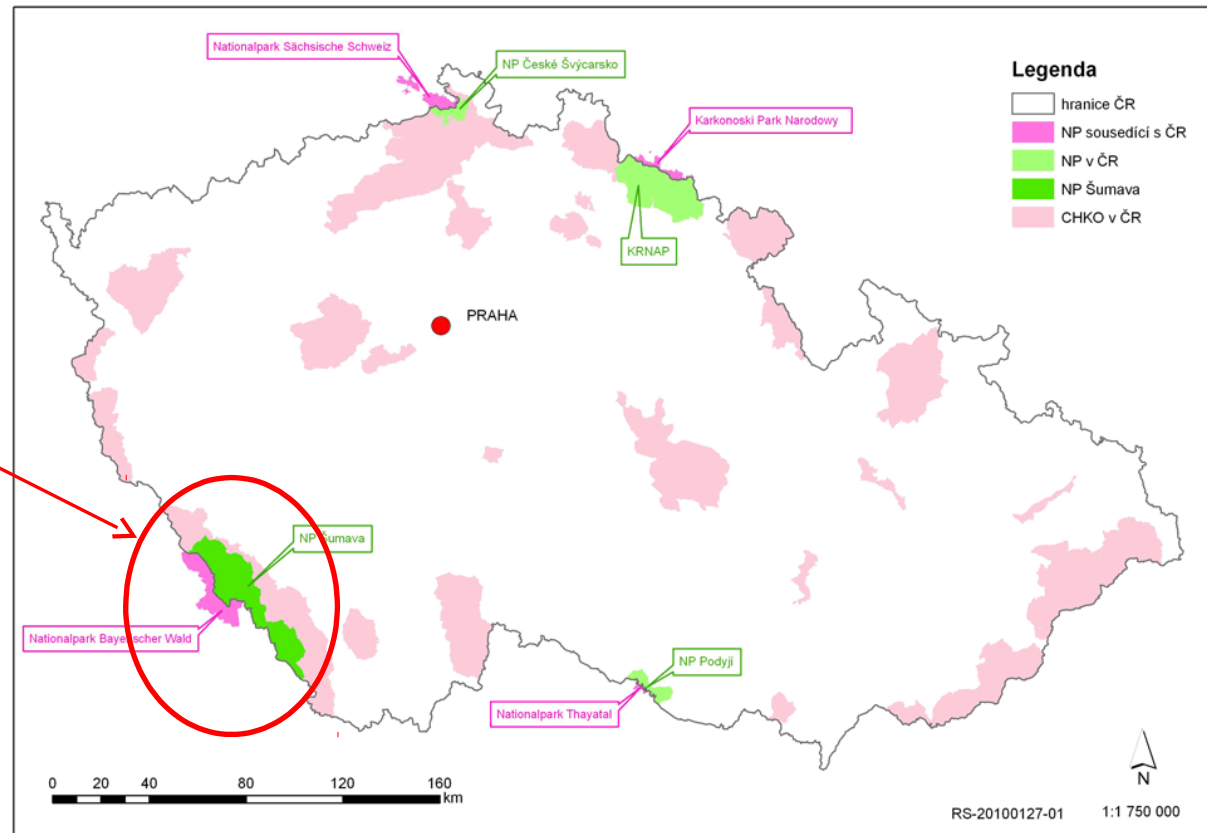
# Czech Republic

- founded: 1. 1. 1993
- capital city: Prague
- area: 78 866 km<sup>2</sup>
- population: 10,52 millions

- 4 bilateral National Parks
- 26 Protected Landscape Areas



## Šumava National Park





# Šumava National Park

the largest national park in the Czech Republic

Area: Šumava NP: 680 km<sup>2</sup>

Šumava PLA: 996 km<sup>2</sup>

*Bavarian Forest National Park* : 240 km<sup>2</sup>

***Protected area of both NP: 920 km<sup>2</sup>***

## ŠUMAVA NATIONAL PARK

Forests: 80% (54 100 ha)

Non-forest land: 20% (13 900 ha)

Agricultural land: 9% (5 900 ha)

Water surfaces, streams: 1% (1 100 ha)

Other areas: 10% (6800 ha)

Urban area: 0,1% (66 ha)

Glacial lakes: 5x (NP- 3x, PLA- 2x)

- **Declaration: PLA:** 27.12. 1963, Decree of the Ministry of Education and Culture No. 53855/63, amended by the Decree of the Ministry of Culture CSR No. 5954, dated 17.3. 1975

- **Declaration: BVNP:** 1970

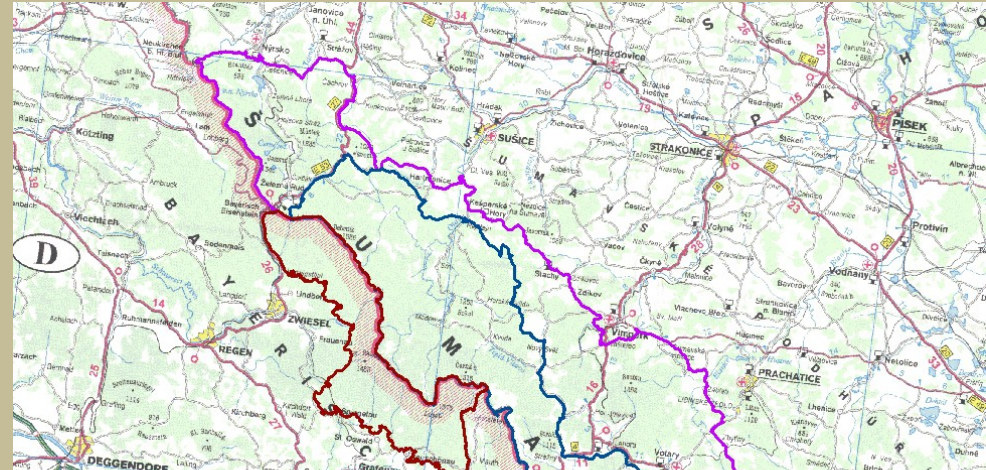
- **Declaration: NP:** 20. 3. 1991, CR Government Regulation, No. 163/1991 Coll.

- **Vertical range:** 570 – 1378 m above sea level

- **NATURA 2000** - SPA(9 species of birds)  
- SCI(8 species of animals, 2 species of plants, 19 habitats)

# Šumava National Park – mountain type of NP

- peatbogs
- mountain spruce forest
- beech primeval forest
- glacier lakes,
- mountain rivers,
- boreomountain type of fauna and flora
- historical man made meadows



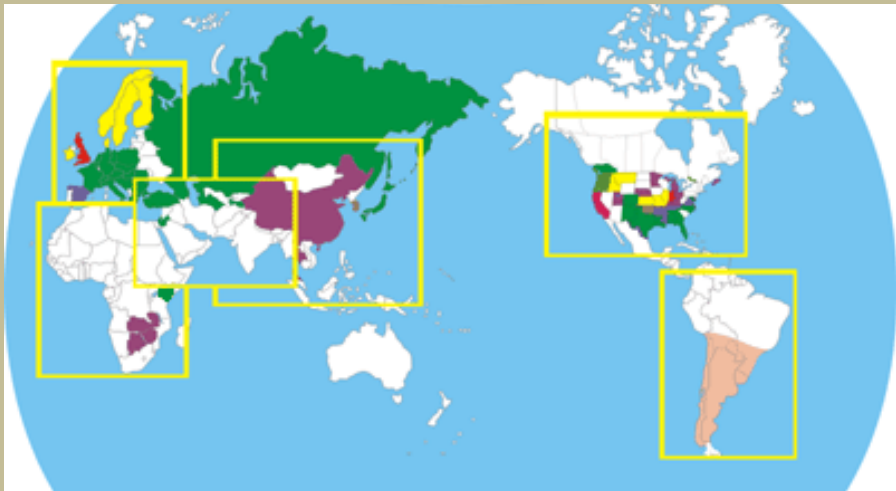
# Invasive and expansion species

- **invasion species:** a species non-native to the area, which are spreading uncontrollably while aggressively displaces native species that have a similar function in nature as itself
- **expansion species:** native species, which are spontaneously spread (even to humans altered landscape)



# Coypu *Myocastor coypus* (Molina, 1782)

- neotropical species from South America
- 1899 drop off in North America for fur
- later drop off elsewhere in Europe, Africa, Asia

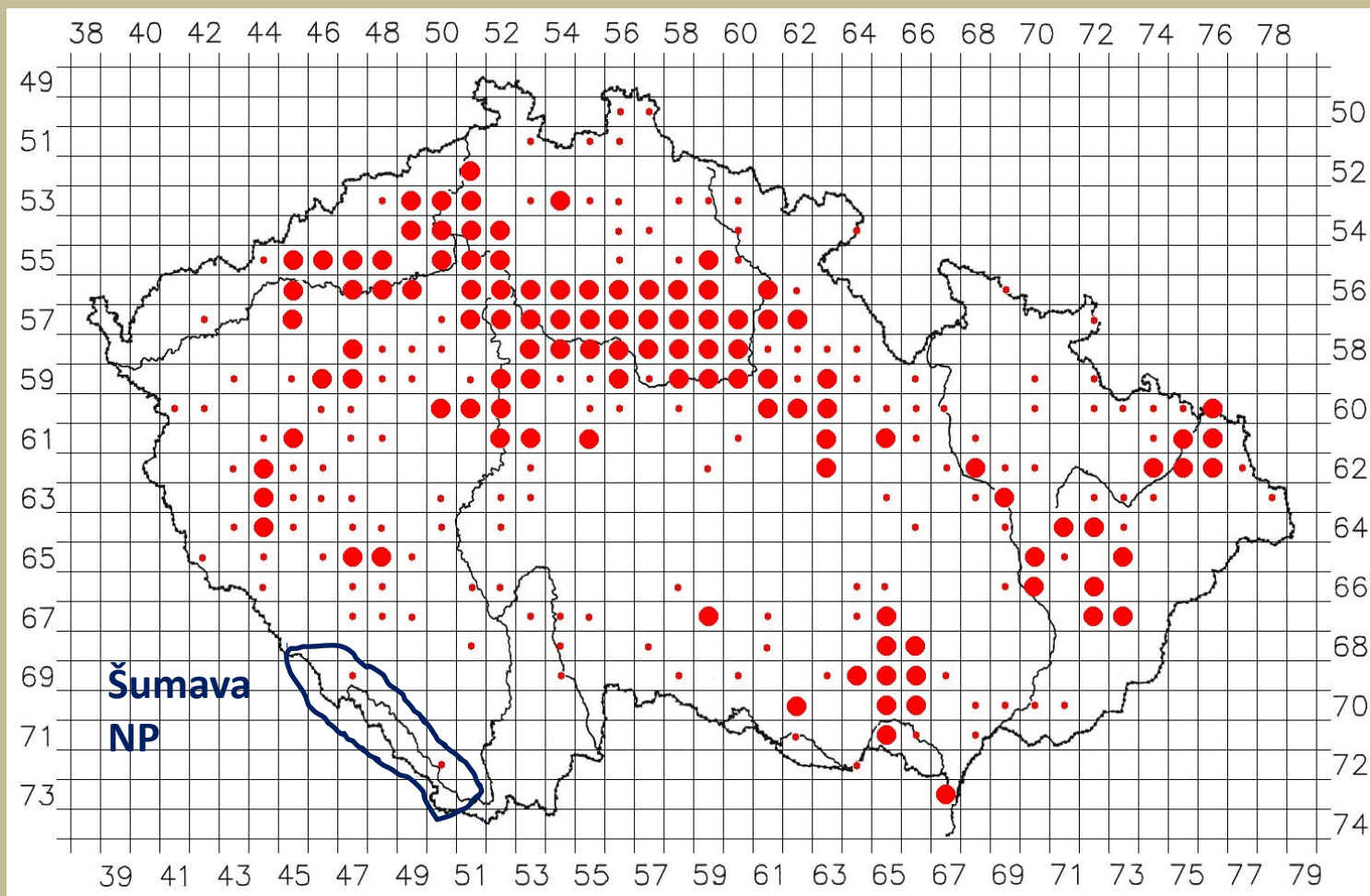


# Coypu in Europe

- in Europe first farmed in the 20s of the 20th century
- at present, a common occurrence in the wild, mostly in Western Europe, Italy and the Balkans
- from England wild removed



# Coypu in CR (2015)



big circle - permanent occurrence; small circle - a regular occurrence



# Raccoon Dog

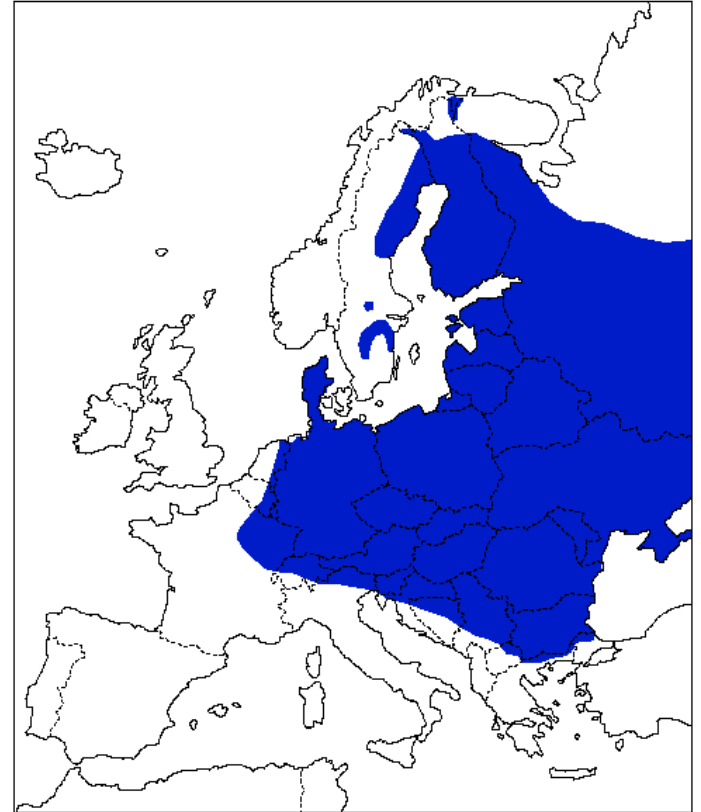
*Nyctereutes procyonoides* (Gray, 1834)

- canine beast
- the original distribution: E and SE Asia
- false hibernation
- monogamous species living in pairs
- vector of the spread of rabies



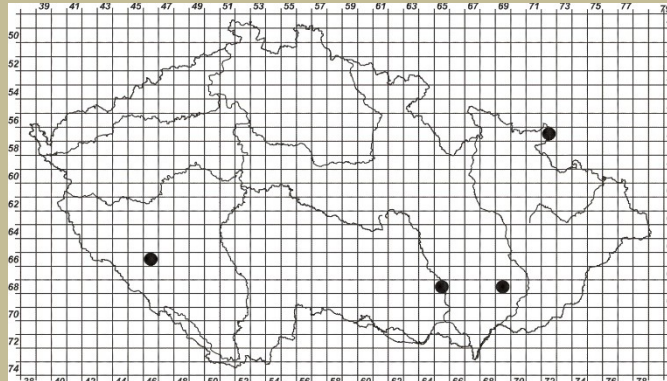
# Raccoon Dog in Europe

- 1929-1955 drop off a furry species into the wild, more than 9,000 individuals from the Ukraine, Belarus, Russia and Latvia
- quickly spread to Western Europe and the Balkans

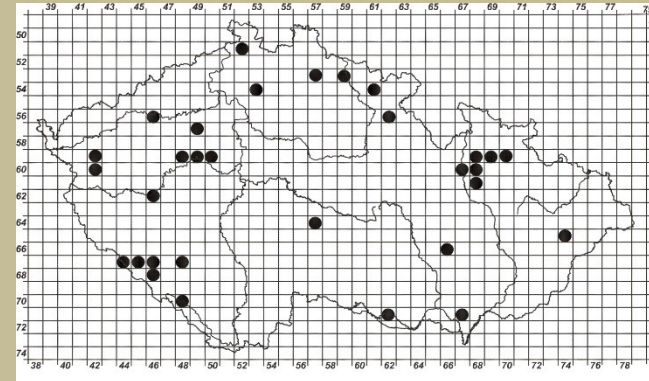


# Raccoon dog in CR

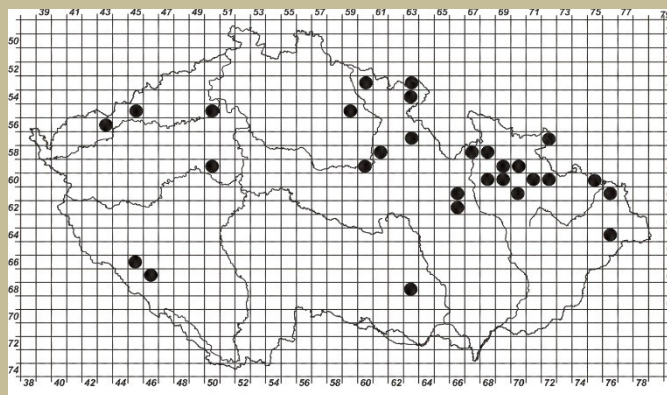
1950-1959



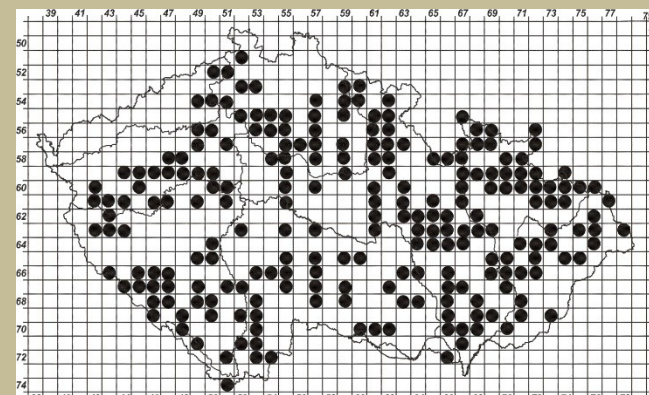
1980-1989



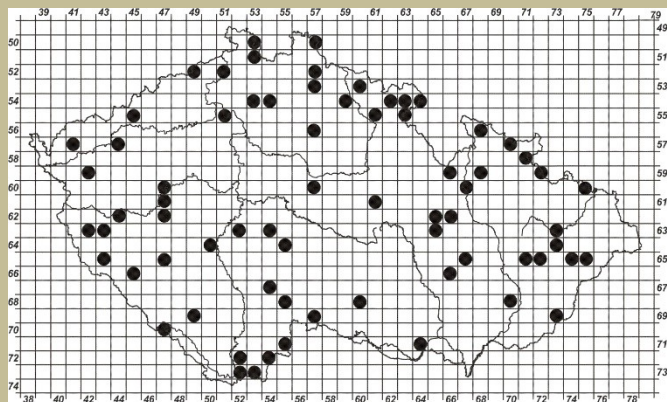
1960-1969



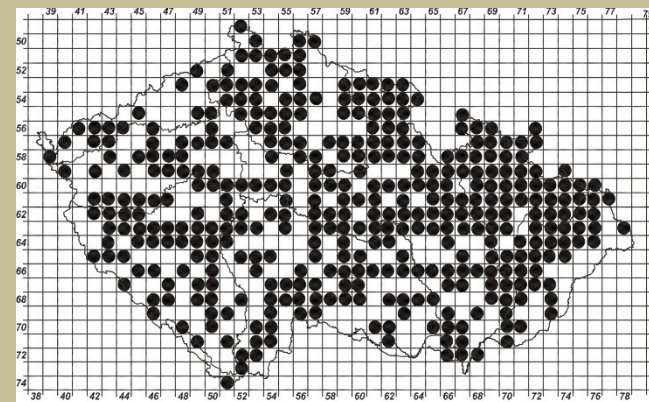
1990-1999



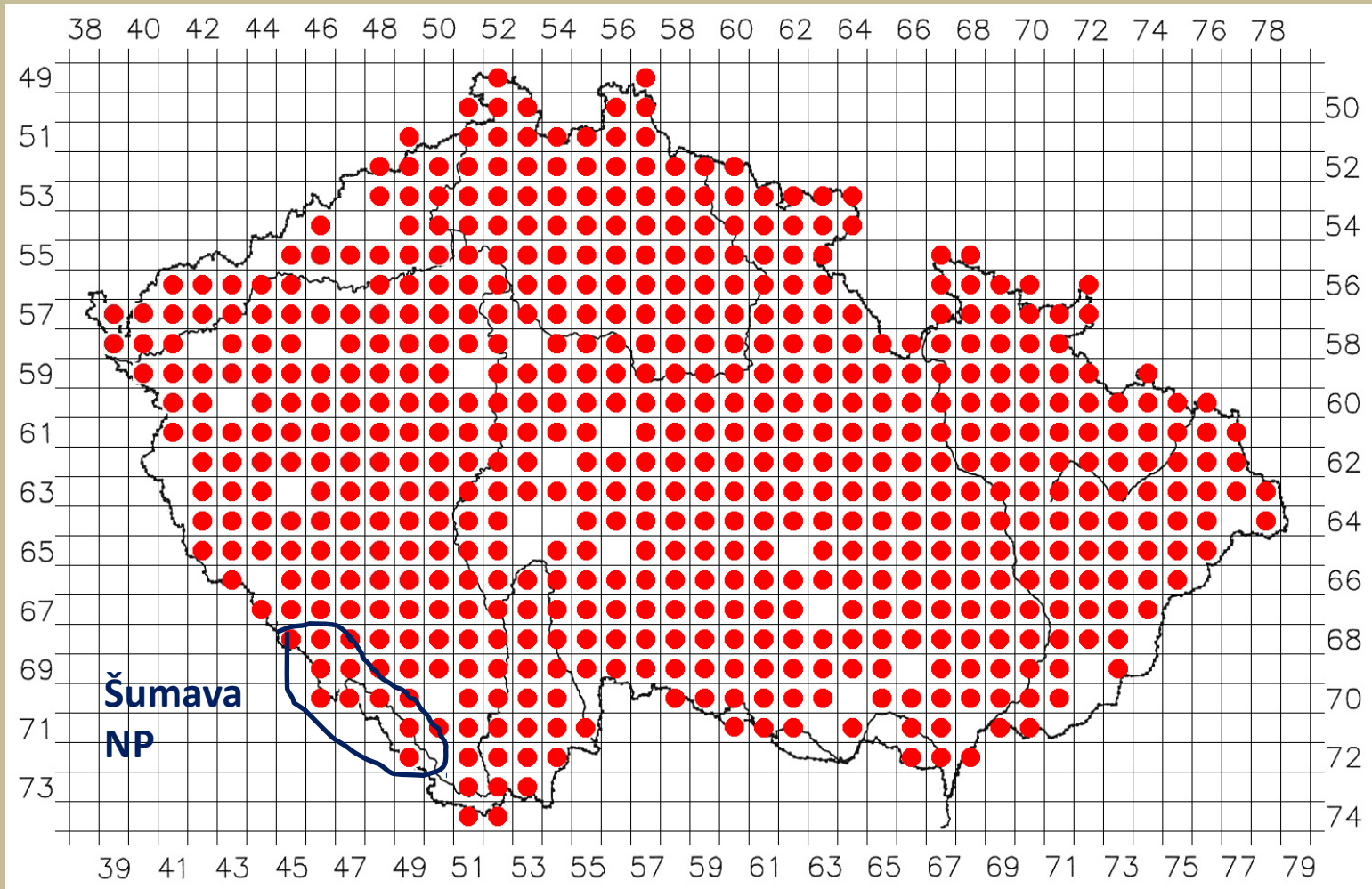
1970-1979



2000-2005

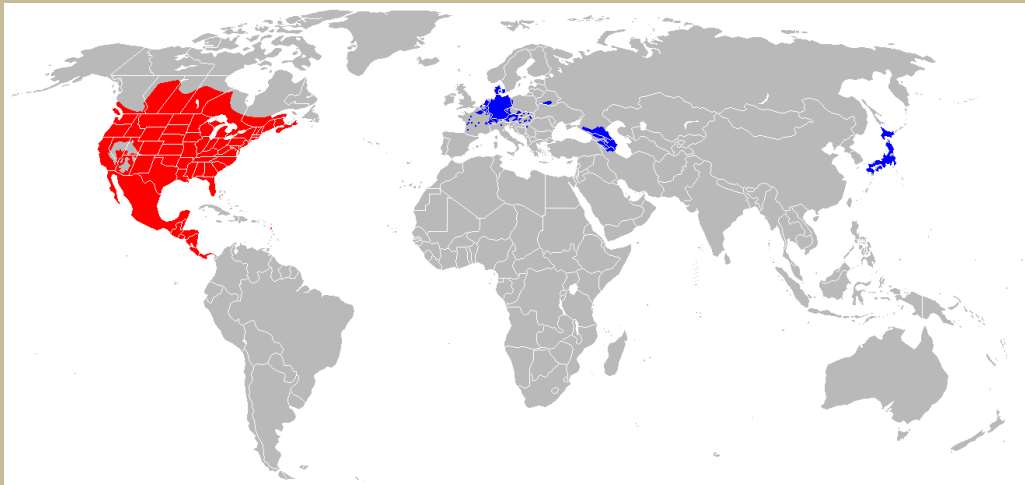


# Raccoon Dog in CR (2015)



# Raccoon *Procyon lotor* (Linnaeus, 1758)

- bear beast (Family: Procyonidae)
- original distribution: North America and Central America
- introduction: Europa, Japan, from year 1936 planted in former USSR (26 localits in Russia, Belarus Rusku, Belarus, Azerbaijan, Uzbekistan)

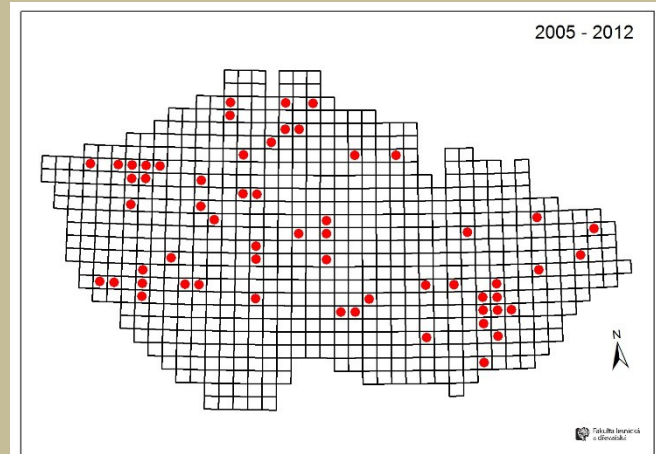
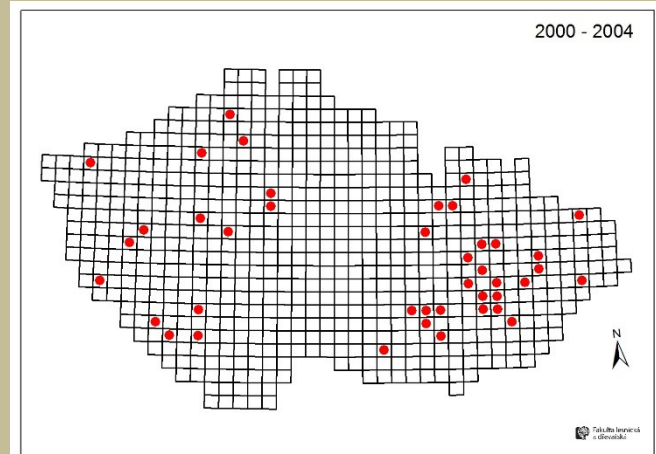
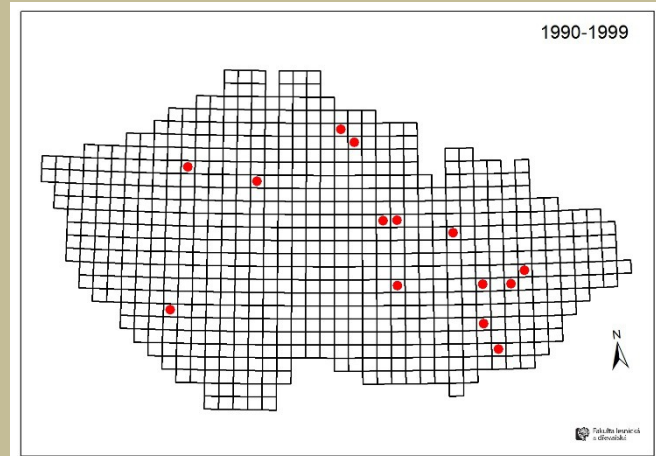


# Raccoon in Europe

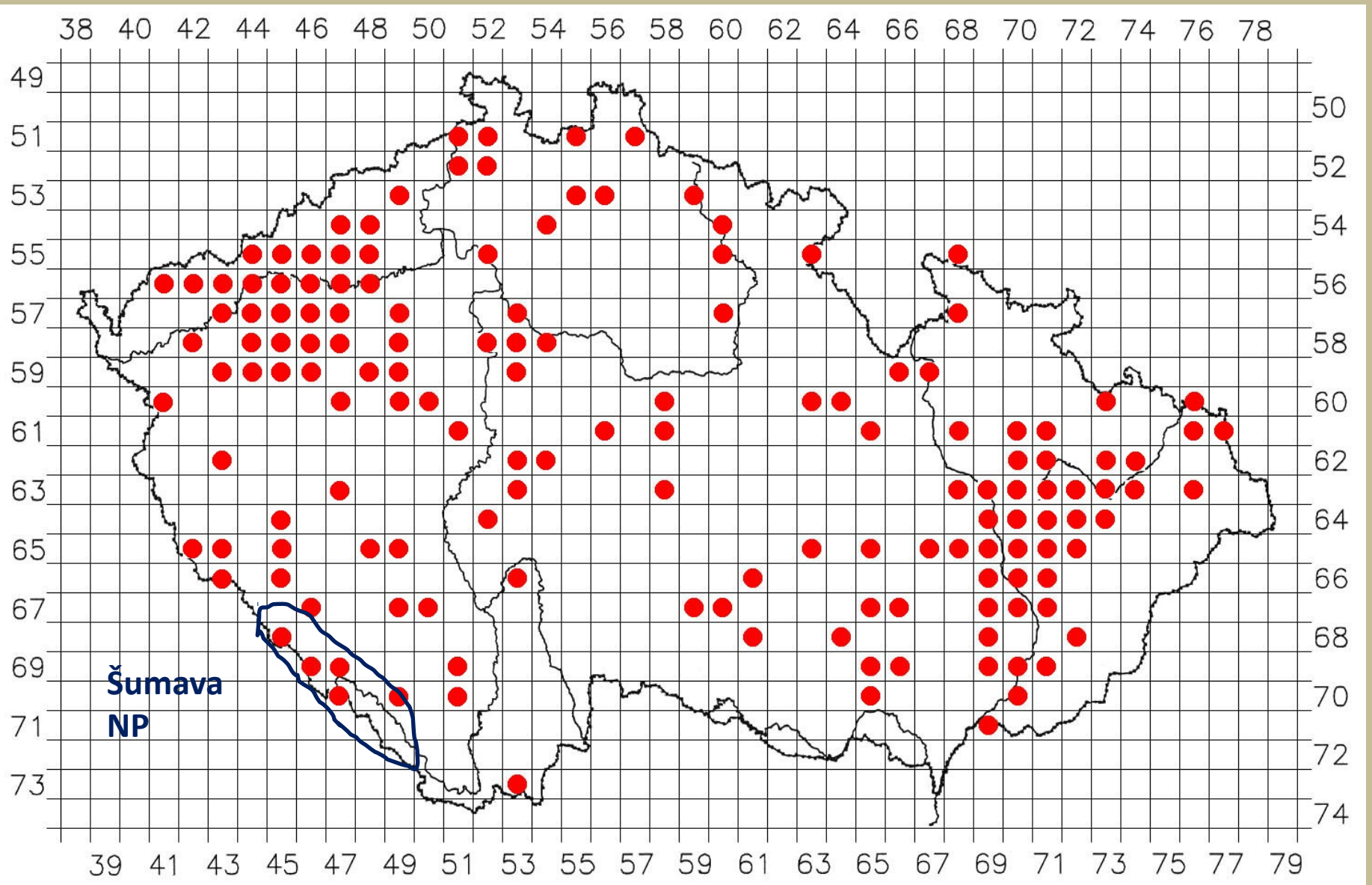
- 1927 farmed in Hessen, escape from captivity
- 1934 drop off two couples in Kassel, Germany
- after 1945 releases from farming in central Europe
- the gradual emergence of large populations and spread through Europe
- Germany, the estimated abundance of about 1 million individuals



# Raccoon in CR



# Raccoon in CR (2015)

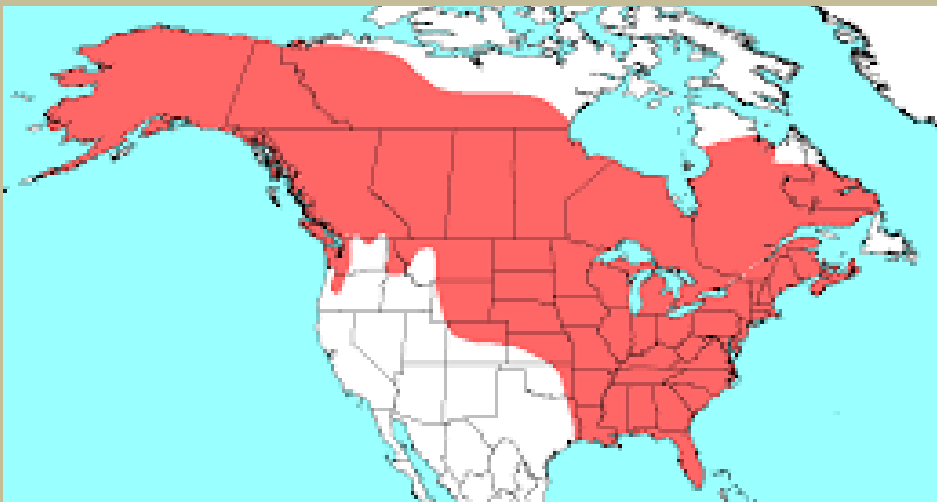




# American Mink

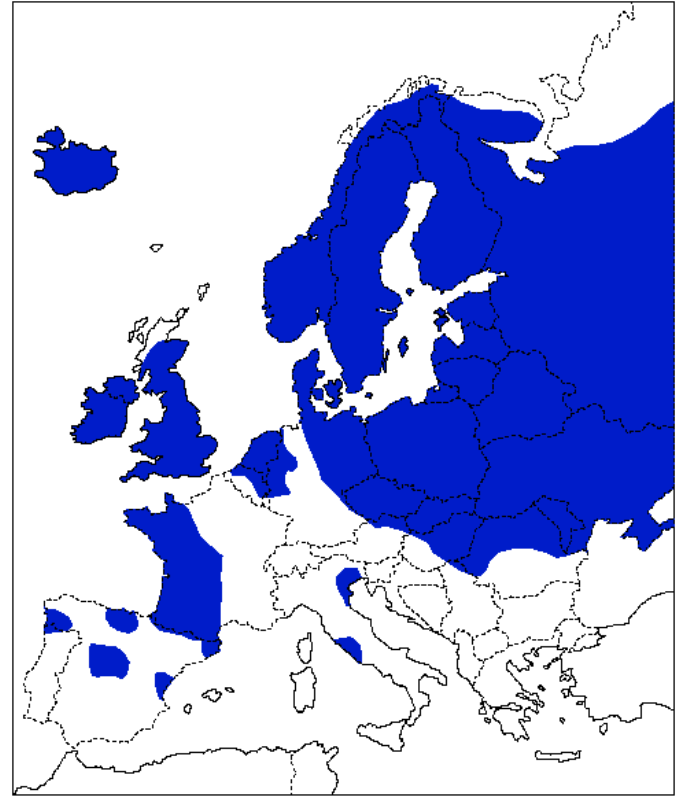
*Mustela vison* (Schreber, 1777)

- weasel beast
- original distribution: North America
- drop off a lot of place of Europe



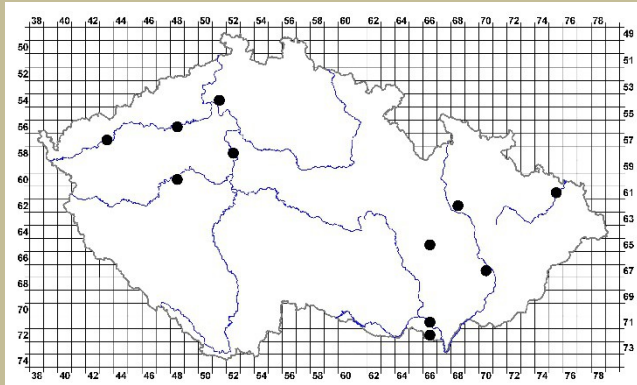
# American Mink in Europe

- first import of Mink to Europe in 19. / 20. Century
- frequent escapes from fur farms, especially in the former USSR and northwestern Europe
- after year 1945 escapes from farms in Middle Europe
- occupied a free niche after European Mink extinction
- first occurrence in CR 1958
- from 1995 3 stable populations in CR wild

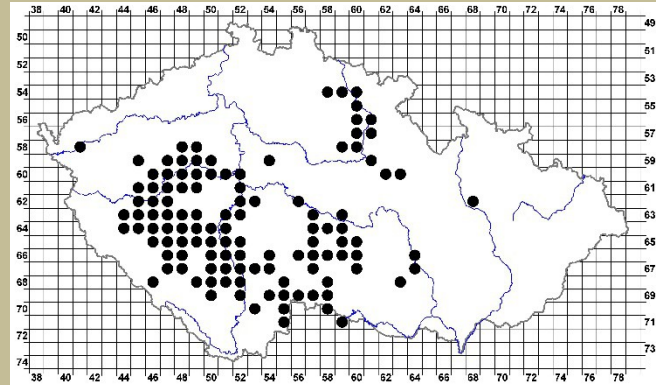


# American Mink in CR

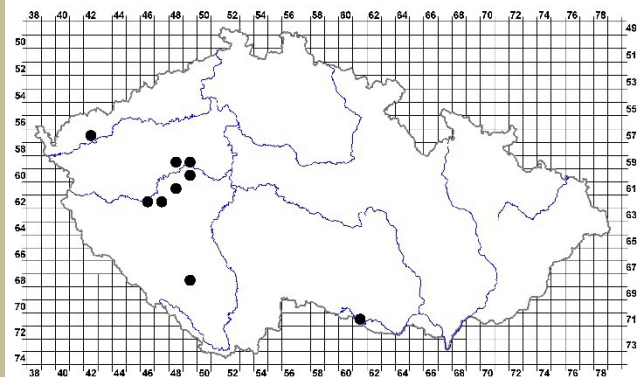
do 1984



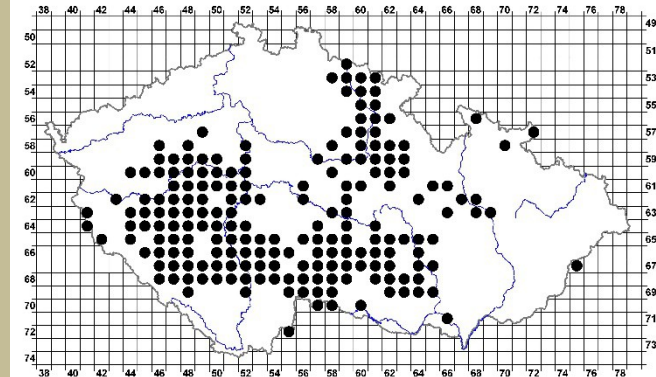
1995-1999



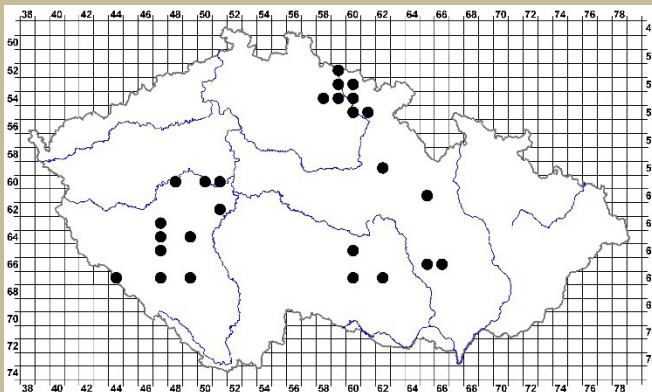
1985-1989



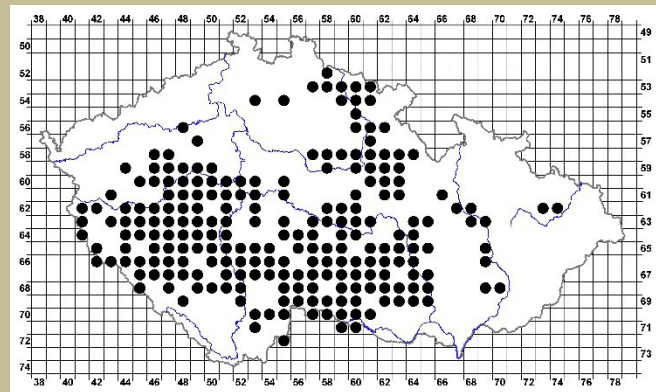
2000-2005



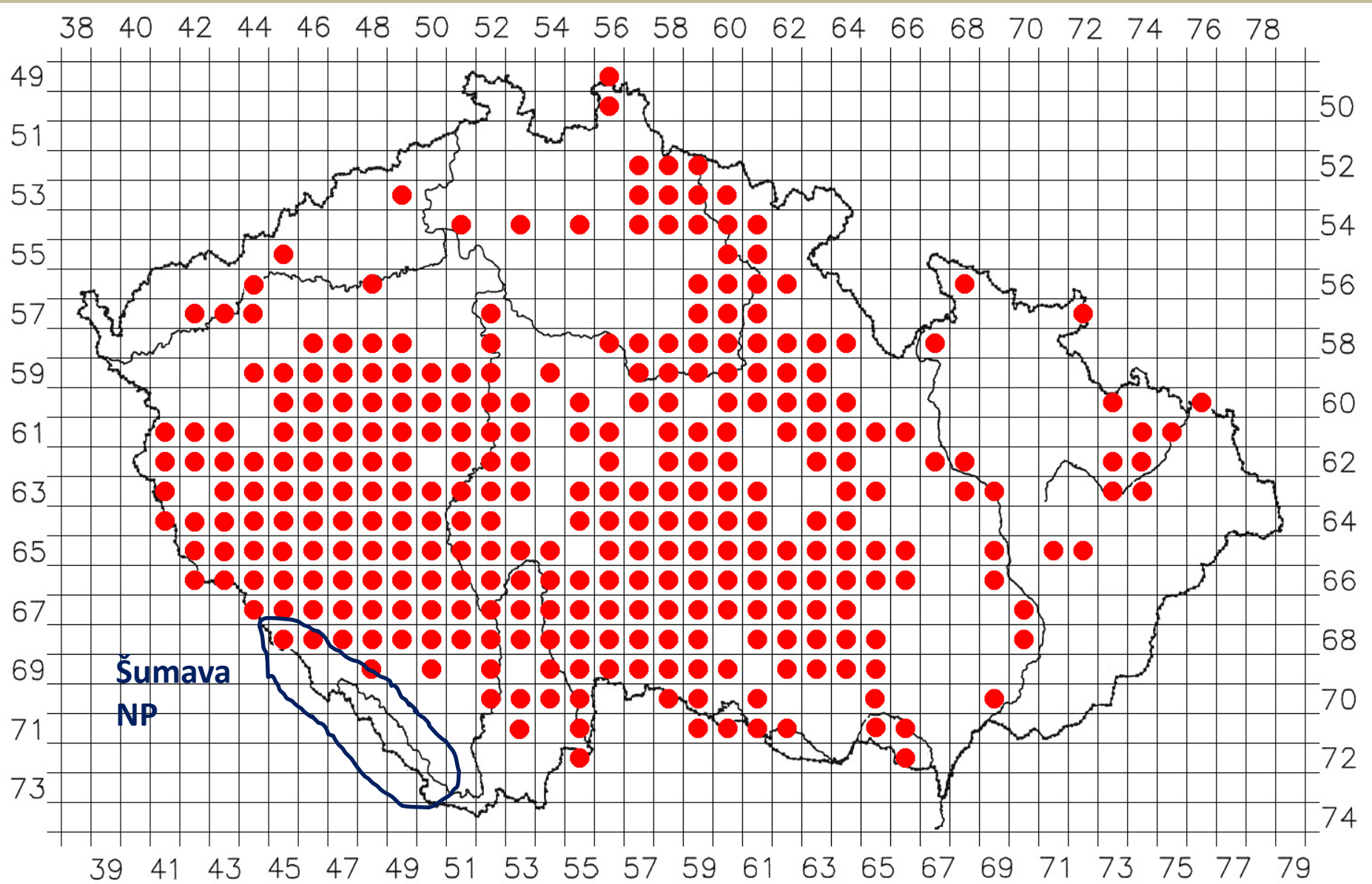
1990-1994



2006-2010



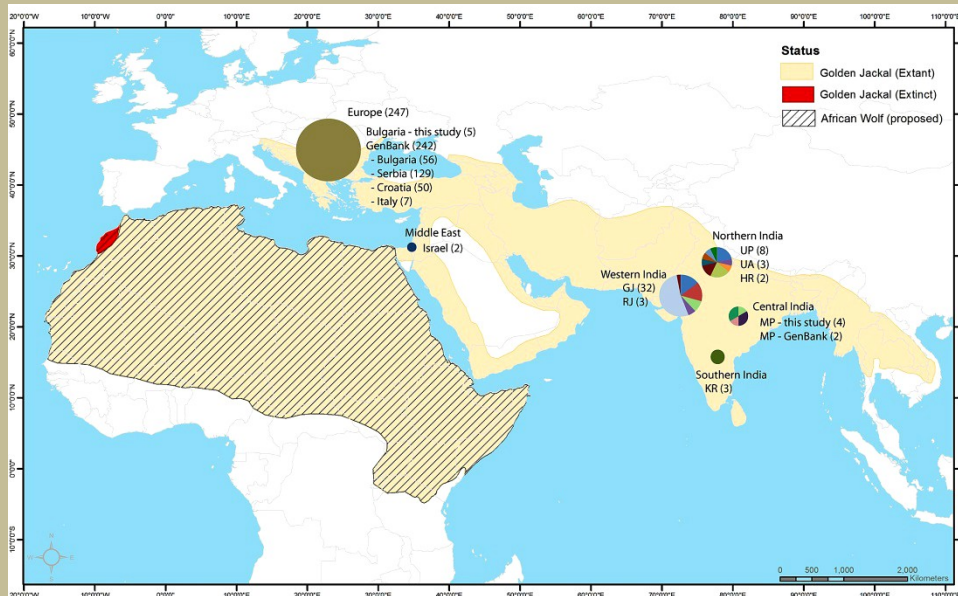
# American Mink in CR (2015)



# Golden Jackal

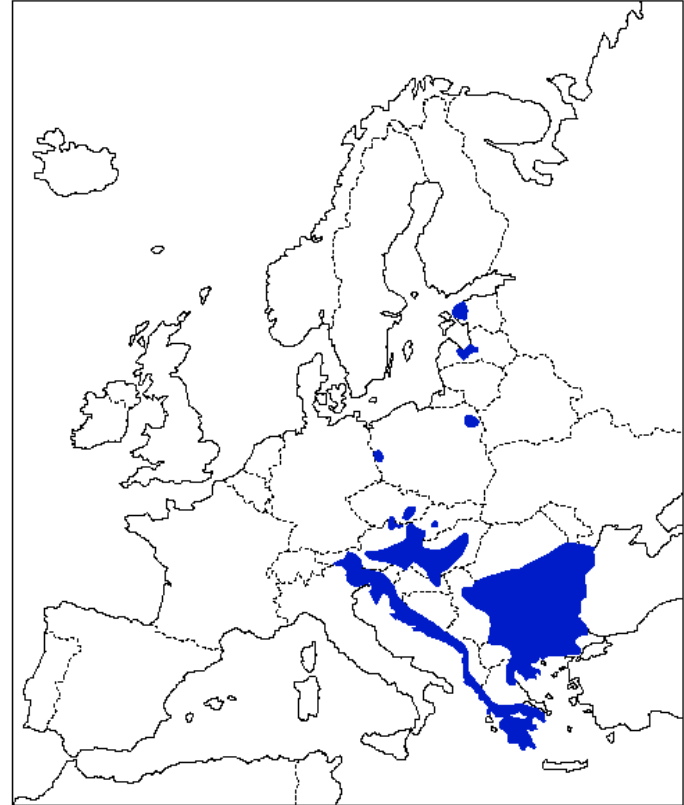
## *Canis aureus* (Linnaeus, 1758)

- canine beast
- original distribution: JV Europe, N Africa, S Asia
- occupy steppe and forest steppe habitats

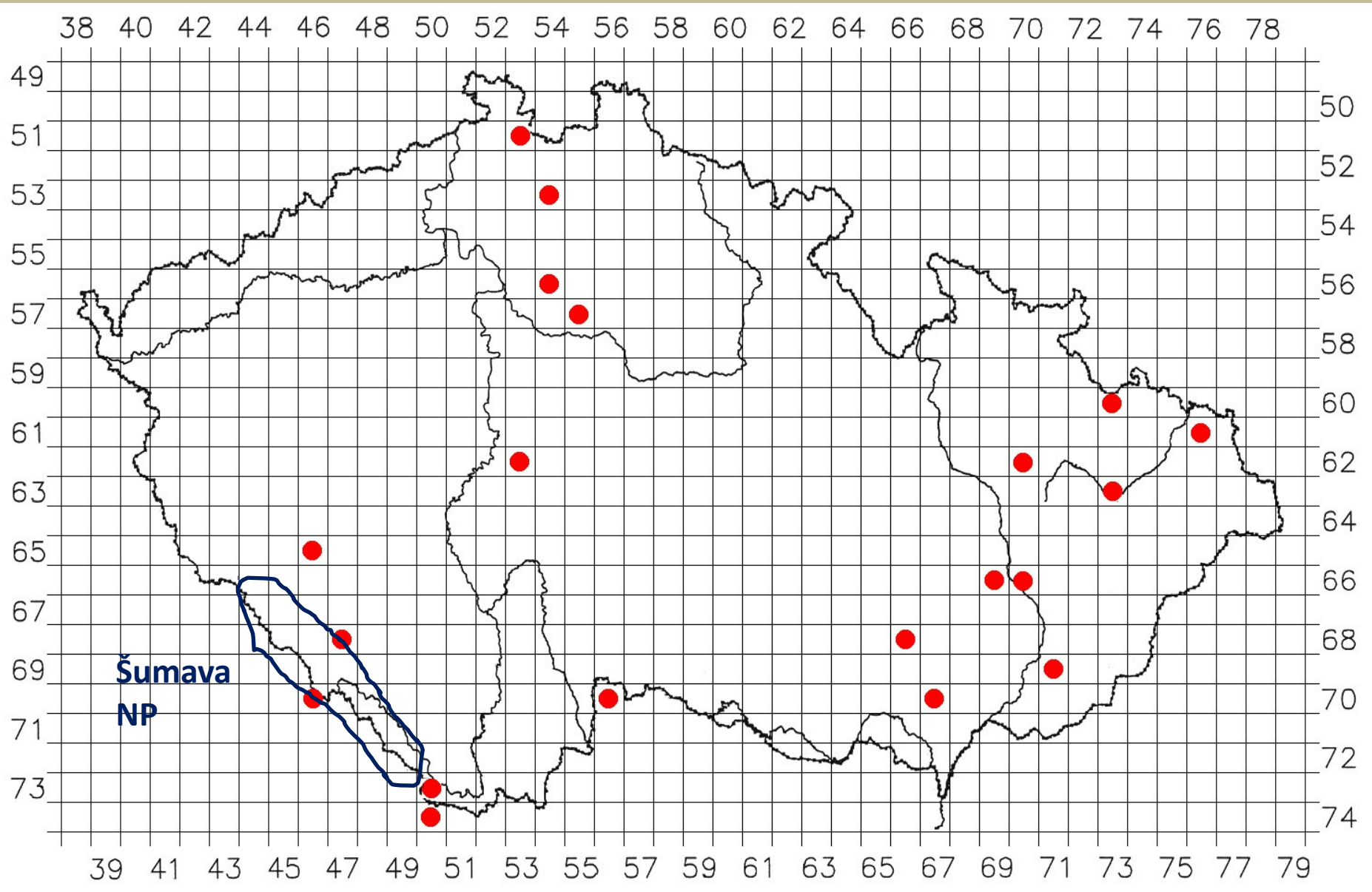


# Golden Jackal in Europe

- after 1945, spreading from the Balkans to Central Europe
- at present abundant in Hungary
- regular occurrence in Austria and Slovakia
- reproducing populations in Estonia !!!
- found in Germany, Poland, Latvia and most recently in Denmark



# Golden Jackal in CR



# Sika Deer *Cervus nippon* (Temming, 1838)

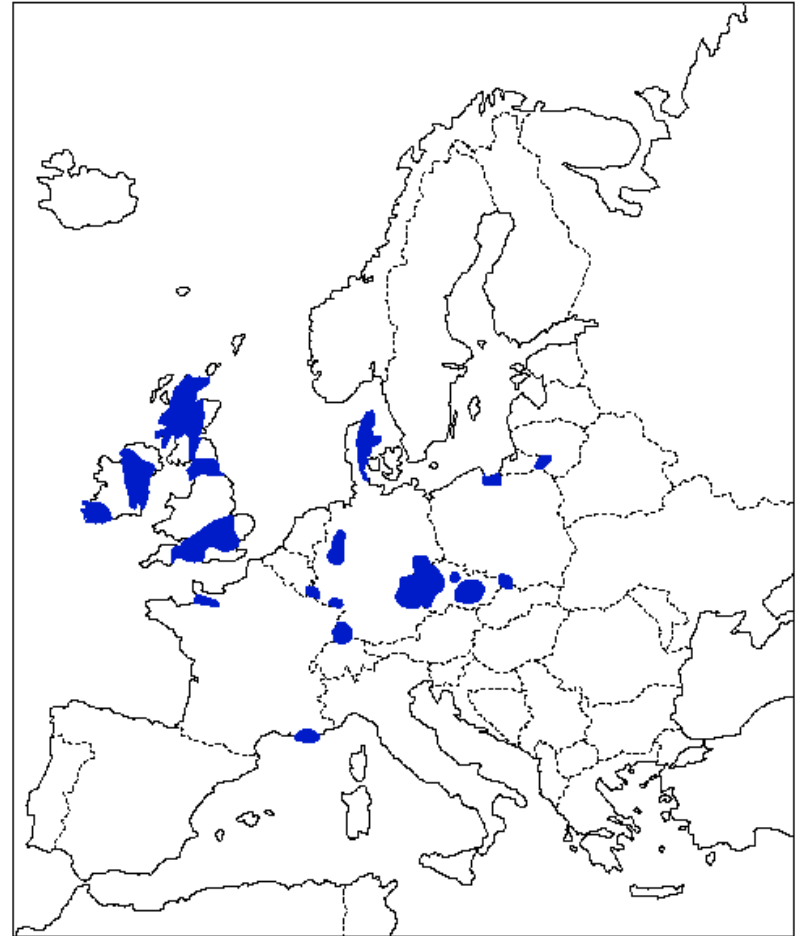
- deer
- original distribution: JV Asia
- a lot of subspecies
- introductions: f.e. Europe, New Zealand, Philippines, USA



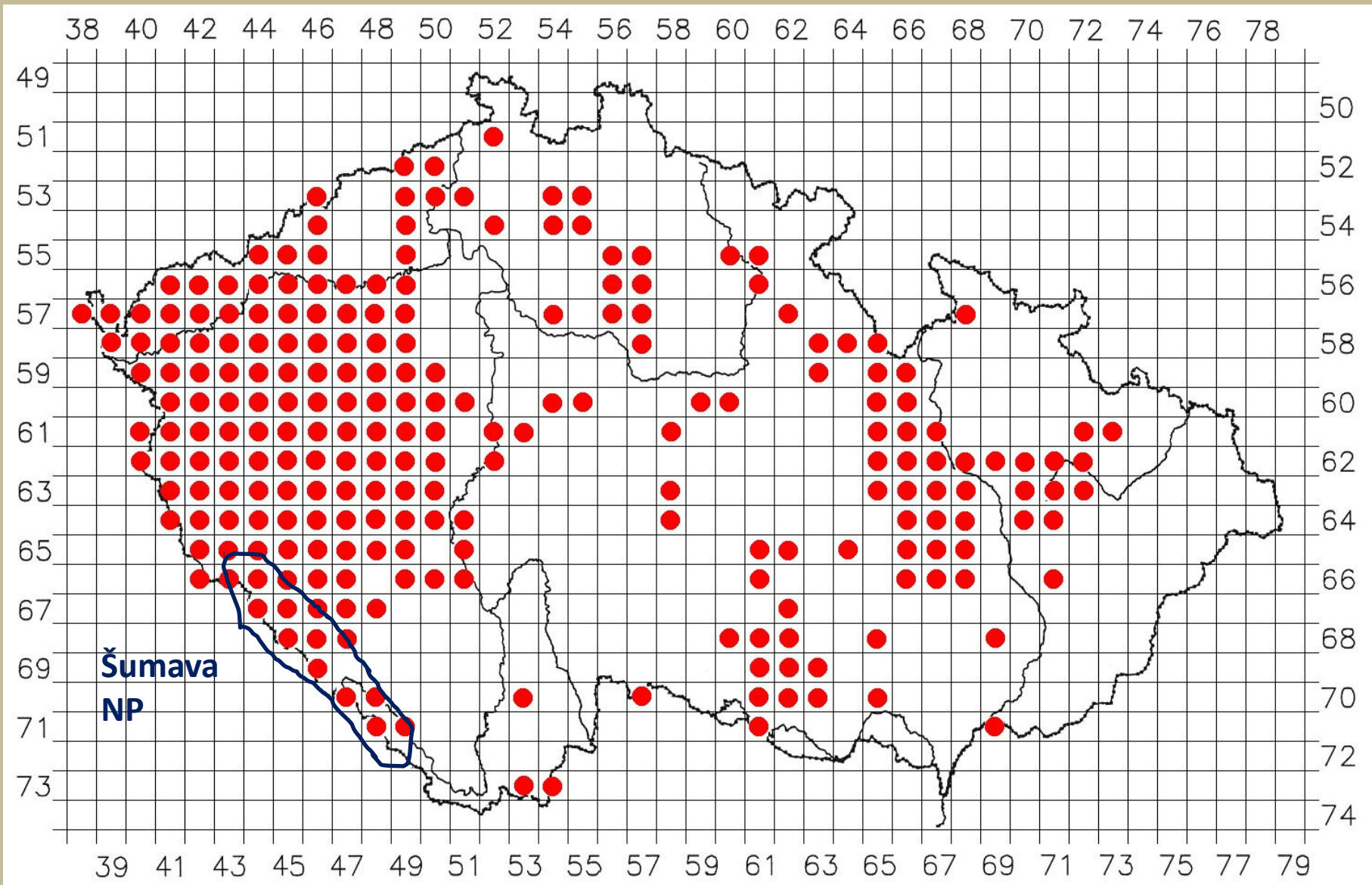


# Sika Deer in Europe

- repeated introductions in Europe
- first imports to the England and Ireland in the year 1860
- most abundant population in british isles
- most abundant population in continental Europe in CR
- next occurrence in Germany especially



# Sika Deer in CR (2015)



# Hybridization of Sika Deer and Red Deer

- known since the 19th century
- keep hidden in CR
- prolific hybrids
- characteristic of hybrids: mottled coloration of adults, special shape of antlers, tail length, shape and color of bottom, shape and color ankle glands, cranial specific dimensions



# Other invasive and expansive species in CR

- Fallow Deer (*Dama dama*) ?
- White – tailed Deer (*Odocoileus virginianus*)
- Mouflon (*Ovis musimon*)
- Alpine Chamois (*Rupicapra rupicapra*)
- Pheasant (*Phasianus colchicus*)
- Musk Rat (*Ondatra zibethicus*).....
- Moose (*Alces alces*) ?
- Steppe Polecat (*Mustela eversmannii*)
- European Beaver (*Castor fiber*) ?

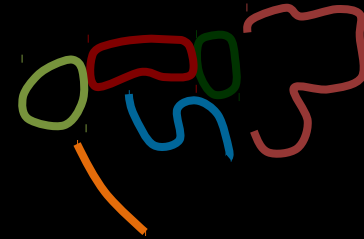


# Problems with invasive species

- increase their presence in community at the expense of native species
- in the competition for limiting resources can completely replace native species
- can hunt native species until their complete extinction
  
- invasive species can also fill the vacant ecological niche or occupy the place for extinct species

# Monitoring and study invasive and expansion species in Šumava NP

Fotomonitoring



4/03/2011 12:21 AM

Cuddeback



# Raccoon Dog - Šumava NP



5/05/2010 9:39 PM

Nationalpark  
Bayerischer Wald



Národní Park  
Šumava

# Golden Jackal - Bavarian Forest NP





## Stay signs and random observations

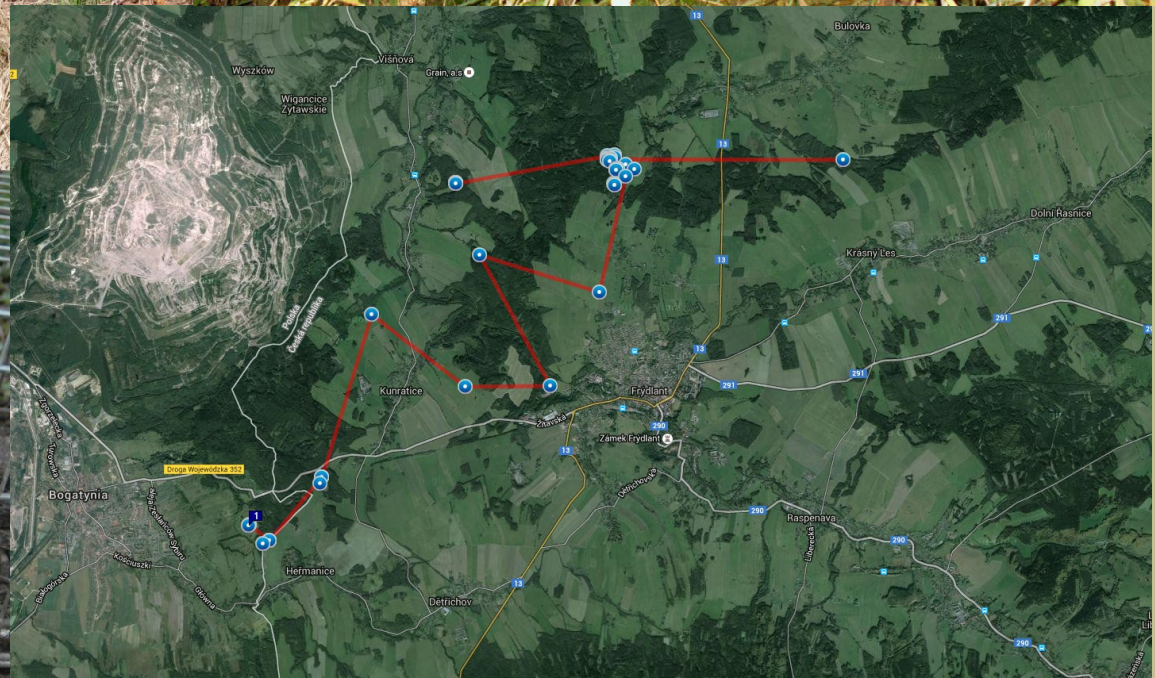
### American Mink



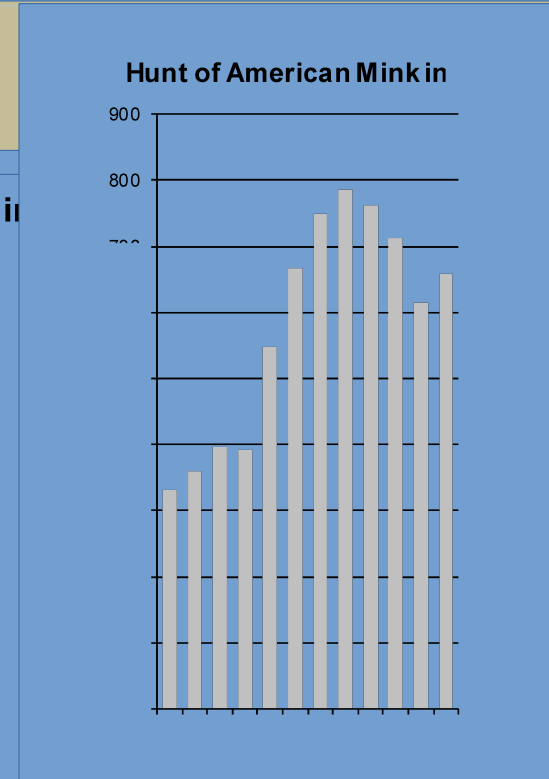
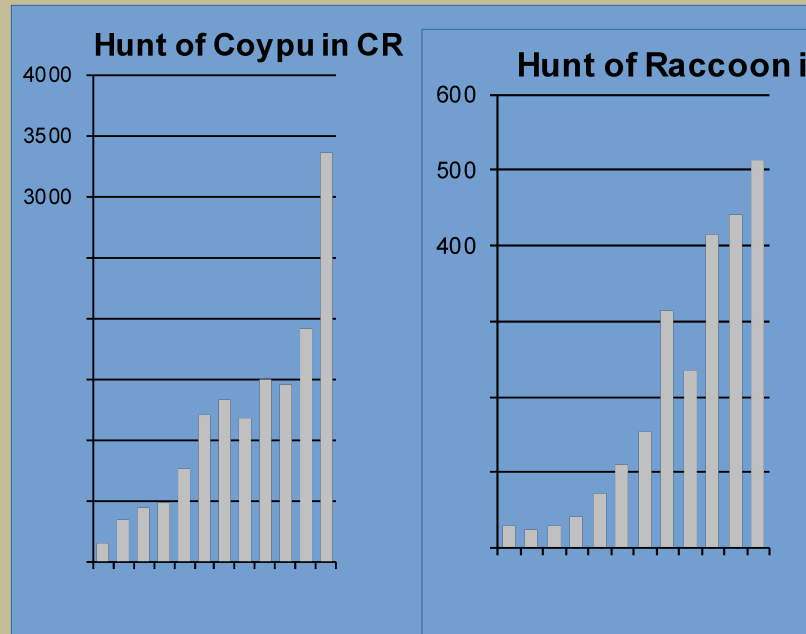
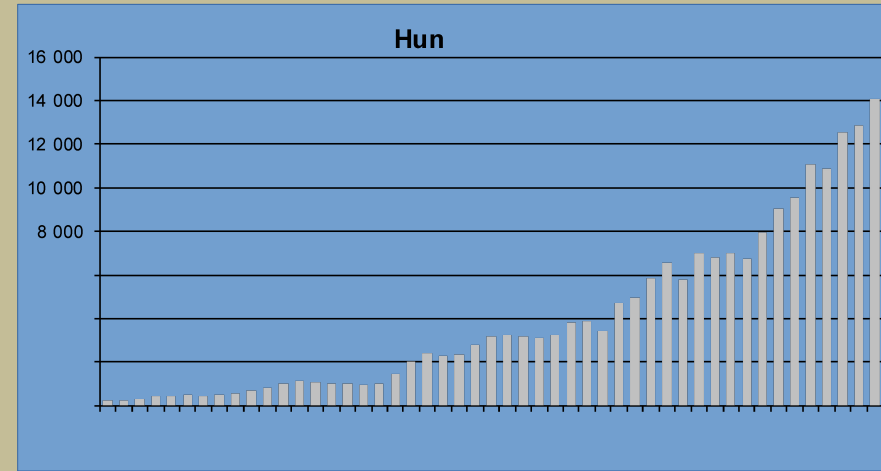
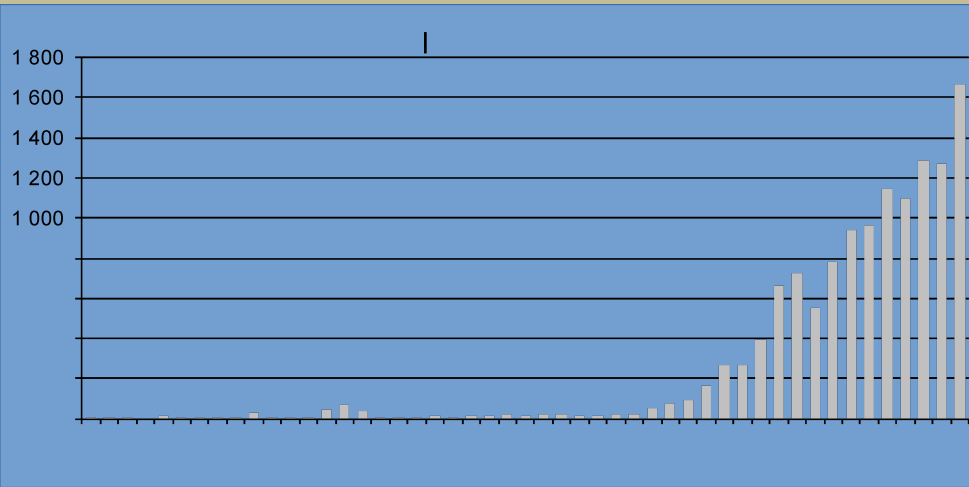
### Raccoon footprints



# Telemetry researchs of the Raccoon Dog, Raccoon and Sika Deer in CR



# Hunt



# Thanks for your attention!

Thanks for data from distribution of invasion species in Europe and Czech Republic to

Prof. J. Cervený

