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A SURVEY OF CAPE VULTURE BREEDING COLONIES IN SOUTH AFRICA'S NORTHERN PROVINCES (*TRANSVAAL REGION)* – AN UPDATE 2013

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The Cape Vulture *Gyps coprotheres*, a southern African endemic, is classified as *globally threatened* (Barnes 2000, BirdLife International 2004), with some regional populations faring worse (e.g. critically endangered – Namibia – Robertson *et al.*1998; Swaziland – extinct - Monajem *et al.* 2003). In four regions, long-term (more than 25 years) reproductive studies of Cape Vultures have been undertaken and provide the basis for evaluation of changes in this bird's breeding status (Western Cape – Boshoff and Vernon 1980, Boshoff and Currie 1981, Scott 1997, Scott *et al.* 2000, Shaw 2004; Eastern Cape – Vernon 1999, 2004, Vernon and Boshoff 1997, Vernon *et al.* 1984; Botswana – Borello 1985, Borello and Borello 1997, 2002, *Transvaal Region* (the former Transvaal Province, now Limpopo, Northwest, Gauteng and Mpumalanga provinces) – Benson and Dobbs 1984, Tarboton and Allan 1984, Benson *et al*. 1990, Benson 1997, 2000, 2004). Most of these studies concentrate on individual or a few of the known colonies in those regions. Many active, formerly active or suspected colonies are rarely if ever assessed.

The northern provinces of South Africa, *Transvaal Region*, are the stronghold of the Cape Vulture (Tarboton and Allan 1984). In the 1980s and early 1990s, aerial photographic and ground surveys

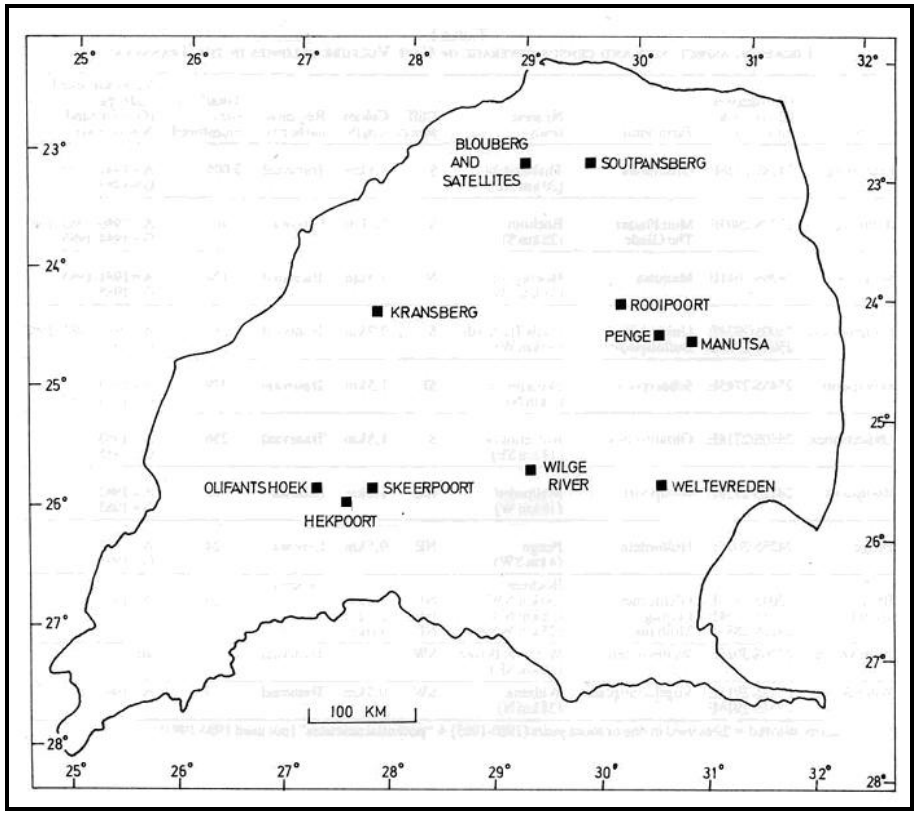

Fig 1 – Locations of Cape Vulture colonies surveyed in the former Transvaal Province (*Transvaal Region*)

were conducted of the 11 extant Cape Vulture colonies, in the *Transvaal Region* (Fig 1), where breeding had occurred since the 1930s (Tarboton and Allan 1984, Tarboton and Benson 1988, Benson *et al.* 1990). Unique, permanent alpha-numeric codes were assigned to observed and suspected/potential nest sites and their locations marked on the aerial photos. These photos are used as a guide for ground surveys, and any additional nest sites discovered are marked on them.

As part of a long-term study of the biology of Cape Vultures, the Kransberg colony has been intensively monitored annually, since 1981 to present (Benson 2000a, 2004). Monitoring occurs monthly, from April to January. Other colonies, Blouberg (1984-1986) and Manutsa (2001-2005, 2008, 2011) have been monitored less intensely. These three colonies, located in Limpopo Province, are the three largest Cape Vulture breeding sites. In 2000, in addition to the Kransberg monthly monitoring, the other eight colonies where birds were known to have bred in 1985 were surveyed (Benson 2000b, unpublished data). In 2013, all 11 colonies were censused again.

When categorising nest use, the terminology and criteria of Postupalsky (1974) are followed. An "active nest" is the census unit, and is a nest in which a clutch of egg(s) is laid. An "occupied nest" is one in which an egg may or may not have been laid, but at minimum, nest building occurs (i.e. all "active nests" are "occupied nests" but not necessarily *vice versa*). Because not all nests can be seen into directly, determining whether it is active or not is often based on observing a nestling. An incubating adult is also an indication of an active nest. An adult simply standing at a nest site, is not by itself, an indication of breeding activity. So unless a nestling is observed, or behaviours indicating its presence (e.g. an adult feeding, brooding or shading a nestling) the site is not considered active. Only active nest sites are considered in this paper.

Except for the Kransberg and Hekpoort colonies the 2013 observations are based on a single visit to the locations. For small colonies (e.g. Penge, Rooipoort, Weltevreden, Wilge Rivier, Blouberg satellites), where little or no nesting occurs, only a single day may be required to adequately determine the numbers of active nests present. For larger colonies, several days to a week or more, may be required to determine the numbers of active sites. Colonies are viewed from several observation points to cover all nesting cliff faces, and all nesting areas are examined repeatedly during a visit. Observations are made using binoculars and telescopes. Data are recorded on pre-prepared data sheets, with all of the alpha-numeric codes for previously known nest sites and additional blank sheets for the inclusion of new sites. Since 1981, at the Kransberg colony, over 3 300 sites have been mapped on aerial photos of the 5.1 km long nesting cliff. Over 25 000 nesting attempts have been documented at that colony.

The value for the Hekpoort colony in 2013 is based on three surveys during the season. The first two were conducted by Dr C Whittington-Jones and Mr Sean West of Gauteng Department of Agriculture and Rural Development. PCB accompanied these gentlemen on a third visit to the Hekpoort colony and to the Oliphantshoek (Robert's Farm) site in September 2013. The Magaliesberg breeding locations, (Skeerpoort, Hekpoort, Oliphantshoek (Robert's Farm)) should be considered as one colony, as they are within sight of each other and birds regularly move between them.

The raw data from the 1985, 2000 and 2013 surveys are presented in Fig 2. Three small cliffs (Blouberg satellites), south of the main Blouberg colony on the mountain Makabeng were not included in the 2000 census.

No nesting occurred there in 2013, and only 16 nests were observed in the 1985 census (Tarboton and Allan 1984, Benson *et al*. 1990). The Blouberg and Blouberg Satellites are approximately 20 km apart and should be considered as one colony. The Manutsa, Penge and Rooiberg colonies are also close to each other and should also probably be considered as one colony.

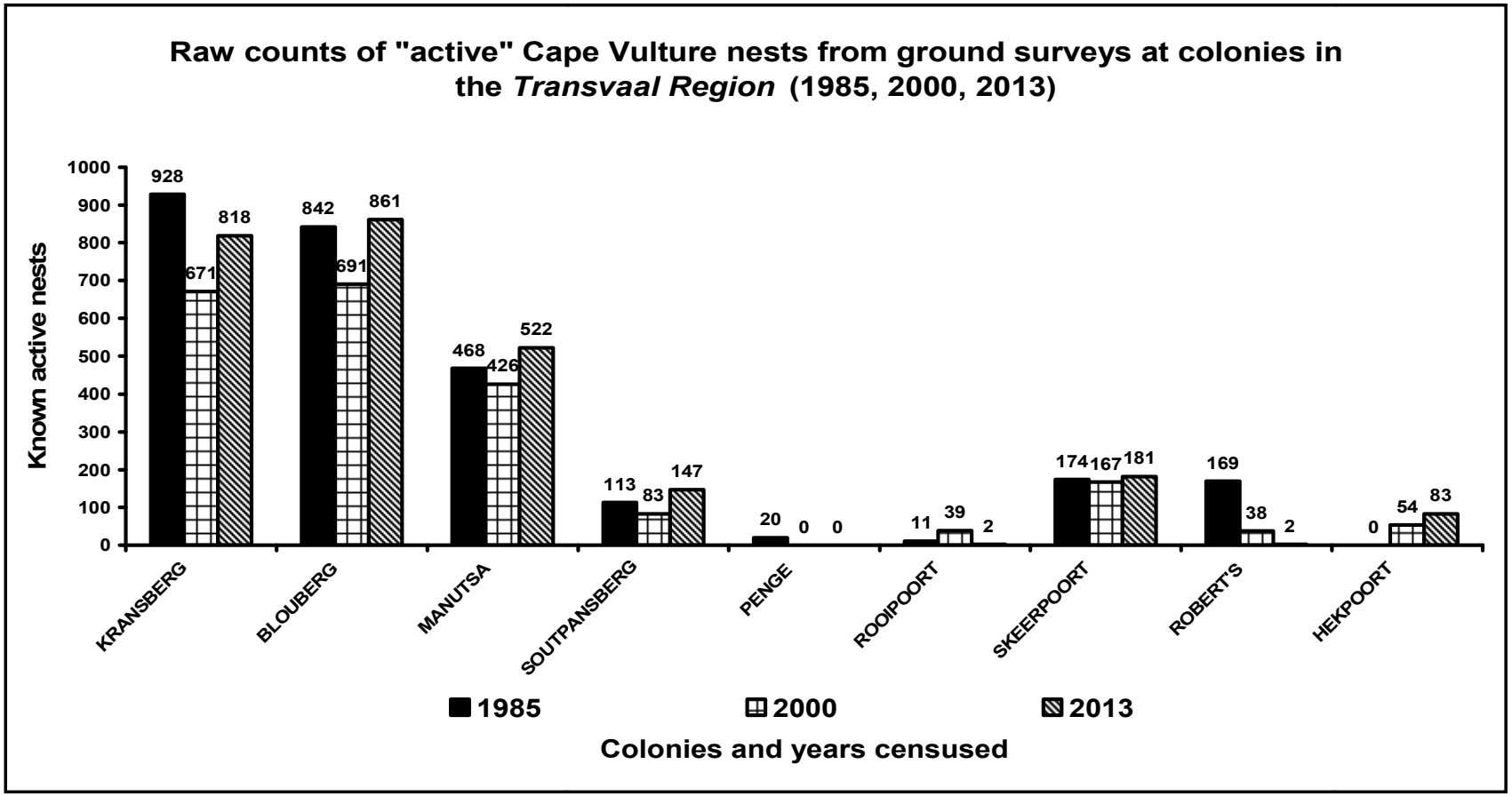

Fig 2 – Raw counts of "active" Cape Vulture nests from ground surveys at colonies at the *Transvaal Region* in 1985, 2000 and 2013

The minimum total numbers of nestlings present/observed during the surveys in the *Transvaal Region* for the three census years are: 1985 = 2741, 2000 = 2169, 2013 = 2616. These values do not include nest failures occurring prior to the census dates. Benson *et al.* (1990) gave "best estimates" of total breeding pairs at each colony, in the assessment years between 1981 and 1985, based on the active nests observed during the census, and an approximation of the numbers of nests which had failed prior to the census dates. This approximation was based on season long observations at the Kransberg and Blouberg Cape Vulture colonies and the daily failure rates occurring there (See Benson *et al.* 1990 for the formula). These calculations are similar to those developed by Vernon *et al.* (1984)

for the Collywobbles colony, in the Transkei (Eastern Cape Province). The total "best estimate" for the Transvaal Region for 1985 was 2987 (Benson *et al.* 1990). Findings for the 2000 and 2013 breeding seasons will be published elsewhere (Benson, Whittington-Jones and West *in prep.).*

The raw data (Fig 2) suggest a general decline from the 1985 observations to the 2000 census. From 2000 to 2013 the numbers of active nests have generally increased. A similar pattern has been observed in the Eastern Cape Province where the Collywobbles Cape Vulture colony declined from over 300 breeding pairs in the early 1980s to less than 70 pairs in 1990s (Vernon 1999). In 2012 there were at least 200 breeding pairs at Collywobbles (Allan and Benson *in prep*.). Vernon (1999) suggests the changes in Cape Vulture breeding numbers, in the communal grazing areas of the former Transkei, of the Eastern Cape, are dependent on the presence of livestock there. Huntley *et al.* (1989) indicate livestock mortality is high in the Transkei, which would be a source of food for the vulture populations there. Presumably a similar situation occurs in the communal grazing areas in the *Transvaal Region*. This hypothesis is being investigated (Benson *et al. in prep.*)

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