lifetime of a bird, as all three accipiters hunt rather elusive prey (primarily birds), and the gradual improvement of hunting techniques seems especially plausible for such prey. Though we have no evidence for or against it, there could be a preferential mating system in which adults with the darkest red eyes could have the greatest success in gaining mates. The disadvantages inherent in red eye coloration might prevent any tendency toward early assumption of this color in inexperienced birds, and the relatively greater danger to eyes of females (the sex that normally feeds chicks) could explain the relatively slow transition to red eyes in this sex.

Though one might suggest that age recognition could be achieved without employing the color red, it is questionable whether a preferential mating system based on differences in eye coloration could be sustained if the preferred color did not also have disadvantages to its bearer at least at some age in life. Otherwise, selection would presumably lead to a uniform population with preferred eye coloration.

The above hypothesis is not without difficulties. It is relevant to note that iris color changes of Marsh Hawks (*Circus cyaneus*), as intensively studied by Hamerstrom (Inland Bird Banding News 40:43, 1968) and Balfour (Bird Study 17:47, 1970), also occur faster in males than in females. In this species the transition from an initial brown coloration to a final yellow coloration takes approximately 1 year for males and up to 6 or 7 years for females. It seems unlikely that the hypothesis developed above could be directly applied to Marsh Hawks, though pecking preferences of Marsh Hawk chicks remain to be explored.

A second difficulty concerns the role of an experience factor in delaying red eye coloration in male accipiters. As an order of magnitude guess, the chances of a male losing his mate during the breeding cycle and carrying on alone in feeding chicks might be on the order of one in a hundred breeding attempts. The question arises whether an older (red-eyed) male would be any more proficient in interacting with chicks than a younger (yellow-eyed) male, as the chances of a male losing a mate and feeding chicks more than once in a lifetime would presumably be rather smaller than having this happen even once. If there is no significant difference in proficiency between young and old males in interacting with chicks, it is difficult to see why red eye coloration might be delayed as long as it is.

In defense of the hypothesis developed above, one might suggest that learning of a proper way to interact with chicks may not be limited to situations where adults are actually feeding chicks. Though males do not normally rip apart prey for chicks, they do commonly bring food to the nest from the mid-nestling stage onward and they are normally faced with close contact with hungry chicks even though they are not directly feeding them. The chance of a stray blow to an inexperienced eye may supply a selective pressure against early adoption of red iris coloration even in males.

SUMMARY

Young nestling Cooper's Hawks peck vigorously at red objects but do not peck at yellow objects. The significance of this response is discussed in relation to developmental changes in iris coloration in adult hawks.

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## BARRED OWL RECORDS IN WESTERN MONTANA

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The Barred Owl (*Strix varia varia*) is considered to be a rare, permanent resident of the eastern part of Montana. Saunders (A distributional list of the birds of Montana, Pacific Coast Avifauna No. 14, 1921) lists only three records, all from well east of the Continental Divide.

Recent observations may indicate a southwestern extension of range. On 30 July 1966, an injured Barred Owl was found west of the Divide near Lake McDonald in Glacier National Park, Flathead County. This bird was cared for and, in June 1967, released in the park headquarters area by Roberta Seibel, then museum curator. The photographs that were taken of this owl were compared with specimens at the University of Montana to verify identification and are permanently on file at Glacier National Park Headquarters.

Winton Weydemeyer (unpubl. data) reports five separate sightings in 1969 and 1972 in the months of October and November, all west of the Divide near Fortine, Montana.

In the years 1968–71, while working as the seasonal biologist and back-country ranger, I either saw or heard Barred Owls on at least 13 different occasions. These records were obtained in the Douglas fir-lodgepole pine-western larch forests of the North Fork area or near West Glacier, all west of the Divide in Glacier National Park. On 13 September 1969, I saw an adult at close range being harassed by a Sharp-shinned Hawk (*Accipiter striatus*) and two Gray Jays (*Perisoreus canadensis*). On 13 August 1971, Roberta Seibel and I saw two immature birds in the West Glacier area. I have occasionally heard the distinctive call of the Barred Owl at dusk near West Glacier, especially during the summer.

In summary, I have seen or heard Barred Owls over a 5-year period on dates ranging from 22 February until 7 October. Thus there is good evidence for a southwestern extension of range and that this species is a permanent resident within Glacier National Park.

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