



Alien squirrels in Italy: impacts and best management practices

IL PROGETTO LIFE+ EC-SQUARE ROSSOSCOIATTOLO

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Università di Varese



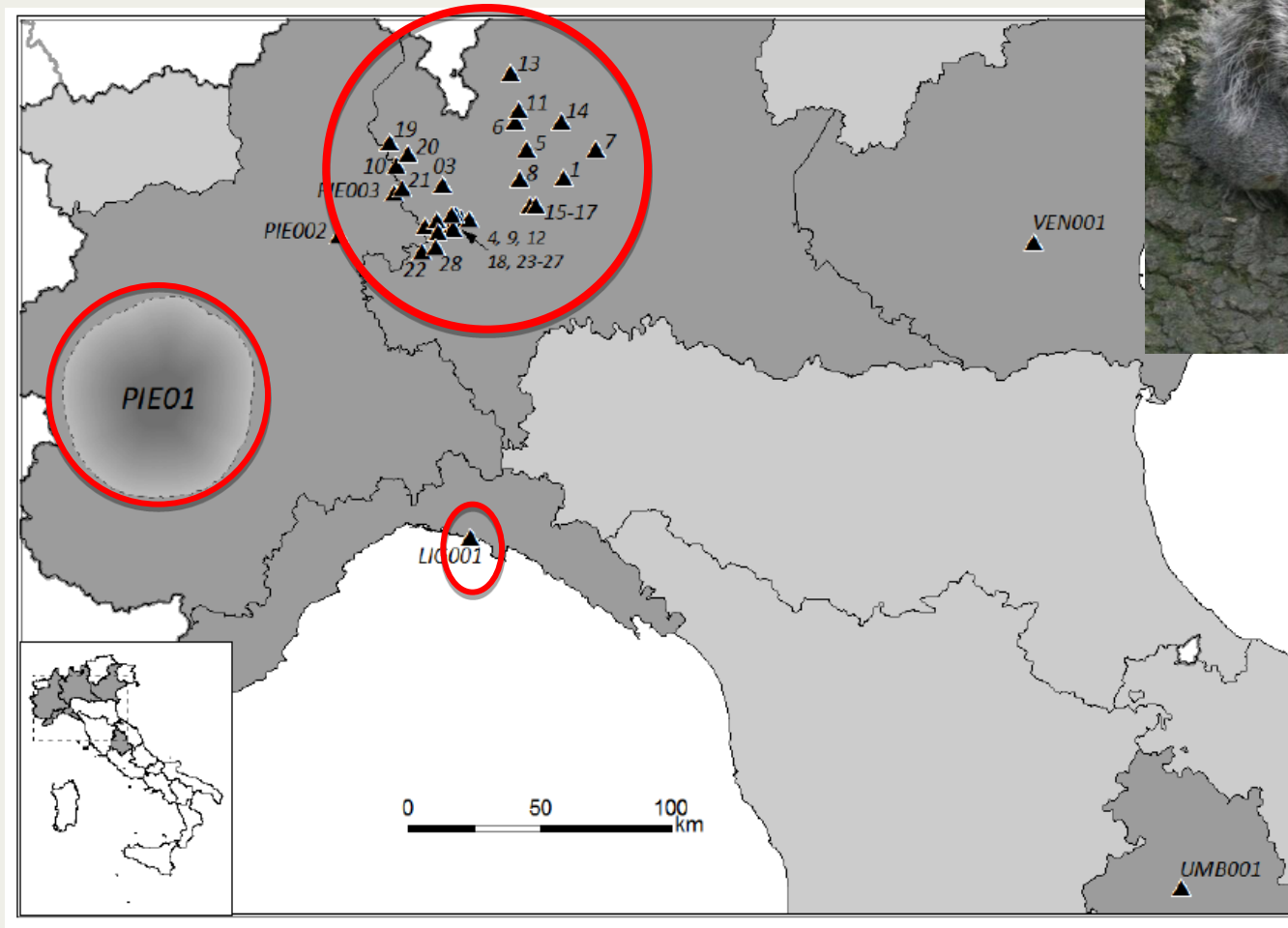
REGIONE LIGURIA



The Actors of this story



The grey squirrel in Italy



A Conservation Issue: The red is also losing in Italy!

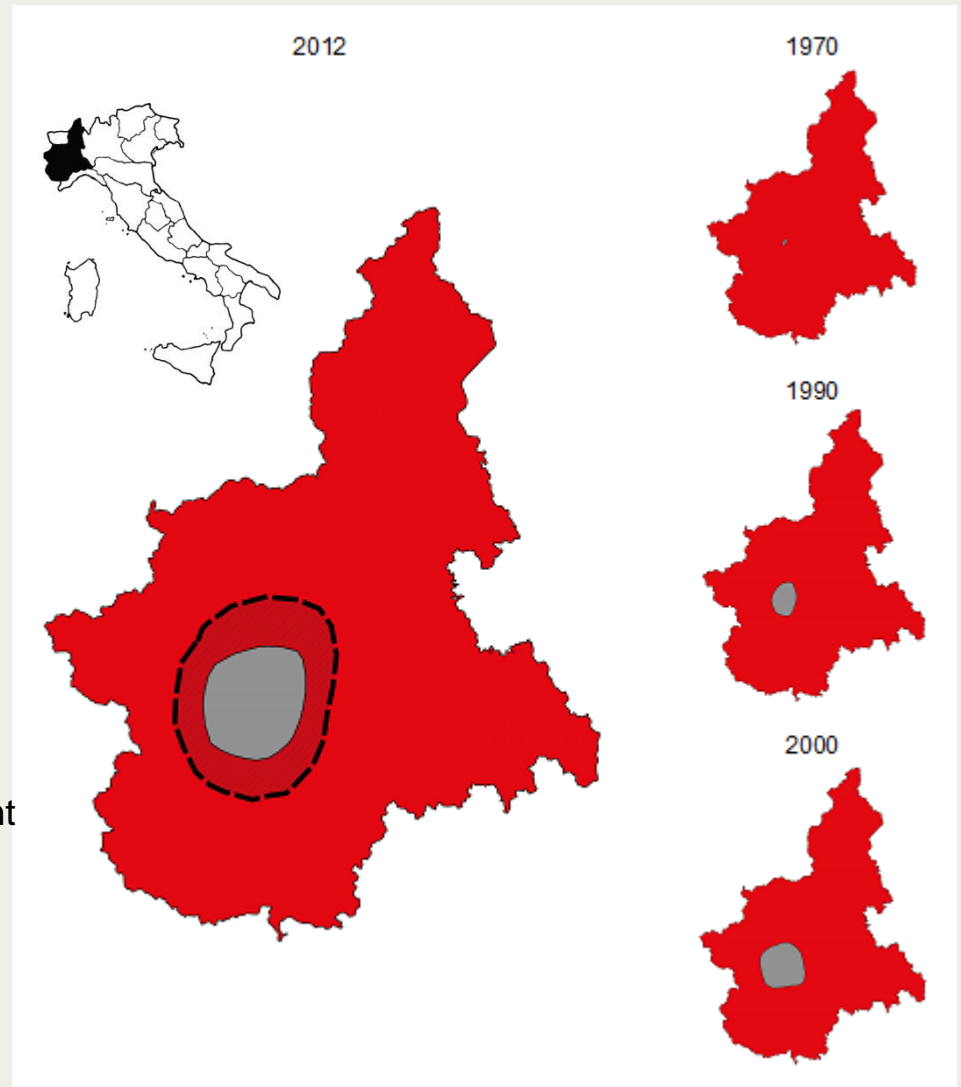
The red squirrel went extinct in an area of about 1700 km²



In red: Red squirrel distribution area in Piedmont

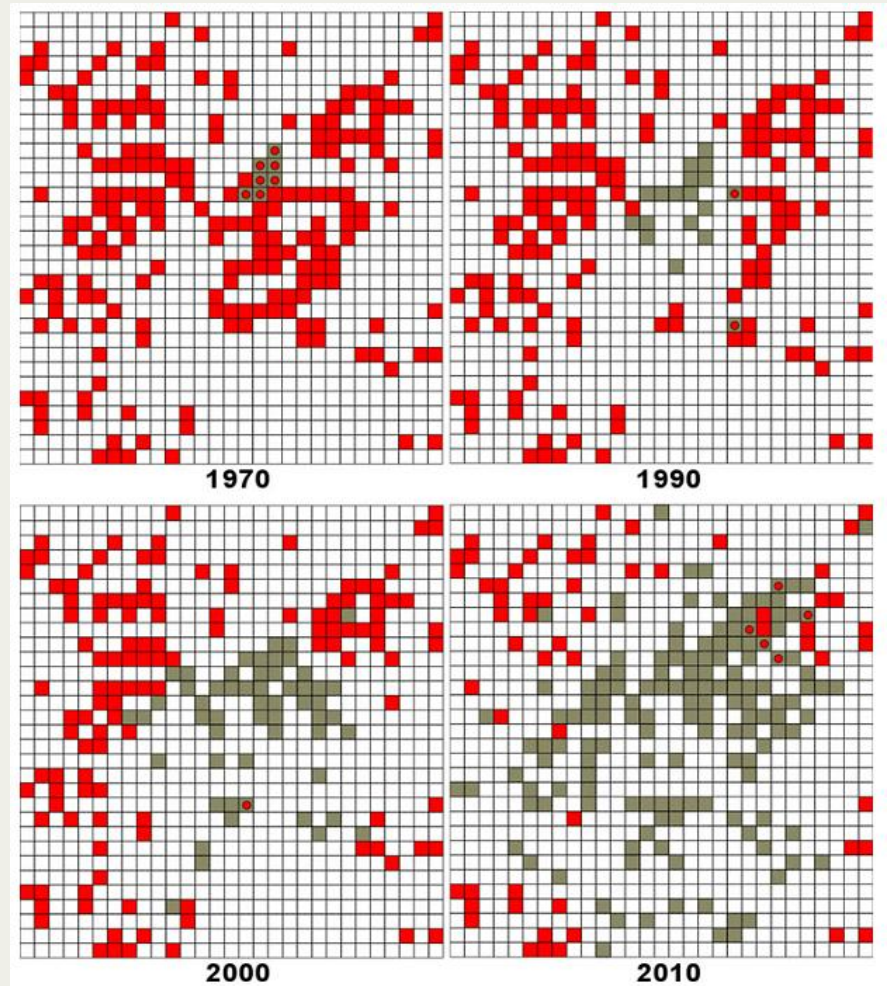
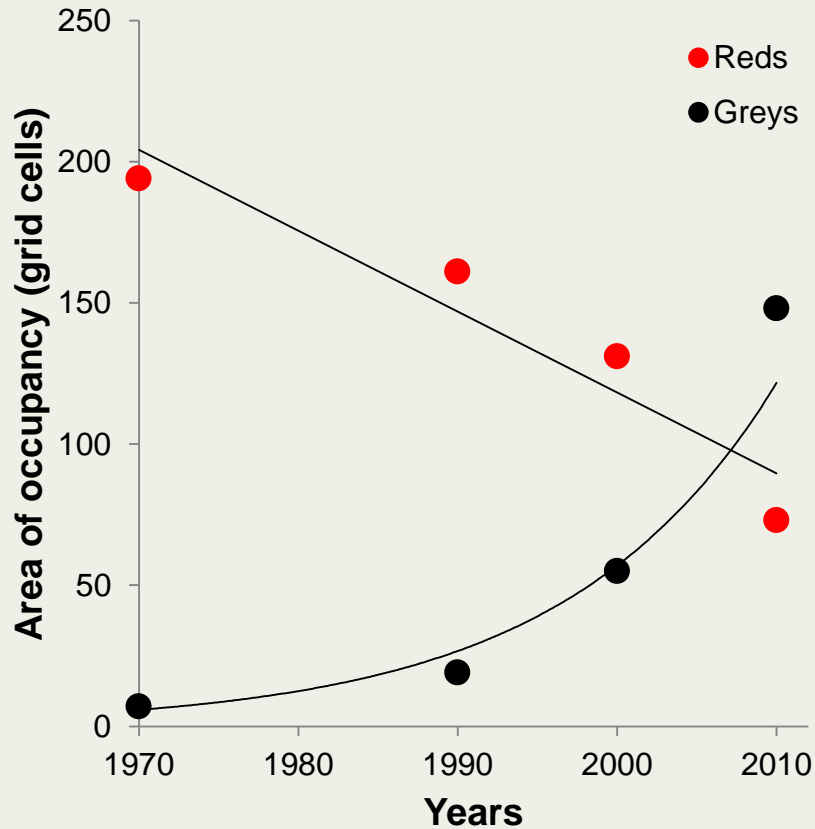
In grey: Area occupied by grey squirrels where reds have gone extinct

Dotted line: border of the grey squirrel distribution area



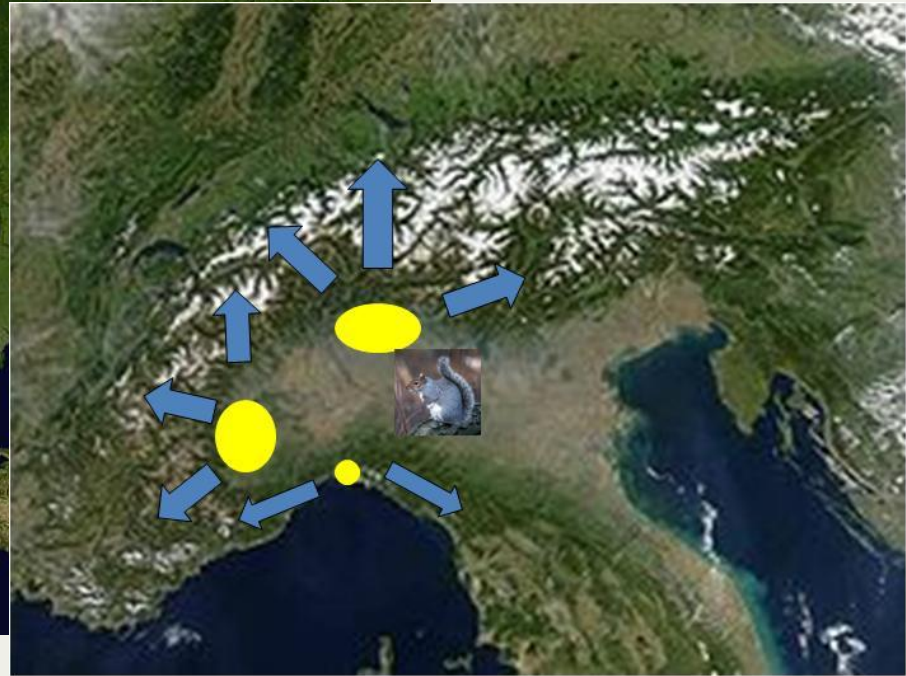
The red is also losing in Italy!

It went extinct in an area of about 1,700 km²



From 1970 to 2010 Red squirrel went extinct in 62 % of 2x2km² (ca. 1,689 km²)

The grey squirrel in Italy is a threat for Europe



LIFE09/NAT/IT/00095 "EC-SQUARE"



www.rossoscoiattolo.eu



Aim of the project



Develop efficient methods to remove grey (alien) squirrels in different socio-ecological contexts.

We have to consider:

- **Ecology of the species and how to remove the animals**
(field work: e.g. trappabilità at low densities)



extermination



- **Public opinion**
(i.e. human dimension)



Aim of the project

Not only grey squirrel control but also investigate effects of Pallas' Squirrel on native reds and develop efficient methods to remove the species (EU Regulation 1143/2014).

Presence and distribution?

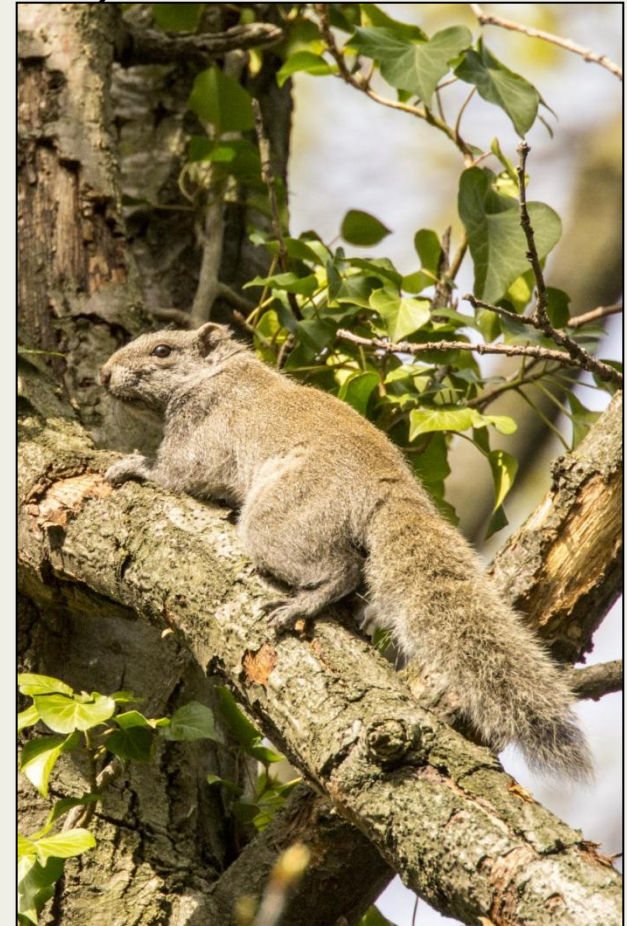
- Hair tubes
- Visual survey
- Trapping

Competition with the red squirrel?

- Food
- Space
- Parasites
- Red population dynamics

Management

- Removal
- Trapping efficiency
- Shooting



Opposition to the project



Attività di opposizione al progetto

Raccolta firme

**Petizione al
Parlamento
Europeo**

**3 Ricorsi
al TAR**

**Richieste
accesso
agli atti** Lombardia
Piemonte
Liguria
Province
Parchi

**Interpellanza
CAMERA**

**Manifestazioni
in parchi
urbani**

**Interpellanza
SENATO**

**Mail
bombing**

Danneggiamenti delle trappole

INTERROGAZIONI

**Consiglio Regionale
Lombardo**

**Consiglio Regionale
Piemontese**

**Consiglio Regionale
Ligure**

2

Commissione
Ambiente
Provincia di
Milano

2

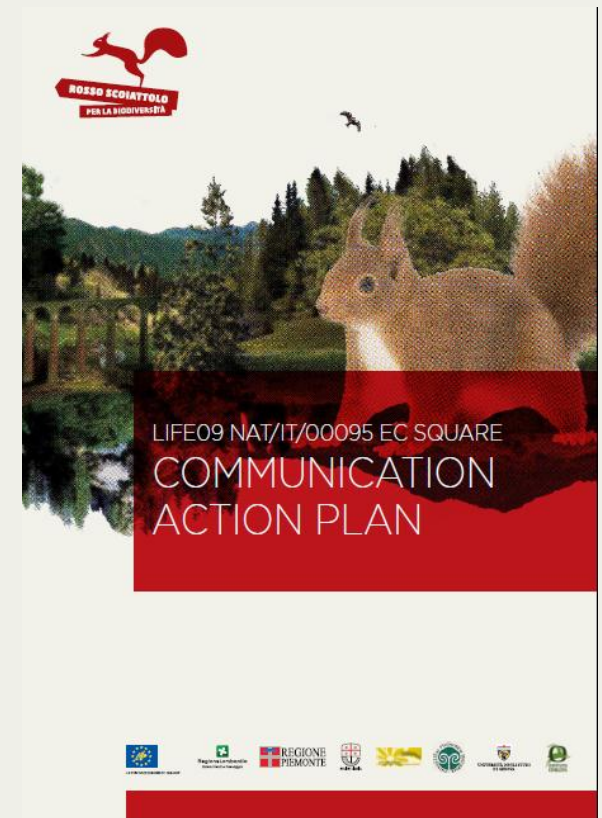
**Ricorsi
al CdS**

We produced a Communication Action Plan

with a main message:

The red is our squirrel
The red squirrel is threatened
We have to save our species

To save the reds, we have to control the greys






SALVIAMO LO SCOIATTOLO ROSSO

METTI QUI UN TITOLO DI SPIEGAZIONE, SU 1 O 2 RIGHE

- TITOLO**
LoremVestibulo. Lo biberosque auctor voluam reiciam quam voluamum lictimq
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epelictimat nisi neque sequere actioem etoliparum fuga. Dedit iud officio.



Registrazione Facebook ti aiuta a connetterti e rimanere in contatto con le persone della tua vita.

rosso scoiattolo Società/Cultura

Bacheca

Condividi: Post Foto

Scrivi qualcosa...

rosso scoiattolo • Tutti (più visitati)

rosso scoiattolo
ma...
conferenza di gestione di scoiattoli alloctoni in Europa
Università francesi e belghe. La conferenza sarà visibile in streaming su <https://streaming.uninaudova.it/square/>
Mi piace • Commenti • 14 novembre alle ore 5:28 •

A Anna Rita Di Cerbo piace questo elemento.

Emiliano Mori mi dispiace tantissimo non riuscire a seguirlo... è possibile leggere gli atti? martedì alle 6:16 • 1

Informazioni

ROSSO SCOIATTOLO:
PROGETTO LIFE PER
CONSERVAZIONE
SCOIATTOLO CO
Vostra tutto

27
Piace a




UN DEPLIANT PER LO SCOIATTOLO ROSSO ITALIANO

» DEPLIANT DI INTERVENTO
Ovvero la biodiversità come valore fondamentale da difendere e salvaguardare




ROSSO SCOIATTOLO PER LA BIODIVERSITÀ

A Brand identity of the Project to raise the image of the Red squirrel

www.rossoscoiattolo.eu




UN DEPLIANT PER LO SCOIATTOLO ROSSO ITALIANO

» DEPLIANT DI INTERVENTO
Ovvero la biodiversità come valore fondamentale da difendere e salvaguardare



TITOLETTO

Agar d'interesse voluam nisi non parum sibi dicitur in doloque
voluam voluam voluam nisi non parum sibi dicitur in doloque
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PER ULTERIORI INFORMAZIONI

Tel. n. 00000000
Mail: rosso@rossoscoiattolo.eu
Site: www.rossoscoiattolo.eu

Methods and strategies



Prevention: banning trade in Italy (Europe)

Grey squirrel management actions were linked with the population size and the extent of the distribution area at a given grey squirrel site

Lombardy: many populations that can be managed independently

- Eradication with live-trapping and euthanasia

Piedmont: a single very large population

- long-term control with live-trapping and euthanasia

Liguria: a small population in an urban park

- eradication with live-trapping and surgical sterilization

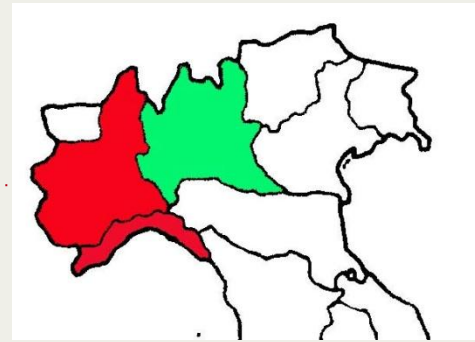
Prevention: Banning alien squirrels form Italy

In year 2013, trading, raising and keeping of grey squirrel and other two squirrel species (*Sciurus niger*, *Callosciurus erythraeus*) has been forbidden in Italy

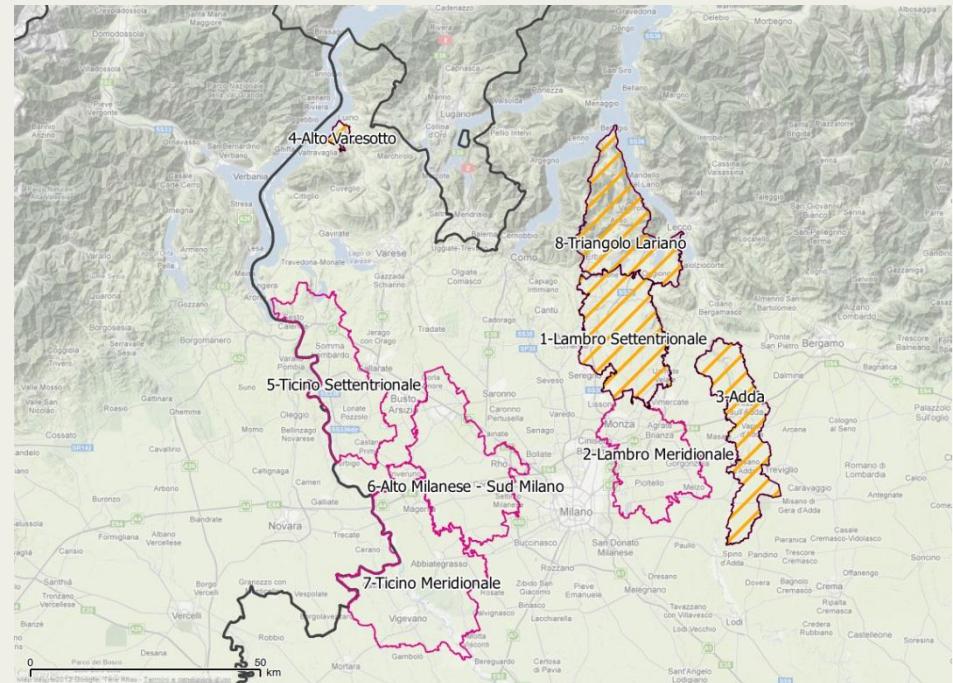
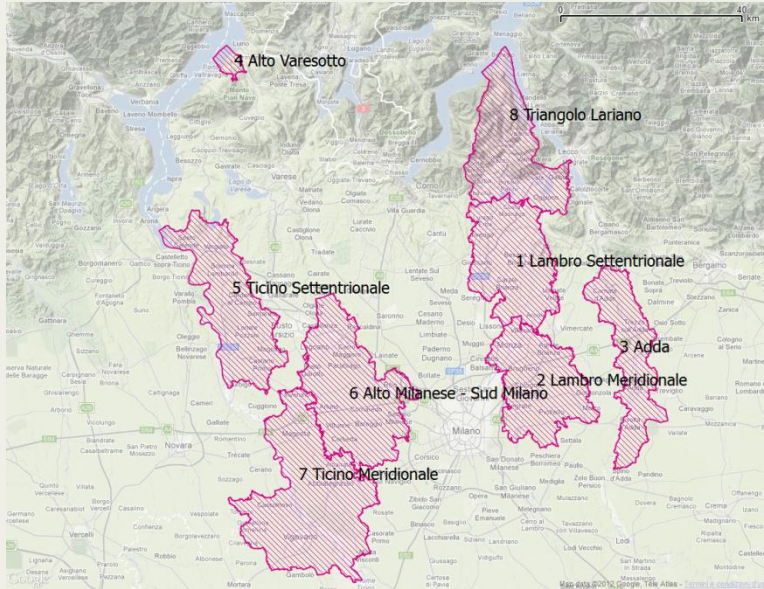
A good start, but.....animal pet-trade remains a great problem!!



Grey squirrel in Lombardy



Areas where alien squirrels are recorded



Trapping efficiency



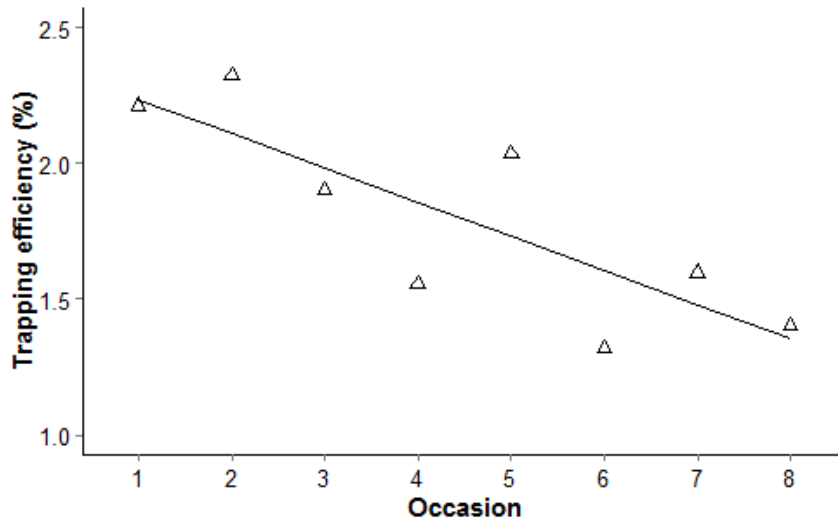
Single live trap

Capture trend:

Prebaiting / removal

3 day capture session

Winter-spring

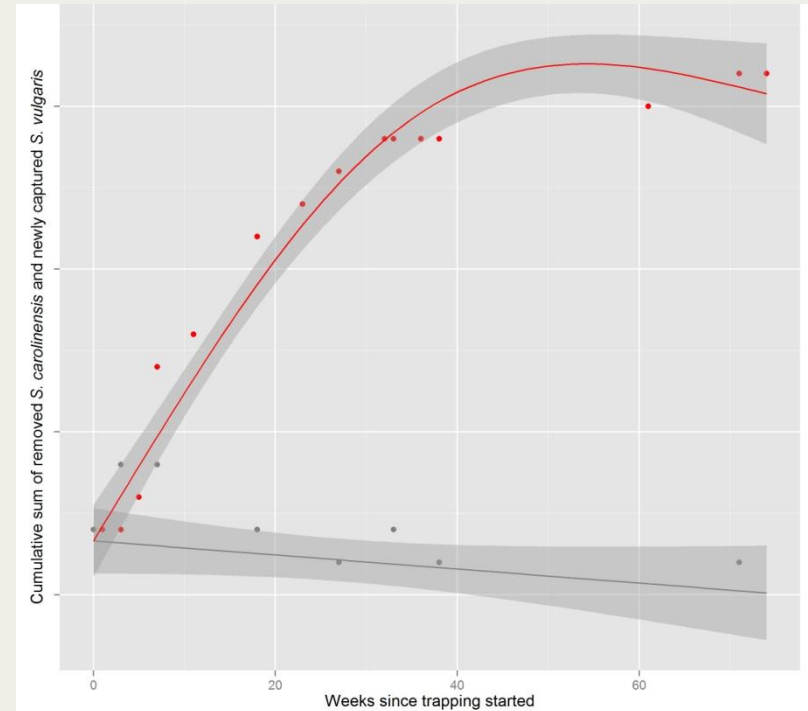


Take home message from Lombardy

Local grey squirrel eradication is possible, if....**ACCESS** to sufficient (private) areas can be obtained;
AND...more than 1 method !



Where alien squirrels are removed
Red squirrels are coming back!

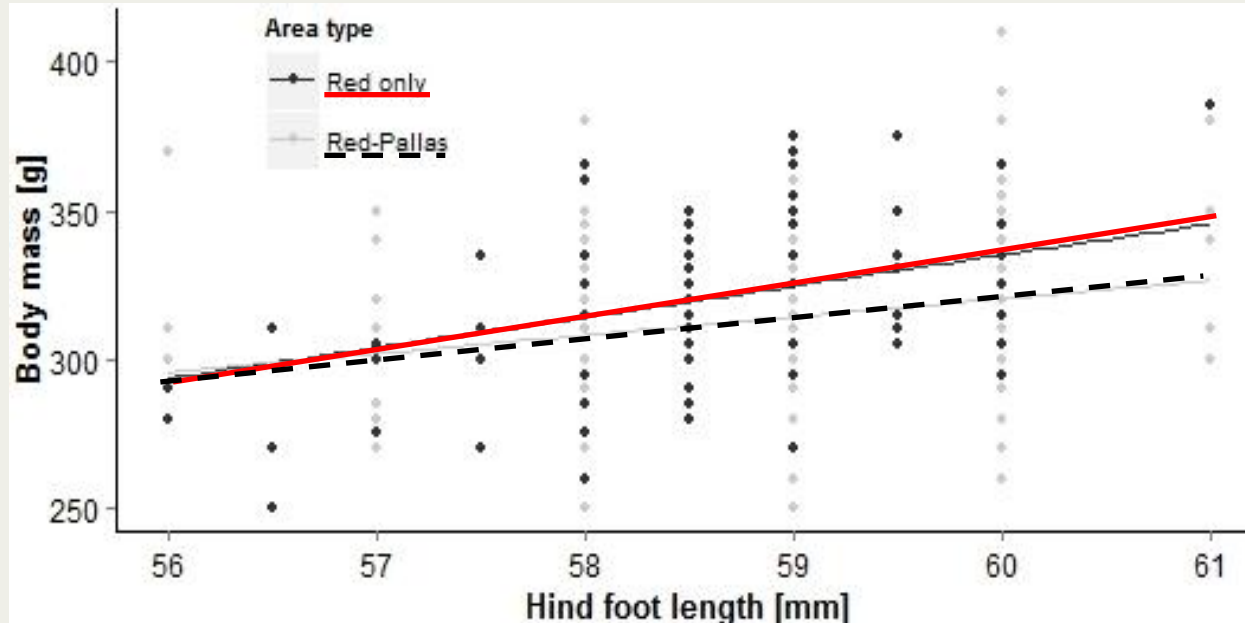


Callosciurus vs. reds? Data collection



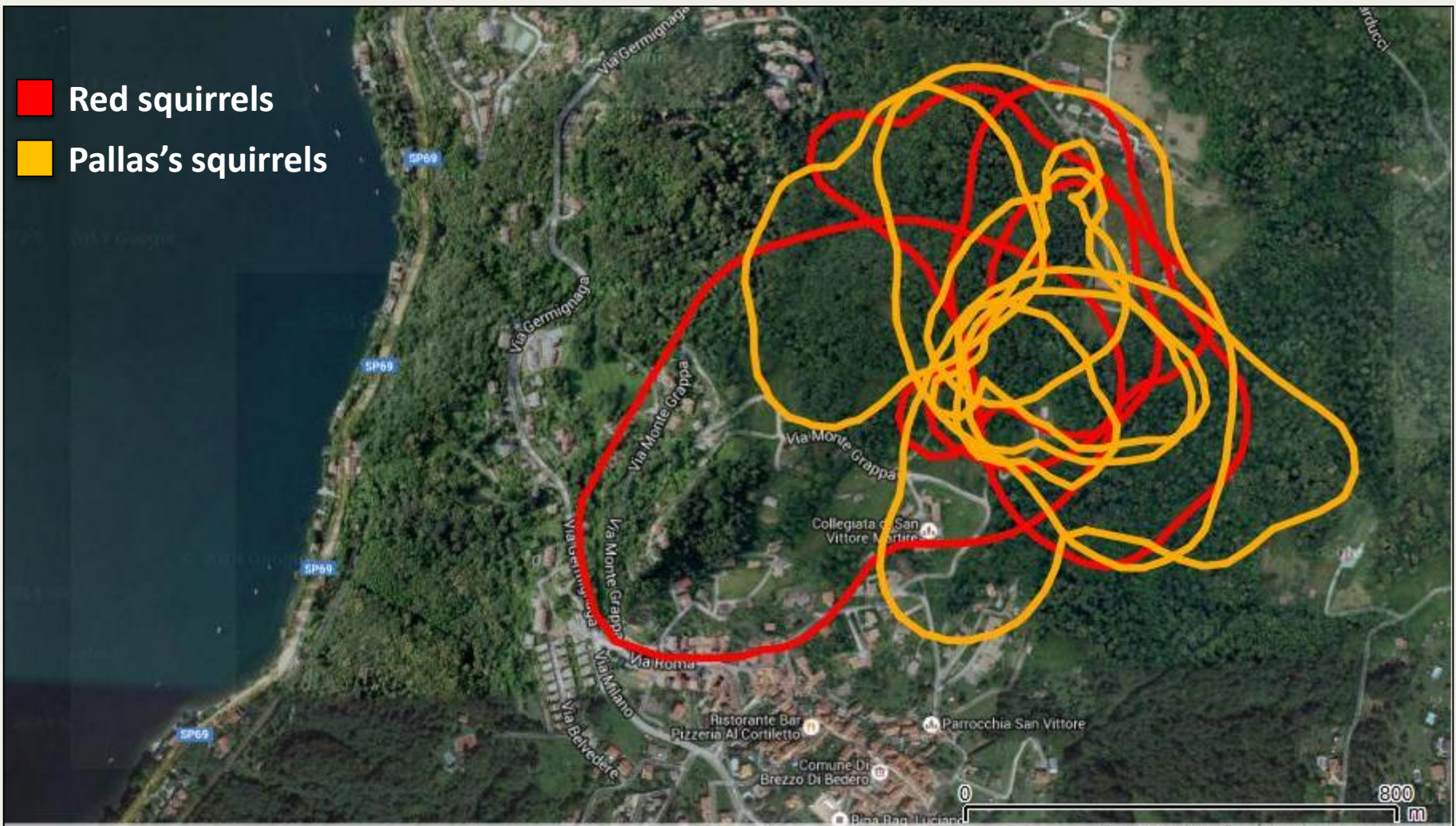
- BM
- sex
- reproductive condition
- hind foot length
- parasites

Poorer condition in sympatry



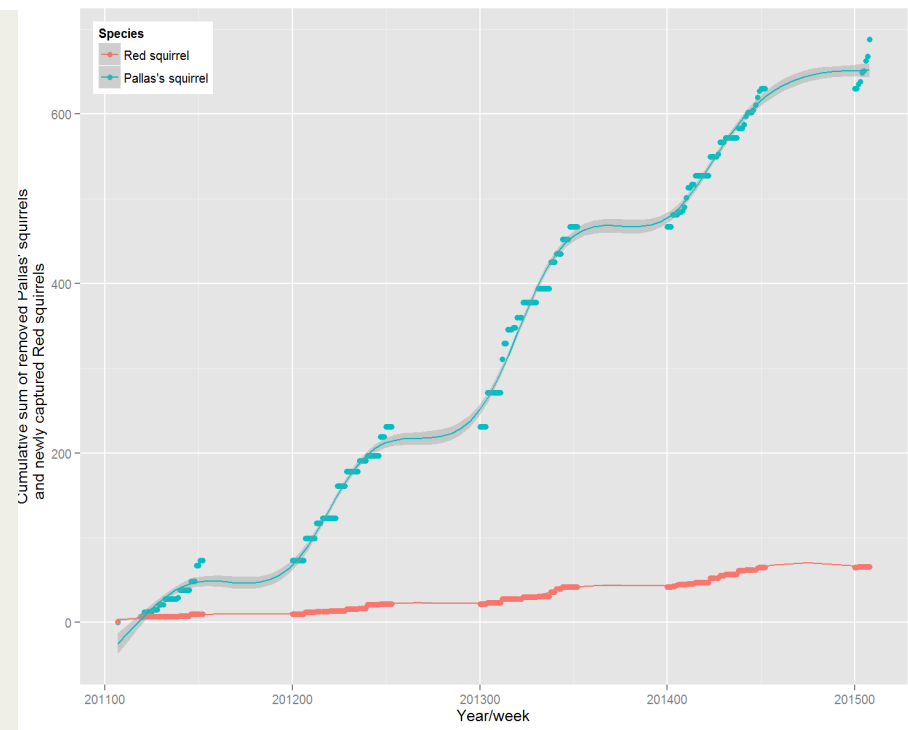
**REDUCED ENERGY INTAKE WHEN
IN CO-OCCURRENCE**

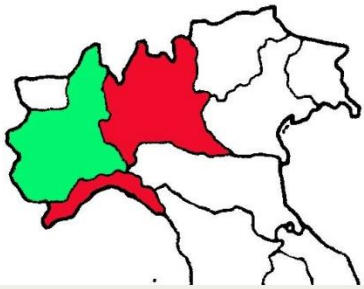
Competition for space



Is Pallas' squirrel invasive: YES

	red-Pallas	red-only
Breeding rate	90%	100%
Survival	11%	53%
Density	0.05 ha ⁻¹	0.39 ha ⁻¹



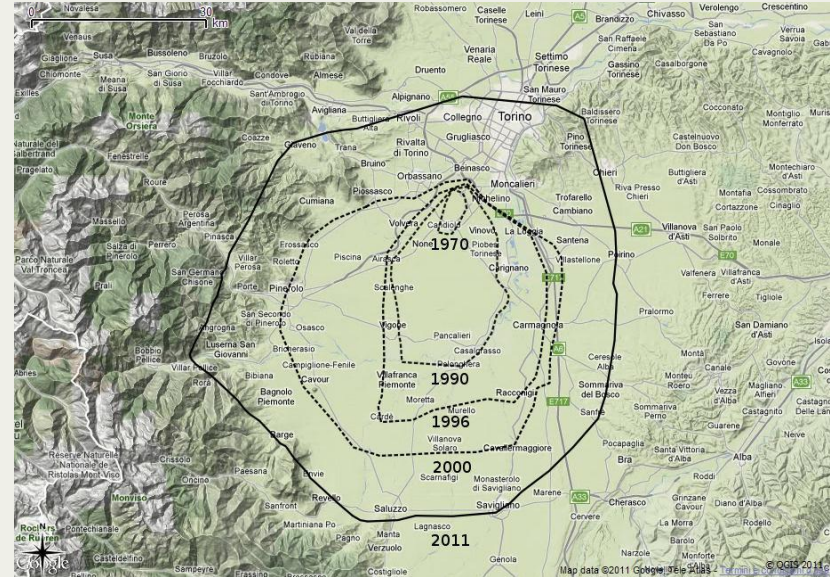


Piedmont



Large expansion of the grey squirrel in Piedmont > 2000 sqkm in the Po Plain and hills, with reduced forest cover

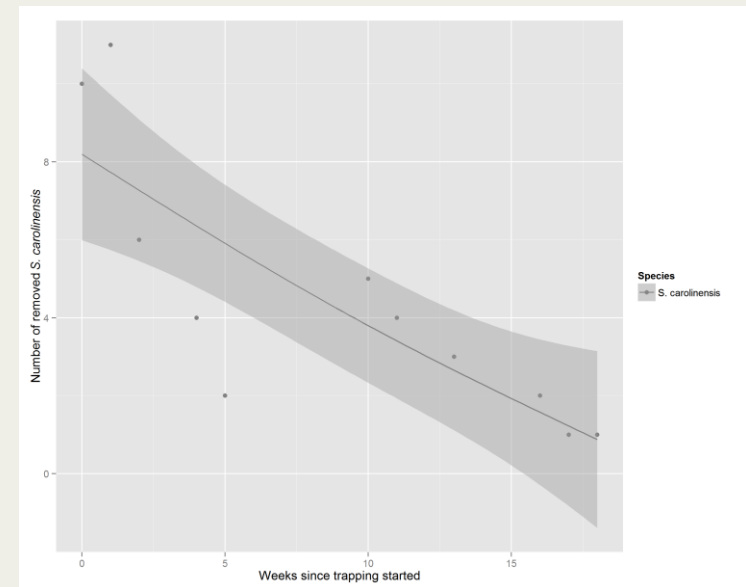
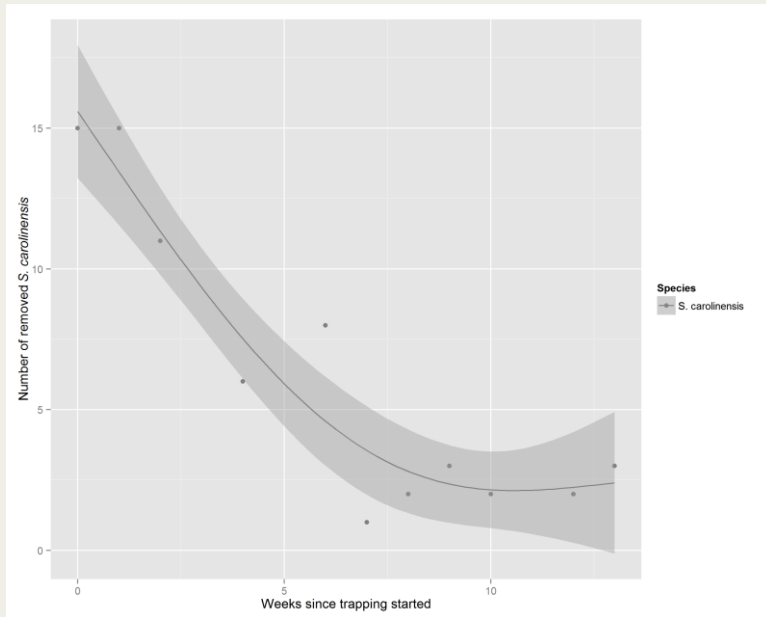
- Maintain reds in strongholds
- Removing greys in historical estates



Pushing back grey squirrels expanding along rivers to maintain red squirrels in these ecological corridors

Removing grey squirrel in private parks of historical estates

In these areas (with high local densities 10-20 squirrels/ha) the sub-populations can be removed in a few weeks

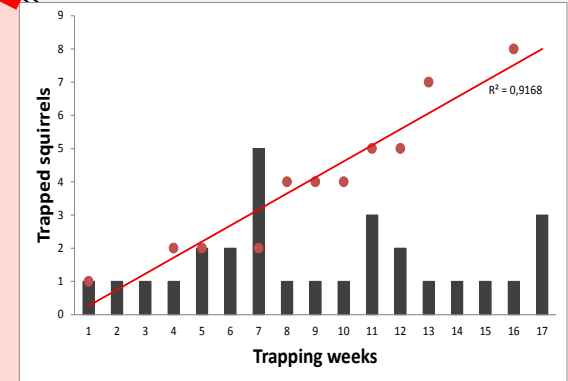
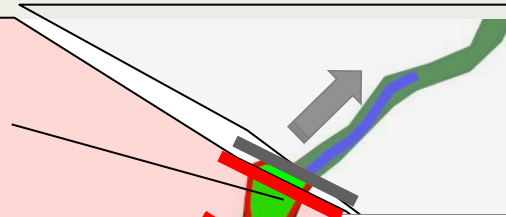


Pushing back grey squirrels expanding along rivers

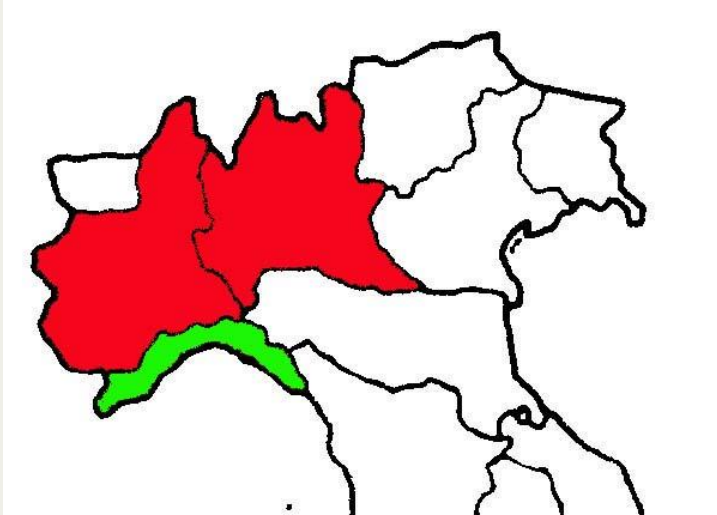


Grey squirrel barrier
(trapping and removal)

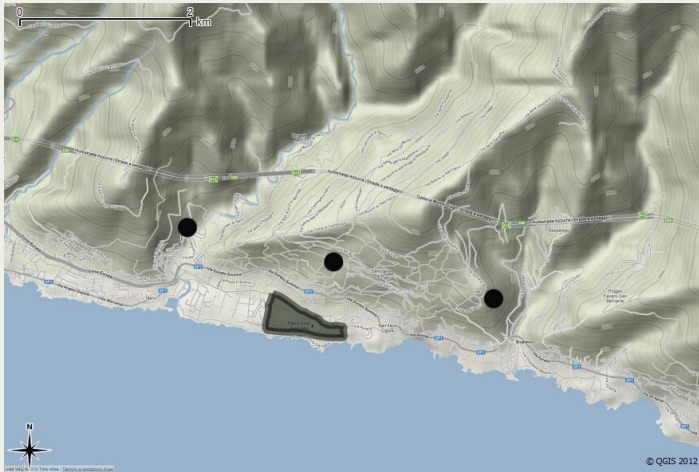
Checking for grey squirrels that
passed the barrier



Genoa Nervi



About 300 grey squirrels in an urban park inside Genoa



Increasing know-how



15 Scientific papers and chapters in books

Increased our knowledge on mechanisms of interspecific competition between grey and red squirrels;

Demonstrated the existence of and revealed mechanisms of competition between Pallas's squirrel and red squirrel;

Threats through other organisms: the role of parasites (Romeo's talk tomorrow);

 **Improve conservation and management**



We did only the first steps along the way to stop the grey squirrel in Italy!