

GROUNDWATER & ENVIRONMENT NEWSLETTER

A PERIODIC NEWSLETTER COMPILED FOR HYDROGEOLOGICAL & ENVIRONMENTAL PROFESSIONALS IN W.A. MINING & RESOURCE COMPANIES

WATER: WHY YOU CAN'T LIVE WITHOUT IT!

Water comprises 70% of our bodies, our biochemical reactions occur in it, body temperature is regulated by excreting it, & it removes bodily wastes; water is essential to life. 70% of Australia is semi-arid to arid desert; travelling through the outback not only requires water, but also knowledge about water. The average person can expect to survive without water for 2-5½ days depending on climate & what they try to do.

How Much Is Enough?

- Normal activity: c8-10 (240ml) glasses/ day (1.9 to 2.4L).
- Minimum water requirement in the bush is 4L/ person/ day drinking water, +4L for washing, plus extra in case of stranding/ breakdown/ lost.

Thirst is not always a reliable guide & can lead to under consumption of your daily requirement. To prevent "voluntary" dehydration, use the following temperature guide:

- <38°C, drink ½L of water/ hour.
- >38°C, drink 1L/ hour

Symptoms of too little water include constipation, itching, nose bleeds, urinary infections, sneezing, sinus problems & headache.

Assuming a 12-hour working day, the recommended water consumption would be:

Location	Mean days/year>35°C	When	Recommended consumption L/p/d	When	Recommended consumption L/p/d
Wagin (Central SW)	19	Nov-Mar	12	Apr-Oct	6 minimum
Perth Airport	26	Nov-Mar		Apr-Oct	
Kalgoorlie (Goldfields)	40	Oct-Mar		Apr-Sep	
Newman (Pilbara)	137	Oct-Apr		May-Sep	
Fitzroy Crossing (Kimberley)	209	Sep-Apr		May-Aug	

What to Do In an Emergency

If you are lost/ stranded in a vehicle, stay there; it is easier to spot, & a good shade source; temperatures are significantly reduced 0.3m above the ground surface. Air temperature, humidity & physical activity affect water requirements in the desert. Ways to minimise water loss include:

- Find shade, avoid direct sunlight;
- Place something between you & the hot ground;
- Limit movement/ labour in daytime;
- Conserve your sweat.
- Cover up; protect from hot blowing winds &/or direct sun.
- Breath through your nose (reduces transpiration).
- Drink in small sips
- If water is scarce, do not eat; water is consumed during metabolism.
- Do not drink urine unless distilled.

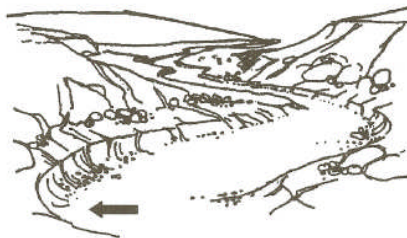
I'm So Thirsty.

Tricks on how to get water in the desert;

Rain water:

- Rock formations accumulate rainwater & a possible spring/ soak
- Salt lakes, after rain the top 3mm of water is fresh & can be syphoned off
- Farm/ station dams/ soaks

Groundwater: Dig at the outside bend of a river bed, use a rag to soak & ring out.



Catch/ condense atmospheric moisture:

- Place plastic bags over the ends of a branch with leaves.
- Dessert still: dig a hole, place a cup in the middle/ bottom, place a tarp/ plastic sheet over the hole weighted down & sloping down to the cup

- Wrap rags around your legs & walk through heavy grassland at dawn/ dusk, ring out

Vegetation: Tree roots contain moisture which can be drained,
Locate an oasis/ dam/ soak: Follow animal tracks

Distilling: boil salty water, collect the steam, & condense it using a long tube to a container

Hyponatremia

Consumption of excess water; it is a common electrolyte imbalance, typically where >15-20L water has not been adequately excreted.

Sources: FirstScience, Bureau of Meteorology, US Army Field Manual, US Bureau of Land Management, WA Police, Wikipedia

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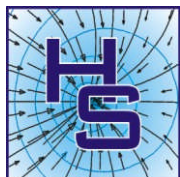
Next issue – Source Protection



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