Working on Italian islands

Community buy-in and building for large scale conservation vision

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Subject

1) Eradications of Black rat (*Rattus rattus*)

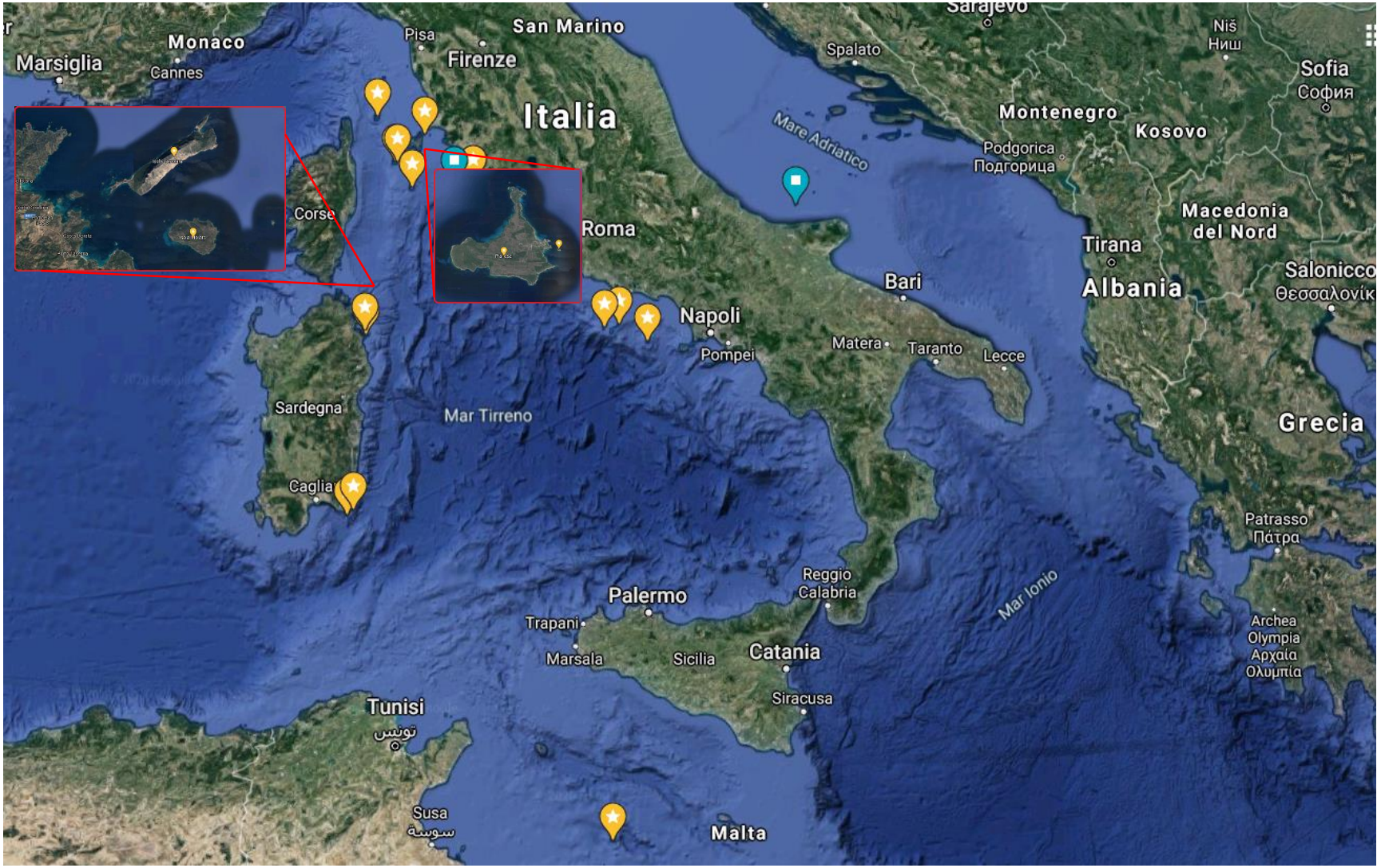
- ✓ **The most widespread mammal on Italian (and Mediterranean) islands**

2) Aimed <u>mainly</u> at the protection of: Yelkouan shearwater (*Puffinus yelkouan*)

Scopoli's shearwater (*Calonectris diomedea*)

(impact of Black rat: predation of chicks and eggs)

11 rat eradication programs, funded mainly by EU LIFE projects



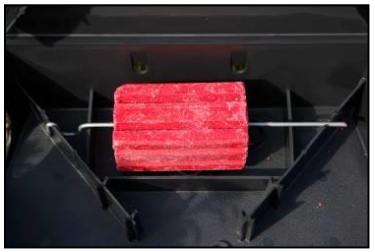
Not funded/coordinated by the National Government

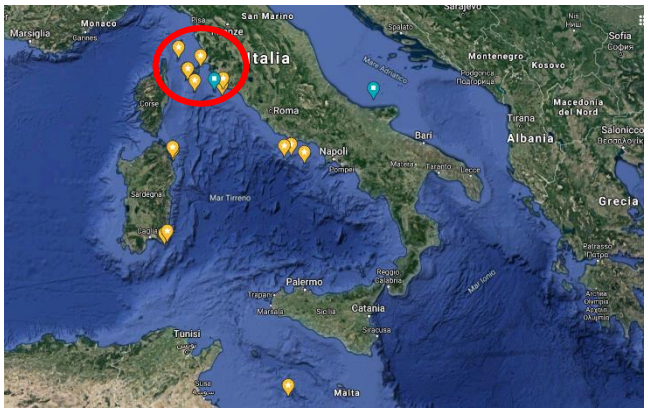
1999-2001: the first rat eradication projects

Black rat eradication on 7 small islands in the Tuscan Archipelago National Park (area between 1 and 6.5 ha)

Rodenticide bait placed inside bait station (6-10 bait stations/ha)

<u>Islands closer 350 m from mainland were reinvaded</u>

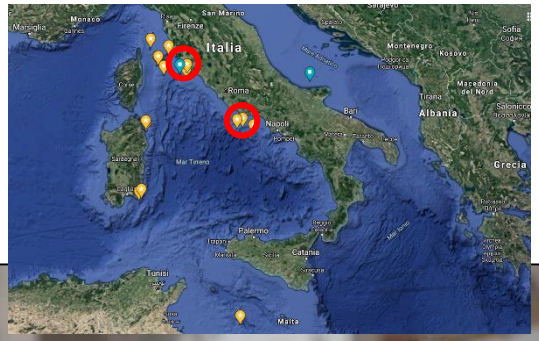




Life Capraia

2005-2007: facing Larger Islands

- ✓ Rat eradication on Giannutri (239 ha, Tuscan Archipelago NP) and Zannone (104 ha, Circeo National Park)
- ✓ Bait inside bait stations, at an average density of 4 per ha
- ✓ Successful, no rat reinvasion
- ✓ on a small very steep sector of Zannone, aerial launch of home-made bait-stations



2008

Toward a Strategic Approach

(not planned by the National authority)

Prioritization of islands

- ✓ **Based on economic cost vs conservation effectiveness**
- ✓ **Islands with high risk of reinvasion (close to mainland, > 50 residents troughout the year) excluded**

….

- ✓ **Eradications carried out firstly according the requests of local authorities (NPs, MPAs, Regional governments), secondly on priority**
- ✓ **Eradication attempts also on inhabited islands previously excluded, aimed both at seabirds conservation and to benefits for the community**

2008 to 2018: Molara, Montecristo, Linosa, Tavolara…

Key colonies of *C. diomedea* and *P. yelkouan*

Aerial baiting on Molara, Montecristo and Tavolara: successful (but Molara reinvaded, probable deliberate reintroduction)

Ground-based eradication on Cavoli and Serpentara, small and un-inhabited: successful

Linosa (ground-based, 550 ha and inhabited) failed

Montecristo is currently the largest rat-free island in the Mediterranean

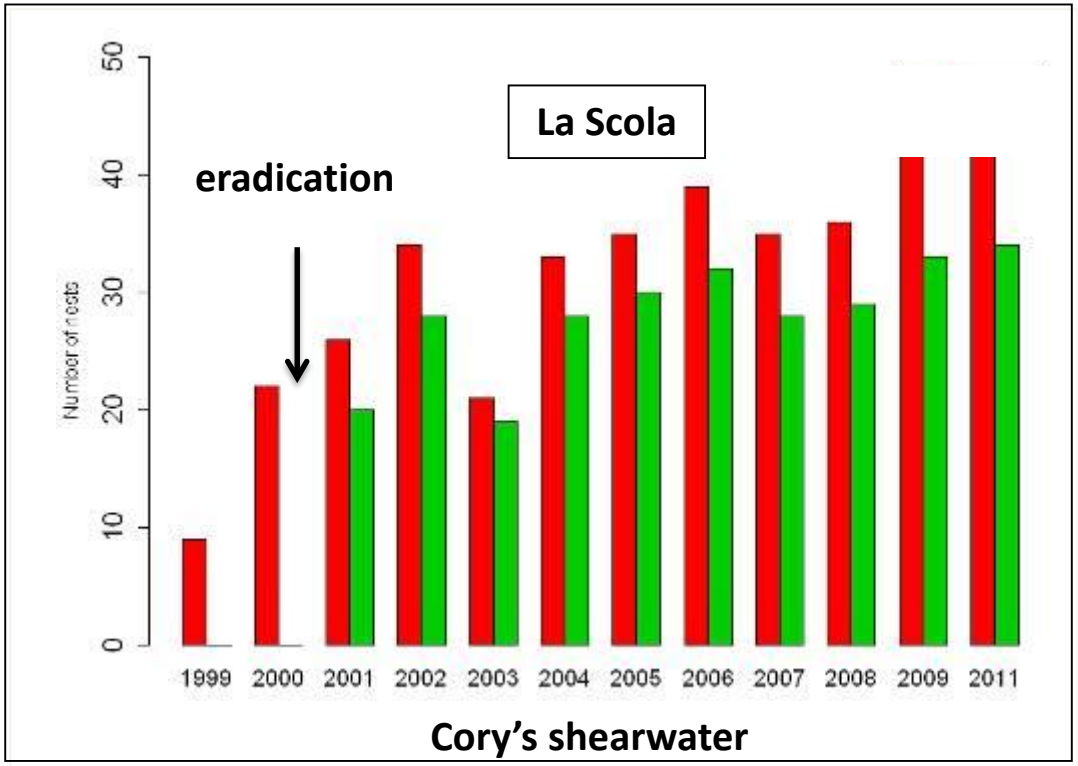
life montecristo 2010

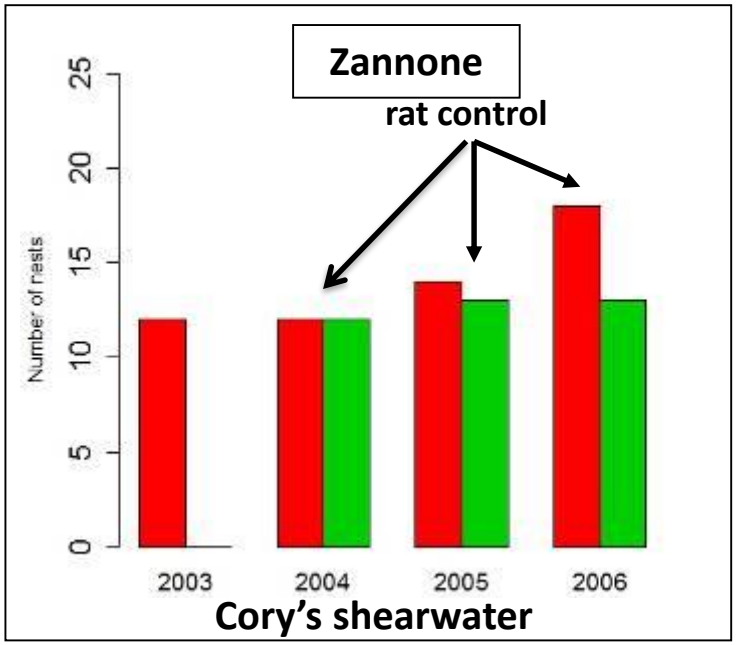
Tavolara, the most important Italian seabirds island

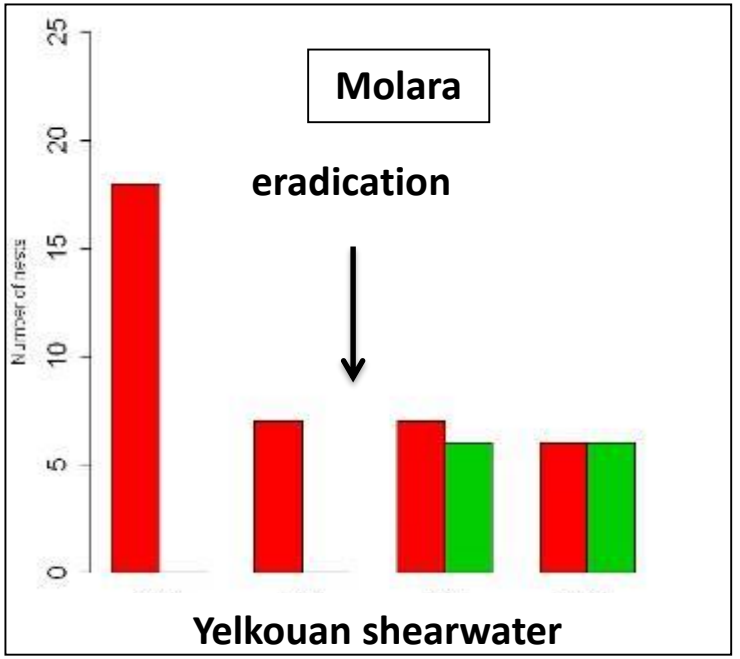
- ✓ **Main colony of Yelkouan shearwater (40-50% of global population), great technical difficulties (the steepest island where a Rodent eradication has been attempted, broadcast from up to 400 m above ground level over a military area)**
- ✓ **We obtained permission for aerial broadcast after <u>struggling for almost 2 years</u> with Italian Health Ministry**
- ✓ **<u>Successful</u>! The obtaining of the authorization has been more difficult than facing this vertical island**

LIFE Puffinus TAVOLARA

Examples of benefits for target species

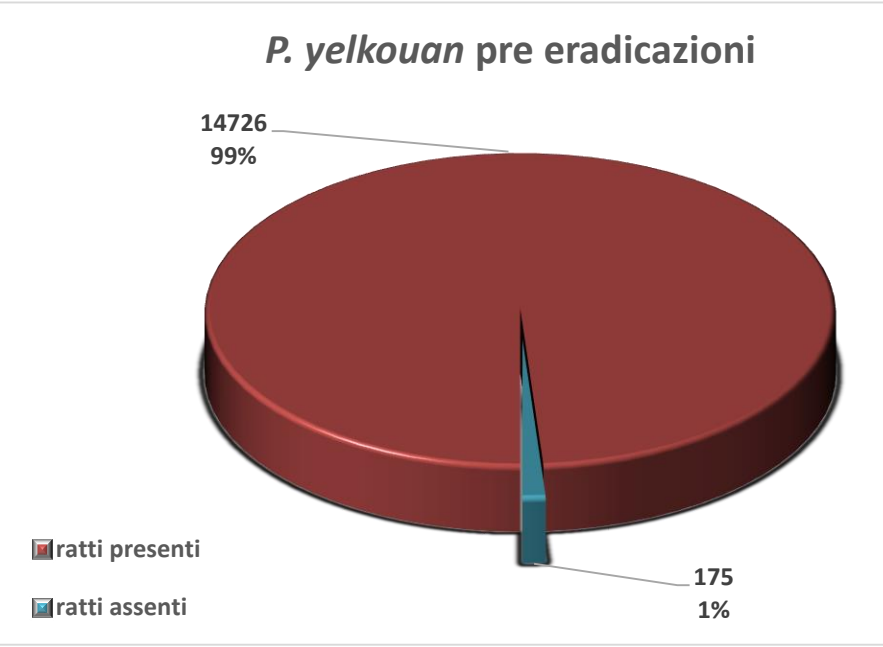


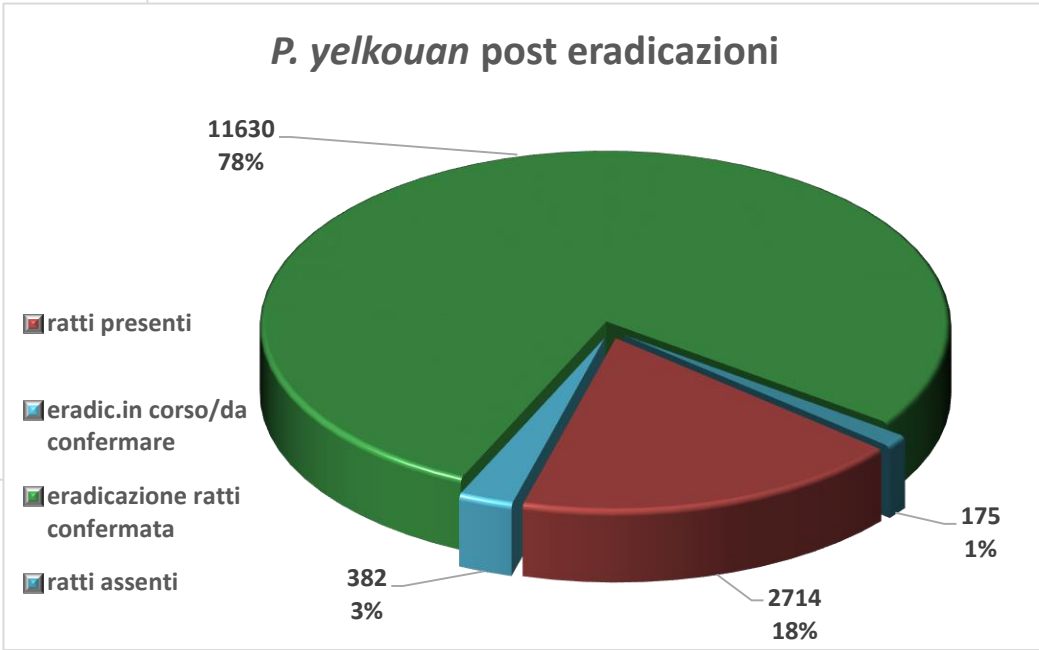




Shearwater nesting success before and after rat eradication

Total benefits for Yelkouan shearwater





>50 % of global population in Italy

(Italy 15.000 pairs, global 25-30.000)

2017-2021: dealing with “large” inhabited islands

Ventotene (700 residents) and Linosa (500 residents), Pianosa (prison with personnel and detainees, > 1000 ha), all ground-based with bait-stations.
Among the several problems:

Impact on pets (cats and dogs)

- **First bait administrations with bromadiolone or difenacoum (less toxic), last with brodifacoum (200 stray cats on Ventotene, have all survived)**

Risks for snails-eaters

- **Snails gathering must be forbidden, communication**

Working with local communities

- **Access to private properties and much more!**

Strict biosecurity measures

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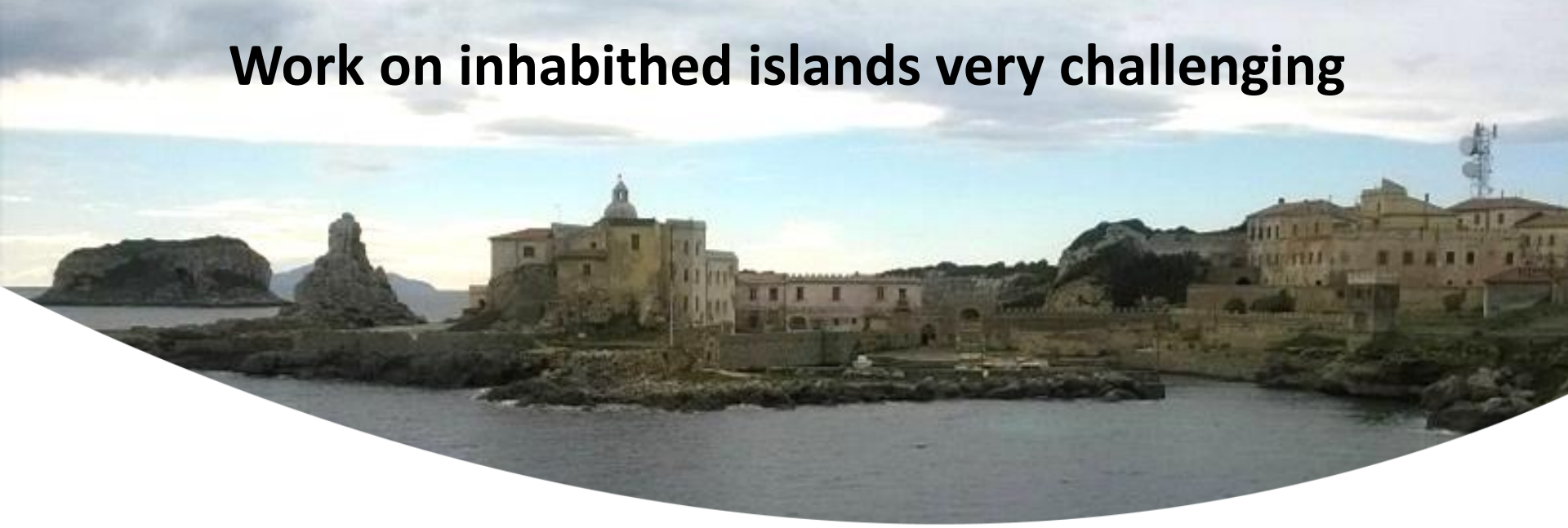
Work on inhabithed islands very challenging



Eradications failed on Linosa, still ongoing on Ventotene, Palmarola and Pianosa. Probably due to several reasons:

- **Rats diffident to bait-stations or to bait**
- **Bait less attractive when there are aboundant human food sources in inhabited areas**
- **risk of (frequent?) reinvasion events (Ponziane, Pianosa)**
- **small home-range of rats in inhabited areas (-> inadequate spacing of bait-stations)**

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Solutions

Diffidence to bait-stations or to bait

- **Carried out baiting for a very long time** (3 + years), high density of bait-stations
- Change of bait-stations and bait
- **Baiting out of bait-stations** (in sites inaccessible to humans and pets)

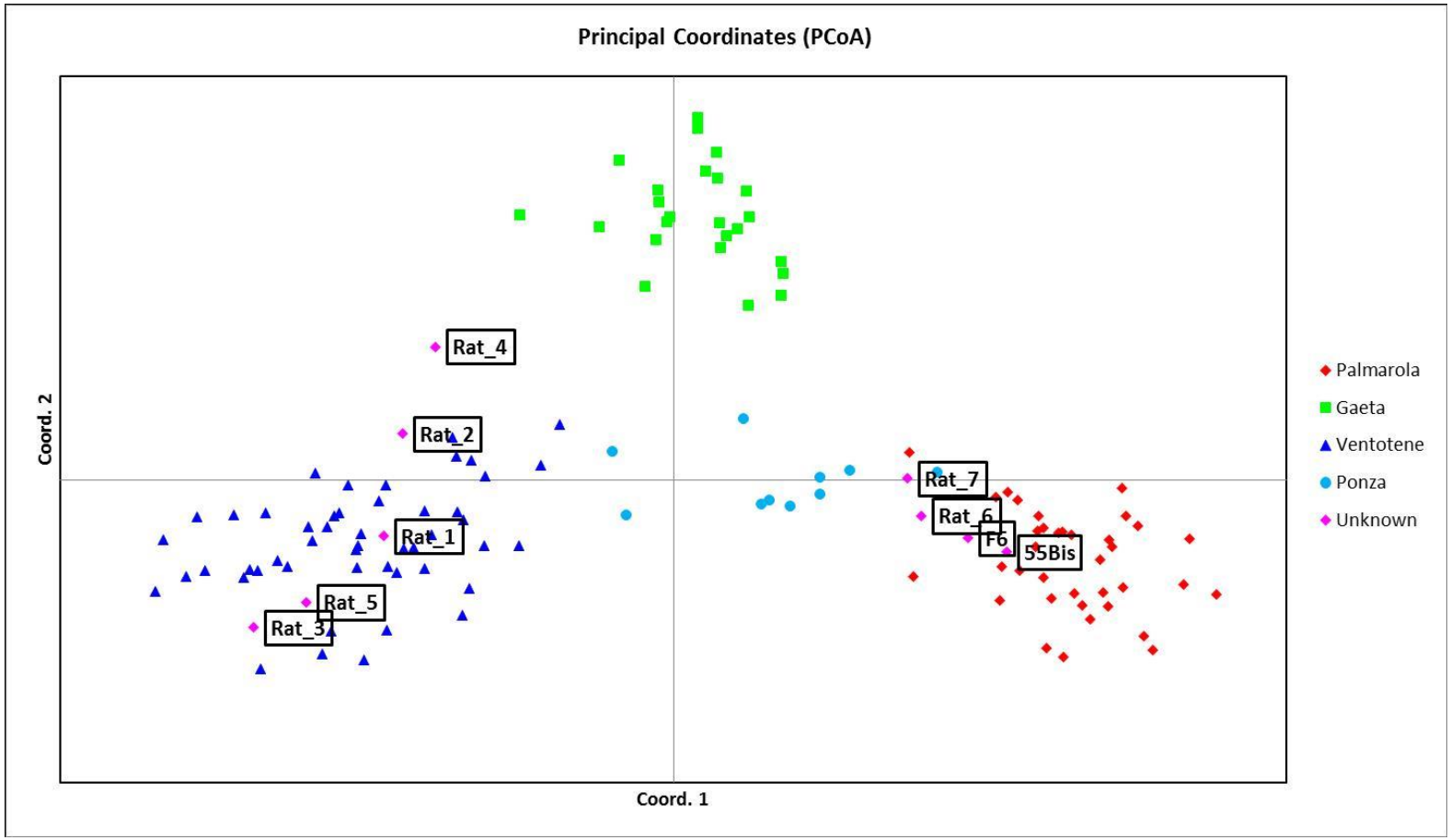
Risk of reinvasion

- **Biosecurity**
- **Working at the Archipelago level**

Simultaneus eradications on all the islands

Ponziane Archipelago

Genetic of rat populations on Ponziane Archipelago



Analysis by Ecolgene Ltd

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Human Food Sources

On inhabited islands, also if there are few people, the preparatory phase of population involvement must be as long as necessary, and the active participation of a large part of people in the community is fundamental to 1) reducing food resources 2) help to detect and target any critical situation 3) help in detecting surviving rats

Estimating and communicating socioeconomic benefits

Ventotene, 700 residents

Monetary costs associated to rats (rodent control and damages to poultry and cultivations) have been estimated at about **€ 20.000 per year**

Advantages potentially caused by increased touristic attractiveness due to rat-free status **have not been evaluated**

Other aspects to be considered:

Environmental impact: 250 kg/year of rodenticide placed without bait stations

Zoonotic risk: analyses on rats for pathogens and parasites (high prevalence of Toxoplasma, presence of Borrelia)

On Ventotene this **advantages have been recognized** by the community **and everyone is in favor of rat eradication**

Working with local communities

A face to face dialogue with as many people as possible is necessary, with visits to all the possible critical situations (hen-houses, orchards, waste collection sites, sewer system ecc.). As many people as possible should manage their own bait-stations in orchards, gardens, hen-houses

Expected result: appropriation of the project by inhabitants, it must be *their* project

Sewer baiting, a first in rat eradication

Rats in the most remote sewers: may this have been the problem?

Sewer baiting, a first in rat eradication

20 manholes opened, inspected and checked every 20 days


Google Earth

Next steps: strategic projects

A national project on a coordinated strategy of biosecurity, involving all rat-free islands (common protocols, Rapid Response Team, trained rat-dogs …), with a new rat eradication attempt after the failure on Palmarola, some restoration actions and community-based control of the worst alien plant species

AREA MARINA PROTETTA TAVOLARA PUNTA CODA CAVALLO

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NATURA 2000

Life Capraia

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CIRCEO PARCO NAZIONALE

Life montecristo

Life Puffinus TAVOLARA

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thanks for your attention…

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