Biserte, 11 – 13 April 2012

MONTECRISTO VS RATS

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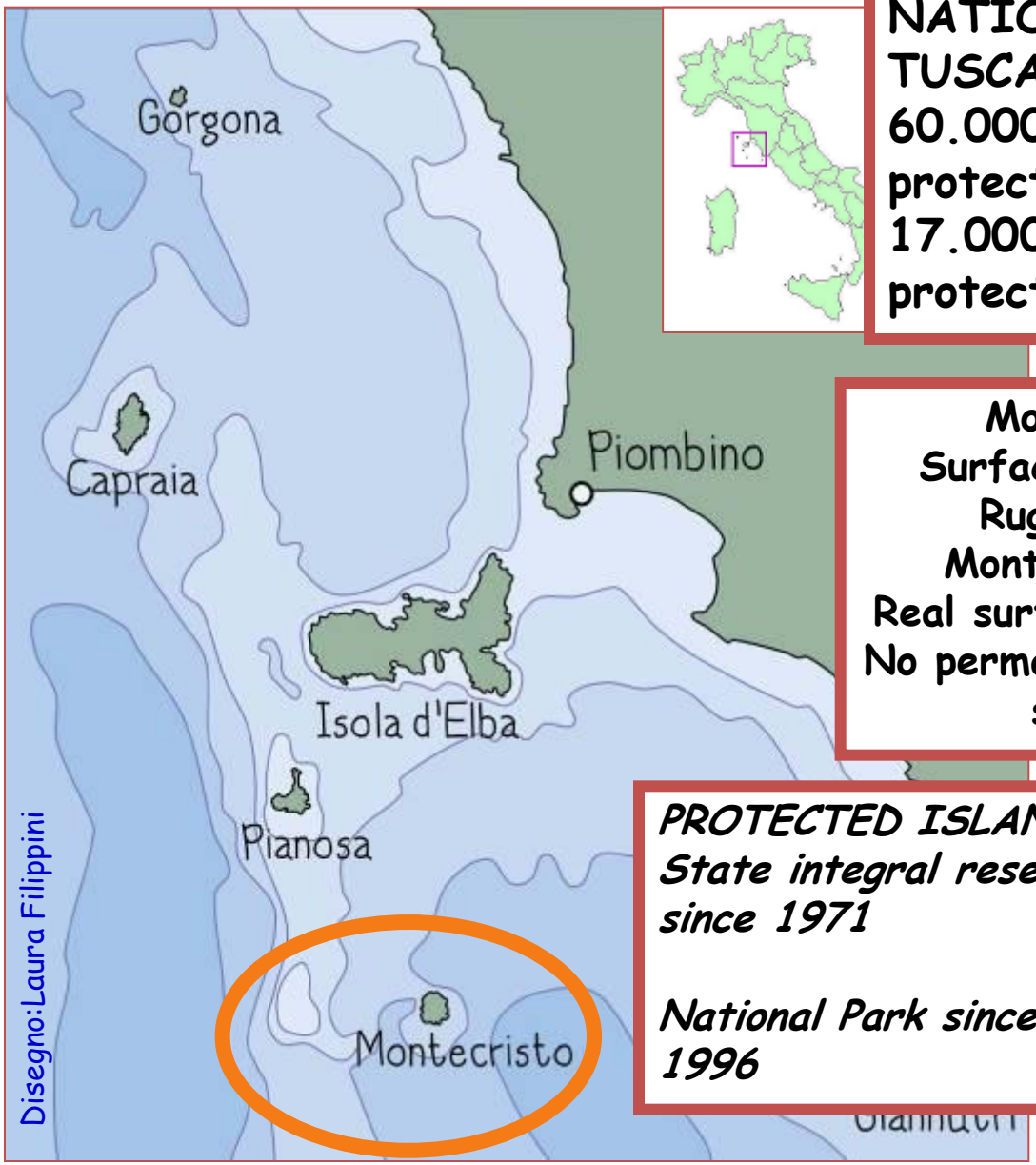
Conservatoire du littoral
VILLE DE MARSEILLE
Ministère de l'ENVIRONNEMENT

Montecristo vs rats

National Park of Tuscan Archipelago



NATIONAL PARK OF TUSCAN ARCHIPELAGO:
60.000 ha marine protected areas
17.000 ha terrestrial protected areas

Montecristo Island
Surface area of 1080 ha
Rugged topografy – Monte Fortezza 645 m
Real surface area of 1350 ha
No permanent settlement: only security staff

PROTECTED ISLAND
State integral reserve since 1971

National Park since 1996

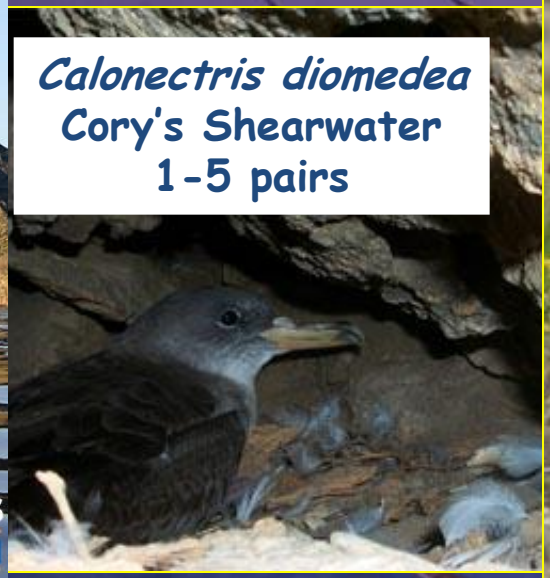
Montecristo vs rats

Management

4 seabirds nest in Montecristo. All species, with the exception of Yellow-legged gull, are in Annex 1 of EU Bird Directive

Phalacrocorax aristotelis desmarestii
Mediterranean Shag

Puffinus yelkouan
Yelkouan Shearwater
400 – 750 pairs



Calonectris diomedea
Cory's Shearwater
1-5 pairs

Larus audouinii
Audouin's Gull
Presence of no breeding individuals
Last breeding colony in 1995

Actions to protect seabirds are carrying out in the territory of the National Park.
The aim is to reduce the impact caused by terrestrial introduced predator

Cory's Shearwater chick predated by rats

Montecristo vs rats

Management

La Scola Islet – 2001
1,5 ha

Giannutri Island – 2005
239 ha

In Tuscan Archipelago rats were eradicated/controlled from 7 islets and from 1 island

RATS FREE

Actions carried out in 2000

Islet	Surface (ha)	Outcome
Peraiola	1	Re-invaded
Isola dei Topi	1,3	Re-invaded
Isole Gemini	2,9	Unkown
Isolotto Ercole	6,5	Re-invaded
Palmaiola	8	OK

Eradicate rats to protect shearwaters

Rats eradication in Montecristo

montecristo 2010
Eradicazione di componenti florofaunistiche aliene invasive e tutela di habitat nell'Arcipelago Toscano

Corpo Forestale dello Stato

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LIFE Project MONTECRISTO 2010
www.montecristo2010.it

Partner
CFS
PNAT
ISPRA
NEMO srl

Total budget: 1.584.856 €
Time: January 2010-June 2014

Co-financer
Tuscan Regional Government,
Province of Livorno

Eradication rats operation is in full development on Montecristo island for stopping predations of hundreds of Yelkouan's chicks, with the inevitable decline of population.

Total costs: 446.000 €

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Rats eradication in Montecristo

What risks?

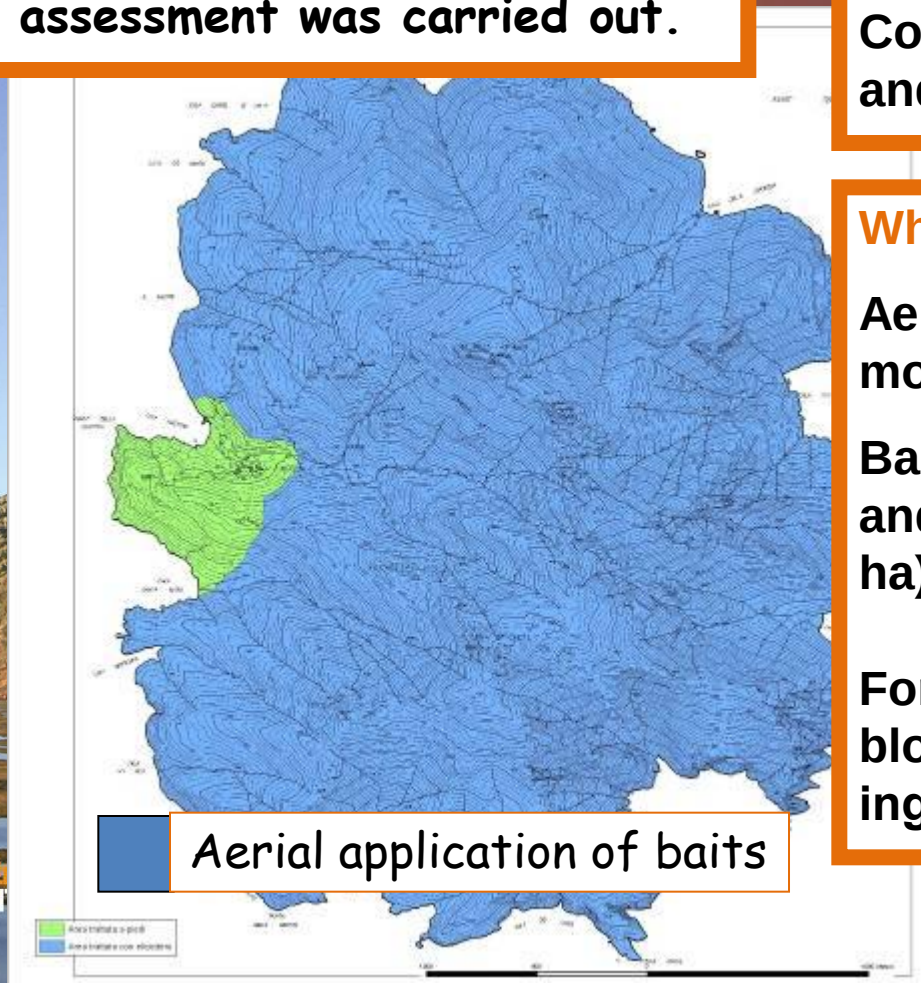
Direct and/or secondary poisoning of no target species, in particulary vertebrate.

Risk assessment was carried out.

What benefits?

The conservation of 5-10 % of the global population of Yelkouan shearwater

Conservation of other local species and habitat



Which method?

Aerial distribution of baits on the most of territory

Bait stations in the settlement area and in a north–west promontory (40 ha)

Formulation: pellets and paraffin blocks containing 50 ppm active ingredient “Brodifacoum”

Rats eradication in Montecristo

The fist steps of the project (since January 2010 to December 2011)

a) Monitoring and estimating rats population in order to plan eradication activities

b) Identifying Yelkouan shearwater nests and monitoring breeding success

Risk assessment: selected bibliografy, previous experiences and new ex-situ experiments

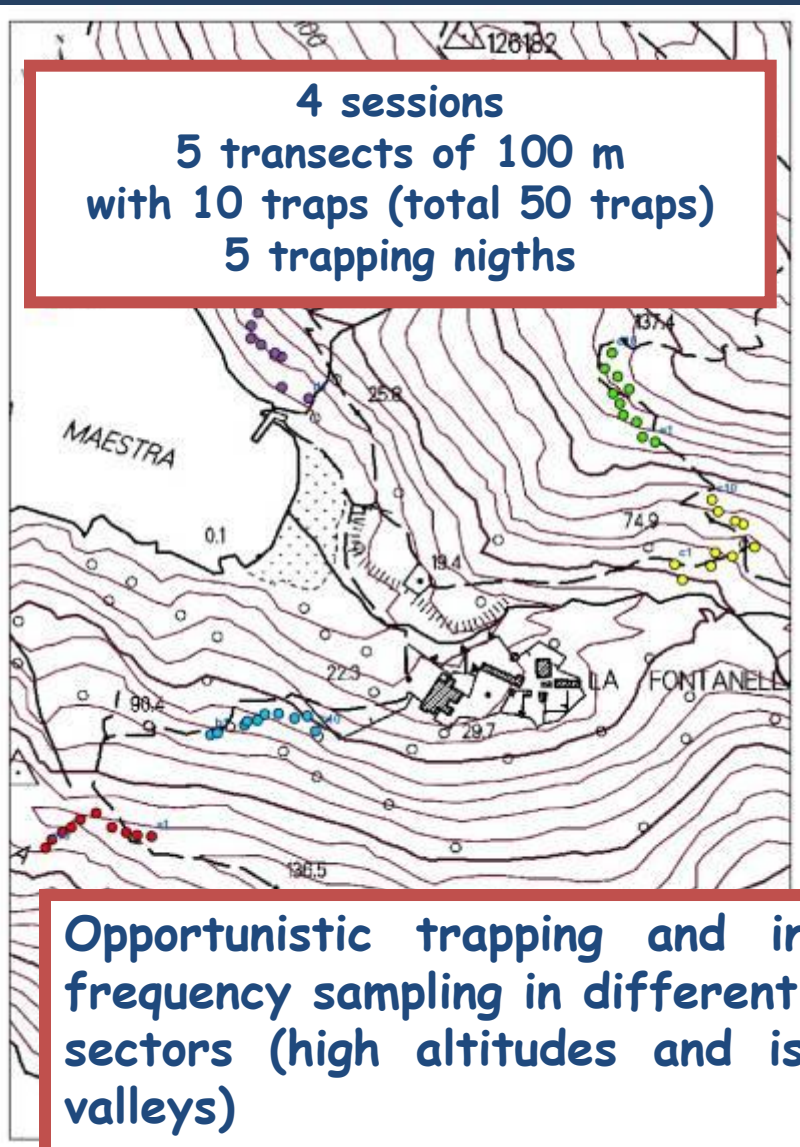
c) Identifying and monitoring populations of no target species that could be affected by direct/secondary poisoning: Yellow-legged gulls, feral rabbits, corvids, rapacious, goats.

d) Testing rodenticides toxicity on some species of vertebrates and invertebrates

e) Protecting the Montecristo goat (*Capra hircus*) during rat eradication effort

Rats monitoring

4 sessions
5 transects of 100 m
with 10 traps (total 50 traps)
5 trapping nigths



Rats were captured by means of snap-traps placed inside bait stations

Opportunistic trapping and indirect frequency sampling in different island sectors (high altitudes and isolated valleys)

Daily trapping in the settlement area (29 bait stations)

Aim of trapping

Estimating the presence/density of rats

Identifying the period when the population consistence was lower

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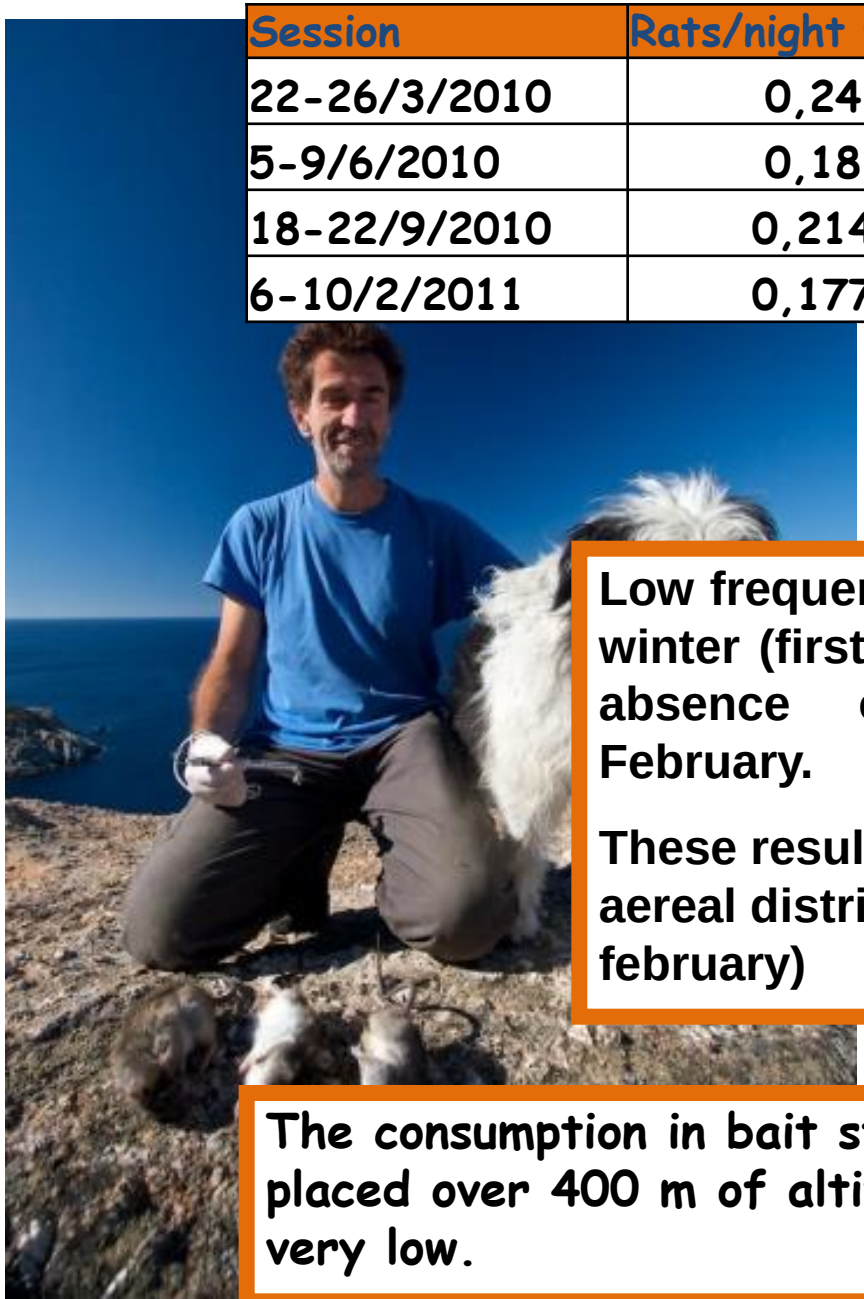
Rats monitoring

Session	Rats/night trap	n rats <100 g/ n tot rats
22-26/3/2010	0,24	0
5-9/6/2010	0,18	0,27
18-22/9/2010	0,214	0,077
6-10/2/2011	0,177	0



Standard trapping results

Low frequencies or absence of youngs in winter (first young recorded on April 6°), absence of pregnant females on February.

These results allowed us to plan the aereal distribution on winter (January – february)

The consumption in bait stations placed over 400 m of altitude was very low.

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Montecristo vs rats

Test ex-situ and in-situ

Rodenticide toxicity tests were performed on endemic snails (*Oxychilus oglasicola and Ciliellopsis oglasae*)

Pellet (blue) and block baits (pink) were given to 16 snails

No case of mortality was recorded

Oxychilus oglasicola Giusti

Test ex-situ and in-situ

In order to assess the impact of pellets accidental drop in water pools, habitat of the endemic amphibian *Discoglossus sardus*, an ex situ experiment was performed.

Some pellets were placed in a container with 20 larvae; another 20 larvae were used as controll.

No case of mortality or abnormal metamorphosis was recorded

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Test ex-situ and in-situ

In order to verify the possible risk associated with pellets drop into the sea, a test was performed on benthic fishes.

Some pellets were released in 9 station within 10 meters depth; for the next 10 minutes fish behaviour was observed.

Only a few very abundant species (*Coris julis, Sarpa sarpa, Oblada melanura*) were attracted and fed it.

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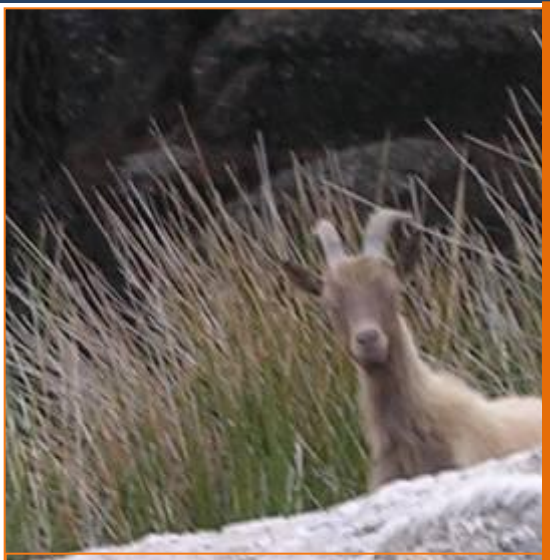
Protecting Montecristo goat



Female of Montecristo go

1) Exclusion of a 25 ha fenced-off area from the aerial distribution - 44 goats were transferred (25 % of total population) into this zone.

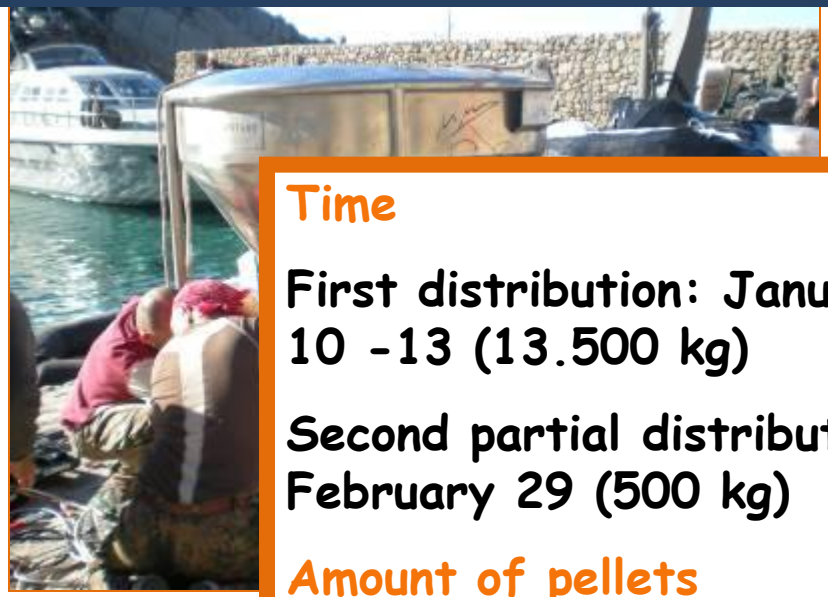
The goats will be released when pellets will be completely degraded

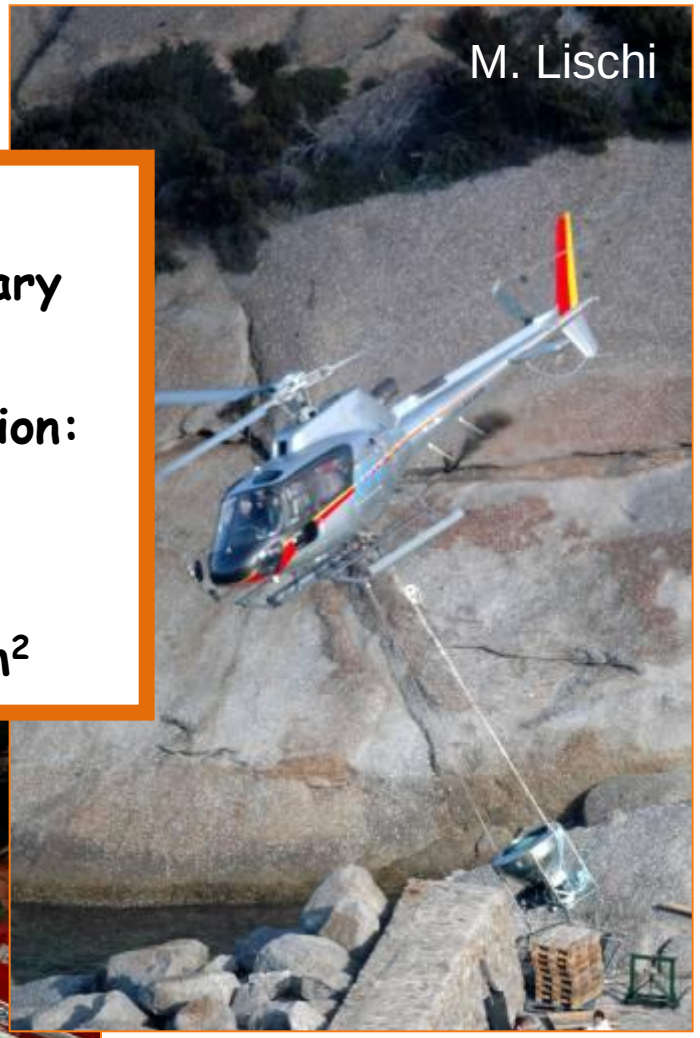
2) 4-5 goats will be moved to the Bioparco zoological garden in Rome

Male of Montecristo goat

Goats feeding in the fence

The aerial distribution





Time

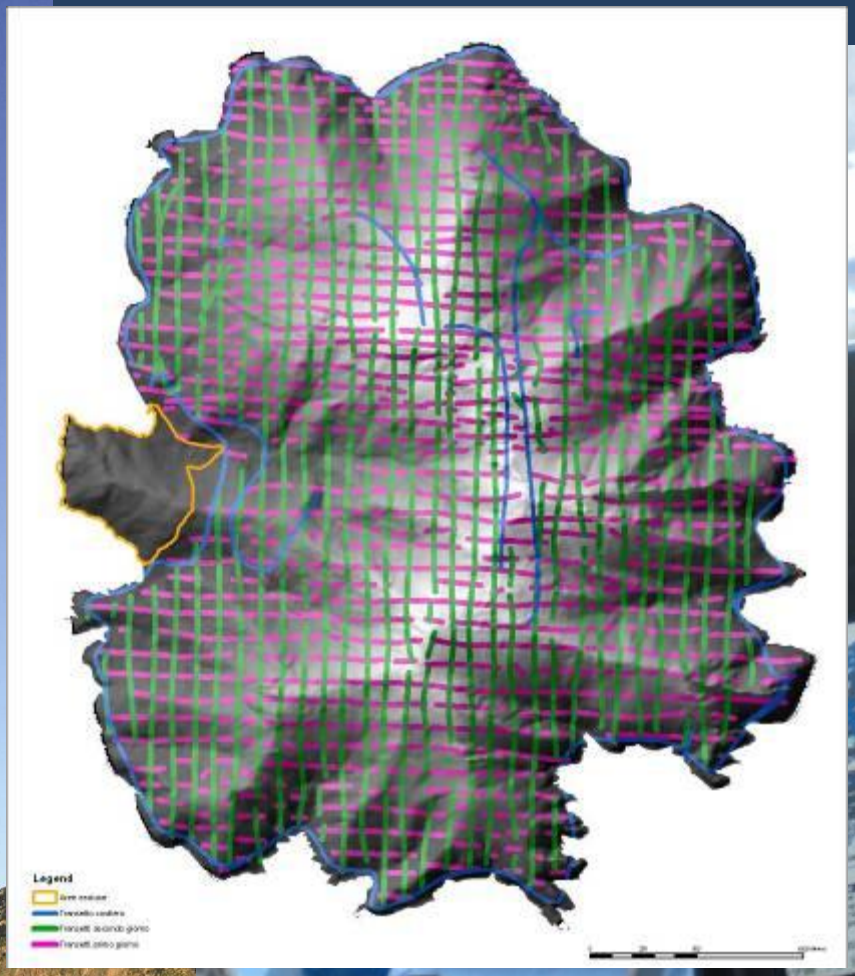
First distribution: January 10 -13 (13.500 kg)

Second partial distribution: February 29 (500 kg)

Amount of pellets

10 kg/ha = 1 pellet/2 m^2

The aerial distribution



Spreading transects (first total distribution)

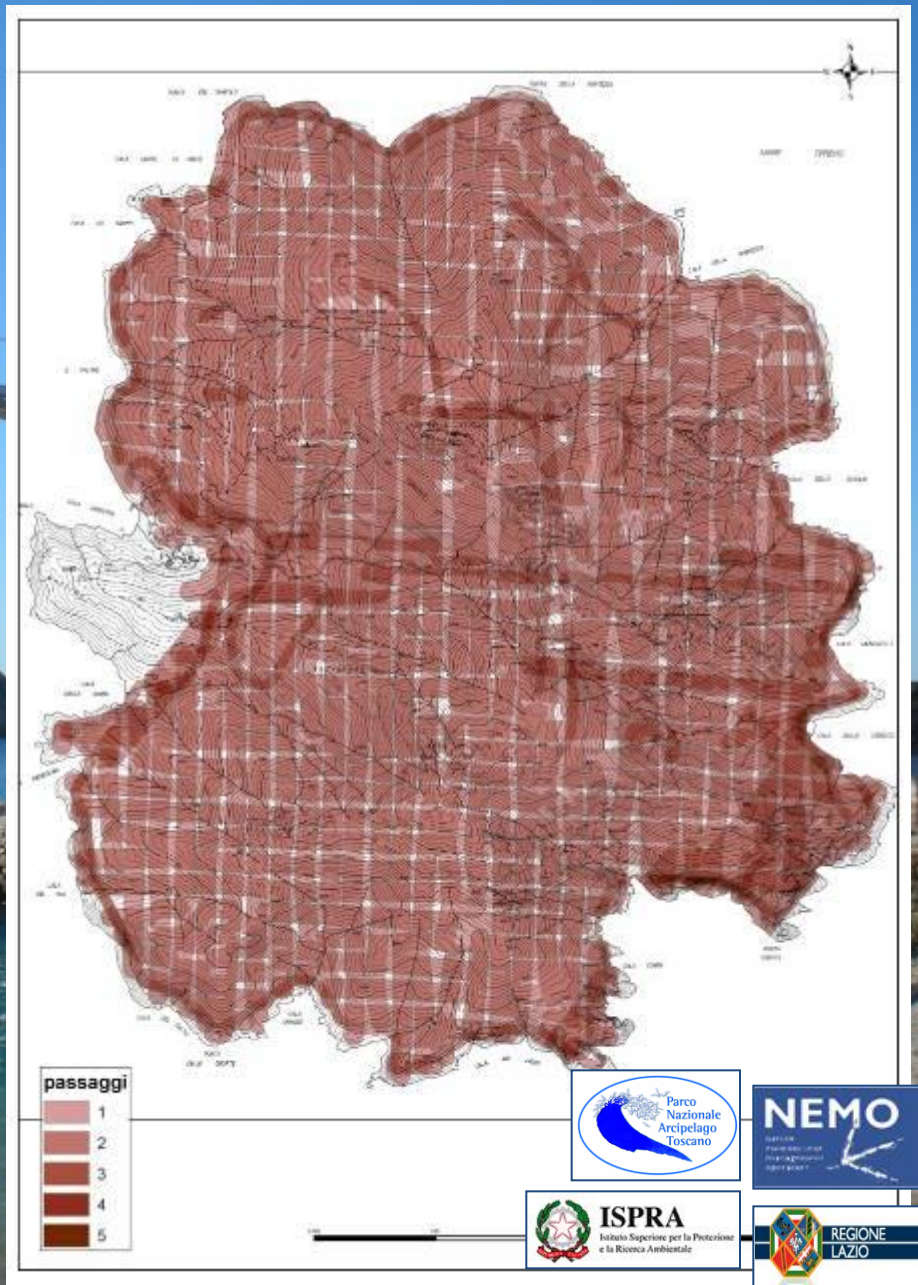
The helicopter was equipped with a GPS guidance and distribution control system that activates the spreading only when:

- the aircraft was over a target area,
- and not over an area previously covered
- and within a preset distance of the flightline (eg 4 meters)

The aerial distribution

Coverage after the second distribution
(calculated with a 40 m buffer each side of transect)

Uncovered areas are smaller than 2500 mq or even less.
Actually, a 45-50 m buffer is more realistic

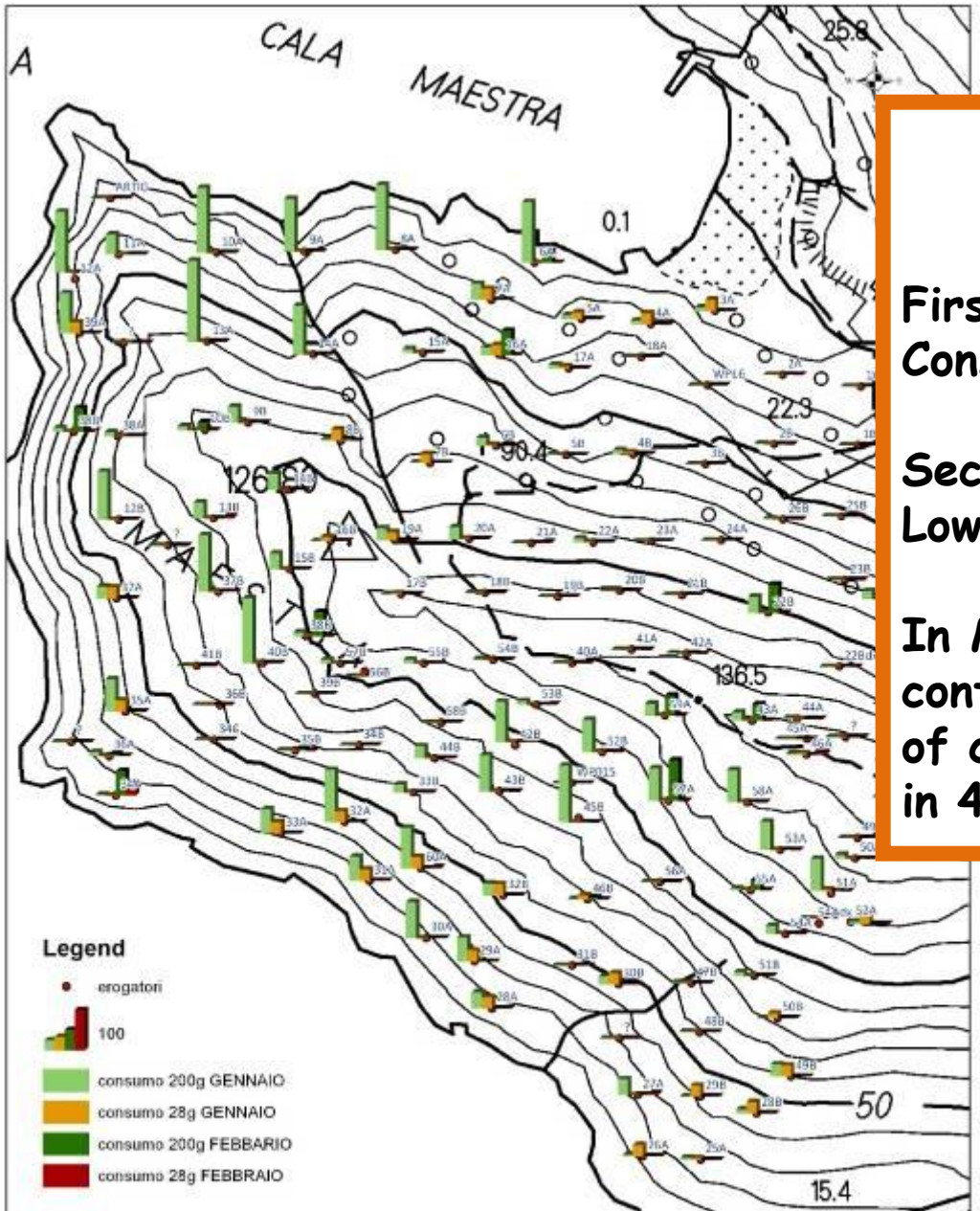


Monitoring consumption during aerial distribution

During dropping 50 snap-traps were placed for monitoring the consumption of baits

	rats	Rats that ate baits
1° night after first dropping (5 kg/ha)	3	2
2° night after complete first distribution	3	2
3° trapping night	4	3

Monitoring the bait stations sector

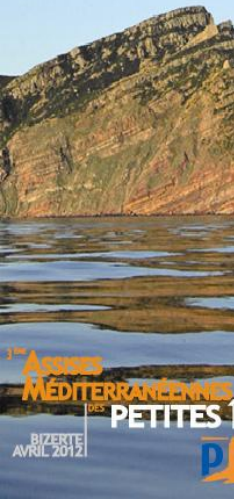


Bait consumption in the excluded area

First Control: January
Considerable consumption

Second controll: February
Low consumption

In March, during the last controll, only doubtful sings of consumption were recorded in 4 bait stations



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Monitoring and expected results

At present, three months after distributions, it is not possible to know if activities will be successfully

Problably the low rainfall intensity increases the chances of success

50 bait stations are kept working in order to monitor rats presence.

Impact on no target species

At the moment the loss of a few hundreds of Yellow-legged gulls is estimated.

22 goat carcases were found outside the fence, but more than 50 goats were observed in a part of the island.

These data should be confirmed with next census

Montecristo vs rats

Thanks for attention

Bye-bye rats

Assises Méditerranéennes des Petites Îles
Bizerte Avril 2012
pim

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