



Barn Owl Report - 2022

Ulster Wildlife



Ulster
Wildlife



Acknowledgements

We would like to thank all the people involved, directly or indirectly, in the barn owl project. Thank you to every single **volunteer** that carried out a survey for us, and those that reported sightings. A special thank you to our **nest minders** who go out of their way to protect barn owls in Northern Ireland. Thank you to everyone that made us a barn owl **nesting box** and assisted in the project. As this project has limited funding, we rely on our superb volunteers to help achieve the objectives of our conservation work. It is always humbling to see that so many of you stand in solidarity with us to try to help this iconic species thrive in Northern Ireland. 2022 has been an interesting year and a better one for barn owls; with the help of staff, trainees and volunteers, we have managed to continue our conservation efforts for barn owls in NI. This year's programme delivery would not have been possible without your help.

Thank you also to the Barn Owl Trust, BTO, BirdWatch Ireland, CEDaR, Comber Rotary, National Trust, NBDC, NIRSG, RSPB NI, UW Grassroots Challenge and the Young Farmers Club. Thank you also to our funders NIEA, DAERA and the Garfield Weston Foundation.



Picture 1: Katy Bell, Senior Conservation Officer, with Ulster Wildlife staff Ronald Surgenor, Ross McIlwrath, Aaron Kelly and MSc student Chloe Craig out surveying for barn owls and long-eared owls at one of our nature reserves.

Contents

1. Introduction.....	4
2. Barn Owl/Long-eared Owl Survey.....	4
2.1. Background.....	4
2.2. Survey Methodology.....	5
2.3. Results.....	5
3. Other key points.....	6
3.1. Sightings.....	6
3.2. Dead barn owl reports.....	8
3.3. Known active nest sites.....	9
3.4. Boxes.....	10
4. Limitations and successes.....	11
5. Future plans.....	12
6. Conclusion.....	13
7. References.....	14

Introduction

Since 2010, Ulster Wildlife has undertaken work focusing on the conservation of Barn Owls (*Tyto alba*) in Northern Ireland. Classed as “Least Concern” on the International Union for Conservation of Nature (IUCN) red list on the global scale, the situation in Northern Ireland however is highly concerning. Barn owls have been in decline for decades as a result of habitat loss meaning loss of both hunting habitat and nesting places. The last population estimate in the 1980s put the breeding population at only 30 to 50 breeding pairs (Northern Ireland Species Action Plan, 2006), but we estimate there are now likely less than 30 pairs. Fortunately, they are protected under Article 4 and Schedule A1 of the Wildlife (Northern Ireland) Order 1985 as amended by the Wildlife and Natural Environment Act (Northern Ireland) 2011, are a priority species in the Northern Ireland Biodiversity Strategy and are “Red Listed” in Birds of Conservation Concern in Ireland. We are thankfully sharing good news for 2022 as our local birds had a much better breeding year than 2021.

As an important part of our natural and cultural heritage, our barn owl work aims to develop and advance barn owl conservation throughout Northern Ireland. This work feeds into our vision of a wilder future where people and nature are thriving together. A range of actions are undertaken, such as raising awareness, the management of sightings, the construction and the erection of nest boxes, and offering advice and support to landowners to improve their habitat for barn owls. In addition, our main focus in the summer months is co-ordinating the annual barn owl survey. Thanks to our dedicated volunteers, consecutive barn owl surveys have been carried out across the whole of Northern Ireland, on an annual basis since 2010. The aim is to visit sites that are most likely to host barn owls in order to discover new active roost or nest sites; as well as checking nesting boxes for signs of occupation. Knowing the exact locations of roosting and breeding barn owls is essential to target our conservation efforts. Surveying for barn owls is not an easy task, particularly due to the low population densities that exist in Northern Ireland. In addition, the fact that they are nocturnal and one of the most elusive birds make them even harder to find. Discussions are in place to develop new methodology for carrying out nationwide surveys in Northern Ireland after some initial analysis with the British Trust for Ornithology (BTO).

This report will give an overview of the work that has been done throughout the year, with an important focus on the barn owl survey. It will compare some results with the findings of the previous years, and the work plan for 2023 will be discussed.

2. Barn Owl Survey

2.1. Background

The Ulster Wildlife Barn Owl Survey started in 2010. During the first years, the fieldwork concentrated on 2x2 km survey tetrads in areas where barn owls had been sighted. After talking to locals and landowners and conducting field based surveys, historic and potential nest/roost sites, as well as locations of barn owl boxes within each tetrad were identified, surveyed and recorded into the mapping database.

Since 2016, Ulster Wildlife have carried out a national presence-absence survey based on these identified sites and they are included in our adaptation of the Barn Owl Trust's "Three Step Survey Method". The steps consist of the following:

- **Desktop Survey** to identify the most likely sites barn owls will be found through the use of sightings reports from communities and individuals, habitat maps, aerial photos and precipitation records;
- **Interviewing Local People.** This is carried out throughout the year at local events such as country fairs, agricultural shows and through submissions from the general public by phone and on our website. Volunteers are also seeking to liaise with local landowners, and erect posters calling for sightings in their local areas;
- **Intensive Surveying.** Volunteers survey for activity at the most likely sites across Northern Ireland, such as historic nest sites, nest boxes, active nest sites, potential sites, or an area where we have an important number of confirmed sightings.

Since 2018 we have also included long-eared owls (*Asio otus*) in our survey. While they are considered to be common and widespread across the whole of the island of Ireland (NIRSG, Birdwatch Ireland, Bird Atlas 2007-11), there is a lack of information on their distribution across Northern Ireland. There are common characteristics between barn owl and long-eared owl, like the fact that, to a large degree, they rely on the same food sources (i.e. small rodents). Long-eared owls are more commonly recorded in woodlands but are vastly under recorded.

2.2. Survey Methodology

For our 2022 survey, we contacted anyone on our list that had a barn owl box and asked that the landowner check the box themselves for any signs of occupation (whitewash, pellets, feathers, noise) during the months of July and August. People were not going up to the box itself so as not to cause any disturbance. This also meant that no one was walking on other people's land in order to keep people safe. Each surveyor received a copy of the Survey Methodology, a Recording Form and a Risk Assessment.

We asked that people provide us with up-to-date information regarding the nesting box: whether it was occupied, the grid reference, and whether it needed repaired or replaced. That way we can see whether we need to replace a box or add boxes in an area. We also carried out a number of surveys at key sites. The area was visited during the day to check for any signs; feathers, pellets, whitewash, and then an evening visit was also carried out where possible.

Our nest minders had been monitoring their sites all year so we were keeping in touch with them regarding the known barn owl pairs (see **3.3**).

2.3. Results

In total **76** boxes were checked for signs of barn owl activity throughout July and August. We also carried out a total of **12** surveys at potential sites. **Figure 1** shows the majority of the boxes are in the east of the country as our barn owl population is

more abundant in the east, but there is a spread of boxes across the whole of NI. We carried out night watches in key areas. During one survey a juvenile barn owl was recorded indicating breeding in the area, this sighting was followed up with local landowners. A number of long-eared owls were also recorded. Thank you to all our volunteers and Ulster Wildlife staff who helped with the survey.



Figure 1: Location of the boxes and sites surveyed in 2022.

3. Other key points

3.1. Sightings

We are pleased to see support from the public continue with regular sightings of barn owls reported to us via phone call, email, social media (Facebook/Twitter), or online through CEDaR's website (Centre for Environmental Data and Recording) and iRecord. By the end of 2022, **59** sightings have been entered onto our database and mapped (**Figure 2**). This data gives us an insight into where birds may be nesting or roosting. This allows us to target our conservation action specifically where it is needed. The summer survey is also key in raising awareness and generating sighting reports through public engagement. It is vitally important to get the message out there that our local barn owl population is struggling and needs our help.

We also received **32** sightings of long-eared owls (**Figure 2**) – more than double from 2021 due to increased public awareness. Long-eared owls are actually more common than barn owls but they are not reported as frequently. We received more long-eared owl sightings this year and will continue to encourage sightings of long-eared owls.



Figure 2: Sightings of Barn Owls and Long-eared Owls in 2022.

For the second year in a row, in collaboration with BirdWatch Ireland, we have combined our sightings across the island of Ireland for 2022 (**Figure 3- pending finalisation**). This gives us an insight into barn owl distribution and prevalence across Ireland. It also allows us to target our conservation efforts as well as look at possible survey gaps.

It is important to collaborate outside of Northern Ireland as barn owls can travel long distances in search of foraging areas and new nest sites. We collaborate across the UK with the Barn Owl Trust on the State of the UK Barn Owl Population reports. Within Ireland we are collaborating with BirdWatch Ireland, RSPB NI, and various other barn owl volunteer projects. This work is vital to get a clear picture of what is happening with barn owls in Ireland as a whole.

If you have a barn owl or long-eared owl sighting in Northern Ireland, please report it to barnowls@ulsterwildlife.org or through CEDaR or iRecord, or for the Republic of Ireland visit <https://bit.ly/barnowl-survey>.

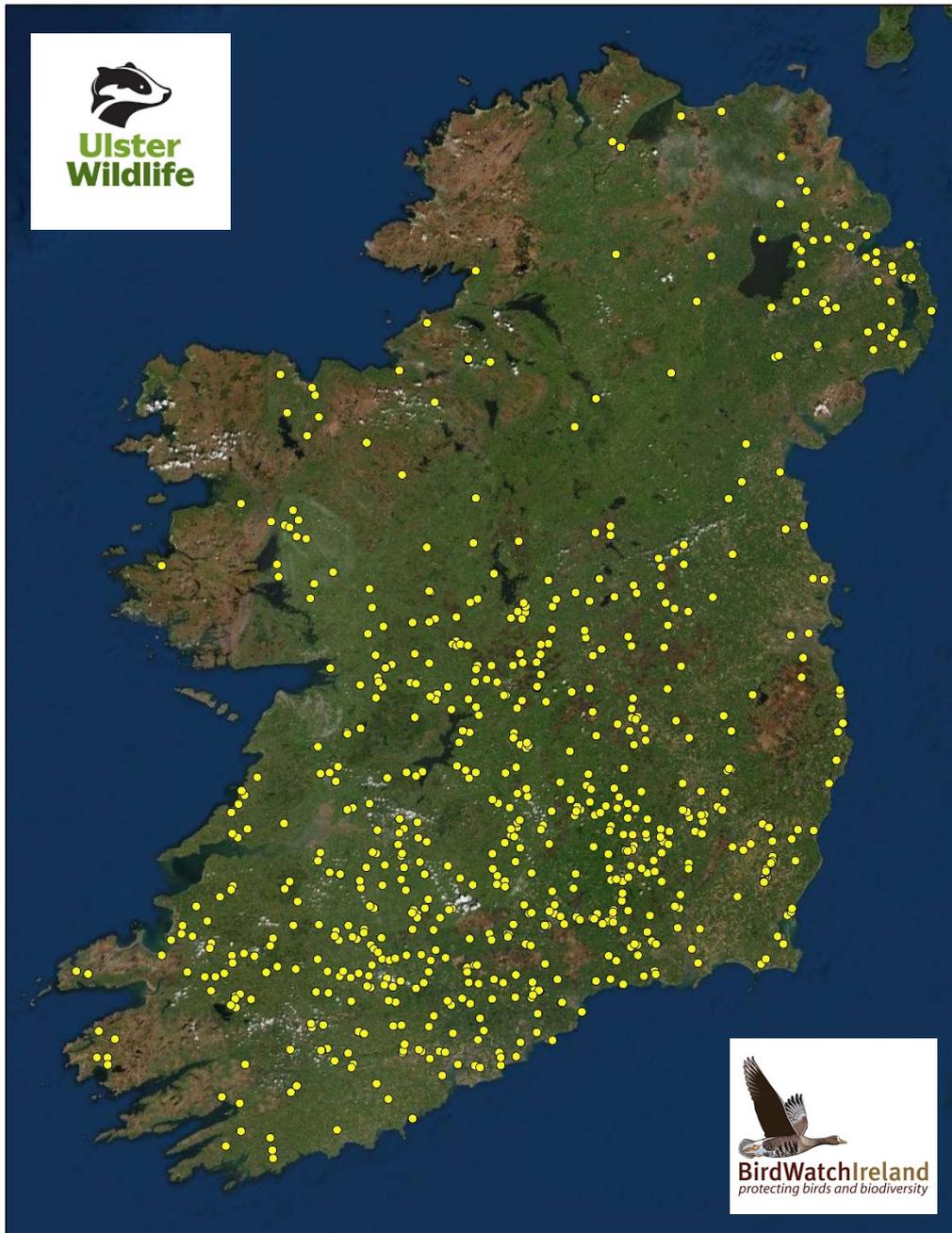


Figure 3: Sightings of Barn Owls across Ireland in 2021 (BirdWatch Ireland and Ulster Wildlife) – pending finalisation of 2022 update.

3.2. Dead barn owl reports

Barn owls face many risks as they move through the countryside including dangers from roads. In February 2022, we unfortunately got a report of a dead barn owl on the side of the M1 motorway. The bird was a young male that had unfortunately been killed by a passing vehicle. In October 2022, we got another report of a dead barn owl at the side of the road in County Down. This barn owl unfortunately had been dead for a while, most likely from being hit by a car.

If you find a dead barn owl please report it to barnowls@ulsterwildlife.org.

3.3. Known active nest sites

In 2022 we monitored a number of active nest sites. This breeding season was thankfully much more successful than 2021. We had a total of **8 broods** across Northern Ireland and **24 chicks fledged**. This is an amazing success and a really great breeding year. A number of these were new nest sites where either breeding took place for the first time or after a long period of absence. We had two new pairs settle in tree nesting boxes which was a great success. Ringing was carried out with BTO ringers at three of the nest sites. One of the pairs produced a late brood in September but there were no second broods.

Nest site	Number fledged 2019	Number fledged 2020	Number fledged 2021	Number fledged 2022
Mount Stewart	-	3	-	1
Antrim 1	-	-	-	4
Antrim 2	-	-	-	4
Antrim 3	-	-	-	3
Strangford	2	3	2	4
Finnebrogue	-	-	2	-
Downpatrick	-	-	-	3
Fermanagh	-	-	-	1
Co. Down	-	-	-	4
Mean	-	-	2	3

Table 1: Number of fledged barn owl chicks within the known nest sites.

A new site has established in Downpatrick after only putting nesting boxes up the previous winter. It was rewarding to see a pair settle in a box so quickly and produce three healthy chicks (**Picture 3**). This farm has been working closely with RSPB NI to improve their land for wildlife, providing excellent hunting habitat for the birds. Another new pair settled in County Down and had a brood of four chicks late on in September. We have been working closely with the landowners and the site historically had barn owls nesting there. It was a great surprise to our volunteer to see four chicks on the camera trap that was used for monitoring the site (**Picture 4**).



Picture 2: The single chick that fledged from Mount Stewart in 2022. Pic © Tristan Bane.



Pictures 3 and 4: One of the three chicks that fledged from a new site in Downpatrick and the four barn owl chicks born at a new site in County Down.

3.4. Boxes

Since the beginning of the year, **20** barn owl boxes have been erected throughout Northern Ireland (**Figure 4**). We focused on priority areas where we knew barn owls were present; and also areas of suitable foraging habitat. We want to create a Nature Recovery Network of boxes to allow chicks from existing pairs to spread out. We also carried out a total of **34** site visits to landowners where we provided advice on boxes and land management. More nest boxes were also erected at existing nest sites to increase the network of boxes in the area and to offer roosting or nesting opportunities for fledglings. We have a number of organisations and volunteers making nesting

boxes for us. Our thanks to all the groups, young people, and volunteers who helped make this happen.

While we aim to support everyone who gets in contact with us, as there is a high demand for boxes, we have to prioritise possible sites which are the most suitable for barn owls. We make the decision on whether to visit a site based on certain parameters including:

- Proximity to an existing nest site;
- The number of sightings in the area;
- The abundance of rough grassland, thick hedgerows and other suitable habitat features;
- Any negative site features, such as the proximity to a main road.

We must visit a site before we make the decision on whether the site is suitable for a box, and we carry out this work mainly in late autumn and winter, outside of the breeding season.



Figure 4: Locations where barn owl boxes were erected in 2022.

4. Limitations and successes

The use of thermal imaging equipment has improved our surveying abilities by allowing us to check boxes from the ground. This technology can tell us whether a box is occupied and therefore minimising any disturbance caused. Through our funders

we purchased thermal imaging binoculars and monoculars which we have been using at every site visit. This equipment is also extremely valuable during evening surveys.

This year we were able to get back to running talks and events in person. This has been very successful and we aim to continue providing a mixture of talks and events in person while still providing online talks. By reaching a wide audience we can continue to raise awareness of the issues barn owls face locally.

Barn owls are very scarce in Northern Ireland, and difficult to survey, and so there are difficulties in locating nest sites. Our understanding of barn owl distribution in Northern Ireland may be biased towards areas where communities are more aware or where population densities are higher. Awareness effort needs to be put into areas where we are lacking sightings in order to see whether or not the actual distribution is reflective of our data. We also plan to carry out more systematic surveying so that the data can be used for an up-to-date population estimate. It would be beneficial for a large scale survey to take place every 10 years alongside other eNGO's and stakeholders.

This year we faced a new issue for our barn owl pairs: predation by pine marten. At the Mount Stewart site we had a pine marten predate two of the four chicks. The first chick died naturally and we think the pine marten was attracted in from the smell. Luckily one chick survived and fledged (**Picture 2**). We have been working on a solution throughout the year including erecting a new box nearby on a standalone tree that has been predator-proofed. This is something we need to be aware of as pine marten populations increase and spread.

Staff from the Barn Owl Trust in England visited our project in September 2022 (**Picture 5**). We carried out a number of site visits over the three days and it was very successful in terms of knowledge sharing. Thank you to Matteo and Matt for making the journey over and all of the interesting and valuable barn owl discussions.

5. Future plans

In September 2022, we held a Barn Owl Working Group meeting with all of the stakeholders involved in the project; RSPB NI, BTO NI, The Barn Owl Trust, BirdWatch Ireland, Northern Ireland Raptor Study Group (NIRSG), NIEA, Nature Friendly Farming Network (NFFN) and the National Trust. This was a valuable opportunity to discuss what is going on with barn owl conservation across Ireland and the UK, as well as discuss important issues such as barn owl monitoring, and how agri-environment schemes can help barn owls locally. Going forward we want to hold this meeting annually.

Our main aim this year will again be to identify more unknown nest sites. Our target audience through our communications will be farmers and landowners. We want to ensure that land is managed properly for barn owls and that anyone that knows of a nest site is engaged with and supported. We will be encouraging measures to be put in place to support barn owls in future agri-environment schemes. We will continue to carry out site visits and provide advice on nature-friendly land management. This year we aim to run events for landowners alongside RSPB NI. Ulster Wildlife will continue

raising awareness of barn owls at a local scale and the pressures and threats they face.

We will be carrying out an annual survey again in 2023 and hope to increase the number of potential sites checked. Getting landowners to check their own boxes proved successful in 2020, 2021 and 2022, and so we will repeat this again in 2023. We hope to acquire more thermal imaging equipment to increase our reach. Ulster Wildlife will continue to work closely with RSPB NI, BTO NI and the Northern Ireland Raptor Study Group (NIRSG) locally, along with BirdWatch Ireland (BWI) and The Barn Owl Trust more widely.

6. Conclusion

In Northern Ireland, barn owls remain very vulnerable and elusive. The annual survey, performed by our volunteers during the summer, had allowed to us to check 76 boxes and 12 new sites. We received 59 barn owl sightings and 32 long-eared owl sightings this year and we continue to encourage these sightings. New boxes in key areas and dry and warm weather allowed our barn owl pairs to have a good breeding year. Barn owls are particularly vulnerable to prolonged heavy rain periods (such as in spring 2021) which badly impact breeding success - unfortunately such weather conditions are likely to become more frequent an occurrence due to climate change, and we therefore need to work hard to ensure the population is as resilient as possible. Having 24 chicks born to eight pairs is an amazing boost to our local population. We hope the existing pairs are successful while new pairs continue to settle in new areas. By expanding our box network, with 20 new boxes in 2022, we hope to provide more opportunities for birds to nest and roost. Land management is key to barn owl survival and this remains crucial in helping our population here in Northern Ireland.

Finally, 2023 brings exciting opportunities to forward plan for the future of our barn owl conservation work. We want to be able to find more nest sites, support more landowners and nest-minders, and ultimately help protect our small population of barn owls in Northern Ireland. We are looking forward to the year ahead and the continuation of our conservation work on this iconic species. We anticipate that this year will build on the successes of recent years. We hope that once again we can rely on your support, as we have relied on it historically, to help build a future for one of Northern Ireland's most iconic species.



Picture 5: Staff from the Barn Owl Trust on their visit to Northern Ireland in September.

7. References

- Barn Owl Trust (2012) *Barn Owl Conservation Handbook*, Pelagic Publishing, Exeter
Bird Atlas 2007-11. The breeding and wintering birds of Britain and Ireland. Balmer, Gillings, Caffrey, Swann, Downie and Fuller. (456-457)
- Bunn, D.S., Warburton, A.B. & Wilson, R.D.S. (1982). *The Barn Owl*. Calton: T & AD Poyser.
Fick, S.E and R.J. Hijmans, 2017
- Gilbert, G., Stanbury, A. and Lewis, L. (2021), "Birds of Conservation Concern in Ireland 2020–2026". *Irish Birds* 43: 1–22.
- Hosseini Vahidi, Brian Klinkenberg and Wanglin Yan (2017), *Trust as a proxy indicator for intrinsic quality of Volunteered Geographic Information in biodiversity monitoring programs*, GIScience & Remote Sensing, 10.1080/15481603.2017.1413794, (1-37).
- Lusby, J. and O'Clery, M. (2014) *Barn Owls in Ireland: Information on the ecology of Barn Owls and their conservation in Ireland*. BirdWatch Ireland.
- Lusby, J., O'Clery, M., McGuinness, S., Tosh, D., & Crowe, O. (2019). *The interactions between Barn Owls and major roads: informing management and mitigation*. BirdWatch Ireland.
- Paul, K., Quinn, M. S., Huijser, M. P., Graham, J., and Broberg, L. (2014). An evaluation of a citizen science data collection program for recording wildlife observations along a highway. *J. Environ. Manage.* 139, 180–187. doi: 10.1016/j.jenvman.2014.02.018.
- Worldclim 2: *New 1-km spatial resolution climate surfaces for global land areas*. International Journal of Climatology.

Websites

- <https://www.barnowltrust.org.uk/uk-barn-owl-population-latest/>
- https://www.cieem.net/data/files/Resource_Library/Technical_Guidance_Series/SoSM/TGSS_oSM-Barn_Owl_Survey_Methodologyrevised2012.pdf
- <http://www.nirsg.com/long-eared-owl/>
- <https://www.birdwatchireland.ie/IrelandsBirds/Owls/LongearedOwl/tabid/1123/Default.aspx>
- https://www.daera-ni.gov.uk/sites/default/files/publications/doe/Natural-plan-species-action-barn-owl_0.pdf
- <https://www.eea.europa.eu/publications/COR0-landcover> accessed 2017
- <https://www.gov.je/Environment/LandMarineWildlife/Birds/Pages/Owls.aspx#anchor-3>
- <https://www.rspb.org.uk/globalassets/downloads/bocci4-leaflet.pdf>