EU-Life+ Malta Seabird Project

Fieldwork methodology used and respective results

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INTERNATIONAL WORKSHOP
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Introduction

BirdLife International's **Marine IBA toolkit** provides guidelines for the methodology to identify marine Important Bird Areas

The fieldwork actions carried out as part of the Malta Seabird Project widely followed this methodology

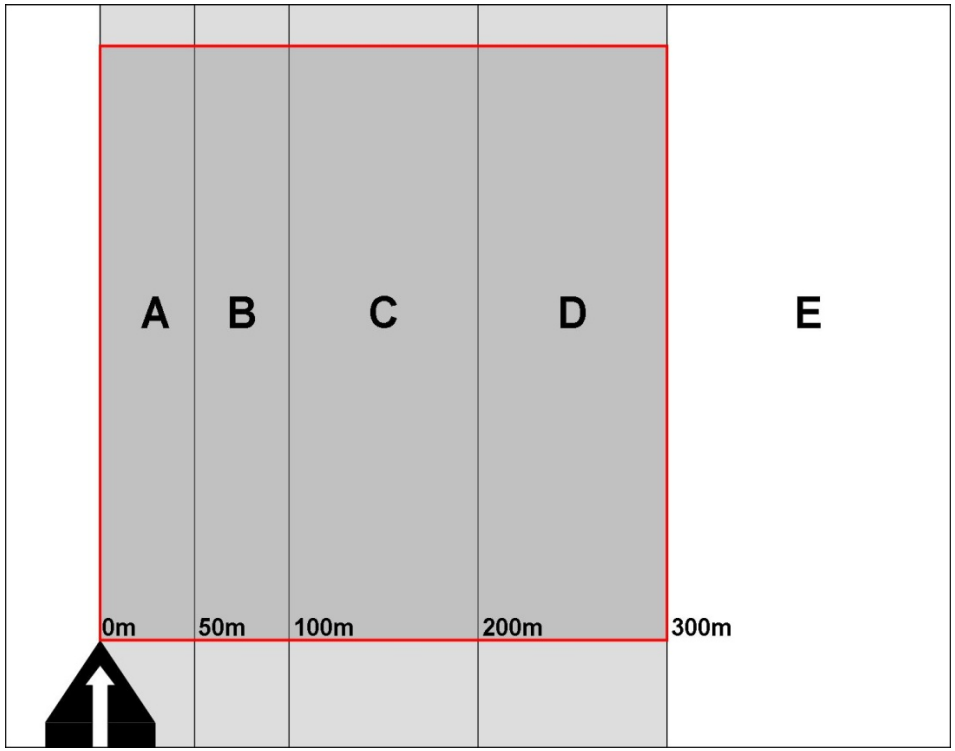
Vessel based surveys - seabird counts

Vessel based surveys - seabird counts

Methodology: European Seabirds at Sea - ESAS

(Camphuysen & Garthe 2004, Camphuysen et al. 2004)

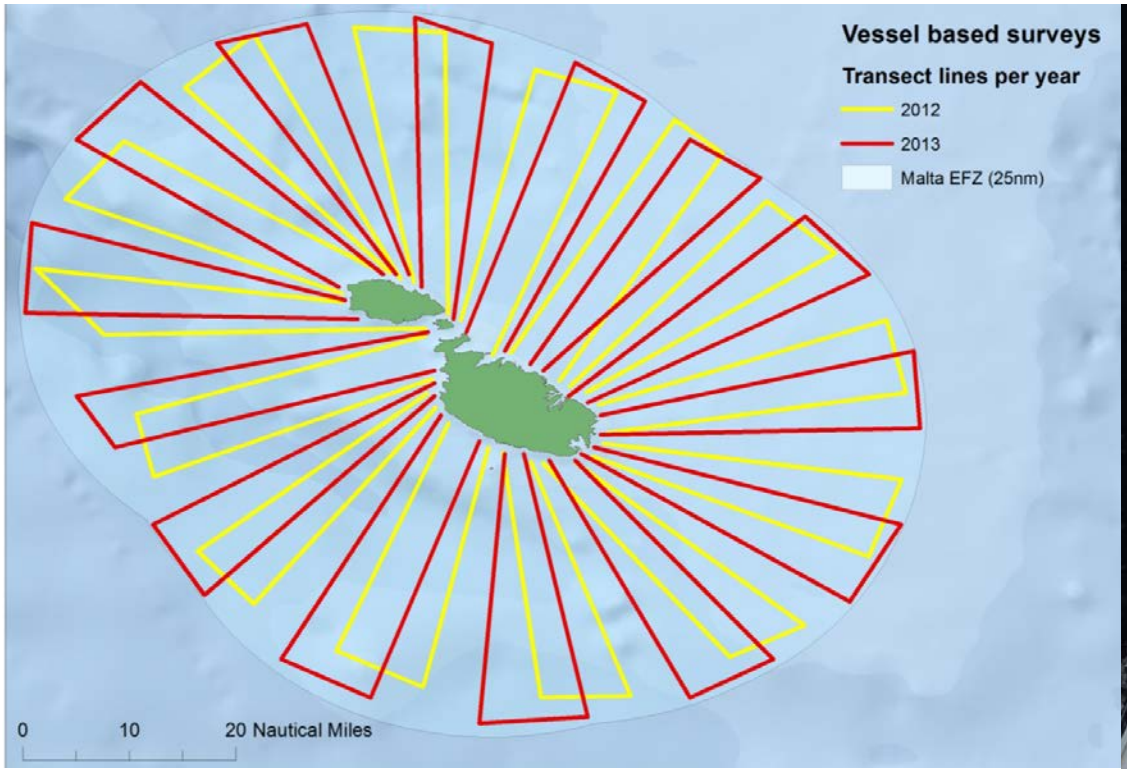
- Distance sampling
- Constant speed
- Transect line counts
- Trained observers
- Species
- Numbers
- Behavior data
- Position Key (every 5min)



Vessel based surveys - seabird counts

14 transect lines, once per month, two years, March to October

Covering Maltese Exclusive Fishing Zone (EFZ, 25nm)



Vessel based surveys - seabird counts

Results in numbers:

224 days spent at sea

21,496 km on transect

6449 km² surveyed

Yelkouan Shearwaters: 1572

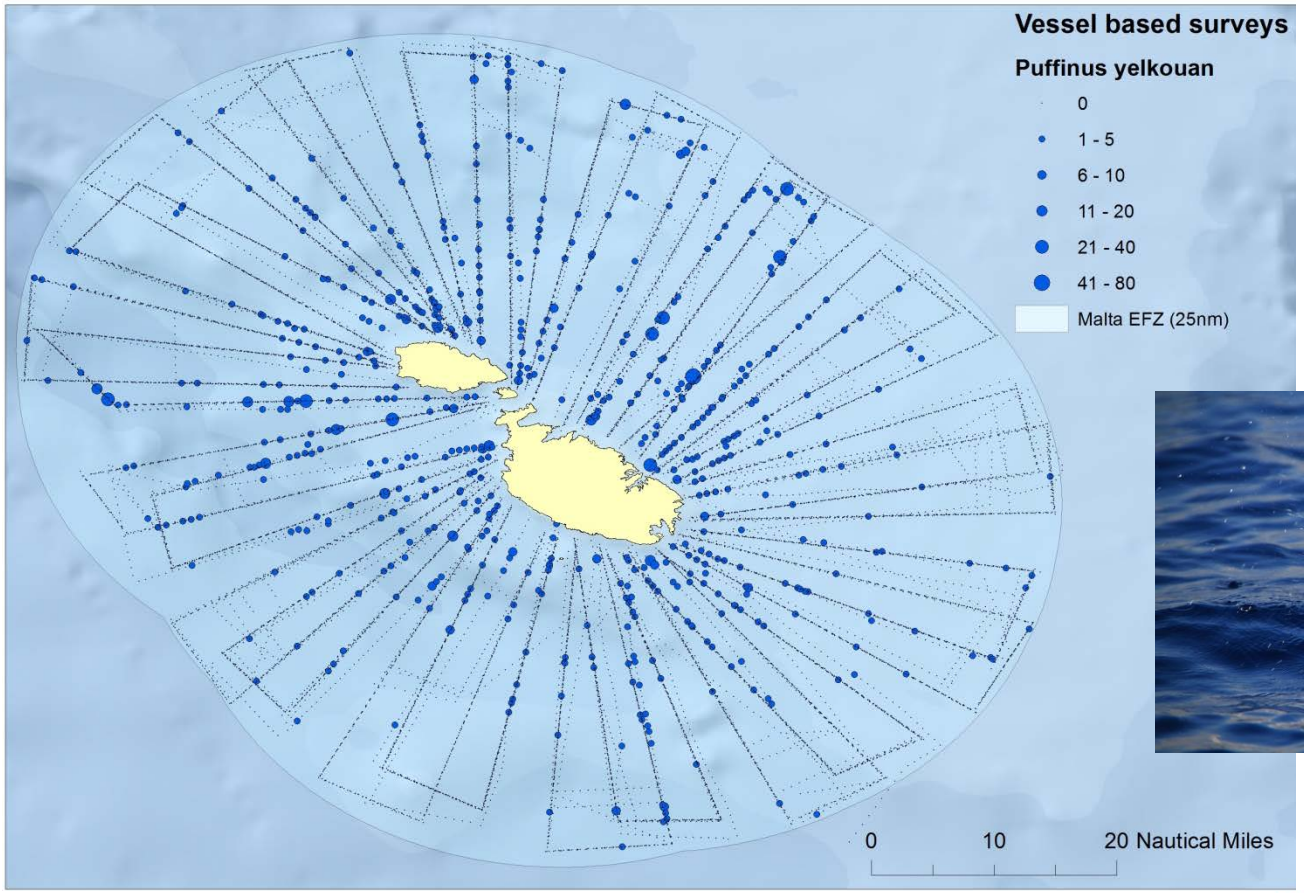
Scopoli's Shearwaters: 26527

Med. Storm-petrel: 304

Additional: cetaceans, turtles

Vessel based surveys - seabird counts

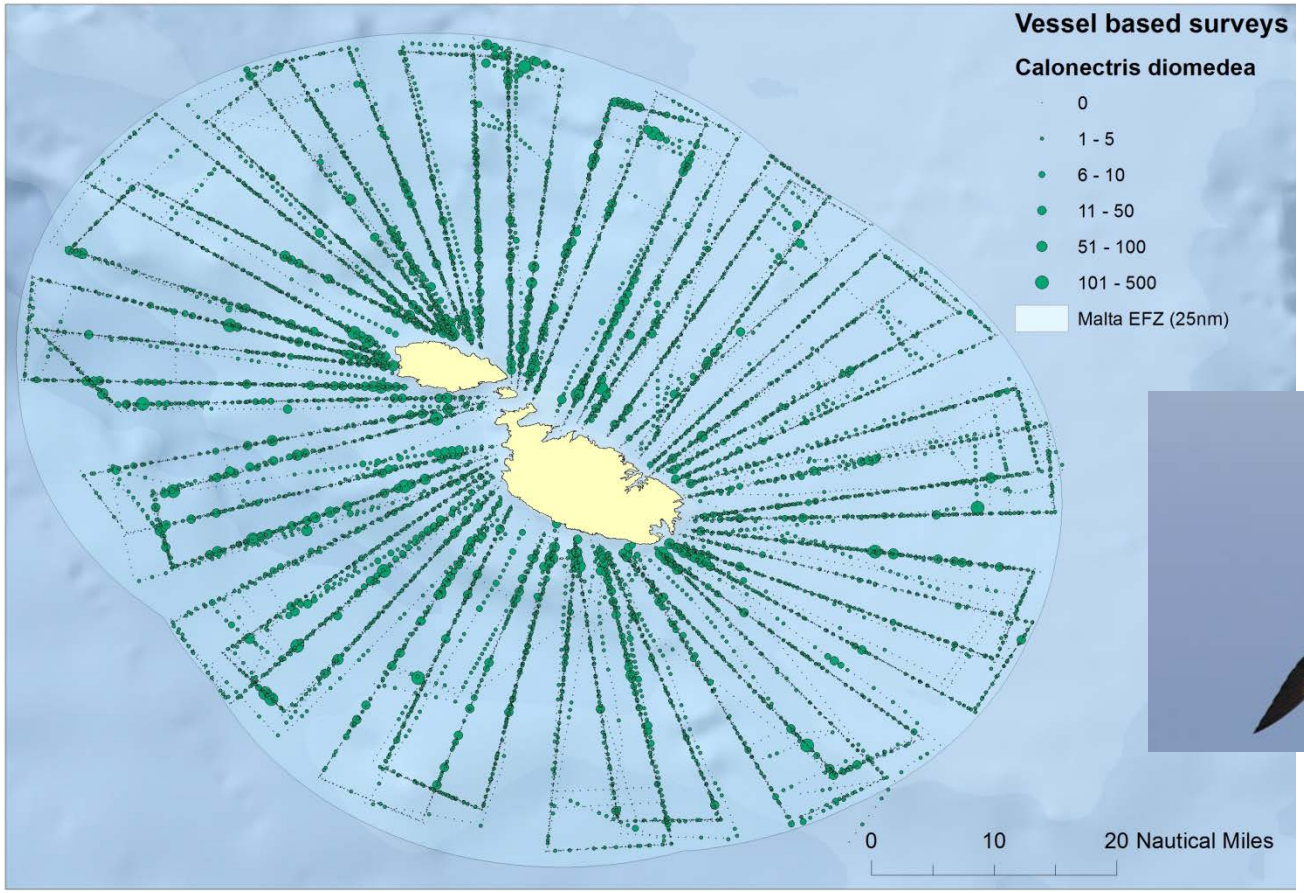
Spatio-temporal seabird distribution, Yelkouan Shearwater



n = 1572

Vessel based surveys - seabird counts

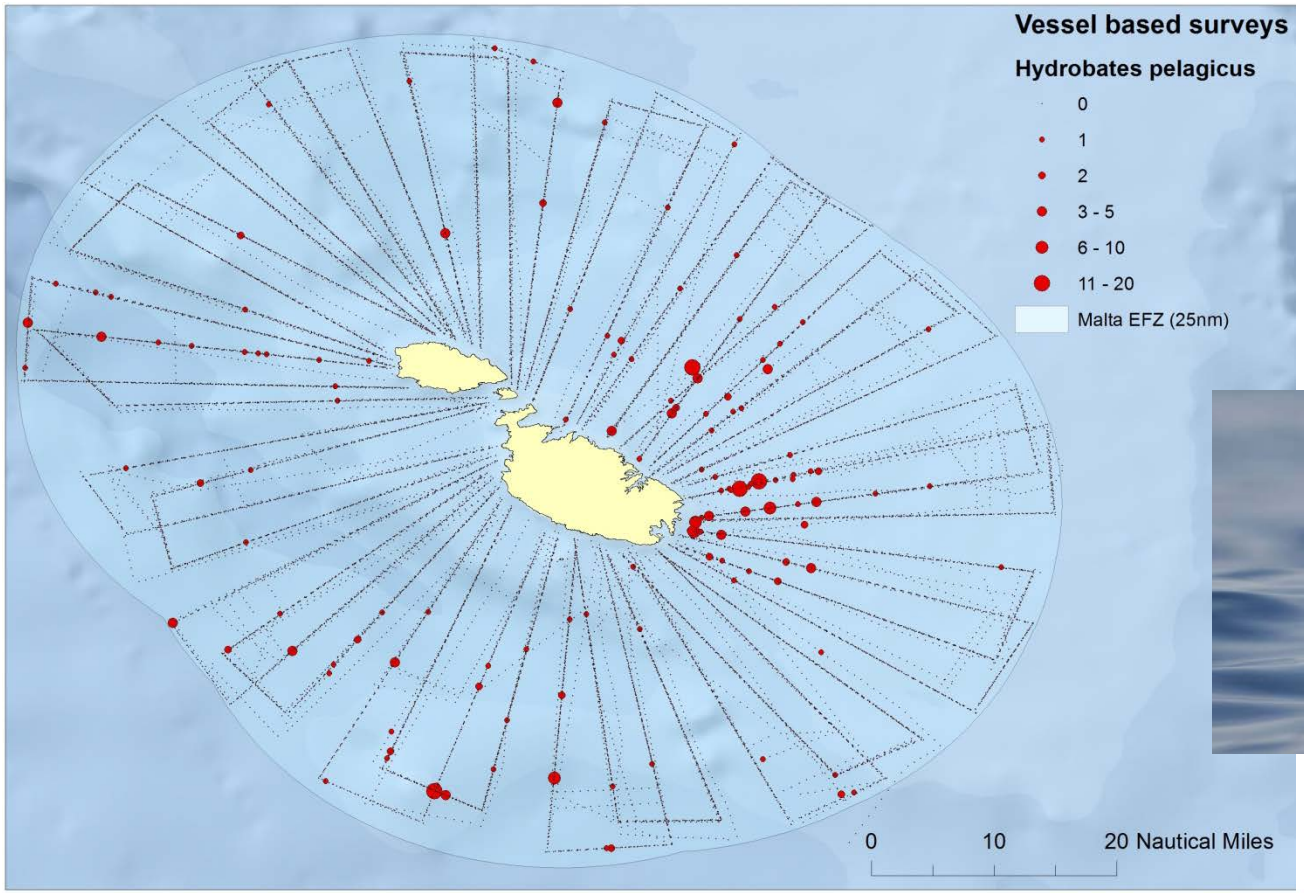
Spatio-temporal seabird distribution, Scopoli's Shearwater



n = 26527

Vessel based surveys - seabird counts

Spatio-temporal seabird distribution, Med. Storm-petrel



n = 304

Telemetry studies – GPS-tracking

Yelkouan Shearwater *Puffinus yelkouan*

Telemetry studies – GPS-tracking

Yelkouan Shearwater *Puffinus yelkouan*

GPS- Datalogger in waterproof casing

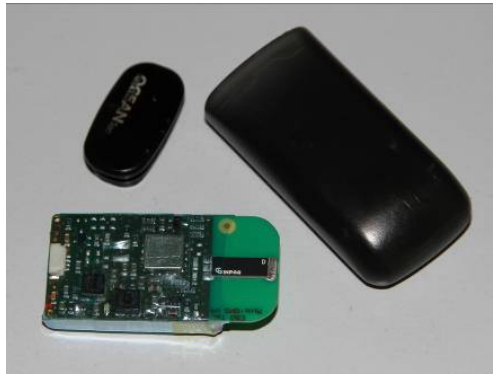
Attached with tape to back-feathers

Chick-rearing adults

Two colonies

1 fix per 20 min

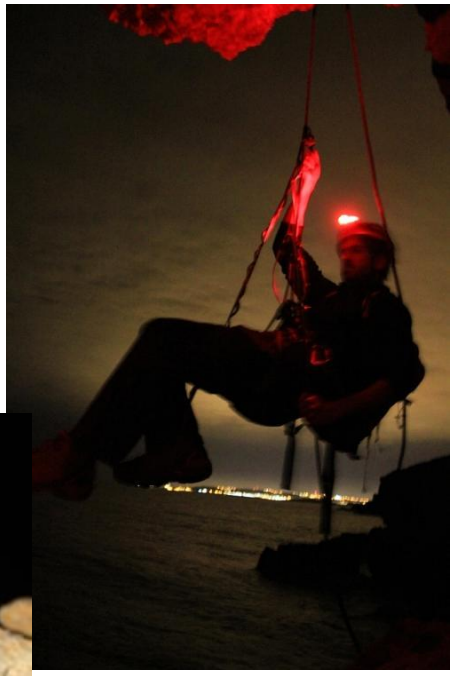
Release back into nest



Telemetry studies – GPS-tracking

Yelkouan Shearwater *Puffinus yelkouan*

Retrieval of GPS-loggers at night, when birds return from foraging trip



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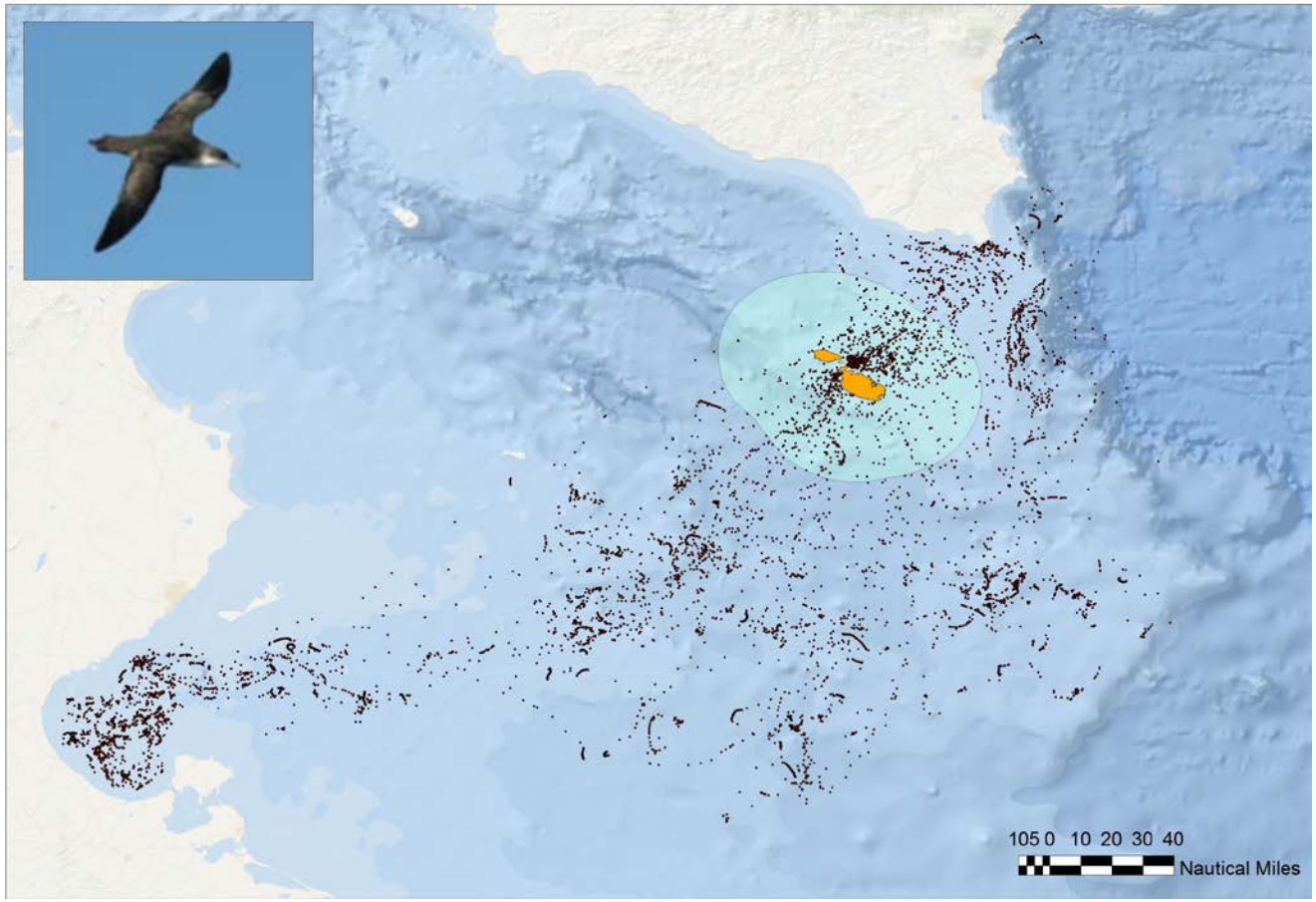
Telemetry studies – GPS-tracking

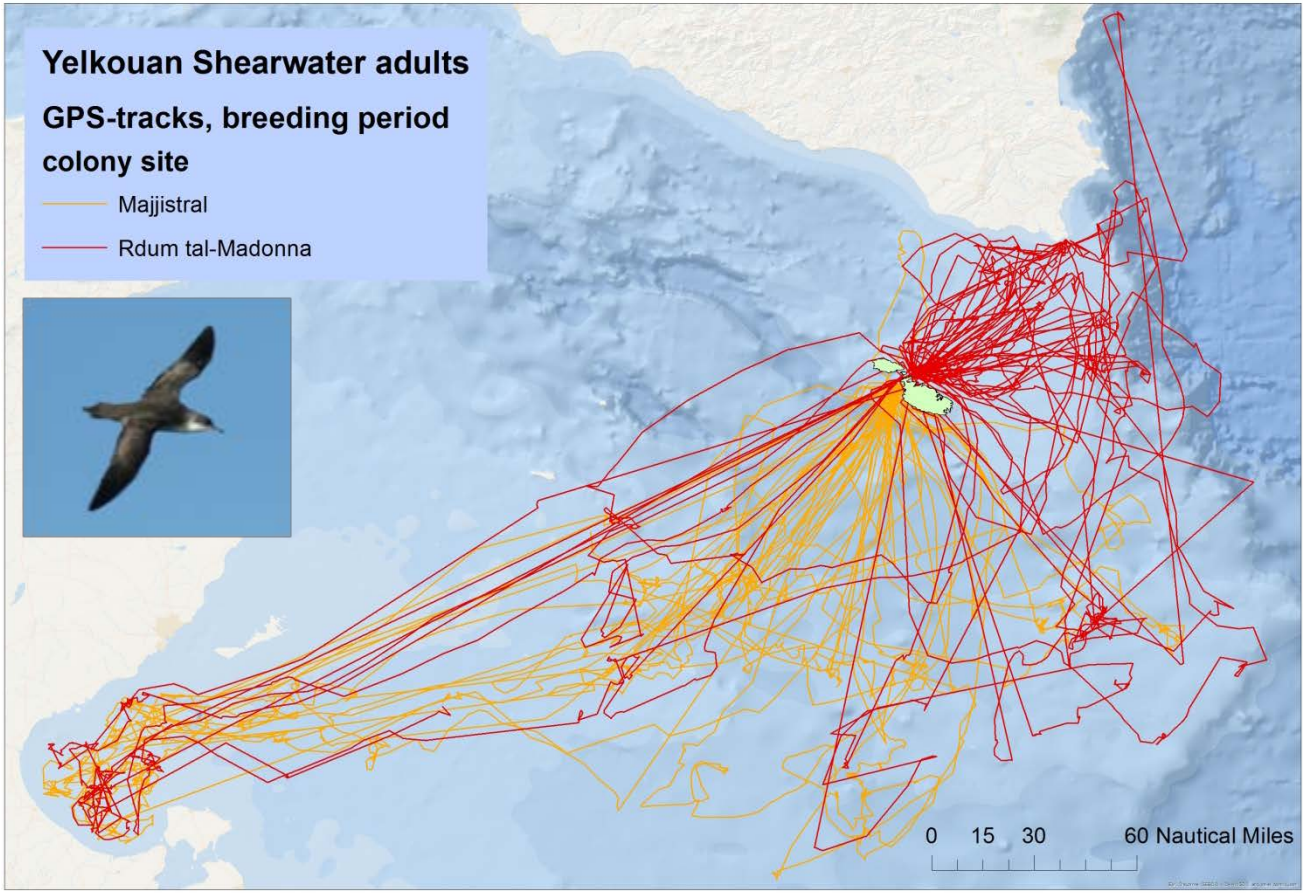
Yelkouan Shearwater *Puffinus yelkouan*



9598 GPS-fixes of 50 tagged birds

Telemetry studies – GPS-tracking

Yelkouan Shearwater *Puffinus yelkouan*



55 foraging trips, 2 colonies

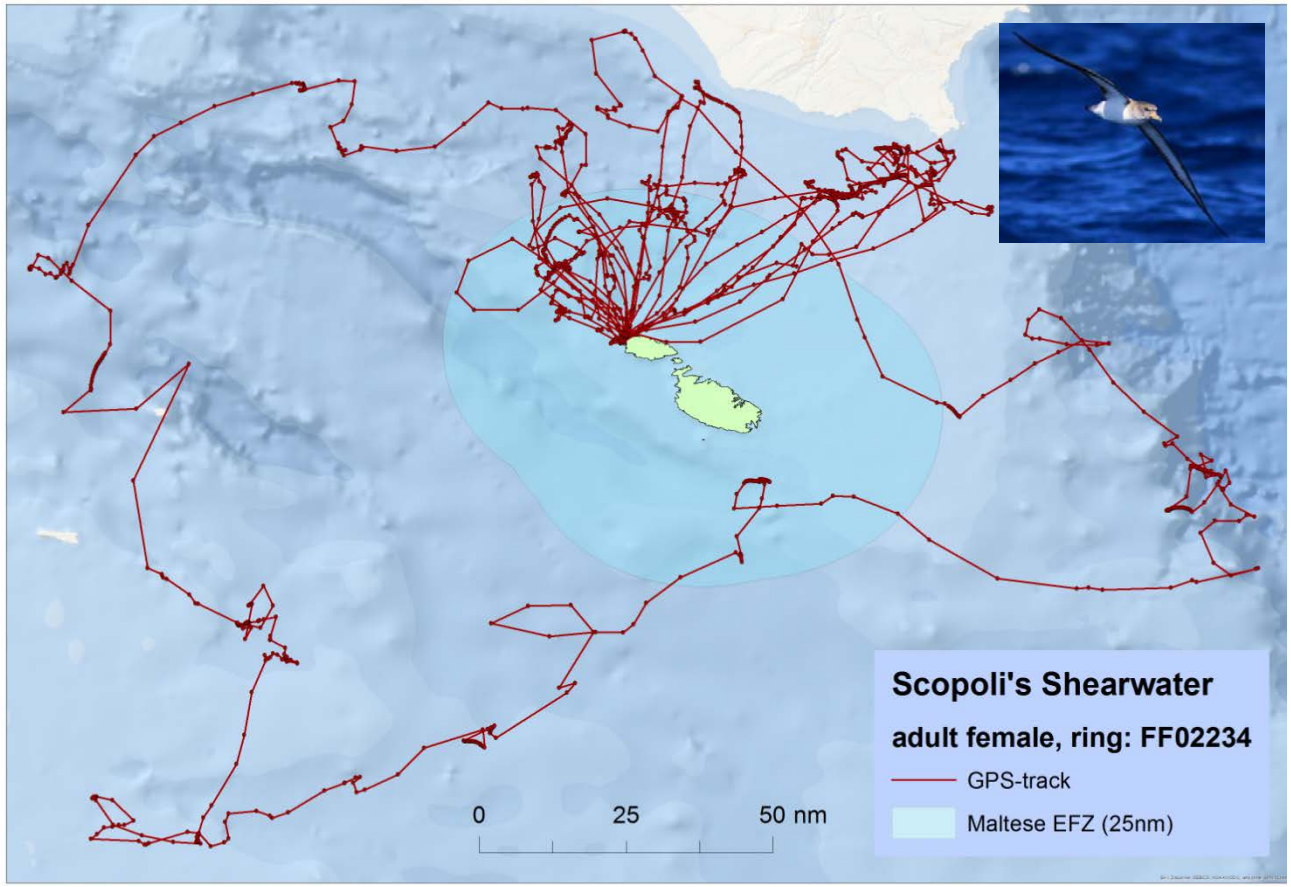
Telemetry studies – GPS-tracking

Scopoli's Shearwater *Calonectris diomedea*

81 successful tagging events, 3 colonies

Telemetry studies – GPS-tracking

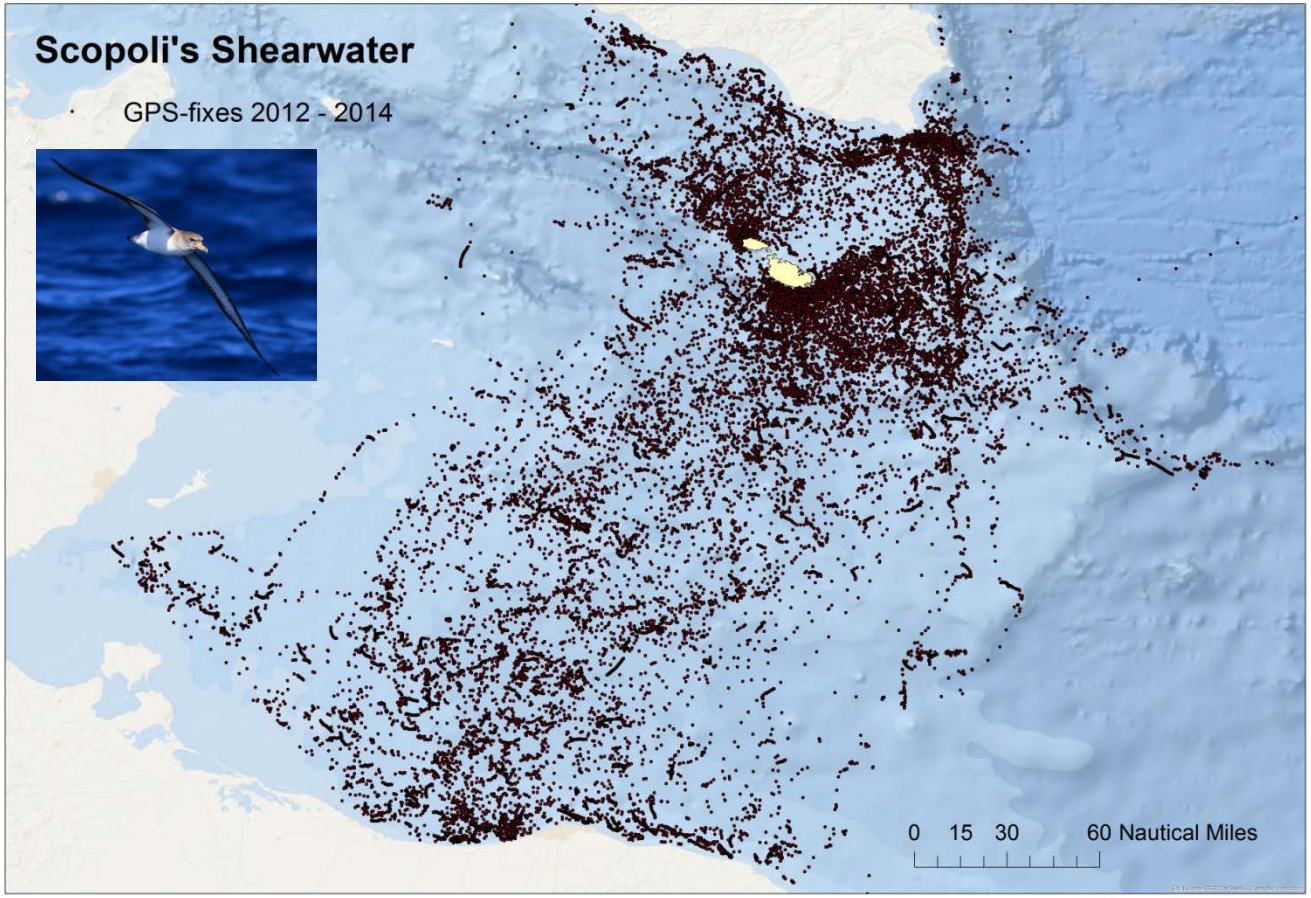
Scopoli's Shearwater *Calonectris diomedea*



Example GPS-track

Telemetry studies – GPS-tracking

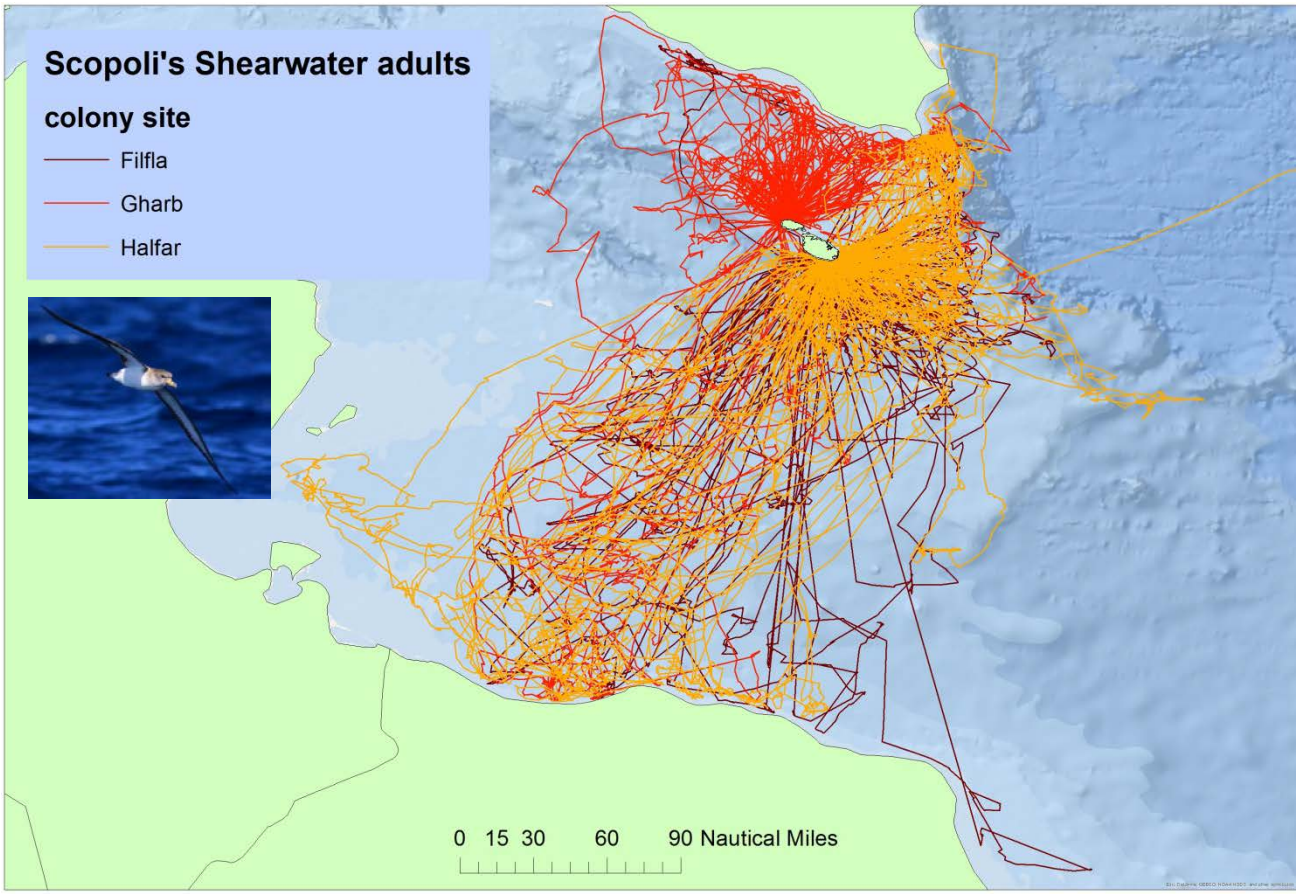
Scopoli's Shearwater *Calonectris diomedea*



35297 fixes of 81 tagged birds

Telemetry studies – GPS-tracking

Scopoli's Shearwater *Calonectris diomedea*

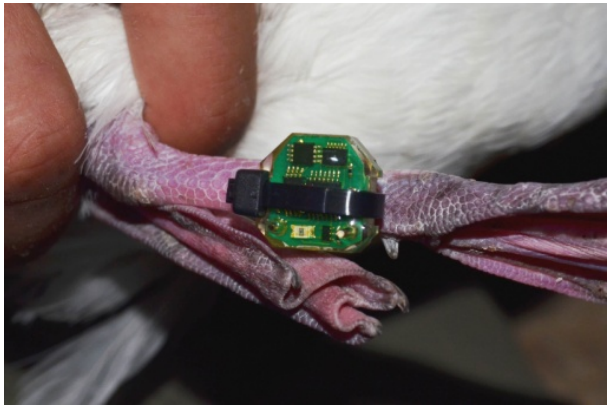


225 foraging tracks, 3 colonies

Telemetry studies – GLS-tracking

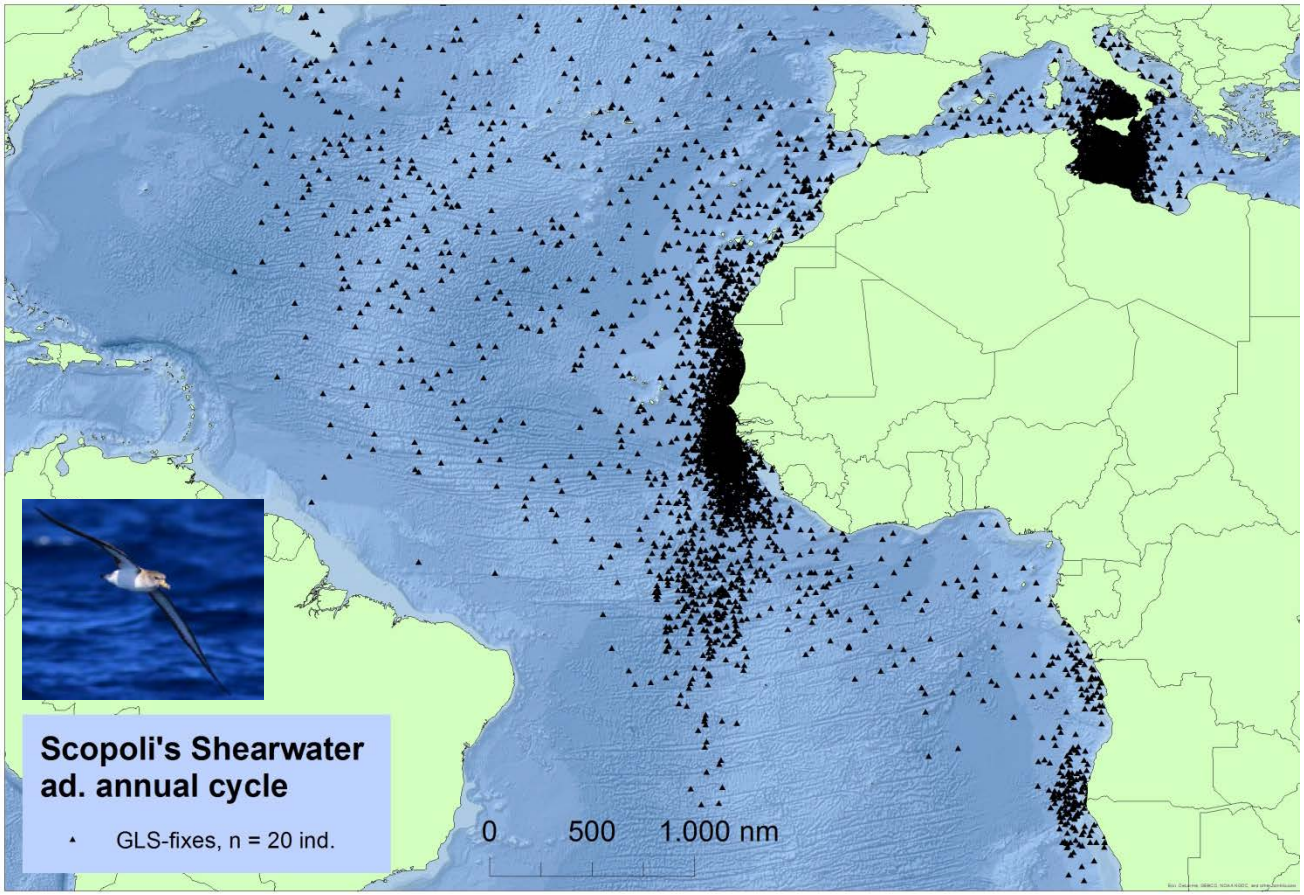
Scopoli's Shearwater *Calonectris diomedea*

- Geolocator/ Light-logger
- Attached to leg-ring
- Two fixes per day
- Up to two years
- Less accurate than GPS
- Tracking on migration and during non-breeding season
- 20 complete trips of adults



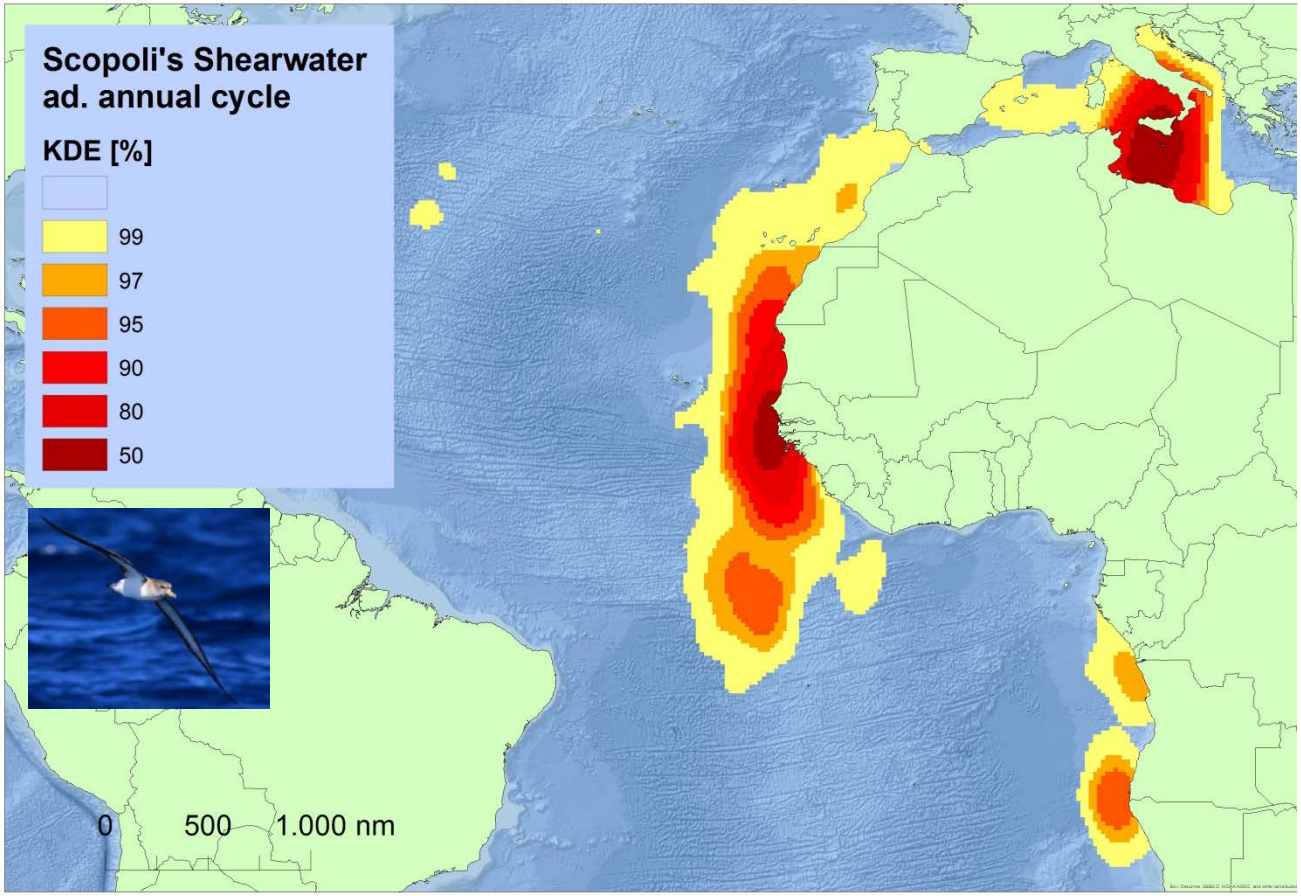
Telemetry studies – GLS-tracking

Scopoli's Shearwater *Calonectris diomedea*



Telemetry studies – GLS-tracking

Scopoli's Shearwater *Calonectris diomedea*



Telemetry studies – Radio-tracking

Med. Storm-petrel *Hydrobates pelagicus melitensis*

76 adults, Filfla, 2 chick rearing periods

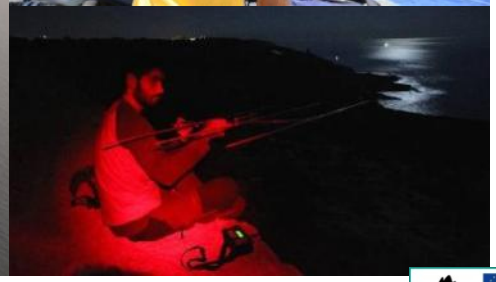
Telemetry studies – Radio-tracking

Med. Storm-petrel *Hydrobates pelagicus melitensis*

Aerial transects in 4500ft, Cessna 172 equipped with Yagi-Antennas and receiver unit

Telemetry studies – Radio-tracking

Med. Storm-petrel *Hydrobates pelagicus melitensis*

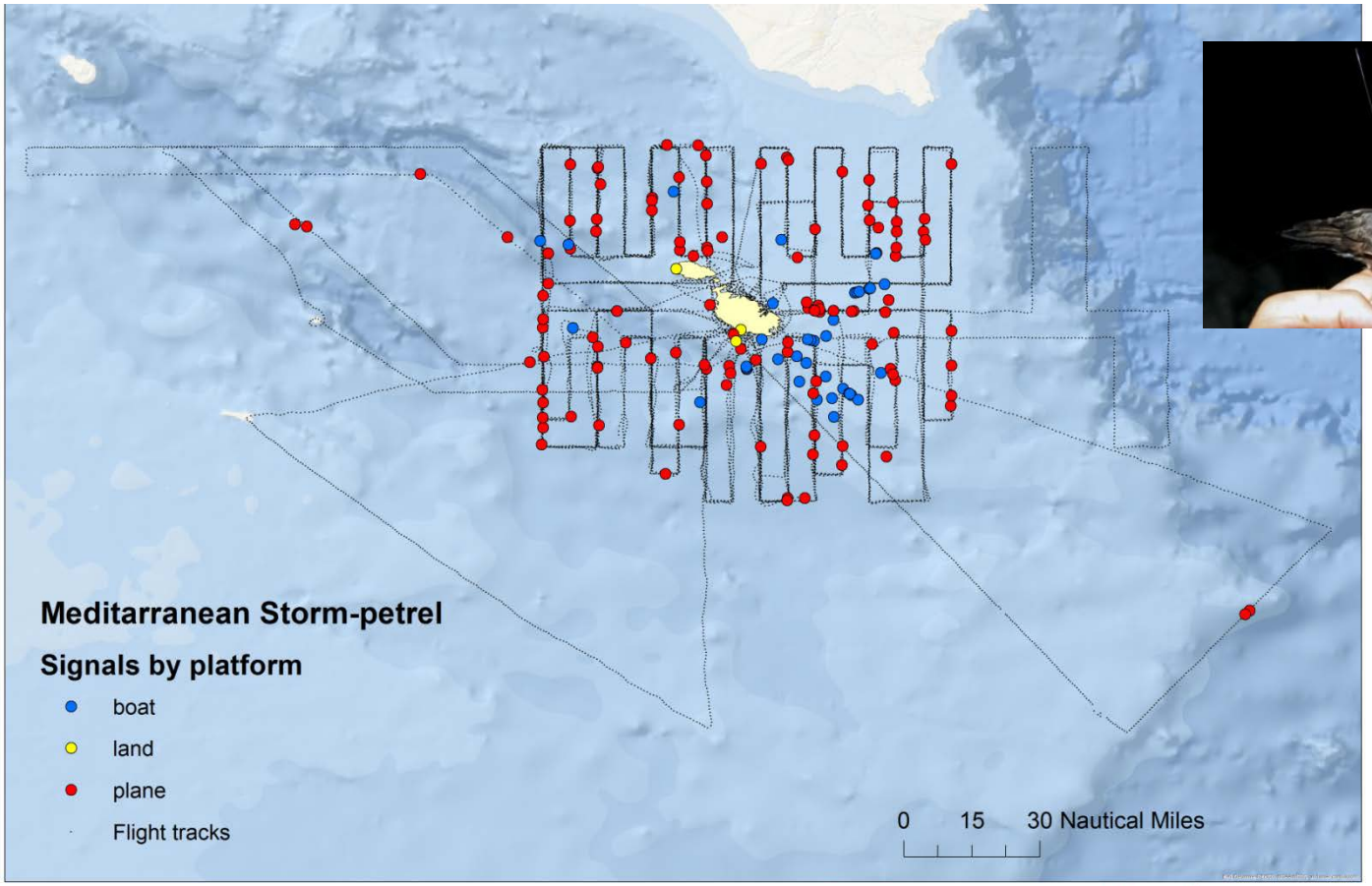


>160 hrs on transect flights

Additional radio-tracking from vessel and land

Telemetry studies – Radio-tracking

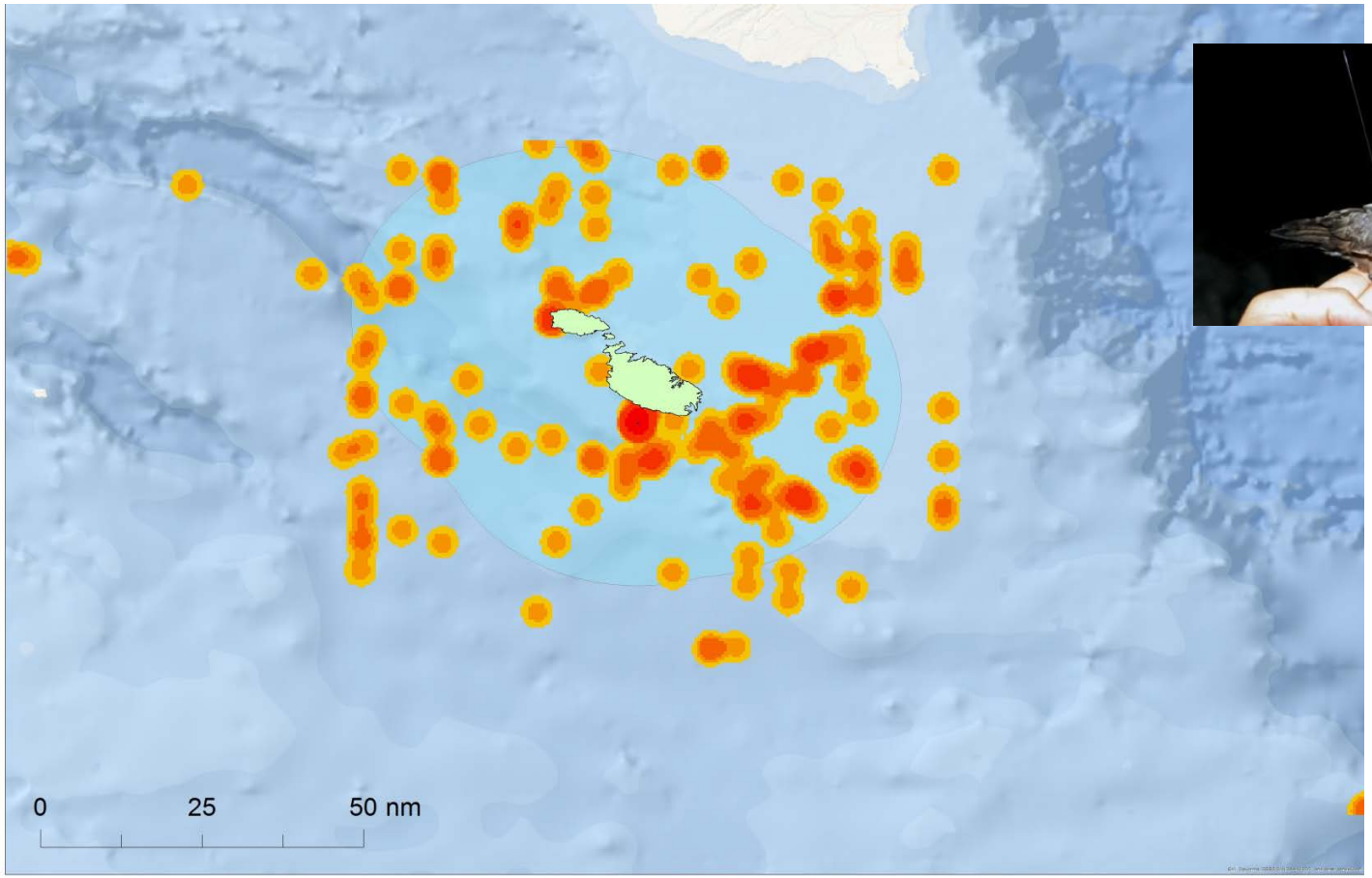
Med. Storm-petrel *Hydrobates pelagicus melitensis*



183 radio-fixes of 43 individuals

Telemetry studies – Radio-tracking

Med. Storm-petrel *Hydrobates pelagicus melitensis*



Kernel density estimates from radio-fixes

Telemetry studies – GLS-tracking (trial)

Med. Storm-petrel *Hydrobates pelagicus melitensis*

Telemetry studies – GLS-tracking (trial)

Med. Storm-petrel *Hydrobates pelagicus melitensis*

35 devices attached

1 bird recaptured after one year

1 bird recaptured after two years

Both in good body conditions

Overall low recapture rates on Filfla

Devices had failed

Future study to show the birds' whereabouts during the non-breeding season

Land-based surveys and colony monitoring

Only Scopoli's Shearwaters in representative numbers

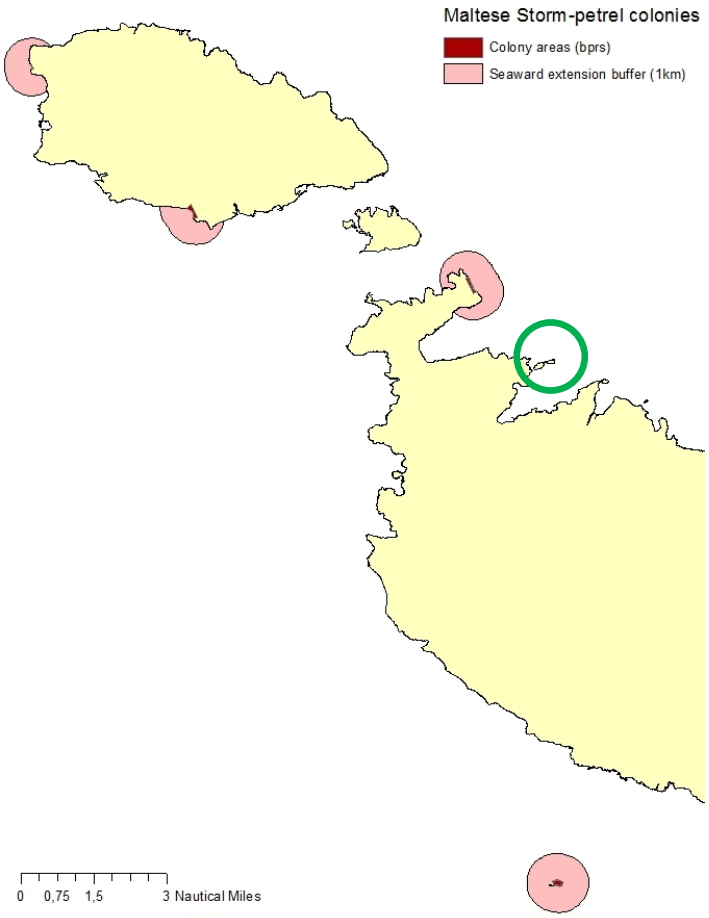
Seawards extensions for analyses

Land-based surveys and colony monitoring

(Re-)discovery of colonies

P. yelkouan: Saint Paul's Island

H. pelagicus: L' Ahrax, San Dimitry

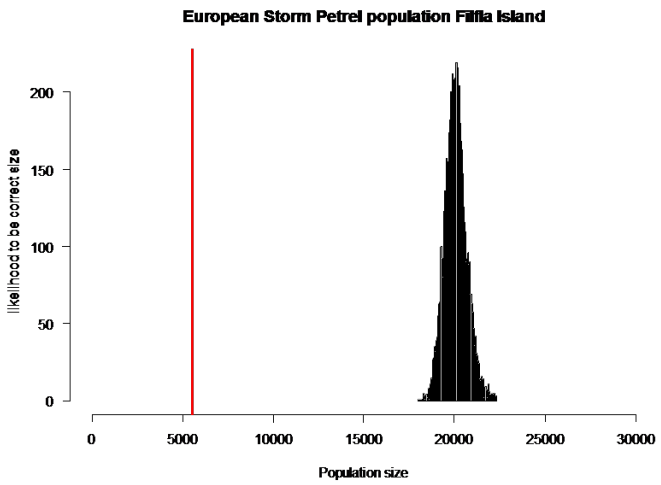


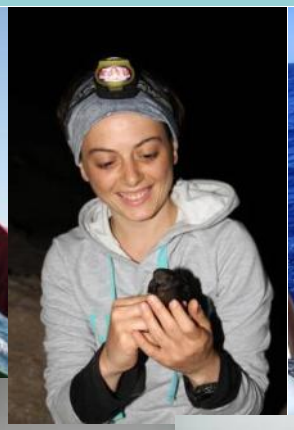
Land-based surveys and colony monitoring

Capture mark recapture of Storm-petrels on Filfla in 2013 for population estimates (SPACECAP: ~ 20,000 ind.)

Colony size assessment: Majjistral, Saint Paul's Islands (IBA candidates)

Nestboxes to facilitate monitoring










Thanks to all project partners, employees, helpers, volunteers and interns

Thank you for your attention