

I INTRODUCTION TO WILROY RESERVE

JOHN DELL

Location and History

Wilroy Reserve, No. C26196, lies about 17 km southeast of Mullewa in the North Coastal Meteorological District. It is named after Wilroy railway siding which is in the centre of the Reserve, and is shown on Lands and Survey lithograph 156/80. Total area of the Reserve is 331 ha. Included within the boundaries of Reserve 26196 are 2 small reserves: 21910 of *ca* 5 ha for Recreation, and 18768 of 0.4 ha for Water.

The area known as Wilroy Siding was requested as a siding in 1913 for the Wongan to Mullewa railway which was opened on 5 March 1915. The area around the siding was granted as a temporary reserve as a proposed townsite and known as Onteroo. There was some confusion regarding the spelling (Onteroo or Onteru) and after a request from the railways department, the name was changed to Kockatea in 1917. Confusion continued and in 1921 the railways department requested that the name be changed to Wilroy.

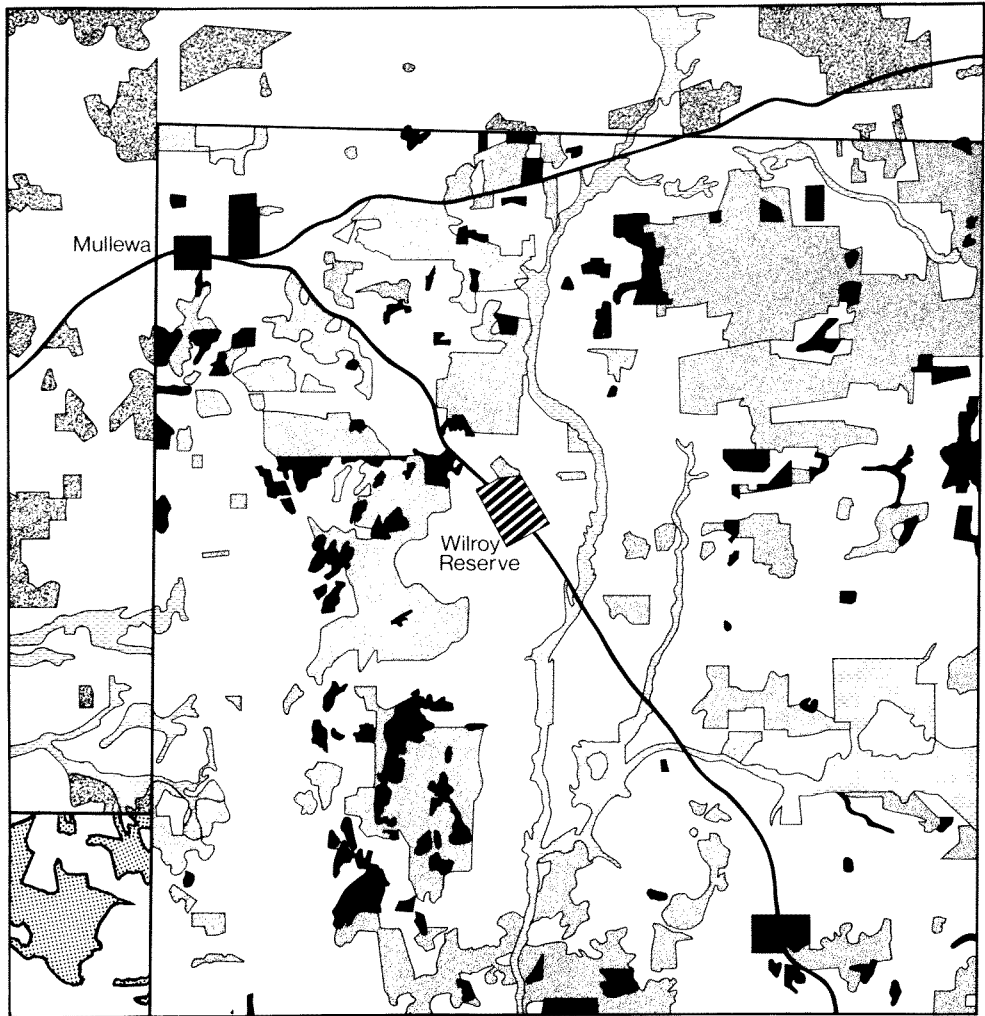
During the 1950s there were several applications to have the temporary reserve thrown open for selection for farming. A divisional surveyor from the Department of Lands and Surveys in 1961 recommended that the reserve become a Class A reserve for conservation of flora as it was the "last piece of natural vegetation in the area". On 9 February 1962 the reserve was gazetted Class C for Conservation of Flora but not vested with any authority.

Physiography and Basic Geology

Wilroy Reserve lies in the Irwin Basin *ca* 12 km east of the Darling Fault on the granite and granitic gneisses of the Yilgarn Block. The present surface geology of the Reserve consists of colluvium — rock fragments, gravel, sand and silt. The elevation of the Reserve above sea-level is 300 m \pm 50 m. The nearest 3 Bench Marks indicate 296-326 m. Four vegetation formations are present on Wilroy Reserve. These, together with soil classifications, are listed by Muir (this report).

Fire History

Aerial photographs taken in March 1958 and April 1970 show no recent burns. A small area (loc. 4.1, Muir this report) has been burnt since 1970. Apart from this the vegetation is older than 20 years. The 1958 photographs show that the previous burn was irregular, with patches and streaks. This indicates that, although the vegetation is older than 20 years, some portions are considerably older.



Wilroy Nature Reserve

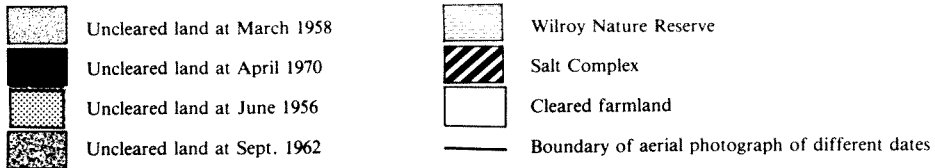


Fig. 1: Map showing amount of uncleared land in vicinity of Wilroy Reserve in 1970 compared to 1958 (data extracted from aerial photographs).

Isolation

Uncleared land in the vicinity of Wilroy Reserve has been substantially reduced since 1958. Air photographs taken in 1958 indicate that *ca* 41875 ha or 40% of the 103,600 ha included in **Fig. 1** was uncleared. By 1970 this was reduced to *ca* 8375 ha or 8%.

Climate

Data are extracted from Anon (1959) and Anon (1975) for Mullewa, the nearest meteorological station.

Rainfall: mean yearly rainfall (61 years) is 326 mm of which 213 falls in May to August. The mean monthly rainfall and the highest daily rainfall recorded in each month are set out in **Table 1**.

Although the heaviest daily falls occur in February, March and June the figures show that heavy rain is fairly evenly distributed with only September, October and December having less than 50 mm as their heaviest daily fall.

The 5 months (March-July) preceding the 1975 survey had above average rainfall—313 mm compared to the mean of 215 for that period. Accordingly, the saltflats to the east of Wilroy (see **Fig. 1**) were inundated and provided habitat for numerous birds. Also the 1975 survey was affected by inclement weather,—rain fell on each day except the last.

Humidity: Only 2 months have a mean relative humidity of over 50%, and 6 months have below 30%. The annual mean relative humidity is 32%. Figures for each month are shown in **Table 1**.

Evaporation: Charts in Anon (1959) show that annual evaporation at Mullewa is *ca* 2286 mm.

Temperature: Mean daily maximum temperature for the year at Mullewa is 27.6°, and the mean daily minimum is 13.4°. Mean maximums, mean minimums are shown in **Table 1**.

	J	F	M	A	M	J	J	A	S	O	N	D
Mean rainfall	14	16	20	19	45	70	61	43	21	13	8	7
Highest daily rainfall	55	91	78	60	57	78	53	69	34	47	59	34
Mean relative humidity	20	23	25	32	39	52	51	43	34	26	22	20
Mean maximum temperature	36.6	35.9	33.5	28.1	23.6	19.7	18.3	19.7	22.9	27.0	31.1	34.6
Mean minimum temperature	19.8	20.0	18.3	14.9	11.7	9.4	7.4	7.2	8.7	11.4	14.6	17.7

Table 1: Rainfall, humidity and temperature figures for Mullewa.

The highest recorded temperature is 47.3 on 29 January 1944 and the lowest is -1.4 on 31 August 1926. An average of 2.3 days of frost are recorded each year, these occur between June and August. The average frost-free period is 310 days. The earliest recorded frost is 24 May and the latest is 18 September.

Winds: The Bureau of Meteorology has compiled a 5-year average preceding 1977. These figures indicate that in summer the winds are predominantly from a southerly direction, but in winter are quite variable. In February (the hottest month) winds are light—over 64% are in 1-10 kph. In winter (May-August) most winds are 1-10 kph but calms are frequent (over 30% in June).

Biological Survey

Kitchener (1976) outlined the aims and objectives of the biological survey of the Western Australian wheatbelt. This report on Wilroy Reserve is the seventh in this series. Reports previously published are Kitchener *et al.* (1976, 1977), Chapman *et al.* (1978), Muir (1977a,b) and Muir *et al.* (1978).

From 7-15 July 1975 a Museum survey team consisting of D.J. Kitchener (7-8 July), K.D. Morris, M. Jackson, G. Harold and J. Dell (10-11 July) examined Wilroy Reserve. They used 10 mammal traplines (for location see Muir, this report), collected reptiles and made observations on birds. A. Chapman, J. Dell, G. Harold and M. Hanlon did a repeat survey during 14-20 May 1976 and A. Chapman, J. Dell, M.J. Odgers and P.J. Fuller did a further survey during 20-26 September 1976. Muir recorded the vegetation during 4-6 June 1977. Dell and R.E. Johnstone made a few bird notes on 13 April 1973.

Results of the above surveys are included as separate papers in this report.