

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).

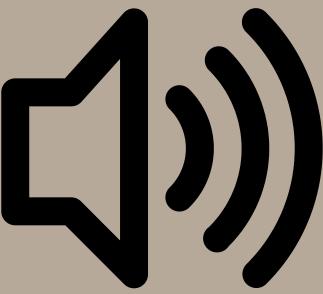
These recordings were then processed using **BirdNET**, an open-source sound analysis tool developed by the Cornell Lab of Ornithology and Chemnitz University of Technology. BirdNET identifies bird species by analyzing their calls and songs and assigns a confidence score to each detection.



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%)



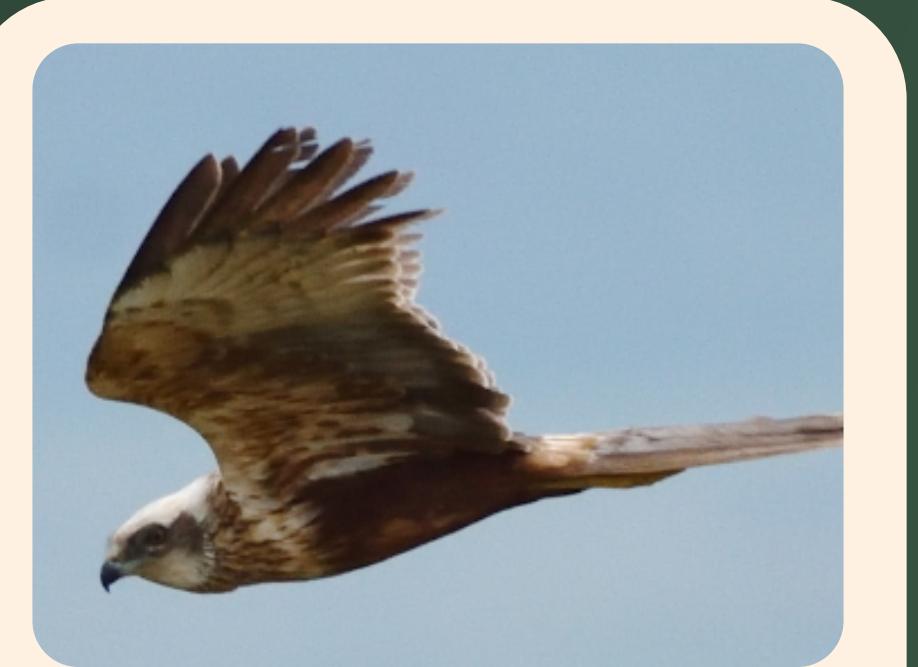
Cuculus canorus
(Common Cuckoo)
Detected 1 time (0.04%)



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



703



651



476



273



254



199



165



146



106



93

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

Photo: www.inaturalist.org

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

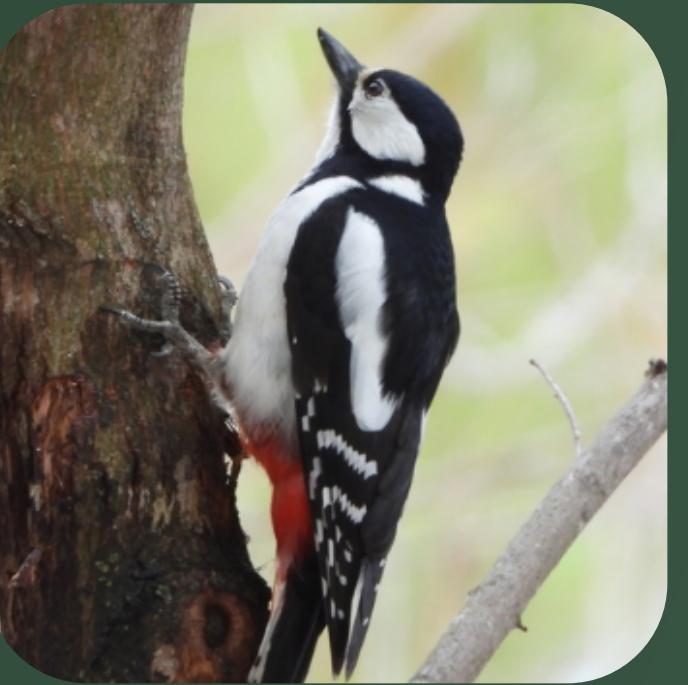
Amber
Conservation status



Circus aeruginosus
(Eurasian Marsh-Harrier)
Detected 1 time

Rare breeder in Irish
wetlands; slowly
recovering

Amber
Conservation status



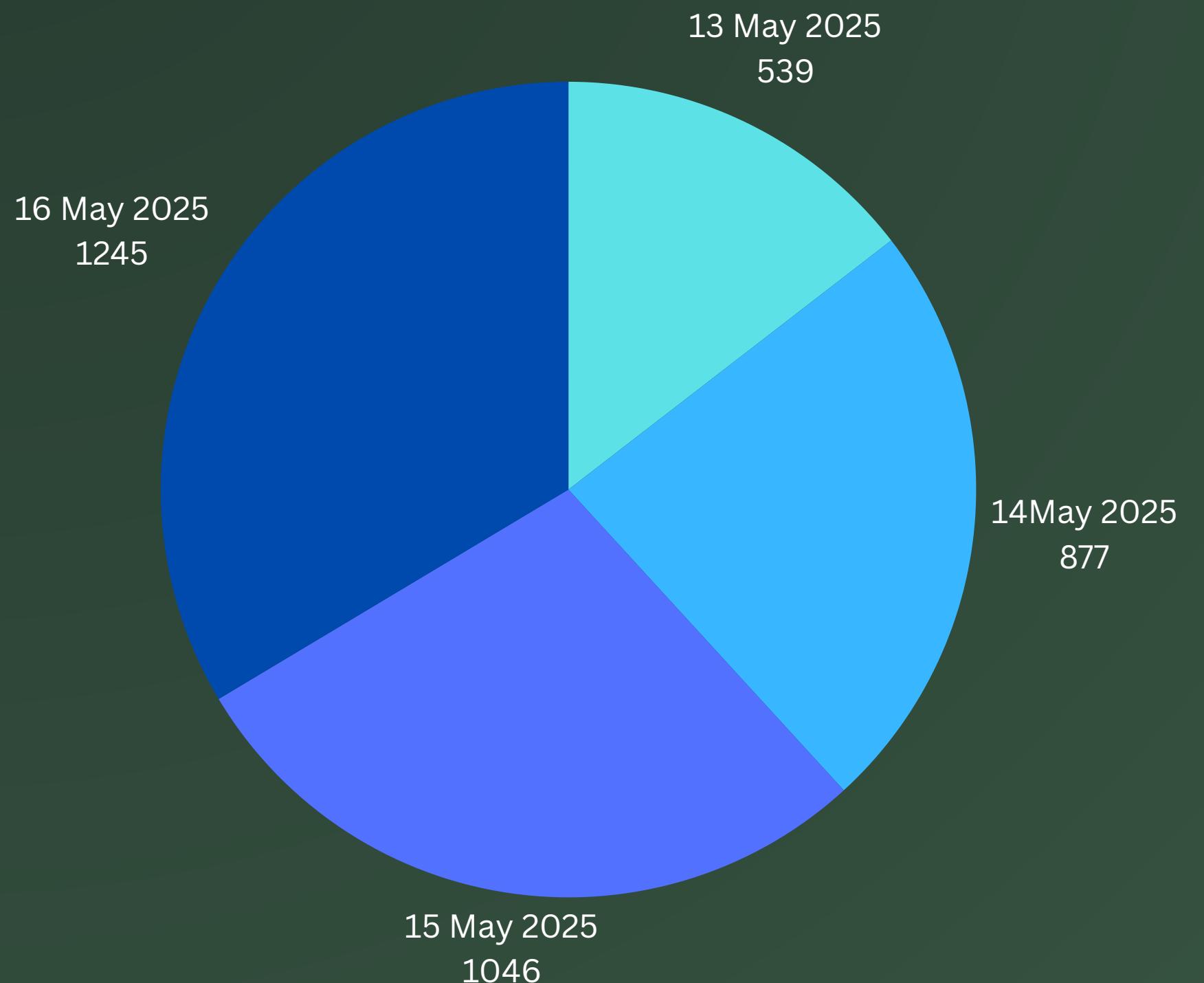
Dendrocopos major
(Great Spotted
Woodpecker)
Detected 1 time

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

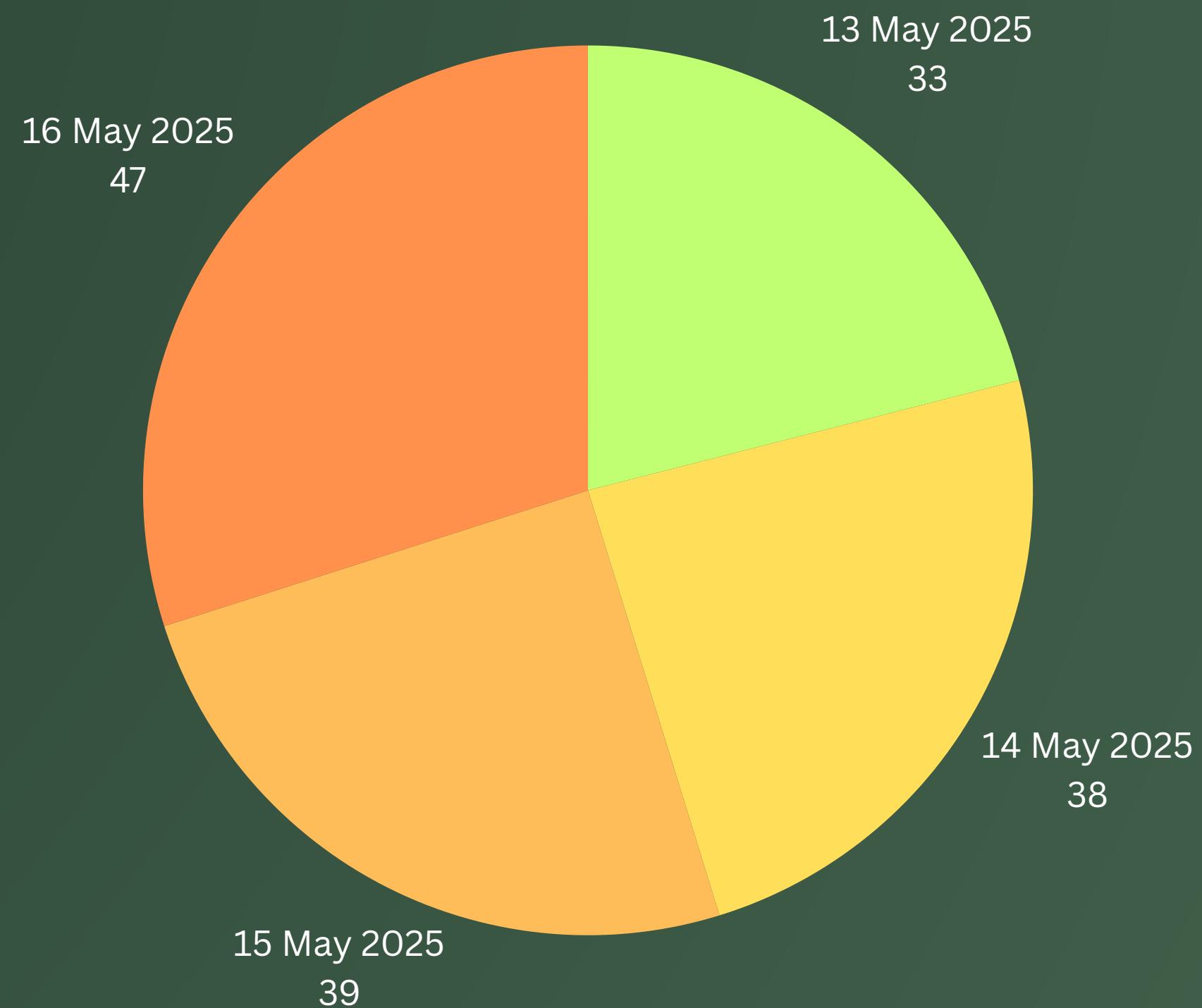
Red – severe declines (e.g.
declines >50% over 25
years)

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

Total Bird Detections per Day



Unique Bird Species per Day





Thank You