Chapter 2. Characteristics of the Study Area

2.1. Introduction

The Bynespoort Game Park is approximately 1 780 ha in size. It is situated approximately 7 km to the west of Cullinan, in Eastern Gauteng. The altitude varies between 1280 m and 1423 m above sea level. The topography comprises of a combination of rocky hills, plains and drainage wetlands. A network of roads criss-crosses the Park, and infrastructure includes a Camping Site with a lapa, boma, and slaughter-house, three dams and a rural school (Fig.1).

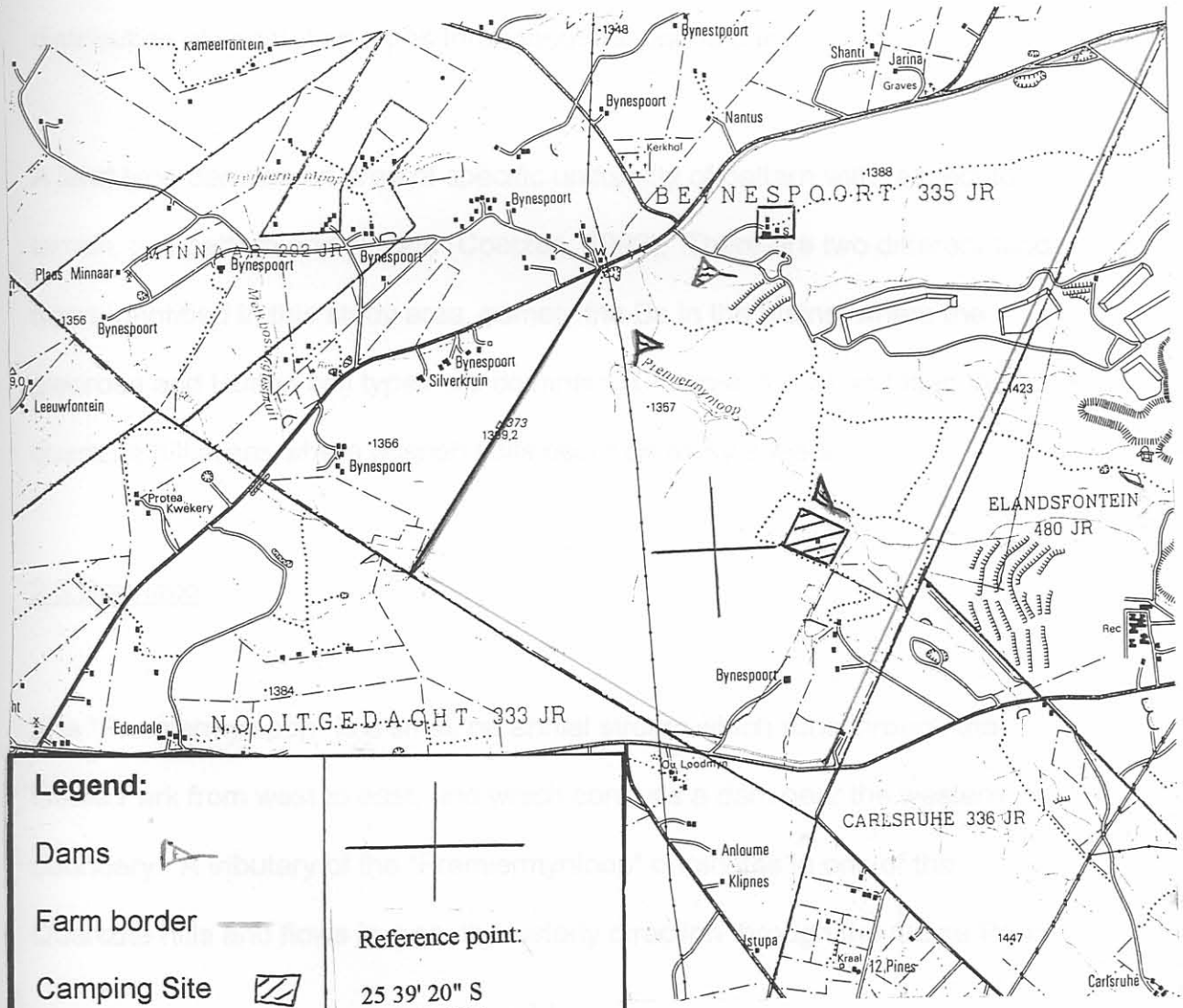

Fig 1: 1 : 50 000 Topographical map of the Bynespoort Game Park

2.2.Geology and Land types

The geology of the Game Park basically consists of four substrate types (Fig. 2) namely quartzite, gabbro, diabase, alluvium and other recent deposits.

The Rayton formation of the Pretoria supergroup contains the quartzite and the diabase and alluvium are contained in the bushveld complex.

The geology has a strong influence on the topography, soil types and distribution of vegetation types throughout the Game park.

A land type denotes an area of specific uniformity of pattern with respect to terrain, soil pattern and climate (Coetzee, 1993). There are two different land types identified in this study area, namely the Ba in the plains, where the glenrosa and Hutton soil types are dominant (Coetzee, 1993),and Ib in the quartzite hill areas where Mispah soils occur on rocky sheets.

2.3.Drainage

The "Premiermynloop" is a small perennial stream which runs through the Game Park from west to east, and which contains a dam near the western boundary. A tributary of the "Premiermynloop" originates in one of the Quartzite hills and flows in a south-easterly direction through the Game Park,

and this stream contains two dams, one near the campsite and another was recently built near the source. Two disused slimes dams occur in the central and eastern sections of the park, and seepage occurs into the "Premiermynloop" during the wet season.

2.4.Climate

The climate of the Game Park and surrounding areas is given in Figure 3. The annual rainfall is on average 678 mm (Bredenkamp & Van Rooyen, 1994). The wet season is usually between October and April with December and January being the wettest months. The rainfall is a primary driving force for the productivity of the veld (Dankwerts, 1989). Therefore, the rainfall in an average rainfall year (600 mm), a below average rainfall year (400 mm) and an above average rainfall year (851 mm as in 1996) was used to determine the carrying capacity of the veld.

Geology of the Bynespoort Game Park

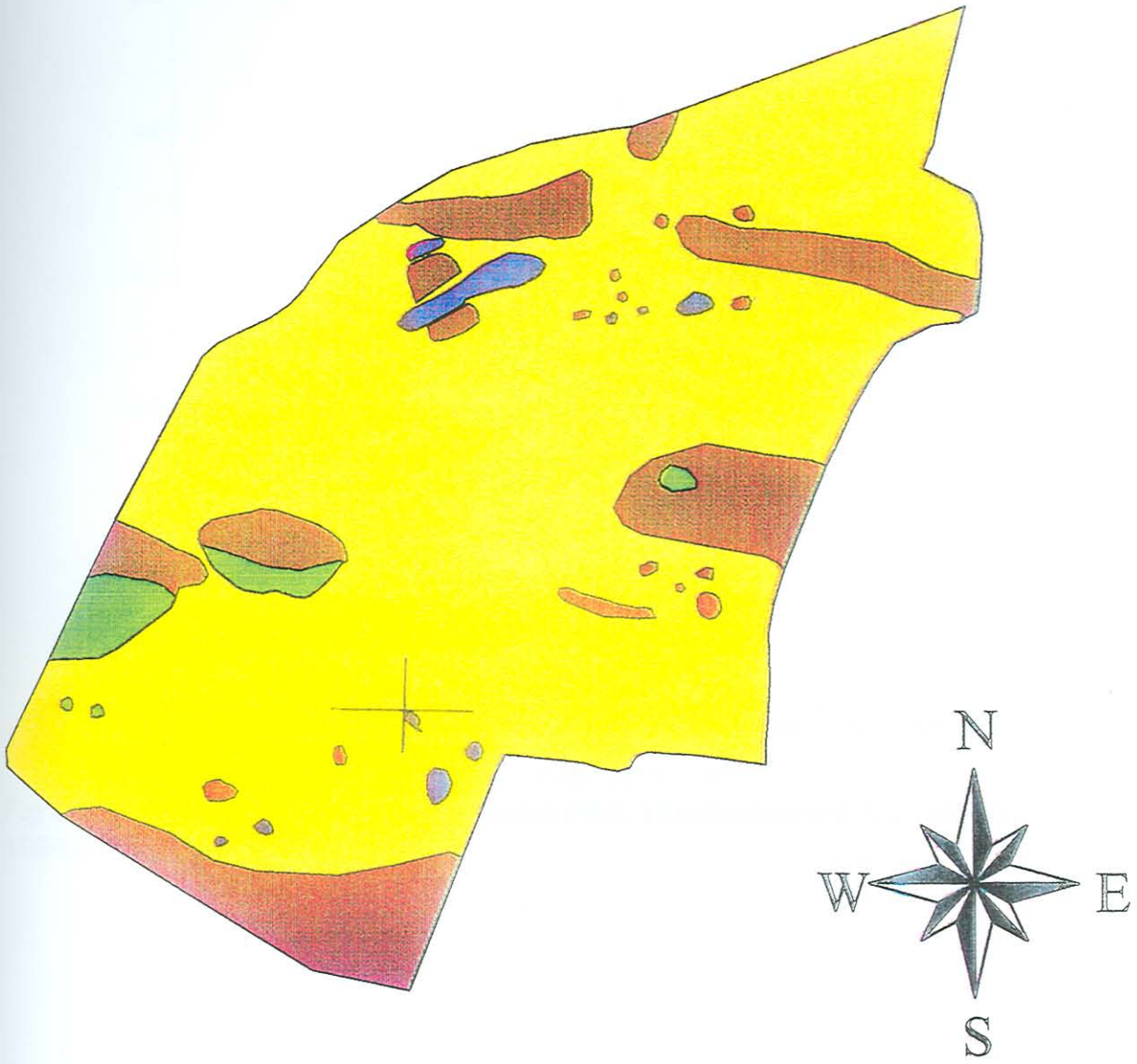

Fig 2: Geology of Bynespoort Game Park

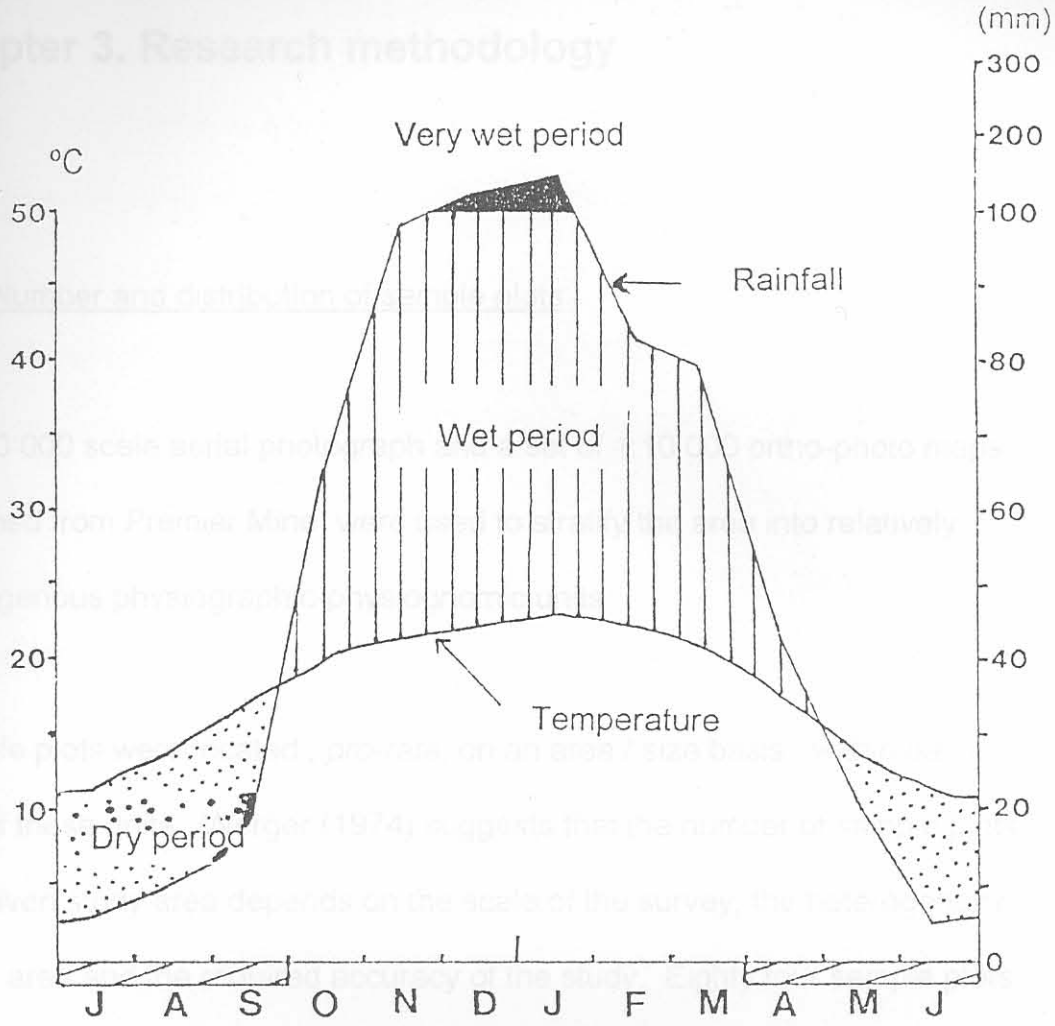

Fig 3: Climatograph of Bynespoort Game Park (Bredenkamp & Van Rooyen, 1994).