Report on the Lincolnshire Airfields Curlew Survey 2024

by Philip Espin, Chair, Lincs Bird Club
28 Grimsby Rd, Louth, Lincolnshire

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Curlew with ‘just visible’ chick at Cranwell June 2024 – Brian Lyon

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The author can be contacted by email on pmjespin@gmail.com

Summary

1. A breeding curlew survey of certain airfields in Lincolnshire was undertaken in 2024 to establish the number of breeding pairs on these sites.

2. The survey was prompted by the desire to understand the curlew population baseline and to see positive management to assist long term curlew population growth in Lincolnshire and to begin to understand how that might be achieved in the context of the "head starting" programme by Curlew Action.

3. The survey was conducted by Lincs Bird Club in partnership with Natural England and the RAF Ornithological Society (RAFOS) with advice from BTO.

4. Six RAF airfields and their surrounding tetrads were visited. Four active ones with aviation: Barkston Heath, Cranwell, Waddington and Coningsby, one with no aircraft, Digby and the recently decommissioned airfield of Scampton.

5. The methodology employed was akin to an early and late visit under the BTO Atlas timed tetrad visit technique, with an early visit between 1 April and 15th May and a late visit from 16th May to 30th June.

6. In all 29 pairs of curlews were discovered across the six airfields. With pairs in brackets, at Scampton (8), Cranwell (6), Barkston Heath (5), Digby (5), Waddington (4) and Coningsby (1) which represents 10% of the lowland England breeding population.

7. Only two broods of young were observed on the late visits with one of three chicks at Cranwell and another of three chicks at Digby. It was not established whether these chicks successfully fledged. This puts the overall success rate at 0-20%. Far below the 50% required to sustain a stable population.

8. Clutches were removed for air safety purposes from Barkston Heath (9 clutches of 32 eggs in total) and Cranwell (3 clutches of 12 eggs in total) and taken for the head starting project. It is known that of 58 tracked head started curlews released, 65% returned to England in their second year. A higher proportion than wild fledged birds.

9. Two former nesting grasslands were checked using the same methodology (Hawthorpe and Wickenby) and no curlews were found.

10. A wider qualitative survey of the county using Birdtrack and eBird data identified probable breeding at five other sites and possible breeding at five more.

11. Measures that might support curlew productivity in Lincolnshire are discussed.

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Report of the Lincolnshire Airfields Curlew Survey 2024

Introduction

The Curlew is one of our most recognisable birds by both sight and sound. It is a common winter visitor to The Wash and Humber estuaries which hold internationally important migratory and wintering populations. Concern has been focussed on the decline of the UK breeding population estimated at 58,000 pairs in 2020 which is thought to have nearly halved over the previous 20 years. In lowland England the population is now put at less than 300 pairs. The Curlew Recovery Partnership was formed in 2021 by conservation organisations to try and reverse this decline.

Curlews have never been a common or widespread breeding bird in Lincolnshire with the number of pairs put at between 30-50 over the last 40 years. There were no confirmed breeding reports in the Lincolnshire Bird Report between 2017 and 2021. In 2021 Curlew Action began taking curlew eggs from Lincolnshire RAF stations for the purpose of "head starting" curlews. Head starting involves taking curlew eggs from nests that would have zero chance of success, hatching them in captivity, rearing and then releasing the birds at carefully identified sites once fledged.

News that curlews were breeding in Lincolnshire in better numbers than was generally known prompted a discussion at the Lincolnshire Bird Club (LBC) committee meeting in August 2022. In order to understand the ramifications for the small but now apparently important Lincolnshire curlew population, the club approached Curlew Action, BTO and Natural England (all members of the Curlew Recovery Partnership) to learn more. It was established egg collection under licence from Natural England at RAF airfields with active flying had started in 2021 and continued in 2022. These licences had previously allowed clutches to be destroyed to reduce aircraft collision risk. Some licences also allowed for adult birds to be shot but in practice this was not thought to have happened, at least in recent decades.

Realising how little we know about breeding Lincolnshire curlews, especially as curlew is now a red-listed species of conservation concern, this report aims to set out what we know historically about breeding curlews in Lincolnshire, the results of a systematic survey of curlews breeding on Lincolnshire airfields in 2024 and how we might support the Lincolnshire curlew population going forward.

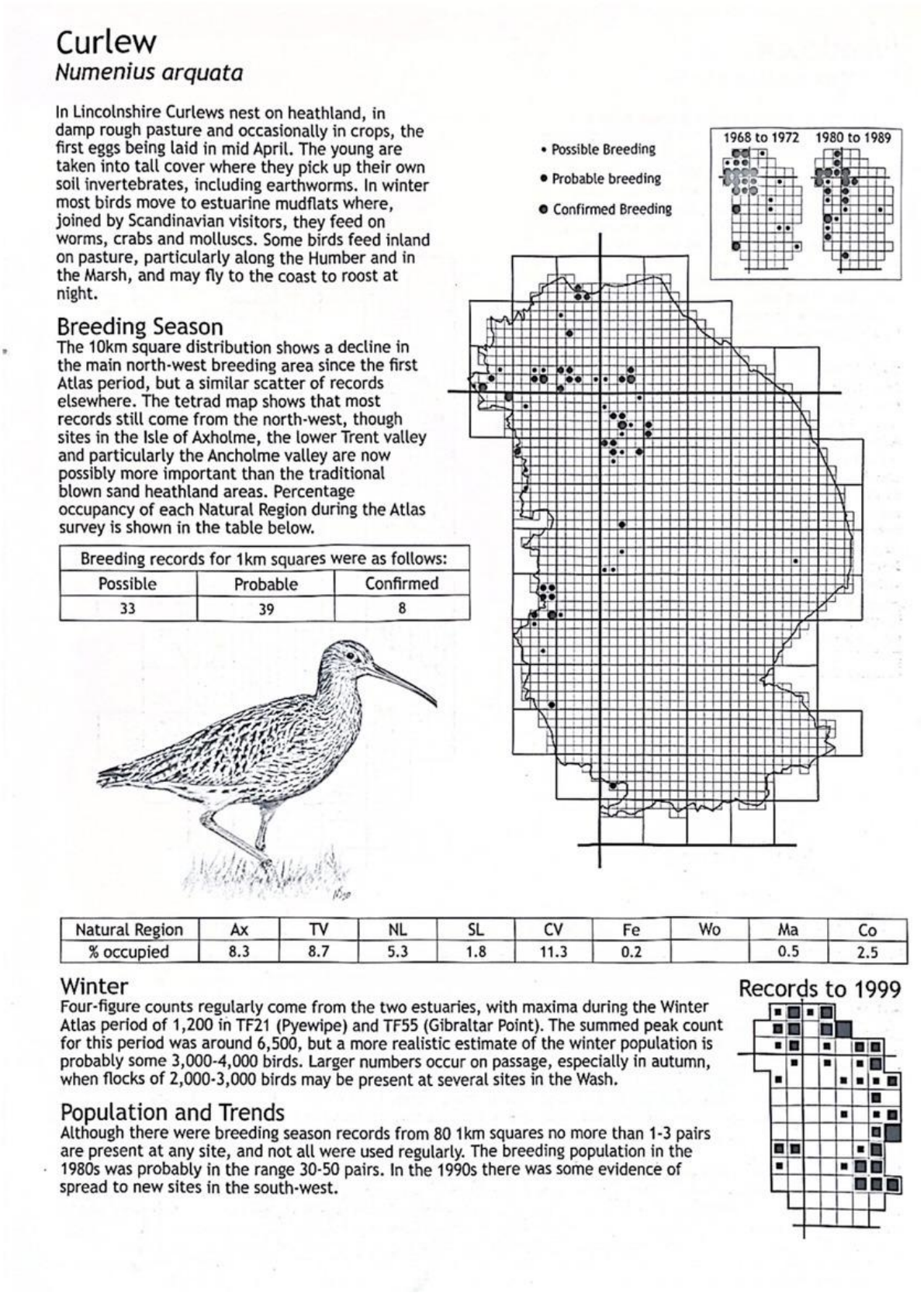
The history of breeding Curlews in Lincolnshire

Cordeaux in his *Birds of the Humber District* (1872) did not mention the curlew as a Lincolnshire breeding species at that time. Holloway's *The Historical Atlas of Breeding Birds in Britain and Ireland 1875-1900* (1996) shows them as an uncommon breeder in the north of the county and absent from the south of the county. They did not breed in East Anglia, middle England, or the South-East during 1875-1900. Holloway indicates curlews began a range expansion out of the Pennines at the end of the 1860s. This may have been driven by population increases arising from predator control on upland moors as grouse shooting became more popular in the Victorian era. These population increases led to range expansion into less intensively managed agricultural habitats like lowland heaths and grasslands across the southern half of England.

Fast forward to Smith and Cornwallis: *The Birds of Lincolnshire* (1955) who stated, "A few pairs of curlew nest regularly in the heath districts in the north-west of the county and there is some indication of an extension of range in this area."

The first detailed knowledge of curlew distribution in Lincolnshire comes from Sharrock (1976) *The Atlas of Breeding Birds in Britain and Ireland*. This Atlas which covered the years 1968-1972 confirmed breeding Curlews in 8 "hectads" (10 km squares) in Lincolnshire all in the Trent and Ancholme Valleys mostly in the north-west of the county. This position was expanded in detail by the LBC *Lincolnshire Bird Atlas 1980-1999* (2020), and a copy of that

entry is shown in Fig. 1.



Curlew

Numenius arquata

In Lincolnshire Curlews nest on heathland, in damp rough pasture and occasionally in crops, the first eggs being laid in mid April. The young are taken into tall cover where they pick up their own soil invertebrates, including earthworms. In winter most birds move to estuarine mudflats where, joined by Scandinavian visitors, they feed on worms, crabs and molluscs. Some birds feed inland on pasture, particularly along the Humber and in the Marsh, and may fly to the coast to roost at night.

Breeding Season

The 10km square distribution shows a decline in the main north-west breeding area since the first Atlas period, but a similar scatter of records elsewhere. The tetrad map shows that most records still come from the north-west, though sites in the Isle of Axholme, the lower Trent valley and particularly the Ancholme valley are now possibly more important than the traditional blown sand heathland areas. Percentage occupancy of each Natural Region during the Atlas survey is shown in the table below.

• Possible Breeding
• Probable breeding
• Confirmed Breeding

1968 to 1972 1980 to 1989

Breeding records for 1km squares were as follows:		
Possible	Probable	Confirmed
33	39	8

Natural Region	Ax	TV	NL	SL	CV	Fe	Wo	Ma	Co
% occupied	8.3	8.7	5.3	1.8	11.3	0.2		0.5	2.5

Winter

Four-figure counts regularly come from the two estuaries, with maxima during the Winter Atlas period of 1,200 in TF21 (Pyewipe) and TF55 (Gibraltar Point). The summed peak count for this period was around 6,500, but a more realistic estimate of the winter population is probably some 3,000-4,000 birds. Larger numbers occur on passage, especially in autumn, when flocks of 2,000-3,000 birds may be present at several sites in the Wash.

Records to 1999

Population and Trends

Although there were breeding season records from 80 1km squares no more than 1-3 pairs are present at any site, and not all were used regularly. The breeding population in the 1980s was probably in the range 30-50 pairs. In the 1990s there was some evidence of spread to new sites in the south-west.

Fig. 1 Lincolnshire Bird Atlas 1980-1999 extract

Subsequent BTO breeding Atlases covered years 1988-1991 and 2008-2011. The summary data of confirmed breeding hectads from these Atlases together with information from Lincolnshire Bird Reports 2012-2022 and information from Natural England about eggs collected from Lincolnshire RAF stations for the Curlew Action "head starting" programme is summarised in Table 1.

Table 1. Confirmed breeding of Curlew in Lincolnshire from Atlases, LBR and RAF

Hectad	Broad Location	Region	1968-72	1980-89	1988-91	2008-11	2011-16	2020-23
SK82	Wyville	Upper Witham	1			1		
SK84	Marston	Upper Witham			1	1	1	
SK85	Beckingham	Upper Witham		1	1		1	
SE80	Butterwick	Trent Valley	1	1	1			
SK86	Swinderby	Trent Valley	1		1			
SK87	Torksey	Trent Valley			1		1	
SK88	Marton	Trent Valley	1					
SK89	East Stockwith	Trent Valley	1					
SK91	Castle Bytham	Upper Glen				1		
TF02	Hawthorpe	Upper Glen				1	1	
SK95	Brant Broughton	Upper Witham				1	1	
SE90	Hibaldstow	Ancholme Valley	1		1		1	
SE91	Appleby	Ancholme Valley			1			
SE92	South Ferriby	Ancholme Valley			1			
SK99	Kirton/Waddingham	Ancholme Valley					1	
TA00	Cadney	Ancholme Valley	1	1	1			
TF08	Toft next Newton	Ancholme Valley	1					
TF09	South Kelsey	Ancholme Valley		1	1	1		
TF17	Wragby	Witham Valley				1		
SK94	RAF Barkston Heath	Limestone Heath				1	1	1
SK96	RAF Waddington	Limestone Heath					1	1
SK97	RAF Scampton	Limestone Heath						1
TF04	Sleaford	Limestone Heath				1	1	
TF05	RAF Digby/Cranwell	Limestone Heath					1	1
TF00	Tallington	Fens				1		
TF11	Baston Fen	Fens					1	
TF24	Anton's Gowt	Fens					1	
TF25	RAF Coningsby	Fens						1
TF57	Skegness	Marsh				1		
Notes			*BTO*	*LBA*	*BTO*	*BTO*	*LBR 1*	*NE 2*
TOTAL			7	4	10	10	13	5

Notes 1 There were no reports of confirmed breeding reported in LBR from 2017-2022.
2 Data obtained via Natural England

At some point in the period between 1991 and 2008 curlews switched their favoured nesting habitat in the county to RAF airfields. The reason is unknown, but it may have been partly due to reduced aircraft activity and reduced mowing of airfields brought about by reducing spending budgets. There is no published data that might lead one to conclude the area of permanent grassland or hay crops have declined in the county in this time period specifically. Another possibility is that fencing and/or predator control limits predation and human recreational activity on airfields. Since 2016 there have been no reports of curlew confirmed breeding anywhere other than on or adjacent to RAF airfields in the county. This is anecdotal as there have been no systematic surveys since 2008-2011.

Alan Ball has kindly provided ringing data for all Curlew nestlings ringed in Lincolnshire. The first ringed in the county was a brood of two chicks at Nocton Fen ringed by him in 2004. Gordon Priestly subsequently ringed four separate single broods adjacent to the Barkston Heath airfield as follows. A brood of three in 2005, one of which was recaught near Bangor, Wales, nine years later on 28th September 2014. In 2006 a brood of two, one of which was found dead in France a year later. Four chicks were ringed in 2007 and two in 2010.

The raw BTO BBS data for Lincolnshire for the period 1994 to 2021 has been reviewed and it tells us very little about breeding curlew. One square, SK9985 north of RAF Scampton has held Curlew in 11 out of 15 years since they first started appearing there regularly in 2008.

LBC decided a full survey of the county to determine the exact current distribution of the Curlew in Lincolnshire would be ideal but would likely have to wait for the next BTO Atlas (now scheduled to begin in November 2027).

In the meantime, the LBC committee decided to conduct a survey that would answer questions about the birds breeding on and around airfields as these seem to be the hotspots selected by birds at the moment. The aims of the survey were set out as follows:

1. Identify areas where Curlew breed in and around airfields and the habitats they use.

2. Assess the number of breeding pairs in these areas.

3. Assess the productivity of Curlews on airfields and around them.

4. To establish what proportion of the productivity of the Lincolnshire population is affected by air safety measures and associated with the head starting programme.

5. Engage LBC members to conduct a wider qualitative look at whether Curlews are breeding successfully at any of the other sites they have bred in since 2011.

Philip Espin (PE), Chair of LBC was appointed Survey Organiser. Around the same time Gill Fisher (GF) of Natural England and also an LBC member approached PE about curlews, and they met twice in 2023 to plan a survey in 2024.

Survey methodology

Confirmed Curlew breeding has been reported from the following six RAF stations since 2020:

Barkston Heath, Cranwell, Waddington, Scampton and Coningsby by collection of clutches.

Digby by observation of adult curlews with chicks

Scampton ceased operations as an active airfield in 2022/2023, and no clutches have been taken from there from 2023 onwards. Barkston Heath, Cranwell, Waddington and Coningsby still have systematic clutch removal, but none were taken from Waddington and Coningsby in 2024.

A potential survey area for each of these six locations was established by placing the central tetrad of a 3x3 grid of tetrads over the main airfield area of each site. This generated an initial range of survey tetrads of 6x3x3, a total of 54 potential survey tetrads. These survey squares were each examined by Survey Organiser Philip Espin and Gillian Fisher of Natural England on the relevant OS map together with current Google satellite mapping to determine the possible desirability of each square for Curlews and any issues connected with surveying it. The restricted access to military sites and the degree of public access routes to extensive farmland areas were key considerations. Other considerations in eliminating squares included the degree of urban development, presence of woodland and other features which might be unfavourable for Curlews. OS maps consulted showing the tetrads on them are at Appendix 1. This analysis reduced the number of tetrads to be visited to 29 of which 6 were wholly or mainly RAF restricted areas with no public access.

The RAF Ornithological Society was contacted via Natural England to assist with the survey as they could obtain clearance to access Ministry of Defence restricted areas inaccessible to the public. The key contact at RAFOS who organised and led their expedition was Keith Cowieson (KC).

A survey methodology based on the standard BTO Atlas timed tetrad visit was used. This involved two visits to each square. One in the period from 16th March to 15th May and another in the period 16th May to 30th June. Each visit involved covering the tetrad on foot for a minimum of 2 hours using public rights of way or others where permission from landowners was sought and given. Surveys were conducted between one hour after dawn and 13.00 hrs to enable coverage of two squares per day where desired.

Volunteers to cover the non-restricted squares were solicited through articles in The Heron, monthly enewsletter of LBC. A list of volunteers is mentioned in the acknowledgements.

A map of each tetrad was provided as a survey sheet, and each tetrad was assigned a unique code based on the four figure OS grid number of its bottom left one km square. All curlew detected by sight and sound were recorded and the following data collected.

1. Time of sighting
2. Number of birds and sex where possible
3. Location of sighting as marked on the map.
4. Behaviour of the bird(s) at the time of sighting/hearing based on standard BTO methodology with focus on display calls and flights and any other evidence of breeding behaviour.
5. A broad habitat description of fields/areas used by curlews.

No one was specifically asked to look for nests and seek them out to avoid disturbing breeding birds.

A WhatsApp group was set up for surveyors to report when they were visiting each square and to report their headline results. An RAF liaison officer joined the group to ensure security around the airfields knew when surveyors were about. No access issues arose around the airfields, and no difficulties were encountered.

Datasheets were submitted to the Survey Organiser, PE either in paper or electronic format. RAFOS produced their own internal report authored by KC, a copy of which was made available to prepare this report.

Using the data from the early and late visits an assessment of the number of territories in each square covered was made. Each square or a sample of them, holding territories were visited in early July and an attempt made to confirm breeding success in terms of the numbers of chicks and juveniles seen.

On RAF restricted areas where independent professional contractors were engaged in removing clutches, Natural England were able to establish via consultation how many clutches were removed and on what dates and locations.

In summary the numbers of tetrads covered and those covering them was as follows:

Site	Squares	RAFOS	LBC	NE
Barkston Heath	5	1	4	
Cranwell	7	1	5	
Digby	5	1	4	
Waddington	4	1	3	
Scampton	6	1	5	
Coningsby	2	1		1
Total	29	6	22	1

Philip Espin co-ordinated coverage of the LBC squares surveyed on the first five sites with local volunteers. Coningsby was covered by GF of Natural England who already had a degree of access to the site. KC of RAFOS organised coverage of RAF restricted squares by teams of RAFOS members who are mentioned in acknowledgements and PE attended their first Barkston Heath visit with them. The area of tetrads covered is shown in Fig. 2.

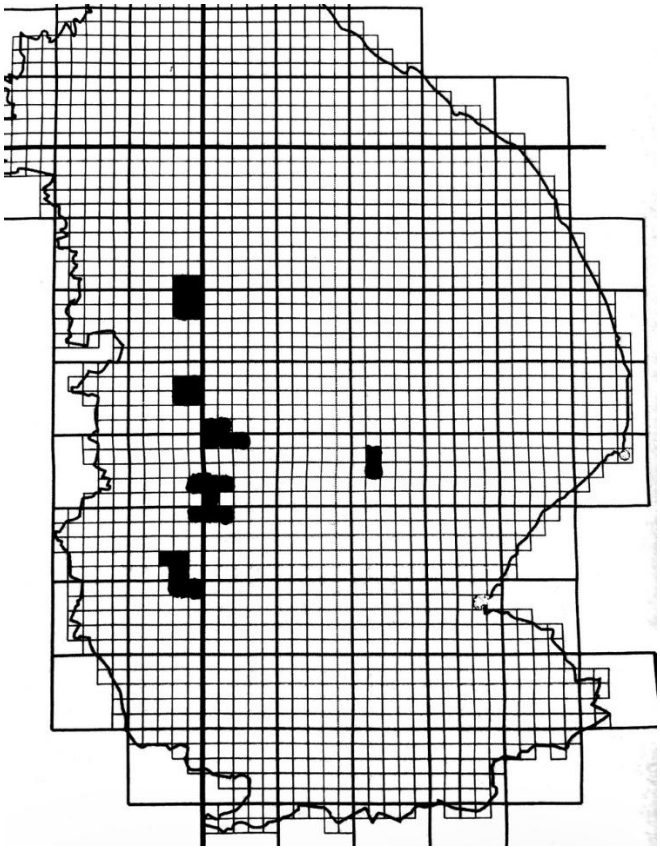


Fig. 2 Coverage of Lincolnshire tetrads in the 2024 Curlew survey.

LBC members were asked to visit areas with curlew breeding potential to look for and count potential breeding birds and to submit their results via Birdtrack or eBird during the 16th March – 16th July 2024 survey period. LBC has data sharing arrangements with both Birdtrack and eBird. The datasets for Lincolnshire for the period March to July 2024 was accessed electronically through these sharing agreements and the data analysed for explicit and implicit breeding information. This was facilitated by Andrew Chick LBC IT officer who obtained the data and passed it to PE.

Results

All 29 survey squares were visited at least twice. A summary of these visits is shown in Table 2. On the early visits a total of 68 birds were counted across 15 squares out of 29 surveyed from which it was judged 29 pairs of birds were occupying 9 squares. Birds were thought to be feeding in 6 squares not being used for breeding. On the late visit 29 birds were observed across 9 squares representing 15 pairs. Around 50% of pairs were lost from the early to late visit, attributed to nest site predation either by natural predators or human egg collection for air safety and then head starting. Two separate pairs were observed with three chicks each, but it is not known if any of these chicks fledged.

Table 2. Curlews recorded by tetrad across the six areas surveyed.

Airfield	Tetrad Ref.	Early visit max birds	Late visit max birds	Early visit pairs	Late visit pairs	Max Pairs	Young
Barkston Heath	SK9442	0	0				
Barkston Heath	SK9638	0	0				
Barkston Heath	SK9640	10	6	5	3	5	0
Barkston Heath	SK9642	3	0	1			
Barkston Heath	SK9838	0	0				
Cranwell	SK9846	0	0				
Cranwell	SK9850	0	0				
Cranwell	TF0046	1	0				
Cranwell	TF0048	8	8	4	4	4	3
Cranwell	TF0246	0	0				
Cranwell	TF0248	2	4	1	2	2	?
Cranwell	TF0250	0	0				
Digby	TF0256	1	0				
Digby	TF0258	0	0				
Digby	TF0456	8	2	4	1	4	3
Digby	TF0458	5	2	1	1	1	?
Digby	TF0656	1	0				
Waddington	SK9862	4	2	2	1	2	0
Waddington	SK9684	4	2	2	0	2	0
Waddington	TF0062	0	0				
Waddington	TF0064	0	0				
Scampton	SK9676	0	0				
Scampton	SK9678	8	2	4	1	4	?
Scampton	SK9680	8	0	4	1	4	?
Scampton	SK9876	0	0				
Scampton	SK9878	2	0				
Scampton	SK9880	0	0				
Coningsby	TF2254	0	0	0	0	0	
Coningsby	TF2256	3	1	1	1	1	0
				28	14	29	6

GF and KC were able to obtain detailed egg collection data for airfields from the sub-contractor engaged to collect them and pass them onto Curlew Action. A summary of this data is at Table 3, and the full data is in Appendix 2.

Table 3. Curlew Eggs collected on Lincolnshire Airfields 2022-2024

Airfield	2022 Clutches	2022 Eggs	2023 Clutches	2023 Eggs	2024 Clutches	2024 Eggs
Barkston Heath	5	19	12	39	10	32
Coningsby	1	3	1	4	0	0
Cranwell	1	4	4	11	3	12
Waddington	4	16	2	7	0	0
Scampton	7	27	0	0	0	0

There follows a more detailed narrative description of results by site. Some information comes from detailed liaison with the egg collection contractor reported by KC.

Barkston Heath

RAF Barkston Heath is a training airfield associated with RAF Cranwell. It has the longest history of curlew breeding and Alan Ball rang a curlew chick on the periphery of the airfield in 2007. It is approximately 200 ha in area. In 2024 the early visit found 5 pairs of curlews were nesting in uncut grass areas of the airfield. A pair reported in the tetrad at the northern extremity of the airfield viewed from the outside of the perimeter have been included in this total. No birds were observed in the other tetrads around the airfield.

As at other airfields with aircraft, the RAF have mobile teams that monitor the airfield for hazards at all times when flying is taking place. Curlews are one of these hazards and the teams monitor their presence and note where they are nesting. They shared this intelligence with RAFOS who conducted surveys from cars under constant contact with air traffic control. The information is also shared with the contractor who collects clutches for the head starting programme. In practice this system is so efficient that no Curlew eggs are hatched on this airfield.

Birds turn up in late March and egg collecting begins in late April. All five pairs had their first clutches of eggs taken and laid a second. One second clutch of four eggs was predated before it could be collected. Most clutches were of four eggs, but collection took place on weekly visits as eggs were laid, not when clutches were complete. Once the second clutch was taken pairs abandoned the airfield. The last collection took place in the first week of June, no birds were seen the following week, and one pair was seen in the third week of June. In total 32 eggs were collected and four were known to have been predated. This equates to nine clutches from 5 pairs. It is possible further eggs were predated that were not recorded.

Cranwell

RAF Cranwell is an active airfield around 250 ha in area. The early visit found four pairs on the airfield itself and a further pair in a sheep field to the east of the airfield. The late visit found the same four pairs on the airfield and two pairs in the same area of sheep grazing to the east of the airfield. This was the only tetrad off the airfield in which Curlews were reported. Only three clutches of four eggs were taken from the airfield, and one pair were

successful in hatching young and were seen with three chicks on 19th June. It must be assumed the three uncollected first/repeat clutches were taken by predators. To the east of the airfield although birds were observed mobbing a Red Kite on 29th April no young were observed on this or the late visit on 17th June although two pairs appeared to be holding territory. A feeding flock of 12 adult birds was also observed in this tetrad on 17th June, presumably failed breeders from Cranwell and perhaps the adjoining airfields within 5 km, Barkston to the south and Digby to the north. A final visit on 10th July revealed no birds were present to the east. No birds were seen on the airfield after 19th June, and it is not known if the three chicks observed on that date successfully fledged.

Digby

RAF Digby is a non-flying airfield and the curlews here are left to rear their young naturally. It is smaller than other airfields and comprises around 120 ha. The grass is long and thick and has not been mown for several years and shows signs of early succession with hawthorns saplings appearing in places. Birder James Porter was based here for three years before he retired in March 2024 and was disappointed to miss the survey. He has been aware of Curlews present on the airfield through his time there but did not observe confirmed breeding, a pair of adults with two chicks defending them from predators until June 2023. The thick long grass provides great cover but makes it difficult to observe young unless they are crossing the tarmac perimeter track.

The RAFOS early visit on 23rd April revealed four pairs displaying over the airfield and another to the north. Visits to surrounding tetrads on 7th and 11th April found two pairs feeding in sugar beet fields to the north of the airfield and a single bird to the west but at least three of these birds were seen flying onto the airfield, suggesting they were feeding off the airfield. The late visits off airfield on 10th June revealed a single pair in sugar beet behaving as if they had chicks, strongly seeing off a hunting buzzard. The RAFOS visit on 18th June found two pairs present. One pair had two young and were see just off the northern edge of the airfield, quite probably the same pair as seen on 10th June. This same pair were subsequently seen with three young on 29th June. It is not known if these chicks successfully fledged.

Waddington

RAF Waddington is a large operational airfield with an area of over 400 ha. In early visits four pairs of curlews were found displaying over the airfield but none were seen in surrounding agricultural fields. Although no eggs were collected for head starting one nest with three eggs was removed in late May because it was seen as presenting an imminent threat to aviation. One pair was present on the late visit on 17th June. No other evidence of breeding was noted on that date. These two birds were present up until the end of June and one bird was present until the second week of July implying this pair may have been raising young, successfully or not is unknown.

Scampton

Former RAF Scampton is another large airfield of over 400ha. Flying stopped there in late 2022 and as a result no licence to collect eggs was granted in 2023 and 2024. The site became locally controversial over its planned used following closure as an RAF station, and heavy security was employed to stop protestors accessing the site. This security was in place during the 2024 breeding season and made access especially sensitive and difficult. In addition, the mowing regime in place up to 2022 was stopped and by 2024 the grass had become thick and

long making viewing difficult. Neither was there an RAF team or egg collection team in place to support observations.

Early visits to the surrounding squares produced sightings of feeding birds with all breeding activity apparently taking place on the airfield. The early visit to the airfield itself was made on 14th April by GF who was able to gain access through contacts at The Home Office who were controlling the site at that time. She estimated 8 pairs were present across the airfield. The late visit on 21st June which was made by GF in conjunction with RAFOS found just two pairs with one making the agitated alarm calls associated with defending young from predation. The long, thick grass made it impossible to see chicks despite determined observation. The heavy attrition rate of pairs present suggest predation may have had a severe impact on the breeding curlews present as human disturbance was minimal.

Coningsby

RAF Coningsby is now the eastern outlier of RAF airfields in Lincolnshire. It is an extremely active and highly managed large site of over 400 ha and just two tetrads were visited. On the early visit three birds were seen and one pair was thought to be present. However, on a follow up early visit by RAFOS on 25th April it was found that the site had been recently mown short and conditions were unsuitable for breeding curlew, though one bird was seen. No birds were recorded on the late visit, and no eggs were collected from the site. The number of eggs collected in 2022 and 2023 are strongly suggestive of a single pair being present.

Former breeding sites visited.

Members visited the following sites that had previously held breeding curlews using the same methodology as employed for the survey. No curlews were observed at these sites: Hawthorpe Grasslands TF02 and Wickenby Airfield TF18.

What proportion of Lincolnshire Curlew productivity is associated with airfields and the head starting programme?

Only 2 airfields had egg collection programmes for head starting in 2024. These airfields Barkston Heath and Cranwell respectively held six and five pairs of breeding Curlew of the 29 total pairs. These 11 pairs represent 38% of the Lincolnshire breeding Curlew population.

Wider qualitative data for Curlew breeding in Lincolnshire in 2024

LBC members had been asked to report all inland curlews in order to discern any potential breeding records. All curlew reports for the period 1st March to 16th July 2024 were downloaded from Birdtrack and eBird and sifted as follows.

1. All reports from coastal sites where wintering and migration occurs with no evidence of past breeding were discarded.
2. Remaining records for inland sites were checked, and the following were removed.
3. Records associated with the Curlews Airfields survey.
4. Records close to the coast of migrant single birds on a single date.
5. Records prior to 16th March and post 30th June where no birds had been seen earlier.

The remaining records which came from 10 different sites were evaluated against Atlas breeding criteria. These 10 sites and their records are summarised in Table 5 below. The table lists the site number, the site name, the site hectad grid reference, the date of the record, the number of birds recorded, the breeding status determined and whether breeding has taken place in the hectad in the past as reported in Table 1. There were no reports of confirmed breeding. The reports broke down into five sites with probable breeding and five sites with possible breeding. These sites were in eight different hectads, six of which have had breeding previously reported in them and two which had not. Whether curlews nested at any of these sites is open to question but all of them certainly needs examining closely in the next BTO breeding atlas.

Table 4. Inland reports of Curlew in Lincolnshire and their inferred breeding status

Site No.	Standard site name	Grid Ref.	Date	Count	Breeding	Table 1
1	Beckingham	SK86	23/05/2024	2	Probable	Yes
	Beckingham	SK86	03/06/2024	2		
2	Cowbit	TF21	28/04/2024	2	Probable	No
	Cowbit	TF21	21/07/2024	1		
3	Horsington	TF16	13/05/2024	1	Probable	No
	Horsington	TF16	27/05/2024	c2		
	Horsington	TF16	13/06/2024	2		
	Horsington	TF16	18/06/2024	1		
4	Lea Marsh	SK88	14/03/2024	3	Possible	Yes
5	Messingham	SE90	16/03/2024	1	Possible	Yes
	Messingham	SE90	06/04/2024	10		
6	N Kelsey	TA00	10/04/2024	2	Probable	Yes
	N Kelsey	TA00	07/05/2024	1		
	N Kelsey	TA00	09/05/2024	1		
7	N Scarle	SK86	24/06/2024	1	Possible	Yes
	N Scarle	SK86	30/03/2024	1		
8	Stixwould	TF16	31/05/2024	c3	Possible	No
9	Toft Newton Res	TF08	21/04/2024	3	Probable	Yes
	Toft Newton Res	TF08	27/04/2024	1		
	Toft Newton Res	TF08	03/05/2024	2		
	Toft Newton Res	TF08	10/05/2024	4		
	Toft Newton Res	TF08	18/05/2024	1		
	Toft Newton Res	TF08	01/06/2024	3		
	Toft Newton Res	TF08	03/06/2024	2		
	Toft Newton Res	TF08	12/06/2024	1		
10	Trent Port	SK88	12/04/2024	1	Possible	Yes

Discussion

This survey has revealed that the Lincolnshire Curlew population at the six sites covered is of the order of 30 pairs. It is doubtful given a more qualitative assessment of breeding across the rest of the county that there are more than 35 pairs in Lincolnshire in total.

Given that in 2023 the lowland English curlew population was put at 290 pairs by Natural England (Brown et al (2023) Natural England Report NECR400), 70 pairs of which breed in the Lower Derwent Valley NNR (Craig Ralston reserve manager pers comm.) just to the north of Lincolnshire, the local population of 30 pairs may be 10% of the lowland England population. The Lincolnshire population appears to be an essential element of the wider lowland England population, providing a link between populations in Yorkshire, East Anglia and further South and needs to be recognised and sustained as such.

Curlews are long lived birds and can persist for decades but if their population is to be maintained it is thought that each pair needs to produce at least one chick every two years. In this survey 29 pairs were observed, 17 on four airfields where no eggs were collected and 12 on and around airfields where 44 eggs were collected. One might think that airfields where no eggs are collected would be more productive, but this does not appear to be the case. On uncollected sites, of 17 pairs on early visits only five remained on the late visits, an abandonment rate of 70%. With only one pair seen on the late visit with three young whose ultimate fledging success was not established.

On “collected” sites nine out of 11 pairs remained on the late visit, an abandonment rate of only 18%. In this cohort one pair was seen with three young and fledging success was not established.

On the best-case scenario that all six chicks seen were fledged this would relate to a fledging rate of 20%, well below the 50% needed for a stable population. Of course it could have been 0%, or more likely somewhere between 0-20%. The conclusion one draws from these results is that it is a miracle that curlews persist in Lincolnshire and they need all the help they can get. Even so could it be that curlews fare better on some well managed busy airfields like Barkston Heath and Cranwell despite egg collecting than they do on Digby and Scampton? Waddington and Coningsby are particularly intensively used, and the situation may be different on those airfields. Clearly the role of grass cutting and its timing has a major impact as it does on intensively managed farm grasslands.

Since Digby and Scampton are relatively undisturbed one might conclude that levels of predation from foxes, badgers, buzzards, red kites, marsh harriers, crows and ravens must be higher and perhaps more disturbing for curlews than relatively clinical egg collection by humans at Cranwell and Waddington. Another possibility is that despite providing great cover for nesting the long grass at Digby and Scampton is not ideal for rearing curlew chicks. In the author’s experience of surveying curlews in the Pennines over the last four years, they prefer a mosaic of sward lengths in the short to medium range to enable small chicks to forage successfully and find shelter from predators. Perhaps strip mowing in early March might be helpful? At least on these sites curlews are not exposed to what camera traps have recently revealed as the greatest predator of curlew eggs; sheep!

It would be churlish to deny on the evidence of this survey that most of the curlew eggs removed for air safety and taken for "head starting" would not have otherwise failed to produce fledged curlews. Those head started individuals are given a better chance of reaching breeding age and contributing to the National Population. The question must be what happens to these head started curlews? Do they have a better chance of reaching breeding age and successfully rearing chicks in their new ranges rather than Lincolnshire? Given the lack of fledging success observed in Lincolnshire, we will have to await results of the out turn for head started curlews in other parts of the country before firm conclusions can be drawn. This subject should be a priority.

The best evidence on this at the time of writing comes from Parrot et al (2024) "Post release survival and movements of head started European Curlew in lowland England" Bird Study 71 (1) 1-15. Of 58 tracked head started birds, 65% survived to return to the UK in their second year, higher than wild fledged chicks. Only 40 % returned to their release areas with others generally returning within 50 km. There is some suggestion that young head started birds follow older birds they meet while wintering/migrating to their breeding areas.

A case can be made that in any event curlews have persisted in Lincolnshire and some of the head started birds could be returned here if habitat were suitable and predator control was in place to help maintain our local population. The question is where in the county would curlew breeding success be maximised?

KC has made the case to the RAF that they should consider developing 'curlew plots' on active airfields, well removed from airfield active runways and aircraft manoeuvring areas, and adjacent to adjoining farmland or rough uncultivated land, as curlew breeding sanctuaries. He has also suggested that both inactive airfields at RAF Digby and Scampton appear eminently suitable for, and offer the opportunity to host, a Lincs 'rear-and-release' facility to exploit head-started eggs from the adjacent active RAF airfields.

The soon to be published Lincolnshire County Council Nature Recovery Strategy (LNRS) produced in conjunction with Natural England recognises curlew as a priority species in the county and hopefully this will bring recovery efforts into focus. Finding suitable sites should be a priority within the context of LNRS discussions and with projects planned by local RSPB, LWT and perhaps rewilding estates in the county. One site that makes an immediate case is the former Scampton airfield. It is recommended that the existing curlew population at Scampton could be managed to help curlew succeed in the county.

Without some kind of interventions like the ones suggested above one has to wonder what the Lincs curlew population will be by 2030. One thing this survey does show is the resilience and persistence of the curlew in the face of adversity. It has hung on here over the last century and let us help it continue to do so if we can.

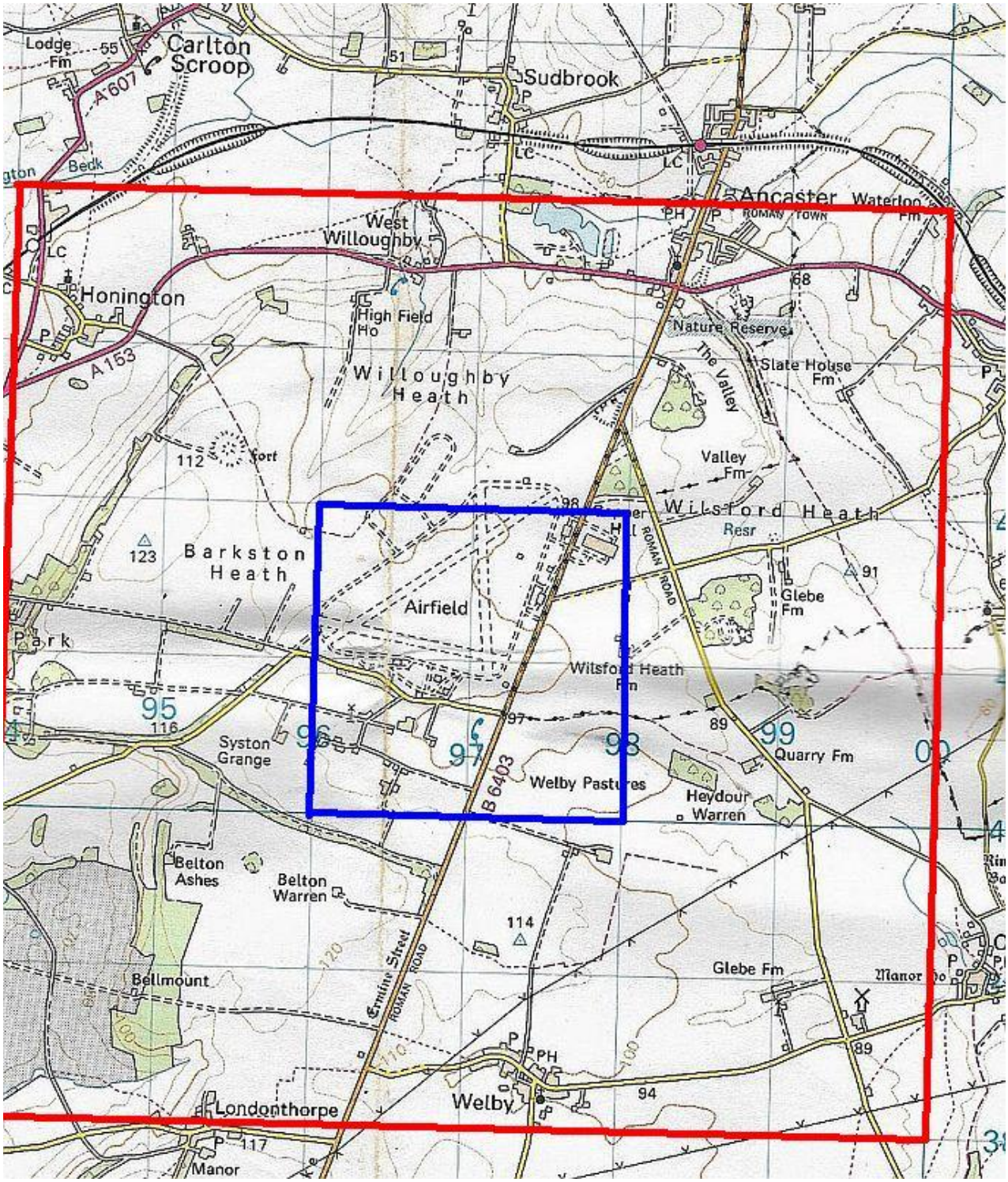
Acknowledgements

Thank you to Gill Fisher who has been instrumental in inspiring this survey, helping to find funds through the MoD to help it go ahead as well as taking part in survey coverage at Coningsby and Scampton and finding out key information. Natural England provided the data on eggs collected for head starting. The LBC committee has been supportive especially Mike

Harrison, Jim Wright and Andrew Chick. LBC members Alan Ball, Les Batty, Gary Fenwick, Vin Fleming, Brian Hedley, Barrie Hunt, Nick Tribe, Stephen Wayling and Isobel Wright all covered survey squares. Alan Ball also provided ringing data of nestling Curlews ringed in Lincolnshire. The survey could not have happened without RAFOS whose expedition was led by Keith Cowieson who consulted with RAF and their contractors to get access to airfields and details of airfield operations. He kindly provided his detailed expedition report allowing me to use extracts. He was ably supported by John Wells, Sue Berrecloth, Scott Drinkel, Jayne Lindley and Brian Lyon who also provided the photo of Curlew chicks at Cranwell. RAF personnel Lindsey Metherell at Digby and Robyn Parkes at Waddington facilitated crucial access and liaison. Dawn Balmer and Samantha Franks at BTO provided early support, advice and encouragement. Jim Porter gave me a tour of Digby in February 2024 just before he retired and helpful insights into curlews on Lincolnshire airfields. It took a large team to produce this survey but any errors in this report are mine alone.

Philip Espin Louth, Lincs July 2025

Appendix 1 Maps of the airfields covered in the survey.



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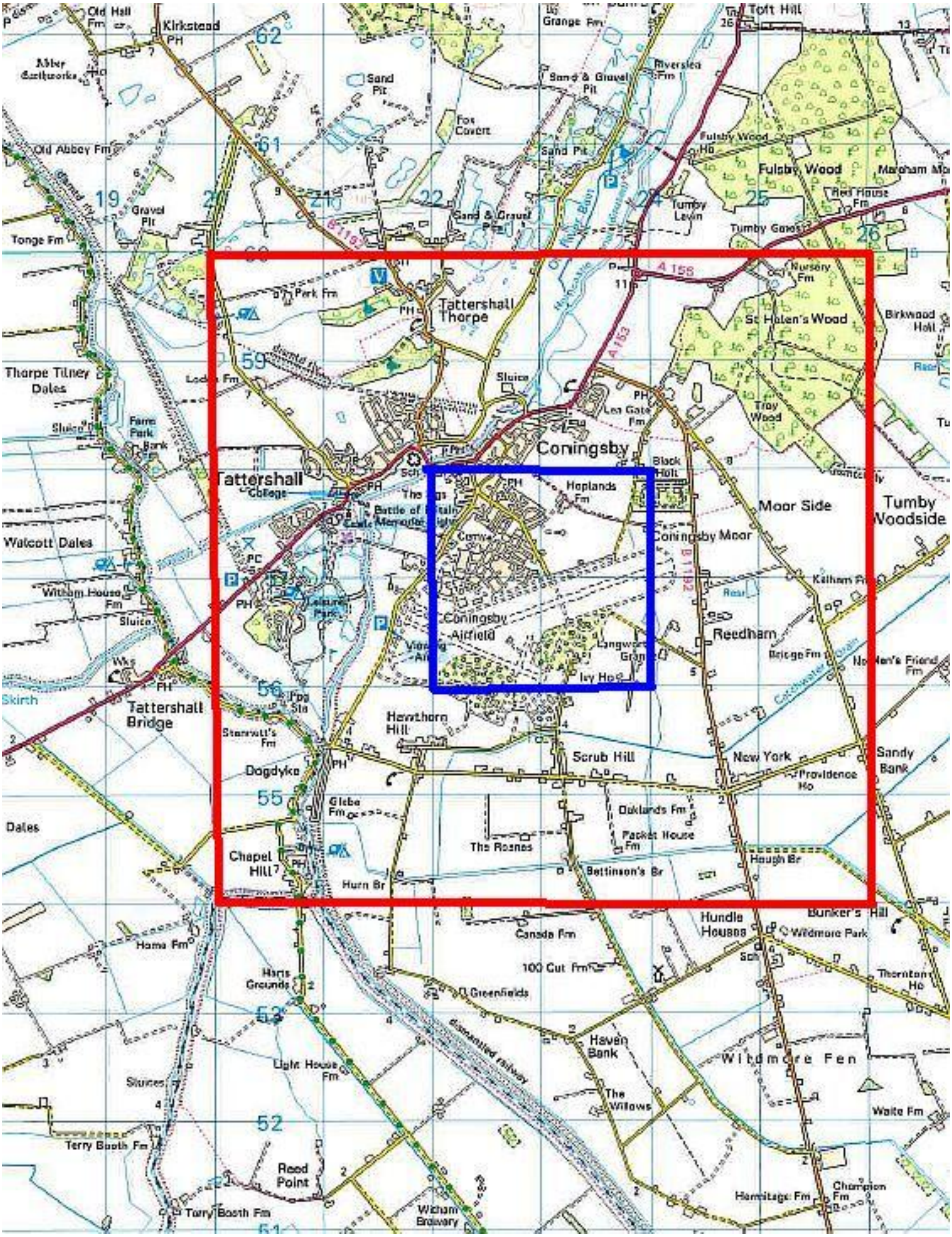
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Abbey Earthworks
Old Abbey Fm
Tonge Fm
Gravel Pit
Sand Pit
Fox Covert
Grange Fm
Sand & Gravel Pit
Riverside Fm
Toft Hill
Fulsby Wood Ho
Fulsby Wood
Red House Fm
Tumby Gates
Tumby Lawn
Sand & Gravel Pit
Park Fm
Tattershall Thorpe
Nursery Fm
St Helen's Wood
Birkwood Holt
Thorpe Tilney Dales
Lodge Fm
Sluice
Lea Gate Fm
Troy Wood
Farm Park
Bank
Coningsby
Black Holt
Tattershall
College
Hoplands Fm
Moor Side
Tumby Woodside
Battle of Britain Memorial Flight
Coningsby Moor
Walcott Dales
Withern House Fm
Leisure Park
Coningsby Airfield
Kelham Fm
Reedham
Bridge Fm
Langworth Grange
Ivy Ho
Tattershall Bridge
Skirth
Hawthorn Hill
Scrub Hill
New York
Providence Ho
Sandy Bank
Dogdyke
Glebe Fm
Oaklands Fm
Packet House Fm
The Rosnes
Dales
Chapel Hill
Hurn Br
Bettinson's Br
Hough Br
Hundle Houses
Bunker's Hill
Widmore Park
Home Fm
Canada Fm
100 Cut Fm
Greenfields
Thornton Ho
Haven Bank
Wildmore Fen
Light House Fm
Sluices
The Willows
Waite Fm
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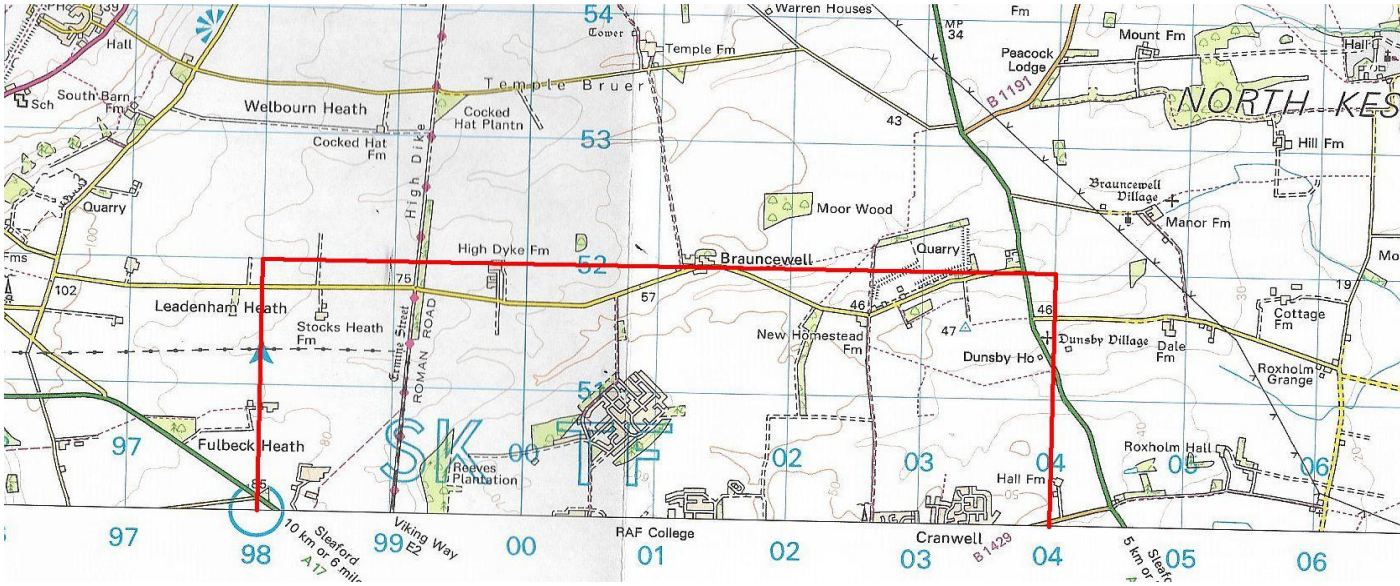
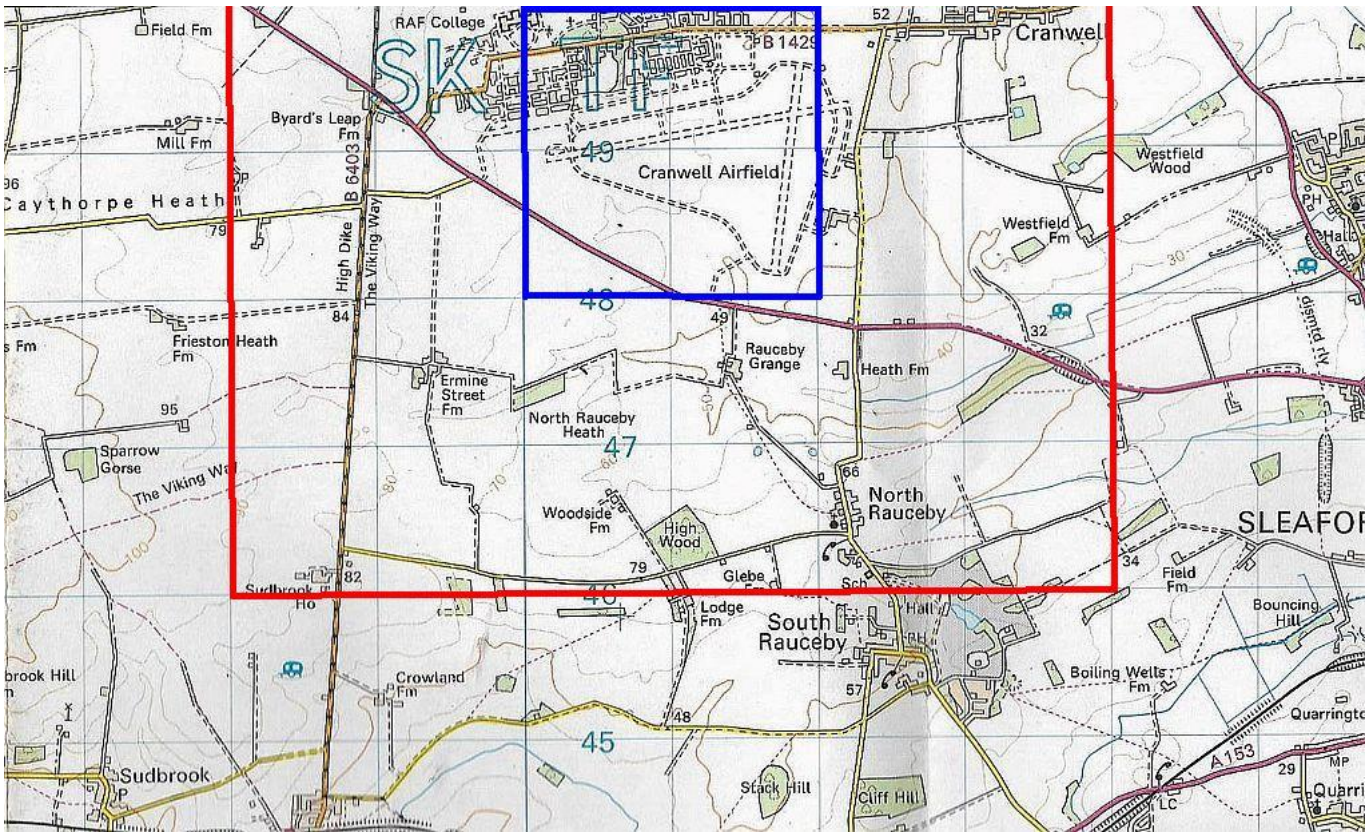
Champion Fm
A 153
A 155
B 1192

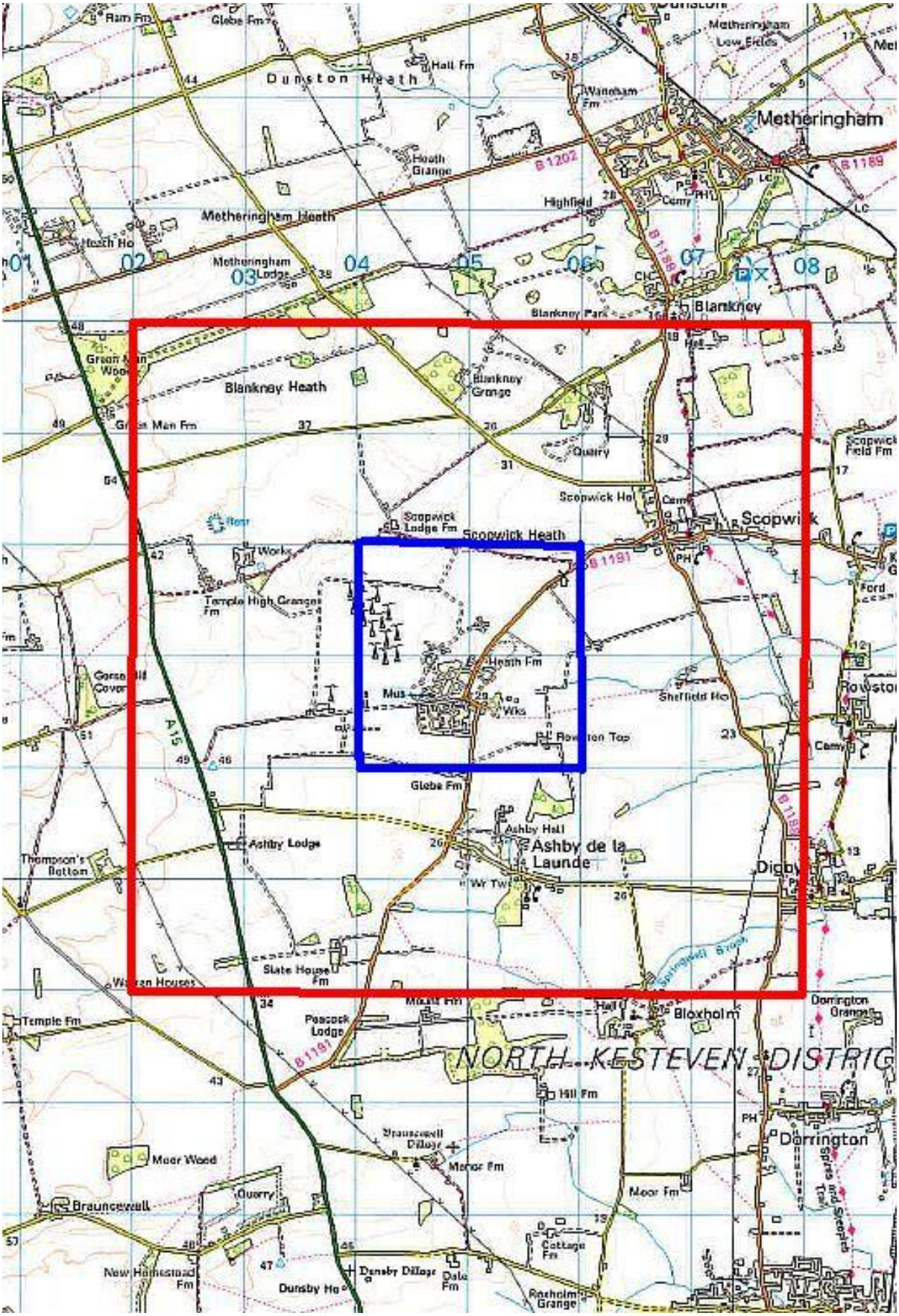
Coningsby

Cranwell North





Cranwell South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Metheringham Heath
Blankney
Blankney Heath
Blankney Grange
Scopwick
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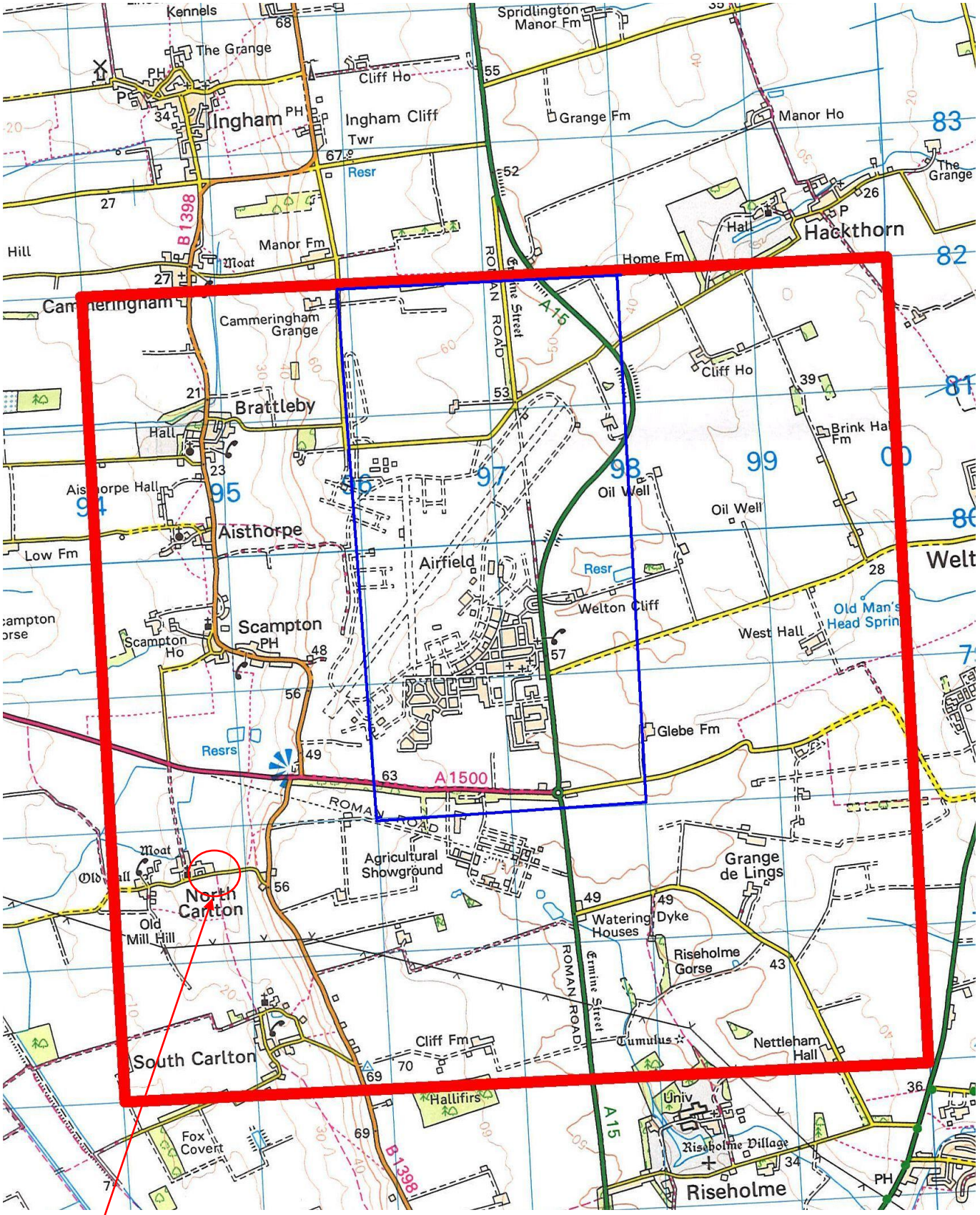
Heath Fm
Temple High Grange Fm
Ashby Lodge
Ashby de la Launde
Digby
Slate House Fm
Peacock Lodge
Bloxholm
Dorrington
Moor Wood
Quarry
Braunceswell
Manor Fm
Moor Fm
Dunsby Ho
Dunsby Village
Rochsholm Grange
NORTH KESTEVEN DISTRIC
A15
B1202
B1189
B1191

RAF Digby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Ingham
Ingham Cliff
Twr
Cliff Ho
Spridlington Manor Fm
Grange Fm
Manor Ho
Hackthorn
Hall
Home Fm
B 1398
Manor Fm
Moat
Hill
Cammeringham
Cammeringham Grange
Brattleby
Hall
Aisthorpe Hall
Aisthorpe
Low Fm
Airfield
Oil Well
Resr
Welton Cliff
West Hall
Old Man's Head Spring
Scampton
Scampton Ho
PH
Resrs
A1500
ROMAN ROAD
Glebe Fm
Agricultural Showground
Grange de Lings
Watering Houses
Dyke
Riseholme Gorse
Ermine Street
Cumulus
Nettleham Hall
North Carlton
Old Mill Hill
South Carlton
Cliff Fm
Hallifirs
Fox Covert
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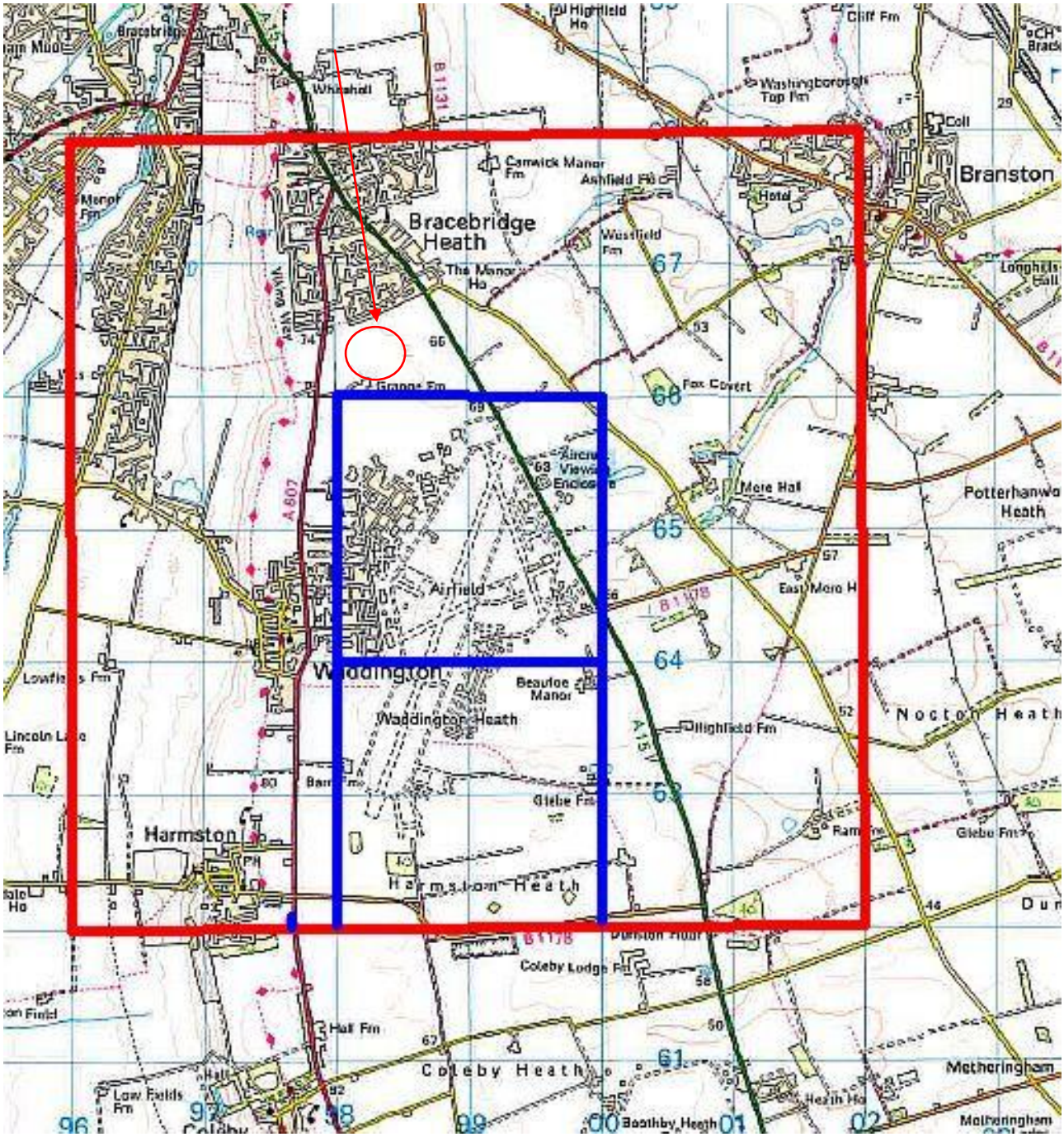
Univ
Riseholme Village
Riseholme
PH

Scampton



RAF Waddington

Appendix 2

Curlew egg collection data from Lincolnshire airfields 2022-2024

Date	Location	Clutch size
16/05/2022	Barkston Heath	4
16/05/2022	Barkston Heath	3
03/05/2022	Barkston Heath	4
03/05/2022	Barkston Heath	4
26/05/2022	Barkston Heath	4
11/05/2022	Coningsby	3
04/05/2022	Cranwell	4
27/04/2022	Scampton	3
27/04/2022	Scampton	4
04/05/2022	Scampton	4
04/05/2022	Scampton	4
13/05/2022	Scampton	4
13/05/2022	Scampton	4
16/05/2022	Scampton	4
10/05/2022	Waddington	4
17/05/2022	Waddington	4
23/05/2022	Waddington	4
10/06/2022	Waddington	4
25/04/2023	Barkston Heath	4
25/04/2023	Barkston Heath	2
29/04/2023	Barkston Heath	4
29/04/2023	Barkston Heath	3
29/04/2023	Barkston Heath	2
03/05/2023	Waddington	4
03/05/2023	Barkston Heath	4
09/05/2023	Waddington	3
09/05/2023	Coningsby	4
11/05/2023	Barkston Heath	4
11/05/2023	Barkston Heath	4
11/05/2023	Barkston Heath	4
16/05/2023	Barkston Heath	4
16/05/2023	Barkston Heath	1
24/05/2023	Barkston Heath	4
24/05/2023	Barkston Heath	3
24/05/2023	Cranwell	4
26/05/2023	Cranwell	3
30/05/2023	Cranwell	4
07/06/2023	Barkston Heath	4
29/04/2024	Cranwell	4
03/05/2024	Barkston Heath	4
03/05/2024	Barkston Heath	4
14/05/2024	Barkston Heath	4

14/05/2024	Barkston Heath	4
24/05/2024	Barkston Heath	3
29/05/2024	Cranwell	8
31/05/2024	Barkston Heath	2
31/05/2024	Barkston Heath	4
31/05/2024	Barkston Heath	4
07/06/2024	Barkston Heath	2
07/06/2024	Barkston Heath	4