

COLOUR-RINGING PALE CHANTING GOSHAWKS

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Background

Colour-ringing was used to facilitate individual identification in a population study of Pale Chanting Goshawks *Melierax canorus* on a farm in the Khomas Hochland highland savanna west of Windhoek.

21 birds were marked between late 1979 and the end of 1982, the results of the population study during this period having been reported on at the 2nd Symposium of African Predatory Birds (August 1983: Golden Gate). This note concerns the application and evaluation of the colour-ringing technique used in the study.

Methods

Three 10 mm PVC coiled colour rings (as supplied by SAFRING) were applied to one leg and a metal ring to the other leg of each goshawk captured. The last free part of the coil was 'spotted' with cyanoacrylate glue to seal off the ring. During the early part of the study the wings were also window-marked (Kemp, 1977) to allow for additional temporary identification in flight. Resightings were made using binoculars or, more often, a zoom telescope. The study farm has hot summers (mean daily maximum temperature for the hottest month just over 30°C) and cool winters (mean daily minimum temperature for the coldest month about 3°C). It receives about 10 hours of daily sunshine all year except from January-March (most of the highly variable mean rainfall of 365 mm falling then) when mean daily sunshine drops to about eight hours. During the period covered by this report the annual rainfall was consistently far below the mean and the humidity particularly low for longer periods than usual.

Field durability of rings

There was no ring loss for a period of two years, during most of which time ring colours were clearly visible under favourable conditions. Thereafter ring loss became evident in an increasing number of birds and re-marking had to be considered for all those birds still remaining in the study area during the drought.

Retrapped birds showed that ring loss was probably largely due to cracking (see Fig. 1), pieces of the inner and outer coils flaking off, with sufficient inner coil loss leading to an increase in internal diameter (from 10,4 mm of a fresh control ring of that colour to 12,3 mm in one case). Even a worn ring without any inner coil loss had expanded from the 9,8 mm control of that colour to 11,7 mm i.d. when a vertical crack through both coils was closed. Fading of colours and dirtying (mostly a greyish darkening) was also evident in rings of retrapped birds and had led to difficulties in reading some rings in the field after one and a half years.

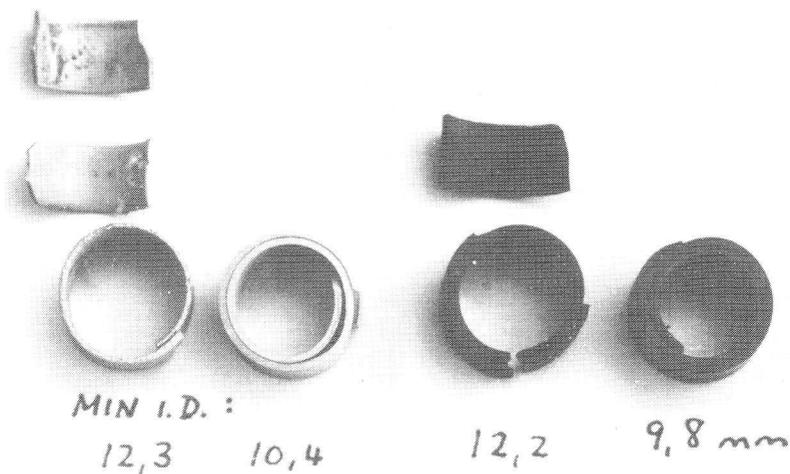


FIGURE 1: PHOTOGRAPH OF WORN AND UNUSED RINGS SIDE-BY-SIDE SHOWING DIRTYING, CRACKING AND FLAKING OFF OF WORN COLOUR RINGS, AND THEIR INCREASE IN INTERNAL DIAMETER. THESE TWO RINGS WERE ON A PALE CHANTING GOSHAWK FOR A PERIOD OF TWO YEARS AND WOULD PRESUMABLY HAVE BEEN LOST SOON AFTER THIS IF NOT REPLACED.

An undesirable complication

The upper ring on one retrapped individual was found to have slipped over the somewhat wider 'tibial' joint (possibly having been forced over by leg activity, or counter-pressure when the bird rushed into, say, a bush) above which it was firmly lodged without causing any serious constriction (Fig. 2). Apart from this one incident, no evidence was noted of rings causing any potential inconvenience to birds.

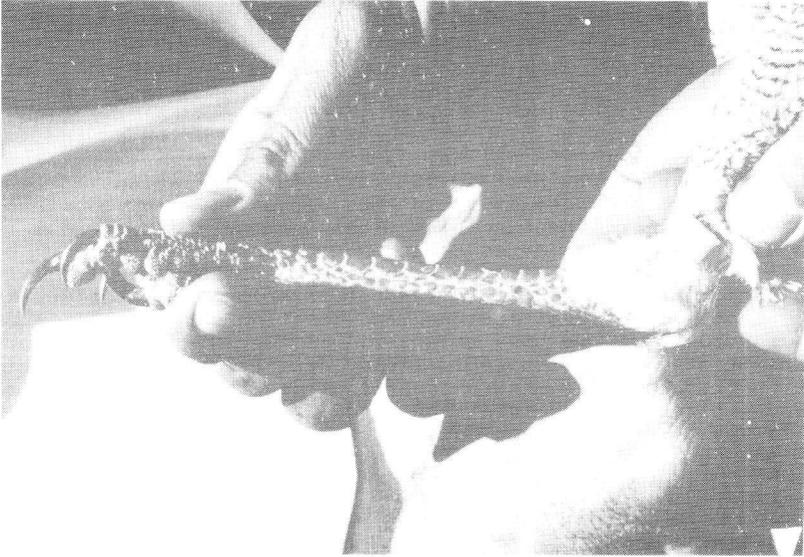


FIGURE 2: WORN RING WITH INCREASED INTERNAL DIAMETER WHICH HAS SLIPPED OVER THE SLIGHTLY WIDER 'TIBIAL' JOINT. ALTHOUGH IT WAS FIRMLY LODGED THERE, THERE APPEARED TO BE NO SERIOUS CONSTRICTION.

Ease of sighting

Chanting Goshawks spend most of the day perched, but during hunting periods move actively from perch to perch, and perch to ground. With a little trouble ring colours of most perched birds (except two very nervous individuals) could be read regularly. Telescope readings were usually made from a vehicle 50-150 m away from the bird, 30x magnification usually being practical and adequate, but up to 60x occasionally being required. Several repositionings of the vehicle were often necessary to obtain the best reading, and even this reading would sometimes be incorrect by one colour (for instance blue instead of black) when checked against the original listings. Under hot midday conditions shimmer sometimes made reading more difficult (but seldom impossible), while in poor light, readings such as 'two dark rings over a light one' would lead to an uncertain identification. In spite of these difficulties, a positive identification of a perched bird was usually made even if it was after the bird had been advertently, or inadvertently, caused to change perch once or twice. White proved to be an exceptionally readable colour under virtually all conditions, and to often be visible even when watching a flying bird through binoculars.

Comparison with other techniques

Window-marking of these birds trapped early in the study yielded only a few extra identifications and the technique was thus abandoned. The authors were in a fortunate position to evaluate patagial tagging of Chanting Goshawks when assisting with a project in the Kalahari area and felt that the marginal advantage (we felt about 10-20% extra identifications might be possible) of tagging would be offset by any potential disadvantage to goshawks which often scratch under bushes and sometimes fly into dense trees. The authors have also been helped to start a radio-tracking project on part of the study population, this technique far outstripping any other we know for short-term identification (and location) of a small number of individuals. We have colour-ringed the individuals carrying transmitters to assist rapid field identification at any time, but particularly to ensure identification after the batteries have expired and before the birds are retrapped to change batteries. In addition, all pairs surrounding these birds are now being marked or re-marked with colour rings.

Discussion

Colour-ringing of Chanting Goshawks is, in our opinion, relatively safe and very useful as a means of identifying individuals for a period up to two years. Although our study was not geared to evaluate retrapping success, we did retrap several individuals with the original trapping technique (Balchatra trap), so that the two-yearly retrapping requirement for a long-term study would not appear to pose an insurmountable problem. Colour rings which are equally readable but last longer would obviously be preferable. We have now begun marking birds with both Darvic and PVC rings and should be able to report back with comparative results later - the fresh Darvic colours are brighter and may cause less confusion when reading combinations in the field. The cyanoacrylate glue appears not to 'spot' the Darvic rings well and we are now trying fast-drying conventional adhesives instead. We have also now started marking birds on both legs as one leg is often lifted or obscured during resighting attempts - we use two colour rings (the same combination) on both legs as well as a metal ring on one leg. We attempt as far as possible to use a light colour (yellow or white) in the combinations for the one bird of any pair and a darker but still contrasting combination for the other.

This enables easy identification of sexes with binoculars when following birds which have initially been identified with certainty using a telescope. White rings should possibly be reserved for individuals most regularly studied or known to be very nervous.

REFERENCE :

Kemp, A.C. 1977. Some marking methods used on a variety of Southern African raptors. Safring News 6 (1): 38-43.

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COLOUR-MARKING SCHEMES IN ALGOA BAY

A.P. Martin

As part of a project to determine the impact of birds as predators on the Swartkops Estuary, Port Elizabeth, several colour ringing and dyeing schemes are in progress. Colour rings are used on the three most important species, namely, Kelp Gulls *Larus dominicanus*, Grey Plover *Pluvialis squatarola* and Whimbrel *Numenius phaeopus* to enable individuals to be followed during feeding observations and to get an idea of the extent to which they use the Estuary for feeding.

To find out whether birds feeding on the Estuary also feed on the adjacent salt pans and sandy beaches, and to see if there is any turnover of birds on the Estuary, every bird caught is dyed with picric acid, whether colour-ringed or not. Dye is applied to the breast, belly or tail, according to the region of the Estuary on which the bird was caught, to check for intra-estuarine movement. I prefer to dye rather than colour-ring the majority of birds that I catch because dye is more visible and prevents us from catching the 'European colour-ringing syndrome' where so many schemes are in progress that few sightings of colour-marked birds can be traced. To avoid confusion with European schemes I do not dye adult migrants after the start of their autumn pre-nuptial moult.

Picric acid is generally considered the best of the dyes currently available because the yellow/orange colour is very visible and it lasts longer than other dyes (Summers 1978). A saturated solution (with excess crystals at the bottom) is prepared in 70% ethanol which dries quickly when brushed well into the feathers. The birds are kept in a well-ventilated keeping cage for ca. 20 minutes before release to allow the dye time to dry. Little Stints *Calidris minuta* do not appear to be