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## **WEAVERS AS PREY OF BARN OWLS**

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## PREDATION

### WEAVERS AS PREY OF BARN OWLS

*H. Dieter Oschadleus*

Animal Demography Unit, Department of Biological Sciences, University of Cape Town, Rondebosch, 7701 South Africa; doschadleus@gmail.com

#### Abstract

Barn Owls *Tyto alba* are widespread globally, and feed largely on rodents, but also birds. In Africa, weavers are an important component of avian prey. 46 papers were found that list weavers as prey of Barn Owls, with 11 species of Ploceidae weavers identified to species level, although there are likely many other weaver species that have been taken but not yet identified. Hunting strategies of the Barn Owl are taking weavers at their nests at night (four records), or taking roosting weavers from reedbeds. Barn Owls have been recorded at Red-billed Quelea *Quelea quelea* colonies, where they presumably pick up recently fledged juveniles.

#### Introduction

Barn Owls *Tyto alba* are widespread globally, and they feed largely on rodents, but also other small mammals, birds, reptiles, amphibians and insects (Bruce et al. 2017). In Africa, birds feature widely in the diet of Barn Owls, especially in urban areas (Hockey et al. 2005), and weavers are a large component of avian prey (Taylor 1994). Many weaver species roost in reeds or trees in large numbers, and many species are colonial when breeding (del Hoyo et al. 2010), and thus are vulnerable to predation by these owls.

#### Methods

References to weavers as prey of Barn Owls were searched widely, both in peer reviewed journals and local bird club newsletters, using an unpublished bibliography of the Ploceidae family. For identified weaver species, mean mass was taken from Fry & Keith (2004) for African weavers, and from Safford & Hawkins (2013) for Madagascan weavers.

#### Results

Individuals of eleven weaver species have been taken as prey by the Barn Owl (Table 1). No records of Barn Owls preying on Asian weavers were found. Most records were based on prey remains in pellets regurgitated by the owls. In Village Weavers *Ploceus cucullatus*, nests were attacked by this owl (see Discussion). Most studies that recorded weavers as prey of Barn Owls were from South Africa, but there were studies from East Africa, West Africa, and Madagascar. Mass of weaver species taken averaged from 12g (Scaly-feathered Finch *Sporopipes squamifrons*) to 45g (Cape Weaver *Ploceus capensis*).

#### Discussion

Most studies involve the usual analysis of Barn Owl pellets (24 studies). Usually weavers, as with other prey items, are identified by skulls (and feathers). In some cases, metal bird rings provide unique identification of individual birds (Hewitt 1962, Oatley 1990, Oschadleus 2000, Rowan 1964, Anon. 1955). Another 22 papers were anecdotal observations of predation or listing predation records as part of other studies.

#### *Weaver species recorded as prey*

Eleven weaver species were recorded as prey items of the Barn Owl, with the Red-billed Quelea the most often recorded species. The quelea is considered the most numerous bird globally (Bruggers & Elliott 1989), so this is not surprising. The next most frequently

recorded species were Southern Red Bishop *Euplectes orix* and Southern Masked Weaver *Ploceus velatus*, both very common species in southern Africa. These three weaver species are colonial and regularly roost in reeds (Fry & Keith 2004), thus are likely targets as prey for Barn Owls residing near the weaver colonies or roost sites. The Spectacled Weaver *Ploceus ocularis* is monogamous, but small numbers may join mixed species weaver roosts (e.g. at Darvill, Pietermaritzburg, South Africa). The other weaver species listed are gregarious (Scaly-feathered Finch) or colonial (Fry & Keith 2004), including the Madagascar Fody *Foudia madagascariensis* (Safford & Hawkins 2013). The White-browed Sparrow-weaver *Plocepasser mahali* and Scaly-feathered Finch are found in savanna, including drier areas than for the other weavers (Fry & Keith 2004). Mass of weavers taken as prey varies from 12 to 45g, well within the weight range of small rodents taken, i.e. 7-110g (Hockey et al. 2005).

Probably many other weaver species are taken as prey, but have not been identified to species level, e.g. Safford & Hawkins (2013) noted that Comoro Fodies *Foudia eminentissima* may be prey items for Barn Owls. A large number of studies recorded weavers to family or genus level. No records of Barn Owls preying on Asian weavers were found, but the search of Asian literature was less comprehensive than that for African weavers.

#### *Hunting methods by Barn Owls*

Weavers are diurnal, and thus it may seem strange that they are an important component of avian prey taken by the nocturnally hunting Barn Owl. However, many weavers are common, widespread in Africa and the Indian Ocean islands, and often found in large numbers. Thus individual Barn Owls may adapt to hunting sleeping weavers, either in the roosts or nests of the weavers.

In urban areas in kwaZulu-Natal, South Africa, Barn Owls have been observed taking weavers, including Village Weavers, at their nests at night (Adams 2009, Caine 2007, Hoffman 2009, Young 2009). Young (2009) described the technique as follows. The owl hangs upside-down on a nest by its talons, holding its wings open for balance, puts its head into a nest to extract the prey, which is taken to a nearby branch and ripped apart. This strategy has been likened to the technique of the diurnal African Harrier Hawk (Caine 2007). This behaviour was also used by Barn Owls taking swifts from their nests (Ewbank 1984). In addition to the above records, Chapin (1939) observed a Barn Owl with a weaver, which may have been taken from a nest - interestingly, this occurred during daylight - diurnal hunting is known for this owl (Bruce et al. 2017).

Some weavers roost in their nests during the non-breeding season (Oschadleus et al. 2017), rather than in large roosts in reeds or tree twigs, though this may represent low numbers in general. In the breeding season males, females and chicks would be present in nests, providing a greater chance of a Barn Owl finding food in weaver colonies. This hunting technique may be more common than suggested by these four anecdotal records, at least in local areas where the owls have learned to use nearby weaver colonies as a food source. It would be worthwhile placing camera traps at likely colonies to record nocturnal predation events.

Many authors refer to Barn Owls preying on roosting flocks of weavers (e.g. Taylor 1994), but few details are available. Grant (2013) noted Barn and Spotted Eagle Owls *Bubo africanus* catching quelea roosting in reeds at night, with the quelea constantly being disturbed by the owls. Presumably the owls grab quelea that perch-roost on reeds, while the owl is in flight.

Red-billed Quelea breeding colonies attract a large variety of predators (Bruggers & Elliott 1989), especially birds of prey, and

including Barn Owls. The hunting strategy by Barn Owls at these colonies (Jarvis & Vernon 1989, Lourens 1963, Thiollay 1978, Thiollay 1989, Vernon 1970) is not described but may be different to the strategies described for other weaver colonies. Other raptors prey on inexperienced fledglings soon after leaving the nest, by moving around the colony to take the easy pickings, and owls may use similar techniques.

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**Table 1.** Published records of Barn Owls preying on weaver birds. First author and year are given (references for Table follow), country or region of study abbreviated as: ao Angola, bw Botswana, cd DR Congo, do Dominican Republic, ke Kenya, mg Madagascar, mw Malawi, na Namibia, ng Nigeria, sn Senegal, za South Africa, zw Zimbabwe, Wafr West Africa

Weaver species	Studies	Other records	Mass	No. of papers
White-browed Sparrow-weaver <i>Plocepasser mahali</i>	za: Vernon 1972		42.2	1
Scaly-feathered Finch <i>Sporopipes squamifrons</i>	na: Dean 1975 za: Dean 1975, Nel 1965		11.7	2
Red-billed Quelea <i>Quelea quelea</i>	za: Dean 1977 zw: Vernon 1980a	bw: Grant 2013 za: Leask 2002, Lourens 1963, Tucker 1957 zw: Brooke 1972, Jarvis 1989, Vernon 1970 WAfr: Thiollay 1978, Thiollay 1989	19.1	11
Yellow-crowned Bishop <i>Euplectes afer</i>	sn: Yalden 1994		14.1	1
Southern Red Bishop <i>Euplectes orix</i>	za: Dean 1977, Herholdt 1986, Kopij 1997, Vernon 1980b	za: Anon. 1955, Hewitt 1962, Oatley 1990, Oschadleus 2000, Rowan 1964	20.0	9
Madagascar Fody <i>Foudia madagascariensis</i>	mg: Goodman 1993, Goodman 2009, Goodman 2014, Rasoma 2007		16.7	4
Cape Weaver <i>Ploceus capensis</i>	za: Grindley 1973, Wirminghaus 1989	za: Rowan 1964	44.9	3
Southern Masked Weaver <i>Ploceus velatus</i>	na: Dean 1975 za: Dean 1977, Grindley 1973, Herholdt 1986, Kopij 1997	za: Oschadleus 2000, Rowan 1964	28.7	7
Village Weaver <i>Ploceus cucullatus</i>	za: Bateman 1960, Caine 2007	cd: Chapin 1939 do: Wiley 2001 za: Thring 1942	36.2	5
Sakalava Weaver <i>Ploceus sakalava</i>	mg: Goodman 1993, Goodman 2009, Goodman 2014, Rasoma 2007		23.7	4
Spectacled Weaver <i>Ploceus ocularis</i>	za: Bateman 1960		25.7	1

Weavers	ao: Dean 1974 ke: Gichuki 1987 mw: Hanney 1963 ng: Lekunze 2001 na+za: Vernon 1972 za: Grindley 1973, Kilpin 2000, Kopij 1997, Kopij et al. 2014, Skead 1956, Vernon 1972, Vernon 1983 zw: Vernon 1980a	za: Adams 2009, Hoffman 2009, Kolbe 1946, Rowan 1964, Young 2009	n/a	18
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**Figure 1.** Barn Owls sometimes roost or breed in Sociable Weaver nests, but have not yet been recorded as preying on Sociable Weavers (Photo: Phillip Nieuwoudt, from <http://vmus.edu.org.za/?vm=BirdPix-21574>)