RING OUZEL REPORT 2012

FINDINGS OF A STUDY OF RING OUZEL *Turdus torquatus* TERRITORIES IN ROSEDALE AND OTHER AREAS OF THE NORTH YORK MOORS

Summary of 2012 Study on Page 3

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Front cover photograph: Male ring ouzel in flight, Reeking Gill, Rosedale, 2011. Peter Waterton.

1. SUMMARY OF 2012 RING OUZEL STUDY

1. **Earliest arrival recorded with male seen at Reeking Gill on 21st March** (5.2, Pg. 14).

2. **Highest number of breeding pairs to date with 23 territories recorded** (5.3, Pg. 14).

3. **First time pair found nesting below 200 metres** (5.3.20, Pg. 21).

4. **First photographic record of nest being constructed** (5.5, Pg. 22 & Annex 6, Pg. 30).

5. **Wet & cold conditions from April to June severely affected breeding** (5.1, Pg. 13).

6. **Two nests abandoned at egg stage; first year this had been noted** (5.3, Pg. 14).

7. **Nest productivity lowest since 2004** (4.3, Pg. 8-9).

8. **Three broods fledged a day later than the usual 13 days** (5.3.11-13, Pg. 18-19).

9. **First time a fledging in late July had been recorded** (5.3.7, Pg. 17).

10. **Lack of ripe Rowan berries at key time with yield lower than normal** (5.6, Pg. 22).

Note: Points 5 to 10 are weather related and reflect the difficult conditions experienced during the 2012 breeding season.

2. INTRODUCTION

The 2012 survey was the 12th 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. 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 2012 survey concentrated on the Rosedale area of the North York Moors; an area of around 25 sq/km. As for the last few years a visit was made during late summer to locate ring ouzels prior to migration.

The 2012 season marked 11 years of unbroken study in the Rosedale area; only the foot and mouth outbreak in 2001 and the subsequent closure of the moors prevented continuous study since the start of the project in 1999.

As in previous years the north-west and east side of the dale was covered by Vic Fairbrother and the west side by Ken Hutchinson.

Additional effort was given to supporting the 2012 National Ring Ouzel Survey. This was the second national survey the first being in 1999. The latest survey visited 11 tetrads across the North York Moors, each being surveyed twice between April and June. The 2012 survey was more intense than the 1999 survey when just five tetrads were selected. Assistance with the survey was provided by Chris Tyas who visited the six tetrads located in the western part of the North York Moors. The five central and northern tetrads were surveyed by the authors. The findings from the National Survey are to be published in 2013.

3. METHODOLOGY

The criteria used to assess the breeding status and thus the existence of a territory is shown in the table below.

BREEDING STATUS	CRITERIA
Possible	• Single bird observed in suitable nesting habitat. • Male seen or heard singing on one survey date only.
Probable	• Male observed singing on two different days in a week or more at the same place. • Territorial behaviour observed on two or more days. • Pair observed in suitable nesting habitat. • Nest-building activity. • Agitated behaviour.
Confirmed	• Nest found with eggs or chicks. • Recently fledged young seen. • Adult seen carrying food.

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

4. RESULTS

4.1 Territories

4.1.1 Rosedale Area

Table 1: Breeding ring ouzel territories in the Rosedale area between 1999 and 2012.

No.	Location (all territories recorded to date)	Grid Ref.	Year												
			99	00	02	03	04	05	06	07	08	09	10	11	12
1.	Spaunton Moor - Spindle Thorn	SE 716 930	?	×	✓	×	×	×	×	×	✓	×	×	?	✓
2.	Spaunton Moor - Spaunton Knowl	SE 717 918	?	?	?	?	?	?	?	?	?	?	?	?	✓
3.	Spaunton Moor - Loskey Ridge west	SE 714 934	?	✓	✓	✓	×	×	✓	×	×	×	×	?	×
4.	Spaunton Moor - Loskey Ridge east	SE 715 935	?	×	×	✓	✓	✓	×	×	×	×	×	?	×
5.	Rosedale west - Bank Top	SE 720 951	✓	✓	✓	✓	×	×	✓	×	×	×	×	✓	✓
6.	Rosedale west - Bank Top (east)	SE 725 945	?	×	×	✓	×	✓	×	×	×	×	×	×	×
7.	Rosedale west - Hob Crag	SE 714 954	?	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
8.	Rosedale west - Thorgill Bank	SE 707 958	?	×	×	✓	×	×	✓	×	×	×	×	✓	✓
9.	Rosedale west - Thorgill Head	SE 670 956	?	×	✓	✓	✓	✓	×	×	×	×	×	×	×
10.	Rosedale west - Sheriff's Pit	SE 697 963	✓	✓	✓	×	✓	✓	✓	×	✓	✓	✓	✓	✓
11.	Rosedale west - Sheriff's Pit (south)	SE 698 961	×	×	×	×	×	×	✓	×	×	×	×	×	×
12.	Rosedale west - Round Hill (south)	SE 694 968	?	×	✓	✓	✓	✓	✓	✓	✓	✓	×	×	✓
13.	Rosedale west - Round Hill (west)	SE 693 971	×	×	✓	×	×	×	×	×	×	×	×	✓	✓
14.	Rosedale west - Round Hill (north)	SE 693 974	?	×	×	×	×	×	×	✓	×	×	×	×	×
15.	Rosedale west - Round Hill (east)	SE 694 970	?	×	✓	✓	✓	×	×	✓	✓	✓	✓	✓	✓
16.	Rosedale west - Sledge Shoe Bents	SE 691 978	?	✓	✓	✓	✓	✓	✓	×	×	✓	×	✓	✓
17.	Rosedale west - Matty Carr	SE 688 984	?	×	×	✓	✓	✓	✓	✓	✓	×	✓	✓	✓
18.	Rosedale west - Matty Carr (south)	SE 690 980	?	×	×	×	×	✓	×	✓	×	×	×	×	✓
19.	Rosedale west - Lion Inn	SE 681 999	×	✓	✓	✓	×	✓	×	✓	×	×	×	×	✓
20.	Rosedale west - Blakey Swang	SE 685 998	?	?	?	?	?	?	?	?	✓	×	×	×	×
21.	Rosedale west - Dalehead (north)	NZ 680 013	✓	×	✓	×	✓	×	×	×	✓	×	✓	✓	✓
22.	Rosedale west - Dalehead (west)	NZ 680 008	×	×	✓	✓	✓	✓	✓	✓	×	✓	×	✓	✓
23.	Rosedale east - Dalehead (east)	NZ 686 008	×	×	×	✓	✓	×	×	×	×	×	×	✓	×
24.	Rosedale west - Dalehead (south)	NZ 682 005	×	×	✓	×	×	×	×	×	×	×	×	×	×
25.	Rosedale east - Dalehead (quarry east)	NZ 685 006	×	×	×	×	×	×	×	×	×	×	✓	×	×
26.	Rosedale east - Dalehead (quarry west)	NZ 683 008	×	×	×	×	×	×	×	×	×	×	✓	✓	✓
27.	Rosedale east - Reeking Gill (cutting)	NZ 688 007	×	×	×	×	×	×	×	✓	✓	×	✓	×	✓
28.	Rosedale east - Reeking Gill	NZ 691 007	✓	✓	✓	×	×	✓	✓	✓	✓	✓	✓	✓	✓
29.	Rosedale east - Reeking Gill (south)	NZ 692 003	×	×	×	×	×	×	×	×	×	×	×	✓	✓
30.	Rosedale east - Nab Scar (north)	NZ 694 000	×	✓	×	✓	✓	✓	✓	✓	×	✓	✓	✓	✓
31.	Rosedale east - Nab Scar (south)	SE 695 999	×	×	×	×	×	×	×	×	×	×	✓	×	✓
32.	Rosedale east - Sturdy Bank	NZ 699 000	✓	✓	✓	✓	×	×	×	×	✓	✓	✓	✓	✓
33.	Rosedale east - East Mine	SE 705 989	?	?	?	?	?	?	?	?	✓	×	×	×	✓
		TOTAL	**5**	**9**	**16**	**16**	**12**	**13**	**12**	**11**	**12**	**9**	**12**	**16**	**23**

1. Only a partial survey was carried out in 1999.
2. Foot & mouth prevented field work in 2001.

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

See map at **Annex 1** for the location of ring ouzel territories and nests in Rosedale in 2012.

4.1.2 Other Areas of the North York Moors

See map at **Annex 2** for the location of other ring ouzel sightings on the North York Moors in 2012 (other than the Rosedale area and passage migrants).

4.2 Nest Sites

Table 2: Ring ouzel nest sites located in Rosedale in 2012.

No.	Location	Grid Ref.	Comment
1.	Rosedale west - Sheriff's Pit 1st	SE 6968 9643	Found 07/05, 4 pulli, all fledged.
2.	Rosedale west - Sheriff's Pit 2nd	SE 6973 9627	Found 19/06, 2 pulli, all fledged. Same nest used in 2011.
3.	Rosedale west - Round Hill west	SE 6926 9706	Found 24/05, 4 eggs, 3 fledged, 1 dead in nest. 2011 nest.
4.	Rosedale west - Round Hill south	SE 6944 9670	Found 07/05, 4 eggs, 4 hatched, predated.
5.	Rosedale west - Matty Carr quarry	SE 6880 9835	Found 05/07, 2 pulli, predated.
6.	Rosedale west - Matty Carr south	SE 6888 9818	Found 24/05, 3 eggs, 3 hatched, predated.
7.	Rosedale west - Blakey Lion	SE 6823 9960	Found 14/05, 5 eggs, 4 hatched, 4 fledged.
8.	Rosedale west - Dalehead west	NZ 6794 0080	Found 30/04, 4 eggs, abandoned.
9.	Rosedale east - Sturdy Bank	SE 6985 9996	Found 27/04, 4 eggs, abandoned.
10.	Rosedale east - Nab Scar north	NZ 6943 0006	Found 27/05, 4 eggs, predated.
11.	Rosedale east - Nab Scar south	SE 6949 9988	Found 23/04, 4 eggs (1 taken), 3 hatched, fledged.
12.	Rosedale east - Reeking Gill	NZ 6919 0066	Found 08/05, 4 pulli, fledged.
13.	Rosedale east - Reeking Gill cutting	NZ 6881 0067	Found 19/04, 4 eggs, 4 hatched, fledged.
14.	Spaunton Moor - Spaunton Knowl	SE 7170 9180	Found 24/05, 3 pulli, outcome unknown.

Full details of Rosedale territories and nests can be found in section 5.3.

4.3 Annual Breeding Results

Table 3: Summary of annual breeding results at ring ouzel nest sites in Rosedale and other areas of the North York Moors. Data from 2000-2012. Detailed results are presented at **Annex 3**.

Year	Nests found	Successful nests	Laying pairs (2^{nd} clutch)	Pairs that hatched young (2^{nd} attempt) [2^{nd} brood]	Pairs that successful fledged young (2^{nd}attempt/brood)	Pairs that failed to fledge young	Total young fledged	Mean fledged young per successful nest[a.]	Mean fledged young per laying pair[b.]
1	2	3	4	5	6	7	8	9	10
00	1	1	1	1	1	0	4	4.00	4.00
02	1	1	1 (1)	1 (1)	1 (1)	0	4	4.00	4.00
03	7	3	6 (1)	4 [1]	3	3	11	3.66	1.83
04	4	2	4 (1)	4 (1)	2 (1)	2	8	4.00	2.00
05	6	4	4 (2)	4 (1)[1]	4 (2)[c]	0	13	3.25	3.25
06	3	1	2	1 (1)	1 (1)[d]	1	5	5.00	2.50
07	4	3	4	3	3	1	12	4.00	3.00
08	9	6	7(3)	7[2][e]	5(1)	2	23	3.83	3.29
09	5	5	4(1)	4[1]	4(1)	0	19	3.80	4.75
10	12	9	8 (5)	7 [3]	7(2)	1	30	3.33	3.75
11	19	15	14 (8)	13 [8]	12 (5)	2	55	3.67	3.92
12	13	7	11 (5)	6 (1)[3]	6 (2)	5	23	3.28	2.09
							Overall Mean	**3.81**[f]	**3.20**

Note
a. Mean fledged young per successful nest (Column 9) = Column 8 ÷ Column 3
b. Mean fledged young per laying pair (Column 10) = Column 8 ÷ Column 4
c. One pair had two unsuccessful attempts before being successful at third attempt.
d. One pair had one unsuccessful attempt before being successful at second attempt.
e. One pair had two unsuccessful attempts; the 1st predated at the chick stage, the 2nd at the egg stage.
f. Mean for: Glen Esk (Burfield) 3.48; Moorfoots (Burfield) 3.50; Yorkshire Dales (Appleyard) 3.60; BTO Nest Records (Flegg & Glue) 3.60.

Interpreting Table 3

- Column 2 shows the total number of nests found that year.
- Column 3 shows the number of nests fledging young (i.e. successfully leaving the nest) that year.
- Column 9 shows the average number of young fledged from each nest that year (see Note f. for comparison with other study areas).
- Column 10 shows the number of young fledged per pair averaged for all the pairs that laid eggs that year and includes those pairs that abandoned their eggs, lost nests to predation or had infertile eggs. **This is a measure of productivity.**

In 2012 the nests of 12 pairs were located. The pair at Sheriff's Pit had two successful nests, the first nest being 160m north of the pit shaft where the second nest was built using the old 2011 nest; an indication perhaps that the female was the same as nested in the shaft last year. Nests at Dalehead west and Sturdy Bank were abandoned at the egg stage - the first time this had been recorded - and was most likely as a result of the cold wet conditions that coincided with the start of the breeding season in late April having been thrown by the balmy conditions at the start of the month. The other notable event in 2012 was the late nesting of pairs at Matty Carr quarry and Hob Crag where young were being raised and fledged well into July; a few weeks beyond

what in past years has been regarded as the end of the breeding season and perhaps another indication of the poor weather delaying things. Also the reported discovery of a nest with three pulli at Spaunton Knowl was notable in that this was the first time a nest had been located below the 200 metre contour; much lower than the 250 metre previously considered as being the lowest elevation for nesting in the North York Moors.

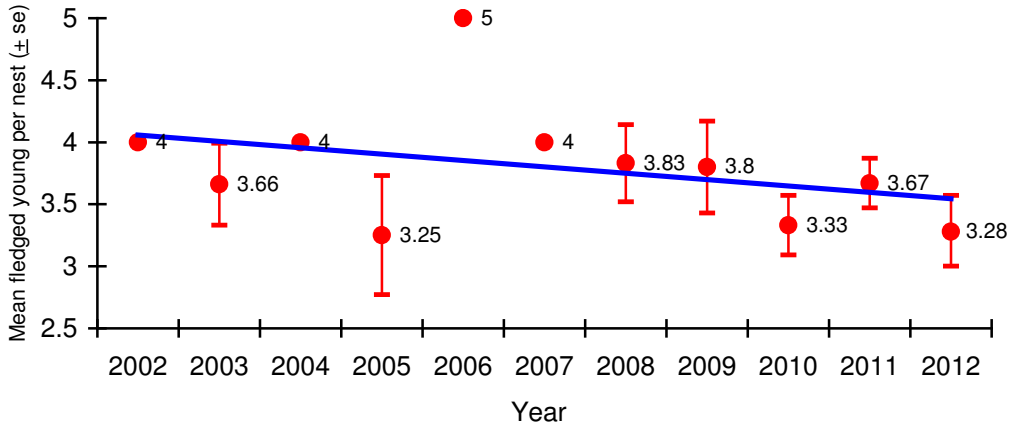

Figure 1: Annual mean fledged young per successful nest for Rosedale and other areas of the North York Moors between 2002-2012 showing the 11-year trend.

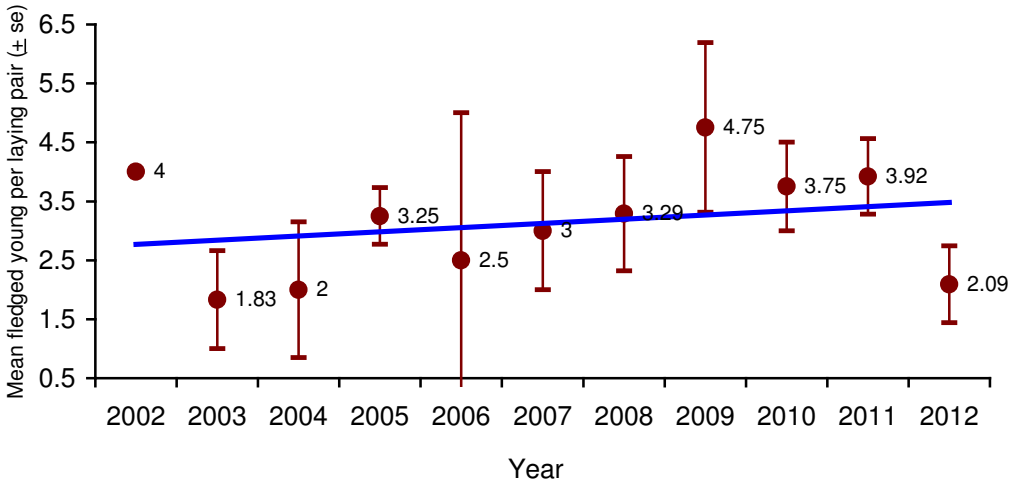

Figure 2: Annual mean fledged young per laying pair for Rosedale and other areas of the North York Moors between 2002-2012 showing the 11-year trend.

Interpreting Figures 1 and 2

Figure 1 - Mean fledged young per successful nest

- Values are taken from Columns 3 and 9 in Table 3.
- The vertical axis shows the average number of young that fledged each nest in a particular year. The vertical **red** Hi-Lo line through each data point gives the standard error (±se) *e.g. In 2012 an average of 3.28 young left the nest and that the standard error shows there is a 68% confidence that this value lies within the range 3.00 to 3.57.*

Figure 2 - Mean fledged young per laying pair

- Values are taken from Columns 4 and 10 in Table 3.
- The vertical axis is the number of young fledged averaged over all the pairs that laid eggs. As in the above example, the vertical **brown** Hi-Lo line through each data point gives the standard error (±se).

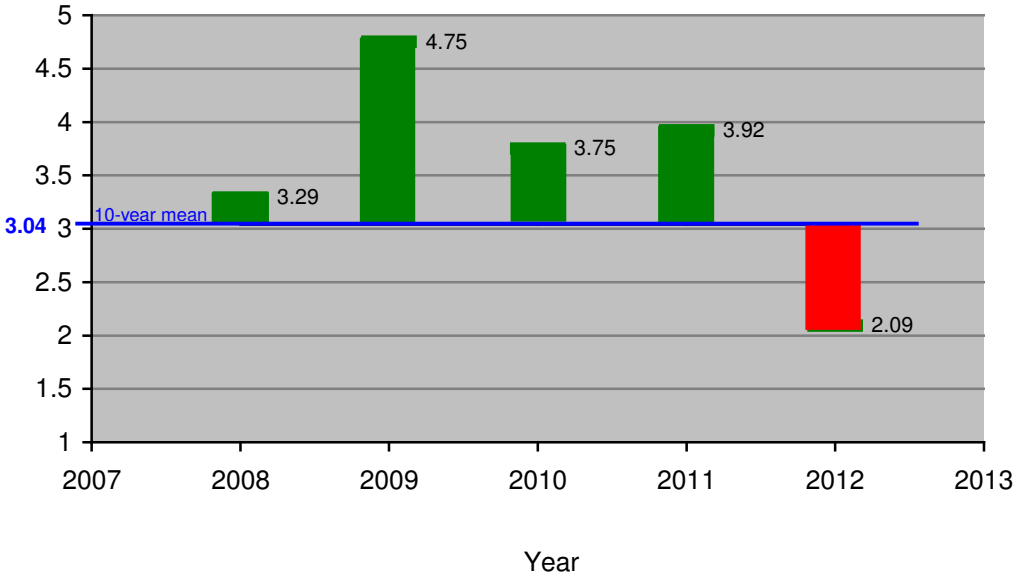

Figure 3: Annual mean fledged young per laying pair for Rosedale and other areas of the North York Moors between 2008-2012 relative to the 10-year mean.

4.4 First-egg Laying Dates

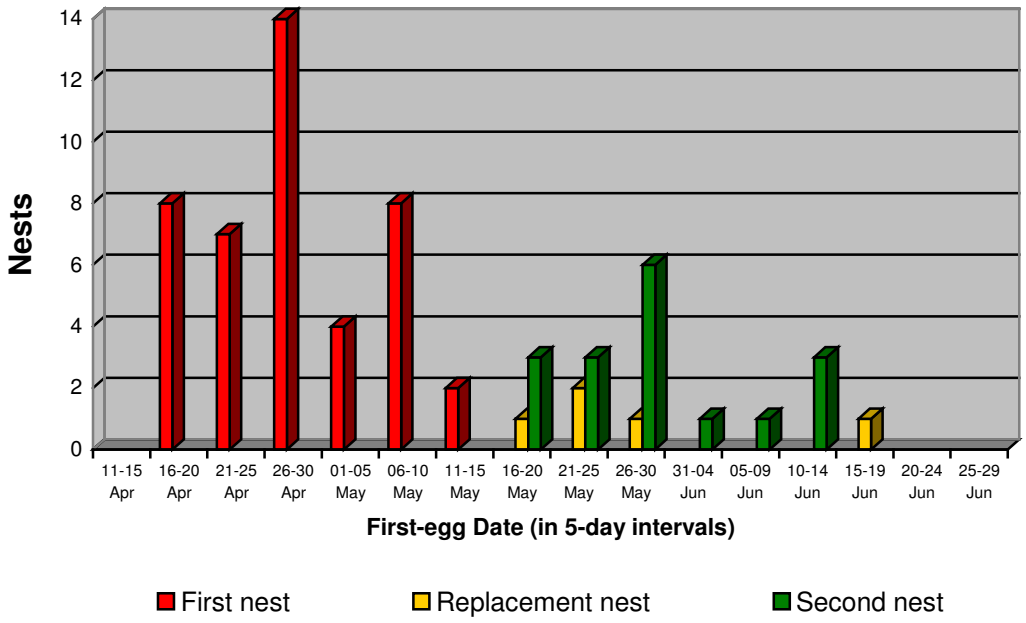

Figure 4: First-egg laying dates for Rosedale and other areas of the North York Moors between 2000-2012. Date points in 5-day intervals for the months of April, May & June. (n=65)

4.5 First-egg, Hatching & Fledging Dates

Table 4: First-egg, hatching & fledging dates for Rosedale and other areas of the North York Moors.

Year	Nest location	1st 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)	-	2nd nest.
2006	Ousegill Bridge	10 May	25 May	7 June	
	Sheriff's Pit south	21 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	26 April	11 May	24 May	
	Dalehead west	29 April	14 May	27 May	
2008	Sturdy Bank 1st	29 April	14 May (a)	27 May (a)	
	Sturdy Bank 2nd	10 June	25 June (a)	9 July (a)	1st egg 14 days after 1st nest fledged.
	Round Hill south	1 May	16 May (a)	29 May	
	Reeking Gill	5 May	20 May (a)	2 June	
	West Gill	25 April	10 May	23 May	Seen copulating on 22 April.
	Hob Crag 1st	28 April	13 May (p)	-	
	Hob Crag 2nd	27 May (p)	-	-	Replacement nest/eggs.
	Sheriff's Pit	7 May	22 May	4 June	
	Dalehead north	25 May	9 June (a) (p)	-	Likely replacement nest/eggs.
2009	Reeking Gill	16 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	26 April	11 May	24 May	1st nest. 2nd nest at Sheriff's Pit.
	Dalehead west	10 May	25 May	8 June	Likely to be 1st nest.
	Sheriff's Pit	26 May	10 June	23 June (a)	2nd nest. 1st nest at Round Hill south.
2010	Sturdy Bank 1st	30 April (a)	16 May (a)	29 May (a)	1st nest.
	Sturdy Bank 2nd	16 June (p)	-	-	Predated at egg stage.
	Reeking Gill	16 April	1 May	14 May (a)	1st nest.
	Reeking Gill cut. 1st	9 May	24 May (a)	6 June	1st nest.
	Reeking Gill cut. 2nd	11 June	26 June	7 July	2nd nest. Likely fledged at 11 days.
	Ousegill 1st	28 April	13 May (a)	26 May	1st nest.
	Ousegill 2nd	2 June	17 June (a)	-	2nd nest. Failed at chick stage.
	Hob Crag 1st	29 April	14 May	28 May (a)	1st nest. Fledged at 14 days.
	Hob Crag 2nd	9 June	24 June	7 July	2nd nest
	Sheriff's Pit	13 May	28 May	10 June	Likely to be 1st nest.
	Round Hill central	27 April	12 May	25 May	1st nest.
	Dalehead quarry west	22 May	6 June	19 June	Likely to be 2nd nest.
2011	Hob Crag	19 April	4 May	17 May	1st nest. In nest on 16th ready to fledge.
	Round Hill east	18 April	3 May	17 May	1st nest. In nest on 16th ready to fledge.
	Round Hill west	10 May	25 May	7 June	1st nest. In nest on 6th ready to fledge.
	Matty Carr	17 April	2 May (a)	16 May	1st nest. In nest 14. Fledged & by nest 16.
	Sturdy Bank 1st	21 April	6 May (a)	19 May (a)	1st nest.
	Sturdy Bank 2nd	28 May	12 June (a) (p)	-	2nd nest. 3 hatched on 12th. Predated.
	Nab Scar north 1st	21 April	6/7 May (a)	20 May (a)	1st nest. 2 eggs hatched on 6th & 2 on 7th
	Nab Scar north 2nd	26 May	10 June	23 June (a)	2nd nest. 3 pulli. 1 egg unhatched.
	Reeking Gill 1st	16 April	1 May	14 May (a)	1st nest.
	Reeking Gill 2nd	19 May	3 June (a)	17 June (a)	2nd nest. 3 eggs hatched on 3rd.
	Ousegill	28 April (a) (p)	-	-	1st nest. Likely predated at egg stage.
	Dalehead west 1st	23 April	8 May	21 May	1st nest.
	Dalehead west 2nd	29 May	13 June	26 June	2nd nest. In nest 24/6, out of nest 27th.
	Dalehead north	8 May	23 May	6 June (a)	1st nest.
	Dalehead quarry wst 1st	28 April	13 May	27 May (a)	1st nest.
	Dalehead quarry wst 2nd	?	(p)	-	2nd nest. Predated at chick stage.
	Dalehead east	25 May (a)	9 June	22 June	Likely to be 2nd nest.
	Thorgill Bank	18 May	2 June (a) (p)	-	Likely to be 2nd nest. Predated.
	Sheriff's Pit	30 May	15 June	27 June	Likely to be 2nd nest.
2012	Reeking Gill cutting	17 April	2 May (a)	16 May (a)	1st nest. 3 eggs hatched 2nd. 14 days to fledg.
	Sturdy Bank	27 April (a)	-	-	1st nest. Abandoned at egg stage.
	Nab Scar south	20 April (a)	5 May (a)	19 May (a)	1st nest. 2 hatched 5th. 14 days to fledg.
	Dalehead west	-	-	-	1st nest. Abandoned at egg stage.
	Sheriff's Pit north	21 April	6 May	19 May (a)	1st nest.
	Sheriff's Pit	28 May	12 June	25 June (a)	2nd nest.
	Round Hill south	29 April	14 May (a)	(p)	1st nest. Predated between Day 5 & 8.
	Reeking Gill	23 April	8 May (a)	22 May (a)	1st nest. 14 days to fledging.
	Blakey Lion	10 May	25 May (a)	7/8 (a) June	1st nest. 2 fledged 7/6 & 1 fledged 8/6.
	Matty Carr south	22 May	6 June	(p)	Likely 2nd nest. Predated between Day 2 & 6.
	Matty Carr quarry	19 June	4 July	(p)	Likely replacement 2nd nest from MC south pair. Predated at chick stage between Day 5 & 9.
	Round Hill west	20 May	4 June (a)	17 June	Likely 2nd nest. One pulli died naturally in nest.
	Nab Scar north	?	-	-	2nd nest. Predated at egg stage.
	Spaunton Knowl	22 April	8 May	(o)	1st nest. 3 pulli. Outcome unknown.

(a) = actual (o) = outcome unknown (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.

4.6 Distance Between First & Second Nests

The distance between first and second nests is shown below in Table 5. 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 - the 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. For the North York Moors (n=16) the mean and median values are 90.5 and 50.5 metres respectively.

Table 5: Distance between 1st and 2nd nests in Rosedale and other areas of the North York Moors.

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	1st - Sheriff's Pit 2nd - Sheriff's Pit south
2008	Hob Crag	SE7144295395	SE7138795446	75	2nd is replacement nest
2008	Sturdy Bank	SE6989499907	SE6986599899	30	
2009	Round Hill south/Sheriff's Pit	SE6953396742	SE6972596266	513	1st - Round Hill south 2nd - Sheriff's Pit
2010	Bransdale, Ousegill	SE6399795110	SE6397994971	140	
2010	Hob Crag	SE7138195441	SE7131895441	0	First nest was reused.
2010	Sturdy Bank	NZ6988800004	NZ6987000054	53	
2010	Reeking Gill cutting	NZ6879000661	NZ6885600683	69	
2011	Reeking Gill	NZ6915200719	NZ6916800713	17	
2011	Dalehead west	NZ6792700814	NZ6793700793	23	
2011	Sturdy Bank	NZ6986900050	SE6986899936	114	
2011	Dalehead quarry west	NZ6829600847	NZ6829600847	0	2nd nest on top of 1st nest.
2011	Nab Scar north	SE6945099957	NZ6943800004	48	
2012	Sheriff's Pit north/Sheriff's Pit	SE6967796429	SE6972596266	168	2nd nest as used in 2011.
			Mean Distance	**90.5**	metres
			Median Distance	**50.5**	metres

5. DISCUSSION

5.1 Weather Conditions

March
March was one of the warmest, driest and sunniest on record. With less than 10mm of rain falling on the North York Moors at the beginning of the month, the remainder was dry with many areas having little or no rain. The dominant feature in the second half of the month was the anti-cyclonic conditions that developed over the Bay of Biscay around the 20th of the month. This slowly moved north and east and dominated the weather pattern for the remainder of the month. With light winds from the south-west the conditions were near perfect for birds migrating from southern Europe. Shorts and T-shirt were called for during the last week when temperatures rose above 20c on three consecutive days.

April
The start of the month saw temperatures return to the seasonal norm when the anti-cyclonic conditions that had dominated the second half of March gave way to a deep low centred over Scandinavia. This saw a change in wind direction to the north-east and a heavy fall of snow on the night of 3/4th caused widespread disruption. In Rosedale around 10cm covered the ground above 200 metres with drifts up to 60cm. Low pressure dominated the weather for the remainder of April with the month proving to be the wettest on record. Most days saw significant rainfall with heavy falls occurring towards the end of the month. Temperatures remained low for most of the month, seldom rising above 10 degrees Celsius.

May
The month continued unsettled with temperatures continuing to be below the seasonal norm until the last week when a mini heat wave saw temperatures exceed 20c on several days. The month's extremes were marked with a severe frost on the 6th when the mercury dropped to -5c and rose to an uncomfortable +24c on the 28th. But the main talking point of the month was the seemingly endless days of rain that exceeded 5mm for 10 of the 31 days, peaking close on 20mm on the 9th.

June
June proved to be the wettest on record with low pressure dominating the weather pattern for most of the time. Many areas of the country experienced severe flooding with some parts having a month's rainfall in just 24hrs. Locally over 100mm of rain fell during the month with the15th seeing in excess of 20mm. Temperatures remained below the seasonal norm for most of the month with only the last week seeing the mercury climb to 20c before dropping back.

July
The month continued to be cool, wet and dull over much of the country. Locally over 100mm of rain fell in the first three weeks. Daytime temperatures were below average for much of the month, only rising to a more seasonal norm in the later part when the thermometer recorded daytime highs above 20c between the 21st and 25th before dropping back to finish up where the month began at around an un-seasonal 15c.

Graphs of temperature and rainfall between April and July are shown at **Annex 5**.

5.2 First Arrivals

The first ring ouzel to be recorded in Rosedale in 2012 was seen on 21st March at Reeking Gill; the earliest recorded and two days earlier than in 2011 (Figure 5).

A singing male was seen on the 27th March at Nab Scar north, whilst the first female to arrive was seen at the south end of Dalehead quarry on the 29th March.

By the first week of April pairs had been seen at Hob Crag and Round Hill, both long established breeding sites. In the second week of April mixed flocks were seen at both Bank Top (7m, 2f) and East Mines (10m, 1f), the first time such large gatherings had been recorded which time wise suggested they were likely to be Fenno-Scandia passage migrants (see 5.5, Pg. 22).

The first arrival noted in Bransdale was a single male on the 25th March at Ousegill Bridge; four days earlier than 2011. On the same date a male was seen on Kepwick Moor on the western edge of the North York Moors.

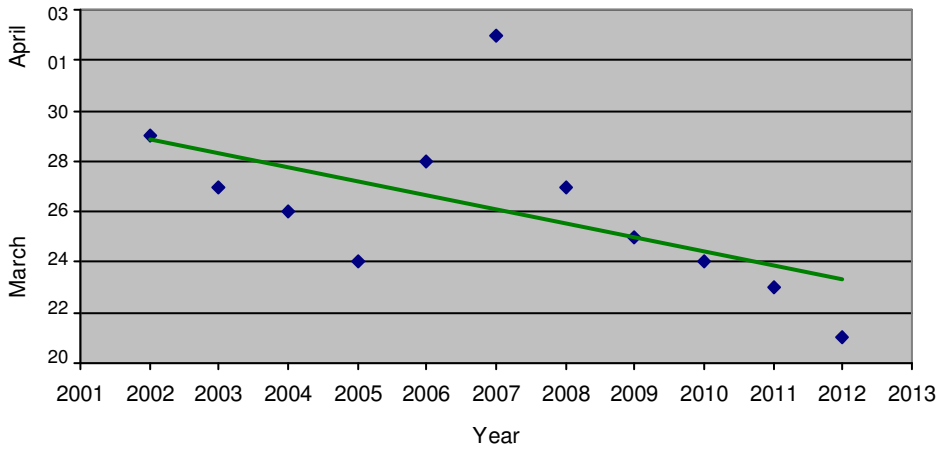

Figure 5: First-arrival date and 11 year trend for the Rosedale area of the North York Moors for the period 2002-2012.

5.3 Rosedale Territories and Nests

Twenty-three ring ouzel territories were recorded in 2012 in the Rosedale area of the North York Moors; by far the best year since the study began in 1999 and a considerable increase on the low point of nine just three years earlier in 2009. All territories, apart from Spaunton Knowl, had been occupied before and some, such as Hob Crag, Sheriff's Pit, Reeking Gill and Sturdy Bank, almost annually since 1999. A total of 34 territories have been recorded in the Rosedale area between 1999-2012 (Table 1). The location of the 2012 territories is shown at **Annex 1**.

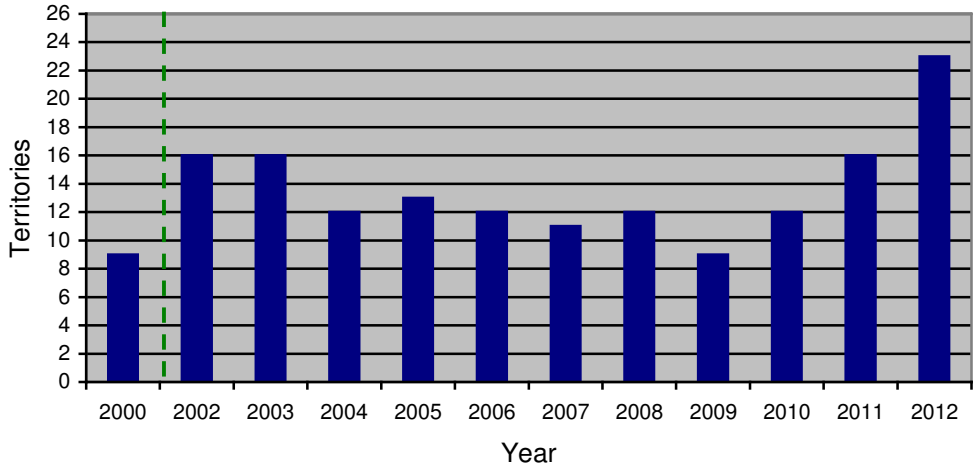

Figure 6: Territories recorded in the Rosedale area of the North York Moors Between 2000 and 2012. (foot & mouth prevented field work in 2001)

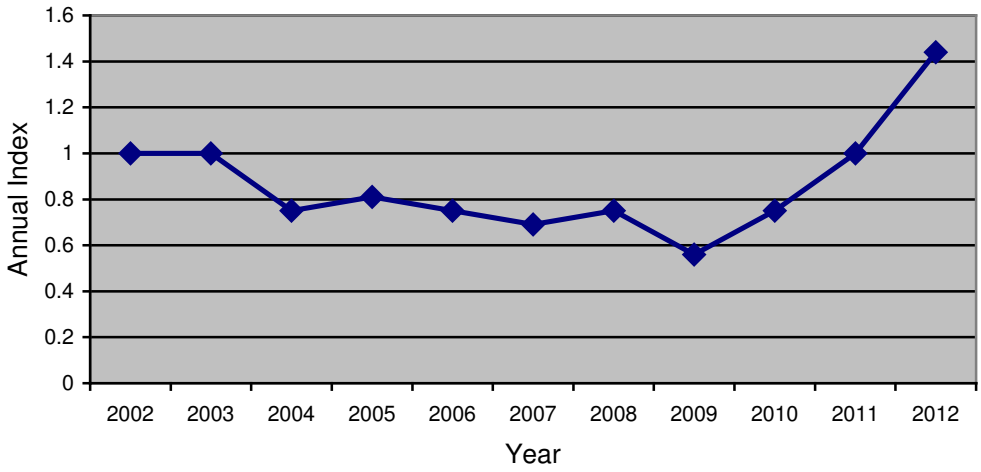

Figure 7: Annual indices of territories recorded in the Rosedale area of the North York Moors between 2002 and 2012; referenced to 2002.

5.3.1 Bank Top and Bank Top East

The territory at **Bank Top** was used for the first time last year following a long period between 2004-2010 when no breeding occurred in this area. Between 13th April and 14th May frequent sightings of both male and female birds were seen around the derelict kilns and on the grassy slope midway down the old railway incline, with the male seen on the 23rd April and 10th May singing loudly from the top of a mature tree adjacent to the nearby cottages. Despite attempts to locate the nest nothing was found and followed a similar failed attempt last year. About 500m east of the kilns at **Bank Top east** a male was heard/seen singing from a tree towards the bottom of the incline on the 12th, 19th and 23rd April; the same location that a male was heard singing in 2011. On the 23rd April both the Bank Top and Bank Top east males were heard singing together and was to be the last time that the Bank Top east male was seen or heard. As a consequence of the short appearance at this site Bank Top east was not recorded as a territory in 2012.

5.3.2 Blakey Lion Inn

Following reports of repeated sightings of Ring Ouzels by a local dog walker the track below the Lion Inn at Blakey was cold searched on15th May, a wet and windy day. Working south produced no reward so retracing our steps we carefully checked the heather clad west bank as we worked our way north again and quite soon a female flew out of the heather to disclose a nest containing 5 eggs. Closer examination later showed that the current nest had been built on an old nest and another old nest was alongside.

Finding the nest at the 5th egg stage gave no clue to the hatching date and many visits were required until 3 newly hatched chicks and 2 eggs were found in the nest on 25th May. This indicated that she probably began sitting on the 3rd egg on 12th May with the first egg being laid on 10th May. There were 4 healthy chicks on 4th June and 3 possibly 4 chicks on 6th June. A discrete check with binoculars at around 8:30am on 7th June showed three very alert chicks still in the nest. It was not approached as fledging was imminent but later in the afternoon a further inspection showed two chicks had fledged leaving one in the nest and about to fledge.

On 28th June three well grown juveniles were still present within 50 metres of the nest site. An inspection of the nest in early July revealed one egg left that was presumably infertile.

5.3.3 Dalehead north

This was the site of a successful nest in 2011 but sightings were even scarcer here than at Dalehead west. Dalehead north lies in one of the tetrads chosen for the National Ring Ouzel Survey in 2012 and there were no contacts or response to the lure at this site during the first survey on 1st May. During the second survey visit to this tetrad on 12th June there was again no response to the lure at the playback point close to this site. Shortly afterwards as a lone walker

walked across the trackless moor high on the west side of the gill, chacking was heard and a male Ring Ouzel was eventually located on heather low down in the gill from where it flew out over the track. A female then appeared and crossed to a shooting butt on the east side chacking agitatedly. Their behaviour strongly suggested a nest or young nearby but frustratingly there were no other sightings.

5.3.4 Dalehead quarry

Nests were located in the disused quarry at Dalehead in 2010 and 2011 but although a pair was present in this territory in 2012, efforts to locate the nest were frustrated.

Hopes were raised with the sighting of a female at the south end of the quarry as early as March 29th but there were only two other sightings in April, a male feeding at the north end on 10th and a female at the south end on 30th.

May was much more promising and a pair was in the prime feeding area at the north-west corner on 8th. A check in the vicinity of the old nest site on 15th May was disappointing and there was no evidence of a nest at this end of the quarry but a male sang tantalisingly at the south end of the quarry on both 15th and 16th. A male was singing here again on 24th and 29th with a female also present but giving only fleeting glimpses as she moved between the foraging areas, the trees and the wall of the quarry. It is possible that the nest was on the inaccessible cliff face which was well screened by trees and shrubs. Observation was further complicated by Blackbirds also nesting there.

There were no further records in June or July.

5.3.5 Dalehead west

There was deep snow in Rosedale on 5th April and snow patches were still present when a female was briefly seen in the vicinity on 10th April. Although a male was present on 25th April there were frustratingly few Ring Ouzel sightings at Dalehead throughout the month. It was still only 8ºC as fog cleared mid morning on 30th April when two very lively stoats were observed being harried by agitated Meadow Pipits on the approach to Dalehead west. After watching from cover for 30 minutes and no sign of Ring Ouzels a cold search of the area revealed 4 eggs in the refurbished 2nd nest of the Dalehead pair which successfully reared two broods here in 2011. There was still no sign of adults so the area was quickly vacated. On a return visit on 4th May a quick check confirmed a growing suspicion that the eggs were cold. Four cold eggs still present on 15th May removed any faint hope that the nest had not been abandoned.

A stoat was in the Dalehead west area again on 23rd August.

5.3.6 East Mines

The remains of miners' cottages and workshops are a prominent feature at East Mines and Ring Ouzels are recorded here in most years especially early in the season. It appears to be a good foraging area but perhaps rather lacking in potential nest sites typical of Rosedale and we have yet to locate a nest. During the third week in April from two to eight, mostly male Ring Ouzels were noted here, but the rest of the month only produced single sightings of males on three occasions. The first three weeks in May were more promising with pairs noted on three occasions and two pairs on a couple of occasions. Despite much patient observation and some targeted searching no nest was found. Then on 17th May a female with a beak full of worms was encountered. She did not appear to be disturbed but flew east very high and then banked north-east and was lost to view. The East Mines puzzle was further complicated by a sighting from the car on 20th May when a male flew east to west across the road that separates Rosedale from North Dale. It flew fast and very low to the ground as seen on previous occasions leaving East Mines. This hints at possible movement between nest sites at West Gill, North Dale, and feeding areas at East Mines a distance of over 1km.

5.3.7 Hob Crag

A pair arrived at this site on the 2nd April and remained in the vicinity of the disused quarry until 21st May. The male was heard singing on several occasions over a six-week period, usually from the trees below the quarry in the dale bottom. Despite efforts to locate the nest nothing was found and although several visits were made to the site throughout June no further sightings of the pair

were made until the 24th July when the gamekeeper reported seeing two adults feeding a fledgling 200 metres north of the quarry. This sighting was remarkable for the lateness of the clutch which pointed to the first-egg being laid some time around the 25th of June, making it the latest recorded since the study began and most likely as a consequence of the cold wet conditions that persisted well into June.

5.3.8 Matty Carr quarry

A pair were seen in the quarry on the 26th April, the male singing for five minutes or so from a tree at the north end of the quarry. The male was heard singing on the 10th May from a tree at the south end of the quarry and again on the 17th, 19th and 24th May. On the 4th June two birds, thought to be juveniles, were disturbed in the central part of the quarry and flew off chacking towards the dale bottom. The female was seen on the 14th June and again on the 19th while the male was observed singing at the north end of the quarry on the 16th June and from a tree below the quarry in the dale bottom on the 19th June. Further sightings of the male in the quarry area were made on the 28th June and on the 2nd July. On the 5th July the male was heard singing from a rowan tree at the south end of the quarry and a search of the quarry later located a nest in a niche on the quarry wall containing two pulli; the female flying off the nest when approached. A check of the nest on the 8th July found the adults going to the nest with food and two pulli at the day five stage with their eyes still closed. A further check on the 12th July found the nest predated.

The nest site was previously used in 2005 and was located in a deep recess in the quarry wall about two metres above ground level. It was considered to be about as predator proof as is possible which suggests the predator was aerial; probably a corvid or possibly a kestrel. A pair of kestrels were resident in the area and had been observed close to the Matty Carr south nest site earlier in the season.

It was likely that the pair that nested in the quarry in July were not the same that were observed earlier in the season but most probably were the pair that nested at Marry Carr south whose nest was found predated on the 11th June.

5.3.9 Matty Carr south

On the 17th May a pair were seen about 150 metres south of the southern end of Matty Carr quarry while at the same time a male was seen/heard singing from a rock in the dale bottom just south of the quarry; the female was observed carrying nesting material to a prominent position high up on the daleside just a few metres from the disused railway track. A search of the area on the 24th May found the nest containing three eggs, the female flying off when approached. Further checks were made on the 31st May and 4th June when on each occasion the female left the nest and three eggs were seen. A visit on the 11th June found the nest had been predated; likely to be at the hatchling stage some time between day two and six.

5.3.10 Nab Scar north

On 27th May fledglings could be heard in the vicinity high on the Scar and the male appeared to be feeding them in at least two separate locations and one was seen to fly a short distance. He sang intermittently and then sat facing the hill side which seemed a little odd. Another male that appeared was quickly chased off and he again sat facing the bank. Patient observation was then interrupted by the sudden emergence from heather of a female which flew down below the track to feed. She emerged only about 1metre away from where the male was. The male hopped into the same heather. After about 8 minutes feeding she flew back about halfway up the Scar and as soon as the male came out of cover, she flew straight into heather and the male then flew down below track and out of sight.

Returning discretely later in the day to check the suspected location, the nest containing 4 eggs was located on a ledge in heather. The female was not present and again a fledgling was observed this time on the moor top above the nest. It is tempting to suspect that the fledglings were from an earlier undetected nest at Nab Scar north as a pair has been present in the vicinity throughout. Unfortunately the evidence is inconclusive as checks of Nab Scar south found no adults or fledglings from that site during the day so these may have dispersed to Nab Scar north or elsewhere.

There were still 4 eggs in the nest on 2nd June and both adults were present. All seemed quiet during the approach on 10th June but to our dismay the nest was empty and a small feather lay close by. Predation may have been very recent as the female then appeared and came to within 10m of us chacking agitatedly before flying off. Dates indicate that hatching had taken place and that chicks had been predated.

5.3.11 Nab Scar south

Last year's success in locating the first ever nests in Nab Scar territories was followed up on 23rd April this year when a female flew from below the track to a point high up on Nab Scar south, where with barely a pause she flew a few more metres straight into a clump of heather. She was left undisturbed whilst Nab Scar north was checked and on returning to confirm the site the female obliged by chacking out of the heather at only 3 metres to reveal a nest containing 4 eggs. When the nest was checked on 1st May there were only 3 eggs but no sign of any disturbance. There were snow and hail showers on Saturday 5th May but a check during one of the bright intervals found 2 newly hatched chicks and one egg.

This indicated a first egg date of 20th April the day when some unusual behaviour by the female had been noted. The pair was located at the south end of the scar, the female doing very little, moving only a few hops at a time and just pecking at the ground and appearing in almost a trance like state. The male gradually moved higher and sang quietly twice. Each time the female responded by moving a little higher up but in between she did very little but stare. At about 3m away he flew back down and then slowly worked up to her. As they moved along together at one stage he came close to her and she rebuffed him, chasing him away. Had she just laid the first egg?

Three chicks in the nest on 15th May confirmed that the third egg had hatched. The adults were still attending the nest on 17th and 18th May the day when fledging had been anticipated so the nest was not approached. Finally a visit on 19th May found the nest empty and 1 fledgling still very close by, only about 20cm away. This was the second nest this year to have fledged one day later than usual in Rosedale.

5.3.12 Reeking Gill

Towards the end of a long period of observation on 8th May a male was seen to fly from the east side of the gill and land near to two trees high up on the east side. Almost immediately a female flew to join him and then dropped straight into a clump of heather at the base of one of the trees. After a 30 minute wait for rain to cease and for two walkers to depart a steep climb was rewarded when a nest was located containing three newly hatched chicks and one egg. This was perfect timing and fledging was thus expected on 21st May. A careful approach on that day revealed 4 chicks still sitting tight. It was still windy on 22nd and all was quiet during a cautious approach. The male then flew over the east side of the gill and a fledgling could be seen next to an empty nest. On moving carefully away the male was seen to come and sit in the nearby tree making the high pitched sound used to warn the other fledglings presumed to be nearby. This is the third nest this year where fledging has been one day later than usual.

5.3.13 Reeking Gill cutting

Two days of rather wet surveying were rewarded when a female flushed from the railway cutting led to the discovery of a nest containing 4 eggs on 19th April. Occupied in three of the last five years this is a small territory and the nest was positioned between the first and second nest locations of 2010. Three newly hatched chicks and one egg were found in the nest when it was checked on 2nd May indicating a first egg date of 16th April. As fledging was imminent the nest was not approached on 15th May but from the track chicks could still be seen in the nest. On 16th May the nest was empty and the male was observed carrying food into the cutting where fledging had taken one day longer than usual in Rosedale.

5.3.14 Reeking Gill south

The location of nests has been very difficult in this area sandwiched between the two popular nest sites at Reeking Gill and two popular nest sites at Nab Scar. Some birds observed here are certainly from neighbouring territories but not all. The situation is further complicated as the area

below the track here is used for communal feeding. Although no nest was found there is strong evidence of an occupied territory here in 2012. Pairs were observed in this area on 9 days in the second half of April. On 25th April 2 males engaged in a vertical flight dispute here, one eventually retreating southwards. The nesting male from Reeking Gill was observed counter singing with a male located at Reeking Gill South on 24th and 27th May. Single birds were also seen here on 11 days during May and early June, and pairs were located on 4 days. A male sang here on 5 days between 24th May and 2nd June and intriguingly a female was seen carrying nesting material on 1st June.

5.3.15 Round Hill east

A pair was seen several times between the 2nd April and 28th May in the area close to the 2010/11 nest site. On 16th April the female was seen prospecting for a nest site with the male in close attendance. Again on the 23rd April the female was seen with a beak full of nesting material close to where she had been observed on the 16th while at the same time the male was seen singing from atop a nearby holly bush while the Round Hill south bird was singing some 150 metres to the south. The nest appeared to have been located below the holly bush in an area that was considered unsafe to search and as such was inaccessible.

5.3.16 Round Hill south

A male was heard singing for over an hour from the meadow below Round Hill on the 10th April. On the 23rd April a pair was observed in the meadow area while on the 26th April a male was heard singing in the vicinity of the meadow at the same time that a male was heard singing at Round Hill east. A male was seen in the vicinity of a small track-side quarry on the 30th April and on approaching the quarry a female flew out across the track towards the dale bottom chacking loudly. Later in the day the quarry was again looked at and a female was seen at the back of the quarry looking as though she was prospecting for a suitable nest site. On approaching the quarry on 7th May a female flew out of a heather overhang and a quick search found a nest with 4 eggs.

Inspecting the nest on 14th May found four pulli that had hatched that morning. Both adults were seen collecting food in the meadow some 400 metres from the nest and flying to the nest. The nest was checked again on the 17th May and four pulli were seen with their eyes still closed. A further inspection on the 21st May found the nest predated.

There are several of these small quarries by the track-side but this was the first time that one had been used for nesting. However, they are less than ideal as nest sites as they are attractive to passing walkers as a place to shelter and to use for other unmentionable activities.

5.3.17 Round Hill west

The first male was seen at this site was on 10th April when a single bird was disturbed close to the track near last year's nest site. On the 26th April a male was heard singing in the vicinity of the 2011 nest site but could not be located. Again on the 17th May a bird was heard chacking from the dale bottom but was not located. Passing close to the 2011 nest site on the 24th May a female flew out of the heather bank on the west side of the track where last year's nest was found. A quick search located a newly refurbished 2011 nest containing four eggs. On the 4th June the nest was checked and three pulli were seen that looked as though they had hatched that morning. The fourth egg could not be seen and was assumed to be underneath the hatchlings. Further brief visits to the nest were made on the 7th and 11th June when three pulli were counted. On the 14th June the nest was again checked and this time four pulli were counted. On the 19th June both adults were seen in the dale bottom around 50 metres from the nest collecting food, at one point a fledgling was seen flying from a low branch of a tree to join the female.

Inspecting the nest later that day found a dead pullus that from the stage of the feathers development suggested it had died in the nest at around day 8. The cause of death was not obvious but it was clearly too big for the adults to remove and so remained in the nest with the other three for around a week before the others fledged.

5.3.18 Sheriff's Pit

Over the years the area around the disused pit shaft has proved to be popular breeding site for ring ouzels and 2012 was no exception. A pair were first located on the 7th May when their

behaviour in an area some 170 metres north of the shaft suggested there was a nest nearby. A search of the area where a pair was seen entering a prominent clump of heather found a nest with four pulli that were estimated to be one day old. Returning on the 17th May the male was seen collecting worms from the grassy area by the mine shaft and an inspection of the nest while the adults were away found four healthy young about a day from fledging. On the 19th May the male was seen with a beak full of worms going into the heather about two metres from the nest; a later check found the nest empty. The close proximity of the fledglings to the nest suggested they had left that morning.

An interesting observation was that the female if disturbed while on the nest would drop to the ground and scuttle off through the heather and remain hidden instead of, as most do, flying off the nest to a point some distance away.

The pair remained in the vicinity of the pit shaft and most days when the site was visited the male could be seen singing from atop the security fence post. A look into the shaft on the 28th May found the female perched on the edge of a near complete nest that was being built on the same spot as that used in 2011; nine days after the first nest fledged. Viewing into the pit shaft is difficult at the best of times and has to be done from a distance of 10 metres or more through a scope, for that reason it was not possible to see if last year's nest was being refurbished or built on. On 31st May the end of one egg could just be seen when viewed through binoculars. Observing from a distance on the 23rd June both adults were watched over a two hour period going to the nest with food and later, when both were away from the nest, a quick look through the scope revealed two pulli that appeared to be close to fledging. A visit on the 25th June found one fledgling 30cm from the nest looking as though it had fledged that morning, while a few metres outside the safety fence on the north side of the shaft the male was seen going into the heather as if feeding young.

In contrast to some adults both Sheriff's Pit birds tended the young in equal measure with the male being particularly attentive during the hatchling stage. The use of last year's nest site for the pairs second nest points to the female being the same one as nested in the pit shaft last year. The female looked to be a second or third year bird with a gorget that in certain light made the two adults difficult to distinguish apart.

5.3.19 Sledge Shoe

This territory has been occupied most years since 1999. The first male in 2012 was seen in the dale-bottom on 10th May flying into a tree and chacking. On the 24th May a male lifted from the trackside flew into the dale bottom where it gave a short burst of simple song. Later in the month on the 31st a male was heard singing for over 15 minutes from a location just north of the earlier sightings and again on the 7th June. On 11th June a male and female were seen in the dale-bottom, the male singing briefly while the female was seen tugging at a worm before both disappeared into the bracken and out of view. Both were seen together on the 19th June foraging in the dale bottom while later on in the day the male was herd singing for five minutes or more from a tree at the south end of the territory. There were no further sightings after 19th June.

5.3.20 Spaunton Knowl

An email was received from David Williams reporting the discovery of a nest on the 24th May containing three naked pulli. The NGR was given as SE717918 and the location as a hollow just off the east side of the Hutton le Hole to Rosedale Abbey road near a place known as Spaunton Knowl. The finding was remarkable in that the nest was located below the 200 metre contour (250m is regarded as the lowest on the North York Moors) in an area where breeding ring ouzels have not been recorded before. The nest site was just over one kilometre south of the nearest known site at Spindle Thorn; which lies on the 250 metres contour. Other than the low elevation of Spaunton Knowl site, the habitat is generally regarded as being suitable for breeding ring ouzels. This record is a reminder as to just how wily ring ouzels can be, the site having been passed on many occasions at various times of the day during the breeding season without a hint of a pair breeding there.

5.3.21 Spindle Thorn

This territory was last occupied in 2008 and before that in 2002. It lies just on the 250 metre contour and is considered to be at the lower end of the elevation that ring ouzels choose for breeding on the North York Moors.

The first sighting was on 21st April when a male was seen pursuing another male westwards towards Loskey Beck. The next sightings were not until the 10th and 11th May when a male was seen on both occasions in the solitary thorn bush on the east side of the road.

In the early evening of the 16th May a female was seen flying a short distance across the road from the east side to the west; the only time that a female was seen in this area.

On the 24th May a male was seen in the thorn bush singing while on the 31st a brief chack was heard from near the thorn bush but was not seen.

5.3.22 Sturdy Bank

On 23rd April a female was watched for about an hour collecting nest material and flying to a heather clump close to a holly sapling. She flew several times to east side of gill to collect pieces of dry grass, some about 4-6 inches long, returning to the site on the west side. These forays alternated with dropping down to the ground immediately below the site presumably to collect mud and back up again. She chacked once when a walker stopped on the track but our presence about the same distance away but higher up the gill provoked no response. We left without approaching the nest but later in the day all was quiet and the basic shape of the nest with no real substance to it could be seen in the heather to the side of the holly sapling. The basic structure of the nest had been made using pieces of dead bracken which had been bent round.

On 24th April the female continued to build the nest. She flew into heather from the east side and was in there for about 1 minute. On leaving she chacked and flew back to east side returning a minute later. She did this twice with same timings. The next time she remained there for about 15 minutes the heather around the nest occasionally shaking. She flew over to the east side and stayed there for at least 10 minutes during which time walkers were passing through on the track. She continued to chack as more walkers paused before passing through. After 30 minutes when all was quiet the nest was approached and there was no sign of male or female. The nest now had more structure with plenty of mud and grass and a piece of dry bracken protruding from the left side of the nest. It was at least twice as deep as a completed nest. The area on the ground below the nest which the female had repeatedly visited on the previous day was composed of very wet exposed shale and presumably she was able to get mud here.

April 25th was the third day of nest building and it was nearing completion. Still quite a deep nest it had reduced somewhat as she filled it in and lined it. Only a little more lining and some tucking in seemed to be needed. The piece of dry bracken was still protruding from the nest.

On 26th April the adults were feeding below the track and after 20 minutes of careful observation the nest was approached and appeared to be complete with old bracken leaves now covered with more lining.

The next visit on 27th April revealed that the first egg had been laid. This rare opportunity to observe nest building progress had involved more frequent visits than normal so the nest was not visited again until 5th May when the female flushed at 3m to reveal 4 eggs.

On 9th May the adults chacked from high up the gill before flying south over the wall and on out of sight. Slightly concerned at this an unscheduled check of the nest revealed 4 cold eggs. This had happened last year and chicks had still hatched so the situation was not hopeless but cold eggs on 11th May sadly confirmed that the nest had been abandoned, one day before hatching would have been expected.

5.3.23 Thorgill Bank

This territory was occupied last year when a nest was found in a narrow gully just to the west of the disused quarry. Previous to that the site was occupied in 2006/03.

A male was first seen in the area on 12th April. On the 16th and 23rd of April he was seen singing in the solitary bush just below the quarry.

The next sightings were on the 7th and 14th May when again he was seen singing from the same bush. It was not until the 21st May when the male was seen singing on the cairn near the

quarry entrance that a female was seen lower down the dale feeding. Later in the day the female was located in the grassy area close to the 2011 nest site. There were no further sightings after that date. Despite an extensive search of the area, including the old 2011 nest site, the nest could not be located.

5.4 Nest Construction

The Sturdy Bank report above chronicles the construction of a nest over a four-day period; an activity which before was thought to have been accomplished in a single day. It is considered to be the first time that the various stages of nest construction have been photographed. The sequence taken between the 23rd and 27th April is shown at **Annex 6**.

A look at other publications provides few clues as to the typical length of time taken by the genus *Turdus* to construct a nest. In Ian Appleyard's, Ring Ouzels of the Yorkshire Dales, there is no information on the length of time taken to complete a nest and in Eric Simms, British Thrushes, mention is made of: "The first nests of the season may be built in a somewhat leisurely fashion, a song thrush taking twenty-four days… a mistle thrush more than a fortnight and… a blackbird up to sixteen days". There was no mention of ring ouzel in this regard.

Measured against Simms observations the first nest at Sturdy Bank was constructed quickly in taking around 4 to 5 days to complete.

5.5 Passage Migrants

Two separate flocks of ring ouzels that were most likely Fenno-Scandia migrants were seen at East Mines on the 15th, 18th and 19th April and at Bank Top on the 12th and 16th April. The count at East Mines peaked at 10 males and one female on the 15th while those at Bank Top peaked seven males and two females on the 16th. A reported sighting of a single male on 13th April at Birchwath on Egton High Moor (NZ785020) was also thought to have been a passage bird - a closer look at the area on 3rd May when the lure was used found no evidence of breeding ring ouzels and the area generally appeared to be unsuitable for breeding. On 6th May seven ring ouzels were seen at RAF Fylingdales on Lockton High Moor (SE865965); a traditional stop over place for Fenno-Scandia passage birds. A single male likely to be a returning Fenno-Scandia bird was seen on 19th October feeding on rowan berries at Dundale Griff (SE835918) on Levisham Moor.

Coastal sightings in April were recorded at Long Nab (TA030940) on the 16th, when eight were seen, while at Ravenscar (NZ973012) a single male was seen on the 22nd and three on the 26th. In May a male was seen at Cornelian Bay (TA065860) on the 4th and a female at Ravenscar on the 5th. Return migrants were recorded throughout October with a peak count of six at Long Nab on the 22nd that coincided with strong easterly winds.

5.6 Late Summer Activity

As in previous years a late season visit was made to Rosedale specifically to locate ring ouzels prior to migration. On 13th August all sites at the north end of the dale were visited but with no sightings of ring ouzels. A search on the 20th August had no success either other than a distant sighting of four mistle thrushes feeding in a rowan tree at the north end of Blakey Swang. The impression was that the Rosedale ring ouzels had left the dale; no doubt as a result of the poor crop of berries to be found on the rowan trees this year.

The switch to a berry diet is an essential part of the ring ouzels preparation for migration. The 2012 season was marked by the lack of ripe rowan berries at the key time of late August early September. The trees that had berries were found to be of poor quality and did not fully ripen until well into September. Many rowan trees were found to have fewer berries than normal with some of the older trees having none. The younger trees appeared to do better but crop yield for those that had berries was in general lower than previous years.

6. ACKNOWLEDGEMENTS

The authors wish to acknowledge the support of estate owner George Winn-Darley and head keeper George Thompson. Also to Mick Carroll, Tom Denney, Chris Tyas and David Williams for reports of ring ouzel sightings during the 2012 season. Our grateful thanks to all of them.

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ANNEX 1 - Map of Nest Sites and Territories in the Rosedale Area in 2012

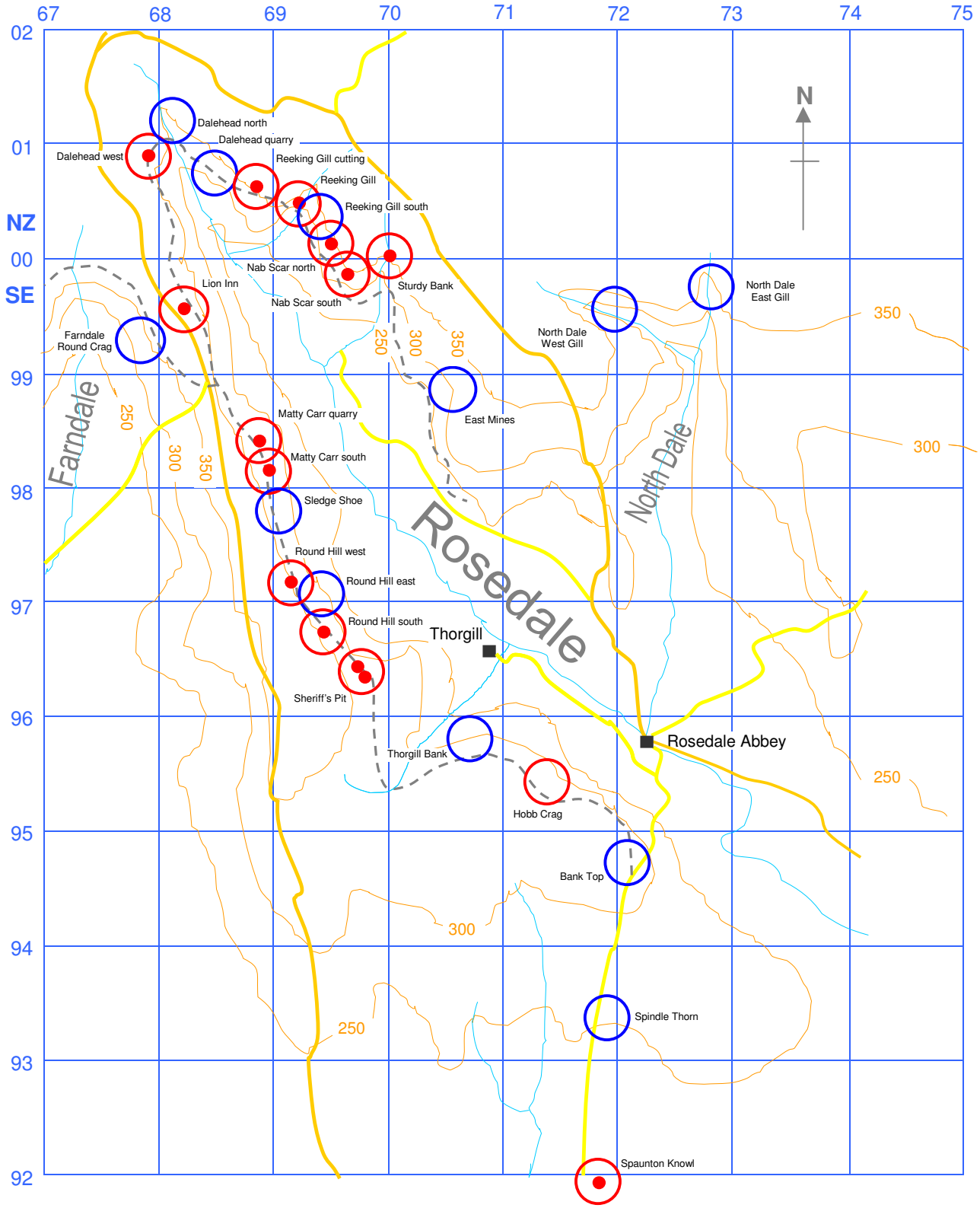


Diagram 1: Ring ouzel nest sites and territories where Confirmed or Probable breeding was recorded in the Rosedale area of the North York Moors in 2012.

Nest Site.

Territory where Confirmed breeding was recorded.

Territory where Probable breeding was recorded.

ANNEX 2 - Map of Sightings on the North York Moors in 2012
(Other than the Rosedale area & passage migrants)

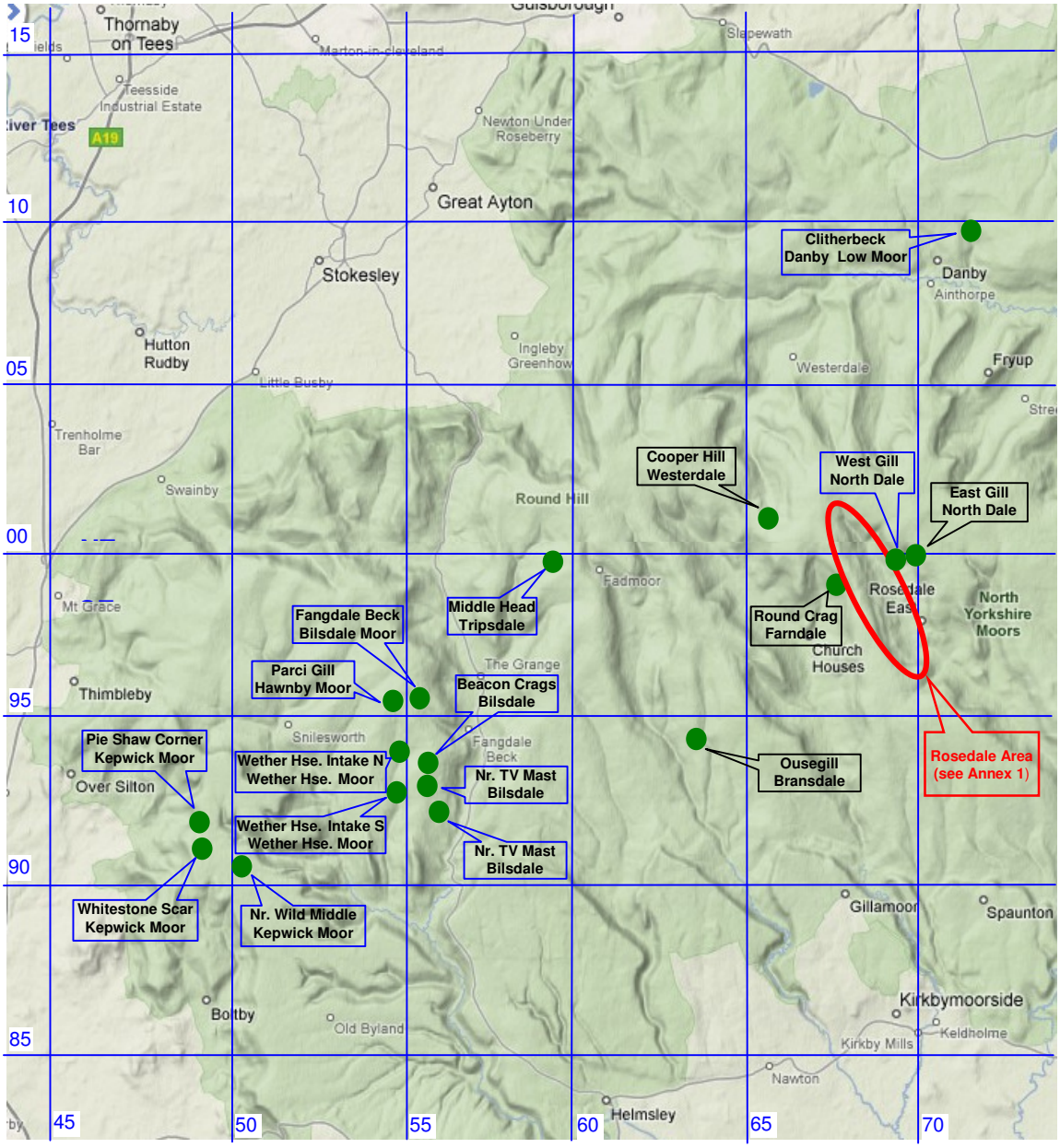


Diagram 2: Sightings of Ring Ouzels on the North York Moors in 2012 other than the Rosedale area and passage migrants. Blue text box indicates sightings recorded during the 2012 National Ring Ouzel Survey.

ANNEX 3 - Table of Annual Breeding Results from 2000 to 2012

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 2012.

Year	Site	Grid Ref.	Eggs	Hatched	Fledged	Comments
2000	Spaunton Moor - Pen Wash	SE71479347	4	4	4	1st brood. 4 pulli ringed.
2002	Bank Top	SE72049483	+	4	4	Likely to be 2nd brood.
2003	Ouzegill Bdg.	SE63709450	4	4	4	1st brood. 4 pulli ringed.
2003	Round Hill	SE69279710	4	4	4	1st brood
2003	Thorgill Head	SE69999559	4	3	0	1st brood. Nest disturbed, chicks abandoned.
2003	Thorgill Bank	SE70729582	4	3	3	1st brood. 3 pulli ringed.
2003	Thorgill Bank	SE70729582	2	1	?	2nd brood. Likely to have failed at pulli stage.
2003	Spaunton Moor - Pen Wash	SE71489347	4	+	0	1st nest. Predated at pulli stage.
2003	Hob Crag	SE71459538	4	0	0	Likely to be 1st 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 1st brood.
2004	Dale Hd East	NZ68560086	4	4	4	Likely to be 2nd brood.
2004	Ouzegill Bdg.	SE63909470	2	1	?	1st brood. 1 egg vanished. 1 pulli ringed.
2005	Sheriff's Pit 1st	SE69659631	+	1	0	1st nest. Nest abandoned; reason unknown.
2005	Sheriff's Pit 2nd	SE69659631	+	0	0	2nd attempt. Predated at egg stage.
2005	Sheriff's Pit 3rd	SE69659631	+	3	2	3rd nest.
2005	Matty Carr quarry	SE68809835	4	4	4	Thought to be 1st brood.
2005	Lion Inn	SE68249954	+	4	4	Likely to be 2nd brood.
2005	Dale Hd West	NZ67960082	+	+	3	3 fledglings seen near nest.
2006	Sheriff's Pit 1st	SE69659631	4	0	0	Nest on NW side of pit shaft washed out by heavy rain in mid May.
2006	Sheriff's Pit 2nd	SE69779609	5	5	5	2nd attempt 185m south of pit shaft.
2006	Dale Hd West	NZ67930081	4	+	+	Likely to be 2nd brood. Not known if hatched or fledged.
2007	Hob Crag	SE71459538	3	0	0	1st nest. Predated at egg stage.
2007	Round Hill Sth	SE69819663	4	4	4	1st nest.
2007	Dale Hd West	NZ67940079	4	4	4	1st nest.
2007	Reeking Gill	NZ68920066	4	4	4	1st nest.
2008	Sturdy Bank 1st	SE69899991	4	4	4	1st nest.
2008	Sturdy Bank 2nd	SE69869990	4	4	3	2nd nest.
2008	Round Hill Sth	SE69819664	4	4	4	1st nest. Used refurbished 2007 nest.
2008	Reeking Gill	NZ69140056	5	5	5	1st nest.
2008	Northdale, W. Gill	SE71799957	+	+	3	1st nest.
2008	Hobb Crag 1st	SE71449539	4	4	0	1st attempt. Predated at pulli stage. Used 2003/4 nest site.
2008	Hobb Crag 2nd	SE71399545	3	0	0	2nd attempt. Predated at egg stage.
2008	Sheriff's Pit	SE69719626	4	4	4	1st brood.
2008	Dalehead Nth.	NZ67950102	4	1	0	Likely to be 2nd attempt. Failed after 1st hatchling. 1egg left in nest.
2009	Dale Hd West	NZ67940079	4	4	4	1st nest.
2009	Sturdy Bank	SE6987 9991	4	4	3	Likely to be 1st nest.
2009	Round Hill Sth	SE69539674	4	4	4	1st nest.
2009	Reeking Gill	NZ69240076	+	+	3	1st nest.
2009	Sheriff's Pit	SE69729627	+	5	5	2nd nest. 1st nest at Round Hill Sth.
2010	Ouzegill 1	SE64009511	4	4	3	1st nest. 1 left early & died near nest.
2010	Ousegill 2	SE63989497	5	3	0	2nd nest 140m sth of 1st nest. Predated at pulli stage. 2 eggs left.
2010	Ousegill Bridge	SE63929444	5	0	0	Likely to be 2nd nest. Predated at egg stage.
2010	Sturdy Bank 1st	NZ69890000	3	3	3	1st nest.
2010	Sturdy Bank 2nd	NZ69870005	3	0	0	Predated at egg stage.
2010	Reeking Gill	NZ69080068	+	4	4	1st nest.
2010	Reeking Gill cut 1st	NZ68790066	4	4	4	1st nest.
2010	Reeking Gill cut 2nd	NZ68860068	+	3	**3**	2nd nest 69m east of first nest.
2010	Hob Crag 1st	SE71389544	+	4	4	1st nest.
2010	Hob Crag 2nd	SE71389544	+	4	**2**	2nd nest using same nest as 1st nest.
2010	Sheriff's Pit	SE69739627	+	3	3	1st nest.
2010	Round Hill (central)	SE69439690	+	4	4	1st nest.
2011	Hob Crag	SE71239557	+	4	4	1st nest.
2011	Round Hill east	SE69459685	+	4	4	1st nest.
2011	Round Hill west	SE69269706	4	4	4	1st nest.
2011	Matty Carr quarry	SE68809836	4	4	4	1st nest.
2011	Ousegill Bridge	SE63969475	4	0	0	1st nest. Likely to have been predated at egg stage.
2011	Sturdy Bank 1st	NZ69870005	3	3	3	1st nest.
2011	Sturdy Bank 2nd	SE69879994	4	3	0	2nd nest. Nest predated. 1 egg unsure if hatched.
2011	Nab Scar north 1st	SE69459996	4	4	4	1st nest.
2011	Nab Scar north 2nd	NZ69440000	4	3	3	2nd nest. One egg left in nest.
2011	Reeking Gill 1st	NZ69150072	4	+	+	1st nest. Fledged; assumed all 4 left nest.
2011	Reeking Gill 2nd	NZ69170071	5	5	5	2nd nest.
2011	Dalehead west 1st	NZ67930081	4	3	3	1st nest. One egg left in nest.
2011	Dalehead west 2nd	NZ67940079	4	3	3	2nd nest. One egg left in nest.
2011	Dalehead qrry west 1st	NZ68290085	4	4	4	1st nest.
2011	Dalehead qrry west 2nd	NZ68290085	4	+	0	2nd nest. Nest predated at chick stage.
2011	Dalehead east	NZ68650075	4	4	4	Likely to be 2nd nest.
2011	Dalehead north	NZ68050125	+	4	4	1st nest.
2011	Thorgill Bank	SE70669580	4	4	0	2nd nest. Likely to have been predated at chick stage.
2011	Sheriff's Pit	SE69739627	+	2	2	Likely to be 2nd nest.
2012	Reeking Gill cutting	NZ68810067	4	4	4	1st nest.
2012	Nab Scar south	SE69499988	4	3	3	1st nest. 4 eggs laid, 1 removed.
2012	Sturdy Bank	SE69859996	4	-	-	1st nest. Nest abandoned at egg stage.
2012	Dalehead west	NZ67940080	4	-	-	1st nest. Nest abandoned at egg stage.
2012	Sheriff's Pit north	SE69689643	4	4	4	1st nest.
2012	Sheriff's Pit	SE69739627	+	+	2	2nd nest.
2012	Round Hill south	SE69449670	4	4	0	1st nest. Nest predated at chick stage.
2012	Reeking Gill	NZ69190066	4	4	4	1st nest.
2012	Blakey Lion	SE68239960	5	3	3	1st nest. 2 fledged 7/6 & 1 fledged 8/6.
2012	Matty Carr south	SE68889818	3	3	0	2nd nest. Nest predated at chick stage.
2012	Matty Carr quarry	SE68809835	+	3	0	Likely replacement 2nd nest from Matty Carr south pair.
2012	Round Hill west	SE69269706	4	4	3	Likely to be 2nd nest. One pulli died naturally in nest.
2012	Nab Scar north	NZ69430006	4	0	0	2nd nest. Nest predated at egg stage.
2012	Spaunton Knowl	SE71709180	+	3	?	1st nest. 3 naked pulli on 24/5. Outcome unknown.

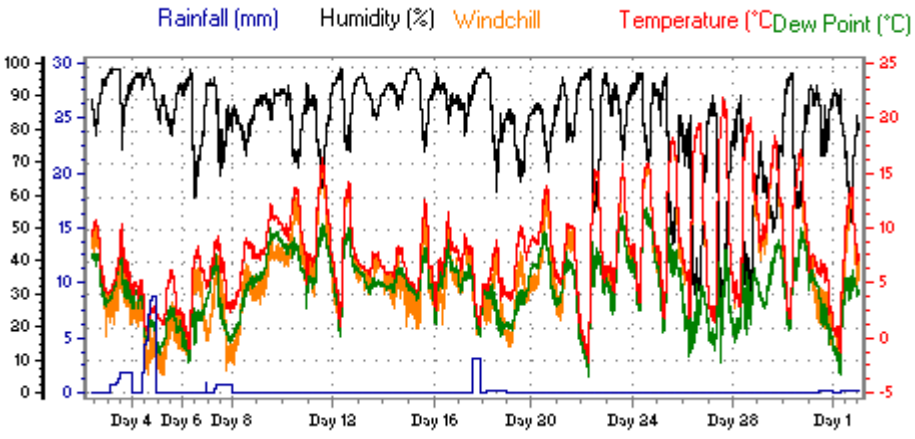
? = Outcome unknown **+** = Exact value unknown.

ANNEX 4 - Table of Nest Aspect and Elevation

Table 1: Aspect & elevation of nest sites mainly in the Rosedale area of the North York Moors.

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 1st	SE 7144 9539	NNE	310m
2008	Rosedale - Hob Crag 2nd	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 1st	SE 6989 9991	W	307m
2008	Rosedale - Sturdy Bank 2nd	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
2010	Rosedale - Sturdy Bank	NZ 6988 0004	W	324m
2010	Rosedale - Hob Crag (1st & 2nd)	SE 7138 9544	NE	315m
2010	Rosedale - Sheriff's Pit	SE 6973 9627	NE	340m
2010	Rosedale - Round Hill (central)	SE 6943 9690	ENE	328m
2010	Rosedale - Reeking Gill	NZ 6908 0068	SE	317m
2010	Rosedale - Reeking Gill cutting 1st	NZ 6879 0066	S	328m
2010	Rosedale - Reeking Gill cutting 2nd	NZ 6886 0068	SE	329m
2010	Rosedale - Dalehead (quarry west)	NZ 6828 0082	S	281m
2010	Bransdale - Ousegill 1st	SE 6400 9511	W	250m
2010	Bransdale - Ousegill 2nd	SE 6398 9497	E	250m
2010	Bransdale - Ousegill Bridge	SE 6392 9444	W	225m
2011	Rosedale - Hob Crag (north)	SE 7123 9557	NW	313m
2011	Rosedale - Thorgill Bank	SE 7066 9580	NW	307m
2011	Rosedale - Sheriff's Pit	SE 6972 9627	SE	343m
2011	Rosedale - Round Hill (east)	SE 6945 9685	E	321m
2011	Rosedale - Round Hill (west)	SE 6926 9706	NE	352m
2011	Rosedale - Matty Carr quarry	SE 6880 9836	NW	343m
2011	Rosedale - Dalehead (north)	NZ 6805 0125	SW	341m
2011	Rosedale - Dalehead (west) 1st	NZ 6793 0081	SW	352m
2011	Rosedale - Dalehead (west) 2nd	NZ 6794 0080	SW	347m
2011	Rosedale - Dalehead (east)	NZ 6865 0076	NE	328m
2011	Rosedale - Dalehead quarry (west) 1st & 2nd	NZ 6830 0085	E	296m
2011	Rosedale - Reeking Gill 1st	NZ 6915 0072	S	333m
2011	Rosedale - Reeking Gill 2nd	NZ 6917 0071	S	319m
2011	Rosedale - Nab Scar north 1st	SE 6945 9996	SW	337m
2011	Rosedale - Nab Scar north 2nd	NZ 6944 0000	SW	339m
2011	Rosedale - Sturdy Bank 1st	NZ 6987 0005	E	343m
2011	Rosedale - Sturdy Bank 2nd	SE 6987 9994	W	288m
2011	Bransdale - Ousegill	SE 6396 9475	E	240m
2012	Rosedale - Sheriff's Pit (north)	SE 6968 9643	N	343m
2012	Rosedale – Round Hill (south)	SE 6944 9670	NW	350m
2012	Rosedale - Dalehead (west)	NZ 6794 0080	SW	347m
2012	Rosedale - Reeking Gill cutting	NZ 6881 0067	S	328m
2012	Rosedale - Reeking Gill	NZ 6919 0066	N	334m
2012	Rosedale - Nab Scar (south)	SE 6949 9988	SSW	330m
2012	Rosedale - Sturdy Bank	SE 6985 9996	SSE	300m
2012	Rosedale - Blakey Lion	SE 6823 9960	E	366m
2012	Rosedale - Matty Carr (south)	SE 6888 9819	SSE	357m
2012	Rosedale - Round Hill (west)	SE 6926 9706	NE	352m
2012	Rosedale - Nab Scar (north)	NZ 6943 0006	SSW	345m
2012	Rosedale - Sheriff's Pit	SE 6972 9627	SE	343m
2012	Rosedale - Matty Carr quarry	SE 6880 9835	SE	331m

ANNEX 5 - Graphs of Daily Max/Min Temperature & Rainfall for the Months March to July



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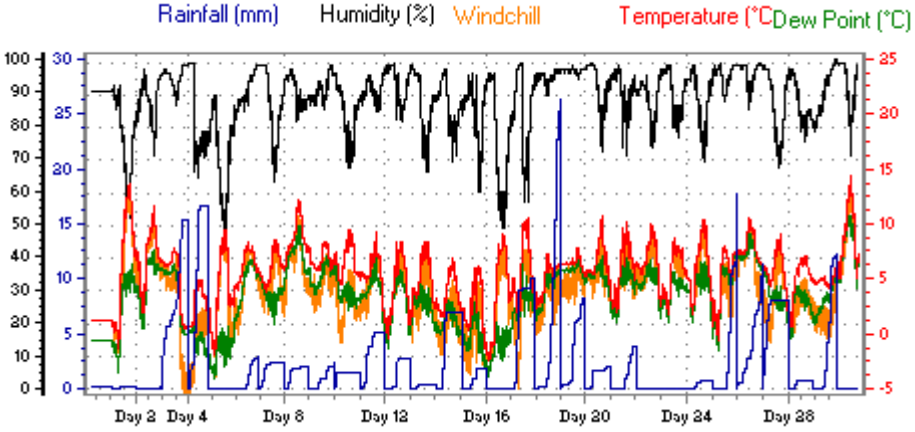
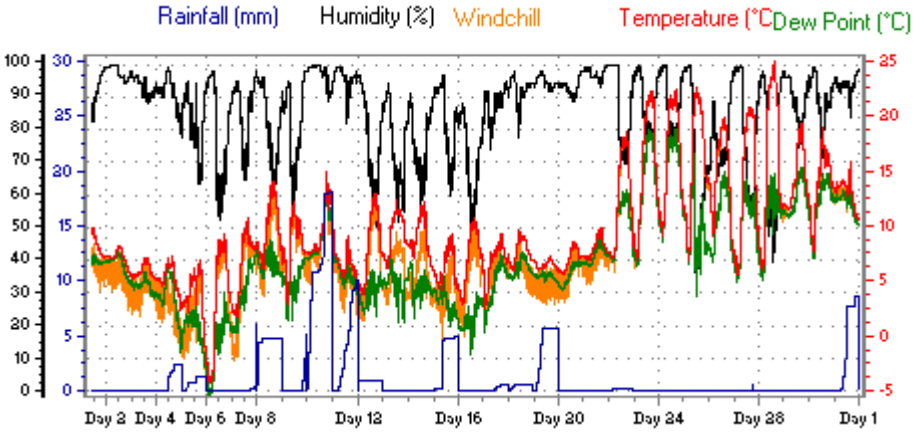
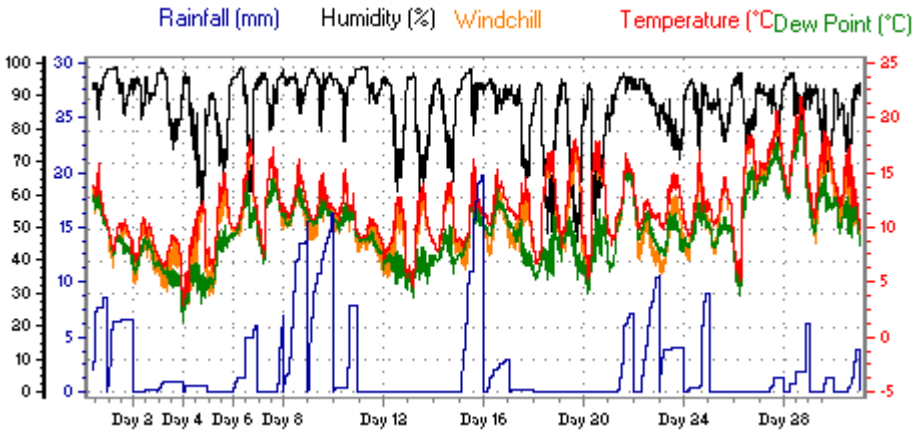


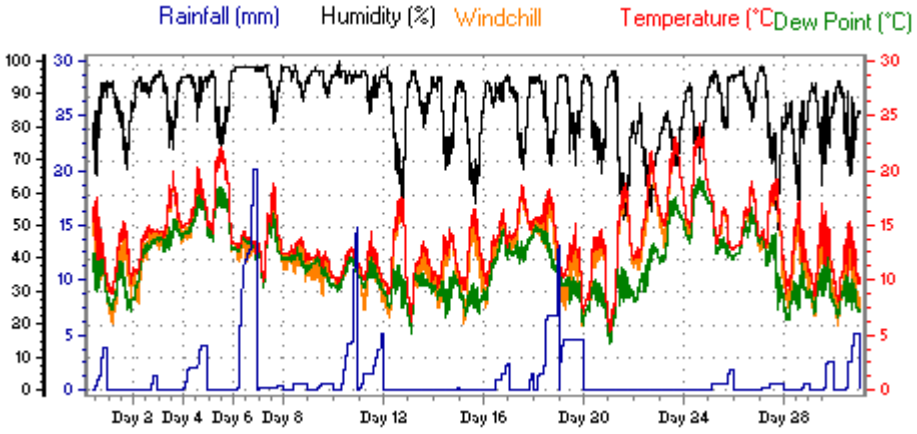
April



May



June



July

Daily max/min temperature & rainfall recorded at Westerdale, NZ665058, altitude 225m, in 2012.

ANNEX 6 - Photographs of Nest Construction.

23 April 2012 at 1725hrs.

Form of nest taking shape but twiggy material still being added and plenty of loose ends in need of being woven in and tidying.

24 April 2012 at 1448hrs.

A day on and outer wall of cup now complete with loose ends woven together. Start has been made on adding mud lining.

25 April 2012 at 1159hrs.

Inner rush layer now added and covers most of the 'water-proof' mud lining.

26 April 2012 at 1258hrs.

Now complete and nicely adorned with a woven rim of bent rushes.

27 April 2012 at 1439hrs.

First-egg laid a day after nest completion. Well timed!