

# Where's the Data?

JENNIFER MAROHASY

The new Director of IPA's Environmental Unit asks for the evidence to support repeated claims of deteriorating water quality in Australia

**R**EPETITION of the simple message that we have a water quality problem in our rivers is a feature of two current high-profile environmental campaigns. The save the Great Barrier Reef and save the Murray River campaigns, both backed by the World Wide Fund for Nature (WWF), have been phenomenally successful. Recently, both sides of politics have sought to out-compete each other in their pledges to introduce new programmes that will save these Australian icons. A remarkable feature of both campaigns, however, is the lack of information provided to support this key message.

If the Reef and the Murray are facing an environmental catastrophe, then repetition of this key message from high-profile environmentalists is justified. If, however, the key message cannot be substantiated, then we are perhaps dealing with propagandists who are potentially duping the Australian public. Can the message shared by both the save the Reef and save the Murray campaigns—that deteriorating water quality is an established scientific fact—be supported by the available scientific evidence?

The preamble to the Wentworth Group's *Blueprint for a Living Continent* begins with the statement, 'Salinity and deteriorating water quality are seriously affecting the sustainability of Australia's agricultural production, the conservation of biological diversity and the viability of our infrastructure and regional communities'. The WWF Australia's *Great Barrier Reef Pollution Report Card*, launched in June 2001, also fo-

cuses on water quality and, in particular, on 'the effects of sediment and nutrients pouring out of our rivers'.

Key water quality indicators include turbidity (a measure of sediment load), total nitrogen (nutrient level) and electrical conductivity (saltiness). Australian State Governments have measured and recorded these indicators for our major river systems for many decades and stored the information in large databases. These values should be regularly compared against national guidelines that have been developed for drinking water, aquatic ecology and irrigation. According to the *Australian Water Resources Assessment 2000*, we spend \$142–\$168 million each year on water quality monitoring.

Trends with respect to water quality could be easily established by plotting the values for the indicators (for example, saltiness) for particular sites (for instance, Morgan, SA) over time (for example, 1988–1998). If water quality is deteriorating, then the graph will generally resemble a high performing super fund—that is, the plot will show an increase over time.

I first requested information on water quality for rivers in Great Barrier Reef (GBR) catchments in 1999. The information was not easy to access, but I persisted and eventually succeeded in not only seeing the data, but also getting government to publish a limited-edition water quality report for eight key indicators at 18 sites in 12 catchments for two five-year periods. This report (*Water quality report for catchments containing sugar cane in Queensland, 1<sup>st</sup> May 1995–30<sup>th</sup> April 2000*) presents the best available data on water quality

in GBR catchments for recent years. The graphs show there are seasonal trends for some indicators for some catchments, but no long-term trend of improvement or deterioration.

The Queensland Government should have made this information generally available on a Website. Instead, in both January and May 2003, Premier Beattie declared that water quality was deteriorating to the extent that there has been 'a fourfold increase in sediments and nutrients discharge (from agriculture) into the reef waters over the past 15 years'. This is consistent with the WWF's assertion that sediment and nutrient loads are 'pouring out of our rivers'. However, I have been unable to establish the basis for the Premier's assertion and this information is difficult to reconcile given the significant improvements in on-farm environmental management, including the adoption of precision farming and minimum tillage techniques, over the last 15 years in GBR catchments.

The message from government and WWF with respect to deteriorating water quality in GBR catchments appears to be pure propaganda. Interestingly, my inquiries to government regarding the assertion that there has been a 4-fold increase in 15 years have been met with the allegation that I am 'in denial' ('psychological contagion' is a known propaganda tactic—a component of the rule of unanimity).

Even the recent 415-page Productivity Commission Research Report, *Industries, Land Use and Water Quality in the Great Barrier Reef Catchment* contains much rhetoric about deteriorating water quality but, incred-

ibly, absolutely no water quality trend data. When the first draft of the report was released for public comment, I asked one of the Melbourne-based research officers why the Queensland Government's water quality trend data was not included in the report. He replied that 'the data is not useful'. Information that contradicts the position of the propagandists is certainly not useful information.

I recently searched for water quality data for the Murray River, in particular, for graphs with trend lines that showed the deterioration in water quality as repeatedly reported in the media over the last year.

The Murray Darling Basin Commission Website is huge, but after several hours of searching I could find no graphs showing trends for turbidity (sediment loads) or total nitrogen (nutrient levels) for any localities.

I did download a report on the *Salinity and Drainage Strategy—Ten Years On, 1999*. The report that was published in 1999 shows recorded salinity levels at Morgan in South Australia from 1920 to 1999. Morgan is a key locality just upstream of the pipeline off-takes for Adelaide's water supply and its use as an indicator site emphasizes the relative im-

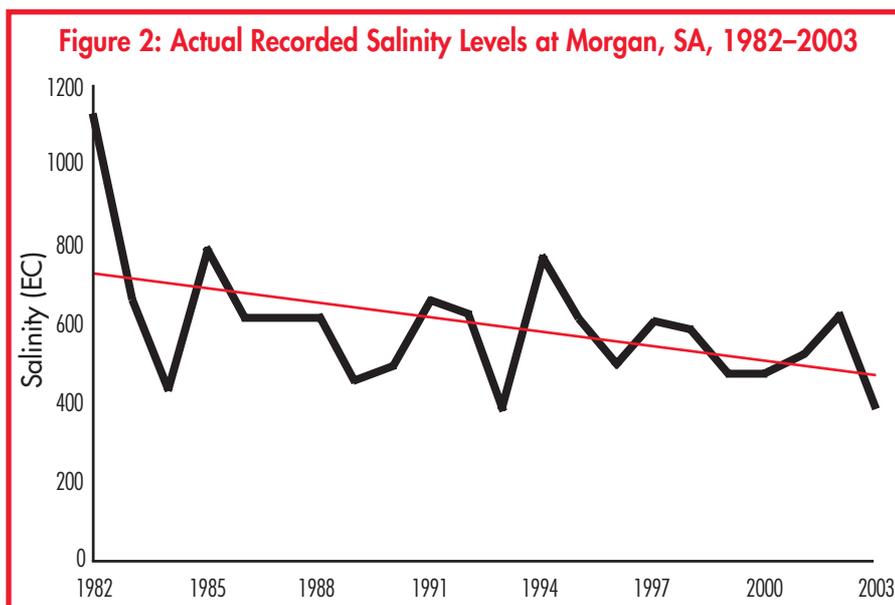
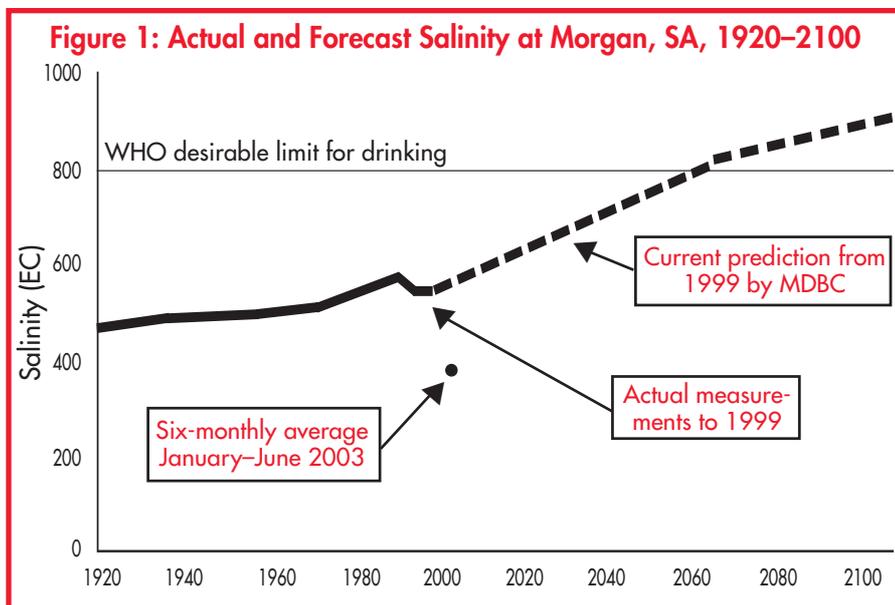
portance of river salinity impacts on all water users in the system.

According to the report, the trend line for recorded levels shows that an increase in salinity levels in the late 1970s was followed by a drop in salinity levels from the late 1980s through to publication of the report in 1999 (Figure 1). The improvement is attributed to salt interception schemes developed as part of the ten-year drainage strategy. The preamble to the report clearly states, 'The (Salinity and Drainage) Strategy has achieved a net reduction in River Murray salinity without jeopardising the undertakings of land protection works, new irrigation and water resource developments in three States'.

Interestingly, the same graph then shows the trend line sharply increasing after 1999, that is, the prediction is that salinity levels will increase after the Drainage Strategy. The report does not explain which model was used to generate this prediction of deteriorating water quality. It simply comments that, 'in future the increase in river salinity is expected to be mainly due to increased salt contribution from dry-land areas and pre-strategy irrigation development'. Why would salinity levels increase given that the interception schemes will stay in place and additional programmes to further improve water quality will be brought on line?

It is now nearly five years since the Drainage Strategy was published. Following an e-mail request to the Murray Darling Basin Commission (MDBC), I recently received a table of average yearly values for salinity at Morgan. I plotted these values for the last 20 years (Figure 2). From this graph it is clear that the trend of reducing salinity levels has continued. Water quality is improving at Morgan.

Large quantities of salt have always entered the Murray River from seepage of saline groundwater. The largest increases are usually noticed during low flow periods—for ex-



ample, during drought. Given the current extended drought across the basin, the trend of improving water quality at Morgan is remarkable. The extent of the improvement, and the extent to which the MDBC model's prediction is wrong, are evident when the average for the last six months (389 EC Units) is plotted against the prediction (Figure 1). Why isn't this good news story being reported?

At which sites has there been deterioration in water quality along the Murray River? Ticky Fullerton's acclaimed book *Watershed* laments deteriorating water quality in the Murray, but provides no water quality data to support the rhetoric. Early in May 2003, I received the new CSIRO *Land and Water Corporate Profile* with a letter from John Williams (a member of the Wentworth group). On the Website mentioned in the letter it states, 'Salt levels are rising in almost all of the (Murray Darling) Basin's rivers'. But again there are no accompanying data to support this simple message.

In his book *Europe—A History* Norman Davies writes, 'To be most effective, propaganda needs the help of censorship. Within a sealed informational arena, it can mobilize all means of communication and press its claims to maximum advantage. Propaganda is the antithesis of all honest education and information.' Could this explain why the aforementioned texts, reports and Websites, which purport to concern themselves with water quality, fail to present basic up-to-date information on water quality; is it that the real science, the real data, does not support the key message—the propaganda?

The Murray is an ancient river system with sedimentary material that has accumulated over the last 65 million years. Since European settlement, the most significant change to water quality is thought to be an increased sediment input from the early years of land clearing and the introduction of sheep, cattle and rabbits.

As a result of improved management practices over recent decades, erosion is likely to have stabilized or reduced to pre-European levels. 'New sediment' can take decades to move through a naturally sluggish river such as the Murray because of its low relief and low rainfall. Nevertheless turbidity levels (sediment load), in the absence of actual measurements, may just as well have reduced over the last 30 years.

The WWF-backed Reef and Murray campaigns share 'deteriorating water quality' as a key message. But perhaps the real issue is whether indicators meet national water quality standards?

---

**We expect graphs  
with trend lines  
from our super fund  
managers—we  
should demand as  
much when we are  
repeatedly told  
that water quality  
is deteriorating**

---

Two years ago the National Land and Water Resources Audit published a 160-page *Australian Water Resources Assessment 2000*. It appears like a big report card—a catchment-by-catchment assessment of water quality concluding that we have lots of 'major (water quality) issues'—in other words, D grades for water quality. Trying to understand what contributes to the bad marks, however, is not so easy. Incredibly, this national report does not use the nationally recognized ANZECC water quality guidelines. Instead, median,

average and 90<sup>th</sup> percentile values for different localities have been variously combined and it is unclear for which periods (last decade or last year) and flow conditions (floods or droughts). Without presenting a single trend line for any water quality indicator, the report states, '*The Australian Water Resources Assessment 2000* provides the first overview of Australia's declining surface water quality with salinity, nutrients and turbidity issues revealed across most of the intensively used basins'. No it doesn't. It is just more propaganda.

Concern for the environment has emerged as a key ideology, almost a religion. It is apparent that scientists in positions of power are seeking to give the ideology standing by invoking the authority of science to support key messages. That this rhetoric, these messages, in some critical instances cannot be supported by the available data lays these high-profile environmentalists open to the accusation that they are more about propaganda than the provision of honest education and information.

According to the Australian Journalists' Association's Code of Ethics, respect for truth and the public's right to information are fundamental principles of journalism, along with not allowing any personal interest, or any belief or commitment to undermine the accuracy, fairness or independence of the reporting. Are Australian journalists too naive to recognize the absence of critical information when familiar messages are repeated by leading environmentalists? Journalists seem to expect facts and figures from economists, but not from leading environmentalists. We expect graphs with trend lines from our super fund managers—we should demand as much when we are told water quality is deteriorating.

*Dr Jennifer Marohasy is the new Director of the IPA's Environmental Unit. She was Environment Manager with Queensland Canegrowers Organization Ltd from 1997 to June 2003.*

**IPA**

**REVIEW**