



**REPORT ON A SURVEY OF
RING OUZEL *Turdus torquatus torquatus*
TERRITORIES IN ROSEDALE AND OTHER AREAS
OF THE NORTH YORK MOORS IN 2009**

**Kendrick S. Hutchinson
Victor Fairbrother**

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Front cover photograph: Male ring ouzel in Northgill, Northdale, on 23 April 2009.

1. INTRODUCTION

The 2009 survey marked the 10th year in which a detailed study had been made of the ring ouzel *Turdus torquatus torquatus* (RZ) population in the North York Moors National Park. Only the foot & mouth outbreak in 2001 and the closure of the moors during that year prevented what otherwise would have been a continuous period of recording. The findings of these studies were submitted to various bodies including the North York Moors National Park Authority, the RSPB Ring Ouzel Study Group, Natural England (York office) and the land owner and head keeper of Spaunton Estate.

As in previous years the 2009 survey concentrated on the Rosedale area of the North York Moors; an area of around 25 sq/km. The continued help of a Rosedale resident provided invaluable help monitoring the east side of the dale and gave considerable support to both Vic Fairbrother, covering the top-end of the dale north of Blakey Crossing, and Ken Hutchinson covering the central and southern part on the west side of the dale. Some 85 visits were made between March and October amounting to nearly 500 hours of field work.

Following on the last two years' success in locating ring ouzels prior to migration, several visits were made during late August and September to the main areas of rowan trees at the north-end of the dale.

For the first time a chart has been included (**Annex 5**) showing the elevation of territories recorded annually between 1999-2009. Also a new table showing the distance between first and second nests in Rosedale has been added (**Table 6**).

As for the last few reports, graphs of temperature and rainfall for the months of March through to August have been included (**Annex 7/8**). The data was obtained from the weather station at Scaling Dam sailing club. Scaling Dam lies some 15 kilometres northeast of Rosedale at an altitude of 190 metres.

Finally, the task of recording and building up a database of the ring ouzel's song continued in 2009. This aspect of the study is aimed at using the male's simple song as an 'audiotag' to identify individuals returning to the dale and to track their movements within the dale during the season. In addition, the recordings provided the means to study more closely the dialects associated with different areas of the North York Moors. A first attempt at defining homologous types sung by birds from a particular area are shown in the sonograms at the end of the report (**Annex 9**).

2. METHODOLOGY

As in previous years the core study area was Rosedale in the North York Moors with the main period of observation being from late March to mid July. Further visits were made in late August and throughout September to locate ring ouzels prior to migration.

The existence of a territory was categorised as either: *Confirmed*, when a nest was found containing eggs or pulli, or when food was seen being carried to the nest, or; *Probable*, when the male was observed singing on at least two different days a week or more at the same place, or when seen defending a territory.

References to Rosedale area include the main dale (valley) of Rosedale and adjoining Spaunton Moor (Spindle Thorn, Loskey Ridge). References to Rosedale refer only to the main dale of Rosedale

Audio recordings were made in digital .wav format and viewed on a PC using Raven Lite 1 software that enabled the fine detail of each bird's song to be displayed as a sonogram.

3. RESULTS

Territories

Rosedale Area

Table 1: Breeding ring ouzel territories occupied in the Rosedale area between 1999 and 2009. (See **Annex 1** for location of 2009 territories & nests, foot & mouth prevented field work in 2001)

No.	Location (all territories recorded to date)	Grid Ref.	Year										
			99	00	02	03	04	05	06	07	08	09	
1.	Spaunton Moor - Spindle Thorn	SE 7160 9304	?	*	✓	*	*	*	*	*	*	✓	*
2.	Spaunton Moor - Loskey Ridge 1	SE 7149 9345	?	✓	✓	✓	*	*	✓	*	*	*	*
3.	Spaunton Moor - Loskey Ridge 2	SE 7132 9315	?	*	*	✓	✓	✓	*	*	*	*	*
4.	Rosedale west - Bank Top	SE 7200 9513	✓	✓	✓	✓	*	*	✓	*	*	*	*
5.	Rosedale west - Bank Top (east)	SE 7251 9454	?	*	*	✓	*	✓	*	*	*	*	*
6.	Rosedale west - Hob Crag	SE 7144 9538	?	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
7.	Rosedale west - Thorgill Bank	SE 7072 9581	?	*	*	✓	*	*	✓	*	*	*	*
8.	Rosedale west - Thorgill Head	SE 6999 9559	?	*	✓	✓	✓	✓	*	*	*	*	*
9.	Rosedale west - Sheriff's Pit	SE 6965 9631	✓	✓	✓	*	✓	✓	✓	*	✓	✓	✓
10.	Rosedale west - Sheriff's Pit (south)	SE 6979 9610	*	*	*	*	*	*	✓	*	*	*	*
11.	Rosedale west - Round Hill (south)	SE 6940 9683	?	*	✓	✓	✓	✓	✓	✓	✓	✓	✓
12.	Rosedale west - Round Hill (central)	SE 6927 9710	?	*	✓	✓	✓	*	*	✓	✓	✓	✓
13.	Rosedale west - Round Hill (north)	SE 6928 9740	?	*	✓	*	*	*	*	✓	*	*	*
14.	Rosedale west - Sledge Shoe Bents	SE 6915 9776	?	✓	✓	✓	✓	✓	✓	*	*	✓	✓
15.	Rosedale west - Matty Carr Hill	SE 6880 9833	?	*	*	✓	✓	✓	✓	✓	✓	✓	*
16.	Rosedale west - Matty Carr Hill (south)	SE 6896 9798	?	*	*	*	*	✓	*	✓	*	*	*
17.	Rosedale west - Lion Inn	SE 6810 9987	*	✓	✓	✓	*	✓	*	✓	*	*	*
18.	Rosedale west - Blakey Swang	SE 6848 9981	?	?	?	?	?	?	?	?	✓	*	*
19.	Rosedale west - Dalehead (north)	NZ 6800 0092	✓	*	✓	*	✓	*	*	*	✓	*	*
20.	Rosedale west - Dalehead (west)	NZ 6821 0061	*	*	✓	✓	✓	✓	✓	✓	*	✓	✓
21.	Rosedale east - Dalehead (east)	NZ 6870 0060	*	*	*	✓	✓	*	*	*	*	*	*
22.	Rosedale west - Dalehead South	NZ 6821 0052	*	*	✓	*	*	*	*	*	*	*	*
23.	Rosedale east - Reeking Gill	NZ 6919 0065	✓	✓	✓	*	*	✓	✓	✓	✓	✓	✓
24.	Rosedale east - Reeking Gill (west)	NZ 6892 0066	*	*	*	*	*	*	*	✓	✓	*	*
25.	Rosedale east - Nab Scar	NZ 6950 0020	*	✓	*	✓	✓	✓	✓	✓	*	✓	✓
26.	Rosedale east - Sturdy Bank	SE 6995 9989	✓	✓	✓	✓	*	*	*	*	✓	✓	✓
27.	Rosedale east - East Mine	SE 7055 9895	?	?	?	?	?	?	?	?	✓	*	*
TOTAL			5¹	9	16	16	12	13	12	11	12	9	

Note:

¹. Only a partial survey was carried out in 1999.

✓ = occupied by pair * = not occupied ? = not checked

Other Areas of the North York Moors

Table 2: Ring ouzel sightings recorded in areas of the North York Moors other than Rosedale in 2009.

No.	Location	Grid Ref.	Comment
1.	Bransdale east - Ousegill Bridge	SE 639 946	Territory recorded in 99/00/02/03/04/05/06/07/08
2.	Bransdale west - Bonfield Gill	SE 609 942	Pair on 09/05. Territory recorded in 99/00/02.
3.	Bransdale west - Stump Cross	SE 606 982	Pair on 29/04.
4.	Bransdale east - Shaw Rigg	SE 634 960	Male on 18/4. Pair seen late April.
5.	Arden Great Moor	SE 507 930	1 male on 10/04. Responded to lure.
6.	Arden Great Moor	SE 502 931	1 male on 10/04. Responded to lure.
7.	Arden Great Moor - Harker Yates	SE 511 915	1 male seen feeding on 10/04.
8.	North Dale - North Gill	SE 725 998	Territory recorded in 99/08.
9.	Westerdale - East Gill	NZ 676 033	Male singing. Near previously recorded territory.
10.	Kepwick Quarry	SE 486 914	6 males on 10/4. Likely to be passage RZs.
11.	Kepwick Moor - White Gill Head	SE 491 931	1 male on 10/04. Responded to lure.
12.	Kepwick Moor - Whitestone Scar	SE 487 929	1 male on 10/04. Responded to lure.
13.	Snilesworth Moor	SE 536 974	1 male on 11/04. Responded to lure.
14.	Farndale - Gill Wath	SE 672 997	Pair on 30/04. Territory recorded in 99.
15.	Bilsdale West Moor	SE 551 960	RZs seen around TV mast most of season.
16.	Greenhow Moor - Incline Top	NZ 606 031	RZ seen near Ingleby Incline top.
17.	Gt. Fryup Dale - Gt. Fryup Head	NZ 715 015	Pair on 09/05.
18.	Great Ayton Moor ¹ .	NZ 601 115	Several reported 3 rd week in April.
19.	Lockton High Moor ¹ .	SE 860 960	1 male seen on 29/04. Recorded in 04/05/06/07.
20.	Loftus - Hummersea ¹ .	NZ 720 200	1 on 03/04 and 2 on 10/04.
Note: ¹ . Likely to be Fenno-Scandia passage migrants.			

Nest Sites

Table 3: Ring ouzel nest sites located in Rosedale and other areas of the North York Moors in 2009.

No.	Location	Grid Ref.	Comment
1.	Rosedale west - Sheriff's Pit	SE 6972 9627	Located 04/06; 5 pulli; all fledged.
2.	Rosedale west - Round Hill south	SE 6953 9674	Located 19/05; 4 pulli; all fledged.
3.	Rosedale west - Dalehead west	NZ 6794 0079	Located 21/05; 4 eggs; 4 pulli; all fledged.
4.	Rosedale east - Reeking Gill	NZ 6924 0076	Located 12/05; 3 pulli; all fledged.
5.	Rosedale east - Sturdy Bank	SE 6987 9991	Located 14/05; 4 eggs; 4 pulli; 3 fledged.
6.	Bransdale east - Ousegill Bridge	SE 6385 9475	Located 01/05; 4 pulli.

Annual Breeding Results

Table 4: Summary of annual breeding results at ring ouzel nest sites in Rosedale & other areas of the North York Moors. Data from 2000 to 2009.

Year	Occupied Territories	Laying pairs (2 nd clutch)	Pairs that hatched young (2 nd attempt) [2 nd brood]	Pairs that had successful nests (2 nd broods/ attempts)	Pairs that failed completely	Total young fledged	Average brood size	Average fledged young per laying pair
00	9	1	1	1	0	4	4.00	4.00
02	16	1 (1)	1 (1)	1 (1)	0	4	4.00	4.00
03	16	6 (1)	5 [1]	3	3	11	3.66	1.83
04	12	4 (1)	4 (1)	2 (1)	1	8	4.00	2.00
05	13	4 (2)	4 (1)	4 (2) ^a	0	13	3.25	3.25
06	14 ^c	4 (1)	3 (1)	3 (1) ^b	0	10	3.33	2.50
07	12 ^d	5	4	4	1	15	3.75	3.00
08	14 ^e	9(1)	8 ^f (1) [1]	6(1)	3	23	3.83	2.55
09	9	5(1)	5[1]	5(1)	0	19	3.80	3.80
Overall Average							3.73^g	2.99
<p>Note</p> <p>a. One pair had two unsuccessful attempts before being successful at third attempt.</p> <p>b. One pair had one unsuccessful attempt before being successful at second attempt.</p> <p>c. Includes two territories in Bransdale.</p> <p>d. Includes one territory in Bransdale.</p> <p>e. Includes two territories in North Dale.</p> <p>f. One pair had two unsuccessful attempts; the 1st predated at the chick stage, the 2nd at the egg stage.</p> <p>g. Average brood size for: Glen Esk (Burfield) 3.48; Moorfoots (Burfield) 3.50; Yorkshire Dales (Appleyard) 3.60; BTO Nest Records (Flegg & Glue) 3.60.</p>								

A detailed break down of annual breeding results at ring ouzel nest sites in the Rosedale and other areas of the North York Moors between 2000 and 2009 are presented in **Annex 3**.

First-egg, Hatching & Fledging Dates

Table 5. First-egg, hatching & fledging dates for Rosedale and other areas of the North York Moors.

Year	Nest location	1 st Egg	Hatching	Fledging	Comments
2000	Spaunton Moor	6 May (a)	21 May (a)	3 June	
2002	Bank Top	17 May	1 June	15 June	Replacement nest/eggs.
2004	Matty Carr Hill	26 April	11 May	25 May	
	Hob Crag	10 June (a)	26 June (p)	-	
2006	Ousegill Bridge	9 May	25 May	7 June	
	Sheriff's Pit south	20 May	5 June	18 June	Replacement nest/eggs.
2007	Round Hill south	5 May (a)	20 May (a)	2 June (a)	
	Hob Crag	5 May (p)	-	-	
	Reeking Gill west	25 April	11 May	24 May	
	Dalehead west	28 April	14 May	27 May	
2008	Sturdy Bank 1 st	28 April	14 May (a)	27 May (a)	
	Sturdy Bank 2 nd	9 June	25 June (a)	9 July (a)	1 st egg 13 days after 1 st nest fledged.
	Round Hill south	30 April	16 May (a)	29 May	
	Reeking Gill	4 May	20 May (a)	2 June	
	West Gill	24 April	10 May	23 May	Seen copulating on 22 April.
	Hob Crag 1 st	27 April	13 May (p)	-	
	Hob Crag 2 nd	27 May (p)	-	-	Replacement nest/eggs.
	Sheriff's Pit	6 May	22 May	4 June	
	Dalehead north	24 May	9 June (a) (p)	-	Likely replacement nest/eggs.
2009	Reeking Gill	15 April	1 May	14 May	Pair arrived in gill on 25 March.
	Sturdy Bank	13 May (a)	29 May (a)	11 June (a)	Pair arrived in gill on 26 March.
	Round Hill south	25 April	11 May	24 May	1 st nest. 2 nd nest at Sheriff's Pit.
	Dalehead west	9 May	25 May	8 June	
	Sheriff's Pit	25 May	10 June	23 June (a)	2 nd nest. 1 st nest at Round Hill south.

(a) = actual (p) = predated

Dates other than actual are based on a 29 day breeding cycle assuming female commences sitting on 3rd egg and both incubation and chick stage take 13 days.

First-egg Laying Dates

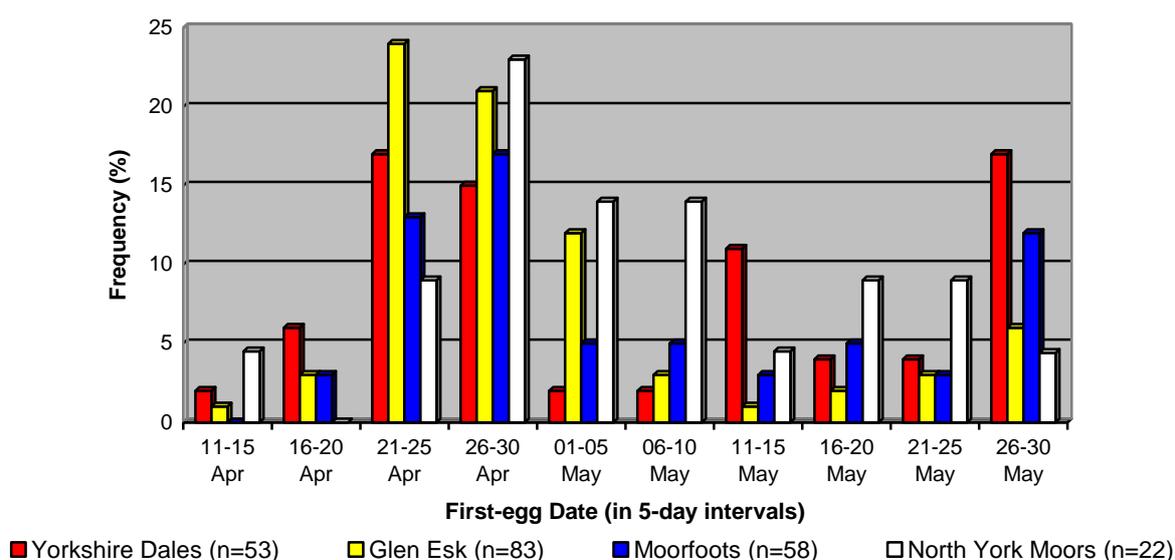


Figure 1. Frequency distribution of ring ouzel first-egg laying dates for the Yorkshire Dales (1988-91), Glen Esk (1998-99), Moorfoots (1998-99), and Rosedale, North York Moors (2000-09). Data in 5-day intervals for the months of April and May.

Distance between First & Second Nests

The distance between first and second nests located in Rosedale is shown below in Table 6. Most built their second nest close to the first. The exception to this was the 2009 pair that moved more than half a kilometre to build their second nest - this pair were easily identified by the female's distinct white head marking. Studies by Appleyard in the Yorkshire Dales record a mean distance between first, second and third brood nests (n=26) of 64 metres with a median of 55 metres. In Rosedale (n=6) the mean and median values are 136 and 52.5 metres respectively.

Table 6. Distance between first and second nests located in Rosedale.

Year	Location	National Grid Reference		Distance (metres)	Comment
		First nest	Second nest		
2003	Thorgill Bank	SE7072195811	SE7073895808	17	
2005	Sheriff's Pit	SE6972196263	SE6972296271	8	
2006	Sheriffs Pit/Sheriff's Pit south	SE6972296268	SE6978496106	173	1 st - Sheriff's Pit 2 nd - Sheriff's Pit south
2008	Hob Crag	SE7144295395	SE7138795446	75	2 nd is replacement nest
2008	Sturdy Bank	SE6989499907	SE6986599899	30	
2009	Round Hill south/Sheriff's Pit	SE6953396742	SE6972596266	513	1 st - Round Hill south 2 nd - Sheriff's Pit

Nest Aspect & Elevation

The aspect and elevation of 40 nests in the Rosedale area (also includes Northdale) are tabulated at **Annex 4**. Diagrams showing the aspect of 40 nests in the Rosedale area and the elevation profile of 36 nests in Rosedale are shown at **Annex 5**, Fig.1 & 2 respectively.

Elevation of Territories from 1999 to 2009

A diagram depicting the elevation of 27 territories recorded in Rosedale are shown for each year between 1999 and 2009 at **Annex 6**.

4. DISCUSSION

Weather Conditions

March: A period of cyclonic weather brought settled conditions between the 15th and 23rd of the month providing a window for birds migrating eastwards; the first arrival on the Moors was seen on the 25th - the earliest recorded. A return to more unsettled conditions with strong north westerly winds dominated the weather pattern for the remainder of the month.

April: The first half of the month saw unsettled conditions with gusty westerly winds and daytime temperatures just making double figures. More settled conditions returned in the second half with afternoon temperatures above 17°C between the 21st and 26th. Rainfall remained low for most of the month apart from the 27/28th when over 20mm fell in 24 hours.

May: Unsettled conditions continued to dominate the weather for most of the month with strong westerly winds persisting for all but the last few days. Showers were recorded most days until the 26th when settled conditions returned and daytime temperatures exceeded 20°C.

June: The month saw unsettled weather with showers most days and gusty westerly winds persisting through to the latter part of the month. Cyclonic conditions returned in the last few days with daytime highs exceeding 25°C.

July: Generally the month was unsettled with frequent spells of rain. It was the wettest July on record for England and Wales with over 75mm falling on the Moors over the period 17/18th. Daytime temperatures at the start of the month approached the high 20s but for the remainder of the month day time temperatures were slightly lower than the seasonal norm and for most of the time struggled to make the low 20s.

August: Continued to be unsettled with frequent bouts of showery weather. Daytime temperatures of typically 22°C were around the seasonal norm. Mid August saw a few dry and settled days with long periods of sun.

Graphs of temperature and rainfall between March and August are shown at **Annex 7 & 8** respectively.

First Arrivals

The first ring ouzels to arrive in Rosedale in 2009 were a male and female seen on 25th March in the meadow below Reeking Gill at the north end of the dale. A day later on 26th March a male and female were seen further down the dale at Sturdy Bank feeding in the grassy area on the west side of the gill. Both sightings were the earliest arrivals recorded and the first time pairs appeared to have arrived together and established their territory straight away.

By 31st March males were sighted at Matty Carr, Blakey Swang and Round Hill. The male at Blakey Swang was seen with a female while the male at Round Hill had the distinct white neck markings of the male that nested at Sheriff's Pit in 2008. An early report from another area of the North York Moors was of a male at Shaw Rigg, Bransdale, on 1st April.

By 9th April males and females had been seen in several locations in Rosedale and by mid April males were singing throughout the dale.

Rosedale Territories

Nine ring ouzel territories were recorded in 2009 in the Rosedale area of the North York Moors (Figure 2). The lowest count since the study began in 1999. The 9 territories had all been occupied before; some 6 times or more in the last 10 years. See **Annex 1** for location of 2009 territories.

A total of 27 territories have been recorded in the Rosedale area between 1999-2009 (Table 1).

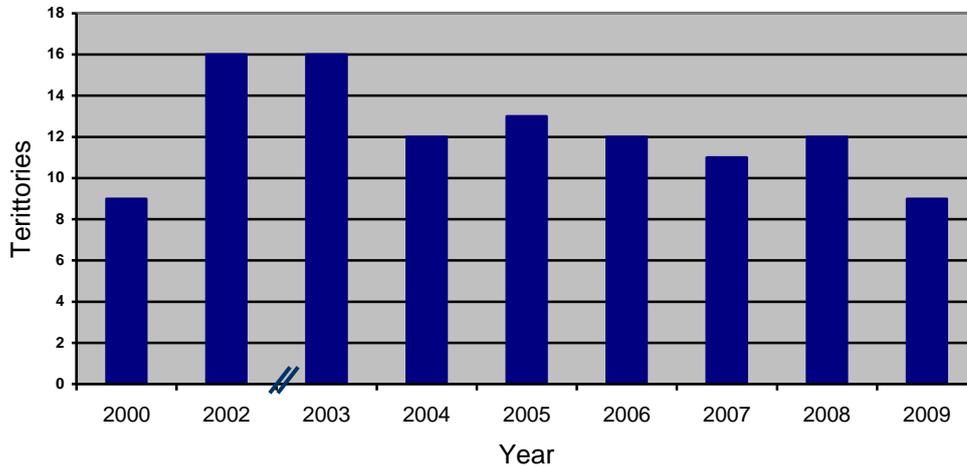


Figure 2: Confirmed & Probable territories in the Rosedale area of the North York Moors for the period 2000-2009. (foot & mouth prevented field work in 2001)

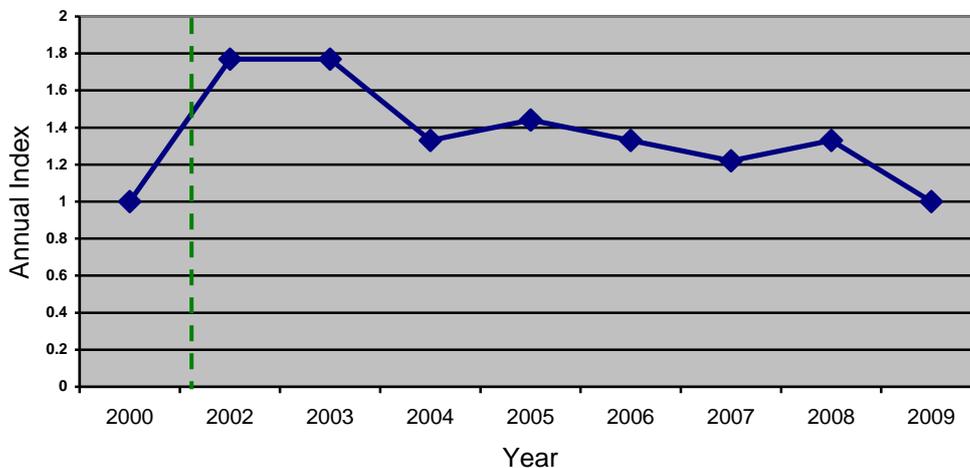


Figure 3: Annual indices of Confirmed & Probable territories in the Rosedale area for the period 2000-2009, referenced to 2000. (foot & mouth prevented field work in 2001)

From a peak of 16 territories in 2002 and 2003, the years 2004-8 recorded 12, 13, 12, 11 & 12 territories respectively; an average of 12 territories per year and a seemingly stable situation. Whether or not the drop to 9 territories in 2009 signals the start of a decline will become clearer in 2010. We anxiously await.

Dalehead west site was used again in 2009; the seventh time in the last 10 years. The 2009 nest was in the exact same location as the 2007 nest and was unique in being constructed in a heather 'tunnel' that provided a front and back entrance. The adults were seen using both entrances/exits.

Hob Crag again proved a favourite site but despite repeated attempts to locate the nest nothing was found. The male was seen on several occasions throughout the season and was heard singing from the lower part of the quarry a number of times from April through to early June. On two occasions in June the male was seen in the quarry area looking agitated and giving an alarm call.

Nab Scar was used again in 2009, the seventh time in 10 years. The pair as in previous years continued to be elusive giving no hint as to the location of their nest. It is a difficult site to observe and finding a concealed location with good views of the surrounding area has so far proved impossible.

Reeking Gill has been used most years since 1999 and 2009 proved no exception. The pair were the first to arrive in the dale on 25th March with the first-egg laid on the 15th April. For the first time a pair of kestrels nested in the gill just 50 metres or so from the ring ouzel's nest and successfully fledged young. On several occasions both ring ouzels were seen attacking the kestrels.

Round Hill central has been a territory used on and off over the last 10 years. Both birds were seen on various occasions between April and June with the last sighting being on 2nd July when the female was seen foraging alongside the disused railway track.

Round Hill south was again occupied in 2009 for the eighth consecutive year.

Sheriff's Pit was used again in 2009 with a pair building a nest in the disused mine shaft. Apart from 2003/7 this site has been used each year since the studies commenced in 1999. The female using this site in 2009 had a distinct white stripe on the left side of the nape and appeared to be the same female that had her first nest over 500 metres away at Round Hill south.

Sledge Shoe Bent has been used seven times in the last 10 years. On the last day of April a pair were seen together in a rowan tree towards the bottom of the dale with the male sounding the alarm. This site is a difficult one to observe and consequently the nest could not be located.

Sturdy Bank again attracted a pair, the birds arriving together on the 26th March but not laying the first-egg until 13th May.

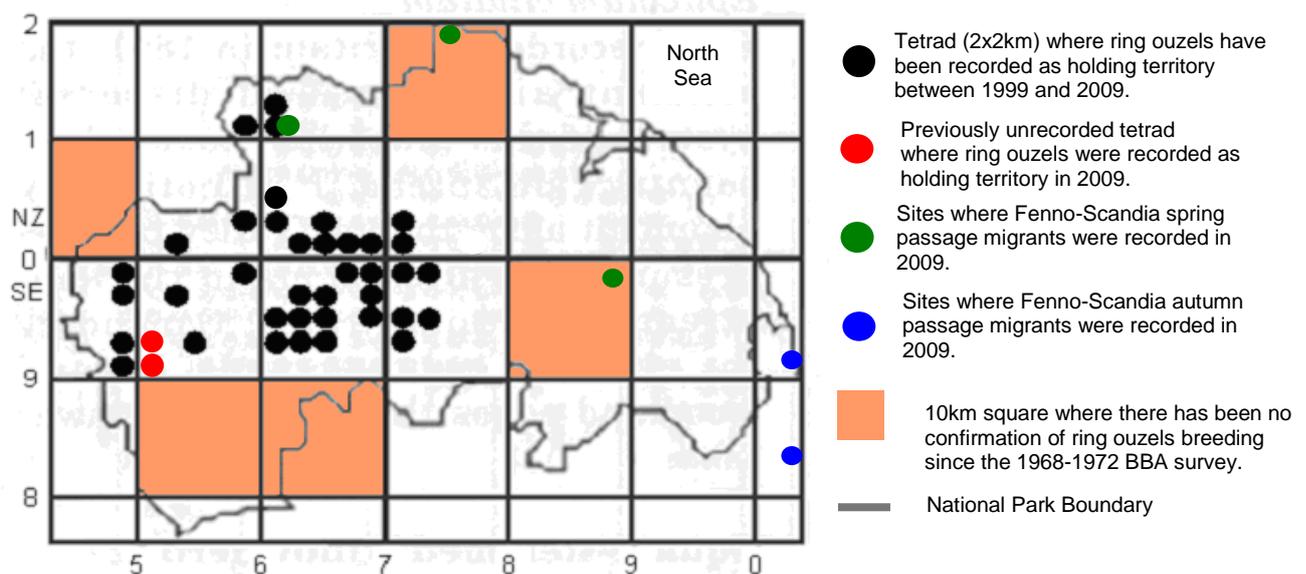


Figure 4: Tetrads holding a ring ouzel territory in the North York Moors between 1999-2009 and the tetrads where spring/autumn passage migrants were recorded in 2009.

Rosedale Nests

Dalehead west

As in previous years the steep heather bank on the west side of Rosedale at dalehead attracted a pair of ring ouzels in 2009. The nest was found on 21st May and contained four eggs. A further visit on 23rd May found the female sitting on 4 eggs. On 4th June the female was seen entering the nest with food and on inspection 4 pulli were seen aged about 10 days old. A further check on 8th June found the adults nearby feeding the recently fledged young with one obliging juvenile allowing its photo to be taken. The 2009 nest was built in the exact same spot as the 2007 Dalehead west nest and was unique in that it was constructed in a long heather 'tunnel' that had access from two sides.

Reeking Gill

The Reeking Gill pair were the first arrivals in 2009 and seemed to arrive as a pair. The nest was located on 11th May containing 3 pulli which were estimated to be about 10/11 days old and close to fledging. On 19th May both adults were seen carrying food and in an agitated state suggesting there were young nearby. The first-egg was calculated as being laid on 15th April, just 3 weeks after arrival, making the 2009 nest at Reeking Gill the earliest in the 10 years of the study. The nest was the first that had been found towards the top of the gill and was out of view from the track at the lower end of the gill where previous nests had been observed. Given the early start for this pair there was expectation that a second and possibly a third nest would be attempted. After weeks of frequent observation when the adults were often seen in the vicinity of the gill, including 18th June when the male was seen carrying worms, two fledglings were seen being fed by the adults on 22nd June. This suggested that a second nest was built about 3 days after the first young fledged on 14th May with the first-egg being laid around 19th May. The location of the second nest was not found and there seemed to be no further nesting attempts by this pair.

Round Hill south

The nest at this site was found on 19th May containing 4 pulli estimated to be 8 days old. The female was distinct in having a white stripe on the left side of the nape. This marking enabled the bird to be identified as the female that fledged a second brood at Sheriff's Pit over 500 metres away from the first nest at Round Hill south.

Sheriff's Pit

The nest was located on 4 June when the female was seen sitting on a well exposed nest on the sloping west side of the disused pit shaft. Monitoring at this site is difficult as observations have to be made through the security fence from the opposite side of the shaft; a distance of around 6 metres. The female was readily identified by the white stripe on the left side of the nape as the female that had her first nest at Round Hill south. On 12th June it was possible to see into the nest through a scope and observe one pulli about 2/3 days old. Returning on 18th June five pulli could clearly be seen moving around and looked around 9 days old. A final visit on 23rd June found the nest empty and one juvenile being fed by the adults. Observation over the next hour saw the adults carrying food and going into the heather in various locations within 20 metres of the nest site. Calculations suggest that the female laid the first-egg of the second clutch just a day after the young from Round Hill south had fledged, suggesting the second nest at Sheriff's Pit was being constructed while the first nest young were still in the nest.

Sturdy Bank

After the success at this site in 2008 the early arrival of a pair in the gill on 26th March looked promising. As at Reeking Gill the pair seemed to arrive in the dale as a pair and to move straight on to territory. On 14th May the nest containing 2 eggs was discovered on a bracken slope near to the 2008 second nest. A visit to the site on 29th May found the female sitting with 3 pulli and 1 egg in the nest; the last occasion the female was seen. On 8th June 3 pulli were seen in the nest being fed by the male and appeared to be in good condition. Three pulli fledged on 11th June and on inspecting the nest a fourth, well grown, chick was found at the bottom appearing to have been suffocated. On 12th June a dead fledgling was found near the nest with the male seen softly

singing from a nearby tree with no evidence of young being fed. The final outcome of this nest suggested the female had succumbed during the critical stage of the broods rearing and that the male had been the sole provider. As a consequence the fledglings probably left the nest undernourished and did not survive beyond a few days. Despite the pair's early arrival in the gill this nest seems to have been built some 6 weeks after their arrival on territory which could suggest an earlier nest was attempted but failed. Or it may point to the female being old and perhaps in poor health thus taking a while longer to attain breeding condition.

Passage Migrants

A single ring ouzel was seen on Lockton High Moor (SE865965) on 29th April at a site where Spring passage birds have been recorded in previous years. Sightings of several ring ouzels on Great Ayton Moor (NZ601115) in the 3rd week of April, a single bird on 3rd April and two on 10th April on the coast at Hummersea (NZ720200) were also likely to be Fenno-Scandia passage birds. Autumn migrants were recorded along the coast with a single bird at Filey on 15th October, 11 at Flamborough also on 15th October and on 19th and 31st October when single birds were reported near Scarborough.

Late Summer & Early Autumn Activity

As in the last two years a late season visit was made to Rosedale specifically to locate ring ouzels prior to migration. The visits concentrated mainly on the west side of the dale around Blakey Swang where there were known to be a number of stands of mature rowan trees. On 31st August two were seen in a rowan tree towards the head of the dale and on 13th September a single male was seen in Reeking Gill. Further visits on 13th, 17th and 24th September found nothing. Given the heavy crop of berries on the rowan trees, probably the best for years, it was surprising that so few ring ouzels were recorded. Other species such as mistle thrush and starling which were found in large numbers in 2008 feeding on rowan berries were also absent.

Unattached Males

As in 2008 there were several sightings in Rosedale of males that appeared to be unattached.

On 21st May two males were seen in area between Blakey Swang and Matty Carr (SE68709914). Both were singing at the same time from the top of a dry stone wall about 20 metres apart. One then chased the other off to a tree some 200 metres away to the south towards Matty Carr before returning to the wall to carry on singing. This continued for several more minutes before then flying north to Blakey Swang where it was later heard singing faintly in the distance. The bird that was chased off in the direction of Matty Carr was notable for having distinct white markings on the head, the same distinct markings seen on the male that successfully raised a brood at Sheriff's Pit in 2008.

On 28th May two males were heard singing at the same time in the Reeking Gill area. One west of the gill at (NZ68950060) was seen in a tree below the track and the other south-east of the gill from the grassy area below the track in the direction of Nab scar. The second bird appeared to be the resident bird from Reeking Gill and was heard several times during the day, at one point flying into the gill. The impression was that the first bird was trying its best to attract a female, possibly the resident female from Reeking Gill.

The lateness in the season for these birds to be singing heartily point to them being unattached and that they were making a last ditch attempt at attracting a partner.

Analysis of the Ring Ouzel Dialect

A start was made in 2008 on creating a database of ring ouzel songs. The aim was to use the sonogram of each bird's song to assist in tracking individual male ring ouzels in the North York Moors and to study their dialects.

Studies carried out by the late David Stemple showed that geographically clustered groups of ring ouzels share small distinct sets of simple songs which in Scotland could be attributed to individual glens. Simple songs were found to be delivered singly and in groups of two, three or four notes spaced around a quarter second apart; two and three note being the most frequent grouping. Figure 5 shows the sonogram display of a ring ouzel singing a combination of a 2, 3 and 4 note simple song.

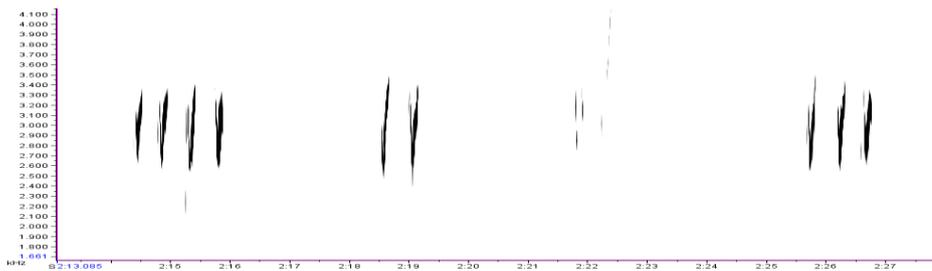


Figure 5: Sonogram presentation of a ring ouzel singing a mixture of a two, three and four note simple song. Recorded at Bank Top, Rosedale, by David Stemple on 23 April 2003.

Recordings made in 2003 by David Stemple of three Rosedale ring ouzels produced a distinct song type when compared with birds in Derbyshire, the Yorkshire Dales and Scotland; where he had made many recordings over a large geographic area. What was not answered in his brief visit to the North York Moors was whether or not the dialect of the birds recorded in Rosedale was unique to that dale or was sung over a much wider area and as such could be regarded as a North York Moors dialect.

The ring ouzel simple song comprises one or more distinct parts or types; referenced as *Type 1.*, *Type 2.* etc. The *Type 1.* dialect is the main simple song sung by birds from a particular area and can be regarded as the homologous type song. The *Type 2.* part of the simple song is mixed in with the homologous song but occurs less frequently (or not at all) in an individual bird's repertoire and in some cases may be unique to that bird; though further work is needed on this. In the Scottish birds looked at by David Stemple there were instances in some glens of *Type 3.* and *Type 4.* parts to a bird's repertoire.

In Rosedale over 15 individual recordings of the ring ouzel simple song have been made since 2003; three in 2003 by David Stemple and the remainder in 2008/9. Birds were also recorded in three other dales in 2009; one each in Bransdale, Farndale and Northdale. **Annex 9** shows the *Type 1.* and *Type 2.* sonograms for the four dales. No *Type 3.* or *Type 4.* parts could be found in any of the recordings.

Analysis of the 15 Rosedale recordings showed there to be a distinct *Type 1.* part to the simple song and no *Type 2.*. In the case of Bransdale the *Type 2.* part closely resembled the Rosedale *Type 1.* which may suggest that this particular male bird had a Rosedale connection and could have fledged in that dale. The strong association of the Northdale *Type 1.* and Rosedale *Type 1.* came as no surprise given Northdale is a minor dale off Rosedale. The *Type 1.* and *Type 2.* parts to the Farndale dialect were markedly different to the other recordings and was interesting in so much as the location of this birds territory was less than 2 km from the nearest Rosedale territory.

It is early days in the study of local dialects and more recordings will be made during the coming years in Rosedale and other areas of the North York Moors.

5. ACKNOWLEDGEMENTS

The authors wish to acknowledge the considerable help of a local resident and the support of estate owner George Winn-Darley, head keeper George Thompson and Northdale beat keeper, Peter Richardson. Also to Mick Carroll, Tom Denney, John Knight, Jim Pewtress, Chris Tyas and Peter Waterton for reports of ring ouzel sightings during the 2009 season. Our grateful thanks to all of them.

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ANNEX 1 - Location of Nest Sites and Territories in Rosedale in 2009

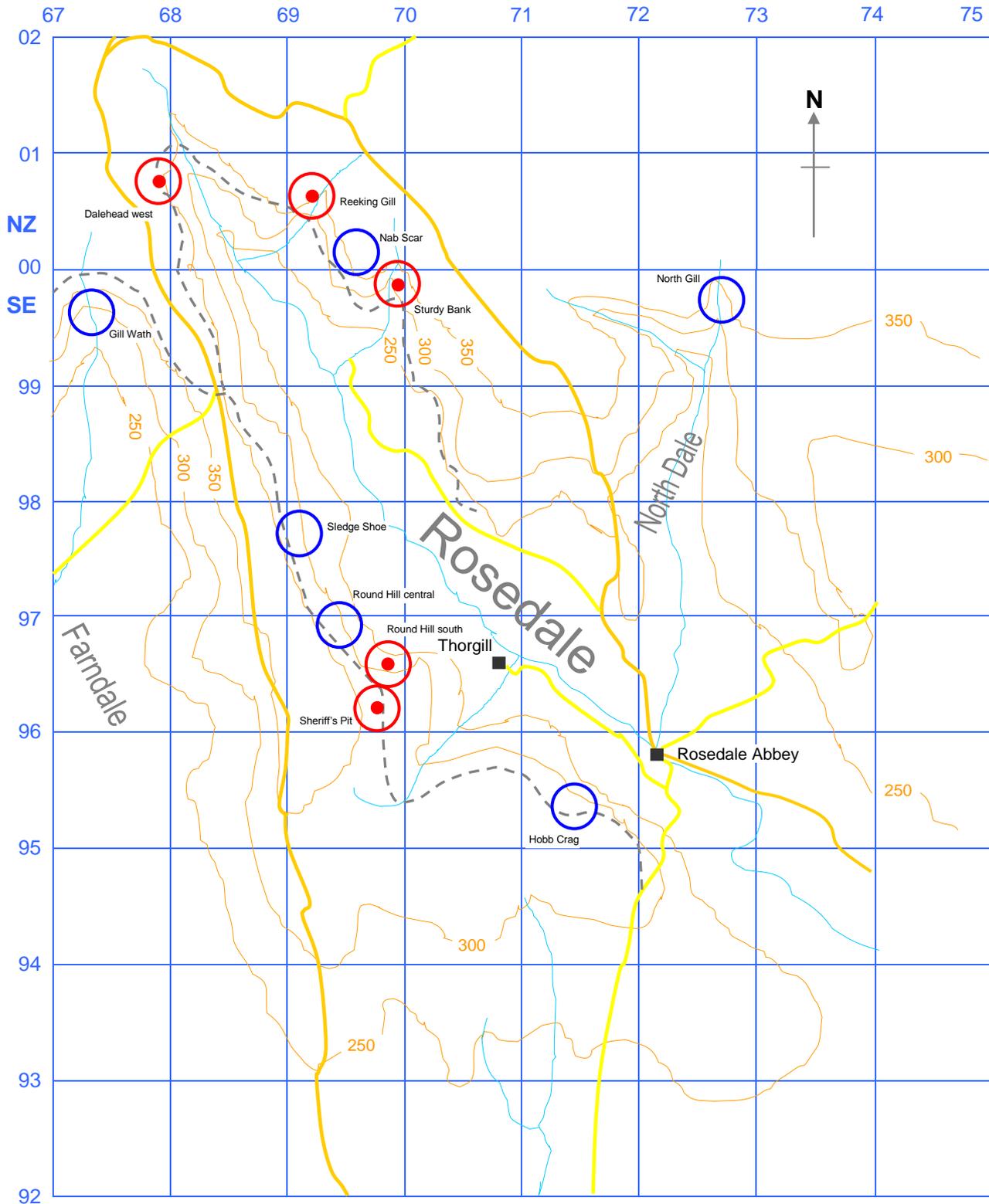
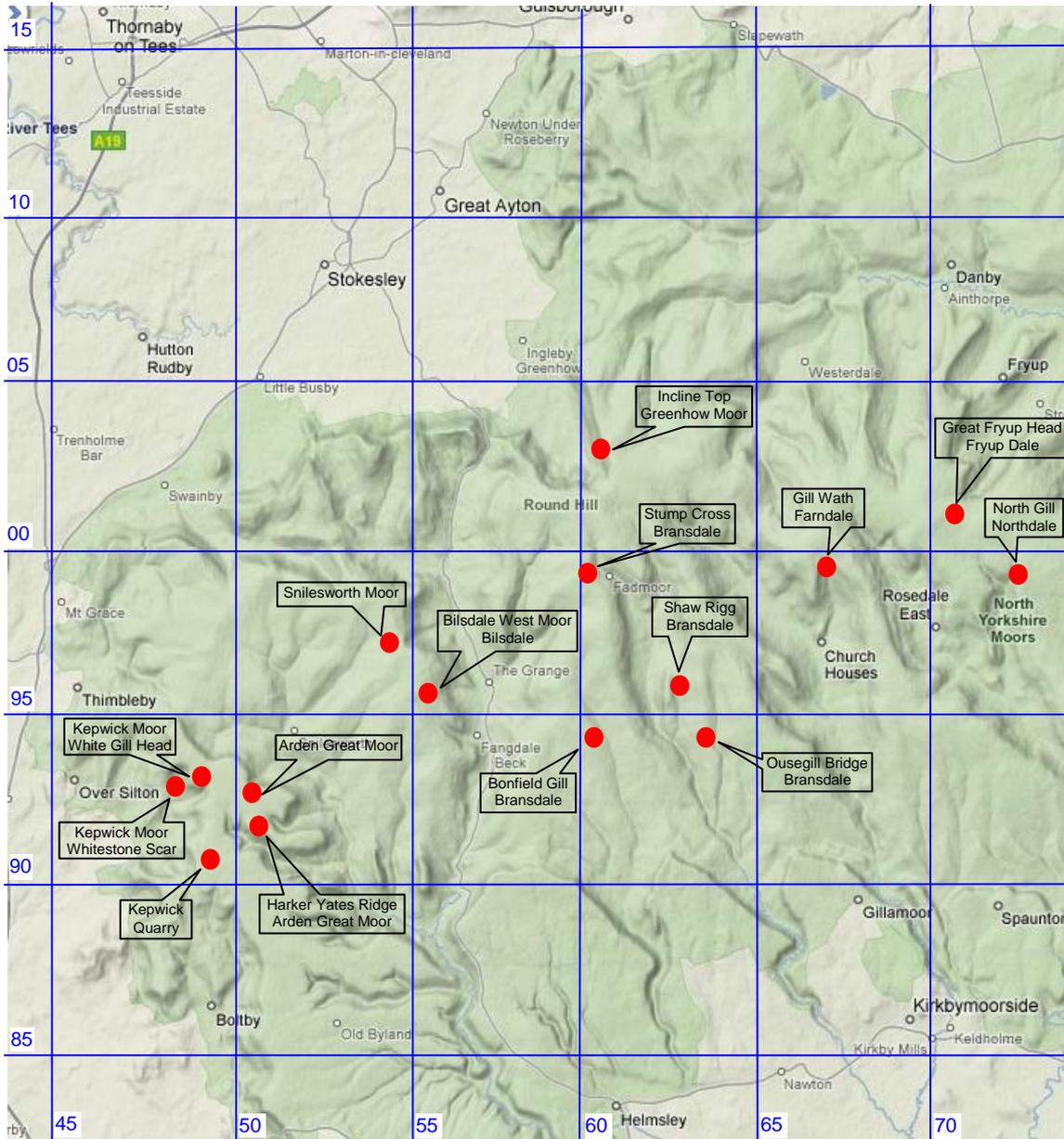


Diagram 1: Ring ouzel nest sites and Confirmed & Probable territories located in the Rosedale area of the North York Moors in 2009.



ANNEX 2 - Ring Ouzel sightings on the North York Moors in 2009 (other than Rosedale)



ANNEX 3 - Annual Breeding Results from 2000 to 2009

Table 1: Annual breeding results at ring ouzel nest sites in the Rosedale and other areas of the North York Moors. Data from 2000 to 2009.

Year	Site	Grid Ref.	Eggs	Hatched	Fledged	Comments
2000	Spaunton	SE71479347	4	4	4	1 st brood. 4 pulli ringed.
2002	Bank Top	?	?	?	?	First attempt not found.
2002	Bank Top	SE72049483	+	4	4	Likely to be 2 nd brood.
2003	Ouzegill Bdg.	SE63709450	4	4	4	1 st brood. 4 pulli ringed.
2003	Round Hill	SE69279710	4	4	4	1 st brood
2003	Thorgill Head	SE69999559	4	3	0	1 st brood. Nest disturbed, chicks abandoned.
2003	Thorgill Bank	SE70729582	4	3	3	1 st brood. 3 pulli ringed.
2003	Thorgill Bank	SE70729582	2	1	?	2 nd brood. Likely to have failed at pulli stage.
2003	Loskey Ridge	SE71489347	4	+	0	1 st nest. Predated at pulli stage.
2003	Hob Crag	SE71459538	4	0	0	Likely to be 1 st nest. Predated at egg stage.
2004	Hob Crag	SE71459538	4	4	0	Predated at pulli stage. Refurbished 2003 nest.
2004	Matty Carr	SE68809833	4	4	4	Likely to be 1 st brood.
2004	Dale Hd East	?	?	?	?	First attempt not found
2004	Dale Hd East	NZ68560086	4	4	4	Likely to be 2 nd brood.
2004	Ouzegill Bdg.	SE63909470	2	1	?	1 st brood. 1 egg vanished. 1 pulli ringed.
2005	Sheriff's Pit 1	SE69659631	+	1	0	1 st nest. Nest abandoned; reason unknown.
2005	Sheriff's Pit 1	SE69659631	+	0	0	2 nd attempt. Predated at egg stage.
2005	Sheriff's Pit 1	SE69659631	+	3	2	3 rd nest.
2005	Matty Carr	SE68809835	4	4	4	Thought to be 1 st brood.
2005	Lion Inn	?	?	?	?	First attempt not found
2005	Lion Inn	SE68249954	+	4	4	Likely to be 2 nd brood.
2005	Dale Hd West	NZ67960082	+	+	3	3 fledglings seen near nest.
2006	Sheriff's Pit 1	SE69659631	4	0	0	Nest on NW side of pit shaft washed out by heavy rain in mid May.
2006	Sheriff's Pit 2	SE69779609	5	5	5	Second attempt 185m Sth. of pit shaft.
2006	Dale Hd West	?	?	?	?	First attempt not found
2006	Dale Hd West	NZ67930081	4	?	?	Likely to be 2 nd brood.
2007	Hob Crag	SE71459538	3	0	0	1 st nest. Predated at egg stage.
2007	Round Hill Sth	SE69819663	4	4	4	1 st nest.
2007	Dale Hd West	NZ67940079	4	4	4	1 st nest.
2007	Reeking Gill	NZ68920066	4	4	4	1 st nest.
2008	Sturdy Bank 1	SE69899991	4	4	4	1 st nest.
2008	Sturdy Bank 2	SE69869990	4	4	3	2 nd nest.
2008	Round Hill Sth	SE69819664	4	4	4	1 st nest. Used refurbished 2007 nest.
2008	Reeking Gill	NZ69140056	5	5	5	1 st nest.
2008	Northdale, W. Gill	SE71799957	+	+	3	1 st nest.
2008	Hobb Crag 1	SE71449539	4	4	0	1 st attempt. Predated at pulli stage. Used same nest site as in 2003/4.
2008	Hobb Crag 2	SE71399545	3	0	0	2 nd attempt. Predated at egg stage.
2008	Sheriff's Pit	SE69719626	4	4	4	1 st brood.
2008	Dalehead Nth.	?	?	?	?	First attempt not found
2008	Dalehead Nth.	NZ67950102	4	1	0	Likely to be 2 nd attempt. Appeared to have failed after 1 st hatchling. 1 abandoned egg left in nest.
2009	Dale Hd West	NZ67940079	4	4	4	1 st nest.
2009	Sturdy Bank	SE6987 9991	4	4	3	Likely to be 1 st nest.
2009	Round Hill Sth	SE69539674	4	4	4	1 st nest.
2009	Reeking Gill	NZ69240076	+	+	3	1 st nest.
2009	Sheriff's Pit	SE69729627	+	5	5	2 nd nest. 1 st nest at Round Hill Sth.

? = No data. + = Exact value unknown.

ANNEX 4 - Table of Nest Aspect & Elevation

Table 1: Aspect & elevation of 40 ring ouzel nest sites in the Rosedale area of the North York Moors. Data from 1999 to 2009.

Year	Location	Grid Reference	Aspect	Elevation
1999	Rosedale - Sheriff's Pit	SE 6973 9627	NNW	331m
1999	Blakey Crossing	SE 6830 9900	SSW	370m
2000	Spaunton Moor - Penwash	SE 7147 9347	SSW	240m
2002	Rosedale - Bank Top	SE 7204 9483	NNW	310m
2003	Rosedale - Round Hill	SE 6927 9710	N	336m
2003	Rosedale - Hobb Crag	SE 7145 9538	NNE	313m
2003	Rosedale - Thorgill Head	SE 6999 9559	NNE	330m
2003	Rosedale - Thorgill Bank	SE 7073 9580	NE	308m
2003	Spaunton Moor - Penwash	SE 7148 9347	NE	249m
2003	Rosedale - Thorgill Bank	SE 7072 9582	ENE	309m
2004	Rosedale - Matty Carr Hill	SE 6880 9833	E	358m
2004	Rosedale - Sheriff's Pit	SE 6971 9626	SSE	331m
2004	Rosedale - DaleHead (east)	NZ 6856 0086	SW	330m
2005	Rosedale - Sheriff's Pit	SE 6971 9626	NE	339m
2005	Rosedale - Blakey Lion	SE 6824 9954	ENE	362m
2005	Rosedale - Dale Head (west)	NZ 6796 0082	E	349m
2005	Rosedale - Sheriff's Pit	SE 6971 9626	ESE	333m
2005	Rosedale - Matty Carr Hill	SE 6880 9835	SE	331m
2005	Rosedale - Sheriff's Pit	SE 6971 9626	SW	331m
2006	Rosedale - Sheriff's Pit (south)	SE 6979 9610	N	339m
2006	Rosedale - Dale Head (west)	NZ 6793 0080	E	362m
2006	Rosedale - Sheriff's Pit	SE 6971 9626	ESE	333m
2007	Rosedale - Reeking Gill (west)	NZ 6892 0066	N	321m
2007	Rosedale - Round Hill (south)	SE 6981 9664	NNE	297m
2007	Rosedale - Hob Crag	SE 7138 9546	E	313m
2007	Rosedale - Dale Head (west)	NZ 6794 0079	S	357m
2008	Rosedale - Round Hill (south)	SE 6981 9664	NNE	297m
2008	Rosedale - Hob Crag 1	SE 7144 9539	NNE	310m
2008	Rosedale - Hob Crag 2	SE 7139 9545	NE	313m
2008	North Dale - West Gill	SE 7179 9957	NE	308m
2008	Rosedale - Dalehead (north)	NZ 6795 0102	NE	353m
2008	Rosedale - Sheriff's Pit	SE 6971 9626	SSE	331m
2008	Rosedale - Sturdy Bank 1	SE 6989 9991	W	307m
2008	Rosedale - Sturdy Bank 2	SE 6986 9990	SSW	281m
2008	Rosedale - Reeking Gill	NZ 6914 0056	W	322m
2009	Rosedale - Reeking Gill	NZ 6924 0076	S	359m
2009	Rosedale - Sturdy Bank	SE 6987 9991	SW	282m
2009	Rosedale - Dale Head (west)	NZ 6794 0079	S	357m
2009	Rosedale - Round Hill (south)	SE 6953 9674	NE	330m
2009	Rosedale - Sheriff's Pit	SE 6972 9627	NE	345m

ANNEX 5 - Nest Aspect & Elevation Profile

Number of nests facing:-

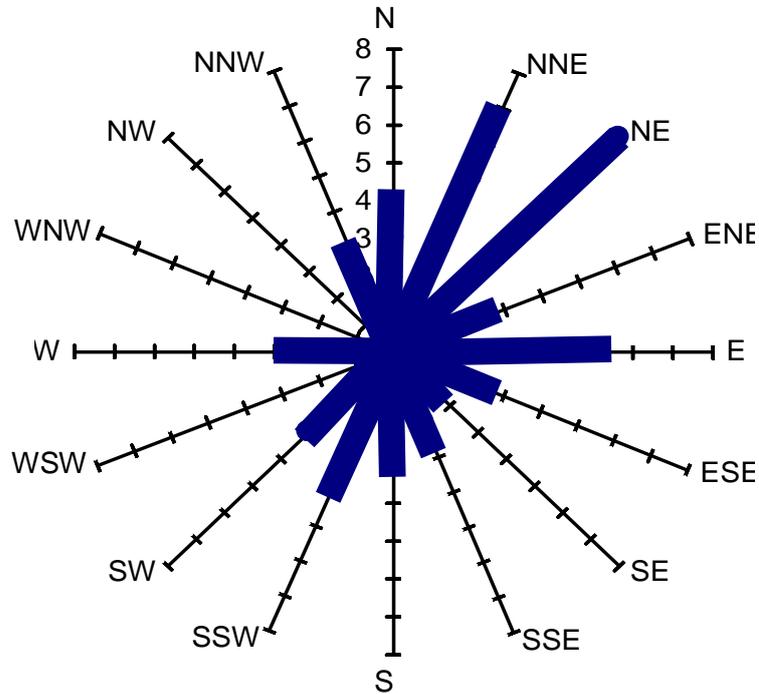


Figure 1: Number of nests facing principal compass points in the Rosedale area of the North York Moors. Data from 1999 to 2009, n=40 nests.

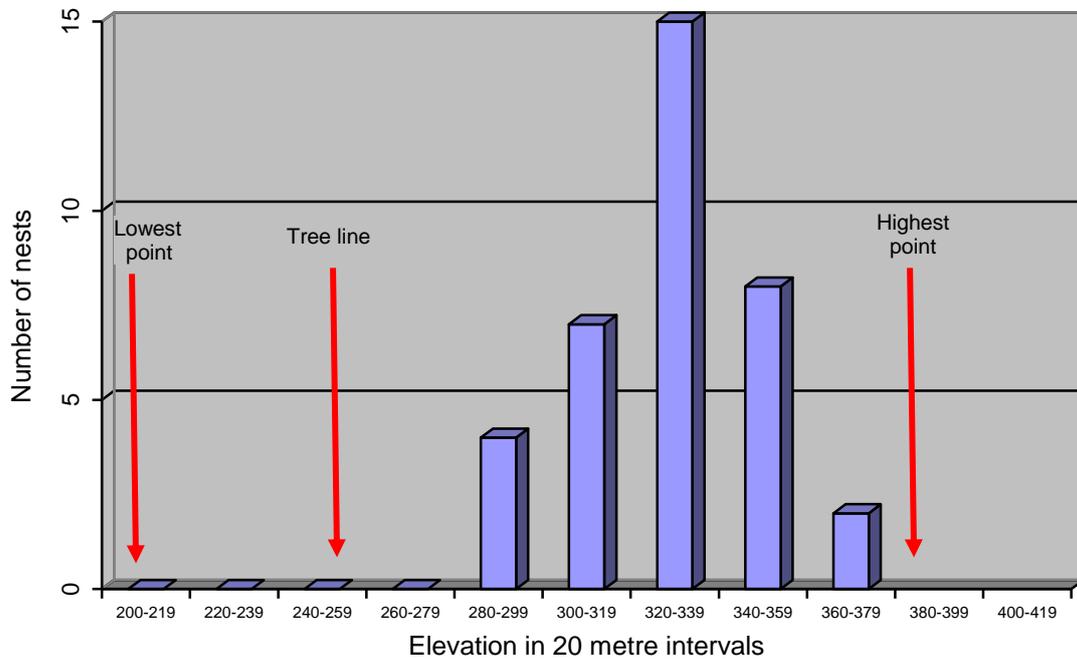


Figure 2: Elevation profile of nests in Rosedale, North York Moors. Data from 1999 to 2009, n=36 nests.

ANNEX 6 - Elevation of Territories Recorded Annually from 1999 to 2009

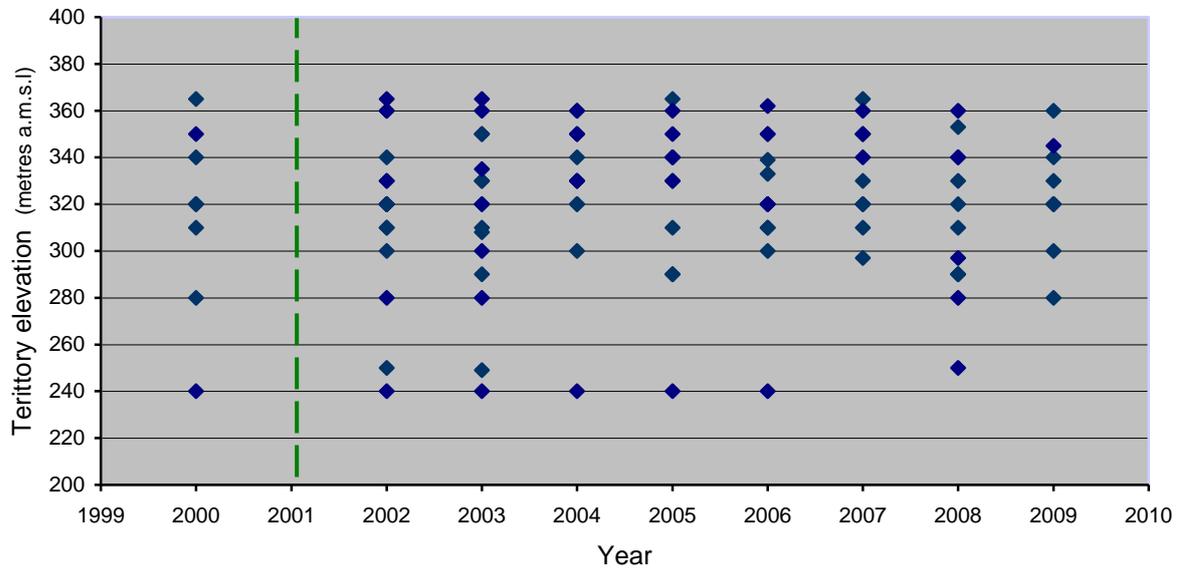
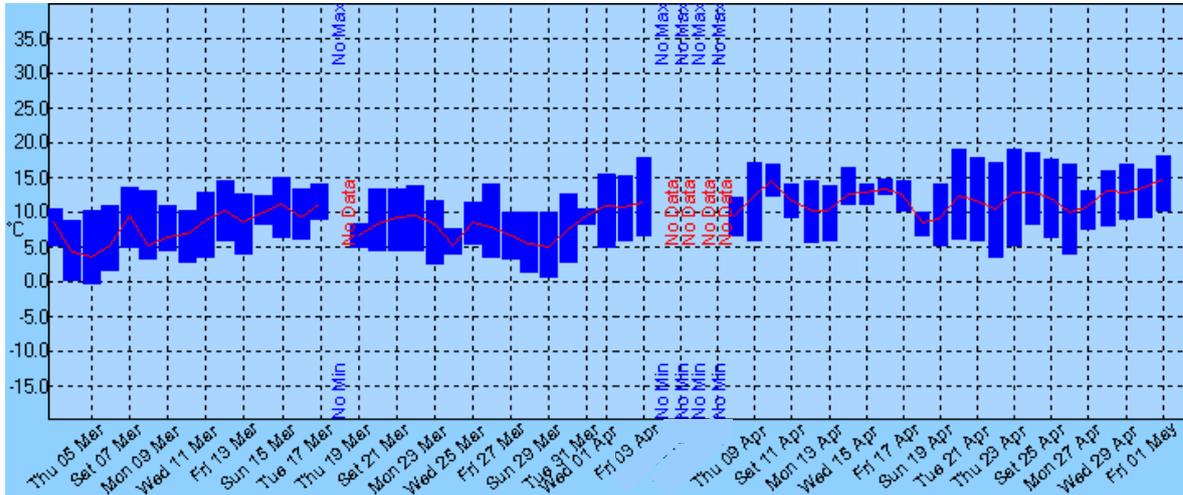
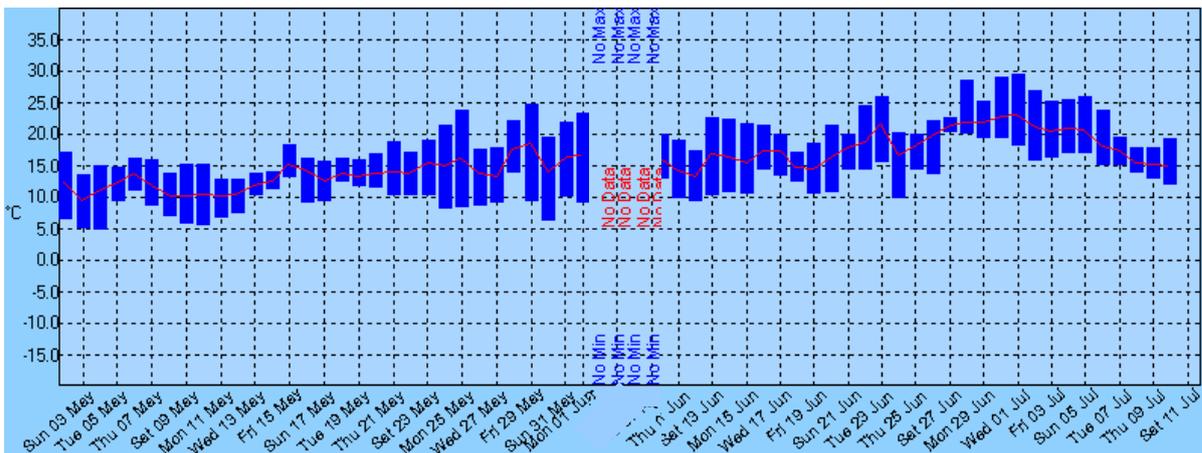


Figure 1: Elevation above mean sea level of territories recorded each year between 2000-2009 in Rosedale, North York Moors. n=27 territories. (foot & mouth prevented field work in 2001)

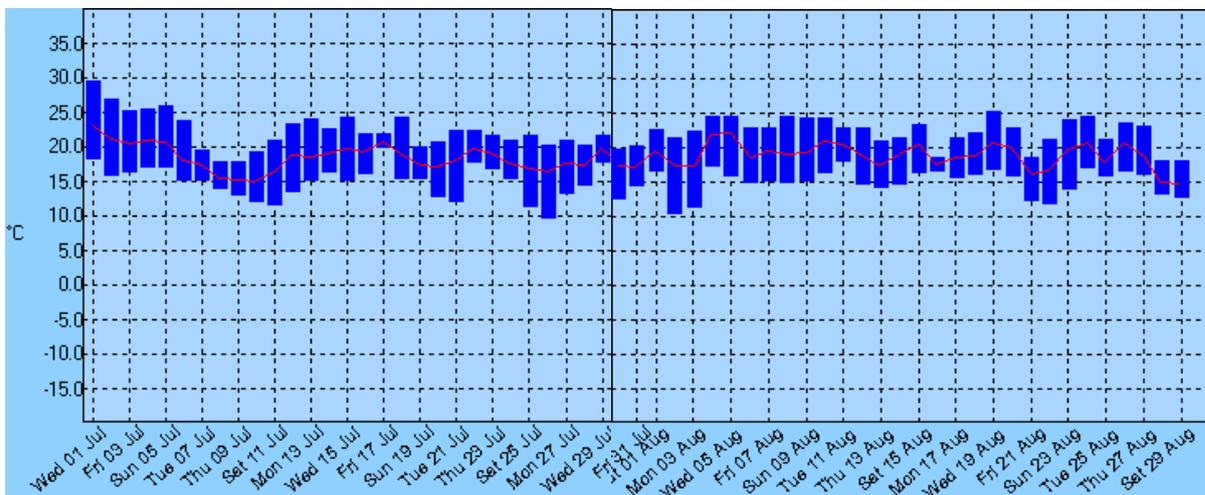
ANNEX 7 - Daily Max & Min Temperature Recorded at Scaling Dam in 2009



March - April



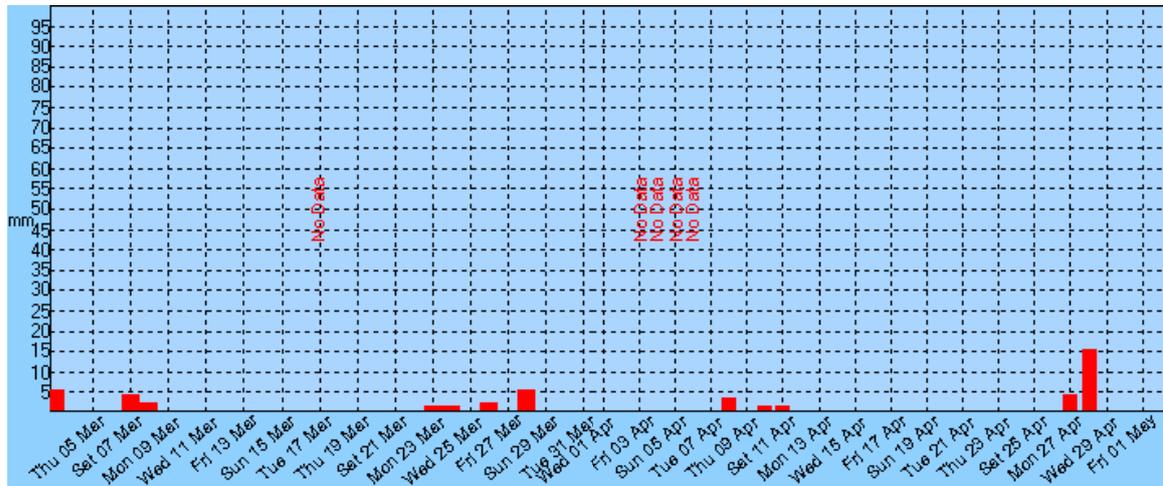
May - June



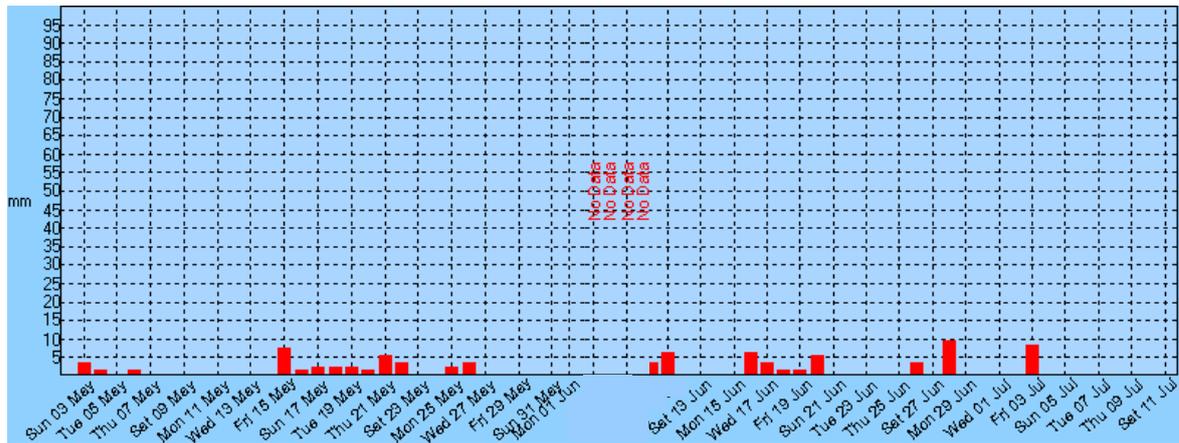
July - August

Daily maximum and minimum temperature recorded at Scaling Dam (NZ741126) between March and August 2009.

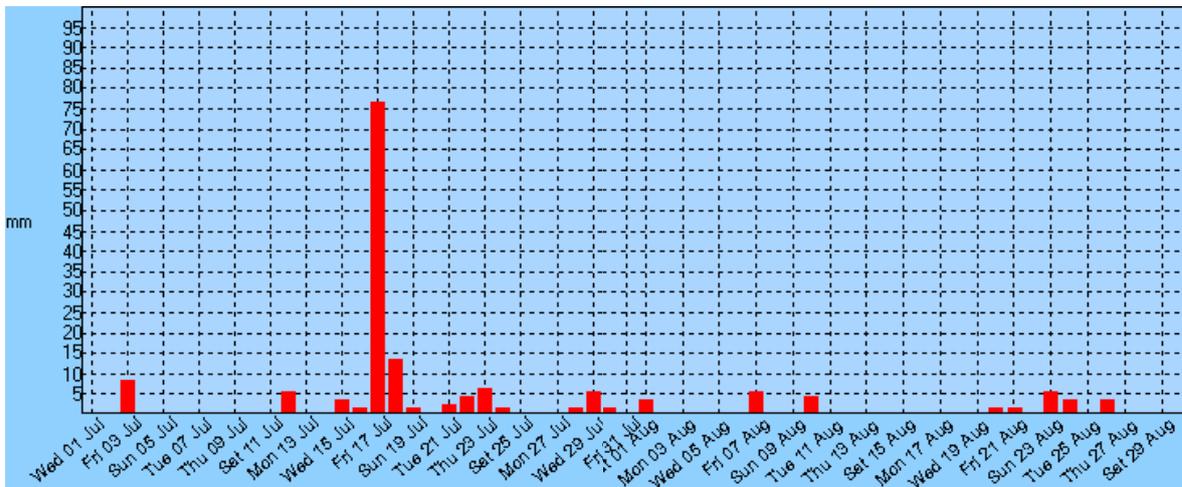
ANNEX 8 - Daily Rainfall Recorded at Scaling Dam in 2009



March - April



May - June



July - August

Daily rainfall recorded at Scaling Dam (NZ741126) between March and August 2009.

ANNEX 9 - Dialects of Ring Ouzel Simple Song

Bransdale

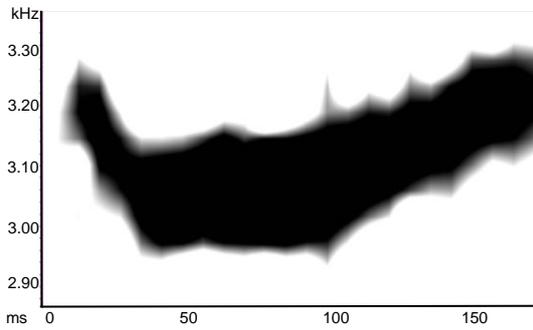


Fig 1a: Single note of a **Type 1** simple song.

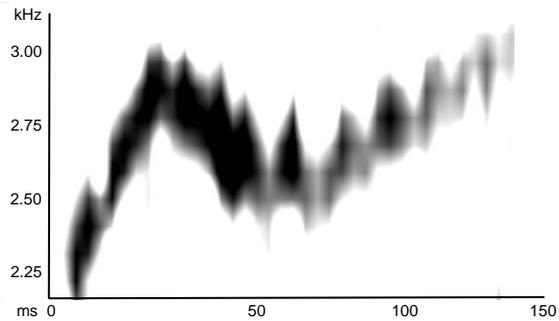


Fig 1b: Single note of a **Type 2** simple song.
(note likeness to Rosedale **Type 1** song in Fig. 3a)

Farndale

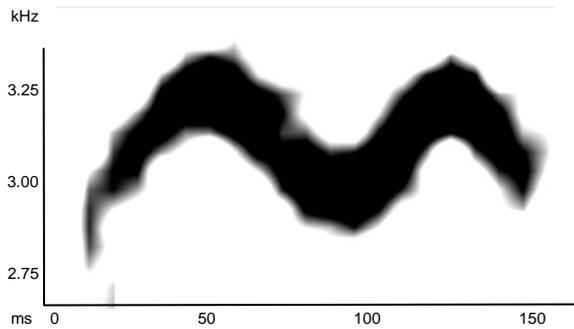


Fig 2a: Single note of a **Type 1** simple song.

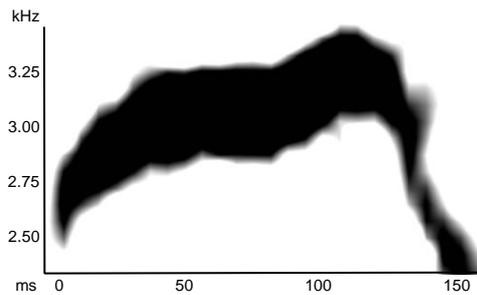


Fig 2b: Single note of a **Type 2** simple song.

Rosedale

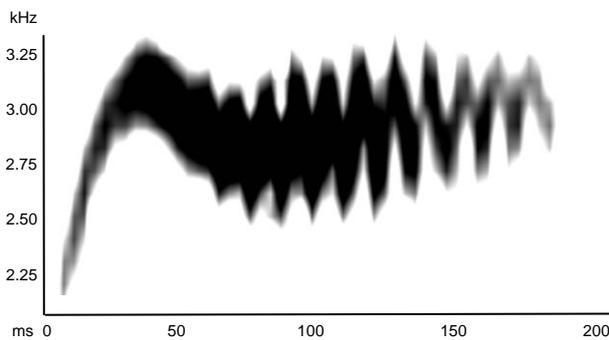


Fig 3a: Single note of a **Type 1** simple song (modulated).

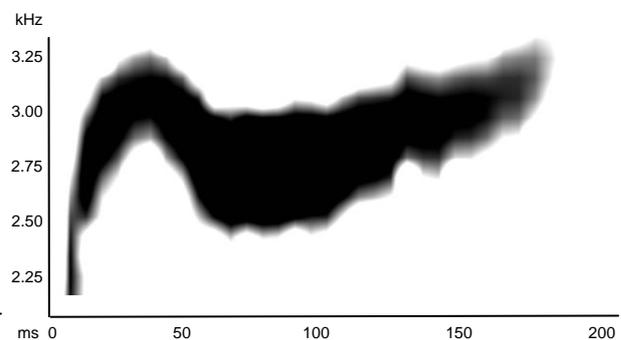


Fig 3b: Single note of a **Type 1** simple song (unmodulated).

Northdale

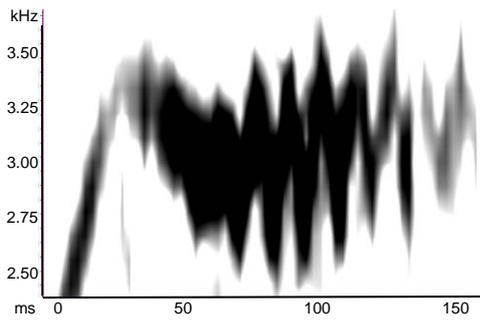


Fig 4a: Single note of a **Type 1**. simple song.
(note likeness to Rosedale **Type 1** song in Fig. 3a)

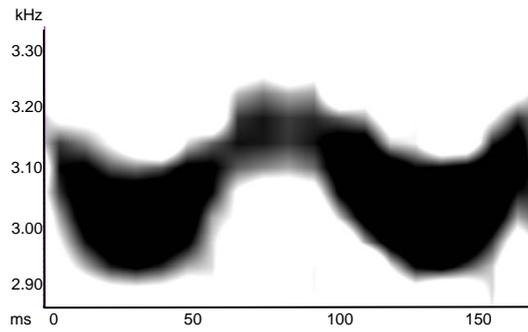


Fig 4b: Single note of a **Type 2**. simple song.

Comment

The **Type 1**. simple song represents the main simple song and can be regarded as the homologous type sung by birds from a particular area. The **Type 2**. simple song occurs less frequently in an individual bird's repertoire and in some cases could be unique to that bird; further work is needed on this. No **Type 2**. forms were found in the 15 birds recorded in Rosedale and both forms of **Type 1**., modulated and un-modulated, were sung with the same regularity; often mixed together in the repertoire. In Fig. 1b the **Type 2**. form may suggest that the male bird had a Rosedale connection and could have fledged in that dale. The strong association of the Northdale **Type 1**. and Rosedale **Type 1**. was expected given Northdale is a minor dale off Rosedale.