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SOME OBSERVATIONS OF A COMMUNAL ROOST OF THE AUSTRALIAN HARRIER

(Circus approximans gouldi)

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ABSTRACT

A communal roost of the Australasian Harrier was studied at Huntly from late January to early April 1975. The roost was situated in standing hay and extended over about 0.36 of a hectare. Most individual roosts were found clustered in groups among the most dense vegetation. Morning and evening observations showed that a consistent pattern of movement was followed. A limited amount of aerial displaying was also observed. Previously, it has been suggested that communal roosts occur when harriers gather to exploit a local food abundance. Evidence gathered from the Huntly roost indicates that this contention may not be true for all roosts.

INTRODUCTION

With the conclusion of the breeding season (January-February in the Huntly area), the Australasian Harrier *(Circus approximans gouldi)* shows an inclination to gather in communal roosts in favourable habitats.

The number of birds involved in such communal roosts can vary considerably. Stead (1932) described roosts of two or three hundred birds whereas Middleditch (1949) reported a roost of 45 individuals at Lowburn in May 1948. Gurr (1968) gave several examples of roosts ranging in number from two up to 150 birds.

On 23 January 1975, a small roost was discovered scattered through several fields of standing hay in an area situated 0.8 km north-east of Huntly township. Observations were carried out each evening until 29 March 1975. Intermittent observations were made then until 9 April when the roost was finally dispersed by the mowing of the surrounding hay. It is likely, judging from the results of an individual roost count, that the roost had been in use for perhaps 3-4 weeks prior to its discovery. The following is a summary of the findings.

THE ROOST

Observations generally began about an hour before sunset so that pre-roost activity could be seen. Early morning observations were also made on different occasions.

Most individual roosts were found within an area covering 0.36 ha, roughly triangular in shape, and on an east-west axis. Vegetation in the roost was a mixture of rye grass *(Lolium perenne)*, paspalum (*Paspalum dilatatum* L.) and white clover (*Trifolium repens* L.). Red clover (*Trifolium pratense* L.) was occasionally seen. Individual roosts were invariably found amongst the most dense vegetation. This was generally rye grass, being the most prolific and tallest growth (approx. 1 m).

The area immediately beyond the roost consists largely of open pasture to the north, west and east. To the south the land is taken up by a large swamp, an open-cast mine operation and a land reclamation scheme.

Individual roosts were generally elliptical, varying in size but generally 30-36 cm long and 20-26 cm wide, and were rounded at one end (sometimes both) as if the bird had used its body to shape out a cavity from the surrounding grass. Into this cavity faecal matter was ejected. Pellets could occasionally be found although two together was exceptional. These were deposited on the trampled grass which formed the floor of the roost. Small amounts of down and feathers were also found.

Individual roosts were clustered in rough groups, often in association with larger areas of trampled grass which varied in size, the largest being 8 m long and 5 m wide. The origin of these areas is not known though collections of feathers, down and faecal matter make it likely that they were used on occasion by roosting harriers.

' Paths ' between individual roosts could usually be seen, some being up to 12 m in length. These did not occur in grass measuring above 30-35 cm in height.

Food remains occurred in two individual roosts; the partially stripped hindlegs of an immature rabbit (*Oryctolagus cuniculus* L.) and a quantity of regurgitated flesh in an advanced stage of decay. Harriers were seen bringing prey into the roost on three occasions.

DAWN AND DUSK ROOSTING ACTIVITY

Harriers began to arrive at the roost during the final hour of daylight. As Stead (1932) and others have noticed, the birds did not fly at any particular height. About 70% of the birds came in from a southerly direction (the swamp area). On arrival they usually settled on a fence post or in an adjacent pasture, although some flew directly into the roost. For those harriers settling outside of the roost, the interval before moving into the roost was spent preening and shaking plumage into shape or, more generally, in observ-

ing the surrounding countryside. The period of time spent outside the roost varied from a few seconds to over an hour with the average time throughout the observation period being about 17 minutes. Only on two occasions was the first bird present on a post a juvenile.

The birds usually flew into the roost itself just before sunset. Several potential roosting sites could be 'inspected' by the birds circling or hovering briefly above them before a final choice was made. 'Disputes' sometimes arose over roost sites, but would usually end quickly with the 'retreat' of one of the birds. Three prolonged 'disputes' lasting over 30 seconds were observed.

Aerial 'displays' took place on three evenings. These were little more than extended chases involving at most three or four birds and were concluded within about half a minute.

Morning observations of harriers moving from the roost showed that a consistent pattern of dispersal was followed. The birds would generally move to an adjacent fence post to preen and straighten plumage. Within half an hour they would move off in different directions to forage. Most birds began to quarter the ground almost immediately. While on the post these birds seemed very lethargic and could be approached to within about 30-35 metres. The cold temperature and low-lying fog encountered on all of these mornings probably account for this behaviour.

NUMBERS ATTENDING THE ROOST

Stead (1932), Middleditch (1949) and Gurr (1968) have given examples of roosts much larger than the Huntly roost described in this article. The smaller number of birds involved make a roost of this size much less likely to be noticed by human observers. It is therefore probable that roosts of this size are more common than larger roosts previously described by other observers. Although harder to detect, small roosts reward observation in that more accurate head counts and closer observation of individual behaviour are possible.

Data taken from the initial observation period and just before vegetation removal (Table 1, 2) show that the number of harriers attending the roost each evening fluctuated quite markedly so that it was not possible to predict, even for one day ahead, just how many birds would arrive at the roost. However, a slight increase in the average number of birds attending each evening occurred until a peak was reached on 5 March, sixteen birds being present on this occasion. The reverse then occurred with a gradual drop in numbers, this trend being accelerated by the removal of the surrounding hay from 27 March until 6 April. Two or three harriers continued to use the roost in the last few days before the final section was cut.

DISCUSSION

Gurr (1968), in a very interesting discussion, examined several factors which he thought might explain why harriers gather in large numbers to roost. He dismissed communal roosting as being an

Variation in Numbers *(Circus approximans gouldi)*

TABLE 1. January 22-February 4

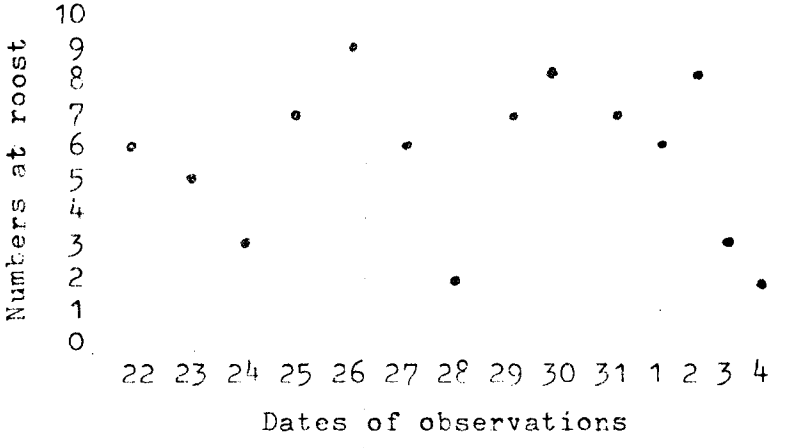
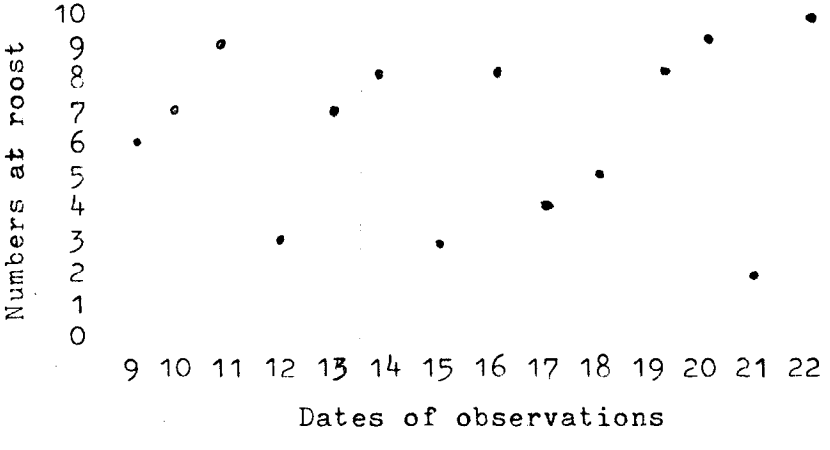


TABLE 2. March 9-22



adjunct to migration as it is in other countries. Watson (1954), he pointed out, has shown that no regular migration takes place. Gurr then went on to argue that a link exists between large communal roosts and gatherings (observed by Wodzicki 1949), and a dramatic, possibly artificially induced, upsurge in the food supply of an area. Large gatherings such as these occur regularly because of an abundant harrier population caused in turn by the spread of introduced mammals and the increase of suitable habitat created by European farming methods.

I do not disagree with the contention that large scale gatherings are possibly a result of a local food abundance; a communal roost could conceivably grow in size if more birds are attracted to the area by a favourable food supply. However, observations of the Huntly roost suggest that Gurr's conclusions do not apply in the case of smaller roosts. If the harriers observed at the Huntly roost were gathering to exploit a local food abundance, then they could be expected to remain longer in the area than the one or two days indicated by their deposits of faecal matter and fluctuating roost attendance figures. It remains a possibility, of course, that the birds were using an unobserved roosting area on alternative nights. This may account for the variation in roost attendance and could mean that the overall population of the local area was both larger and more stable than previously supposed. General impressions are that no such roost(s) existed in the immediate area at least, though a careful search could well prove this assumption to be false.

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