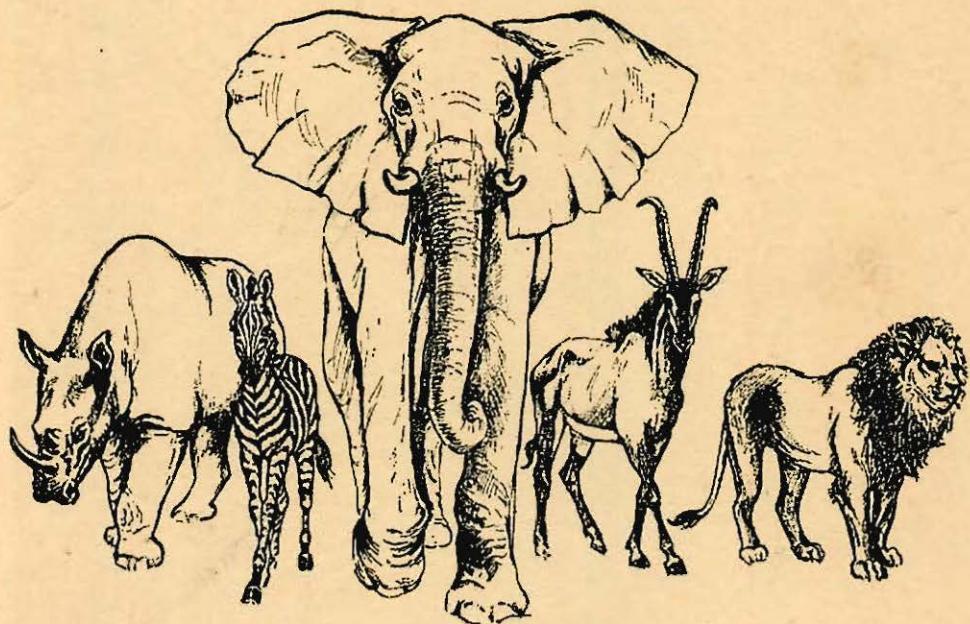
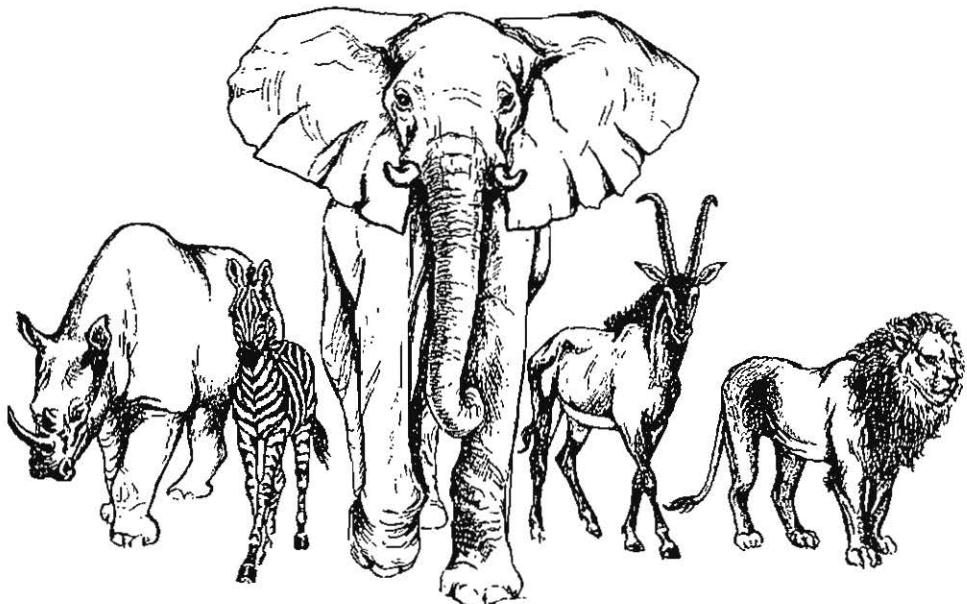


THE DISTRIBUTION OF LARGE MAMMAL SPECIES IN SOUTHERN RHODESIA

By Graham Child & C. R. Savory





THE DISTRIBUTION OF LARGE MAMMAL SPECIES IN SOUTHERN RHODESIA

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The distribution of large mammals in Southern Rhodesia is imperfectly known and this paper aims at a preliminary assessment of the geographical ranges occupied by most large species found in the territory.

In their discussions on distribution, Roberts (1951) and Ellerman *et al.* (1953) include Southern Rhodesia as part of a larger geographical region, and Fraser (1958), who restricted himself to Southern Rhodesia, discussed the problem in general terms.

The rapid increase of interest in wild life in Southern Rhodesia during the last three years, both for its aesthetic and commercial values, has led to a demand for a better understanding of its distribution. It was with this need in mind that the present survey was undertaken as a joint project by the National Museums of Southern Rhodesia, the Department of National Parks and Wild Life Management and the Natural Resources Board.

Based on questionnaires and supplementary data, and with the limited personnel and time available, it was realised that the survey would have limitations, but it is hoped that it will stimulate further research into this important basis for wild life work within the territory.

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Our thanks are due to all those who completed and returned questionnaires; to our colleagues in our respective organisations, to the Natural Resources Board who arranged the distribution of the questionnaires, and to Miss W. Schiff who assisted us in analysing the data.

METHODS

Eight thousand questionnaires were distributed to land holders and Government personnel responsible for the administration of rural areas in June, 1961. Every effort was made to obtain as wide a coverage as possible of the whole of Southern Rhodesia.

Information requested included an indication of which species were resident in, or only occasional visitors to, the area covered by the questionnaire. The distributional data was plotted on outline maps of Southern Rhodesia, using a quarter degree square grid in which lines were spaced at 30 minute intervals both longitudinally and latitudinally. It was not practical to use a more sensitive scale due to the uneven distribution of the replies (Fig. 1), itself a reflection of current land use intensity and

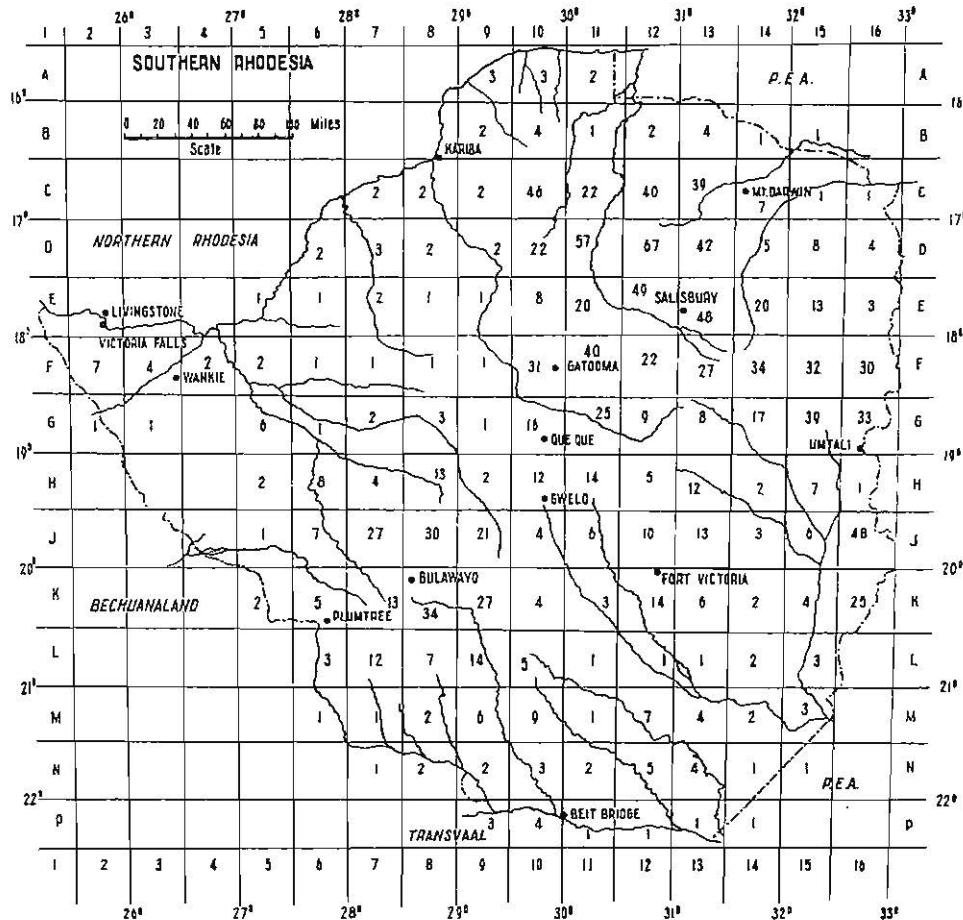


Fig.1

rural European population density. Even on this scale, a number of questionnaires covered more than one square, especially in underdeveloped areas. In Fig. 1, questionnaires, reporting on more than one square, have been indicated in all the squares with which they deal.

After the data on the 1,454 questionnaires which were returned (18 per cent) had been analysed, additional information was sought from those areas for which there was inadequate coverage. Here the results of tsetse fly control hunting schemes and records from game rescue operations on Lake Kariba (Fig. 2) were of great value. In addition, the authors and field staff of the Department of National Parks and Wild Life Management paid particular attention to populations in given areas. The Wankie National Park (Fig. 2) was treated as a separate entity, based on park records kindly supplied by the Senior Warden, Mr. Bruce Austen.

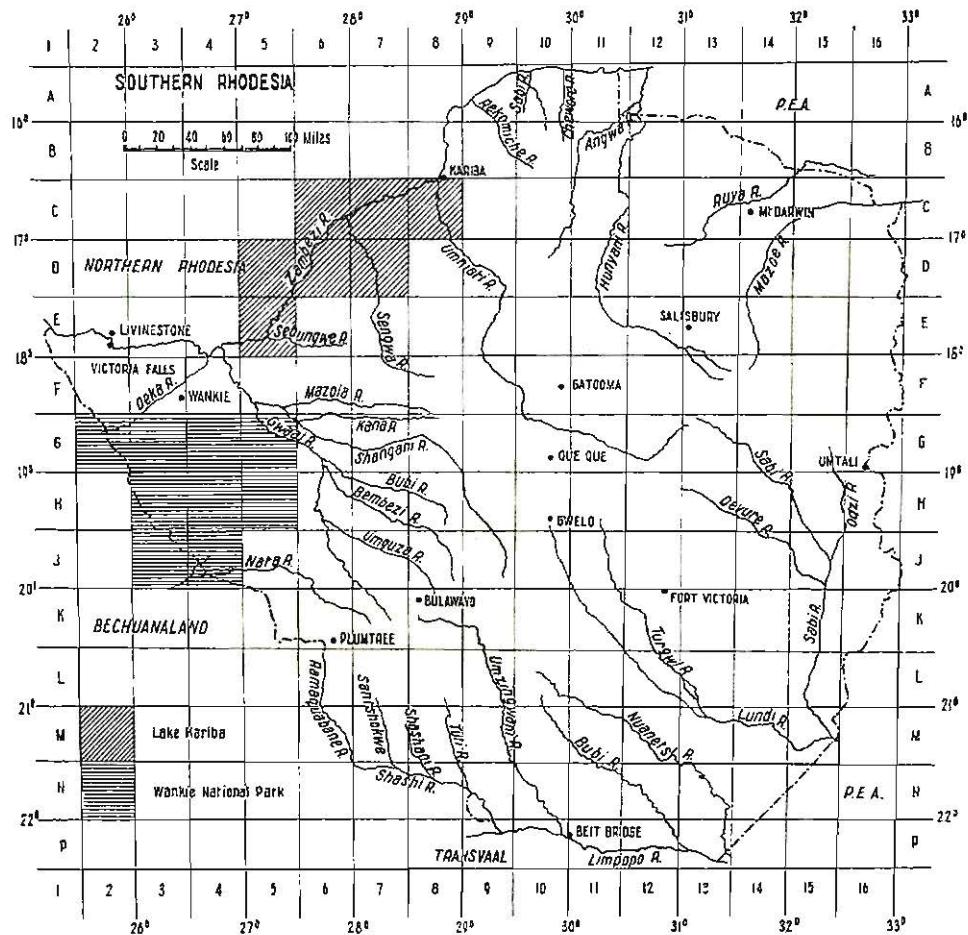


Fig. 2

No attempt was made to ascertain the status or trends within populations in the various areas and discretion was exercised in the treatment of species which, in any one square, were only recorded as "occasional visitors". In the case of species with localised habits, their indication as occasional visitors in the area represented by a square would suggest they were rare or secretive, while the phrase is appropriate for species which may move about a great deal. Little is, however, known of the movements of most species in Southern Rhodesia and arbitrary decisions have had to be made as to their treatment where they were only indicated as occasional visitors.

The grid system used in this paper is based on that of the Federal Survey Department's 1:1,000,000 map. Distribution squares which only just reach into the borders of Southern Rhodesia are frequently ignored. Selected rivers are named in Fig. 2, to which other maps may be referred.

Common names applied to species are those normally used locally, while the scientific nomenclature and the systematic arrangement of species follow Ellerman *et al.* (1953).

RESULTS

Vervet Monkey, *Cercopithecus aethiops*

K/15 was the only square from which vervet monkeys were not recorded, but it is to be expected that the species would be present along the Sabi River and its tributaries, in this area.

Samango Monkey, *Cercopithecus mitis*

Samango monkey was not included on the questionnaires in order to avoid confusion with the last species. The samango is limited to areas of forest along the eastern border mountains, where it probably has a distribution similar to that of the blue duiker (See Fig. 14).

Baboon, *Papio ursinus* (Fig. 3)

Baboons occur over most of the country, but are rare or absent in woodland on heavy Kalahari sand. This may account for their not having been recorded from H/3 and 4 and J/3 to 6. The lack of reports from other areas was probably due to the low number of returns from these areas.

Wild Dog, *Lycaon pictus*

Wild dog are sparse but widespread over most of the territory, especially in undeveloped areas in the north and south. They were excluded from the questionnaire because it was believed a biased picture of their distribution might be given as a result of the prejudice against this species.

Brown Hyaena, *Hyaena brunnea*

Brown hyaena are rare and the species was probably confused with the spotted hyaena on a number of questionnaires. Their distribution, based on collected material, has been described by Ansell (1961). Converted to the system of plotting used in this paper, their presence has been established in G/3, H/8, L/6, 7 and 9, and M/6.

Spotted Hyaena, *Crocuta crocuta* (Fig. 4)

Spotted hyaena are widespread but apparently absent from a number of areas. Although this may be ascribed to their nocturnal habits and extreme secretiveness when persecuted, coupled with a low return of questionnaires from some areas, the lack of reports from around Gwelo and Salisbury probably reflects a gap in the range of the species. Whether this is natural or has been induced through human agencies is not clear.

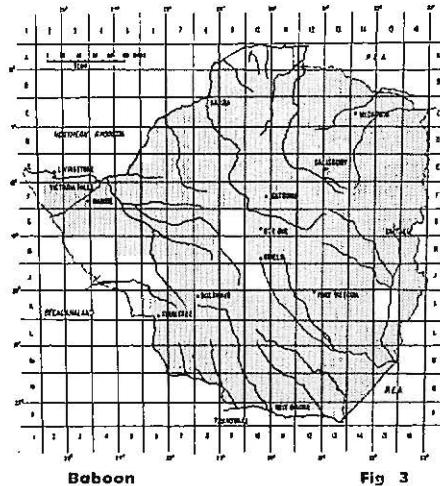


Fig 3

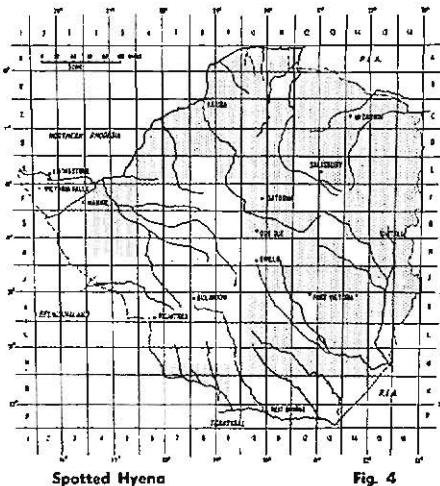


Fig. 4

Leopard, *Panthera pardus*

Leopard were reported from all areas except E/8, G/7, J/10 and N/8. These are all localities from which there was a low return of questionnaires.

Lion, *Panthera leo* (Fig. 5)

Lions are mainly restricted to the border areas, but it is clear from reports that lion may occur, at least temporarily, in many adjacent areas.

Cheetah, *Acinonyx jubatus* (Fig. 6)

Cheetah are reported to have a wide but patchy distribution. The unevenness of the distribution may, in part, result from the irregularity with which the species is contacted, even in areas where fairly well represented.

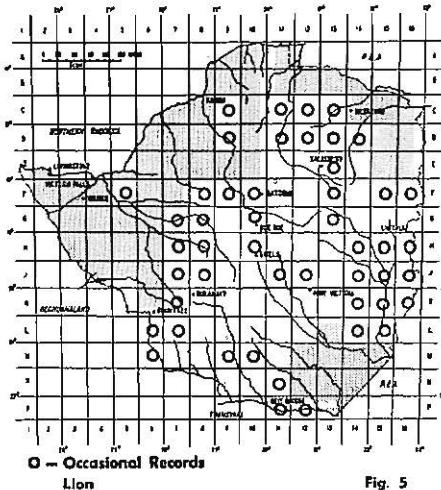
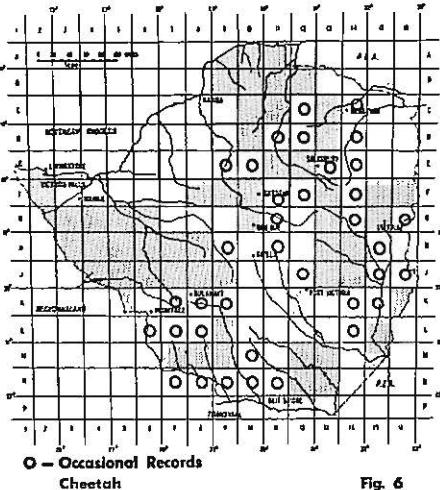


Fig. 5



Cheetah

Antbear, *Orycteropus afer*

Antbears were reported from all areas except E/8, G/7 and L/11, from which there were few returns.

Elephant, *Loxodonta africana* (Fig. 7)

Elephant are most common in the Zambezi Valley, the southern lowveld and in the Wankie National Park and its vicinity. Reports of occasional observations of lone animals and small groups of this conspicuous species came from many adjoining areas.

Black Rhinoceros, *Diceros bicornis* (Fig. 8)

Black rhino are now limited to the Zambezi Valley and a relict population in the Sabi Valley, although it is evident from Selous (1908) that the species once had a much wider range. Recently black rhino from the Kariba Lake basin have been re-introduced into the Wankie National Park, G/3, and into the Matopos National Park, L/7.

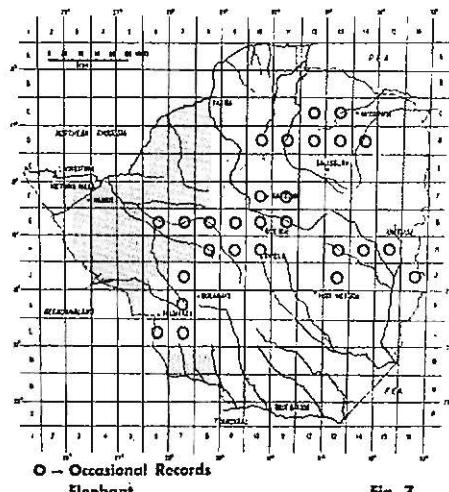


Fig. 7

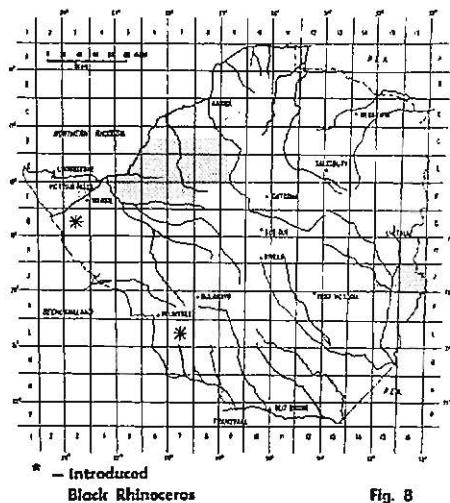


Fig. 8

White Rhinoceros, *Diceros simus*

Eight white rhino from Zululand, Republic of South Africa, were re-introduced in 1962. Four of these are now in the Matopos National Park, L/7, and four are in the Kyle Dam Game Reserve, K/12.

Zebra, *Equus burchelli* (Fig. 9)

Zebra are generally absent along the Southern Rhodesian watershed. It has not been possible to determine whether this is natural or has been influenced by agricultural expansion as they still occur in some highly developed areas, but are absent from other less densely settled districts.

They have been introduced into the Matopos National Park, L/7, and the Robert McIlwaine National Park, E/12, which are both within the present range of zebra.

Bushpig, *Potomachoerus porcus* (Fig. 10)

Bushpig are apparently absent from the south western portion of the Wankie National Park, but elsewhere are widespread. Other gaps in their distribution are probably due to the secretive habits of the species in areas from which we received few returns and where crop production is limited.

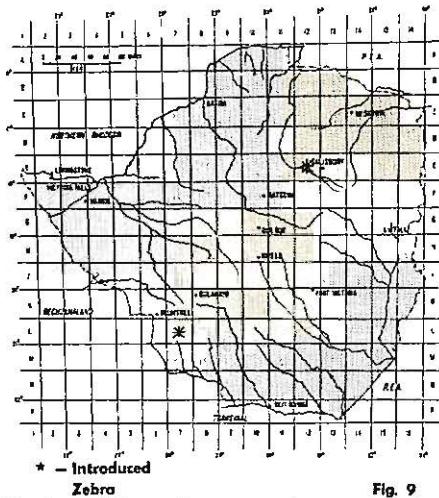


Fig. 9

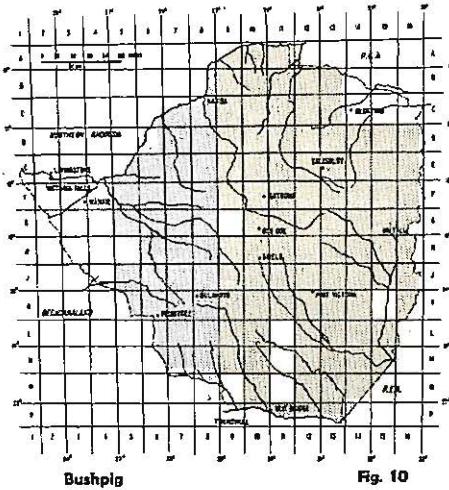


Fig. 10

Warthog, *Phacochoerus aethiopicus* (Fig. 11)

Reports indicate their absence from high plateau areas along the watershed, but generally they are widespread. They have been introduced into the Robert McIlwaine National Park, E/12.

Hippopotamus, *Hippopotamus amphibius* (Fig. 12)

The greatest concentrations of hippo occur in the Sabi/Lundi and Zambezi River systems, although it is evident from frequent reports of occasional observations, that the species may move up some of the other larger rivers on a number of which there are resident populations.

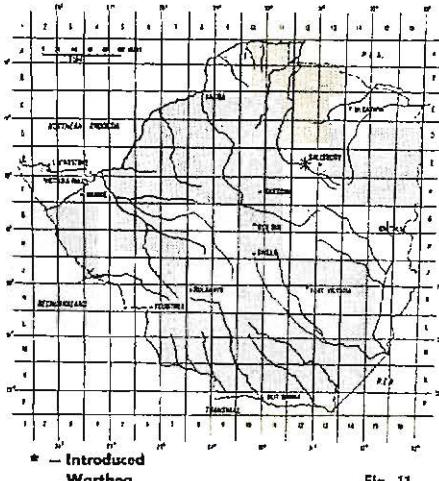
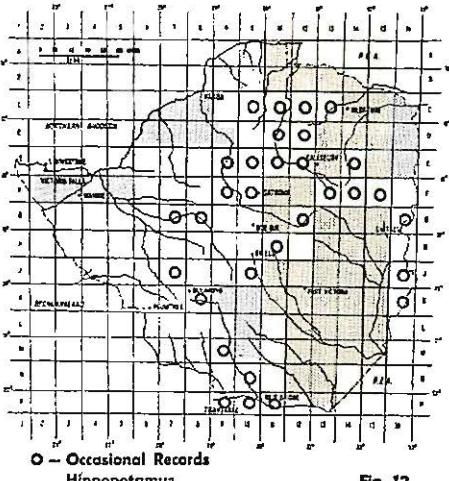


Fig. 11



O - Occasional Records
Hippopotamus

Fig. 12

Giraffe, *Giraffa camelopardalis* (Fig. 13)

Giraffe have been introduced into the Matopos National Park, L/7, and the Robert McIlwaine National Park, E/12, but apart from this are restricted to the southern lowveld and north western corner of the territory.

Blue Duiker, *Cephalophus monticola* (Fig. 14)

Blue duiker are limited by the availability of suitable forest habitat along the eastern border.

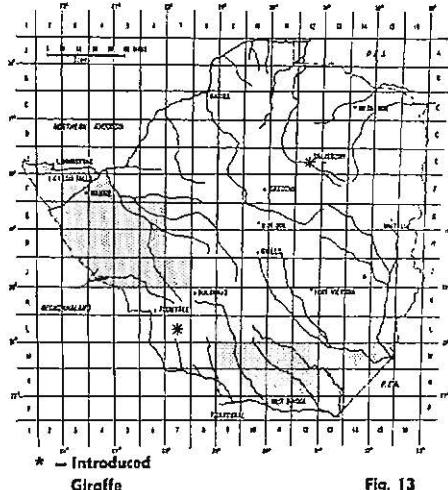


Fig. 13

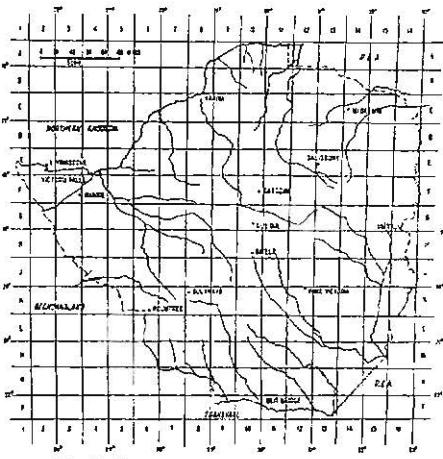


Fig. 14

Duiker, *Sylvicapra grimmia*

Duiker were reported throughout.

Steenbuck, *Raphicerus campestris* (Fig. 15)

Steenbuck are absent from the Zambezi Valley below the Victoria Falls, but otherwise have been reported from most of the territory. The limits of distribution in the north coincide roughly with the 3,000 feet contour, although they occur at lower elevations in the south.

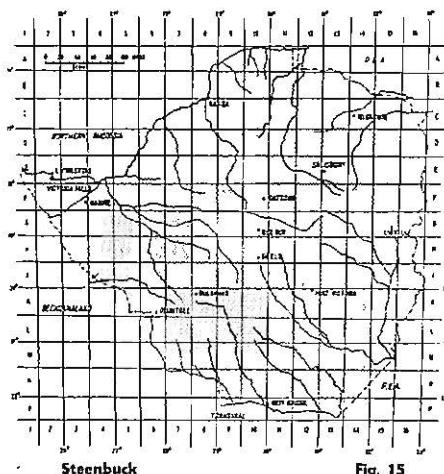
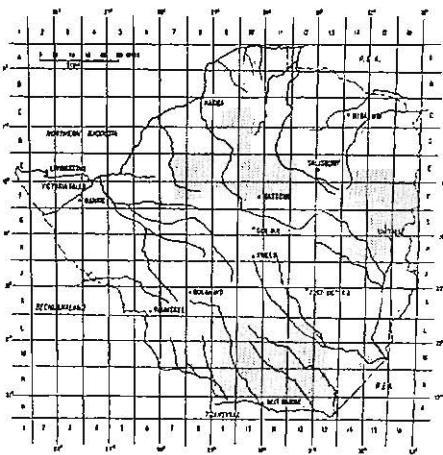


Fig. 15



Sharp's Grysbok

Fig. 16

Sharpe's Grysbuck, *Raphicerus sharpei* (Fig. 16)

Except along the western border and adjacent areas, Sharpe's grysbuck are widespread.

Oribi, *Ourebia ourebi* (Fig. 17)

Oribi, *Ourebia ourebi* (Fig. 17)
Oribi mainly occur in the north eastern half of the territory. They are present in the Zambezi drainage above the Victoria Falls, where they are known from as far south as F/2, but are apparently absent from the Zambezi Valley below the Falls. There is one reliable report in recent years of a lone male about 14 miles south of Bulawayo in K/8.

Suni, *Nesotragus moschatus*

The range of the suni reaches into Southern Rhodesia at low altitudes along the eastern border in C/16, D/16 and L/15. In the latter locality it is known from both banks of the Sabi River, which does not form a barrier to its distribution. In addition there are two specimens in the National Museum obtained from tsetse control hunting operations in the Urungwe district (approx. C/8 and 9, D/8 and 9). It has not been possible to determine their exact origin, but should it have been in thickets below the Zambezi escarpment it would suggest their possible occurrence along the Zambezi below Kariba.

Klipspringer, *Oreotragus oreotragus* (Fig. 18)

Klipspringer are widespread, except for an area in the north west which is characterised by heavy Kalahari sand and where suitable rocky habitat is uncommon.

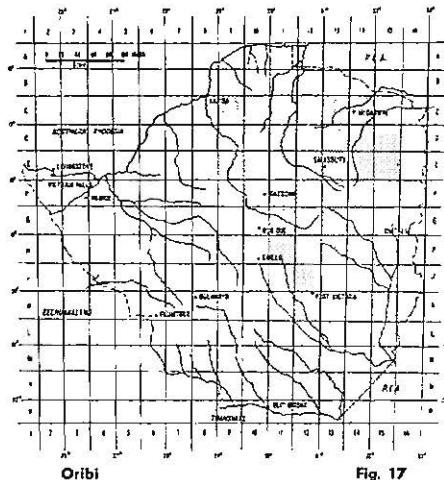


Fig. 17

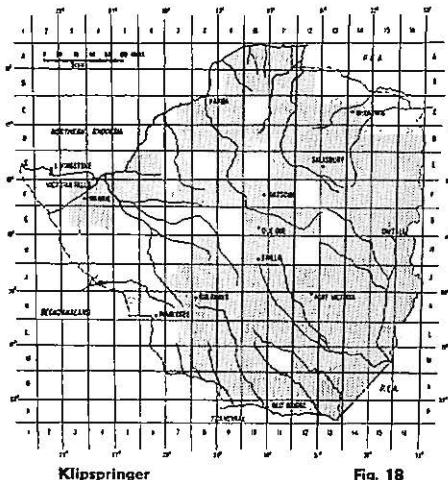


Fig. 18

Reedbuck, *Redunca arundinum* (Fig. 19)

Reedbuck are widespread, but were not reported from the Limpopo or Zambezi Valleys, although Savory observed a single female associated with impala in A/10 in 1961. This lone reedbuck was well known to local Africans.

Common Waterbuck, *Kobus ellipsiprymnus* (Fig. 20)

Reports reflect their absence over much of the western half of the territory, except in the Limpopo and Zambezi Valleys.

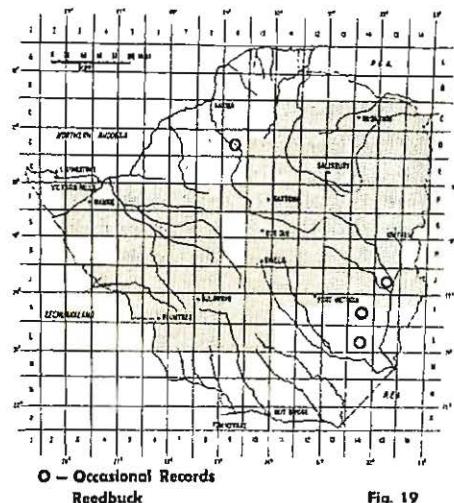


Fig. 19

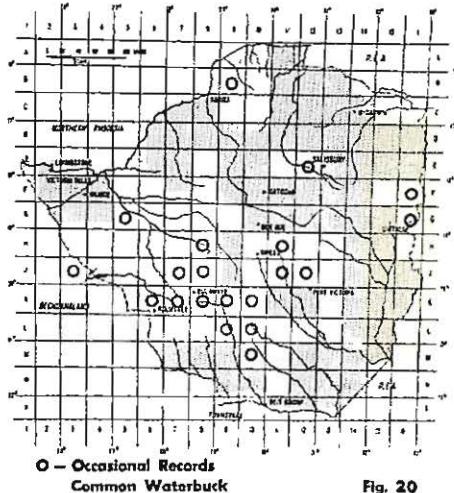


Fig. 20

Impala, *Aepyceros melampus* (Fig. 21)

The range of impala coincides roughly with the distribution of mopane woodland and is absent from areas of well developed *Brachystegia* in the north east and *Baikiaea* woodland on Kalahari sand in the north west.

Gemsbuck, *Oryx gazella* (Fig. 22)

The range of gemsbuck, which are typical of the Kalahari, just reaches into Southern Rhodesia in the north west. They are restricted almost entirely to the Wankie National Park, although two reports indicate they are occasionally seen in E/1.

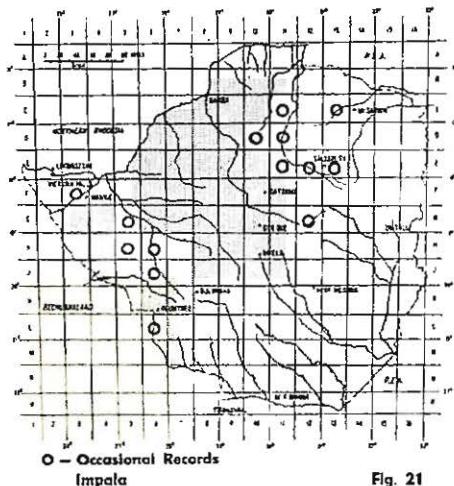
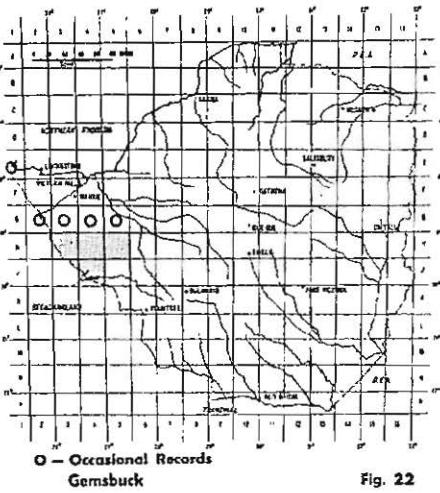


Fig. 21



— Occasional Records
Gemsbuck

Roan Antelope, *Hippotragus equinus* (Fig. 23)

Roan antelope, generally absent along the Southern Rhodesian watershed and their distribution elsewhere suggests their range is being reduced.

Sable Antelope, *Hippotragus niger* (Fig. 24)

Reports indicate a widespread, if somewhat patchy distribution.

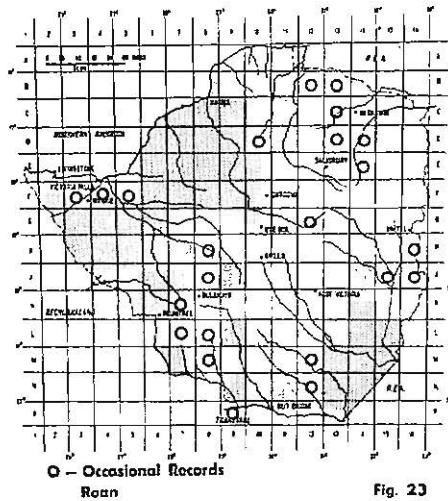


Fig. 23

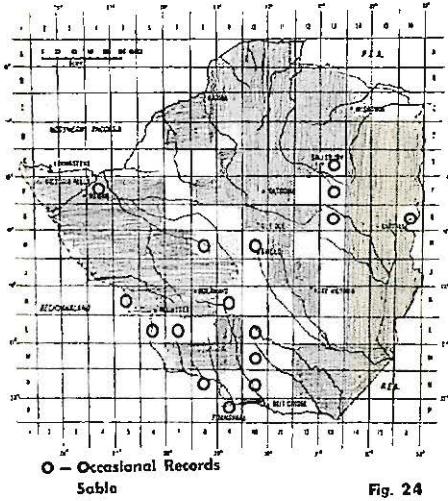


Fig. 24

Tsessebe, *Damaliscus lunatus* (Fig. 25)

Reports of tsessebe indicate that the species has a somewhat patchy distribution, except in the Sebungwe, Shangani and Bubi River areas.

Red Hartebeest, *Alcelaphus buselaphus* (Fig. 26)

Red hartebeest were only reported from the north and south western corners of the Wankie National Park and adjacent areas, although there is one reliable report of

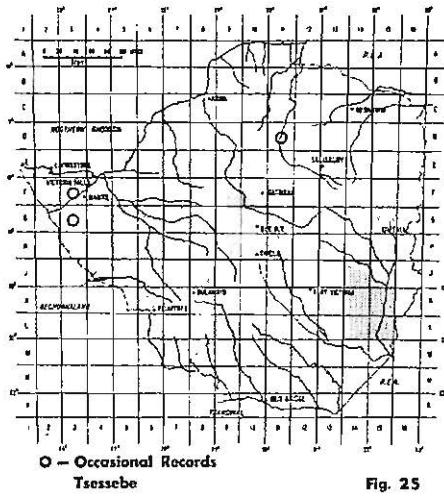


Fig. 25

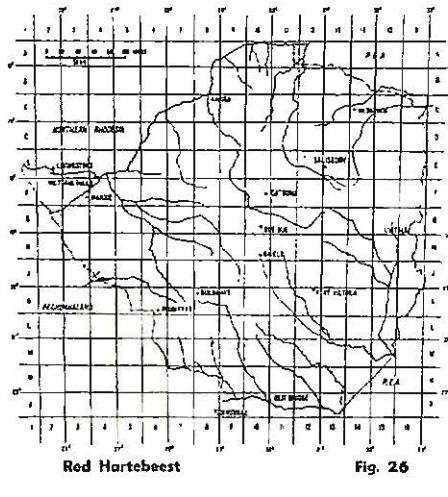


Fig. 26

their occurrence in E/9 in 1933 and unsubstantiated rumours suggest a few may possibly survive in this general area.

Lichtenstein's Hartebeest, *Alcelaphus lichtensteini* (Fig. 27)

Lichtenstein's hartebeest was only reported from a limited area in the south east, although at least three were shot on a tsetse control hunting scheme during the 1950s, in C/15 or 16.

Wildebeest, *Connochaetes taurinus* (Fig. 28)

Wildebeest occur mainly along the southern and western borders of the territory. They are absent from the Zambezi Valley, but have been introduced into the Robert McIlwaine and Matopos National Parks in E/12 and L/7 respectively.

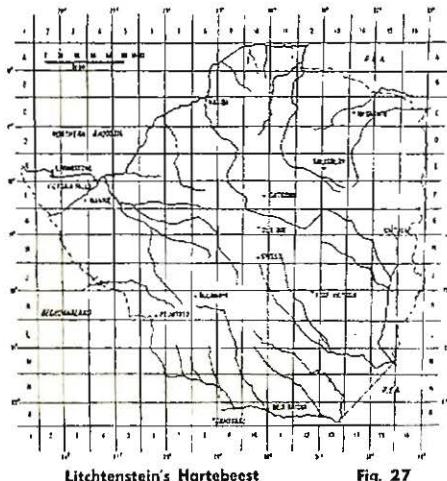


Fig. 27

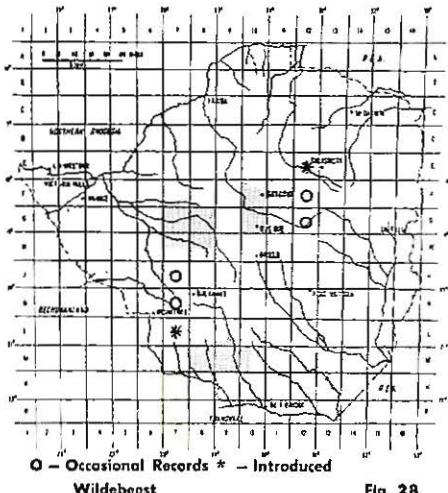


Fig. 28

Bushbuck, *Tragelaphus scriptus* (Fig. 29)

Bushbuck are found throughout, although their distribution tends to tail off in the west. They are absent in large areas stretching from the southern portions of the Wankie National Park to Plumtree.

Nyala, *Tragelaphus angasi* (Fig. 30)

Nyala occur in the south eastern lowveld. Although present in L/13, 14 and 15, they are not known from north of the Lundi River in an area which has been hunted extensively during past tsetse control operations. Four nyala were seen by National Parks and Wild Life Management officer, A. Milne, in A/11 in mid-1963, which confirmed rumours of their presence there. This was not surprising as nyala are known from neighbouring areas on the Zambezi River below Zumbo in Portuguese East Africa (approximately A/12).

Kudu, *Tragelaphus strepsiceros*

Kudu occur throughout.

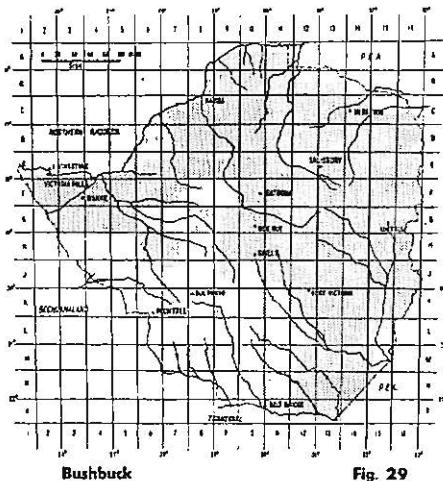


Fig. 29

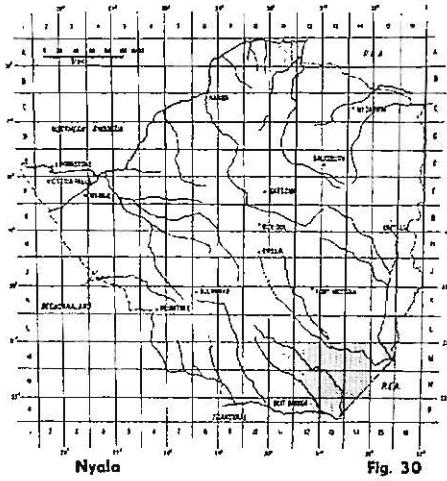


Fig. 30

Eland, *Taurotragus oryx* (Fig. 31)

Reports indicate a widespread, if somewhat patchy distribution, which may have been curtailed by human development as they occur in a wide range of habitat at all elevations.

Buffalo, *Syncerus caffer* (Fig. 32)

Buffalo are most numerous in the south east, north west and Zambezi Valley areas, but there are also resident herds along the Nuanetsi River and in the Que Que/Gatooma area. In adjacent areas and along the eastern border, there are frequent reports of occasional observations of buffalo. The latter may be buffalo which enter the territory from Portuguese East Africa.

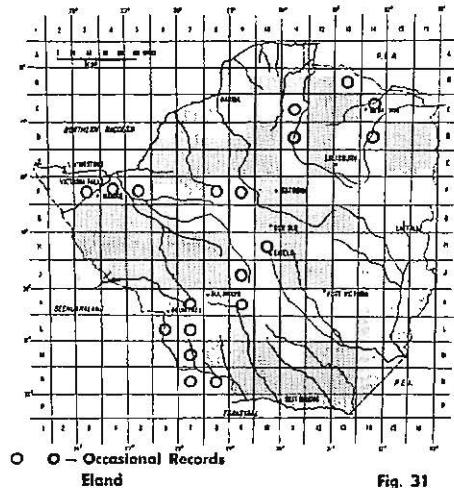


Fig. 31

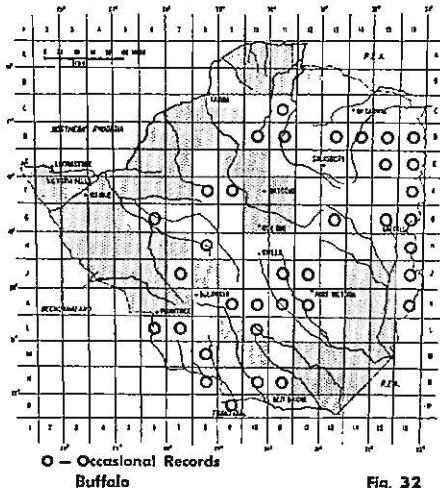


Fig. 32

DISCUSSION

A biological survey based largely on questionnaires to the public has inherent weaknesses. It is believed, however, that the present study gives a reliable picture of the current distribution pattern of large mammals in Southern Rhodesia, although it is to be expected that further research will add many refinements. Most species dealt with are large, easily identified and, when present in an area, are quite conspicuous. Some confusion may have arisen between the Red and Lichtenstein's hartebeest, but the two species do not overlap geographically. More important is the possible mis-identification of steenbuck and Sharpe's grysbuck although, in spite of numerous spot checks, no such error has been established. Added confidence for the validity of the present results comes from supplementary data obtained from tsetse fly control hunting programmes, game rescue operations on Lake Kariba, records of the Wankie National Park and locally specific reports from field staff of the Department of National Parks and Wild Life Management.

The use of the quarter degree grid for plotting distribution probably exaggerates the range of a species, which in any case would be limited to suitable habitat within this area. In some cases there are apparent gaps in a species' distribution which may be due to the low number of questionnaires received from some of the remote areas.

The white rhino was the only large mammal species of wide distribution in Southern Rhodesia which had become extinct in historic times, but has recently been re-introduced into two sanctuaries in the territory. There is some doubt as to the status of the puku, *Kobus vardoni*, and sitatunga, *Tragelaphus spekei*, in the north western corner of Southern Rhodesia. Sitatunga occurs on the Zambezi River, just upstream from the north western tip of the territory and according to Ellerman *et al.* (*op. cit.*) has been collected in Southern Rhodesia. The same authors give "the neighbourhood of the Victoria Falls, the junction of the Chobe and Zambezi rivers" as part of the range of puku, which still occur at least on the west bank of the Chobe river just beyond our limits. It is not altogether clear from this general statement whether or not puku were ever confirmed in Southern Rhodesia, although Shortridge (1935) quoting Selous, indicates they were. Neither puku nor sitatunga have been reported in recent years. Whatever the status of these two species in this area, it is worth further investigation.

Benson and White (1960) and Ellerman *et al.* (*op. cit.*) indicate parts of eastern Southern Rhodesia as within the range of the mountain reedbuck, *Redunca fulvorufula*, but we have been unable to find any evidence to substantiate this.

There are three other species whose ranges have apparently been curtailed since the territory was colonised by Europeans in the early 1890s. According to Selous (*op. cit.*) black rhino extended over much of Southern Rhodesia and Lichtenstein's hartebeest were known from Nuanetsi in L/12 in the 'twenties. It is also probable that the range of the red hartebeest has become more restricted.

Information derived from this study highlights a number of points of zoogeographical interest. In the south east lowveld nyala and giraffe did not occur north of the Lundi River, even during past heavy tsetse control hunting programmes, although one giraffe has once been reported north of the river in M/14. Here the river appears to act as a geographical barrier, although both species could easily cross it.

There are three species which only just spread across the eastern border of Southern Rhodesia at low altitudes from Portuguese East Africa. These are suni and Lichtenstein's hartebeest, which have very similar distributions, and nyala. The eastern limits of the range of species common in eastern Bechuanaland extends into Southern Rhodesia. These are brown hyaena, gemsbok, red hartebeest and, to a greater extent wildebeest and giraffe in the northwest, although in the south these two species spread right across the territory. Species which are absent from the Zambezi Valley below the Victoria Falls, but which are known from neighbouring areas include steenbuck, which occur at low altitudes in the south, oribi, reedbuck, apart from a single record, giraffe and wildebeest. The last two are interesting as they are represented by relic populations (Ansell 1960) in the valley of the Luangwa River, a tributary of the Zambezi, with apparently similar habitat conditions in certain areas.

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