



Cyprus Barn Owl Project Report 2023



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Cover Photo: Markos Charalambides

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Key Actions Completed

This report focuses on actions carried out by BirdLife Cyprus during 2023, but it must be noted from the outset that these actions were carried out in collaboration with relevant government departments and services, as part of the relevant National Action Plan (see below).

National Action Plan

This was a very successful year for the project. The ‘working group’ set up by Ex-minister Prof. Costas Kadis back in 2018, kept collaborating with experts from Israel, Greece and Switzerland, on the promotion of the National Action Plan (NAP) for the Barn Owl as a biological control for rodent populations in Cyprus. The NAP is based on the idea that through a collaborative effort, the Barn Owl can be used as an effective biological control agent, to tackle the rodent problems in certain agricultural crops and therefore reduce impacts on produce and, especially, help minimize use of rodenticides, which have negative ecological, environmental and human health impacts.

The working group consists of local experts from the Agricultural Department, the Forestry Department (FD), the Game and Fauna Service (GFS), the Veterinary Services (VS) and BirdLife Cyprus (BC). Ex-minister Prof. Kadis had dedicated a state budget -from the Ministry of Agriculture and Rural Development- of €35,000 for 2021 to move this project forward and based on the success of the working team, this support budget doubled to €70,000 for 2023 from Ex-minister Mr. Petros Xenophontos.

GIS Database

A GIS database was created this year by our external assistant Mr Zoltán Tölgyesi, which includes 738 of the nest boxes that the “working group” has installed so far, as well as layers of land use, crop type, water bodies, road network, national forests and Natura 2000 areas. These layers are overlaid with data from the monitoring seasons of 2022 and 2023. This is the first step to enable the team to collect all the data in one common mapping system and it will allow the team to identify gaps in coverage and expand the nest box network strategically and in a more targeted manner.

Barn Owl nest boxes currently in Cyprus

By December of 2023, there are over 1,328 Barn Owl boxes across the country, installed by the members of the ‘Barn Owl working group’ only in clearly agricultural areas, i.e. not in areas dominated by natural habitats. Out of those 1,328 boxes, Birdlife Cyprus has installed a total of 89 Barn Owl boxes and 14 Common Kestrel boxes.

Based on the previous work done by the “Barn Owl working group”, installations of new boxes is done based on the geographical spread of the boxes throughout Cyprus and a list of other criteria. These criteria include “close to communities with boxes”, “inside or very close to IBA/Natura 2000 areas” and “inside or very close to the buffer zone”. This helps the team target the spread and fill in any gaps in areas where not as many boxes had already been installed.

Unfortunately, this year we saw a slight increase in the use of rodenticides across Cyprus, compared to 2022 (11%). This maybe due to an increase in rodent populations (anecdotal evidence from conversations with farmers). However, if we compare the rodenticide use to the start of the project numbers, there is still a 22% decrease since the start of this project in 2014 (Figure 1) and a 41% decrease since 2020, which is the year that the project started receiving funding through the Ministry of Agriculture. When we take a closer look, it is obvious that we should focus on specific districts (Paphos, Famagusta and Larnaca), to put more pressure on organised groups, arrange more awareness events and try to get them involved in the project and thus decrease rodenticide use.

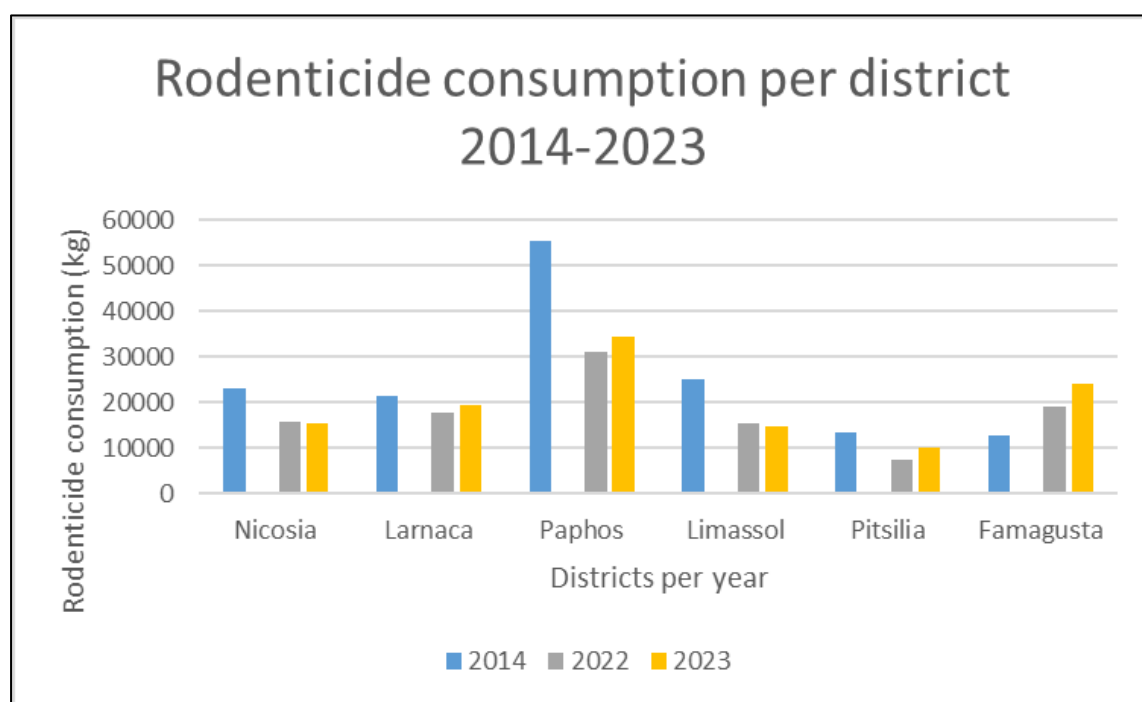
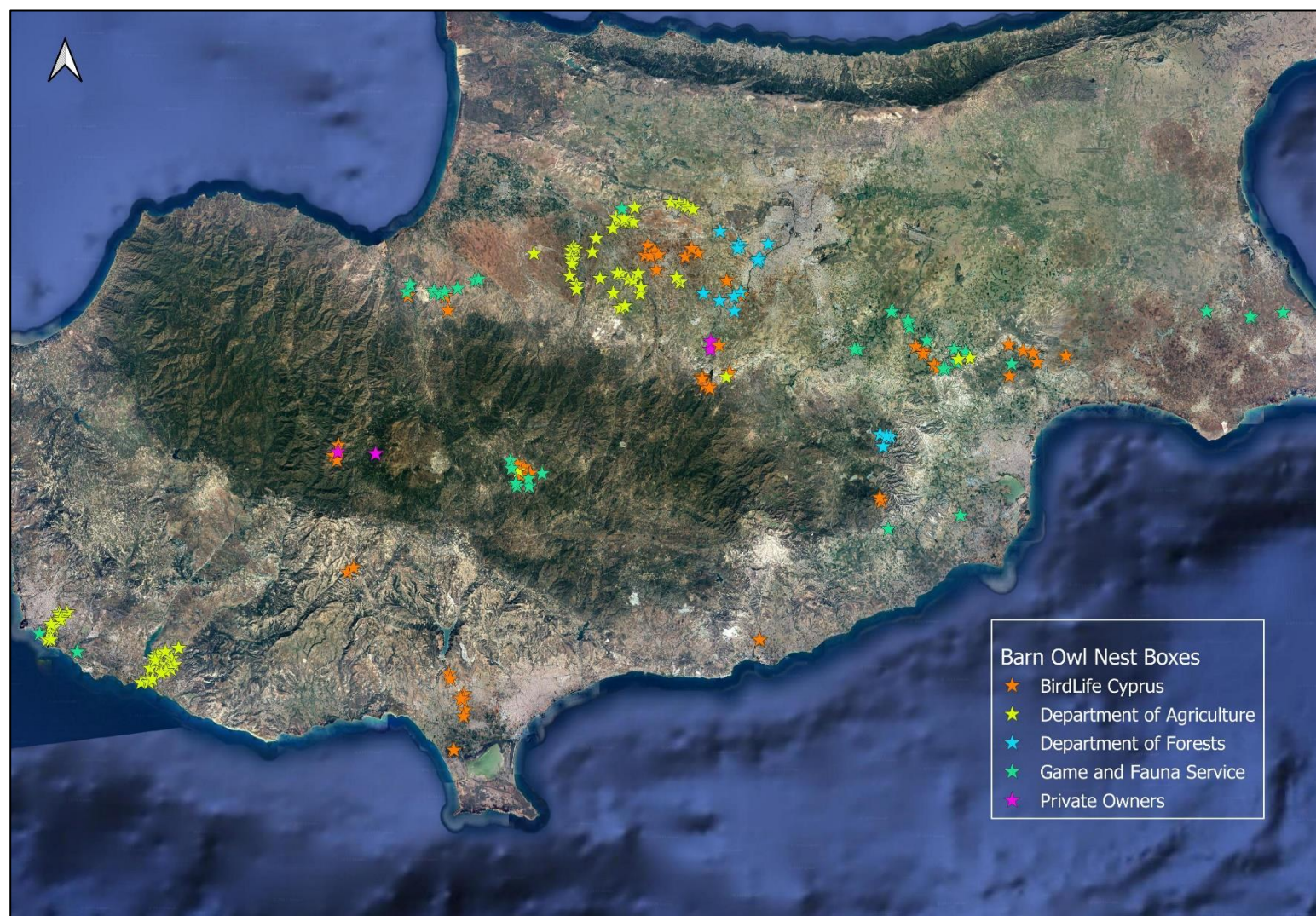


Figure 1: Bar graph showing the fluctuation as well as the slight increase in 2023 in the use of rodenticides in most districts of Cyprus.

Results of Monitoring Season 2023, carried out by BirdLife Cyprus

The monitoring season this year was done in the same manner as in 2022. As a “working team”, we decided to monitor a sample of 203 boxes, from all four partners. This meant selecting around 50 boxes from each partner (Map 1). The checks were performed by BirdLife Cyprus staff; Antaia Christou and Markos Charalambides, with the help of external assistant, Zoltán Tölgyesi, and thanks to funding by the Ministry of Agriculture.



Map 1: Map showing the geographical spread of the sample of 203 nest boxes that were checked in 2023. Those marked in Orange were installed by BC, in Yellow were installed by DoA, Blue were installed by DF, Green were installed by GFS, Pink were installed by private owners.

Results

The checks started in March and were completed by August 2023. “Occupancy” / “Confirmed breeding” in this report is defined by signs such as eggshells, feathers, pellet substrate, an incubating adult bird, or the presence of chicks inside the box at the time of the monitoring. Overall, 2023 saw an increase in the use of nest boxes by Barn Owls (see Figure 3 below) in comparison to 2022. We speculate that the reason for this high occupancy was the increase in rat population in 2023 (anecdotal observations by farmers). For comparison, signs in the boxes indicated that only 20% of those boxes had been occupied by Barn Owls in 2022.

Barn Owl Occupancy of nest boxes 2023

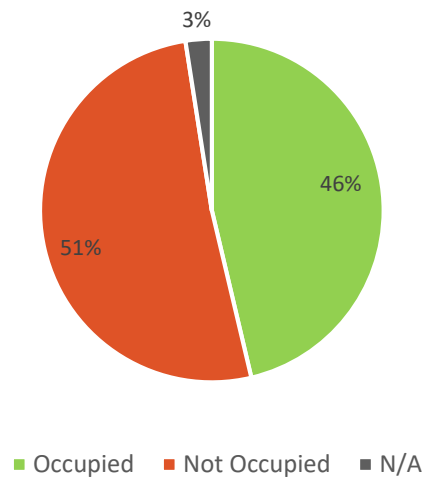


Figure 3: Pie chart showing the numbers and the percentages of boxes that were occupied or not by Barn Owls during the 2023 monitoring season. "Occupied" means confirmed breeding (i.e. eggshells, feathers, pellet substrate, the bird was incubating, or there were chicks sitting in the box) at the time of the monitoring. N/A means they were broken, lost / stolen, burned by fires or shot by hunters.

Within the sample of 203 nest boxes, we also recorder species other than Barn Owls occupying nest boxes. In the graph below (Figure 4), you can see the variety of species that made use of nest boxes in the 2023 breeding season.

Barn Owl Nest Boxes Occupants

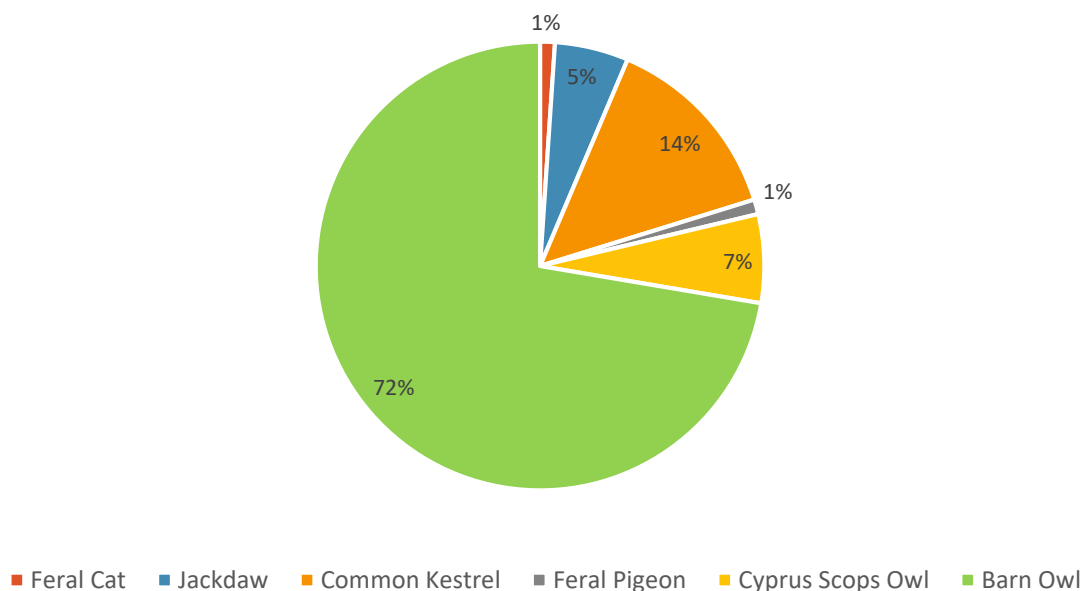


Figure 4: Pie chart showing the species of occupants inside the sample of boxes from all partners of the working team during the monitoring season of 2023. Note that "Occupants" means confirmed breeding (i.e. eggshells, feathers, pellet substrate, the bird was incubating, or there were chicks sitting in the box) at the time of the monitoring.

Barn Owls in BirdLife Cyprus boxes

As BirdLife Cyprus, we have data from monitoring efforts of our boxes since 2016. As mentioned above, for all boxes, this year we observed a slide increase in the occupancy numbers in our nest boxes compared to the previous year (39% in 2023, 36% in 2022) as shown in Figure 5. We always need to take into account the monitoring effort that takes place each year and calculate the relative occupancy based on the number of boxes that were monitored, rather than calculate occupancy in relation to all boxes installed. Occupancy in this report is defined by the presence of a bird incubating, or of eggs, eggshells, feathers or thick pellet substrate in the box.

Occupancy could be related to a variety of factors, such as an increase in rodent population that might result in the increase of the Barn Owl population or productivity, or it could be related to climatic conditions that may have affected the owl's breeding cycle, or other factors. However, more research and more data is needed to understand the variations in occupancy levels between years. The following bar chart (Figure 5) provides an overview of the number of nest boxes that had been installed each year by BirdLife Cyprus and how many of them have shown signs of Barn Owl presence.

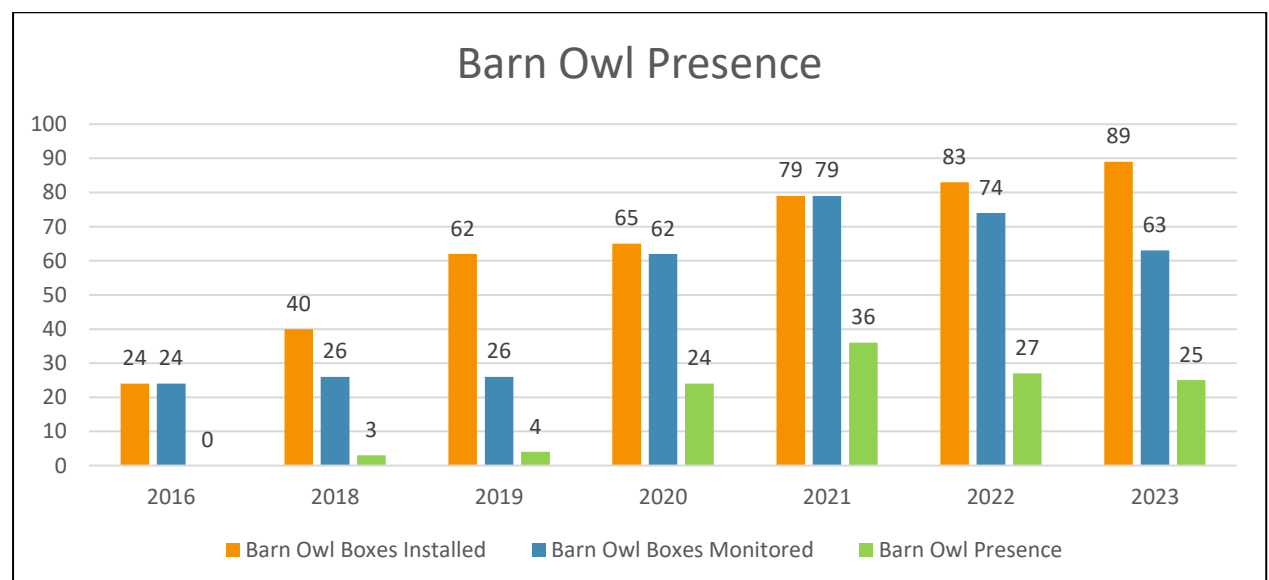


Figure 5: Bar chart illustrating Barn Owl presence and the number of nest boxes installed every year, as well as how many of them were monitored every year up to 2023 by BirdLife Cyprus only. Note that "Presence" is defined here by presence of fresh pellets, eggs, Barn Owl adult birds or chicks.

Finally yet crucially, we stress that as in the previous years, the checks and ringing efforts of owls in BirdLife Cyprus boxes, were carried out together with either the field owners / farmers or with representatives of communities (Athienou hunting club, Kampia and Pera Orinis farmers, UN officials, etc). This is crucial in our efforts to keep the farmers and communities engaged. The people involved really appreciate this approach. It gives them a more tangible experience (especially when they get to hold a bird during the ringing procedure) and therefore they are more likely to stay engaged in the efforts, as well as promote the project and spread the word to other locals and nearby communities.

Please find photos from the monitoring and ringing activities in Annex I.

Summary

In summary, the results from the monitoring season of 2023 are the following:

- Sample of 203 Barn Owl nest boxes checked, around 50 from each partner of the “Barn Owl working group” in Cyprus
- 3% were either broken, burnt, lost, stolen, inaccessible or shot at
- 46% of the boxes were occupied by various species
- 33% of the boxes were occupied by Barn Owls
- 47 Barn Owl adults ringed
- 71 Barn Owl chicks ringed
- 2 Cyprus Scops Owl adults ringed
- 4 Cyprus Scops Owl chicks ringed
- 3 Common Kestrel adults ringed
- 6 Common Kestrel chicks ringed
- 11% increase in rodenticide use across the island in 2023 compared to 2022.
- 22% decrease in rodenticide use across the island since the beginning of the project in 2014.

Additional Project Activities

Awareness-raising

We have also kept raising awareness about the project together with communities and organised groups, by using different platforms to reach a wider audience. These included events with communities, posts on our social media pages and interviews with journalists. The local communities have supported this project and it is always been popular with online and print media. This support is shown by the amount of mentions in the local media about the Barn Owl project. Some of these can be found in the links below. An in depth interview with Cyprus Mail dedicated to the project is listed first.

- <https://cyprus-mail.com/2023/12/18/barn-owls-are-back-in-cyprus/#:~:text=This%20is%20one%20of%20Cyprus,of%20mouth%20can%20work%20magic.>
- <https://www.dw.com/en/owls-help-farmers-in-cyprus/video-66694465>
- <https://news.rik.cy/article/2023/12/11/apelutherose-anthropopoulion-sten-orokline/>
- <https://larnakaonline.com.cy/2023/04/20/technites-folies-kai-doryforikoi-pompoi-gia-tin-parakolouthisi-anthropopoulion/>
- <https://gr.euronews.com/2023/06/12/kypros-ptino-eswse-nekri-zvni-pontikia>
- <https://pafosnet.com/terastia-zitisi-gia-anthropopoulia-stin-pafo>

BirdLife Cyprus also co-organised an event together with the Athienou hunting club and the local nursery school on Earth Day. The participants were able to witness the successful monitoring of

the Barn Owl boxes that were installed in their area. They also had the chance to see both chick and adult Barn Owls, touch them and observe them closely. A short talk was given about the NAP project, our efforts across Cyprus, as well as the Barn Owl's diet and thus their importance as a farmers ally. Another similar event took place with the local school of Tamassou, where we monitored 3 nests together with the schoolchildren during their visit to a bio-farm. Additionally, an event was organized in Oroklini by the LIFE *Pandoteira* project team (Terra Cypria, the Game and Fauna Service and the Nicosia Development Agency (ANEL)), together with a primary school, where we released rehabilitated Barn Owls back in the wild and installed Barn Owl boxes. The children of the local school were able to learn more about the ecology of the Barn Owl and the threats it's facing, as well as observe the rewarding moment of a previously injured bird finally flying free and healthy.

Thanks to these awareness-raising actions, during 2023, 47 people called, emailed, or messaged BC through Facebook to express their interest in installing Barn Owl boxes in their fields, gardens or holiday homes. The working team has already created a guide in Greek and English regarding the project, including some nest box designs and advice for people who are not "eligible" to receive a box under our project (non-farmers or organized communities). This guide was shared with everyone who expressed interest in our project.

Visit to Israel and Jordan

We were delighted to be invited to Israel and Jordan by our partners in this project and particularly Professor Yossi Leshem and General Mansour Abu Rashid. This was a regional seminar with representatives of the "Barn Owl working team" in Cyprus, as well as partners from Morocco, Greece, Palestine, Jordan and Switzerland. Each partner presented the progress done within their countries and we discussed possible steps forward together as a regional cooperation, as well exchanged knowledge and ideas. There was also a practical introduction by Dr. Orr Spiegel and Mr Shlomo Cainon on Barn Owl tracking through the ATLAS system at HaMa'ayanot Valley (formerly Beit-She'an Valley).

Please see photos related to all the Project activities in Annex I.

Research

During the 2023 monitoring season, we had the opportunity to ring even more Barn owls than the previous years, including both adults and chicks, since a licensed ringer, Mr Zoltán Tölgyesi joined and trained BC staff during the monitoring visits. We have managed to ring 134 birds, including Barn Owls, Common Kestrels, Cyprus Scops Owls and Jackdaw. These data will add to the research aspect of this project in the coming years with recoveries and re-sightings of the birds. Ringing birds during this project also gives the unique tangible experience to the community, to actually touch or hold the birds that are using their boxes, which helps to build a bond and appreciate these animals further.

Recaptures

We had five recaptures of birds that were ringed as part of this project in the last three years, four Barn Owls and one Common Kestrel. Some interesting data were recorded, such as two adult Barn Owls (one male, one female) were found within a 5km range of the box they were ringed in, the year prior. One was found covered in industrial oil and unable to fly, the other one was roosting in

another nest box. Two chicks (one Common Kestrel and one Barn Owl) were found dead in the same box they were ringed in, suggesting they never fledged. One Barn Owl that was ringed as a chick, was found with adult plumage and a severe injury on the left wing (possible cause of injury, collision with barbed wire).

Secondary poisoning

Together with the Game and Fauna Service, BirdLife Cyprus is participating in a LIFE IP project (LIFE *Pandoteira*), where one of the actions relates to secondary poisoning of raptors. Through this action, we aim to understand the extend of secondary poisoning on the island. So far, we have collected 36 Barn Owl specimens; majority of them found dead, next to busy roads. These were analysed by the State General Laboratory for traces of four rodenticides; Bromadiolone, Brodifacum, Flocoumafen and Difenacum.

Results so far showed that 89% of those owl specimens had rodenticide residues in their bodies. Half of the specimens had more than one chemical present and 14%, tested positive to all four chemicals mentioned above. These are very worrying results and we plan to keep collecting data for this study as part of the aforementioned project.

Next steps for the project in Cyprus

The following activities will take place before the end of 2023:

- Follow up with the relevant Ministry and Government officials regarding the set-up of an agri-environment scheme for the reduction of rodenticides using the Barn owl as a biological control agent.
- Place GPS tags on at least four adult Barn Owls to get information about their hunting grounds especially during egg incubation and chick rearing periods.
- Follow up with the relocation / maintenance of placed boxes where needed.
- Installation of a nest camera to run live for the next breeding season.
- Arrange further visits to schools.
- Keep collecting injured Barn Owls or carcasses to further our study on secondary poisoning under LIFE *Pandoteira*, together with Game and Fauna Service.

ANNEX I

Photos

Monitoring



Photo 1: Safely reaching the nest boxes to monitor the boxes. Credit: Antaia Christou.



Photo 2: Cleaning out a nest box from material brought in by rats. Credit: Antaia Christou.



Photo 3: Cyprus Scops Owls sometimes breed in Barn Owl boxes. Credits: Zoltan Tolgyesi.



Photo 4: Pair of Adult Barn Owls. Female (left) and Male (right). Credits: Markos Charalambides.



Photo 5: Day old barn owl chicks and some unhatched eggs inside a nestbox. Rats and pellets are also visible. Credits: Zoltan Tolgyesi.

Ringing



Photo 6: Ringing of a Barn Owl chick. Credits: Antaia Christou.



Photo 7: Ringing of an adult Barn Owl. Credits: Markos Charalambides.



Photo 8: Using wing plumage to age Barn Owls found in boxes. Credits: Antaia Christou.

Awareness-raising



Photo 9: Earth Day event co-organized with the local school and hunting club. Credits: Pantelis Pourgouras.



Photo 10: Performing the monitoring with local farmers and their families provides them with a tangible experience, creates a bond with Barn Owls and strengthens their support towards the project. Credits: Maria Pithara.



Photo 11: Joint nest box monitoring with local schools. Children were amazed with the size of the recently hatched Barn Owl chicks. Credits: Christia Alexandrou.



Photo 12: Joint nest box monitoring with local schools. Children were amazed with the size of the recently hatched Barn Owl chicks. Credits: Christia Alexandrou.

Visit to Israel and Jordan



Photo 13: BLC presenting the work done in Cyprus to the regional seminar in Jordan. Credits: Zoltán Tölgyesi.



Photo 14: Exchanging ideas, knowledge, and brainstorming about future collaborations, together as a region. Credits: Zoltán Tölgyesi.