

CHAPTER THREE

REGIONS SURVEYED AND PREVIOUS COLLECTIONS

REGIONS SURVEYED

Faunal remains were either collected from or had been previously collected from five distinct regions to increase a database for all three extant hyaenid species (Figure 2).

Prey remains from spotted hyaenas were collected from one active and three inactive den sites in the Mashatu Game Reserve, Botswana, and two inactive dens in the Namib-Naukluft Park, near Gobabeb, Namibia. Brown hyaena prey remains were collected from three dens at Rietvlei Nature Reserve, South Africa and nine dens in Diamond Area No. 1 and adjacent Luderitz peninsula, Namibia. A collection housed at the University of Witwatersrand previously collected in Diamond Area No. 1 of Namibia by Skinner & van Aarde (1991) and Skinner *et. al.* (1998) was also analysed in this study. Data for striped hyaenas is included for comparison and comes from a previous collection by the author of five extant den sites in three regions of eastern Jordan (Kuhn, 2001, 2005). This collection is currently stored at the Council for British Research in the Levant (CBRL) facility in Amman, Jordan.

AFRICA

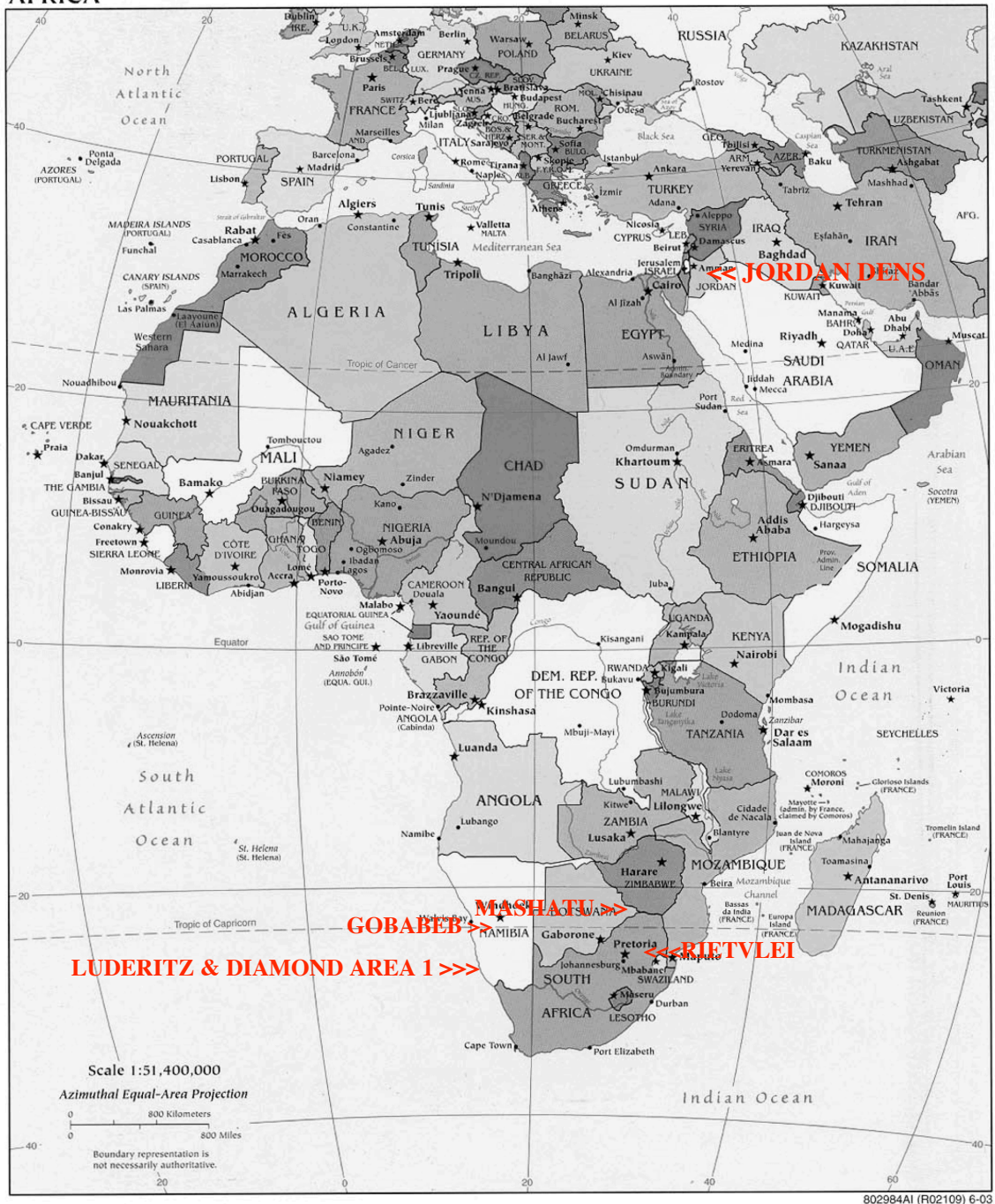


Figure 2: Map showing den localities

Rietvlei Nature Reserve, South Africa

Rietvlei Nature Reserve is situated on the eastern edge of greater Pretoria adjacent to the R21 highway and Irene road (Figure 3). The reserve is adjacent to the Rietvlei dam built in 1934 and covers an area of 3800 ha. The reserve is 1525 m above sea-level and can accommodate up to 2000 head of large ungulate species, which include buffaloes (*Syncerus caffer*), eland (*Tragelaphus oryx*), black wildebeest (*Connochaetes gnou*), springbok (*Antidorcas marsupialis*), plains zebras (*Equus burchelli*) and white rhinoceroses (*Ceratotherium simum*) to name a few. In addition, the Reserve is also home to numerous small mammals, reptiles, amphibians, birds and three larger carnivores, black-backed jackals (*Canis mesomelas*), a pair of cheetahs (*Acinonyx jubatus*), and brown hyaenas. The reserve has 30km of road that break it into 31 specific blocks. It has a typical Highveld climate, with an average summer rainfall of 724 mm and a dry and cold winter. The veld type is mostly Bankenveld and the landscape consists of rolling hills and grasslands, with a small area of wetlands as well.

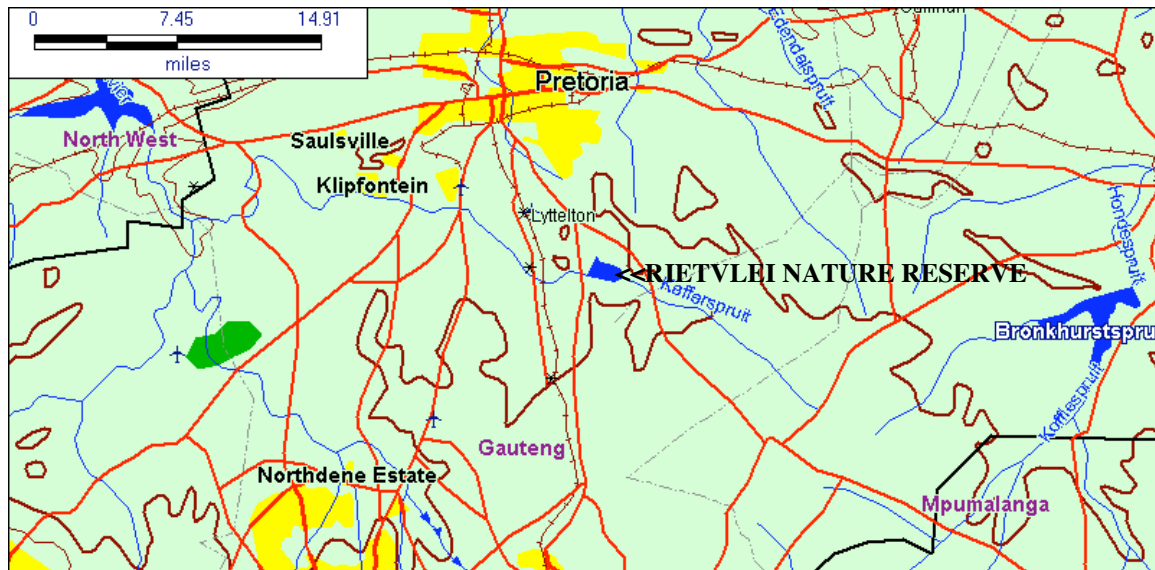


Figure 3: Map showing location of Rietvlei Nature Reserve

Mashatu Game Reserve, Botswana

The Mashatu Game Reserve lies in the Tuli Block of southeastern Botswana (Figure 4). The reserve covers 30,000 ha of bushveld at the confluence of the Shashe and Limpopo rivers. Approximately 177 mm of rain falls over the reserve during summer. The region surveyed for this study is located at the southwest corner of the reserve near the Motloutse River and Motloutse Archaeology site. The region supports a variety of wildlife, including a large population of elephants (*Loxodonta Africana*) in addition to numerous game species including zebras, eland, blue wildebeest (*Connochaetes taurinus*), impala (*Aepyceros melampus*) and kudus (*Tragelaphus strepsiceros*) as well as large carnivores like lions (*Panthera leo*), leopards (*P. pardus*) and spotted hyaenas (statistical information from the website, www.mashatu.com).



Figure 4: Map showing location of Mashatu Game Reserve

Diamond Area No. 1 and Luderitz peninsula, Namibia

Luderitz and Diamond Area No. 1 are located in the southwest of Namibia, the Diamond Area, or Sperrgebiet, extends over 100 km to the South African Border at Alexander Bay covering 26,000 km² (Figure 5). To the north of Luderitz is the southern edge of the Namib-Naukluft Park, thus aside from the town and small areas to the north and the peninsula (which has over 65 km of road by itself) the area consists largely of protected or prohibited land. The region is coastal desert and only receives 2-20 mm of rainfall annually. Despite the arid conditions the region supports a variety of wildlife such as gemsbok (*Oryx gazella*), springbok, black-backed jackals and numerous small mammals including the recently identified African wildcat (*Felis sylvestris*) (I. Wiesel, pers. comm.), birds and reptiles. In addition to the terrestrial wildlife there is an abundance of marine life, both birds and mammals that occupy the shorelines. These include Cape fur seals (*Arctocephalus pusillus*) and jackass penguins (*Spheniscus demersus*). The fact that the majority of lands around Luderitz are protected in some way (be they parks or diamond areas) has benefited the local wildlife, but does not limit the wildlife to said areas as all the species can be found on the peninsula and public beaches and brown hyaenas are routinely sighted with in the town itself (Goss, 1986).

Gobabeb, Namib-Naukluft Park, Namibia

The Namib-Naukluft Park covers over 50,000 km² along the western edge of Namibia, from Luderitz in the south to Walvis Bay and Swakopmund in the north (Figure 5). Gobabeb lies in the northwest portion of the park, 55 km from the coast and 70 km from Walvis Bay (120 km via the road) at the intersection of three major ecosystems. These ecosystems are the Namib Sand Sea, the gravel plains of the Central Namib and the Kuiseb River. The region around Gobabeb receives 0-50 mm of rainfall per annum, but is able to collect its moisture from the advective fogs that arise from the cold Benguela Current and are swept inland from the coastal regions (Louw & Seely, 1982). The region around Gobabeb supports a diversity of wildlife from Hartmann's mountain zebras (*Equus zebra hartmannae*), gemsbok, springbok, leopards, black-backed jackals and spotted hyaenas to numerous small mammals, birds and reptiles. Additionally there are resident herded populations of domestic goats (*Capra hircus*) and cattle (*Bos spp*) that forage along the Kuiseb River.



Figure 5: Map showing locations of Luderitz, Diamond Area 1 and Gobabeb

SKINNER COLLECTION

The Skinner collection housed at the University of Witwatersrand is actually the combination of two collections that were collected in Namibian Diamond Area No. 1 south of Luderitz (Skinner & van Aarde, 1991; Skinner *et. al.*, 1998) (Figures 5 & 9).

In addition to the regions surveyed, there are 17 specimens from a preliminary investigation of one brown hyaena den near the Gladysvale palaeontology site located on the John Nash private reserve in the Cradle of Humankind, South Africa. Due to time constraints and filming in the region, the Gladysvale dens were not included in the extensive survey portion of the study