



Cofinanziato
dall'Unione europea



TETIDE

Workshop

LIFE TETIDE per la biodiversità: scienza e divulgazione contro le invasioni biologiche



REGIONE
LAZIO



UNIVERSITÀ
DEGLI STUDI
DI PALERMO



Università
degli Studi
di Palermo



VILLASIMUS
ARCA MARINA PROTETTA
CAPO CARBONARA





Portoferraio, 2.12.2025

***Le specie target del
progetto e il monitoraggio***

Camilla Gotti, Luca Melega

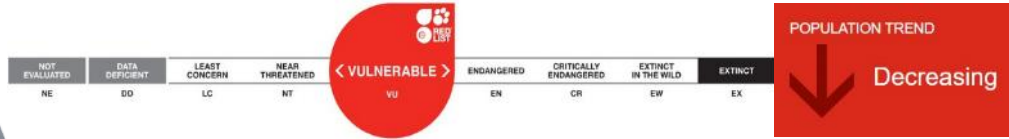


THE MAIN PLAYERS: THE PROCELLARIIFORMES



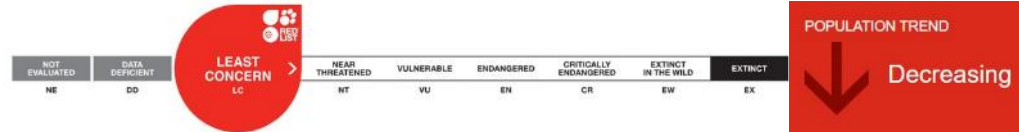
Yelkouan shearwater (*Puffinus yelkouan*)

21,201 – 35,975 pairs



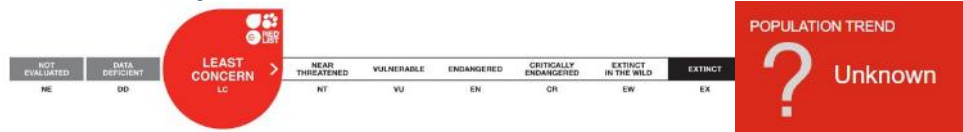
Scopoli's shearwater (*Calonectris diomedea*)

142,478-222,886 pairs



Mediterranean Storm Petrel (*Hydrobates pelagicus melitensis*)

16,000 pairs



THE MAIN PLAYERS: THE PROCELLARIIFORMES



➤ **Endemic** to the Mediterranean sea



➤ They spend most of their time in the **open sea**, are **faithful to their breeding site**, lay a **single egg per year**, become reproductive when they are 4-6 years old.



LAND
AHOY!!

➤ They breed **in colonies**, inside burrows on rocky shores, **returning to the nest only at night**.

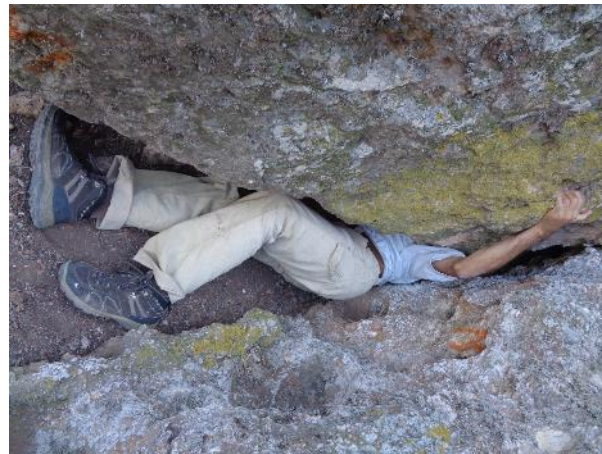


THE MAIN PLAYERS: THE PROCELLARIIFORMES



➤ **VERY VULNERABLE SPECIES!!!**

➤ **VERY HARD TO MONITOR!!**





THE THREATS



➤ **BYCATCH**

➤ **HUMAN
DISTURBANCE**

➤ **POLLUTION**

➤ **OVERFISHING**

➤ **.....**





THE THREATS



➤ **INVASIVE ALIEN SPECIES!!! – THE BLACK RAT**









THE THREATS!



➤ **INVASIVE ALIEN SPECIES!!! – THE BLACK RAT**





-  Eradicated (23)
-  Failed (2)
-  Successful/Re-invader (7)
-  Ongoing (1)

12 rat eradication programs on 25 islands,
funded mainly by EU LIFE projects.





IMPORTANCE OF THE RESULTS



IMPORTANCE OF MONITORING!!

(SHEARWATERS)

1. HOW MANY?
- RAFT COUNTS





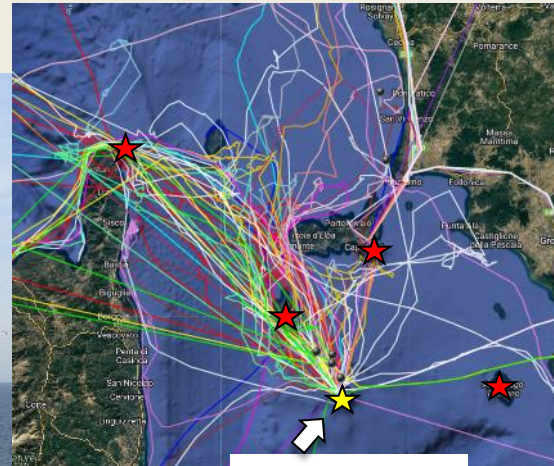
IMPORTANCE OF THE RESULTS



IMPORTANCE OF MONITORING!!

(SHEARWATERS)

1. HOW MANY?
- BOTTLENECK
COUNTS



MONTECRISTO





IMPORTANCE OF THE RESULTS



IMPORTANCE OF MONITORING!!

(SHEARWATERS)

2. WHERE DO THEY
NEST?





IMPORTANCE OF THE RESULTS



IMPORTANCE OF MONITORING!!

(SHEARWATERS)

2. WHERE DO THEY
NEST?





IMPORTANCE OF THE RESULTS



IMPORTANCE OF MONITORING!!

(SHEARWATERS)

2. WHERE DO THEY
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IMPORTANCE OF THE RESULTS



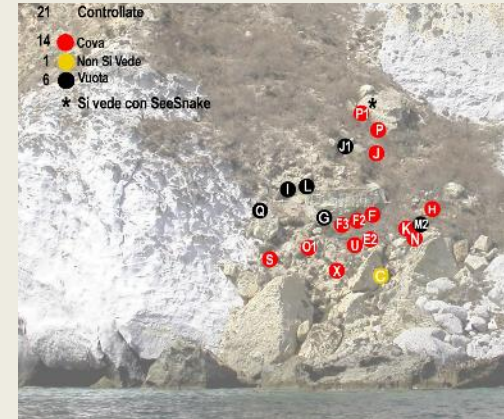
IMPORTANCE OF MONITORING!!

(SHEARWATERS)

3. WHICH IS
THEIR
BREEDING
SUCCESS??



First check: beginning of incubation
Data obtained: active nests





IMPORTANCE OF THE RESULTS



IMPORTANCE OF MONITORING!!

(SHEARWATERS)

3. WHICH IS
THEIR
BREEDING
SUCCESS??



Second check: just before young fledging
Data obtained: number of fledging/pair





IMPORTANCE OF THE RESULTS



IMPORTANCE OF MONITORING!!



**STANDARDIZED AND REPEATABLE
Monitoring Protocols!**

Criterion	Parameter
D1C2	<p>"Abbondanza delle popolazioni" espresso come:</p> <ul style="list-style-type: none"> 1) Numero assoluto di coppie nidificanti per le specie coloniali insediate in posizioni visibili; 2) Stima del numero di coppie nidificanti per le specie nidificanti in cavità (<i>Calonectris diomedea</i>, <i>Puffinus yelkouan</i>); 3) Numero di individui censiti a metà gennaio nelle zone umide marino-costiere per le specie svernanti.
D1C3	<p>"Caratteristiche demografiche" espresse come:</p> <ul style="list-style-type: none"> 1) Successo riproduttivo (numero di involati/numero di coppie) calcolato sull'intera colonia (es. <i>Larus audouini</i>; <i>Sterna sandvicensis</i>) o su sottocampioni di nidi marcati in colonie campione (es. <i>Calonectris diomedea</i>, <i>Puffinus yelkouan</i>). 2) Struttura per classi di età (proporzione di individui adulti e giovani del primo anno) per <i>Phalacrocorax aristotelis</i>
D1C4	<p>"Estensione della distribuzione" (equivale a "mappa delle zone di distribuzione ed estensione della distribuzione" in DIR2009/147/CE "Uccelli"). Mappa dei siti riproduttivi (colonie) per le specie target nidificanti. Estensione della distribuzione invernale (numero di siti marino-costieri occupati) per le specie svernanti.</p>



1. HOW MANY?



2. WHERE DO THEY NEST?



3. WHICH IS THEIR BREEDING SUCCESS?

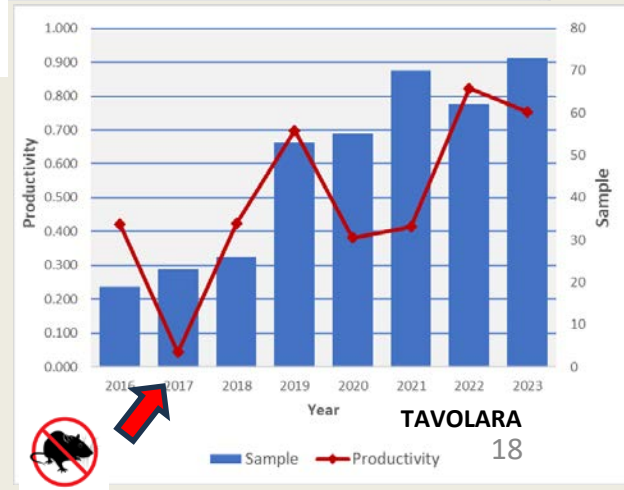
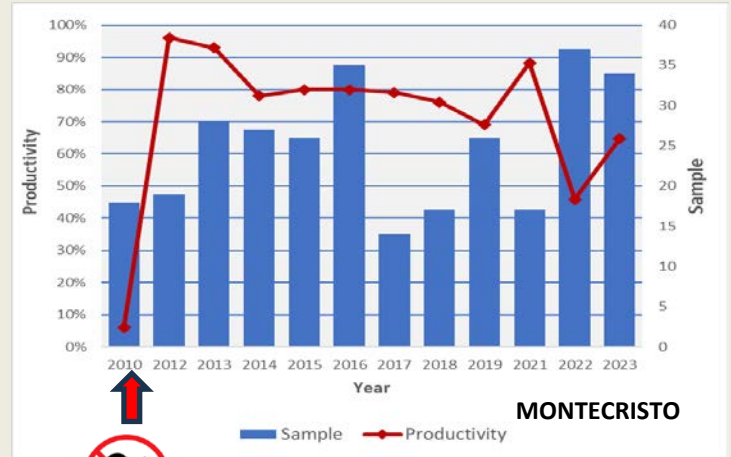


RATS AND PRODUCTIVITY

The reproductive success in almost all the Italian islands with rats was between 0 to 10% in all the nests checked, whereas after the eradications it increased up to 70-90%



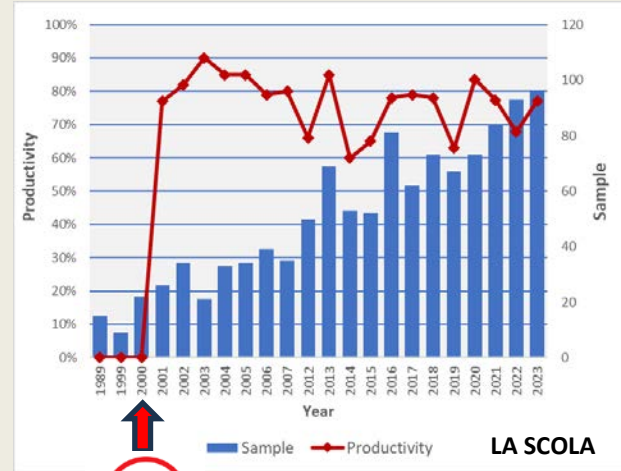
YELKOUAN SHEARWATER



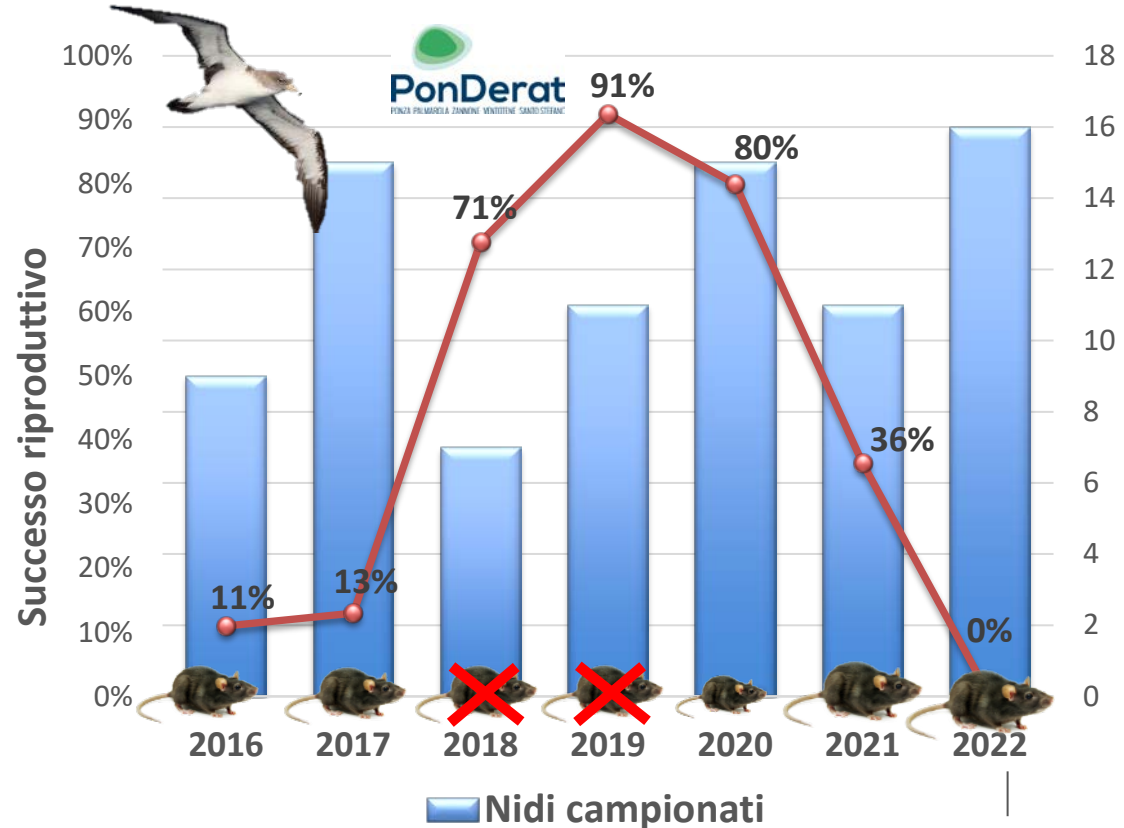
RATS AND PRODUCTIVITY

SCOPOLI'S SHEARWATER

The reproductive success in almost all the Italian islands with rats was between 0 to 10% in all the nests checked, whereas after the eradications it increased up to 70-90%



RATS AND PRODUCTIVITY: PALMAROLA REINVASION





SHEARWATER MONITORING IS HARD!!!!!!





SHEARWATER MONITORING IS HARD!!!!!!



ARTIFICIAL COLONIES!



Montecristo 2012





SHEARWATER MONITORING IS HARD!!!!!!



ARTIFICIAL COLONIES!



Life TETIDE

Montecristo 2025





SHEARWATER MONITORING IS HARD!!!!!!



ARTIFICIAL COLONIES!

Tavolara 2025





SHEARWATER MONITORING IS HARD!!!!!!



ARTIFICIAL COLONIES!



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Cerboli 2025





SHEARWATER MONITORING IS HARD!!!!!!



ARTIFICIAL COLONIES!

Pianosa 2024



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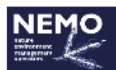




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REGIONE LAZIO

BIOM
UDRUGA / ASSOCIATION



UNIVERSITÀ DEGLI STUDI FIRENZE
BIO SCIENZE AMBIENTALI



ISPRA
Istituto Superiore per la Protezione e la Ricerca Ambientale



Università degli Studi di Palermo



AREA MARINA PROTETTA TAVOLARA
PUNTA CODA CAVALLO



Area Marina Protetta Capo Carbonara
Società Promotrice: ESTERRE



VILLASIMIUS
AREA MARINA PROTETTA CAPO CARBONARA



 Omis Italica