

SUBMISSION TO REGIONAL WATER STRATEGIES

Far North Coast Strategy

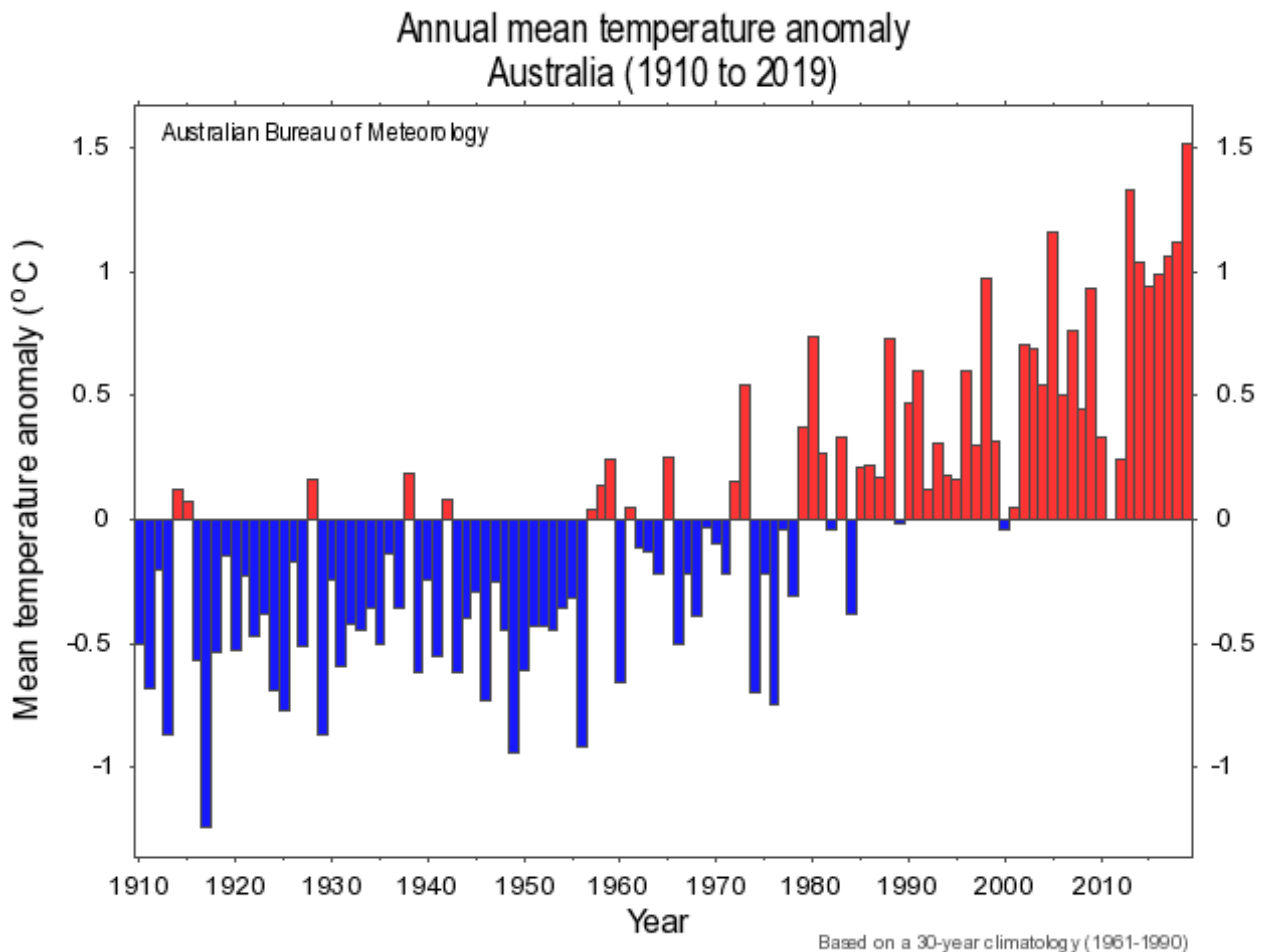
OVERVIEW

I am a retired mental health professional and health sociologist. I have been, concerned about climate change for the past 30 years. I instructed health and social science students, both verbally and in written study guides, about the environmental, health, social and emotional impacts of the rising levels of greenhouse gases in the atmosphere, over the period of my employment at Southern Cross University.

The body of knowledge about climate heating is now huge, covering multiple aspects from overviews to fine details. I will simply quote the words of Professor Tim Flannery. 'As I write, humanity stands at a fork in the road. Unless we act decisively to phase out the use of fossil fuels, global temperatures will exceed a 2°C-rise above the pre-industrial level in a few decades, and we will risk committing every human to climatic shocks and catastrophes that will destroy our civilisation and precipitate mass extinctions', (2020:1) (1).

Tipping points, such as the collapse of gigantic ice sheets, which cannot be remedied, seem perilously possible. Such points have the potential to set off cascades of other catastrophes.

The following graph illustrates the heating climate in Australia:



Despite the alarm I feel regarding the federal government's lack of an effective climate policy, the states, including New South Wales have much more robust policies, which give me

encouragement and hope. However, we need to act quickly and efficiently, with all options on the table across all government departments.

The present climate crisis has been described as an existential threat, a potential catastrophe and a wicked problem. In looking for solutions, can these ideas be of assistance?

1. David Spratt and Ian Dunlop (2019) (3), long term Australian researchers of climate change, suggest that climate change can usefully be viewed as an existential threat, a threat to something's very existence—when the continued being of something is at stake or in danger, in this case, life on earth.

This claim is useful in that it alerts us to the critical nature of climate change. This is an essential first step. Without some sense of alarm we are much more likely to espouse a 'business as usual' approach to problems.

2. Potential Catastrophe

The International Panel on Climate Change publishes regular reports. In October 2018 a landmark report claimed that we had 12 years to act, to keep climate heating at the 1.5 degree level of warming recommended in the Paris accord, to avoid climate catastrophe (IPCC, October, 2018) (4). Again, a useful first step, but Australia has virtually wasted two of those twelve years, and we're lagging well behind other developed nations. So it seems as though that warning is insufficient to elicit action.

3. A Wicked Problem

Toman (Sep 30, 2014) (5) described the task of mitigating global climate change as a 'wicked problem'. "Climate change is an issue that presents great scientific and economic complexity, some very deep uncertainties, profound ethical issues, and even lack of agreement on what the problem is."

From my perspective, addressing climate change as a wicked problem is the most effective and efficient way to proceed. The idea of a problem, lends itself to the natural response of seeking solutions. Creativity, diversity and flexibility are the basis for this approach, whereas more traditional, single-focus 'solutions' often end up making the situation worse. So, if creativity, diversity and flexibility of approaches are acknowledged characteristics of problem solving of wicked problems, these should be the hallmarks of proposed solutions.

When approaching climate change in this way, components of the problem, such as water security, can also be seen and strategised as wicked problems. Fortunately, the DPIE in NSW appears to be heading in that direction, with a range of ideas on the table. Within the proposed Far North Coast Water Strategy, two proposed ideas stand out in relation to this need to address complexity. One, recycled treated waste water for drinking purposes, is completely in line with this approach... and the other, the proposed Dunoon Dam, is in complete opposition. I can only trust that science, logic and effective consultation will overrule any opposition to the former. So in this submission I will focus on opposing the latter, the poorly researched and very destructive Dunoon Dam.

DUNOON DAM OBJECTION

MY QUALIFICATIONS AND EXPERIENCE

I have lived my whole life on the driest populated continent on earth. I am dismayed by the modern non sustainable attitude to water. It is clear that water security is a critical issue worldwide, and there is a robust conversation and effective interventions in the area of water management.

I have been a resident of the Northern Rivers region for the past forty plus years, thirty five years of which, I lived on properties without access to town water. I grew up in the Manning District, where I spent my first 16 years on a dairy farm. On our farm we managed our own power, water,

waste disposal and transport systems. We learned to balance our resources budget, living closely with and depending on natural systems.

Given my experience, I am well qualified to comment about water management. On moving from a rural property into Lismore, I am appalled by the cavalier attitude to water. I have observed worrying water wastage from leaking reservoirs and mains, within the local area of my daily walks.

Career wise, I am a retired sociologist and mental health professional, which means I have a keen interest in the social and emotional impacts of developments, especially in my region. This includes the Dunoon Dam project, which I DO NOT support.

Herewith are the reasons for my OBJECTION to the proposed dam development.

ENVIRONMENTAL IMPACTS

We are living in a time of transition. We now accept the urgent need to move from squandering our natural resources, to living sustainability and managing the resources we depend upon. We are living climate change. The quick and easy solutions of the past are no longer viable. We are also realising the importance of our connection with nature to our mental, emotional and physical wellbeing.

Impact on Rain Forest

Overall, rainforest is decreasing in NSW and Australia generally. During the last unprecedented bushfire season rainforests burnt, for the first time. It has been estimated that 5.4 hectares of forest was burned in the catastrophic fires of last fire season, including a third of the state's rainforest. The affected area includes more than 3.5m hectares of the state's best koala habitat. (Guardian Australia, June, 2020). (6)

In addition to catastrophes such as bushfires, much of the clearing of our forests is deliberate. The main causes of total clearance are agriculture and in drier areas, fuelwood collection. The main cause of forest degradation is logging. Mining, industrial development and large dams also have a serious impact.

One strategy commonly applied to "soften the blow" of developments is biological offsetting. It can be argued that the logic underpinning biological offsetting is questionable. If a biological "asset" is rare or threatened enough to require offsetting, it should not be destroyed or damaged in the first place. The idea that a dollar price can be put on unique flora and fauna is a nonsense.

The suggested offset in the case of the Dunoon Dam is particularly ludicrous. To claim that there is any equivalence between rainforest on sandstone and degraded farmland is particularly onerous, they are simply impossible to compare and the latter simply cannot be "developed" so as to make them equivalent to any degree.

The rainforests of north-east NSW have been ravaged by both fire and drought leaving animals packed into the remaining areas. "Across the fire-grounds most leaf litter, logs and under-storey plants were burnt, along with their inhabitants. Many tree bases were damaged," said Mr Pugh. (Mar 13, 2020). (7)

This means that any remaining rainforest needs protection, especially lowland rainforest growing on sandstone. The only ethical conclusion is that The Channon gorge must be protected, and the dam project abandoned.

Impact on Mammals

Australia is home to several unique and iconic species of animals. Most well known being the koala. Even more fascinating are our two monotremes, or egg laying mammals, the platypus and the echidna. "As one of the world's most evolutionarily distinct mammals, the platypus has long been regarded to be of exceptional scientific importance as well as a globally unique component of Australia's biodiversity" (Bino et. al 2019:308). (8)

Australia has an appalling history of extinction of our mammal species. I will address just two; the koala and platypus, populations of which have been severely impacted by the extensive drought and the unprecedented bushfires of the last few years.

Koalas

The unprecedented bushfires of last fire season caused catastrophic losses of our iconic koalas. Their present conservation status is recorded as vulnerable, though some would say they are functionally extinct.

“Koalas are considered vulnerable to extinction—just a step above endangered—and reports indicate that between 350 and a thousand koalas have been found dead so far in fire-devastated zones of northern New South Wales” (Daly, 2019) (9). The dam would wipe out essential prime koala habitat, which has favoured koala food eucalyptus species, growing on basalt substrate and really rich soils, which provide superior nutrition (Nicholson, 2020). (10).

The local Landcare group has laboured for three years in which time it has planted close to 3000 koala food trees, building critical corridors for koala movements. The Dunoon Dam would cut across the corridors creating a huge barrier to movement between populations, increasing the risk of functional extinction.

Platypus

Platypus habitat has become critical due to the severe loss of animals during the recent severe drought. Other factors involved in their decline are land clearing, predation and dams.

One of the factors used in marketing the Dunoon Dam is recreational fishing, which is considered a hazard for platypus, which can become tangled in lines and punctured by hooks (2010). (11). The presence of recreating humans leads to an increase in inappropriate rubbish disposal, and platypus have been shown to become entangled in all manner of detritus.

Dr Gilad Bino, an internationally-respected platypus researcher at the UNSW Centre for Ecosystem Science, said “Action must be taken now to prevent the platypus from disappearing from our waterways.” (2020) (12)

Researchers say platypus numbers may have halved or more since Europeans arrived in Australia, predicting local extinctions may have occurred across 40% of the species’ range due to dam building, land clearing and other disruptions, according to a study published in the scientific journal *Biological Conservation*. (Sirrat, June, 2020). (13)

Despite platypuses becoming far less common, their decline has barely registered with governments. That’s despite the International Union for Conservation of Nature (IUCN) recently downgrading the conservation status of the nocturnal animal to “near threatened”. (Sirrat, June, 2020) (14). This warning needs to alert all levels of government.

The studies upon which these comments are based were carried out prior to the unprecedented bushfires, which will also have had a detrimental effect on platypus habitat. With the continuing effects of climate change, conditions can only get worse for platypus. Therefore, it is essential that prime habitat, such as the water systems feeding the proposed Dunoon Dam, be protected.

The problems that dams create for platypuses include creating a barrier to the free movement, dispersal of juveniles and mixing of platypus populations. Animals are forced to the edges of the dam, due to optimal water depth requirements. The location of the edges will change many times as the dam fills, and are likely to be deficient in suitable banks for burrow construction, snags, food, and overhanging trees (Serena and Williams, 2010) (15). The long term build up of silt creates a surface unsuitable to the bottom dwelling insects upon which platypus feed.

Dams also have a negative effect on the areas below the weir in relation to platypus populations. These creeks can have reduced flow, even dry up, and at the other end of the cycle, experience sudden, strong flooding. In the case of large floods, the impact will be catastrophic, as banks are eroded, burrows are inundated for extended periods of time, animals are washed downstream, or

drowned, with juveniles being most severely impacted. They can also contract pneumonia or lose vital food sources as invertebrates are washed away (Serena and Williams, 2010) (15).

IMPACTS ON HUMANS

Dams are marketed as being beneficial. However, there are multiple negative effects on the human population. Those who live nearby will lose prime agricultural land and features of the landscape they love. There will be the noise of the construction itself and continuing increased traffic. For those who live further afield there will be the loss of beauty spots, while all will pay the higher price for water.

Structural or Institutional Racism

Racism has a negative effect on the mental health of Indigenous Australians. One, largely unrecognised form, is structural or institutional racism. Certain practices are so imbedded and normalised in non-Indigenous society as to not be recognised as racism. Structural racism has been a prominent feature of Australian society since colonial times, when it served the ideology of terra nullius, which theory held sway until the Mabo Decision of 1992.

A prime, and sadly very common example of structural racism, is the destruction of sites of cultural, emotional and spiritual significance, to Indigenous populations, during “developmental” projects. Such destruction can be deliberate (Pascoe, 2014) (16) or viewed as mere “collateral damage”, as in the present project. Regardless of the intention, the negative impact on Indigenous citizens is huge.

Quinn (2020:1) (17) describes institutional racism as follows: “Indigenous Australians continue to live with the legacy of centuries of racism that has produced gross inequalities in health and education, the disproportionate number of young First Nations peoples incarcerated, the unethical destruction of significant sites and cultural practices.”

Mickey Ryan, from the Bundjalung Elders Council, recently said the thought of the area being inundated [by the Dunoon Dam] was sickening. “To see things like that happening, destruction of sites, it makes me sick,” he said. (ABC, 2020). (18)

It is reasonable to suggest that structural racism is actually making Indigenous Australians sick, physically, emotionally and spiritually. Markwick et al (2019:1), (19) say, “Racism is a key determinant of the health of Indigenous Australians that may explain the unremitting gap in health and socioeconomic outcomes between Indigenous and non-Indigenous Australians.”

The destruction of sacred and culturally significant sites by the Dunoon Dam is an example of institutional racism. The destruction of sacred and culturally significant sites is so common in our society that it is rarely called out as the racism it truly is. As a consequence, the huge cumulative effect on Indigenous health and wellbeing is not taken into account in developments such as the proposed Dunoon Dam.

The Amenity of Peace and Tranquility

As a person who grew up on an isolated farm, I favour quiet, uncrowded surroundings, preferably with lots of green. I am sure that the people of The Channon value their quiet, village ambiance. Not only will the dam construction shatter that, but it will be gone for ever due to the loss of amenity of peace and tranquility (Thorne & Shepherd, 2013) (20) occasioned by noise from the pump house, added traffic, the sound of motor boats and similar. Such irritants impact on mental, emotional and physical wellbeing.

Loss of Community Harmony

Developments which are marketed as being beneficial to the community, and yet have a huge environmental and emotional price tag, are often divisive in otherwise harmonious communities. The Dunoon Dam project is divisive.

The Discriminatory Nature of Water Price Rises

The proposed dam is so expensive to build that water prices will rise by 400%. As always, price rises impact most severely on the most financially vulnerable citizens. As a general rule, these households are also the most vulnerable emotionally and physically. So, it's a double whammy on those who are most susceptible, therefore discriminatory.

THE SITUATION, PROBLEMS AND PROPOSED SOLUTIONS

The proposed Dunoon Dam is an excessively high price solution to water security. The price tag is not only financial, but also environmental, racial and community divisive.

With all due respect, it's a lazy, unimaginative, dated solution. It lets councils and consumers off the hook of taking responsibility. It's a solution that creates more problems than it solves, therefore, it's no solution at all.

General Problems With Dams

Dams inundate large areas, in this case, prime agricultural land and species' habitat. They change the water flow, sedimentation and chemical composition within the dam, and the streams below. They impact negatively on climate change by increasing greenhouse gas emissions. They have been found to alter the earth's rotation. They are barriers to the free movement of land and terrestrial animal species such as platypus and koalas, reducing gene pools and diversity. They inundate prime koala habitat, altering water flow, the chemical composition and substrate composition making it unsuitable for some marine species and the food on which they depend. Water flow is regulated in accordance with human needs, with little or no consideration given to other species' requirements. (21) and (22).

Dams worsen the impact of climate change. They release greenhouse gases, destroy carbon sinks in wetlands and oceans, deprive ecosystems of nutrients, destroy habitats, and waste water. (Dec 12, 2017) (23) and (24)

ALTERNATIVE SOLUTIONS

There is a robust dialogue and testing of innovative approaches to water management worldwide. Case studies are easily accessible from Denmark to Italy to Bangladesh and many other locations.

Water Efficiency

The city of Al Ain in the Emirate of Abu Dhabi (United Arab Emirates) managed to reduce its NRW [Non Revenue Water] levels from as high as 45% to 10% within one year for 19 District Metering Areas.

This case study illustrates many of the common strategies employed in water management. "The results were achieved through an integrated approach which included implementation of real-time hydraulic modelling, automated water balance calculations, installation of flow and pressure monitoring instruments as well as deploying noise loggers for automatic leakage detection and the Holistic Management Information System 'HOMIS' on top. HOMIS integrated all operational data systems such as GIS, SCADA, noise loggers, water quality sampling, customer care, billing and finances. By monitoring and reporting online KPIs, HOMIS helped the managers react and initiate corrective measures when specific KPIs [Key Performance Indicators] were outside the allowed target range. In addition, a dedicated training and educational programme elevated competencies within the utility at both operational and management levels. This has enabled Al Ain in moving towards a 24/7 supply and securing safe and economic operation of the city's drinking water system." (State of Green, 2016). (25)

Other strategies include, Asset Management Systems, Demand driven distribution and accurate metering. The point has been made that buying cheaper components is false economy.

Rous County Council could employ strategies that involve councils and consumers, including industry, more actively in water management and sustainability. For example, charge for water

based on reservoir levels, as Sydney does. Make water tanks mandatory. Involve school kids - they've shown they're concerned about their future. Invite them to be part of the solution. As suggested by Daniel Peterson, (2020), (26) employ solar powered water desalination plants could be built in appropriate locations.

Across the board education will be a critical part of many of these solutions. In order to take people with them and enthusiastically participate, Rous County Council will need to be clear and transparent about strategies that require local council and community involvement. Part of this education will be the constant updating of knowledge and skills within Rous County Council itself.

IN SUMMARY

I don't want the cheapest solution. I want the BEST solution. Indeed the best solution is likely to be the cheapest solution, once all the costs are counted. Rous County Council needs to sell a suite of effective, sustainable strategies that way to politicians - adding sustainability to their vocabulary.

The Dunoon Dam has been on the drawing board since 1990. The conservation status of our unique rainforest, platypus and koalas has only become more critical in that time. We have also been living with more severe impacts of global heating due to rising emissions. The structural racism underlying the destruction of Indigenous Australian culture and heritage continues apace, witnessed in the blasting of Juukan Gorge caves.

Given the evidence above, I submit that The Channon Gorge should be permanently protected, not obliterated by the Dunoon Dam. I absolutely OBJECT to this project.

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