

A Black Harrier is perched on a vertical wooden post in a grassy field. The bird is facing right, with its wings slightly spread. The background is a clear blue sky. The foreground is filled with tall, thin grasses, some of which are blowing in the wind.

# The Black Harrier

Work in progress

*Despite its striking appearance and Red Data status, the endemic Black Harrier remains little studied.*

Text by Odette Curtis, Andrew Jenkins  
& Rob Simmons  
Photographs by Andrew Jenkins



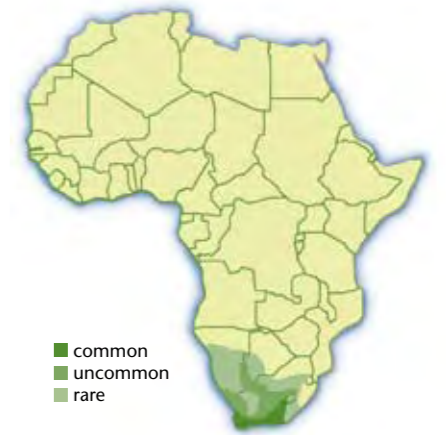
A Black Harrier beats its way low across the windswept Strandveld of the Cape West Coast. Its elegant shape and charcoal-black plumage, offset by striking white markings and piercing yellow eyes, contrast starkly with the monotonous greens and browns of the coastal scrub. It is a sight as unique to the Western Cape region as the looming silhouette of Table Mountain, yet this impressive and endemic bird, newly inducted to Red Data status, remains largely unknown.

### Better late than never

The year 2000 saw the start of a research project on the biology and conservation status of the Black Harrier in the

Western Cape, initiated by staff and associates of the Percy FitzPatrick Institute of African Ornithology. The harrier has been the Institute's logo since the early 1980s, but this new initiative is the first formal attempt to understand the harrier's biology.

There are only a couple of Black Harrier studies in the literature. One dates back to 1981 and was a desk-top review of status and distribution, while a more recent study recorded aspects of breeding biology over two seasons in the West Coast National Park. Our goals are more ambitious. We hope to document fully the species' breeding ecology and resource requirements, with a view to understanding its conservation needs better. This ▷



**Opposite** Banking against the afternoon sun, a soaring Black Harrier shows its characteristic flight-pattern.

**Below** Black Harrier habitat in the Perdeberg area – fynbos patches in a sea of grain.





*Black Harrier life-cycle: a clutch of four eggs at Sally's nest on the Slent farm, Perdeberg; a recent hatchling and two unhatched eggs;*



*a female and her two three-week-old nestlings; a fully-feathered youngster, aged about six weeks.*

requires that we work over as extensive an area as possible, and that the study spans a number of years. Having identified our ultimate objectives, we set ourselves three more modest goals for the year. We aimed to locate study areas with breeding harriers in both natural and man-altered environments; to capture and mark adult birds for long-term observations (and to take blood from both adults and their offspring to determine paternity); and to study breeding biology and success, including a preliminary assessment of mating systems.

### Living in a sea of grain

A regrettable feature of the Fynbos Biome (which forms the core of the Black Harrier's breeding distribution) is the extent to which natural vegetation has been transformed into horizon-spanning swathes of cereal croplands. It is unclear to what degree, and in what way, the harrier population has been affected by this wholesale modification of its habitat. In order to shed some light on this all-important conservation management issue, we went to some lengths to locate nests situated within or in close proximity to the grain belts of the West Coast and the Overberg. Obviously, if the harriers are capable of breeding successfully in

agricultural areas, the transformation and fragmentation of their natural habitat by agriculture is likely to be of little consequence. Given that standard farming practices in grain-growing areas include frequent crop-spraying, that harvesting of crops generally coincides with the middle of the harrier breeding season and that the Black Harrier is an exclusively ground-nesting bird, it would seem unlikely that pairs attempting to breed in fields of wheat or barley could ever fledge significant numbers of young. Our preliminary investigations do indeed suggest that these problems may largely exclude harriers from farmland.

Despite scouring much of the Overberg region for breeding harriers, we found no active nests in or close to grain fields, and all of the 19 nests we located were in relatively pristine vegetation. Ultimately, we identified two principal study areas: the area inclusive of the Koeberg and Jakkalsfontein nature reserves on the West Coast, and Slent Farm and the Perdeberg Conservancy, just north-west of Paarl.

### When Harry met Sally... and Harriette

Harriers are notorious for the diversity (and perversity?) of the mating systems

they exhibit. More than a third of the world's harrier species are, at least sometimes, polygynous. In other words, they breed in groups comprising a single male and multiple (usually two) females. Polygyny has been mooted for Black Harriers, but has not yet been properly confirmed. In an attempt to clarify this issue, we spent many hours watching interactions between breeding harriers. Both of our study areas featured concentrations of breeding birds, in which the closest nests were about 100 metres apart. Even under these 'semi-colonial' conditions, we recorded only one instance of confirmed polygyny: the antics of a male dubbed 'Harry the Harrier' were studied at length during the formation of his threesome.

Harry met Sally some time before we started to monitor the harriers at Slent Farm, and the couple had already produced a splendid clutch of four eggs. What Sally didn't know (or did she?) was that Harry had a little bit on the side. His newly acquired mate, Harriette, gained Harry's attention during Sally's protracted vigil at nest one, and soon produced a clutch of three eggs at nest two. However, Harriette's eggs became lunch for one of the area's other predators (possibly an egg-eating snake). Afterwards, having apparently sown his wild oats for the sea-

son, Harry settled down to fatherhood and together with Sally successfully raised three healthy youngsters.

We first met Harry when, contrary to our expectations, he pounced greedily onto our Bal-chatri trap baited with plump little mice (which were unharmed during this process and lived to tell of their heroic escape). This was the first of five birds that we managed to trap during the 2000 season. Once in the hand, these birds were weighed, measured, ringed and marked with brightly coloured patagial tags (plastic flaps attached to the leading edge of one wing). Individuals tagged in this way were distinguishable hundreds of metres away and were key in our behavioural studies. We also took blood samples from these birds and from any young that they produced during the season. We hope to use these and subsequent samples to determine which males are fathering which broods, as it was entirely possible that, given the mêlée of courting harriers we sometimes observed, some males may have copulated with females other than their 'wives'.

### Movable feast

It became clear to us relatively early on in the study that areas favoured by harriers for breeding may not be prime foraging sites. We saw very little hunting

close to the nests that we had under observation, and at the Koeberg Nature Reserve provisioning males were seen to make regular, very direct flights to areas some distance away to the east, probably to the wheatfields that lie beyond the West Coast road.

What little information we were able to collect on harrier diet (and this took the form of prey remains collected from beneath favourite perches and roosts and direct observations of prey delivered to nests), suggested that harriers fed mostly on rodents, small birds and the occasional reptile. Interestingly, the harriers at Koeberg were predominantly rodent eaters, while those at Slent seemed to take mainly birds. The most frequently recorded prey at Slent was Common Quail *Coturnix coturnix*, while Red Bishop *Euplectes orix* was also on the list of prey species. This suggested to us that the Slent harriers did much of their foraging some distance from the Perdeberg (where quail are uncommon and bishops not recorded), probably in the grainfields that surround the mountain. In one remarkable instance, a small, non-harrier egg (probably that of a quail) was found on a harrier nest containing four chicks! It seems likely that this egg was brought to the nest in the body of an adult quail that was about to deposit it in its own nest, before

being caught by a provisioning harrier. The egg had disappeared when we went to ring the nestlings at a later stage. Perhaps it hatched, only to provide a tasty morsel for the hungry harriers?

We should get a far clearer picture of harrier diet once we have been able to collect and analyse larger samples of remains, and when we have completed more observations. However, initial impressions indicate that, while agriculture may fragment and impinge on Black Harrier nesting habitat, it could also benefit the species by providing particularly good foraging conditions. On this basis, the key to Black Harrier conservation seems to lie in achieving an optimal balance between cereal croplands and patches of undisturbed, natural vegetation.

### The road ahead

Given sufficient enthusiasm and funding, this promising start should see the Black Harrier project run for another three to four years. During this time we hope to continue the intensive monitoring of marked breeding birds in our core study areas, and simultaneously develop a clearer picture of the size and extent of the Black Harrier population nationally. In particular, we would like to gain a better understanding of the effects of land transformation on the species' con- ▽

## FACT FILE

ervation status.  
**Scientific name:** *Circus maurus*

**Body length:** 45–50 cm

**Weight:** about 400–600 g

**Sexual dimorphism:** no known plumage differences between sexes; females larger and about 15–20% heavier than males

**Range:** southern African endemic: mainly in south-western South Africa, in fynbos and Karoo of Northern, Western and Eastern Cape provinces, also grasslands of Free State, Lesotho and KwaZulu-Natal. Peripherally in north-eastern South Africa, and Botswana and Namibia. Some seasonal movement into

north of range in late summer/winter  
**Breeding season:** July to December

**Clutch size:** 2–5 (average 3)

**Breeding biology:** nests as close as 100 metres apart. At least one record of polygyny (one male mated to two females)

**Diet:** mostly rodents; also small birds and reptiles

**Conservation status:** world population may be less than 1 000 birds, less than 100 in protected areas. May be threatened by habitat destruction associated with cereal agriculture and viticulture in core breeding area. South African Red Data species and classed as 'Globally Vulnerable'. □

*Public participation is essential to the researchers, and they would like to encourage all conservation-conscious landowners and/or birders who live in or regularly visit Black Harrier country to submit details of harrier sightings or nest records to: Odette Curtis, Percy FitzPatrick Institute of African Ornithology, University of Cape Town, Rondebosch 7701, Cape Town.*

