



Malleefowl Monitoring in Victoria: 2007/8

Report to the Victorian Malleefowl Recovery Group

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1. Monitoring effectiveness

The VMRG visited 1170 Malleefowl nests during the 2007/8 breeding season, including 130 newly recorded mounds most of which were found during searches of new sites (Paradise, Broughtons and Brocken Bucket, see below). Appendix A.1 shows a breakdown of the effectiveness of the monitoring effort and the overall result is once again very impressive. While a total of 23 mounds could not be found, most of these (20) were probably bogus records that had been mistakenly identified as mounds in the past but not re-found since. These 20 doubtful mounds will be taken off the monitoring lists as they were deemed not to be Malleefowl nests, or could not be found despite several attempts (detailed in Appendix 2). Thus, there were only three mounds of nearly 1200 that we should have visited but did not; a remarkably good effort!

Several re-searches of sites were organised and supervised by the VMRG and involved community volunteers and students from Bendigo Regional Institute of TAFE (site 05 Colignan). Natimuk Urban Landcare Group (site 28 Nurcong), Friends of Hopetoun Pre-school and Kindergarten (site 34 Paradise), Nhill SES and Nhill Lions Club (sites 35 Broughtons), and the Friends of the Simpson (site 36 Broken Bucket). In addition, the VMRG re-located twelve mounds at the Wychitella site (site 32) that were recorded in 2005 by John Morieson and Peter Watts and monitored these mounds for the first time. These searches added 121 new mounds to the monitoring lists for these areas, seven of which were active in 2007/8.

2. Malleefowl Breeding numbers

Of the 1170 mounds that were visited in 2007/8, only 80 were active which is considerably less than last year and the year before when 90 and 123 were active respectively (including nest within sites as well as those outside the original site boundaries). A more rigorous comparison between is obtained by counting only nests within the original site boundaries, in which case 75 mounds were active in 2007, 85 in 2006 and 114 in 2005 (Appendix A 3a,b,c). In fact, the situation is even worse that these numbers suggest because in 2007 we established a new grid (Paradise) which contained seven active mounds and these are included in the 2007 figures.

Declines were noted in most areas (see Figures 1 and 2) although there were some small increases at individual monitoring sites (Appendix B). In particular, breeding numbers at monitoring sites in the North-east (sites 15 Wandown, 14 Menzies and 27 O'Brees) which have been exceptionally high over the past few years, dropped sharply and there was hardly any breeding attempted at Wandown and O'Brees, and reduced attempts at Menzies. In the North-west, breeding numbers were on par with those last year but still well below breeding numbers recorded in the 1990s. In the Eastern Big Desert, breeding numbers were better than last year and similar to the seasons following the 2002 drought, but also well below breeding numbers recorded in the 1990s. In terms of the seven key monitoring sites that have been tracked for the past 20 years (Figure 2), the 2007 result was one of the lowest recorded: breeding numbers were on par with those recorded in the 1994 drought, but still above those recorded in the devastating 2002 drought.

The declines in breeding numbers were not entirely surprising considering the severity of the continuing drought. While good rains fell in many areas during the summer and autumn of 2007, winter rainfall was severely reduced in most areas. For example,

Ouyen received less than 50% of its average rainfall between June and September, and the situation was even worse at Mildura, only 100km north, where rainfall in this period was less than 30% of its long-term average (figure 3). This was one of the lowest rainfall totals for these periods since records began.

Apart from providing monthly rainfall totals, Figure 3 also shows how variable the rainfall patterns can be over relatively short distances in the mallee. For example, while Ouyen received over 180 mm of rain in April and May 2007, Mildura only 100km north received less than a third of this. Thus, while these rainfall estimates provide a general view of the season, they do not necessarily reflect the conditions at individual sites. In this regard it is interesting that sites near Ouyen (such as 04, 23, 02, 03, 21) showed some of the most consistent Malleefowl breeding numbers in 2007.

Figure 1. Trends in Malleefowl breeding numbers at 22 set sites over the past 12-15 years. Eastern Big Desert comprise 6 sites over 15 years (triangles), North East comprise 4 sites over 14 years (shaded squares), and North West comprises 12 sites over 12 years (solid circles). 1994/5, 2002/3, and 2006/7 were major drought years.

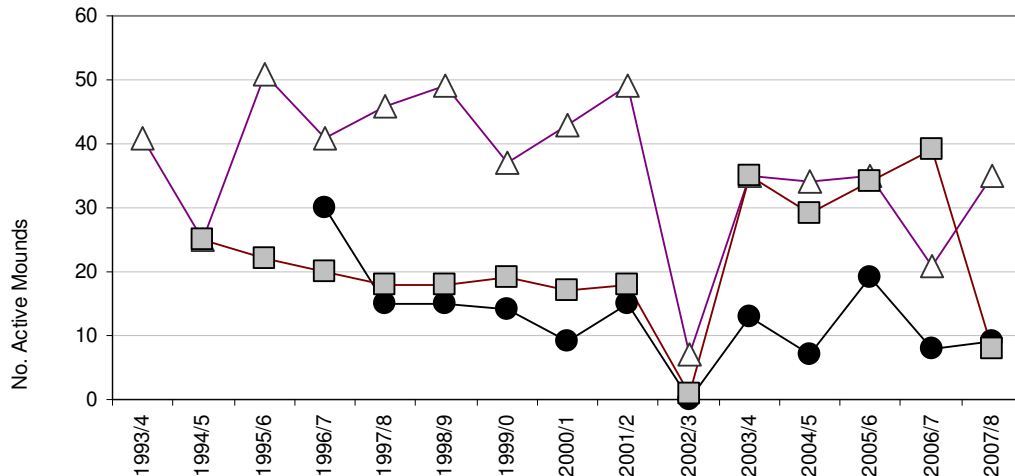


Figure 2. Trends in Malleefowl breeding numbers at 7 set sites over the past 20 years. 1994/5, 2002/3, and 2006/7 were major drought years (white points). Sites comprise 01, 02, 03, 04, 20 and 23.

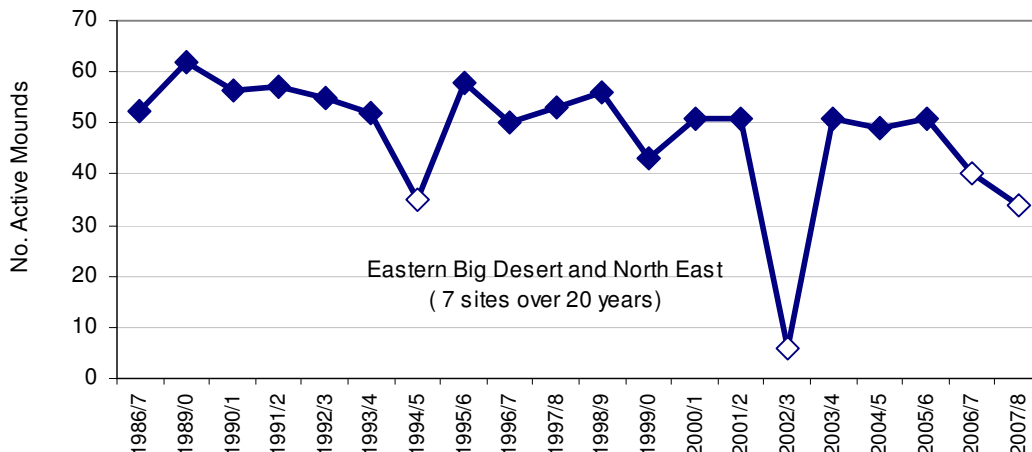
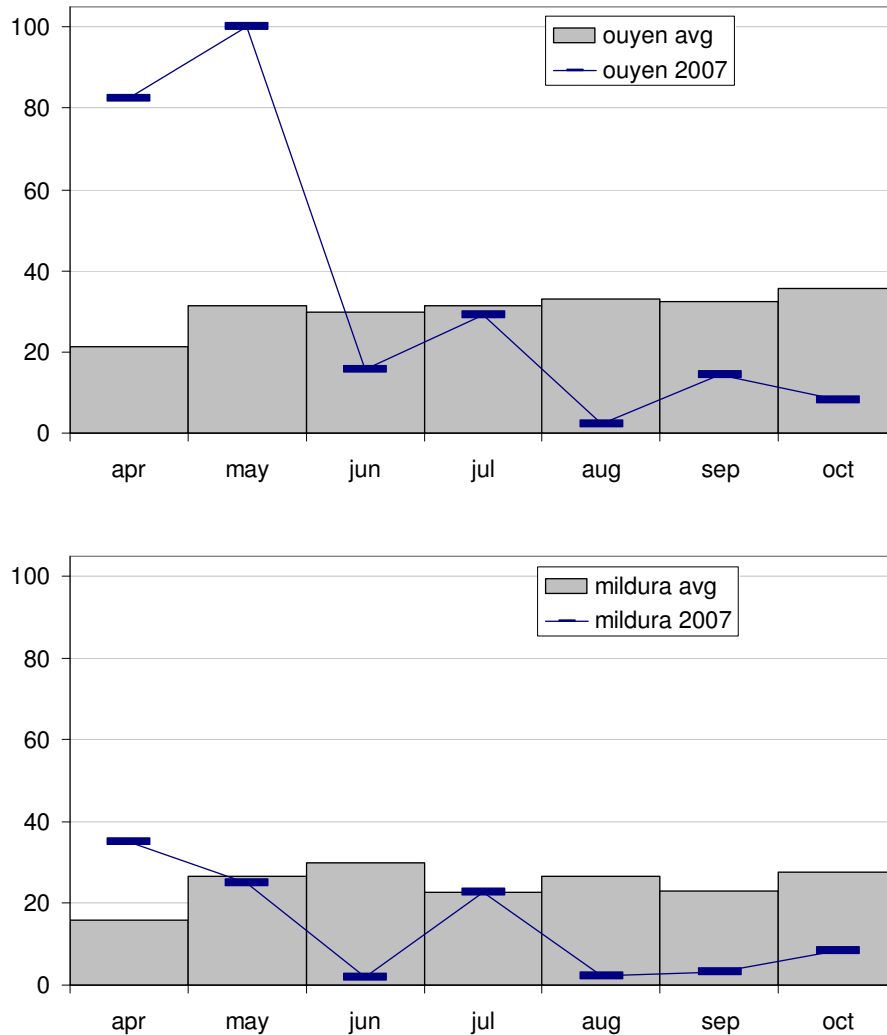


Figure 3. Rainfall at Ouyen and Mildura in 2007 (line and bars) and average rainfall (since early 1900s). At Ouyen, above average rain fell in April and May, but conditions were very dry after July. (Data from the Bureau of Meteorology website). Mildura received good rains in April/May (though not as large as Ouyen) and in July, but June, August and September were very dry.



While we are usually cautious in interpreting declines during droughts, the fact that this drought has continued provides reason for great concern. During droughts, Malleefowl are known to skip breeding and wait for better conditions, and it is apparent from long term trends (Figure 2) that breeding numbers often return to normal after the drought breaks. On the other hand, having two droughts in a row is unusual and, given that these are embedded in a very dry decade, the effects on Malleefowl may be much more severe than single dry years. Let's hope that the continuing drought breaks soon.

Individual Grid trends

Appendix B shows the histograms of grid trends from historical records to 2006/7. The value (ie number of active nests) for each histogram bar is also shown so that you can distinguish between seasons when there was no breeding at a site, and seasons

when the site was not monitored. Note that recently established sites where trends have yet to be determined are not displayed.

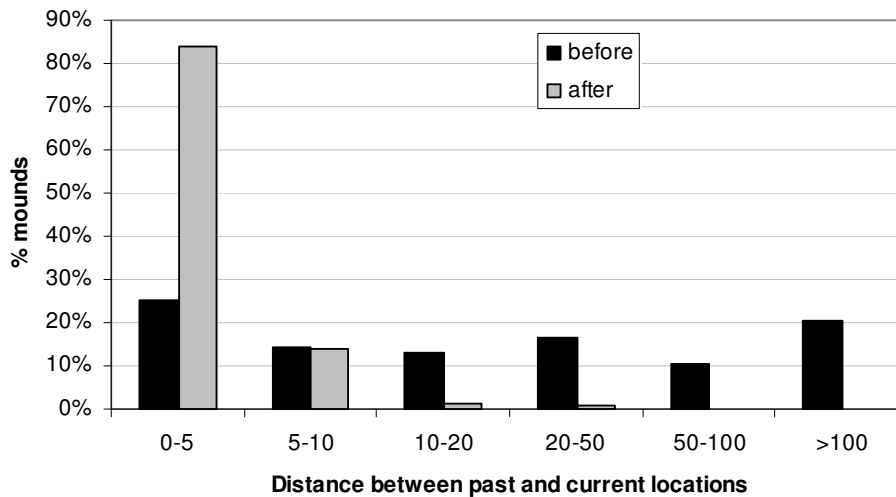
3. Changes to data recorded in the field

Few changes were needed to the data collected in 2007/8 except in regard to mound identity and location where errors were more numerous than previous years. As with last season, volunteers made lots of errors in regard to the location of mounds this season, and these errors were time-consuming to correct. Volunteers tended to record mound activity and signs very well, but sometimes misidentified mounds on Cybertracker (providing either the wrong site or nest number), or the GPS location was recorded while not at the nest in question. These errors can be avoided by 1) checking the site/nest numbers entered at the top of the Cybertracker screen, and 2) making sure that each record is finalised while you are still at the nest in question (ie press OK on the thankyou screen). (If you are unsure about either of the points, please ask!).

An exciting new Competition!

Rather than beat people with a stick to encourage them to avoid these simple mistakes, we are instead offering a fine bottle of wine (or other up to the value of \$50) to the person/team that provides the most accurate mound locations for the sites they monitor. The way the competition is scored is simple: we will compute the average distance between where you record mounds to be and where we have measured it previously, and the winner will be the smallest average distance.

Figure xx shows these average distances for the 2007 data before and after all the errors were corrected. While only about 25% of records were within an average of five metres of their expected location in the original data, once corrected this rose to 84% and average distances more than 10m were virtually eliminated. Corrections were either typos (wrong nest number) or due to locations being recoded after leaving the mound and arriving at another mound.



The point is that correcting these errors is very time consuming and, more importantly, these sort of errors will be bounced back to you in the future when the

new database takes over management of the data. It would be a great advantage to present the database with data that requires as little management as possible.

2007 competition result

The 2007 winner is, at a mere 3.2 m average distance between past and current location of 39 mounds at the Dumosa site...Greg and Tricia Currie! A magnificent achievement!

Honourable mentions to Aden and Rob Splatt (19 mounds, 3.8m) and Barry and Heather Harvey (20 mounds, 4.1 m). In fact, quite a few sites were blessed with monitors that achieved average distances between past and current location of less than 5 m, including sites 08, 10, 12, 13, 17, 19 and 23. If you are responsible for one of these, congratulations (and many thanks).

Hints on how to improve your score:

- Make sure you have the correct mound and site numbers
- Finalise your records while standing at the same spot each season
- Check that the GPS has a good signal

4. Fox scats

Fox scats were collected at 352 mounds in 2007/8 and weighed a total of 5.1 kg. This is similar to the total last year (394 nests and 4.8 kg), and to the total in 2002/3 (also a drought year). The following table shows the total weight of fox scats collected at mounds, and the number of mounds with fox scats, for both 2007 and the previous year.

Grid	Name	2007 Wt (g)	2007 No. Nests	2006 Wt (g)	2006 No. Nests
v01	Dattuck	17	1	29	5
v02	Torpey's	428	21	196	18
v03	Wathe SW	431	19	368	32
v04	Bronzewing	456	31	851	63
v05	Colignan	98	10	68	9
v07	Annuello	165	11	141	14
v08	Powerline	25	3	37	5
v09	Mt Hattah	31	2	0	0
V10	One Tree Plain	0	0	0	0
v11	Mopoke	86	9	71	8
v12	Pheeneys	184	15	247	16
v13	Bambill	198	14	243	23
v14	Menzies	108	4	79	7
v15	Wandown	448	28	410	37
v16	South Bore	243	18	231	15
v17	One Tree Plain	13	1	64	6
v18	Washing Machine	43	6	56	3
v19	Underbool/Cowan	21	3	52	10
v20	Lowan	383	25	339	30
v21	Dumosa	98	12	7	2
v22	Denning	27	1	100	4

Grid	Name	2007 Wt (g)	2007 No. Nests	2006 Wt (g)	2006 No. Nests
v23	Moonah	828	48	574	40
v24	Kiata	62	6	59	7
v26	Hattah Tracks	17	2	143	7
v27	O'Brees	129	11	102	8
v28	Nurcoung	93	10	196	11
v29	Wedderburn	59	5	24	5
v30	Hattah South	84	5	49	5
v31	Skinners Flat	58	4	39	4
v32	Wychitella	31	4	n/a	n/a
v34	Paradise	209	20	n/a	n/a
v35	Broken Bucket	26	3	n/a	n/a
	TOTAL	5,099	352	4,776	394

May we remind everyone once again of the importance of being very systematic with fox scat collection. We must search the mound surface very carefully for a full minute to be to absolutely sure that we get all the scats, as emphasised in the manual and during the training weekends.

6. Lerp

This season was only the second time we recorded the occurrence of lerp on Malleefowl mounds. Lerp were recorded at 5% of mounds, compared to only 3.5% last season, and at some sites more than a quarter of mounds showed at least some lerp. In late summer and early autumn one of us (JB) received several anecdotal accounts of increasing lerp numbers from Ron Wiseman, Peter Stokie and others, and in late March JB decided to revisit Bronzewing (04) and conduct some lerp transects. While in November 31% of mounds at Bronzewing had lerp on their surface, in late March 63% of random quadrats had lerp. This is a substantial increase, especially when considering that mounds have a surface area of 10-15 m² compared to our quadrats (1 m²). In March, data from the 32 random quadrats suggested that lerp abundance was in the order of 4 million lerp per km² and increasing. If the weather continues to be kind to the psyllids, we can expect these numbers to increase substantially.

Given these results and the potential significance of lerp outbreaks to Malleefowl recruitment we think it would be very valuable to obtain more data on lerp abundance over the next month. Last year (2006) volunteers did a terrific job visiting a range on sites in May, but unfortunately we had left it too late and whatever lerp was available was washed away by heavy rainfall in many areas (Figure 3). People who are interested in revisiting the mallee for this purpose should contact Peter Stokie as a matter of urgency!

For the record, JB did the two transects in Bronzewing (involving 32 quadrats and about 4km walk) in about 2 hours and 40 minutes. Not a huge effort for such valuable data.

7. Concluding comments

The VMRG has completed another excellent year of monitoring and the data are of a very high standard again. Unfortunately the continuing drought meant that many Malleefowl did not attempt to breed and consequently the breeding numbers probably don't reflect the population numbers. If this is true, breeding numbers should recover in most areas when there is sufficient rain, although the duration of this drought is unprecedented in the Malleefowl monitoring record and it's hard to know what to expect.

Now that the multi-regional project is behind us and national standards have been established, we are entering a new era in which monitoring, management, and research are combined in order to develop effective management techniques. The VMRG has received commonwealth funds to develop an adaptive management framework in collaboration with some of the leaders in this field, and this will be a national program that builds on all of our past and current successes. The VMRG has also received commonwealth funds to develop a national database that will be state-of-the-art, friendly and useful, and we have engaged Richard and Margaret Alcorn to work on this with a view to having a working prototype running by October in preparation for the next monitoring season. Finally, the VMRG has received TSN funding for a landscape scale survey of the Little Desert where we hope to determine the distribution of Malleefowl in that area and select some useful sites for establishing monitoring sites.

All these exciting developments notwithstanding, our main role and purpose is to continue the high standard of monitoring of our sites and improve these data where we can. The possibility that a lerp outbreak may be underway provides some urgency to this objective.

Once again, we are very appreciative of the effort made by people in collecting the high quality data, helping to keep the program running, and providing the sort of feedback we need to improve the program for volunteers and Malleefowl.

Joe Benshemesh and Peter Stokie

9 April 2008

NOTE if you notice any likely errors in this report or the Appendices, or numbers that disagree with your recollections, please let me know!
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Appendix A 1. 2007/8 Nest Inspection Report for All Grids

09-Apr-08

Table 1. Page 1 of 1
2007/8 Malleefowl Monitoring Report

Updated nests

► *Records that will be included in future lists*

	Grid	01	02	03	04	05	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	26	27	28	29	30	31	32	33	34	35	36	
Sought and found	1036	80	57	91	108	14	35	17	14	3	16	26	39	32	85	42	37	27	23	59	39	18	67	19	22	20	12	9	11	14						
New from search	121					1																					7			1	12		89	6	5	
New incidental	9						4								1					1	1					2										
Sought, NOT found	1																													1						
NOT sought or found	1																													1						
New but not found	1																																			
Total	1169	80	57	91	108	15	39	17	14	3	16	26	39	32	86	42	37	27	23	60	40	18	67	19	24	20	20	9	11	17	12		89	6	5	

► *Records that will be omitted from future lists (erroneous records, and nests well outside grid boundaries)*

	Grid	01	02	03	04	05	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	26	27	28	29	30	31	32	33	34	35	36		
Sought and found	1											1																									
New from search	3					3																															
Sought, NOT found	5															4					1																
NOT sought or found	1																1																				
New but not found	14																																				4
Total	24					3						1				5																					4

Grand Total 1193 80 57 91 108 18 39 17 14 3 16 27 39 32 86 47 37 27 23 60 41 18 67 19 24 20 30 9 11 17 20 9 11 17

Note: Grid 06 and 07 were combined in 1997 into one grid named Annuello 07.

End

Appendix A 2. 2007/8 Details of Nests Not found, New, or Omitted

2007/8 Malleefowl Monitoring Report

Grid_nest	General notes
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The following nests will be included in future ANNUAL lists:

- Previously known mounds that were Niether Sought, Nor Found

31	5	very old, old rabbit holes
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- Previously recorded and Sought in monitoring, but Not Found

31	11	no gps coordinates and coujdn't find mound.
----	----	---
- New mounds encountered incidentally during monitoring

07	85	
07	86	
07	87	
07	88	
15	999	a new mound.
20	67	
21	43	
26	25	new but very old
26	26	new mound in limestone
- Newly described in search and Sought in monitoring but Not Found

28	38	Do not think his is a mf mound. Was under south side of grasstree and probably kangaroo scrape deepened by echidnas etc. No remnant litter underneath, no shell. Only reason to keep monitoring is for chance of mf using hole. Unlikely in sand, its easy ever
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- Newly described in search, Sought and Found in monitoring

05	18	britafe find, back of site, profile 2, but not worked for several months, no litter trail
28	29	Now staked and tagged. Long unused.
28	32	New mound staked and tagged.
28	34	No work since Aug. search.
28	35	
28	37	Staked, not tagged. Branch fallen over mound..
28	39	New nest, not active but worked probably this season.
31	17	waypoint 003 possible new mound, very old. seems too deep, unsure..
32	1	
32	2	stony, long unused
32	3	very, very old. visit occasionally
32	4	
32	5	litter trail obvious from two seasons ago. lots of litter in mound
32	6	lalready tagged 40 /15. old scrapped trail.
32	8	
32	9	new mound on top of very old mound about 10 metres wide. old mound maybe 2nmetres high. new mound measured. new mound scraped out this year. no other mf signs
32	10	
32	11	
32	12	Already tagged 40n19
34	1	
34	2	
34	3	
34	4	

Grid_nest	General notes
34 5	
34 6	
34 7	
34 8	
34 9	
34 10	
34 11	
34 12	saw chick qt this nest
34 13	
34 14	
34 15	
34 16	looks like it is active but has herbs and old fox scats on the inner ring is
34 17	
34 18	
34 19	
34 20	
34 21	
34 22	
34 23	
34 25	
34 26	
34 27	
34 28	
34 29	
34 30	
34 31	
34 32	
34 33	
34 34	not nest simlar formations only metres away on the side of this hill
34 35	
34 36	
34 37	
34 38	
34 39	
34 40	
34 41	
34 42	
34 43	
34 44	
34 46	
34 47	
34 48	
34 49	
34 50	scat possible wild dog
34 51	
34 52	
34 53	

Grid_nest	General notes
34	54
34	55
34	56
34	57
34	58
34	59
34	60
34	61
34	62
34	63
34	64
34	66
34	67
34	68
34	69
34	70
34	71
34	72
34	73
34	74
34	75
34	76
34	77
34	78
34	79
34	80
34	81
34	82
34	83
34	84
34	85
34	86
34	87
34	88
34	89
34	90
34	91
34	92
35	1
35	2
35	3
35	4
35	5
35	6
36	1
36	2
36	3

roo dugout

nest before this one was fifty three

very nice hole for a mound in a pine thicket.

has been active in past few years

open deep mound

old but fairly deep mound

fox scat found and bagged,

sandy

lots of feathers very recent prints being worked today

decaying log over nest echidna diggings

Grid_nest	General notes
36 4	..
36 5	very old visit occasionally

The following nests have been recommended to be inspected only every FIFTH year

● Other reasons

04 16	no change. could be deleted
04 42	not active in over 20 years. suggest deleting from database.
04 68	old, flat, candidate for deletion.
04 113	Not worth visiting, delete please.
13 37	not a nest, delete from database
14 4	DELETE in dam, no trace
15 236	ddelete/----delete
17 10	open sandy site, no litter surrounds; recommend delete,
17 16	recommmend delete. see comments in field notes. 2 photos
17 22	open sandy site, little surface litter; recommend to bypass next year.
17 27	a sandy shallow hollow; on exposed se slope of dune. WAS IT EVER A NEST
17 28	recommend delete- see field note book. No measurements- too indistinct in open andy dune slope.
17 31	recommend delete. see extended comments in my note book.
21 7	No activity 15 years. Possible deletion.
21 14	Very old nest - consider deletion.
21 33	Recommend deletion. Barely recognisable as nest.
21 35	Very old nest - possible delete?
21 36	Recommend delete
23 53	hardly recognisable, could delete, most acal dead, acal (0,0) no b
24 8	not for annual visit
24 9	no longer looks like a malleefowl mound, cannot distinguish outer or inner rim, suggest either removing or visiting occasionally
24 18	not changed for many years, recommend visit in a few years
24 20	defidentily not worth anual visit
24 22	not worth annual visit

● Newly described in search, Sought and Found in monitoring

28 36	Not a nest. Maybe a practice scrape. No litter under centre. In corner where firebreak cleared and windrows burnt.
32 7	alredy tagged 40n14. recommend visit ocassionally.

The following nests have been omitted from future lists:

● Previously known mounds that were Niether Sought, Nor Found

16 44

● Previously recorded and Sought in monitoring, but Not Found Again

16 45	
16 46	
16 47	photo taken of possible old mound - but no monitoring attempted
16 48	photo taken at post but no mound visible
21 42	2 fruitless searches - 2006 / 2007. Conclude no mound, remove from d/b

Grid_nest	General notes
● Other reasons	
12 27	3 GOATS ,and 4 kids, near nest 33. Lerps on nest. □□Mf feathers at edge of nest, maybe fox attack. Rabbit warren at E601470, N6058946 needs attention. □Car ,Toyota ETB780 .sped away from Lowan Track on our approach. Ssuspicious.
● Newly described in search and Sought in monitoring but Not Found	
28 7	No mound. Circled 30m around, nothing seen.
28 8	Searched 30m around, NO MOUND FOUND.
28 9	No nest within 30m radius. On edge of track, may have been entry point for end of search line. No markers or tape. No nest here.
28 10	Searched 40m around, NO MOUND FOUND.
28 14	Searched 30m around, NO NEST FOUND. Photo of echidna dig in old ant nest/clay mound. No litter under, no sratching or right shape. Probably never a mound.
28 19	Mound from ants and echidnas. No litter inside, no shell, no large pebbles raked in, all small buckshot brought up by ants. NOT MF NEST.
28 24	Not mf nest. Ant nest, clay mound as around here. No litter in soil, no shell, mounded not scraped out., echidna digging recent.
28 27	Old ant nest. No litter inside. No shell. No sign of ever being dug out. NOT MF NEST. Photo.
28 28	No mound here. Good mallee 30m away each side.
28 33	No nest. In road. Probably a GPS reading taken when searching the grid, so we knew where to start again next day.
36 6	in thick scrub no evidence of mound
36 7	in very thick scrub no evidence of moun
36 8	beside track no mound here
36 9	not a sign of a mound in the vicinity of waypoint very thick scrub
● Newly described in search, Sought and Found in monitoring	
05 15	britafe find kangaroo scrap not a mound, tape found
05 16	britafe find not a mound, shallow hole in ground, tape found
05 17	britafe find, not a mound, old rabbit warren, tape found

Printed on 09-Apr-08

Appendix A 3a. 2007/8 Activity by Site (Grid)

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2007/8 Malleefowl Monitoring Report

Grid		Total nests	Active (y)	Not Active (n)	Not Found ()	Active Last Year	Area (ha)	Active density (per km sq)
01	Part A	53	2	51	0	2	300	0.7
01	Part B	27	1	26	0	0	300	0.3
02		56	3	53	0	2	400	0.8
03		76	8	68	0	6	324	2.5
04	Part A	53	9	44	0	3	270	3.3
04	Part B	29	4	25	0	0	270	1.5
05		15	1	14	0	1	400	0.3
07	Part A	17	1	16	0	1	150	0.7
07	Part B	7	1	6	0	0	150	0.7
07	Part C	7	0	7	0	0		-
08		17	1	16	0	0	400	0.3
09		14	0	14	0	0	400	-
10		3	0	3	0	0	400	-
11		16	1	15	0	1	400	0.3
12		24	1	23	0	0	400	0.3
13		38	0	38	0	3	400	-
14		31	6	25	0	11	380	1.6
15	Part 1a	31	0	31	0	14	325	-
15	Part 1b	12	0	12	0	6	115	-
15	Part 2	19	0	19	0	7	440	-
15	Part 3a	4	0	4	0	2	370	-
15	Part 3b	18	4	14	0	9	660	0.6
16		42	1	41	0	0	400	0.3
17		31	0	31	0	0	400	-
18		27	1	26	0	0	400	0.3
19		23	0	23	0	0	400	-
20		46	2	44	0	3	282	0.7
21		32	3	29	0	3	400	0.8
22		16	0	16	0	0	542	-
23		49	6	43	0	5	400	1.5
24		14	0	14	0	0	210	-
26		24	2	22	0	1		
27		20	1	19	0	4	290	0.3
28		19	7	11	1	1		
29		9	0	9	0	0		-
30		11	2	9	0	0	400	0.5
31		17	0	15	2	0		-
32		11	0	11	0	0		-
34		89	7	82	0	0		
35		6	0	6	0	0		-
36		5	0	5	0	0		-
Totals		1058	75	980	3	85	11378	0.7*

* Over a total area of 113.8 km sq (excluding sites with as yet undetermined areas)

Appendix A 3b. 2007/8 Activity of nests that were OUT OF GRID (OOG)

Printed on 09-Apr-08

2007/8 Malleefowl Monitoring Report

Grid		Total nests	Active (y)	Not Active (n)	Not Found ()	Active Last Year
02	oog	1	0	1	0	0
03	oog	15	0	15	0	2
04	oog	22	3	19	0	1
07	oog	4	0	4	0	1
12	oog	2	0	2	0	1
21	oog	3	0	3	0	0
22	oog	2	0	2	0	0
23	oog	17	2	15	0	0
Totals		66	5	61		5

Appendix A 3c. 2007/8 Active Nests List

+ nests that have been newly added to the monitoring program
* nests that are not included in the Common Sets for each grid

01: 3 active nests	07_15 Part A	23_19
01_21 Part A	07_62 Part B	23_26 oog
01_55 Part B	08: 1 active nests	23_28
01_72 Part A	08_4	23_51
02: 3 active nests	11: 1 active nests	23_66 oog
02_12	11_2	26: 2 active nests
02_28	12: 1 active nests	26_15
02_34	12_8	26_17
03: 8 active nests	14: 6 active nests	27: 1 active nests
03_8	14_3	27_8
03_20	14_8	28: 7 active nests
03_25	14_12	28_1
03_32	14_17	28_3
03_53	14_21	28_4
03_56	14_29	28_16
03_82	15: 4 active nests	28_17
03_100	15_66 Part 3b	28_21
04: 16 active nests	15_90 Part 3b	28_26
04_1 Part A	15_248 Part 3b	30: 2 active nests
04_9 Part A	15_249 Part 3b	30_1
04_17 Part A	16: 1 active nests	30_7
04_26 Part B	16_25	34: 7 active nests
04_41 Part B	18: 1 active nests	34_2 +
04_45 Part A	18_18	34_4 +
04_53 Part A	20: 2 active nests	34_6 +
04_55 Part A	20_34	34_12 +
04_61 Part A	20_37	34_14 +
04_64 Part B	21: 3 active nests	34_62 +
04_71 Part A	21_12	34_78 +
04_73 oog	21_15	
04_87 oog	21_43 +	
04_90 Part B	23: 8 active nests	
04_92 oog	23_5	
04_94 Part A	23_13	
05: 1 active nests	23_14	
05_11		
07: 2 active nests		

Appendix A 4. 2007/8 Nests Needing Tags or Stakes

All 46 nests listed here require tags (astericks denote tags that are available but not yet placed in the field).

Grid	Nest	Need...	Note	Grid	Nest	Need...	Note
<i>Grid 01 needs 0 stake, 1 tag:</i>				26_5			? (need to confirm)
	01_82		Needs Tag	26_10			? (need to confirm)
<i>Grid 02 needs 1 stake, 1 tag:</i>				26_18			? (need to confirm)
	02_20		Needs Stake & Tag	26_21			? (need to confirm)
<i>Grid 03 needs 1 stakes, 3 tags:</i>				26_24			Needs Stake & Tag
	03_111		Needs Tag	<i>Grid 28 needs 12 stakes, 12 tags:</i>			
	03_114		Needs Tag	28_1			Needs Stake & Tag
	03_117		Needs Stake & Tag	28_2			Needs Stake & Tag
<i>Grid 05 needs 1 stake, 1 tag:</i>				28_3			Needs Stake & Tag
	05_18		Needs Stake & Tag	28_4			Needs Stake & Tag
<i>Grid 07 needs 3 stakes, 0 tags:</i>				28_5			Needs Stake & Tag
	07_85		Needs Stake	28_6			Needs Stake & Tag
	07_86		Needs Stake	28_12			Needs Stake & Tag
	07_87		Needs Stake	28_16			Needs Stake & Tag
<i>Grid 15 needs 1 stakes, 0 tags:</i>				28_17			Needs Stake & Tag
	15_201		Needs Stake	28_21			Needs Stake & Tag
	15_999		? (need to confirm)	28_23			Needs Stake & Tag
<i>Grid 17 needs 1 stake, 1 tag:</i>				28_26			Needs Stake & Tag
	17_40		Needs Stake & Tag	<i>Grid 29 needs 0 stake, 1 tag:</i>			
<i>Grid 18 needs 3 stakes, 3 tags:</i>				29_5			Needs Tag
	18_25		Needs Stake & Tag	<i>Grid 31 needs 0 stakes, 1 tags:</i>			
	18_26		Needs Stake & Tag	31_5			? (need to confirm)
	18_27		Needs Stake & Tag	31_16			Needs Tag
<i>Grid 19 needs 4 stakes, 4 tags:</i>							
	19_26		Needs Stake & Tag				
	19_27		Needs Stake & Tag				
	19_28		Needs Stake & Tag				
	19_30		Needs Stake & Tag				
<i>Grid 21 needs 1 stake, 1 tag:</i>							
	21_34		Needs Stake & Tag				
<i>Grid 23 needs 5 stakes, 5 tags:</i>							
	23_65		Needs Stake & Tag				
	23_67		Needs Stake & Tag				
	23_68		Needs Stake & Tag				
	23_69		Needs Stake & Tag				
	23_70		Needs Stake & Tag				
<i>Grid 26 needs 1 stakes, 1 tags:</i>							
	26_4		? (need to confirm)				

Appendix A 6. 2007/8 Frequencies of Animal Scats at Nests

09-Apr-08

Note: New observers collected data at several grids. Scat frequencies at these grids are not comparable with frequencies recorded in previous years or by other observers.

Grid	AvgDate	Total	MF	Fx	K	R	G	E	H	D	C
01	5/11/2007	80	1%	0%	24%	-	-	1%	-	-	-
02	18/01/2008	57	14%	47%	23%	-	-	-	-	-	-
03	4/12/2007	91	10%	29%	20%	1%	-	-	-	-	-
04	4/11/2007	104	24%	36%	38%	2%	-	-	-	-	-
05	11/12/2007	15	13%	67%	73%	-	-	7%	-	-	-
07	22/11/2007	39	23%	28%	38%	-	-	-	-	-	-
08	16/11/2007	17	6%	18%	76%	-	35%	-	-	-	-
09	17/11/2007	14	0%	14%	86%	-	7%	-	-	-	-
10	10/11/2007	3	0%	0%	67%	-	-	-	-	-	-
11	9/11/2007	16	31%	56%	25%	-	-	-	-	-	-
12	26/10/2007	26	38%	50%	8%	-	-	-	-	-	-
13	24/11/2007	38	29%	42%	53%	-	-	-	-	-	-
14	31/10/2007	31	52%	13%	16%	-	-	-	-	-	-
15	28/10/2007	85	41%	26%	19%	-	-	2%	-	-	-
16	10/12/2007	42	31%	45%	79%	7%	-	-	-	-	5%
17	12/11/2007	31	0%	3%	52%	-	29%	-	-	-	-
18	16/12/2007	27	4%	22%	52%	-	-	-	-	-	-
19	2/01/2008	23	4%	13%	74%	-	-	-	-	-	-
20	25/11/2007	60	10%	40%	57%	17%	-	-	-	-	-
21	17/11/2007	35	14%	34%	57%	3%	-	-	-	-	-
22	3/01/2008	18	0%	6%	94%	17%	-	-	-	-	-
23	8/02/2008	66	30%	67%	88%	-	-	2%	-	-	-
24	10/11/2007	14	0%	50%	86%	14%	-	21%	-	-	-
26	19/12/2007	19	5%	5%	32%	-	5%	-	-	-	-
27	2/12/2007	20	20%	55%	80%	-	-	-	-	-	-
28	17/01/2008	18	22%	44%	78%	-	-	-	-	-	-
29	3/02/2008	9	0%	56%	89%	11%	-	-	-	-	-
30	17/11/2007	11	36%	45%	36%	-	-	-	-	-	-
31	9/12/2007	15	13%	40%	67%	7%	-	-	-	-	-
32	8/02/2008	11	0%	45%	100%	-	-	-	-	-	-
34	10/12/2007	89	9%	27%	10%	-	-	-	-	-	-
35	6/01/2008	6	0%	33%	17%	-	-	-	-	-	-
36	25/02/2008	5	20%	0%	80%	-	-	-	-	-	-
8/12/2007		1135	17.8%	32.1%	43.4%	2.1%	1.5%	0.7%	0.0%	0.0%	0.2%

K= Kangaroo, R= Rabbit, G= Goat, E= Emu, H= Human, D= Dog, C= Cat

Appendix A 7. 2007/8 Frequencies of Animal Prints at Nests

09-Apr-08

Note: New observers collected data at several grids. Print frequencies at these grids are not comparable with frequencies recorded in previous years or by other observers.

Grid	AvgDate	Total	MF	Fx	K	R	G	E	H	D	C
01	5/11/2007	80	3%	-	34%	-	-	3%	-	-	-
02	18/01/2008	57	51%	28%	30%	-	-	-	-	-	-
03	4/12/2007	91	27%	23%	25%	-	-	1%	-	-	-
04	4/11/2007	104	19%	2%	28%	-	-	4%	-	-	-
05	11/12/2007	15	47%	47%	60%	-	-	-	-	-	-
07	22/11/2007	39	21%	-	23%	-	-	-	-	-	-
08	16/11/2007	17	12%	24%	35%	-	47%	6%	-	-	-
09	17/11/2007	14	-	43%	43%	-	36%	-	-	-	-
10	10/11/2007	3	-	-	67%	-	33%	-	-	-	-
11	9/11/2007	16	38%	19%	25%	-	-	-	-	-	-
12	26/10/2007	26	19%	50%	42%	-	-	-	-	-	-
13	24/11/2007	38	26%	13%	13%	-	-	-	-	-	-
14	31/10/2007	31	71%	26%	39%	-	-	6%	-	-	-
15	28/10/2007	85	56%	29%	36%	-	-	-	-	-	1%
16	10/12/2007	42	19%	40%	57%	-	5%	-	-	-	-
17	12/11/2007	31	3%	-	94%	-	55%	-	-	-	-
18	16/12/2007	27	7%	7%	15%	-	-	-	-	-	-
19	2/01/2008	23	30%	17%	48%	-	-	-	-	-	-
20	25/11/2007	60	8%	5%	28%	3%	-	7%	-	-	-
21	17/11/2007	35	9%	-	60%	-	3%	3%	-	-	-
22	3/01/2008	18	-	33%	72%	-	-	-	-	-	-
23	8/02/2008	66	70%	38%	47%	-	-	23%	-	-	-
24	10/11/2007	14	14%	7%	29%	-	-	-	-	-	-
26	19/12/2007	19	21%	11%	21%	-	5%	16%	-	-	5%
27	2/12/2007	20	25%	25%	25%	-	-	5%	-	-	-
28	17/01/2008	18	39%	-	28%	6%	-	6%	-	-	-
29	3/02/2008	9	-	11%	33%	-	-	-	-	-	-
30	17/11/2007	11	45%	55%	45%	-	-	-	-	-	-
31	9/12/2007	15	-	7%	13%	-	-	-	-	-	-
32	8/02/2008	11	-	-	55%	-	-	-	-	-	-
34	10/12/2007	89	22%	9%	9%	-	-	-	-	-	-
35	6/01/2008	6	33%	17%	-	-	-	-	-	-	-
36	25/02/2008	5	20%	20%	80%	-	-	-	-	-	-
8/12/2007	1135	26.6%	17.0%	34.1%	0.3%	3.1%	3.1%	0.0%	0.0%	0.2%	

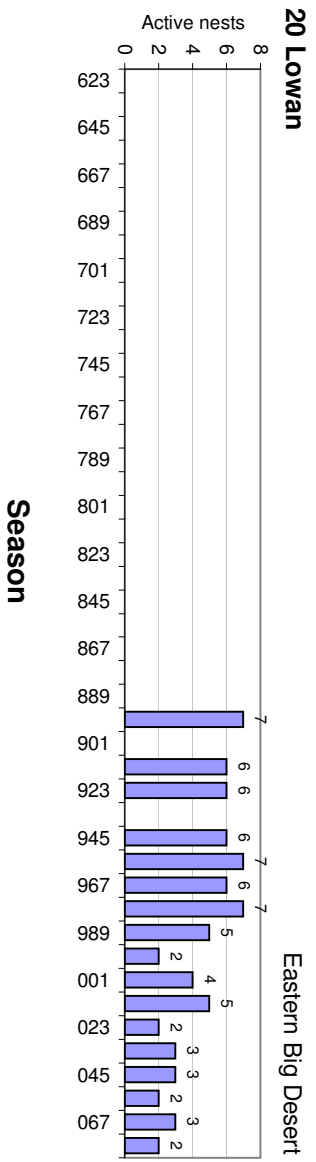
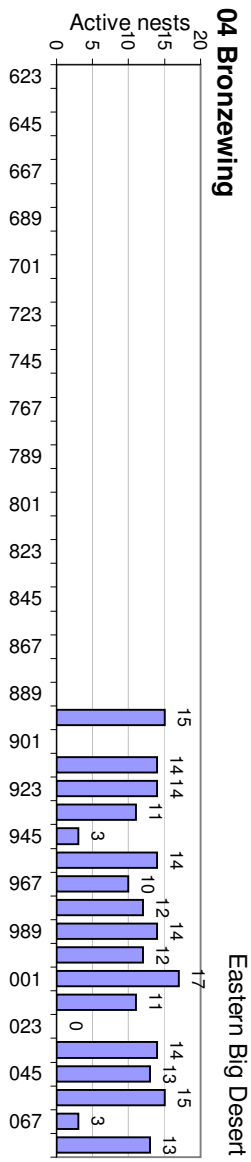
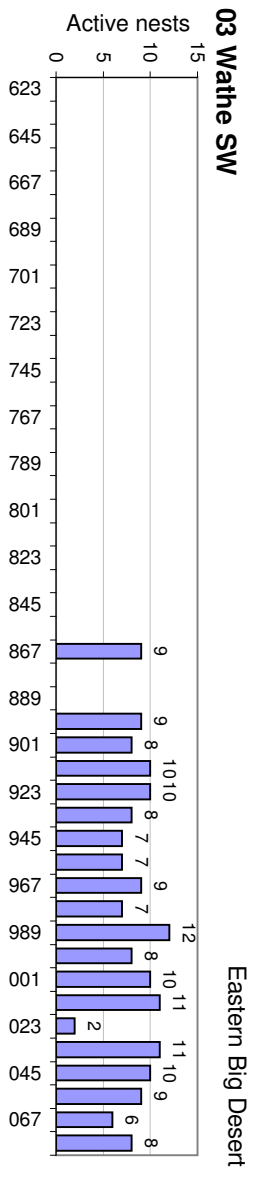
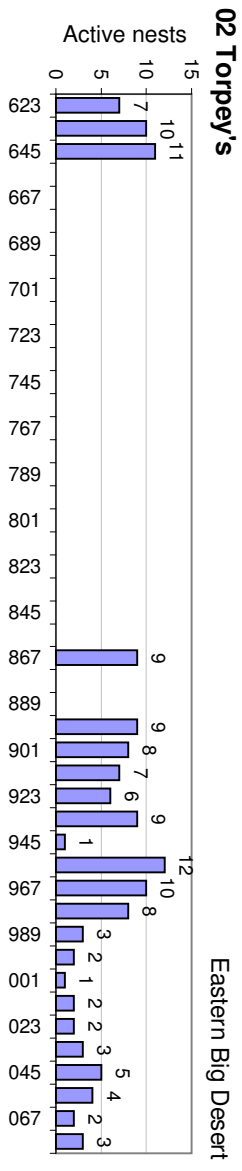
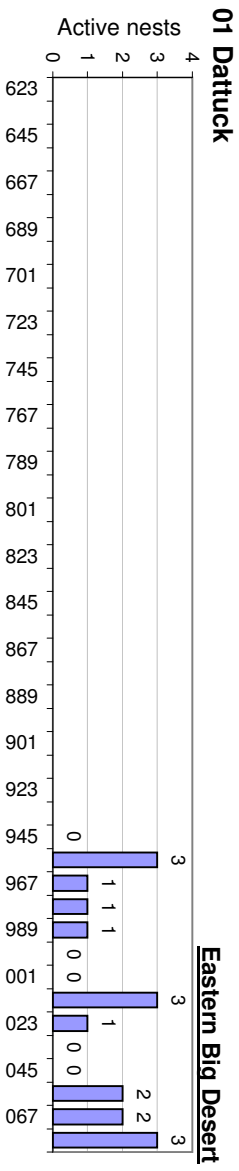
K= Kangaroo, R= Rabbit, G= Goat, E= Emu, H= Human, D= Dog, C= Cat

Appendix A 8. 2007/8 Lerp on Malleefowl Nests

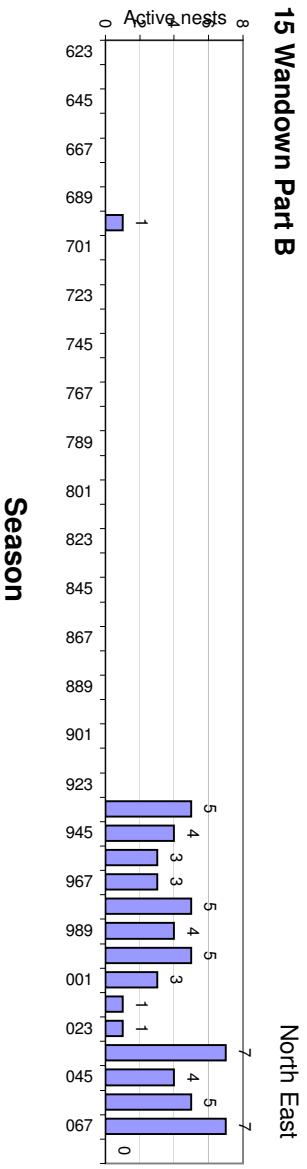
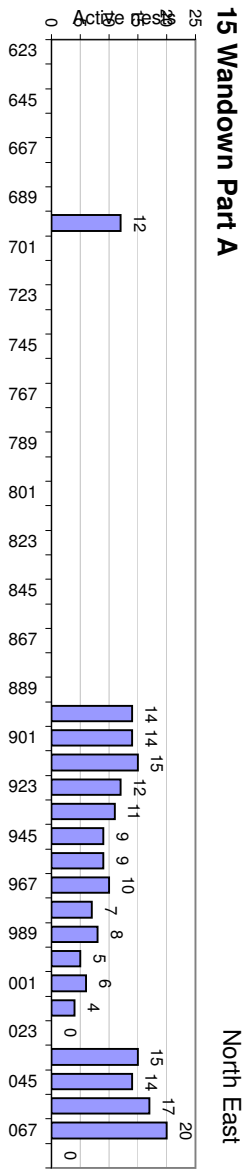
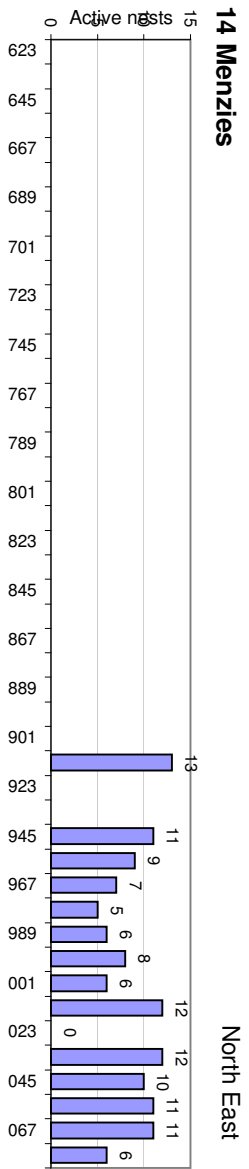
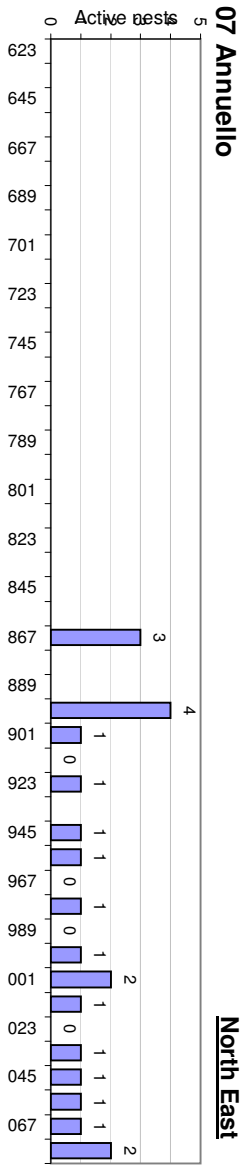
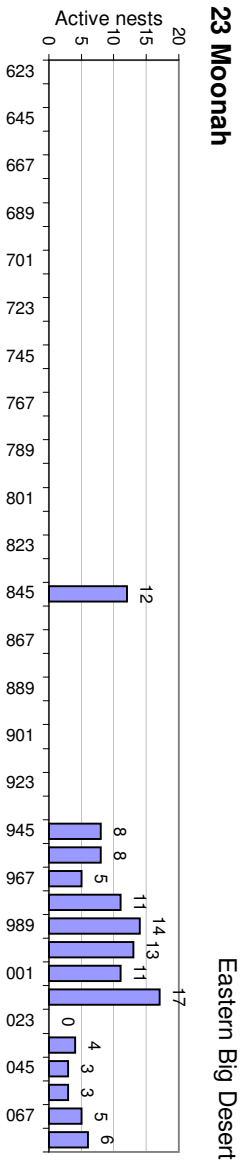
09-Apr-08

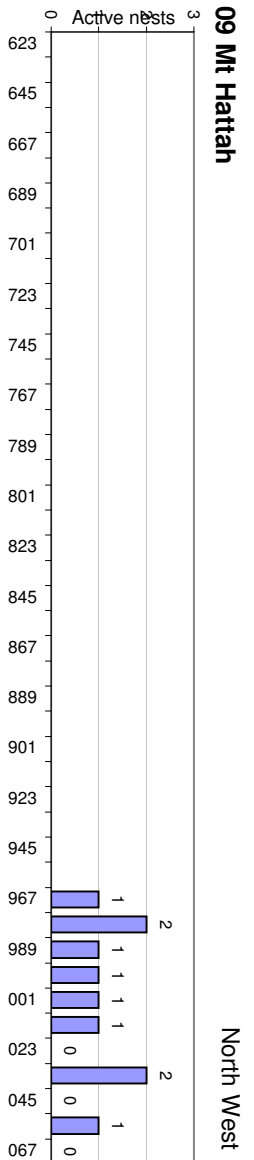
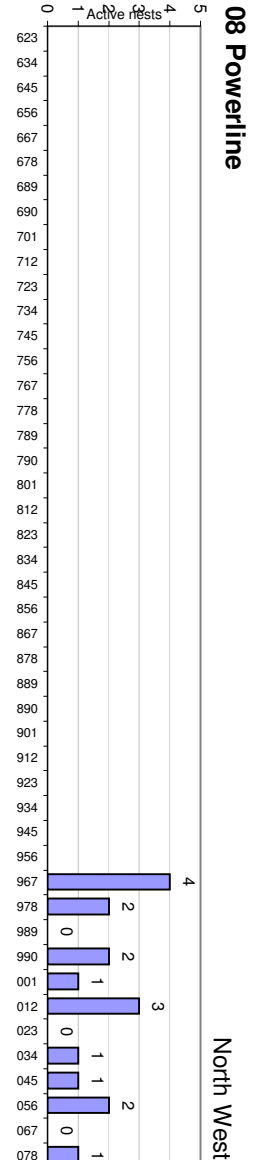
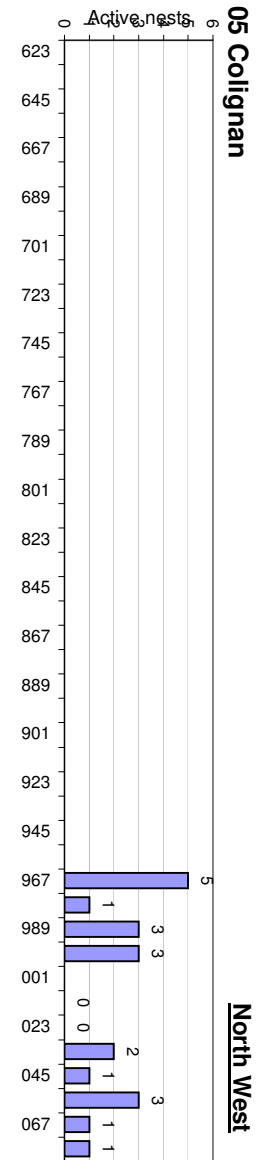
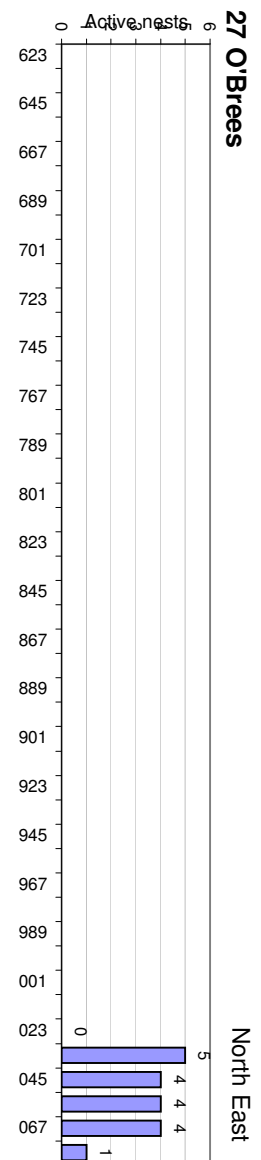
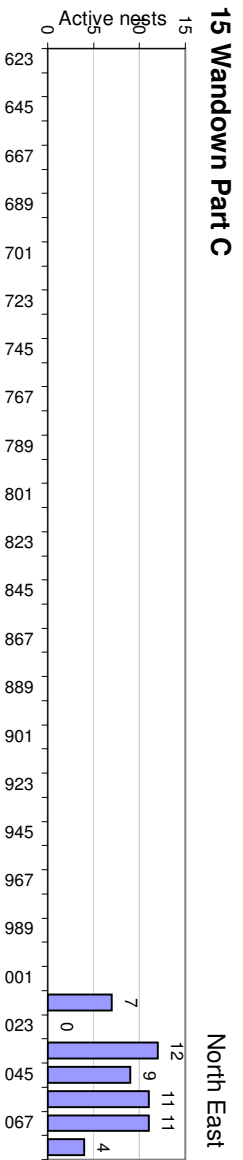
Note: Lerp on nests recorded as None (none), Some (1-10 lerp) or Lots (more than 10 lerp on the nest)

Grid	AvgDate	NUMBERS				FREQUENCIES (%nests)		
		Total	none	some	lots	Any Lerp	some	lots
01	5/11/2007	80	80	0	0	-	-	-
02	18/01/2008	57	56	0	1	2%	-	2%
03	4/12/2007	91	87	1	3	4%	1%	3%
04	4/11/2007	108	75	24	9	31%	22%	8%
05	11/12/2007	15	14	1	0	7%	7%	-
07	22/11/2007	39	31	8	0	21%	21%	-
08	16/11/2007	17	15	2	0	12%	12%	-
09	17/11/2007	14	13	1	0	7%	7%	-
10	10/11/2007	3	3	0	0	-	-	-
11	9/11/2007	16	16	0	0	-	-	-
12	26/10/2007	27	27	0	0	-	-	-
13	24/11/2007	39	37	1	1	5%	3%	3%
14	31/10/2007	32	32	0	0	-	-	-
15	28/10/2007	86	84	1	1	2%	1%	1%
16	10/12/2007	42	41	1	0	2%	2%	-
17	12/11/2007	37	37	0	0	-	-	-
18	16/12/2007	27	27	0	0	-	-	-
19	2/01/2008	23	23	0	0	-	-	-
20	25/11/2007	60	58	0	2	3%	-	3%
21	17/11/2007	40	40	0	0	-	-	-
22	3/01/2008	18	17	1	0	6%	6%	-
23	8/02/2008	67	65	2	0	3%	3%	-
24	10/11/2007	19	19	0	0	-	-	-
26	19/12/2007	19	19	0	0	-	-	-
27	2/12/2007	20	20	0	0	-	-	-
28	16/01/2008	19	19	0	0	-	-	-
29	3/02/2008	9	9	0	0	-	-	-
30	17/11/2007	11	11	0	0	-	-	-
31	9/12/2007	15	15	0	0	-	-	-
32	8/02/2008	12	12	0	0	-	-	-
34	10/12/2007	89	89	0	0	-	-	-
35	6/01/2008	6	6	0	0	-	-	-
36	25/02/2008	5	2	2	1	60%	40%	20%
	8/12/2007	1162	1099	45	18	5.0%	4%	1%

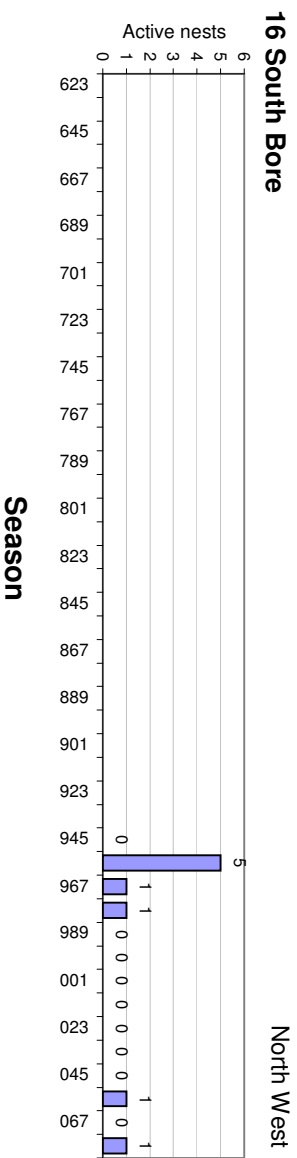
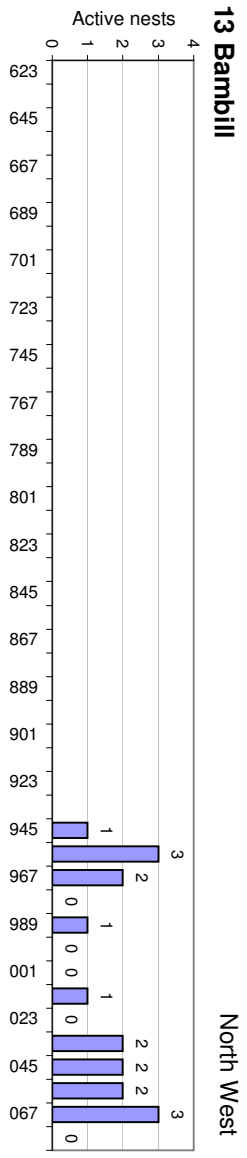
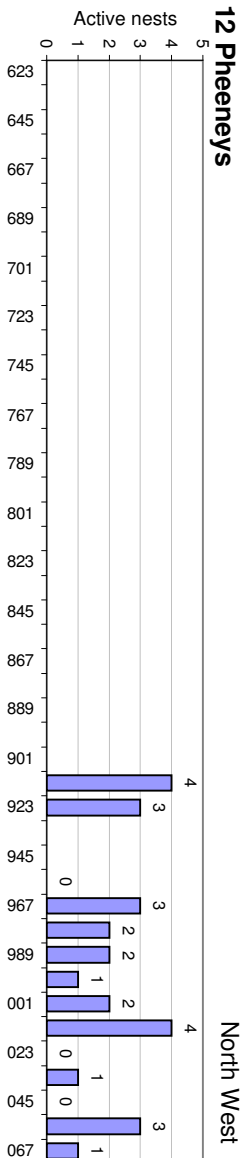
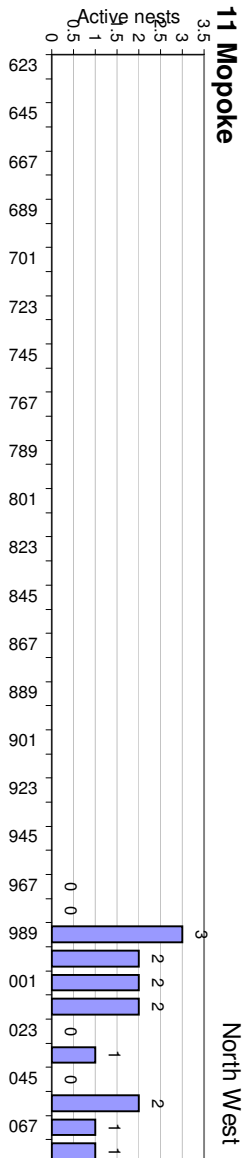
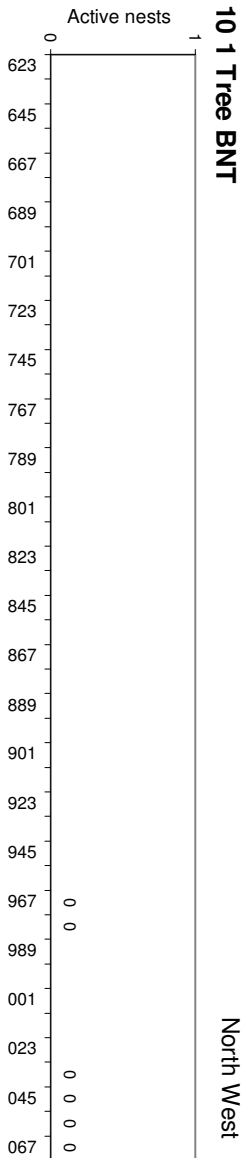


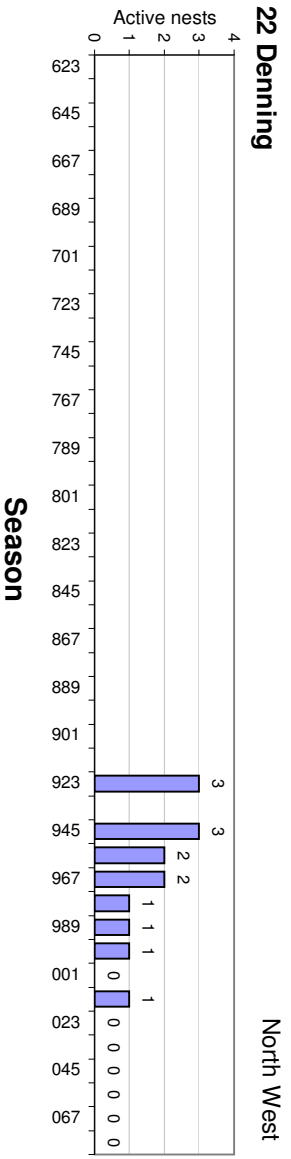
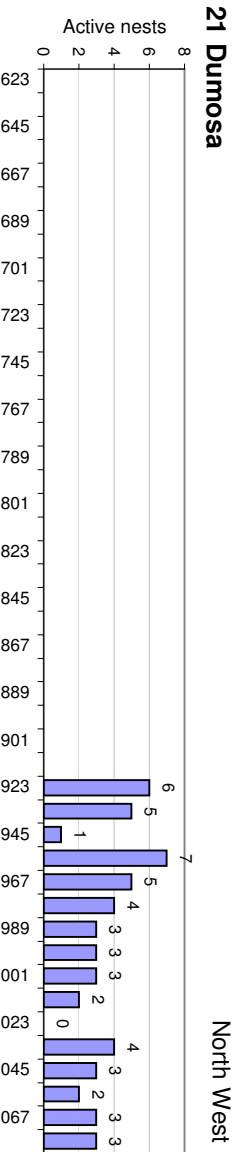
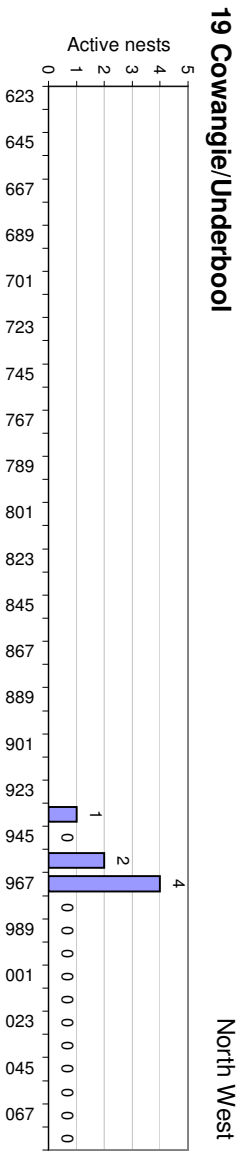
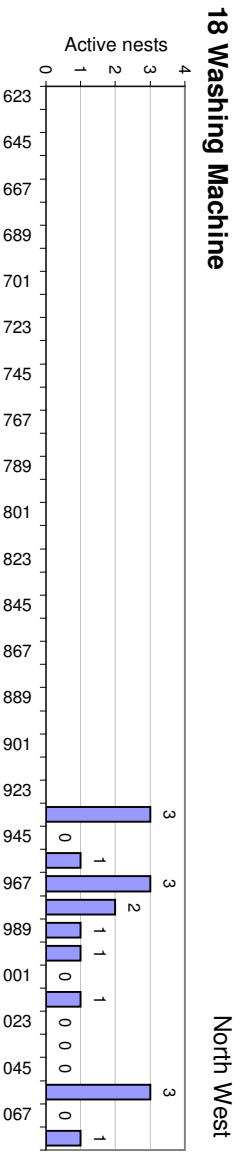
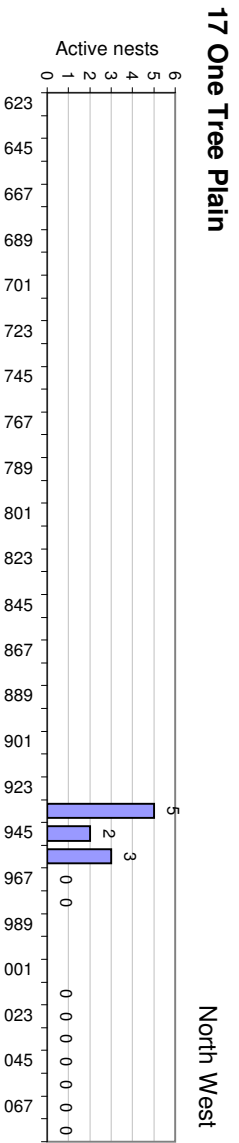
Appendix B Site Trends





Season





end.