

SOUTH WEST YARRAGADEE AQUIFER

35. Mr P.D. Omodei to the Minister for Water Resources

Will the Minister provide the following information -

- (a) the estimated volume of water stored in the South West Yarragadee aquifer formation;
 - (b) the annual recharge rate of the South West Yarragadee aquifer formation;
 - (c) the annual volume of water discharged into the Blackwood River from aquifers in the South West;
 - (d) the current quantity of water drawn from the South West Yarragadee on an annual basis;
 - (e) the current quantity of water allocated from the South West Yarragadee and for what purpose these allocations have been made;
 - (f) the current quantity of annual water consumption in the South West region;
 - (g) a breakdown of the estimated future quantity of annual water consumption in the South West region;
 - (h) a breakdown of the predicted future quantity of water to be drawn from the South West Yarragadee formation;
 - (i) the impact on the ecology (including but not limited to the impact on wetlands, river systems and animal life) of exporting water from the South West Yarragadee aquifer formation;
 - (j) the current, and estimated future cost of research into the South West Yarragadee aquifer formation;
- and
- (k) the estimated date that a decision will be made regarding the sourcing of water from the South West Yarragadee for metropolitan consumption?

Dr G.I. GALLOP replied:

- (a) The estimated volume of water stored in both onshore and offshore parts of the South West Yarragadee aquifer is 600 000 GL.
- (b) The annual recharge rate is dependent on factors such as rainfall, land use change and the amount of pumping that occurs. Estimates of recharge to the Yarragadee aquifer include recharge directly entering the aquifer in areas where it is exposed to the surface and leakage from overlying aquifers in other areas. Total recharge to the South West Yarragadee has been estimated in various studies to be between 300 and 400 GL/yr.
- (c) The annual volume of groundwater discharged into the Blackwood River from the South West Yarragadee aquifer is approximately 10-20 GL/year. In addition, there is approximately the same volume that discharges into the river from the Leederville aquifer.
- (d) The quantity of groundwater drawn from the South West Yarragadee aquifer on an annual basis is estimated at about 36 GL.
- (e) The following information is provided by the Department of Environment's (DoE) Water Resource Licensing database and is current to 29 April 2005. Please see Attachment 1 below -

Table 1 Licensed entitlements in the SW Yarragadee aquifer

Purpose	Quantity (GL/yr)
Agriculture	25.528
Commercial	0.998
Domestic	0.607
Future town water supply	8.542
Industrial	4.916
Local government	1.713
Mining	15.186
Public Town Water Supply	29.570
Unaccounted	0.262
Total	87.322

- (f) The quantity of annual groundwater consumption in the South West region from all aquifers is estimated at about 72 GL (as of September 2004).
- (g) The breakdown of estimated annual water consumption in the south west region can be determined from the work completed within the South West Yarragadee project and the National Land & Water Resources Audit (2000). See Attachment 2 below -

Table 2 Forecast increase in water use scenarios (GL/yr) by 2030

Water Sector	Increase in water use (GL/yr)		
	National LWRA (1999)	Industry base case	Industry expansion scenario
Town water	46	19	19
Industry		8.3	23.3*
Other urban use		9.6	9.6
Horticulture	50	23	23
Dairy/pasture		30	30
Viticulture		17	17
Mining	12	0	0
Other uses		0.6	0.6
TOTAL	108	107.5	122.5

*includes 15GL/yr for the Kemerton Industrial Park

Given that the current use from all aquifers in the south west region is 72 GL/yr, the estimated future quantity of annual water consumption will be between 179.5 and 194.5 GL/yr.

- (h) Table 3 Breakdown of estimated consumption from groundwater in the south west region by 2030 (excluding potential transfer to Perth). See Attachment 2 below -

Water sector	Groundwater resource	Estimated consumption (GL/yr)
Dairy	Yarragadee	30
Horticulture	Yarragadee	23
Viticulture	Yarragadee	3.3
Industrial	Yarragadee	4
Town water supply	Yarragadee	25.4
TOTAL		85.7

- (i) The ecological impact of taking water from the South West Yarragadee aquifer is still under investigation and will depend on the total amount of additional water taken by all users, the location from which the water is taken and the rate at which it is taken.
- Any decisions to take water from the South West Yarragadee aim to ensure that natural ecological processes and the biodiversity of water dependent ecosystems are maintained. Environmental allocations need to be balanced with the sustainable use of water resources to meet the economic and social needs of others who want to use the water now and into the future.
- (j) The total cost of existing research into the South West Yarragadee is approximately \$12.5 million. An additional \$1.8m has been budgeted for ongoing investigation in 2005/06. The final costs of future research will depend on specific information needs identified through the ongoing evaluation and assessment processes.
- (k) The current expectation is that a decision will be made in early 2006.