

A climate change of attitude

Australian policymakers are talking global warming and its implications for the country's fresh water resources.



BY **RON HALL** EDITOR AT LARGE

Australian water at a glance

- ▶ Population 22 million; projected population of more than 39 million by 2056
- ▶ Continental area of 2,680,000 sq. miles (10 times larger than Texas)
- ▶ On average, 90% of rainfall is directly evaporated back to the atmosphere or used by plants; only 10% runs off to rivers and streams or recharges ground-water aquifers
- ▶ Household water consumption, about 75 gal. per person per day
- ▶ Household water use decreased by 8% from 2001 to 2005
- ▶ Household use of reused or recycled water increased from 11% to 16% from 2001 to 2006

Source: "Australian Water Resources 2005," Australian Government, National Water Commission

AUSTRALIA, THE driest inhabited continent on earth, is a testament to man's industriousness, creativity and, perhaps, to his arrogance by choosing to live wherever he desires.

International attention is focusing on the water issues facing this continent, 80% of which is desert or semiarid. In a sense, it's the Earth's test tube for global warming, especially in terms of water resources.

Australian scientists and policymakers are taking climate change seriously. They're preparing the country's water and energy sectors in anticipation of significant environmental changes.

"I don't care if you believe in climate change or not, but you're a bit of a fool if you don't manage the risk," says Dr. Bryson Bates chief scientist with the Australian Commonwealth Scientific and Research Organization (CSIRO). "We're seeing strong evidence from climate research, and we seem to be locked into a drying cycle into the future."

Evidence of rapid, global change

is impossible to ignore, Bates says. It's most obvious manifestations are:

- ▶ melting ice sheets and caps
- ▶ melting glaciers
- ▶ melting permafrost
- ▶ ocean acidification
- ▶ atmospheric circulation changes
- ▶ ecosystem changes.

Bates' belief is supported by a recent report from the Australian Climate Change Science Program, claiming, that during the past 30 years, there has been a dramatic shift in the country's climate, which is affecting storm tracks in southern Australia. The shift has resulted in a 30% reduction of storm growth rate, meaning less rainfall throughout southern Australia.

Put in perspective

While it's believed the continent has been inhabited for about 50,000 years, it wasn't until 1788 when ships began disgorging England's excess population that today's Australia began taking shape. The newcomers quickly set about attempting to transform the

vast island continent into a facsimile of their former homeland.

But Australia, apart from the common language, isn't like England. The two are quite different geographically and climatically.

Australia's 22 million people are concentrated in and around a few cities on the eastern, southern and southwestern coasts. And Australia is drier, much drier. Much of the most inhabited and agriculturally important areas of the continent are in the grips of a withering 7-year drought.

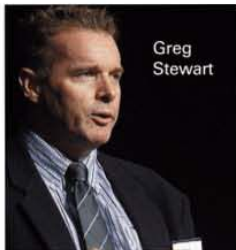
For all of these obvious differences, Australians are finding old habits are hard to break, especially when it comes to landscape irrigation. They are, like today's garden-loving Brits, passionately attached to their landscapes, lawns, golf courses and sports fields.

Changing habits

But break those habits they must. They're starting to get the message, says Greg Stewart, General Manager Total Eden, Chair of Irrigation Association — Western Australia Region.

Stewart cites a water emergency in the region in 2001 as a wake-up call to the Green Industry in terms of landscape irrigation. The water corporation in Perth, the region's capital with a population of about 1.7 million, threatened a complete lawn-and-garden watering ban as the dams that supplied water to the city approached all-time lows.

Thanks to the action of a coalition of Green Industry associations, headed by the Irrigation Association of Australia (now Irrigation Australia), the water corporation agreed to two-day-a-week watering. Even with the restriction, the problem of landscape water waste persisted. Property owners merely increased their watering times and watered on days they



Greg Stewart

weren't allocated.

What was needed and implemented was an aggressive, joint industry/water corporation effort to educate property owners about products and practices to allow them to water only twice a week while still maintaining attractive gardens and lawns, Stewart says.

The resulting media blitz focused on convincing the public to restrict watering to 15-minute intervals during allotted times, adjust controllers regularly, use soil wetting agents and mulch, select and install water-efficient plants and implement proper maintenance practices. These changes began to reduce landscape water waste, says Stewart.

Meanwhile, retailers were encouraged to train their garden staffs about efficient irrigation practices and products. Not only did it improve the advice retailers could offer garden product consumers, it resulted in increased sales of higher-priced, better-quality irrigation products.

ADVANCES IN WATER-EFFICIENT IRRIGATION

Greg Stewart offered these product and product-use suggestions for boosting irrigation efficiency in Australia landscapes:

- ▶ Automatic controllers must come on when required, otherwise the watering day or period is lost. Controllers must not be overly complicated. They should have large, clear display screens.
- ▶ Low precipitation output and high uniformity rotary-type nozzles are becoming more popular for all the right reasons. They must be designed and installed correctly, and programmed for the correct run times.
- ▶ Inline drip and a mixture of well-placed bubblers, drippers and emitters are replacing the traditional spray method. Be advised, drip systems require more education, training and maintenance.
- ▶ Soil moisture and rain sensors should be made mandatory for every automatic system in Australia. The price point needs to be under \$100.



Stuart White

Looking ahead

Water authorities and government agencies are united in preserving and adding to Australia's precious fresh water supplies. They're working with the Green Industry on a range of programs,

including irrigation-product testing and certification, to ensure citizen's have healthy lawns, parks and gardens.

Even as the nation brings alternative supplies of water on line, including using more reclaimed wastewater and construction of desalination plants, it'll continue to seek increased water-use efficiencies from the public.

"There's absolutely no point in putting in systems which reuse water, which capture rainwater, which recycle storm water unless we have maximized efficiency levels first," says Dr. Stuart White, director of the Institute for Sustainable Futures at the University of Technology, Sydney. "This is the largest and quickest contribution we can make to future water sustainability or energy." LM

NOTE: Much of the information used in this article came from Rain Bird's "Intelligent Use of Water Summit X" in Melbourne, Australia, March 19, 2009.