

## A river and a livelihood – all but lost in a decade

*Pop Petersen*

### Introduction

I am passionate about the Culgoa River in the northern part of the Murray–Darling Basin, where we lived. For 27 years we managed Brenda Station, a 66 400 ha sheep and cattle property, straddling the Queensland and New South Wales border. The Culgoa River runs through the property for 52 km; it not only supplied drinking water from its main channel, but its floods also sustained our livestock and our livelihoods. In the 1983 flood, the highest since 1890, we had 43 200 ha (74% of the property at the time) flooded for 13 weeks, producing amazingly productive pastures. Such large floods are rare but smaller floods regularly came, inundating different amounts of the property, excellent for our livestock breeding and production. Floodplain graziers, such as us, depend on these floods. When reliability of these floods went, we hurt economically, along with our environment.

The Culgoa River is one of four rivers, including the Birrie, Bokhara and Narran Rivers, which spread out, forming the Lower Balonne floodplain in the northern part of the Murray–Darling Basin (see Chapter 14). They connect, forming a network of more than 1.4 million hectares of floodplain (Kingsford *et al.* 2004). They receive their water from upstream, from the Condamine and Balonne Rivers (see Chapter 14; Fig. 15.1). The Narran River fills the Ramsar-listed Narran Lakes and then overflows down a creek into the Bokhara River to eventually reach the Barwon River. Periodic flooding used to sustain a vibrant sheep and cattle industry, dry land farming and the environment. The floods brought economic benefits usually lasting three years. For example, we estimated that the 1995 flood provided about \$36.1 million in income from cattle, sheep and dry land farming for the 236 properties on the Lower Balonne floodplain in New South Wales. This productive floodplain and its people were irrevocably damaged by the development of water resources upstream – a story that needs to be told by those affected.

### The development phase

The rivers and their flooding patterns were altered forever by upstream development of the rivers. Beardmore Dam, built in 1972 on the Condamine River (Fig. 15.1), marked the beginning of a rapid expansion in irrigation upstream in Queensland. This took many of the floods that we needed for our income. The pace of this development picked up in 1995 when off stream water storages were built to capture river water amounting to 90 000 ML and increasing another 15 times to 1 500 000 ML by 2003. The policy of the Queensland Government continued to promote water resource development, which contributed to increased diversions by irrigators (see Chapter 21). They even converted the amount of



**Fig. 15.1.** Flows from upstream in the Condamine–Balonne catchment flow down the Condamine River at St George where flows are confined to a large channel before the river fans out into a deltaic system with the four rivers of the Lower Balonne. Much of the irrigation development, that has catastrophically altered the Lower Balonne, is near St George and downstream on the Condamine–Balonne, but upstream of much of the Lower Balonne floodplain (photo, R. T. Kingsford).

overland flow on the floodplains of irrigation properties into a volume of water extracted. This development occurred despite an embargo in 1992, on the issuing of water harvesting licences. Access to this overland flow, our economic lifeblood and essential for the environment, was at no cost to the irrigation industry apart from their infrastructure and taking the water from the river. The water was free. Initially, there were also no limitations on the volume of water that could be diverted: if the pump was large enough and the water was there, it could be diverted into storage. All this water resource development occurred without a single environmental impact study.

The largest irrigation property is Cubbie Station on the Culgoa River, with a licensed storage capacity of 538 800 ML (Sydney Morning Herald 2009), about the same as Sydney Harbour. It has the capacity to take most of a flood. In 2004, Cubbie Station filled its storages to 25% capacity and the flood destined to reach Brenda Station stopped. Our water problems started when Cubbie Weir was built in 1986. It holds back water and moves it into a diversion channel, which is about three times larger than the main channel of the Culgoa River. Our records showed that before 1986, flows of 1000 ML/day for six days (i.e. 6000 ML) reached Brenda Station. In 1989, the height of Cubbie Weir was increased and now flows of 12 000 ML no longer reach the New South Wales and Queensland border, 30 km upstream of Brenda Station homestead. Even our guaranteed supply of stock and domestic flow did not reach us for the second flood in a row in July 2005.

## The impacts

Brenda Station is an official recording station for the Bureau of Meteorology for river heights and rainfall. There were 110 floods from 1905 to 2005 at Brenda Station, averaging one about every 11 months. The homestead was never out of water between 1890 and 1992. In 1993, we were without water for 10 months and another four months in 2003. These were drought years, but the river still reached Brenda Station during the worst drought of 1943–47. Average annual rainfall for 2001–05 was 295 mm compared to 173 mm for 1943–47. The river often used to run continuously for a year before water resource development.

This development reduced river flows at the end of the Culgoa River by 58% (CSIRO 2008). The environmental effects were tragic and depressing. We had hundreds of dying or dead river gums (*Eucalyptus camaldulensis*), coolibah (*E. coolabah*) and river cooba (*Acacia stenophylla*), and thousands of hectares of dead lignum (*Duma florulenta*) (Fig. 15.2b). The latter provided nesting habitat for bird life and was very important food for livestock. At the same time, terrestrial plants such as rolypoly (*Sclerolaena muricata*) invaded the floodplain. Six fish species in this system are endangered. Waterbird numbers have declined. In 1996 the New South Wales and Queensland governments gazetted the Culgoa National Park, an 80 000 ha area to protect river red gums, coolibah and lignum communities dependent on flooding. These areas will continue to degrade over the coming decades.

## Transferring our wealth upstream

After 1999, we did not get even a low flood for over six and a half years, and seven years for a moderate flood. Before 2004, a river flow peaking at 65 000 ML/day, at Jack Taylor Weir at St George, produced a moderate flood, inundating 24 000 ha on Brenda Station (e.g. 1994). Contrastingly, the 2004 flow peak of 66 802 ML/day, a major flood at St George, did not flood a single hectare of Brenda Station, nor anywhere south of the Queensland border. Our income was transferred upstream, as we lost production from livestock and dryland farming, a loss estimated to be \$568 735 in 2004. Carrying capacity for sheep and cattle respectively decreased by 30% and 45%. The Queensland Department of Natural Resources offered no explanation when we met them. Instead, the Queensland water agency continued to allow diversion of water for irrigation in 2005, when people downstream on the Culgoa and Birrie Rivers had to cart water for essential domestic supply.

The extent and frequency of flooding decreased. We even had to build four off-river storages to supply our livestock with drinking water, without any financial assistance, for a service that the river used to provide for free. We also had to pipe water to parts of Brenda Station previously supplied with flood waters. Next, we had to fence off large sections of the river because livestock could cross the river, which had been a natural barrier. These real costs were incurred by many along these rivers and yet never recognised in any socio-economic analyses, until relatively recently during the Northern Basin Review (Murray–Darling Basin Authority 2016b). Further, the land lost value because reduced flooding decreased productivity (Fig. 15.2). For example, nearby Balgi Station had its land rates reduced by 30% in 2003. The properties became harder to sell. Upstream development with the irrigation simply shifted the wealth from a huge area of landholders to a small area of irrigators.



**Fig. 15.2.** The impact on our livelihood was catastrophic with declining productivity of the land and devastation of the environment as the floods stopped coming. This shows (a) the incredible response of floodplain vegetation after the 1983 flood, before upstream development of the river and (b) the results of upstream water resource development in 2004, taking the floods which we relied on and killing these long-lived trees on the floodplain (photos, P. Petersen).

## Consultation

There was no discussion about developments, authorised by the Queensland Government, with downstream communities or even the Government of New South Wales. The entire Queensland water allocation management planning process was consistently weighted heavily towards the irrigation industry. Considerable concern mounted during the late 1990s and 2000s about the inequities of the planning process (Tan 2000; see Chapter 21). In 1999–2000, the Queensland Government developed a Water Allocation Management Plan. There was consensus among stakeholders about the plan, recommending cutbacks and restrictions. The irrigation industry objected to the modelling and planning began again with considerable national and state controversy. This was the catalyst for the Premier of Queensland, the Honourable Peter Beatty, to commission an enquiry headed by freshwater ecologist Professor Peter Cullen.

There were four terms of reference for review: (1) the hydrological modelling by the Queensland Department of Natural Resources for the Condamine–Balonne Basin; (2) the current ecological condition of the Lower Balonne river system, including its floodplains and wetlands; (3) the current relevant scientific information in order to propose an ecological definition of the health of the working river applicable to the Lower Balonne context; and (4) the range of likely future ecological conditions and trends in the health of the Lower Balonne river system, including its floodplains and wetlands (Cullen *et al.* 2003). The scientific report concluded that the time lag was too short to clearly demonstrate impact, but ‘there will be significant long-term degradation of the Lower Balonne Floodplain and of the Narran Lakes in particular once the system experiences the water extraction that is possible with the present infrastructure’ (Cullen *et al.* 2003). Further, the report concluded that the full impacts would not necessarily be fully obvious even in 40 years, given high flow variability. The report was substantially ignored because it was equivocal in the short term, with different sides choosing sections from the report that supported their positions.

Water resource planning started again, requiring a Community Reference Group of 22 members, including 12 members, with the Chair from the irrigation industry and only four from New South Wales, of which three were floodplain graziers, including myself, and the other a councillor from Brewarrina. The remaining members were from local councils and management groups in Queensland. No one provided input from the New South Wales Government. Concerns of floodplain graziers downstream about the river and floodplain were largely neglected when the Queensland Government legislated the plan in August 2005.

Nothing addressed the problem of downstream impacts or reduced extraction. There was only one small concession. If, after a dry period, there was a flood with a peak of 60 000 ML/day, which would flood a smaller downstream area than a natural flood peaking at 20 000 ML/day (i.e. before development), there would be a 10% reduction in diversions for up to a maximum period of five days. Further, this water was only ‘borrowed’, allowing it to be taken in the future for irrigation. In 2004, this concession would have only have delivered a meagre 4902 ML (a 10% increase), divided between four rivers.

Sadly, the New South Wales Government was missing in action, meekly accepting the inevitable consequences for the downstream river and its floodplain. The planning processes

remained largely parochial. The Queensland Government showed further contempt for transparency and equity by appointing a local irrigator as the facilitator to the newly formed ministerial advisory council, charged with implementing the water resource plan and the resource operation plans. There were inevitable beneficiaries from the licensing of overland flows. Our consistent requests for an independent facilitator were ignored.

We would like to see the complete abolition of overland flow allocations. We want an annual volumetric cap placed on all water harvesting, replacing the current practice of filling up irrigation storages with flows above a threshold, regardless of how many times the river flows. We want pumps to be metered and diversions policed. Water has been pumped illegally from stock and domestic flow, but no one has ever been convicted of any offence. Flows must be allowed to run right through the rivers before water extractions are permitted. There also needs to be improved communication between the Queensland water agency and landholders downstream. No repayment of water by downstream users should be made to irrigators. Flows are marginally increased under the Murray–Darling Basin Plan, but long-term consequences and damage remain. The recommendations of the Northern Basin Review continue to reinforce the inequities, with the irrigation industry largely convincing the Murray–Darling Basin Authority that the 390 GL of water to be returned to the environment under the Murray–Darling Basin Plan should be cut by ~30% in the Condamine–Balonne (Murray–Darling Basin Authority 2016a).

## Conclusion

We have always wanted a fair share of the water that was once ours. We relied on the natural flooding of the floodplains for grazing and watering our livestock and for our domestic needs (Fig. 15.2). The consequences of upstream irrigation development will continue to have major economic and environmental impacts. My husband and I lived on the Culgoa River for 27 years and watched with great sadness the continuing devastation of the river environment. It remains a disgrace that irrigation on our river could take so much water to the detriment of people and the environment downstream. It may be legal, but it remains morally wrong. We fought a losing battle against the wealthy and politically connected. We hold the Queensland Government responsible for the socio-economic and environmental mess. They simply allowed development to occur, oblivious to the downstream impacts, already obvious in many parts of the Murray–Darling Basin. The effects of this development were disastrous, economically, environmentally and emotionally.

## References

- CSIRO (2008) 'Water availability in the Condamine-Balonne. A report to the Australian Government from the CSIRO Murray-Darling Basin Sustainable Yields Project'. CSIRO, Canberra.
- Cullen P, Marchant R, Mein R (2003) 'Review of science underpinning the assessment of the ecological condition of the Lower Balonne system. Report to the Queensland Government'. The State of Queensland, Brisbane.
- Kingsford RT, Brandis K, Thomas RF, Knowles E, Crighton P, Gale E (2004) Classifying landform at broad landscape scales: the distribution and conservation of wetlands in New South Wales, Australia. *Marine and Freshwater Research* **55**, 17–31.

- Murray-Darling Basin Authority (2016a) *Environmental Outcomes of the Northern Basin Review*. Murray-Darling Basin Authority, Canberra, <[http://www.mdba.gov.au/sites/default/files/pubs/NBR-environmental-outcomes-Oct-16-v2\\_1.pdf](http://www.mdba.gov.au/sites/default/files/pubs/NBR-environmental-outcomes-Oct-16-v2_1.pdf)>.
- Murray-Darling Basin Authority (2016b) *Northern Basin Review – Technical Overview of the Social and Economic Analysis*. Murray-Darling Basin Authority, Canberra, <<http://www.mdba.gov.au/sites/default/files/pubs/NB-social-economic-technical-overview%20final-Dec16.pdf>>.
- Sydney Morning Herald (2009) Wong won't force Cubbie to sell water. *Sydney Morning Herald*, <<http://www.smh.com.au/environment/water-issues/wong-wont-force-cubbie-to-sell-water-20090817-emw0.html>>.
- Tan P (2000) Conflict over water resources in Queensland: all eyes on the Lower Balonne. *Environmental and Planning Law Journal* **17**, 545–568.