

## Cattle and Australia's water supply

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The Asian Water Tower includes the Qinghai-Tibet Plateau, the Eurasian highlands of the Iranian Plateau, the Caucasus, and the Carpathians. This 20 million square kilometer area is home to thousands of melting glaciers that feed Asia's largest rivers, including the Yangtze, Yellow, Indus, Yarlung Zangbo, Ganges, Brahmaputra, Irrawaddy, Salween, Mekong, and the Syr Darya, which provide water for three billion people across Asia.

In 2018, Yao Tandong, an award-winning glaciologist and director of the Institute of Tibetan Plateau Research with the Chinese Academy of Sciences led a team of scientists to study the melting glaciers of this region. The study concluded that by 2060 the water supply to people dependent on those rivers will be threatened.

### **As many cattle as people**

We don't have this problem in Australia because we have no glaciers. We get our water from rainfall, from dams on rivers, and by pumping water from underground reservoirs. However, our water supply is also under threat. We have the driest inhabited continent on earth, a heating climate, reduced rainfall, repeating low water levels in our rivers and municipal dams, a sinking water table in the Great Artesian Basin (one of the biggest groundwater systems on

earth), and 25 to 29 million cattle, most of them grazing our river banks (numbers are affected by droughts or rains). Water restrictions in many towns and cities are common. To help prop up our water supply the cities of Perth, Sydney, Melbourne, and also the Gold Coast now use desalinated water.

About those cattle - in one day a single cow can excrete as much feces and urine as twenty people. Simple arithmetic (25 million x 20) suggests that our 25 million cows could, each day, excrete as much as 500 million people.

Since most of our cows graze riverbanks and rivers tend to be the lowest parts of most landscapes, this indicates that much of that excreta will get washed into our rivers during rain. Cattle commonly wade into the water to drink and while doing so, often lift their tails and excrete directly into the water.

Every gardener knows what good fertilizer cow manure is. Unfortunately, in rivers, it fertilizes algae. The journals of our earliest white explorers show they found clean, drinkable water in almost all the rivers they came across. But once the first white settlers brought the first seven cattle to Australia in 1788, an ever-increasing number of cattle have been dropping an ever-increasing amount of manure into our rivers. The result is that today far too many of our rivers are lathered with disgusting-looking amounts of often toxic algae.

### **Manure suffocates rivers**

Algae are one of the oldest life forms on earth. They are a natural and integral part of the environment. In rivers, they are the base of the food chain. However, our millions of cattle have resulted in plague proportions of algae in rivers. Living algae absorb carbon dioxide and release oxygen via photosynthesis during the day –which is wonderful. But at night, photosynthesis stops and algae absorb oxygen and release carbon dioxide.

Excessive algae in a river can absorb too much oxygen at night and not leave enough for other organisms in the water. This can kill fish and other oxygen-needing organisms. This is what happened to millions of fish in the Murray-Darling river system in January 2019. Furthermore, when algae die en masse, bacteria decompose them, and in doing so also use up oxygen. During cell decomposition toxins in blue-green algae are released into the water and can kill animals that drink the water.

Today Australia has 25.5 million people versus 25.1 million cattle. This excess results in many serious problems to environmental (and human) health. The root cause of the problems is simple - people keep eating cattle and using their milk, and the meat industry works tirelessly

to keep increasing sales. The solution is also simple – skip the cattle and get protein and calcium the same way cows get it – by eating plants. More and more people are understanding this.

## **Growing appetite for plant-based meat**

There is a growing body of evidence that people do not need to eat animal-derived foods to be healthy. Both Charles Darwin and Carl von Linneaus classified humans in the ‘plant-eater’ group, based on anatomy. The website of the Physicians Committee for Responsible Medicine offers a wealth of information on the benefits of a vegan diet, including medical research papers on the healing of various illnesses through the adoption of such a diet. There is also an expanding number of vegan or vegetarian Olympic champions.

Roy Morgan polls showed that in 2009 there were 1,608,000 vegetarians in Australia; by 2013 there were 1,935,000, by 2014 there were 2,200,000, by 2015 there were 2,500,000. The number of new vegan foods on sale here tripled from 2014 to 2019.

The cattle industry is feeling the pinch, and though some in the industry are trying to reduce the impact of some of the problems they contribute to, cattle still line our rivers. One reason is that graziers say it is too expensive to fence off rivers and to pump water to the cattle. There are possible solutions to this.

## **Regrowing the river banks curbs water pollution**

Meat and Livestock Australia (MLA) is an industry body that looks after the interests of cattle graziers. Graziers pay MLA a levy which is used to create advertising. Two dollars a week from each grazier (and Australia has about 46,000 of them), could be added to this levy. The additional funds could be distributed through a lottery system where a grazier would be able to win it each week. The only condition is that the money must be used to fence off the river and pump water to the cattle. Over time this would help reduce the serious algal pollution of Australia’s once beautiful rivers.

With cattle removed from river banks, the vegetation which was previously cleared, eaten, or trampled by cattle would be able to grow. Trees shade rivers from the sun and algae love the sun. The shade would also help reduce algal growth. When trees, bushes, and grasses line rivers they act as a filter to pasture fertilizer, helping reduce the flow of nitrogen and phosphorus into the water. This would also help reduce algal growth because nitrogen and phosphorus nourish algae.

MLA has a subsidiary company called MLA Donor Company (MDC). Its function is to attract donors to invest in the Australian red meat and livestock industry to help drive innovation (among other things) to increase capacity for innovation and sustainability. With ever more recognition of the many environmental problems of the red meat industry, and with plant-based meats now a global multimillion-dollar business, there is no reason that MDC could not start encouraging donors and graziers to start investing in (a) lab-grown meats, and (b) gradually replacing cattle with edible acacia trees.

Most cattle in Australia graze in arid areas and acacia trees do very well in arid areas. For example, the Sahel region of Africa was seeded with many species of acacia to help feed the people there. Both flowers and seeds are edible and very nutritious. In Australia, a kilo of *Acacia victoriae* seeds can sell for \$75, which is more than a kilo of beef or dairy product sells for. This tree grows in all mainland states. Other edible acacias include *Acacia colei*, *A. elachantha*, *A. thomsonii*, *A. tumida*, and *A. murrayana*. Instead of damaging soil and increasing aridity, the trees grow fast and add nitrogen and organic matter to the soil. Instead of producing methane, they absorb carbon dioxide and produce oxygen.

Since MDC attracts investment from research and technology providers, it could invite the assistance needed for corporate graziers in the wide-open, sun-drenched inland of Australia, to transfer from grazing to building alternative energy systems using solar and wind power.

With both the Australian and the global water situation not looking very good, it has become increasingly important to care for the water we have. Continuing to mass-produce cattle and letting them daily drop into our rivers manure equal to what 500 million people would excrete is dysfunctional. For people to stop eating cattle meat/dairy products is the most effective way to help heal our rivers. It cuts out the root of the problem. Fencing off rivers from cattle is a secondary, interim measure.

MDC is always seeking co-investment and research partners in innovation that will benefit the industry. If you are interested in partnering with MDC you can contact them at [mdc@mla.com.au](mailto:mdc@mla.com.au). Phone; 02 9463 9333, Free call: 1800 023 100 (Australia only).

You can also contact MLA on the same numbers as above, or [info@mla.com.au](mailto:info@mla.com.au). Alan Beckett is chairman of the board of directors.

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Shannon Merika has spent a lot of time in the Tasmanian and Australian bush. After seeing what cows were doing to Australia's rivers she wrote a book, *All our beautiful rivers: material and spiritual aspects of eating cows*, presently being offered to publishers. She has written for the Organisation of Nature Evolutionaries and Vegan Australia.

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