



MALTA'S SECRETIVE SEABIRDS

LIFE+ MALTA SEABIRD
PROJECT REPORT



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Malta's Secretive Seabirds: The LIFE+ Malta Seabird Project Report is the Layman's report of the EU LIFE+ Malta Seabird Project [LIFE10 NAT/MT/090] published in November 2015.

Project duration: September 2011 – June 2016

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Design: Kuluri

Printing: Poultons Print

Reference guide: Riteniece, K., Barbara, N., Metzger, B. & Ball, E. [2015]. Malta's Secretive Seabirds: The LIFE+ Malta Seabird Project Report. Malta: EU LIFE+ Malta Seabird Project.

ABOUT THE PROJECT

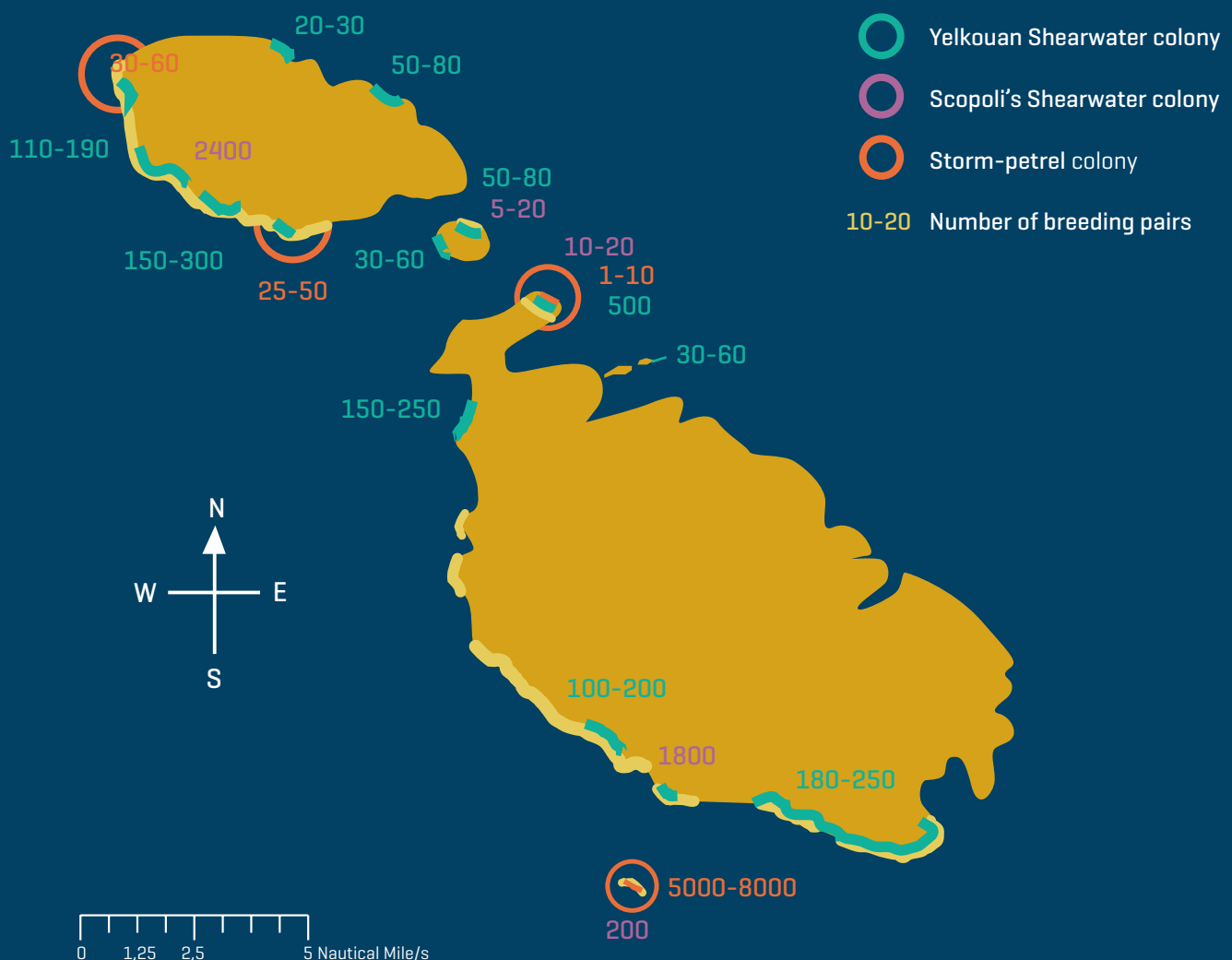
The EU LIFE+ Malta Seabird Project is the largest seabird conservation project carried out in Malta. Through extensive and innovative research, the project aimed to identify areas at sea essential for Malta's seabirds and to create an inventory of these marine Important Bird Areas (IBAs).

With seabird populations declining across the world, local conservation efforts are important for safeguarding global biodiversity. In order to protect birds that spend most of their life at sea, protection of key marine areas is just as important as that of breeding sites on land. This project is the first to target all three of Malta's breeding seabirds that have an unfavourable conservation status: Yelkouan Shearwaters, Scopoli's Shearwaters and European Storm-petrels. The Maltese Islands are home to significant numbers of these protected species. The five-year project builds on the results from the previous LIFE Yelkouan Shearwater Project, completed in 2010, that led to the identification of Malta's first ever marine Important Bird Area

in the channel between Malta and Gozo. The new project has enabled thorough research into the life of Malta's seabirds while out at sea and emphasised the need to protect marine areas regularly used by birds either for feeding, resting or during migration.

The project has identified marine Important Bird Areas in Maltese waters using measures that are standardised by BirdLife International, the world's largest nature conservation partnership. These sites are being proposed for declaration as Marine Special Protection Areas in 2016 by the Maltese government. Once designated as Special Protection Areas within the Natura 2000 network, Malta will be fulfilling its obligation of implementing the EU Birds Directive. The EU LIFE+ Malta Seabird Project is led by BirdLife Malta in collaboration with the Ministry for Sustainable Development, Environment and Climate Change (MSDEC), the Royal Society for the Protection of Birds (RSPB) and the Sociedade Portuguesa para o estudo das Aves (SPEA).

Seabird distribution in Malta



PROJECT TARGET SPECIES

This project is unique in targeting all three of Malta's breeding seabirds from the tubenose family, identified by their tubular nostrils used to expel salt from their bodies. The Mediterranean holds the main breeding grounds for the Yelkouan Shearwater, the Scopoli's Shearwater and the Mediterranean Storm-petrel, a subspecies of the European Storm-petrel. With an unfavourable conservation status globally, all three are also protected by local legislation and are listed under Annex 1 of the EU's Birds Directive, the priority list of protected species for which EU countries are obliged to designate protected areas.

Yelkouan Shearwater (Garnija) *Puffinus yelkouan*

The Yelkouan Shearwater is a small shearwater species endemic to the central and Eastern Mediterranean.

Distribution

Breeds in Malta, Spain, France, Italy, Greece, Bulgaria, Albania, Croatia, Turkey, Algeria and Tunisia, but the precise distribution is not sufficiently studied.

Size

Body length 30-35 cm, wing span 70-84 cm

Lifespan

Up to 25 years

Food

Small fish and squid that are caught by plunging into the sea and diving as deep as 30m.

Reproduction

Young birds reach maturity within 2-3 years. Yelkouan Shearwaters are early breeders, returning to their colonies in the winter months. Each pair lays one egg between the end of February and beginning of March and the parental duties are shared between the male and female. Young fledge between June and July, in comparison with October for Scopoli's Shearwater.

Population

Global population

15,300-30,500 pairs

Maltese population

With 1,660 - 1,980 pairs Malta hosts approximately 10% of the world population. The largest colonies are found at Rdum tal-Madonna, along Malta's south-eastern cliffs, on Comino and Ta' Cenc in Gozo.



Global conservation status
Vulnerable

Scopoli's Shearwater (Ċiefa) *Calonectris diomedea diomedea*

Recently distinguished from the Cory's Shearwater, Scopoli's are remarkable in their habit of gathering in large 'rafts' close to the coast at sunset before returning to their nests in the dark. During the breeding season their colonies come alive at night with their calls, which sound like a crying baby.

Distribution

Breeds in the Mediterranean including Algeria, Croatia, France, Greece, Italy, Malta, Spain, Tunisia and Turkey. Migrates to the west coast of Africa and as far as the east coast of Brazil.

Size

Body length 45-52 cm, wingspan 112-122 cm

Lifespan

Over 20 years. Malta's oldest Scopoli's Shearwater was recaptured during project monitoring after being ringed 28 years earlier when she was already a breeding adult.

Food

Squid and fish are caught from the surface and as deep as 15m. Scopoli's are attracted to fishing boats to feed on discarded fish.

Reproduction

Scopoli's Shearwaters mate with the same partner at the same breeding site every year. Young birds reach maturity between 2 to 4 years old, before which they may spend their entire time at sea.

Population

Global population

142,478-222,886 pairs

Maltese population

4,500 - 5,000 pairs. Ta' Cenc cliffs in Gozo are home to the largest colony.



Global conservation status
Least Concern (with decreasing population trend)

European Storm-petrel

[Kangu ta'Filfla] *Hydrobates pelagicus*

Storm-petrels are the smallest seabirds in Malta and also the smallest tubenoses in Europe. As their Maltese name suggests, the tiny island of Filfla is a Mediterranean stronghold for these birds. Recent genetic studies suggest that the Maltese population is a distinct subspecies, *Hydrobates pelagicus melitensis*.

Distribution

Vast majority of the population breeds on the Faroe Islands; but also in the UK, Ireland, Norway, Malta, Greece, Spain and Italy.

Size

Body length 14-16 cm, not much bigger than a sparrow. Wingspan 37-41 cm

Lifespan

Up to 28 years

Food

Feeds mainly on the wing, typically fluttering over the surface and looking for floating food, but occasionally dives for its prey as deep as 5m. Diet includes small fish and squid, crustaceans and plankton.

Reproduction

Being so tiny, Storm-petrels nest deep in small crevices in the rock. Similar to shearwaters, they lay just a single egg each year, with parents sharing incubation and foraging duties. Their breeding period is prolonged – from April till October.

Population

Global population
430,000-510,000 pairs, but the Mediterranean population is estimated to be less than 16,000 pairs.

Maltese population
Filfla holds 5,000-8,000 breeding pairs, more than a half of the Mediterranean Storm-petrel subspecies. Two small colonies are also found in Gozo.



Global conservation status
Least Concern [with decreasing population trend]

A NEED FOR MORE PROTECTION

Malta is home to 10% of Yelkouan Shearwaters, 3% of the world's population of Scopoli's Shearwaters and a substantial 50% of the Mediterranean's Storm-petrels. As seabirds are the most endangered group of birds in the world, safeguarding the future of Malta's significant populations is a must.

Positive steps have already been taken to protect seabirds in Malta. Most of their nesting colonies are now protected as Natura 2000 sites and the first rat control programme at a Yelkouan Shearwater colony has given great results, reducing the number of eggs and chicks eaten by predators. However these seabirds are strictly pelagic, meaning they spend most of their lives at sea, so protecting only their nesting habitat is not enough.

These birds face multiple threats at sea: from competition with fishermen over the availability of fish, the risk of being caught

in fishing nets and lines, and the increasing sea pollution with plastic and other materials that are dumped in the sea. Closer to land, noise and light pollution from sea traffic or insensitive development also disturbs seabirds.

Their ability to fly hundreds of kilometres daily to their feeding areas, as well as their secretive behaviour in approaching land only at night has caused difficulty in accessing, observing and studying these birds. Before this project began, their routes, destinations and behaviour at sea were largely unknown, meaning that their protection at sea could not be guaranteed.

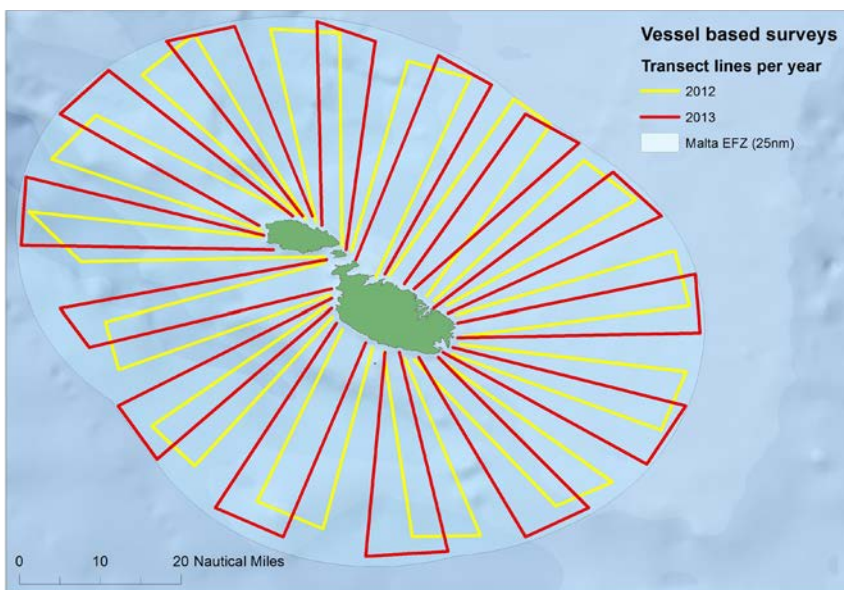
Four years of innovative research have now given comprehensive results and will be the first step towards legal protection of the most important marine areas for Maltese seabirds

THE RESEARCH

To study these mysterious seabirds and their movements out at sea, the Project applied a combination of traditional and innovative methods.

BOAT-BASED OBSERVATIONS

Boat-based seabird counts are a core tool for mapping their distribution off-shore. Over a two year period, the project team spent 224 days on board a research yacht. Trained surveyors recorded seabird densities [birds per area surveyed], flocks and their behaviour; whether they were flying, rafting on the water or feeding. Transect lines at sea were followed to cover the majority of Maltese waters. These observations strictly followed a standardised, Europe-wide used protocol - European Seabirds at Sea (ESAS). This methodology allowed the project team to accurately map the concentration of Maltese seabirds, leading to identification of the Important Bird Areas within the 25 nautical miles of the Maltese Exclusive Fishing Zone, where legal protection can be implemented.



RADIO TRACKING

The LIFE+ Malta Seabird Project was the first in Europe to successfully carry out Very high frequency (VHF)-radio tracking of Storm-petrels, birds which are too small for other tracking methods. The tracking results helped to identify the sea areas used by European Storm-petrels which were breeding on Filfla. Seventy-six birds were fitted with radio tags that emitted unique signals from each bird. These signals were then tracked by attaching an antenna to the wing of a small aircraft flown above sea. Special software stored the individual bird number with the exact GPS position and time.

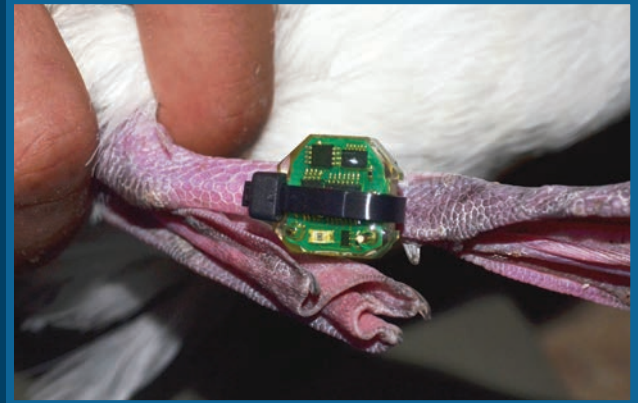


GPS LOGGERS



During their incubation and chick-rearing period seabirds make frequent and relatively short trips to find food for the young birds waiting in the nest. The project fitted adult birds with Global Positioning System (GPS) loggers, to record precise pin-points of individual birds every 20 minutes for up to a month. Being relatively large, these loggers are only suitable for the larger species – shearwaters. Researchers spent countless nights waiting for the tagged birds to return to their nest so that they could retrieve these devices with precise data of the birds' previous foraging trips.

GEOLOCATORS



Outside the breeding season, seabirds migrate away from Malta. To find these important wintering areas, Global Location Sensor (GLS) loggers or geolocators were used for Scopoli's Shearwaters. Attached to a ring on the bird's leg, these small devices can be left for up to two years; measuring the time of sunrise and sunset, two aspects which reveal the bird's location at a given day. Although less accurate than GPS loggers, geolocators are suitable to reveal migration patterns. Seabird fidelity to the same nesting site year after year meant that tags could be retrieved after birds completed their migration.

MONITORING



Our researchers visited the main breeding colonies of all the three target species across the islands, surveying the success of nesting attempts and the extent of the colony areas. Through bird ringing, we were able to trace the return to the same colony year after year. The main objective of this method is to monitor populations' state of health, knowing whether their numbers are growing or declining. These are very important factors in guiding conservation efforts on site.



Another measure employed during the project, which will continue in the future, is monitoring the Yellow-legged Gull colony on Filfla, as gulls are known to predate on the smaller Storm-petrels.

To facilitate the studies of seabirds that tend to nest in deep, inaccessible crevices, artificial nest boxes were successfully implemented for both European Storm-petrels and Yelkouan Shearwaters.

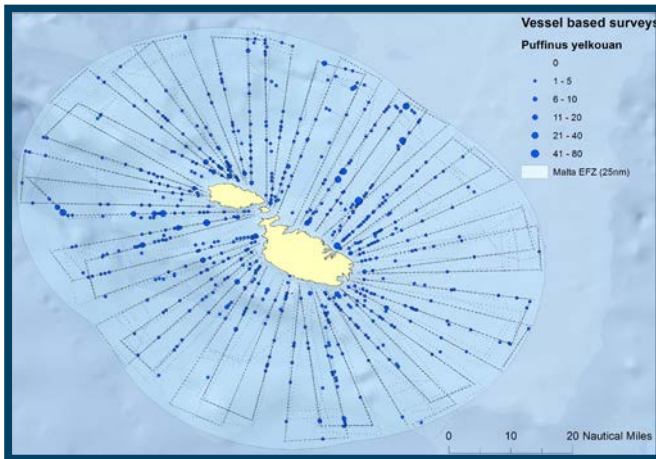
MODELLING IMPORTANT BIRD AREAS

Data obtained from field research methods explained in this section were crucial, however not enough to design important bird areas. It is impossible to count the birds in all sea areas and track every single bird. However, recording various environmental factors (such as sea surface temperature, sea depth, distance from colonies, etc.) and associating these with the presence of birds allows developing mathematical models which help to predict the marine areas favoured by seabirds.

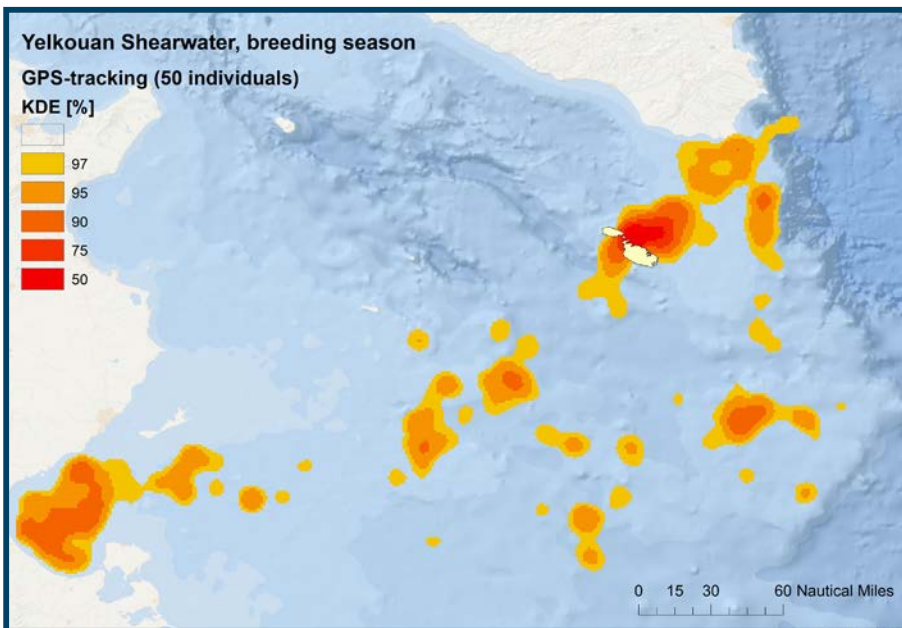
THE RESULTS

The various techniques utilised during the project have yielded remarkable information about previously unknown areas frequented by seabirds. These have helped gain a better idea of the areas at sea seabirds depend on to feed, rest as well as migrate throughout their yearly cycles.

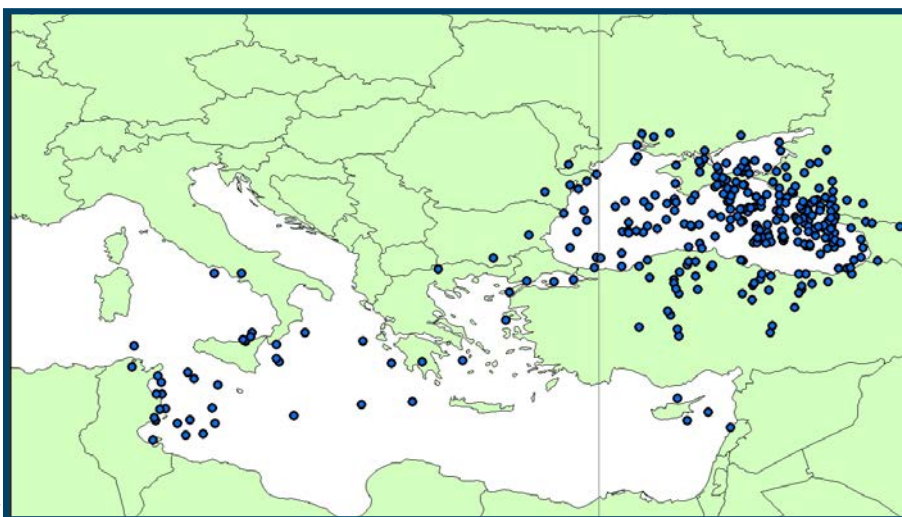
YELKOUAN SHEARWATER



Boat-based counts of Yelkouan Shearwaters revealed their distributions within 25 nautical miles of Malta in between March and October of 2012 and 2013.

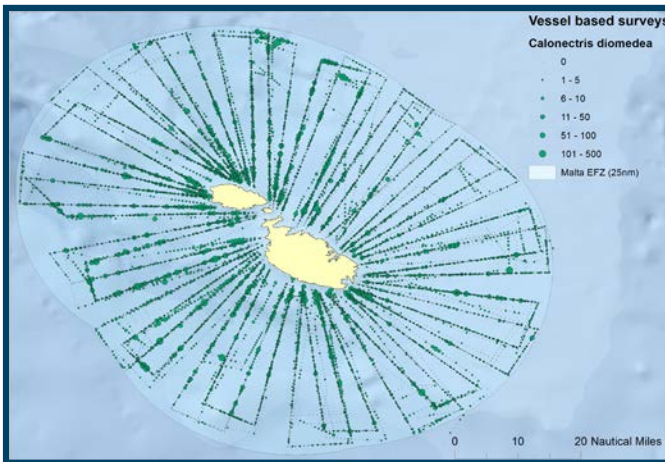


GPS tracking data obtained from over 50 adult birds during the breeding season shows that key feeding areas lay in both international and Maltese waters. From short foraging trips a few kilometres away from their colonies, to the coast of Sicily or the Gulf of Gabes in Tunisia, they may spend up to a week visiting these areas in search of food for their young.

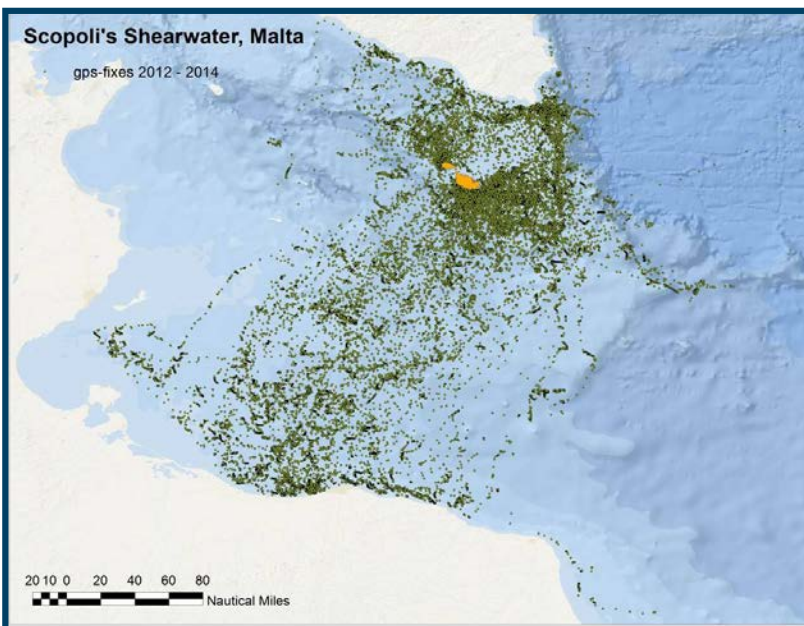


Geolocators fitted during the LIFE Yelkouan Shearwater Project had revealed that they leave to winter in the Black Sea after the breeding season. Yelkouans from all over the Mediterranean congregate in this area, showing that it is crucial for species survival.

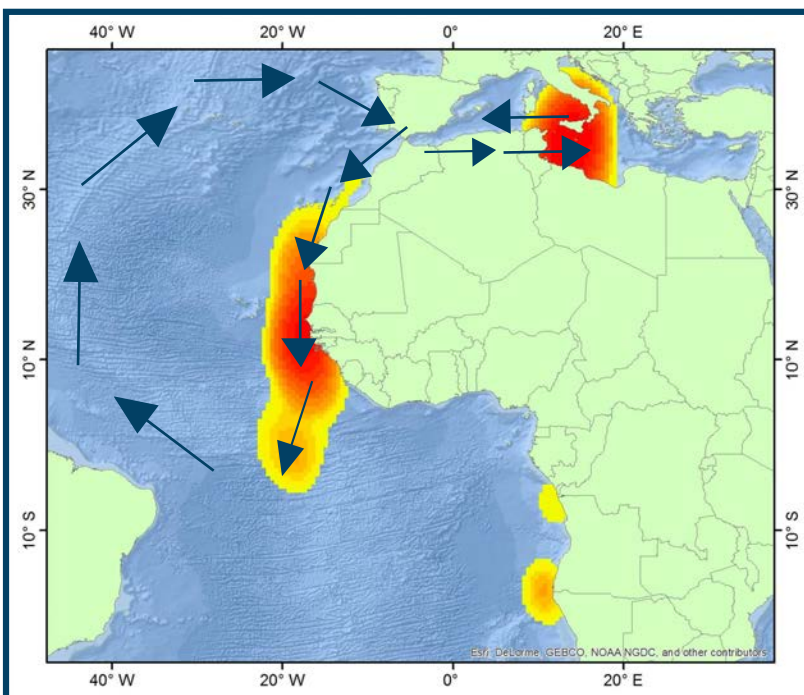
SCOPOLI'S SHEARWATER



Boat surveys carried out in 2012 and 2013 revealed that contrary to Yelkouan Shearwaters, Scopoli's Shearwaters are more numerous and visible closer to the coast, especially close to their colony sites.

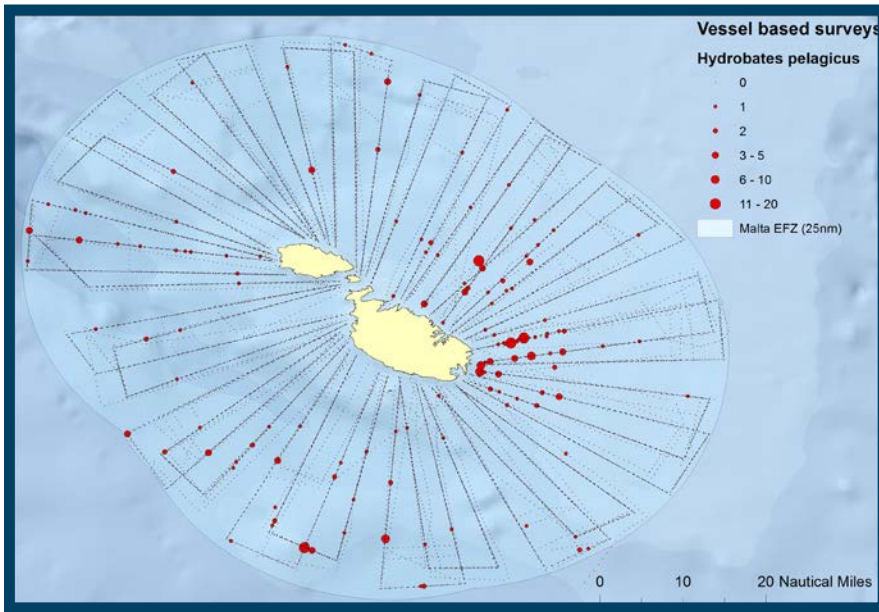


Adult Scopoli's Shearwaters tracked during the breeding season with GPS data loggers have similarly shown their dependence on both Maltese and international waters. Their feeding trips range from short one-day trips within Maltese waters to 20-day trips to the coast to Sicily and Libya.

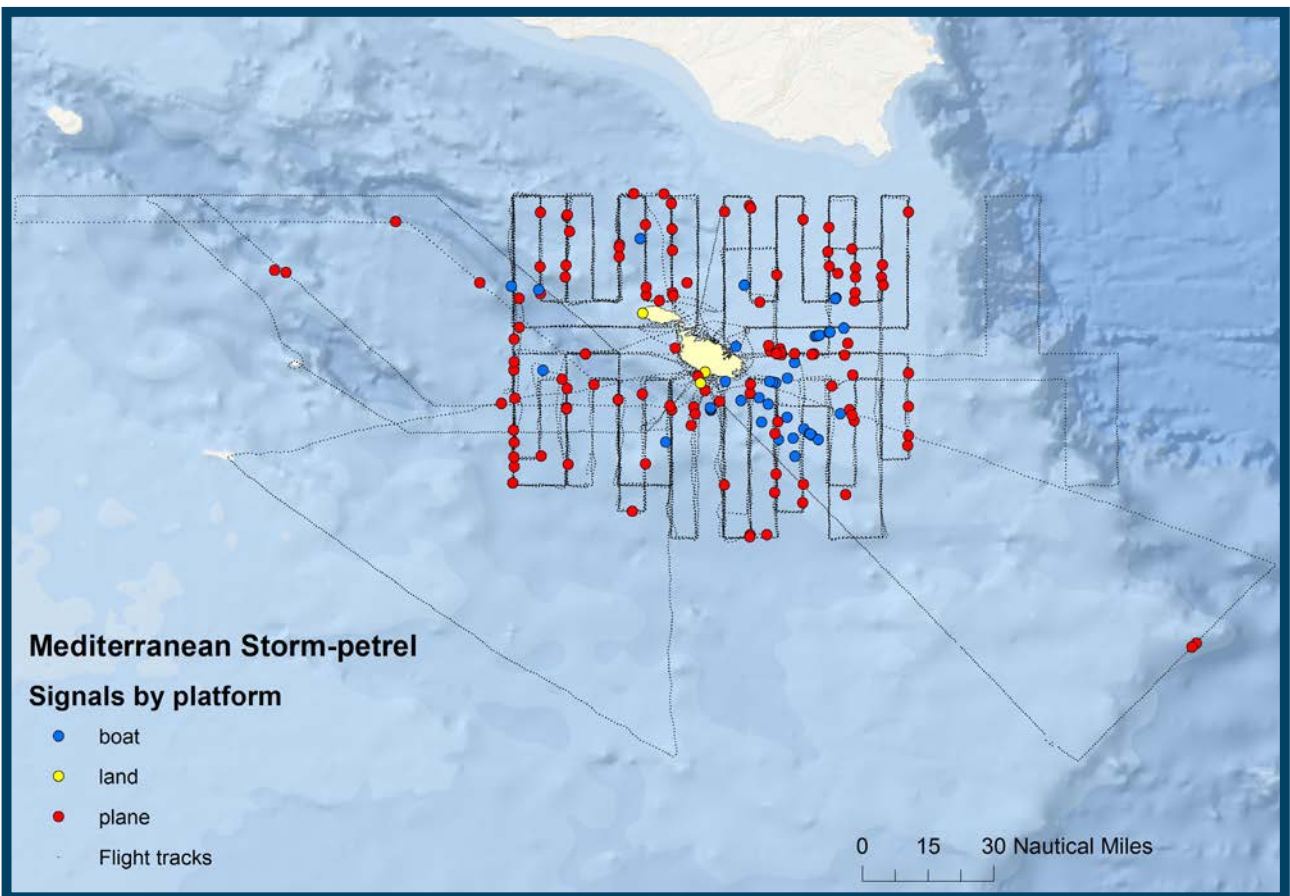


GLS data from 20 Scopoli's Shearwaters show that they leave the Mediterranean in October and November, travelling to winter in food-rich sea areas of the East Atlantic and in front of the West African coast. Their return trip takes them off the East coast of Brazil, looping around the North Atlantic Ocean, possibly following gulf stream currents. Scopoli's re-enter the Mediterranean through the strait of Gibraltar, making a presence in Malta between February and March.

STORM-PETREL

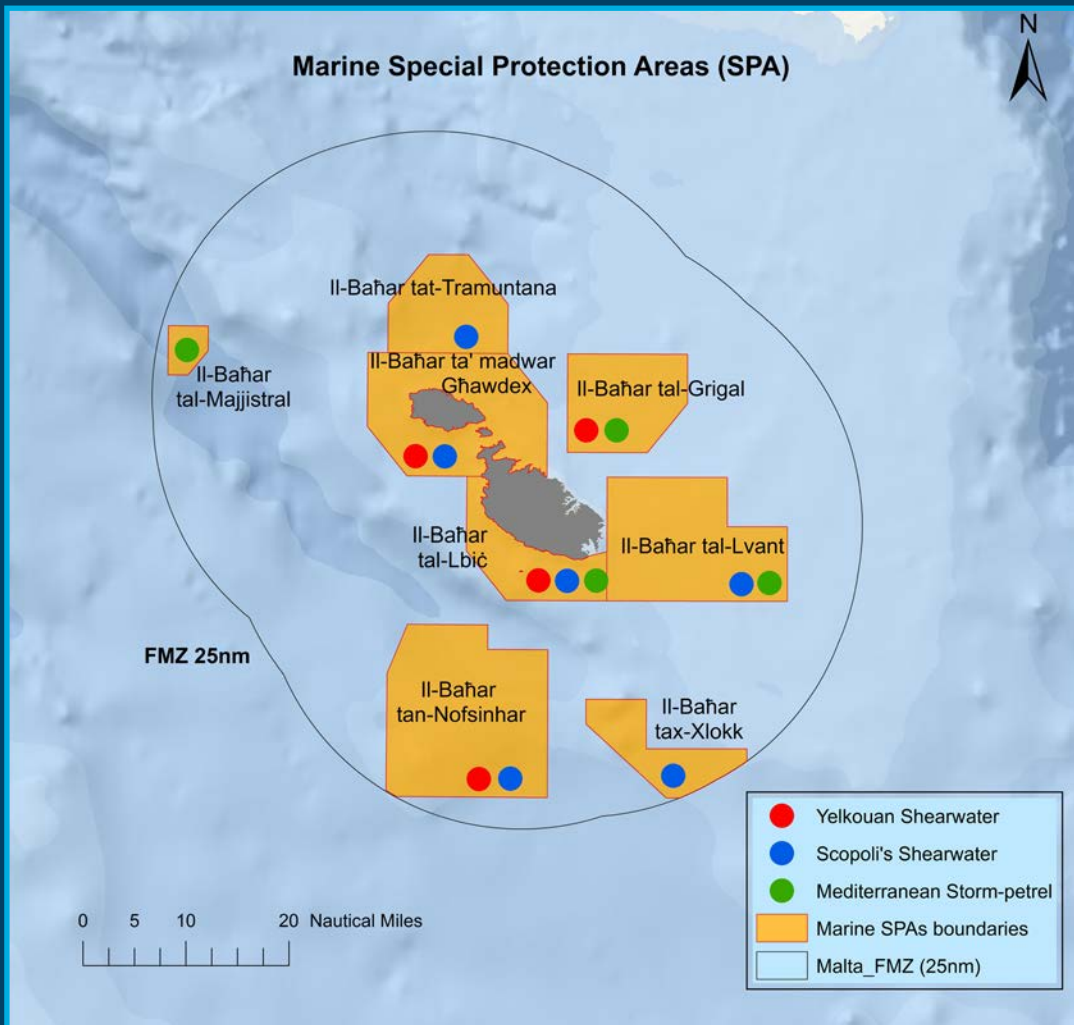


Storm-petrels were not as frequent as shearwaters during boat-based surveys, indicating that they venture off-shore outside Maltese waters. Their presence close to fish-farming activities is a phenomenon that still needs to be studied.



Radio signals from tagged Storm-petrels of Filfla reveal that they are practically found within all surveyed areas around the Maltese Islands and beyond. Radio tracking revealed that Storm-petrels breeding on Filfla fly as far as 150 km to the Italian island of Linosa in search of food. With expected improvements in technology in the near future, smaller GPS devices will enable the discovery of important feeding areas for these seabirds.

THE IMPORTANT BIRD AREAS

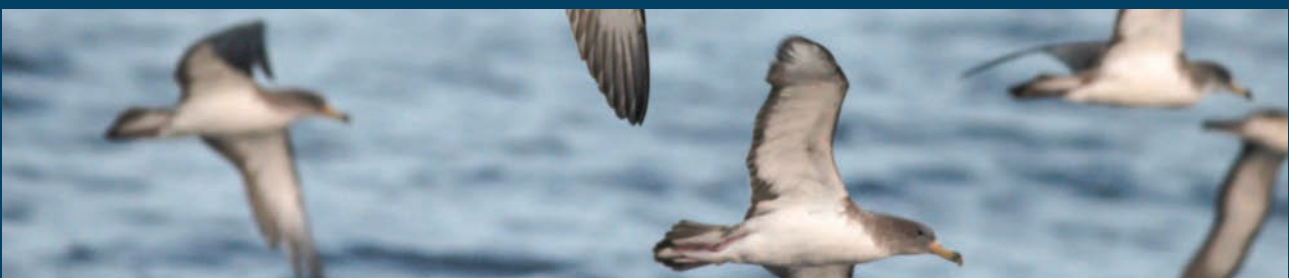


NATURA 2000 SITES DECLARED

In April 2016, the Maltese government designated the first eight marine Special Protection Areas (SPAs) on the basis of the marine Important Bird Areas, which were mapped by this Project, and these areas will now form part of the EU-wide Natura 2000 network. This network is essential for the protection and long-term survival of Europe's natural heritage - on land and at sea.

The Maltese authorities will then create and implement management plans for all the marine protected sites and monitor them to make sure that the seabirds and other marine life are safe and that these areas have Good Environmental Status (GES) by 2020, meaning

they are bio-diverse, clean and used sustainably. To achieve this, BirdLife Malta and the Maltese government will work closely with all people using these areas of sea, such as fishermen, tour operators, marine traffic authorities and many more, to make sure that they are carrying out their activities responsibly and are using best environmental practices to keep our seas in a good state for wildlife and future generations. Seabirds will continue to be excellent indicators to see that the marine environment we all depend on is productive and healthy.





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