

WATER, WATER EVERYWHERE, BUT NOT A DROP TO DRINK

Fresh water, or rather the lack of it, is Australia's biggest environmental challenge it currently faces.

Scientists recently have suggested that Sydney, at its current water storage level, has only three years of water supply left.

This has made the Carr Government jump to action by looking at the feasibility of building a desalination plant. A \$350 million dollars pilot program is already under way at Kwinana in West Australia, which will be powered by gas. Victoria is also looking at the feasibility of building such a plant. Is this the way to go?

The lack of fresh water is not just Australia's domain. From studies of worldwide water supplies, summarised in the table below, indicates that less than 0.3% is accessible freshwater, with only 0.01% available through freshwater lakes, the majority of which are man-made reservoirs built for drinking supplies.

PERCENTAGE OF EARTH'S WATER OCCURRING IN AQUATIC SYSTEMS

Source of water	Estimated % worldwide
Oceans	97.6
Ice	<2.1
Exchangeable ground & soil water	<0.3
Freshwater lakes	0.01
Saline lakes	0.01
Atmospheric water vapour	0.001
Rivers	0.0001

Table 1: Source Dr. Lill Monash University Earth Sciences Dept.

PRECIPITATION AND RUNOFF

Continent	Area (sq. km)	Av. annual precip (mm)	Mean Annual Runoff (mm)	Runoff as a % of precipitation
Africa	30,210	660	151	23
Nth America	24,260	660	339	51
Sth America	17,790	1350	661	49
Asia	44,030	610	221	54
Europe		580	306	52
Australia		420	45	11

*Table 2: Comparison of continents runoff as % of precipitation
Source Dr Lill Monash University Earth Sciences Dept*

As can be seen from Table 2 Australia and Africa (at 11% and 23% respectively) have the lowest runoff in the world. This may explain why Australia has the most dams per capita in the world.

PERCULATION

Def'n: The absorption of water from precipitation into the soil and the environment and then down into the water table

Facts about Percolation

- Most of the precipitation is percolated into the soil
- Surface runoff accounts for only a minute amount
- Large scale surface runoff only occurs during heavy rains
- Most stream channels are filled with water from water tables