

Notes

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Unusual Marsh Harrier plumages

During the summers of 2005, 2006 and 2007, a male Marsh Harrier *Circus aeruginosus* with particularly unusual plumage bred on the RSPB reserve at Titchwell, Norfolk. Instead of a dark, rufous-brown belly contrasting with the paler chest of a typical male Marsh Harrier of the nominate race *aeruginosus*, this bird showed a completely white belly contrasting with a blotchy chin and gorget of grey- and rufous-brown streaks that extended down onto the breast (plates 88 & 89). The undertail was white, as were the underwings except for black and sharply contrasting primaries. At close range, a peppering of fine russet streaks on the lesser underwing-coverts was visible, while the typical greyish edge to the tips of the secondaries on the underwings was lacking. At distance, its pale appearance with darker throat and upper breast could superficially recall both male Hen Harrier *C. cyaneus* and male Montagu's Harrier *C. pygargus*, and it was frequently misidentified as one of these. The bird's upperparts comprised the typical, three-toned plumage of black primaries, silvery-grey tail and secondaries, and chocolate-brown back and upperwing coverts but, in addition, an obvious white patch on the uppertail-coverts, white peppering on greater and primary coverts and an off-white crown. With its striking pale underparts, this bird showed a superficial resemblance to the east Asian race, *C. a. spilonotus*.

The males of this race are variable, with some showing a bold black face but others a dark-streaked head and breast, yet both forms display a white belly. The Titchwell individual most resembled the latter type, although it lacked the dark- (black in some cases) streaked mantle and upperwing-coverts of Asian birds.

Male Marsh Harriers of the nominate form become more contrasting with age; the back becomes a darker brown and the head, tail, upperwing secondaries and underwing-coverts become paler, while a white rump generally signifies an older bird. It seems likely, therefore, that the Titchwell harrier was a very mature male rather than being partly leucistic.

Clarke (1995) drew attention to the occurrence of leucistic, albinistic and partially white Marsh Harriers, and noted a nest in Italy in 1969, and other nests in Norfolk (three), Suffolk (three) and The Netherlands (one or two) in 1989 from which 'pied' juveniles fledged. All had the normal dark, almost black-looking plumage peppered in white. The amount of white varied among these birds, some showing large white areas on the upperwing-coverts and broad tips to the flight and tail feathers, while others had white rump patches, greater-coverts and scapulars. All were noted as having typical golden crowns and chins. Despite these findings, there is no mention of such birds in any of the modern field guides, raptor guides or hand-



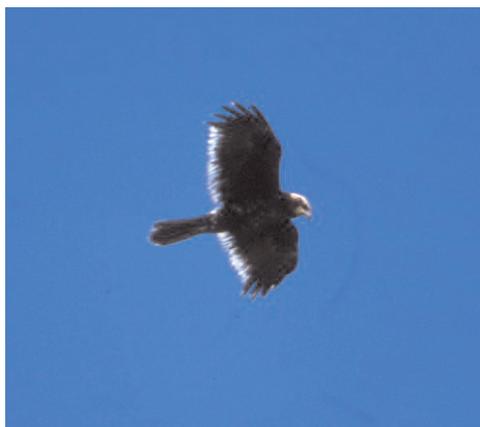
Chris Knights



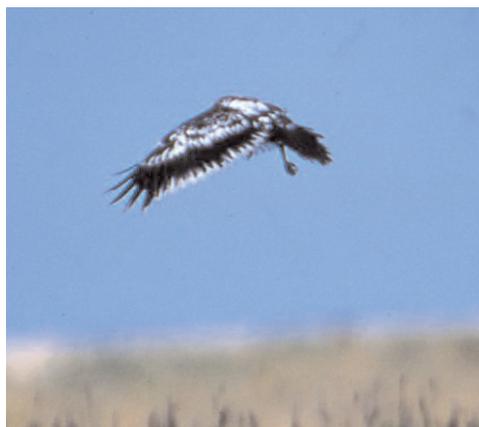
Chris Knights

88 & 89. Male Marsh Harrier *Circus aeruginosus* with unusual plumage (see text), Titchwell, Norfolk, May 2006.

Gary K. Smith



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90 & 91. 'Pied' juvenile Marsh Harrier *Circus aeruginosus*, Cley, Norfolk, August 2004.

books. Not surprisingly, they often provide a problem to identify when seen for the first time.

Since 1995, there have been at least 14 more examples of such juveniles in Norfolk alone (see plates 90 & 91), of variable appearance though with a recurring theme in that the white stretches across the upperwing-coverts, the tips of the flight feathers and the rump (sometimes isolated, sometimes connected to white mantle or scapulars). This does not appear to be a localised phenomenon and in recent years other broods of such birds have also been described from Wicken Fen, Cambridgeshire, in 1995, and Minsmere, Suffolk, in 2006.

Until recently, it appeared that only fresh juveniles exhibit such traits, leading to speculation that these pale plumage marks are lost during their first winter. However, a fledgling from a north Norfolk nest in 2006 subsequently wintered in the area and was present the following spring. Although its overall coloration was now much browner, it retained off-white greater coverts, secondary tips and flecking to mantle and underbody. Furthermore, two mature females were observed in Norfolk in 2007 that resembled more muted versions of the striking pied juveniles. One seen near Whissonsett showed an indistinct creamy U-shaped rump patch and obvious creamy greater

coverts. A female that summered on the Holkham NNR showed similar markings (including the rump patch), although the cream colour on the greater coverts was restricted to broad tips. In 2004, a different female had summered there, also with a cream rump. All these birds appeared to be muted versions of the more striking 'pied' juveniles, although without definitive evidence it is only speculation that they were such birds maturing.

Although plumage abnormalities, including melanistic and partially albino birds, have been described before (e.g. Clark 1987, Clarke 1995), it seems that the number of birds with such abnormalities being recorded in Britain is increasing, though this may be a consequence of the species' expanding population. The point of this note is to create a greater awareness of their existence, which has been largely ignored in modern literature.

Acknowledgments

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Artificial feeding of Hen Harriers in the Peak District

In spring 2006, the Hen Harrier Recovery Project (HHRP) run by English Nature (now Natural England) was involved in monitoring

breeding Hen Harriers *Circus cyaneus* in the Peak District, with the help of the South Peak Raptor Study Group, National Trust and the

RSPB. The work focused on two nests, some 2 km apart, in the Upper Derwent Valley, both with male and female birds present. The first nest (Nest 1) was approximately 19 days more advanced than the second (Nest 2).

Both nests developed normally, with six eggs laid in each and regular food passes between male and female observed. However, in early June, food provisioning to both females halted abruptly, and a male harrier was not observed in the area again. In order to prevent almost certain breeding failure at both nests, field-workers decided upon the unusual strategy of artificial feeding and quickly obtained the necessary licence.

Growing raptor chicks need a varied diet of highly nutritious prey. For Hen Harriers in England, small birds such as Meadow Pipits *Anthus pratensis* and young Red Grouse *Lagopus lagopus*, together with small mammals such as Field Voles *Microtus agrestis*, are typical prey items. As we were unable to obtain a natural food supply, captive-bred quail *Coturnix* sp., with a small number of gerbils (Gerbillinae) and white mice *Mus* were used, collected frozen from a local supplier. Usually, two or three items of food were put out every day at each of the two nests.

At each site, food was initially placed adjacent to the nest in the early morning, in order to minimise disturbance. However, neither female took food provided in this way and so food was then introduced directly into the nests. This was immediately successful at Nest 2, where the female (still on eggs) accepted and ate the quail carcass provided. However, the reaction of the Nest 1 female (now with five small chicks) was to promptly remove the quail from the nest and dump it several hundred metres away on the moor! This was despite the fact that she would almost certainly not have been able to provide enough prey to rear the chicks without assistance.

A second attempt was made to provision the Nest 1 female by breaking the quail into several pieces before placing it in the nest. Initially, the response was the same, with the female immediately removing two pieces of the carcass. But the remaining pieces were accepted and it is assumed that the female used them to feed the chicks before she was later seen carrying some to a nearby rock to eat for herself. This method was used several times, before reverting to whole quail carcasses, which were now accepted. Although a number of different sites were tried,

including a small table used to raise food off the ground, the Nest 1 female never accepted food that was not placed directly in the nest.

The Nest 2 female was much more co-operative. After accepting the carcass placed in the nest on the first occasion, she immediately began taking food for herself from a site c. 40 m from the nest. This continued for several days, during which time she left the eggs only to defecate and eat the food provided. However, when the eggs began to hatch, she stopped leaving the nest and so food was again placed directly into it. This continued for 15 days after the first egg hatched, when the female returned to collecting food left away from the nest. During this time, the youngest chick died from starvation, being unable to compete for food with its larger siblings, a common occurrence in naturally raised Hen Harrier broods. To prevent this happening to the next two youngest chicks, which were showing signs of weakness, they were force-fed in the nest each day for five days. After this time they were strong enough to compete for food provided by the female.

While still making use of the food provisioning, both females returned to hunting once the youngest chick was about 2½ weeks old, although neither caught enough to wholly sustain a brood of five growing chicks. Provisioning continued at both nests until shortly after the ten young harriers, five from each nest, had fledged. The young continued to take small amounts of the supplementary food provided for a few days after fledging but it was not long before they could be seen hunting successfully for themselves. Artificial feeding was gradually reduced over a period of a few days to ensure that the birds experienced no difficulties through a sudden cessation of provisioning.

The behaviour of the chicks during our brief visits to the nest appeared to show that they were developing normally. Once they were able to stand, a defensive posture was frequently adopted, with wings out and beaks gaping, showing a normal fear response. From the age of about 2½ weeks, they often hid in the Heather *Calluna vulgaris* around the nest when the nest was visited and showed no signs of becoming habituated to human visitors. Their growth also appeared to be normal; mean weight at ringing was slightly above average for young Hen Harriers in England in 2006. The progress of the young was followed closely until late August, aided by the radio transmitters

fitted to five of the chicks while still in the nest. Their habits and behaviour could not be distinguished in any way from those of young Hen Harriers with a more normal upbringing which were monitored in the same way by the HHRP.

In spring 2007, one of the young female harriers that fledged from Nest 2 in 2006, identified by her wing tags and radio-transmitter frequency, was found breeding on a grouse moor in the Yorkshire Dales. Her partner was an imma-

ture male of unknown origin. Five eggs were laid and hatched, and eventually one chick (almost certainly the oldest) fledged. The death of the four other chicks coincided with that summer's relentless poor weather. This chick and the adult female were also fed artificially after the disappearance of the male parent three weeks prior to fledging. However, it is encouraging that this female's unusual upbringing had not prevented her from finding a mate and breeding.

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EDITORIAL COMMENT Natural England's Ian Carter has commented as follows: 'The situation faced by fieldworkers here was a difficult one. Should nature have been allowed to take its course, which would, inevitably, have resulted in the failure of both breeding attempts, or was direct human intervention justified? When considering this question it is perhaps worth reflecting on the perilous situation faced by the Hen Harrier in England. Natural England's Hen Harrier Recovery Project recorded just 12 successful pairs in northern England in 2006, with 46 young fledging (the figures would have been 10 successful pairs and 36 young fledged without the artificial feeding described above).

'Another year's worth of monitoring data has added to the already overwhelming evidence that human persecution is the main factor limiting Hen Harrier numbers. In the past six years, no adult Hen Harriers have disappeared while breeding in the Bowland Fells, Lancashire (an area where Hen Harrier persecution appears not to be an issue), whereas adult Hen Harriers 'disappear' from around 60% of nesting attempts on intensively managed grouse moors away from this area. These data strongly suggest that disappearances of adult birds while breeding are unnatural, supporting the case for positive human intervention.

'Opinions will vary as to whether the use of limited conservation resources for this purpose was justified in this case. What is clear is that 10 more young fledged as a result of the intervention and the work has helped to raise awareness of the plight still facing the Hen Harrier in England.'



Richard Saunders

92. Adult female Hen Harrier *Circus cyaneus* over grouse moor, Forest of Bowland, Lancashire; this particular female is the only Hen Harrier that nests regularly on driven grouse moor in the whole of England.

Singing by female Marsh Tits: frequency and function

Song has been reported from the females of many tit (*Paridae*) species, although it is generally rare and the circumstances often ill-defined (*BWP*). For the Marsh Tit *Poecile palustris*, one study reported female song to be 'regular' while two others found it 'infrequent' (*BWP*). A further long-term study recorded no female song at all (Morley 1953). The detailed circumstances of female song also remain unspecified.

Long-term research on Marsh Tits at Monks Wood, Cambridgeshire (e.g. Broughton *et al.* 2006, Hinsley *et al.* in press), revealed a fuller picture of the frequency and function of female song in this species. Between April 2003 and March 2007, 121 female Marsh Tits were observed over 1,760 hours of field observation. Birds were individually colour-ringed and of known age. Singing was found to be very rare, being recorded from just five females (4%) on six occasions (0.7% of observation days). While males have up to eight song variants (*BWP*), the female songs were all of one type. This resembled one of the common song variants of the local males, being composed of a single note repeated four or five times and transcribed as a soft, sweet rattle: 'tu-tu-tu-tu'. This is in contrast to the information given in *BWP*, where female song units are said to be 'more variable [than those of the male], not exactly repeated'; and while one song was recorded as having a slurred terminal note, all others were of even quality. Female song was also described as less loud than that of the male but, in my study, volume depended on context. The six song observations at Monks Wood could be assigned to two distinct contextual categories:

1. Signalling the female's location and attracting the male – characterised by low-volume song in intra-pair communication, used to advertise the female's location to the male and apparently as a signal for him to join her:

a) On 2nd May 2006, a three-year-old female left her nest during incubation to be fed by her mate, before both visited a pond to bathe. After several minutes, the female left the pond, emitting begging calls (*BWP*) while making her way back to the nest. The male had lagged 5 m behind, out of sight of the female, who uttered a quiet burst of song, which immediately attracted the male to her side. Both then made their way back towards the nest while engaging in courtship feeding (see Morley 1953).

b) On 9th May 2006, a second incubating female, aged two years, was called off the nest by her mate. The male was perched 6 m from the nest hole, probably out of sight of the emerging female. On leaving the nest, the female gave two bursts of quiet song, which immediately brought the male to meet her. Both then moved through the nearby canopy while courtship-feeding.

c) On 14th June 2006, a six-year old female repeatedly sang quietly while alone in a territory (territory A) adjacent to the one in which she had bred the previous month (territory B). Territory A was occupied by a recently widowed male, while the female's own breeding partner remained on territory B; their brood had reached independence and dispersed only days before. The female had occupied territory A with a different male in previous years, and may have been returning to this preferred area after parental responsibilities had ended. The function of the singing may have been to attract her breeding partner, although the presence of the widowed male may have prevented him from responding. Her movement had therefore resulted in an effective desertion, so the function of the singing may also have been to attract *any* male. That the female subsequently paired with the widowed male over the following weeks suggests that this was successful.

2. Territorial advertisement and defence – characterised by loud song in extra-pair communication, for the proclamation of territory ownership in antagonistic encounters:

a) On 4th April 2005, a pair of first-year birds were involved in a territorial dispute with a neighbouring male. Both the neighbouring male and the female of the first-year pair were engaged in a song duel for several minutes, during which the first-year male remained silent (although he sang on other occasions). The female song was loud and similar to that of a male, although less strident.

b) On 2nd March 2005, a first-year female, which had neither a territory nor a mate, was engaged in a song duel with an adult male on his territory border. The female gave numerous bursts of loud song that were similar to the song of a male yet, once more, less strident. This female subsequently bred successfully in a nearby territory, with a different male.

c) On 8th March 2007, a pair of first-years both

responded to a tape-lure of Marsh Tit songs at their territory border. Both birds sang against the tape, the female for at least ten bursts. The female song was loud, though weaker than the male's, and the terminal note was slurred, e.g. 'tu-tu-tu-tu-tsup'.

Both contexts described above have been reported for female song in other tits, including Great Tit *Parus major* (Gompertz 1961), Willow Tit *Poecile montana* (Foster & Godfrey 1950) and Black-capped Chickadee *P. atricapillus* (Dixon & Stefanski 1970; Ficken *et al.* 1978). Such singing is rare in all of these species, as found in Marsh Tits here. Singing is common among female Coal Tits *Periparus ater*, however, also in situations of male absence (Goller 1987). It is unclear why some female Marsh Tits sang on some occasions but not others, and why most females did not sing at all. Out of almost 100 other territorial disputes in which females were present, none was heard to sing, even when lone females were defending territories. Similarly, other recently widowed or deserted females and other incubating females that were temporarily separated from their mates were not heard to sing. The vocalisations and social behaviour of the *Poecile* genus of North American chickadees and Eurasian 'brown tits' is very complex, however (e.g. BWP, Smith 1993,

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Mostrom *et al.* 2002), and highly specific social cues may be necessary to solicit female song, even within the two contexts identified here.

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Carrion Crow attacking Grey Squirrel

On 10th May 2006 at about 05.15 hrs, I was watching a Grey Squirrel *Sciurus carolinensis* on the ground from my kitchen window in Liverpool. Almost directly above the squirrel, high in an Ash *Fraxinus excelsior* tree, a pair of Carrion Crows *Corvus corone* had a nest with two unfledged young. One of the crows appeared in the air overhead and the squirrel made a frantic dash for the nearest tree as the crow flew down. The squirrel leapt the last metre and landed on the tree a second before the crow grabbed at it. In the brief struggle which followed, the squirrel was knocked to the ground. The crow's impetus took it a couple of metres past the squirrel as the latter ran and leapt onto another tree. The

squirrel spiralled up and around the trunk of the tree for approximately 2 m, with the crow following it. Eventually the crow pulled the squirrel from the tree and flew away with it, out of my sight into the tree canopy. I am quite certain that the crow pulled or dragged the squirrel from the tree using its feet, as I had a clear view of this. As the crow flew away from me, I could see only the tail of the squirrel properly as it was carried off; I assumed that the crow was carrying the squirrel in its feet but cannot be absolutely certain that it had not transferred the creature to its beak by that stage. The whole incident lasted for about 25 seconds, the initial capture at a distance of no more than 20–30 m from my vantage point.

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EDITORIAL COMMENT Attacks by breeding Carrion Crows on Grey Squirrels have already been recorded in *BB* (e.g. *Brit. Birds* 42: 211–212); in this case, the possibility that the squirrel was carried off in the corvid's feet makes the observation of particular interest – this behaviour would be normal for raptors but is exceptional for crows.