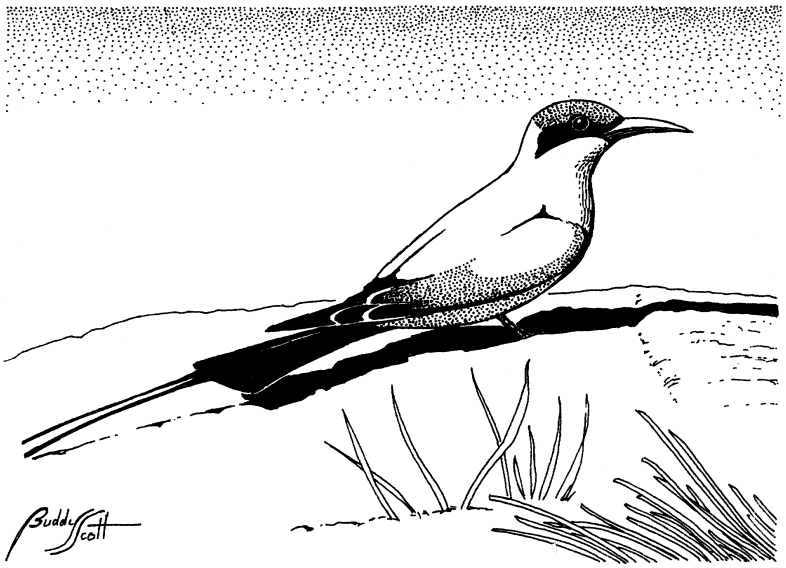

Carmine Bee-eater

Rooiborsbyvreter

Merops nubicoides

This common intra-African migrant is found throughout the southern savannas (Fry 1984; Fry *et al.* 1992). In the northern Afrotropics it is replaced by *M. nubicus.* In southern Africa it ranges through Zimbabwe, northern and eastern Botswana, northeastern Namibia, including the Caprivi Strip, the northern and eastern Transvaal, and just reaches northeastern Swaziland. It is most common in northern Botswana and the Caprivi, and along the Zambezi River in Zimbabwe. Elsewhere in Zimbabwe it appears to be localized. It is a vagrant to northern KwaZulu-Natal (Cyrus & Robson 1980).

It is the most distinctive of the bee-eaters. It is highly gregarious during the breeding season and its habit of hawking from exposed perches in open areas makes it conspicuous.

Habitat: It frequents open woodland and savannas, floodplains and arid *Acacia* steppe (Fry *et al.* 1992). For nesting it favours high, fresh-cut sand cliffs, preferably free of vegetation; such sites are typical of large, meandering rivers. During breeding (September–November) it is most common in the Okavango and Miombo biomes. Later in the wet season it disperses to open grassy places in a variety of other woodland types, particularly Northern Kalahari, Mopane and Arid Woodland. It was not recorded outside of woodland biomes.

It breeds in large, dense colonies. Normally large perpendicular sandy cliffs are used for nesting, but some of the largest colonies in the Okavango are on sandy flats (M.H. pers. obs). Breeding in southern Africa occurs only in the tropical areas of Zimbabwe, northern Botswana and the Caprivi Strip.

Movement: It exhibits a three-stage migration (Irwin 1981; Maclean 1993b). Birds arrive at the breeding grounds in the northernmost Zones, August–September (Taylor 1979; Irwin 1981; Herremans 1994d). Shortly after breeding, from December onwards, it becomes less gregarious and there is wide-scale dispersal of juvenile and adult birds southwards over most of northern and eastern Botswana and the Transvaal (Tarboton *et al.* 1987b; Maclean 1993b; Herremans 1994d), where numbers peak in January (Zone 6) and no breeding occurs (Tarboton *et al.* 1987b). (The breeding records in Zone 6 refer to southern Zimbabwe.) This movement is confirmed by four recoveries in the Transvaal of birds ringed at breeding colonies in Zimbabwe (Tarboton *et al.* 1987b). The majority of birds leave the region in March (Taylor 1979; Herremans 1994d), and migrate to equatorial Africa for the austral winter (Irwin 1981). There are a few wintering records from various parts of its southern African range.

Breeding: Breeding activity spans August–January, with egglaying completed by November (Irwin 1981; Skinner 1996a; Brown & Clinning in press) and most young fledge by early December, before the heaviest rains.

Interspecific relationships: It overlaps with six other bee-eaters in southern Africa and occurs alongside all of them occasionally, as it forages both in riparian habitat and dry woodland. It will make use of 'prey beaters' such as large mammals, birds and even vehicles moving through grassland (Fry 1984). In the Savuti Plains (1824C) it regularly perches on Kori Bustards *Ardeotis kori* and may do so on Secretarybirds *Sagittarius serpentarius* (Anon. 1987; Randall 1987b; Viljoen & Viljoen 1987; Fee *et al.* 1990; Walker 1990).

It is a host of the Greater Honeyguide *Indicator indicator* (Maclean 1993b).

Historical distribution and conservation: Its distributional limits have not changed in recent times. However, large numbers of colonies along the Zambezi River were lost through the construction of Lakes Kariba and Cahora Bassa (Mundy *et al.* 1994). The atlas data show higher concentrations of birds in northern and eastern Botswana, and in the Caprivi Strip, than previously appreciated (Fry *et al.* 1992; Maclean 1993b). Its habit of breeding in large colonies, which are easily disturbed and readily abandoned, makes it sensitive; some colonies outside National Parks in Zimbabwe have been exploited as a food source to the point of extinction by rural people (A.J. Tree *in litt.*). The larger breeding colonies in Zimbabwe and Botswana merit conservation measures.

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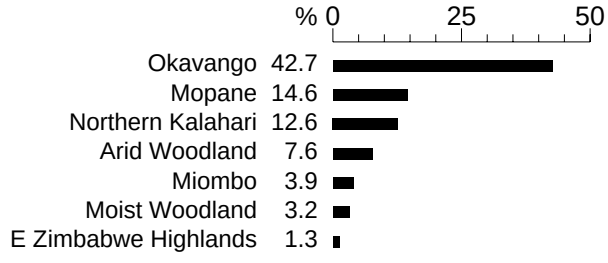
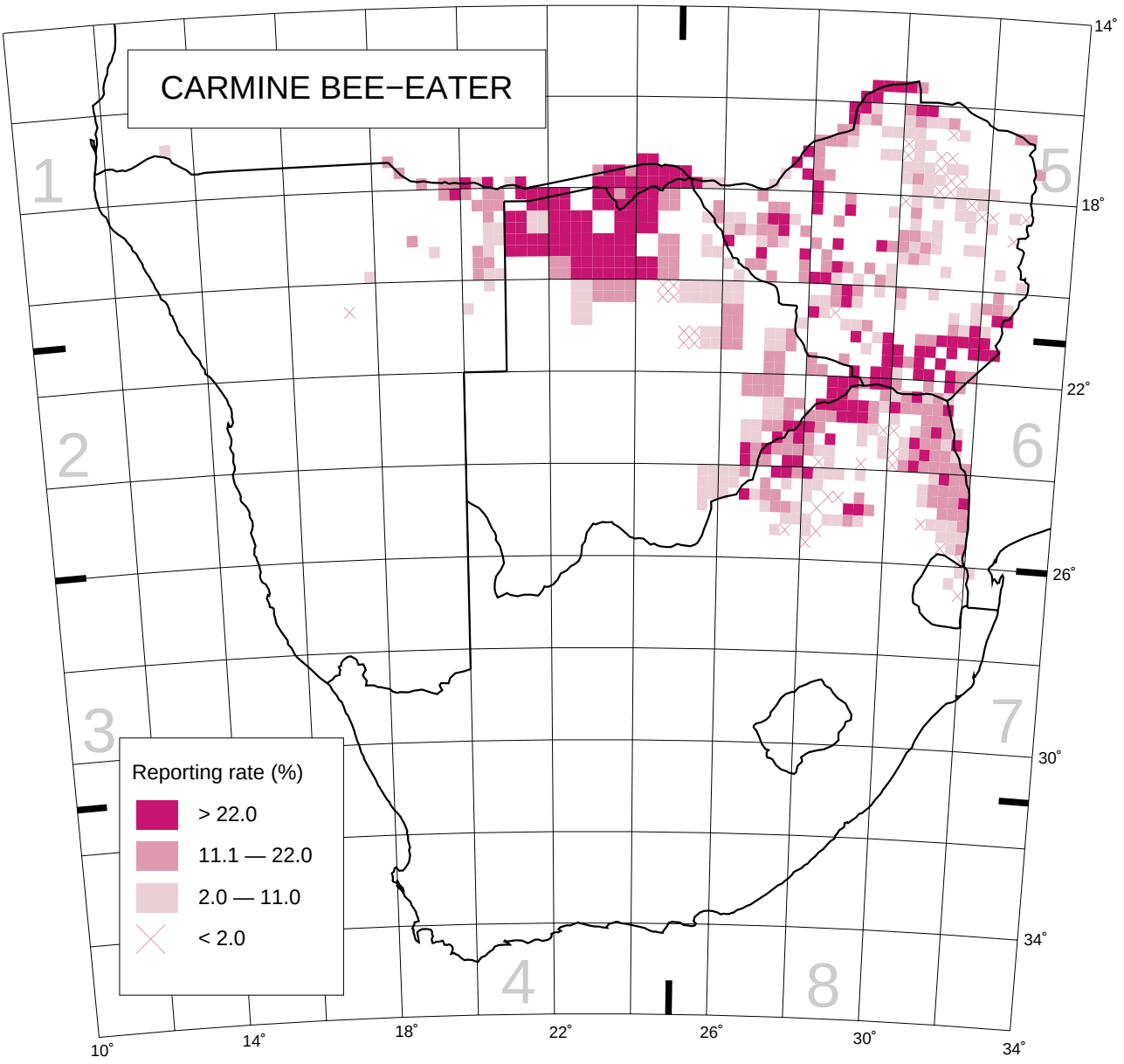
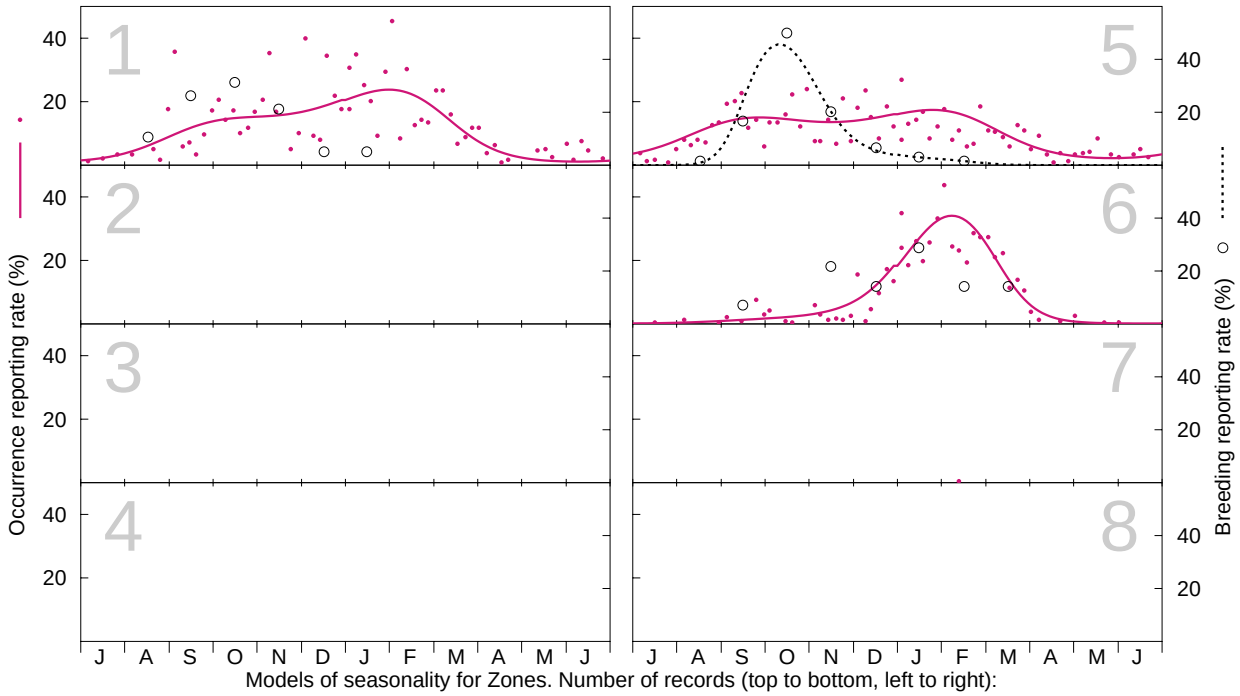
Recorded in 665 grid cells, 14.7%
Total number of records: 3648
Mean reporting rate for range: 14.2%

Reporting rates for vegetation types

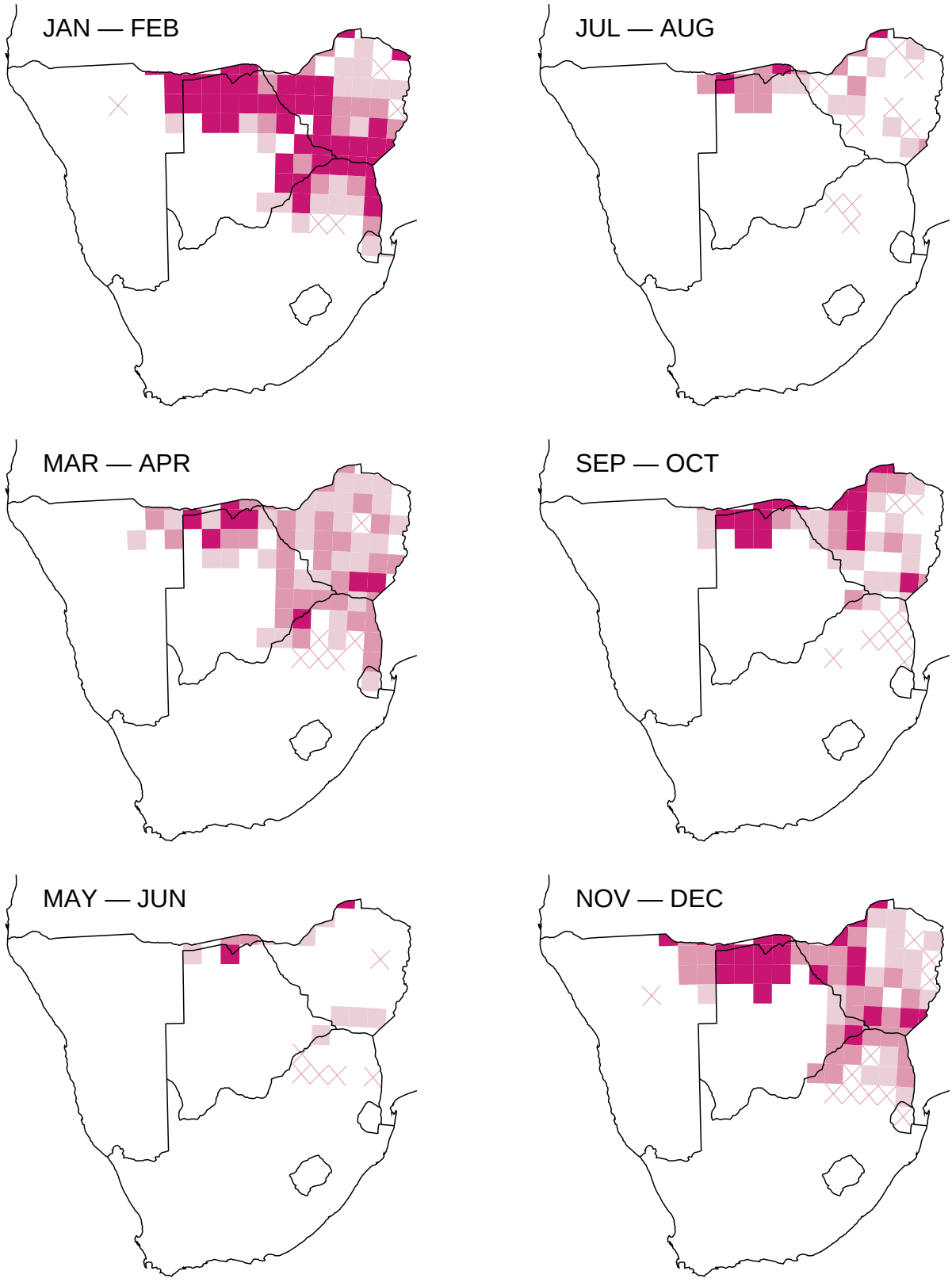






Models of seasonality for Zones. Number of records (top to bottom, left to right):
Occurrence: 310, 0, 0, 0, 915, 921, 1, 0; Breeding: 19, 0, 0, 0, 60, 14, 0, 0.

CARMINE BEE−EATER



Seasonal distribution maps; one-degree grid.