Executive Summary

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Habitat focus: Farmland
Habitat summary: 22 bird species are included in our farmland bird index, with 10 listed in the Local Nature Recovery Plan, and a further 4 recognised as indicators)
Summary data

Plot ID: I_AR1

Season	Overall Score (0-100)	Sp. Rich-ness	Specialists present	Recording time (hours/rating)
Spring	NA	NA	NA	NA
Summer	NA	NA	NA	NA
Autumn	48	22	Eurasian Skylark, Yellowhammer, Eurasian Linnet	72 (Limited)
Winter	33	22	Eurasian Skylark, Eurasian Linnet	137 (Good)

Plot ID: I_BN1

Season	Overall Score (0-100)	Sp. Rich-ness	Specialists present	Recording time (hours/rating)
Spring	NA	NA	NA	NA
Summer	NA	NA	NA	NA
Autumn	56	22	Eurasian Skylark, Eurasian Linnet	125 (Good)
Winter	33	22	Eurasian Skylark, Eurasian Linnet	286 (Excellent)

Summary
Iford performs well in our Farmland bird habitat health index, particularly given the seasons during which monitoring occurred. There is evidence of healthy levels of Skylark and Linnet activity at both plots, both of which are listed in the Local Nature Recovery Strategy. Farmland indicator species Goldfinch are particularly active at I_BN1, and Starling were occasionally recorded at this site as well. Recording in Spring and Summer would provide a more complete picture of the farmland bird community using these sites.

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Farmland Bird Assessment

In the UK an estimated 68% of all land is used for agriculture, of this, 56% is thought to be permament pasture for grazing livestock. In southeast England the arable portion of our agricultural land is mostly dedicated to the production of cereals and oilseeds; primarily wheat, barley and oilseed rape.

The past century has seen rapid technological developments within farming, leading to intensification of management practices and an increase in yields. However, many of these practices have had serious knock-on effects on our ecosystem. Many of our traditional farmland birds have been particualrly heavily hit.

Despite the abundance of farmland, agricultural intensification has resulted in farmland birds showing the most rapid decline of any bird-group in the UK. The Government's Farmland Bird Index shows a 62% drop in farmland birds since the 1970s, and the British Trust for Ornithology estimates that we have lost around 73 million farmland birds during this period.

Here, we explore the activity of 22 farmland bird indicators. Ten are farmland indicator species that are listed in the Local Nature Recovery Strategy, such as Turtle dove, Tree sparrow, and Corn bunting. A further 4 are listed as farmland specialists including Starling, Goldfinch and Greater Whitethroat, and the remaining 8 are listed as farmland associats in the Government's Farmland Bird Index (see page 9 for the full list). The young of all of these birds require insects as a foodsource, whilst many of them also rely on access to seeds over the winter.

A farmland which provides good habitat for birds may include the following features:
1. Winter stubble left in place - this allows birds to access fallen seeds over the winter, without them being ploughed back into the soil.
2. Reduced pesticide usage - this allows insect numbers to increase and prevents harmful chemicals accumulating within the food chain.
3. Bird seed mixes and wild flowers being planted - bird seed mixes provide direct sustinance for birds, whilst native flowers increase the abundance of insects on which farmland birds feed.
4. Low intensity managemant practices - reduced regularity of cutting hedges, such as a 2-3 year rotation allows hedges to fruit, and increases nesting habitat; leaving 2-6m field margins also increases usable habitat, and allowing tussocky grass to develop provides shelter for birds and invertebrates.

Skylark (*Alauda arvensis*)

Linnet (*Linaria cannabina*)

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Our monitoring station locations
Iford

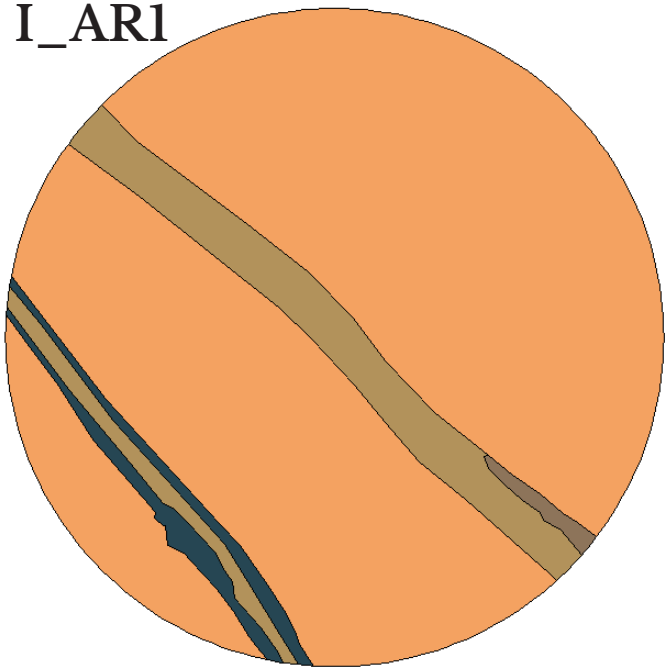
The monitoring locations were chosen to evidence the impacts of the BNG scheme actions performed at Iford.

Our monitoring stations capture bird vocalistations from approximately 200m radius (roughly 12.5 hectares). However, a greater number of identifications will be achieved from vocalisations closer to the station.

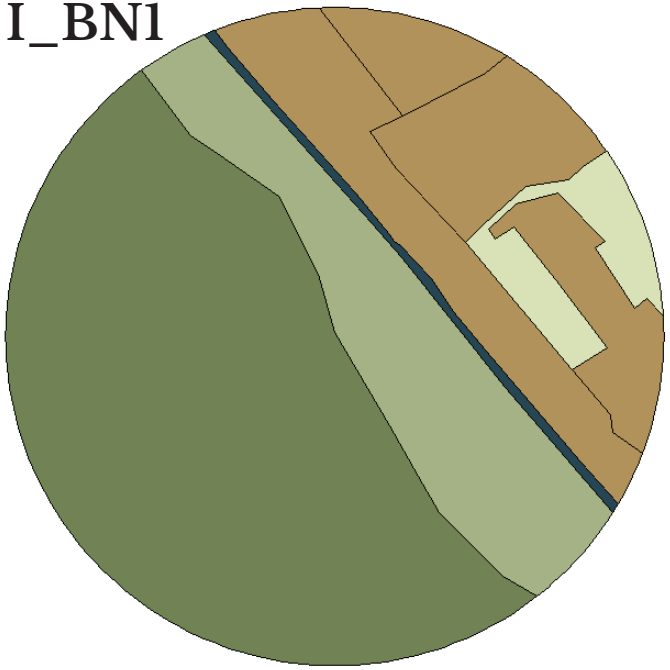
Site I_AR1
Lat: 50.882820 Long: -0.024423
This area was selected as a representation of the arable farming being done on the Iford estate. As such, it acts as a powerful comparison to our other monitoring station.

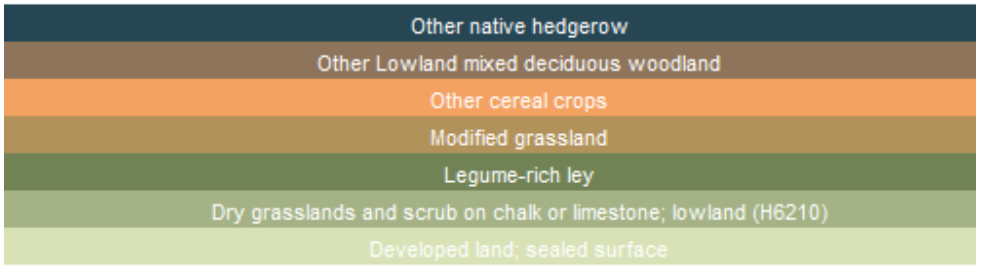
Site I_BN1
Lat: 50.873612 Long: -0.027881
The monitoring station for this location was placed on the fence-line between an area of grassland with establishing scrub, and an area where a wild flower seed mix had been planted. The wild flower mix was dominated by birds-foot trefoil.

I_AR1



I_BN1





Habitat Health Index (HHI): Method Summary

Summary
The Habitat Health Index (HHI) is a composite, standardised indicator designed to summarise the ecological condition of a habitat based on acoustic bird survey data. It integrates information on species occurrence, activity, and habitat specialism to provide an interpretable, repeatable measure of habitat quality across sites, plots, and seasons.

The index is intended as a decision-support and monitoring tool. It does not replace detailed species-level analysis, but instead provides a transparent, ecologically grounded summary that can be compared across locations and tracked through time.

Overview of Index Structure

The HHI is calculated separately for each plot and season. It is composed of three core elements:

1. Species Activity Component – reflects total bird activity recorded, scaled to reduce dominance by highly vocal species.
2. Species Richness Component – reflects how many habitat-indicator species are detected. The score is scaled between 0 and 80%, so 80% of species present gives a maximum score for this component reflecting species separation in space.
3. Specialist Bonus – provides additional weighting for species considered strong indicators of high-quality habitat conditions (weight 3 species on page 9).

These components are combined and rescaled to produce a single Habitat Health Index score on a 0–100 scale.

Example to explain interpretation

Grey bar shows the max-min of HHI of all other monitoring stations in the Nature Sense network. Points above the top or below the bottom indicate scores better or worse respectively compared to all other plots in the network.

Seasonal scores are provided for clearer comparison depending on sampling effort. Autumn and Winter are dissadvantaged because summer migrants aren't present.

Points with a square box around them indicate less than 100 hours of sampling effort at that site for that season. Higher sampling would likely increase the score.

Habitat Health Index (HHI) Performance

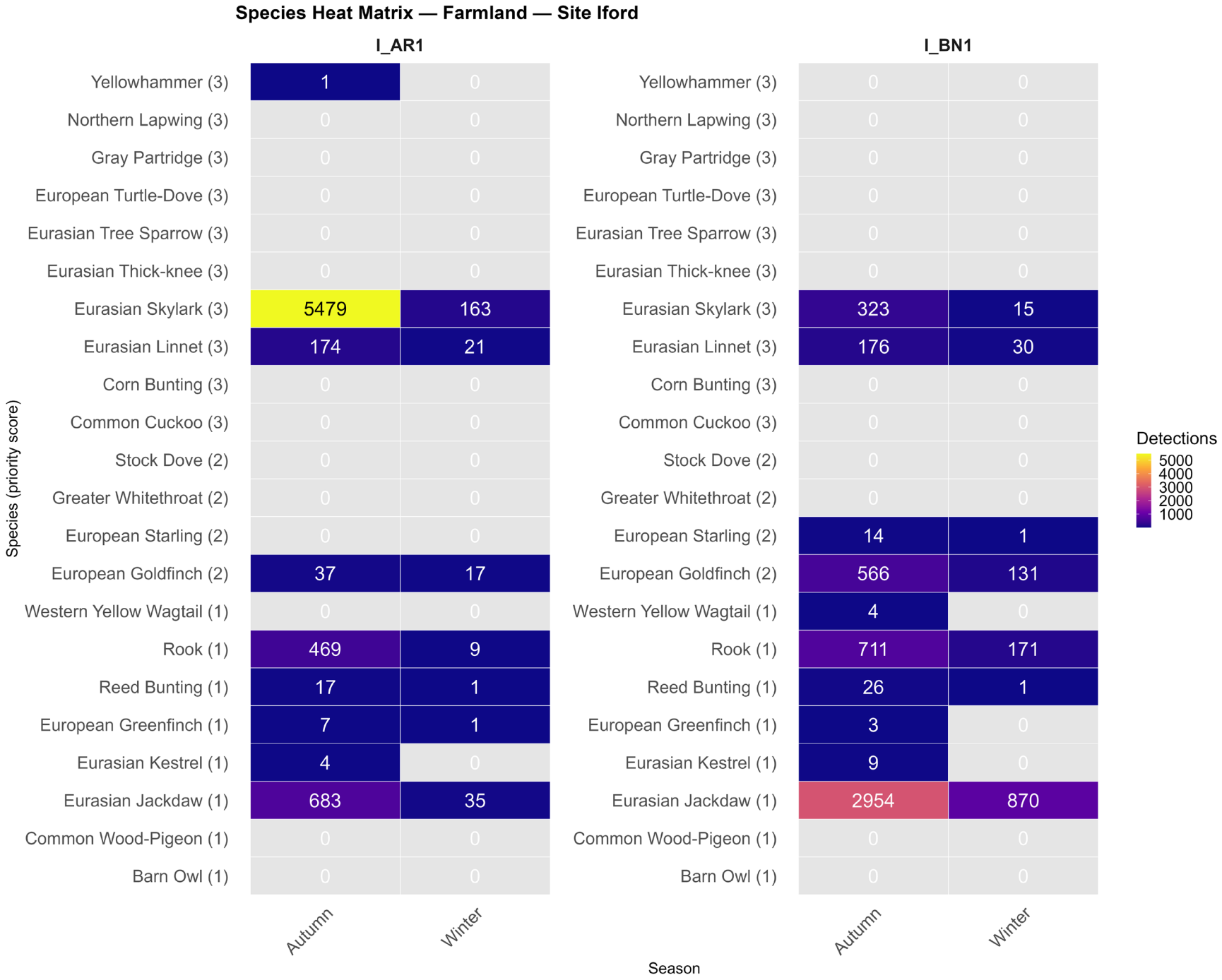
Results
Iford performs well using the Farmland HHI, despite monitoring on the estate taking place over the Autumn and Winter.

I_BN1 performed particularly well in the Autumn, with a score which placed it near to the top of those present in our network. However, I_AR1 may have been negatively impacted by a lower number of sound recordings being made (I_AR1 Autumn recordings = 72 hours to I_BN1's 125 hours).

As can be seen from the table on the next page, both sites are supporting similar assemblages of farmland birds. For LNRS listed birds (Weight 3), Skylark and Linnet activity is important at both plots. The large number of Skylark vocalistaions recorded at I_AR1 suggests a healthy population is present, likely thanks to areas of non-intensively managed grassland (and the additional hours of recording).

Of the other farmland indicators (Weight 2), Goldfinch is the most active, particularly at plot I_BN1, which is also occasionally visited by Starling.

Of the farmland associated species (Weight 1), Corvids (in this case Rooks and Jackdaws) are recorded in high abundance at both sites. The small number of records of Western Yellow Wagtail at I_BN1 are likely the result of migrants passing through the estate.


Species Heat Matrix — Farmland — Site Iford
I_AR1
I_BN1
Yellowhammer (3)
Northern Lapwing (3)
Gray Partridge (3)
European Turtle-Dove (3)
Eurasian Tree Sparrow (3)
Eurasian Thick-knee (3)
Eurasian Skylark (3)
Eurasian Linnet (3)
Corn Bunting (3)
Common Cuckoo (3)
Stock Dove (2)
Greater Whitethroat (2)
European Starling (2)
European Goldfinch (2)
Western Yellow Wagtail (1)
Rook (1)
Reed Bunting (1)
European Greenfinch (1)
Eurasian Kestrel (1)
Eurasian Jackdaw (1)
Common Wood-Pigeon (1)
Barn Owl (1)
1
5479
163
174
21
37
17
469
9
17
1
7
1
4
683
35
323
15
176
30
14
1
566
131
4
711
171
26
1
3
9
2954
870
Species (priority score)
Autumn
Winter
Season
Detections
5000
4000
3000
2000
1000

What this tells us

When looking at the species present at Iford, it becomes apparent that whilst many of the medium-sized birds associated with open farmland are present (e.g starlings, linnet, skylark), the doves and pigeons are absent. This includes the normally abundant Wood Pigeon. Naturally, seasonality plays a large part in this and the results for Iford may have been even better in the summer when migrants such as the Cuckoo and Greater Whitethroat would have been present.

The farmland at Iford is very exposed, and whilst scrub is developing at I_BN1, it is not yet established enough to provide nesting or foraging habitat for the species which are conspicuously missing from our records. We suggest that given the management practices currently employed on the Iford estate, there is a very high potential for the abundance of threatened farmland birds here to increase significantly. Further, if the fenceline upon which the recorder for BN_1 was placed were to be developed into a hedgerow, this feature would provide excellent shelter to the grassland and developing scrub, once mature.

As well as the scrub development at Iford, the wild flower mixes planted at I_BN1 are certain to increase invertebrate abundance at the site, providing food for insectivorous birds. It is likely that the seed avialability associated with this wild flowermix is the cause for the higher activity of Goldfinch at I_BN1 than at I_AR1.

We hope that as nature recovery actions continue at Iford, you will choose to continue to monitor the changes happening on the site. There is certainly a huge potential here for the recovery of traditional farmland bird species assemblages.


Kestrel (*Falco tinnunculus*)


Yellowhammer (*Emberiza citrinella*)

Appendix


Greater Whitethroat (*Curruca communis*)

A note about the data used in this report
The data we used to create this report was generated from Passive Acoustic Monitoring (PAM) at each of the sites described. After collection, the data was assigned to species using BirdNET which uses an algorithm to detect known bird vocalisations. After this, a selection of recordings were manually validated by the Nature Sense team.

BirdNET allocates a confidence score to each identification it makes. We set a minimum confidence threshold of 75%, and excluded all vocalisations below this threshold. The Nature Sense team validated two recordings of each identified species within four confidence groupings: >99%, 99-95%, 95-90%, and 90-75%. Species were accepted in the species list for a site if any of the validated recordings were assessed to be confirmed or probable, and otherwise excluded. This process improves the quality of the reported species list, however, it is important to note that erroneous identifications will still be included. However, as our validation work develops it is creating a substantial additional evidence base that will be used to improve the validation process in the future.

We have noticed that Corn Bunting (*Emberiza calandra*) is conspicuously absent from across the network and we suspect this is an error in the BirdNet processing that we are looking into.

Validation of AI processed recordings is vital. Whilst some mistakes are relatively easily spotted (e.g cows being reported as Atlantic Puffins), others are more problematic, such as Wood Pigeons often being reported as Turtle Doves.
We recommend our partners to always check that a validation step has been included when working with results from PAM.


Goldfinch (*Carduelis carduelis*)

Scientific name	Common name	Weight	Ecological justification
Emberiza calandra	Corn Bunting	3	Late-singing arable specialist strongly associated with open, low-intensity farmland; highly sensitive to agricultural in-tensification and habitat simplification.
Cuculus canorus	Common Cuckoo	3	Brood parasite dependent on host species associated with structurally diverse farmland mosaics; indicative of land-scape-scale habitat connectivity.
Perdix perdix	Gray Partridge	3	Arable ground-nesting species closely tied to traditional cereal systems; severe national declines make it a high-value farmland indicator.
Linaria cannabina	Linnet	3	Seed-eating specialist of open farmland and field margins; highly responsive to changes in crop management and winter food availability.
Alauda arvensis	Skylark	3	Iconic farmland songbird reliant on extensive open arable and grassland; strong indicator of habitat openness and low disturbance.
Burhinus oedicnemus	Stone-curlew	3	Internationally important specialist of dry arable and short-sward grassland; presence indicates very low disturbance and high habitat quality.
Passer montanus	Tree Sparrow	3	Colonial farmland passerine associated with farm buildings, hedgerows, and mixed farming; sensitive to intensifi-ca-tion and loss of nesting sites.
Streptopelia turtur	Turtle-Dove	3	Rapidly declining species reliant on farmland and scrub mosaics; strong indicator of habitat management quality.
Vanellus vanellus	Northern Lapwing	3	Breeding wader of mixed farmland and wet grassland; highly sensitive to drainage, mowing regime, and agricultural intensity.
Emberiza citrinella	Yellowhammer	3	Characteristic farmland bunting closely associated with hedgerows and mixed arable systems; declining nationally.
Carduelis carduelis	Goldfinch	2	Widespread farmland finch whose breeding success reflects seed availability, margin quality, and agricultural man-agement.
Columba oenas	Stock Dove	2	Farmland pigeon associated with pasture, arable land, and mature trees; indicative of traditional mixed farming sys-tems.
Sturnus vulgaris	Starling	2	Colonial species strongly associated with livestock-grazed farmland; declines reflect reduced pasture use and changes in farming practice.
Curruca communis	Greater Whitethroat	2	Shrub-dependent farmland and field-edge warbler; indicative of hedgerow and margin condition.
Chloris chloris	Greenfinch	1	Generalist finch frequently present in farmland but with broad ecological tolerance and weak diagnostic value.
Corvus monedula	Jackdaw	1	Opportunistic corvid commonly associated with farmland buildings and pasture; presence reflects land use rather than habitat quality.
Falco tinnunculus	Kestrel	1	Widely foraging raptor using farmland as hunting habitat; indicates prey availability but not vegetation structure.
Emberiza schoeniclus	Reed Bunting	1	Wetland-edge bunting often present in farmland mosaics; more strongly tied to wetlands than arable systems.
Corvus frugilegus	Rook	1	Colonial corvid closely associated with improved pasture and arable land; weak indicator due to high adaptability.
Columba palumbus	Wood-Pigeon	1	Highly adaptable pigeon ubiquitous in farmland; presence provides background context only.
Motacilla flava	Yellow Wagtail	1	Migratory wagtail associated with grazed pasture and arable fields; moderately informative but not habitat-restricted.
Tyto alba	Barn Owl	1	Nocturnal predator reliant on farmland small mammals; presence reflects prey availability rather than vegetation di-versity.