

## An opportunistic observation of cooperative mobbing behaviour

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### INTRODUCTION

This note places on record an opportunistic observation of cooperative mobbing behaviour involving an intruder, Koala *Phascolarctos cinereus*, and the aggressors, White-winged Chough *Corcorax melanorhamphos* and Blue-faced Honeyeater *Entomyzon cyanotis*. A reason for the observed behaviour is proposed.

The single incident took place in April 2009 in a patch of remnant Spotted Gum *Corymbia maculata*, Ironbark *Eucalyptus* sp. woodland at Duns Creek, New South Wales (32° 38' 14" S, 157° 37' 34" E). The habitat consists of degraded woodland dominated by mixed age Spotted Gum with some Ironbark and a noticeable absence of understorey species. The ground cover is comprised of both grazed and ungrazed native and introduced grasses interspersed with patches of leaf litter. It is the leaf litter that provides foraging habitat for the White-winged Choughs.

The observation site is about three kilometres from a known area of Koala habitat in the adjacent locality of Butterwick where Koalas have been reported regularly, although they have been seen at the observation site on only three occasions since 1987. On each occasion the mammals used a Spotted Gum as a day-time resting place and were present for less than 24 hours. A bellowing Koala was heard at night on one occasion. The presence of Koalas at the observation site could be regarded as a rare event having been known to occur only four times in the previous 22 years.

White-winged Choughs are a gregarious species characterised by long curved bills, strong legs, a full mobile tail and white patches on the flight feathers, which are conspicuous only in flight. These birds display intraspecific cooperative behaviour during incubation and when feeding young birds. They are regular visitors to the observation site as a flock of eight to ten birds.

Four individuals exhibit the conspicuous red eye indicative of older birds while the remainder have brown eyes. White-winged Choughs usually breed in the Hunter Region in the latter half of the year (Stuart 2007) and during breeding will defend a territory. Neither intraspecific nor interspecific aggressive behaviour has been observed within this flock previously.

Blue-faced Honeyeaters are regular visitors to the site as a flock of up to eight birds. The local Blue-faced Honeyeaters are typical in that they have been observed to display pugnacious/aggressive behaviour toward other species, including the ever-present Noisy Miner *Manorina melanocephala* population.

Mobbing is generally an obvious behaviour engaged in by birds to defend members of the same species, their offspring or nests from predation. Additionally mobbing may play a role in protecting the food resource and may have social implications of status and partition of labour (Arnold 2005). Mobbing behaviour comprises alarm calls, visual display and flying at an intruder to distract its attention with the harassment often continuing until the intruder is evicted. Mobbing behaviour has been recorded in a wide range of species, it usually commences with several birds but the activity often attracts large numbers of birds, which may include more than one species. The term cooperative mobbing refers, in this context, to the aggressive behaviour of the two different avian species simultaneously directed at the intruding Koala.

### OBSERVATIONS

Mid-morning a solitary Koala was observed walking across a grassed area before climbing 10 to 15 metres into a Spotted Gum. It remained in this tree for two hours before relocating to an adjacent Ironbark where it settled five metres

above ground level amongst the tree's relatively dense branches. The regularly visiting flock of White-winged Choughs flew 30 metres from their foraging site to initiate a mobbing attack on the Koala about one hour after the Koala had moved to the Ironbark. A short time after the attack had been initiated six Blue-faced Honeyeaters joined the White-winged Choughs in harassing the koala. The honeyeaters had not been observed in the vicinity prior to the initiation of the attack. The estimated duration of the mobbing was five minutes.

The mobbing behaviour of the White-winged Choughs consisted of continuous grating alarm calls, hopping strongly along and between branches, short flights within the tree and several metres from the tree. Activity was most intense in close proximity to the Koala (~1m) but contact with the Koala was not observed. The white wing patches were conspicuous as the birds spread their wings, contrasting strongly with the otherwise black bird. When in contact with the branches the mobile tails moved rapidly and repeatedly through an estimated angle of 45 degrees to the horizontal in both an upwards and downwards direction thus producing an angle of deflection approximating 90 degrees. (This tail motion may be associated with the retention of balance on the branches of relatively small diameter rather than as a component of the display). The general impression was of noise, rapid movement and contrasting colour.

The Blue-faced Honeyeaters repeatedly flew between the branches, where possible, emitting loud alarm calls. Flights were often initiated from nearby trees and the attack was more direct than that of the White-winged Choughs. Contact with the Koala was not observed.

With the exception of one defensive swiping arm motion the Koala remained motionless during the mobbing. Both species of bird gradually reduced the intensity of the harassment before dispersing. The White-winged Choughs resumed foraging within 50 metres of the Koala while the Blue-faced Honeyeaters left the area. The Koala was undisturbed for the remainder of the day.

## DISCUSSION

The behaviour on this occasion involved two different species mobbing an intruder at the same time and as such has been considered cooperative. Although the Blue-faced Honeyeaters appeared to respond to the calls of the White-winged Choughs, it might be interpreted that the honeyeaters were simply "joining in" as a reflection of their generally pugnacious responses rather than participating in a fully "cooperative" act with the choughs. An additional consideration would be as to their level of involvement in the mobbing in the absence of the auditory and visual display provided by the choughs. More important, perhaps, is the reason for the attacking behaviour in this instance.

The primary value of mobbing behaviour lies in the prevention of predation and protection of the food resource. In this case it appears that the Koala would offer no threat in terms of nest predation (the birds were not breeding at the time) or depletion of the food resource (absence of common food requirements), facts which bring into question the reason for mobbing behaviour in this instance. In a study of group mobbing behaviour of the Noisy Miner it was found that the number of birds that mobbed an experimental model was not a simple reflection of the potential nature of the threat (Arnold 2005). Arnold proposed that the response to nest predators, such as raptors, may be a reflection of rarity, in addition to threat. This insight, together with the previously established rarity of Koala visits to the site, prompts the proposal that rarity may have been a major contributing factor in this example of cooperative mobbing behaviour.

## REFERENCES

- Arnold, K.E. (2005). Group mobbing behaviour and nest defence in a cooperatively breeding Australian bird. *Ethology* **106** (5): 385-393.
- Stuart, A. (Ed.). (2007). Hunter Region of New South Wales Annual Bird Report **14** (2006). (Hunter Bird Observers Club Inc., New Lambton.)