



Milan, 29-30 November 2017

LIFE PROJECTS ON ALIEN SPECIES IN THE TUSCAN ARCHIPELAGO



**LIFE platform
meeting on
Invasive
Alien
Species**

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***Tuscan Archipelago
7 Major Islands and 40 Islets***

***Protected area since 1971
(Montecristo natural reserve)***

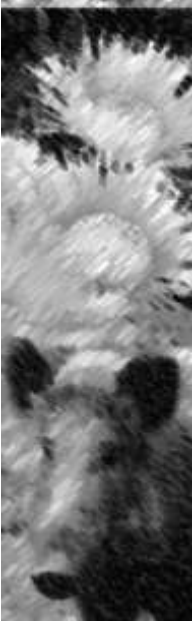
National Park since 1996

***Nature 2000 Sites – SPAs and
recent SACs institution in 2016***

***MAB Unesco Reserve since
2003***



From the largest island (Elba 220 km²)
to the smallest one (Gorgona 2 km²)



Tacheocampylea tacheoide



Euleptes europaea



Discoglossus sardus



Limonium spp

Conservation target

Many endemic species
and protected habitats



Sand-dune habitat



Euphorbia dendroides



Puffinus yelkouan



Calonectris diomedea

Threat to biodiversity Alien species invasion



In the Tuscan
Archipelago
more than 155
alien species
(including 140 plant
species)



The National Park is
involved in many actions to
reduce the impact of alien
species

More than 18,000
ungulates were
removed from the
protected area



LIFE Projects contribute to the eradication and control of many alien species

TIME: 19 years of work including After Life Plans



Life Capraia



Tuscany
Region

Isotosca



National
Park

Montecristo 2010



Former CFS
Follonica

Resto con Life



National
Park

TOTAL BUDGET for direct eradication actions:
c. 2,3000,000 euros

TARGET ALIEN SPECIES: 6 animal and 9 plant species

LOCATION: 5 islands and 7 islets

ERADICATED
species

Eradication
IN PROGRESS

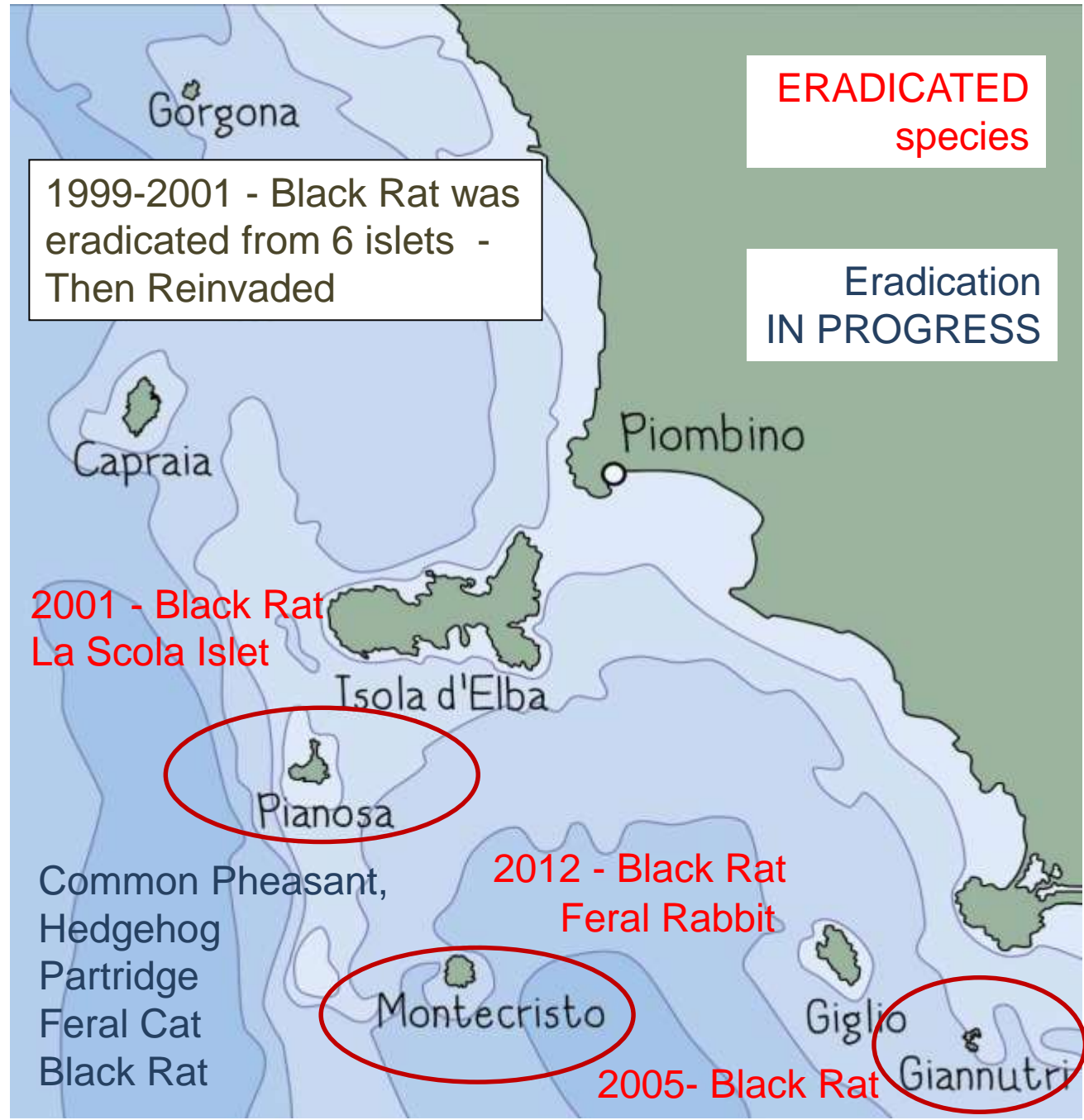
1999-2001 - Black Rat was
eradicated from 6 islets -
Then Reinvaded

2001 - Black Rat
La Scola Islet

2012 - Black Rat
Feral Rabbit

2005- Black Rat

Common Pheasant,
Hedgehog
Partridge
Feral Cat
Black Rat



ERADICATED species

After Life Plan
IN PROGRESS

Eradication/Control
IN PROGRESS

Ailanthus altissima

Carpobrotus spp
Acacia spp

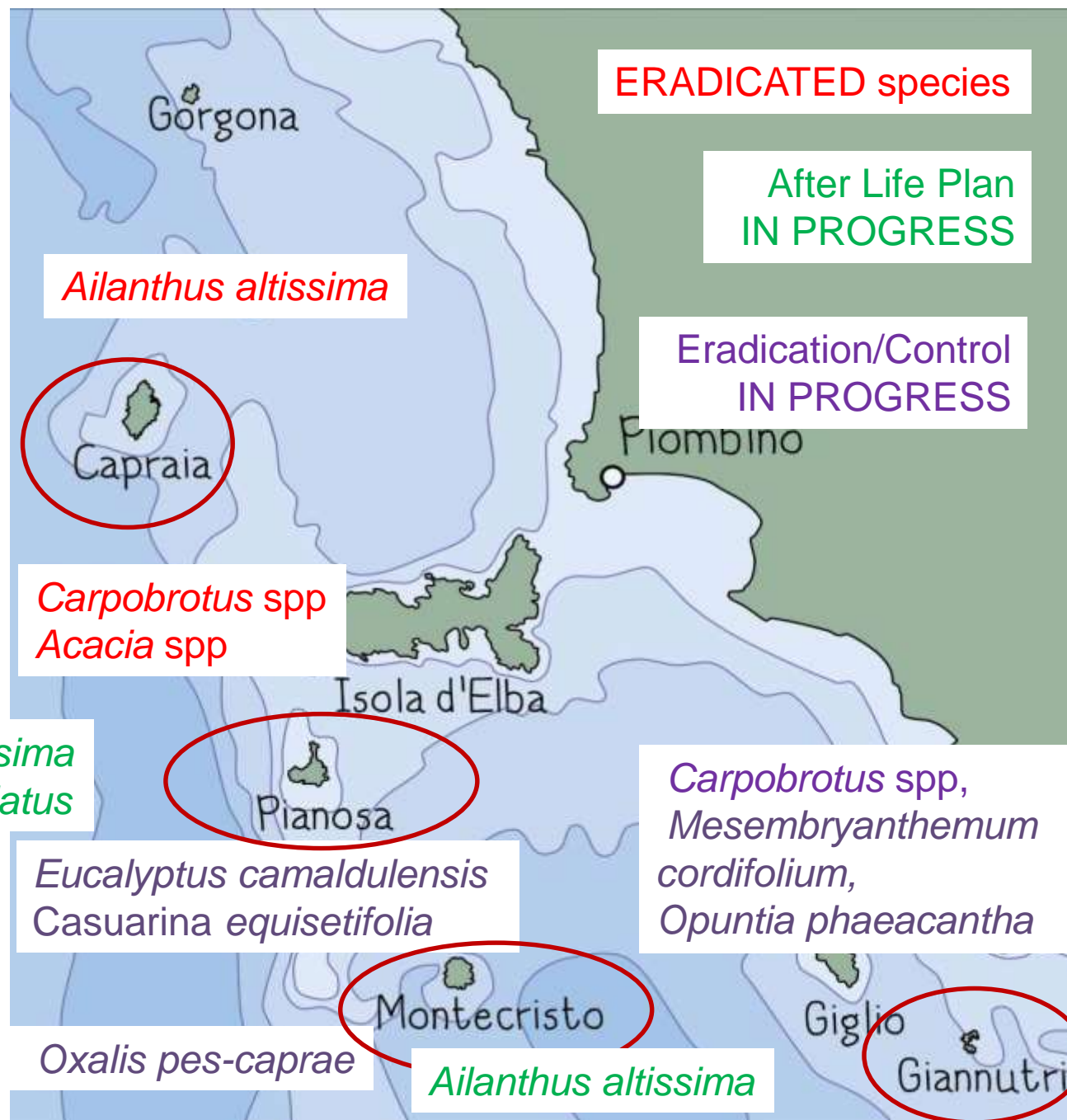
Ailanthus altissima
Senecio angulatus

Eucalyptus camaldulensis
Casuarina equisetifolia

Carpobrotus spp,
Mesembryanthemum
cordifolium,
Opuntia phaeacantha

Oxalis pes-caprae

Ailanthus altissima





MONTECRISTO ISLAND

Natura 2000 habitats: 125 ha

Target species: *Ailanthus altissima*

Operation started in 2010

METHODS

Large surface area: 183 ha

Chemical and cutting treatment (through the systemic herbicides Picloram and Triclopyr)

Two treatments

Cost per hectare: 2240 euros.

RESULTS

In Cala Maestra and in surrounding areas the target plant species have been eliminated. In the rest of the island monitoring is underway and the regrowth is intense.

PIANOSA ISLAND

Natura 2000 habitats: 340 ha

Target species: *Ailanthus altissima*

Operation started in 2011

Area of intervention 2 ha.

100,000 ailanthus plants removed

METHODS

Chemical and cutting treatments

Cost per m²: 3,7 euros

RESULTS

The species has been reduced to some units
that are kept under control by activities
foreseen in the After Life Plan –
Eradication is near.





PIANOSA ISLAND

Target species

Carpobrotus spp.

About 500 mq in the village
and in dune habitat

RESULTS: eradication



Operation started in 2011
METHODS: manual
uprooting and
chemical treatment

BEFORE



AFTER



GIANNUTRI ISLAND

Natura 2000 habitats: 140 ha

Target species *Carpobrotus* spp.

About 1,4 ha

5 main core areas

Operation started in 2016



Photo: G. De Luca



BEFORE



AFTER



Cost per m²: 8 euros

METHODS

Mulching by means
big plastic films



RESULTS

Eradication

Monitoring is underway

Manual uprooting



ABOUT BLACK RAT (*Rattus rattus*)



The first project rats were eradicated from 7 islets (1,5 – 7 ha).



GIANNUTRI

RAT-FREE

Main conservation target: Scopoli's Shearwater population estimated at 70-270 pairs

Intervention period: 2005-2007.

To date the situation is monitored only on La Scola islet (1,5 ha), rat-free since 2001.

METHODS

Cost:
€ 4,500



Rats returned from Pianosa at least twice after eradication, and were promptly removed

Hand baiting

Bait blocs with brodifacoum 5 ppm distributed in bait-stations in a 50 m grid (4 bait stations/ha)

1 ton of baits used.

Cost: 320 €/hectare.

Main conservation target: Yelkouan Shearwater population estimated at 400-750 pairs

Jan – Feb 2012

METHODS

Aerial distribution of baits at mid-winter

14 tons of bait* (cereal pellet with 5 ppm brodifacoum) distributed (rate 10 kg/ha surface area)



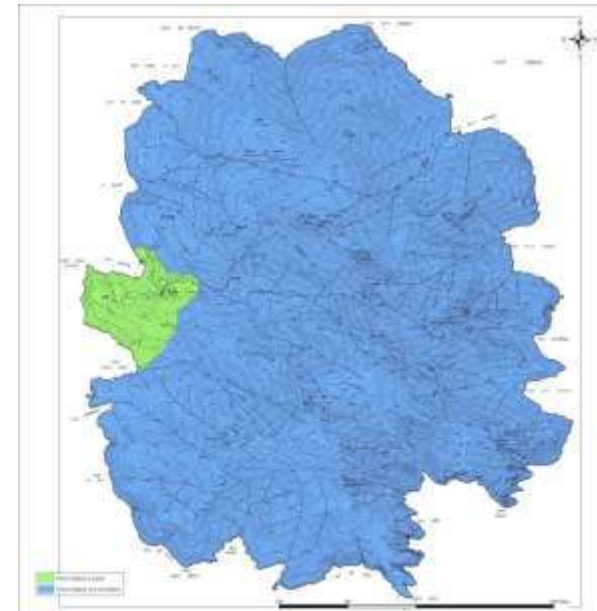
Cost: 390 € per ha

Exclusion of an island sector (30 ha) from aerial distribution including a 25 ha fenced area treated with bait-stations, where 44 goats were kept (129 bait stations)



RAT-FREE

MONTECRISTO ISLAND



Aerial distribution



Jan-Oct 2017

4750 bait-stations (50 m-grid, doubled in critical areas), 5 distributions

First 3 distributions with bromadiolone (instead of brodifacoum) in the town-prison settlement areas (lower risk for domestic animals)

c. 2200 kg of baits used

Bait-stations removed on October

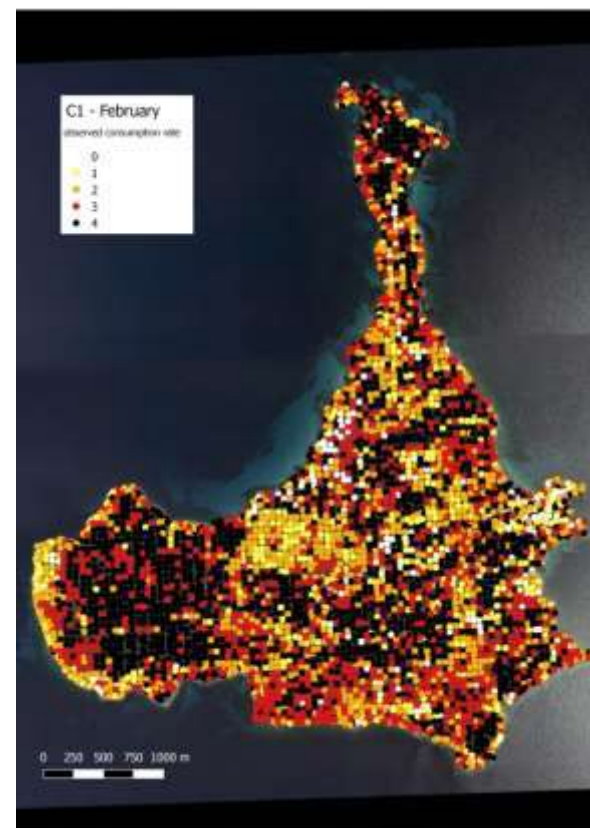
Estimated cost per ha: 588 €

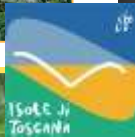


PIANOSA ISLAND

Eradication target:
Black Rat

Main conservation targets:
Ichthyæetus audouinii
(80-100 pairs)
and *Calonectris diomedea*
(30-60 pairs)





First results:

Removed animals: hedgehogs (124) pheasants (690) and partridges (167).
Capture percentage ranges between 50% to nearly 100% - compared to the various estimated populations



OTHER SPECIES

PIANOSA ISLAND

Target species:
Feral Cat (*Felis catus*)
Operation started in 2005
Actions in progress

METHODS: live trapping, sterilization and traslocation to Elba Island or main land

After many trapping campaigns, more than 160 feral cats were removed from the island. Eradication should be confirmed.
Cost: 515 € per individual (ISOTOSCA)



CRITICAL ISSUES

- Rat eradications

On medium or large-sized islands (i.e. 200-1000 ha) the cost of ground-based eradication vs aerial distribution is higher by at least 30%. Aerial distribution is currently complicated by Regulation (EU) 528/2012 concerning the use of biocidal products and, in Italy, by considerable obstacles to issuing permits.

- As regards the animal species, the culling, capture and/or relocation of animal species is a cause of tension among animal welfare groups and other stakeholders.
- The current Italian and European regulations on the methods of capture and culling seem totally inadequate and often in conflict with other rules on animal welfare; this situation could cause interruption of the working protocols and therefore increase costs.
- As regards the plant species, research should be developed on highly effective systemic herbicides, as Glyphosate is still not easy to apply.
- The public still opposes eradication of beautiful ornamental plants.
- Biosecurity measures are essential; however, they are perceived as superfluous by the resident population and by other administrations.
In preparing the project, the costs for biosecurity measures implementation must be duly taken into account.



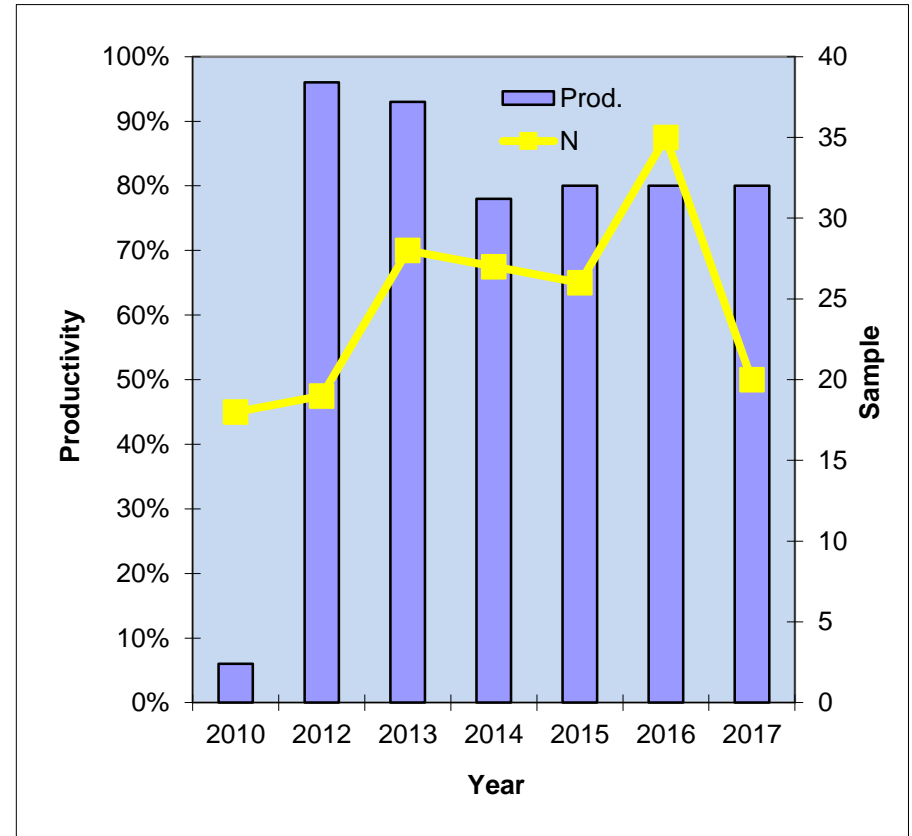
MONTECRISTO

Yelkouan Shearwater productivity has increased from 6 % (2010) to an average of 85%.

Best-practices adopted

Rat eradication was marked by a high level of technical innovation for the European continent, due to the use of specific software and equipment for the aerial distribution of the bait.

SUCCESSFUL ACTIONS



SUCCESSFUL ACTIONS

GIANNUTRI

In 2013 the presence of the Yelkouan shearwater was recorded anew, after total absence in the previous decade.

In the treated areas without *Carpobrotus* new plants of *E. dendroides* are growing.

LA SCOLA ISLET

At the time of rat eradication, the Scopoli's Shearwater colony was estimated at 50-80 breeding pairs. Today it is estimated at 150 - 250 pairs.

PIANOSA

The Black Rat operation is the largest ground-based eradication attempt at the global level; Pianosa could be one of the largest rat-free islands in Europe, the second in the Mediterranean (Montecristo is the first).

Productivity (short term) and population size (long term) of seabirds is expected to increase, at least for *I. audouinii* and *C. diomedea*.

Improvement of habitat condition for bird species breeding on the ground or close to it (e.g. *L. collurio*, *C. europaeus*), for birds present on migration stop-overs, as well as for reptiles, invertebrates and vegetation.



Giglio Island – Project to eradicate mouflons (*Ovis aries*) and to raise people's awareness of exotic plant damages.



FUTURE PROSPECTS

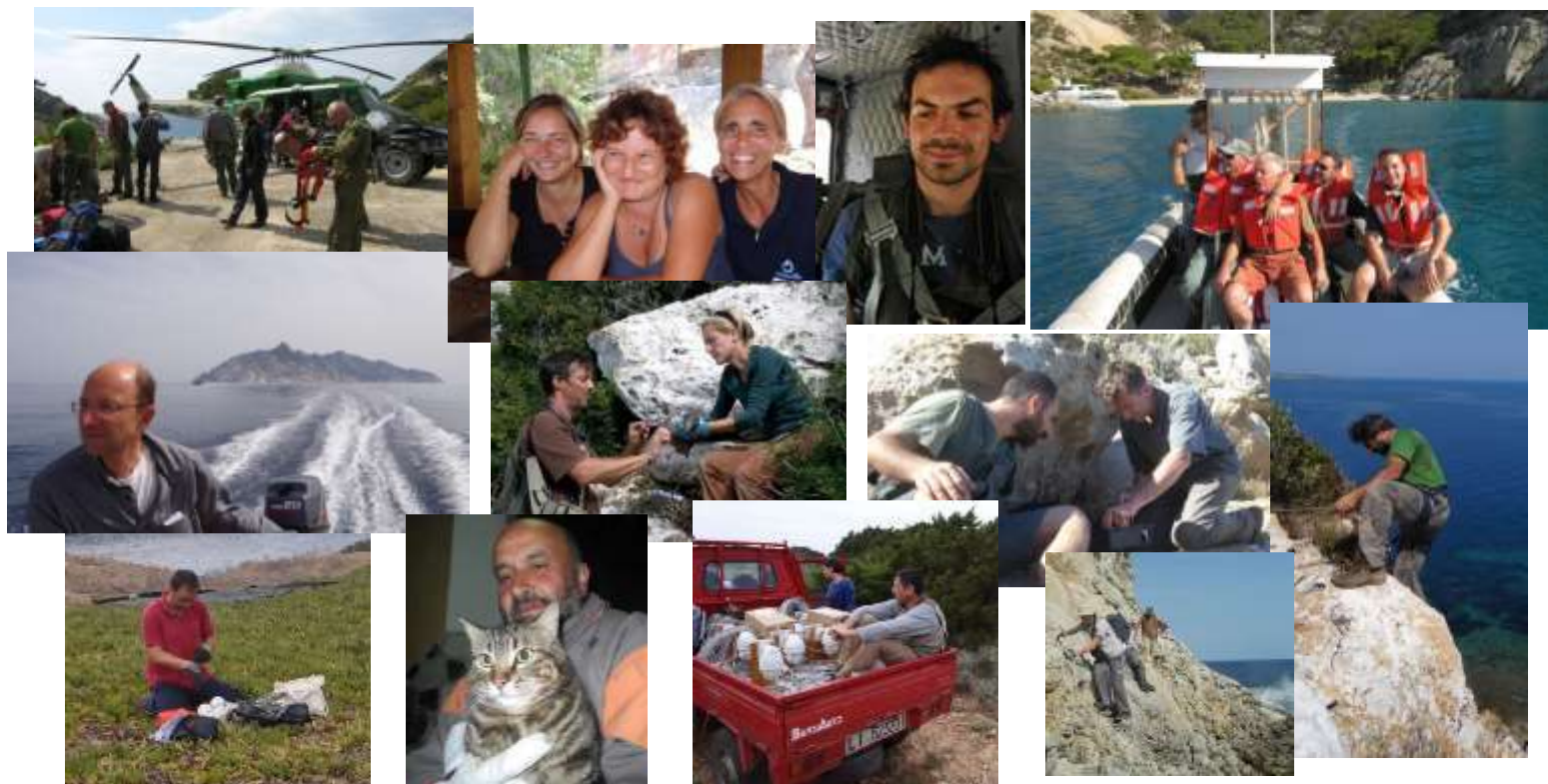
Implementation of biosecurity measures for both animal and plant species.

Capraia Island – Project for Black Rat eradication ??





Milan, 29-30 November 2017
THANKS FOR THE ATTENTION



**LIFE platform
meeting on
Invasive
Alien
Species**

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www.restoconlife.eu - www.montecristo2010.it