

# Conservationists' hide-and-see with seabirds

*The Maltese Archipelago hosts nocturnal open seafaring pelagic birds. They have perfected their hiding methods on the rocks, which is great for their survival, but a challenge for researchers. **Dilek Sahin** writes.*

**S**eabirds like shearwaters and petrels spend most of their life at sea but need land to lay their single egg and rear their chick.

Tiny Malta is a good option thanks to its location and suitable habitats. We have been living near these secretive neighbours for many years, yet we have only started to properly understand them in recent decades.

Seabirds face various threats on land and at sea. They usually feed on fish caught for commercial use, risking death in fishing gear. Overexploitation of marine resources, climate change, and marine pollution threaten their livelihood. On land, introduced species like rats, cats, and invasive plants reduce breeding success. Recreational activities around breeding sites, coastal urbanisation, and light pollution disturb their scarce rest.

To protect a species, you must get to know it. What are their numbers, distribution, population parameters, and local threats? This is the most challenging part of seabird conservation. Besides visiting the land only to breed

at night, seabirds like shearwaters and petrels nest in difficult-to-access coastal sites like sheer cliffs, or among large boulders. They also nest deep in burrows to avoid predators. Finding plenty of hideouts on the Maltese coast makes the islands a very hospitable place, but for a seabird scientist, it is a great challenge. How would you tell if the breeding seabird population is doing well without being able to check a large sample of nests?

## **BACK IN THE 60S**

The pioneer researchers started tackling this challenge in Malta in the 1960s, with visits to Filfla and some accessible Maltese cliffs at night. Back then, they had very few tools to reach and monitor the colonies. Ringing, the most traditional method to estimate the population size and changes, was often all they could do. Despite limited opportunities, pioneers did an amazing job and initiated long-term monitoring of three pelagic seabird species of the Maltese Archipelago: Yelkouan shearwater, Mediterranean storm-petrel, and Scopoli's shearwater.

In 1966, conservationists found a huge population of Mediterranean storm-petrels on Filfla. They decided to look for colonies on the mainland, and this is how they discovered one of the largest Yelkouan shearwater colonies at L-Aħrax tal-Mellieħa. In the meantime, they monitored the breeding behaviour of more than a hundred Scopoli's shearwater nests.

By 2015, ample information was available for the main seabird colonies in Malta. However, we still knew very little about the rest of the sites, because they were hard to reach. BirdLife Malta initiated the LIFE Arcipelagu Garnija project to find out more on the globally threatened Yelkouan shearwater, using various technologies to overcome the challenges in accessing nest sites.

## **FROM ABSEILING TO KAYAKING**

In the beginning, the project team, which includes University of Malta graduates, started exploring the sites by boat or by kayak to scan the cliffs from the sea, and also by walking, scrambling, or abseiling on land. These visits helped



An illustration of a Mediterranean storm-petrel, nesting near cliffs

map all potential breeding sites. A drone helped us check the cliff faces in more detail. The team then visited these sites at night to check if birds were calling in the area, which might indicate the presence of a breeding colony. To conclude that it is a nesting site you need to see birds entering into burrows or find some signs like footprints, faeces, or distinct seabird smell. So besides crawling into caves to look for these signs, the team used thermal imaging technology to observe birds without disrupting their natural behaviour. With a thermal imaging camera, we located the nesting caves/burrows. These videos let us roughly figure out the number of breeding pairs per site. We started building the information we needed to protect them.

Once the nesting sites are located, it is time to see if they are accessible from cliff top or the sea with a short climb. In the majority of places, we know where the colonies are, but we simply cannot get to them. Although they are located in the same archipelago, each colony has its local conditions, and we cannot simply assume that they are the same.

The team had to learn to abseil and rock climb to broaden its reach, which takes a lot of dedication and passion.

The next step was using weatherproof trail cameras to increase coverage. These can remain on site to capture any moment that the seabirds are around, providing valuable information. The team set the cameras in front of caves or nests and used the image data to support the population estimates, by counting the birds entering and leaving the field of view of the camera carefully. If the data from images are consistent with other methods used in estimating the population, then the numbers can be trusted. Otherwise, we need to try harder.

The team benefited from one of the most characteristic features of seabirds: their loud and eerie calls. The soundscape of Maltese cliffs is full of seabird calls at night. Why not utilise this to infer the seabird density at a certain site? We used automated sound recording units to capture the night soundscape at some known colony sites. By comparing the intensity of calls between these

sites, we were able to validate our population estimates. Then, we used these data as a reference to estimate bird numbers of inaccessible colonies.

The technology and dedicated seabird scientists are enabling effective monitoring and conservation of Maltese seabirds. However, as Sultana wrote in 2015 (see further reading), 'In research and conservation of seabirds, one can never reach the end of the tunnel. It is always an uphill struggle. Monitoring seabirds can never be concluded.' And, so, our hard work continues to save these precious birds. **T**

#### Further reading:

**Sultana, J., Borg, J. J., Barbara, N., & Metzger, B. (2016). Fifty years of seabird research and conservation in the Maltese Islands: Are we getting there? In P. Yesou, J. Sultana, J. Walmsley, & H. Azafzaf (Eds.), Conservation of Marine and Coastal Birds in the Mediterranean (pp. 82–87). UNEP-MAP RAC/SPA.**

[birdlifemalta.org/arcipelagugarnija](http://birdlifemalta.org/arcipelagugarnija)