

# East Dartmoor Moorland Breeding Bird Survey 2016



Whinchat © Chris Townend

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Moor than meets the eye is a landscape partnership telling the story of the people and landscape over 4000 years on Dartmoor. This exciting scheme aims to help local people, farmers, businesses, organisations and visitors work together and share their passion for Dartmoor so that we can all understand and appreciate this landscape better and contribute to its future.



## Abstract

In 2016, moorland across 174 kilometre squares (or part squares) was surveyed for breeding birds in east Dartmoor, as part of the *Moor than meets the eye (MTMTE)* Heritage Lottery Fund (HLF) scheme. Much of the area had not been systematically surveyed since 1979. The 2016 survey has provided a new benchmark of key moorland bird species in this area, but using a different, more systematic, method to 1979. The data collected, while not directly comparable, provide a general assessment of distribution and abundance of moorland birds and an indication of change over the 37 year period. Survey results are presented as maximum counts of adults with breeding territories estimated for priority species. The results are mixed but continue to show the great importance of East Dartmoor for many moorland bird species.

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## 1 Introduction

East Dartmoor includes a complex mix of open moorland and enclosed moorland, known as newtakes, enclosed farmland and wooded valleys. This breeding bird survey covered the open moorland and newtakes within the area covered by the *MTMTE* HLF scheme (Figure 1). It did not include other enclosed land or woodland.

Monitoring bird populations provides a valuable indication of the condition of habitats and therefore the outcome of land management practices. Whilst habitat condition is not the only factor affecting bird populations, with wider climatic factors and conditions elsewhere for migrant birds playing their part, all require good habitat on their breeding grounds for survival.

For much of the east Dartmoor moorland, the 2016 breeding bird survey was the first since 1979 and therefore provides an important benchmark of the state of moorland birds in this area. It also provides an opportunity to look at changes in population and distribution of species since 1979. However, the 1979 survey used a different method, so a direct comparison of bird populations cannot be made. For example, in 1979, there was just a single survey visit and the surveyor devised their own route around the moorland (Mudge et al 1979), whereas in 2016, a parallel transect method was adopted. This latter approach allowed for a more detailed analysis and sets a standardised approach to enable direct comparison to future surveys.

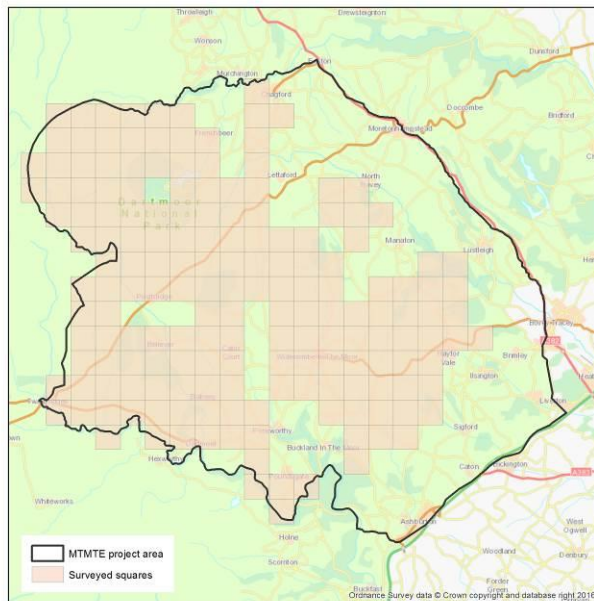
In addition to using the 2016 data to target conservation action, we can look at general changes in distribution patterns and the number of birds recorded per kilometre square from each survey to give an idea of change over this 37 year period.

## 2 Method

### 2.1 Field survey

The 2016 survey covered 174 km sq (or part squares) of open moorland and newtakes and was undertaken by three full time staff and 11 volunteers from the RSPB and Devon Birds. Any 1 km sq with over 20% moorland cover was included in the survey.

Figure 1. Surveyed squares within the *MTMTE* project area



Surveyors walked transect lines and used survey recording maps to mark observations of birds within distance bands from the transect route.

On each survey map (see appendix), there were four transect lines (east-west orientation) each 250 metres apart. The most northerly and southerly of these were located 125 metres in from the edge of the survey square. GPS was used to help ensure accuracy when walking transects.

The fieldwork was carried out between 6am and midday, avoiding adverse weather conditions, such as strong wind, poor visibility and rain. As the first couple of transects were expected to be busier for bird activity due to the earlier time of day, the transects walked first on the first visit were covered second on the second visit and visa versa. On average, a 1km transect line took 30 minutes to survey although, as we were only monitoring moorland areas, some squares which were only part moorland, had much shorter transects.

Each square was visited twice within the season, once in each of the following periods:

1<sup>st</sup> Survey Visit: 15 April- 4 June

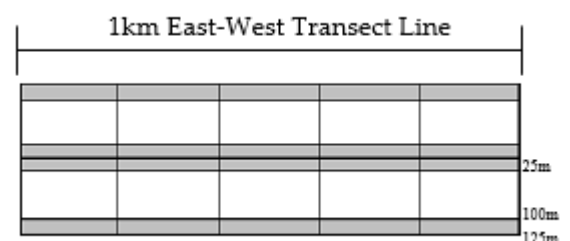
2<sup>nd</sup> Survey Visit: 4 June- 13 July

### 2.2 Recording species

All birds seen or heard were recorded in distance bands while walking the route at a slow, methodical pace and occasionally pausing to listen and scan for birds.

Distance bands were as follows:

1. 0 to 25 metres either side of the transect line.
2. 25 to 100 metres either side of the transect line.
3. 100 to 125 metres either side of the transect line.



Distances were measured at right angles to the transect line. For example, a bird seen 200 metres ahead of the surveyor but within 25 metres of the transect line was recorded in distance band 1.

Hovering kestrels or birds in display flight were recorded in the relevant distance band. Aerial-feeding swifts, swallows and martins were recorded in flight unless they were seen to land, when they were noted in the appropriate distance category.

Any other species flying over a transect route were also recorded, though apart from lesser redpoll, these records did not form part of the population or distribution counts.

In addition to the transect survey, supplementary data on whinchat was also gathered, with a 10 fig grid reference for each sighting. These data were then used to help RSPB Conservation Science staff undertake detailed habitat mapping of whinchat territories across the *MTMTE* area, as part of a national research programme.

Due to the abundance of skylark and meadow pipit on the moor these species were not mapped, however a total number of birds for each species was recorded for each 1 km square on the first visit.

The survey area overlapped with the study area for three species covered by separate projects. Data for these species, curlew, ring ouzel and dunlin, were shared with and reported by those projects and are not reported here.

All completed survey forms are stored at the RSPB SW England Regional Office in Exeter.

### **2.3 Data analysis**

Survey results were mapped on the RSPB's data management and GIS system 'Merlin'.

Mapped field results were entered into an Excel spreadsheet. Information for each species was then extracted from the spreadsheet using a pivot table. For each survey square, the total number of birds (male, female or unknown) was tallied for each visit, and the maximum count was taken as whichever visit total was highest. This maximum count is therefore a minimum estimate, as gender was not taken into account (e.g. if two males and a female were recorded on visit one, and five males on visit two, the maximum count would be five, even though at least six different individuals will have been recorded as a female was recorded in visit one). These maximum counts were then mapped for each 1km square.

Using the mapped records, by merging the distribution between visits, territory analysis was undertaken for tree pipit, whinchat, stonechat, wheatear, grasshopper warbler, reed bunting and snipe, to provide an estimated number of pairs in each 1km square. This allowed for some comparison with the 1979 territory data.

Currently, no analysis has been undertaken using the distance bands, however the dataset is available for further analysis to refine estimates of species density and population size. Further, population estimates have not been generated for swifts, swallows or house martins.

### 3 Results

In total, 174 km squares (or part squares) were surveyed.

The survey started on 18 April 2016. Weather conditions began very cold with sleet and snow on 26 April, but then settled down with a period of fine weather for much of May. Weather during the second visits through June and July was more challenging with a number of survey days lost to rain and low cloud with thick fog often greeting surveyors once on the moor. Consequently some of the second survey visits were carried out past the allocated survey period with the final survey visit on 20 July, in addition a small number of squares to the west of Fernworthy (1<sup>st</sup> visit data indicated only meadow pipits and skylarks to be present) were only visited once. Table 1 shows the maximum counts of adults of priority species recorded on moorland habitats in the 2016 survey, presented in order of abundance. These are compared with the 1979 survey, being mindful of the caveats explained in the methods.

Table 1. Maximum counts of adults for moorland species

Species	Maximum count of adults	Potential change since 1979
Meadow pipit	2,687	unknown
Skylark	1,550	unknown
Stonechat	1,063	strong increase
Willow warbler	513	unknown
Linnet	488	increase
Carrion crow	266	unknown
Lesser redpoll*	249	unknown
Yellowhammer	222	increase
Wheatear	200	possible decline
Whinchat	172	possible decline
Reed bunting	122	strong increase
Snipe	109	little change?
Tree pipit	102	increase
Mistle thrush	90	unknown
Cuckoo	83	decline
Redstart	64	increase
Grasshopper warbler	53	strong increase
Grey wagtail	34	little change
Kestrel*	26	possible decline
Dartford warbler	6	colonised
Red grouse	3	decline

\*Includes flying birds

#### 3.1 Species accounts

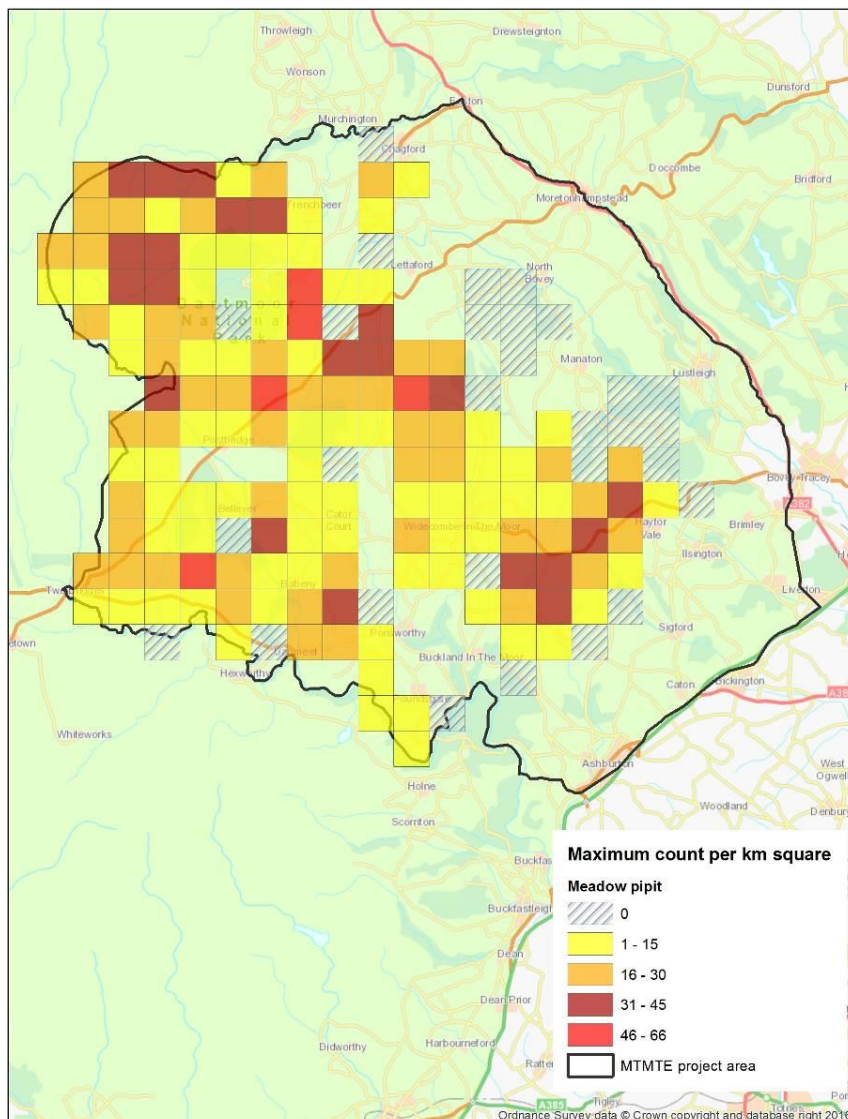
Accounts are provided below for each species listed in Table 1. Each species account includes a table showing national, regional and county information on the species' status, the population recorded in 2016 (max count of adults) and the 1979 population for the equivalent area where available. A map of the distribution of each species based on max counts by km square is presented and for the highest priority species, territory maps for 2016 are also presented. Where data are available, a map showing territory results from the 1979 survey is also presented to provide an indication of change between surveys. Note that the count ranges vary between individual maps and species. The 1979 survey covered all of Dartmoor so the maps show distribution of birds beyond the *MTMTE* boundary; these records have been retained for interest.



## Meadow pipit

<b>UK conservation status</b>	IUCN Near Threatened (global status) ( <a href="http://www.iucnredlist.org">www.iucnredlist.org</a> ) BoCC Amber list (Eaton et al 2015). BTO Atlas reports 46% decline in breeding population between 1970 and 2010 (Balmer et al 2013). Latest BBS trend: -9% 1995-2014 (Hayhow et al 2017).	
<b>Regional status</b>	Nationally important population on Dartmoor (Stanbury 2006) and substantial population on Bodmin Moor (Chown 2008) and Exmoor, where a recent increase. (Sim & Douglas 2014)	
<b>County status</b>	Devon Atlas (Beavan & Lock 2016) shows a significant contraction in range between atlases from presence in 44% to 25% of tetrads, with heavy losses in the lowlands.	
<b>2016 Max count</b>	<b>2,687</b>	Meadow pipits were the most numerous species recorded during the survey, though absent from the northeast parts of the survey area. Highest densities to the west of Fernworthy, Headland Warren and Haytor areas.
<b>1979</b>	No count	Described as 'by far the most abundant bird, occurring in sizeable numbers in virtually all habitats'.

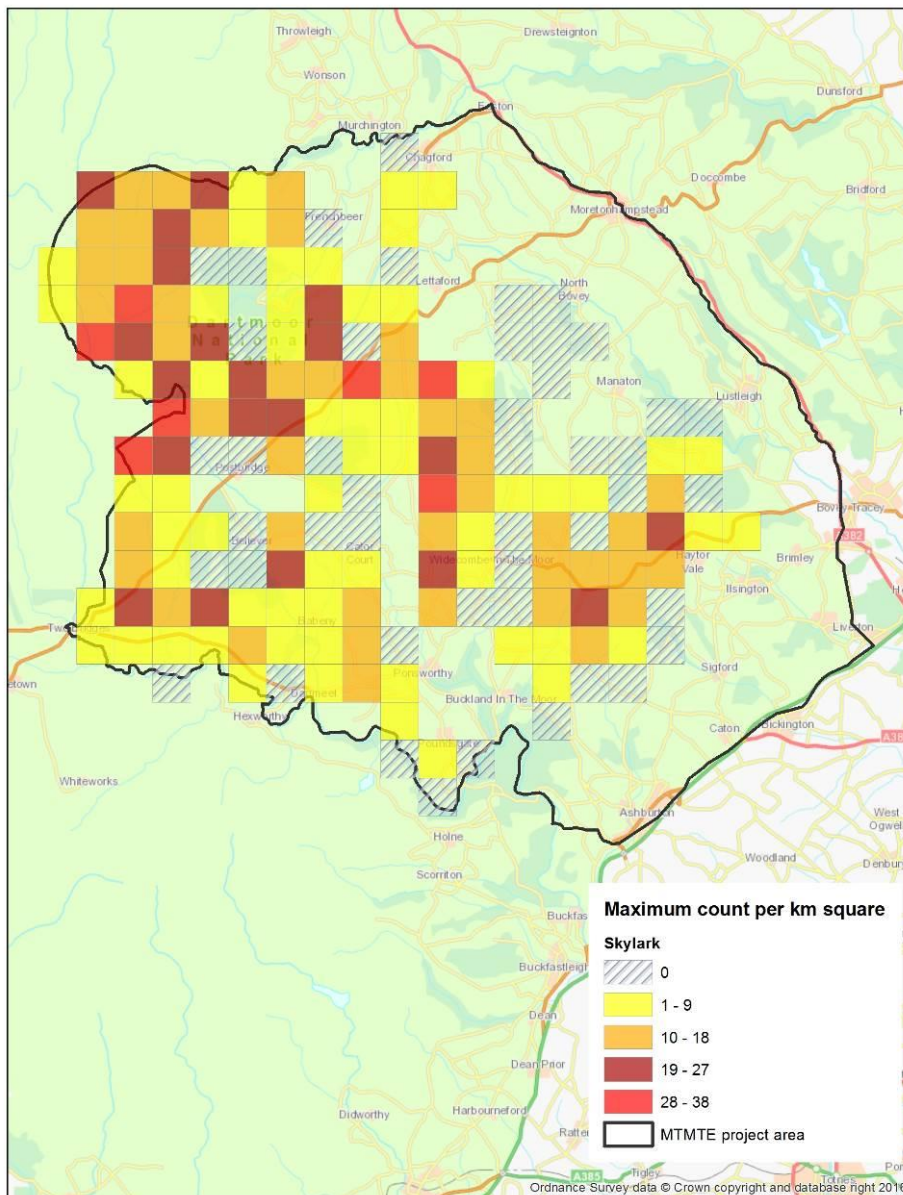
Figure 2: Distribution of meadow pipits in the survey area in 2016



## Skylark

<b>UK conservation status</b>	BoCC Red List. BTO Atlas reports 58% decline in breeding population between 1970 and 2010. Latest BBS trend: -24% 1995-2014.	
<b>Regional status</b>	Uplands important. Recent increase on Exmoor, stable on north Dartmoor and Bodmin Moor.	
<b>County status</b>	Devon Atlas shows significant decline between atlases, especially in lowland areas. They were present in 93% of tetrads but this has dropped to 63% occupancy.	
<b>2016 Max count</b>	<b>1,550</b>	Skylarks are widely distributed and were the second most numerous species (after meadow pipit). The area of apparent highest density is to the west of the survey area in the moorlands around Fernworthy.
<b>1979</b>	No count	Described as 'extremely common breeding birds in almost all habitats, outnumbered only by meadow pipits'.

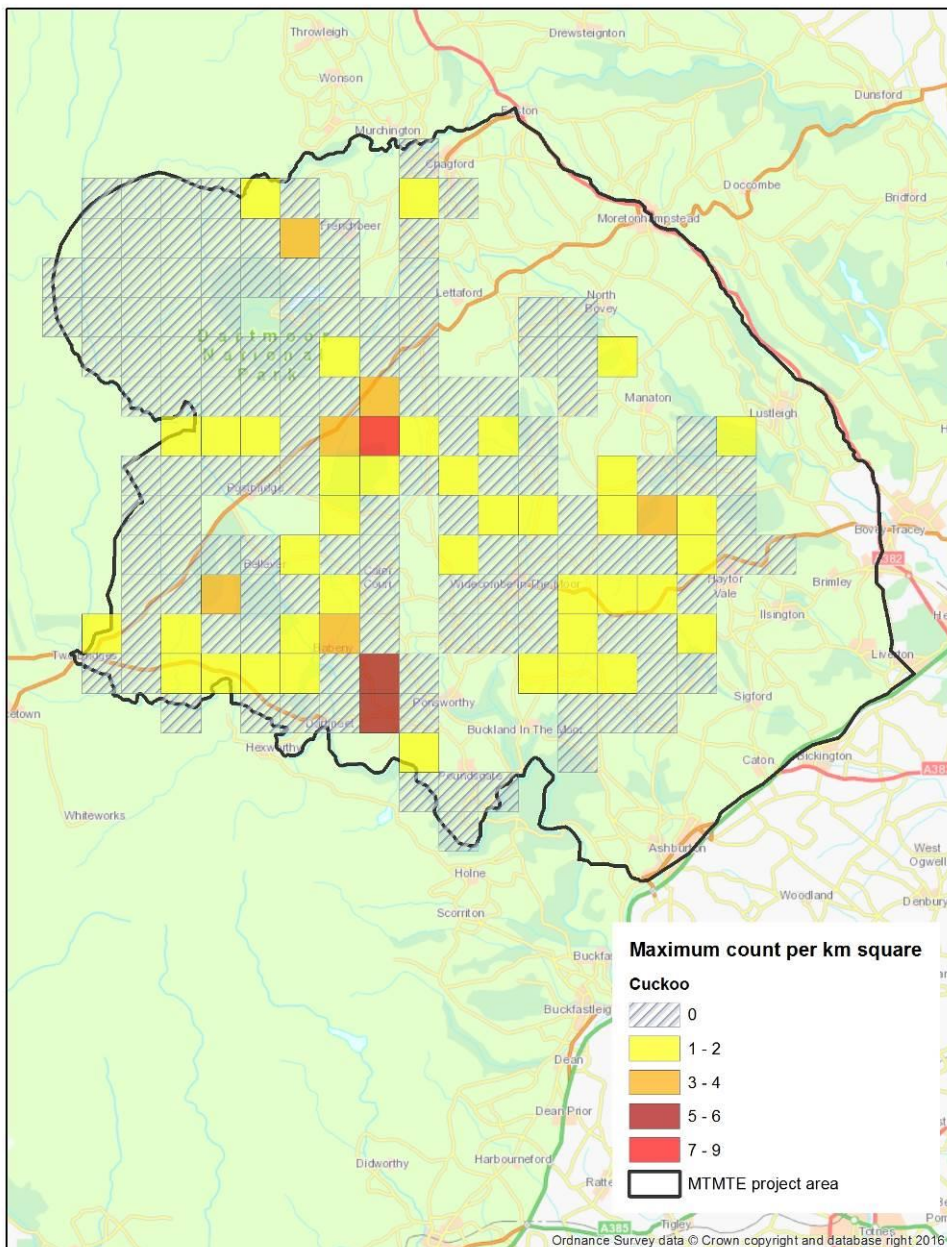
Figure 3: Distribution of skylarks in the survey area in 2016



## Cuckoo

<b>UK conservation status</b>	BoCC Red List. BTO Atlas shows major declines in breeding abundance across England, with some increases in Scotland. Latest BBS trend: -43% 1995-2014.	
<b>Regional status</b>	Largely confined to the uplands, increasing on Exmoor and stable on Bodmin Moor.	
<b>County status</b>	Devon Atlas shows large scale decline in the county since the last Atlas (77-85), with losses from two thirds of tetrads and now largely absent from lowland areas.	
<b>2016 Max count</b>	<b>83</b>	Fairly widely distributed over the survey area with higher densities at Headland Warren and Yartor and Comdon Downs.
<b>1979</b>	No count	Described as 'very common on open moor'.

Figure 4: Distribution of cuckoo records in the survey area, 2016



## Tree pipit

<b>UK conservation status</b>	BoCC Red list. BTO Atlas shows reductions in range (29%) and abundance across much of Britain. Latest BBS trend: +16% 1995-2014.	
<b>Regional status</b>	Major decline on Bodmin Moor and slight decline on Exmoor; increase on north Dartmoor.	
<b>County status</b>	Devon Atlas shows a significant decline with the species lost from over half (52%) of occupied tetrads.	
<b>2016 Max count</b>	<b>102</b>	Appears to have increased in both number and range since 1979. Important areas appear to be Meldon Common, Headland Warren, Houndtor Down and the Cherrybrook area between Postbridge and Two Bridges.
<b>1979</b>	31-34 pairs	Concentrations around the Dart Valley, Hamel Down and around Fernworthy.

Figure 5: Distribution of tree pipits in the survey area in 2016

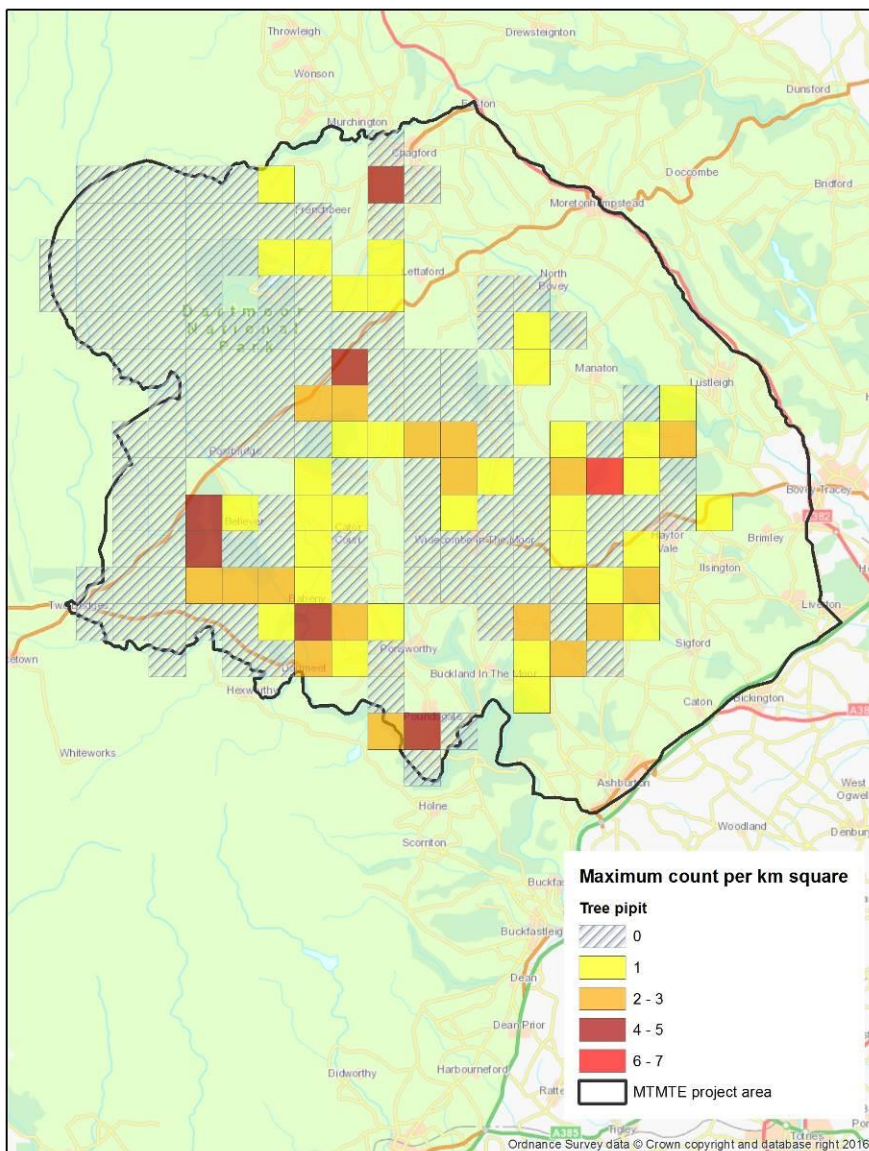


Figure 6: Estimated tree pipit territories 2016

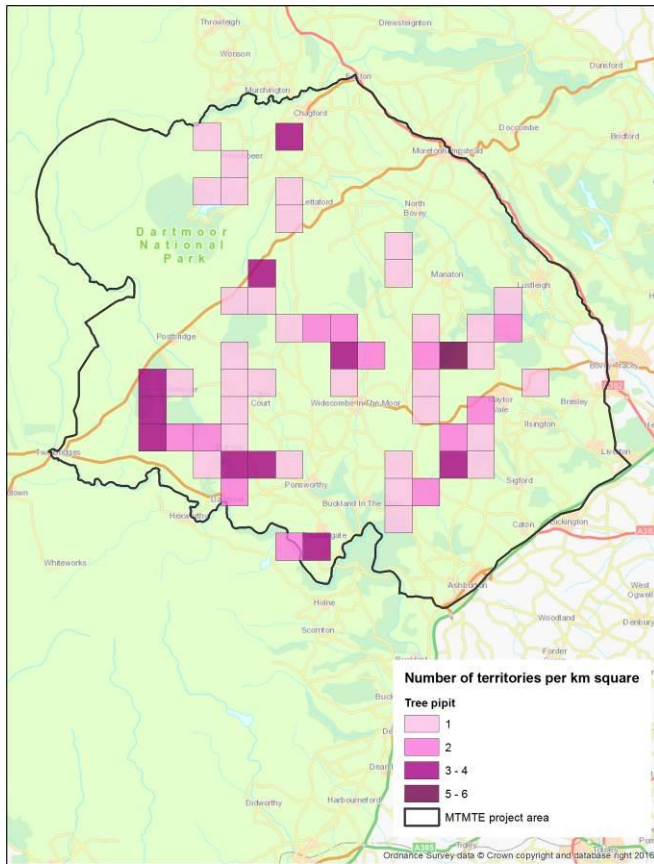
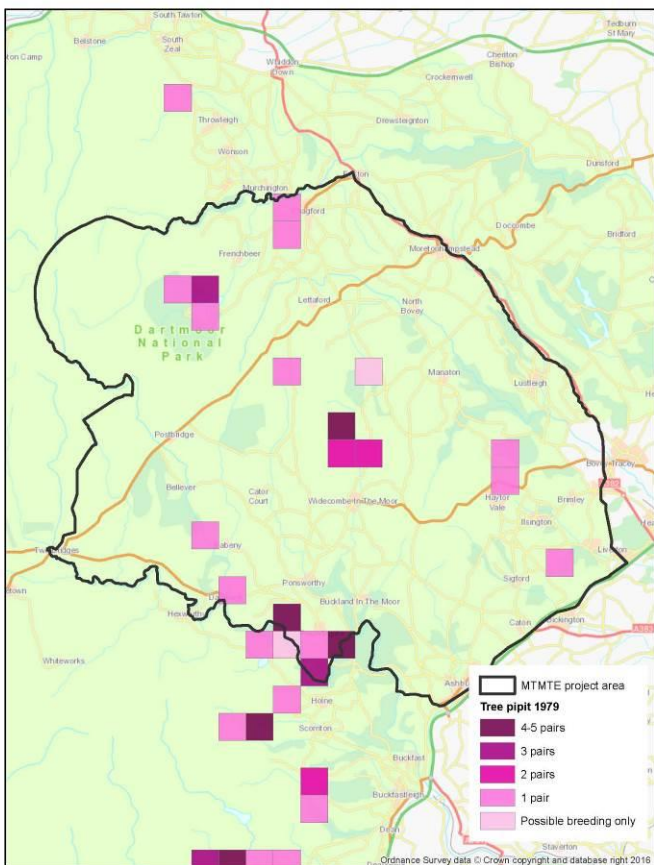


Figure 7: Population of tree pipit in the MTMTE area from 1979.



## Whinchat

<b>UK conservation status</b>	BoCC Red list. BTO Atlas reports 47% range contraction in Britain. Latest BBS trend: -59% 1995-2014.	
<b>Regional status</b>	Largely extinct in the lowlands (apart from Salisbury Plain). Decline on Bodmin Moor and stable/slight decline on Exmoor but important population and occurs at high densities.	
<b>County status</b>	Devon Atlas shows the species is almost entirely confined to uplands with the number of occupied tetrads reduced by two thirds.	
<b>2016 Max count</b>	<b>172</b>	Mostly concentrated in the Headland Warren area where they occur at high density. Distribution does reflect that of 1979 but suggests some losses in site occupancy in the intervening years. For example, in 2016 there were no records to the west of Fernworthy, from Easdon Down and apparently fewer occupied areas around Trendlebere Down, the central newtakes and the Dart valley.
<b>1979</b>	71 pairs	Described as common and widely distributed.

Figure 8: Distribution of whinchats in the survey area in 2016

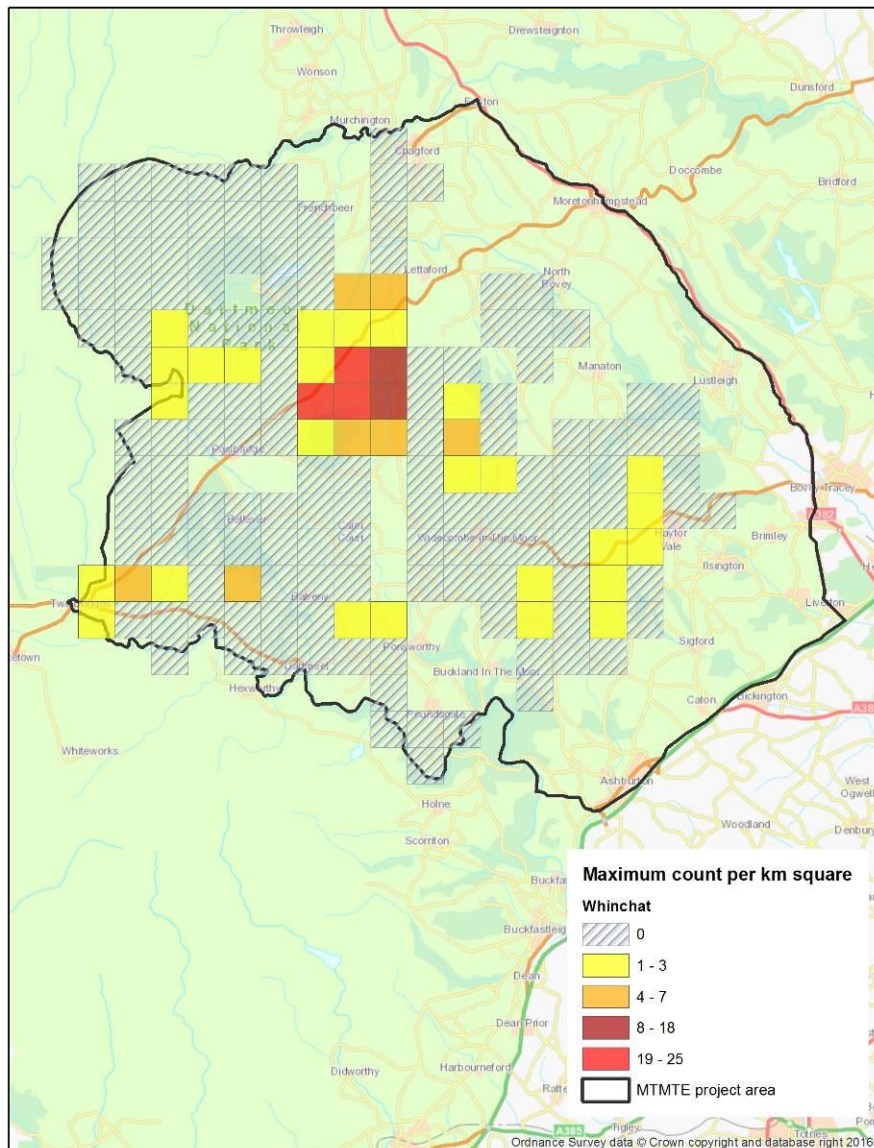


Figure 9: Whinchat territories in 2016

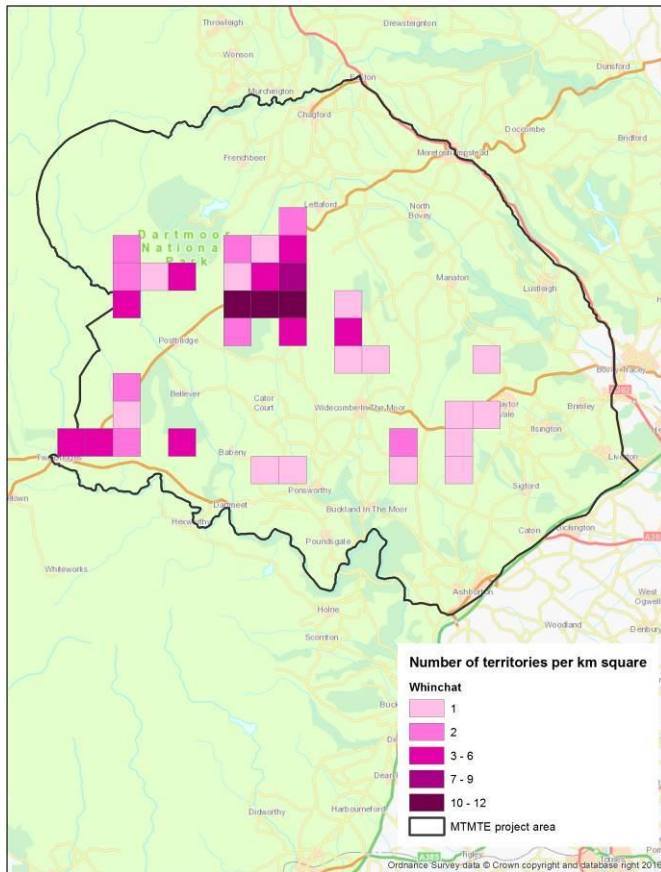
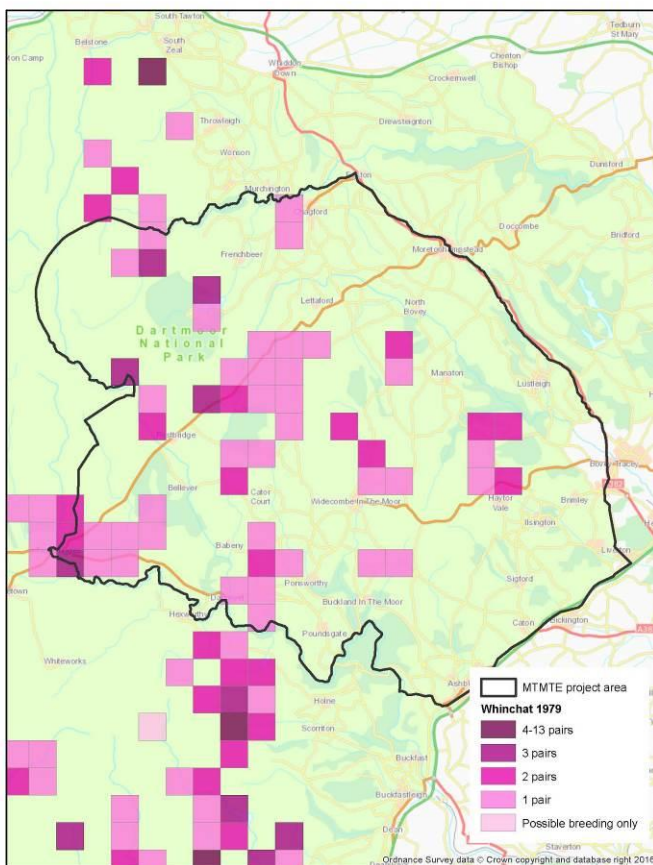


Figure 10: Population of whinchats in the MTMTE area in 1979



## Stonechat

<b>UK conservation status</b>	Not BoCC listed. BTO Atlas shows a 29% increase in range. Latest BBS trend: +29% 1995-2014.	
<b>Regional status</b>	Increases on Bodmin Moor, Dartmoor and Exmoor.	
<b>County status</b>	Devon Atlas shows an overall stable population with Dartmoor one of the strongholds.	
<b>2016 Max count</b>	<b>1,063</b>	Widely distributed and the third most abundant species. More widely spread than in 1979 and the figures indicate the population is now considerably larger.
<b>1979</b>	79 pairs	Recorded as relatively widespread

Figure 11: Distribution of stonechats in the survey area in 2016

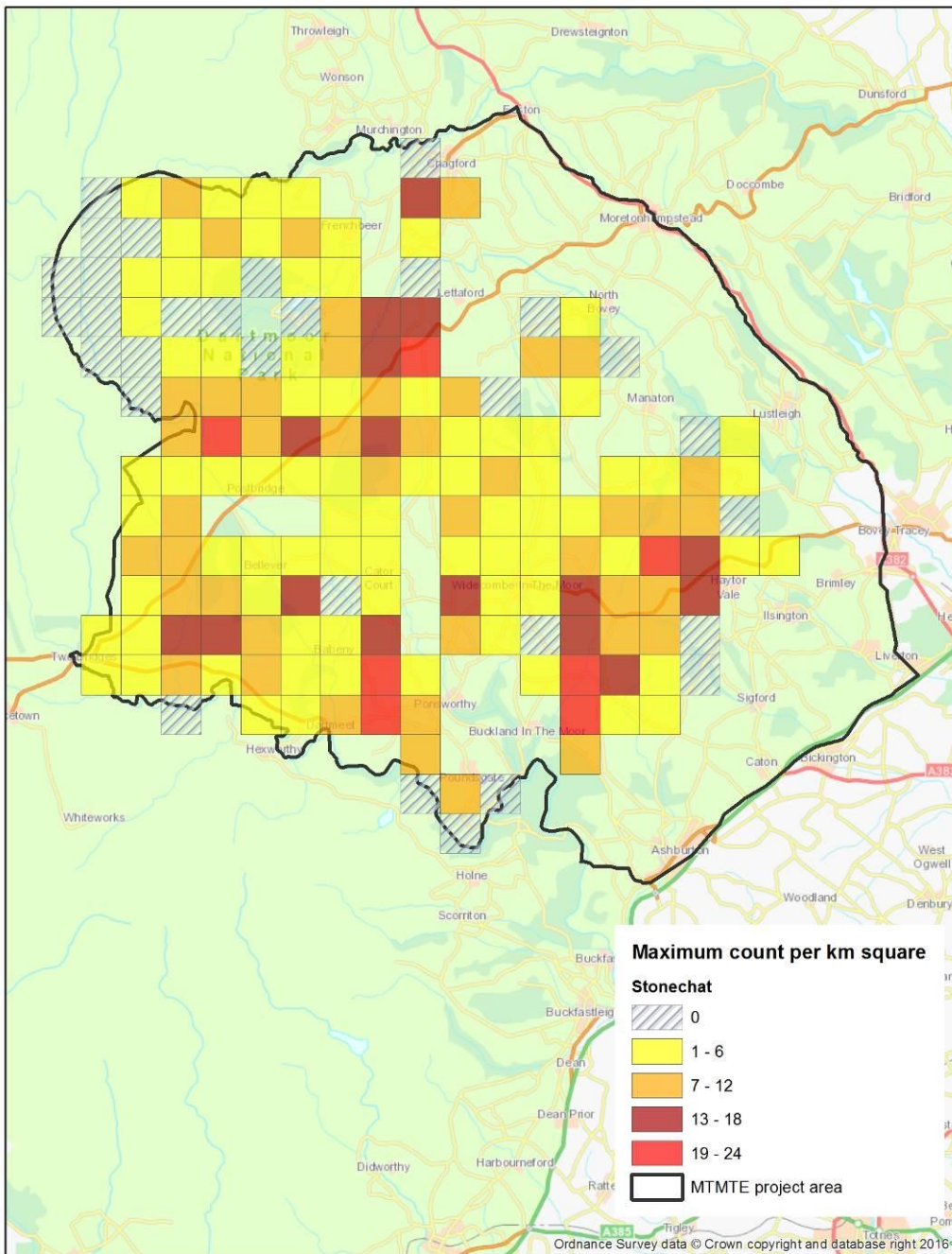




Figure 12: Estimated stonechat territories in 2016

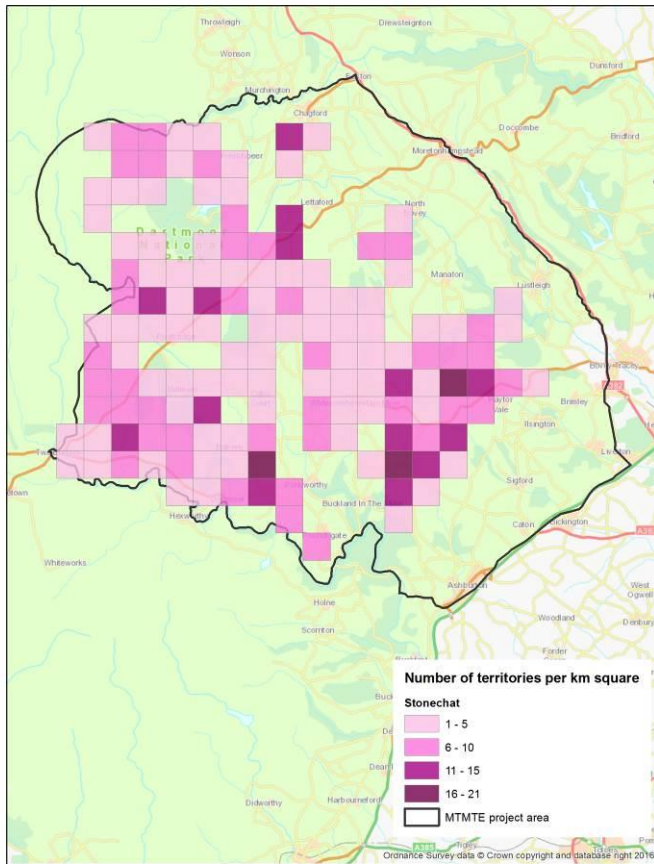
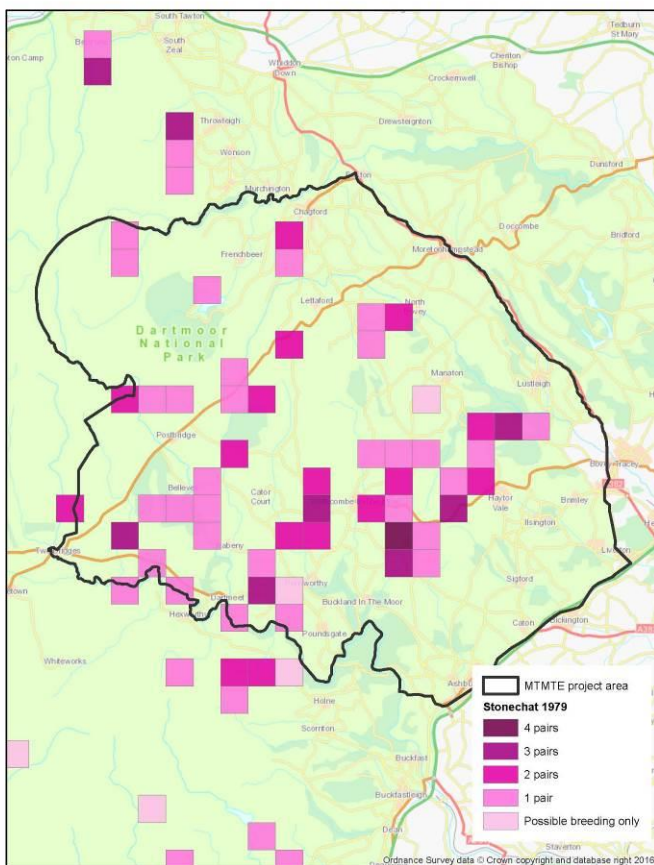


Figure 13: Population of stonechats in the MTMTE area in 1979



## Wheatear

<b>UK conservation status</b>	Not on BoCC list. BTO Atlas reports a 14% decline in breeding range between 1970 and 2010. Latest BBS trend: -11% 1995-2014.	
<b>Regional status</b>	Now largely restricted to upland areas, with smaller numbers found on the coastal fringe. Decreasing on Bodmin Moor and Exmoor.	
<b>County status</b>	Devon Atlas confirms Dartmoor as a key site, but numbers in decline.	
<b>2016 Max count</b>	<b>200</b>	Relatively widespread with concentrations around the East Dart Valley and eastern commons. The distribution and numbers suggests a decline between 1979 and 2016.
<b>1979</b>	123-262 pairs	Described as very common and widespread across the moor.

Figure 14: Distribution of wheatears in the survey area in 2016

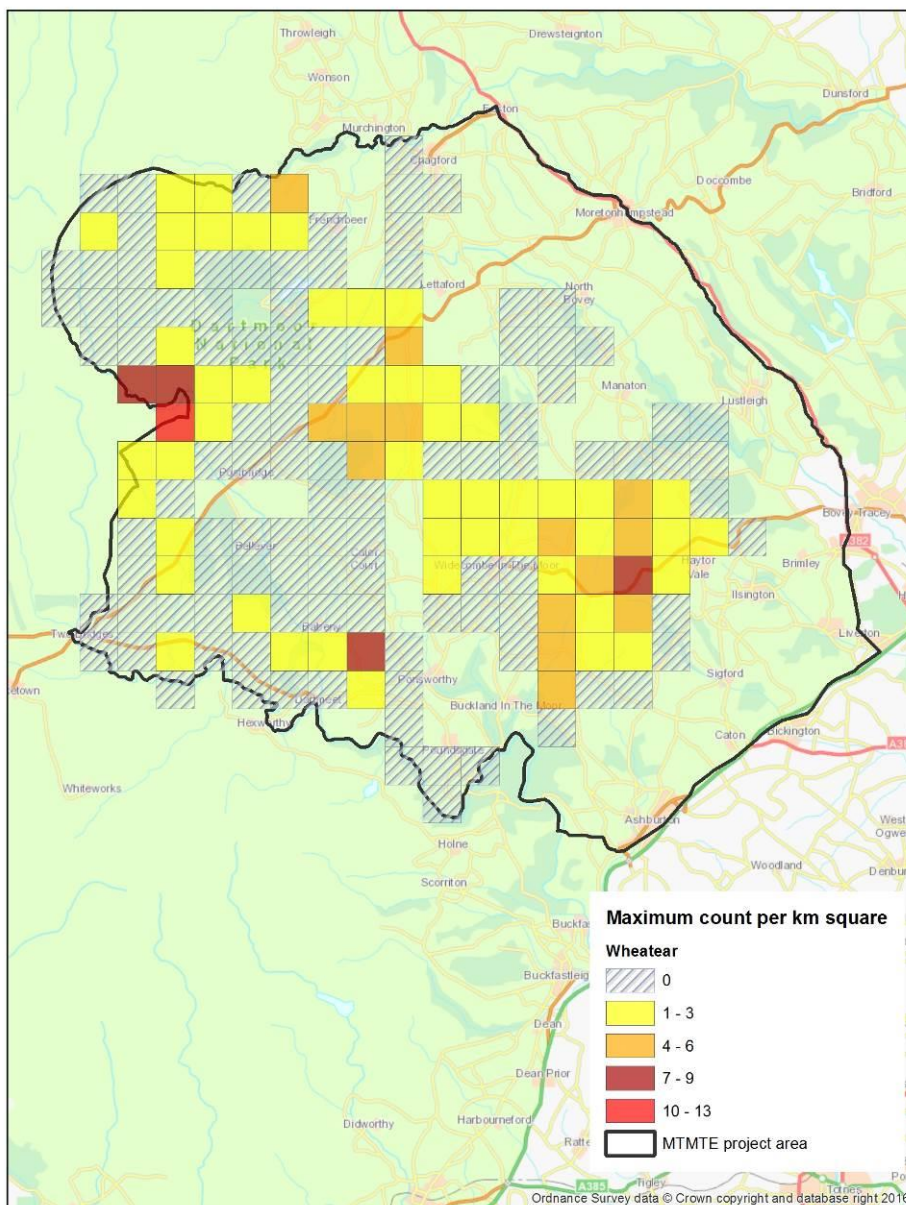


Figure 15: Estimated wheatear territories in 2016

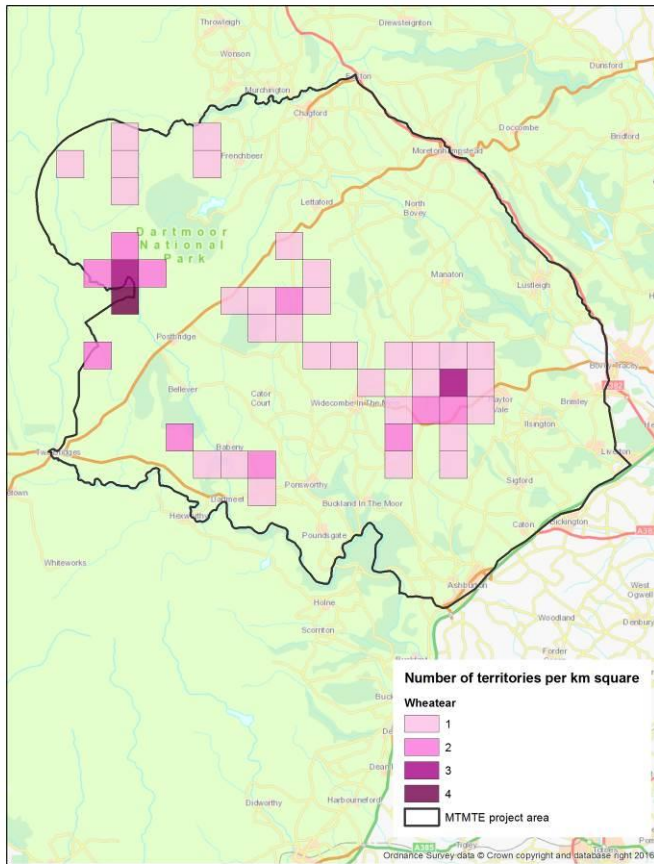
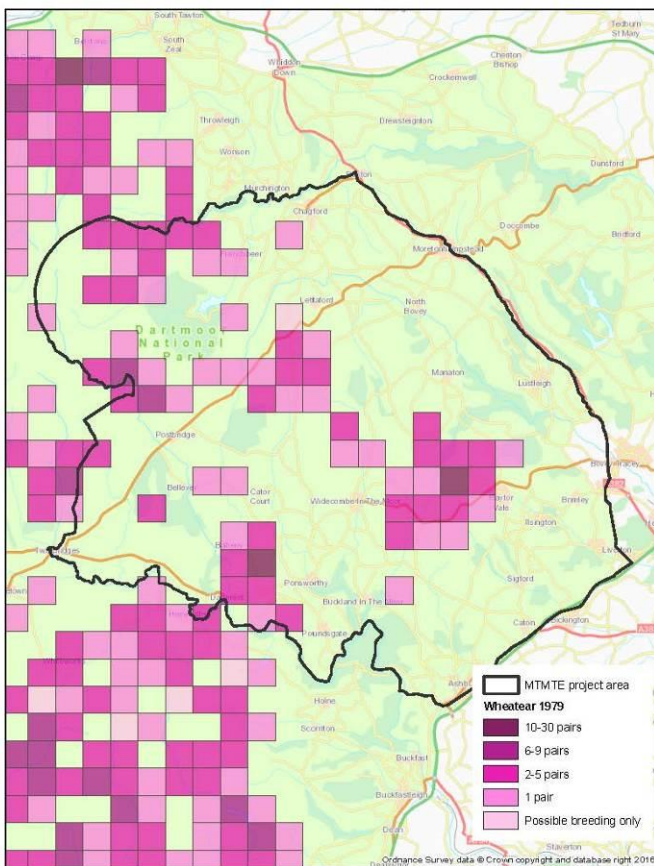


Figure 16: Population of wheatears in the MTMTE area in 1979.



## Grasshopper warbler

<b>UK conservation status</b>	BoCC red list. BTO Atlas reports an 11% loss of breeding range between 1970 and 2010. Latest BBS trend: -18% 1995-2014.	
<b>Regional status</b>	Widespread losses from lowland areas except around Salisbury Plain and the Culm. Decreasing on Bodmin Moor and Exmoor.	
<b>County status</b>	Devon Atlas shows a strong shift away from lowland areas into the uplands, with Dartmoor increasingly important.	
<b>2016 Max count</b>	<b>53</b>	Mostly distributed to the west of the survey area, south of Fernworthy and in and around the central newtakes. More widely distributed than in 1979 and a substantial increase in population.
<b>1979</b>	4 pairs	Recorded in the Two Bridges area only.

Figure 17: Distribution of grasshopper warbler in the survey area in 2016

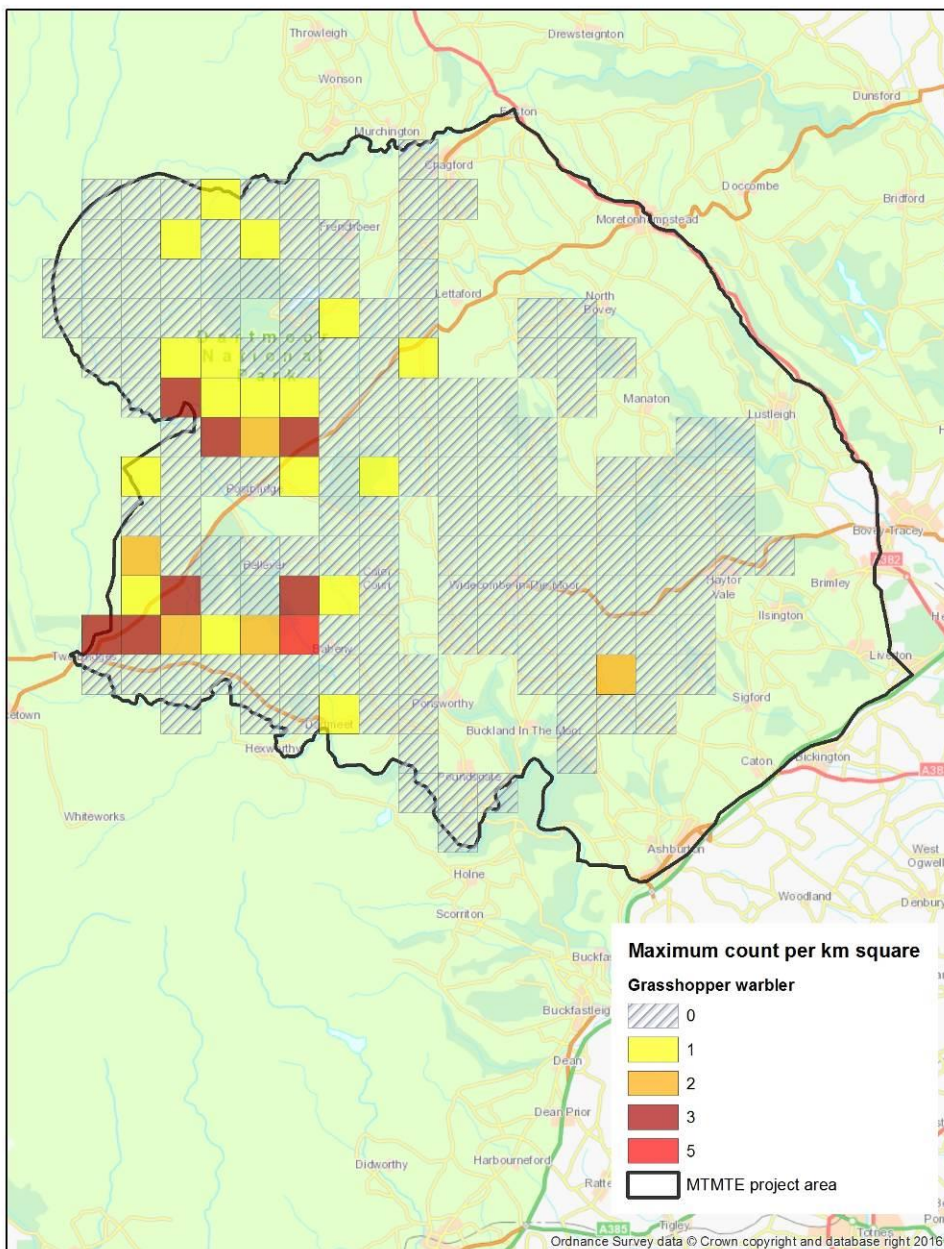


Figure 18: Estimate of grasshopper warbler territories in 2016

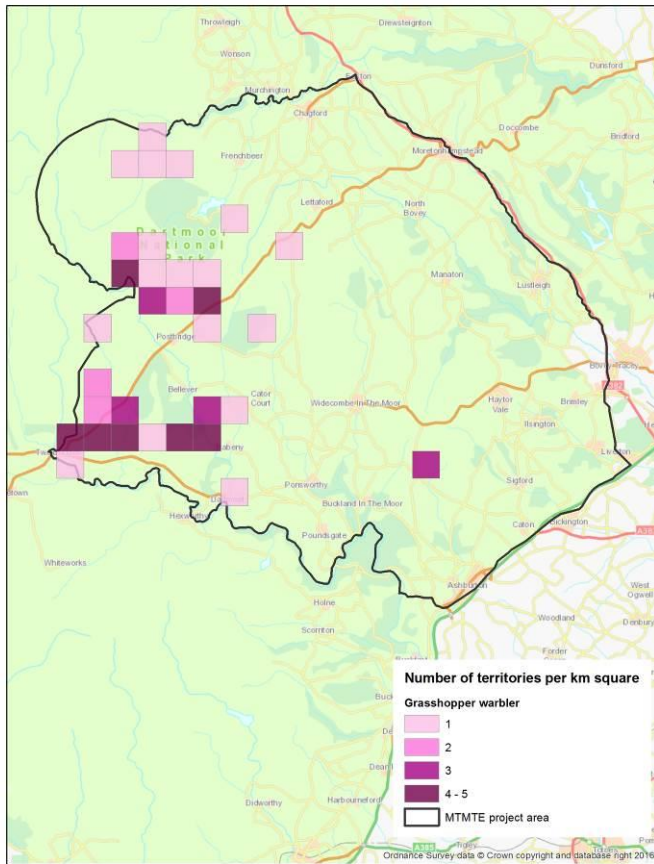
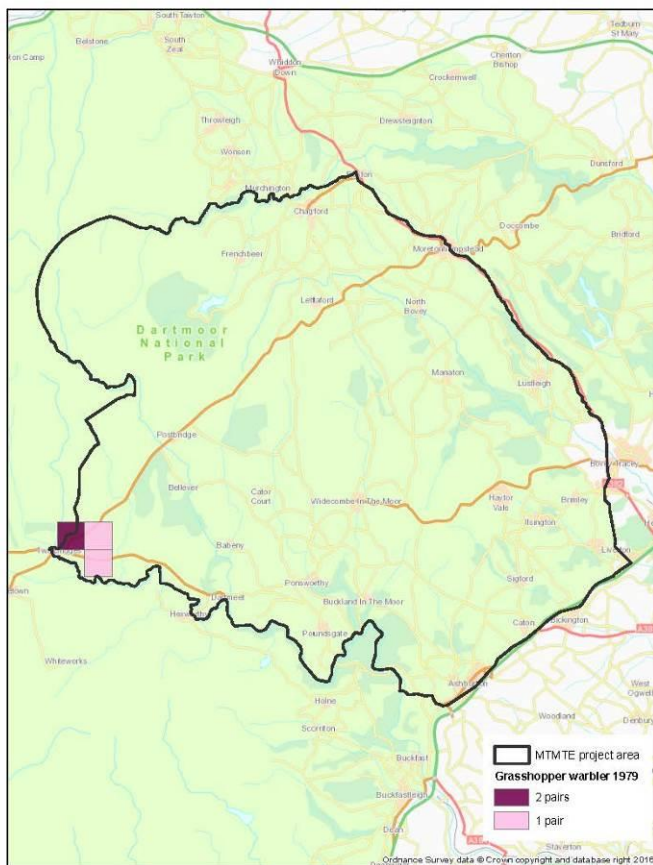


Figure 19: Population of grasshopper warblers in the MTME area in 1979



## Red grouse

<b>UK conservation status</b>	BoCC amber list. BTO Atlas reports a 22% decline in breeding range between 1970 and 2010. Latest BBS trend: +19% 1995-2014.	
<b>Regional status</b>	Only ever established on Dartmoor and Exmoor. Now considered extinct on Exmoor, with the last record in 2009.	
<b>County status</b>	Red grouse were introduced to Dartmoor in c.1915. The Devon Atlas shows an ongoing decline.	
<b>2016 Max count</b>	<b>3</b>	Red grouse were detected in just two 1km squares. The distribution of those records was similar to 1979 but the results indicate a loss of red grouse in the <i>MTMTE</i> area.
<b>1979</b>	3-5 pairs plus 9 other records	Scarce on East Dartmoor

Figure 20: Distribution of red grouse in the survey area in 2016

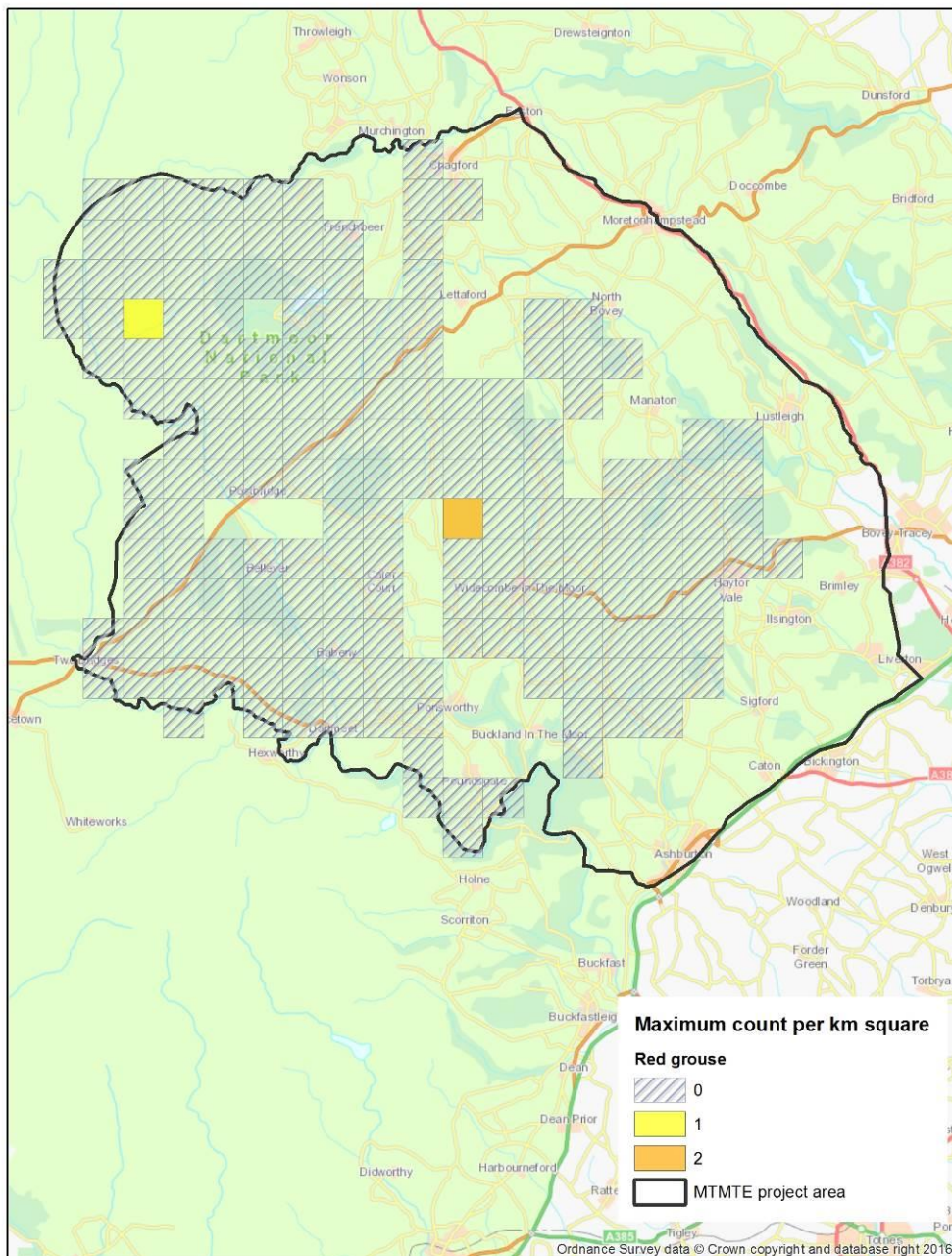
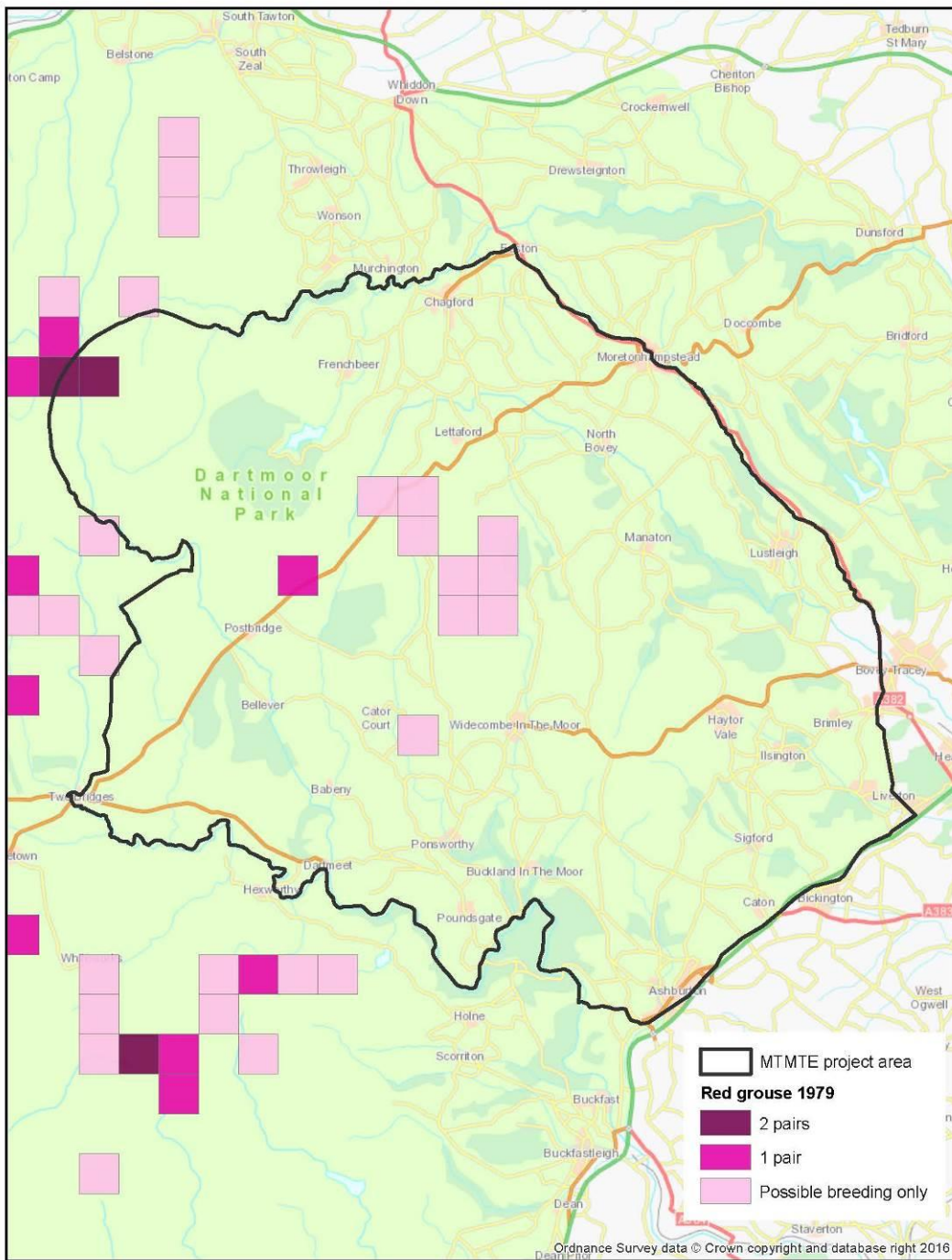


Figure 21: Population of red grouse in the *MTMTE* area in 1979.



## Reed bunting

<b>UK conservation status</b>	BoCC amber list. BTO Atlas shows a 5% decline in breeding range between 1970 and 2010. Latest BBS trend: +29% 1995-2014.	
<b>Regional status</b>	The majority of the UK range decline has been across the SW. Population increases on Bodmin Moor and Exmoor.	
<b>County status</b>	Devon Atlas shows Dartmoor has become increasingly important for this species, against losses elsewhere especially in east Devon and the Culm.	
<b>2016 Max count</b>	<b>122</b>	Reed buntings were relatively widely distributed with concentrations around Headland Warren, the central newtakes and the east Dartmoor commons. The species was found more frequently than in 1979 and while not directly comparable, the population appears to be substantially larger.
<b>1979</b>	18prs	Thinly spread across the area.

Figure 22: Distribution of reed bunting in the survey area in 2016

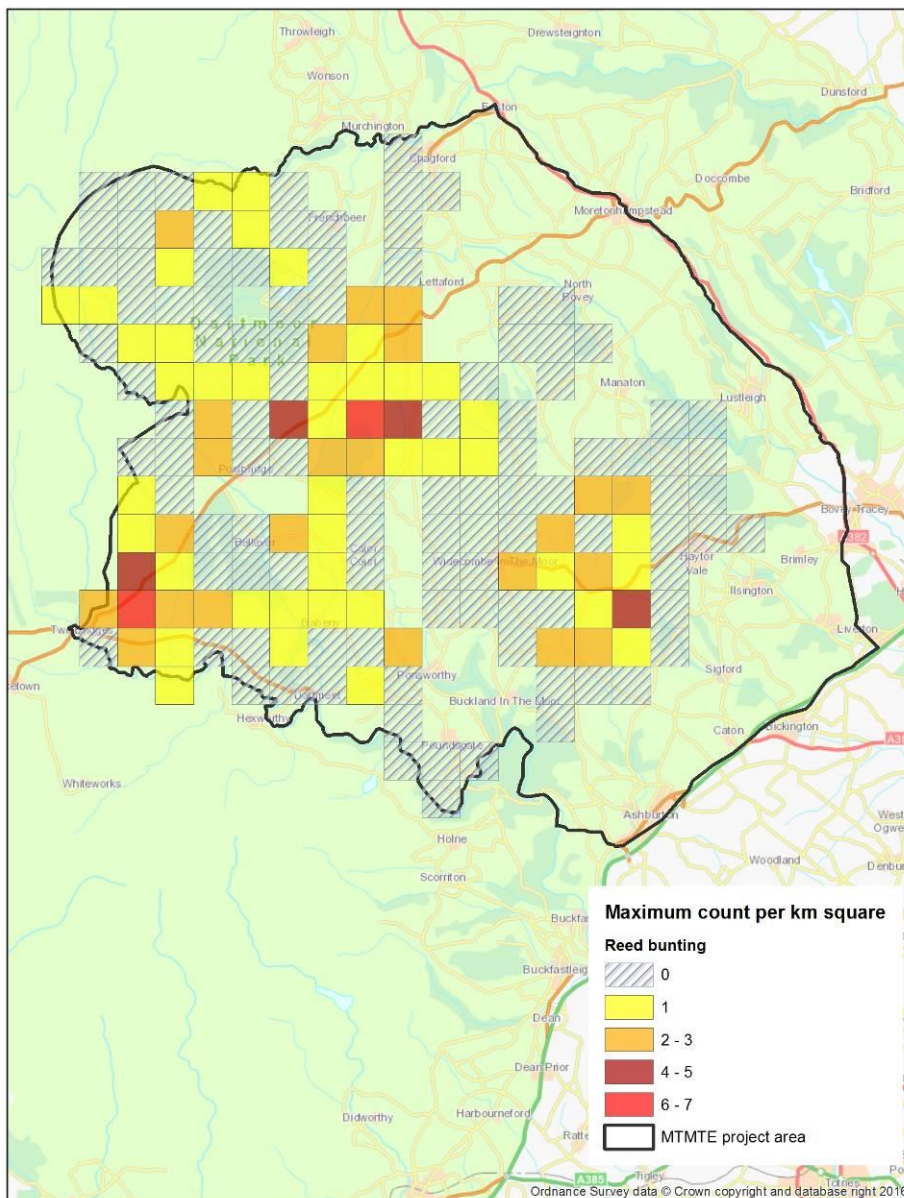




Figure 23: Estimated reed bunting territories in 2016

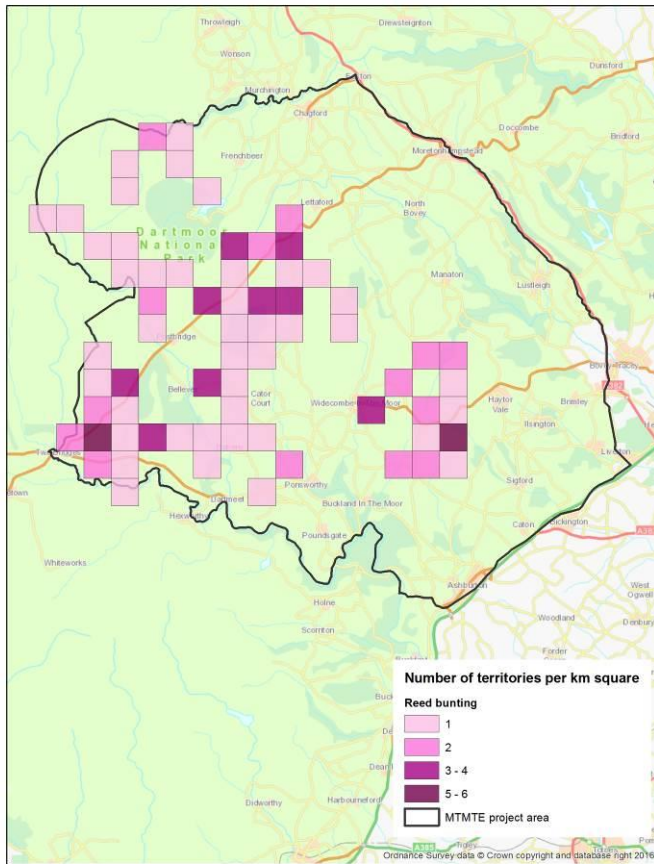
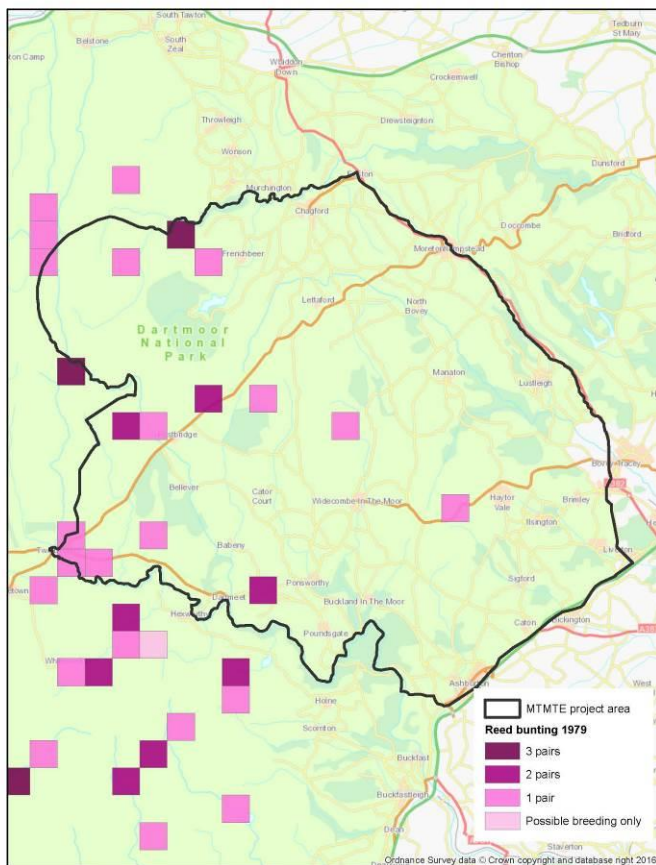


Figure 24: Population of reed bunting in the MTMTE area in 1979



## Snipe

<b>UK conservation status</b>	BoCC amber list. BTO Atlas reports a 31% decline in breeding range, mostly in the lowlands, between 1970 and 2010. Latest BBS trend:+16% 1995-2014.	
<b>Regional status</b>	Important populations on Dartmoor and the Somerset Levels. Remaining in low numbers on Bodmin Moor and Exmoor but lost from most other areas.	
<b>County status</b>	Devon Atlas shows Dartmoor is a major stronghold with a relatively stable population. Now largely absent as a breeding bird across the rest of the county.	
<b>2016 Max count</b>	<b>109</b>	Snipe are particularly concentrated in the east Dartmoor commons, the central newtaks and in the mire systems around Headland Warren. Their distribution is not dissimilar to that of 1979 but they are perhaps now more widespread. For this species in particular it is very hard to know how the numbers compare. The population may be stable or possibly increased but caution is needed in interpreting the differences.
<b>1979</b>	45 pairs	Found to be 'reasonably abundant and widespread' across the Moor.

Figure 25: Distribution of snipe in the survey area in 2016

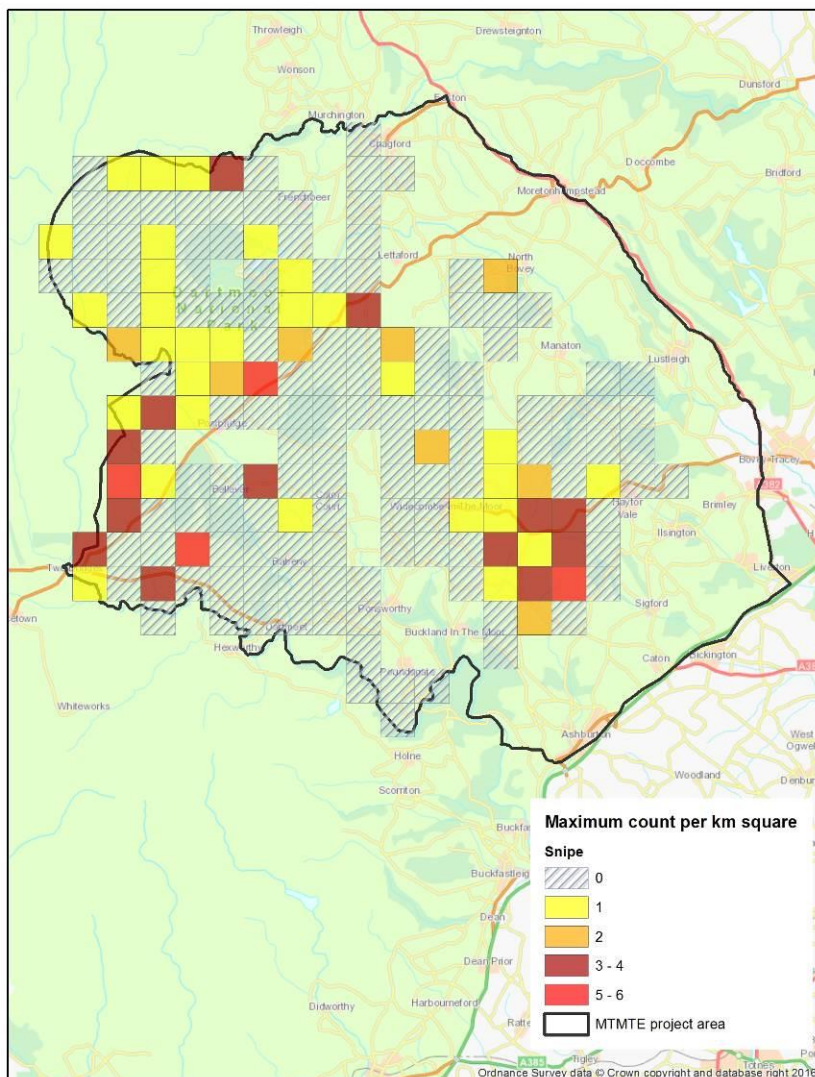


Figure 26: Estimated snipe territories in 2016

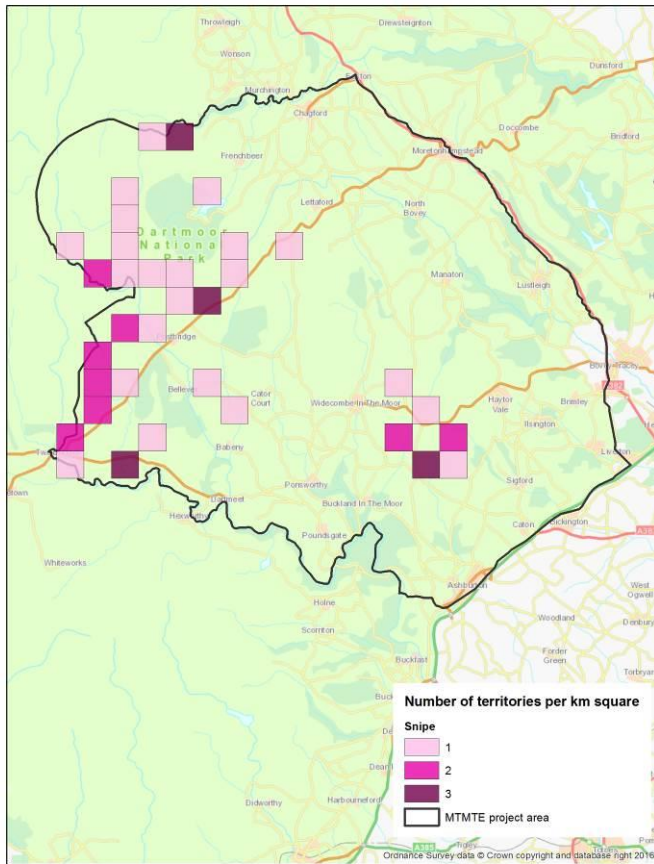
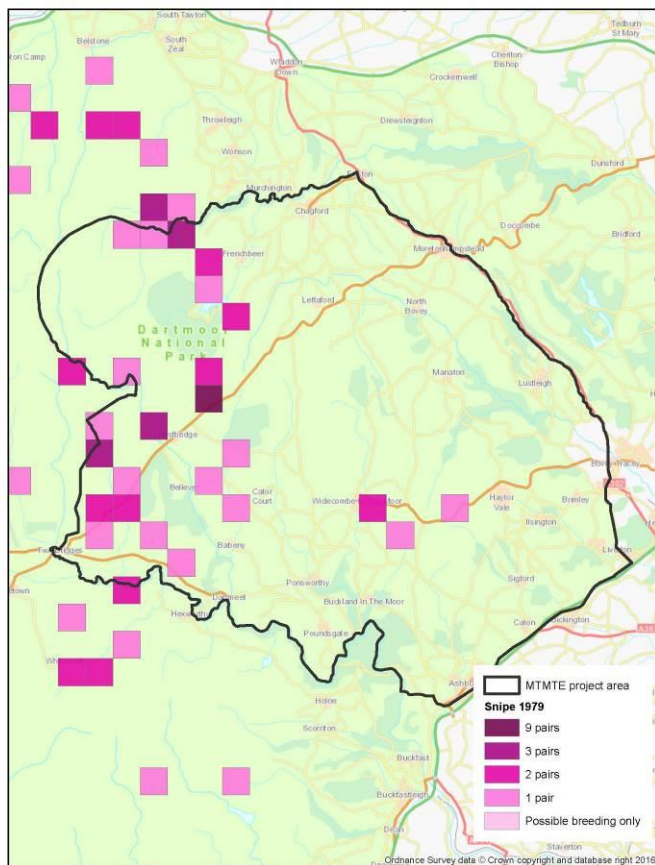


Figure 27: Snipe population in the MTMTE survey area in 1979



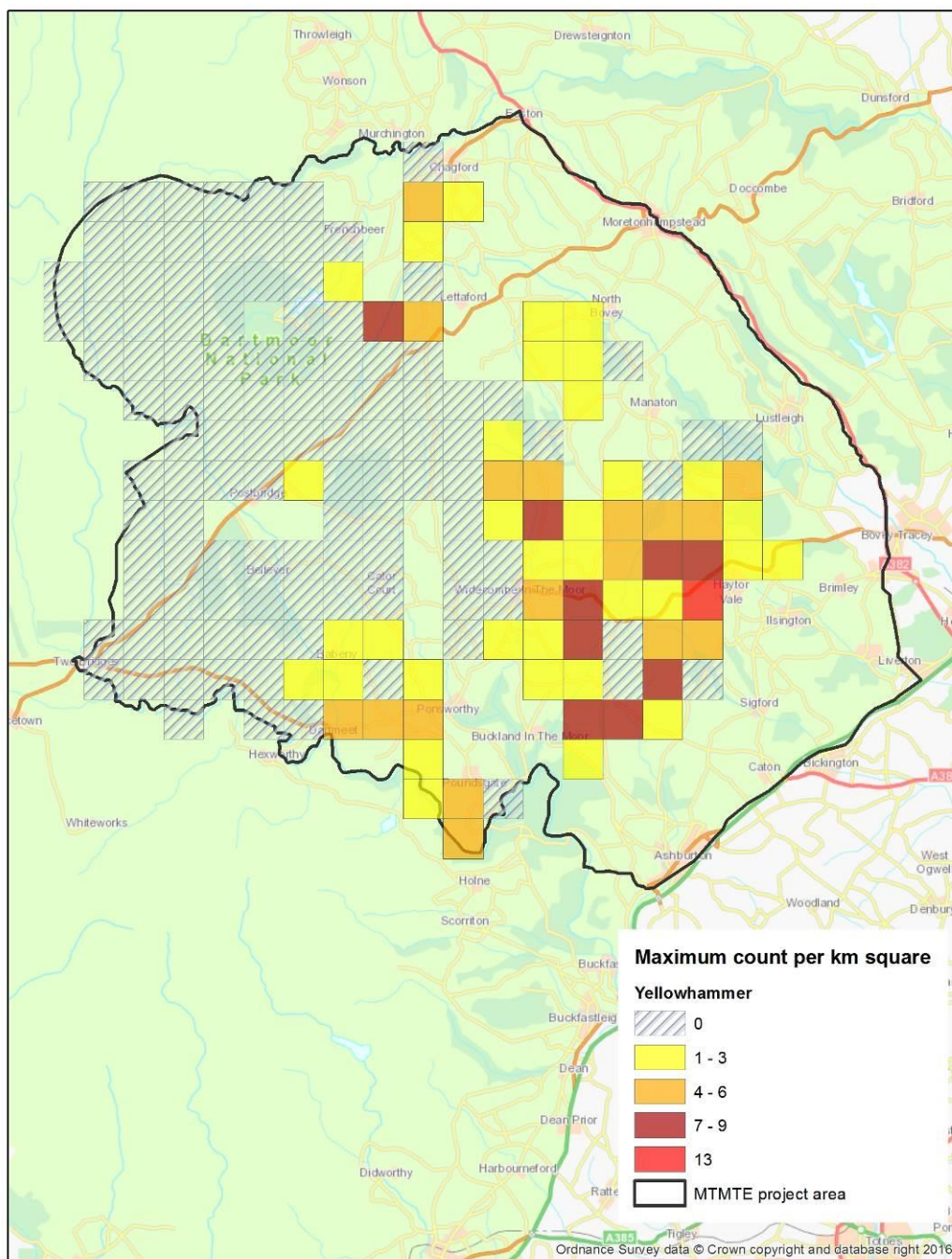
## Dartford warbler

<b>UK conservation status</b>	IUCN Near Threatened (Global status) BoCC Amber List. BTO Atlas shows major increase in breeding abundance and range across southern England.	
<b>Regional status</b>	Was increasing on Exmoor and Dartmoor. Increasing population and range across region. But, severe winters of 2009 and 2010 knocked the upland population back to just a few individuals.	
<b>County status</b>	Devon Atlas shows increase from 10 occupied tetrads to 88, including areas on Dartmoor, however, the cold winters of '09 and '10 saw major declines and assumed loss from the moor.	
<b>2016 Max count</b>	<b>6</b>	A very small population recorded, with two single records elsewhere. Dartmoor supported a nationally important population in 2006 (31 territories within the 2016 survey area), which subsequently crashed in the cold winters of 2009/10 and 2010/11.
<b>1979</b>	<b>0</b>	At this time it was only found at a handful of lowland heathlands in England, after near extinction in the 1960s.

## Yellowhammer

<b>UK conservation status</b>	BoCC Red list. BTO Atlas shows reductions in breeding abundance across much of range. Latest BBS trend: -14% 1995-2014.	
<b>Regional status</b>	Increasing on north Dartmoor and stable on Exmoor.	
<b>County status</b>	Devon Atlas shows a decline of almost 50% between atlases. Dartmoor fringes are amongst important areas for this species.	
<b>2016 Max count</b>	<b>222</b>	Absent from the high moor, but widely distributed around the moorland fringe, possibly increased.
<b>1979</b>	44 pairs	Described as common but locally distributed, mostly in the southern and eastern parts of Dartmoor.

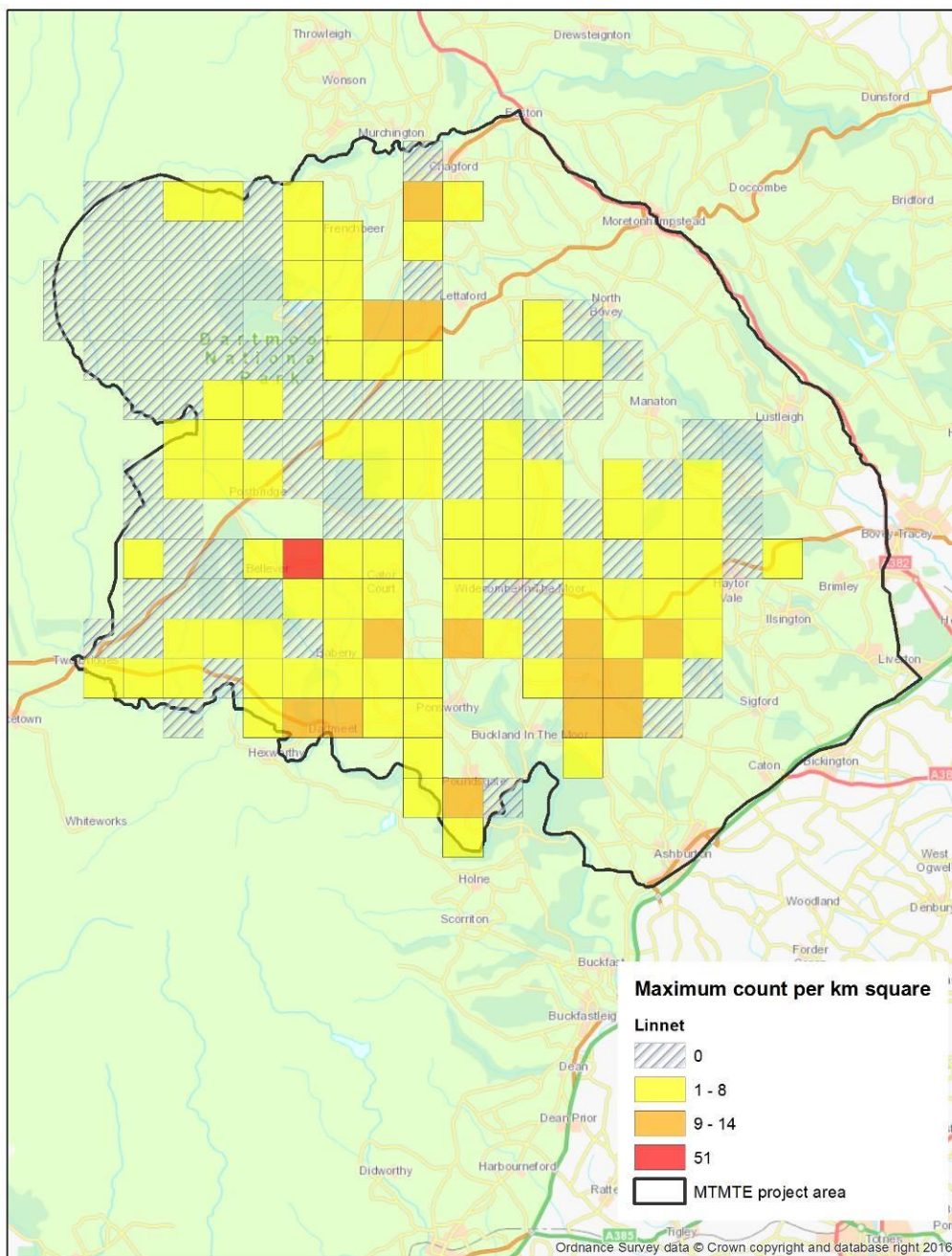
Figure 28: Distribution of yellowhammer in the survey area in 2016



## Linnet

<b>UK conservation status</b>	BoCC Red List. Widespread in UK, but abundance declining everywhere. Latest BBS trend. -25% 1995-2014.	
<b>Regional status</b>	Increasing on Bodmin Moor and Exmoor.	
<b>County status</b>	Devon Atlas shows the species is widespread but declining.	
<b>2016 Max count</b>	<b>488</b>	Widespread at relatively low level, the Haytor to Buckland area appears important for this species. A large post breeding flock shows up near Riddon Ridge, to the east of Bellever.
<b>1979</b>	30 pairs	Described as widespread but patchily distributed and in the lower lying, fringe areas of the moor.

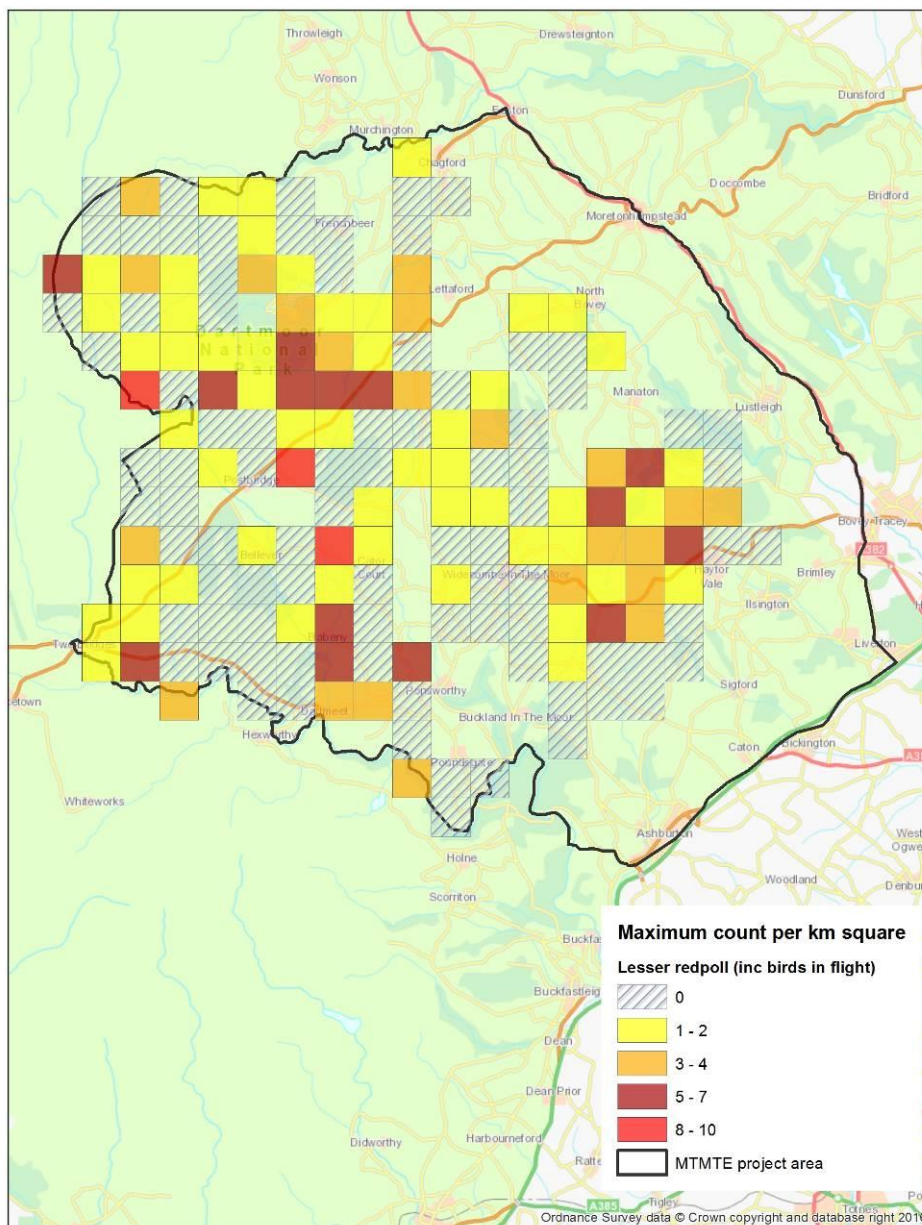
Figure 29: Distribution of linnet in the survey area in 2016



## Lesser redpoll

<b>UK conservation status</b>	BoCC Red list. BTO Atlas reports a 22% decline in breeding range, mostly in eastern England between 1970 and 2010. Latest BBS trend: +38% 1995-2014.	
<b>Regional status</b>	Remains largely restricted to the uplands, Culm and areas of lowland heath. Increasing on Exmoor.	
<b>County status</b>	Devon Atlas shows the species is declining in some parts of the county but increasing in others, including the Dartmoor fringes, and particularly in east Dartmoor.	
<b>2016 Max count</b>	<b>249</b>	Relatively widespread but patchily distributed with notable concentrations in the Headland Warren area and edges of Fernworthy, Yartor Down and Cordon Down and in the east Dartmoor commons.
<b>1979</b>	No count	Described as frequently seen, usually close to conifer plantations.

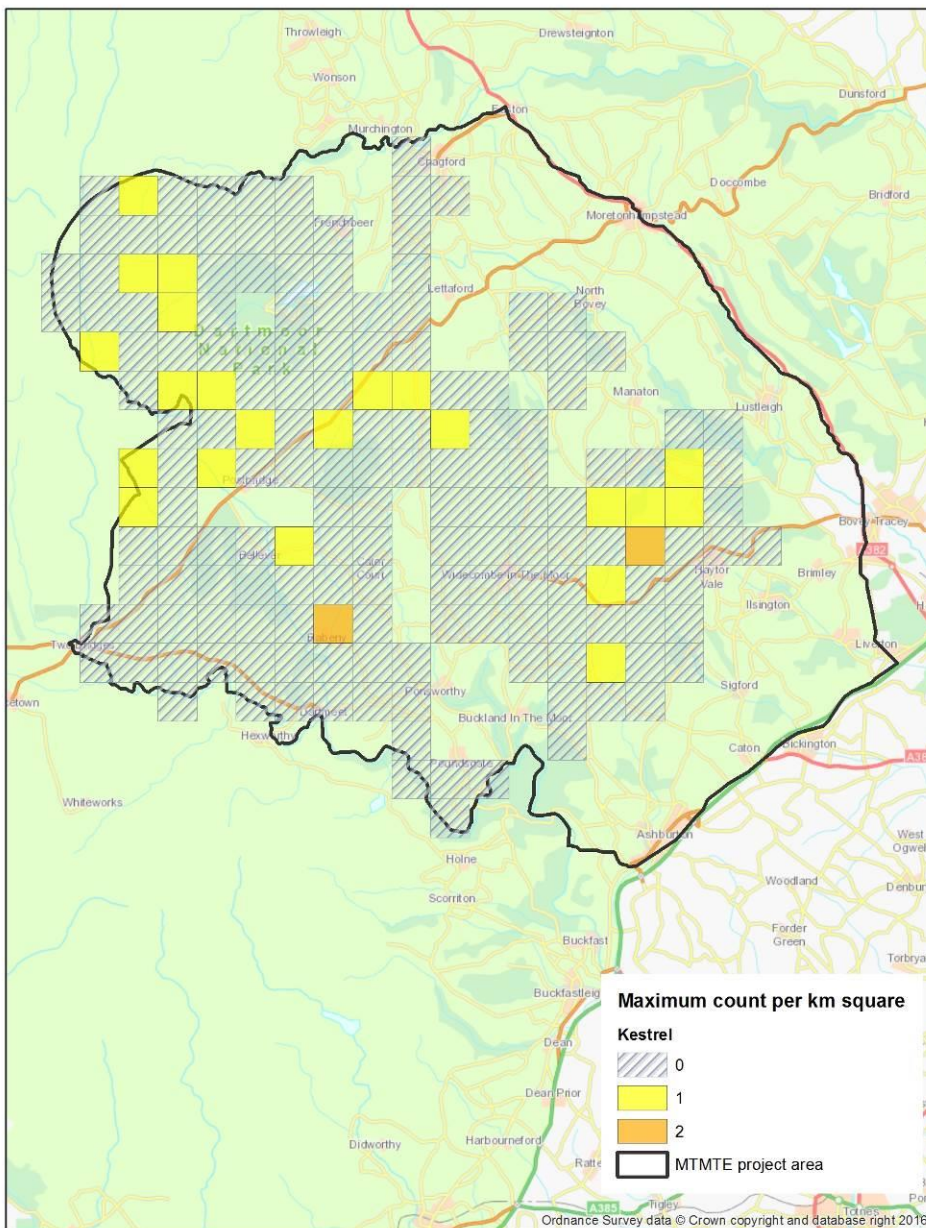
Figure 30: Distribution of lesser redpoll in the survey area in 2016



## Kestrel

<b>UK conservation status</b>	BoCC amber list. BTO Atlas reports a 44% decline in breeding population between 1970 and 2010. Latest BBS trend: -36% 1995-2014.	
<b>Regional status</b>	A 50% decline on Exmoor. BBS shows a 41% decline in the southwest 1995–2015.	
<b>County status</b>	Devon Atlas shows a substantial decline across the county, but with Dartmoor remaining an important area.	
<b>2016 Max count</b>	<b>26</b>	Few records indicating breeding, the map may only show the foraging range of a handful of pairs.
<b>1979</b>	No count	Described as very common, though generally breeding off the moor.

Figure 31: Distribution of kestrel in the survey area in 2016

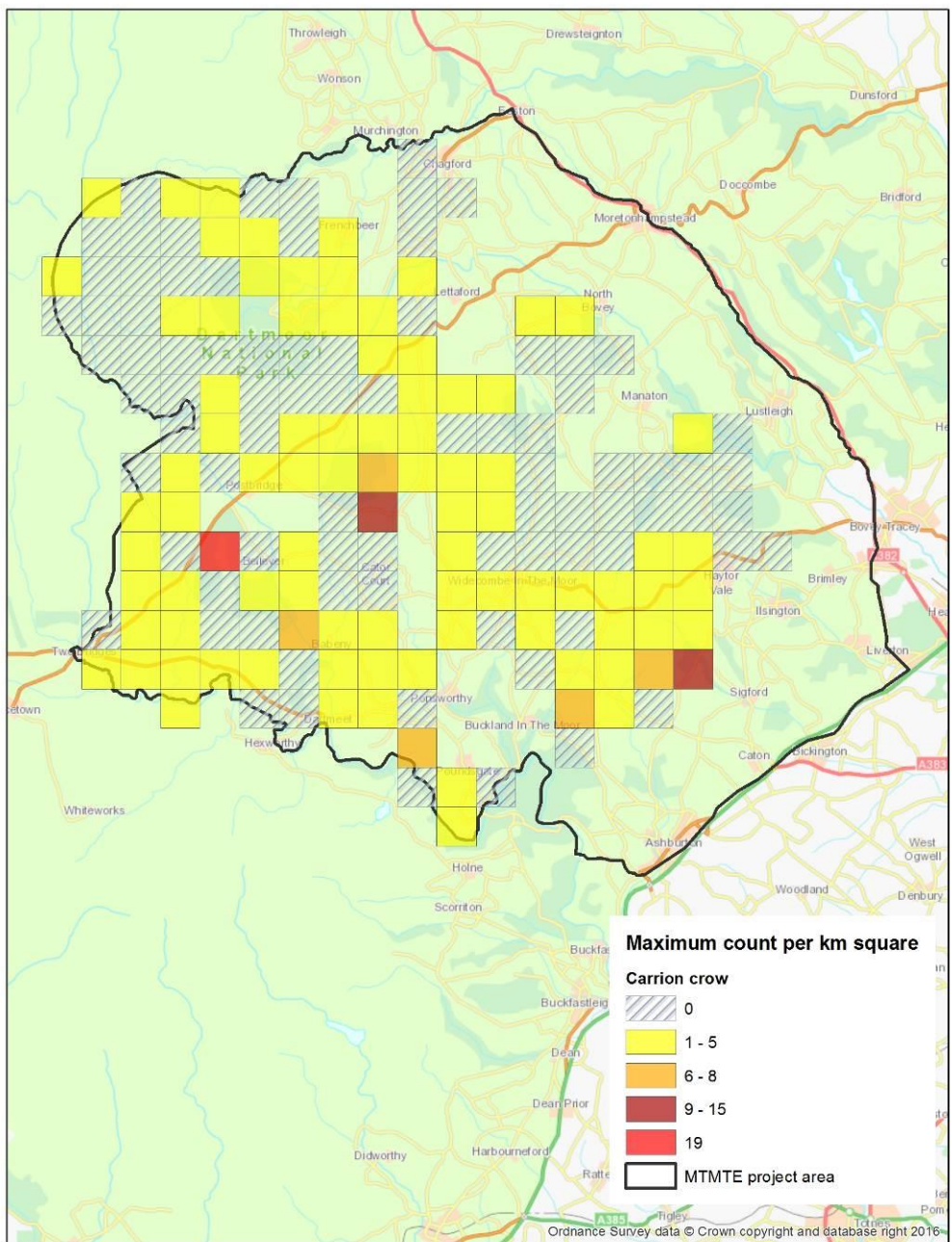




## Carrion crow

<b>UK conservation status</b>	Not on BoCC list. BTO Atlas reports an 89% increase in breeding population between 1970 and 2010. Latest BBS trend: + 19% 1995-2014.	
<b>Regional status</b>	BBS shows a 10% increase in the southwest 1995–2015.	
<b>County status</b>	Widespread. Devon Atlas shows little change with breeding pairs still absent from the high moor.	
<b>2016 Max count</b>	<b>266</b>	Widespread across the survey area, but rarely in large numbers.
<b>1979</b>	No count	Described as very common, breeding in hawthorn and rowan trees on moorland.

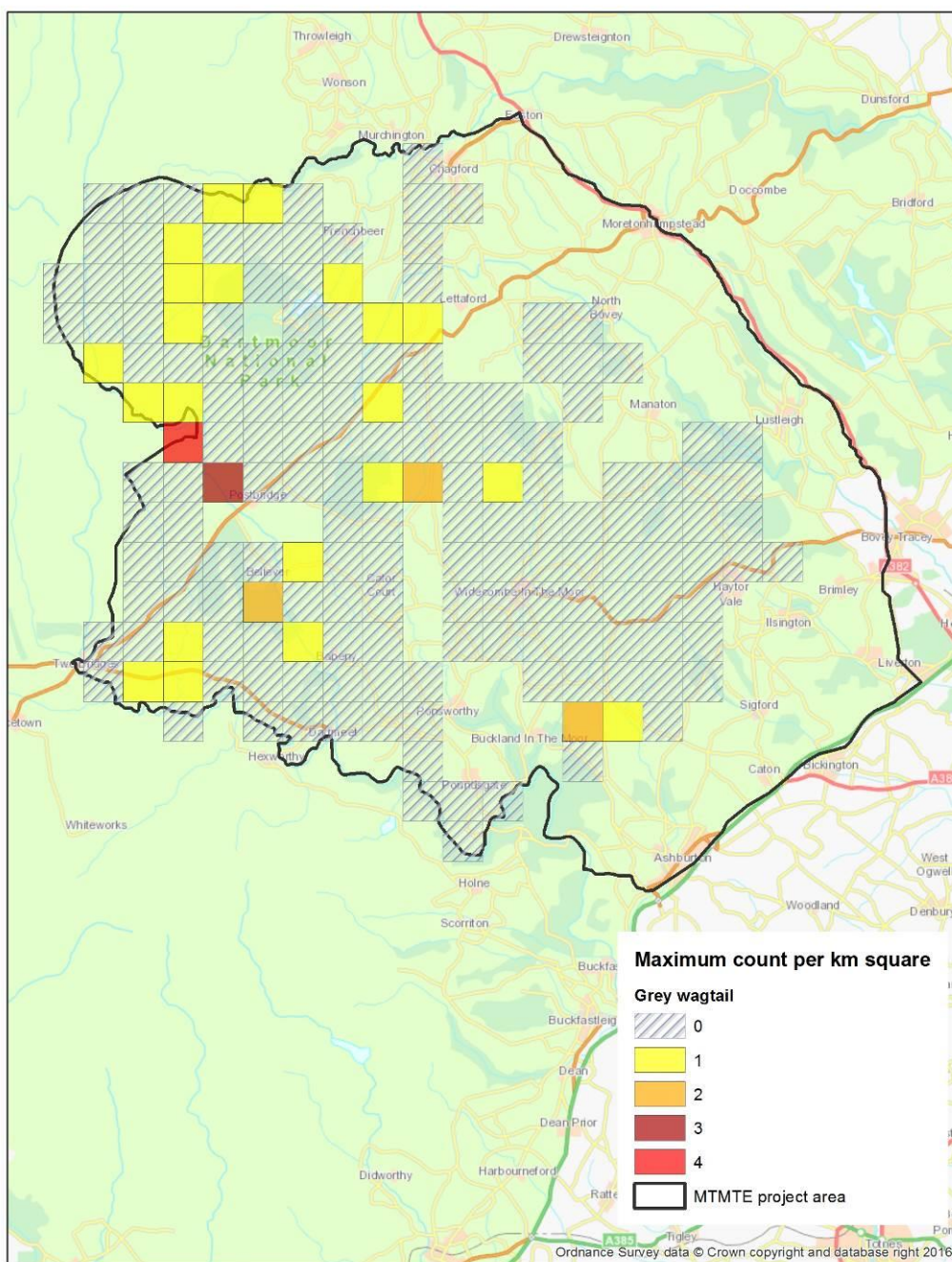
Figure 32: Distribution of carrion crow in the survey area in 2016



## Grey wagtail

<b>UK conservation status</b>	BoCC Red list. BTO Atlas reports a 19% increase in breeding range between 1970 and 2010. Latest BBS trend: -12% 1995-2014.	
<b>Regional status</b>	Increasing on Exmoor. BBS shows a 22% decrease in the southwest 1995–2015.	
<b>County status</b>	The Devon Atlas shows a 48% range decline with birds lost primarily from lowland areas rather than the upland core.	
<b>2016 Max count</b>	<b>34</b>	Rare on the open moor away from fast flowing streams and rivers.
<b>1979</b>	12 pairs	Recorded as moderately common and also closely associated with streams and rivers.

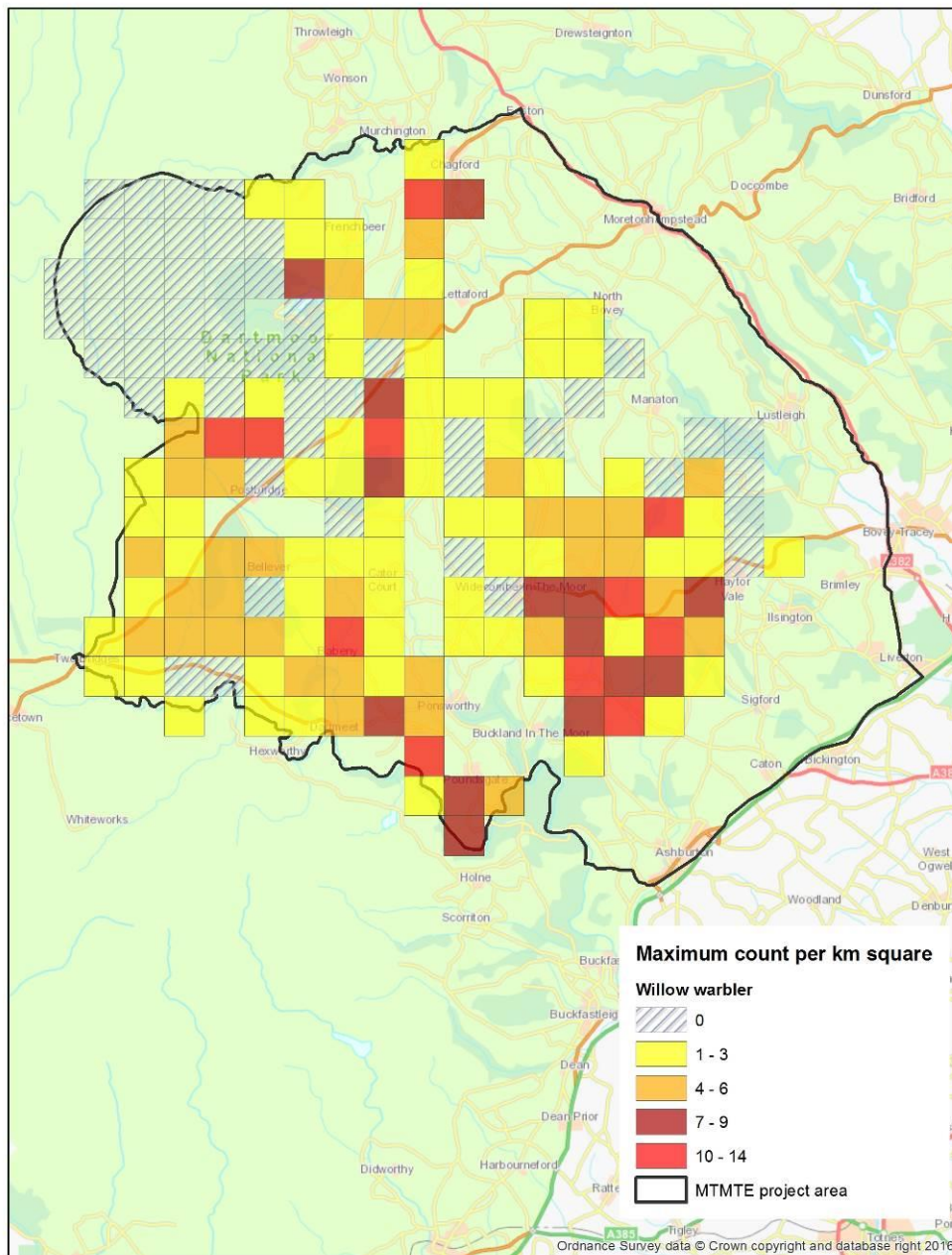
Figure 33: Distribution of grey wagtail in the survey area in 2016



## Willow warbler

<b>UK conservation status</b>	BoCC Amber list. BTO Atlas reports a 28% decline in breeding abundance in England between 1995 and 2010. Latest BBS trend: -8% 1995-2014.	
<b>Regional status</b>	Increasing on Bodmin Moor and Exmoor. BBS shows a 60% decrease in southwest 1995–2015.	
<b>County status</b>	The Devon Atlas shows a 27% range decline with the uplands and areas of semi-natural habitat eg Culm measures important.	
<b>2016 Max count</b>	<b>513</b>	Well distributed around the moorland edge and areas of scrub.
<b>1979</b>	No count	Recorded as very common off the open moor.

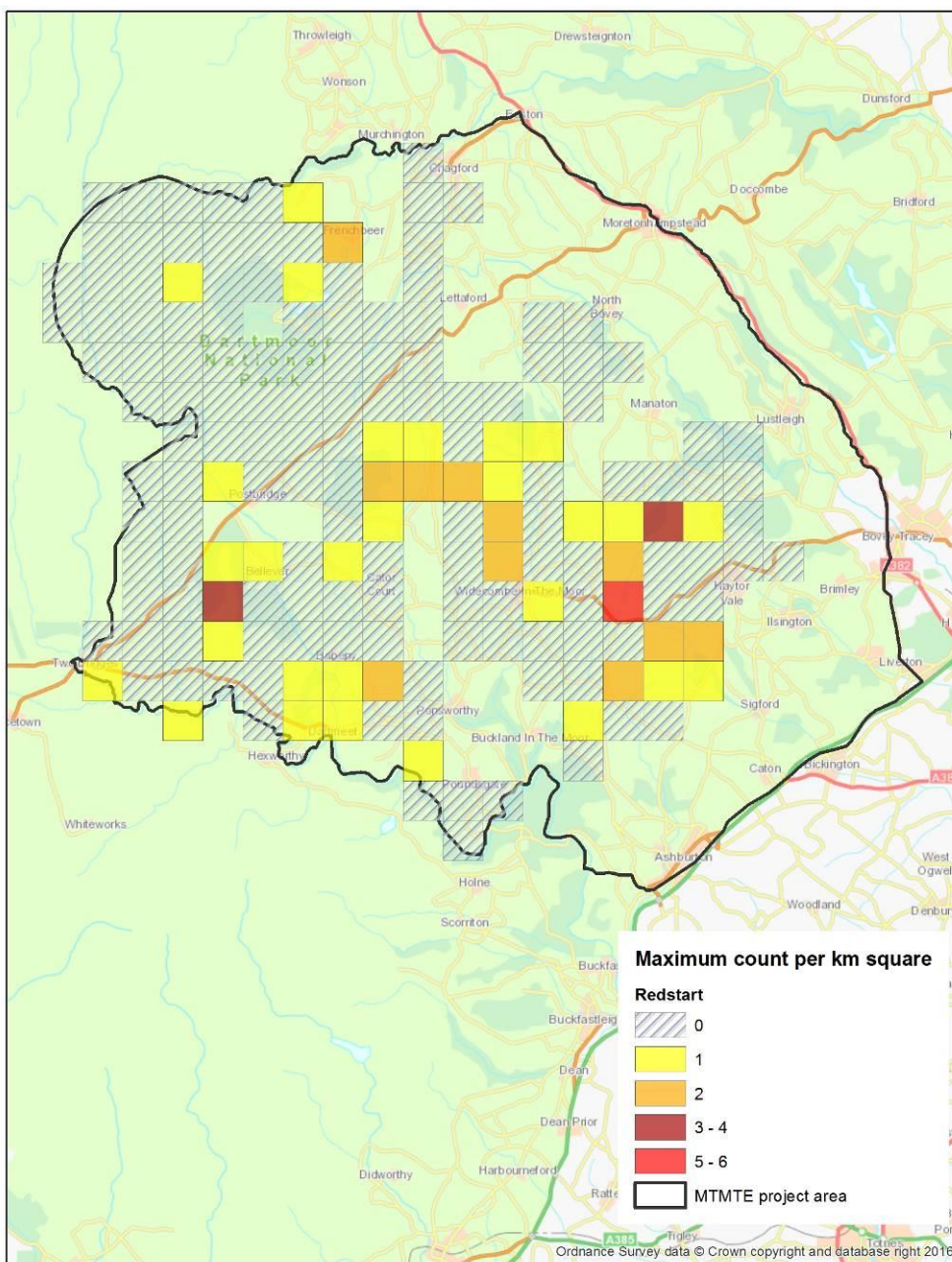
Figure 34: Distribution of willow warbler in the survey area in 2016



## Redstart

<b>UK conservation status</b>	BoCC Amber list. BTO Atlas reports a 31% decline in breeding range between 1995 and 2010. Latest BBS trend: +47% 1995-2014.	
<b>Regional status</b>	Largely restricted to areas of semi-natural habitat. Increasing on Bodmin Moor and Exmoor.	
<b>County status</b>	Range now largely stable but mostly restricted to the uplands.	
<b>2016 Max count</b>	<b>64</b>	A considerable increase is apparent with birds found in most well vegetated areas away from the open moor.
<b>1979</b>	10 pairs	Most were found on slopes on the moorland edge usually adjacent to moorland.

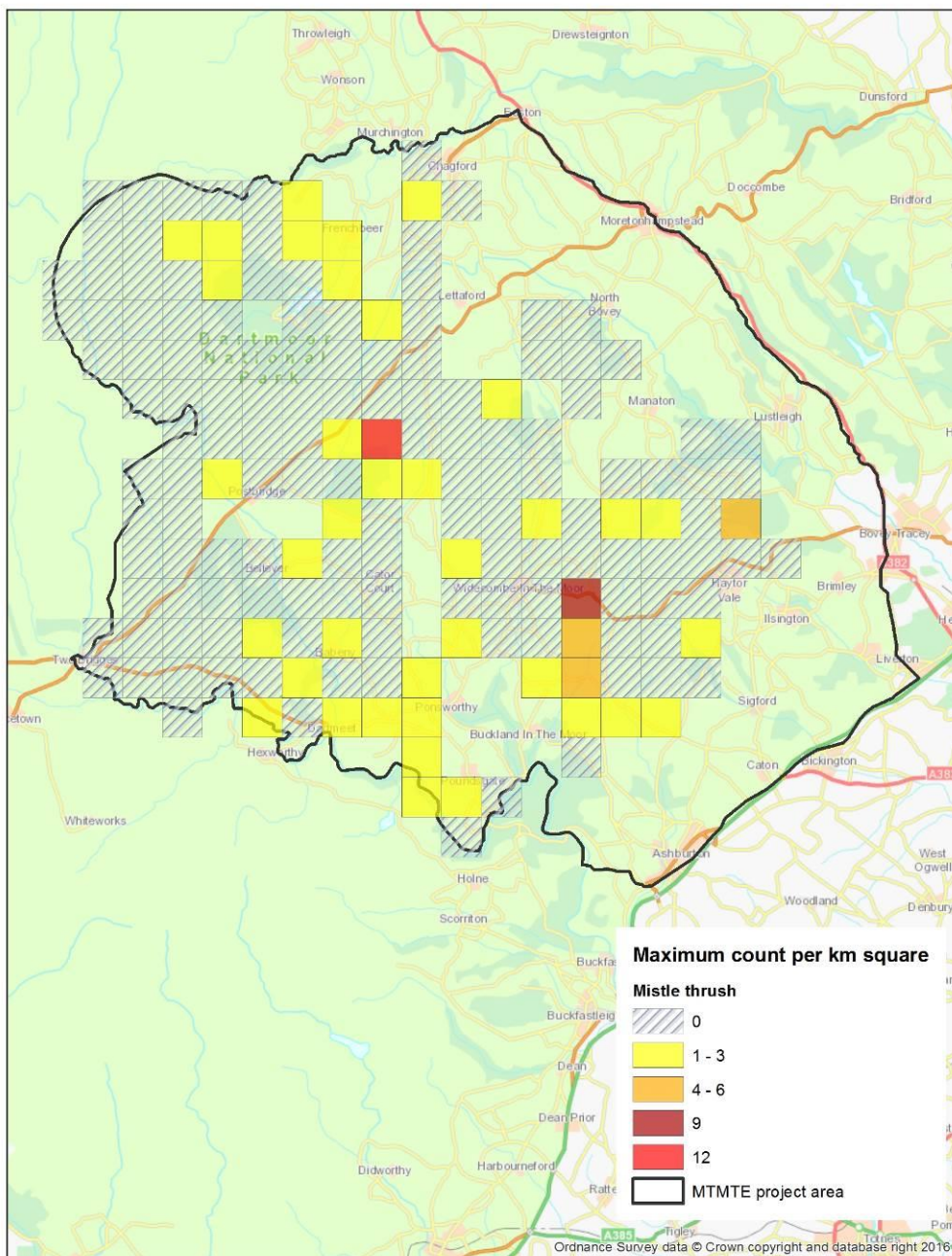
Figure 35: Distribution of redstart in the survey area in 2016



## Mistle thrush

<b>UK conservation status</b>	BoCC Red list. BTO Atlas reports 35% decline in breeding population between 1970 and 2010. Latest BBS trend: -25% 1995-2014.	
<b>Regional status</b>	BTO atlas shows no losses in distribution but noticeable declines in abundance. Latest SW BBS trend: -47% 1995-2015	
<b>County status</b>	The Devon Atlas shows a 43% range decline, with a marked concentration remaining around Dartmoor and its surroundings.	
<b>2016 Max count</b>	<b>90</b>	An early breeding species, around a dozen singing males with numerous pairs and several post-breeding flocks recorded.
<b>1979</b>	No count	'Commonly seen. The odd pair may have bred.'

Figure 36: Distribution of mistle thrush in the survey area in 2016

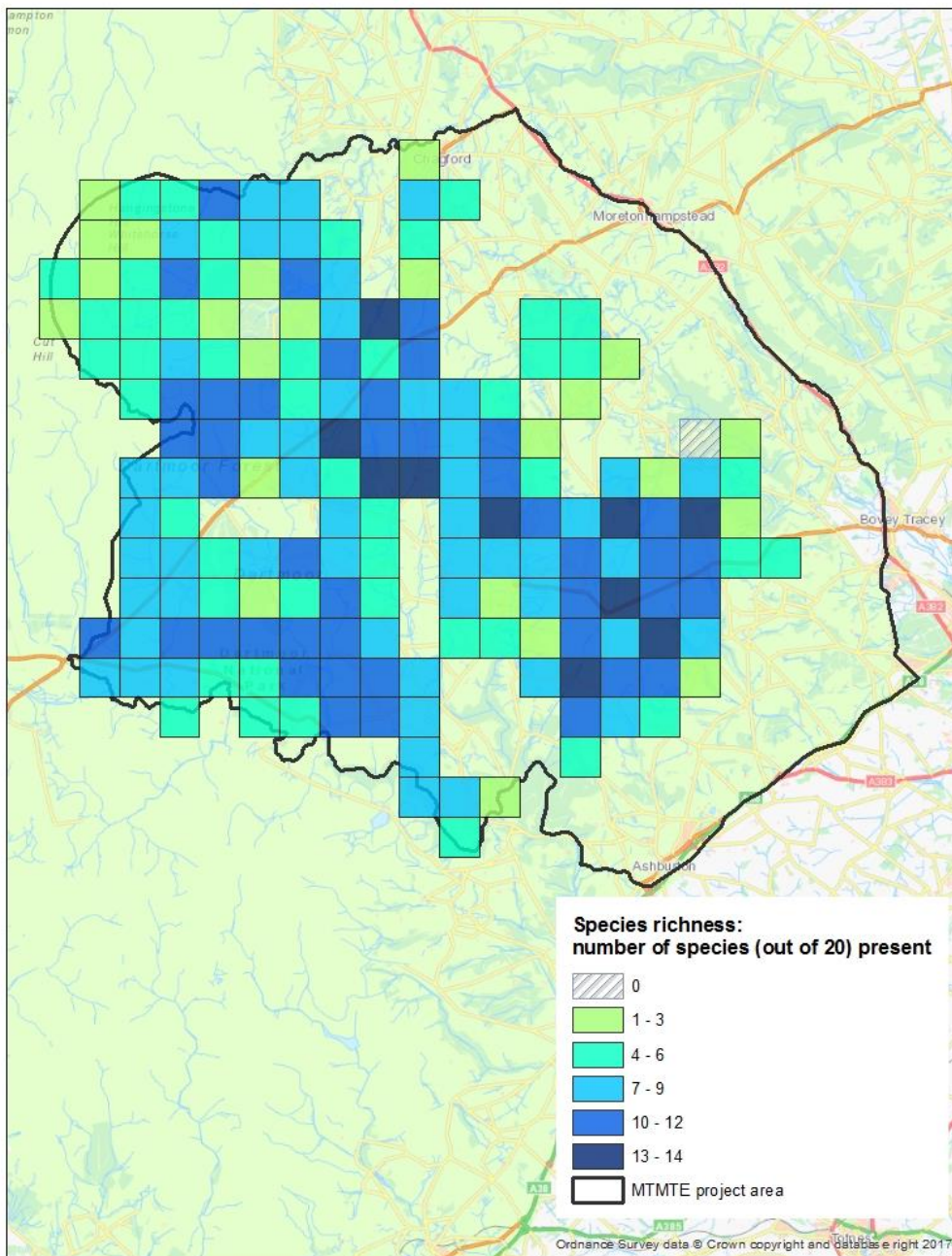


### 3.2 Important moorland areas

The number of species and the number of individuals from 20 moorland species in each 1km square gives an overview of the areas of moorland that are particularly important for birds. Figure 38 shows the number of moorland species within each square surveyed, known as species richness. It shows that the Headland Warren area across to and including the slopes of Whiddon Down, and east to the greater Haytor area, supports the greatest number of species. The Ponsworthy to Hexworthy area is also important for species richness, which includes Yartor Down and Cordon Down.

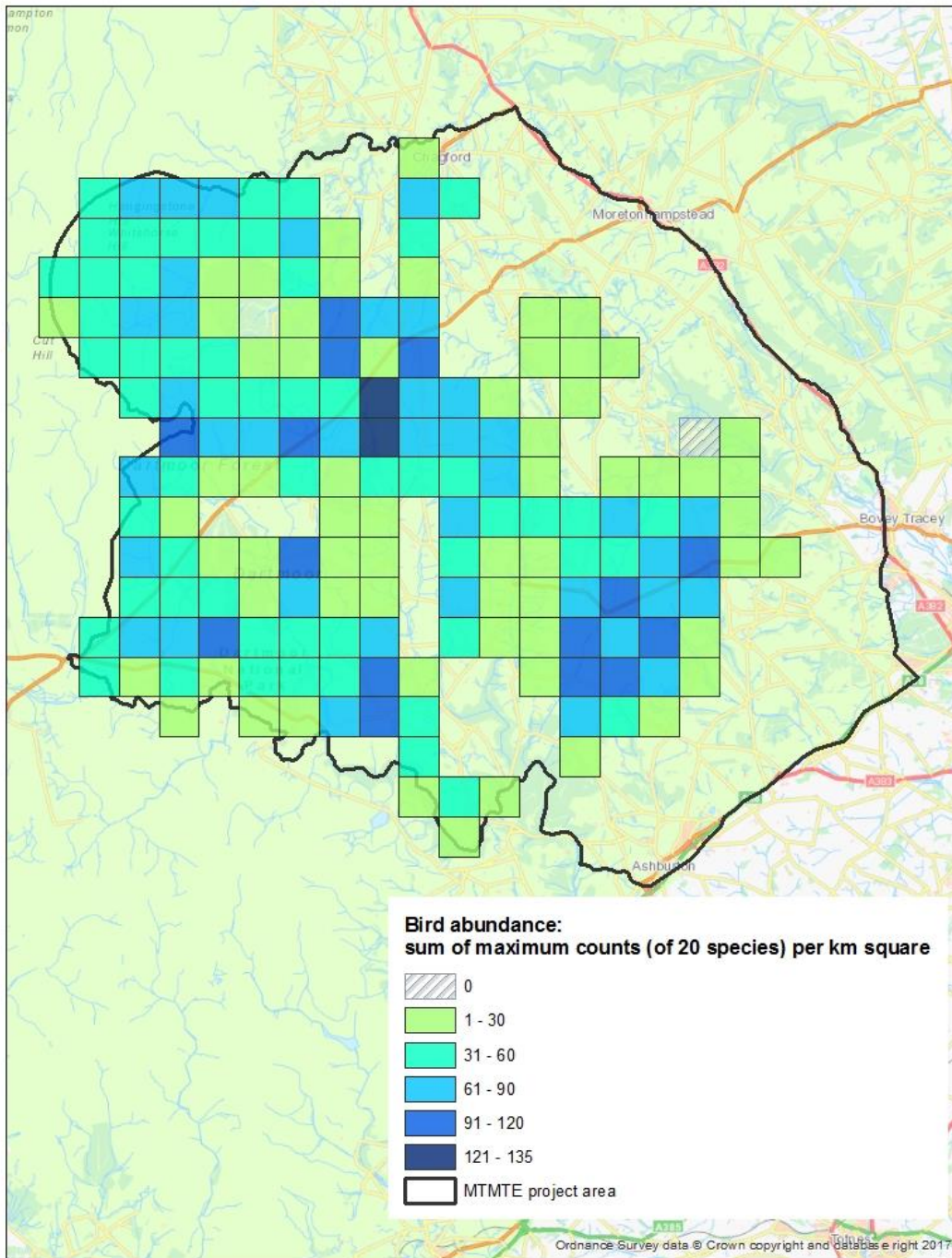
Twenty species were used to generate the maps in Figures 38 and 39. These were meadow pipit, skylark, stonechat, whinchat, cuckoo, tree pipit, reed bunting, grasshopper warbler, snipe, grey wagtail, linnet, yellowhammer, red grouse, Dartford warbler, kestrel, lesser redpoll (including flying birds), wheatear, mistle thrush, redstart and willow warbler.

Figure 37: Species richness



Similarly, looking at the total number of individual birds from the priority species recorded in each 1km square gives a further perspective on areas of importance.

Figure 38: Bird abundance



The two 1km survey squares supporting the greatest number of surveyed breeding birds are at Headland Warren, with up to 135 individual priority birds recorded in each square, and up to 120 birds in parts of the surrounding area. The second hotspot for numbers is the Haytor area, broadly between Haytor Vale and Buckland in the Moor and Yartor Down and Cordon Down, supporting a similar number of birds.

## 4 Discussion

The moorland of east Dartmoor provides a varied mix of habitats with heather, grassland, gorse, scattered trees, mires and bogs. This moorland is divided by enclosed farmland, forestry and woodland edge, undulating topography, steep in places, with tors, incised river valleys and small settlements. The result is a diverse landscape supporting many habitats with the potential to support a rich variety of wildlife and is arguably the most diverse moorland area on Dartmoor.

The 2016 survey was the first full survey of breeding birds in the area since 1979. Because the methods from the two surveys were different it is difficult to make direct comparisons of bird numbers, however, where they exist, it is possible to draw some parallels with the overall distribution, abundance and estimates of territories/pairs, and where any differences are particularly stark, this is likely to be a true reflection of change.

### 4.1 Increasing species

There are encouraging results for some species, the results are particularly striking for grasshopper warbler, stonechat and reed bunting. These species, along with linnet, redstart, tree pipit and yellowhammer, appear to be more widespread and numerous than they were in 1979.

All these species are national conservation priorities and notably, in Devon, have declined across lowland areas and some are now largely confined to the uplands. These trends are likely to be driven by changes in land management and in particular, the intensification of lowland farmland that has taken place over recent decades.

Stonechats are resident (non-migratory) birds of heathland and areas with rough grassland and scrub, particularly gorse. Reed buntings, also resident, have a preference for tall vegetation, damp areas, e.g. valley mires, with rushes and sedges, and drier areas with tall vegetation and scrub. Grasshopper warbler, a long distant migrant, uses both wet and dry habitats, and also requires longer vegetation with scattered scrub. Redstarts and tree pipits are also summer visitors, migrating to sub-Saharan Africa in winter. They use woodland edge, moorland, heathland or other rough habitats with scattered trees. Where east Dartmoor is now markedly more important for these species, it is a sign that vegetation structure is more diverse than it was in the late 1970s.

Both linnet and yellowhammer have seen major declines at both UK and county level over recent decades, but they are relatively abundant in East Dartmoor and while we cannot directly compare, the increase in both numbers and range do suggest a positive change in status. However, like many other species their ongoing survival is also closely linked to what happens elsewhere as these species tend to winter off the moor.

Dartford warbler is a resident species that has colonised Dartmoor since 1979, in line with increases across southern England. However the population on Dartmoor in 2016 was much lower than a few years previously, due to losses incurred during recent cold winters. The population can be expected to increase but cold winters will continue to impact the population.

### 4.2 Declining species

Since 1979, there appears to have been a considerable decline in red grouse, whilst whinchat appear to have lost some range, now being particularly concentrated in the Headland Warren area but sparsely distributed elsewhere.

Red grouse were introduced to Dartmoor a hundred years ago and occupy the higher and wilder areas of the moor where they require heather for nesting and feeding. They were clearly more widespread in 1979 than in 2016, highlighting an ongoing decline. Poor heather condition, loss of heather and disturbance are considered the likely factors behind the decline (Beavan and Lock 2016). As an introduced species, they receive little attention, however, as heather moorland specialists, they do provide some valuable insight into the condition and extent of this important habitat on Dartmoor.



Whinchats are a top conservation priority for RSPB in the UK, and in Devon (and the wider South West), they are largely confined to Dartmoor and Exmoor. The patchy distribution of whinchats in the survey area suggests they have specific habitat requirements that are provided at Headland Warren, with up to 26 birds recorded in two of the 1km squares, but less so elsewhere. Whinchats are traditionally associated with longer vegetation with song perches, often in the form of bracken stems, heather or small hawthorn trees or other scrub.

Whinchats are summer visitors to the UK, wintering in sub-Saharan Africa. Research indicates their wintering habitat is not limiting numbers (Hulme and Cresswell 2012) and there are numerous studies from breeding sites across mainland Europe where the species is also in major decline, and that habitat change in breeding areas is driving the decline, notably intensification of grassland (Bastian and Feulner 2015). The RSPB is researching causes of decline in UK breeding areas, by investigating the fine scale habitat requirements of the species and testing whether habitat change explains the decline. Exmoor and Dartmoor breeding locations are contributing to this study alongside sites in Wales, northern England and Scotland. Initial results are currently being analysed and will be shared on completion to help guide action to conserve this species across its range.

Cuckoo have undergone major declines across southern Britain including much of Devon but remain in relatively good numbers on East Dartmoor. However the fact that they were considered too common to even record back during the 1979 survey indicates that the population has declined significantly. The abundance of their main host on Dartmoor, meadow pipit, should benefit the species but the lack of suitable vantage points on the open moor means they are restricted to the areas of more diverse habitat structure. RSPB research on this species has also been undertaken on Dartmoor and the results of this work will be combined with research from other upland sites to help deliver positive conservation actions.

Wheatears favour a shorter sward for foraging, avoiding scrub and Molinia dominated areas and occupying areas of stone walls or rock clitter around Tors. The changes in numbers and distribution of wheatears suggests a slight decline in the area between 1979 and 2016.

#### **4.3 Species that appear stable or for which there is no available trend**

Meadow pipits were the most numerous species in the area and have also been the most abundant species in previous Dartmoor moorland surveys (Mudge et al 1979, Geary 2000, Stanbury 2006). This is also the case on Exmoor (Stanbury 2008, Sim and Douglas 2014). Because of their abundance, meadow pipits can be easy to dismiss, yet the importance of Dartmoor for this species should not be underestimated. Meadow pipits are globally 'Near Threatened' under the IUCN's conservation red list ([www.iucnredlist.org](http://www.iucnredlist.org)). The only other bird species with this level of global conservation concern occurring on Dartmoor are curlew and Dartford warbler. On Dartmoor meadow pipits can occupy a range of habitats from grassland, mires, lowland and upland heathland and blanket bog. They use vegetation of varying heights (but not scrub), making them able to occupy much of the moor.

Skylarks were the second most numerous species, and their song flight is the sound of the open moorland. They occupy the higher plateau area, avoiding the slopes and valleys. They also avoid areas of dense scrub favouring grassland, mires and blanket bog of varying vegetation heights.

Snipe require mire systems with very wet areas and short (c10cm) tussocky vegetation (Slader and Price 2009). Compared to the 1979 survey, the transect methodology may have had a greater influence on the recording of this species, so this interpretation should be treated with caution. However, surveys in 2008 and 2009 (Slader and Price 2009) and the Devon Atlas do suggest snipe is stable on the moor as a whole.

Kestrel hunt widely across the moor but breeding numbers appear to have declined in line with national and regional populations, however the data do not allow for direct comparison. A species to watch over the coming years.

Grey wagtail numbers appear stable both in numbers and range around their preferred habitat of fast flowing watercourses.

Mistle thrush's early breeding season means analysing numbers of breeding pairs over the course of the two surveys is especially difficult. Several of the records in 2016 involved post breeding flocks but the 1979 comment that the 'odd pair may have bred' does suggest an increase in the intervening years.

Willow warblers and lesser redpolls generally occupy the woodland edge and scattered trees in the transitional zone between moorland and woodland. These species are likely to be found in other habitats away from the survey area, including plantations and mature hedgerows. Both species also occupy moorland away from the woodland edge where there are sufficient scattered trees.

#### **4.4 Species hotspots**

Certain parts of the survey area stand out as important based on the number of species they support. The following moorland areas appear to be particularly important for the species listed:

**Headland Warren** – cuckoo, tree pipit, whinchat, stonechat, reed bunting, snipe, meadow pipit and lesser redpoll

**Haytor** – yellowhammer, reed bunting, stonechat, snipe, meadow pipit and lesser redpoll

**Central newtakes** – tree pipit, grasshopper warbler, reed bunting and snipe

**Yartor & Corndon Downs** – cuckoo, stonechat, lesser redpoll, tree pipit and wheatear

**North & West of Fernworthy**- skylark and meadow pipit, plus grey wagtail in the East Dart

**South of Fernworthy** - grasshopper warbler, skylark and wheatear

Of these, two km squares at Headland Warren supported the greatest number of individual birds from the 20 species assessed and the surrounding area, as well as the wider Haytor area, was also important for bird abundance.

As well as the overall abundance and diversity of species, some areas that appear less rich in species can also be of considerable importance because of the presence of one habitat and associated specialists. For example, blanket bog is species poor in terms of its bird populations, yet if it supports breeding dunlin, this indicates the bog is in good condition, as dunlin can only breed on good quality blanket bog with pools. Snipe also require very wet conditions but are more common in valley mire systems than on blanket bog. Blanket bog also supports skylarks and meadow pipits, with other species using them for foraging/hunting. Where a blanket bog supports only meadow pipit and skylark, this could be an indication of poor habitat condition, as a key indicator species is absent. In the survey area, Winney's Down was the only area with blanket bog that supported dunlin.

Similarly, on a heathy slope or valley with areas of bracken, gorse and scattered trees, around nine priority species would be expected to be present, but in areas supporting fewer species, it could indicate the habitat is sub-optimal in some way because a particular feature is missing.

The Molinia dominated areas to the N & W of Fernworthy, although supporting meadow pipit and skylark, were very species poor; this reflects the lack of diversity in the vegetation in this area.

## 5 Conclusions and Recommendations

There is little doubt that the expansive areas of semi-natural habitat on Dartmoor are now of great importance for many species once much more common in the wider countryside. These species have been lost or displaced by habitat loss and/or increased agricultural intensification. The challenge on Dartmoor is to ensure the viability of both the remaining habitats and the farming that shapes them.

East Dartmoor is an important area for a whole suite of moorland birds, from the high blanket bog to the woodland fringe. The area offers a variety of habitats that provide breeding sites for species with varying needs, and in some locations the number of species supported is particularly diverse.

The future of the bird communities on Dartmoor is intrinsically linked to the future management of the moorland vegetation. This is primarily carried out through the grazing of livestock, but also by swaling, cutting and bracken management. This survey has once again illustrated that the open, often *Molinia* dominated moorland, is relatively poor for avian diversity. Species diversity is richer around the edge of the moor and within the valleys where areas of gorse, scrub and mires occur. Management should aim to protect and enhance the suite of habitats present across the moor.

Sharing the outcomes of the survey and providing information on the birds of east Dartmoor and their habitat needs is essential to support land managers in protecting and enhancing the special qualities of the moor. The *MTMTE* HLF scheme has provided further funding, along with other partners<sup>1</sup>, to establish a Dartmoor wide project, implemented by the RSPB, to provide moorland bird and habitat information and follow up advice to commoners, graziers and others managing the land, as well as sharing information with local communities. This work aims to support and enable management that will help species populations and importantly allow these actions to be targeted in the right areas to deliver maximum benefits.

### 5.1 Future surveys

East Dartmoor is part of the largest area of semi-natural habitat in southern England, and remains an important area for breeding birds. It is essential that continued monitoring of its breeding birds (and other wildlife) is undertaken.

The methodology used in this survey will allow for further analysis of the 2016 dataset, and if repeated in future, direct comparison and improved analysis of change. It also matches the methods used in the 2006 DTA survey of Dartmoor (Stanbury et al, 2006).

Regular monitoring is vital in identifying clear long-term trends so that the impact of management and climate change can be assessed. There should be an aim to repeat this survey a minimum of every 10 years to continue to assess population status, trends and importance of this part of the moor. Not only that, but this approach should be widened to ensure follow up surveys are undertaken across the whole of the unenclosed land on Dartmoor. Such full scale monitoring has not been carried out since the 1979 survey.

Future survey work should also have enough resource to ensure other aspects such as vegetation monitoring and assessment can be undertaken. Such an increase in resource would also provide opportunities for further analysis of the bird data, in particular, using the distance bands to get population estimates across the area.

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<sup>1</sup> The Dartmoor Moorland Bird Project is supported by RSPB, Duchy of Cornwall, Dartmoor National Park Authority, Natural England, Dartmoor Commoners Council and farmers, *MTMTE* HLF scheme, Devon Birds and Dartmoor Preservation Association.

## **5.2 Future research**

The survey has identified populations of several species of potential concern with regard to their national and international populations. These species, such as whinchat and cuckoo, may need further research and conservation action to be taken in the coming years to safeguard the future of the species, on Dartmoor and also further afield.

Other aspects of research where east Dartmoor bird populations can play a significant role include, but certainly are not limited to, responses to land management, increasing public pressure and climatic changes in the uplands.

The data collected by this survey are available for further analysis and could make a worthwhile contribution to studies to assess populations and distribution of birds against, for example, vegetation and topography.

## 6 Acknowledgements

The authors would like to take this opportunity to thank all those who have had an input into the 2016 Breeding Bird Survey, particularly the fieldwork team, Chris Townend, Paul Kemp and Steve Waite for their hard work and dedication that was instrumental in the completion of this project. Thanks also to all the other staff and volunteers who helped them finish the survey: Fiona Freshney, Simon Lee, Aaron Boughtflower, Paul Buckley, Sarah Alsbury, John Walters, Peter Exley and Norman Baldock.

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Appreciation has to also go to Helen Whitall (RSPB) and Jen Dunster (RSPB) for their help and support throughout the survey, particularly with data inputting and map preparation during the survey set up. Thanks also to Helene Jessop (RSPB) for proof reading drafts of this report.

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[www.iucnredlist.org](http://www.iucnredlist.org)

Appendix 1: Survey recording form



**2016**  
**moorland bird survey**  
**SX7374**

*Moor than meets the eye*  
 Landscape Partnership



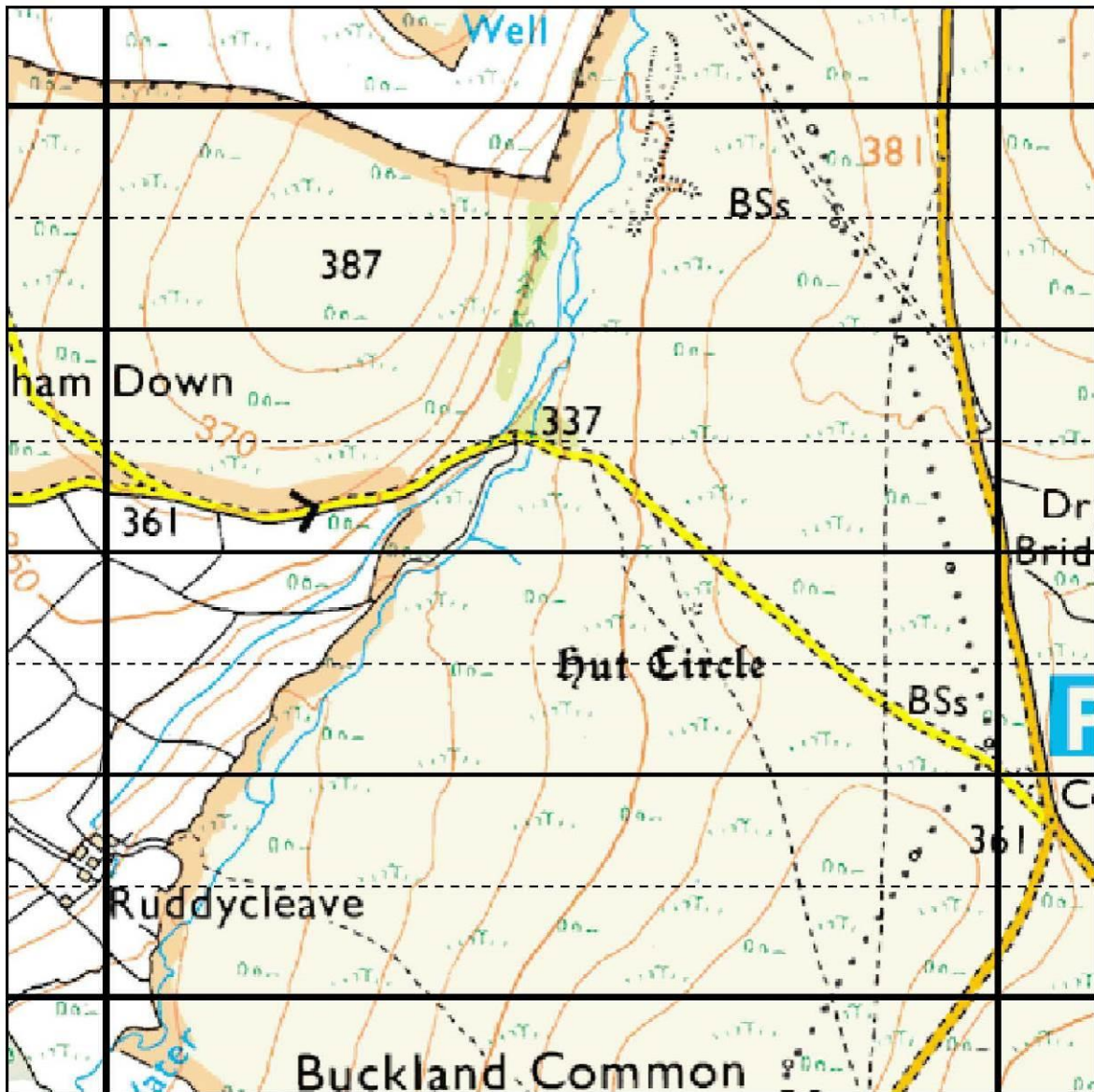
Visit:

Date:

Observer/s:

Key species to record: Whinchat (WC), Wheatear (W.), Red grouse (RG), Snipe (SN), Cuckoo (CK), Grasshopper warbler (GH), Tree pipit (TP), Stonechat (SC), Reed bunting (RB), Kestrel (K.)

NB Survey transect is dotted line-----



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