

## ***Drought Proofing a Dry Continent***

by Viv Forbes  
(with help from his friends)

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Earth is a blue watery planet.

70% of its surface is covered by oceans of salt water, some of which are extremely deep. These oceans contain about 97% of Earth's water. Another 2% is locked up in snow, ice caps and glaciers. That leaves just 1% of Earth's surface water in inland seas, lakes, rivers and dams. We have plenty of water, but not much to drink.

In addition to these vast surface water supplies, water vapour is the fourth most abundant gas in the atmosphere, after nitrogen (76%), oxygen (21%) and Argon (1%). Moisture in the atmosphere varies from almost zero over deserts and ice caps up to 4% over the wet tropics. (Carbon dioxide is a miniscule 0.04%).

Then there are the large and unmeasured supplies of hidden underground water – “renewable” water from rain soaking into alluvial sands and gravels; artesian water in deeper permeable rocks; hydro-thermal water associated with volcanic and igneous activity; and primary water originating deep in Earth's crust which feeds many natural springs and is sometimes discovered in unexpected places in very large quantities.

With this abundance of water, why do humans ever find themselves short of fresh water? Three reasons – insufficient water is conserved when it is abundant, too much water is wasted, and power costs make desalination unattractive.

The biggest water-wasters are those towns and cities which supply unlimited free or subsidised water to large and growing populations. Everything supplied “free” is wasted. Then when drought comes and water is most needed, it must be rationed. Under-priced or free water will be wasted watering lawns and golf courses so they can be mowed again, sprinkling decorative gardens, supplying fish ponds and water features, washing cars and footpaths, filling swimming pools, indulging long showers, and ignoring dripping taps and leaking pipes. If every user in every town and city were metered, and had to pay the full cost of water, it would be used much more carefully.

For example, back in the 1980's, the Central Queensland coal town of Moranbah, water was un-metered and water was supplied “free” by the coal company. But in droughts Moranbah water had to be rationed – gardens on one side of the street could use water today, the other side tomorrow. Another town, Dalby, in the same climatic district was metered and self-regulated. No watering restrictions were imposed. The water consumption per resident in Dalby was half that of Moranbah (and gardens were just as good).

How should we charge for water? “Charge what it costs” sends the right signals to users. Maybe each user should pay a fixed base charge for water to cover essential needs. This should be related to the capital costs of the water infrastructure. Usage above this should be charged at a variable rate which would increase as the water

levels in dams dropped. This would remove the need for water restrictions and generate public support for building more dams.

“The Lucky Country” also has a “Great Artesian Basin” and many grazing properties and inland towns have relied heavily on artesian water that flows to the surface from deep bores. Again this “free” water has been badly wasted by allowing the bores to flow unchecked into open bore drains subject to heavy losses by evaporation and soakage. There is a program to case and cap these bores to reduce wastage. Some of the government funding frittered on global warming “research” and green energy gambles would be better devoted to conserving artesian waters.

Some places like Perth in Western Australia with low rainfall and high evaporation rates have made good use of artificial desalination plants, but desalination is generally the last resort without abundant cheap electricity.

The nuclear energy of the sun powers the greatest desalination plant on earth using mainly sea water to create all of Earth’s clouds, rain, hail and snow. Unfortunately it delivers these products in cycles of floods and droughts. Therefore dams are needed to improve water security in droughts, and to moderate the severity of floods.

Water storage is an important part of the water equation which every farmer understands. There is no point allowing immense floods of fresh water to erode the land and spew into the seas – the oceans are not short of water (but offshore sea life like prawns and corals can benefit from nutrients and minerals delivered offshore in floods).

When the inevitable droughts return and the dams are drained, cities are faced with severe rationing, re-treating waste water or de-salting sea water in expensive power-hungry desalination plants.

Australia has immense deserts and many of our “rivers” (including the mighty Murray-Darling) flow intermittently. Normally “creeks” flow into “rivers”, but in the dry inland it takes two “rivers” (the Thompson and the Barcoo) to service Coopers “Creek”, and still Lake Eyre is usually dry.

Droughts and floods are a natural feature of Australia’s climate.

Our pioneer farmers soon learnt how to cope with drought – “don’t overstock, build more dams and keep the hayshed full”.

The Cattle King of Australia, Sydney Kidman, created a cattle empire by understanding the weather. He knew that universal droughts were not common – there was always some place that got a freak storm that filled dams, made creeks run and brought a flush of green pasture. So he acquired a string of properties stretching from the Gulf of Carpentaria to Adelaide and had his own intelligence network advising where rain had fallen to produce stock feed, and where he could find distressed droughted properties for sale. His drovers drifted mobs of cattle to the grass and water, preferably towards the big southern markets.

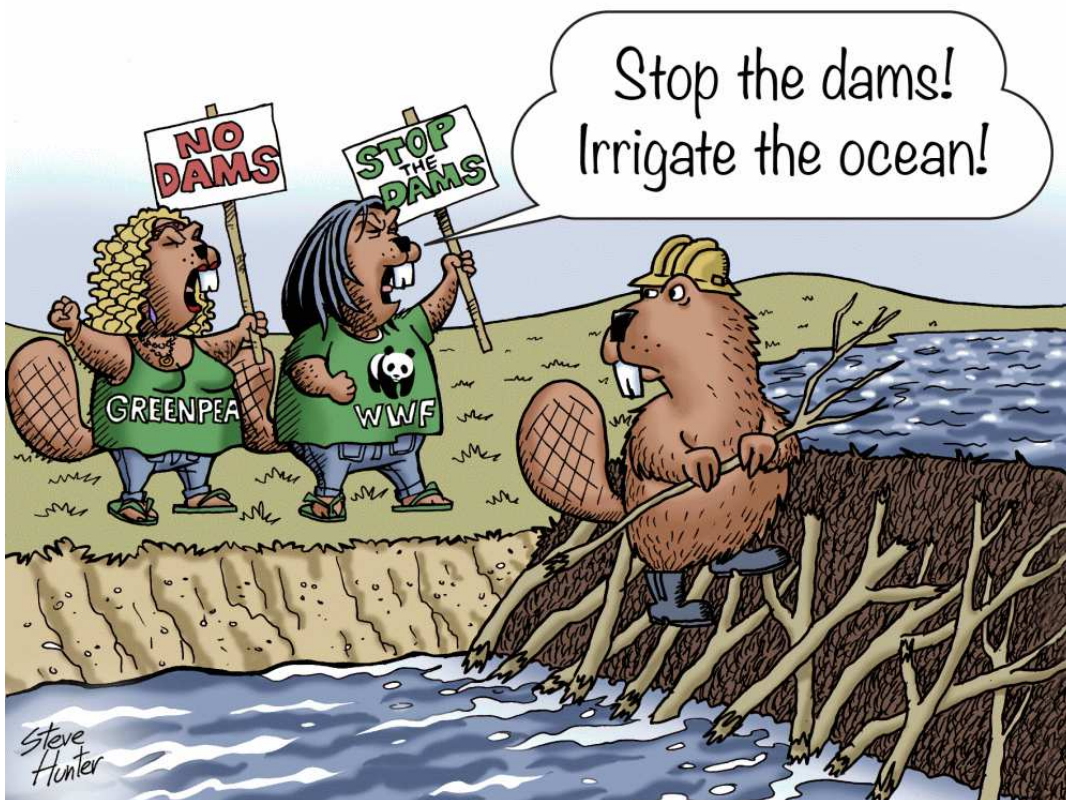
Good grazing managers also build private dams and deepen billabongs. They also manage their soil and pastures so that rain runoff is minimised and pastures benefit.

This is best achieved by giving pasture periodic rests from grazing pressure, and improving soils by retaining more water and improving soil aeration by key-line ripping, and by supplying mineral deficiencies.

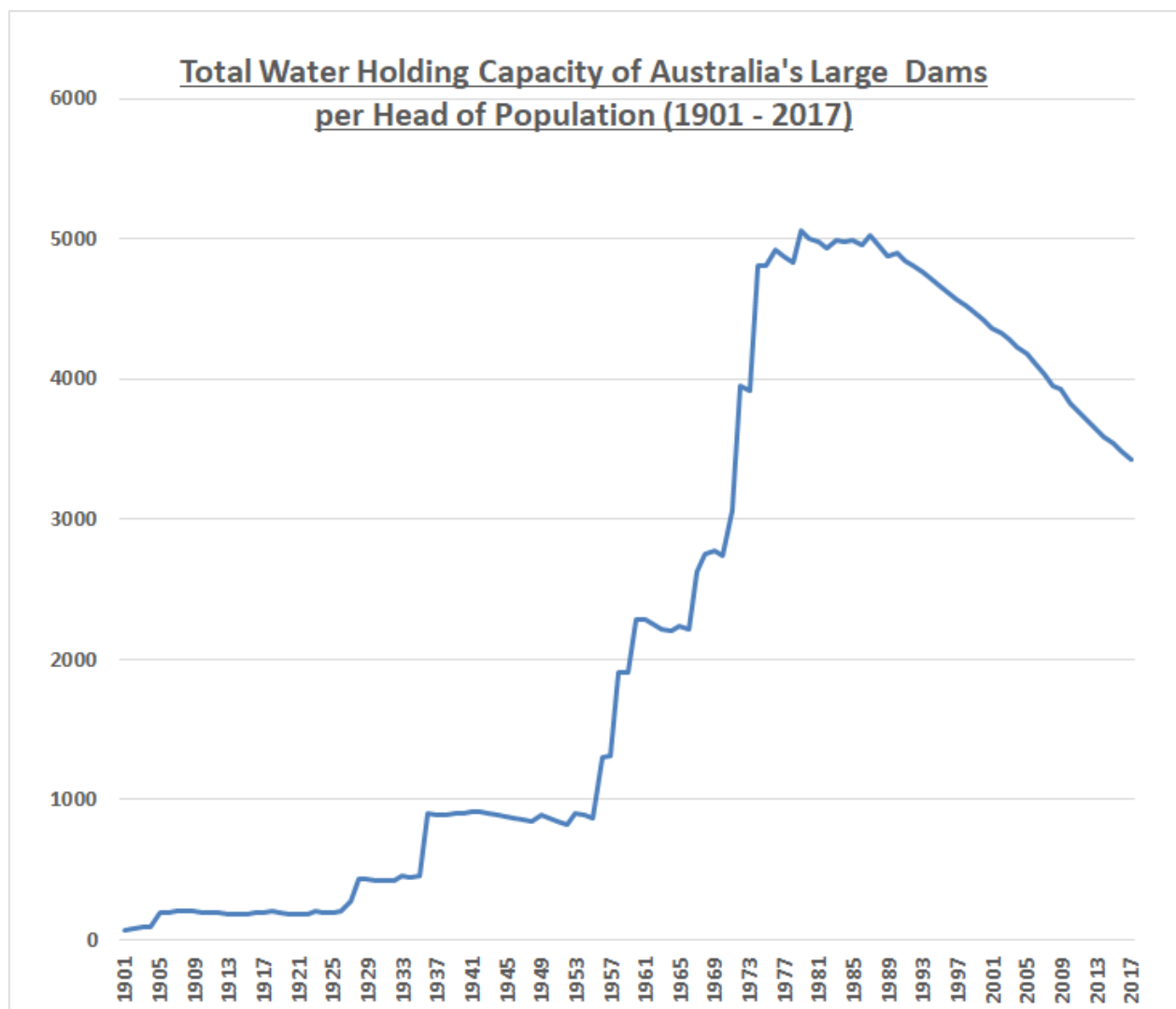
The greatest enemies of sensible water conservation and river management are the water bureaucrats whose rules change every flood. One decade they are removing trees “to allow flood waters to get away quicker”; next decade they place a ban on removing trees. Dam building is encouraged, then it is prohibited. Levies are built, and then taken down. Irrigators are cheered, and then they are dis-possessed. Finally, drunk with power, they draw up “Basin Plans” like the Murray-Darling Basin Plan which is part of a long term green plan to gradually smother farming, grazing and irrigation along the river.

Sensible people try to conserve water when it is abundant, but every dam proposal soon attracts fierce and organised opposition. This means that most of Australia’s dams were completed decades ago - Warragamba NSW 1960, Eungella Qld 1969, Ord River WA 1971, Beardmore Qld 1972, Fairbairn Qld 1972, Snowy River Vic-NSW 1974, Gordon Tasmania 1974, Hinze Qld 1976, North Pine Qld 1976, Fred Haigh Qld 1978, Wivenhoe Qld 1984, Thompson WA 1984, Burdekin Qld 1987, Barambah Qld 1988. Without these dams many Australian cities could not exist, and those who choose to live on flood plains would pay dearly for flood insurance.

Australia’s population has increased greatly since our major dams were built, and our water risk becomes greater every year. Today, pampered urban Greens with no understanding of water realities will predictably oppose every new water proposal. (The Snowy Scheme involved building 16 major dams. Imagine getting the approvals to build them today.)



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**Compiled by Mike Williamson from Australian Government Statistics**

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There is a growing procession of “ghost dams” in Australia that did not materialise including Nathan Gorge, Urannah, Traveston, Wolffdene, Bremer River, Tully-Millstream, the Bradfield Scheme and the Reid Scheme in Queensland; Clarence, Nymboida and the Macleay Schemes in NSW; Franklyn in Tasmania. Naturally few of these proposals stack up as well as the dams already built, and some may never look feasible – good dam sites are usually used first. But some must be built and they will provide water and food security as well as becoming tourist and wildlife attractions.

If we keep inflating our population with immigrants, subsidising big families with welfare, and attracting tourists with games and spectacles we will have to find more usable water for both cities and farms.

Australian governments are wasting billions of dollars on foreign aid, foreign wars, climate propaganda, subsidies for un-viable industries, politically distorted research and many other suspect causes. Only those who administer or receive this flood of money see value in it. More should be used for drought-proofing the dry continent.

However, the only big water-related investment on Australian government drawing boards today is the Snowy 2.0 pump storage scheme. It is a fraud. This scheme will not conserve one extra litre of water, and it will be a net consumer of electricity – its sole useful function is to keep the lights on when intermittent green energy fails. It will also exploit and smooth out the severe electricity price fluctuations caused by intermittent energy from wind and solar power. But, like all hydro-schemes, it needs water and may be at risk in a big drought.

The estimated cost of Snowy 2.0 has risen from \$2 billion to \$7 billion as the result of spending \$29 million on an initial feasibility study. Add that to the \$6 billion that the federal government will spend buying the existing Snowy Hydro scheme from the states who own it. If they used this vast splurge of money to build a real water supply dam and a real base-load power station, Australia's supplies of water and electricity would be far more secure.

Eastern Australia is currently suffering a big drought. Climate alarmists pushing a green global agenda will, as usual, try to exploit community suffering and concern by blaming man-made global warming for more droughts. Wrong again. Warmer oceans would increase evaporation, producing more clouds and more rain, not more drought.

Warmer oceans also expel carbon dioxide into the atmosphere and plants flourish in the moist warm fertile atmosphere. Anyone who studies a bit of climate history can see that warm centuries like the Medieval Warm Period are times of plenty, whereas cold periods like the Little Ice Age are times of hunger and conflict. Spending ANY money trying to reduce global warming is totally wasted. Drought and global cooling are the real threats we should fear and prepare for.

Sensible drought-proofing policies for Australia are simple –

1. Stop wasting water
2. Build more dams, pipelines and pumps
3. Build power stations capable of delivering cheap reliable electricity for pumping water and energising desalination plants.

Viv Forbes

[vforbes@bigpond.com](mailto:vforbes@bigpond.com)

Washpool Qld Australia

**Further Reading:**

The Absurd Murray-Darling Basin "Plan":

<https://jennifermarohasy.com/2013/03/absurd-murray-darling-basin-plan-now-irreversible/>

The costly needless Snowy 2.0 Scheme:

<https://www.theguardian.com/australia-news/2017/dec/21/snowy-hydro-2-viable-government-backed-study>

"Drought is the normal climate of the western US. That is why the west is a desert. There have been 200 year long droughts in the past":

<https://realclimatescience.com/2018/08/distinguishing-between-natural-drought-and-man-made-drought/>

Be like the Beaver – Build More dams:

<https://carbon-sense.com/2016/02/27/build-more-dams/>

The World's Largest artificial Desalination plant:

<https://www.technologyreview.com/s/534996/megascale-desalination/>

<https://www.technologyreview.com/s/533446/desalination-out-of-desperation/>

*Nosedive in dry Australia's dam water capacity per head of population:*

<http://theconversation.com/dam-hard-water-storage-is-a-historic-headache-for-australia-33397>

Viv Forbes has spent most of his life coping with the weather in rural Qld and NT – exploration, mine development, pasture management and raising sheep and cattle.