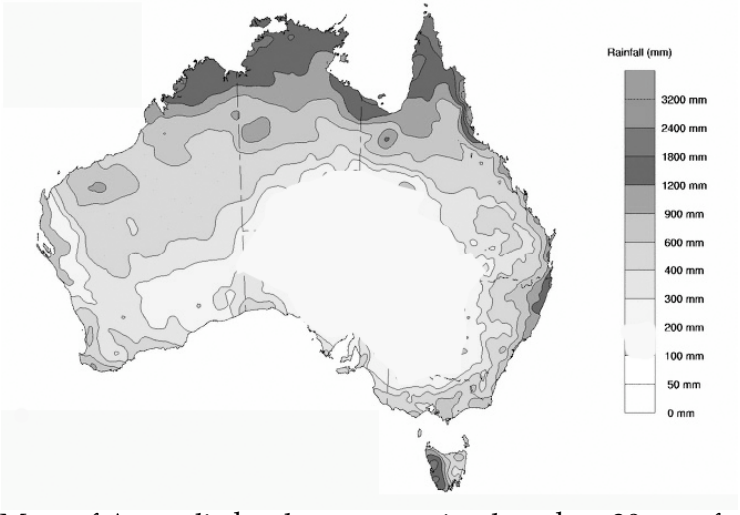
Draft. E&OE. POPULATION FACT SHEET 4

WATER RESOURCES OF AUSTRALIA

Why Australia is the world's driest continent.



Rainfall map. Most of Australia has been averaging less than 30 cm of rainfall per year.
The average annual rainfall on the earth is 81.28 cm/32 inches

AUSTRALIA'S SHARE OF WORLD WATER RESOURCES,

A crucial problem of Australian rivers is variable flow, with unpredictable droughts and floods. Records show that this variability has been far more erratic in Australia than in any other continent,

Table 1. The variability of the major river flows in Australia (megalitres)

River	Average flow, ML per annum	Maximum flow	Minimum flow	Max/Min ratio
Lachlan, NSW	133,000	7,300,000	5,300	1,370
Darling, NSW	320,000	2,915,000	12,800	227
Burdekin, Q	7,000,000	23,000,000	154,000	167
Coliban, Vic	66,000	157,000	6,900	22
Murray (Murray-Darling 3,750 km)	13,000,000	40,000,000	2,500,000	16
Goulburn,Vic	1,880,000	7,360,000	692,000	11
Comparison				
Mississippi, USA,3,779 km	580,000,000	1,030,000,000	260,000,000	4

Table 2. Comparisons of average annual river -water run-off in million cubic metres

Amazon river, S. America	6,700,000
Yangtze river, China	689,000
Ganges river, India	590,000
Yenisei river, Russia	560,000
Mississippi river, USA	550,000
Columbia river, USA	230,000
Rhine river, Europe	70,000
Australian continent	293,000
Tasmania	50,000

Massive water transfers such as north – south schemes are still impracticable due to problems such as variability and pumping, and our potential solar resources are still not used for desalination.

AUSTRALIA'S GROUNDWATER RESOURCES. See http://www.anra.gov.au/topics/salinity/groundwater-flow/index.html. This report focuses on problems of dryland salinity incuding the effects of clearing in raising saline water tables.

"* Local groundwater flow systems respond rapidly to increased groundwater recharge. Water tables rise rapidly and saline discharge typically occurs within 30 to 50 years of clearing of native vegetation for agricultural development. These systems can also respond relatively rapidly to salinity management practices, and afford opportunities to mitigate salinity at a farm scale.

* Intermediate groundwater flow systems have a greater storage capacity and generally higher permeability than local systems. They take longer to 'fill' following increased recharge. Increased discharge typically occurs within 50 to 100 years of clearing of native vegetation for agriculture. The extent and responsiveness of these groundwater systems present much greater challenges for dryland salinity management than local groundwater flow systems.

* Regional groundwater flow systems have a high storage capacity and permeability. They take much longer to develop increased groundwater discharge than local or intermediate flow systems-probably more than 100 years after clearing the native vegetation. The full extent of change may take thousands of years. The scale of regional systems is such that farm-based catchment management options are ineffective in re-establishing an acceptable water balance. These systems will require widespread community action and major land use change to secure improvements to water balance. "

PROBLEMS OF UNSUSTAINABILITY OF GROUNDWATER. See http://www.nwc.gov.au/www/html/180-sustainable-management.asp Groundwater has too often been seen as an infinite resource, but it is not. Too many licences may be issued and too much groundwater extracted, not to be replaced. This has been made worse by licensed groundwater usage not being metered in many parts of Australia, provision of free or under-priced groundwater, and failure of management plans to recognise that groundwater and surface water are connected.