

title **WATER**
The Fate Of Our Most Precious Resource

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note: the 2003 2nd Edition has added sections on South Africa, India and China

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of note Won the 1999 Governor General's Award for Non Fiction.
<http://www.canadacouncil.ca/prizes/ggla/>

who will be interested in this book?

Anyone interested in water availability, use, and issues in the world - ranging from the American Southwest, the Middle East, Africa, to China. Due to the expansive topic, readers may want to use the detailed chapter notes and bibliography to further their understanding of this topic (some of the books are reviewed elsewhere in this section).

why read this book?

A good introduction and world-wide overview of water issues, combining extensive research and the author's personal travel to many of the areas discussed. Although concerning a weighty subject, it is easy to read, seldom lagging. The authors travel log segments may be distracting to some but they usually bring the discussion to a focus and to a more personable level.

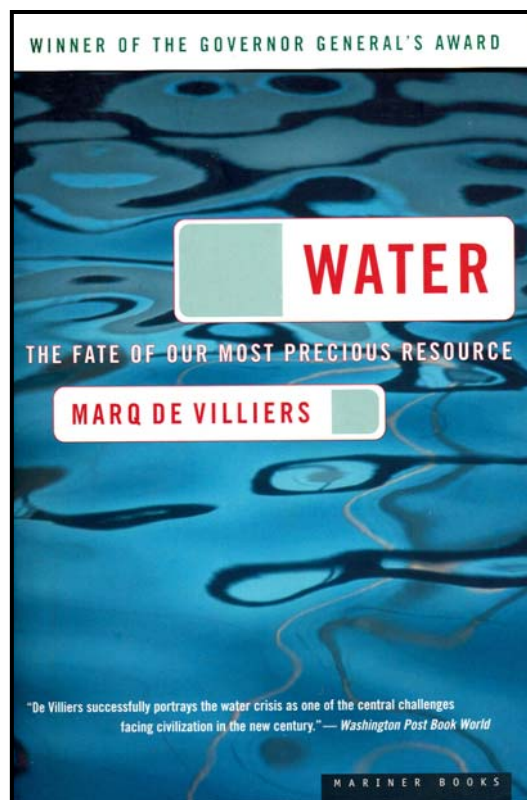
There are detailed chapter notes and an extensive bibliography for further reading.

review / outline by Lance Brown, vistadelsol@telus.net

Overview

For anyone wanting an introduction to water issues around the world, this book is a great place to start. A point made early in the book is:

Water is undervalued even as it is becoming more precious.



For those interested in food production, consider a theme De Villiers mentions more than once in the overviews by country - the economics of diverting water from food production to industry:

The market value of goods produced by water use in industry is fifty (50) times the market value of food produced by the same amount of water.

The value of water (i.e., the “return to government via licensing and taxes from industry”) and the possible reduction of irrigation water with increased population (as in the Okanagan) are current topics in British Columbia.

If water “value” were to increase (a theme seen often to encourage conservation) food becomes more expensive – will food producers see a comparable return? De Villiers shows the result of heavily subsidized agricultural water in California can result in abundance of food, but also in subsidized crops such as cotton.

Even China, with its serious water shortages, is considering the economic advantages of shifting water from agriculture to industry with the intent of buying food outside the country. But with their massive population, any sizeable shift would have world-wide implications. De Villiers shows, for instance, if the Chinese consumed as many eggs as Americans, they would require a flock of 1.3 billions hens and an additional 24 million tons of grain, equal to Canada’s entire grain exports.

Throughout, De Villiers links many similar consequences to water shortage solutions, but, if there is a water crisis as many believe, he ends with four strategies countries will use to cope.

An interesting thought:

Water is not entirely “renewable” (it doesn’t reproduce itself) but is “recycled” (by the hydrological cycle) – impacts to water may remain (some diminish, some intensify).

Sixteen Chapters with Points of Interest

1. *Water in Peril – Is the crisis looming, or has it already loomed?*
 - diminishing aquifers, dropping water tables, alarm about sustainability, are issues facing many populated areas
 - a country is water stressed below 1,700 cubic m / person / year
 - water crisis can be partly a management problem – allocation and distribution
 - a look at countries’ water resources verses their needs and expected population growth
2. *The Natural Dispensation – Who has how much, and who’s running out?*
 - total water in world is 1.4 billion cubic kilometers; more than 97% is salt water
 - about 2.5% is fresh water, but about 2/3’s of that is locked into polar icecaps and permanent snow cover and a large percentage is too far underground
 - freshwater lakes and rivers contain about 900,000 cubic kilometers or 0.26 percent of worlds total supply of fresh water
 - aquifer withdrawals / falling water tables / river flows / land subsidence
3. *Water in History – Some things never change: how humans have always discovered, diverted, accumulated, regulated, hoarded, and missed used water.*
 - ancient terraces, dikes, canals, aqueducts, wells, distribution systems, irrigation
 - 47% of earths area is made of river basins shared by more than one country
 - water / politics / international law
4. *Climate, Weather, and Water – Are we changing the first, and will changes to the other two necessarily follow?*
 - expansion of Sahara Desert

- climate change effect on the Norse settlement of Iceland and colonization of Greenland
 - is climate change occurring and what will be effects on water
5. *Unnatural Selection – Contamination, degradation, pollution, and other human gifts to the hydrosphere.*
- a look at pollution of world rivers; human sewage, industrial, agricultural
 - decline in fisheries
 - over 1 billion people have no access to clean water
 - over 2.9 billion have no access to sanitation services
6. *The Aral Sea – An object lesson in the principle of unforeseen consequences.*
- once the 4th largest sea, is now mostly a desert
 - has been described as “the quiet Chernobyl”
 - inflow rivers diverted for agriculture, lake started to drop in 1960’s
 - historic inflow of 50 cubic kilometers was reduced to zero by 1980’s
 - once on an island, the town of Muynak is now 75 km from the sea
7. *To Give a Dam – Dams are clean, safe, and store water for use in bad years, so why have they suddenly become anathema?*
- in 1900, there were no dams in the world over 15m height
 - by 1950, there were 5,270 (2 in China)
 - by 1980, there were 36,562 (18,820 in China)
 - issues of reservoir silting, loss of river deltas, and habitat
8. *The Problem with Irrigation – Irrigated lands are shrinking, and irrigation is joining dams on an ecologist’s hit list. Why?*
- in 1800, total irrigated land in world was 6 or 7 million ha
 - by 1900, 50 million ha; by 1950, 100 million ha; now 230 million ha
 - only 15% of worlds cultivated land is irrigated but it accounts for 40% of global harvest
 - about 1 million hectares taken out of irrigation yearly due to salination – concentration & accumulation of salts in water and soil
 - about 30% of US irrigated land has yield reductions due to salinity
 - occurring in poorly drained soils & soils that are naturally alkaline
9. *Shrinking Aquifers – If water mines ever run out, what then?*
- Nubian aquifer under the Sahara Desert being piped to Libya in the “Great Man-Made River”
 - first stage was 4m diameter pipe 1,900 km long costing \$4 billion
 - total project to cost \$32 billion
 - in 1945, Ogallala Aquifer supplied irrigation for a few 1000 ha
 - by 1980’s, was 7 million ha of land irrigated
 - wells in west Texas went from 100 (1914) to 1,000 (1937) to 74,000
 - aquifer level is falling due to about 14 million ac-ft/year overdraw (which is equal to flow of Colorado River in a good year)
10. *The Reengineered River – If you can turn a river into a sewer, you can turn it back into a river again.*
- success of the “rebirth” on the Rhine River
 - Czechoslovakia and Hungary quarrel on dam issues on the Danube River
11. *The Middle East – If the water burden really is a zero-sum game, how do we get past the arithmetic?*
- Jordan River diversions
 - water / politics / war

12. *The Tigris-Euphrates System – Shoot an arrow of peace into the air, and get a quiverful of suspicions and paranoia's in return.*
 - conflicts between Turkey (headwaters of both rivers) and Syria / Iraq which are downstream users
 - historical / ancestral water rights versus country of origin of water
13. *The Nile – With Egypt adding another million people every nine months, demand is already in critical conflict with supply. Another zero-sum game?*
 - conflicts between Sudan / Ethiopia (headwaters of Nile) and Egypt which is a major downstream user
 - historical / ancestral water rights versus country of origin of water
 - Aswan High Dam and the resulting de-silting of lower Nile
14. *The US and Its Neighbours – In the ménage a trois of Canada, Mexico, and the US, who is the seducer and who the seducee?*
 - conflicts between US (headwaters of Nile) and Mexico, a downstream user
 - Canada / water / NAFTA
 - water conservationism may make money
15. *The Chinese Dilemma – China is not running out of water, except in places where water is needed most.*
 - 17% of US food production is from irrigated land
 - 70% of China's food production is from irrigated land
 - in 1972 for 15 days the Yellow River dried before reaching the sea
 - in 1996 for 133 days; in 1977 (a year of drought) for 226 days
 - for long stretches it did not reach Shandong province (the source of 1/5th of China's corn and 1/7th of its wheat) that uses the Yellow River for half of its irrigation water
16. *Solutions and Manifestos – If you're short of water, the choices are stark: conservation, technological invention, or the politics of violence.*
 - four water survival strategies: get more; use less; have fewer people; steal water

[other review](#) **Publishers Weekly**

Marq de Villiers provides an eye-opening account of how we are using, misusing, and abusing our planet's most vital resource. Encompassing ecological, historical, and cultural perspectives, de Villiers reports from hot spots as diverse as China, Las Vegas, and the Middle East, where swelling populations and unchecked development have stressed fresh water supplies nearly beyond remedy. Political struggles for control of water rage around the globe, and rampant pollution daily poses dire ecological threats. With one eye on these looming crises and the other on the history of our dependence on our planet's most precious commodity, de Villiers has crafted a powerful narrative about the lifeblood of civilizations that will be "a wake-up call for concerned citizens, environmentalists, policymakers, and water drinkers everywhere".

[other review](#) **Amazon.com** - Gregory McNamee

Water is a curious thing, observed the economist Adam Smith: although it is vital to life, it costs almost nothing, whereas diamonds, which are useless for survival, cost a fortune. In *Water*, Canadian journalist de Villiers says the resource is still undervalued, but it is becoming more precious. It's not that the world is running out of water, he adds, but that "it's running out in places where it's needed most."

De Villiers examines the checkered history of humankind's management of water--which, he hastens to remind us, is not a renewable resource in many parts of the world. One of them is the Nile River region, burdened by overpopulation. Another is the Sahara, where Libyan ruler Muammar Qaddafi is pressing an ambitious, and potentially environmentally disastrous, campaign to mine deep underground aquifers to make the desert green. Another is northern China, where the damaging effects of irrigation have destroyed once-mighty rivers, and the Aral Sea of Central Asia, which was killed within a human lifetime. And still another is the American Southwest, where crops more fitting to a jungle than a dry land are nursed. De Villiers travels to all these places, reporting on what he sees and delivering news that is rarely good.

De Villiers has a keen eye for detail and a solid command of the scientific literature on which his argument is based. He's also a fine storyteller, and his wide-ranging book makes a useful companion to Marc Reisner's classic "Cadillac Desert" (*Note: this book is reviewed in this section*) and other works that call our attention to a globally abused--and vital--resource.