

LAYMAN'S REPORT



LIFE
PANPUFFINUS!
PROJECT 2025

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SUMMARY

The EU-funded LIFE PanPuffinus! project addresses the urgent conservation needs of two threatened and endemic Mediterranean seabird species: the Yelkouan Shearwater and the Balearic Shearwater. Through an unprecedented transboundary collaboration between Malta, Greece, Spain, France, and Portugal, the project has implemented a wide range of coordinated conservation actions over five years.

This Layman’s Report presents an overview of the project’s objectives, the actions undertaken, and the key achievements. By focusing efforts both on land and at sea, the project has contributed significantly to the protection of these vulnerable seabirds, across the Mediterranean and beyond, reaching as far as the Atlantic coast of Portugal, helping to secure their future across their range.

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Project overview

The **LIFE PanPuffinus!** project is coordinated by BirdLife Malta in partnership with Aquatic Resources Malta (ARM), Hellenic Ornithological Society (HOS), Natural Environment & Climate Change Agency (NECCA), Sociedad Española de Ornitología (SEO), Ligue pour la Protection des Oiseaux (LPO), and Sociedade Portuguesa para o Estudo das Aves (SPEA).

Countries: Malta, Greece, Spain, France, and Portugal.

The project is **co-financed** by the LIFE Programme of the European Union, which supports environmental and climate action initiatives aimed at protecting Europe's biodiversity and natural habitats, under contract number **LIFE19 NAT/MT/000982**.

- **Total project budget:** €3,540,557
- **EU LIFE Programme financial contribution:** €2,124,335
(60% of total eligible project budget)

Project co-financing by: Malta's Ministry for Agriculture, Fisheries, Food and Animal Rights, the A. G. Leventis Foundation, The Green Fund, French Biodiversity Agency (OFB), Food4good, MAVA, Sathoan, Fondation Nature et Découverte, Oceanário de Lisboa, and Fundo Ambiental.

Project duration: September 1, 2020 – February 28, 2026.



Protecting two Mediterranean seabird species

The LIFE PanPuffinus! project is dedicated to the protection of two endangered and endemic Mediterranean seabirds: the Yelkouan shearwater (*Puffinus yelkouan*) and the Balearic shearwater (*Puffinus mauretanicus*).

These seabirds face serious threats throughout their life cycle. Through a unique transboundary collaboration, the project brings together experts and BirdLife partners from **Malta, Greece, Spain, France, and Portugal** along with Aquatic Resources Malta and Greece's Natural Environment and Climate Change Agency.

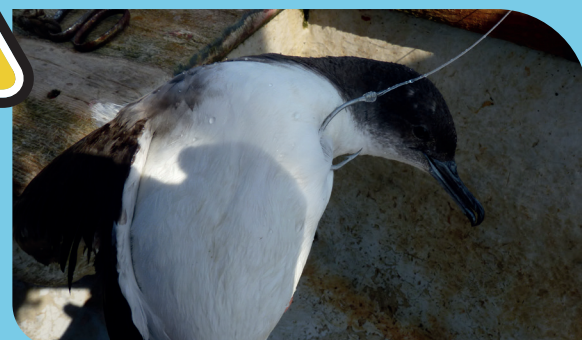
Together
they are tackling two major challenges:



Invasive predators:
such as rodents, that
threaten nests on land.



Bycatch:
the accidental capture of
seabirds in fishing gear.



A joint effort for a safer future

The main goal of LIFE PanPuffinus! is to understand and reduce two main threats to these seabirds, ensuring their survival for future generations.

To achieve this, the project focuses on:

- **Working closely with fishers to better understand the scale of bycatch** across the Mediterranean Sea and the Atlantic coast of Portugal;
- **Testing mitigation measures** to reduce seabird bycatch in different types of fishing gear;
- **Implementing predator control and biosecurity actions** on breeding islands;
- **Engaging stakeholders and raising awareness** among fishers, local communities, and the general public.

Why does it matter?

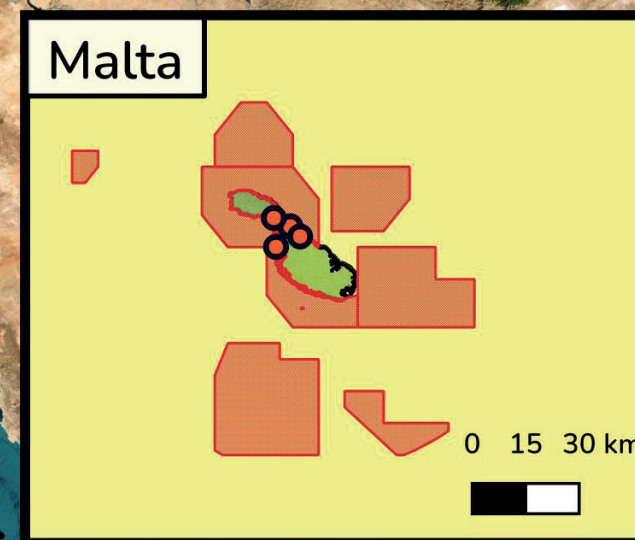
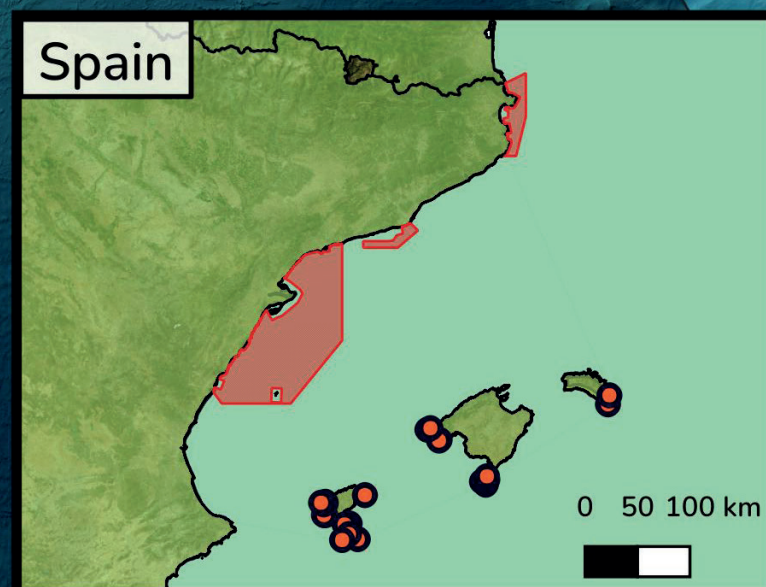
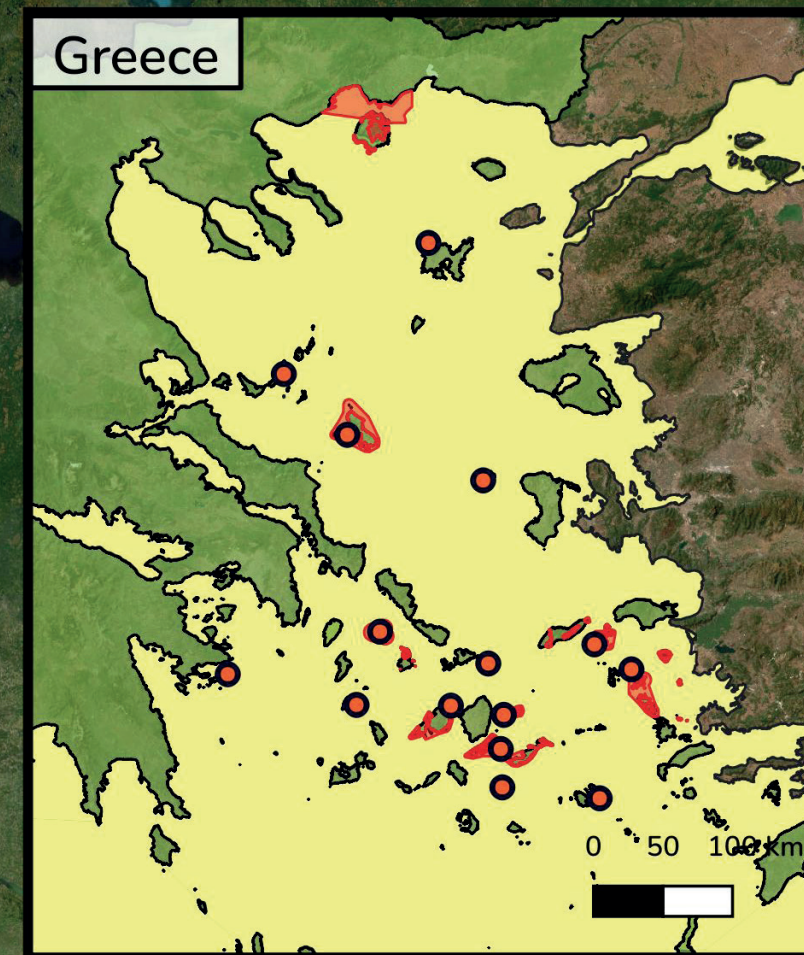
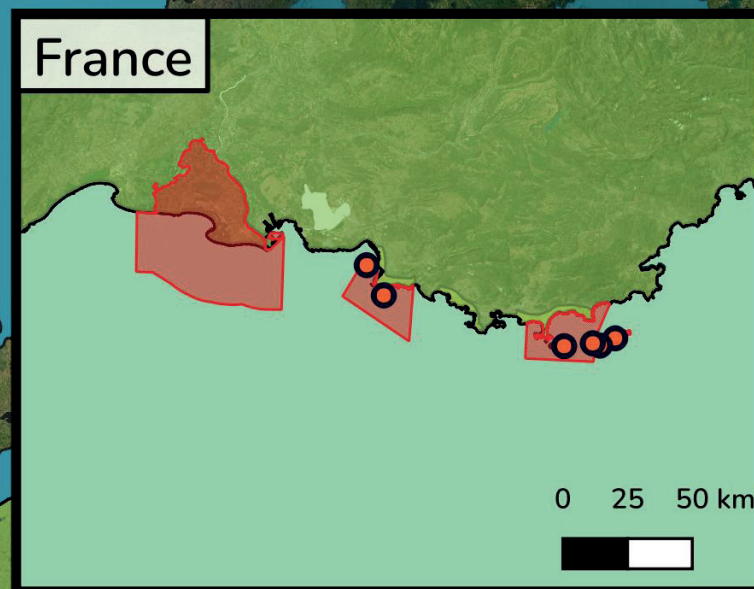
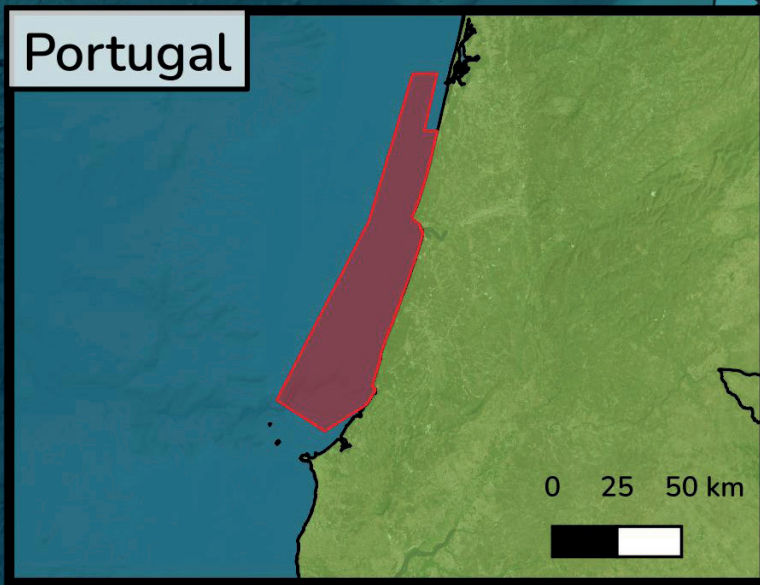
The Yelkouan and Balearic shearwaters are **unique to this region** and are important indicators of the health of our marine ecosystems. By protecting them, the project also contributes to the wider conservation of the Mediterranean Sea and the Atlantic coast of Portugal.

LIFE PanPuffinus! is more than a conservation project, it's a collaborative effort across countries, united by a common goal: **to give these threatened seabirds a fighting chance.**



Project Sites

- Legend**
- Colonies
 - Project Sites
 - Project countries
 - Balearic shearwater range
 - Yelkouan shearwater range
 - Balearic and Yelkouan shearwaters range



Project Species

Yelkouan Shearwater

Puffinus
yelkouan



	Malta	Greece	Spain	France	Portugal
Common name	Garnija	Μύχος	Pardela mediterránea	Puffin yelkouan	Pardela-do-mediterrâneo
Description	Streamlined body with long narrow wings, blackish brown upperparts and white underparts; slender black beak with hooked tip, and external tube-like nostrils; webbed black feet				
Body length	30-35 cm				
Wingspan	70-84 cm				
Weight	330-500 g				
Life span	Up to 25 years				
Lifestyle	Mostly pelagic				
Diet	Fish prey such as anchovy, sardine and horse-mackerel; along with squid, crustaceans and discards from fishing vessels				
Nests	Highly philopatric, nest in caves, borrows or under vegetation of cliffs or rocky remote islets. Visits to the nest happen exclusively during the night to avoid avian predators				
Breeding season	February to August				
Active on colonies	Nocturnal				
Clutch size	One egg per breeding season				
Conservation status – European level	Vulnerable				

Main threats	• Bycatch • Invasive alien species predation • Oil pollution • Offshore wind energy production • Overfishing • Plastic pollution • Human disturbance (noise, recreational marine traffic) • Climate change • Light pollution
Threats addressed by the project	• Invasive alien species predation • Bycatch



Project Species

Balearic Shearwater

Puffinus
mauretanicus

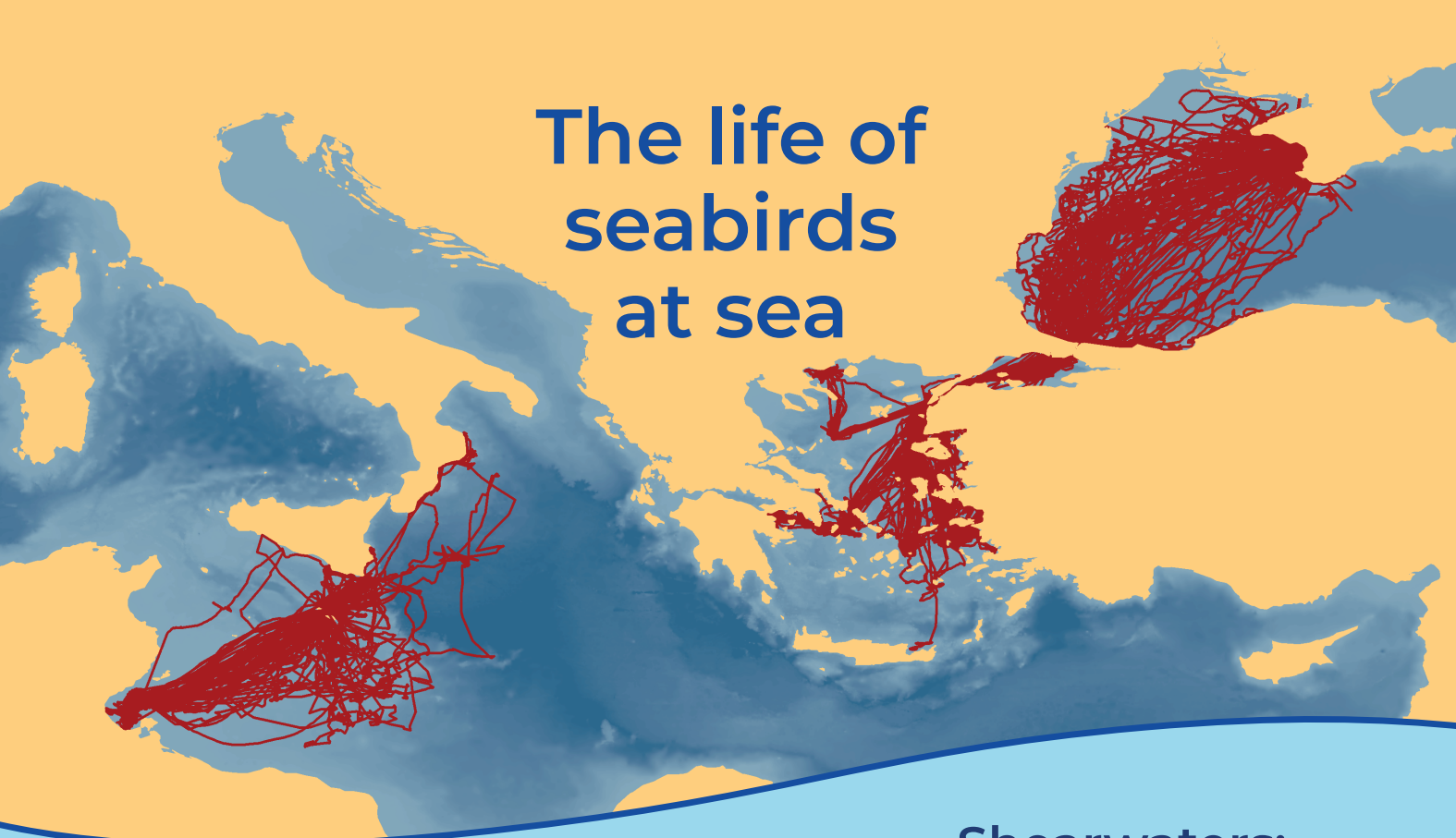


	Malta	Greece	Spain	France	Portugal
Common name	Garnija Balearika	Μύχος των Βαlearίδων	Pardela balear	Puffin des Baléares	Pardela-balear
Description	Streamlined body with long narrow wings, blackish brown upperparts, brownish on rear underparts shading paler on chest and throat, slender black beak with hooked tip, and external tube-like nostrils; webbed dark feet				
Body length	35-40 cm				
Wingspan	85-90 cm				
Weight	472-565 g				
Life span	Up to 37 years				
Lifestyle	Mostly pelagic				
Diet	Fish prey such as anchovy and sardine; along with squid, crustaceans and discards from fishing vessels				
Nests	Exclusively in the Balearic Islands (Spain), highly philopatric, nest in caves, borrows or under vegetation of cliffs or rocky remote islets. Visits to the nest happen exclusively during the night, most probably to avoid predation				
Breeding season	February to July				
Active on colonies	Nocturnal				
Clutch size	One egg per breeding season				
Conservation status – European level	Critically Endangered				

Main threats	• Bycatch • Invasive alien species predation • Oil pollution • Offshore wind energy production • Overfishing • Plastic pollution • Human disturbance (noise, recreational marine traffic) • Climate change • Light pollution
Threats addressed by the project	• Invasive alien species predation • Bycatch



The life of seabirds at sea



Shearwaters: sentinels of the sea

Shearwaters spend most of their lives out on the open sea, returning to land only during the breeding season to lay a single egg. Because of their close connection to the marine environment, they are considered true “sentinels” of the sea: changes in their behaviour can reveal broader shifts in marine ecosystems and signal the presence of emerging threats.

Tracking Shearwaters with GPS

One of the most precise ways to study seabird movements is through GPS technology. Small GPS devices are carefully attached to the birds, allowing researchers to follow their journeys across the sea in great detail. This helps us understand where they go to feed, how far they travel, and what areas are important for their survival.

As part of LIFE PanPuffinus!, we retrieved data from 81 GPS devices from three breeding colonies in Greece and three in Malta. Thanks to this effort, we were able to collect data on several individual foraging trips, building a clearer picture of their at-sea behaviour, their migration routes as well as the most significant foraging grounds.



Monitoring at sea

Another approach we used to improve our knowledge about the shearwaters ecology is the European Seabirds at Sea (ESAS) methodology. This involves trained observers recording seabird sightings during boat-based surveys, helping us to estimate abundance and distribution across different marine areas.

Through LIFE PanPuffinus!, 112 ESAS surveys were carried out during the early years of the project.

These corresponded to 20 days of observations along 1,500km of transects in Portugal; and 74 days along 8,756km of transects in Greece.

In Portugal, a total of 2,029 Balearic shearwaters were counted, while in Greece 6,785 Yelkouan shearwaters were recorded.

These surveys provided important data to identify key areas used by seabirds, including potential threats from human activities such as fishing or marine traffic.

Data collection—Common data protocols and databases for questionnaires, logbooks, and onboard observations:

Standardizing data collection supports more robust and comparative analysis across different countries, with some adaptations to suit each country's context, and to ensure consistency.



Bycatch risk maps:

Bycatch risk was assessed by mapping the overlap of fishing effort and the distribution of Balearic and Yelkouan shearwaters. It combines biologging, seabird at-sea surveys, and fisheries data collection to understand the behaviour and threats faced by shearwaters. Fisheries data came from fishers' questionnaires, official institutions, and satellite-based monitoring via Global Fishing Watch. This mapping exercise provides new insights into when and where interactions with fisheries may occur, showing potential bycatch risks.



International Conference on the Prevention of Seabird Bycatch:

The conference was organised in October 2024 in Hyères, France, by LPO France and partners of the LIFE PanPuffinus! Project. The aim was to disseminate information on quantifying and mitigating seabird bycatch to stakeholders across the Mediterranean and the rest of Europe. It brought together around 70 participants from eight countries, including environmental authorities, conservationists, and fishers involved in the project.



Fisheries exchanges:

Fisheries exchanges brought together fishers and NGOs from two project countries at a time and was conducted in various project locations. It was rewarding to witness the similarities in fishing practices across different cultures, whether in techniques, gear attachment methods or target species. The exchanges also highlighted the enormous value of learning from each other and sharing practical insights.



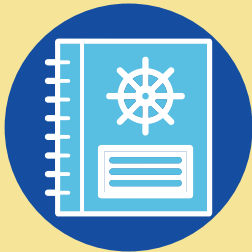
Number of questionnaires:
689



Duration of fishing events
monitored by observers (hours):
1897



Number of onboard
observation trips:
531



Number of fishers
filling logbooks:
55



Number of seabirds
accidentally bycaught:
728



Bycatch mitigation measures

Bycatch is disadvantageous to fishermen, as it reduces the efficiency of their gear and compromises their catch. Their involvement in testing mitigation measures is crucial.

Type of mitigation measures tested during LIFE PanPuffinus!

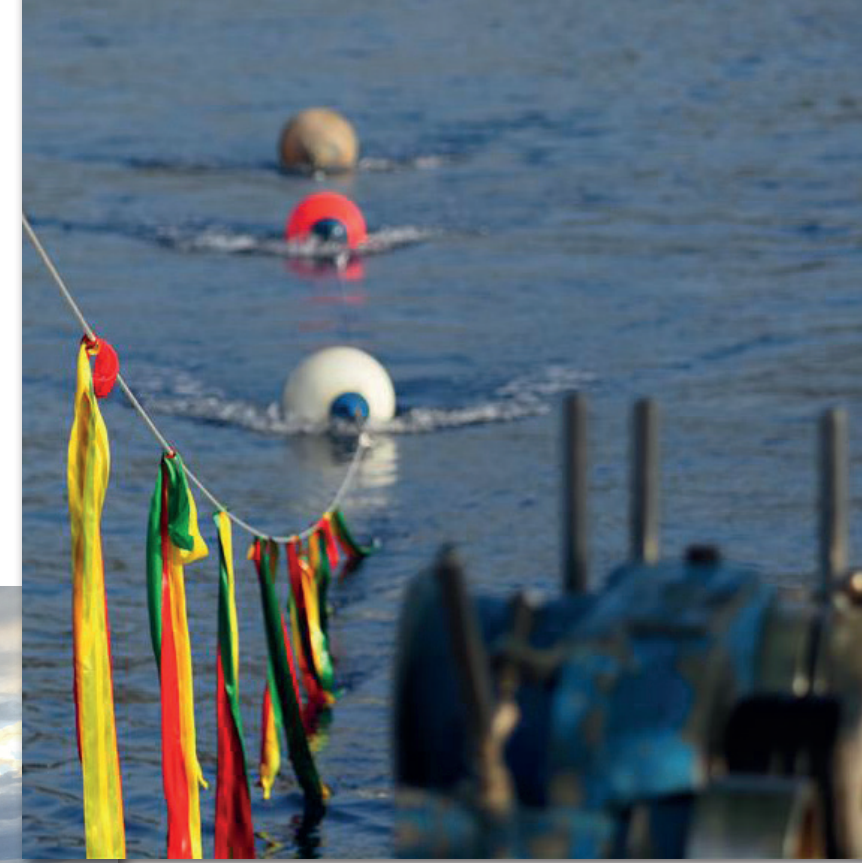
Scarybird in longlines, purse seines, and trammel nets:

Device usually attached to the vessel, to keep seabirds away from fishing operations. It mimics a bird of prey and is used to reduce seabird interactions.



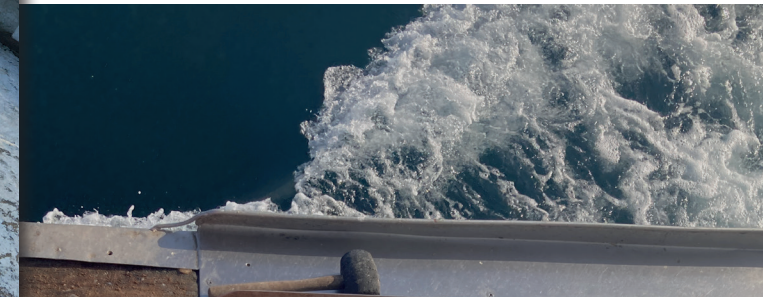
Bird scary line (and towed buoy) in longlines:

Used during setting, it consists of a long rope attached to the stern, with bright hanging ribbons and/or towed buoys at the end, scaring the birds and avoiding seabird interactions with the fishing gear.



Contrast panels in trammel nets:

Typically made of high-contrast colours, like black and white, designed to make the net more visible to seabirds while in the water.



Discard management in trammel nets:

Unwanted fish are often discarded at sea during fishing operations, providing food for seabirds, but also increasing the risk of bycatch. With discard management, fish waste is stored during the fishing operation and returned to the sea only after the fishing operations end, preventing seabirds from coming into contact with fishing gear.



The life of seabirds on land



Seabirds from the Procellariidae family are known to be highly philopatric, meaning they are extremely loyal to their birthplace. They don't just return to the same island or region to breed; they often come back to the exact site where they hatched. This strong bond is why protecting their nesting sites is so important. When these birds are ready to return and raise their chicks, they should be able to find their nesting spot just as they left it, or in even better condition.

One of the most serious threats to these colonies comes from invasive mammals like rats and cats. These predators can predate on eggs, chicks, and even adult birds. For species that lay only one egg per breeding pair each season, and have high parental investment into each attempt, the loss of even a single offspring can pose a significant impact.

Removing or controlling invasive species is essential to preserve the habitat and support seabird populations, giving these birds a real chance to thrive for generations to come.



What did LIFE PanPuffinus! do:

- ✓ Rat eradication was successfully completed in the region of North Dodecanese, Agreloussa island complex in Greece! The intervention contributed to the protection of a significant Yelkouan Shearwater colony, estimated at 810–1,170 breeding pairs.
- ✓ The breeding success of Yelkouan shearwater in the Agreloussa colony, Greece, has increased by 79% following rat eradication efforts.
- ✓ Biosecurity Assessment Visits (BAV) at colonies' sites were conducted to enhance the effectiveness of previous eradication efforts.
- ✓ Implementation of 17 biosecurity training sessions for 115 participants in Malta, Greece, and Spain. Throughout the project, training sessions raised awareness and built stakeholder capacity to apply preventive measures, promoting collaboration among local authorities, site users, and other key groups to manage invasive species.
- ✓ Effective waste management is essential for rodent control, and the project focused on improving these strategies. Compost bins were distributed to local businesses, while meetings with waste authorities and frequent site user engagement promoted actions to reduce food waste and limit resources that sustain rat populations.





Incursion response kits were set up and stored in specific locations to be ready when needed. Each kit has enough bait and materials for the local trained team to quickly act if rats are spotted or return to the main project sites. This helps ensure a fast and effective response to keep the areas rodent-free.



A review of 119 operations across



7 countries Mediterranean countries assessed past efforts to manage invasive mammal predators, mainly rodents, to protect native seabirds. It identified successful eradications, the duration of invasive-free status, applied biosecurity measures, and cases where only control was feasible.



Raising awareness

Activities

Engaging people was one of the 4 main objectives of the LIFE PanPuffinus! project, recognizing that the long-term conservation of seabirds depends not only on field interventions, but also on awareness, education, and cooperation. That's why the project placed strong emphasis on raising awareness, building capacity, and involving local communities, schools, fishers and decision-makers across all partner countries.

MEDIA RELEASES

600+



POLICY MEETINGS

17



SCHOOL ACTIVITIES

26



STAKEHOLDER WORKSHOPS

30



PUBLIC EVENTS

74



Achievements in a nutshell

Strengthening Biosecurity

- Biosecurity measures were successfully implemented in **Malta, Greece, and Spain**.
- **Incursion Response Hubs** were established to enable rapid action and protect vulnerable colonies from invasive rodent species.
- Training reached a wide range of stakeholders: including boat operators and farmers.

Building Stronger Communities

- Strengthened collaboration with fishing communities, highlighting the importance of teamwork and trust.
- Training and informal meetings improved reporting practices and laid the foundation for lasting relationships.

Reducing Bycatch Risks

- Bycatch risk areas for **Yelkouan and Balearic shearwaters** were mapped using **tracking data, at-sea surveys, and fisheries information**, identifying key hotspots of overlap with fishing activities.
- 48 fishing vessels participated in mitigation measure testing.
- A **mitigation toolkit** was produced with clear instructions on how to use the mitigation measures, proven efficient during trials.

The project's next steps

- Securing funding for the continuation of rat control following the operational plans put in place by the project. This includes precautionary activities such as waste management.
- Continued engagement with boat owners and maritime users to raise awareness on biosecurity. This would include the implementation of precautionary measures such as instructions for monitoring of rat presence on board, best practices for food and bins, rope guards and information panels for passengers.
- Mitigation measure trials and bycatch studies to be continued and expanded beyond the project geographical region. Replication of methodologies and transfer of knowledge to other countries to encompass wider seabird range.
- Implementation of seabird mitigation measure within target fleets at a national scale. This includes important materials such as training materials, seabird ID guides, and mitigation toolkits.
- Capacity building at institutional level, specifically with national fisheries observers to equip them with skills such as seabird identification, use of mitigation measures, seabird safe handling and release.



Acknowledgements



We would like to thank all the fishers who collaborated in data collection and generously shared their experience at sea. We are also grateful to the local maritime and environmental authorities for their support and for providing the necessary permits that made this work possible. Our sincere appreciation is extended to the students who completed internships under the project, as well as the staff and volunteers who contributed with enthusiasm and dedication, which were invaluable to its success.

List of names of all project teams



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Agir pour la biodiversité

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A dramatic night scene of a rocky coastline. The sky is dark and filled with stars. The sea is dark and calm. A large, dark rock formation dominates the left side of the frame. A bright red light source, possibly a fire or a lamp, is visible in a cave-like opening in the rock, casting a strong red glow on the surrounding rocks and the sea. The overall mood is mysterious and atmospheric.

Seabirds are the bridge
between sea and sky
never bound to either,
yet belonging to both.



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