



Polliknow

Revolutionizing insect pollinator measurement

Recording Birdlife at Dunsany

This trial aimed to explore bird biodiversity at **Dunsany Nature Reserve** using passive acoustic monitoring and machine learning-based sound recognition.

Audio recordings were collected using the **Polliknow device**, which is equipped with a **standard USB microphone** to capture birdsong. The device was placed in a fixed location for four days (**13th–16th May 2025**). It was set to record during morning and evening hours to coincide with peak bird activity, with each session consisting of short audio clips (~1 minute).

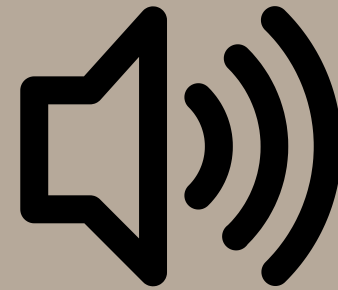
These recordings were then processed using **BirdNET**, an open-source sound analysis tool developed by the Cornell Lab of Ornithology and Chemnitz University of Technology. BirdNET identifies bird species by analyzing their calls and songs and assigns a confidence score to each detection.



Recording Period

May 13–16, 2025

Recorded each
morning and evening
(1 hour per session)



A total of
350 audio recordings
collected



A total of
57 bird species
were identified



Troglodytes troglodytes
(Eurasian Wren)
Detected 703 times (25.98%)



Turdus merula
(Eurasian Blackbird)
Detected 651 times (24.05%)



Fringilla coelebs
(Common Chaffinch)
Detected 476 times (17.59%)



Sylvia borin
(Garden Warbler)
Detected 273 times (10.09%)



Erithacus rubecula
(European Robin)
Detected 254 times (9.38%)



Turdus philomelos
(Song Thrush)
Detected 199 times (7.35%)



Curruca communis
(Greater Whitethroat)
Detected 165 times (6.10%)



Sylvia atricapilla
(Eurasian Blackcap)
Detected 146 times (5.40)



Milvus milvus
(Red Kite)
Detected 106 times (3.92%)



Anthus trivialis
(Tree Pipit)
Detected 93 times (3.44%)



Turdus viscivorus
(Mistle Thrush)
Detected 86 times (3.18%)



Pyrrhula pyrrhula
(Eurasian Bullfinch)
Detected 53 times (1.96%)



Phylloscopus collybita
(Common Chiffchaff)
Detected 47 times (1.74%)



Sitta europaea
(Eurasian Nuthatch)
Detected 41 times (1.52%)



Numenius arquata
(Eurasian Curlew)
Detected 37 times (1.37%)



Curruca curruca
(Lesser Whitethroat)
Detected 36 times (1.33%)



Phylloscopus trochilus
(Willow Warbler)
Detected 33 times (1.22%)



Phasianus colchicus
(Ring-necked Pheasant)
Detected 26 times (0.96%)



Regulus regulus
(Goldcrest)

Detected 23 times (0.85%)



Aegithalos caudatus
(Long-tailed Tit)

Detected 22 times (0.81%)



Parus major
(Great Tit)

Detected 20 times (0.74%)



Chloris chloris
(European Greenfinch)

Detected 19 times (0.70%)



Cyanistes caeruleus
(Eurasian Blue Tit)

Detected 18 times (0.66%)



Corvus corone
(Carrion Crow)

Detected 18 times (0.66%)



Emberiza citrinella
(Yellowhammer)
Detected 18 times (0.66%)



Buteo buteo
(Common Buzzard)
Detected 15 times (0.55%)



Prunella modularis
(Dunnock)
Detected 14 times (0.52%)



Spinus spinus
(Eurasian Siskin)
Detected 13 times (0.48%)



Garrulus glandarius
(Eurasian Jay)
Detected 11 times (0.41%)



Turdus pilaris
(Fieldfare)
Detected 11 times (0.41%)



Saxicola rubicola
(European Stonechat)
Detected 10 times (0.37%)



Carduelis carduelis
(European Goldfinch)
Detected 8 times (0.30%)



Corvus cornix
(Hooded Crow)
Detected 6 times (0.22%)



Accipiter nisus
(Eurasian Sparrowhawk)
Detected 6 times (0.22%)



Periparus ater
(Coal Tit)
Detected 6 times (0.22%)



Motacilla cinerea
(Gray Wagtail)
Detected 5 times (0.18%)



Muscicapa striata
(Spotted Flycatcher)
Detected 4 times (0.15%)



Tachybaptus ruficollis
(Little Grebe)
Detected 4 times (0.15%)



Linaria cannabina
(Eurasian Linnet)
Detected 4 times (0.15%)



Numenius phaeopus
(Whimbrel)
Detected 3 times (0.11%)



Haematopus ostralegus
(Eurasian Oystercatcher)
Detected 3 times (0.11%)



Apus apus
(Common Swift)
Detected 3 times (0.11%)



Charadrius hiaticula
(Common Ringed Plover)
Detected 2 times (0.07%)



Acanthis cabaret
(Lesser Redpoll)
Detected 2 times (0.07%)



Acrocephalus scirpaceus
(Eurasian Reed Warbler)
Detected 2 times (0.07%)



Falco peregrinus
(Peregrine Falcon)
Detected 1 time (0.04%)



Tringa nebularia
(Common Greenshank)
Detected 1 time (0.04%)



Certhia familiaris
(Eurasian Treecreeper)
Detected 1 time (0.04%)



Dendrocopos major
(Great Spotted Woodpecker)
Detected 1 time (0.04%)



Anser anser
(Graylag Goose)
Detected 1 time (0.04%)



Ardea cinerea
(Gray Heron)
Detected 1 time (0.04%)



Emberiza schoeniclus
(Reed Bunting)
Detected 1 time (0.04%)



Cuculus canorus
(Common Cuckoo)
Detected 1 time (0.04%)



Sturnus vulgaris
(European Starling)
Detected 1 time (0.04%)



Tringa totanus
(Common Redshank)
Detected 1 time (0.04%)



Circus aeruginosus
(Eurasian Marsh-Harrier)
Detected 1 time (0.04%)



Pica pica
(Eurasian Magpie)
Detected 1 time (0.04%)

Top 10 Most Detected Bird Species

- Troglodytes troglodytes
- Turdus merula
- Fringilla coelebs
- Sylvia borin
- Erithacus rubecula
- Turdus philomelos
- Curruca communis
- Sylvia atricapilla
- Milvus milvus
- Anthus trivialis

Photo: www.inaturalist.org

703



651



476



273



254



199



165



146



106



93



Bird Highlights



Milvus milvus
(Red Kite)
Detected 106 times

Extinct from Ireland in
19th century,
reintroduced 2007

Red
Conservation status



Numenius arquata
(Eurasian Curlew)
Detected 37 times

Over 96% population
loss since the 1980s;
only 138 breeding pairs
left by 2017

Red
Conservation status



Haematopus ostralegus
(Eurasian Oystercatcher)
Detected 3 times

High concern in Ireland;
most seen Sept–Mar.

Red
Conservation status



Apus apus
(Common Swift)
Detected 3 time

Summer visitor from
Africa; widespread but
declining

Red
Conservation status

Bird Highlights



Muscicapa striata
(Spotted Flycatcher)
Detected 4 times

Summer visitor (May–
Sept); common but
declining

Amber
Conservation status



Circus aeruginosus
(Eurasian Marsh-Harrier)
Detected 1 time

Rare breeder in Irish
wetlands; slowly
recovering

Amber
Conservation status



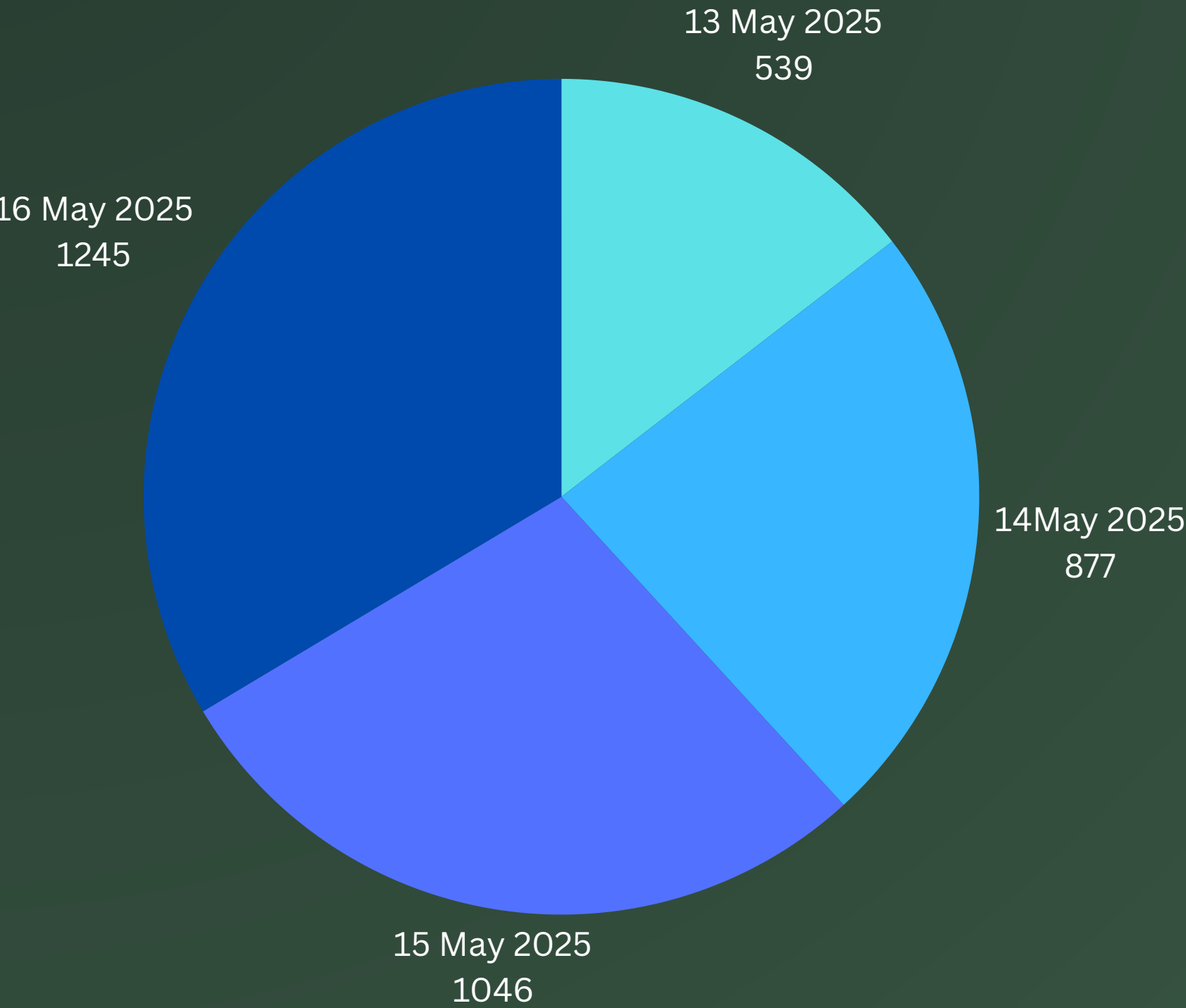
Dendrocopos major
(Great Spotted
Woodpecker)
Detected 1 time

Extinct since 17th–18th
century; now
recolonised and
widespread across
Ireland

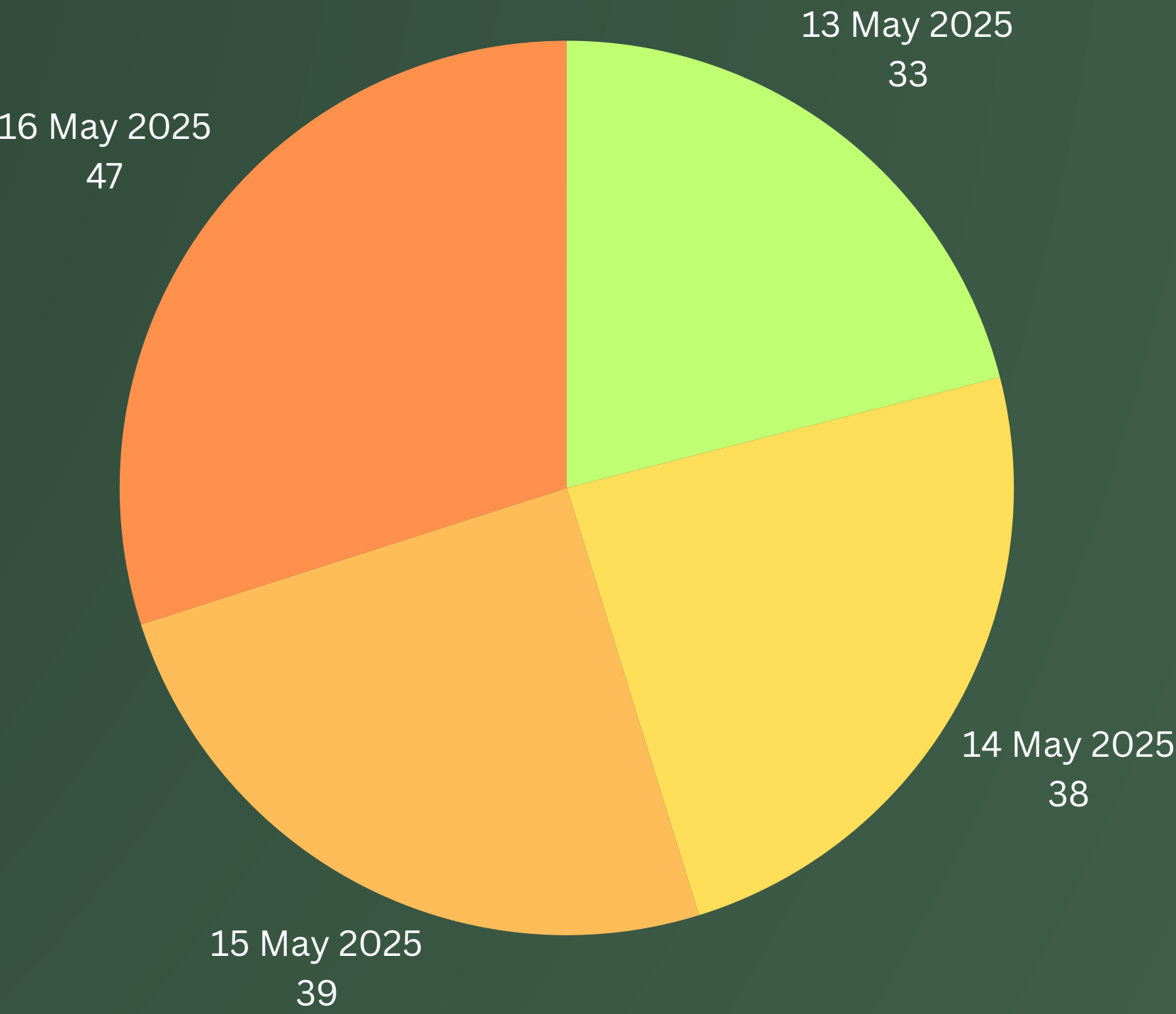
Red – severe declines (e.g.
declines >50% over 25
years)

Amber– moderate declines
(e.g. declines of 25-49%
over 25 years)

Total Bird Detections per Day



Unique Bird Species per Day





Thank You