


Peak District Moors

Breeding Bird Survey 2018

March 2021

Waterman Infrastructure & Environment Limited
Merchants House, Wapping Road, Bristol, BS1 4RW
www.watermangroup.com

Prepared for Moors for the Future Partnership and Natural England

Client Name:	Peak District National Park Authority
Document Reference:	WIE14005-100-R-1-2-6-NM
Project Number:	WIE14005-100

Quality Assurance – Approval Status

This document has been prepared and checked in accordance with
Waterman Group's IMS (BS EN ISO 9001: 2015, BS EN ISO 14001: 2015 and BS OHSAS 18001:2007)

Issue	Date	Prepared by	Checked by	Approved by
First	Nov 2018	Niall Machin Associate Director	Simon Dowell Senior Ecologist	Niall Machin Associate Director
Second	March 2021	Niall Machin Associate Director	Simon Dowell Senior Ecologist	Niall Machin Associate Director

Comments	Second issue following 2021 additional analysis.

Acknowledgements

This project was funded by a number of stakeholders including Natural England, the Moorland Association, National Trust, RSPB, Severn Trent Water, United Utilities and Yorkshire Water and co-ordinated by Moors for the Future Partnership.

We are also grateful to all the landowners, agents and managers who gave permission for our surveyors to access their land and undertake the survey work.

This is an updated report following additional analysis in 2021.

Disclaimer

Contents

Tables

Figures

Appendices

1. Introduction

1.1. Waterman Infrastructure & Environment Ltd (Waterman) was commissioned by Moors for the Future Partnership (MFFP) and initiated by Natural England (NE) to carry out a Breeding Bird Survey of the Peak District National Park moorland SSSI habitat. This survey was funded by Natural England, the Moorland Association, National Trust, RSPB, Severn Trent Water, United Utilities and Yorkshire Water.

1.2. The moorlands of the Peak District are nationally important and designated as Sites of Special Scientific Interest (SSSI) in part due to their moorland breeding bird assemblage. They are internationally designated within the South Pennine Moors Special Area of Conservation (SAC; under the EU Habitats Directive) and South Pennine Moors Special Protection Areas (phase 1 – Peak District Moors, SPAs; under the EU Birds Directive); both together are called Natura 2000 sites). It is designated as an SPA for short-eared owl *Asio flammeus*, merlin *Falco columbarius* and golden plover *Pluvialis apricaria*.

1.3. The survey objective was:

'… to update knowledge on the spatial distribution and abundance of breeding moorland birds, mainly within the SSSIs of the Peak District. The Survey will be a repeat of the Breeding Bird survey in 2004[1] of the Peak District moorlands…The Survey within the project will provide detailed maps of the distribution of moorland birds which will provide evidence towards assessing the impact of conservation and restoration land management and inform site specific management plans'.

1.4. This is an updated report following additional analysis undertaken in 2021 (see Section 3 and Appendix B).

[1] G.Carr and P. Middleton (2004). Breeding Bird Survey of the Peak District Moorlands 2004. Moors for the Future Report No.1

2. Study Area

2.1. The study area ('Survey Area') comprised the moorland habitats within 1868 500m x 500m squares ('survey squares') with a surface area of up to 467 km² within the Peak District National Park. The survey area was located within 603 National Grid kilometre squares, a map delineating proposed boundaries is attached in Figure 1.

2.2. It should be noted that the 2018 survey area differed slightly from the 2004 survey area, in particular 28 survey squares to the north east of the Goyt Valley around Combs Moss were included in 2004, but excluded in 2018 as this area was not part of the SSSI.

2.3. SSSIs within the Survey Area consist of: Dark Peak, Leek Moors, Goyt Valley and Eastern Peak District Moors. The area surveyed was a mosaic of upland habitats comprising heather moor, blanket bog, acid grassland and rush pasture. The study surveyed the 'moorland' habitat only – generally the unenclosed upland habitats: it excluded in-bye land, other grassland and plantations/woodland.

3. Methodology

Survey dates and surveyors

3.1. The Survey Area was subject to two survey visits as follows:

- First survey: between 18th April and 20th May 2018; and
- Second survey: between 21st May and 3rd July 2018.

3.2. All surveys were undertaken by highly experienced ornithologists with experience of upland bird species, including some who had participated in previous Peak District breeding bird surveys. CVs were approved by MFFP. The team started as 10 surveyors and expanded up to 13.

Survey methodology

3.3. The survey methodology (hereafter 'methodology') was issued by MFFP prior to the project commencing. Given the importance of surveying for key species like curlew and golden plover, the methodology was based on Brown & Shepherd (B&S 1993[2]). However, MFFP adapted the methodology in line with previous surveys in 1990 and 2004. The main differences from B&S are set out in Table 1 below:

Table 1: Differences from Brown & Shepherd Methodology

Issue	B&S	MFFP 2018
Design and target species	B&S is a specific method devised for censusing upland breeding waders: oystercatcher, golden plover, dotterel, lapwing, dunlin, snipe, curlew, redshank and common sandpiper.	All target species in Tables 2 and additional species in Table 4.
Search effort	A constant search effort maintained throughout: on unenclosed moorland 20-25 min (mean 22.5 min) spent in each 500 x 500 m quadrat. Minimum time was adhered to unless more was required for writing registrations of birds breeding at high density. On no account was the maximum permitted time exceeded.	20 – 25 min spent in each square (=80 to 100 min/km^2), upper limit does not need to be strictly adhered to (e.g. in 'busy' squares where lots of birds may have to be recorded).
Coverage	The observer followed a route walking through each square such that all parts were approached to within at least 100m.	Cover the survey square so you are within 125m of all areas.

3.4. The methodology aimed for surveyors to spend 20 – 25 minutes in each survey square, spending longer if required in 'busy' squares where more birds were present. See 'Limitations' section for a discussion on this time guideline.

3.5. Surveys were undertaken between 08:30 – 18:00, with routes generally reversed for the second survey period.

3.6. There was one surveyor per square, although some surveyors worked in teams of two across wide areas to reduce travel.

[2] A. F. Brown & K. B. Shepherd (1993). A method for censusing upland breeding waders, Bird Study, 40:3, 189-195, DOI: 10.1080/00063659309477182

3.7. A predetermined route was devised so that surveyors walked within 125m of each survey square in order that all ground was visible. i.e. whilst transecting is fine in flat areas, walking up to localised raised ground / hill-tops was sometimes necessary in undulating areas. Observers recorded all emerging/disturbed/flushed birds, listened for calls/song and scanned areas when appropriate (e.g. to clarify locations/numbers of calling/singing birds or visible birds in open areas). See 'survey limitations/constraints' section below for a note on assessing breeding behaviour in the field.

3.8. Locations and activity/behaviours of all birds seen on the moorland habitat were recorded on 1:25:000 OS maps using standard BTO Common Bird Census (CBC) codes. The primary focus was on the list of target moorland species in Table 2 below, but all other species using the moorland habitat were also recorded at the client's request.

3.9. Numbers of three species - red grouse, meadow pipit and skylark were tallied per survey square on the first visit only (no locations/CBC codes marked).

3.10. Surveys were only undertaken in suitable weather conditions avoiding strong winds (in excess Beaufort Scale Force 4), precipitation more than light rain, or when low cloud or fog reduced visibility.

3.11. Survey routes were recorded on GPS/OS maps.

Table 2: Target species

Number	Name	Latin Name
1	Black headed gull	*Larus ridibundus*
2	Buzzard	*Buteo buteo*
3	Canada goose	*Branta canadensis*
4	Carrion crow	*Corvus corone*
5	Common sandpiper	*Actitis hypoleucos*
6	Cuckoo	*Cuculus canorus*
7	Curlew	*Numenius arquata*
8	Dipper	*Cinclus cinclus*
9	Dotterel	*Charadrius mornellus*
10	Dunlin	*Calidris alpina*
11	Golden plover	*Pluvialis apricaria*
12	Goshawk	*Accipter gentilis*
13	Grey wagtail	*Motacilla cinerea*
14	Hen harrier	*Circus cyaneus*
15	Kestrel	*Falco tinnunculus*
16	Lapwing	*Vanellus vanellus*
17	Little ringed plover	*Charadrius dubius*
18	Mallard	*Anas platyrhynchos*
19	Meadow pipit	*Anthus pratensis*
20	Mistle thrush	*Turdus visciverus*
21	Merlin	*Falco columbarius*

Number	Name	Latin Name
22	Oystercatcher	*Haematopus ostralegus*
23	Peregrine	*Falco peregrinus*
24	Raven	*Corvus corax*
25	Red grouse	*Lagopus lagopus*
26	Redshank	*Tringa totanus*
27	Reed bunting	*Emberiza schoeniclus*
28	Ring ouzel	*Turdus torquatus*
29	Short-eared owl	*Asio flammeus*
30	Skylark	*Alauda arvensis*
31	Snipe	*Gallinago gallinago*
32	Stonechat	*Saxicola rubicola*
33	Teal	*Anas crecca*
34	Twite	*Carduelis flavirostris*
35	Wheatear	*Oenanthe oenanthe*
36	Whinchat	*Saxicola rubetra*

Data Analysis

3.12. The analysis followed the methodology as set out below, broadly divided into three stages:

- Stage 1: In the field, ensuring as far as possible that multiple registrations relating to the same birds were clearly identified;
- Stage 2: Estimate number of breeding pairs for study area on each visit. Where several individuals were present in an area and it had been impossible to determine the number of pairs they represented in the field, individual birds were considered to form a pair if the distance between them was less than 500 m (200 m for dunlin and passerines); and
- Stage 3. Consider both visit maps together to determine population estimates. The distance thresholds only applied between visit 1 and visit 2 maps. Breeding pairs are considered to be separate from one-another using the following thresholds:
  - 1000m apart for all species apart from those listed below
  - 500m for dunlin
  - 200m for passerines (including corvids)
- Where pairs are judged to be the same, the final location is marked on the map halfway between both observations. Stage 3 follows on once all distance thresholds have been followed as required by Stage 1 and 2 above.

3.13. If a nest represented one of the two locations that were being recorded as one pair, the location of the nest was used for the record of the pair. In a few instances, topography was a factor influencing in determining whether visit 1 and visit 2 registrations of a species within the distance threshold (e.g. 1000m for most species) were the same or separate pairs. For example, if two potential curlew pairs were separated by 800m with a deep wooded ravine separating the registrations, these may be considered separate pairs depending on the judgement of the analysing ornithologist and the field data.

3.14. For the analysis, species were divided into 3 groups:

a) Species for which number and location of breeding pairs was estimated;

b) Species analysed only as 'sightings' as their actions are not often attributable to the breeding criteria listed above and are mostly recorded as flying over suitable breeding/feeding habitat (e.g. raptors); and

c) Red grouse, meadow pipit and skylark which were tallied per survey square on the first visit only (no locations/CBC code or behaviours marked).

3.15. For (a) above, i.e. those species where the number and location of breeding pairs was estimated, the assessment of breeding pairs/pairs, was as set out in the methodology, namely birds were considered breeding if they were in song, displaying or in territorial dispute, carrying food or nest material, alarm calling, or if there were nests or young.

3.16. Snipe had specific methodology: birds were recorded as breeding if they were displaying, chipping, or drumming/wing vibrating. Where snipe were flushed, giving a typical flight call, these were not classed as breeders.

3.17. All teal flushed from, or observed in suitable breeding habitat, were classed as breeding.

Survey limitations/ constraints

3.18. The survey was based on the Brown & Shepherd methodology, but amended in that a much wider list of target bird species were being surveyed and recorded (see Table 2 above). The fact that the B&S methodology is devised to census upland breeding waders only (principally six waders - golden plover, dunlin, oystercatcher, lapwing, curlew and redshank[2]), has had two important methodological constraints.

3.19. Firstly, it meant that other than the 6 waders mentioned above, the survey may have under-recorded all other species, as the methodology was not devised specifically for such species. For example, breeding snipe will not flush and show breeding behaviour unless almost trodden on, so most will not have been located by only walking within 125m of all squares: and species which favour the moorland edges (whether rivers or fence lines/ scattered trees) may not be seen/heard from a distance of 125m (e.g. whinchat, dipper).

3.20. Secondly, in recording a greater number of species, the survey transects took much longer than the estimated 20-25 minutes per survey square. The tough terrain also contributed to longer survey times. On average, each survey square took between 30-34 minutes. Coupled with the late start to the project (18th April instead of 1st April), this meant that the first survey period overran and finished on 21st May instead of 15th May. The longer time required per survey square also meant that the second survey period started later and also overran and finished on 3rd July rather than 30th June. The slightly altered timings of the 2nd survey period may have had an influence of wader numbers, given that some species will leave the moors early after breeding to feed on nearby in-bye land. To account for this, most of the 2nd survey was completed before 20th June – but some areas were not surveyed until early July (primarily a small area in the Dark Peak around Howden). However, the results of the 2nd survey were generally very good for species like golden plover and dunlin (as expected) and it may be that only curlew may have been impacted by the survey time changes – with some surveyors noting that fewer were recorded on the 2nd survey.

3.21. As a result of the extra time taken to survey each survey square, the 1st survey did not survey 79 full survey squares and 19-part survey squares as follows (see **Appendix A** for 1km square grid references for these areas):

- Arnfield Moor, Dark Peak: 14-full and 6-part survey squares;
- Greenfield/Howden, Dark Peak: 16-full survey squares;
- Derwent/Moscar Moors, Eastern Peak District Moors: 45-full survey squares and 13-part survey squares; and
- Leek Moors: 4-full survey squares.

3.22. Those survey squares missed from visit 1 were prioritised to be undertaken early on in the second visit. However, as the 'tally species' (meadow pipit, red grouse and skylark) were only tallied on the first survey, the numbers for these 3 species will be reduced by the lack of data for the above missed survey squares.

3.23. A small number of moorland SSSI units were not surveyed at all as these were excluded by the client at the outset, or access was not forthcoming.

3.24. In addition, there were a few areas not surveyed by the Waterman team - at Pikenaze (Dark Peak) as the landowner used their own surveyors: species for these squares have been added to the species totals.

3.25. All other survey squares were surveyed on both visit 1 and visit 2, i.e. surveyed twice.

3.26. In addition, some survey squares/part survey squares were not surveyed where there were steep or dangerous slopes, or steep slopes with thick heather/bracken. Areas of thick heather were also walked around rather than through at the surveyor's discretion – where a lack of target breeding species was considered likely.

3.27. The weather was an inevitable factor governing survey – and a certain amount of time was lost as a result of un-forecast poor weather. However, the weather guidelines were adhered to and surveyors ceased survey if the weather deteriorated and was considered unsuitable.

3.28. Assessing breeding/territorial behaviour in the field can be subjective and at times challenging. In order to deliver the survey (two visits to each 0.5km square twice) during one breeding season, this meant that a large number of field surveyors were employed. This introduced a degree of variance in observer recording practice, skill and experience, in particular for key upland species. A training day was held prior to work starting to help standardise the approach, however not all surveyors were able to attend and some surveyors were added later into the team and so missed the training session. Whilst all surveyors were highly experienced survey ornithologists (some having been involved in previous Peak District Breeding Bird Surveys) and CVs were approved by the client, there was some bird notifications that needed further explanation and scrutiny post survey.

3.29. Therefore, the analysis also involved further checking with surveyors about various records and a system of post survey 'signposting' was agreed with MFFP. Where original field registrations did not show breeding behaviour but were subsequently interpreted as showing breeding behaviour in the analysis, these field results were subsequently highlighted and noted in an excel table (including the reason for the analysis interpretation).

3.30. As an example, the field maps had many records of golden plover calling from the ground, where such calling birds did not flush on the approach of the observer (bird merely walking away). Where these had been marked as a 'single underline' (calling bird) in the field, they were subsequently interpreted as 'double underline' (alarm calling and distraction display, i.e. adult bird alarm calling at approach of surveyor, leading surveyor away from nest/young, showing obvious loyalty to nest area). These were considered to be distinct to non breeding birds which tended to flush and disappear in flight, not showing any territorial allegiance.

3.31. The adaptation of the B&S methodology for the 2018 survey had other potential impacts which are worth flagging in terms of future survey methodology. Issues included:

- Whilst B&S is designed for a small number of wader species mentioned earlier, it is not designed for many other species e.g. passerines, raptors, ducks, geese – which will not react in the way the target wader species would do – e.g. flying up and alarm calling. Some passerines would just not be seen or heard at 125m and may not react in a conventional breeding behaviour manner. Finches were often observed in pairs calling as they flew over – or calling from suitable habitat – but not recorded as alarm calling and therefore not classified as breeding;
- For many other species, a sight record that may involve a call would be difficult to categorise as breeding behaviour e.g. dipper, grey wagtail. A single individual calling in suitable habitat would not count as breeding in the project methodology – but in many cases these would probably be breeding birds. If birds are present high on the moors in summer in suitable habitat – they are highly likely to be breeding. There may be a very small number of summering/non-breeders, but in most cases the birds are likely breeding;
- For some species, the mid April start date was too late to record the majority of breeding behaviour e.g. dipper and mistle thrush, as these species begin breeding in February when adults are singing;
- Even for some of the target species, distinguishing between calling and alarm calling is not easy. Surveyors were walking through birds' moorland territory – so a bird taking wing and calling was likely to be in response to the sight of a human form (predator) and should rightly be termed an alarm call.

4. Results

4.1. The results of the survey for each target species are summarised below, setting out:

- Number of pairs or individuals (sightings); and
- Brief account of distribution.

4.2. Species distribution maps are set out in Figures 2 - Figure 25.

4.3. Since the initial analysis and publication of the report in 2018 there has been additional analysis of the field data (see 3.12 above above). This has had the overall effect of reducing the numbers of pairs for most target species from the 2018 issue (see Appendix B).

Species accounts

Canada goose

4.4. A total of 100 pairs of Canada geese were recorded during 2018 surveys. Most pairs were located in the Dark Peak (84) with particular clusters in the north of the Dark Peak and north west/north of Kinder Scout. Smaller numbers were in Leek Moors (11) and Eastern Peak District Moors (5). Pairs were generally nesting on heather hill/valley sides or in cloughs.

Teal

4.5. A total of 13 pairs of teal were recorded in 2018. 5 pairs were in the Eastern Peak District Moors SSSI and the remainder in the Dark Peak.

Mallard

4.6. A total of 19 pairs of mallard were recorded in 2018. These were spread across the Dark Peak (15) with fewer in the Leek Moors (3) and a single territory in the Eastern Peak District Moors. This species may be under-recorded as there were many more sightings of individual or groups of mallard which could have related to more breeding pairs.

Hen harrier

4.7. There were 6 sightings of hen harrier during the 2018 survey, 3 sightings in the Dark Peaks, 2 in the Leek Moors and a single sighting in Eastern Peak District Moors. In addition, in 2018 a separate pair successfully raised three young on National Trust land in the Dark Peak (surprisingly, whilst the surveyor knew of their presence, they were not seen during the survey).

Buzzard

4.8. Buzzards were a relatively common sight across the Peak District, with 244 sightings throughout the area in 2018. As a quite wide-ranging species, there could be considerable overlap with these sightings. The BTO have recorded a rapid increase in the buzzard population in England, recently describing it as the most common diurnal bird of prey.

Kestrel

4.9. A total of 239 sightings of kestrel throughout the Survey Area were recorded in 2018. Again, there may be duplication of sightings during surveys as the birds hunt over wide areas. However, BTO statistics show a steady decline in the UK over the past few decades – the high level of sightings in 2018 in the Peak District may reflect a good supply of prey (small mammals) in the upland grassland areas.

Merlin

4.10. There were 28 sightings of merlin in 2018, including evidence of successful breeding. Most sightings were in the Dark Peak, with fewer in Eastern Peak District Moors (3) and Leek Moors (3).

Peregrine

4.11. In 2018 there were 36 sightings of peregrine (including evidence of breeding). The sightings were generally distributed across the SSSIs, although associated more with craggy areas.

Goshawk

4.12. The 2018 surveys recorded 3 sightings of goshawk all in the Dark Peak SSSI.

Red grouse

4.13. A total of 3689 red grouse were observed during visit 1. The survey methodology is not designed for this species and so this is assumed to be an underestimate as red grouse can be secretive birds and can avoid approaching surveyors without being observed.

Oystercatcher

4.14. A total of 11 pairs of oystercatcher were recorded in 2018. There were 3 pairs in the Eastern Peak District Moors and the remaining 8 pairs in the Dark Peak. Some pairs were associated with reservoir banks (not all).

Golden plover

4.15. In 2018, a total of 522 pairs of golden plover were recorded across the entire survey area. As in previous years, the birds were common above 400m where the vegetation is typified by cottongrass *Eriophorum vaginatum*. The birds avoided areas of thicker/taller heather.

4.16. Golden plover were common on the Dark Peak all the way down to its southern extremity. In the Eastern Peak District Moors, golden plover only bred in the northern section, between the A6101 and Burbage Moor. A total of 41 pairs were recorded on the Leek Moors and Goyt Valley SSSIs, with the southernmost around northing 68.5. This is just north of the Staffordshire boundary.

Lapwing

4.17. A total of 178 pairs of lapwing were recorded in 2018. Many lapwing pairs were on the moorland edges, particularly in the Dark Peak and Leek Moors/Goyt Valley SSSIs, where there was more of a grassland element to the moor. Lapwings were absent from the very southern section of the Leek Moors.

4.18. Lapwing have a clear association with in-bye land and, to a lesser extent, areas cleared/scraped of heather.

Dunlin

4.19. In 2018 a total of 69 pairs of dunlin were recorded. Dunlin were found in high plateaux areas with small pools or bogs present – and appear to have benefited from habitat creation works to dam and create such small waterbodies. The southernmost breeding records were around northing 90.5, just north of Kinder Scout.

4.20. Whilst no pairs were recorded on the Leek Moors/Goyt Valley SSSIs, a single dunlin was observed in suitable breeding habitat in the north of the Leek Moors.

Snipe

4.21. A total of 140 pairs of snipe were recorded in 2018. This may be an underestimate of population size using the moors given that the methodology is not well designed to record snipe. Pairs were mostly associated with wetter rush *Juncus* areas, with the Eastern Peak District Moors holding good numbers due to the prevalence of boggy areas.

Woodcock

4.22. Just a single individual was recorded in the Langsett area of Dark Peak. Again, this is a species not compatible with the methodology, being a largely nocturnal woodland species.

Curlew

4.23. Curlew were a common moorland bird during the 2018 surveys with 703 pairs recorded. They were generally well distributed across the survey area in 2018, despite their association with in-bye land for foraging. There were areas where they were less frequent, e.g. north and north east of Chew Reservoir, around Rakes Moss (Dark Peak) and Howden Moors (Dark Peak). There were 92 pairs recorded in the Leek Moors/Goyt Valley SSSIs, 466 pairs in the Dark Peaks and 145 in the Eastern Peak District Moors.

Redshank

4.24. In 2018 there were 2 pairs of redshank recorded. Both pairs were associated with reservoirs in the north west of the Dark Peak.

Common sandpiper

4.25. A total of 16 pairs of common sandpiper were recorded in 2018. All pairs were in the Dark Peak and all associated with reservoirs, bar a single territory on a river system on the western edge near Glossop.

Black headed gull

4.26. There were 23 sightings of black headed gull in 2018. This species was not recorded in 2004. In 2018 only those birds on the reservoir edges of the moor or flying low over the moor were recorded – not birds passing high over. Almost all records were from Snailsden Moor/ Winscar Reservoir area. An adult was recorded low over Gin Piece (Derwent/Moscar): this is a former breeding site (to mid-1980s) though this bird is likely to be a non-/post breeder loitering at the nearby Redmires Reservoirs.

Cuckoo

4.27. There were 77 sightings of cuckoo in the Peak District in 2018, mostly relating to singing males (this could be equated to ‘pairs’). One of the favoured host species of the cuckoo is meadow pipit – by far the most abundant species on the moors. Yet cuckoo were mostly recorded in areas away from the main open moorlands – in edge and slightly more diverse habitats which provided more song posts and cover. There were 13 in the Leek Moors/Goyt Valley SSSIs, 27 in the Eastern Peak District Moors and 37 in Dark Peak.

Short eared owl

4.28. There were 74 sightings of short eared owl in 2018. Some confirmed breeding pairs were recorded in the Dark Peak. Clearly 2018 was a good year for this species - numbers of short-eared owls tend to fluctuate from year to year dependent on food (vole) supply. There were 2 sightings in the Leek Moors/Goyt Valley SSSIs, 8 in the Eastern Peak District Moors and an impressive 64 in the Dark Peak prompting one local

surveyor familiar with the area commenting that he would remember the survey for '*the large numbers of short-eared owls, in 14 years of surveys I have never seen as many owls'*.

Skylark

4.29. There were 853 sightings of skylark in visit 1 in 2018. Skylark were only present in grassland areas, which frequently occurred at the edges of the moor or where more of a habitat mosaic occurred.

Meadow pipit

4.30. A total of 8878 meadow pipits were tallied (individuals) on survey visit 1. By far the most common species in the survey area, meadow pipit were widely distributed in almost every square. They were one of the few species that was recorded in areas of deep heather.

4.31. It's notable that all 3 tallied species sightings were less in 2018 than 2004: the limitations section (above) sets out the fact that not all squares were surveyed in visit 1 in 2018 and should 100% coverage have been completed, then it's likely that these differences would be less or numbers may have increased. Also, in 2004 an additional 28 squares were included to the north east of the Goyt Valley (excluded in 2018).

Grey wagtail

4.32. There were 45 pairs of grey wagtail recorded in 2018. The species is confined to fast flowing streams and rivers, and therefore the methodology may produce an underestimate of the true population (many streams and rivers formed moorland boundaries and surveyors were frequently 125m away on the moor). The bulk of the pairs (37) were from the Dark Peak, with just 5 in the Eastern Peak District Moors and only 3 in the Leek Moors/Goyt Valley SSSIs.

Dipper

4.33. There were 10 pairs of dipper in 2018. As for grey wagtail, this is a bird of fast flowing upland rivers and streams and similarly will have been under-recorded by the methodology, especially as dipper begin breeding activity in winter and can lay eggs as early as Feb/March. All pairs were in the Dark Peak, with a notable concentration in the central area either side of the A628.

Whinchat

4.34. A total of 48 pairs of whinchat were recorded in 2018. Again, the methodology doesn't favour the recording of this species which may be more prevalent on fringe habitats. The bulk of the pairs (33) were in the Eastern Peak District Moors as in 2004, but this time further south, with main centres on Stoke Flat/Big Moor (either side of White Edge) and also, to a lesser extent Burbage Moor. There were no records in the Leek Moors/Goyt Valley SSSIs.

Stonechat

4.35. There were 70 pairs of stonechat recorded in 2018. This species was recorded more frequently on the second survey visit. Records were spread across the Peak District, with 32 pairs in the Dark Peak, 24 pairs in the Eastern Peak District Moors and 14 pairs in the Leek Moors/Goyt Valley SSSIs.

Wheatear

4.36. Only 23 pairs of wheatear were recorded in 2018. Some individuals observed in April and early May were considered to be of the Greenland race *leucorhoa.* These and other birds not showing any territorial

behaviour were excluded from the totals as they were regarded as passage migrants or non breeding individuals.

4.37. Just 5 pairs were recorded in the Leek Moors/Goyt Valley SSSIs, with 4 pairs in the Eastern Peak District Moors around Burbage Moor. The remaining 14 pairs were scattered widely across the Dark Peak.

Ring ouzel

4.38. There were 82 pairs of ring ouzel recorded in 2018. Ring ouzel is one of the quintessential birds of upland crags and bracken slopes. It is one of a number of species of the British uplands undergoing marked range contraction and population decline.

4.39. Ring ouzel showed a scattered distribution generally across the Dark Peak, and just a single territory was recorded on the Leek Moors (at a traditional breeding site). However, there were particular strongholds for this species in the Eastern Peak District Moors in places like Burbage Moor and up to and along Stanage Edge.

Mistle thrush

4.40. There were 18 pairs of mistle thrush recorded in 2018, spread across the survey area. This species nests early in the season (in mid-February) so may have been unrecorded in relation to breeding behaviour.

Raven

4.41. A total of 159 raven sightings were recorded in 2018. Raven have experienced a range expansion in recent years within the UK and the BTO Breeding Bird Survey showed that from 1994 to 2007 the population increased by 134%.

4.42. Whilst raven were distributed across all of the Peak District SSSIs, there were concentrations in the Upper Commons – Bull Clough Head area, and north west of A629 around Rakes Moss.

Twite

4.43. There were just 2 flyover records of twite in the 2018 survey, with no breeding records. Both 2018 records were around Wessenden Moor, a former area in which twite were found breeding in 2004.

Reed bunting

4.44. A total of 177 pairs of reed bunting were found in the Peak District in 2018. Most pairs were associated with wetter, marshy areas, but the species can breed in other habitat like scrub and forestry plantations.

4.45. Pairs were dotted around the Dark Peak and Leek Moors/Goyt Valley SSSIs generally in the wetter *Juncus* areas. Over half the reed bunting pairs were in the Eastern Peak District Moors which held 95 pairs (which has perhaps more extensive boggy habitat) and reed bunting were fairly common breeders in the south and mid-Eastern Peak District Moors.

Summary Table

4.46. Table 3 below presents the data from the 2018 survey. Comparisons between the 1990, 2004 and 2018 surveys will be included in a separate analysis report.

Table 3: 2018 survey results of target species

Species	Pairs (P) or sightings (S) 2018
Black headed gull	23 (S)
Buzzard	244 (S)
Canada goose	100 (P)
Carrion crow	194 (S)
Common sandpiper	16 (P)
Cuckoo	77 (S/P)
Curlew	703 (P)
Dipper	10 (P)
Dotterel	0
Dunlin	69 (P)
Golden plover	522 (P)
Goshawk	3 (S)
Grey wagtail	45 (P)
Hen harrier	6 (S)
Kestrel	239 (S)
Lapwing	178 (P)
Little ringed plover	0
Mallard	19 (P)
Meadow pipit	8878 (S)
Merlin	28 (S)
Mistle thrush	18 (P)
Oystercatcher	11 (P)
Peregrine	36 (S)
Raven	159 (S)
Red grouse	3689 (S)
Redshank	2 (P)
Reed bunting	177 (P)
Ring ouzel	82 (P)
Short-eared owl	74 (S)
Skylark	853 (S)

Species	Pairs (P) or sightings (S) 2018
Snipe	140 (P)
Stonechat	70 (P)
Teal	13 (P)
Twite	2 (S)
Wheatear	23 (P)
Whinchat	48 (P)

Other species recorded

4.47. The following species were also recorded during the 2018 survey, shown in Table 4 below. Many of these species were in fringe habitats (e.g. woodland/trees and scrub) and were therefore under-recorded by the methodology.

Table 4: Other species recorded in 2018

Species	Sightings (S)/ Pairs (P)
Blackbird	17 (P)
Blackcap	21 (P)
Bullfinch	1 (P)
Blue tit	3 (P)
Chiffchaff	6 (P)
Chaffinch	44 (P)
Coal tit	5 (P)
Dunnock	32 (P)
Goldcrest	1 (P)
Grasshopper warbler	13 (P)
Greylag goose	7 (P)
Goldfinch	13 (P)
Great tit	6 (P)
Grey Heron	1 (S)
Hobby	30 (S)
Jackdaw	19 (P)
Long eared owl	2 (S)
Lesser redpoll	8 (P)
Lesser whitethroat	1 (P)

Species	Sightings (S)/ Pairs (P)
Linnet	104 (P)
Magpie	1 (S)
Marsh harrier	2 (S)
Mandarin duck	1 (P)
Moorhen	1 (S)
Nightjar	3 (P)
Pheasant	35 (P)
Pied wagtail	4 (P)
Red kite	18 (S)
Red legged partridge	3 (P)
Redstart	5 (P)
Robin	23 (P)
Spotted flycatcher	1 (P)
Sparrowhawk	9 (S)
Siskin	2 (P)
Swallow	1 (P)
Sand martin	3 (P)
Song thrush	3 (P)
Tawny owl	2 (S)
Tree pipit	19 (P)
Tufted duck	2 (P)
Whitethroat	14 (P)
Wood pigeon	5 (P)
Wren	459 (P)
Willow warbler	322 (P)
Yellowhammer	4 (P)

4.48. A summary of selected 'other' species is listed below.

Hobby

4.49. There were 30 sightings of hobby in 2018. Some records are likely to be duplicates but this species appears to be enjoying a population and range expansion nationally. It's not clear whether any pairs are breeding in the Survey Area, but it may breed where areas of woodland occur on the edges of the moor.

Red kite

4.50. A total of 18 sightings of red kites occurred in 2018. The 2018 sightings are likely to be wandering birds from introduction schemes started in 1989 and nationally the population has risen 1026% between 1995-2014.

Linnet

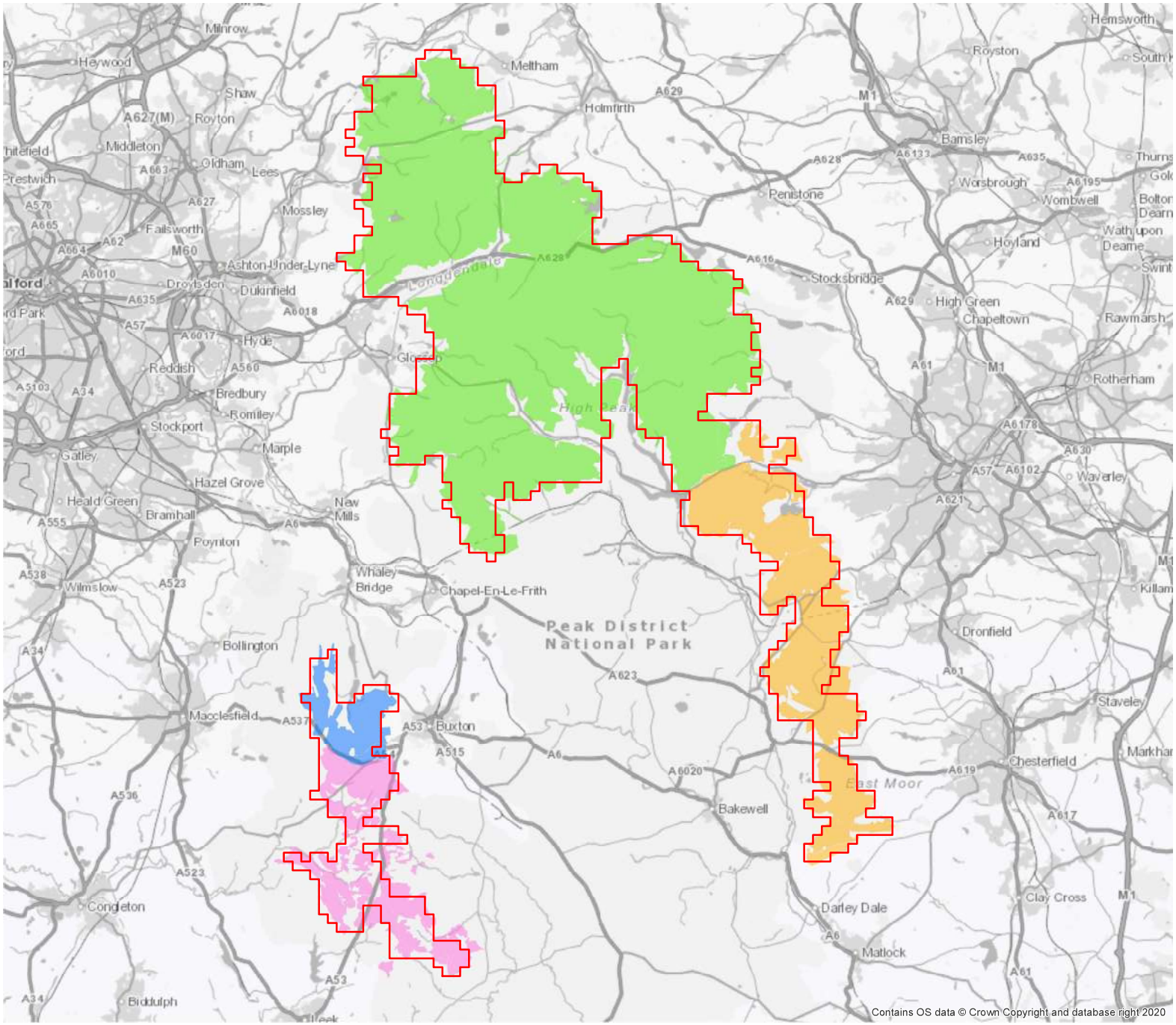
4.51. A total of 104 pairs of linnet were recorded in 2018. Linnets nest in loose colonies often on the fringes of the moor where scrub exists so population sizes may be underestimated by the methodology. However, its main stronghold was the Eastern Peak District Moors where 79% of the breeding records were found – the remainder in the Goyt Valley/Leek Moors SSSIs and some extreme fringe habitats of the Dark Peak.

5. References

A. F. Brown & K. B. Shepherd (1993). A method for censusing upland breeding waders, Bird Study, 40:3, 189-195, DOI: 10.1080/00063659309477182

G.Carr and P.Middleton (2004). Breeding Bird Survey of the Peak District Moorlands 2004. Moors for the Future Report No.1.

FIGURES



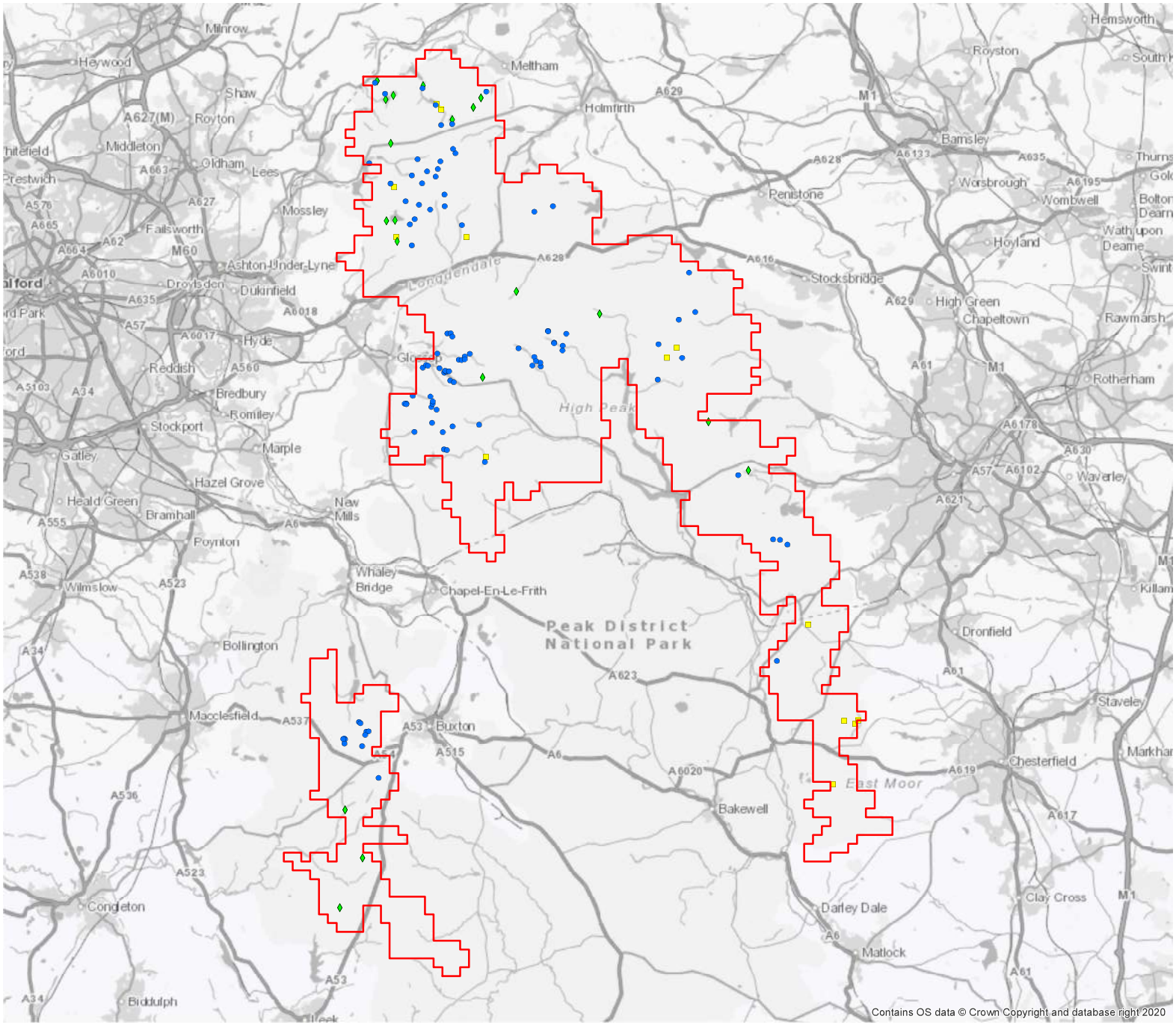
Survey Area
Eastern Peaks SSSI
Dark Peak SSSI
Goyt Valley SSSI
Leek Moors SSSI

N

0 2.5 5 10 km

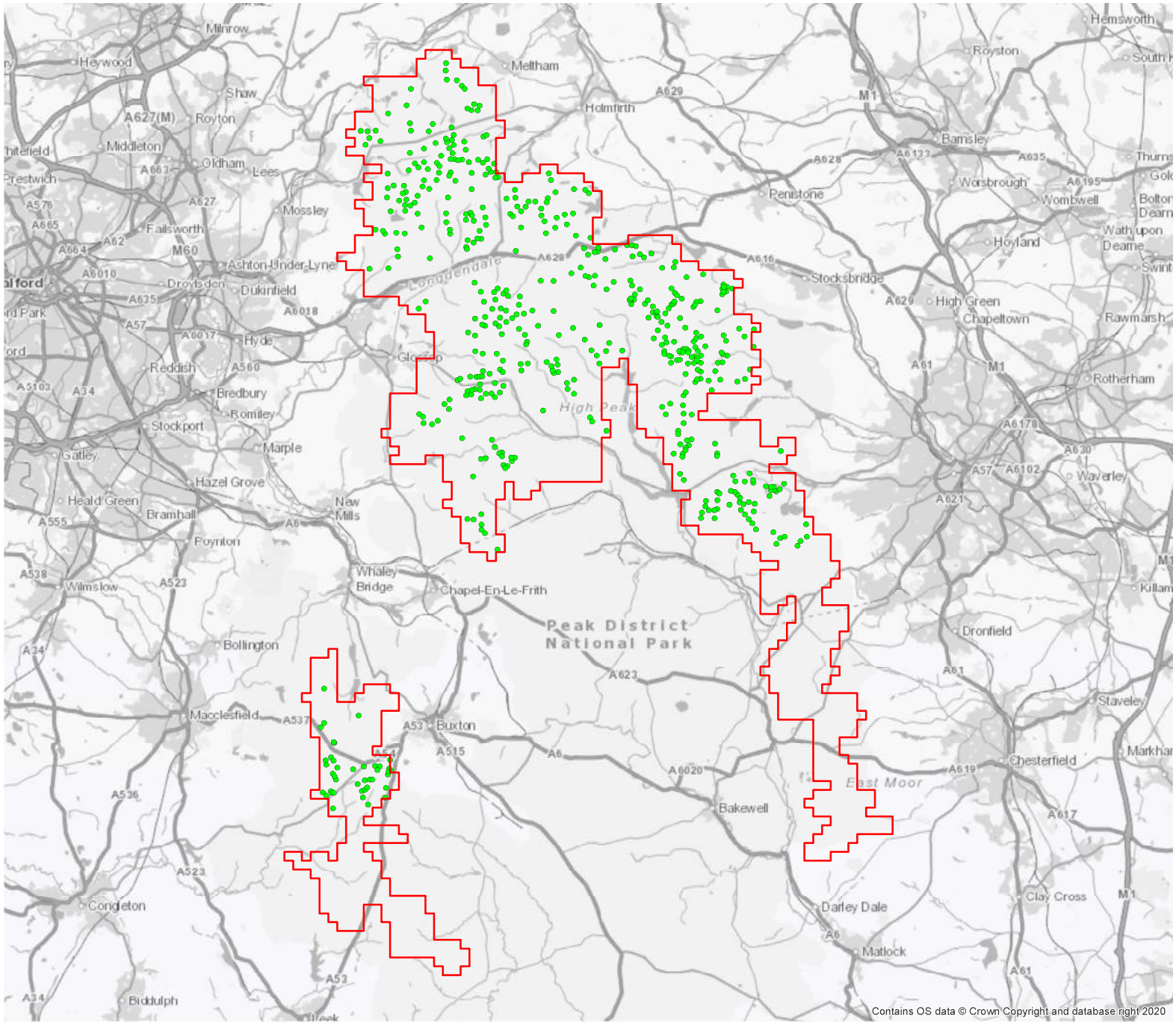
Project Details	WIE17078-101: Peak District
Figure Title	Figure 1: Survey Area showing SSSIs
Figure Ref	WIE17078-101_GIS_BS_1A
Date	February 2021
File Location	\\s-lncs\wie\projects\wie17078\101\gis\bs\issued figures

www.watermangroup.com



Project Details	WIE17078-101: Peak District
Figure Title	Figure 2: Distribution of Pairs – Canada Goose, Mallard, Teal
Figure Ref	WIE17078-101_GIS_BS_2A
Date	February 2021
File Location	\\s-lncs\wie\projects\wie17078\101\gis\bs\issued figures

www.watermangroup.com



Survey Area

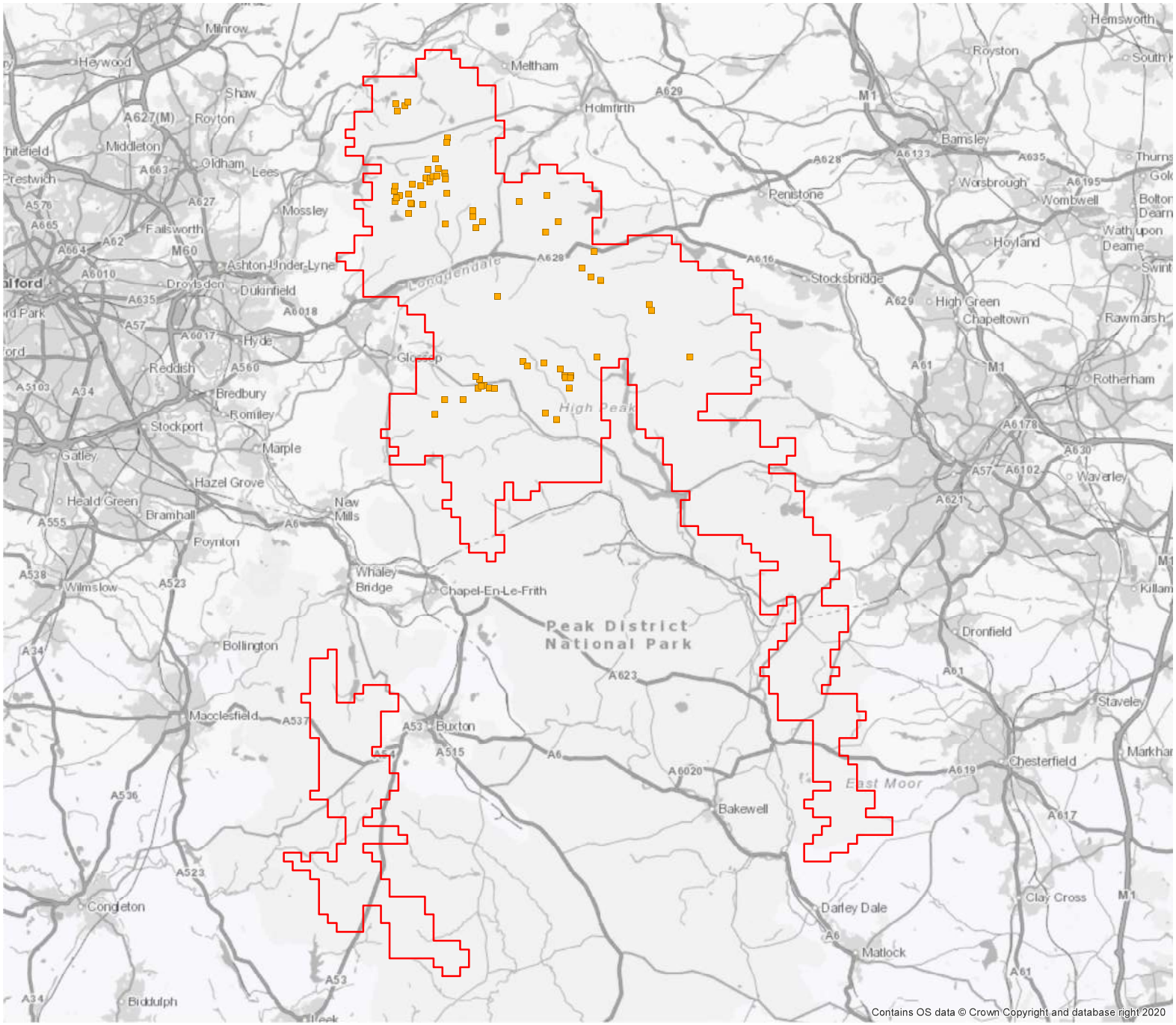
Golden Plover

N

0 2.5 5 10 km

Project Details	WIE17078-101: Peak District
Figure Title	Figure 3: Distribution of Pairs - Golden Plover
Figure Ref	WIE17078-101_GIS_BS_3A
Date	February 2021
File Location	\\s-lncs\wiel\projects\wie17078\101\gis\bs\issued figures

www.watermangroup.com



Survey Area

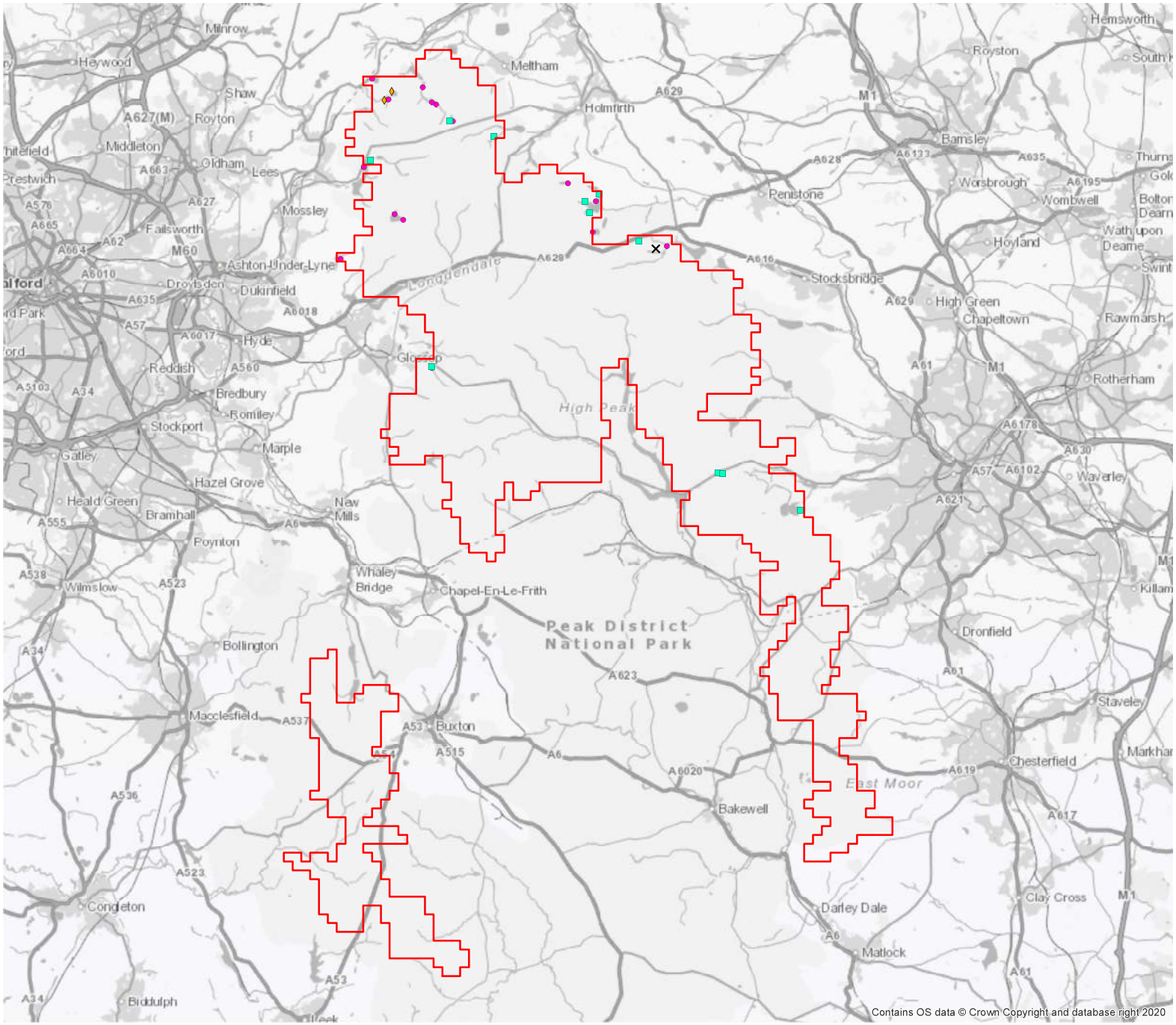
Dunlin

N

0 2.5 5 10 km

Project Details	WIE17078-101: Peak District
Figure Title	Figure 4: Distribution of Pairs – Dunlin
Figure Ref	WIE17078-101_GIS_BS_4A
Date	February 2021
File Location	\\s-lncs\wiel\projects\wie17078\101\gis\bs\issued figures

www.watermangroup.com



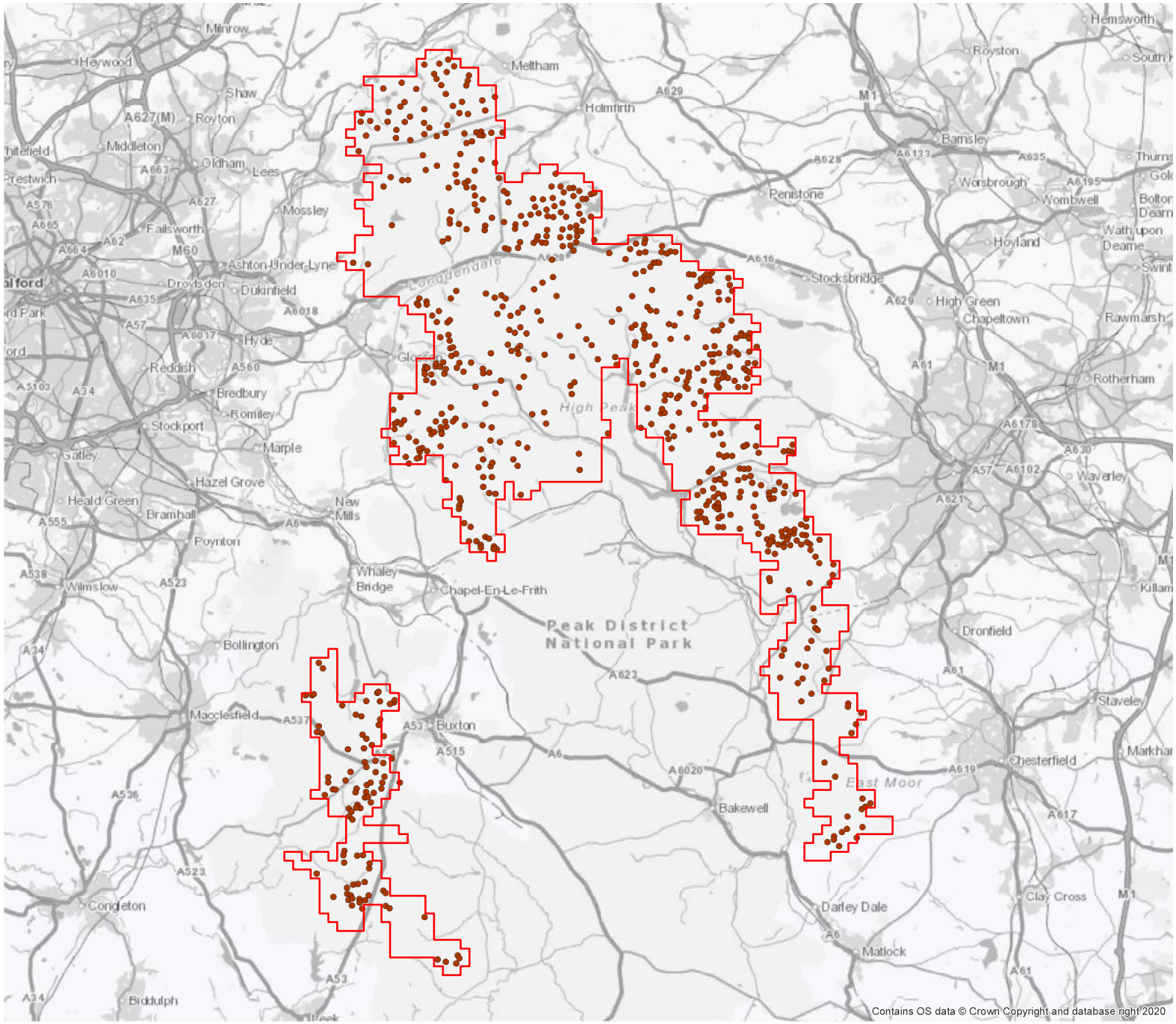
Survey Area
Woodcock
Redshank
Oystercatcher
Common Sandpiper

N

0 2.5 5 10 km

Project Details	WIE17078-101: Peak District
Figure Title	Figure 5: Distribution of Pairs – Common Sandpiper, Oystercatcher, Redshank and Sightings of Woodcock
Figure Ref	WIE17078-101_GIS_BS_5A
Date	February 2021
File Location	\\s-lncs\wiel\projects\wie17078\101\gis\bs\issued figures

www.watermangroup.com



Survey Area

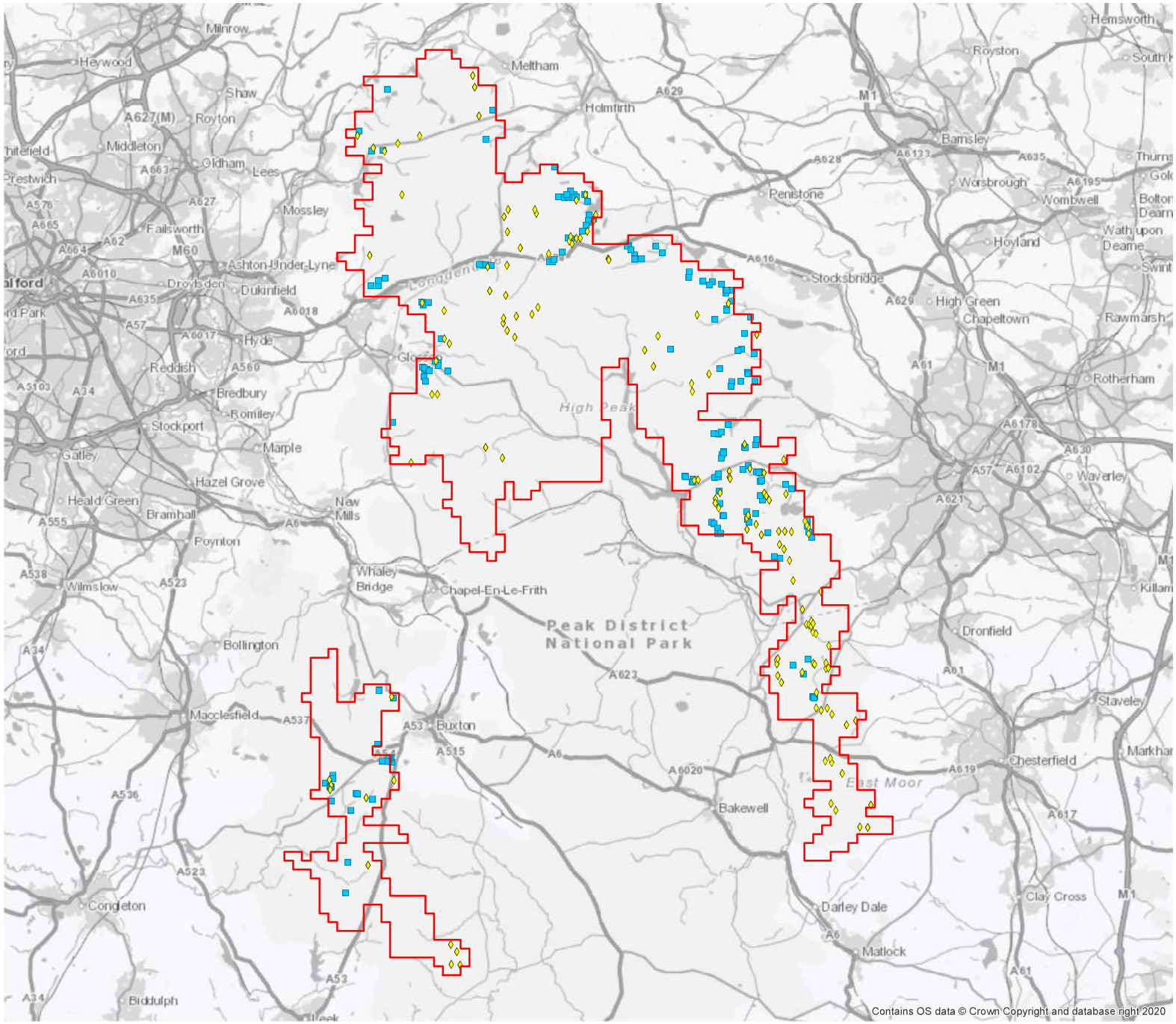
Curlew

N

0 2.5 5 10 km

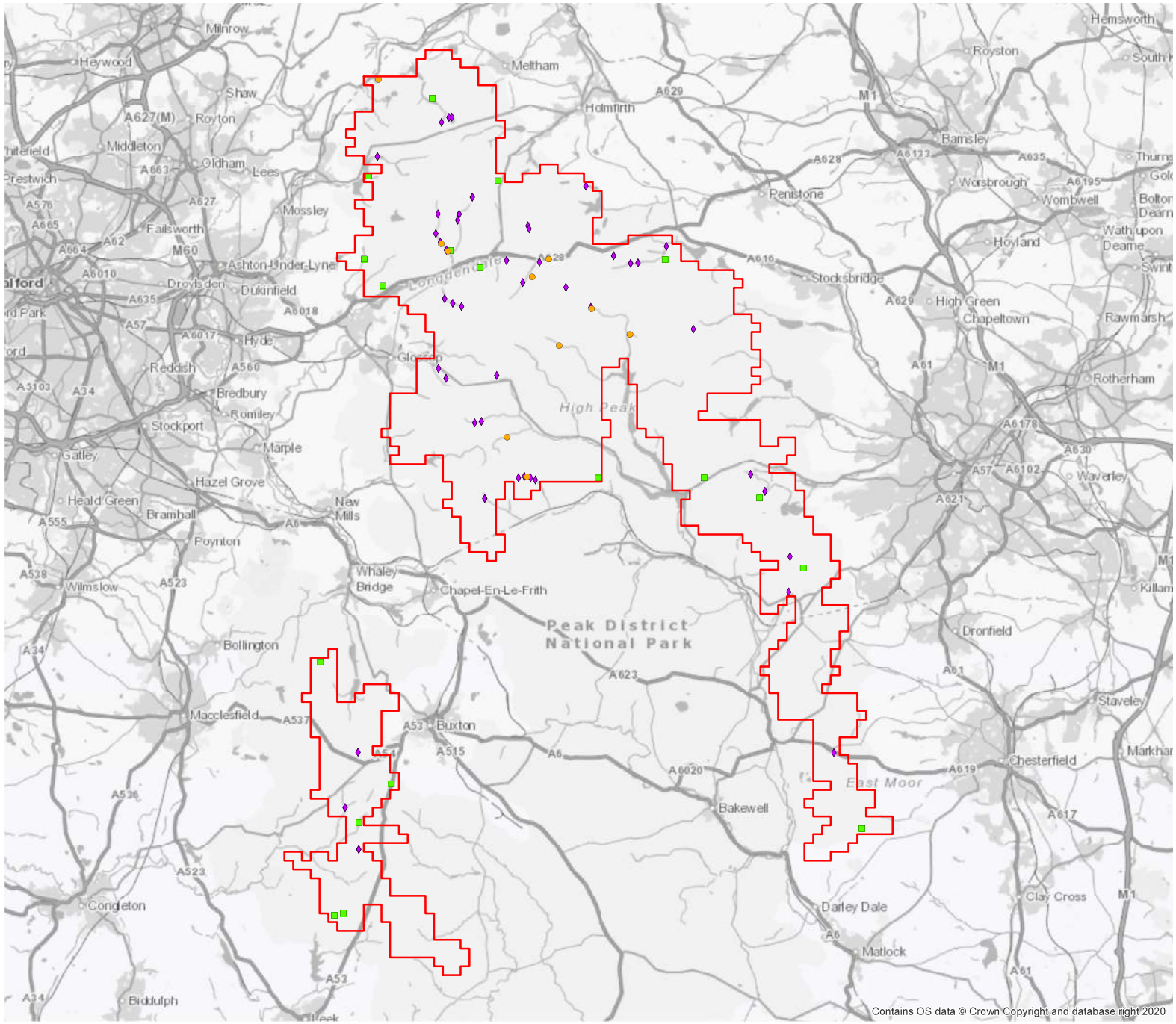
Project Details	WIE17078-101: Peak District
Figure Title	Figure 6: Distribution of Pairs – Curlew
Figure Ref	WIE17078-101_GIS_BS_6A
Date	February 2021
File Location	\\s-lncs\wiel\projects\wie17078\101\gis\bs\issued figures

www.watermangroup.com



Project Details	WIE17078-101: Peak District
Figure Title	Figure 7: Distribution of Pairs – Lapwing, Snipe
Figure Ref	WIE17078-101_GIS_BS_7A
Date	February 2021
File Location	\\s-lncs\wie\projects\wie17078\101\gis\bs\issued figures

www.watermangroup.com



Contains OS data © Crown Copyright and database right 2020

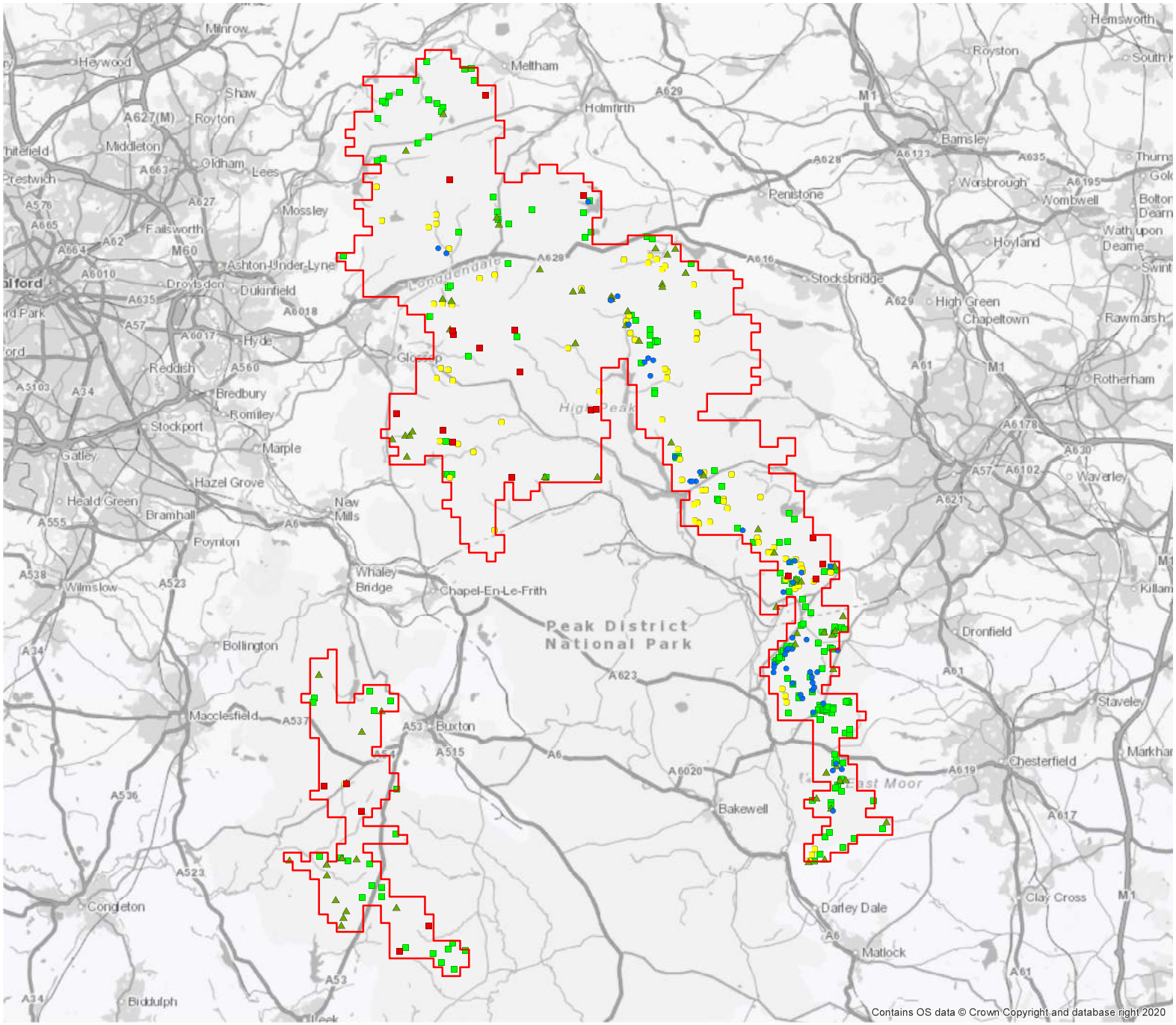
Survey Area
Dipper
Grey Wagtail
Mistle Thrush

N

0 2.5 5 10 km

Project Details	WIE17078-101: Peak District
Figure Title	Figure 8: Distribution of Pairs – Dipper, Grey Wagtail, Mistle Thrush
Figure Ref	WIE17078-101_GIS_BS_8A
Date	February 2021
File Location	\\s-lncs\wiel\projects\wie17078\101\gis\bs\issued figures

www.watermangroup.com



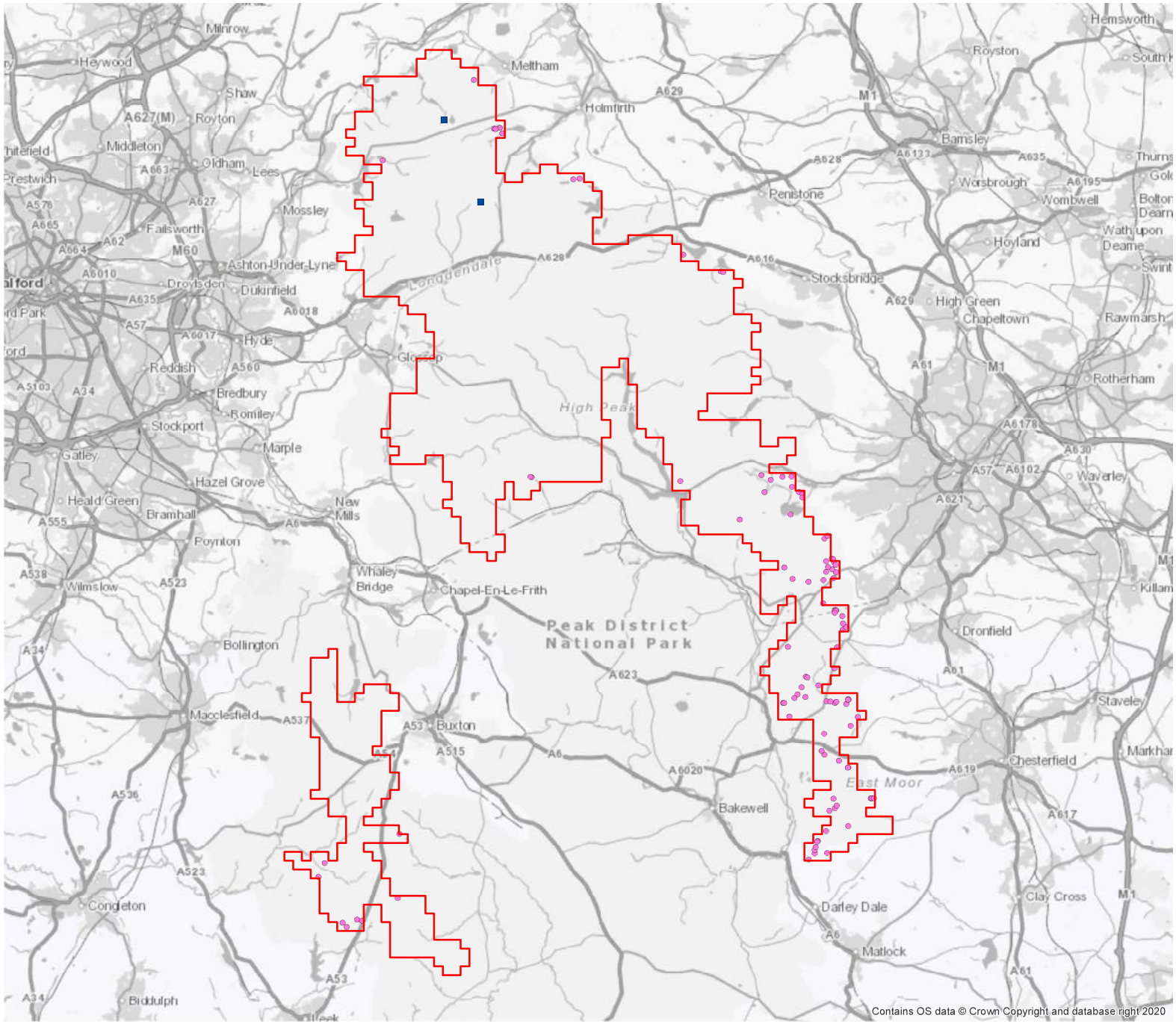
Survey Area
Whinchat
Wheatear
Stonechat
Ring Ouzel
Reed Bunting

N

0 2.5 5 10 km

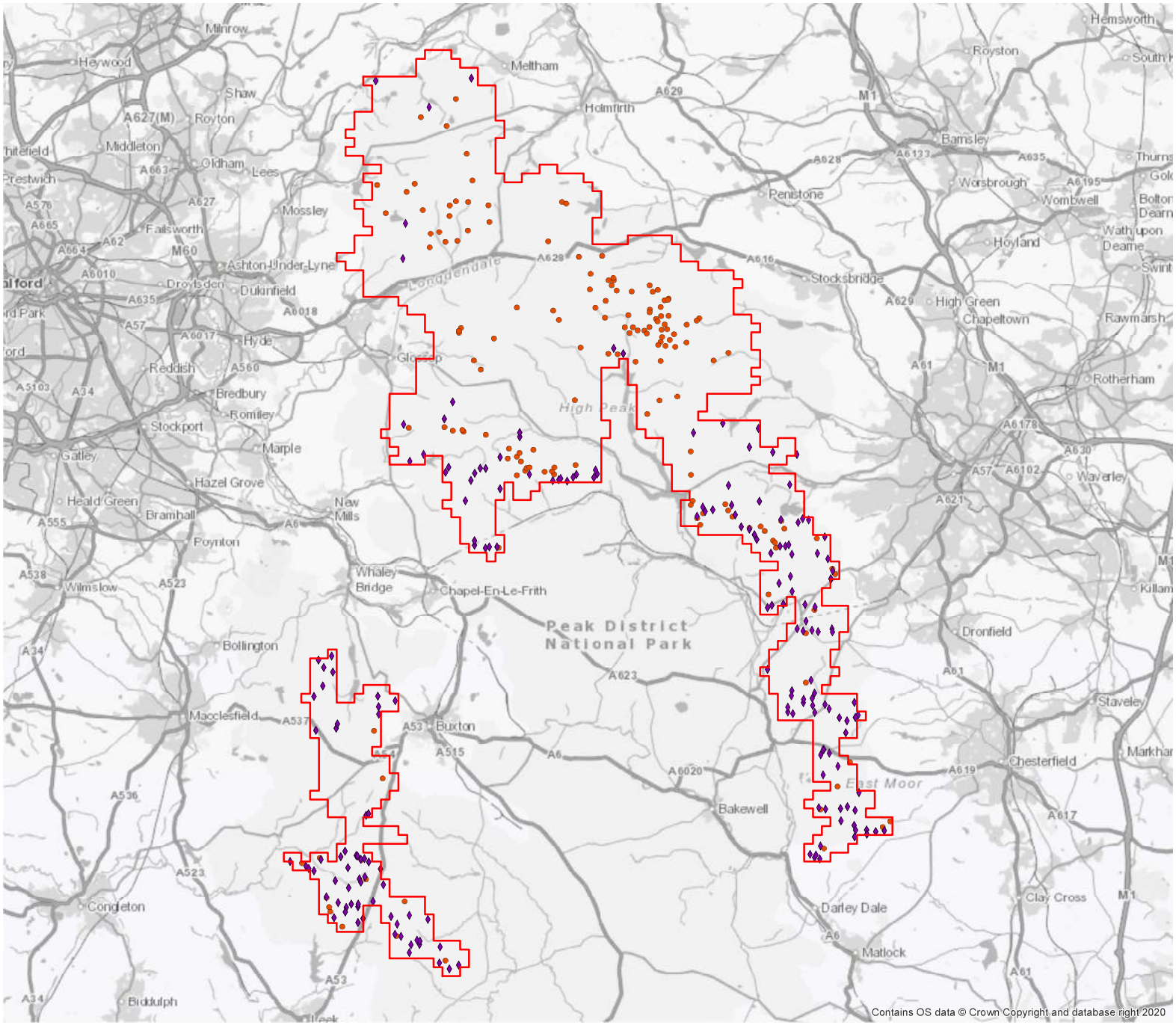
Project Details	WIE17078-101: Peak District
Figure Title	Figure 9: Distribution of Pairs – Wheatear, Stonechat, Ring Ouzel, Whinchat, Reed Bunting
Figure Ref	WIE17078-101_GIS_BS_9A
Date	February 2021
File Location	\\s-lncs\wiel\projects\wie17078\101\gis\bs\issued figures

www.watermangroup.com



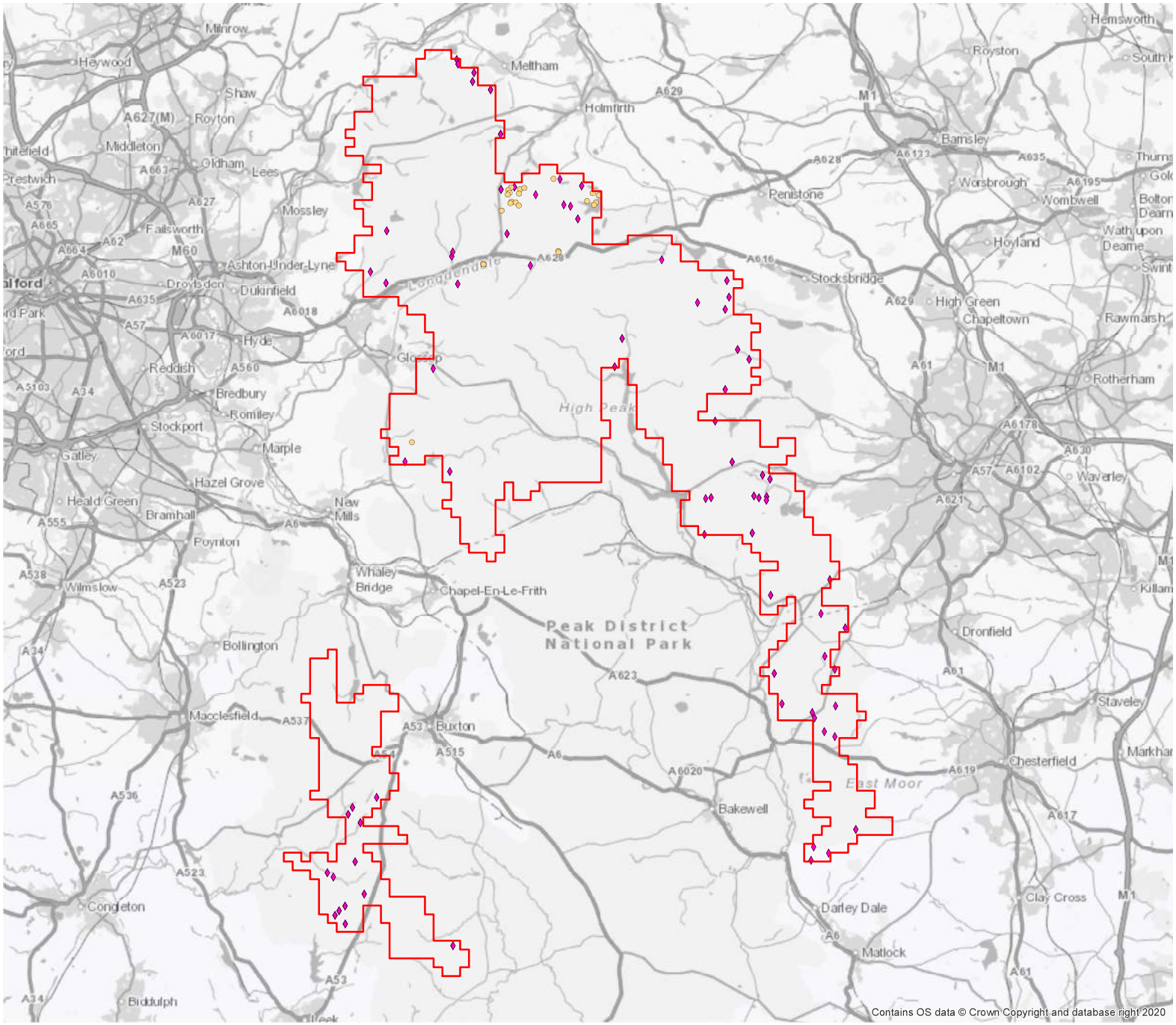
Project Details	WIE17078-101: Peak District
Figure Title	Figure 10: Distribution of Pairs Linnet and Twite Sightings
Figure Ref	WIE17078-101_GIS_BS_10A
Date	February 2021
File Location	\\s-lncs\wiel\projects\wie17078\101\gis\bs\issued figures

www.watermangroup.com



Project Details	WIE17078-101: Peak District
Figure Title	Figure 11: Distribution of Crow and Raven Sightings
Figure Ref	WIE17078-101_GIS_BS_11A
Date	February 2021
File Location	\\s-lncs\wiel\projects\wie17078\101\gis\bs\issued figures

www.watermangroup.com



Survey Area

Black Headed Gull

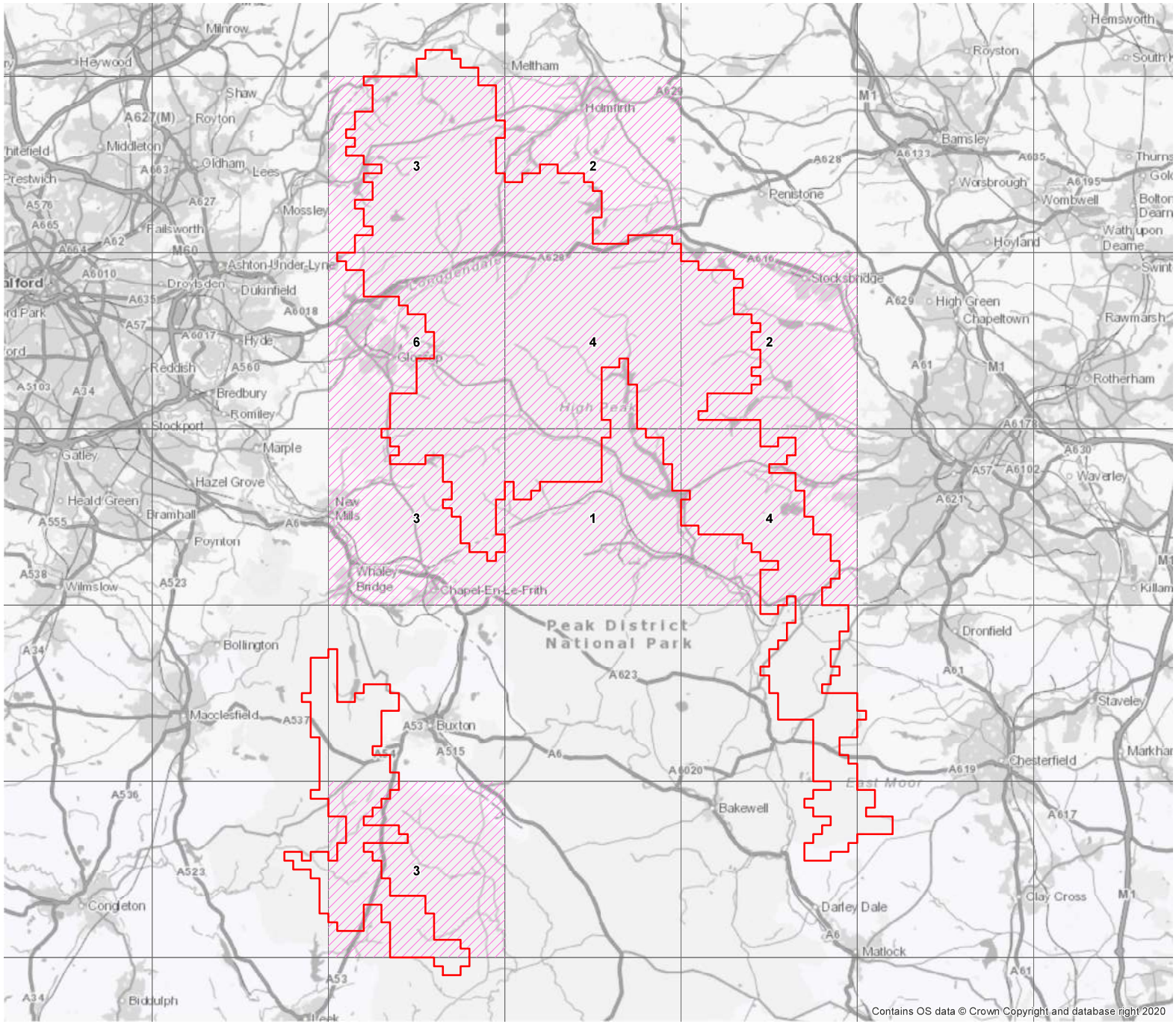
Cuckoo

N

0 2.5 5 10 km

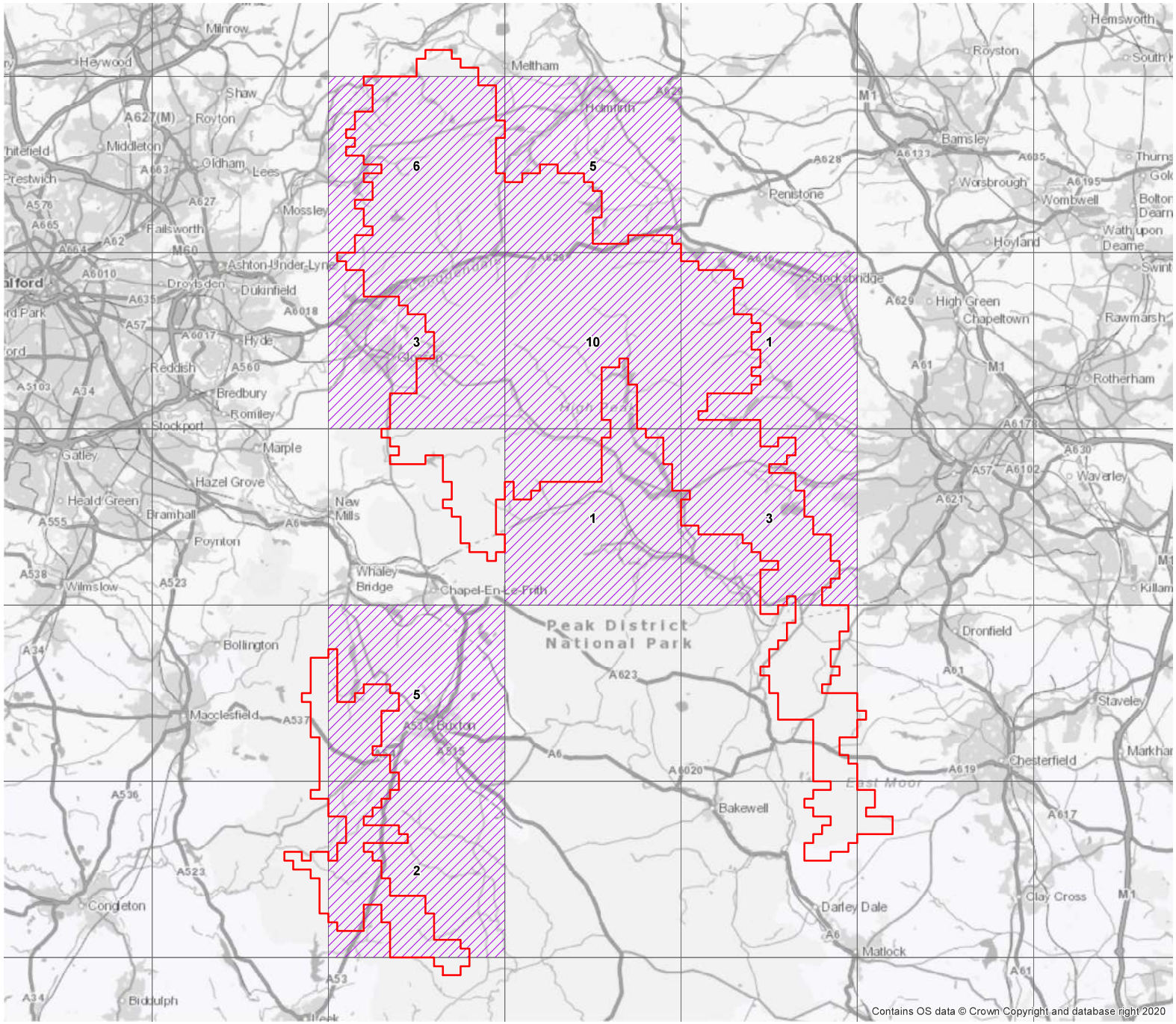
Project Details	WIE17078-101: Peak District
Figure Title	Figure 12: Distribution of Black Headed Gull and Cuckoo Sightings
Figure Ref	WIE17078-101_GIS_BS_12A
Date	February 2021
File Location	\\s-lncs\wiel\projects\wie17078\101\gis\bs\issued figures

www.watermangroup.com



Project Details	WIE17078-101: Peak District
Figure Title	Figure 13: Distribution of Merlin Sightings
Figure Ref	WIE17078-101_GIS_BS_13A
Date	February 2021
File Location	\\s-lncs\wie\projects\wie17078\101\gis\bs\issued figures

www.watermangroup.com



Survey Area

Peregrine

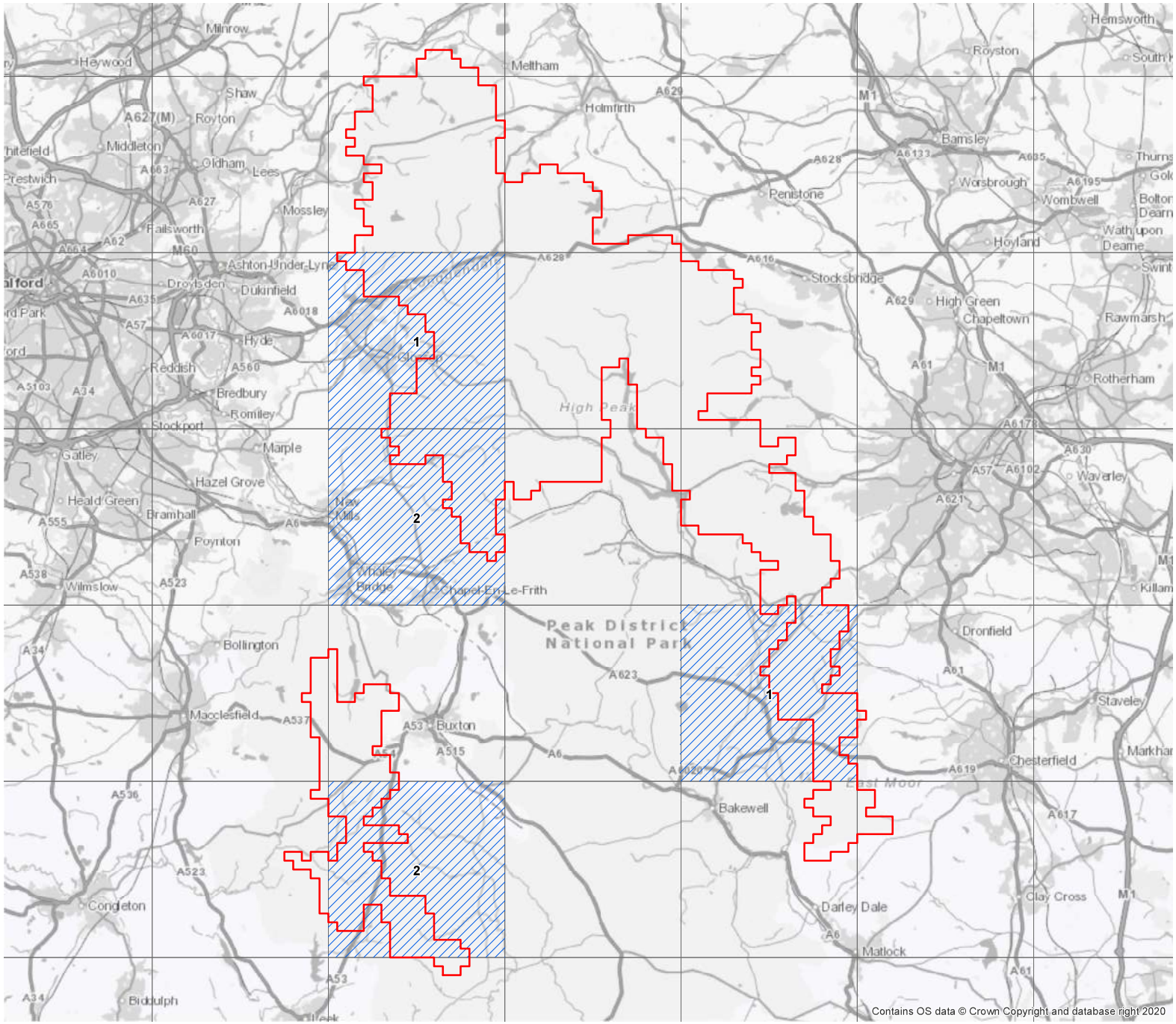
Note:
Raptors and owls are shown as sightings per 10km grid square

N

0 2.5 5 10 km

Project Details	WIE17078-101: Peak District
Figure Title	Figure 14: Distribution of Peregrine Sightings
Figure Ref	WIE17078-101_GIS_BS_14A
Date	February 2021
File Location	\\s-lncs\wiel\projects\wie17078\101\gis\bs\issued figures

www.watermangroup.com



Survey Area

Hen Harrier

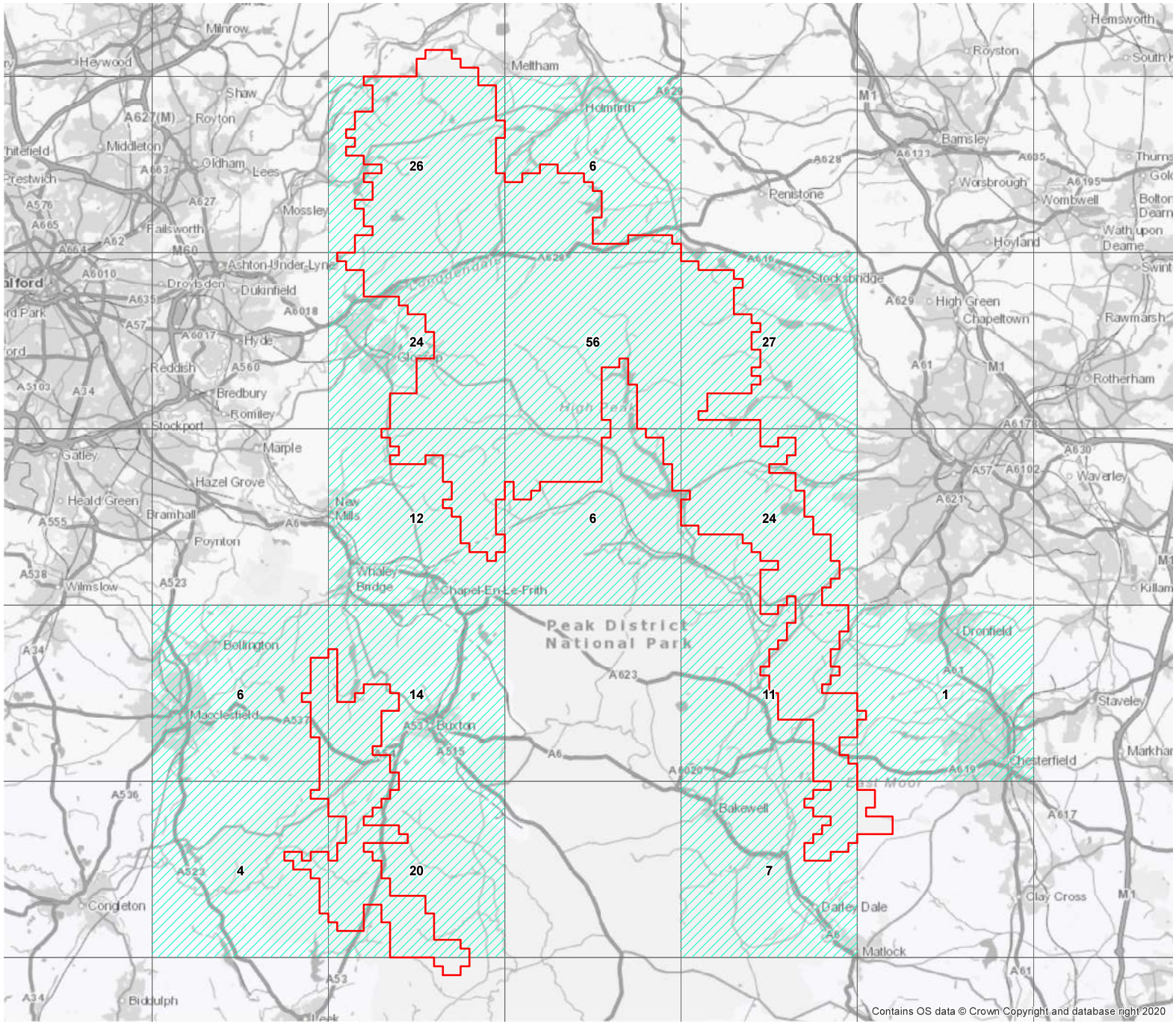
Note:
Raptors and owls are shown as sightings per 10km grid square

N

0 2.5 5 10 km

Project Details	WIE17078-101: Peak District
Figure Title	Figure 15: Distribution of Hen Harrier Sightings
Figure Ref	WIE17078-101_GIS_BS_15A
Date	February 2021
File Location	\\s-lncs\wie\projects\wie17078\101\gis\bs\issued figures

www.watermangroup.com



Survey Area

Buzzard

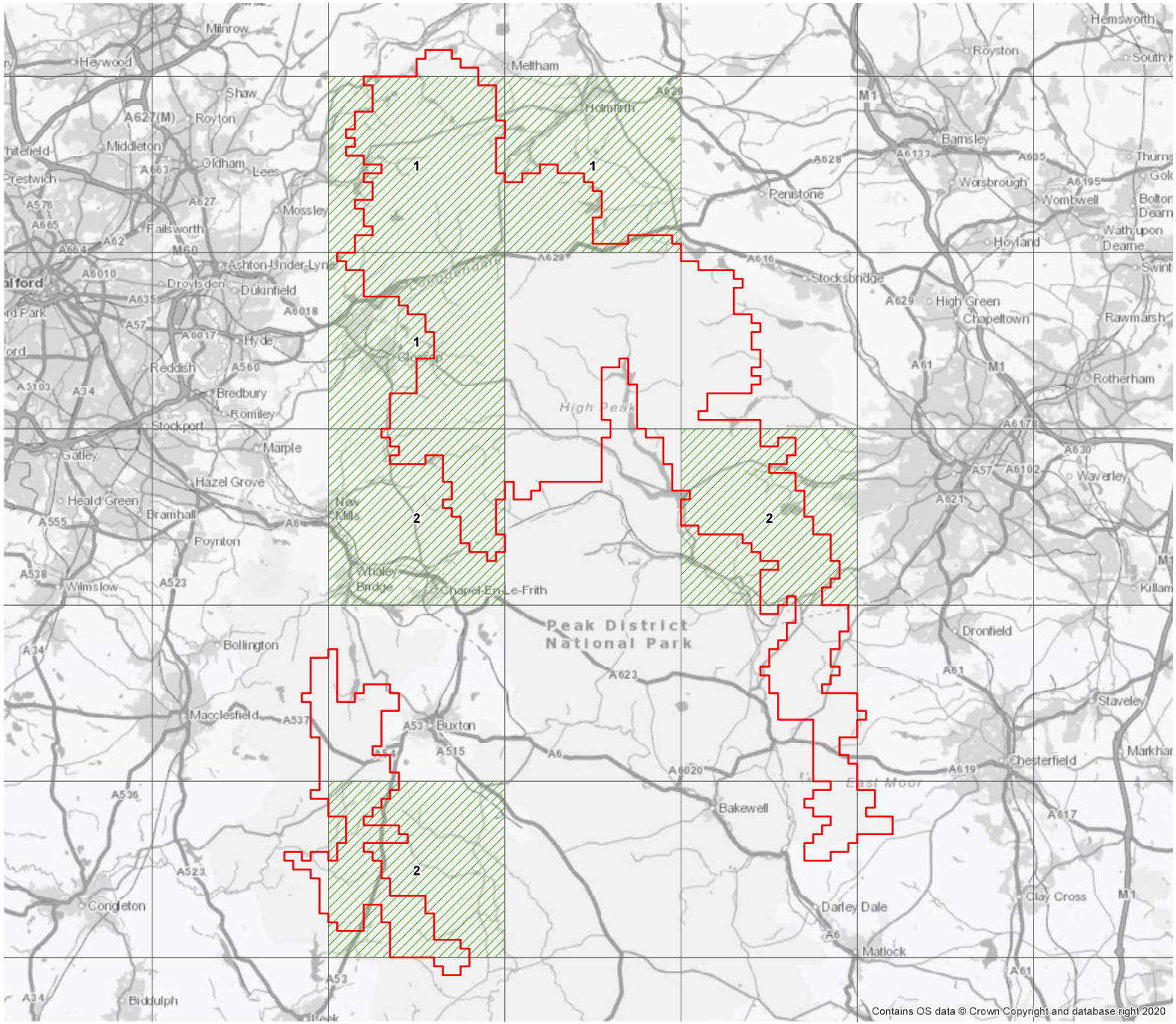
Note:
Raptors and owls are shown as sightings per 10km grid square

N

0 2.5 5 10 km

Project Details	WIE17078-101: Peak District
Figure Title	Figure 16: Distribution of Buzzard Sightings
Figure Ref	WIE17078-101_GIS_BS_16A
Date	February 2021
File Location	\\s-lncs\wie\projects\wie17078\101\gis\bs\issued figures

www.watermangroup.com



Survey Area

Sparrowhawk

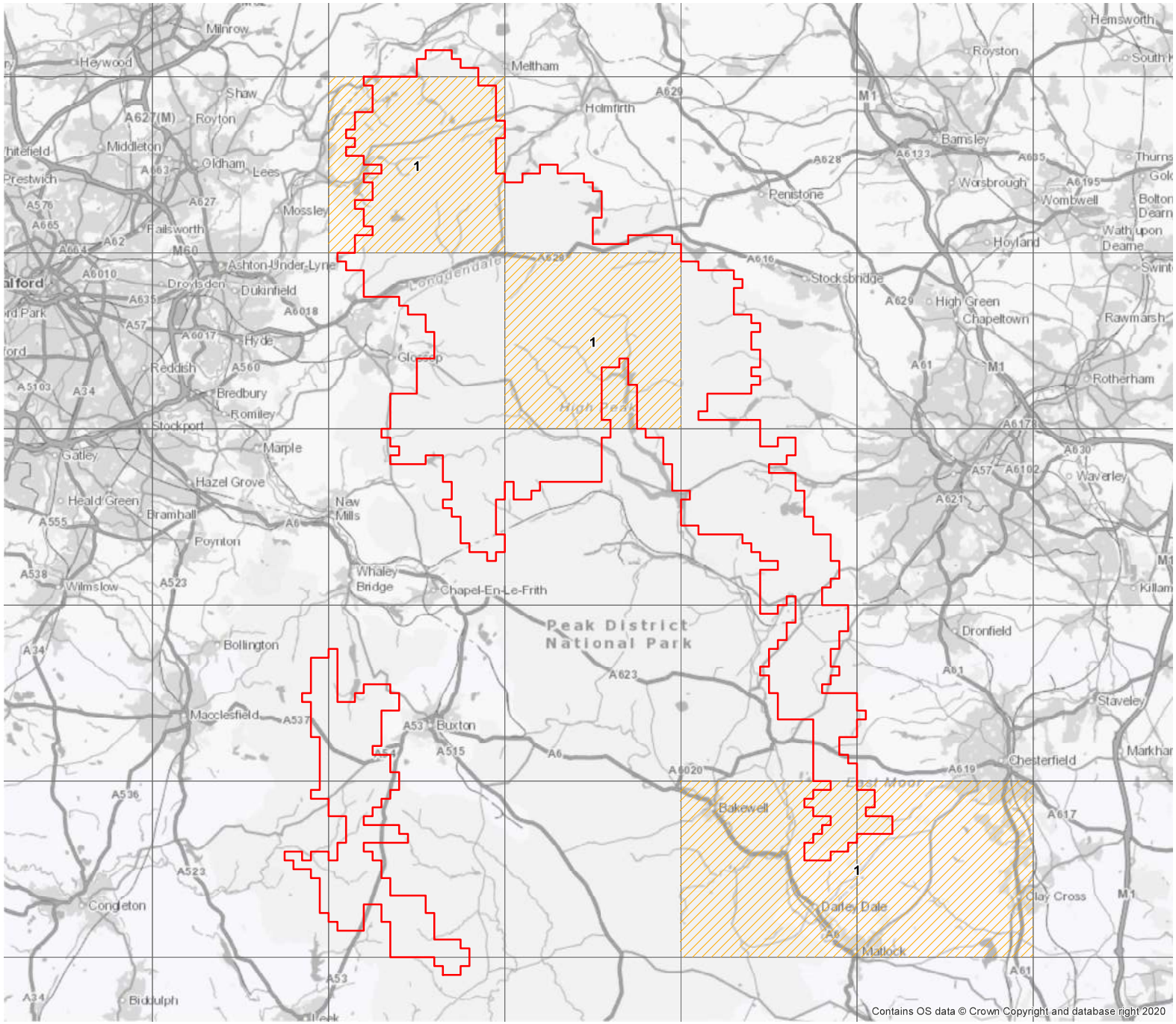
Note:
Raptors and owls are shown as sightings per 10km grid square

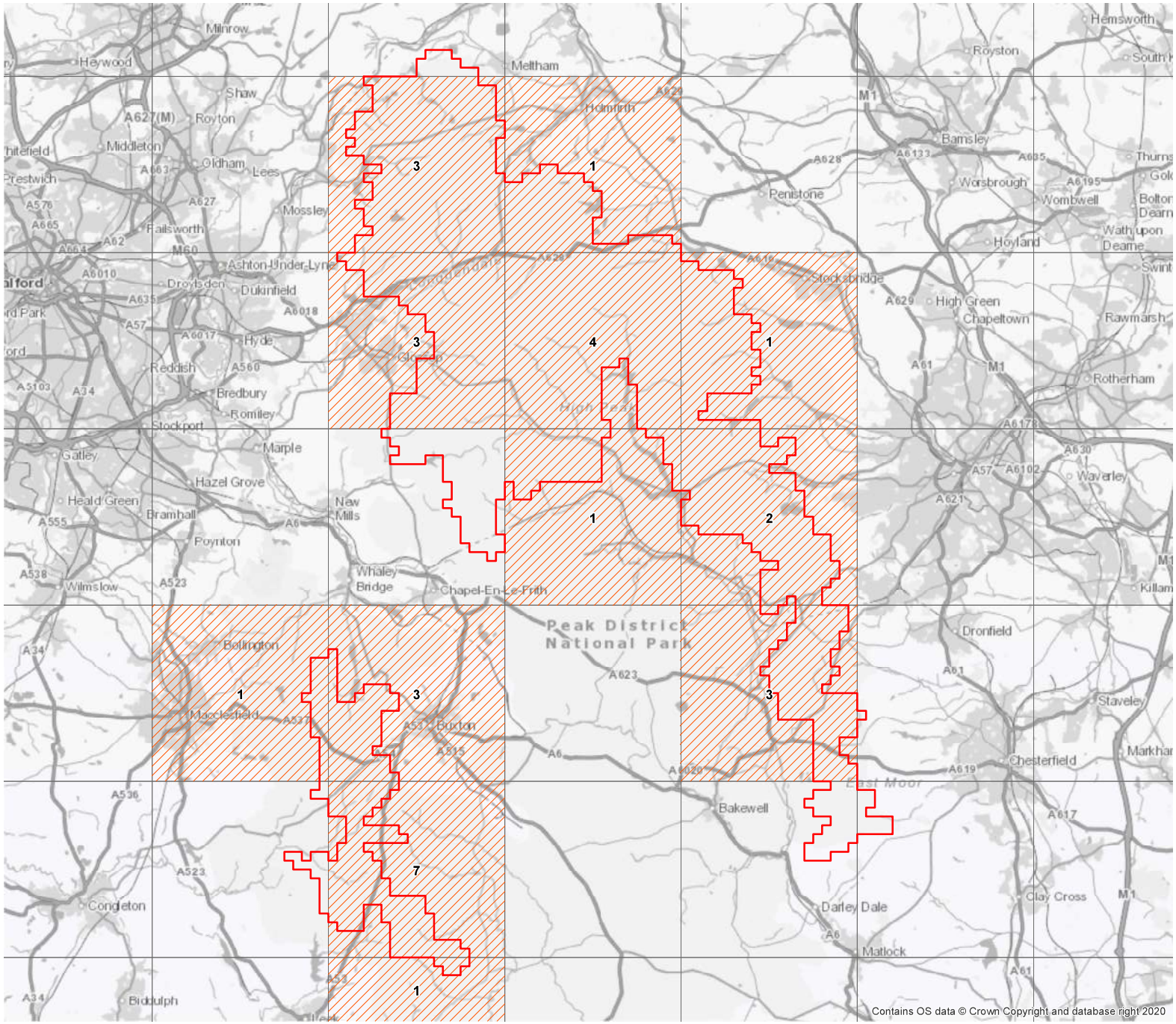
N

0 2.5 5 10 km

Project Details	WIE17078-101: Peak District
Figure Title	Figure 17: Distribution of Sparrowhawk Sightings
Figure Ref	WIE17078-101_GIS_BS_17A
Date	February 2021
File Location	\\s-lncs\wie\projects\wie17078\101\gis\bs\issued figures

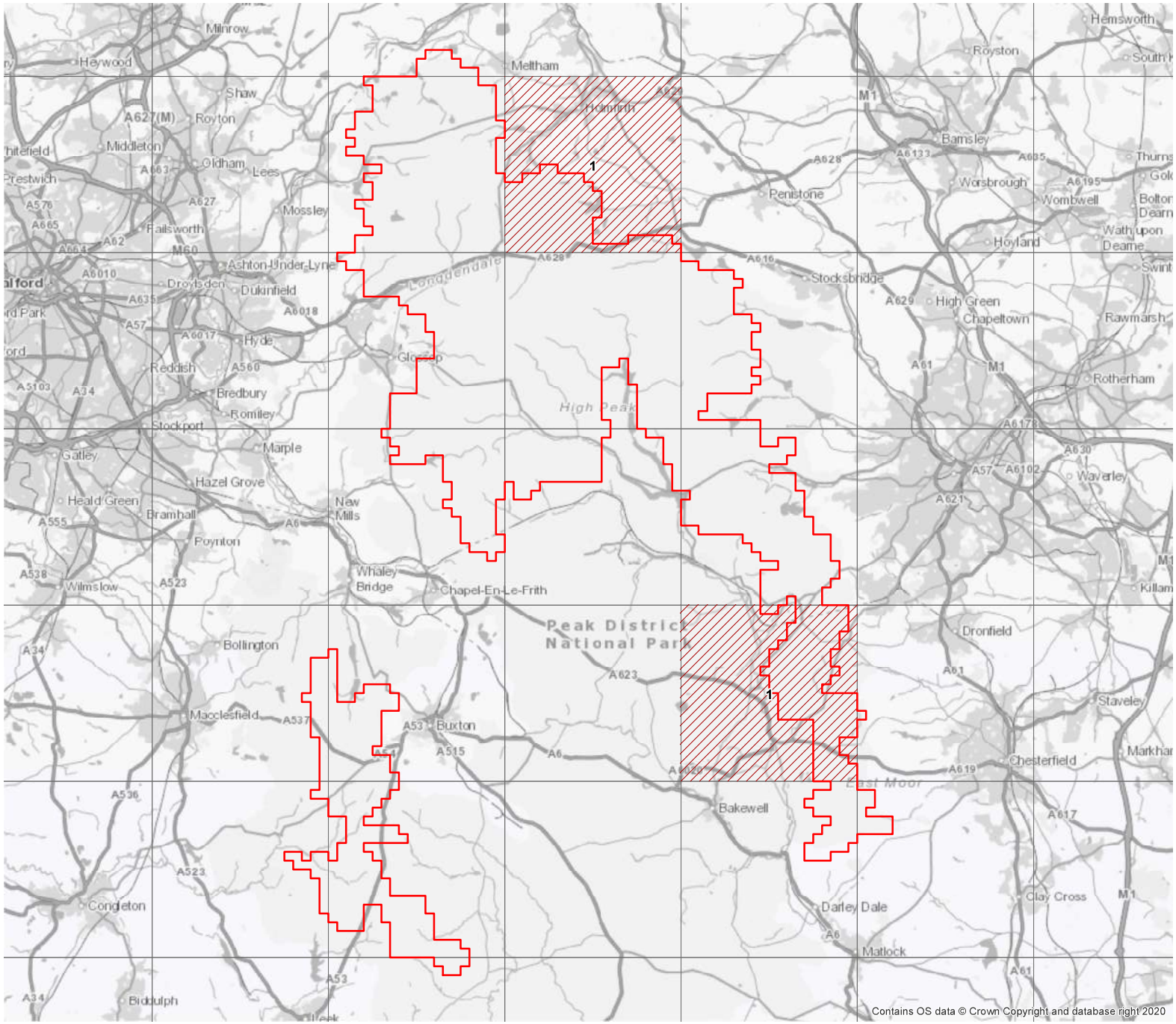
www.watermangroup.com





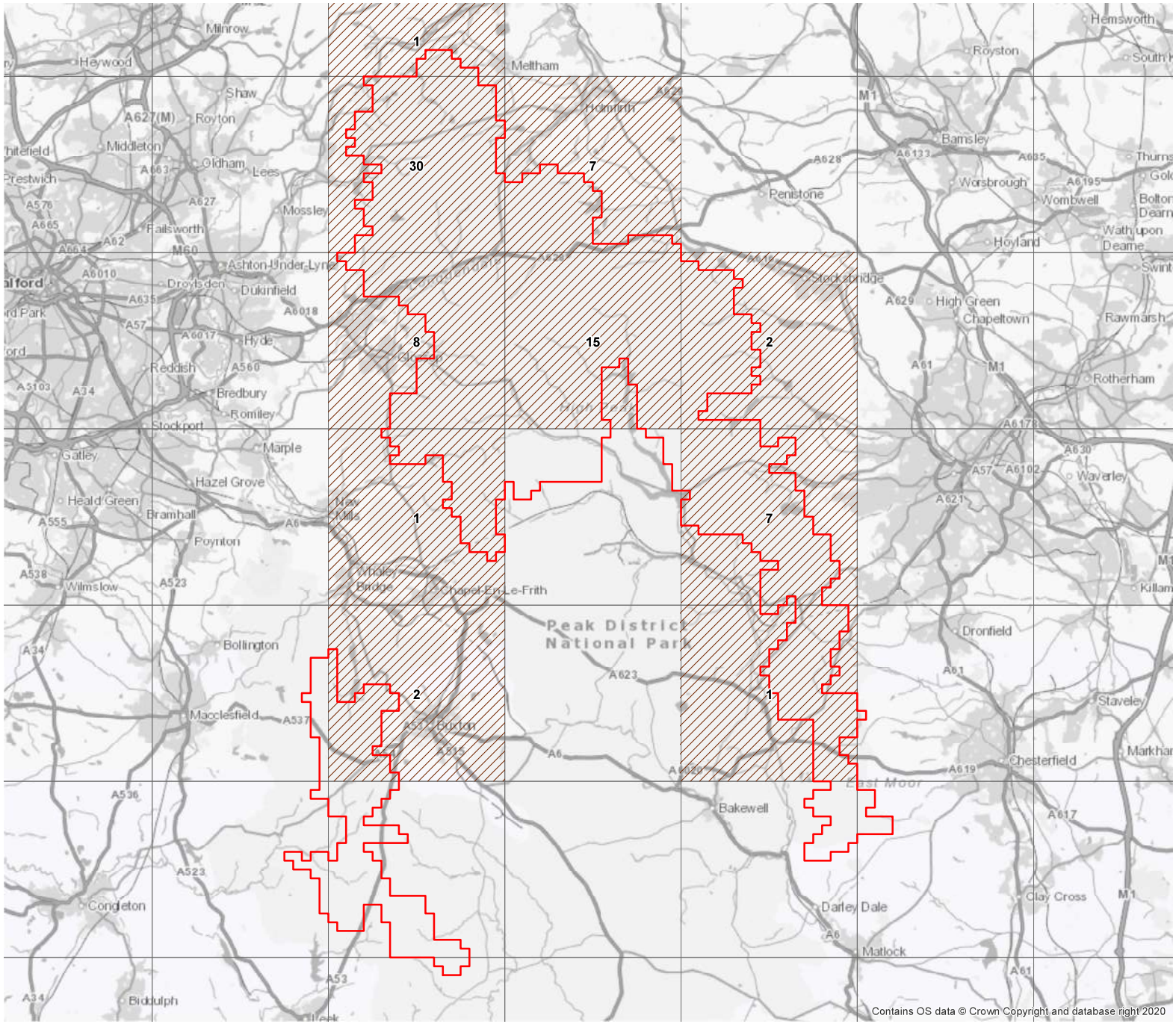
Project Details	WIE17078-101: Peak District
Figure Title	Figure 19: Distribution of Hobby Sightings
Figure Ref	WIE17078-101_GIS_BS_19A
Date	February 2021
File Location	\\s-lncs\wie\projects\wie17078\101\gis\bs\issued figures

www.watermangroup.com



Project Details	WIE17078-101: Peak District
Figure Title	Figure 20: Distribution of Long-eared Owl Sightings
Figure Ref	WIE17078-101_GIS_BS_20A
Date	February 2021
File Location	\\s-lncs\wie\projects\wie17078\101\gis\bs\issued figures

www.watermangroup.com



Survey Area

Short-eared Owl

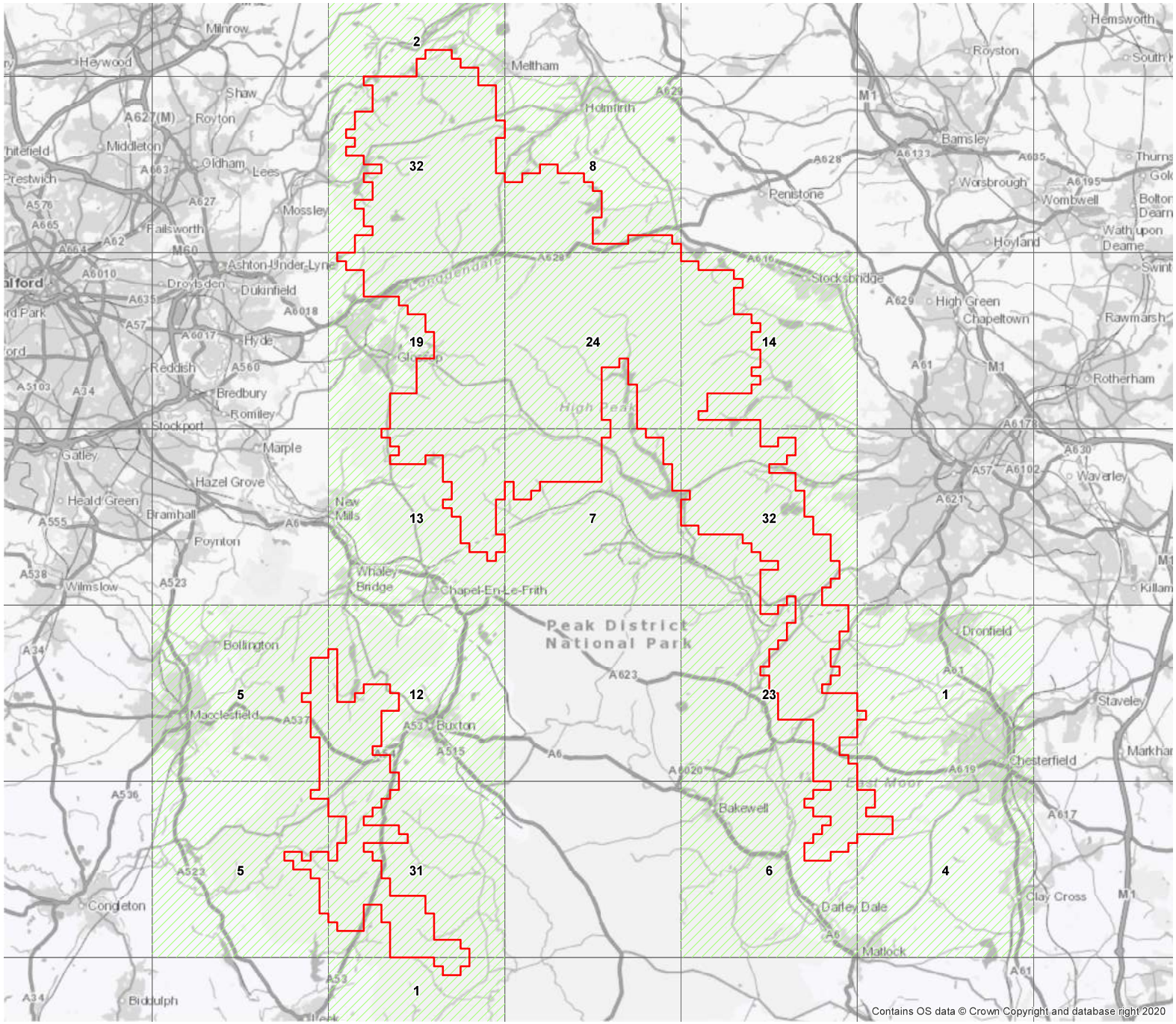
Note:
Raptors and owls are shown as sightings per 10km grid square

N

0 2.5 5 10 km

Project Details	WIE17078-101: Peak District
Figure Title	Figure 21: Distribution of Short-eared Owl Sightings
Figure Ref	WIE17078-101_GIS_BS_21A
Date	February 2021
File Location	\\s-lncs\wie\projects\wie17078\101\gis\bs\issued figures

www.watermangroup.com



waterman

Survey Area

Kestrel

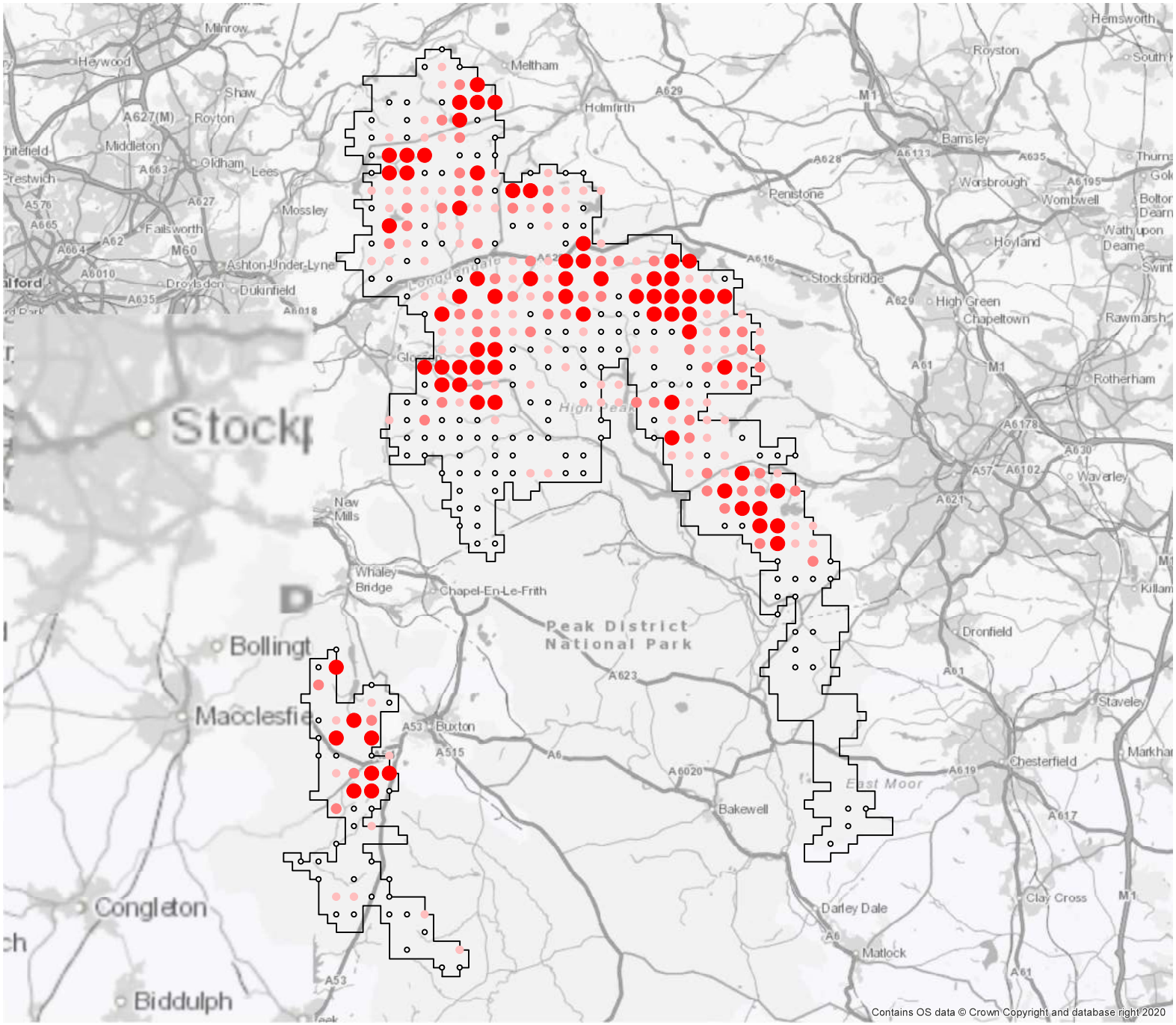
Note:
Raptors and owls are shown as sightings per 10km grid square

N

0 2.5 5 10 km

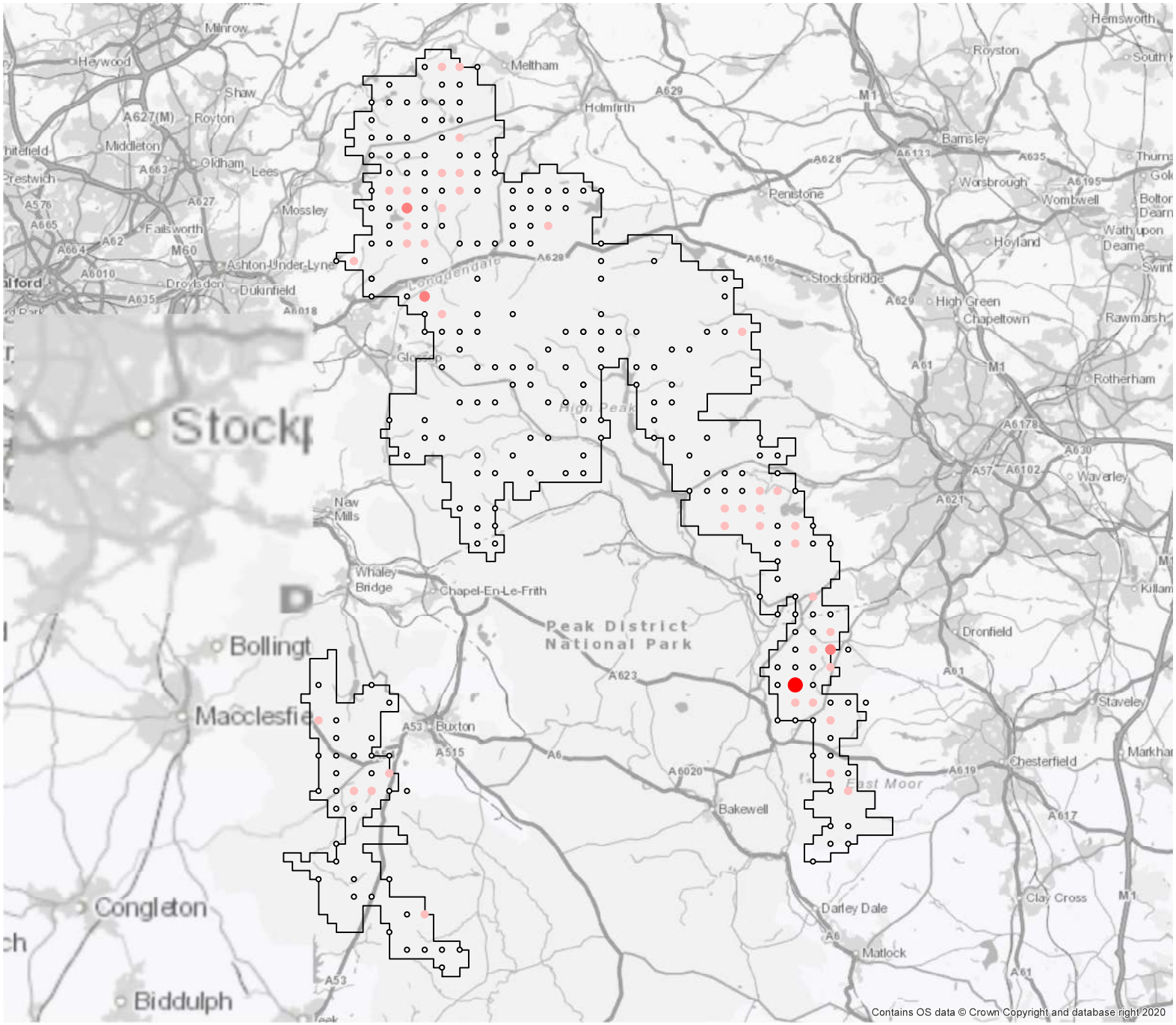
Project Details	WIE17078-101: Peak District
Figure Title	Figure 22: Distribution of Kestrel Sightings
Figure Ref	WIE17078-101_GIS_BS_22A
Date	February 2021
File Location	\\s-lncs\wie\projects\wie17078\101\gis\bs\issued figures

www.watermangroup.com



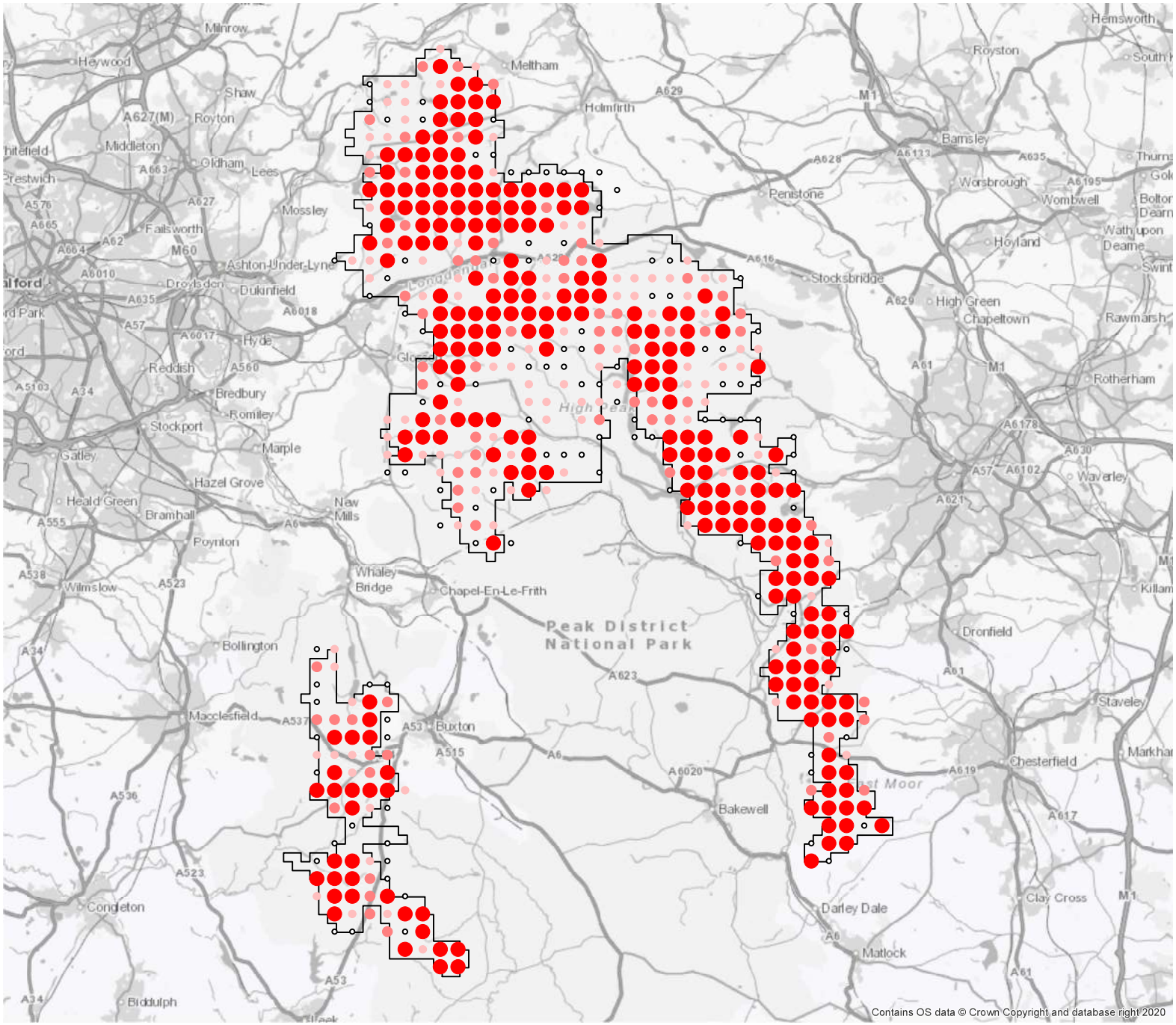
Project Details	WIE17078-101: Peak District
Figure Title	Figure 23: Distribution of Red Grouse
Figure Ref	WIE17078-101_GIS_BS_23A
Date	February 2021
File Location	\\s-lncs\wie\projects\wie17078\101\gis\bs\issued figures

www.watermangroup.com



Project Details	WIE17078-101: Peak District
Figure Title	Figure 24: Distribution of Skylark
Figure Ref	WIE17078-101_GIS_BS_24A
Date	February 2021
File Location	\\s-lncs\wiel\projects\wie17078\101\gis\bs\issued figures

www.watermangroup.com



Project Details	WIE17078-101: Peak District
Figure Title	Figure 25: Distribution of Meadow Pipit
Figure Ref	WIE17078-101_GIS_BS_25A
Date	February 2021
File Location	\\s-lncs\wie\projects\wie17078\101\gis\bs\issued figures

www.watermangroup.com

APPENDICES

A. Squares not surveyed in Visit 1.

The following 1km squares were not surveyed in survey visit 1 due to time constraints: they were therefore surveyed only once during the project, early in survey visit two.

Arnfield Moor, Dark Peaks: SE0199, SE0299, SE0399 (western half), SE0298, SE0398 (western half), SE0397 (northern half).

Middle Moss/Featherbed Moss, NE of Howden Moors, Dark Peaks: SK 1994, SK2094, SK1923 (three quarters) and SK2023.

Derwent Moors/Moscar Moors, Eastern Peaks: SK1989 (SW quarter), SK2089 (SE quarter), SK2189 (southern half), SK1988 (eastern half), SK2088 (three quarters), SK2188, SK1987 (eastern half), SK2087, SK2187, SK2287, SK2086 (small parts), SK2186, SK2286 (west half), SK2085 (east half), SK2185, SK2285 (three quarters), SK2084 (north east quarter), SK2184, SK2284 (three quarters) and SK2384 (three quarters).

Leek Moors: SK0359, SK0366 (NE quarter), SK0268 (small part in centre), SK0267 (NE quarter).

B. Note on 2021 additional analysis

The 2021 additional analysis has resulted changes to the results, including a decrease in various key target species as set out in the table below:

Table B1. Comparison of 2018 and 2021 analysis results

Species	2018 Analysis	2021 Additional analysis	% increase + /decrease -
Black-headed gull	19	23	+ 21%
Buzzard	239	244	+2%
Canada goose	128	100	-22%
Carrion crow	170	194	+14%
Common sandpiper	17	16	- 6%
Cuckoo	75	77	+3%
Curlew	948	703	-26%
Dipper	17	10	-41%
Dunlin	88	69	-22%
Golden plover	627	522	-17%
Goshawk	3	3	0
Grey wagtail	63	45	-29%
Hen harrier	4	6	+50%
Kestrel	223	239	+7%
Lapwing	228	178	-22%
Mallard	28	19	-32%
Meadow pipit*	8878	8878	0
Merlin	27	28	+4%
Mistle thrush	Not included	18	N/a
Oystercatcher	11	11	0
Peregrine	36	36	0
Raven	157	159	+1%
Red grouse	3689*	3689	0
Redshank	3	2	-33%

Species	2018 Analysis	2021 Additional analysis	% increase + /decrease -
Reed bunting	203	177	-13%
Ring ouzel	102	82	-20%
Short-eared owl	73	74	+1%
Skylark	853*	853	0
Snipe	189	140	-26%
Stonechat	81	70	-11%
Teal	13	13	0
Twite	2	2	0
Wheatear	44	23	-48%
Whinchat	52	48	-8%

* Not reanalysed in 2021

In undertaking the additional analysis, a number of previously assessed pairs were deleted as they were no longer assessed as meeting the criteria for breeding: in 2018 some pairs were identified by the presence of birds (singularly or in pairs) in suitable breeding habitat[3], or by the presence of calling birds. Following further analysis and checks with surveyors (where possible), the 2021 additional analysis has signposted where these species are still considered to be showing breeding behaviour and where this is not the case some previous pairs have been deleted. Therefore, the territory numbers in the report are more likely to be an underestimate.

The 2021 additional analysis also resulted in some small increases for some species recorded as 'sightings'. These small variations were due to additional scrutiny of records and moorland boundaries.

It should be noted that the methodology used is one approach aimed at showing breeding bird distribution across the Peak District, thought to be applicable to surveying large areas of upland for key species. The Brown & Shepherd methodology, on which the project methodology was based, was not designed for areas of high breeding density. The B&S methodology (original paper) states of the method that:

> *It was clearly capable of determining whether breeding birds were present in or absent from any particular study area. It thus allows us to distinguish breeding areas from those used for feeding, loafing, roosting and other activities. The population estimates did not always match the estimates from the intensive studies and the proportion of birds located appeared to be rather variable…* [apart from lapwing] *the method may provide broadly realistic estimates, perhaps underestimated by 20-30%*

[3] This breeding criteria was also adopted in the 2004 Survey, but has since been removed having been subject to reanalysis

UK and Ireland Office Locations