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WHY SHOULD AN EAGLE MOB A LEOPARD?

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On 1 August 2012 whilst observing a pair of Verreaux's Eagles *Aquila verreauxii* in the Cederberg Mountains I noted an unusually short and repetitive dive being performed at first by one of the pair of eagles. The eagles were present on arrival at the kloof at 09:00 – which was a known active nest site although both of the recently hatched chicks had died on 21 July due to prolonged rain. At 9:40 one eagle dived repeatedly at one spot and within two minutes the second eagle also joined in swooping to ground level and rising up. Closer inspection with a spotting scope revealed a leopard *Panthera pardus* walking through the bushes, it occasionally ducked as if to avoid a strike. Otherwise, the leopard paid little attention to the eagles and continued to walk along the slope of the mountain (away from the nest cliff). By 09:50 the eagles had abandoned their mobbing attempt and were seen flying towards the nest with a twig.

On 17 August 2012 at 10:00 I began observations at another active Verreaux's Eagle nest also in the Cederberg Mountains. Although one eagle was in the nest from 10:12-11:03 apparently incubating, it later became clear that this was probably a form of behaviour associated with a recent loss of eggs or young chick because this breeding attempt also failed. At 11:33 both adult eagles flew in "pendulum formation" in front of their nest cliff. This was assumed to be associated with their return from having just chased an intruding

Fig 1 - Composite photo showing the Verreaux's Eagle in the mobbing behaviour and leopard in different poses on boulder. (Courtesy: Charmaine and Derick Oosthuizen)

Verreaux's Eagle from their territory. At 11:35 both eagles perched briefly on the cliff before taking off and diving repeatedly at one spot close to the peak of the mountain. On focusing the spotting scope on the point of interest nothing extraordinary was first seen. However, after 10 minutes a leopard walked out from behind a rock. It walked along the ridge of the mountain before disappearing out of sight. Although the eagles no longer mobbed the leopard, they appeared to "check" the area where it had been by flying low and circling at least three times over that area during the next hour.

Norton and Henley (1985) summarised their observations of Verreaux's Eagles "attacking" leopards, also in the Cederberg. From June 1983–March 1984 they observed four occasions of a pair of eagles diving low over a particular spot and calling. All incidents were either associated with seeing a leopard at the targeted spot or plotting a radio-collared leopard within range of the behaviour. One further well-documented account of this behaviour occurred close to the location of my first observation, and was probably performed by the same pair of eagles. On 15 August 2010 a pair of Verreaux's eagle were photographed diving at a leopard which remained apparently unperturbed lying on a rock, the eagles also called during this mobbing (Underhill 2012) (Figure 1).

Additional observations of this behaviour include Rowe's (1947) account near Mbulu, Tanzania whereby a Verreaux's Eagle was seen diving at a leopard and calling loudly. The leopard responded by rearing back and raising a forepaw but then continued unhurriedly on its way. Rowe (1947) also reports the discovery of an injured male Verrreaux's Eagle which subsequently died. Although it could not be confirmed, the wounds were attributed to a leopard encounter.

Norton and Henley (1985) mention four possible reasons for the mobbing behaviour: 1) Food; the eagles were trying to kill the leopard for food, possibly by chasing it over a cliff; 2) Piracy; the eagles were trying to chase the leopard off a carcass so they could eat it; 3) Nest defence; the eagles considered the leopard a potential danger to their chick, and were chasing it away from their nest site; 4) Food competition; the eagles recognised the leopard as a competitor for food, and were chasing it out of their hunting area.

Norton and Henley (1985) also determined that the lack of a reaction from the leopard suggested that the first two reasons (food and piracy) are unlikely causes for the mobbing as these should elicit a defensive stand from the leopard. Three of four of Norton and

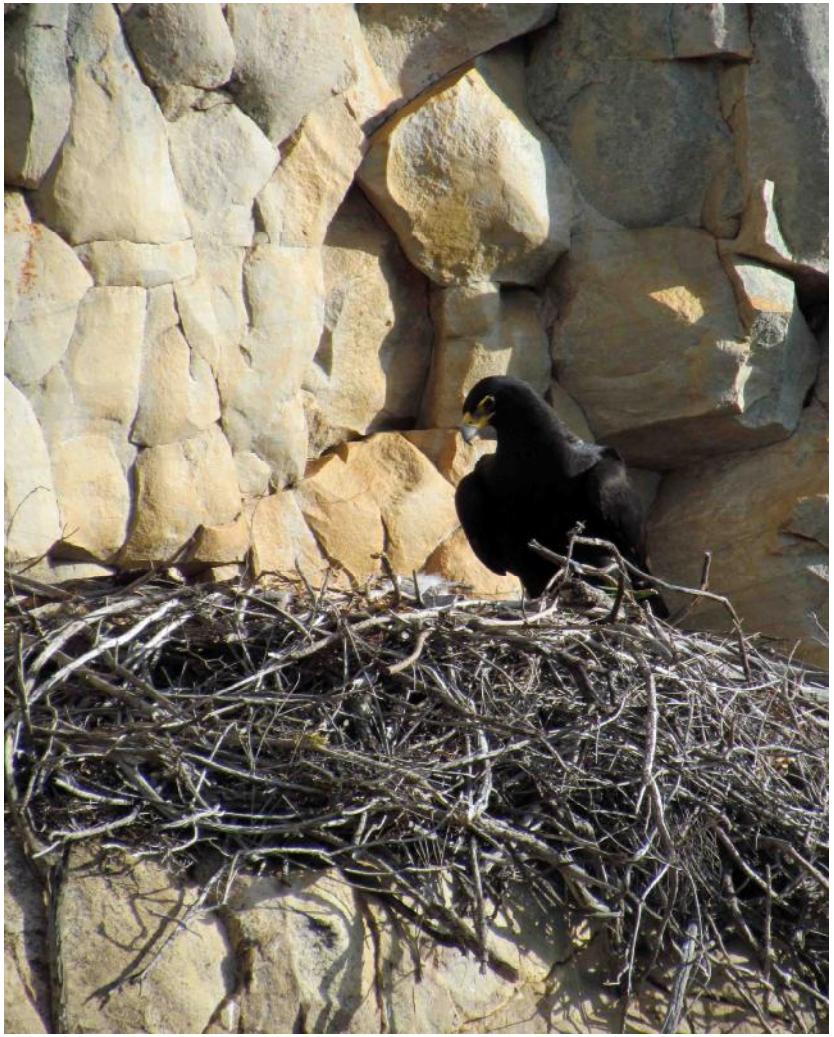

Fig 2 - Verreaux's Eagle on the nest described in 1 August 2012 leopard mobbing incident.

Henley's (1985) observations were in February or March (outside of the Verreaux's Eagle's breeding season in the Cederberg) and my own observations were after nest failure. This evidence, in addition to the steep inaccessible cliff nests, makes it unlikely that the mobbing is associated with nest defence.

Food competition appears to be a plausible explanation. Hyraxes *Procavia capensis* form ~35% of leopard diet in the Cederberg (Martins 2010). Verreaux's Eagles also to a great extent rely heavily on this prey source (pers. obs.). Therefore it is possible that the eagles are acting to defend their hunting territory in the same way that they would if another eagle intruded.

In addition I propose one additional feasible explanation; self-defence. On occasion, Verreaux's Eagles can kill a hyrax which may be equal or greater than their own body weight. This forces them to begin eating on the ground (pers. obs.) were they may be at risk of predation or lose their prey by piracy – particularly from an undetected leopard. Therefore it is beneficial to their safety to attempt to "remove" a leopard from their territory and it is also worth paying the price of probably causing all potential prey to temporarily hide and become unavailable as it is not possible for the eagles to hunt safely in the same area as a leopard. Rowe's (1947) account of the injured eagle may also support this suggestion.

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