

Submission
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**INQUIRY INTO RATIONALE FOR, AND IMPACTS OF,
NEW DAMS AND OTHER WATER INFRASTRUCTURE IN
NSW**

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SUBMISSION

to Portfolio Committee 7 on the

Rationale for, and impacts of, new dams

and other water infrastructure in NSW

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Introduction

The Clarence Environment Centre (CEC) has maintained a shop-front presence in Grafton for over 30 years, and has a proud history of environmental advocacy. The conservation of Australia's natural environment, both terrestrial and marine, has always been a priority for our members, and we believe the maintenance of healthy ecosystems and biodiversity is of paramount importance.

Discussion

Water is not an unlimited resource. No matter how many dams are built, it will not increase the amount of water, they merely reduce the amount of water flowing naturally down river systems, and instead make that water available for other purposes.

As world populations explode, water has become a scarcer, and more valuable commodity, and in an age where economic considerations exceed all else (aka greed), water has become tradeable, and is fast becoming un-affordable as wealthy entities, very often non-users, buy up licences and water rights to sell at a profit.

Weak regulations, and even weaker compliance monitoring and enforcement have added to Australia's water woes, and in NSW this has led to water theft, in a variety of forms, and even corruption. This is particularly so in the Murray – Darling Basin, which is always the main focus of water infrastructure provision in this state.

The failure of governments at all levels to acknowledge that water is not infinite, has led to calls for more dams and pipelines to redirect entire river systems to other parts of the continent, to make up for shortages resulting from past over-allocation of water licences. These plans are proposed with little or no consideration of environmental needs, or cost-benefit analysis.

However, behind all of these grandiose, taxpayer funded schemes, there are invariably those that stand to make a great deal of money.

As far as the Murray-Darling Basin is concerned, it needs to be understood that no matter how much water is made available, those economic drivers will ensure that no additional water will end up as environmental flows, or even reach the mouth of the river.

Damming the Darling River Catchment

There are some huge dams in northern NSW, on what is known as the North-west Slopes, Keepit, Glen Lyon, and Copeton, to name a few. All of those dams spend decades at a time with barely any water in them through lack of rain, mere 'puddles' surrounded by tens of thousands of hectares of weed-infested wastelands rather than stored water.

Despite this, every decade or so one government or another will seek to make political mileage by announcing a scheme that will ensure out-back NSW will be drought-proofed as a result. Currently there is 'chatter' about reviving the Mole River dam, a storage that will likely be unfit for human consumption, because of pollution from an historic arsenic mine which already impacts the Mole.

One argument used to support the building of that dam in the past, has been that it would be used to regulate down stream flows and maintain environmental flows during drought. However, there is no money to be made from environmental flows, and none of that water would flow past thirsty, drought stressed irrigation crops along the way. The message being, if there is water there someone will demand access to it, and the environment will lose out yet again.

Turning coastal rivers inland – The decadal revival of Bradfield's grand vision

Being cognisant of the problem of filling any new dam on the Northwest Slopes, proponents expand on the immediate water needs of the region, by promising “environmental flows” and grand plans for the drought-proofing of inland NSW. This is done by proposing to fill them from the supposedly inexhaustible supply of water flowing to waste in the ocean along coastal river systems.

The Clarence River has been a constant target for such proposals for close to 100 years, beginning with Bradfield's 1928 vision of 'turning around' numerous east coast rivers. As in that case, every subsequent proposal has been dismissed because they made no economic or environmental sense.

Despite this, the proposals keep on coming, supported by mythical facts and figures that have been passed down through time. One classic example is the Clarence River's 5 million megalitre average annual flow. This was the basis of the Snowy Mountains Engineering Corporation's (SMEC) 2007 feasibility study into the damming of the Clarence River to provide water to South-east Queensland.

The Clarence Environment Centre investigated that claim after finding that the average annual flow recorded over the 35 year life of the gauge at Lilydale, on the edge of the tidal pool near Copmanhurst, was a mere 3,072,884ML per year, and in the 15 years to 2007, the average was under 2 million megalitres, with 6 of those years delivering less than 1 million. We have not had the time to check the last 13 years, but suspect the average has likely dropped even further over that period as a result of increased extraction for irrigation on the Upper Clarence.

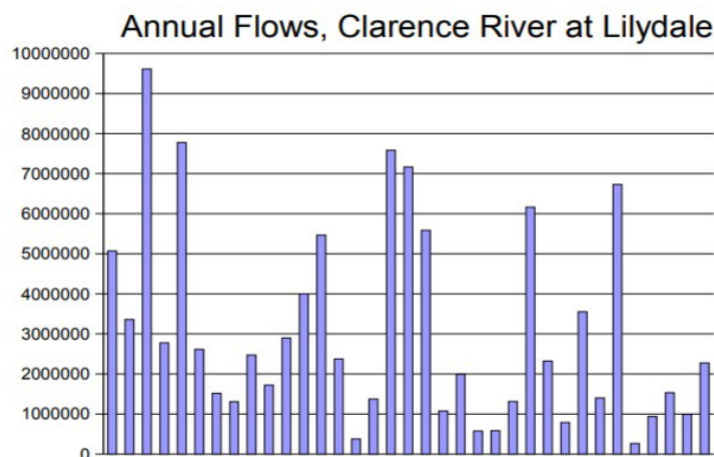


Table 1. Annual flows of the combined river flows in the Clarence River measured at Lilydale between 1970 and 2006

So where did the 5 million ML figure come from? SMEC's desktop study claims to draw on a previous study, the NSW Water Resources Commission's "Possibilities for Inland Diversion of NSW Coastal Streams" (Rankine & Hill 1981). That report also led to the 1988 "Inland Diversions – Where to from here" investigation by the then NSW Department of Water Resources. The report on that seminar also makes the 5 million megalitre claim, but also reveals that the Rankine and Hill report was "a preliminary investigation", and that: "The, Consultant's desk-top exercise relied on readily available information...".

Undoubtedly one of the sources of that 'readily available information' that has perpetuated the myth was a report presented by the Clarence Valley Interdepartmental Committee on Water Resources (June 1975). The CEC obtained a copy of that report (The Jackadgery Multi-purpose Dam Project), which again made the claim (p 6) that the Clarence "has a long-term average annual runoff of some 5 million megalitres." Unfortunately that 37 page report does not provide a single reference.

So the origin of the 5 million megalitre myth may never be known, but it makes for more compelling reading than 2 million, especially if you are proposing to pump 1 million ML inland.



Frequently referred to as The "Mighty" Clarence, this 106 kilometre tidal estuary gives the casual observer a misleading impression of unlimited potable water. In reality, should the river cease to flow, there would be no visible change in the the river at this point.

Consequences of River Diversions (specifically relating to the Mann River) As identified by NSW Department of Water Resources (Don Geering, 1988):

- Reduced visible amenity, more prominent mud banks and river bank slippage, resulting in a reduction in the health of river bank vegetation with an increase in weeds.
- The prawn-trawling industry relies on 'freshes' in the river to trigger spawning runs. As these freshes would become less frequent, the multimillion dollar industry would be jeopardised.
- Many freshwater fish species such as the Australian Bass and the Eastern Freshwater Cod rely on large water flows to trigger spawning runs. The reduction of flows is likely to severely impact fish populations, and adversely influence recreational fishing.

- Fish diseases such as Red Spot appear to be related to poor water quality. Reduction of flows will tend to further concentrate pollution and increase these problems.
- Fish populations could be seriously affected to the detriment of commercial fisheries, tourism and recreation.
- Tidal prism. Reduced flows will result in salt water being pushed further upstream. Tidal velocities will tend to increase, with possible affects on bank stability.
- Dams occupy land that could otherwise be productive, and serve to sterilise economically and environmentally valuable areas.
- The Mann River is a designated wilderness area, with much of its surrounding forests world heritage listed. The proposed storages will significantly affect those values and lead to substantial tourism loss.
- The Eastern Freshwater Cod survives only in a very limited area.
 - The proposed dam sites contain much of the species' best remaining breeding sites.
 - Recent research indicates that some aquatic plants, critical to fish species for food and shelter, succumb to higher levels of salinity, placing those fish species at risk.
 - The Eastern Freshwater Cod is an endangered species under greater threat of extinction than the Giant Panda

Other known impacts resulting from inter-basin transfer of water:

- Changes in water temperature – full impacts not known.
- Reduction of nutrient flows onto the floodplain and into the ocean.
- Interruption of sedimentary flows, also critical to fish species such as endangered Eastern Freshwater Cod.
- Destruction of threatened species and endangered ecological communities.
- Destruction of threatened species' habitat.
- Massive fragmentation of forest habitats by pipelines, power lines, and inundation of river valleys.
- Regulation of flows does away with the natural rise and ebb of water levels following each rain event.
- Potential erosion and siltation of receiving waterways, which may not be accustomed to such volumes of water.
- Potential transfer of species, vertebrates and invertebrates, into waterways in which the species may not exist, the impacts of which are not known.
- Potential transfer of aquatic weeds into rivers that may not currently have those problems.
- Potential transfer of diseases such as the fungal root rot pathogen *Phytophthora cinnamomi*, a listed key threatening process under both State and Federal legislation.
- Potential increased flooding in the receiving river system.
- Climate change implications through loss of carbon-storing forests and construction emissions.
- Many of the above impacts are not restricted to the construction phase (dam, pipelines, power lines etc).

Relevant quotes:

- ***“It is apparent that any proposal to divert substantial quantities of water from the Clarence would present significant risks to the health of riverine ecosystems, and those activities and values dependent on them.*** (Commissioner Peter J. Crawford, Healthy Rivers Commission: Final Report, November 1999 (page 156)).
- ***It is important to note that freshwater flows through catchments or into the ocean are not wasted. It is an essential element of downstream ecosystems.***” (The Hon Malcolm Turnbull, Minister for the Environment and Water resources, 2007).

- *"...we move beyond last century's solutions. Building a dam... would be an expensive, ineffective response - it would take years to build and even longer to fill, not to mention the damage done to the surrounding farmland and natural areas."* (Late Premier of NSW, the Hon Bob Carr).
- *"In environmental terms, the no dam option would be highly desirable and beneficial"* (Recommendation of the World Commission on Dams)

Floodplain harvesting

Floodplain harvesting, poor regulation and inadequate compliance enforcement has been an environmental disaster. It has opened the doors to widespread roting of the system that was not intended. Scooping out a dam on a floodplain to capture and store floodwaters is one thing, but we do not believe that the building of 40km to 50km long embankments, that prevents all run-off, not only flood water, from reaching the river, was ever the intention of those drawing up the legislation.

The impact of farm dams east of the Dividing Range

The burgeoning Intensive horticulture industry is having a major impact on water, both supply and quality. In the Coffs Harbour area, dams, often far in excess of the size officially allowed to store 'harvestable rights', have been dug in so many first and second order streams, that third order streams no longer flow except in flood times. All of that stored water is water that never reaches the rivers, with the result, that rivers like the Orara now flow at significantly lower rates than in the past. This trend has to be addressed.

Regulatory failure

Regulatory failure is widespread, as has been revealed through the media, particularly via a number of ABC News investigations, a fact we suspect is one of the reasons behind the vocal minority clamouring to have the ABC de-funded. These issues have been well aired already, so we will focus on a local issue.

Numerous complaints were aired about the lack of regulation and compliance monitoring in relation to the blueberry industry from members of the community (including the Clarence Environment Centre which began its campaign to have the industry regulated as far back as 2007). A few years later, An inter-agency blueberry advisory committee was formed in response to a deluge of complaints on all aspects of the industry's operations, from illegal land clearing and dam building, causing erosion and pollution of streams, to excessive and careless pesticide use, under-payment of workers, use of illegal overseas labour, to harassment and threats to neighbours.

The Advisory Committee had no powers to prosecute, merely to advise and "encourage" best practice. However, that Committee noted in their minutes (15th February 2017) that many in the industry regarded fines as a cost of doing business, a clear case of regulatory failure. I one orchardist, found to have illegally cleared land, had been ordered to rehabilitate that land, illegal clearing would have stopped overnight. Instead, they were prepared to pay the fine and continue in business.

It wasn't until 2019, 12 years after the Clarence Environment Centre had first raised concerns, that State Government undertook a reported "blitz" on water use by horticulturalists in the Coffs Harbour region. Their media release claimed: ***"Compliance with water take rules in the North Coast is a regulatory priority in response to public concern that has been received"***. According to the Natural Resources Access Regulator (NRAR), during the first 2 stages of that "Blitz", in May 2019 and February 2020, their investigators visited 31 properties and found 28 to be allegedly non-compliant with NSW's water laws.

This finding that almost all orchardists in the area were flouting the law, and despite the industry having been warned beforehand about the proposed inspections, clearly shows their total disregard for regulations. In fact, 16 months after the first stage began, the third stage investigation is still finding breaches. What we find remarkable is, after all the tax-payer support and mentoring the industry has received over the past decade from agencies like Local Land Services, NRAR now reports it ***“has been working with industry groups and stakeholders in the region to educate and improve compliance and attitudes to water laws”***. No real prosecutions have taken place it seems, just more tax-payer funded advice, ***“using industry newsletters, video and web-based conferencing”***.

After 15 years of blatantly ignoring regulations, serious action needs to be taken against these serial offenders, yet governments at all levels are still refusing to require development applications or water management plans to be presented for approval by the intensive horticulture industry. They can take a bush block, clear it of vegetation, build dams and transform the entire countryside into a sea of plastic without the need for any approval whatsoever.

They are putting other industries and human health at risk, and they must be pulled into line. As stated earlier, water is a very precious commodity, and has to be treated accordingly.

Threat to water resources from mining

The fact that Santos' Narrabrai coal seam gas enterprise in the Pilligar State Forest is still being considered is bewildering. With the future of the planet at risk from global warming as a result of emissions from the burning of fossil fuels, that project also poses a threat to the Great Artesian Basin. So why hasn't it been ruled out?

Again, we will not focus on that issue which no doubt will be covered more effectively by others. Instead, we will look closer to home.

The Coffs Harbour – Clarence Valley local government areas share a number of things in common, and the most important of those is the Coffs – Clarence Regional Water Supply. That water is sourced from the Dorrigo Plateau, to the west of Coffs Harbour and south of Grafton.

The Plateau is renowned for its high and reliable rainfall, and rugged mountain scenery, clothed in tall eucalypt forests and rainforest. However, for the past 15 years at least a number of minerals exploration companies have been drilling across the area searching for anything that is worth digging up. Heavy and rare metals are a high priority, but many of those are either highly toxic, or require toxic processes to extract them. There is already a serious pollution problem from historical antimony mining on the Plateau, and with gold and copper both having been found, the risks to water sources are very real if mining was to occur.

Only this week we saw an announcement by Christopher Wilson Investments, about two mining leases that they have taken out totalling a massive 198 sq kms, much of it across the regional water supply catchment. In the past, in response to our expressing concerns at these exploration activities, we have been 'fobbed-off' with statements such as ***“it's only exploration, just drilling a hole in the ground, there's no environmental threat at all”***.

While this may be true, if a viable mineral resource was found, the company in question would have an expectation to be allowed to extract that resource. Frankly, it would not be fair, having allowed the exploration to take place, potentially at the cost of millions of dollars, for the government to reject that mining application. As we see it, the mining leases need to be re-mapped across the whole of Australia to identify sensitive areas, drinking water catchments, heritage sites, and places of environmental significance, where mining simply should not occur, and declare them off-limits.

Impacts on water supplies from forestry

As with mining, the timber industry's activities across the Dorrigo Plateau, and most likely across other urban drinking water catchments in NSW, are having a very negative impact on water quality. Pristine forests will filter water run-off to drinking water standard, but whenever the region experiences heavy rain, the water from the Nymboida River is unusable, sometimes for weeks, because of turbidity caused to a large extent by the activities of Forests Corporation, particularly with their clear-felling of plantations.



This is the scene of the Clouds Creek state forest pine plantation, clear-felled and cultivated as far as the eye can see. This work was undertaken across drainage lines almost to the river itself, and the erosion potential was huge. This type of stupidity simply has to stop.

Forest Corp's high intensity logging operations are almost as bad, with massive soil disturbance, and a mere 5m buffer along drainage lines, and no buffer at all if the drainage line or gully doesn't happen to be marked on the topographical map.

Native forest logging has been losing millions of dollars annually, so taxpayers are not only footing that bill, they are having their drinking water polluted in the process. Why is this being allowed to continue?

As well, most, if not all, state forests in the Nymboida River catchment are leased out for cattle grazing, with cattle trampling creek banks and defecating in the waterways. Again, why is this allowed?

There are also grazing properties all around the Nymboida weir which is the 'take-off' point for the Coffs – Clarence regional water supply. Few of the river and creek banks are fenced to prevent their cattle from accessing our drinking water.

Climate Change

Water is very likely going to be a lot scarcer as the planet heats up. Water stored in dams, and conveyed along open irrigation channels, will dissipate faster through greatly increased evaporation rates from their expansive surfaces. For the same reason it will dry out across the entire landscape, particularly irrigated land, making the demand for agricultural water even greater.

In conclusion

The lack of concern for water quality, shown by our political leaders, legislators and regulators, is mind-boggling, and something needs to be done to rectify that.

We strongly believe that more dams are not the solution, Australia must plan within its means, and not continue to expand its agricultural activities, or urban populations beyond the point where adequate water cannot be guaranteed. Our state and local government planners continue to expand populations in the pursuit of “growth”, and then run about in a panic when they run out of water.

We need to be smarter about the crops we irrigate, and focus on dry-land food crops rather than fibre. We need to protect water from all polluting activities, including agricultural and urban run-off, drilling and hydraulic fracturing for gas mining, and underground mining that might impact aquifers. We also need to stop the exploitation of underground water supplies from water mining for bottled water. That activity not only depletes underground water supplies but adds massively to the plastics pollution problem. And finally we need to fence off waterways to exclude cattle.

We thank the Committee for the opportunity to comment

Yours sincerely

John Edwards
Honorary Secretary