



Malleefowl Monitoring in Victoria: 2009/10

Report to the Victorian Malleefowl Recovery Group

Joe Benshemesh and Peter Stokie

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1. Monitoring effectiveness

Appendix A.1 shows a breakdown of the effectiveness of the monitoring effort and the overall result is once again impressive. The VMRG visited 1164 Malleefowl mounds during the 2009/10 breeding season (all 'sought and found', plus all 'new' mounds), including 19 newly recorded mounds found during searches of Wathe v03 and Annuello v07, and 11 mounds found incidentally at eight sites. A total of 20 mounds on the annual lists were not found, three of which could not be found despite being sought, while 17 were not sought at all and appear to have been forgotten. Most of these "forgotten" mounds occurred at One Tree Plain (site v17) where a mix-up resulted in half the site being monitored twice and the other half not at all! One Tree Plain was burnt in 1997 and we have not yet detected any signs of Malleefowl returning, so missing 13 mounds this year is not a great disadvantage. Elsewhere, a total of four mounds were neither sought nor found, and three mounds were searched for, but not found. Overall, even with these missed mounds, we still managed to find 98.4% of mounds that we set out to monitor (had the mix-up not occurred at v17, our monitoring success would have been similar to previous years at 99.4%). This represents a terrific effort again, and all should be proud of this effort.

The VMRG also organised two searches of sites that had not been searched for many years, Wathe v03 and Annuello v07. Both seem to have been very successful in terms of organisation and thoroughness, and added the many newly found mounds to the monitoring lists as outlined above. At Annuello, the old site was extended to include the area between the original site and the main access track, which is where most of the newly found mounds were at this site. These searches were especially timely because both of these sites have been affected by recent nearby fires (some of Wathe v03 was in fact burnt). As a result of these nearby fires, homeless Malleefowl may have been pushed into the unburnt habitat at these monitoring sites and this may account for the boost in breeding numbers at these sites last year (see last years report). Now that the sites have been thoroughly searched we can be more confident of the monitoring records from these sites.

2. Malleefowl Breeding numbers

Of the 1164 mounds that were monitored in 2009/10, 131 were active (120 of which were inside sites, and 11 of which were mounds outside the strict site boundaries; see Appendix A 3a-c). This is one of the highest total counts of active mounds we have ever observed (see Appendix 2 for individual site trends), but is down on last year's record numbers when a total of 153 active mounds were recorded. Much of this difference may be accounted for by reduced breeding at four key sites: Torpeys (v02), Wathe SW (v03), Wandown (v15), and Menzies (v14) (Appendix A. 3a) where the combined breeding total was down from 70 active mounds last year to 49 this year, a reduction of 30%.

The decline at Wathe (v02 and v03) is not surprising and was forewarned in last year's report. Wathe experienced an extensive wildfire in November 2007 which burnt over half of the old growth habitat in the reserve. While some of the habitat at the monitoring sites was burnt, these sites nonetheless contain much of the old growth habitat in the reserve and represented refuge for Malleefowl that were left homeless by the fire. Despite the loss of some habitat in the two monitoring sites at Wathe, breeding numbers soared last year to unprecedented levels due to this likely shift of birds from the burnt to unburnt habitats. But the crowding evident in the breeding

numbers last year most likely resulted in an unsustainable situation and so it was not surprising that a 'correction' occurred. Despite the decline that has occurred at Wathe in the past year (from 25 to 16 active mounds: 36% decline), breeding numbers are still higher than they have been for many years and this suggests that further (but smaller) declines are possible. Interestingly, at Annuello (v07) which also showed an increase in breeding numbers last year following a nearby fire, breeding numbers were unchanged from last year.

The declines in the past year at Wandown and Menzies were less pronounced than at Wathe (from 45 to 33 active mounds: 27% decline) but are harder to explain. Possibly, these neighbouring sites missed out on critical rains, although if this is the case the affect must have been quite localised as nearby monitoring sites (v07 and v27) showed relatively steady breeding numbers. Other possibilities include the affects of sonic bird deterrents in nearby almond orchards, although these have been operating for a number of years.

Apart from these areas, breeding numbers were similar to last year; some sites were a little higher, some a little lower, but overall numbers were similar. In general, breeding numbers tended to be a little lower than last year in the north of the state, and higher in the south, and this also may suggest a rainfall affect.

Rainfall throughout the western mallee in 2009 showed a return to average conditions during the autumn/winter periods, in contrast to the decade or so to 2007 when dry conditions prevailed during this period. Widespread and above average rains fell across western Victoria in June (Figure 1), an important time for Malleefowl when they renovate their mounds and wait for rain to wet the litter, and this most likely benefitted the birds. Apart from these rains, the northern areas were below average from May to August, whereas further south rainfall was above average throughout this period.

Trends in Malleefowl breeding numbers over the past few decades are shown in Figures 2 and 3, in which monitoring sites are grouped according to how long they have been monitored. In terms of the seven key monitoring sites that have been tracked for the past 22 years (Figure 2), the 2009 result showed a sharp drop from last year's record breaking total, and a return to numbers more in line with previous years. Three of the seven sites shown in this aggregated total showed substantial declines in breeding numbers from last year (v02, v03 and v15; discussed above), and these declines account for the drop in breeding numbers in the aggregate total.

Regional Malleefowl breeding trends over the past 14-17 years also showed declines in comparison to last year trends (Figure 3), and were also affected by the declines at Wandown and Menzies (v15 and v14; NE), and at Wathe (EBD). Nonetheless, the aggregate results for the Eastern Big Desert are amongst the highest since 2001 (albeit still lower than during the 1990s), and the results for the North East are considerably higher than those from the 1990s (albeit not as high as they have been since 2001). In the North West, which was unaffected by the declines in Wathe and Wandown, breeding numbers were only slightly lower than last year and, while this result is amongst the highest over the past 13 years, it was still considerably lower than the breeding numbers recorded in 1996.

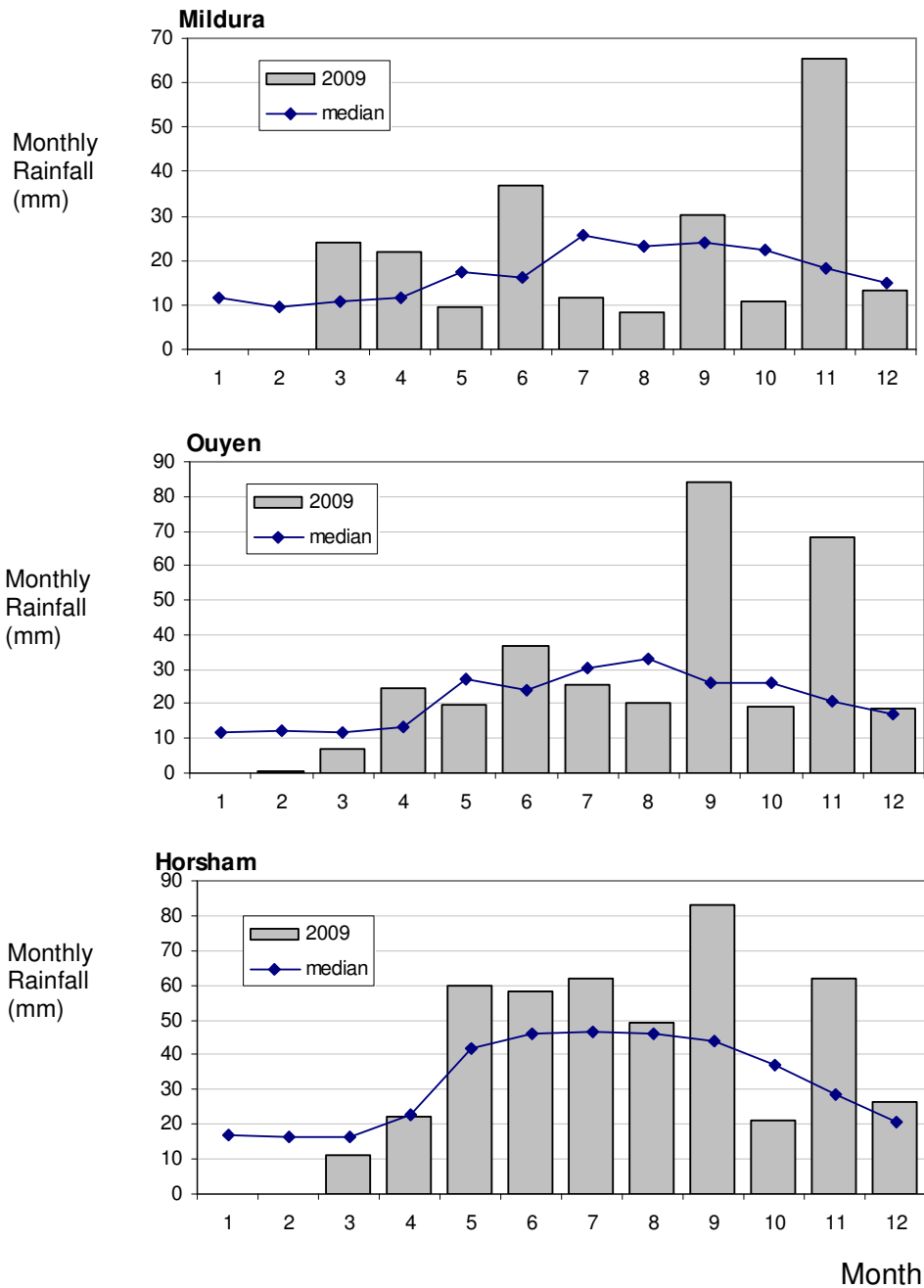


Figure 1. Rainfall at Mildura, Ouyen and Horsham in 2009 (bars) and median rainfall since early 1900s (line). During the critical months prior to breeding (May to August) in 2009, rainfall was a little below the long term median in the northern mallee (Mildura), but was well above median values for the southern Mallee (Horsham). (Data from the Bureau of Meteorology website).

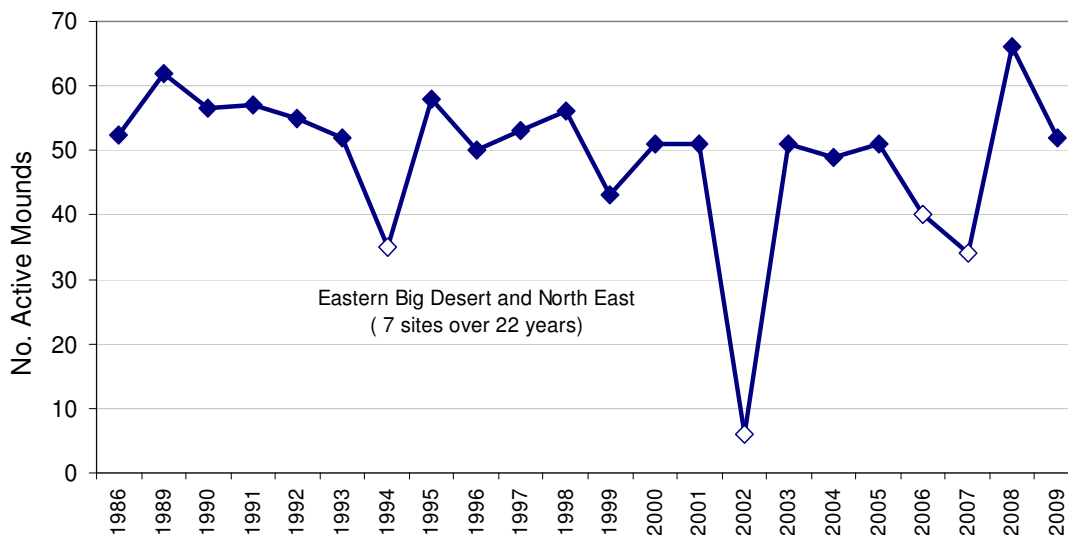


Figure 2. Trends in Malleefowl breeding numbers at 7 set sites over the past 22 years. 1994, 2002, 2006 and 2007 were major drought years (white points). Data comprise the common sets for sites 01, 02, 03, 04, 07, 20 and 23.

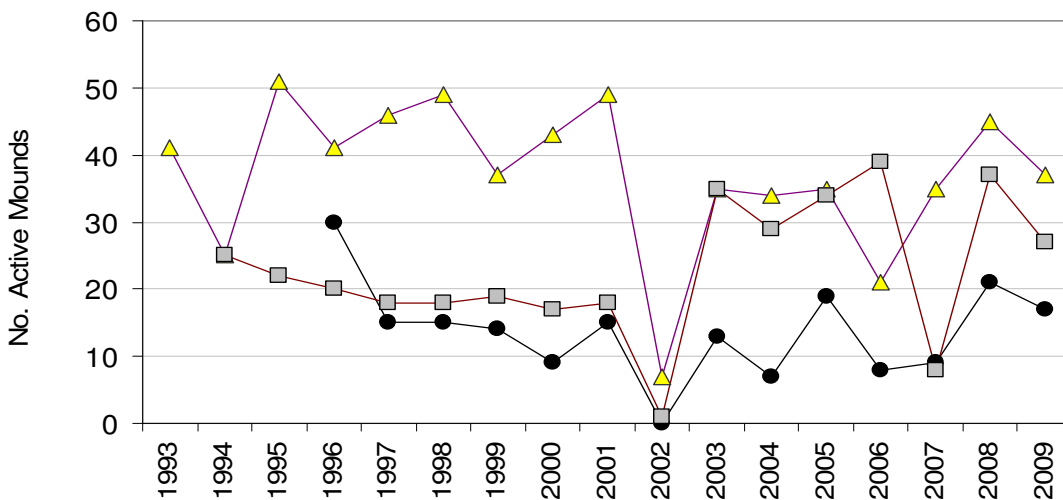


Figure 3. Trends in Malleefowl breeding numbers at 22 sites over the past 14-17 years. Eastern Big Desert comprise 6 sites over 17 years (triangles), North East comprise 4 sites over 16 years (shaded squares), and North West comprises 12 sites over 14 years (solid circles). 1994, 2002, 2006 and 2007 were major drought years in many areas.

Individual Grid trends

Appendix B shows the histograms of grid trends from historical records to 2009/10. The value (i.e. 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. All sites are represented in numerical order.

3. Changes to data recorded in the field

Few changes were needed to the data collected in 2009/10, although there were a number of cases where people apparently finalized their monitoring record after they had already left the mound. This error can be avoided by making sure that each record is finalised while you are still at the nest in question. (If you are unsure about this, please ask!).

For many monitors, this season may have been one of frustration or gadget-geeky-joy (or both) as we rolled out the new devices (Magellan Mobilemappers) that are replacing the old, tired Palms. Given the very little instruction provided, things generally went very well although there were some bugs in the program that caused extreme frustration for some (the bug caused the device to freeze sometimes after taking a photo). These bugs were mostly in Cybertracker itself, and although they were quickly corrected by Cybertracker programmers, unwittingly we sent the buggy version into the field without realising that there was a problem, or that there was a solution available.

Another issue, for which one of us (JB) was uniquely responsible, was that the GPS on the new devices was set to low accuracy which caused lots of problems when trying to vet the records. This has also been corrected.

Frustrating though these problems may be for you when you are out in the field, it's important to not become disheartened with the new technology. Our monitoring program is like a well oiled machine, but like any complex system when something is changed there is an opportunity for system failure. We have changed a lot behind the scenes in the past year or so: we have rewritten the monitoring sequence for a completely new version of Cybertracker, developed a completely new on-line database to handle the data, and changed the devices we are using in the field to capture data. There have certainly been lots of hiccups along the way, and we are sorry that some of you had to deal with problems in the field, but we are through the most challenging period now and I am sure the problems are largely behind us (this is not to say there won't be other stuff ups).

On the positive side, the new Magellans did perform well for the majority of people, and many people used the in built camera to take monitoring photos (this, incidentally, is where most of the problems occurred). Importantly, the data was more secure than on the Palms and was easily transferred to PC and to the on-line database.

Another change that occurred was that the VMRG, in conjunction with the APYLM (Anangu-Pitjantjatjara Yankunytjatjara Land Management; in central Australia), commissioned Steventon Consulting (USA) to develop a GPS emulator within the Cybertracker program we use for collecting our monitoring data. This development means that it will no longer be necessary to use a separate GPS to navigate to mounds. Previously we have always had to carry a GPS with the Palms and the new Magellans, even though the Magellans have an inbuilt GPS that we use to record the location of mounds. Now we will be able to navigate to all the mounds from within the

Cybertracker program, and it's all very simple and easier than on a separate GPS. In addition to being a benefit in the field, the development also brings many advantages behind the scenes, increases the security of mound locations, and streamlines the annual preparations for the monitoring.

Next season we intend to train people on how to use the Magellans before they monitor, and to provide a simple user-manual for the use of the devices for the monitoring.

The new database

The on-line database that has been developed for our monitoring by Richard and Margaret Alcorn (initially funded by DEWHA) has performed very well and is proving to be an invaluable tool for processing, storing and accessing the large volume of data we currently obtain.

This season has provided a good work-out for the database and we are working through various tweaks and changes. We also have yet to load historical data and photos, and have been teaching Malleefowl monitoring colleagues in other States how to use the database and vet their data.

So far, only a select few have been using the database in each State, but the database is being designed for everyone involved in the monitoring. This is where you will be able to see the records you collect, add comments you forgot to add in the field, check mound photos over the past few years, keep tabs on the progress in vetting and finalising the data, and access trend graphs and other information.

Richard and Margaret have built a very robust system that will provide a firm foundation for these and other developments. We have ideas on how to improve the database in terms of data processing and management, but would like to hear about features that everybody else wants. So now is a good time to get onto the database; have a look and a think and let us know how we can get the data you collect back to you in the form that you want it in. Note that for security reasons you will need to obtain a user name and password to log onto the database, but these are easily obtained by contacting one of us.

4. Lerp

This season was the fourth time we recorded the occurrence of lerp (the sweet and nutritious casing of psillid sap-sucking insects that fall from leaves) on Malleefowl mounds, but there were very few to count. Lerp were recorded at about 1% of mounds in 2009 (Appendix A VIII), compared to only 7% last season and 5% in 2007/8. The low count may have been due to the heavy rains in September and November, but is not unusual. Lerp become significant food resources for Malleefowl when there are psillid outbreaks and the fallen casings are abundant. In most years they are in low abundance and of less importance. Given the low numbers of lerp on mounds during this season's monitoring, there is no need to conduct more intensive lerp surveys this autumn.

5. Fox scats

Fox scats were collected at 427 mounds in 2009/10 and weighed a total of over 7 kg. This is an increase over last year in which there was a total of 378 mounds with fox scats, weighing a total of 4.8 kg (similar to the year before; Table 1). Thus, the number of mounds with scats increased by 13%, whereas the weight of fox scats found on mounds increased by nearly 50%. These increases suggest that fox numbers may be also be increasing, possibly benefitting from the good rains in the past couple of years. Malleefowl feathers have been forwarded on to Taneal Cope who is conducting the genetics study at Melbourne University.

Grid	Name	Fox Scats				MfFeather	MfScat
		2009Wt (g)	<i>2008 Wt (g)</i>	2009 Count	<i>2008 Count</i>	2009 Count	2009 Count
v01	Dattuck	39	<i>65</i>	3	<i>6</i>	0	1
v02	Torpey's	464	<i>237</i>	28	<i>17</i>	3	4
v03	Wathe SW	867	<i>374</i>	38	<i>29</i>	2	13
v04	Bronzewing	1195	<i>565</i>	60	<i>58</i>	9	27
v05	Colignan	75	<i>189</i>	6	<i>10</i>	0	0
v07	Annuello	257	<i>176</i>	16	<i>13</i>	0	7
v08	Powerline	19	-	2	-	0	1
v09	Mt Hattah	44	<i>4</i>	3	<i>2</i>	0	0
V10	One Tree Plain BNT	0	-	0	-	0	0
v11	Mopoke	143	<i>148</i>	9	<i>8</i>	0	6
v12	Pheeneys	283	<i>151</i>	16	<i>14</i>	0	6
v13	Bambill	340	<i>158</i>	21	<i>14</i>	1	9
v14	Menzies	179	<i>44</i>	11	<i>4</i>	2	5
v15	Wandown	256	<i>144</i>	28	<i>19</i>	2	9
v16	South Bore	113	<i>145</i>	12	<i>16</i>	0	18
v17	One Tree Plain	0	<i>4</i>	0	<i>1</i>	0	0
v18	Washing Machine	52	<i>30</i>	4	<i>3</i>	0	0
v19	Underbool	90	<i>107</i>	4	<i>9</i>	0	3
v20	Lowan	341	<i>213</i>	26	<i>22</i>	2	2
v21	Dumosa	214	<i>334</i>	15	<i>20</i>	3	12
v22	Denning	21	<i>67</i>	2	<i>4</i>	0	0
v23	Moonah	641	<i>683</i>	36	<i>41</i>	5	7
v24	Kiata	24	<i>117</i>	3	<i>4</i>	0	0
v26	Hattah Tracks	165	<i>43</i>	16	<i>5</i>	5	11
v27	O'Brees	72	<i>74</i>	8	<i>8</i>	3	3
v28	Nurcoung	49	<i>67</i>	6	<i>8</i>	7	8
v29	Wedderburn	29	<i>121</i>	5	<i>6</i>	0	0
v30	Hattah South	67	<i>20</i>	5	<i>6</i>	0	0
v31	Skinners Flat	13	<i>13</i>	3	<i>3</i>	0	0
v32	Wychitella	24	<i>54</i>	1	<i>3</i>	0	0
v33	Korong Vale	55	<i>29</i>	2	<i>1</i>	2	2
v34	Paradise	847	<i>354</i>	34	<i>22</i>	2	10
v35	Broken Bucket	25	<i>24</i>	3	<i>2</i>	0	0
v36	Boughtons WH	4		1		1	1
TOTAL		7007	4754	427	378	49	165

Table 1. The total weight of fox scats, the number of mounds at which fox scats were collected, for both 2009 and the previous year (*italics*). The number of mounds at which Malleefowl scats and feathers were collected is also shown.

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. Concluding comments

The VMRG has completed another excellent year of monitoring and the data are of a very high standard once again. While the breeding numbers this year have not been as stellar as those last year, the monitoring is suggesting stable populations in most areas, a result which is likely to be due at least in part to the good rains that occurred during the autumn-winter period.

There have been many changes to the monitoring system, although only a few of these have directly affected those of us that collect data in the field. Most notably we began using the new Magellan mobilemappers, and although there have been various teething problems, these proved very successful. The database has been given the most thorough testing and is now being used to upload, store and access Malleefowl monitoring data from throughout Australia. These developments will continue and it is now time for people who monitor to start using the database and provide us with feedback regarding the sorts of facilities they would like to see developed.

Progress is also occurring in the field where the VMRG managed to re-search two sites. More re-searches are planned for 2010, as are further surveys of the reserves in the Wedderburn area.

We are now also planning to apply for an ARC Linkage grant to fund the development of an adaptive management (AM) project for Malleefowl. The project would fund a post-doc at Melbourne University to build mathematical models that would allow us to measure the success or failure of management actions aimed at benefitting Malleefowl. The monitoring information collected by the VMRG and other groups around Australia is fundamental to the AM project and will provide the data that is essential to assessing the success of actions. The AM project is ambitious in its aims of providing a synthesis of monitoring, management, and research, but would develop the full potential of the monitoring program as a means of conserving Malleefowl in the future.

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

26 March 2010

NOTE if you notice any likely errors in this report or the Appendices, or numbers that disagree with your recollections, please let us know!
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Appendix A 1. 2009/10 Mound Inspection Report for All Victorian Sites

01-Apr-10

Table 1. Page 1 of 1
2009/10 Malleefowl Monitoring Report

Updated records

► *Mounds that will be included in future annual 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	37
Sought and found	1112	76	55	84	103	15	40	18	14	2	16	26	38	30	98	42	18	27	22	61	36	15	66	10	23	20	18	8	11	11	11	3	85	6	4	
New after search	19			8			11																													
New incidental	11			2	1		1					1										1							1	2	2					
Sought, NOT found	2	1																						1												
NOT sought or found	17	2													2	13																				
Total	1161	79	55	94	104	15	52	18	14	2	16	27	38	30	100	42	31	27	22	61	36	16	66	10	24	20	18	8	11	11	12	5	87	6	4	

► *Mounds that will be checked every 5th year*

	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	37
Sought and found	18	1	1	3	1			1										1			3	1	3			1			2							
New incidental	1																												1							
Sought, NOT found	1														1																					
Prev. 5yr listed*	30			4	4										1					5			5			1	1	4	1	3				1		
Total	50	1	1	7	5			1							2			1		5	3	1	8			2	1	6	2	3			1			

► *Mounds that will be omitted from annual 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	37
Sought and found	3		1																					1									1			
NOT sought or found	6															6																				
Total	9		1													6								1										1		

Grand Total 1220 80 57 02 109 15 52 19 14 2 16 27 38 30 102 42 37 27 23 61 41 19 67 19 24 20 20 9 11 17 14 8 88 6 5

* This row shows mounds previously listed on 5yr list and thus not visited this season.

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

End

Appendix A 2. 2009/10 Details of Mounds Not found, New, or Omitted

2009/10 Malleefowl Monitoring Report

Grid_nest	Contributors comment	Validation comment
<u>These mounds will be included in future ANNUAL lists:</u>		
● Previously known mounds that were Niether Sought, Nor Found		
01	38	no data no photo: forgotten
01	48	no data no photo: forgotten
15	13	no data no photo: forgotten?
15	60	no data no photo: forgotten?
17	15	no data no photo: forgotten
17	18	no data no photo: forgotten
17	19	no data no photo: forgotten
17	20	no data no photo: forgotten
17	21	no data no photo: forgotten
17	23	no data no photo: forgotten
17	24	no data no photo: forgotten
17	25	no data no photo: forgotten
17	26	no data no photo: forgotten
17	32	no data no photo: forgotten
17	33	no data no photo: forgotten
17	38	no data no photo: forgotten
17	40	no data no photo: forgotten
● Previously recorded and Sought in monitoring, but Not Found		
01	67	Fallen trees unable to see stake despite looking
26	24	Entered from sheet gps given wae for 21n01 on east sjde of track
● New mounds encountered incidentally during monitoring		
03	129	
03	130	
04	119	
07	101	
12	27	
22	21	
32	13	
33	8	
33	9	
34	93	
34	94	
● Newly described in search, Sought and Found in monitoring		
03	118	
03	119	
03	120	
03	121	
03	122	
03	123	
03	124	
03	126	
07	90	

Grid_nest	Contributors comment	Validation comment
● Newly described in search, Sought and Found in monitoring		
07	91	
07	92	
07	93	
07	94	
07	95	
07	96	
07	97	
07	98	
07	99	
07	100	

These mounds will be omitted from future lists:

● Other reasons		
02	49	mound destroyed inn bulldozer line. take off list. stake located.
		Mound destroyed by dozer (fire). Stake proba
24	21	This is not a mound
		Note observer says that this is not a mound, b
34	3	
		no photo 2009, but previous photos show very

These mounds have been marked this season for monitoring only every FIFTH year

● Other reasons		
01	32	Doesn't need monitoring every year old old old
		aided to 5yr list following comment. used agd
02	47	put on 5 year list
		added to 5yr list following comment
03	17	put on 5 year list
		put on 5yr list folowing comment and photo
03	39	put on 5 year list
		put on 5yr list folowing comment and photo
03	90	put on 5 year list
		put on 5yr list folowing comment and photo
04	95	5-year list candidate
		added to 5-year list (re obs comment)
19	23	Old callitris has fallen across mound. Photo 1 from NE; 2 from E. Not practical to take measurements. Consider selective monitoring.
		added to 5-year list (re obs comment)
22	7	Put on 5 year list
		Put on 5 year list as requested
22	10	Put on 5 year list
		Put on 5 year list as requested
22	11	Put on 5 year list
		Put on 5 year list as requested
24	7	Add to 5year list
		observer note: mound added to 5 yr list
28	38	Not a mound.
		changed to 5yr list following observer note an
31	8	put on 5 year list very small very old
		added to 5yr list following obs comment & ph
31	17	not a mf mound definitely a prospecting hple remove fromdatabase
		put on 5yr list wrt obs comment and photo
● New mounds encountered incidentally during monitoring		
32	14	very 9id sunken mouhd put on5 year list
		put on 5yr list wrt obs comment and photo

These mounds will be omitted from future lists:

● Previously known mounds that were Niether Sought, Nor Found		
17	10	open sandy site, no litter surrounds; recommend delete,
17	16	reccommend 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

Grid_nest	Contributors comment	Validation comment
● Previously known mounds that were Niether Sought, Nor Found		
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.	
<u>These mounds were not visited as they were previously marked for monitoring every FIFTH year</u>		
● Previously known mounds that were Niether Sought, Nor Found		
03 5	JB2009: photo only (data taken from photo)	
03 60	JB2009:photo only (data taken from photo)	
03 80	JB2009:photo only (data taken from photo)	
03 103	JB2009:photo only (data taken from photo)	
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.	
15 236	ddelete/----delete	
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	
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	
28 36	Not a nest. Maybe a practice scrape. No litter under centre. In corner where firebreak cleared and windrows burnt.	
29 4	"Add to the 5 year list" JB2009:ok	
31 1	Coord2009: Put on 5 year list JB2009:ok	
31 2	Coord2009: Put on 5 year list JB2009:ok	
31 3	Coord2009: Put on 5 year list JB2009:ok	
31 5	Coord2009: Put on 5 year list JB2009:ok	
32 7	alredy tagged 40n14. recommend visit ocassionally.	
33 4	"Visit only every 5years;very old nest"	
33 5	"Check every 5 years"	
33 7	"Visit every 5 years"	
36 5	"Very old mound; or not a mound; visit every five years"	
● Previously recorded and Sought in monitoring, but Not Found		
15 235	No sign of nest or tag	Very indistinct by past photos. Put on 5 yr list
● Other reasons		
08 2	We have put the 02 stach in the 02 GPS point. Still no mound.. Firebrack has been rehabiletated.	stake only: mound removed by dozer. recrded

Grid_nest	Contributors comment	Validation comment
● Other reasons		
23 53		partial omit 2008
24 5		partial omit 2008
24 6		partial omit 2007

Printed on 01-Apr-10

Appendix A 3a. 2009/10 Activity by Site (Grid)

Printed on 08-Apr-10

2009/10 Malleefowl Monitoring Report

Grid	Part	Total nests	Active (y)	Not Active (n)	Not Found (o)	Active Last Year	Area (ha)	Active density (per km sq)
01	A	52	0	49	3	0	300	-
01	B	27	0	27	0	0	300	-
02		54	6	48	0	9	400	1.5
03		76	10	66	0	16	324	3.1
04	A	52	9	43	0	8	270	3.3
04	B	29	3	26	0	5	270	1.1
05		15	1	14	0	2	400	0.3
07	A	19	1	18	0	2	150	0.7
07	B	8	3	5	0	1	150	2.0
07	C	10	1	9	0	3		
08		18	1	17	0	1	400	0.3
09		14	0	14	0	1	400	-
10		2	0	2	0	0	400	-
11		16	1	15	0	1	400	0.3
12		24	2	22	0	2	400	0.5
13		38	3	35	0	3	400	0.8
14		30	7	23	0	11	380	1.8
15	Ab	12	3	9	0	6	115	2.6
15	Au	30	8	22	0	12	325	2.5
15	B	19	5	14	0	5	440	1.1
15	Cb	18	8	10	0	8	660	1.2
15	Cu	4	1	3	0	1	370	0.3
15	D	15	1	14	0	2		
16		42	1	41	0	3	400	0.3
17		31	0	18	13	0	400	-
18		27	3	24	0	2	400	0.8
19		22	1	21	0	1	400	0.3
20		47	2	45	0	2	282	0.7
21		33	4	29	0	6	400	1.0
22		14	0	14	0	0	542	-
23		49	7	42	0	6	400	1.8
24		10	0	10	0	0	210	-
26		24	4	19	1	3		
27		20	3	17	0	3	290	1.0
28		18	8	10	0	5		
29		8	0	8	0	0		-
30		11	1	10	0	2	400	0.3
31		11	0	11	0	0		-
32		12	2	10	0	1		
33		5	2	3	0	2		
34		87	7	80	0	8		
35		6	0	6	0	1		-
36		4	1	3	0	1		
Totals		1063	120	926	17	145	11378	1.1*

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

Appendix A 3b. 2009/10 Activity of nests that were OUT OF GRID (OOG)

Printed on 26-Mar-10

2009/10 Malleefowl Monitoring Report

Grid		Total nests	Active (y)	Not Active (n)	Not Found ()	<i>Active Last Year</i>
02	oog	1	0	1	0	0
03	oog	18	2	16	0	1
04	oog	22	2	20	0	4
07	oog	15	3	12	0	0
12	oog	3	2	1	0	0
21	oog	3	0	3	0	0
22	oog	2	0	2	0	0
23	oog	17	2	15	0	3
Totals		81	11	70		8

Appendix A 3c. 2009/0 Active Nests List

+ Mounds that have been newly added to the monitoring program

Where sites have been divided into various parts, these are indicated to the right of the mound code (e.g. A, B, C, and 'oog' (out grid)). At Wandown (v15) site parts have been further subdivided into burnt ("b") and unburnt sections ("u").

v02 : 6 active nests	v07 : 8 active nests	15_61 Cb	v23 : 9 active nests
02_1	07_12 A	15_65 Cb	23_13
02_10	07_61 B	15_66 Cb	23_16
02_11	07_62 B	15_69 Ab	23_19
02_27	07_64 B	15_91 Cb	23_26 oog
02_43	07_69 oog	15_92 B	23_29
02_63	07_80 C	15_93 Ab	23_46
v03 : 12 active nests	07_86 oog	15_105 Cb	23_52 oog
03_20	07_99 + oog	15_107 Au	23_58
03_23	v08 : 1 active nests	15_116 Cb	23_61
03_31	08_4	15_203 Ab	v26 : 4 active nests
03_34	v11 : 1 active nests	15_215 Au	26_4
03_45	11_4	15_217 Au	26_5
03_52	v12 : 4 active nests	15_219 Au	26_6
03_53	12_9	15_224 Au	26_15
03_81	12_17	15_229 B	v27 : 3 active nests
03_82	12_22 oog	15_230 B	27_7
03_84	12_27 + oog	15_233 B	27_8
03_86 oog	v13 : 3 active nests	15_248 Cb	27_19
03_129+ oog	13_7	15_252 Cu	v28 : 8 active nests
v04 : 14 active nests	13_8	15_261 D	28_1
04_2 A	13_28	v16 : 1 active nests	28_3
04_17 A	v14 : 7 active nests	16_21	28_4
04_22 A	14_1	v18 : 3 active nests	28_6
04_26 B	14_8	18_7	28_12
04_32 B	14_10	18_12	28_16
04_41 B	14_12	18_18	28_26
04_45 A	14_22	v19 : 1 active nests	28_34
04_54 A	14_27	19_18	v30 : 1 active nests
04_55 A	14_28	v20 : 2 active nests	30_1
04_57 A	v15 : 26 active nests	20_34	v32 : 2 active nests
04_73 oog	15_6 Cb	20_37	32_6
04_80 A	15_8 Au	v21 : 4 active nests	32_9
04_82 A	15_11 B	21_3	v33 : 2 active nests
04_92 oog	15_19 Au	21_11	33_1
v05 : 1 active nests	15_23 Au	21_26	33_3
05_2		21_43	

Appendix A 3c. 2009/0 Active Nests List

Page 2 of 2
Malleefowl Monitoring Database

+ Mounds that have been newly added to the monitoring program

Where sites have been divided into various parts, these are indicated to the right of the mound code (e.g. A, B, C, and 'oog' (out grid)). At Wandown (v15) site parts have been further subdivided into burnt ("b") and unburnt sections ("u").

v 34 : 7 active nests

34_6

34_35

34_38

34_58

34_68

34_91

34_93 +

v 36 : 1 active nests

36_2

Appendix A 6. 2009/0 Frequencies of Animal Scats at Nests

01-Apr-10

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	X	S
01	18/10/2009	76	0%	8%	16%	1%	-	1%	-	-	-	-	-
02	2/01/2010	55	9%	53%	42%	2%	2%	-	-	-	-	2%	-
03	10/12/2009	90	13%	44%	42%	1%	-	-	-	-	-	-	-
04	27/11/2009	102	30%	62%	23%	1%	-	1%	-	-	-	-	-
05	17/01/2010	15	27%	40%	47%	7%	-	-	-	-	-	-	-
07	27/11/2009	50	10%	30%	28%	-	-	-	-	-	-	-	-
08	7/12/2009	18	6%	11%	61%	-	6%	-	-	-	-	-	-
09	8/12/2009	14	0%	21%	86%	-	7%	-	-	-	-	-	-
10	20/12/2009	2	0%	0%	100%	-	-	-	-	-	-	-	-
11	14/10/2009	16	31%	50%	19%	-	6%	-	-	-	-	-	6%
12	26/12/2009	27	22%	63%	15%	-	-	-	-	-	-	-	-
13	31/10/2009	38	18%	53%	45%	-	-	3%	-	-	-	-	-
14	3/11/2009	30	37%	40%	33%	-	-	-	-	-	-	-	-
15	11/11/2009	98	34%	30%	31%	-	-	2%	-	-	1%	1%	-
16	28/11/2009	42	43%	29%	52%	5%	2%	-	-	2%	-	-	-
17	1/01/2010	18	0%	0%	61%	-	-	-	-	-	-	-	-
18	11/12/2009	26	12%	15%	19%	-	-	-	-	-	-	-	-
19	15/10/2009	22	14%	18%	45%	-	5%	-	-	-	-	-	-
20	2/02/2010	61	4%	52%	38%	8%	-	2%	-	-	-	-	-
21	6/12/2009	36	33%	42%	53%	-	6%	-	-	-	-	-	-
22	5/11/2009	16	0%	13%	75%	19%	6%	-	-	-	-	-	-
23	20/02/2010	66	17%	51%	32%	3%	-	-	-	-	-	2%	-
24	31/10/2009	10	0%	30%	90%	-	-	10%	-	-	-	-	-
26	23/12/2009	23	52%	65%	-	4%	-	-	-	-	-	-	-
27	5/12/2009	20	15%	40%	50%	-	-	-	-	-	-	-	-
28	13/12/2009	18	44%	33%	67%	-	-	-	-	-	-	-	-
29	25/11/2009	8	0%	50%	100%	-	-	-	-	-	-	-	-
30	6/11/2009	11	18%	45%	82%	-	-	9%	-	-	-	-	-
31	13/12/2009	11	0%	27%	91%	-	-	-	-	-	-	-	-
32	28/11/2009	12	0%	8%	25%	-	-	-	-	-	-	-	-
33	29/11/2009	5	40%	40%	60%	-	-	-	-	-	-	-	-
34	2/11/2009	87	13%	32%	8%	-	-	-	-	5%	-	1%	-
35	30/12/2009	6	0%	50%	67%	-	-	17%	-	-	-	-	-
36	9/03/2010	4	0%	25%	75%	-	-	-	-	-	-	-	-
6/12/2009		1133	18.5%	37.9%	35.9%	1.6%	0.8%	0.8%	0.0%	0.4%	0.1%	0.4%	0.1%

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

Appendix A 7. 2009/0 Frequencies of Animal Prints at Nests

01-Apr-10

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	18/10/2009	76	-	1%	46%	-	-	1%	-	-	-
02	2/01/2010	55	16%	24%	33%	-	5%	4%	-	-	-
03	10/12/2009	90	34%	23%	33%	1%	1%	-	-	-	-
04	27/11/2009	102	32%	30%	29%	-	-	2%	-	-	-
05	17/01/2010	15	13%	40%	40%	7%	13%	13%	-	-	-
07	27/11/2009	50	8%	6%	6%	-	-	-	-	-	-
08	7/12/2009	18	6%	28%	56%	-	22%	6%	-	-	-
09	8/12/2009	14	-	7%	64%	-	7%	-	-	-	-
10	20/12/2009	2	-	-	-	-	-	-	-	-	-
11	14/10/2009	16	-	6%	31%	-	6%	-	-	-	-
12	26/12/2009	27	15%	15%	15%	-	-	-	-	-	-
13	31/10/2009	38	13%	21%	24%	-	8%	-	-	-	-
14	3/11/2009	30	57%	23%	13%	-	-	-	-	-	-
15	11/11/2009	98	67%	36%	32%	-	-	3%	1%	-	-
16	28/11/2009	42	5%	-	2%	-	2%	-	-	-	-
17	1/01/2010	18	-	-	39%	-	-	-	-	-	-
18	11/12/2009	26	4%	-	8%	-	4%	-	-	-	-
19	15/10/2009	22	9%	-	41%	-	9%	-	-	-	-
20	2/02/2010	61	7%	4%	25%	-	2%	13%	-	-	-
21	6/12/2009	36	14%	11%	22%	6%	3%	8%	-	-	-
22	5/11/2009	16	19%	25%	56%	-	6%	-	-	-	-
23	20/02/2010	66	66%	46%	44%	2%	2%	11%	-	-	-
24	31/10/2009	10	-	10%	70%	-	-	-	-	-	-
26	23/12/2009	23	48%	13%	17%	4%	4%	-	-	-	-
27	5/12/2009	20	30%	15%	20%	-	-	15%	-	-	-
28	13/12/2009	18	50%	6%	22%	-	-	-	-	-	-
29	25/11/2009	8	-	-	25%	-	-	-	-	-	-
30	6/11/2009	11	27%	36%	45%	-	9%	18%	-	-	-
31	13/12/2009	11	-	-	9%	-	-	-	-	-	-
32	28/11/2009	12	17%	-	17%	-	-	-	-	-	-
33	29/11/2009	5	20%	-	-	-	-	-	-	-	-
34	2/11/2009	87	20%	6%	15%	-	-	3%	-	2%	-
35	30/12/2009	6	-	17%	-	-	-	-	-	-	-
36	9/03/2010	4	-	-	25%	-	-	-	-	-	-
6/12/2009		1133	25.1%	17.4%	28.0%	0.5%	2.2%	3.3%	0.1%	0.2%	0.0%

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

Appendix A 8. 2009/0 Lerp on Malleefowl Nests

26-Mar-10

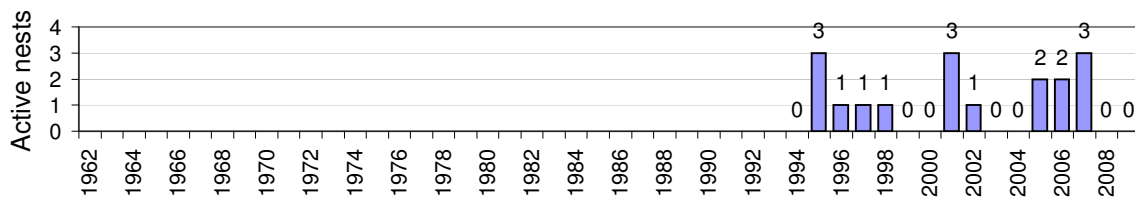
Note: Lerp on nests recorded as None (none), Some (1-10 lerp) or Lots (more than 10 lerp on the nest)

Grid	AvgDate	NUMBERS				FREQUENCIES (%nests)		
		Total	none	some	lots	Any Lerp	some	lots
01	18/10/2009	77	77	0	0	-	-	-
02	2/01/2010	57	57	0	0	-	-	-
03	9/12/2009	93	93	0	0	-	-	-
04	27/11/2009	103	102	1	0	1%	1%	-
05	17/01/2010	15	15	0	0	-	-	-
07	27/11/2009	50	50	0	0	-	-	-
08	7/12/2009	18	18	0	0	-	-	-
09	8/12/2009	14	14	0	0	-	-	-
10	20/12/2009	2	2	0	0	-	-	-
11	14/10/2009	16	16	0	0	-	-	-
12	26/12/2009	27	27	0	0	-	-	-
13	31/10/2009	38	37	1	0	3%	3%	-
14	3/11/2009	30	30	0	0	-	-	-
15	11/11/2009	98	93	4	1	5%	4%	1%
16	28/11/2009	42	42	0	0	-	-	-
17	1/01/2010	18	18	0	0	-	-	-
18	11/12/2009	26	26	0	0	-	-	-
19	15/10/2009	23	23	0	0	-	-	-
20	2/02/2010	46	42	4	0	9%	9%	-
21	6/12/2009	36	34	2	0	6%	6%	-
22	5/11/2009	19	19	0	0	-	-	-
23	20/02/2010	66	61	3	2	8%	5%	3%
24	31/10/2009	14	14	0	0	-	-	-
26	23/12/2009	23	23	0	0	-	-	-
27	5/12/2009	20	20	0	0	-	-	-
28	13/12/2009	19	19	0	0	-	-	-
29	25/11/2009	8	8	0	0	-	-	-
30	6/11/2009	11	11	0	0	-	-	-
31	13/12/2009	13	13	0	0	-	-	-
32	29/11/2009	13	11	2	0	15%	15%	-
33	29/11/2009	5	5	0	0	-	-	-
34	2/11/2009	88	88	0	0	-	-	-
35	30/12/2009	6	6	0	0	-	-	-
36	9/03/2010	4	4	0	0	-	-	-
	6/12/2009	1138	1118	17	3	1.4%	1%	0%

Appendix B Site Trends

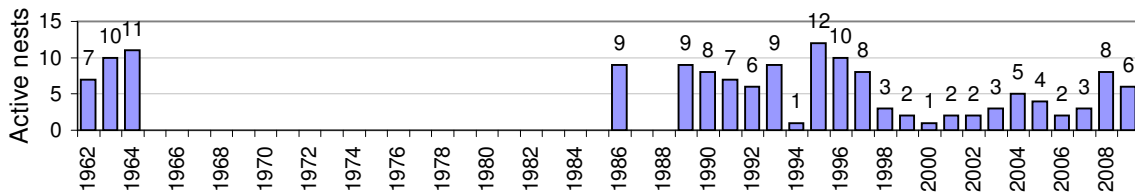
01 Dattuck

Eastern Big Desert



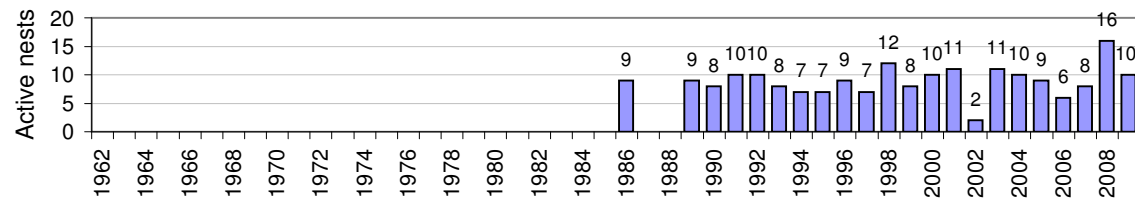
02 Torpey's

Eastern Big Desert



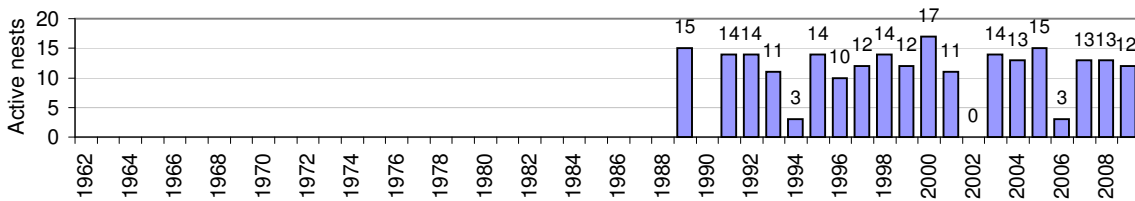
03 Wathe SW

Eastern Big Desert



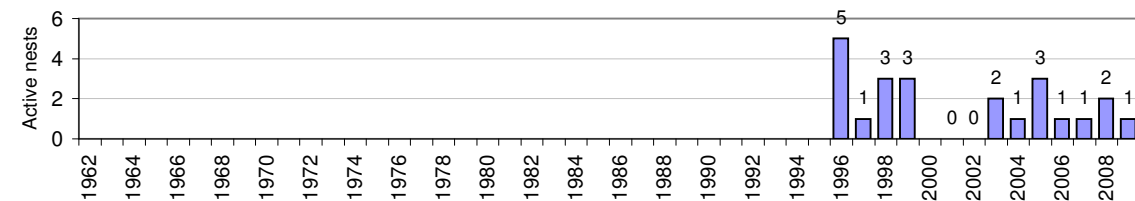
04 Bronzewing

Eastern Big Desert



05 Coligan

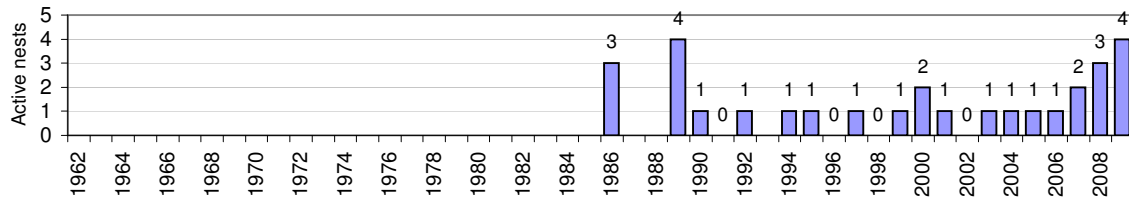
North West



Season

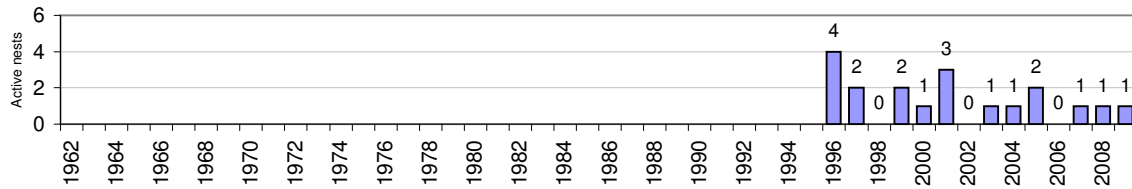
07 Annuello

North East



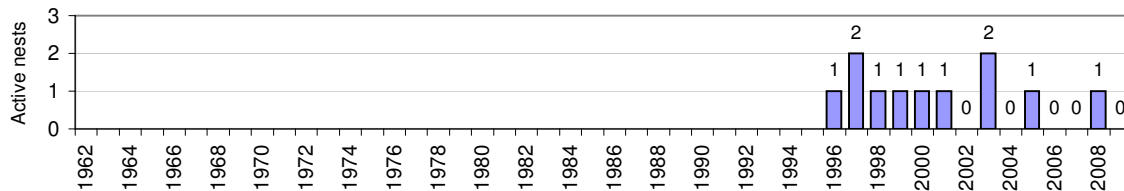
08 Powerline

North West



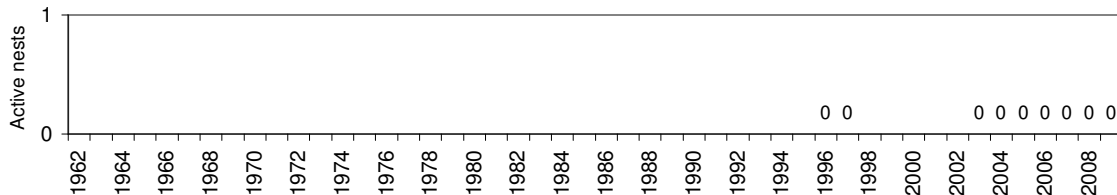
09 Mt Hattah

North West



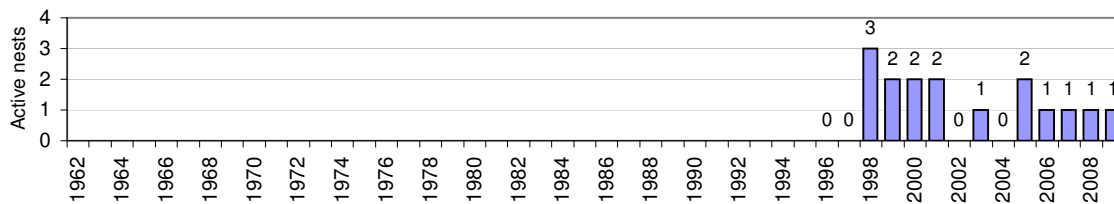
10 1 Tree BNT

North West



11 Mopoke

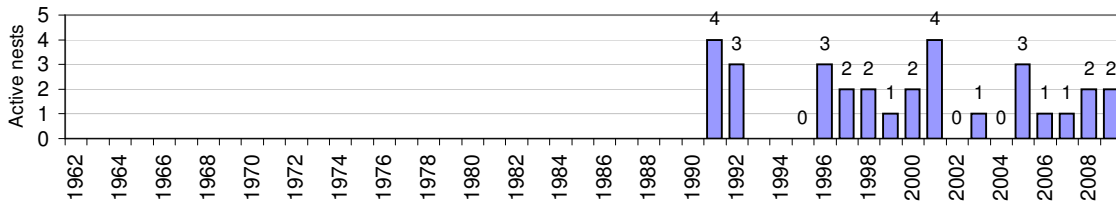
North West



Season

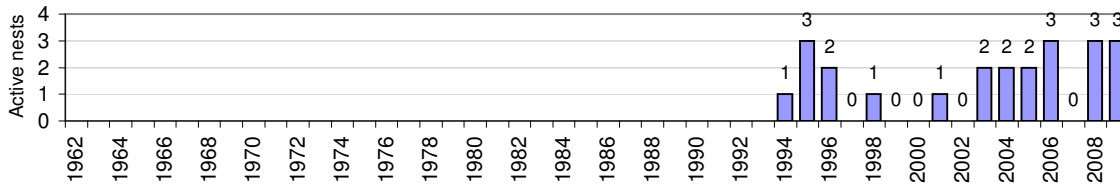
12 Pheeneys

North West



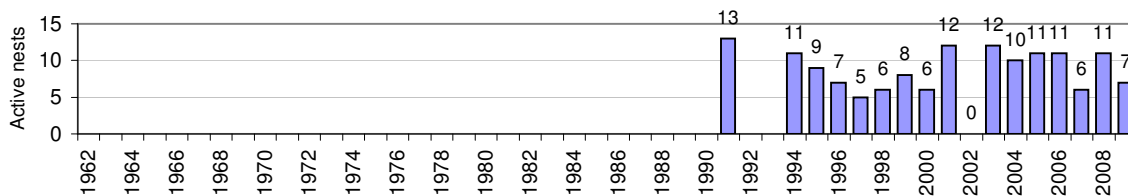
13 Bambill

North West



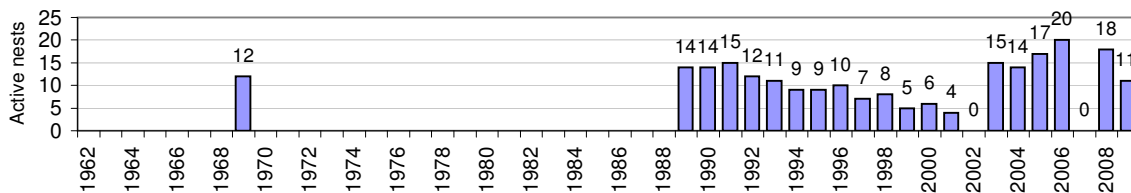
14 Menzies

North East



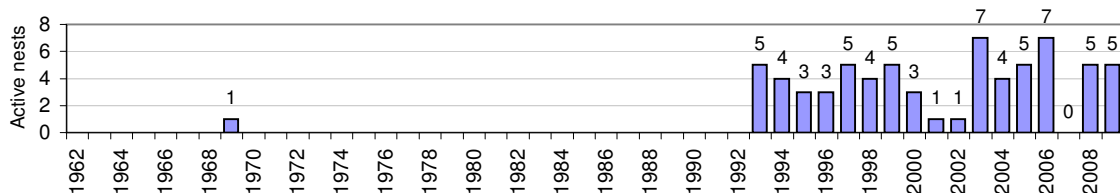
15 Wandown Part A

North East



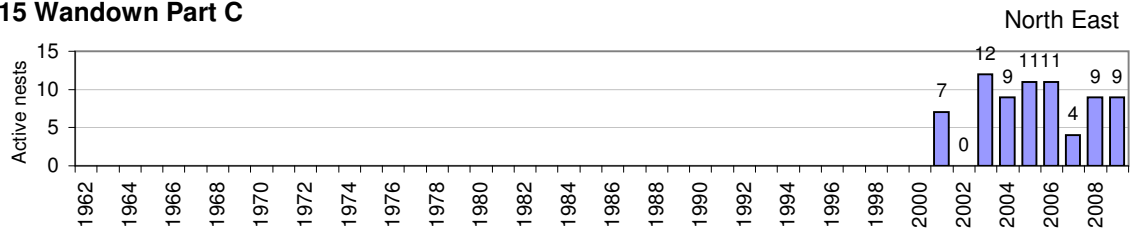
15 Wandown Part B

North East

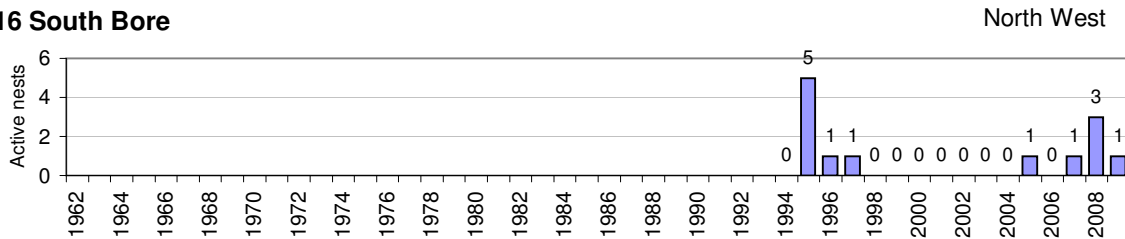


Season

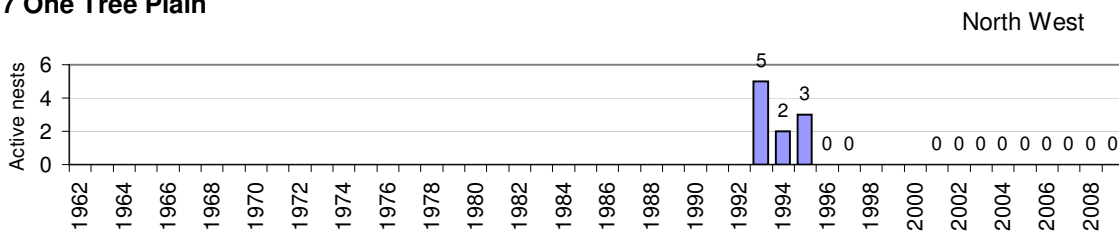
15 Wandown Part C



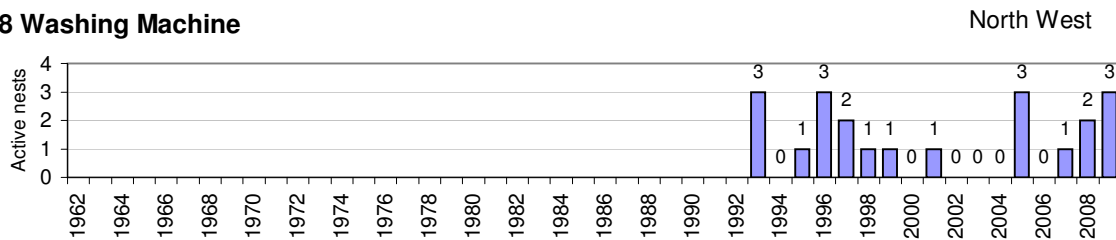
16 South Bore



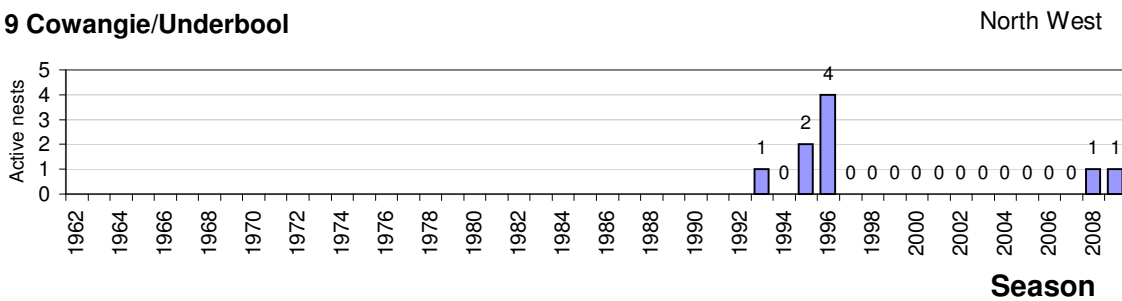
17 One Tree Plain



18 Washing Machine

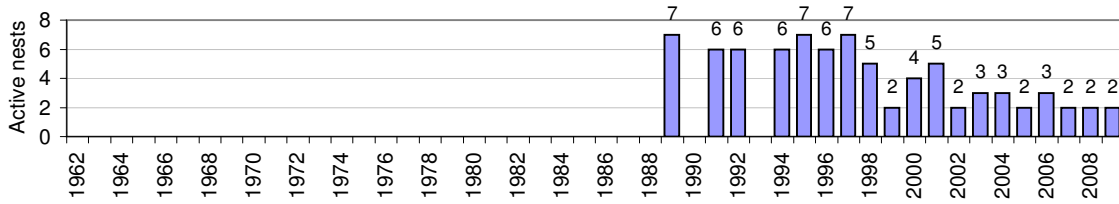


19 Cowangie/Underbool



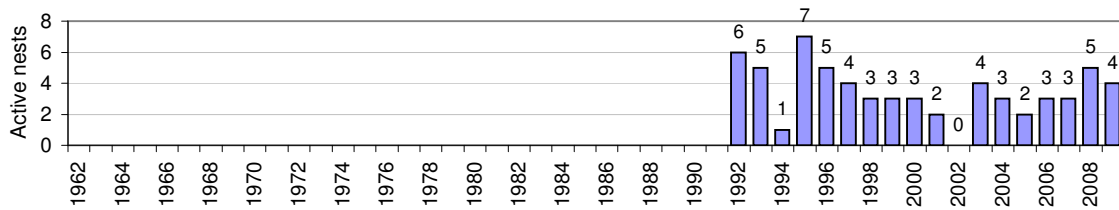
20 Lowan

Eastern Big Desert



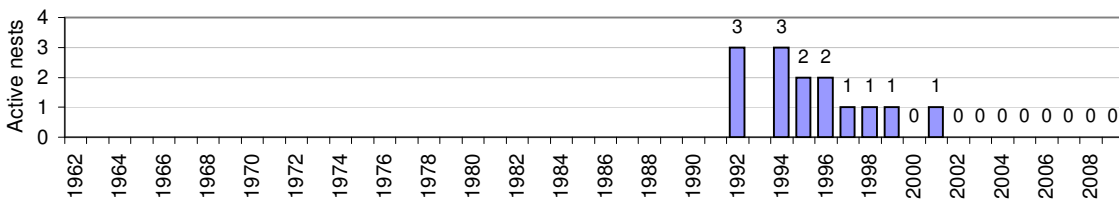
21 Dumosa

North West



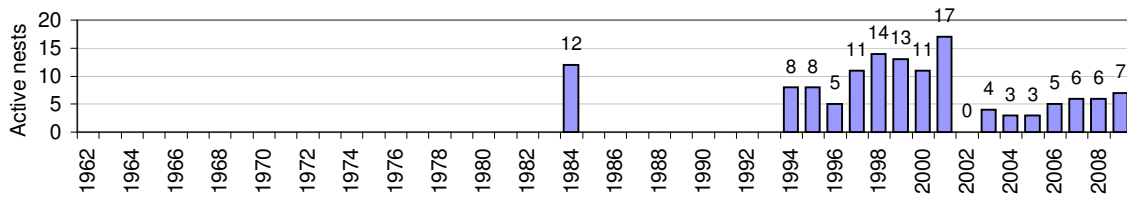
22 Denning

North West



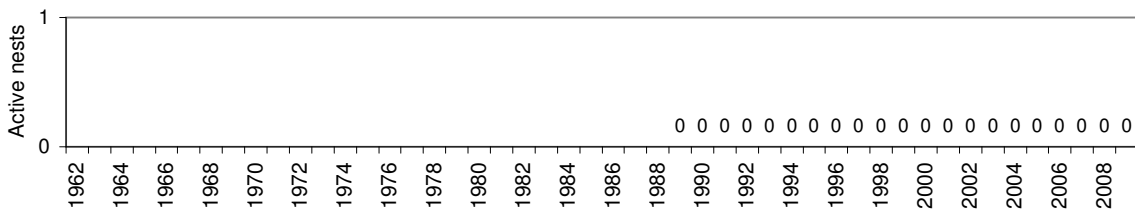
23 Moonah

Eastern Big Desert



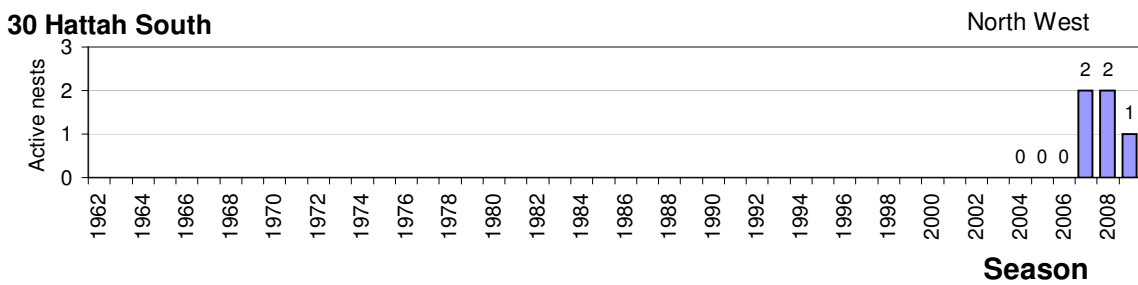
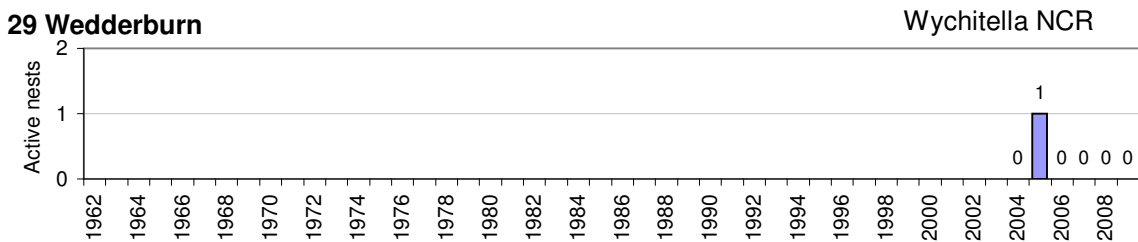
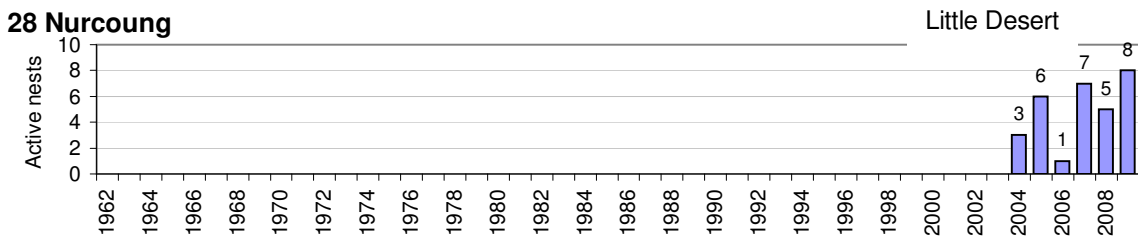
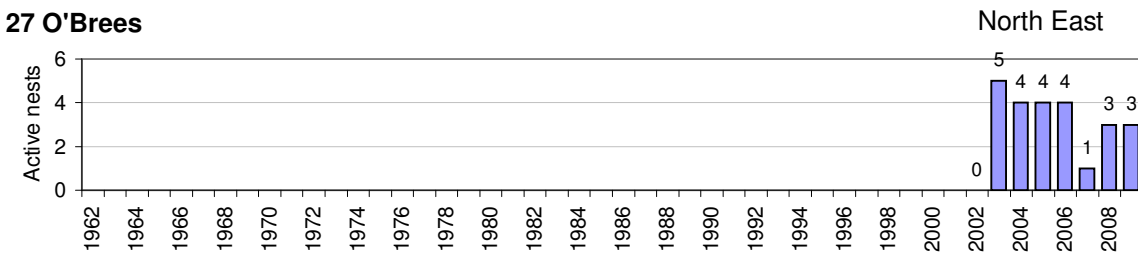
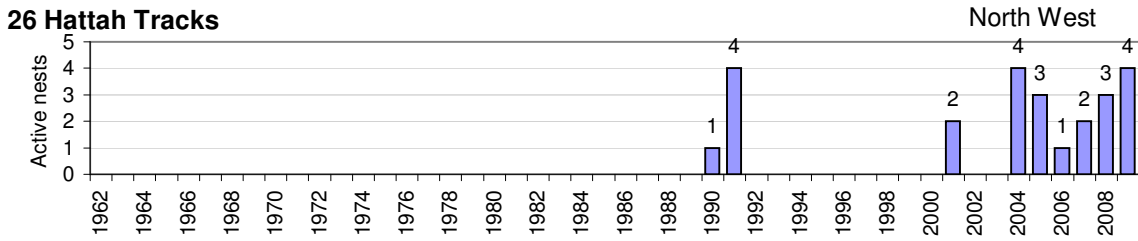
24 Kiata

North East



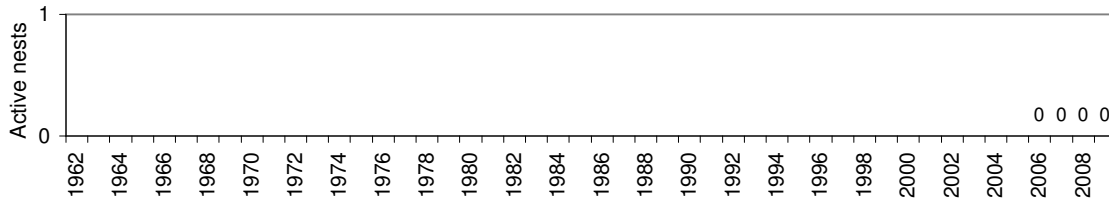
v25 does not exist

Season



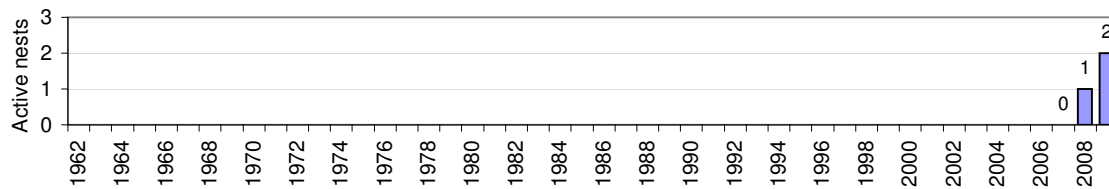
31 Skinners Flat

Wychitella NCR



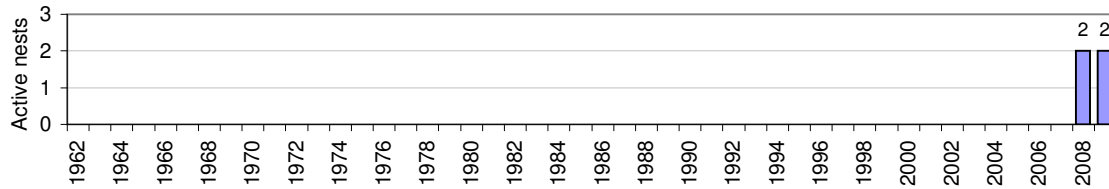
32 Wychitella

Wychitella NCR



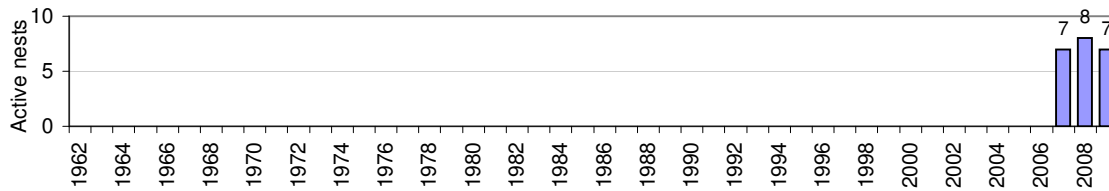
33 Korong Vale

Wychitella NCR



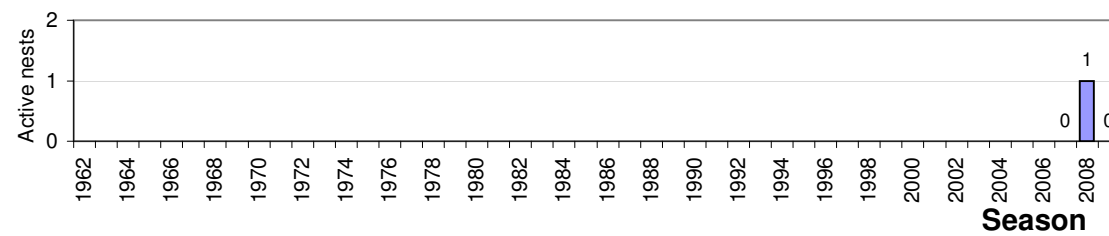
34 Paradise

Eastern Big Desert



35 Broken Bucket

Western Big Desert



Appendix B Site Trends

36 Boughtons WH

Little Desert

