

Abstract

The Duketon-Sir Samuel Study Area is situated in the most northeasterly part of the Eastern Goldfields region of Western Australia. The arid climate has unreliable rainfall, hot summers and cool winters. Occasional torrential downpours are derived from tropical cyclones. The Study Area consists mainly of Undulating Plains over greenstone and Broad Valleys over granite. Isolated Breakaways, Granite Exposures and Hills punctuate these landforms. Salt Lake Features comprise Lake Maitland in the northwest and Lake Darlot centrally located in the southern half. A feature of the Study Area is an extensive area of Sandplains in the northeast that represents a significant incursion from the Great Victoria Desert; this distinguishes the Duketon-Sir Samuel Study Area from others in the Eastern Goldfields.

Soils vary widely from deep sands to cracking clays. However, large areas have a siliceous hardpan at depth. The main vegetation is low woodland typical of the Austin Botanical District and is dominated by *Acacia aneura*. Floristic details differ between loam and rocky soils. Eucalypts over hummock grass occur on deep sands.

The vertebrate fauna of the Study Area is characteristic of that occurring in arid central Western Australia with most species having distributions that extend into the deserts to the east. The importance of heavy rainfall was apparent with numerous species showing signs of breeding activity. None of the 5 amphibian, 46 reptile, 70 bird or 21 mammal species recorded is unique to the Study Area.

There are no conservation areas in the Duketon-Sir Samuel Study Area, except for a small section of the Wanjarri Nature Reserve in the north-west.

I Introduction

R.A. How

The Duketon-Sir Samuel Study Area (Figure 1) is an area of approximately 17,500 km², covered by the Geological Survey of Western Australia 1:250,000 Duketon sheet, SG/51-14 (Bunting & Chin, 1979), except for its eastern fringe, and the eastern half of the Sir Samuel sheet, SG/51-13 (Bunting & Williams, 1979). The Study Area is located north of Laverton and southeast of Wiluna in the northeastern part of the Eastern Goldfields, between latitudes 27°00'S and 28°00'S and longitudes 120°45'E and approximately 122°40'E (Figure 1).

This report is an inventory of the vegetation, and vertebrate fauna recorded during a biological survey of the Study Area within System 11 (Conservation Through Reserves Committee, 1974). The survey, co-ordinated by the Biological Surveys Committee of Western Australia, documented the biota of twelve Study Areas and determined the adequacy of conservation reserves already existing or proposed (Biological Surveys Committee 1984). The major botanical fieldwork was carried out by A.V. Milewski during several short periods between January 1980 and August 1983 and several sites were revisited and sampled by G.J. Keighery in October 1987. The easternmost parts were not visited owing to inaccessibility. The vertebrate faunal work was done during 24 May to 1 June 1979, 21 to 29 February 1980 and 8 to 16 October 1981. Representative areas of each major vegetation formation within a 15 km radius of a campsite at Banjawarn (27°47'S and 121°39'E) were examined for fauna and flora. In addition, vegetation survey work was carried out widely through the rest of the area by A.V. Milewski.

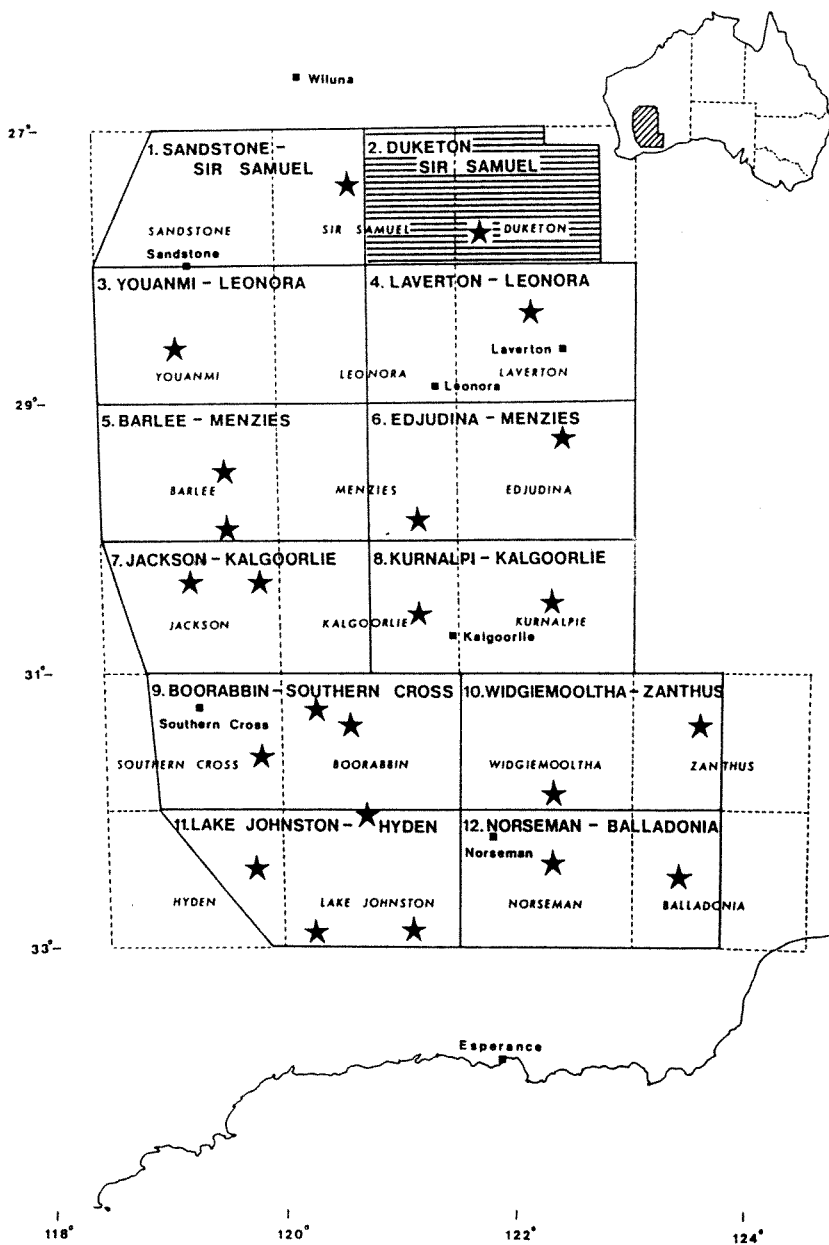


Figure 1: Map showing the extent of the Eastern Goldfields Region, the vegetation districts and the boundaries of the Study Areas included in the biological survey. The shaded portion shows the Duketon-Sir Samuel Study area covered by this report. Fauna survey areas are indicated by stars.

The western part of the Duketon-Sir Samuel Study Area is crossed by a network of unsealed graded roads and station tracks, but these are absent from areas of the north-eastern part which makes this inaccessible to an ordinary vehicle. Access is from Leonora or Laverton northwards. The tracks vary in condition, many are impassable after heavy falls of rain, and others have patches of deep sand which make travelling hazardous when the soil is loose and dry.

An account of previous exploration in the Duketon-Sir Samuel Study Area can be found in Beard (1976). The Study Area is very sparsely settled and contains no existing towns. Several centres appear on the map, but most of these represent either station homesteads or old mining settlements. Permanent habitation is confined to several pastoral leases, supporting a sheep grazing industry, concentrated in the western and southern parts of the Study Area. Mining settlements are at Leinster and Teutonic Bore.

Cosmo Newberry Aboriginal Reserve on the east and outside the Study Area border has a population of up to 100 people. The main foci for the present population are Barwidgee, Wonganoo, Yandal, Melrose, Banjawarn and Bandy Stations.

In the past, parts of the Duketon-Sir Samuel Study Area were probably cut over for timber used in mining operations. The effects of this period of local devastation are generally not particularly evident today, since much of the area has been degraded to a noticeable extent by the pastoral use of the country. Enormous tracts of mulga trees, particularly on wanderrie and stony uplands (see subsequent section) are dead with severely altered understorey.