Rutland Water Nature Reserve

Annual Wildlife Report 2023

love every drop
anglianwater

Leicestershire
& Rutland
Wildlife Trust

Introduction

The Rutland Water Nature Reserve Annual Wildlife Report 2023 summarises the survey and monitoring work that has taken place over the last year. The results feedback into the management of the Nature Reserve and provide evidence for the favourable condition of the designated features (SSSI, RAMSAR, SPA designations). Rutland Water Nature Reserve staff were supported by a team of dedicated volunteers who helped to undertake the survey work, totalling over 4,000 hours of recording in the field.

Record numbers of animals were observed during the year including over 121,000 wetland birds, over 22,000 individual moths, 572 species of beetle, 25 species of butterfly and 19 species of dragonfly. We also reached an important milestone in the Osprey Project with over 250 chicks raised since the project began.

Acknowledgements

As we always say, we cannot do what we do at Rutland Water without the fantastic LRWT volunteers and dedicated staff.

We are indebted to the time, effort and skills of the many volunteers that help to collect and analyse data for the many surveys that are carried out at Rutland Water Nature Reserve.

Joe Davis (Head of Reserve Management)

Images in the report were supplied by Tony Clarke, Rod Baker, Matt Scase, Tim Mackrill, Bob Sharples, Dave Carter, Chris Wood, Steve Liptrop, Joe Seymour, Linda Schlemmer, Oliver Slessor, Garry Barker, Sean Browne, Tom Bennett and Tim Sexton

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Cover photo - Otter © Tony Clarke

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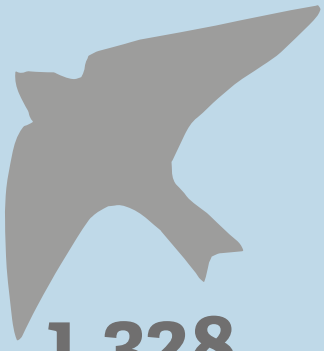
Wigeon © Tony Clarke

Highlights of the Year

2023 in numbers

With the help of our dedicated survey and monitoring volunteers and members of staff we achieved so much in 2023, here are the highlights...



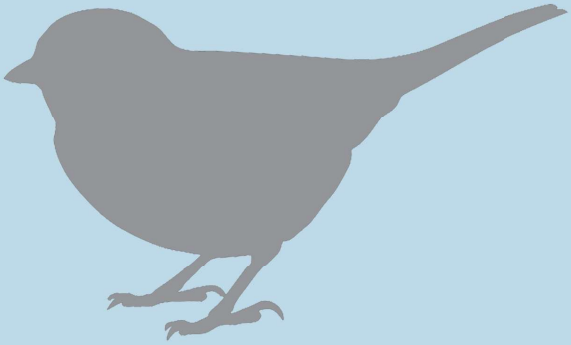
1,328
Sand Martin chicks fledged from the artificial nesting banks

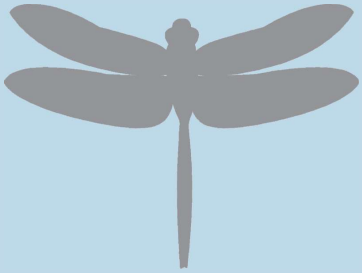
22,167
Moths of **453 species** caught, identified and then released

25 species
of butterfly recorded

121,379
wetland birds counted through the monthly **WeBS counts**

10
breeding pairs of Osprey rearing a total of 22 chicks





19
species of **dragonfly** recorded through pond surveys

2,686 Teal
counted on one WeBS survey
The largest number ever recorded here

6,080 birds processed by the bird ringers of **50 species**

Executive Summary

Rutland Water Nature Reserve is a Site of Special Scientific Interest (SSSI), Special Protection Area (SPA) and a Ramsar Wetland of International Importance as it supports exceptional numbers and diversity of passage and wintering waterfowl. Counts of wintering wetland birds regularly exceed 20,000 individuals, including internationally important numbers of Gadwall and Shoveler along with nationally important numbers of other duck species, grebes and swans. The diversity of waders using the site on passage is outstanding for an inland site, while the diversity and population of breeding waterfowl, waders and passerines is of increasing importance. More recently, wintering gull roosts have become an important feature of the complex with over 50,000 birds recorded in recent winter counts.

The site is owned by Anglian Water (AW) and managed in close partnership with Leicestershire and Rutland Wildlife Trust (LRWT). The Nature Reserve consists of a mosaic of wetland habitats on the western end of the main reservoir and includes eight lagoons, islands, reedbed, marshland, wet grassland and over 20 smaller ponds. Woodlands (along with ancient woodland compartments), scrubland, pasture and species-rich grasslands support important assemblages of breeding birds and assemblages of invertebrates.

Legislative requirements for monitoring the condition of the RAMSAR, SPA and SSSI are met through the monthly Wetland Bird Surveys (WeBS), which have taken place at the site since 1975. The Reserve Management Plan also sets out an annual work programme of non-legislative species monitoring to provide feedback on habitat management which includes (but is not limited to); WeBS, Osprey Monitoring, Breeding Bird Surveys, Water Vole Surveys, Mink Surveys, Wildfowl Ringing, CES and other ringing studies, Breeding Seabird Census, Winter Bird Surveys, Tern Raft Monitoring, Sand Martin Nest Bank Recording, Invertebrate Surveys, Veteran Tree Surveys, and Grassland Monitoring.

The 2023 Survey season did not start off as well as we would have liked, with an outbreak of Bird Flu (HPAI) infecting large numbers of birds, predominantly Black-headed Gulls, early in the season. The outbreak mainly affected returning breeding birds, with nearly 300 birds dying on Lagoon 4 alone. As a consequence, many staff hours were spent monitoring and clearing dead birds over the period. We can only be grateful it didn't appear a month earlier when 50,000 gulls were roosting on the Reservoir.

From the results of the Wetland Bird Surveys, in the autumn/winter of 2022/2023 (the WeBS year runs from July to June), the threshold for International Importance for Shoveler was exceeded with 724 birds recorded in October (threshold is 650). This was the highest count in ten years and is well above the SPA baseline count of 450 individuals. The threshold for International Importance for Gadwall was also exceeded with 1920 birds recorded in July (threshold 1200). The threshold for National Importance for the qualifying features of the SSSI, was exceeded for all but Goosander, Mute Swan and Pochard. The overall sum of species maxima, a qualifying feature of the RAMSAR/SPA designation was also exceeded with a total of 26,867, excluding gulls (threshold for international importance 18,560, SPA baseline is 21,050).

A massive milestone was reached with the Rutland Water Osprey Project this year. It is the 28th year since the project to reintroduce Ospreys back in to England began at Rutland Water. The resident pair, Maya and 33/11 successfully reared three chicks. A further 19 chicks were reared from nine other nests in the surrounding landscape., meaning that 253 chicks have now fledged from nests in and around Rutland Water since the first pair successfully bred in 2001!

In the Sand Martin Banks, following a large reduction of fledged chicks in 2022 as a result of the hot summer (only 1,087 chicks fledging compared to 1,648 in 2021), nesting bird numbers bounced back in 2023 and it looked as though we would have a record year. However, an unidentified illness (potentially Avian Flu) caused a die-off of adult and juvenile birds late in the season. Despite this, a total of 1,472 Sand Martin chicks were ringed this year (with 1,328 fledging) and nearly 500 nest records were submitted to the BTO as part of the Nest Records Scheme - which constitutes around 40% of the total nest records for this species in the UK.

At the two Constant Effort Sites (CES) a total of 1,150 birds were processed (718 at Lagoon 3 and 432 at Field 16). In all, 6,080 birds of 50 species were processed by staff and volunteers in 2023.

The Motus Tower was installed in May 2023, enabling us to monitor migrating birds, bats and insects which have been fitted with Radio Frequency Tags. It is hoped that we will be able to start our own tagging projects in 2024.

Over 22,000 moths of 453 species were recorded in the moth traps across three locations on the Reserve in 2023, with 9 new species being added to the Reserve's moth list. This brings the overall number of moth species recorded at Rutland Water to 759 (341 micro, 419 macro).

Finally, the 'Beetle Bank' was installed in February 2023, using timber gathered from our scheduled woodland management. This 'standing deadwood' sculpture will provide habitat for a range of saproxylic invertebrates.

A massive thank you to all the volunteers who have collectively committed over 4,000 hours of their time to record wildlife at the Reserve over the last year.

Teal © Rod Baker

Wetland Bird Survey (WeBS)

The UK is an internationally important area for waterbirds due to a combination of geography, climate and habitats. The relatively mild winter climate of the UK attracts large numbers of wintering waterbirds to inland wetlands like Rutland Water and to coastal estuaries across the country. Once a month, a team of volunteers conduct population surveys of waterbirds at Rutland Water, the results of which feed into the national Wetland Bird Survey (WeBS) which is coordinated by the British Trust for Ornithology (BTO).

The WeBS is one of the most important wildlife surveys undertaken at Rutland Water and covers both the Reservoir and the Nature Reserve Lagoons. The survey has taken place at Rutland Water since September 1975. In that time, staff and volunteers have recorded over 5.65 million birds of 131 different species. This is the 48th year of the WeBS at Rutland Water.

The principal aims of the WeBS are to monitor the wintering (non-breeding) waterbird populations across Rutland Water and provide feedback on the favourable condition of the designated features (RAMSAR/SPA and SSSI designations). The results of the counts also provide us with a unique opportunity to look at long-term population trends throughout the history of the site and gain an understanding of the responses of wintering and resident waterbirds to ever-changing environmental pressures such as the effects of climate change.

Core counts typically coincide with the national WeBS on Sundays, once a month, between September and March. Between April and August summer counts are carried out on the Tuesday following the national core count date.

During the survey period of 2022/23, all the counts were completed. However, two months were affected by adverse weather conditions in 2022/23 meaning that in July the count was carried out on the Wednesday after the planned date due to 40°C temperatures on and around the core count date and in November, the count was carried out on the Wednesday after the core count date due to heavy rain on the planned date. Occasionally there are other factors which can affect the results of the counts, these can include anthropogenic effects such as fishing boats or sailing boats causing disturbance. In September 2022, fewer birds were counted in the Main Water of the Reservoir due to recreational disturbance caused by a triathlon taking place there. It is likely that these birds were flushed to another area of the Reservoir though and that this event did not adversely affect the overall total as the count was average for the time of year.

The reporting period for WeBS runs between July 2022 and June 2023 to coincide with the BTO's reporting on the national survey. This is to ensure that one full winter is included in each reporting period.

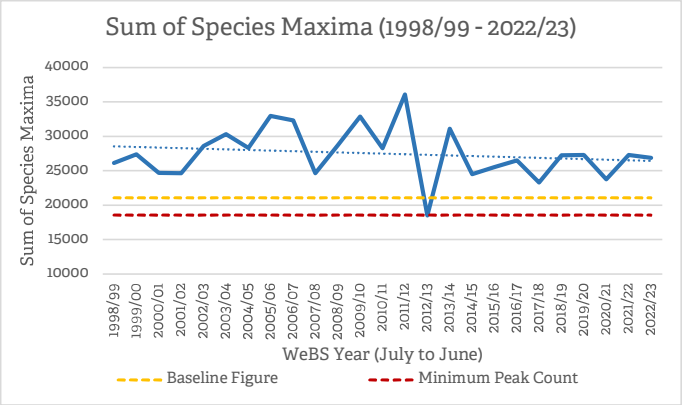


Figure 1.1 Sum of Species Maxima 1998/99 - 2022/23

During the period a total of 121,403 birds of 70 species were recorded. While the overall number of birds is slightly down from the 124,016 recorded in the 2021/22 survey period, the total number of species has increased from last year by four.

The sum of the species maxima, one of the qualifying features of the Site of Special Scientific Interest (SSSI) and Special Protection Area (SPA) designations for 2022/2023 was 26,897. This figure excludes gulls, due to incomplete coverage. This is well above the baseline peak count for the SSSI and SPA (21,050) but slightly below the maximum count for 2021/22 (27,195). Other qualifying features of the SPA include internationally important populations of both Shoveler and Gadwall. In 2022/23 Gadwall exceed the threshold for international importance (set at 1,200) with a maxima of 1,920 for the period. For Shoveler, the species maxima also exceeded the threshold for international importance (set at 650) with a maxima of 724 recorded in October. National figures show that across the UK in the 2022/23 WeBS year, shoveler were recorded in the highest number ever and Gadwall were recorded in the highest number since 2011/12 (BTO, 2024).

Population trends for all qualifying features of the SPA and SSSI designations are shown in figure 1.2. All but Goosander and Mute Swan met the threshold for national importance in 2021/22. Graphs for Common Pochard are not shown as their long-term trends no longer meet the minimum threshold for importance. This follows a national decline in Pochard numbers with the latest figures showing 74% in the 25 years to 2021/22. The maxima for Pochard in 2022/23 at Rutland Water was only 48, representing the lowest maxima for this species here since records began.

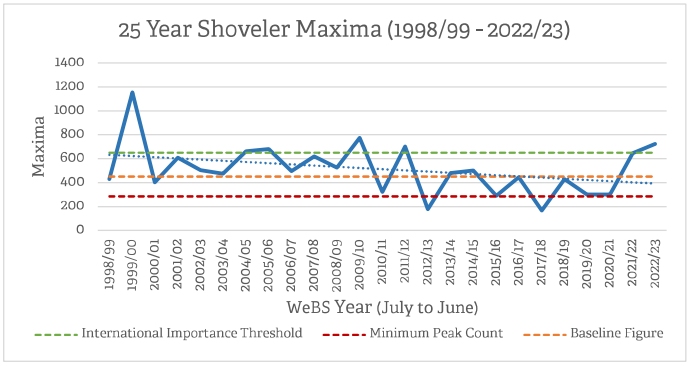
The highlights of the year include: the largest count of Great White Egret through the WeBS for the third year running (a total of 49 in October 2022), the largest count of Little Egret through the WeBS (140 in August 2022), the largest count of Teal since records began (2,686 in November 2022), the fifth largest count of Shoveler ever - and the highest count since 2009 (724), and the largest count of Little Grebe since records began (159 in November 2022). Pintail numbers remained high this year (233 in November 2022) - an increase of 45% on the 25 year mean for this species.

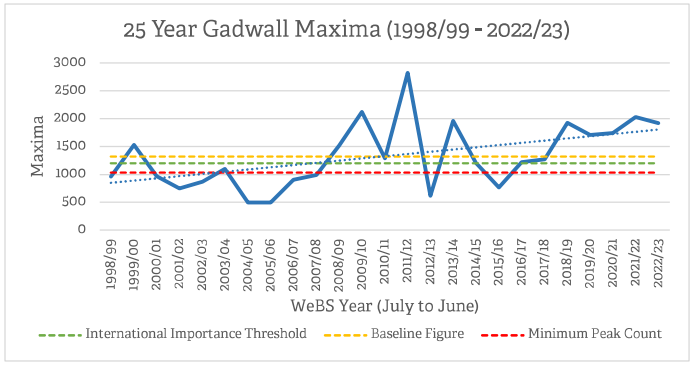
In the WeBS year 2022-23 the counts were carried out on the following days: 20th July 2022, 14th August 2022, 11th September 2022, 9th October 2022, 13th November 2022, 13th December 2022, 22nd January 2023, 19th February 2023, 12th March 2022, 23rd April 2023, 25th May 2023, 20th June 2022.

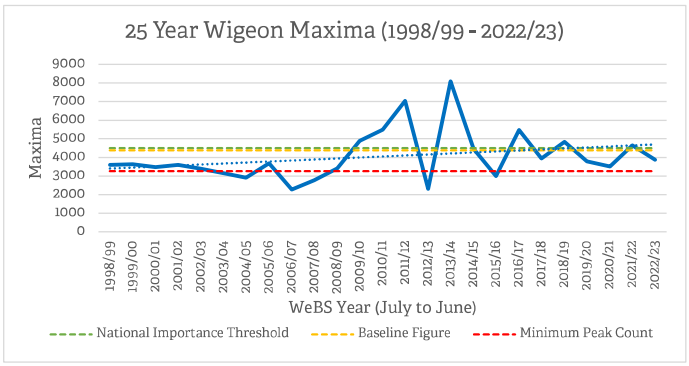
Woodward, I.D, Calbrade, N.A, Birtles, G.A, Feather, A, Peck, K, Wotton, S.R, Shaw, J.M, Blamer, D.E & Frost, T.M. 2024. Waterbirds in the UK 2022/23: The Wetland Bird Survey and Goose & Swan Monitoring Programme. BTO/RSPB/JNCC/Nature Scot. Thetford.

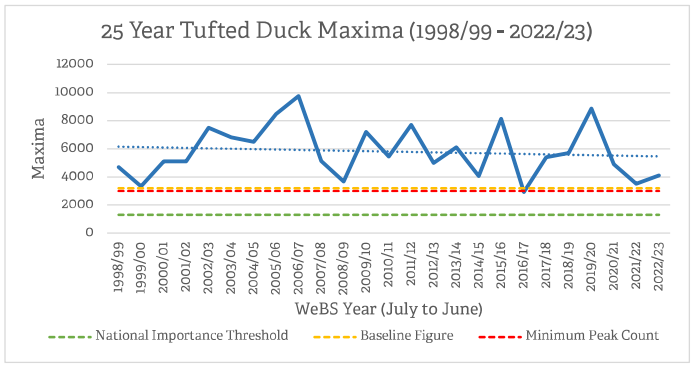
Species	2022/2023 Maxima vs 25 Year Mean 1997/1998 – 2022/2023	UK 25 Year Population Trend 1996/1997 – 2021/2022	Species	2022/2023 Maxima vs 25 Year Mean 1997/1998 – 2022/2023	UK 25 Year Population Trend 1996/1997 – 2021/2022
Canada Goose	▲ 31%	▲ 73%	Tufted Duck	▼ 29%	▼ 15%
Greylag Goose	▲ 71%	▲ 200%	Goldeneye	▼ 15%	▼ 54%
Mute Swan	▲ 0.1%	▲ 11%	Goosander	▲ 1%	▼ 28%
Egyptian Goose	▲ 15%	▲ 550%	Little Grebe	▲ 40%	▲ 38%
Shelduck	▼ 83%	▼ 26%	Great Crested Grebe	▲ 15%	▼ 19%
Shoveler	▲ 42%	▲ 63%	Little Egret	▲ 219%	▲ 933%
Gadwall	▲ 44%	▲ 70%	Great White Egret	▲ 562%	-
Wigeon	▼ 4%	▼ 11%	Cormorant	▲ 17%	▼ 52%
Mallard	▲ 35%	▼ 33%	Coot	▼ 40%	▼ 26%
Pintail	▲ 45%	▼ 18%	Lapwing	▼ 17%	▼ 46%
Teal	▲ 95%	▲ 11%	Golden Plover	▲ 14%	▼ 21%
Pochard	▼ 84%	▼ 74%			

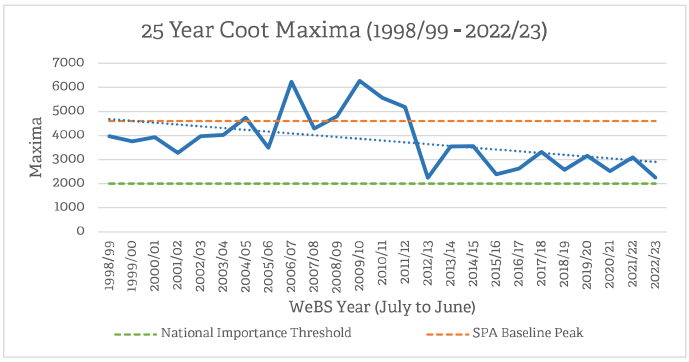
Table 1.1 Population trends for species maxima in 2022/2023 against 25 year mean. Rutland Water compared to the most recently available UK population data (between 1996/97 and 2021/2022). UK data taken from BTO, Waterbirds in the UK 2022/23

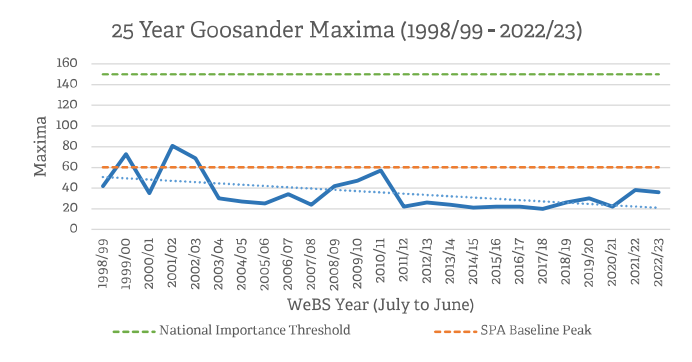


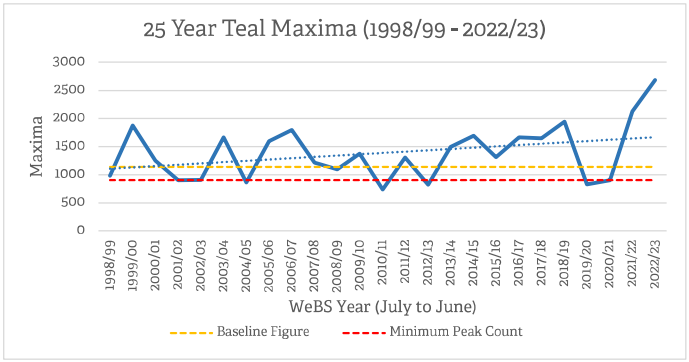


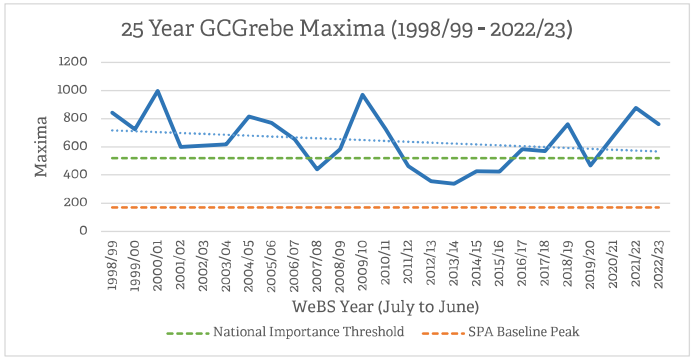


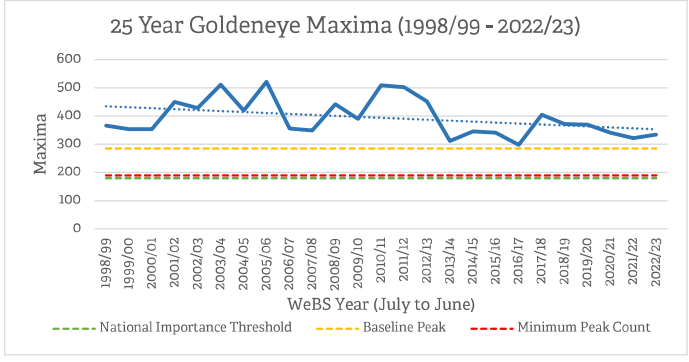












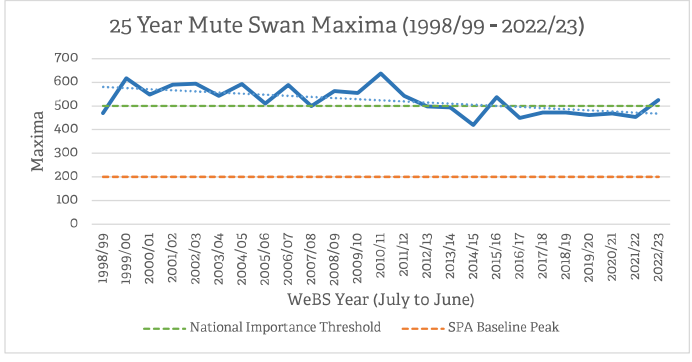


Figure 1.2 Species maxima trends for qualifying features of the SPA and SSSI 1998/99 - 2022/23. SPA Baseline is the peak count when the designation was set. Minimum threshold sets the monitoring target for determining favourable condition of the SSSI under Common Standards monitoring (CSM) protocols

Species Totals and Maxima for WeBS 2022/23													
SPECIES	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	March	April	May	June	Maxima
Canada Goose	1303	1130	788	813	508	476	279	349	187	106	108	**1501**	**1501**
Greylag Goose	**1182**	1005	1000	305	451	116	154	162	476	173	176	1060	**1182**
Pink-footed Goose	0	0	0	**1**	0	0	0	0	0	0	0	0	**1**
Hybrid Goose	0	**1**	0	**1**	0	0	0	0	0	0	0	0	**1**
Mute Swan	396	354	424	**524**	480	381	300	212	123	152	232	233	**524**
Whooper Swan	0	0	0	0	**2**	0	0	0	0	0	0	0	**2**
Egyptian Goose	81	90	72	**96**	17	8	30	22	9	15	21	41	**96**
Shelduck	9	4	1	2	8	2	5	5	3	**10**	9	3	**10**
Mandarin Duck	9	8	**9**	0	2	2	0	0	0	3	2	3	**9**
Shoveler	12	72	366	**724**	145	175	30	97	76	8	5	14	**724**
Gadwall	**1920**	1505	1740	1478	1016	512	825	272	124	89	141	726	**1920**
Wigeon	3	9	1199	**3873**	3354	3611	2886	2521	1858	2	1	3	**3873**
Mallard	861	1538	**1762**	1610	1002	506	459	319	298	223	267	533	**1762**
Pintail	0	12	148	202	**233**	129	95	23	16	1	0	0	**233**
Teal	59	241	1053	1995	**2686**	1483	1388	112	164	34	3	25	**2686**
Red-crested Pochard	1	0	3	9	**47**	2	7	0	0	0	0	0	**47**
Pochard	19	20	14	4	29	21	33	**48**	39	25	17	6	**48**
Tufted Duck	2075	2483	**4094**	1135	945	723	1214	602	740	618	175	216	**4094**
Scaup	0	1	0	0	0	1	**5**	0	2	1	0	0	**5**
Goldeneye	1	0	0	1	85	77	294	294	**335**	7	0	0	**335**
Smew	0	0	0	0	0	0	**9**	2	5	0	0	0	**9**
Goosander	0	0	0	0	14	32	**36**	1	0	0	0	0	**36**
Great Northern Diver	0	0	0	0	0	0	**1**	**1**	0	0	0	0	**1**
Little Grebe	36	100	155	**171**	154	90	123	55	24	1	0	6	**171**
Great Crested Grebe	334	495	**760**	667	361	81	276	91	99	154	159	176	**760**
Slavonian Grebe	0	0	0	0	**1**	0	**1**	**1**	**1**	**1**	0	0	**1**
Black-necked Grebe	0	0	0	**1**	**1**	0	0	0	0	0	0	0	**1**
Grey Heron	18	38	**42**	41	15	6	14	12	7	10	7	11	**42**
Great White Egret	13	28	40	**49**	10	8	4	5	7	1	2	6	**49**
Little Egret	120	**140**	128	70	4	3	1	0	1	15	7	46	**140**
Cormorant	382	**692**	689	649	359	125	116	101	233	200	198	218	**692**
Water Rail	4	1	2	**9**	1	0	0	2	8	0	0	0	**9**
Moorhen	54	**137**	93	103	37	34	21	29	17	19	10	10	**137**
Coot	511	1039	1708	**2254**	1145	240	1071	839	555	79	99	213	**2254**
Oystercatcher	18	0	0	0	1	0	0	**29**	26	28	18	12	**29**
Avocet	5	1	0	0	0	0	0	0	0	12	**13**	1	**13**
Lapwing	376	430	192	670	1842	599	535	**2045**	193	25	32	48	**2045**
Golden Plover	0	0	0	90	783	0	0	**1197**	12	0	0	0	**1197**
Ringed Plover	1	1	**8**	0	0	0	0	0	0	0	5	0	**8**
Little Ringed Plover	7	2	**8**	0	0	0	0	0	0	1	4	6	**8**
Whimbrel	0	0	0	0	0	0	0	0	0	**3**	0	0	**3**
Curlew	5	4	**7**	4	4	0	2	**7**	4	0	0	0	**7**
Black-tailed Godwit	6	**14**	3	0	8	0	0	0	0	1	0	0	**14**
Dunlin	3	1	18	31	**60**	11	6	1	0	0	3	0	**60**
Turnstone	0	0	**3**	0	0	0	0	0	0	0	0	0	**3**
Ruff	0	2	1	**3**	0	0	0	0	0	0	1	0	**3**
Snipe	1	14	6	4	1	2	4	**65**	20	1	0	0	**65**
Common Sandpiper	10	**22**	3	1	0	0	0	0	0	2	0	0	**22**
Green Sandpiper	**15**	13	6	3	2	0	0	0	0	0	0	1	**15**
Redshank	1	0	1	7	**12**	8	10	11	9	1	2	0	**12**
Greenshank	2	5	**8**	7	0	0	0	0	0	1	0	0	**8**
Black-headed Gull	376	460	**1705**	268	51	51	223	303	40	609	461	179	**1705**
Common Gull	3	1	0	3	0	0	**901**	18	0	12	0	0	**901**
Caspian Gull	**1**	0	0	0	0	0	0	0	0	0	0	0	**1**
Great Black-backed Gull	12	**16**	8	6	1	1	7	3	1	4	4	4	**16**
Herring Gull	1	**10**	0	0	0	0	0	0	0	0	0	0	**10**
Yellow-legged Gull	**13**	6	8	2	2	0	0	0	0	0	0	0	**13**
Lesser Black-backed Gull	**6**	3	1	0	**6**	0	0	0	0	3	4	4	**6**
Common Tern	**80**	72	7	0	0	0	0	0	0	15	64	74	**80**
Kingfisher	1	**6**	2	2	1	0	1	2	1	0	1	0	**6**
Maxima total does not include gulls due to incomplete coverage through the WeBS counts												**Total:**	**26867**

Table 1.2 Species totals and maxima for all species 2022/23.

Osprey and Great White Egret © Matt Scase

Manton Bay Ospreys

George Smith (Osprey Information Officer)

The season commenced dramatically on the 14th of March when 25(10), the long-standing Site C female, was the first Osprey to return, intruding on the Manton Bay nest - before the resident female, Maya, had returned. Just two days later, on the 16th of March, our resident male, 33(11), made his return for his ninth breeding season. This set the stage for a tense few days as 33(11) was observed mating with 25(10), while our long-term breeding female, Maya, was still yet to be seen. The situation reached a climax on the 19th of March when Maya returned. Displaying her dominance, she quickly chased off 25(10), reinstating herself as the rightful female at the Manton Bay nest.

With the territorial dispute resolved, Maya and 33(11) settled into their familiar roles. Maya laid four eggs this season, with each egg laid on the 4th, 7th, 10th, and 13th of April. The anticipation grew as the eggs incubated, leading to the hatching of the first chick on the 12th of May. The hatching sequence continued with the second chick emerging on the 14th of May, the third on the 17th of May, and finally, the fourth on the 18th of May. Unfortunately, joy turned to sorrow as the fourth chick died shortly after being born. It was struck by a live pike brought back to the nest by 33(11), and the young chick was too fragile to survive the impact.

Despite the tragic loss, the three surviving chicks thrived. By the 24th of June, they were large enough to be ringed with their BTO metal rings and Darvic rings. These chicks were ringed 3H3, 3H4, and 3H5. The ringing process also revealed their sexes: 3H3 and 3H5 were female, while 3H4 was male. The fledging period began with much excitement as 3H3, after days of 'helicoptering,' finally took her maiden flight on the 3rd of July. She was followed by 3H5 on the 6th of July, and finally, 3H4 fledged on the 9th of July. This was a fantastic period as we saw the juveniles in flight frequently during our Osprey cruises, which continued until August.

As the season progressed, the juveniles began their migration journeys. On the 11th of August, we had our last view of 3H5 as she embarked on her migration. Just a few days later, on the 16th of August, both 3H3 and 3H4 left on their migrations, effectively leaving within hours of each other. With the nest now empty of juveniles, Maya and 33(11) remained at Manton Bay for a few weeks. Eventually, 33(11) departed on the 31st of August, and Maya followed just a few days later on the 3rd of September.

A massive thank you to our Osprey Volunteers who collectively spent over 2,000 hours monitoring the nest from Waderscrape Hide. Their dedication in gathering information about feeding visits, species of fish brought back to the nest, key moments in the nesting period, protecting the nest from possible human intrusion, and providing a wealth of information to our visitors in the hide has been invaluable.

We look forward to another successful season in 2024 and thank everyone involved for their continued support and dedication.

Off-site Osprey Nests

The Site 1 chicks in the nest after ringing © Tim Mackrill

Off-site Osprey Report

Dr Tim Mackrill

2023 proved to be an extremely successful year for the Rutland Osprey project, with a total of 22 chicks at ten active nests. This means that 253 chicks have now fledged from nests in the Rutland Water since the first pair bred successfully in 2001. Figure 2.1 below shows the expansion of the population over that period.

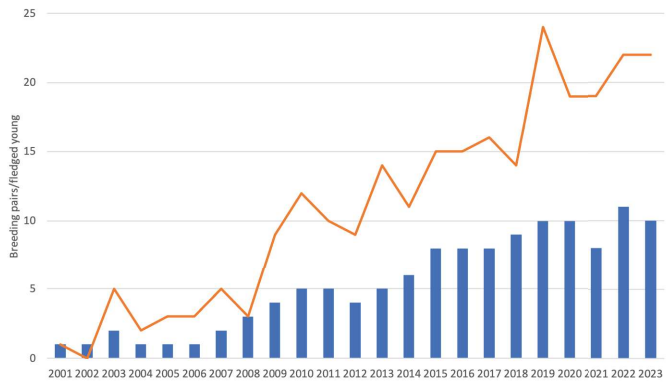


Figure 2.1 Expansion of the Rutland Osprey Population

The value of artificial nests was again clear with all nine successful nests on artificial platforms or at natural nests where the original nest has been replaced with platform in a tree. The one failure was in a natural nest that collapsed during a storm in June. A platform was erected as soon as possible afterwards and this was accepted by the breeding pair, and the male was observed nest building on the new nest prior to migration.

One of the highlights of the year was the very high return rate of birds that fledged in 2021, and were therefore returning to the UK for the first time this summer. Eight of the 19 chicks that fledged in 2021 were identified either in Rutland or elsewhere in the UK between April and August, a return-rate of 42%. This is considerably higher than recent years, as shown in figure 2.2, and likely reflects favourable conditions during the birds' first autumn migration. It is also thought that the availability of ephemeral water bodies in West Africa is also important because juvenile Ospreys are often kept away from prime wintering locations by established adults when they first arrive in potential wintering areas. Interestingly, an even higher return rate was recorded among birds from Cumbria and Northumberland, reinforcing the notion that environmental conditions were favourable for young birds migrating south from England for the first time that year.

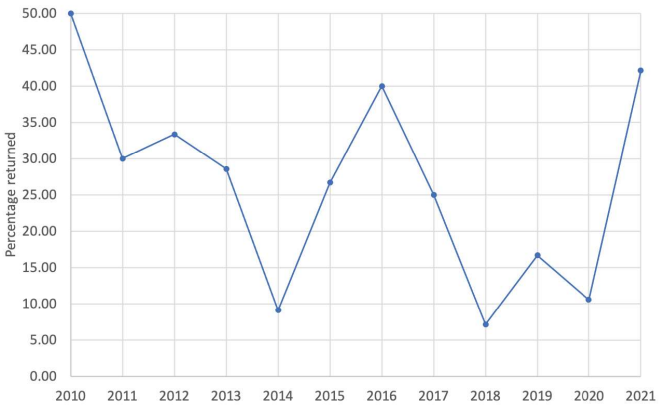


Figure 2.2 Percentage survival to two years of Ospreys fledged in the Rutland Water area. 2010 - 2021

Site B

Male 30(05) was back at the Site B nest on 16th March, and he was joined by his mate HJ8, a Scottish female from Argyll, on 19th March. Incubation was first recorded on 3rd April.

The first signs of hatching were observed during the evening of 10th May when the female left the nest to chase crows, leaving the male perched on the side of the nest. Unusually, he made no attempt to incubate: indicating that the first chick was hatching or had just hatched. Three chicks were clearly visible in the nest on 10th June. The chicks were ringed on 24th June. The ringing details are shown in table 2.1

BTO Ring	Darvic Ring	Weight	Wing	Sex
1269403	3H6	1880g	400	Female
1269404	3H7	1780g	370	Female
1269405	3H8	1550g	371	Male

Table 2.1 Site B Osprey chick ringing information

During August 30(10) and HJ8 both made frequent visits to the nearby vacant Site E artificial nest where a trail camera provided regular images. 3H7 and 3H8 were also recorded at Site E, and all three juveniles also visited Lagoon 4 at Rutland Water Nature Reserve.

3H8 was the first of the juveniles to depart on migration. The last confirmed sighting was on 28th July, but it is likely he remained into early August before departing. The two juvenile females remained much longer. 3H6 was last seen on Lagoon 4 on 29th August, while 3H7 remained until at least 4th September when she was seen with the Site N breeding male, 6K(14).

HJ8 was last present on 14th August, while 30(10) remained until at least 1st September, dividing his time between the main Site B nest and the artificial nest. He was also seen eating a fish at Site C on 1st September, but there were no confirmed sightings after this date, even though 3H7 remained until 4th September.

Site C

The Site C female 25(10) was the first Osprey to return to Rutland, on 14th March. She spent time on the Manton Bay nest and then at Site N before he mate, 11(10) returned on 24th March. Incubation was first recorded on 6th April.

The first signs of hatching were observed on 12th May when 25(10) was very restless on the nest and frequently looking down into the nest cup. Four chicks subsequently hatched – the first time that this particular pair, who have bred together each year since 2013, had produced a brood of four.

The chicks were ringed on 24th June. Unfortunately one of the chicks was found to have become entangled in fishing line, which was limiting its movement on the nest, and had created significant swelling. The fishing line was removed and the chick was not ringed as a result. The remaining three chicks were in good health and the ringing details are shown in table 2.2.

BTO Ring	Darvic Ring	Weight	Wing	Sex
1269409	3H9	1700g	368	Female
1269410	3H0	1890g	355	Female
1269411	3H1	1510g	351	Male

Table 2.2 Site C Osprey chick ringing information

At least one of the juveniles had fledged on 4th July and the remaining two ringed juveniles both subsequently fledged successfully. Unfortunately, there were no confirmed sightings of the unringed juvenile after 4th July, indicating it probably did not survive. The three ringed juveniles were flying strongly on 28th July.

The two juvenile females were both still present on 8th August, with 3H0 again at the nest on 17th August. Interestingly, 3H9 was seen at Horn Mill trout farm on a number of occasions after fledging, the first being on 7th August. 25(10) was last seen at the nest on 8th August, while 11(10) remained until at least 24th August before departing. 4H1 was photographed at the Devoran estuary in Cornwall on 20th August and was still present there on 14th September. Meanwhile 3H9 was photographed at Hanningfield Reservoir in Essex on 4th September.

4H1 at the Devoran Estuary © Bob Sharples

Site J
The Site J male 1K(13) was later-returning to his nest than usual: arriving on 9th April, on the same day as his mate, 2AF(16), with whom he bred for the first time in 2022.

Incubation was first recorded on 27th April, though probably began a few days earlier. Hatching was confirmed on 1st June when the female was observed offering food down into the nest cup for the first time. A single chick was visible in the nest on 3rd July and this was ringed on 13th July and found to be a male. The ringing details are shown in table 2.3. It subsequently fledged successfully.

BTO Ring	Darvic Ring	Weight	Wing	Sex
1269433	5H0	1340g	305	Male

Table 2.3 Site J Osprey chick ringing information

The adult birds were both still at the nest on 22nd August, but 5H0 was not present. All of the family had departed by 30th August.

5HO after ringing on 13th July © Tim Mackrill

Site K
The Site K breeding pair, female 00(09) and male 06(09) were back at the nest together on 27th March. Incubation was subsequently first recorded on 14th April. The first signs of hatching were recorded on 23rd May and next day 00(09) was observed offering food into the nest for the first time. Three chicks subsequently hatched.

The three chicks were ringed on 3rd July and the ringing details are shown in table 2.4. All subsequently fledged.

BTO Ring	Darvic Ring	Weight	Wing	Sex
1269415	4H4	1690g	375	Female
1269416	4H5	1560g	335	Male
1269417	4H6	1560g	365	Male

Table 2.4 Site K Osprey chick ringing information

The three chicks remained at the nest during early-mid August, but all had departed by 22nd, along with 00(09). 06(09) was last observed at the nest on 23rd August.

Following the departure of the Osprey the nest, which has been in use since 2014, was replaced with assistance from National Grid on 11th September.

The new nest platform being installed at Site K with the assistance of National Grid © Tim Mackrill

Site N
Breeding male 6K(14) returned to the Site N nest on 21st March. He was joined by 25(10) for a few days, prior to her returning to her regular nest at Site C, as described earlier. Sadly 6K(14)'s regular mate, 5N(04), who had bred at Site N every year since 2009, and at Manton Bay for two years before that, failed to return.

On 7th April the metal-ringed female who had bred at Site O each year since 2010, but lost her previous mate during the 2022 season, was present at Site N with 6K(14). She was observed mantling on the nest as an intruder flew overhead, indicating she was defending the site and may remain to breed. Incubation subsequently began on 18th April.

The first signs of hatching were recorded on 25th May and three chicks subsequently hatched. The three chicks were ringed on 4th July 2023 and the ringing details are shown in table 2.5.

The Site N chicks in the nest after ringing. ©Tom Mackrill

BTO Ring	Darvic Ring	Weight	Wing	Sex
1269418	4H7	1590g	340	Male
1269419	4H8	1550g	355	Male
1269420	4H9	1470g	346	Male

Table 2.5 Site N Osprey chick ringing information

All of the juveniles at Site N were flying by 28th July. The adult female was last seen at the nest site on 8th August. That day two of the juveniles, 5H7 and 5H8 were photographed at Eyebrook Reservoir. At least two juveniles were still present at the nest on 23rd August.

6K(14) remained into early September, when he was regularly seen on Lagoon 4 at Rutland Water Nature Reserve, including on 4th September when he was seen with a juvenile female from the Site B nest. This proved to be the last sighting of 6K(14) before he migrated.

Site O

During 2022 the breeding male at Site O, 8F(12), disappeared and two newly-hatched chicks were fostered by an unringed male, who was accepted at the nest by the regular breeding female, a metal-ringed bird originally from Argyll in Scotland. This spring the female was seen for the first time on 27th March when she intruded at the Manton Bay nest. However, with the unringed male not present, the female did not remain at Site O and instead moved to Site N where she paired with 6K(14), as described above.

There was very little activity at Site O during early April, however on 20th April two birds were present at the nest: the unringed male from the previous year, and an unringed female who bred at a nest on the Belvoir estate in 2022. The unringed female's mate 4K(13) had not returned and with the previous incumbent of the Site O nest now incubating at Site N, it was clear she had taken the opportunity to move nests. Just under a week later, on 26th April, incubation was recorded for the first time. Two chicks hatched and they were ringed on 8th July. The ringing details are shown in table 2.6.

BTO Ring	Darvic Ring	Weight	Wing	Sex
1269430	5H7	1640g	302	Female
1269431	5H8	1740g	330	Female

Table 2.6 Site O Osprey chick ringing information

The unringed female likely departed prior to 23rd August, but that day the two chicks were still present at the nest, along with the male. However all three had departed by the end of the month.

Site R
On 3rd March the nest at Site R, which has been in use since 2015, was replaced with a new stronger platform, with valuable assistance from National Grid.

The first Osprey to be observed in the spring was an unpaired male, 055(19), who was present on 26th March. The established breeding male, T4(16), was back on 3rd April and by 15th April he had been joined by the unringed female he bred with for the first time in 2022. Incubation was first recorded on 21st April.

Hatching was confirmed on 30th May when the female was observed offering fish down into the nest. A single chick was ringed on 10th July. The ringing details are shown in table 2.7.

BTO Ring	Darvic Ring	Weight	Wing	Sex
1269432	4H0	1480g	338	Male

Table 2.7 Site O Osprey chick ringing information

4H0 was flying strongly in the vicinity of the nest on 28th July, with the female in close attendance. Two weeks later, on 12th August, 4H0 was seen at Horn Mill Trout Farm. T4(16) was still present at the nest on 22nd August, but there was no sign of either the female or juvenile. This proved to be the last confirmed sighting of T4(16) before he too migrated.

Site S
30(05) is the now the oldest-surviving bird in the Rutland population and this spring she returned to the Site S, where she has bred at each year since 2015, on 17th March. She was joined at the nest by her mate T3(16) on 23rd March. Incubation was first recorded on 6thApril.

Hatching was confirmed on 16th May and two chicks were subsequently ringed on 26th June.
The ringing details are show in table 2.8.

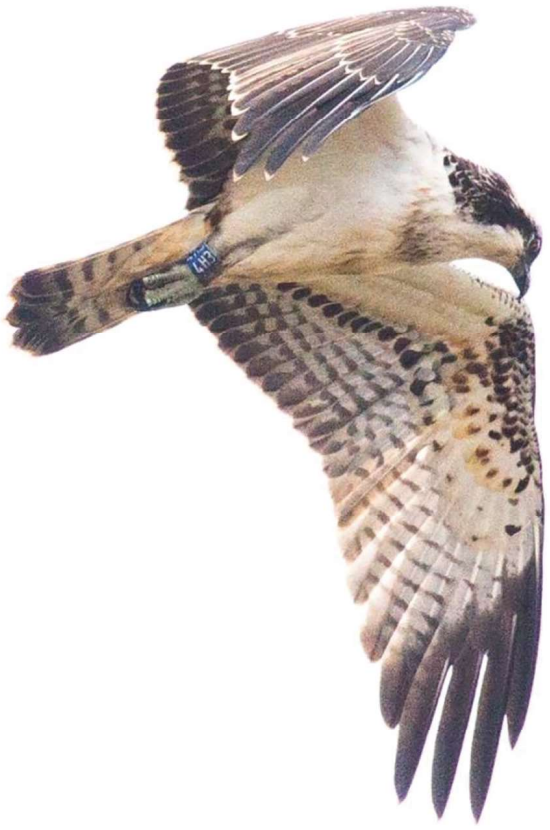
BTO Ring	Darvic Ring	Weight	Wing	Sex
1269430	5H7	1640g	302	Female
1269431	5H8	1740g	330	Female

Table 2.8 Site S Osprey chick ringing information

Both chicks were flying on 11th July.

30(05) departed on 17th August but the male and two juveniles were still present on 26thAugust. Next day 4H3 was photographed at Arlington Reservoir in East Sussex having begun his first autumn migration.

4H2 remained at the nest until 1st September, but unusually the last confirmed sighting of T3(16) was on 26th August. It is unusual for the adult male to leave before the final youngster, but this seems to have been the case on this occasion. 4H3 was still present at Arlington Reservoir on 17th September.



Juvenile male 4H3 photographed at Arlington Reservoir in East Sussex on 27th August © Dave Carter

Site W
T7(16) returned to Site W on 22rd March. He was joined by the metal-ringed Scottish female with whom he first bred at the site for the first time in 2022, on 15th April. Incubation was first recorded on 1st May.

Hatching was confirmed on 9th June when the female was seen offering food down into the nest cup. However, three days later, on 12th June, the nest was blown out of the tree by a ferocious mid-summer storm when a branch supporting the nest gave way. Sadly, there was no sign of any surviving chicks when the remains of the nest were searched. Despite the loss of the nest, the adult birds remained in the vicinity for the rest of the summer.

The male began to build a replacement nest in an oak tree nearby, but this tree was in a position more liable to disturbance and so a decision was made to install a replacement nest in the original tree. This work was undertaken on 6th August with valuable assistance from Mark Ashman (Hillfort Tree Care). The new nest was accepted by the birds and the male was observed adding sticks on 17th August.

The metal-ringed female had departed by 25th August, which was the last date T7(16) was seen at the nest

Replacement nest was installed at Site W © Tim Mackrill

Other birds present in the Rutland Water area

3AH(17)
3AH(17) fledged from the Site B nest in 2017. On 19th May 3AH(17) was present at a new artificial nest (Site Y) that had been erected during March close to a dead tree where an unknown Osprey had built a nest during 2022. 3AH remained at the site for the rest of the summer, and, having failed to attract a female in time to breed, built a large frustration nest in the tree where the original nest was sited. On 28th July an unringed female was present at the nest with 3AH(17). 3AH(17) was still present at the nest on 30th August, and then landed on the Manton Bay nest on 3rd September, prior to departing on migration.

055(19)
055(19) is a male that fledged from the Manton Bay nest in 2019. It was seen for the first time on 26th March when it was present at Site R prior to the return of the breeding male. There were only sporadic sightings of 055(19) for the rest of the summer, including on the Site E artificial nest, which was fitted with a trail camera, on 25th and 26th July.

059(19)
059(19) is a male that fledged from the Site R nest in 2019. It was seen fishing at Horn Mill Trout Farm on 27th April, and became a regular visitor to the Site E artificial nest during late June and July, being recorded there on at least eight different dates. During this period 059(19) was recorded bringing nest lining to the nest. However, from late July, 30(10), the Site B male, began defending the nest in addition to his own, and there were no further confirmed sightings of 059(19) at the site. During late August 059(19) became a regular visitor to Lagoon 4 at Rutland Water Nature Reserve, and was seen defending the nest against other Ospreys on 23rd August.

3AY(19)
3AY is a male that fledged from the Site O nest in 2019. This spring 3AY(19) was first recorded on 27th April when it landed on the Manton Bay nest. It was seen sporadically for the rest of the summer, including on the Site E nest on 30th June and 6th July.

059(19) chasing a juvenile Osprey on lagoon 4 at Rutland Water on 23rd August © Chris Wood

093(20)
093(20) is a male that fledged from the Site L nest in 2020. The first confirmed sighting was on 31st May when it was photographed at Eyebrook Reservoir. It was then seen from an Osprey cruise at Rutland Water on 20th July, and again at Rutland on Lagoon 4 on 23rd August.

079(21)
079(21) fledged from the Site S nest in 2021. It was photographed at Farmoor Reservoir in Oxfordshire on 8th May and was subsequently at several sites in Northamptonshire: Holowell Resevoir on 21st June, Titchmarsh on 28th June and Summer Leys on 21st August.

099(21)
099(21) is a female that fledged from the Site B nest in 2021. It was seen at Eyebrook Reservoir on 25th May, and then at Hickling Broad in Norfolk on 4th August.

355(21)
355(21) is a male that fledged from the Site K nest in 2021. It was photographed at Eyebrook Reservoir on 25th May.

357(21)
357(21) is a male that fledged from the Site N nest in 2021. It was photographed at Eyebrook Reservoir on 25th May.

079 was photographed at Farmoor Reservoir on 8th May © Steve Liptrop

Rutland Birds Recorded Elsewhere - Breeding Birds

5F(12)

5F(12), a 2012 female from the Site K nest, reared two chicks at Lyn Clywedog in mid-Wales, although one was predated by a Goshawk after fledging.

3J(13)

3J(13), a 2013 female from Manton Bay, bred at Cors Dyfi in mid-Wales for a sixth year, rearing two chicks with an unringed male known as Idris.

S2(15)

Male S2(15), who fledged from the Manton Bay nest in 2015, returned again to the Biesbosch in the Netherlands. Unusually, the German female, with whom he has bred successfully since 2020, moved to a new nest with a different male, meaning that S2 did not breed.

CJ7(15)

Female CJ7(15), who fledged from the Site K nest in 2015, reared three chicks at Poole Harbour with translocated male 022(19): their second year of successful breeding.

2AM(17)

2AM(17), a male that fledged from the Manton Bay nest in 2017 bred successfully at a confidential site in the West Midlands, rearing a single chick with a three-year old female, KA6, from the Lyn Clywedog nest in mid-Wales. They reared a single chick, 5H9. This is a significant development in the expansion of Ospreys in England.

3AF(17)

3AF(17), a 2017 female from Site O, bred successfully at a nest in the Scottish Borders with a male from Kielder Forest for a second year, rearing two chicks. She was seen on migration at Abbotsbury Swannery in Dorset on 2nd September.

3AX(18)

Female 3AX(18), who fledged from Site B in 2018, bred for a third year at a confidential site in North-West England, rearing three chicks with male 0A from a nest at Roudsea Wood in Cumbria.

078(20)

078(20), a female, fledged from the Site nest in 2020. She bred for the first time this summer at a nest in the Scottish Borders, rearing two chicks with an unringed male.

Other Returning Birds

095(21)

095(21) is a female that fledged from the Manton Bay nest in 2021. She was seen on Nest 1A at Kielder Forest, Northumberland on 28th April with an unpaired male. She remained in the area for the rest of the summer and was seen on Nest 1A with Welsh male W6 on a number of occasions. It seems likely she will return to the area and attempt to breed in 2023.

351(21)

351(21) is a female that fledged from the Site C nest in 2021. It was observed in the company of an unidentified (blue ring, right leg) male at Brandon Marsh in Warwickshire on 20th July.

358(21)

358(21) is a male that also fledged from the Site N nest in 2021. It was photographed at Clapton on the Hill, Gloucestershire on 11th July.

359(21)

359(21) is a male that fledged from the Site O nest on 2021. It was photographed at Fairburn Ings in Yorkshire on 16th August.

359(21) at Fairburn Ings on 16th August © Joe Seymour

Breeding Wader Survey

Oystercatcher and Chick © Lynda Schlemmer

Tim Sexton

The aim of this survey is to monitor the breeding successes and failures of wading birds (waders) on the lagoons at Rutland Water Nature Reserve. Breeding wader surveys have been carried out at the reserve since 2018. A 2020 survey was not possible due to the coronavirus pandemic. Surveying began in 2023 in the week commencing 14th March 2023. A group of nine volunteers were responsible for monitoring and recording the activities of any wading birds found on their allocated lagoons.

Wader surveyors were asked to survey their allocated lagoon ideally for 2-4 hours at least once per week, dependent upon lagoon size and bird activity. The method employed was a fixed-point observation study. Observation points were usually hides; the only exception was on Lagoon 7 where there are no hides. In this case the surveyor took position in a temporary camouflaged canvas hide, erected on the bank of the lagoon, close to the sluice gate.

The surveyors were asked to look for specific behaviour associated with breeding waders and enter any findings onto both a recording form and a map of the lagoon [see appendices 2 & 3]. Numbered concrete blocks are present on the lagoon islands; this enabled surveyors to note specifically where within the lagoon any breeding behaviour occurred and later in the season, to record exactly where chicks were present.

The behaviours that the surveyors were asked to observe and record were:

Courtship
Chasing, courtship flights and territorial displays. Due to the mobility of birds engaging in courtship, it often proves difficult to accurately assign an island number to any birds behaving in this way.

Copulation
Any records of active copulation are recorded.

Nest scraping
Birds scraping out or building a nest.

Incubation
Birds sat motionless on an island for long periods is a strong indicator of incubation. Roosting waders normally stand upright on one leg; a bird sat on the ground is likely to be incubating.

Brooding
Once eggs have hatched, adult birds will routinely shelter their young chicks underneath their bodies.

Predation events
Any aerial or ground predators present during a monitoring period are recorded. Even if there was no actual predation of a nest.

Notes
Surveyors were encouraged to make further notes of anything they felt pertinent to the survey including other disturbance and non-breeding waders present during the recording period.

The position of the nest was recorded as accurately as possible on the surveyors' lagoon maps with a cross and the BTO species code for the bird. The type of behaviour observed was recorded as such: i = incubation, b = brooding or chicks was written with the number preceding the BTO code to denote the number of chicks for that species. A new map was used for each survey visit.

Summary
Both the total number of breeding attempts and the total number of fledged chcks were considerably lower in 2023 than the previous year, with just four confirmed chicks fledging from 21 nests (compared to 13 chicks from 53 nests in 2022). It is not currently known what is causing the continued decline in wader breeding success at Rutland Water. However, predator surveys will be taking place in 2024 to help better understand the impacts on breeding waders and identify opportunites to improve fledging success.

Survey Results

Lagoons 1 - 3
As in previous years, Lagoons 1 - 3 were monitored by members of staff, as there is far less suitable nesting habitat for waders on these lagoons. Unfortunately, no nesting attempts were made on these Lagoons in 2023.

Lagoon 4
Following the breeding success of 2021 and 2022, Lagoon 4 saw dissapointingly low numbers of successful nesting pairs of waders in 2023. As a consequence of Bird Flu, the Black-headed Gull colony was reduced to just c.20 pairs (from a peak of 350 pairs in 2022). In previous years, a high number of breeding Black-headed Gulls was positively correlated with high wader breeding success - the gulls acted as an 'early warning system' and used a 'strength in numbers' approach to see off aerial predators. Without the gulls to protect them this year, Lagoon 4 had the lowest success rate for the location since the Breeding Wader Survey began. From 21 identified nests, of four species, only one chick was presumed to have fledged.

While not observed during a survey visit, the predation of two Lapwing chicks by a Lesser Black-backed Gull, which was itself nesting on the Osprey Platform, was witnessed by a member of staff from the Volunteer Training Centre.

Lagoon 5
Water levels were left high in Lagoon 5 in 2023 following failed breeding success in previous years. Despite this, two Lapwings showed interest in the lagoon, but were unsuccessful. However, a pair of Reshank succesfully raised one fledgling on the Lagoon.

Lagoon 6
There was early activity of Lapwing in March and April with 3 or 4 pairs present. By May, two pairs seemed to be settling down. One pair with two chicks and another with one chick. By early June each pair only appeared to have one chick each. Juveniles were seen into June, successfuly fledging.

Two pairs of Oystercatcher arrived early in the season, setting up a territory. Eventually one pair disappeared (L8?). The remaining pair proceeded to raise two chicks to immature size but in June only one fledged youngster was seen on Lax Hill.

After successful breeding of Redshank in 2022, a pair was present and showed occasional signs of settling down but disappeared by the end of the month. They were lagoon hopping and often flying over to L5 where a juvenile was seen during June.

Having had a pair of Little Ringed Plover appear on Island 2 for a week in 2022, a pair returned mid April in 2023. Positive signs of potential breeding occured on Island 2, and on Island 4 during a three week period. This pair often flew to L8 Island 7 which, like Island 2 on L6 has some residual shingle/gravel surfaces. By mid May they had gone. Breeding could have been attempted but not proven.

Lagoon 7
A consistent number of Lapwing on the Lagoon (up to five), plus a single Oystercatcher. However, there was no indication of breeding attempts being made.

An Otter was observed on one of the survey visits. Historically, Lagoon 7 has suffered from aerial predation with Jackdaw and Carrion Crow roosting in the trees of the adjacent woodland in Field 16.

Lagoon 8
Lagoon 8 had consistent, but small numbers of Lapwing (on average four) and Oystercatcher (two) throughout the breeding season. Copulation and incubation was observed for both species, but unfortunately no nests, eggs or chicks were seen.

There were a number of Otter tracks seen from Kingfisher Hide and frequent Otter activity observed near to the Lagoon, although no predation events were witnessed during the survey.

Conclusions

With just 21 breeding attempts and four confirmed fledged chicks, this is one of the lowest success rates of the Breeding Wader Survey to date. The only species to have more success in 2023 compared to 2022 was Redshank, which succesfully fledged one chick on Lagoon 5. Otherwise, all other species had fewer nesting attempts along with fewer chicks. This is partly due to the impact of Bird Flu in the spring, but potentially also presure from predators.

Whilst the only observed predation events were aerial attacks (outside of the survey visits), terrestrial predation from Badgers, Foxes and Otters cannot be ruled out. Although there were no observed predation events by terrestrial mammals during the surveys, Badgers, Foxes and Otters are known to predate eggs and chicks. It is therefore possible that if predation by these species is occurring, it will likely be happening in the early hours of the morning or in the evening - and would be missed by our staff and volunteers. Despite trail cameras being positioned around the edges of Lagoon 4 in 2023, no footage of mammals was captured during the breeding season.

The reprofiling of the Lagoon islands in the winter of 2020/2021 had a positive affect on Breeding Wader success in 2021, with our best year on record for fledging success - 70 chicks from 61 breeding attempts! Although reprofiling on the scale of 2020/2021 is not possible in the immediate future, further reprofiling of the islands on Lagoon 4 is planned for the winter of 2024/2025.

The total number of breeding attempts and fledged chicks for 2022 and 2023 for each species can be seen in table 3.1 and 3.2

Redshank © Lynda Schlemmer

Species	Lagoon 1		Lagoon 2		Lagoon 3		Lagoon 4		Lagoon 5		Lagoon 6		Lagoon 7		Lagoon 8		Totals	
2022	BA	FC	BA	FC	BA	FC	BA	FC	BA	FC	BA	FC	BA	FC	BA	FC	Breeding attempt	Fledged chicks
LP	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	5	0
AV	0	0	0	0	0	0	12	2	0	0	0	0	0	0	0	0	12	2
L.	0	0	0	0	0	0	9	3	1	0	5	2	4	2	0	0	19	7
OC	1	0	0	0	1	2	10	0	0	0	2	0	1	2	2	0	15	4
RK	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0
RP	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0
Totals	**1**	**0**	**0**	**0**	**1**	**2**	**37**	**5**	**1**	**0**	**8**	**2**	**5**	**4**	**2**	**0**	**53**	**13**

Table 3.1 Number of breeding attempts and fledged chicks per species and per lagoon in 2022. BA - breeding attempt, FC - fledged chicks, LP - Little Ringed Plover, AV - Avocet, L. - Lapwing, OC - Oystercatcher, RK - Redshank, RP Ringed Plover.

Species	Lagoon 1		Lagoon 2		Lagoon 3		Lagoon 4		Lagoon 5		Lagoon 6		Lagoon 7		Lagoon 8		Totals	
2023	BA	FC	BA	FC	BA	FC	BA	FC	BA	FC	BA	FC	BA	FC	BA	FC	Breeding attempt	Fledged chicks
LP	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	4	0
AV	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	4	0
L.	0	0	0	0	0	0	9	(1)	0	0	2	2	0	0	0	0	11	2 (3)
OC	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1	1
RK	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1
RP	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	**0**	**0**	**0**	**0**	**0**	**0**	**17**	**(1)**	**1**	**1**	**3**	**3**	**0**	**0**	**0**	**0**	**21**	**4 (5)**

Table 3.2 Number of breeding attempts and fledged chicks per species and per lagoon in 2023. BA - breeding attempt, FC - fledged chicks, LP - Little Ringed Plover, AV - Avocet, L. - Lapwing, OC - Oystercatcher, RK - Redshank, RP Ringed Plover. Number in brackets presumed fledged but cannot be certain.

Bird Ringing Report

6,080 birds of 50 species were processed by staff and volunteers in 2023. Highlights included a Nightingale caught in the Lagoon 3 CES - the same bird caught and ringed the year before - at the same location!

Sedge Warbler © LRWT

Terminology and abbreviations

BTO - The British Trust for Ornithology, the charitable body who coordinate and oversee all ringing licencing and activities in the U.K
CES - Constant Effort Site, a standardised method of ringing whereby nets are set in the same place year on year for 12 visits within 10-day periods between May and September.
CONTROL - A bird caught by a ringer more than 5km away from the site where it was originally ringed
PROCESSED - The term referring to processing of a bird for ringing, re-trap or control.
PULLI – Refers to the juvenile birds (chicks) in the nest, unable to fly or fly very weakly.
RAS – The Re-trap Adults for Survival (RAS) scheme is a national standardised ringing programme within the BTO Ringing Scheme, ringers aim to catch or re-sight at least 50 adult birds of a single species within the breeding season.
RECOVERY - A bird caught as in control above, or a bird found by a third party e.g. reported by a member of the public.
RETRAP - A bird caught by a ringer at the same site where it was originally ringed or, if sites are close together, a bird caught within 5km of where it was first ringed.
RINGED - The application of a ring to a bird's leg. Data such as age, sex, wing length, weight etc are also obtained.
RINGING BASE - Birds are brought back to a central area for processing.

2023 Summary

Oliver Slessor

2023 saw the continuation of our long-term ringing projects including our two CES sites, Sand Martin RAS and Sand Martin nest monitoring. General ringing at established sites (Greenbank, Lyndon and Fieldfare) continued. Unfortunately, the long-established Rutland Water Ringing Group folded in the early spring 2023. However, some of the former members opted to continue ringing on the site independently, supported by the contract ringer position - employed by LRWT.

A total 6,080 birds of 50 species were processed at Rutland Water during 2023, compared with 5598 in 2022, 5880 in 2021 and 3679 in 2020. A summary of all birds processed in the year can be found at the end of the ringing report in table 4.7.

The Constant Effort Sites (CES) scheme is the first national standardised ringing program within the BTO and has been running since 1983. Ringers operate the same nets in the same locations over the same time period at regular intervals through the breeding season at around 120 sites throughout Britain and Ireland
The Scheme provides information on population size, breeding success and survival of 24 common songbird species living in scrub and wetland habitats. The species monitored by CES are Song Thrush, Willow Tit (Red Listed), Dunnock, Bullfinch, Reed Bunting (Amber Listed), Robin, Blackbird, Cetti's Warbler, Sedge Warbler, Reed Warbler, Whitethroat, Lesser Whitethroat, Garden Warbler, Blackcap, Willow Warbler, Chiffchaff, Long-tailed Tit, Blue Tit, Great Tit, Treecreeper, Chaffinch, Greenfinch, Goldfinch and Wren.

12 visits are made between May and August, spread evenly throughout the breeding season (the CES avoids main migration periods). The same number of nets are used in the same positions on each visit and from year to year.

Rutland Water Nature Reserve operates two established CES sites at Lagoon 3 and Field 16. The Lagoon 3 CES project started shortly after the CES scheme's inception in 1983 and has been run almost continuously since then. The Field 16 CES site was established in 2008 and has been run continuously since its inception.

Lagoon 3
The Lagoon 3 CES site operates a total of 144m of mist nets through a variety of woodland, wet scrub and reed bed. All 12 of the 12 recommended visits were successfully completed at Lagoon 3 in 2022. 718 birds were processed as part of CES, up from 614 the previous year. The total number of birds processed at Lagoon 3 CES are shown in table 4.1 and figure 4.1.

In all, five of the 24 species monitored by the CES scheme were not caught at this site in 2023: Willow Tit, Lesser Whitethroat, Chaffinch, Greenfinch and Goldfinch. However, three non CES species were caught: Goldcrest, Nightingale and Starling. Breeding of Blackbird, Blackcap, Blue Tit, Cetti's Warbler, Chiffchaff, Dunnock, Garden Warbler, Goldcrest, Great Tit, Long-tailed Tit, Reed Bunting, Reed Warbler, Robin, Sedge Warbler, Song Thrush, Starling, Treecreeper, Whitethroat, Willow Warbler and Wren were all confirmed as first year birds were caught during CES sessions at times which indicate that they had come from nests locally.

2023 was a successful year for the Lagoon 3 CES with many species having a much more productive breeding season than in the previous year. The juveniles of the following species were caught in significantly higher number than in 2022. Blue Tit, Cetti's Warbler, Chiffchaff, Garden Warbler, Long-tailed Tit, Reed Bunting, Reed Warbler, Sedge Warbler, Song Thrush, Whitethroat and Willow Warbler.

Of particular note was the number of Reed Warbler, with an incredible 121 juvenile birds ringed in 2023 compared with just 44 in 2022. Sedge Warbler, which requires a similar habitat to the Reed Warbler, also had a great breeding season in 2023. 71 juvenile Sedge Warblers were ringed through the CES compared to 44 in 2022. Proving the value of the reedbed on Lagoon 3 for these wetland specialist migrant warblers. A comparrison of juvenile birds is shown in figure 4.2.

Reed Warbler caught on 3rd May 2023 © Oliver Slessor

Number of birds processed at Lagoon 3 CES in 2023				
	Adult	Juvenile	Full-grown	Total
Blackbird	6	7	0	13
Blackcap	21	58	0	79
Blue Tit	8	48 (46)	0	56
Bullfinch	3	0	0	3
Cetti's Warbler	4	19 (4)	0	23
Chiffchaff	11	56 (55)	0	67
Dunnock	9	11	0	20
Garden Warbler	11	13 (4)	0	24
Goldcrest	0	1	0	1
Great Tit	5	11	0	16
Long-tailed Tit	9	17 (6)	3	29
Nightingale	1	0	0	1
Reed Bunting	10	7 (0)	0	17
Reed Warbler	73	121 (44)	0	194
Robin	0	17	0	17
Sedge Warbler	27	71 (44)	0	98
Song Thrush	2	5 (3)	0	7
Starling	0	2	0	2
Treecreeper	1	3	0	4
Whitethroat	1	3 (1)	0	4
Willow Warbler	5	6 (5)	0	11
Wren	13	19	0	32
Total	**220 (185)**	**495 (417)**	**3 (12)**	**718 (614)**

Table 4.1 Lagoon 3 CES totals (full grown refers to a bird that cannot be accurately aged due to their moult strategy). Figures in brackets refer to 2022 totals.

Adult male Nightingale caught on 3rd May 2023 © Oliver Slessor. Retrapped during the first CES session of 2023 and was originally ringed the year before at the same location

Recoveries from Lagoon 3 CES 2023

Notable controls include a Channel Islands ringed Sedge Warbler that was caught on the 6th CES session on 28th June. It was an adult female and showed signs of breeding as it had a brood patch. It was originally ringed on the 28th April 2023 at Alderney; where it presumably passed through on its migration route, two months before being caught at Rutland Water.

Adult control Sedge Warbler caught at Rutland Water on 28th June 2023 © Oliver Slessor

Adult control Sedge Warbler and showing the Jersey ring - caught at Rutland Water on 28th June 2023 © Oliver Slessor

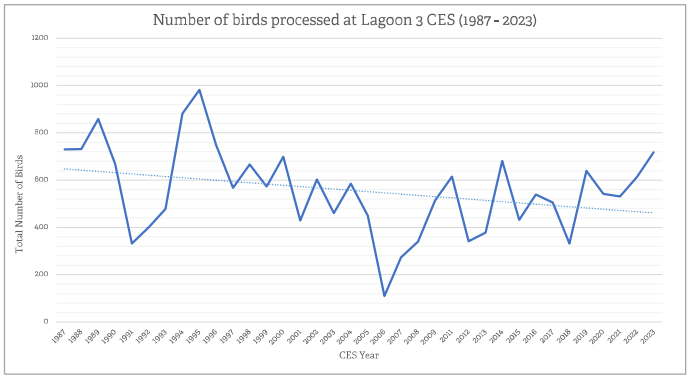


Figure 4.1 Number of birds processed at Lagoon 3 CES between 1987 and 2023.

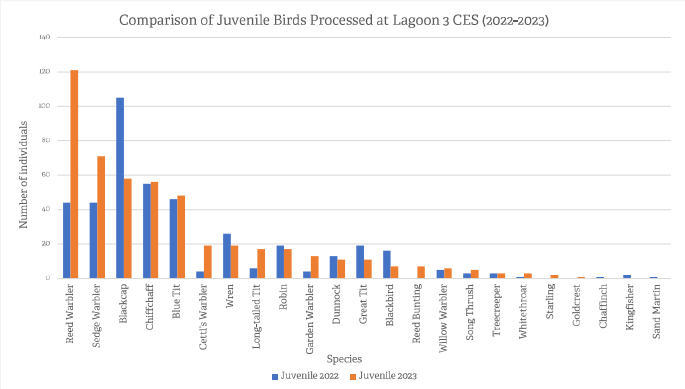


Figure 4.2 Comparison of Number of Juvenile birds processed at Lagoon 3 CES (2022-2023) - note the increase in the number of juvenile Reed Warbler ringed in 2023 compares to 2022.

The habitat within Cherry Wood/Lagoon 3 reedbed area has historically attracted a range of birds passing through on migration (both in spring and autumn) and provides a valuable food source for various species of thrushes and finches. After the final CES session ended on 25th August, time was spent undertaking general ringing at Cherry Wood/Lagoon 3 using tape lures.

Tape lures are highly effective ways of attracting birds to the mist nets and can be used outside the breeding season. Some interesting species were ringed at Lagoon 3 in the autumn which had not been caught earlier in the year during the CES sessions. These included Water Rail, Grey Wagtail (Very few have been ringed previously at Rutland Water), Kingfisher, Marsh Tit (a Red listed species), Redwing, Lesser Redpoll, Siskin and Stonechat.

Grey Wagtail immature, caught on 26th September 2023 © Oliver Slessor

Two new Marsh Tits were ringed in the autumn, like the Willow Tit, this is a red listed species and a species of conservation concern. Although recorded here in small numbers, it is always good to get ringing data for this species. The Stonechat was only the second to be ringed at Rutland Water since 1975. The last one ringed here was on the 30th October 2019 within the tertiary treatment works (behind the VTC) - the same year in which they bred in the adjacent scrub.

Marsh Tit caught on 22nd September 2023 © Oliver Slessor

Stonechat female, caught on 16th November 2023 © Oliver Slessor

The combined number of birds which were processed at Rutland Water by all ringers (including the Sand Martin Banks and the CES sites) can be seen at the end of the ringing report in table 4.7.

Acknowledgements

I'm grateful to Tim Sexton for site preparation throughout the CES period and to the following ringers and volunteers for their help and support during all the CES and general ringing sessions at Lagoon 3/Cherry Wood throughout the year: Keith Walkling, Chloe Russell, Linda Clark, Fee Worton, Katie Goddard, Matt Scase, Robin Ball, Richard Briers, Beth Fox, AJ Meakin and Malcolm Dixon

Field 16 CES Report

Colin Hewitt

The Field 16 CES at Rutland Water Nature Reserve comprises 180m of net set in Phragmites reedbed, wet scrub and woodland habitats. In 2023, eight of the recommended twelve surveys were successfully completed.

The adult abundance of the 24 species monitored through CES was calculated from new adult birds ringed, and the first encounter of the year of individual adult birds that had been ringed at other locations or in previous years. Captures of birds already encountered as part of the 2023 Field 16 CES, and birds that it was impossible to age (mostly Long-Tailed Tits and Cetti's Warblers after moult) were excluded from the analysis (23 birds). Overall, 86 new adults were ringed and 52 adults ringed in previous years or at locations away from the 2023 Field 16 CES were captured. (Table 4.2).

In addition to the 24 CES species, both Goldcrest (two new adults) and Spotted Flycatcher (ringed juvenile) were caught during the CES sessions in Field 16.

Number of birds processed at Field 16 CES in 2023					
Species	New		Subsequent		Total
	Adult	Juv	Adult	Juv	
Wren	1	14	4	10	29
Dunnock	4	19	8		31
Robin	1	16		5	22
Blackbird	2	10	3		15
Song Thrush	1	3	2		6
Cetti's Warbler	3	10	12	10	35
Sedge Warbler	6	6	16		28
Reed Warbler	27	13	30	4	74
Lesser Whitethroat					0
Whitethroat					0
Garden Warbler	3	7	1		11
Blackcap	9	9	1		19
Chiffchaff	9	39	9	2	59
Willow Warbler		1	1	2	4
Long-tailed Tit		9	4	1	14
Willow Tit		1			1
Blue Tit	5	42	4	1	52
Great Tit	3	1			4
Treecreeper		2		1	3
Chaffinch					0
Greenfinch					0
Goldfinch		2			2
Bullfinch	6	2	7		15
Reed Bunting	6	1	6		13
Total	**86**	**207**	**108**	**36**	**437**

Table 4.2 Numbers of birds processed at the 2023 Field 16 CES.

In 2023, only Dunnock, Cetti's Warbler, Long-Tailed Tit and Blue Tit were more abundant compared with the five year mean (2018-2022) (Figure 4.3). When expressed as percentage change in abundance, the 4 fold increase Cetti's Warbler abundance (although absolute numbers were small) was particularly striking (Figure 4.4).

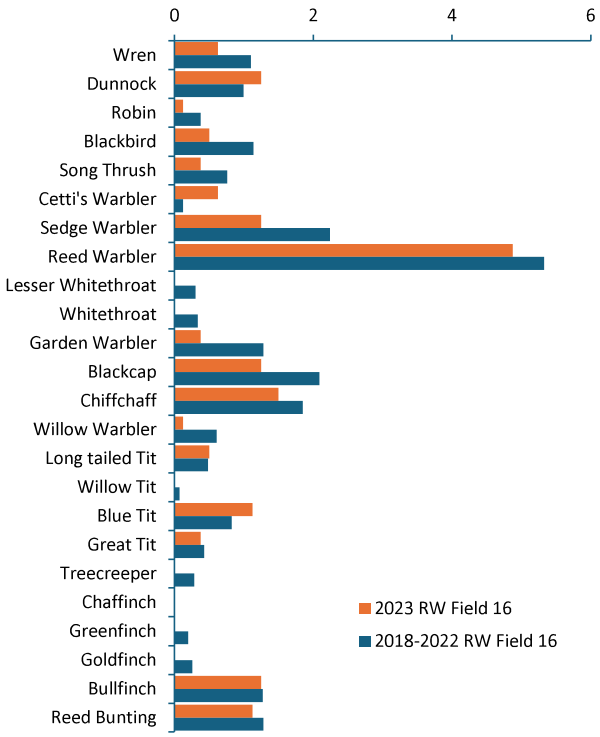


Figure 4.3 Adult abundance index. Index of new adult birds and new-for-year 'subsequent encounter' adult birds at Field 16 CES in 2023 compared with the five year mean (2018-2022).

Every year, the BTO publishes percentage changes in abundance of adults for all ~120 CES sites against a five year mean abundance. In 2023, it appears that the percentage negative change in adult abundance at Field 16 CES for most species has been greater than that for the rest of Britain and Ireland (Figure 4.5).

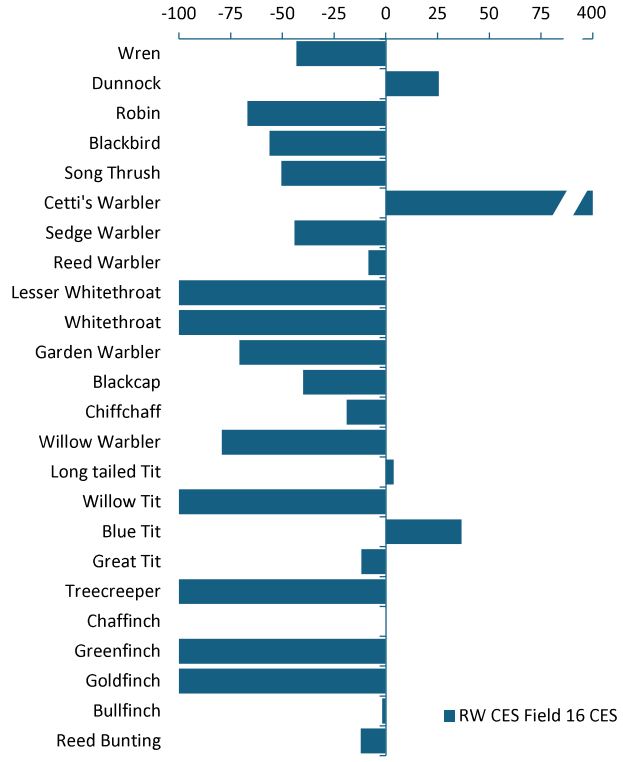


Figure 4.4 Change (%) in adult abundance index in 2023 compared with mean adult abundance index for 2018-2022 at Field 16 CES.

A total of 207 juveniles were ringed; this figure was used to give an index of productivity (breeding success). In 2023, juveniles of several resident species: Dunnock, Robin, Blackbird, Song Thrush, Cetti's Warbler, Long-Tailed Tit, Willow Tit, Blue Tit and Goldfinch were more abundant than the five year mean at the site (2018-2022) (Figure 4.6).

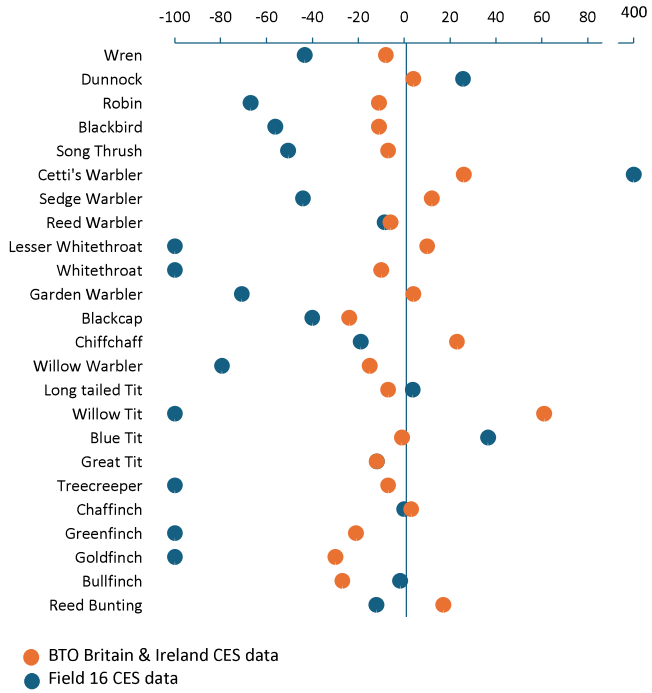


Figure 4.5 Comparison of 2023 Field 16 CES data with 2023 BTO CES data for Britain and Ireland. Change (%) in adult abundance index in 2023 compared with mean adult abundance index for 2018-2022.

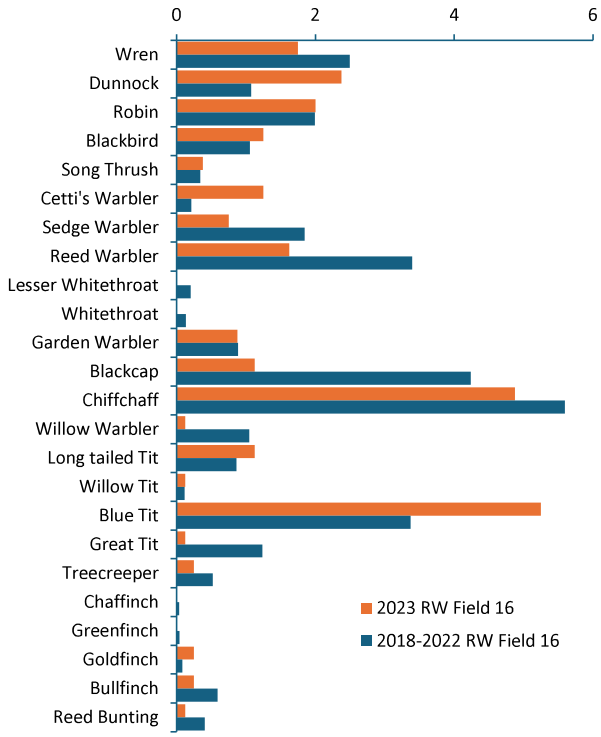


Figure 4.6 Juvenile abundance index. Index of new juvenile birds at Field 16 CES in 2023 compared with the five year mean (2018-2022).

In terms of percent change compared with 2018-2022 data (Figure 4.7), at the Field 16 CES the abundance of juvenile Dunnock, Cetti's Warbler and Goldfinch markedly outperformed the BTO Britain and Ireland data (Figure 4.8).

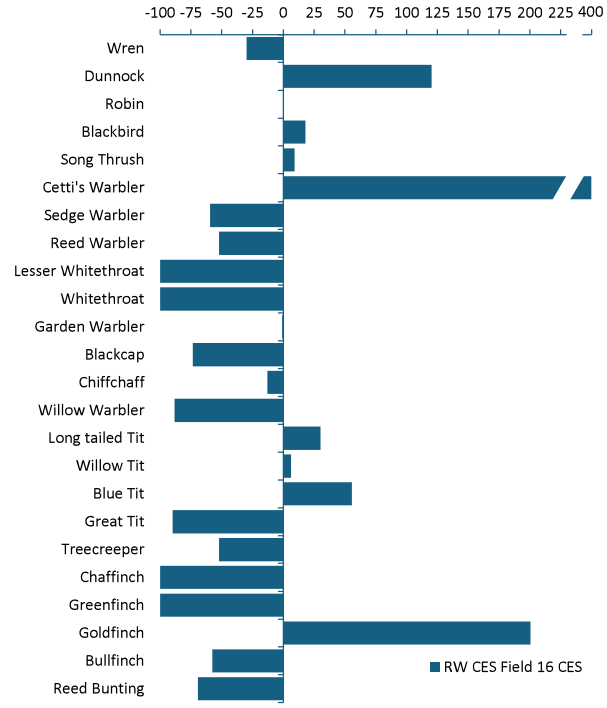


Figure 4.7 Change (%) in juvenile abundance index in 2023 compared with mean juvenile abundance index for 2018-2022 at Field 16 CES.

Figure 4.8 Comparison of 2023 Field 16 CES data with 2023 BTO CES data for Britain and Ireland. Change (%) in juvenile abundance index in 2023 compared with mean juvenile abundance index for 2018-2022.

Lyndon Ringing Area Summary

Garry and Candice Barker

The ringing site at Lyndon has between 350 to 400 feet of mist netting erected during the sessions and normally we don't ring on the site between the end of December and mid March. However, if we are carrying out ringing demonstrations for the general public we utilise the feeding station in the wildflower meadow in front of the centre, as well as the ringing site, to enable us to process a variety of birds.

In 2023 a total of 9 mist netting sessions were carried out with 535 birds processed of 31 species. During the winter of 2022/2023 the feeding station at the Lyndon Centre enabled us to carry out monthly ringing demonstrations for the general public. The highlight of the February session was mist netting a Woodcock. This was the first captured on the site and for many of the public attending the first time they had ever seen one. A real treat for them to see it up close. During one of the August sessions we caught another first for the site, Grasshopper Warbler, and as the table below highlights not just one but 3 juveniles, most likely passing through the site on migration.

In 2023 the mist netting sessions were carried out in January, February, May, June, August, October and November. The first Redwings caught on the site were in October which was about 3 weeks earlier than in 2022. The lowest session total was 20 birds in January, at a ringing demonstration, with 6 nets in operation. A reduced number, and footage of nets is normal for a ringing demonstration because we spend more time showing the birds to the public. With bird welfare being paramount for ringers we try not to catch a large number of birds. The highest session total was 89 in October with 9 nets in operation. It is also interesting that we didn't catch a Sparrowhawk or a Kestrel this year, no birds of prey.

A total of birds processed at Lyndon Ringing Area in 2023 can be found in table 4.3.

Small Hole Nest boxes

The number of small nest boxes checked this year was 86. The 8 open front boxes didn't produce any broods this year and the small hole boxes provided nesting just for Blue Tits and Great Tits. However, we did come across several roosting Noctule bats during the checking. Table 4.4 provides a comparison between the small hole nesting species data for 2022 and 2023.

One of the differences to highlight between 2023 and the previous year is the lower mortality rate of Blue Tits. This further supports our thoughts that the previous summer's high temperatures probably attributed to the increased chick mortality. It is also worth mentioning that most of the Great Tit brood size in 2023 ranged from 5-9 chicks and in 2022 the range was 3 to 8 chicks accounting for less broods in 2023 but more chicks ringed.

Birds processed at Lyndon Ringing Area in 2023				
Species Name	Ringed	Retrap	Contr.	Total
Woodcock	1	0	0	1
Kingfisher	1	0	0	1
Green Woodpecker	1	0	0	2
GS Woodpecker	1	1	0	2
Wren	25	2	0	27
Dunnock	23	25	0	48
Robin	25	14	0	39
Song Thrush	9	3	0	12
Redwing	31	0	0	31
Blackbird	19	7	0	26
Garden Warbler	22	5	0	27
Blackcap	73	5	0	78
Whitethroat	6	0	1	7
Lesser Whitethroat	8	2	0	10
Sedge Warbler	4	0	0	4
Reed Warbler	2	0	0	2
Grasshopper Wbler	3	0	0	3
Willow Warbler	15	0	0	15
Chiffchaff	28	2	0	30
Goldcrest	22	6	0	28
Great Tit	19	10	0	29
Coal Tit	1	1	0	2
Blue Tit	31	26	0	57
Willow Tit	1	0	0	1
Long-tailed Tit	11	11	0	22
Treecreeper	3	0	0	3
Chaffinch	2	0	0	2
Lesser Redpoll	6	0	0	6
Goldfinch	3	0	0	3
Bullfinch	8	8	0	16
Reed Bunting	2	0	0	2
Total (31 Species)	**406**	**128**	**1**	**535**

Table 4.3 Total birds processed at Lyndon Ringing Area in 2023

Species	Number of broods	Number of chicks	Dead Chicks	% of dead chicks
Blue Tit	29	230	35	15%
Great Tit	15	63	8	13%
Totals	**44**	**293**	**43**	**15%**

Table 4.4 Broods, chicks and dead chicks from Lyndon nest boxes

A table of significant recoveries and notable recaptures from 2023 can be seen in table 4.5

Key to Recoveries and Notable Recaptures history: -
Record Type:- New - Ringed fitted, Control - bird ringed at another site > 5kms away, Recaptured – the bird hasn't travelled further than 5kms but has been ringed previously.
Age:- 1 = pullus (nestling or chick), 2 = fully grown, exact year of hatching unknown 3 = hatched in calendar year of ringing 3J = still present some juvenile feathers that it left the nest with 4 = hatched before the calendar year of ringing, exact year unknown 5 = hatched during the previous calendar year 6 = hatched before the previous calendar year, exact year unknown.
M= male, F= female, U=unknown (some birds you can only sex in the breeding season).

Recoveries and Notable Recaptures in 2023 (Lyndon Ringing Area)							
Record Type	**Ring Number**	**Age**	**Sex**	**Date**	**Place**	**Distance**	**Duration**
Great Spotted Woodpecker - interesting age							
New	LE09618	4	M	04.12.2019	Lyndon		
Recaptured		4	M	29.11.2021	Lyndon	0 km	1yr 11mths 25days
Recaptured		6	M	12.01.2023	Lyndon	0 km	3yrs 1mth 8days
Whitethroat - Interesting movement							
New	AYX4924	3		19.8.2022	N.Luffenham Airfield		
Control		5	M	16.06.2023	Lyndon	5.4km	9mths 28days
Goldcrest - Overwintering male staying to breed							
New	DCK295	5	M	11.02.2023	Lyndon		
Recaptured		4	M	16.06.2023	Lyndon	0 km	4mths 5days
Blackbird - Interesting age							
New	LE09641	3J	F	06.08.2020	Lyndon		
Recaptured		6	M	10.08.2023	Lyndon	0km	3yrs 0mth 4days
Blackbird - Interesting age							
New	LE09623	6	M	29.05.2021	Lyndon		
Recaptured		6	M	16.06.2023	Lyndon	0km	2yrs 0mths 18 days
Chiffchaff - Interesting age							
New	LBC820	4	M	16.04.2021	Lyndon		
Recaptured		4	M	16.06.2023	Lyndon	0 km	2yrs 2mths 0days
Long Tailed Tit— - Interesting age and also encountered at Lyndon on11.06.2018, 11.04.2019, 16.11.2021, 25.01.20							
New	JTV570	2		8.10.2017	Lyndon		
Recaptured		2		20.08.2023	Lyndon	0 km	5yrs 10mth 12days
Long Tailed Tit - Encountered as breeding female in 2022							
New	DCK207	2		16.11.2021	Lyndon		
Recaptured		2		23.10.2023	Lyndon	0km	1yr 11mths 7days
Garden Warbler - Returning breeding adult							
New	AVH2839	4		06.08.2020	Lyndon		
Recapture		4	M	20.05.2023	Lyndon	0 km	2yrs 9mth 14 days
Blue Tit - Interesting age, ringed as a chick and not encountered in the interim period							
New	S868880	1		27.05.2018	Box P7 Poplar Line		
Recaptured		6		11.02.2023	Lyndon	1.0 km	4yrs 8mths 15days
Blue Tit - Interesting age and not encountered in the interim period							
New	AEA3811	3J		02.07.2019	Lyndon		
Recaptured		3		06.11.2019	Lyndon	0km	0yrs 4mths 4days
Recaptured		6		11.02.2023	Lyndon	0km	3yrs 7mths 9days
Blue Tit - Interesting age							
New	AXA1707	1		16.05.2019	Gibbets Gorse Box 3		
Recaptured		5		06.03.2020	Lyndon	1.6 km	0yrs 9mths 19days
Recaptured		6		11.02.2023	Lyndon	1.6 km	3yrs 8mths 26days
Blue Tit - interesting movements and also encountered at Lyndon on 10/11/22, 09/12/22 and 12/01/23							
New	AJV6219	1		26.05.2022	Lagoon 3 Box L3		
Recaptured		3		05.08.2022	Lax Hill	2.4 km	0yrs 2mths 9days
Recaptured		5		11.02.2023	Lyndon	4.4 km	0yrs 8mths 15days
Great Tit - Interesting age and not encountered in the interim period							
New	AEA3735	3J		23.06.2019	Lyndon		
Recaptured		6	M	20.05.2023	Lyndon	0 km	3yrs 10mths 27days
Great Tit - encountered as breeding female at nest site							
New	TK00793	4	F	26.10.2021	Lyndon		
Recaptured		4	F	23.05.2023	Gibbets Gorse Box 13	1.6 km	1yr 6mths 27days
Great Tit - Interesting age							
New	TJ35157	1		18.05.2017	Gibbets Gorse Box 8		
Recaptured		6	M	21.01.2019	Lyndon	1.6 km	1yr 8mths 3days
Recaptured		4	M	04.12.2019	Lyndon	1.6 km	2yrs 6mths 16days
Recaptured		6	M	11.02.2023	Lyndon	1.6 km	5yrs 8mths 24days
Dunnock - Interesting age							
New	TK00724	3J		29.05.2021	Lyndon		
Recaptured		4		16.06.2023	Lyndon	0 km	2yrs 0mths 18 days
Song Thrush - Adult male returning							
New	RL44916	4		03.09.2021	Lyndon		
Recaptured		6	M	16.06.2023	Lyndon	0km	1yr 9mths 13days
Bullfinch - Wintering male remaining to breed							
New	AJV6493	3	M	09.12.2022	Lyndon		
Recaptured		5	M	20.08.2023	Lyndon	0km	0yr 8mths 11days

Table 4.5 Recoveries and Notable Recaptures in 2023 (Lyndon Ringing Area)

Total number of birds processed at RWNR in 2023							
Species	New Adult	Retrap Adult	New Juv	Retrap Juv	New Pullus	Retrap Pullus	**Total**
Barn Owl	3	1	0	0	8	0	**12**
Blackbird	20	22	46	8	0	0	**96**
Black-headed Gull	0	0	0	3	0	0	**3**
Blackcap	84	22	387	18	0	0	**511**
Blue Tit	43	57	273	70	277	0	**720**
Bullfinch	17	21	20	0	1	0	**59**
Brambling	1	0	0	0	0	0	**1**
Cetti's Warbler	12	53	39	31	7	0	**142**
Chaffinch	1	0	2	0	0	0	**3**
Chiffchaff	55	27	320	18	1	0	**421**
Coal Tit	1	1	2	0	0	0	**4**
Dunnock	26	46	88	15	1	0	**176**
Garden Warbler	29	13	64	0	1	0	**107**
Goldcrest	18	16	80	8	0	0	**122**
Goldfinch	5	0	3	0	0	0	**8**
Grasshopper Warbler	0	0	3	0	0	0	**3**
Great Spotted Woodpecker	0	1	1	0	0	0	**2**
Great Tit	29	15	68	13	70	4	**199**
Greenfinch	0	0	1	0	0	0	**1**
Green Woodpecker	1	0	0	0	0	0	**1**
Grey Wagtail	0	0	1	0	0	0	**1**
Kestrel	1	0	0	0	9	0	**10**
Kingfisher	0	0	3	0	0	0	**3**
Lesser Redpoll	5	0	3	0	0	0	**8**
Lesser Whitethroat	5	2	7	0	0	0	**14**
Little Owl	0	0	0	0	1	0	**1**
Long-tailed Tit	90	81	36	2	0	0	**209**
Marsh Tit	0	0	2	0	0	0	**2**
Mute Swan	1	0	0	0	0	0	**1**
Nightingale	0	1	0	0	0	0	**1**
Osprey	0	2	0	0	0	0	**2**
Redwing	17	0	22	0	0	0	**39**
Reed Bunting	32	11	18	0	1	0	**62**
Reed Warbler	103	109	250	24	11	0	**497**
Robin	8	12	91	25	2	0	**138**
Sand Martin	44	273	7	106	1472	0	**1902**
Sedge Warbler	39	57	126	4	5	0	**231**
Siskin	1	0	0	0	0	0	**1**
Song Thrush	8	11	20	0	0	0	**39**
Sparrowhawk	0	0	1	0	0	0	**1**
Starling	0	0	2	0	0	0	**2**
Stonechat	1	0	0	0	0	0	**1**
Swallow	0	0	1	0	0	0	**1**
Treecreeper	5	4	15	3	0	0	**27**
Water Rail	2	0	1	0	0	0	**3**
Whitethroat	3	1	21	1	0	0	**26**
Willow Tit	0	0	2	0	0	0	**2**
Willow Warbler	7	6	38	0	0	0	**51**
Woodcock	1	0	0	0	0	0	**1**
Wren	23	44	122	24	0	0	**213**
Totals:	**741**	**909**	**2186**	**373**	**1867**	**4**	**6080**

Table 4.7 Total number of birds processed at Rutland Water in 2023. Figures include Sand Martin nesting banks, Two CES sites, individual ringing sites and nest boxes.

Sand Martin Nest Recording and Ringing

Sand Martin © Sean Browne

Oliver Slessor

Artificial Sand Martin nest banks can create long lasting nesting opportunities for Sand Martins where natural banks are either unstable or where suitable habitat is not available in a given area. In the case of Rutland Water, there are lots of feeding opportunities for Sand Martins, especially with the abundance of emergent aquatic invertebrates, but historically there has been little nesting opportunity. The first artificial Sand Martin nest bank at Rutland Water was created on Lagoon 2 in 1999. The hollow concrete block and clay pipe design simulates the bird's natural nesting habitat and contains 347 nest holes. The bank was an instant success and a second bank followed on Lagoon 5 in 2014, containing 485 nest holes.

Lagoon 2 Nesting Bank © LRWT

This provision of artificial nesting habitat has meant that the number of breeding Sand Martins at Rutland Water has increased dramatically in recent years, enabling the opportunity for long-term studies of Sand Martin nesting ecology.

The design of the nest banks provides access to the nesting chamber and give us an insight to the life of Sand Martins that wouldn't be possible in a natural nest bank.

Weekly checks of the two banks are carried out from late April until the end of August and the chicks are ringed when they reach a suitable age. Between one third and half of the UK Sand Martin pulli ringing is carried out at Rutland Water Nature Reserve.

Along with ringing Sand Martin chicks, in 2011 we started contributing data to the British Trust for Ornithology's (BTO's) Nest Record Scheme. Every week in the breeding season, from when the first twig is brought into the bank, to the time the last chick fledges, a record of the various stages in the nesting cycle are recorded. This would be impossible in a natural Sand Martin nest bank, so the artifical banks at Rutland Water have contributed vital information about this species nesting ecology. Aproximately 40% of the annual Sand Martin nest records submitted to the BTO come from Rutland Water.

In 2012 we bagan a project which looks at adult Sand Martins, understanding how long they live for and to see which birds return to Rutland in subsequent years. The Retrapping Adults for Survival (RAS) is again coordinated by the BTO. Ringers aim to catch or re-sight at least 50 adult birds of a single species in a study area during the breeding season - perfect for the Sand Martin Nesting Banks. In recent years, up to 200 birds can be caught in a session and based on previous year's results, around 80% of these are recaptures from chicks born here or adults caught in previous RAS sessions – an incredible recapture rate.

Towards the end of the first brood, a team of trained and licensed ringers head out to one of the Sand Martin banks before first light (3:00am) and run an 18m net along each face of the bank to catch the adult birds as they emerge. The ringers carefully extract them from the nets and take them back to the base station where they record the ring numbers of previously ringed birds or ring any new birds. 2023 turned out to be the most successful year since the project started with 409 birds caught in the RAS across the two nesting banks.

This consited of 195 birds at Lagoon 2 and 214 birds at L5. Of these 87% were recaptures (returning birds). A summary of the RAS sessions from 2023 is shown in table 4.6 and the totals from between 2012 and 2022 is shown in figure 4.8.

Sand Martin Nest Summary 2021 - 2023			
First Brood	**2021**	**2022**	**2023**
Number of Eggs	1,165	921	1,300
Number Fledged	804	664	971
Percentage Fledged	69%	72%	75%
Nests with Eggs	261	201	282
Eggs per Nest	4.46	4.58	4.61
Second Brood	**2021**	**2022**	**2023**
Number of Eggs	1,138	780	868
Number Fledged	755	423	357
Percentage Fledged	66%	54%	41%
Nests with Eggs	297	206	212
Eggs per Nest	3.83	3.79	4.09
Third Brood	**2021**	**2022**	**2023**
Number of Eggs	257	16	0
Number Fledged	120	0	0
Percentage Fledged	47%	0%	0%
Nests with Eggs	76	10	0
Eggs per Nest	3.38	1.6	0
Overall Total	**2021**	**2022**	**2023**
Number of Eggs	2,560	1,717	2,168
Number Fledged	1,679	1,087	1,328
Percentage Fledged	66%	63%	61%
Chicks Ringed	1,641	1,081	1,472
RAS Totals	340	201	409

Table 4.6 Sand Martin Nest Summary 2021/2022

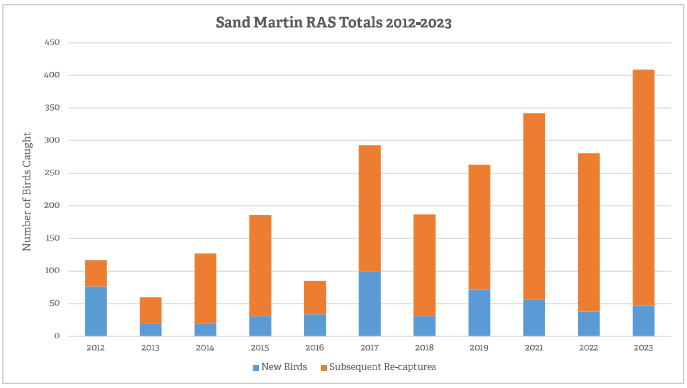


Figure 4.8 RAS Totals 2012-2022

In all, 1,472 Sand Martin chicks were ringed in 2023, with almost 500 nest records submitted to the BTO. This is a 36% increase from last year, when only 1,081 chicks were ringed. This brings the total number of Sand Martins processed since 2001 to over 16,000.

The total number of pulli (chicks) ringed annually between 2001 and 2023 is shown in figure 4.9.

Processing a Sand Martin during a RAS session © LRWT

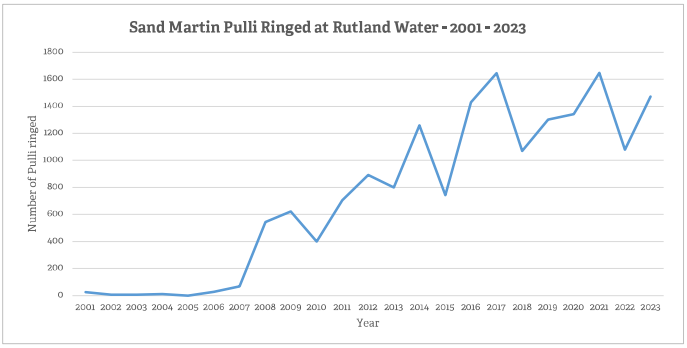


Figure 4.9 Pulli Ringed 2001-2022

Sand Martin chicks, ringed on 21st May 2023 © Oliver Slessor. This is the typical age at which Sand Martin chicks are ringed, when the eyes are opening, there is down on the back and the feathers are starting to emerge from the sheath in the wing.

Juvenile Sand Martin, ringed on the 17th June 2023 © Oliver Slessor. This bird was ringed from one of the nest boxes that can be seen in the background. It is an advanced chick very close to fledging. The buff fringing to the feathers clearly shows it is a first year bird rather than an adult.

A massive thank you to all of the volunteers who helped with nest recording and ringing of Sand Martin pulli in 2023 and to those who helped with the mammoth task of doing the data entry for the ringing and nest recording.

Marsh Harrier with wing tags 'KL' © Lynda Schlemmer

Colour Ringed Birds

Steve Lister

The use of colour marking techniques such as coded plastic leg-rings, nasal saddles and wing-tags in addition to the standard metal rings used by ringers enables individual birds to be identified without being recaptured, as long as birders watch out for the various marks and then read and report them.

As in previous years I collated all sightings of colour-marked birds in 2023 but unfortunately this time they only included 27 birds, as opposed to 70 last year. The large drop was mainly due to the demise of the breeding colony of Black-headed Gulls and Common Terns on Lagoon 4, the easiest site for data collection. The ravages of 'bird flu' and then unexplained desertions left the lagoon devoid of the usual hordes of gulls that often attracted passage birds including a few colour-ringed individuals.

Thanks are due to the ten observers who contributed sightings.

Black-tailed Godwit

One with a combination of three colour-rings and a leg flag (GY – YWf) on July 8th proved to have been ringed as an adult male in south Iceland in June 2012. An excellent illustration of the value of colour marking, this bird has been sighted 137 times since it was ringed: a clear pattern has emerged, with sightings in south Iceland during five breeding seasons, along the south bank of the Humber estuary in autumns, and on the Stour estuary in Essex during winters.

Black-headed Gull

The total of 16 ringed birds sighted included 15 fitted with blue rings as chicks here at Rutland Water since 2018, with sightings all in the period March 24th to July 19th. Six had been ringed in 2018, two in 2019, four in 2021 and three in 2022. The rings are marked with codes made up of 2A, 2B or 2C followed by two more letters. The one bird from elsewhere was Yellow T1PN, a regular winter visitor from Poland where it was ringed as a breeding adult in May 2017 and seen at Rutland Water every year since. This year it was seen on January 24th and then on October 21st and 28th.

Great Black-backed Gull

Two adults with colour-rings were seen on Lagoon 4 on August 26th, both having been seen there in previous years.

Black J8808 was ringed as a chick in Rogaland, Norway in July 2018 and has been seen either at Rutland Water or at Shawell in south Leicestershire in the autumns of 2019, 2021 and 2022. The ring is now badly chipped. Yellow X:056 was ringed as a chick on the Isle of May, Scotland in June 2017 and has been seen either here or at Shawell in the autumns of 2018, 2019, 2021 and 2022.

Common Gull

White JH602 on Lagoon 4 on March 30th was ringed as an adult in Rogaland, Norway in July 2020 and this was the first sighting since.

Common Tern

The regular returning adult G(19) – Rm was on Lagoon 4 on May 12th and 16th after which the colony was deserted. It was ringed as a chick at Brandon Marsh, Warwickshire in 2016 and has been seen on Lagoon 4 in 2019, 2021 and 2022.

Cormorant

The only 'local' seen this year was Yellow ZD4 in the fishponds area on July 18th, September 20th and October 3rd. It was ringed as a chick in 2011 and has now amassed a total of 63 sightings, mainly here but also at two Lincolnshire sites in 2011-13 and 2016. Three others all came from the same colony at Hale in Cheshire, all ringed as chicks this year. Orange 176 was seen on August 15th and September 3rd, followed by Orange 248 between September 4th and October 14th and Orange 273 on October 3rd.

Marsh Harrier

Two birds with wing tags were seen over Lagoon 3. Orange J1 on January 1st and 2nd was ringed as a female chick at Ken Hill, near Snettisham in Norfolk, in June 2021 and had already been reported from Essex, Cheshire, Norfolk and Lincolnshire. Orange KL between November 10th and 25th was ringed as a male chick near Norwich in June this year, no previous sightings.

Not a colour-marked bird, but an odd-looking Mallard seen at close range at the Egleton feeders on April 8th had the metal ring GR80827. It was ringed here as a first-winter in December 2014 and then caught again in both 2015 and 2018 when it was realised that it was an intersex bird showing aspects of both male and female plumage.

Colour Ringing Projects at Rutland Water

Tim Sexton

Historically, there have been a number of colour ringing projects undertaken at Rutland Water. The use of coloured rings, also known as Darvic Rings, enables easier field identification of a marked bird and does not rely on the need to recapture an individual in order to identify it.

The best known colour ringing project locally is the Rutland Osprey Project. With over 250 birds ringed around Rutland Water since the project began. Resightings of birds colour ringed through the project come in from anywhere within the UK to as far away as sub-Saharan Africa.

Colour ringing projects at Rutland have also included studies of Moorhen, Wigeon, Cormorant and Black-headed Gull. In 2023 an application was made to the BTO to enable us to commence the colour ringing of Water Rail and Common Tern at Rutland.

Due to the outbreak of Bird Flu in early 2023, the decision was made not to colour ring any gulls or terns on the nesting platforms at Rutland Water during the summer as this would cause unnecessary stress to the adult birds and risk spreading the disease within the colony. It was also decided that the Cormorant colour ringing was too risky from a health and safety point of view, due to the condition of the trees in Burley Fish Ponds where the Cormorantry is located.

It is hoped that a programme for colour ringing Water Rails will start in the winter of 2023/24. It is also hoped that the colour ringing of Black-headed Gulls and Common Terns will be recommence in 2024.

A Water Rail with colour ring AAA fitted. ©Garry Barker

Breeding Bird Survey

Song Thrush © Lynda Schlemmer

Tim Sexton

The Breeding Bird Survey at Rutland Water uses territory mapping to indicate probable breeding of a range of passerine species within woodland, grassland scrub and wetland margin habitats. As in 2022 the survey consisted of a hybrid between the Common Bird Census and the BTO's more simplified Breeding Bird Survey (BBS). The survey requires only six visits to be made from late March to Early July, recording singing males to indicate a territory

Maps were produced for each of the survey areas and birds were recorded using the standard BTO letter codes along with a circle around the letters to indicate a singing bird, a line underneath to indicate a calling bird and a letter on its own indicates when a bird was only seen (and not calling/singing).

Analysis of the data was carried out at the end of the season and if a bird was recorded in the same area in two or three of the visits (depending on species) it was considered a probable breeding territory.

11 areas of the Reserve were covered across both the Egleton and Lyndon Reserves. These included Egleton Meadows, Hambleton Wood, Lyndon (from Shallow Water Hide to Swan Hide), Field 16, Lax Hill, Barnsdale Wood, Cottage Wood, Fieldfare area, AWBC to Lagoon 6, Cherry Wood and Gibbet Gorse to Berrybut Spinneys.

In total 984 birds of 36 species were recorded as having probable breeding pairs. This is a slight reduction from 2022, where 1,075 pairs of 37 species were recorded. The total is comparable to 2021 (which used the singing and seen methodology) where an estimated 1,254 pairs were recorded over 14 areas of the Reserve. 2021 (which used the singing and seen methodology) where an estimated 1,254 pairs were recorded over 14 areas of the Reserve.

Male Blackcap © Linda Schlemmer

The top six most-common breeding species in 2023 were identical to those in 2022 and 2021. However, Blackcap dropped from second position to fourth in 2023 following a third reduction in the number of breeding pairs year on year. The most common species in this year was Wren followed by Chiffchaff, Blackbird and Blackcap.

There was only one Nightingale territory in 2023, in Cherry Wood. No Nightingales were reported from elsewhere on the Reserve. There were no probable breeding records of Spotted Flycatcher, Linnet, Grasshopper Warbler, Marsh Tit, Mistle Thrush or Raven in 2023. All of which have bred on the Reserve or have presumed to have bred on the Reserve in recent years. However, Grasshopper Warbler were seen in the Tertiary Treatment Works (adjacent to the Volunteer Training Centre), although breeding could not be confirmed.

Results of the Rutland Water Breeding Bird Survey can be found in table 5.2

We are currently developing a GIS layer for recording and mapping breeding territories, which can be overlayed on the Reserve Management layer to help better understand the effects of management work on breeding bird populations. This is hoped to be complete in 2024.

In addition to the Breeding Bird Survey, surveys of colony nesting birds are carried out annually. This includes the Cormorant Colony/Heronry Survey, Black-headed Gull and Common Terns.

Cormarant Colony/Heronry Survey

Surveys of the Cormorant ColonyHeronry in Burley Fish Ponds were carried out on the 7th April, 21st April and 12th May 2023. The maximum number of nests counted was 80 (on the 12th May). There was little change between the number of Cormorant nests in 2023 compared to 2022. However, no Grey Heron nests or Little Egret nests were recorded this year. As the willow within Burley Fish Ponds is becoming increasingly dense, it is hard to see through the trees - especially once the leaves have opened.

A survey of Brown's Island found no nests this year (13 Cormorant nests were record in 2021 and two were recorded in 2022 at this location).

A summary of Cormorant, Heron and Egret nesting activity is shown in table 5.1. Survey results are submitted to the BTO to contribute to the national Heronries recording scheme.

Burley Fish Ponds Cormorant Colony/Heronry Nests			
Species	**2021**	**2022**	**2023**
Cormorant	63	82	80
Grey Heron	12	3	0
Little Egret	6	5	0
Total Nests	**81**	**90**	**80**

Table 5.1 Total nests in Cormorantry 2021 - 2023

Burley Fish Ponds Cormorantry/Heronry © LRWT

Gulls/Terns

As a consequence of Bird Flu, few Black-headed Gulls nested at Rutland Water this year. A small number of pairs (c.20) attempted to breed on Lagoon 4, but were unsuccessful, later abandoning their nests.

Two new Tern platforms were installed on Lagoon 3 in spring 2023. Common Terns nested and in August 54 large chicks were reported from the two platforms.

Rutland Water Breeding Bird Survey Results 2023												
Species/Area	Egleton Meadows	Hambleton	Lyndon	Field 16	Lax Hill	Barnsdale	Cottage Wood	Fieldfare	AWBC-L6	Cherry Wood	Gibbet to Berrybut	**Total**
Wren	35	18	19	14	13	15	8	7	13	22	7	**171**
Chiffchaff	22	12	18	17	12	18	0	3	9	17	5	**133**
Blackbird	11	7	18	7	7	11	5	4	16	9	7	**102**
Blackcap	8	9	12	11	12	8	2	3	8	12	2	**87**
Blue Tit	9	10	10	3	11	12	5	5	8	9	5	**87**
Robin	5	10	7	3	4	10	8	2	8	8	5	**70**
Willow Warbler	5	1	7	4	6	0	0	6	7	8	3	**47**
Garden Warbler	5	2	9	9	4	2	1	0	6	5	1	**44**
Great Tit	5	5	4	2	3	2	3	1	5	3	3	**36**
Chaffinch	2	6	9	1	1	3	4	0	5	1	0	**32**
Song Thrush	3	1	4	3	1	1	3	1	4	5	2	**28**
Sedge Warbler	1	0	9	4	2	0	0	6	5	0	0	**27**
Long-tailed Tit	1	1	4	0	4	3	2	1	0	1	0	**17**
Dunnock	0	1	3	2	1	1	0	1	4	1	1	**15**
Woodpigeon	0	0	0	0	1	0	0	0	7	0	2	**10**
Goldcrest	0	2	0	1	2	1	1	0	0	0	1	**8**
Rook	0	0	7	0	0	0	0	0	0	0	0	**7**
Reed Bunting	0	0	1	2	0	0	0	1	2	1	0	**7**
Reed Warbler	0	0	0	4	0	0	0	0	0	2	0	**6**
Whitethroat	0	0	3	0	0	0	0	2	0	0	1	**6**
Cetti's Warbler	2	0	0	2	0	0	0	0	0	2	0	**6**
Cuckoo	0	0	0	3	0	1	0	0	2	0	0	**6**
Goldfinch	0	0	1	0	0	0	0	0	4	0	0	**5**
Jackdaw	0	0	0	0	2	0	0	0	3	0	0	**5**
Lesser Whitethroat	0	0	2	0	0	0	0	0	2	0	0	**4**
Great Spotted Woodpecker	0	0	0	0	0	1	0	1	0	0	1	**3**
Nuthatch	0	0	0	0	0	1	1	0	0	0	1	**3**
Stock Dove	0	0	0	0	1	0	0	0	0	1	0	**2**
Treecreeper	0	0	0	0	0	1	0	0	0	0	1	**2**
Pheasant	0	0	0	0	0	0	0	0	2	0	0	**2**
Bullfinch	0	0	0	0	0	0	0	0	0	0	1	**1**
Nightingale	0	0	0	0	0	0	0	0	0	1	0	**1**
Carrion Crow	0	0	0	0	0	0	0	0	1	0	0	**1**
Collared Dove	0	0	0	0	0	0	0	0	1	0	0	**1**
Magpie	0	0	0	0	0	0	0	0	1	0	0	**1**
Tawny Owl	0	0	0	1	0	0	0	0	0	0	0	**1**
Spotted Flycatcher	0	0	0	0	0	0	0	0	0	0	0	**0**
Linnet	0	0	0	0	0	0	0	0	0	0	0	**0**
Grasshopper Warbler	0	0	0	0	0	0	0	0	0	0	0	**0**
Marsh Tit	0	0	0	0	0	0	0	0	0	0	0	**0**
Mistle Thrush	0	0	0	0	0	0	0	0	0	0	0	**0**
Raven	0	0	0	0	0	0	0	0	0	0	0	**0**
Total Breeding pairs	**114**	**85**	**147**	**93**	**87**	**91**	**43**	**44**	**123**	**108**	**49**	**984**

Table 5.2 Rutland Water Breeding Bird Survey results 2023

Male Smew - one of 12 recorded in 2023 © Tony Clarke

Rare Bird Report

Tim Appleton

Whooper Swan
Seven Whooper swans made a brief stopover as they headed north on 27th March. Returning birds arrived from 12th to 17th October, a flock of 10 on 21st and two on 12th December.

Pink-footed Goose
A skein of 28 flew over heading west on the 11th November a single bird was seen on 17th December along with one on 4th and 5th January.

White-fronted Goose
Two adults on Lagoon 4 on 6th February.

Common Scoter
A relatively poor year with pair on 10th April, four on 21st October, four females on 17th November, two femalees from 26th November to 12th December. Most records are reported from Main Water as scoter rarely visit the lagoons.

Velvet Scoter
A female was found on Lagoon 2 on 7th of January staying until 9th.

Smew
The peak count for 2023 was 13 birds on 14th February.

Red-breasted Merganser
A female located close to the Dam on 22nd October was the only record. Unlike Goosanders who prefer fresh waters, mergansers are more likely to be seen at sea.

Great Northern Diver
Great Northern Divers were recorded from January 1st to 26th March, during this time, two birds were seen mainly coming to roost of the dam. A returning bird seen at the Dam on 1st November was joined by two more and all three remained until the end of the year.

Slavonian Grebe
A single bird was first sighted on the 9th January remaining until 6th May, arriving in winter plumage leaving in full breeding dress! A single bird was seen on 30th October and another on 12th November, then two on th 29th and one until the end of the year.

Black-necked Grebe
A pair in full breeding plumage were seen on Lagoon 6 on 29th May, a juvenile from 29th August remained throughout September and probably the same bird intermittently until 11th November.

Bittern
2023 was a relatively poor year for Bitterns, two records in January, three in February, single records in March, April and May then two on 12th August.

Cattle Egret
A single bird was present from 9th to 11th June, three were feeding close to the cattle on 17th. A bird stayed from 11th to 22nd September and another from 10th to 12th November. It may not be long before they breed in the County.

Great White Egret
The peak count in 2023 was 50 at roost on 12th September.

Spoonbill
An adult was recorded on 6th May on lagoon 4. August saw birds dispersing from breeding sites with 2 adults and 4 juveniles from 29th and five still on the 31st August (all on Lagoon 4).

White-tailed Eagle
A satellite tagged bird recorded on the shore of North Arm 1 on 10th and 11th August.

White-tailed Eagle © Tim Sexton

Merlin
A single bird seen flying across the Dam on 15th March.

Jack Snipe
Surprisingly the only record was on Lagoon 3 on 22nd February, surely underrepresented as there is suitable habitat on the reserve.

Temminck's Stint
One record between 30th May and 1st June on lagoon 4

Arctic Skua
A dark phase Arctic Skua flew through lagoon 3 on 21st of April

Mediterranean Gull
Still relatively uncommon, Mediterranean gulls were recorded in March, April, May, June, July and October, almost all were single birds joining roosting gulls mainly on lagoon 4.

Little Gull
The only records were on spring passage single on 1st and six on 21st April.

Kittiwake
An excellent year for a species rarely seen inland. One from 14th to 17th January at the Dam , singles on 7th , 12th and 17th April and eight on 29th May.

Little Tern
Spring passage began with one on 23rd April on Lagoon 3, another was seen at Burley Fishponds on 6th and 8th of May, two Birds were seen feeding on lagoon 3 on 3rd June.

White-winged Black Tern
A juvenile was on recorded on Lagoon 3 on 17th August

Sandwich Tern
There were four records of Sandwich Tern in 2023, a single on 1st May and another on 17th and 18th June on Lagoon 4, then three over Burley Fishponds on 10th August and one off the peninsula on 17th September.

Short-eared Owl
Almost all the Short-eared Owl sighting were birds hunting over the rough grassland areas on Lagoon 1. One on 1st September, one on 18th October, 5 records in November.

Rock Pipit
A single bird on 17th October, two birds on 18th October and a single bird on 5th November. Most sightings come from the Dam wall.

Black Redstart
One frequented the area around the Volunteer Training Centre on 27th November, a species rarely recorded on the reserve.

Common Redstart
A single record of a female on 2nd May, a species possibly under recorded on the reserve.

Firecrest
Unlike Goldcrest, Firecrest is a very rare bird on the reserve so when was found on 15th April in full song near Lagoon 2, it brought in many observers to watch this little jewel.

Willow Tit
Considered to be the UK's fastest declining resident breeding bird, two juveniles ringed on 20th August gives hope that a pair are breeding nearby.

Bearded Tit
A male was seen in the reedbed on Lagoon 3 on 4th April. Prone to post breeding erupting in the autumn and locating to new sites, hopefully the extensive reedbed will one day have breeding birds.

Common Redpoll
This will no doubt be the last report of Common Redpolls as the International Ornithological Committee (IOC) has lumped all three species of Redpolls as Redpoll. So a large flock of Siskins, Lesser Redpolls and two Common Redpolls on 10th December in Alder trees near Lagoon 2 will be the last!

Motus Station
Scanning the Airwaves for Wildlife


Motus Station at Rutland Water © LRWT

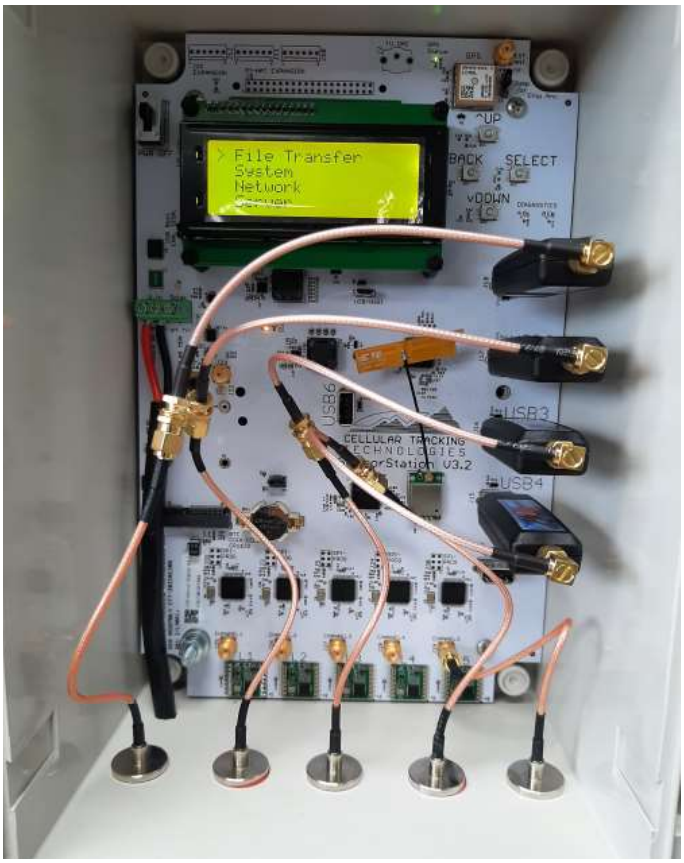
Tim Sexton

A novel method for tracking the movements of wild birds and other animals has gone live at Rutland Water Nature Reserve in 2023.

The Motus project is a collaborative global initiative to track the movements of birds and other small flying animals using radio telemetry tracking. Bats, birds and even creatures as small as butterflies and hornets can be fitted with tiny tags which emit a radio signal, meaning they can be tracked and will shed light on the incredible migration journeys these animals make.

Motus connects a community of conservation organisations, scientists and researchers through a network of monitoring stations situated at key wildlife sites across Britain, Europe and beyond. There are currently more than 2,000 stations across 52 countries operating, with some 800 projects being undertaken, tracking 394 different species worldwide.

While the network of Motus stations is well established in continental Europe and North America, the UK has only recently begun to join the movement and Rutland Water Nature Reserve is the latest site in the country to join the community by installing a Motus Station of our own.



The Motus Receiver Station at Rutland Water and above, the receiver tower near the Volunteer Training Centre

As an internationally important site for overwintering waterfowl, it is hoped that the Motus station at Rutland Water will enable us to discover more about the movements of some of our more secretive winter visitors which cannot be easily monitored through traditional surveys. It will also enable us to study tagged animals from other projects from across the UK and beyond.

Through Motus, animals are tracked using a small digitally coded tag transmitting at 150.1MHz (VHF). As a tagged animal approaches a receiver tower, the antenna pick up the tag's 'Pings' (which are programmed to be broadcast up to every few seconds). Tagged animals can be detected from as far away as 15km (depending on conditions). Once a 'ping' has been detected, data from the receiver stations is sent via a WiFi link to a central database, allowing near real-time tracking.

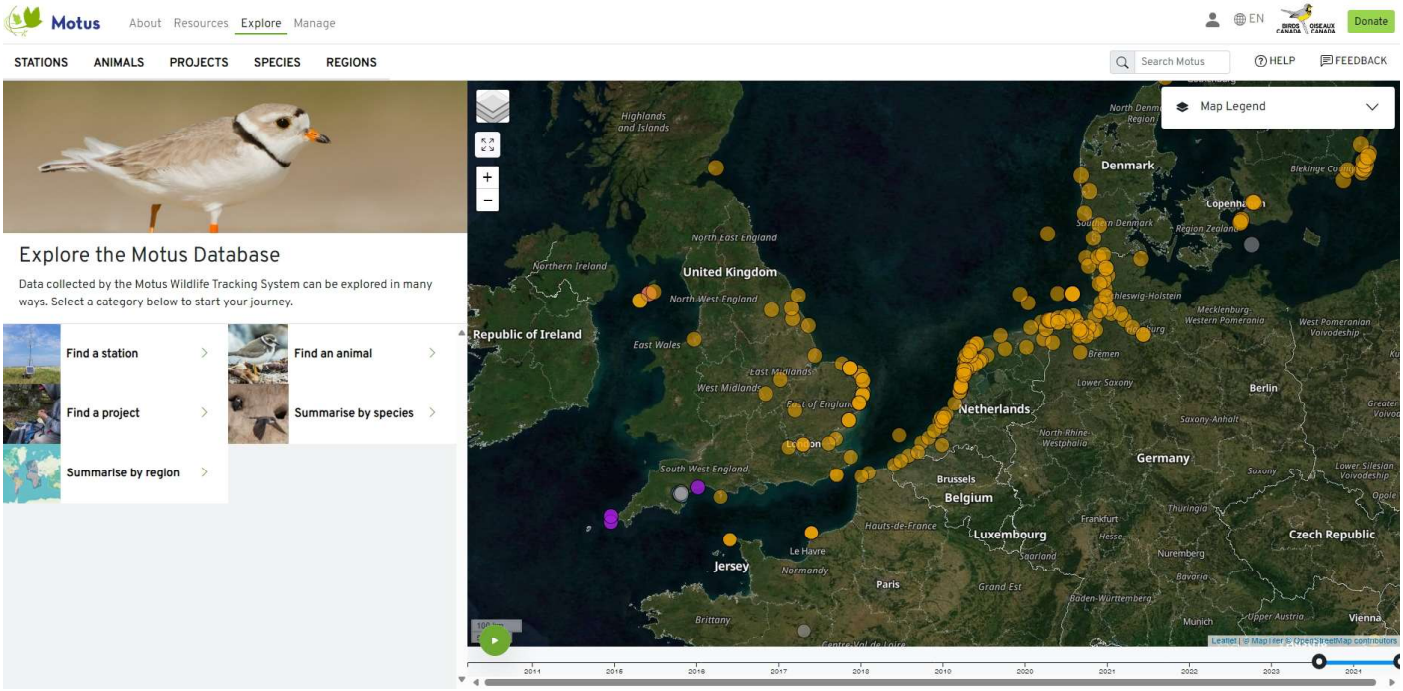
Most of the data collected through Motus is open source and can be viewed by anyone on the Motus website - motus.org

While Motus can be used in conjunction with other tracking methods (such as ringing), one of its main advantages over traditional methods is that there is no need to retrap the animal in order to understand its movements. As long as the battery lasts, the tag will continue to broadcast 'pings' which will be picked up by nearby receivers. After a period of time, the tag is either groomed off or moulted out.

The installation of the Motus receiver station at Rutland Water was funded by a host of local wildlife groups in the East Midlands including Leicestershire and Rutland Ornithological Society, Rutland Natural History Society, Rutland Local Wildlife Group, Leicestershire Bat Group, Rutland Water Ringing Group and Derbyshire Bat Group, along with corporate support from Anglian Water.

Monitoring Nathusius' Pipistrelle Bats at Rutland Water © Tom Bennett

Following generous donations totalling £5,000, which not only funded the cost of the receiver station, but also six tags (to be used in the Spring to monitor Nathusius' Pipistrelle Bats), it is hoped that further funds can now be raised to purchase additional tags to begin a project to monitor Jack Snipe, a secretive wading bird that visits the UK in the winter, and Water Rail, a secretive relative of the Coot and Moorhen.



Screenshot from the Motus dashboard showing locations of Motus stations in Britain and Europe © Motus.org

Small Mammal Camera Trap Project


Harvest Mouse © LRWT

Beth Fox

In 2022, a novel approach to monitoring the small mammal population at Rutland Water Nature Reserve using camera trap tunnels was trialled. Following the success of these trials, the use of this method has continued to map the distribution of small mammals across the reserve.

Replicating the methodology of the study by Littlewood et al (2021), this method allows for multiple species to be recorded at once, which is particularly beneficial for monitoring small mammals due to their mostly nocturnal behaviour and how easily they often go unnoticed. One of the main goals of this study was to have a better understanding of the distribution of Water Shrews as prior to this there were only three confirmed records across the reserve. Another advantage to this method is that as minimal interference is required the camera tunnel can be left to run for long periods of time, and so removing the invasive nature and associated welfare risks of live trapping small mammals using Longworth traps.

The camera trap tunnels measure 615mm x 230mm x 190mm and were constructed with 20mm thick timber with a Perspex roof to allow for extra light, with a hinged compartment at the end of the tunnel to house an Apeman H60 (24mp) trailcam. In order to capture images at such close range, the trailcams are adapted with a 58mm HAMA 4+ close-up filter, attached with Blu-Tac®. A shallow 'bowl' routed into the base of the tunnel ensures that when baited small mammals are at the optimum distance from the camera to focus. Five camera trap tunnels were built for use at each location. PIR sensitivity was set to high on the trailcam to avoid activations from moving vegetation, with images taken at 30 second intervals to reduce repeat photos of the same individuals, and IR settings reduced to low to avoid 'white-out'.

From May to December 2023, volunteers placed the camera traps at 11 different locations on the north end of the Egleton Nature Reserve site. At each location, the five tunnels were spread out to cover the area, and baited with a handful of premium bird seed, half as many casters (fly pupa), and a small handful of apple chunks. Tunnels were left for one week, then re-baited and left for a further week. Memory cards of the cameras were taken and replaced each week. Volunteers examined all of the images, taking note of information on the species and frequency, and the date and time that the camera was triggered. The central point of each location has been used to display the data on the maps.


Small Mammal Camera Trap Tunnel © LRWT

Results
The total camera trap triggers amounted to 3,165, comprising of 30 species (see table), of which 3,074 were triggered by small mammals. Eight small mammal species were identified and are focused on in this report: Wood Mouse, Harvest Mouse, Bank Vole, Field Vole, Common Shrew, Pygmy Shrew, Water Shrew, and Brown Rat. See table two for the table showing total triggers by small mammals at each location.

There is a relatively even distribution across the site of all the species, with a few exceptions that will be discussed, as can be seen in the pie charts in figure …. Across the site, shrews were marginally the most abundant species (34%), largely due to a high number of Common Shrew, followed by voles (33%), mice, (22%), and finally Brown Rats (11%). The greatest amount of activity (total number of activations) was centred around the Anglian Water Birdwatching Centre (AWBC), with the highest number of activations recorded in the Lagoon 1 and 2 Channels (23%), followed by the AWBC North Meadow (21%), and by Mallard Hide (15%). These areas are some of the most established wetland parts of the Nature Reserve and consist of a mix of wetter areas of reedbed and tussocky vegetation - which is managed with the use of cattle grazing and topping of the grass in the autumn/ winter.

Common shrews are one of the most common British mammals and were the most numerous small mammal species on the reserve, being seen in high numbers at ten of the 11 locations monitored. Pygmy Shrews were also seen at the same locations as Common Shrews, although in much lower numbers, with both of these shrews being most commonly found in the locations surrounding the AWBC.

Water Shrews were only captured in six of the 11 locations, spread across the site from the Lagoon 3 Reedbed to the AWBC North Meadow in the notably wetter areas. They were found to be most prevalent in the Lagoon 1 and 2 Channel, which is predominantly reedbed, with 55% of the total Water Shrew's trailcam triggers occurring there. Interestingly, no Water Shrews were found to be at the Pollards by L3 Reedbed location, despite footage from other camera traps which were focused on a Water Vole raft showing Water Shrews feeding in this area.

Common Shrew © LRWT

Field Voles are the most common British mammal, and are the second most numerous on the reserve, found at nine of the 11 locations, but with the highest densities being found around the AWBC.

Bank Voles were also found in similar locations to Field Voles, but most abundantly in areas more dominated by reedbed, where the Field Voles can be seen in the taller areas of grassy vegetation. Water Voles are conspicuously absent from the findings, despite records showing the presence of this species across the reserve, especially in the Pollards by L3 Reedbed area where evidence of them has been found on the Water Vole rafts.

Wood mice were found in every location sampled and quite commonly seen across the reserve, being most abundant in the Egleton Meadow where they made up 53% of the trailcam triggers for that location. Wood Mice are adaptable to different habitats, but prefer drier areas, and those areas on the reserve which are proportionately more dominated by Wood mice tend to be drier, such as the Egleton Meadow.

Unusually, Harvest Mice were found only in the Mallard Hide location, an area of shorter grass and Juncus tussocks, which would be considered to be sub-optimal habitat for this species. Surveys of Harvest Mouse nests throughout winter which took place in the reedbeds on the reserve found nests in the Lagoon 1 and 2 Channel area and in the area to the right of the L3 Reedbed showing that they are present in other areas of the reserve.

Wood Mice © LRWT

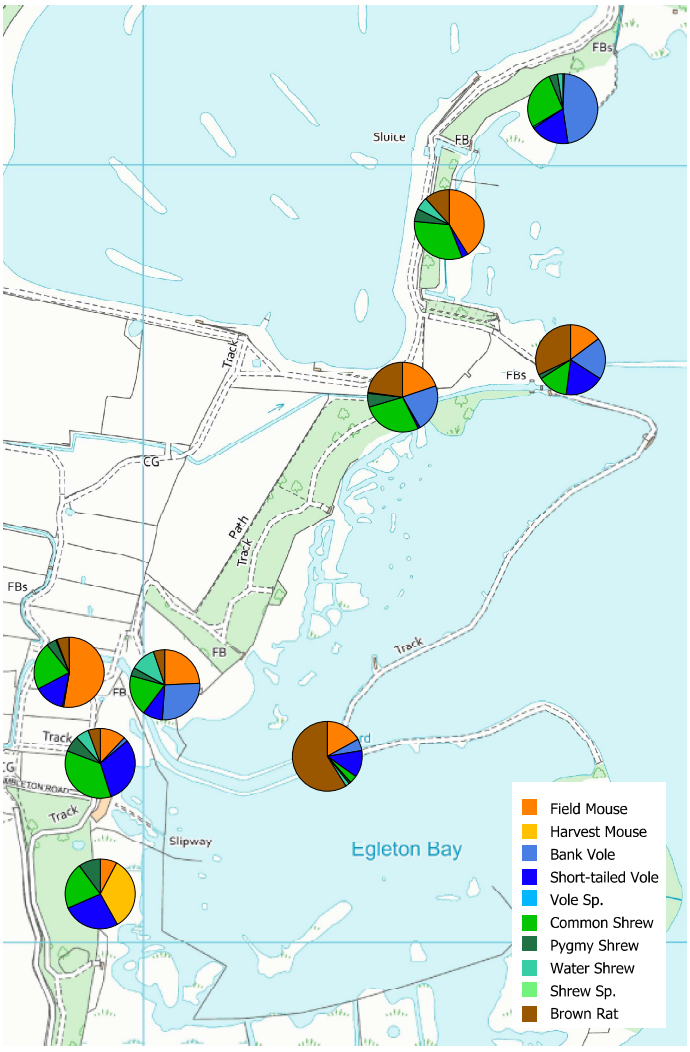
Brown Rats were the least common small mammal on the reserve, seen at nine of the 11 locations. There may be concerns that the Brown Rats may outcompete with the other species, however, the low number of Brown Rats, and that at most of the locations other species appear to tolerate the presence of Brown Rats, suggests that they may not be such an issue here currently.

The only location where they appear to dominate is the Sand Martin Channel, where 59% of trailcam triggers were caused by Brown Rats. Here there are much fewer shrews, voles, and mice, but comparatively there are far fewer small mammals as a whole in this location.

The lack of trailcam triggers at the Pollards by L3 Reedbed was unusual, whereas mentioned, both Water Voles and Water Shrews did not enter the camera trap tunnels despite there being evidence of both these species in this area. Camera tunnels in use by the Mammal Society in the surrounding Leicestershire and Rutland area have had Water Voles entering unbaited tunnels, and so this species will enter these types of tunnels. The placement of the camera trap tunnels may have been the reason for the lack of triggers, as they were located at the top of a steep one-metre-high bank which is at the back of the reedbeds.

With both Water Voles and Water Shrews feeding closer to the water, it may be beneficial to trial the use of floating camera tunnels in the future. The camera tunnels have since been placed again in this location in areas that were dry enough at the base of the bank, but this data will be disseminated in the 2024 annual report.

The distribution of all the small mammals recorded in the Small Mammal Camera Traps in 2023 can be seen in figure...



Distribution of small mammal totals at each location (pie charts scaled to represent sample size at each location).

Totals of species recorded at all locations			
Badger	17	Polecat Ferret	1
Bank Vole	483	Pygmy Shrew	179
Blackbird	1	Rabbit	1
Blue Tit	1	Robin	8
Brown Rat	341	A Sheep	1
A Bush Cricket	3	Shrew sp.	1
A Cat	1	A small bird	1
Chaffinch	1	Smooth Newt	2
Common Shrew	730	A Thrush	1
Dunnock	1	Vole sp.	2
Field Vole	517	Water Rail	5
Grass Snake	2	Water Shrew	150
Great Tit	2	Weasel	4
Grey Squirrel	22	Wood Mouse	513
Harvest Mouse	158	Wren	4
Moorhen	1		
Otter	11	Total Triggers	3,165

Totals of every species recorded across all locations.

Other interesting species to note caught on the trailcams include Water Rail, with five trailcam triggers in the Sand Martin Channel, an area that had not been surveyed for their presence. Otter numbers have been on the rise in recent years and were seen in six locations spread from the AWBC North Meadow to the Pollards by L3 Reedbed. Badgers were caught on the trailcam in six locations, predominantly centred around the AWBC and in the area surrounding Ramsar Field (north of the Ramsar and Osprey Hide location). Two Grass Snakes were seen, with one each at the AWBC North Meadow and at Grebe Hide. Weasels were in three locations, Ramsar and Osprey Hide, Lagoon 1 and 2 Channels, and the AWBC North Meadow, so in the areas with particularly high small mammal populations. The Polecat Ferret was captured on the trailcam in the Egleton Meadows.

Badger © LRWT

With special thanks to the group of volunteers running this study, the camera trap tunnels are continuing to be placed in different locations, helping to build up this bigger picture of the small mammal species distribution across the reserve.

The Lizards of Lax Hill

Tim Sexton

Common Lizards have been seen at Rutland Water for the first time since 2020. In June 2023 we received a record of a pregnant female Common Lizard which was spotted in one of the recently cut woodland scallops at the top of Lax Hill (near Robin Hide). Further records followed in August and September from around the Pumping Station area of Lax Hill and the Kingfisher Hide area of Lagoon 8.

The common Lizard (Zootoca vivipara) is widespread in Britain, although it is considered to be declining due to habitat loss. They can be found in a range of different habitats including woodland, heathland, moorland and grasslands. Also known as the Viviparus Lizard, they are unusual among British reptiles in that they give birth to live young rather than laying eggs.

As its name suggest the Common Lizard is the most common species of lizard found in the UK and are widespread throughout the country. However, they are considered to be uncommon in Leicestershire and Rutland, but fairly widely scattered across Charnwood Forest and Rutland with a few records in West Leicestershire.

Common Lizards were not always found at Rutland Water Nature Reserve. In 2007 there was a project to translocate over 50 common lizards to Lax Hill, in the heart of the Reserve, from a proposed development site at the Wing Water Treatment Works. A team of volunteers from the Nature Reserve laid down corrugated tin sheets across the development site, which absorb heat and create provided shelter for the lizards. They then collected the lizards over a period of a few weeks through the early summer.

The lizards were moved to the south-facing side of Lax Hill on the Nature Reserve, where a suitable receptor site had been created using piles of rocks within an existing area of acid grassland and gorse scrub. Despite the volunteer's best efforts to save the lizards, the project was initially considered to have failed as in the years following the translocation, no lizards could be found during subsequent surveys.

It was not until 2020, when Reserve Officer Paul Trevor saw two Lizards along a grass ride in the Wedlock Wood area of Lax Hill, that the success of the translocation could finally be confirmed.

Despite Common Lizards being widely distributed in the local landscape, there was just one other historic record for them at Rutland Water Nature Reserve prior to the translocation, near Burley Fishponds in 2007.

Following the recent findings, there are plans to create stone reptile refugia in the areas where Common Lizards have been recorded around Lax Hill. This will take place during the winter of 2024/25.

Dragonfly Survey of ponds at Rutland Water

19 species of dragonfly were recorded at Rutland Water Nature Reserve in 2023 including the scarce Lesser Emperor - the first confirmed record of this species on the Reserve and one of less than 10 records in VC55!

Southern Hawker © Tony Clarke

Tony Clarke and Tim Sexton

Objectives
To survey and record the presence and diversity of dragonflies on 31 identified ponds located on the RWNR (including Lyndon), covering a period from May to October 2023.

To include the total numbers of species present at each pond and its immediate habitat, including evidence of breeding activity.

To report on the general condition of the on-site ponds at RWNR that currently hold/don't hold populations of dragonflies with a view to the future management of those ponds and their adjacent habitats.

To provide any additional information relating to dragonflies and their habitats, identified during the survey, that might be of interest and/or direct future management.

Introduction
Dragonflies belong to an order of insects called Odonata. Odonata are divided into two groups (or sub-orders) comprising Anisoptera (dragonflies) and Zygoptera (damselflies). Dragonflies are the larger and more robust looking insects and are 'fast fliers'. Damselflies are smaller and more flimsy looking insects with a slow 'fluttery flight'. The name 'dragonfly' is commonly used to describe both dragonflies and damselflies – a convention adopted in this survey report.

Dragonflies spend a considerable amount of their lives under water as larvae, typically up to 2 years but in some species it is longer. They emerge from Spring onwards, usually overnight or early in the morning. Timing of the emergence of larvae is temperature dependent and varies among species. All emerging dragonflies spend a few days 'maturing' in what is known as known as the teneral stage. Once mature, they lead short but very active lives. They are frequently seen near water, (ponds, streams and lagoons) which they need for breeding. They are also seen away from water and can be found almost anywhere on the reserve. Their short lives include feeding, which is mostly done on the wing (and sometimes far from water); mating (which involves the males and females joining together in a so called 'mating wheel') and egg laying or ovipositing. Most dragonflies only live for a week or two as an adult, but can sometimes live for as long as 6-8 weeks.

Historically there have been few if any formal studies of dragonflies at RWNR. 2022 saw the first 'scientific' survey of dragonflies on 31 ponds that might hold populations of dragonflies . A report was produced in March 2023. The report was summarised as a 'Dragonfly Survey Report' in the published 'RWNR Annual Wildlife Report 2022'. In addition, Trust staff, along with many volunteers and visitors are knowledgeable about dragonflies and 'casual' sightings are often recorded at the visitor centres during their flight periods.

Method
The survey method is based on the 'point count' survey guidance developed by the British Dragonfly Society. It is designed to collect data on species richness, abundance and evidence of breeding activity. A series of maps were created showing the locations of 31 ponds and temporary pools which could support populations of dragonflies.

Monthly visits were made to each pond by volunteer Tony Clarke between May and September 2023. Sadly, the adverse weather conditions and lack of surveyor availability prevented a survey in October, although roving visits are included. Survey visits to the Lyndon sites were also affected by surveyor availability.

Recording visits were made on: 27th and 28th May, 24th and 26th June, 26th July 2022, 19th and 24th August, 15th and 16th September.

Counts were made on the south facing (north) side of each pond wherever accessible. Counts were timed at 5 minutes. At large ponds, individuals were counted 2m inland and 5m into the water. At small ponds, it was possible to count species covering the whole pond and pond-side vegetation. For each species encountered, counts were made of the number of individual adults observed. Mating pairs were counted as two individuals and, individuals (or 'in –tandem' pairs) seen ovipositing were counted as singles or pairs respectively. A scale was used to aid recording where large numbers of dragonflies were present: A=1, B=2-5, C=6-20, D=21-100, E=101-500, F=500+.

In addition to the timed pond counts, further information on the presence of dragonflies on the reserve was obtained as a result of a number of 'roving visits'. These were observations made during travel between ponds on survey visits and separate visits to look for both early and late flying dragonflies and species that might only be on the wider reserve and lagoons.

As air temperature is an important factor in dragonfly recording; surveys did not take place when the temperature was above 30°C or below 17°C in the shade (15°C if the weather was sunny and calm). Surveys were not carried out if it was raining or if the wind strength was greater than 18mph (force 4 on the Beaufort scale).

Close-focus binoculars and a camera/telephoto lens were used to aid recording. Two field guides were used to aid identification. 'Britain's Dragonflies' by Dave Smallshire and Andy Swash; and 'Field Guide to Dragonflies and Damselflies of Great Britain and Ireland ' by Steve Brooks and Richard Lewington.

Southern Hawker ©Tony Clarke

Pond	Location	Incl.	Comments
1	Burley Fish Pond	Yes	Large body of water
2	Not Marked on map	No	
3	Cherry Wood 1	Yes	
4	Cherry Pond 2	Yes	
5	Cherry Wood 3	Yes	
6	Cherry Wood 4	Yes	
7	Sharple's Meadow	Yes	Dry by Sept
8	Access Track	Yes	Improved since 2022
9	Egleton Meadows 1	No	Temporary pool, dry
10	Egleton Meadows 2	No	Temporary pool, dry
11	Optics Field L1	Yes	
12	In front of AWBC	No	No visits
13	Raised Pond AWBC	Yes	
14	Education Pond AW	Yes	
15	Education Pond 2	Yes	Hard to access
16	Fran's Pond	Yes	Dried by end July
17	Pintail Hide	Yes	
18	Robin Hide	Yes	
19	Bottom of Lax Hill	Yes	Improved since 2022
20	Lagoon 8 - off track	No	Not identified
21	Field 16 1	Yes	
22	Field 16 2	Yes	
23	Cycle Track L5/L7	No	No visits
24	Cycle Track L7	Yes	No visits
25	Sloping Field 1	No	Not identified
26	Field	No	Not identified
27	Manton Bay	No	Not identified
28	Lyndon VC	Yes	
29	In front of Lyndon	Yes	
30	Field 1/2	Yes	
31	Gibbet Gorse	Yes	No dragonflies

Results
A total of 19 species of dragonfly were recorded during the survey period. Of note, for the second year running, was the very low number of Broad–bodied Chasers recorded. Willow Emerald records were lower than 2022, with one new location. A highlight was the first confirmed sighting of a Lesser Emperor Dragonfly at Rutland Water, on 26th June. This is only the 6th Lesser Emperor record for the Leicestershire and Rutland recording area (VC55) and only the first record since 2012. When it was found, the Lesser Emperor was dead and in the process of being eaten by a Hornet (figure ...) but enough of the insect remained to allow identification.

It is not possible to quantify the total number of dragonflies present over the while Reserve throughout the year, as this survey only provides a sample of the numbers seen and recorded on the Reserve's smaller water bodies.

As in 2022, it was not possible to locate all 31 ponds identified for the survey, probably due to some of the smaller ones having dried out. Also, Pond 15 soon became overgrown and inaccessible, resulting in limited recording. That said, the ponds that held water throughout the survey period produced the best variety of species in 2023. This is evident from the species maxima counts in annex 5. The ponds in Cherry Wood (ponds 5 and 6), the Education Pond next to the AWBC, the two ponds in Field 16 and ponds 19 and 22 had the highest species abundance. The species maxima for each location can be seen in figure...

Roving Records
Dragonflies are strong fliers and can often be recorded well away from water, typically over grassland, scrub and wildflower meadows, where there is an abundance of invertebrate prey. Roving records help to provide a fuller picture of their presence on the Reserve.

In April 2023, there were several teneral Common Blue damselflies in evidence in the vegetation on the paths and rides.

By May and June, Red-eyed damselflies were present on the marginal vegetation on Lagoon 5. They were visible from 360 Hide and Shelduck Hide. Good numbers of Black-tailed Skimmers were evident on paths around the reserve, especially on warm sunny days., including a mating pair. Damselfly numbers were building up substantially with Common Blue, Blue-tailed, Azure and Red-eyed damselflies visible on vegetation. Damselflies in the 'mating wheel' were also starting to appear along some of the paths. Good numbers of Emperor dragonflies were visible flying around the reserve and Ruddy Darters numbers were building.

Lesser Emperor being eaten by a hornet on 26th June 2023 ©Tony Clarke

July continued the build- up of larger dragonflies around the reserve, including Lyndon, with mostly male Emperor, Brown Hawker and Southern Hawker dragonflies frequently seen in-flight. On paths increasing numbers of Black-tailed Skimmers were evident and larger numbers of Ruddy Darters were seen hunting away from water. A first Common Darter was seen close to Lagoon 4. Banded Demoiselles were sighted. As in 2022, several of the smaller ponds were now drying up due to the hot temperatures.

By August, the three larger dragonflies – Male and female Emperor, Southern and Brown Hawkers were commonly visible around the reserve. The first teneral Migrant Hawkers were visible from paths and rides. Species of 'blue' damselflies were common on vegetation along the paths. Ruddy Darters remained most numerous with Common Darter numbers starting to build. Interestingly, unlike 2022, Willow Emerald did not appear to be as visible around the reserve. Ponds holding any significant level of water were becoming fewer and fewer and vegetation levels were reducing the volume of visible water, making it harder to detect ovipositing dragonflies.

In September the most commonly seen hawker dragonfly seen on walks around the reserve was the Migrant Hawker, with numbers building. Plenty of Darter dragonflies were visible with Common Darters overtaking the numbers of Ruddy Darters. Ageing Black-tailed Skimmers were still on the wing including a mating pair. Willow Emerald appeared to be the dominant damselfly by the end of the month. A second Lesser Emperor sighting was reported by a reliable observer.

Ruddy Darter ©Tony Clarke

By October dragonfly numbers had fallen considerably around the reserve, with most sightings being limited to Common Darter, Southern Hawker, (reducing) Migrant Hawker and Willow Emerald.

Species Maxima per Location 2023

Species/Pond location	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Azure Damselfly			B	B	C	C	C	C			B		B	D	C		C		C		B	B									
Banded Demoiselle												A																			
Willow Emerald						A								B		A			B			C									
Variable Damselfly																															
Common Blue Damselfly	D		C	C	B	D	C	B			C	C				C		B	C		C	C							C		
Red-eyed Damselfly																	A														
Small Red-eyed Damselfly																															
Blue-tailed Damselfly	B		B	B	B	B	C	B			B					B	A				C										
Emerald Damselfly					C	B		B			A	A		B	B	B															
White-legged Damselfly																															
Large Red Damselfly				B	B	B												B										B			
Southern Hawker						A								B							A	A								
Brown Hawker					A	A															A	B									
Common Hawker																															
Migrant Hawker	A					B								A			A	A	A			A									
Emperor Dragonfly			B														A														
Hairy Dragonfly			B	B	B	A					A								A		A										
Broad-bodied Chaser								A																							
Four-spotted Chaser			B	A	C		A				A								A												
Black-tailed Skimmer	B														A	A			A												
Ruddy Darter	C		B	B	B	C	B	A			B	B	A	C	A	C	B		C		B	B							A	A	
Common Darter					B	C	C	A					B	B		C	C					B									
Lesser Emperor						A																									
Total Species	**5**		**7**	**7**	**10**	**13**	**6**	**7**			**7**	**4**	**3**	**7**	**4**	**7**	**7**	**3**	**8**		**7**	**8**						**1**	**2**	**1**	**0**

Summary

The 2023 survey was the second 'scientific 'survey of Odonata conducted at Rutland Water Nature Reserve (RWNR). It used the standardised survey methodology based on the 'point count' survey guidance developed by the British Dragonfly Society. The survey was conducted between May and October 2023.

A total of 19 species of dragonfly were recorded during the survey period –a number expected to be present at RWNR. over that period. Of note, for the second year running, was the very low number of Broad–bodied Chasers recorded: Willow Emerald records were lower than 2022, with one new location: and the first confirmed sighting of a Lesser Emperor Dragonfly on 26th June. The latter being only the 6th Lesser Emperor for VC55 and the first record since 2012. When it was found, the Lesser Emperor was in the process of being eaten by a Hornet but enough of the insect remained to allow identification.

It is not possible to comment on the total number of dragonflies present throughout the year as this survey only provides a sample of the numbers seen and recorded on the reserve's identified dragonfly ponds.

The 'coded system' (see 5.3) used for counting, worked well for survey purposes, and continues to provide the Trust with a basis for the regular recording of dragonflies on its identified dragonfly ponds. If a sample of dragonflies across the whole reserve is required, the option of an additional e.g. 'transect –based' approaches remains open - similar to the Butterfly Transect.

As in 2022, it was not possible to locate all 31 ponds identified for the survey, probably due to some of the smaller ones having dried out. Also, Pond 15 soon became overgrown and inaccessible, resulting in limited recording.

Likewise, the ponds that held water throughout the survey period produced the best variety of species in 2023. This is evident from the species maxima counts. These ponds in Cherry Wood (ponds 5 and 6), the Education Pond next to the AWBC, the two ponds in Field 16 and ponds 19 and 22.

Pond 7 in Sharple's Meadow and pond 16 Fran's Pond, have the attraction of being accessible to visitors who might be interested in dragonflies. Both dried out quickly during the hot summer and are in need of attention. Fran's pond however did re-fill by the autumn, presumably as a result of water management. One possibility would be to provide these two ponds with liners, which might aid the retention of water in the summer, ensure more regular appearance of dragonflies and make them an attractive visitor experience. This might be done as part of a general overhaul of these two ponds.

Attracting good numbers and varieties of dragonflies to ponds requires regular pond maintenance. Dragonflies will always seek out opportunities to visit and breed in favourable habitats and good conservation management can make a big difference. Scheduling the maintenance of dragonfly ponds on a rotational basis (including Lyndon) as part of annual reserve management plans (where resources allow) should be seen as good practice and will aid the presence and conservation of dragonflies on the Reserve. Additional ponds can also help.

There was no visible impact from the increasing number of Willow Emeralds on the reserve on the population of Common Emerald damselflies in 2023 as speculated in the 2022 survey.

It is worth repeating that Willow Emerald damselflies lay their eggs on the branches of Willow and other soft trees that overhang dragonfly ponds. These eggs over winter in these branches which means care should be taken to identify and protect these branches from any winter pond maintenance activities that might otherwise see these branches cut down. The location of the eggs is easily observable by the scarring that is created by the damselflies as they lay their eggs.

Mating pair of Willow Emerald Damselfly © Tim Sexton

Dewick's Plusia (*Macdunnoughia confusa*) © LRWT

Moth Recording

2023 Summary (Tim Sexton)

A total of 22,167 moths of 453 species (294 macro and 159 micro) were recorded in 2023. An increase in individual moth numbers, but slight decrease in species from the previous year (14,070 moths of 469 species in 2022). A cool and unsettled start to the year meant that fewer sessions were run in the early parts of the year, leading to fewer spring moth species being recorded.

The increase in overall moth numbers is largely attributed to the haul of Water Veneer (Acentria ephemerella) and Willow Ermine (Yponomeuta rorrella) caught during the Mega Moth Night event in August - when over 2,800 of each species were recorded on Lagoon 2 Meadow. A total of nine new species were added to the Reserve's Moth List in 2023, including two macro moth species and seven micro moth species (see table 12.1). This brings the total number of species of moths recorded at Rutland Water to date up to 759 (341 Micro, 419 Macro) - note this figure does not include aggregates (species which cannot be confidently identified in the field without microscopic examination).

Regular moth nights were run throughout the year at Cherry Wood/Lagoon 3 Reedbed, Lyndon Visitor Centre and at the Rothamsted Trap at AWBC. With occasional sessions at Lax Hill and a 'Mega Moth Night' was held in August.

New and notable macro moths in 2023

Kent Black Arches was a welcome addition to the Reserve list in 2023 - with two individuals caught in the Rothamsted Trap (adjacent to AWBC). This is a species which was formerly restricted to the southern and eastern counties of England, and parts of Wales, but appears to have spread in recent years. There are still only half a dozen records in Leicestershire and Rutland. Dewick's Plusia (two caught in the Rothamsted Trap, one at Lyndon) is another uncommon species locally. A migrant moth in Britain, 2023 appeared to be a good year for this species - with over 20 other records in Leicestershire and Rutland. A Vestal was recorded at both the Tertiary Treatment Works (adjacent to the Volunteer Training Centre), a daytime record in August, and at Lyndon Centre in October. Scarlet Tiger appears to be spreading with numerous daytime records at Lyndon in 2023 and the first record in the Cherry Wood/Lagoon 3 Moth Trap.

ABH	B&F	Vernacular	Taxon
11.012	186	Common Bagworm	*Psyche casta*
35.003	844	Meadow White-barred	*Aproaerema larseniella*
35.019	857a	Maple Snout	*Anarsia innoxiella*
35.101	802a	Eyed Gelechia	*Gelechia sororculella*
37.106	560	Dark Thistle Case-bearer	*Coleophora paripennella*
45.023	1495	Crescent Plume	*Marasmarcha lunaedactyla*
45.04	1518	Mugwort Plume	*Hellinsia lienigianus*
73.01	2436	Dewick's Plusia	*Macdunnoughia confusa*
74.002	2076	Kent Black Arches	*Meganola albula*

Table 12.1 New species to the Reserve in 2023

Vestal © Tim Sexton

New and notable micro moths 2023

Of the seven new micro moths record in 2023, the Mugwort Plume (Hellinsia lienigianus) was the most notable as it is also likely to be the first confirmed record for Leicestershire and Rutland. This species is considered to be very local in Britian and is designated as Nationally Notable B. As the name suggests the Mugwort Plume is associated with the plant Mugwort - the larvae forming a silken 'tent' by sewing the edges of the leaves together. The Eyed Gelechia (Gelechia sororculella) was also of note as it was only the third record for Leicestershire and Rutland. This species has a local distribution in Britain and is usually associated with Goat and Grey willows within wetlands.

The Least Brown (Agonopterix purpurea), which was new to the Reserve in 2022 (in Lyndon Meadows), was recorded for the first time at the Cherry Wood/ Lagoon 3 Reedbed Moth Trap in 2023, and was also found during the daytime on the door to the Sand Martin Bank at Lagoon 5. A local species in Britain, it is associated with Wild Carrot, with just two other records in VC55 outside of Rutland Water. Oak Nycteoline (Nycteola revayana) was also new to the Cherry Wood/Lagoon 3 trapping area - only the second record for the Reserve, as was Brown Oak Tortrix (Archips crataegana) - only previously recorded in Hambleton Wood in 2001. Finally, there were considerable hatchings of Willow Ermine and Spindle Ermine on the Reserve, with 2,888 (presumably Willow Ermine) recorded on one night alone!

Mega Moth Night

An annual event in the Rutland Water moth recording calendar is the 'Mega Moth Night'. An opportunity for moth recorders from across Leicestershire and Rutland to come together and record moths over a wide area of the Reserve and see how many species can be recorded in just one night. This year, the focus was on the grassland and wetland margins of Lagoon 2. The event was initially planned for early August but a period of wet weather meant it was postponed until the 11th (resulting in fewer people being able to attend), it turned out to be a exceptionally good evening. We recorded over 8,000 moths of 176 species (although 5,774 of these were Water Veneers and unidentified Ermine agg. - presumably Willow Ermine). Not bad for the time of year and 18 more species than last year's event (3081 moths of 158 species).

In all, 11 volunteers helped to run 12 traps (along with some sugaring solution) in three areas; Lagoon 2 Meadow (attended traps including light tent - all 125mv), Cherry Wood/Lagoon 3 reedbed and Lyndon (adjacent to Waderscrape Hide and Lyndon Visitor Centre).

The timing of the event meant that there was a good show of migrant species including Tree-lichen Beauty (which is now perhaps established in Leicestershire and Rutland), Gem and White-point, along with a couple of Nationally Notable species - Webb's Wainscot and Square-spotted Clay. A Gothic at Lyndon was a highlight, this formerly common species appears to be declining locally in recent years. A Muslin Footman was attracted to a UV blacklight trap at the VTC – this species is infrequently caught in the Rothamsted Trap at AWBC, but is not often recorded elsewhere on the Reserve. A Small Rufous represented the first time this species had been seen at Rutland Water since 2006. This local species in Britain is associated with wetlands, bogs and wet grassland where it feeds on various rushes. Whilst the number of ermines and Water Veneer became a bit of a running joke on the night, it was commented that the sheer biomass of all the small moths must keep the bat population on the Reserve well fed!

Scarlet Tiger © Tim Sexton

Lagoon 3 Reedbed Moth Trap
Ron Follows

It was a very slow start to the year in 2023 for both moths and butterflies, with low numbers appearing all across the UK. June saw an improvement with some good catches which continued through July and into August. Weather conditions then took a turn for the worst with regular waves of rain and winds moving through in late summer. Overall, this resulted in a reduced number of trapping sessions undertaken this year compared to the heat wave enjoyed in 2022.

As in previous years all trapping sessions were held around the reedbed area of Lagoon 3, with seven traps operated each night giving a total of 77 trap nights throughout the period. The dates of trapping with the numbers of moths/species caught shown in table 12.2

Overall 382 species were recorded during the year (247 Macro, 135 Micro), eleven of which were new for the Lagoon 3 reedbed location and which brings the location checklist total to 632 (363 Macro, 269 Micro). The highlights of the year were Aproaerema larseniella, Anarsia innoxiella, Gelechia sororculella, Marasmarcha lunaedactyla which were all new for the Reserve.

Date	Number of Moths	Number of Species	Micro Moths	Macro Moths
10/02/23	29	9	2	7
15/04/23	208	21	3	18
07/05/23	64	19	1	18
20/05/23	45	21	3	18
10/06/23	888	131	36	95
23/06/23	1312	175	68	107
07/07/23	1523	178	70	108
24/07/23	739	105	36	69
10/08/23	1764	129	40	89
02/09/23	533	62	18	44
15/09/23	571	59	15	44

Table 12.2 Moth trapping dates - Reedbed Moth Trap

Lyndon Centre Moth Trap
Paul Bennett

A cool and unsettled start to the year meant that effective trapping could only commence in late spring with the first trap run on 27th May. Conditions remained variable throughout the summer and autumn with traps being run on only 10 nights throughout the year which is fewer than in previous years. Humid nights in late June and late July, and unseasonally warm nights in early September and early October, provided opportunities and good numbers of species were recorded around these times. There was one difference to previous years with the main trap being re-built (a skinner trap) and has been permanently sited in the meadow at the back of the visitor centre, which hopefully has had the effect of attracting more moths from further afield than was previously the case. As a result of this change the smaller battery-operated trap was not used in the adjoining wooded area this year.

Initially numbers were low in late May and early June with concern that the previous hot summer may have affected the ability of larvae to find suitable foodplants but the night of 24th June produced 88 species including the first site records of Scarlet Tiger and Clouded Brindle, the first records for several years of Four-dotted Footman and a double figure count of Common Emerald which is a moth that has only previously been recorded there as a single specimen. On the 28th July 90 species of regular summer moths included the micro Wax Moth and a count of over 250 Ermine moths, probably Willow Ermine which were either in or around the trap or resting on adjacent As part of the Mega Moth Night on 11th August, the Lyndon Centre trap was run in conjunction with two other traps set out by Tufted Duck and Waderscrape hides. Of 82 species in the centre area Gothic and Olive were both new site species, with three Tree-lichen Beauty moths seeming to indicate that this is now a firmly established species on the reserve. The Tufted Duck battery-operated trap had 31 species of regular mid-summer species while the 30 species at the Waderscrape hide trap included a Webb's Wainscot and a Bulrush Veneer (Calamotropha paludella).

When good conditions prevailed, autumn numbers were well above normal levels with 34 species on 3rd September including a probable third generation Engrailed. An exceptionally humid night on 9th September produced 40 species with a first site record for Dewick's Plusia being the highlight. This moth is having a rapid range expansion and can now be considered to be breeding in the Midlands area. A count of 47 Centre-barred Sallow was also notable with other autumn moths also appearing. Another humid night on 7th October had 27 species which was again above the monthly average for a single trap, the immigrant moth Vestal was another first record for site with double figure counts for Barred Sallow and Green-brindled Crescent. There were three records each of Satellite and Merveille du Jour and a totally out of season Shoulder-striped Wainscot. A final attempt at trapping was made on the 19th November with just eight moths of five species including four December Moth. A welcome feature of the year was the increase in the number of our most commonly recorded moths with Yellow Underwing species, Setaceous Hebrew Character, Flame Shoulder and Common Wainscot all having better years after several years of decline.

The total number of species recorded at Lyndon since recording began there in 2012 now stands at 447 with 301 macros and 146 micros (including leaf miners recorded locally to the trapping area).

Lax Hill Moth Trap

The Lax Hill static Skinner Trap was set up in the summer 2022. It was only run for five sessions in 2023, but caught a total of 190 moths of 74 species. The highlight being Merville du Jour - an uncommon macro moth in Leicestershire and Rutland. A first generation Vine's Rustic was recorded in mid-June and Tree Lichen Beauty was regularly caught. 125 species have now been recorded at the Lax Hill trap.

We are currently looking for volunteers to manage the trap and operate it on a more regular basis. The semi-ancient woodland and mixture of species - including Elm (which is rarely recorded elsewhere on the Reserve) should make Lax Hill an interesting trapping location.

Merville du Jour © Tim Sexton

Rothamsted Moth Trap (AWBC)

The Rothamsted Moth Trap has been in operation at Rutland Water since 1999. The Rothamsted light-trap network currently comprises around 80 traps across the UK and Ireland, with most traps run by volunteers and conservation organisations.

The data gathered from the Rutland trap contributes towards Rothamsted's long-term monitoring scheme (dating back to 1968), which monitors changes in the distribution, flight period and abundance of the larger (macro) moths. The Rothamsted traps use 200w clear tungsten-filament bulbs and traps are run and emptied every day throughout the year. Active involvement in this long-term survey is vital in order to determine changes and trends in native moth species, particularly in response to climate change.

In 2023 the trap had its second highest annual catch in over 10 years with 3,141 macro moths of 178 species recorded. A summary of total annual moth numbers caught in the Rothamsted Trap between 2000 and 2023 can be see in figure 12.3

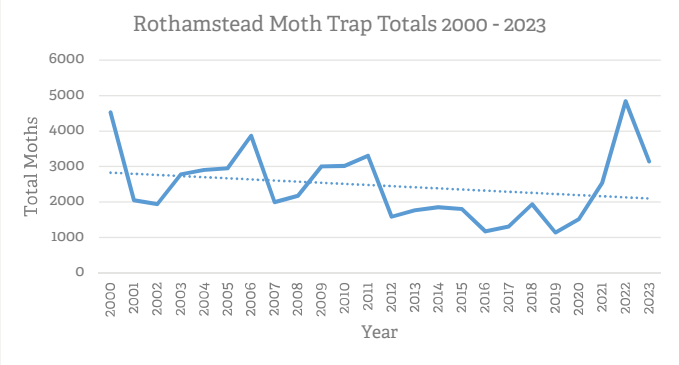


Figure 12.3 Rothamsted Moth Trap annual summary 2000 - 2023

For the 14th year, in the period that the trap has been running, Straw Dot was the most numerous moth recorded with 572 individuals. Webb's Wainscot have continued to increase in number, from the first record in 2005, with 31 individuals recorded - the second highest number caught in a year.

Dewick's plusia, a migrant species, was new to the Reserve, with records in the trap on both the 13th August and 17th September. Kent Black Arches was also new to the Reserve, with records on 26th June and 12th July. This species is mainly restricted to the southern and eastern counties of England, and parts of Wales and is classified as Nationally Notable B. A Vestal was also recorded on the 2nd October - the second of three individuals to be recorded on the Reserve in 2023.

Rothamsted trap adjacent to AWBC © LRWT

Butterfly Report

Red Admiral © Tony Clarke

Tim Sexton

As in 2022, a total of three butterfly transects were monitored this year. The long-standing Lax-Hill transect and the two newly established transects at Lyndon Meadows and Egleton Meadows. The Lax-Hill transect was modified this year to include the recently created wildflower grassland at Lagoon 6. It is hoped that as this species-rich grassland develops it will become as beneficial to butterflies and other pollinating insects as Sharple's Meadow has become.

Monitoring walks were carried out using the fixed route (Pollard Walk) transect methodology as promoted through the UK Butterfly Monitoring Scheme (UKBMS). This involves walking a fixed route each week during the recording season which runs for 26 weeks from 1st April to 30th September, recording all butterflies within a 5m cube ahead of the walker. There are set guidelines for time of day, temperature, wind speed and amount of sun. Adopting this methodology means that it is possible to make a meaningful comparison of species indices and, over time, identify trends in their abundance.

The Egleton transect (between AWBC and Sharple's Meadow via Lagoon 2 woodland) was surveyed by Alistair Lawrence. The Lax Hill Transect (between AWBC and Lax Hill via Lagoon 6 meadow) was surveyed by Brian Webster. The Lyndon Transect (between Lyndon Visitor's Centre and Shallow Water Hide) was surveyed by Paul Bennett and Tim Sexton. Maps of the transect routes can be found in figures 10.3 - 10.6 For the purposes of data analysis, species maxima (the largest count of a given species recorded on any one survey visit) were used as this allows for differences in emergence times, along with recorder effort (number of survey visits made). The results of which are summarised in table 13.1

For the second year running 2023 was a year of extremes for weather. Following on from the record breaking temperatures in 2022 (and periods of drought), 2023 was the second warmest summer on record for the UK. However, 2023 was also wetter than average with rain hampering survey efforts during the core survey period of July and early August - effecting the overall maxima counts. Cooler than average temperatures in April and May also negatively affected early emerging species.

Perhaps the worst affected species at Rutland Water in 2023 was the Small Tortoiseshell, with a maxima of just one (recorded on the Lax Hill transect). There were no records of this species on the Lyndon or Egleton Transects. Only single records were submitted outside of the transects too. This reflects the national picture, where Small Tortoiseshell had its worst year on record, prompting concern for what is considered to be the most widespread species in Britain.

The highlights of the year were two Green Hairstreak (only the fourth record for the Reserve) recorded on the Lax Hill Transect, between Fieldfare Hide and Gadwall Hide, and a Silver-washed Fritillary (also recorded at Lax Hill). Whilst not recorded during a pollard walk, there was a Painted Lady recorded on the Egleton Meadows transect near Sandpiper Hide in July. Finally, 40 Red Admiral recorded at AWBC on the 29th July (also not recorded on a pollard walk) was a sight to behold. Unsurprisingly this species also had its best year on record nationally too.

Overall, the Lyndon Transect recorded the largest number of butterflies with a combined species maxima of 308. However, this represented a 30% reduction from the 2022 count. The biggest change at Lyndon was with numbers of Meadow Brown and Ringlet – both of which saw a 50% reduction compared to the previous year. Across the site, Ringlet were down 64% against 2022. Lax Hill saw a small reduction in totals compares to 2022 and Egleton Meadows was above last year – helped by an increase in Red Admiral, Gatekeeper and Small White.

Species	Egleton	Lax Hill	Lyndon	Total
Brimstone	7	9	0	16
Orange Tip	6	2	2	10
Large White	8	3	15	26
Small White	14	4	55	73
Green-veined White	2	2	2	6
Speckled Wood	8	21	24	53
Meadow Brown	47	89	77	213
Ringlet	14	14	60	88
Gatekeeper	21	45	28	94
Small Heath	0	0	0	0
Large Skipper	1	0	2	3
Small Skipper	0	8	0	8
Small/Essex Skipper	0	0	3	3
Essex Skipper	0	0	0	0
Holly Blue	2	1	0	3
Common Blue	3	1	0	4
Small Copper	1	0	6	7
Peacock	8	8	1	17
Comma	3	3	11	17
Red Admiral	12	7	13	32
Small Tortoiseshell	0	1	0	1
Painted Lady	0	0	0	0
Marbled White	1	0	9	10
Purple Emperor	0	0	0	0
Green Hairstreak	0	2	0	2
Silv.Washed Fritillary	0	1	0	1
Totals:	**158**	**221**	**308**	**687**

Table 13.1 Butterfly Transect Survey Species Maxima

In all, 22 species were recorded across the three transects and an additional three species were recorded outside of the surveys (Brown Argus, Essex Skipper and Painted Lady). There were no records of White-letter Hairstreak, Small Heath or Purple Emperor on the Reserve this year (neither on a pollard walk nor through 'roving records' outside of the surveys). A number of visits were made to Lax Hill during July to look for White-letter Hairstreak around the Elm Trees.

The following 'roving' records include species recorded outside of the transect areas or transect recording periods in 2023.

Painted Lady
One seen in grassland surrounding Lagoon 4 on 19/07/2023

Red Admiral
40 recorded outside AWBC feeding on Hemp Agrimony on 29/07/2023

Brown Argus
A single individual recorded on Sharple's Meadow on 19/08/2023

The dates of pollard walks undertaken in 2023 are shown in table 13.2

Month	W/C	Egleton	Lax Hill	Lyndon
April	3rd	-	03/04/2023	-
	10th	-	10/04/2023	-
	17th	-	17/04/2023	-
	24th	-	24/04/2023	-
May	1st	03/05/2023	-	-
	8th	-	08/05/2023	-
	15th	18/05/2023	15/05/2023	-
	22nd	-	22/05/2023	28/05/2023
	29th	02/06/2023	02/06/2023	-
June	5th	08/06/2023	05/06/2023	-
	12th	-	12/06/2023	14/06/2023
	19th	-	19/06/2023	25/06/2023
	26th	27/06/2023	26/06/2023	-
July	3rd	06/07/2023	03/07/2023	-
	10th	-	10/07/2023	13/07/2023
	17th	17/07/2023	17/07/2023	-
	24th	-	-	-
	31st	26/07/2023	31/07/2023	-
August	7th	11/08/2023	07/08/2023	12/08/2023
	14th	-	14/08/2023	-
	21st	25/08/2023	21/08/2023	-
	28th	-	-	28/08/2023
	4th	04/09/2023	-	10/09/2023
	11th	-	-	-
	18th	-	-	-
	25th	29/09/2023	-	30/09/2023
	Total	**12**	**19**	**8**

Table 13.2 Survey visit dates

Brimstone © Tony Clarke

Black Colonel (Odontomyia tigrina) © Tim Sexton

Other Invertebrates

Tim Sexton

Bees

Despite the wet weather through the peak of the bee season, 41 species of bee were recorded in 2023. The most notable being the Chalk Yellow-faced Bee (Hylaeus dilatatus) which was new to the Reserve and only the 5th record for Leicestershire and Rutland. Both the Common Mini-miner (Andrena minutula) and the Large Meadow Mining Bee (Andrena labialis) were new to Rutland Water in 2023. The Hill Cuckoo Bee (Bombus rupestris) was recorded in Skylark Meadow along with its host the Red-tailed Bumblebee (Bombus lapidarius). This is only the second record for this species at Rutland Water and the first since 2017. There are suggestions that this species is spreading north in the UK and could become more frequent in the coming years.

Wasps

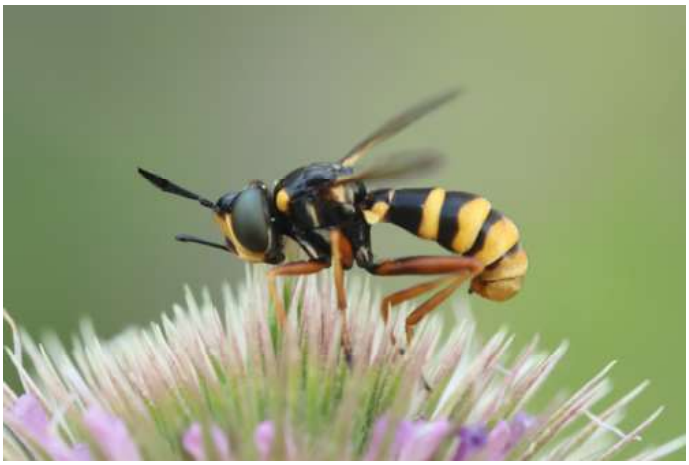
There were few records for wasps in 2023. However, the spider hunting wasp Priocnemis exaltata was new to the Reserve as was the jewel wasp Trichrysis cyanea. The highlight was Ectemnius rubicola - a new species for Leicestershire and Rutland.

Hoverflies

Similarly to many other flying insects in 2023, hoverflies were seemingly impacted by the hot weather and drought in 2022, followed by the changeable weather in 2023. That said, 44 species of hoverfly were recorded through the year - the vast majority through the work of Brian Wetton. Highlights included Cheilosia soror and Cheliosia vulpina (recorded in Sharple's Meadow). The latter species is rare in Leicestershire and Rutland, largely restricted to calcareous grassland. Cheliosia vulpina is the first record for VC55.

Other True Flies

The Conopid Fly Conops quadrifasciatus was recorded on Small Teasel at the Birdwatching Centre in August. Commonly referred to as Beegrabbers, the larvae are internal parasites of bumblebees.



Conops quadrifasciatus © Tim Sexton

The nationally scarce Hairy-legged Horsefly (Hybomitra bimaculata) was recorded twice from within the Birdwatching Centre (presumably associated with the cows on Lagoon 1/Wet Meadow).

The Sheep Bot Fly (Oestrus ovis), first recorded in 2022 was again found on the exterior wall of the Volunteer Training Centre. This species became scarce in Britain following the widespread use of sheep dip.

The highlight was a record of the Nationally scarce Black Colonel (Odontomyia tigrina). Originally taken as a larvae from the Cherry Wood Ponds during the winter of 2022/23, the larvae was reared on and a female hatched in May. It is only the fourth record for Leicestershire and Rutland.

Beetles

Following on from the baseline recording of beetles at Rutland Water which was undertaken in 2022, there was a continuation of this work in early 2023. Highlights include Drymus (Sylvadrymus) pumilio (Nationally Notable B), Anthracus consputus (Nationally Notable B), Schistoglossa gemina (Nationally Notable), Badister unipustulatus (Nationally Notable B), Platynus livens (Nationally Notable B), Atheta nigra (Nationally Notable), Falagria sulcatula (Nationally Notable), Euplectus kirbii (Nationally Notable), Calodera riparia (Nationally Notable) and the Pale Tortoise Beetle (Cassida flaveola). Despite being surveyed in February, over 100 species of beetle were recorded through sieving material in grass heaps and sieving Deschampsia tussucks - a method which has proven to be very successful at Rutland Water.

Seven species of Longhorn Beetle were recorded in 2023. These included Anaglyptus mysticus, Clytus arietis, Phymatodes testaceus, Pseudovadonia livida, Rhagium mordax, Rutpela maculata and Stenocorus meridianus.

Margarinotus purpurascens © Tim Sexton

A clown beetle, Margarinotus purpurascens, found in the strandline of rotting vegetation along the shore of South Arm 3 was the first of its kind to be recorded in Leicestershire and Rutland.

A designated disposal and collection area for birds which succumbed to HPAI became a hotspot for carrion feeding beetles with notable finds being Omosita discoidea and the Hairy Rove Beetle (Creophilus maxillosus) - the first record of this species at Rutland Water.

In all, over 20 new species for the Reserve were recorded in 2023. The total number of beetles recorded at Rutland Water now stands at 762.

True Bugs

True Bugs are typically under-recorded and much overlooked group of invertebrates. That said, there are a handful of interesting records reported each year at Rutland Water. In early May a planthopper, Asirca clavicornis, was recorded along Summer Trail. This Nationally Notable B species was the first record for Leicestershire and Rutland.

Asirca clavicornis © Tim Sexton

A programme of Water quality monitoring continued in 2023, and there was renewed interest in recording water boatmen through a project which was started in 2022 in conjunction with Nottingham Trent University, looking at tolerances of individual species to pollution. 13 species of corixidae were recorded through the year including Arctocorisa germari, a scarce species with just three other records in Leicestershire and Rutland.

Beetle Loggery

Tim Sexton

Upright log piles can provide a habitat for many species of deadwood feeding (Saproxylic) invertebrates in public areas of woodlands, parks and Nature Reserves where standing deadwood cannot be left due to safety reasons. Standing deadwood is considered to be the rarest deadwood habitat in the UK and is incredibly valuable for a host of different invertebrate species, not least of all stag beetles. While we do not get the large Stag Beetle (Lucanus cervus) in Leicestershire and Rutland, there are two smaller species found here which have the same requirements for their larvae; Lesser Stag Beetle (larvae feed on rotting timber, especially Ash, Beech and Apple) and Rhinoceros Beetle (larvae feed on rotting timber, favouring Beech, but also Ash, Apple, Willow and Lime).

In January 2023, The Beetle Loggery at Rutland Water Nature Reserve was installed, creating an interesting and artistic feature that is not only functional, but which can also inspire visitors to create smaller structures in their own gardens to benefit saproxylic invertebrates.

The project made use of timber which is a bi-product of our normal woodland management - and includes oak, cherry, ash, alder and birch (we avoided willow as even timber which was felled a couple of years ago would have potentially re-grown). A mini digger was required to create a pit 4m x 2m in a suitable area of wet woodland, adjacent to one of the main paths through the Reserve near Redshank Hide. The large logs, which varied in height and width, were then sunk into the ground to a depth of approximately 1m to create sub-terranean dead wood along with standing dead wood (up to 2.5m high).
Historically we had used logs from our woodland management to make traditional log piles (laid on the ground), but the benefit of the upright loggery design is that it decays at a much slower rate.

Although it was only installed less than a year ago, we have already recorded two species of jewel beetle and a rarely seen fungus beetle called the false ladybird (Endomychus coccineus) - which was probably attracted to the 20 species of fungi we have so far recorded on the structure.

Endomychus coccineus © Tim Sexton

Fungi Recording


Geoglossum cookeanum © Tim Sexton

Tim Sexton

A total of 130 species of fungi were recorded in 2023. The records came from casual sightings along with organised forays. There were three forays held in 2023; a Leicestershire Fungi Study Group foray on the 1st October (Lax Hill) where 39 species were recorded, a public foray on the 6th October (led by LRWT staff in Cherry Wood) where 50 species were recorded and a foray with Rutland Natural History Society on the 29th October (Barnsdale Woods) where 59 species were recorded. A microscopy weekend, looking at identifying fungi using microscopic features, was organised by Leicestershire Fungi Study Group and ran at the Volunteer Training Centre in September.

Slime moulds, which are technically not fungi as they have to consume nutrients, are generally included within fungi reports. Typically under-recorded, as they are difficult to identify, only two species were observed in 2023 - Coral Slime Mould (Ceratiomyxa fruticulosa) and Dog Vomit Slime Mould (Fuligo septica var. septica)..

There were a number of highlights throughout the year. During the Leicestershire Fungi Study Group foray, three species of earthstar were recorded None of which had been recorded here previously. The Beaked Earthstar (Geastrum pectinatum) was also only the third record for VC55. Blackedged Bonnet (Mycena pelianthina) was the first record for VC55, as was a mould recorded on the fruiting body of the Suede Bolete - Hypomyces microspermus. Wrinkled Peach (Rhodotus palmatus), a widespread but uncommon species in Leicestershire and Rutland, was a welcome addition to the foray list. A full species list is shown in table 14.1


Blackedge Bonnet (Mycena pelianthina) © Tim Sexton

Lax Hill Fungi Foray - LFSG	
Scientific Name	**Common Name**
Bisporella citrina	Yellow Disco
Ceratiomyxa fruticulosa	Coral Slime Mould
Collybiopsis confluens	Clustered Toughshank
Crepidotus cesatii	Roundspored Oysterling
Diatrypella quercina	Oak Blackhead
Exidia nucleata	Crystal Brain
Fuligo septica var. septica	Dog Vomit Slime Mould
Ganoderma australe	Southern Bracket
Geastrum pectinatum	Beaked Earthstar
Geastrum striatum	Striate Earthstar
Geastrum triplex	Collared Earthstar
Hymenopellis radicata	Rooting Shank
Gymnopus dryophilus	Russet Toughshank
Hymenoscyphus scutula	
Hypomyces microspermus	
Hypoxylon fuscum	Hazel Woodwart
Mycena crocata	Saffrondrop Bonnet
Mycena galopus var. nigra	Black Milking Bonnet
Mycena haematopus	Burgundydrop Bonnet
Mycena leptocephala	Nitrous Bonnet
Mycena pelianthina	Blackedge Bonnet
Mycena pura	Lilac Bonnet
Mycena rosea	Rosy Bonnet
Mycena vitilis	Snapping Bonnet
Nectria cinnabarina	Coral Spot
Neoerysiphe galeopsidis	Mint Mildew
Parasola conopilea	Conical Brittlestem
Polyorus badius	Bay Polypore
Rhodotus palmatus	Wrinkled Peach
Rhytisma acerinum	Tar Spot
Sawadaea bicornis	Maple Mildew
Scutellinia scutellata	Common Eyelash
Spinellus fusiger	Bonnet Mould
Stereum hirsutum	Hairy Curtain Crust
Trametes versicolor	Turkey Tail
Tremella mesenterica	Yellow Brain
Typhula erythropus	Redleg Club
Xerocomus subtomentosus	Suede Bolete
Xylaria carpophila	Beechmast Candlesnuff

Table 14.1 Records from LFSG foray on 1st October 2023

Green Elfcup (Chlorociboria aeruginascens) © Tim Sexton

Cherry Wood Fungi Foray - Public	
Scientific Name	**Common Name**
Mycena galericulata	Common Mycena
Mycena galopus var. nigra	Black Milking Bonnet
Mycena acicula	Orange Bonnet
Lactarius deterrimus	Flase Saffron Milkcap
Armillaria mellea	Honey Fungus
Laccaria laccata	The Deceiver
Gymnopus dryophilus	Russet Toughshank
Pluteus cervinus	Deer Shield
Pluteus salicinus	Willow Shield
Pholiota tuberculosa	a Scalycap
Gymnopilus junonius	Spectacular Rustgill
Inocybe Geophylla	White Fibrecap
Inocybe geophylla var. lilacina	Lilac Fibrecap
Hypholoma fasciculare	Sulphur Tuft
Bolbitius titubans	Yellow Fieldcap
Stropharia caerulea	Blue Roundhead
Psathyrella piluliformis	Stump Brittlestem
Psathyrella typhae	a Brittlestem
Bjerkandera adusta	Smoky Bracket
Daedaleopsis confragosa	Blushing Bracket
Daedaleopsis confragosa	King Alfred's Cakes
Annulohypoxylon multiforme	Birch Woodwart
Hypoxylon fuscum	Hazel Woodwart
Rutstroemia firma	Brown Cup
Phlebia radiata	Wrinkled Crust
Scleroderma citrinum	Common Earthball
Exidia glandulosa	Black Witches' Butter
Exidia nucleata	Crystal Brain Fungus
Tremella mesenterica	Yellow Brain Fungus
Calocera cornea	Small Stagshorn
Helvella lacunosa	Elfin Saddle
Xylaria polymorpha	Dead Man's Fingers
Xylaria longipes	Dead Moll's Fingers
Xylaria hypoxylon	Candlesnuff Fungus
Coprinellus micaceus	Glistening Inkcap
Coprinellus disseminatus	Fairy Inkcap
Gymnopus peronatus	Wood Wollyfoot
Gymnopilus penetrans	Common Rustgill
Chlorociboria aeruginascens	Green Elfcup
Panellus stipticus	Bitter Oysterling
Polyporus leptocephalus	Blackfoot Polypore
Polyporus badius	Bay Polypore
Ganoderma applanatum	Artist's Bracket
Hymenochaete rubiginosa	Oak Curtain Crust
Stereum hirsutum	Hairy Curtain Crust
Trametes versicolor	Turkey Tail
Trametes gibbosa	Lumpy Bracket
Datronia mollis	Common Mazegill
Megacollybia platyphylla	Whitelaced Shank
Xerocomus subtomentosus	Suede Bolete

Table 14.2 Records from the public foray on 29th October 2023

During the public foray in Cherry Wood a single fruiting body of Elfin Saddle (Helvella lacunosa) was found amongst a log pile. There are few records for this species in the county. While not particulalry scarce, a log pile covered with the fruiting bodies of Green Elfcup (Chlorociboria aeruginascens) delighted participants on the walk. A full species list is shown in table 14.2

On the Barnsdale Walk foray, Fenugreek Stalkball (which smells of Fenugreek Spice) was a welcome addition to the day's species list. New for the Reserve, it is also uncommon in Leicestershire and Rutland, with most British records come from south-eastern England and East Anglia. The main highlights came from the car-park area of Barnsdale, where two species of earthtongue, two species of club fungi and three species of waxcap were recorded - indicating unimproved grassland. Both species of earthtongue were new for Rutland Water, with Geoglossum cookeanum only being recorded in the north-west of Leicestershire previously. A full species list is shown in table 14.3

Hairy Earthtongue (Trichoglossum hirsutum) © Tim Sexton

Outside of the forays, there was a record of Semifree Morel (Mitrophora semilibera) in April (along the path between AWBC and Mallard Hide). This was the first record of this species at Rutland Water and one of only a handful of records in VC55. Hairy Oysterling (Resupinatus trichotis) was recorded in Cherry Wood - only the second record for VC55, and the Steely Bonnet (Mycena pseudocoricola) was recorded in Gibbet Gorse - also only the second record for VC55. Further records of the Reed Parachute (Marasmius limosus), first recorded in 2022, came from the reedbed in Lagoon 3 and AWBC Reedbed this year.

Barnsdale Wood Fungi Foray - RNHS	
Scientific Name	**Common Name**
Daldinia concentrica	King Alfred's cakes
Hymenochaete rubiginosa	Oak Curtain Crust
Mycena arcangeliana	Angel's Bonnet
Coprinellus disemminatus	Fairy Inkcap
Stereum hirsutum	Hairy Curtain Crust
Exidia nucleata	Crystal Brain
Coprinopsis atramentaria	Common Inkcap
Ascocoryne sarcoides	Purple Jellydisc
Gymnopus confluens	Clustered Toughshank
Hypholoma fasciculare	Sulpher Tuft
Psathyrella conopilus	Conical Brittlestem
Psathyrella multipedata	Clustered Brittlestem
Gymnopus fusipes	Spindleshank
Spinellus fusiger	Bonnet Mould
Auricularia mesenterica	Tripe fungus
Fistulina hepatica	Beefsteak fungus
Xylaria polymorpha	Dead man's fingers
Xylaria longipes	Dead Moll's fingers
Auricularia auricula-judae	Jelly ear
Xylaria hypoxylon	Candlesnuff fungus
Nectria cinnabarina	Coral spot
Trametes versicolor	Turkey tail
Mycena rosea	Rosy bonnet
Phleogina faginea	Fenugreek stalkball
Ganoderma applanatum	Artist's Bracket
Fomitopsis betulina	Birch polypore
Marasmiellus ramealis	Twig parachute
Crepidotus mollis	Peeling Oysterling
Daedaleopsis confragosa	Blushing Bracket
Gymnopus dryophilus	Russet Toughshank
Mycena crocata	Saffron-drop Bonnet
Laccaria amethystina	Amethyst Deceiver
Phlebia tremellosa	Jelly Rot
Scleroderma areolatum	Leopard Earthball
Mycena galericulata	Common Bonnet
Scleroderma citrinum	Common Earthball
Lepista flaccida	Tawny Funnel
Infundibulicybe geotropa	Trooping Funnel
Illosporiopsis christiansenii	a lichenicolous fungus
Gliophorus psittacinus	Parrot Waxcap
Cuphophyllus virgineus	Snowy Waxcap
Hygrocybe conica	Blackening Waxcap
Clavulinopsis luteoalba	Apricot Club
Clavaria incarnata	Skinny Club
Geoglossum cookeanum	an earthtongue
Triglossum hirsutum	Hairy Earthtongue
Helvella crispa	White Saddle
Inonotus hispidus	Shaggy Bracket
Entoloma sericeum	Silky Pinkgill
Postia caesia	Conifer Blueing Bracket
Stereum gausapatum	Bleeding Oak Crust
Hypoxylon fragiforme	Beech Woodwart
Rhodocollybia prolixa	Butter Cap
Bisporella citrina	Lemon Disco
Pluteus cervinus	Deer Shield
Dacrymyces stillatus	Common Jellyspot
Mycena adscendens	Frosty Bonnet
Exidia glandulosa	Black Witches' Butter
Lactarius deterrimus	False Saffron Milkcap

Table 14.3 Records from RNHS foray on 29th October 2023

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