

TABLE 3. Productivity of active Grey Crowned Crane pairs during 2001/2002 season.

Nest name	Landowner	Clutch size	Chicks hatched	Chicks 1 month	Chicks 2 month	Chicks fledged
Tongue2	NECF	4	?	1	1	1
Mt Challenger	NECF	2	0	0	0	0
Wildebees	NECF	3	2	1	1	1
Boncourt1	NECF	2	1	1	1	1
Windmill	Private	3	0	0	0	0
Tongue1	NECF	3	?	?	?	0
Johannes	NECF	3	?	?	?	0
Odaim	Private	2	0	0	0	0
Bonnie brae	NECF	3	2	2	2	2
		25	5	5	5	5

NECF - North East Cape Forests (a division of Mondi Limited)



Photo. Di Martin.

2. SYNCHRONISED, FLIGHTLESS MOULT OF BLUE CRANES (*Anthropoides paradiseus*) ON THE AGULHAS PLAIN, OVERBERG, WESTERN CAPE PROVINCE.

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INTRODUCTION

There appears to be little information on the flightless moult of Blue Cranes (*Anthropoides paradiseus*) in the wild and although it is known to occur (Blaauw 1897 in Walkinshaw 1949) it seems that the secretiveness of moulting birds has prevented detailed study of this phenomenon (Allan & Ryan 1996). This paper describes observations of flightless moult from 1999 to 2003. Cranes were observed at five different sites over this period during which time two of the sites were re-used, the one being re-used in consecutive years.

METHODS

During early March 1999 a farmer reported a large concentration of unfledged Blue Crane chicks on his property. On 11/03/99 an inspection was carried out and approximately 40 moulting, flightless Blue Cranes were found. The farmer indicated that during February the group had numbered approximately 80 birds. The numbers steadily decreased and within 3 weeks they had all dispersed. No follow up was possible during the same period in 2000 although it was established that the birds had not utilised this site.

During the second half of the summer of 2001, 2002 and 2003 full cycles of a synchronized, flightless moult of large numbers of Blue Cranes were observed at other sites. Once it was established when and where the birds were moulting, sites were visited on several occasions and the number of birds were counted. Table 1 illustrates the number of visits to each site when birds were observed moulting in the respective years.

STUDY AREA

The study area is situated on the Agulhas plain near the town of Bredasdorp in the Western Cape Province of South Africa (Figure 1). Within the area four different sites were identified.

Site A:

The site has a shallow pan of approximately 3 hectares, which is surrounded by short overgrazed fynbos, stubble lands and pastures. The pan is normally filled by the winter rainfall and dries completely in the summer. Shallow standing water can be found in the pans during the summer months due to unseasonable rains such as those, which occurred in November/December of 1998 and in January of 2002.

Table 1: Number of visits to each site in each year.

	1999	2000	2001	2002	2003
Site A	1	-	-	2	5
Site B	-	-	-	-	4
Site C	-	-	11	2	5
Site D	-	-	-	4	-

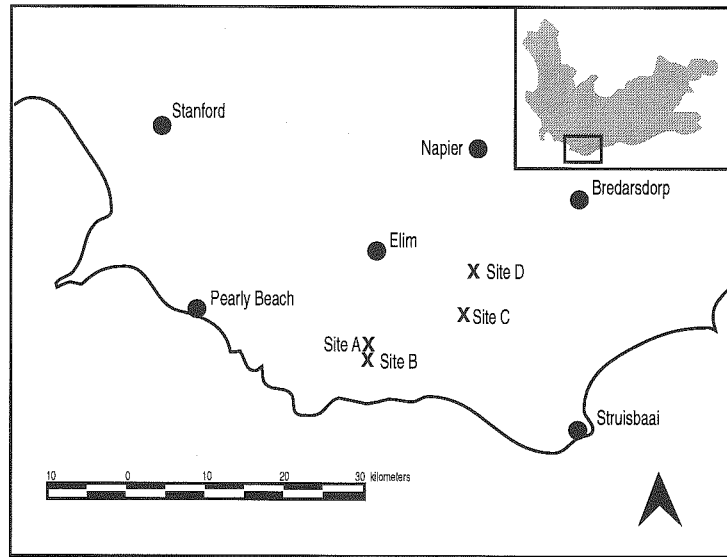


Figure 1: Map showing the localities of the four sites where moulting Blue Cranes were recorded. Insert map shows the general area in relation to the Western Cape Province.

Site B:

Situated approximately 2.5km to the south of Site A, this shallow 30 hectare pan is completely surrounded by dense lowland fynbos. No moulting birds had been observed here prior to 2003 but some alteration to the fynbos, either clearing or burning, must have taken place to the North side of the pan during 2002, allowing improved access to the stubble lands some 1.5 km away.

Site C:

The site is dominated by a large, permanent wetland that covers an area of approximately 450 hectares, 75% of which is inundated during a normal wet period and the balance being damp flats with intermittent low coarse grass cover. All moulting incidents observed at this site were during generally dry spells and the water had retreated to form an open body of roughly 200 ha in the deeper central

pan. The extensive exposed mud flats were dry and the grassy areas had been heavily grazed by domestic stock, leaving large open flat areas round the water extending up to the stubble lands and pastures on higher ground. Extensive isolated stands of "fluitjies riet" (*Phragmites australis*) occur along the edges of the wetland reaching into the water and up onto the dry mud flats with large stretches of open shoreline in between.

Site D:

This site is in a general area that is visited regularly at this time of year by ringers to ring Blue Crane chicks. A shallow salty pan of about 5 hectares in extent surrounded by low reeds and fynbos on its fringes with stubble lands beyond is separated by approximately 3 kilometers of mixed farmland from a second smaller pan. This pan is completely surrounded by exotic acacias varying from a dense

stand on the north side to a narrow border of dense to sparse stands on the remaining sides. Although the summer months are generally dry, there had been approx. 60mm of rain in the area during January 2002 and the pans had received some water but were rapidly drying out.

RESULTS

The behaviour of Blue Cranes undergoing a synchronized flightless moult makes identification in the field very easy. Flighted birds, when threatened, maintain their stately appearance and move away slowly until the threat approaches too close, whereupon they will take to flight. Moulting birds, however, start running together in a tight group at the first sight of a threat. These groups often contain birds of seemingly differing conditions of moult and as the threat increases so the group will run off as a whole with some birds leaping into the air and landing, others flying short distances above the group before landing and running while a few may take off and fly away. The totally flightless birds eventually take some form of evasive action and the following forms were observed.

Where deep water was present :

- Some, though not necessarily all, would wade out to deeper water and disappear into or behind a stand of reeds.
- Some swam out into open water about 300 meters from the shore and held their heads close to their backs thereby reducing their profile so that they became inconspicuous amongst the other water birds present.
- Some birds ran headlong into reeds on the shoreline and on one occasion, where a group was standing close to reeds

on our arrival, they secretively slipped into the reeds disappearing from view.

Where shallow or no water was present:

- Birds were seen to scatter into the veld disappearing amongst the fynbos shrubs.

- Some birds ran through the shallow water and then scattered in search of suitable cover.

- Where no cover was available they split into small groups and ran, going through fences, until they were hidden by natural obstructions or were too far to feel threatened.

Site A:

During March 1999, on investigating a report of a large concentration of Blue Crane chicks, a group of 40 moulting birds was discovered. This group was reported to have numbered 80 individuals previously and within 3 weeks of the first visit they had all dispersed. During 2000 and 2001 no birds were observed moulting at this site.

On the 07/02/2002 approximately 45 moulting and about 200 non-moulting birds were found in the lands surrounding the pan, which was 50% full at the time. In late January 2003 there were large numbers of birds in this area and 10 moulters were seen. By the beginning of February the pan had dried and 15 moulters seen. Subsequent visits revealed no moulting birds and it was assumed that they had relocated to Site B.

Site B:

This pan, being completely surrounded by fairly dense fynbos, had not seemed like a potential moulting site and none had previously been observed here. During

January 2003 there was a large build up of crane numbers in the area and a section of this veld was seen to have been opened up by either a fire, light clearing or over grazing. In late January some moulting birds were found in a stubble land and they ran through this opened area down to the pan where more moulting birds were seen, the group totalling about 45 individuals.

Site C:

On the 21/02/2001 the first group of about 40 confirmed moulting birds were observed at Site C. On a previous visit 14 days before, there had been many groups of cranes in the area, but then there was no obvious sign of moulting taking place. The numbers increased over the next visits and had reached a maximum of about 80 by 12/03/2001, which was maintained till 27/03/2001. By the 05/04/2001 the numbers had reduced to approximately 40 moulting birds and on the last visit on the 19/04/2001 only 14 moulters could be found.

On the 3/03/2001 the cranes were found to have moved to the opposite side of the vlei, about 5km from where they had been initially and where they stayed until the 24/03/2001 before moving back to the original site. Figure 2 shows the numbers of cranes recorded at this site during 2001. During 2002 two visits were made in February and on both occasions moulting birds were found in two separate groups on either side of the vlei. A total of about 45 moulting cranes was counted. In late January 2003 a build up of birds was seen and the first 12 moulting birds were noted by 7/02/03. By 18/02/03 the area had more cranes with one group of 80 birds being flightless or semi-flightless. By 26/02/03 this group had increased to about 105 birds and by 13/03/03 appeared to have split up into two groups of 80 and 40 respectively.

Site D:

The first visit on the 31/01/2002 revealed about 30 moulting cranes in a group of approximately 150 Blue cranes

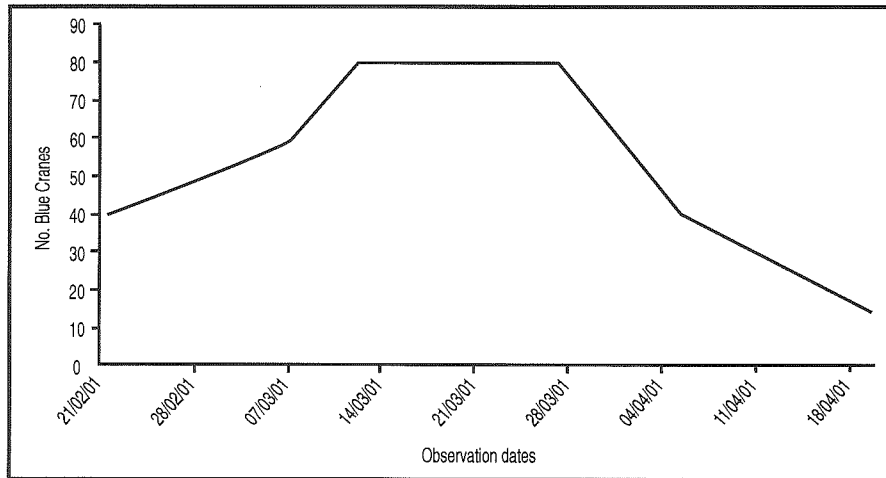


Figure 2: Numbers of Blue Cranes moulting at Site C during 2001.

Table 2 : Maximum number of flightless Blue Cranes seen at each site for each year.

	1999	2000	2001	2002	2003
Site A	40	-	-	45	15
Site B	-	-	-	-	45
Site C	-	-	80	45	120
Site D	-	-	-	64	

and this had increased to 64 by the 5/02/2002. By the next visit, the stubble field in which they had congregated had been burnt, and a team of men was repairing fences. No cranes could be found at the sites but a search of the immediate area revealed many scattered groups of moulting birds. The maximum number of flightless birds seen at each individual site within each year is indicated in Table 2.

DISCUSSION

Earlier literature speculates on the moulting strategy of the Blue Crane stating that flightlessness does occur. This study, while confirming this flightlessness, shows that on the Agulhas plain at least, synchronised moulting of large numbers of Blue Cranes takes place during the

second half of summer (see Figure 3). During the study period, however, two lone cranes were caught in the Caledon district while undergoing a flightless moult. The first was caught on 31/01/2002 and had been ringed on 16/01/1994 making it 8 years old while the other was caught on 16/10/2002.

The timing of the moult identified in this study would place it in the latter part of the breeding season and in theory could allow birds to raise chicks in the early part of the season before moulting. In reality however the family group stays together for some time after the chicks have fledged, making it unlikely that birds can breed and take part in a synchronised moult in the same season. Thus the reproductively active birds may either not



Figure 3 : Photo of the left wing of an adult Blue Crane undergoing a full moult in the Overberg, Western Cape.

moult or may adopt some other strategy and the two lone birds caught in Caledon would seem to reinforce this idea.

The birds involved in the synchronous moult may all be from a specific section of the population i.e. non-breeding or sub-adult birds. A pair of Blue Cranes, known to be two years old, moulted in January for the first time (Lotter 1975). Allan and Ryan (1996) speculated that a transitional plumage between juvenile and adult birds may occur indicating that the synchronised moult may comprise only sub-adult birds. Owing to the behaviour of moulting birds and the way they form large, agitated groups that take various methods of evasive action as described, it is impossible to establish, by means of the colour rings, what aged birds are involved without sophisticated equipment (video or still cameras with powerful telescopic lenses). Should it be proven that they are only sub-adult birds however it would be a valuable means of monitoring the recruitment level of the population.

The time taken to regrow flight feathers has been given as one month (Lotter 1975) and four weeks (Marianne Wellington pers. com.) Birds were observed moulting over a period of two months at any one site and the peak numbers recorded would therefore be somewhat less than the total that would moult in one season at that site (Figure 2). The information gathered during this study is not sufficient to enable an estimate to be made of the total numbers of birds observed moulting. The bi-annual road count (CAR Census) co-coordinated by the ADU has consistently shown large differences in numbers of Blue Cranes during the summer and winter count, with the winter total being far higher than that of the

summer. The reason for these differences is considered to be a "statistical artifact of the fact that Blue Crane gather in flocks during the non-breeding season and flocks are much more conspicuous than breeding pairs of birds" (Young & Harrison, 2000). All of the sites where moulting was recorded were invisible from any of the CAR routes except for Site D where the pan and a portion of their preferred land was visible from the road. The gathering of birds prior to moulting and possibly some moulting would have commenced at the time of the summer count being the last week in January. These flocks, although still in the area, would therefore not be included in the numbers recorded during the road count and will most definitely contribute towards this seasonal difference.

Moulting birds under threat and some distance from suitable refuge, were seen to congregate agitatedly and start running towards some escape feature. Running birds that do not take to the water could be caught by fleet footed predators, however when they start running, some birds lift off from the group and then rejoin, while others will leave the group and fly away creating the impression that they could all take off if required. The larger groups always seemed to have some fully flighted birds in attendance which could be a tactic to deceive a potential predator into thinking that pursuit is pointless. It would seem from the findings that specific sites are used for moulting. This can have huge conservation implications should a site be eliminated, for example the draining of a wetland or the planting of timber. It is therefore imperative that such moulting sites be identified and measures put into place to protect them.

How long cranes have been moulting on the Agulhas plain is not known but this may be a relatively new development. The loss of suitable sites elsewhere in the country may have a bearing on the decline in numbers in the past and on the increase in numbers in the Overberg.

CONCLUSION

Further research on certain specific aspects of crane moulting relating to frequency, effect on breeding and dependency on wetlands that have been highlighted by this project, are needed. The current research needs to be broadened in scope to include other potential sites, both locally and further

afield but time and money remain the main constraints.

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