

Natural Resources Community Wildlife Involvement Program (CWIP), and the Canadian Wildlife Service. Observers were Mike Bryan, Myra McCormick, Dave Elder, Harold Kish, George Williams, and the authors. Sue Bryan was the trip organizer, and the able crew were skipper Paul Odorizzi of Orient Bay, and first mate Bert Odorizzi.

Literature cited

- American Ornithologists' Union*. 1993. Checklist of North American Birds, 6th edition. American Ornithologists' Union, Washington, D.C.
- Bryan, S.* 1991. Pelicans nesting on Lake Nipigon. *Ontario Birds* 9: 58-62.
- Bryan, S.* 1994. A survey of the breeding birds of Lake Nipigon, Part II. *Nature Northwest* (Newsletter of the Thunder Bay Field Naturalists). In press.

- Cadman, M.D.* 1987. Turkey Vulture. Pp. 106-107 in *Atlas of the Breeding Birds of Ontario* (Cadman, M.D., P.F.J. Eagles, and F.M. Helleiner, compilers). University of Waterloo, Waterloo, Ontario.
- Dear, L.S.* 1940. Breeding birds of the Region of Thunder Bay, Lake Superior, Ontario. *Transactions of the Royal Canadian Institute* 23: 119-143.
- Escott, N.G.* 1991. A survey of the breeding birds of Lake Nipigon, Thunder Bay District, Ontario. *Nature Northwest* (Newsletter of the Thunder Bay Field Naturalists) 45 (4): 4-11.
- McNicol, D.* 1987. Ring-necked Duck. Pp. 90-91 in *Atlas of the Breeding Birds of Ontario* (Cadman, M.D., P.F.J. Eagles, and F.M. Helleiner, compilers). University of Waterloo, Waterloo, Ontario.
- Snyder, L.L.* 1928. The summer birds of Lake Nipigon. *Transactions of the Royal Canadian Institute* 16: 251-277.

Nicholas G. Escott, 133 South Hill Street, Thunder Bay, Ontario P7B 3T9.

Susan Bryan, 143 Summit Avenue, Thunder Bay, Ontario P7B 3P2.

Observation of a Northern Harrier eating eggs

by
Ross D. James

The food habits of Northern Harriers (or Hen Harriers, *Circus cyaneus*), have been studied by numerous workers. However, the North American literature is virtually devoid of any reference to them eating eggs (Bent 1937, Hammerstrom 1986, Sherrod 1978, Palmer 1988, Johnsgard 1990). While egg eating is mentioned in European literature, references are very few, and generally without any specific details, so that the extent or even the

existence of such behaviour is far from clear. Witherby *et al.* (1943), without comment or source, include the eggs or young of ground nesting birds among the list of items eaten. Stephen (1967) concurred, but considered this exceptional behaviour "forced" upon them by food scarcity. Watson (1977) and Cramp and Simmons (1980) cite only one reference each to such behaviour, but give no details. While Doran (1976)

found eggshells in several pellets, the shells were not identified and no comment was made about their possible origins. Bannerman (1956) dismisses the subject by saying that while shells have been found in pellets, they could have been just from hatched eggs in the birds own nest. In view of the lack of substantive data, the following observations seem noteworthy.

On the evening of 27 May 1993, just after 2000 h EDST, I casually watched an adult male harrier from my home near Sunderland, in southern Ontario. It soared past from east to west within about 6 m of the ground. As it passed to the southwest corner of the house I suddenly realized that it was passing almost directly over a Killdeer (*Charadrius vociferus*) nest that I knew was there, in a disturbed area with little vegetative cover. The Killdeer pair was not easily disturbed, and had placed their nest within 45 m of the house and within 6 m of where I regularly drove or walked, apparently without flushing them or even eliciting any alarm calling. I had found the nest, with a completed clutch, four days previously when deviating from my usual path.

Unfortunately, I did not see a Killdeer leave the nest, as it was placed just over the crest of a small gradually sloping hill. The bird could easily have flown downslope completely out of sight. The low approach of the harrier may also have been concealed from the Killdeer, partly by the hill, but also by clumps of alfalfa and other plants growing to the east of the nest. But, a sudden change in the course of flight by the harrier as it passed near the nest suggests that the Killdeer did not

flush until the harrier was within a few metres of the nest. The harrier then circled three times as if searching for something specific, and dropped to the ground right at the nest. At that point I ran for a pair of binoculars at a closer window with a better view.

The harrier picked up one egg at a time, stepped from the nest a step or two, placed the egg down, shuffled forward as if to hold it with one or both feet (that I could not see just over the crest of the hill), and immediately began to eat. The shell was easily broken as no specific effort was noted to accomplish that. The bird repeatedly lowered its head for some of the egg contents and raised its head to mouth and/or swallow what it had obtained. The harrier took 15 minutes to eat the four eggs before leaving. I then went outside to examine the nest area.

The harrier had apparently pecked into the side of each egg and enlarged the hole as it methodically worked at emptying the contents. The ends of the eggs were left intact, and the two ends of one egg were still joined together by a small amount of shell on the side.

The eggs had been incubated for at least four days, but embryos were probably still very small. Although I was not always able to see clearly as the bird ate because of the way it turned, I did not detect it removing any solid item from the eggs. The size of the air cell in the remaining shells suggested that the eggs were certainly not even half incubated. Despite the largely soft contents, the harrier had been able to empty the eggs nearly completely, and there was very little of the contents to be seen spilled on

the gravel about the nest. The shells were obviously not the desired food item, as much of it was discarded. Nonetheless, there was no obvious attempt to separate shells, and much was no doubt consumed.

While the food habits of Northern Harriers have received considerable attention, egg eating is likely to have gone largely unnoticed. Studies of food habits have relied heavily on an analysis of regurgitated pellets. But the eggshells of birds, especially those of small birds, are not likely to remain sufficiently intact to be easily identified. Even an examination of stomach contents, also widely used formerly, is unlikely to reveal eggshells that would be highly fragmented by the process of eating, or crushing by the stomach. It also seems unlikely that eggs would be brought to a nest to feed young, where the eggs might be seen by an observer. The birds are ill equipped to carry more than one intact egg at a time, except by swallowing smaller eggs whole, probably crushing them. If a single larger egg was carried to the nest, it would be difficult to feed the contents to young (unless it contained a large embryo), and the rest of the clutch would have to be temporarily abandoned to do so. Eggs even the size of a teal's probably could not be lifted intact. It seems more likely that eggs would be consumed where found. Even if an observer were watching in the field, such activity would be difficult to detect in tall grasses where the bird normally would be feeding.

But, despite the lack of observations of egg eating, the behaviour of the bird I watched suggested that this is done with some

regularity. The harrier immediately began to search apparently after flushing a bird, it handled the eggs with no hesitation, and ate the soft contents with scarcely any loss. It appeared to be experienced in such activity. Egg eating by Northern Harriers may be much more common than realized.

Acknowledgements

Thanks to the librarians in the Royal Ontario Museum for assistance in obtaining publications. I appreciate the comments of Frances Hammerstrom on an earlier draft of this paper.

Literature cited

- Bannerman, D.A.** 1956. The Birds of the British Isles. Volume 5. Oliver and Boud, Edinburgh and London.
- Bent, A. C.** 1937. Life Histories of North American Birds of Prey. Part One. United States National Museum Bulletin 167, Washington, D.C.
- Cramp, S. and K. E. L. Simmons (eds.)** 1980. Handbook of the Birds of Europe and the Middle East and North Africa: The Birds of the Western Palearctic. Volume 2, Hawks to Bustards. Oxford University Press, New York.
- Doran, G.** 1976. Some observations on general and nesting behaviour of the Hen Harrier in Ireland. Irish Naturalist 18: 261-264.
- Hammerstrom, F.** 1986. Harrier, Hawk of the Marshes. Smithsonian, Washington, D.C.
- Johnsgard, P. A.** 1990. Hawks, Eagles and Falcons of North America. Smithsonian, Washington, D.C.
- Palmer, R. S. (ed.)** 1988. Handbook of North American Birds. Volume 4, Diurnal Raptors (Part 1). Yale University Press, New Haven and London.
- Sherrod, S. K.** 1978. Diets of North American falconiforms. Raptor Research 12: 49-121.

Stephen, D. 1967. Where our birds of prey
have found sanctuary. *The Scotsman* 29: 7.

Watson, D. 1977. The Hen Harrier. T. & A.D.
Poyser, Berkhamsted.

*Witherby, H. F., F. C. R. Jourdain, N. F.
Ticehurst and B. W. Tucker.* 1943. *The
Handbook of British Birds.* Vol. III.
H.F. & G. Witherby, London.

Ross D. James, Department of Ornithology, Royal Ontario Museum,
100 Queen's Park, Toronto, Ontario, Canada M5S 2C6.

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