



Department of
Agriculture and Food



Journal of the Department of
Agriculture, Western Australia,
Series 4

Volume 18
Number 3 1977

Article 2

1-1-1977

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I A F Laing

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Recommended Citation

Laing, I A F (1977) "Water supplies on wheatbelt farms : a general picture," *Journal of the Department of Agriculture, Western Australia, Series 4*: Vol. 18 : No. 3 , Article 2.

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Water supplies on wheatbelt farms— a general picture

by I. A. F. Laing,
Department of Agriculture

In good rainfall years, farm dams provide water for more than 50 per cent of the total sheep equivalents* in the wheatbelt. By comparison, up to 30 per cent of the total sheep equivalents have access to ground water supplies (which include bores, wells and soaks). Slightly less than 20 per cent of the total sheep equivalents are on farms connected to piped scheme water (Comprehensive Water Scheme), although not all of those stock would depend on scheme water.

The Commonwealth Bureau of Census and Statistics included questions on farm water supplies in the annual agricultural census at March 31, 1970 and the above data was derived from that census. The following data was also taken from that census and is reported here to give a general picture of farm water supplies in the wheatbelt.

In 1970 there were 73 714 dams on 9 603 farms in 63 wheatbelt shires. The average capacity of

those dams was 1 465 cubic metres and their aggregate volume was 18 600 000 cubic metres.

The total number of farms in the 63 shires was 12 777. Thus 75 per cent of all farms relied at least partly on farm dams for water supply. At the same time there were 5 331 farms—42 per cent of all farms—with at least one usable bore or well.

In 16 of these shires, more than 50 per cent of the sheep equivalents were watered from dams only; and in five shires more than 50 per cent of the sheep equivalents were watered from bores only.

During the 1969-70 drought, water was carted from outside sources to 2 729 farms or 21 per cent of the farms. A further 12 per cent of farms at this time had no stock and this indicates, at least partly, a modification of demand to cope with water shortage. It should be noted that the 1969-70 summer was the most critical period of water deficiency throughout much of the W.A. farming districts for more than 20 years.

The number of farms reporting other sources of stock water in use on the holding (such as lakes, soaks and rivers) at March 31, 1970 was 3 219 or 25.2 per cent of all farms. Soaks probably represented more than 80 per cent of these 'other sources'.

Supplies of water

Marked regional differences exist in the sources of farm water, as shown in the map.

Farm dams are the sole source of stock water on most farms in the southern and south-eastern wheatbelt and in the Mallee and Esperance sandplain districts. There is a general trend from south to north in the agricultural districts of a decreasing use of dams and an increasing use and availability of bores for stock water.

In the Great Southern and generally in the western districts of the wheatbelt, soaks are used extensively as stock water supplies. These shallow ground water supplies are generally not found in the drier parts of the wheatbelt.

Proportion of farmers carting water

The proportion of farmers carting water in years of general water deficiency can be used as a guide to the reliability of water supplies. In districts largely served by underground water, the proportion of farmers carting water from an off-farm source is seldom significant. On the other hand, in such years, it is common for between 50 and 70 per cent of farmers to cart water where supply is normally from dams or from shallow underground supplies, such as soaks.

* Sheep equivalents have been calculated as follows:

- 1 sheep (any description) = 1 sheep equivalent
- 1 cow, bull or calf = 10 sheep equivalents
- 1 pig (any description) = 2 sheep equivalents

In the eastern and north-eastern wheatbelt a small proportion of farmers cart water every year for stock use, whereas in the western wheatbelt and Great Southern almost no farmers cart water in good runoff years.

Demand for water

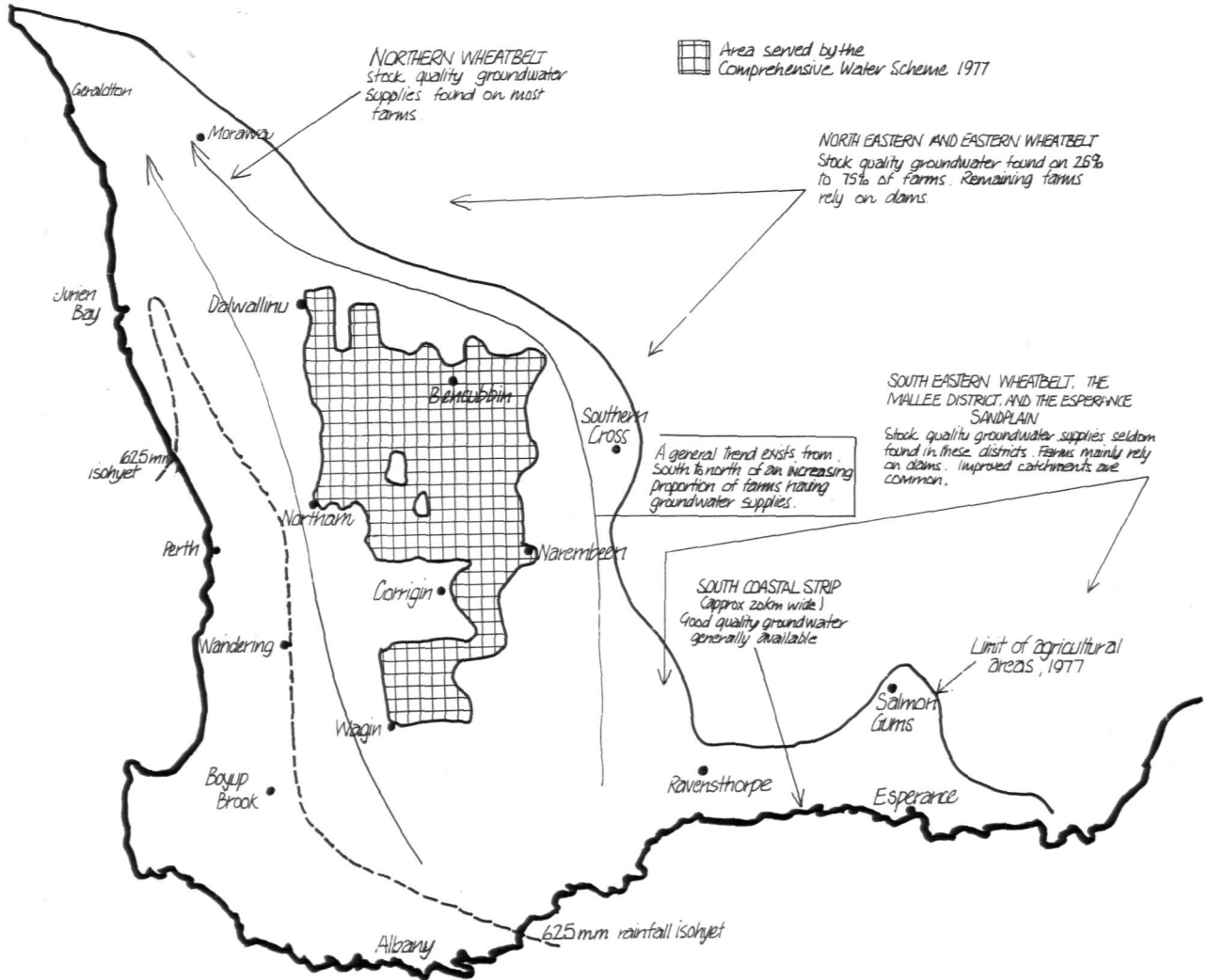
The demand for water on wheatbelt farms is fairly evenly spread over a large area.

During the time when green pasture is available, the demand for water is low but during the hot summer months the demand is continuous. Peak demand during heat-wave conditions may be two or three times greater than the average summer demand.

Total demand comprises about 75 per cent for livestock and 25 per cent domestic use in farm homesteads. On average it amounts

to about 2 kilolitres a hectare each year and is required at supply points serving area units of about 100 ha. The total demand per hectare increases from south to north but is modified by stock carrying capacity.

In a recent study of the water requirement of sheep in the W.A. wheatbelt, Fels and Frith concluded that adult dry sheep on non-saline pasture would require between 0.4 kl and 0.65 kl per head per year.



Sources of stock water on wheatbelt farms