Submission to the Far North Coast Draft Regional Water Strategy

[redacted]

[redacted]

I wish to thank you for the opportunity to make a submission to the FNC Draft Regional Water Strategy. The DPIE team has clearly gone to great lengths to include as many options as possible.

The online submission process proved to be rather confusing and limiting so I have opted to make a submission by email.

Option 14, a new dam at Dunoon is my primary concern. This submission covers three topics that I am particularly interested in and which I believe have not been given significant weight by Rous County Council in the discussions so far about Dunoon Dam: Aboriginal Cultural Heritage, Natural Heritage and the inadequate catchment for the Dunoon Dam.

I am a 68yo farmer and have lived near the Channon for the last 47 years. I am also a rainforest botanist and, with my husband [redacted] have written or published 6 books about rainforest, and collaborated in the production of an interactive rainforest identification key.

I am not a hydrologist or water engineer and do not have expertise in most of the numerous options covered by the Strategy. However, I am well appraised of the broad situation since I was a member of the Public Reference Group (PRG) for the Rous Future Water Project from 2008 till its disbanding in 2013.

[redacted] and I currently live at The Channon, about 1 km below the proposed Dunoon Dam. I have been opposed to the dam for 25 years but now, ironically, I find myself in a particularly vulnerable position. Two independent hydrologists have told us that they would not live where we do if the Dunoon dam goes ahead, due to the risks of (a) dam failure and (b) the potentially catastrophic over-spill effect in large floods. However, this submission to the Draft Regional Water Strategy does not concern our personal risk but my concerns about the losses to the natural environment and Aboriginal heritage.

Of the Options proposed in the Strategy I was surprised to see that the Dunoon Dam was not identified, as the proposed Byrill Creek dam was, as "highly contentious due to the potential impacts on environmental and cultural heritage" (p.131 of the Draft Regional Water Strategy).

Numerous newspaper articles since 1995 provide a catalogue of opposition to the Dunoon Dam. The PRG had many discussions about the problems with the dam, particularly as regards ecological value and Aboriginal heritage. Since the dam was proposed, yet again, in 2020, there has been a steadily increasing wave of opposition.

The submission process conducted by Rous County Council for its Future Water Project 2060 has resulted in 1300 submissions, of which 91% are opposed to the Dunoon Dam. Many of the submission are detailed, well-researched and written by experts in their field, eg water re-cycling. This opposition, and the social impact consequences of ignoring it, need to be taken in to account.

1. Aboriginal Cultural Heritage

I am not of Aboriginal heritage but I have good friends amongst the Widjabul Wia-bal community and consider myself to be "in their corner". I am aware that I live on stolen land.

In 2011 a Cultural Heritage Impact Assessment (CHIA), prepared by Ainsworth Heritage, was provided by Rous to the Public Reference Group. The evidence in this document is overwhelming that the particular section of Rocky Creek that would be impacted by the Dunoon dam is of major importance for the Widjabul Wia-bal people. The cultural significance of the Dunoon Dam site is apparent not just in the artefacts and pre-European burial sites but in the ongoing living connection that local people have with this landscape, including having lived there during the period of dispossession.

The 2011 CHIA states that "Aboriginal stakeholders are of the opinion that the sites should remain undisturbed and that no level of disturbance is considered acceptable, especially when concerned with impacts upon the burials, which they see serving as a direct link to the ancestors of the registered stakeholders". (2011 CHIA Executive Summary, p.9).

"Based on the findings of this study and previously established precedents, it is the opinion of Ainsworth Heritage that the OEH (or the Director-General) would be likely to refuse the development on heritage grounds, based on the clear views of the local Aboriginal people with regards to the cultural heritage of the site. This is further reinforced through the usual divisions of some of the stakeholders who participated in the community consultation, who despite their past differences, held similar views with regard to the protection of sites, in particular, the burials." (ibid., p.9).

However, the strong wording in the 2011 CHIA has been weakened and modified in a second CHIA, produced in 2013. The second CHIA is, surprisingly, entitled "Preliminary" and has clearly been intended to replace the first one. The 2013 CHIA includes a suggestion in a report by a consultant archaeologist that Rous could "get the Traditional owners to agree to allow the site to be left in situ and inundated by the dam and thus preserved."!

I have not been able to ascertain from Rous which stakeholders, if any, agreed to the propositions in the weakened 2013 CHIA.

Consultation with Indigenous stakeholders has been grossly inadequate and has not followed the process that was laid out in the 2011 CHIA. This is partly because it has been limited to a very small number of people, one of whom is on the Rous payroll. Some important stakeholders have been refused access to key documents, such as the 2013 CHIA. There appears to have been a process of exclusion, withholding of information and lack of consultation.

It is not an exaggeration to say that this dam is the North Coast's Rio Tinto moment. Aboriginal heritage is beyond valuing in monetary terms and must not be discarded just because it cannot be given a dollar value. The Juukan Cave was destroyed by Rio Tinto because it had no dollar value. The severe consequences for the Rio Tinto decision makers should be a warning for Rous County Council.

The evidence of burial sites in particular was a major factor in halting the dam last time it was proposed. This hasn't changed. The local Widjabul Wia-bal Traditional Owners are still strongly opposed and have stated this recently (8 Dec 2020) in signed statements forwarded to the Rous councillors.

In addition to the Widjabul Wia-bal concerns, the pre-European date of the burial sites confirms that this area is of value at a national and international level – it is the heritage of all Australians.

It is time to let the wishes of the Indigenous people prevail. The option of a Dunoon Dam should be eliminated because it so blatantly transgresses the wishes of the Traditional Owners and destroys Australian cultural heritage.

2. Natural Heritage

The 2011 Dunoon Dam Terrestrial Ecology Impact Assessment (TEIA) was prepared for Rous County Council to help establish the ecological value of the site. Despite some deficiencies in the report it does establish that there would be severe impacts that cannot be mitigated.

a) Loss of Lowland Rainforest Endangered Ecological Community

According to the TEIA, there are 62 ha of Lowland Rainforest Endangered Ecological Community (EEC) on the site.

This represents 6.6% of the remaining 940 ha of the original Big Scrub. Only 1% of the Big Scrub still remains, much of it in small, dispersed patches. The proposed dam would destroy or fragment the 62 ha of lowland rainforest on site, (including 7 ha of extremely rare Warm-temperate rainforest on sandstone.)

The estimated area to be lost is likely to be an underestimate since none of the roading or construction footprint associated with the dam wall has been taken into account. The remaining rainforest would be fragmented and would have greatly increased edge-to-core ratios, rendering it less effective as habitat and more vulnerable to weed invasion. In addition, the adjoining sclerophyll (eucalypt) vegetation would be reduced, fragmented and damaged, further degrading the available habitat and connectivity.

This forest can never be recreated. Endangered Ecological Communities are regionally and state significant, not just local, and have a special legal status precisely because they are critically important. The elimination of this EEC would not just be a local loss - it would be an irreparable loss to Australia.

Destroying this EEC should be regarded as vandalism of scientific resources and of our collective heritage.

b) Loss of threatened flora species

The Northern Rivers area is a known hotspot for plant diversity. The Mt Warning caldera, on the flanks of which the dam site is located, is recognised nationally and internationally as having highly significant biodiversity. Many of the species in this area occur nowhere else in the world.

According to the TEIA, nine threatened flora species would be affected.

The occurrence of Helmholtzia glaberrima (Stream Lily) in The Channon Gorge is a new southern limit for the species. It appears to be the only Helmholtzia population ever recorded on sandstone.

Rhodomyrtus psidioides (Native Guava), which is now Critically Endangered due to Myrtle Rust infestations, has been recorded within the inundation zone.

Loss of flora species is cumulative, relentless and ultimately terminal. When plant communities containing representatives of threatened species are destroyed the potential for those plants to re-establish elsewhere is very low. The successful recruitment of young plants depends on factors which are likely to be disrupted by disturbance, and increased distancing from other fertile adults. Pollination and fruit dispersal mostly depend on birds, bats or invertebrates, and these are likely to have been eliminated by the loss of other plants on which they depend.

Agreeing to deliberate destruction of these plants and to an increase in the threats against them is a very serious matter with international scientific consequences. It should be rejected outright.

c) Loss of fauna habitat

I am not a fauna specialist so I cannot comment in detail on the species affected. However, it is obvious that these forests and aquatic habitats are home to mammals, birds, reptiles, fish and invertebrates which have nowhere else to go. They cannot move elsewhere because all adjacent niches are already full. They just die.

A new report commissioned by the World Wide Fund for Nature-Australia found the 2019-20 bushfires resulted in the loss of about 71% of koala populations in fire affected areas at six locations on the north coast of New South Wales.

Seventy-two ha of koala habitat will be inundated, blasted or fragmented by the proposed dam. At a time when koalas are predicted to become extinct within a few decades if the current threats continue, no additional threats are acceptable. This means that the way we have treated koalas in the past has to stop. All habitat loss of koalas must cease if we are to make sure that they do not disappear on our watch.

The 2012 Aquatic Ecology Assessment for the proposed Dunoon Dam states “Mobilisation of sediments via major earthworks would increase the sediment load transported downstream and result in habitat loss through smothering “ (p.61). Platypus and other aquatic animals adapted to stream habitats do not benefit from a large lake.

The TEIA states, under the heading of Key Threatening Processes: “The dam will alter the natural flow of Rocky Creek both upstream and downstream of the proposed dam wall. The resultant impact is considered (to) be long-term and irreversible” (p.117). For aquatic species irreversible change rarely means a benefit.

I have not addressed cold water pollution here, for reasons of time, but it will clearly be a problem for habitats downstream of a large dam releasing periodic “environmental flows”

For the individuals of fauna species in the destruction zone the loss of their habitat of rainforest and sclerophyll forest is catastrophic. For species as a whole, extinction occurs more slowly, by a 1000 small cuts. The outcome is the same though.

d) Loss of connectivity

Severance of local wildlife corridors is a serious problem for animal species that require large territories. The proposed dam site contains a great diversity of habitat types on different soils, slopes and drainages, with markedly different vegetation types. Many animals do not stay in one type of forest but move between types. Destroying much of this varied forest, fragmenting the rest and installing a deep lake which blocks all terrestrial animals and most of the aquatic ones from essential movement will have an adverse effect on local animal populations.

The territories of larger animals such as koalas will be broken up and their movement corridors disrupted or cut completely. This will affect their survival even if they are not killed outright.

Smaller animals which are lucky enough not to be cleared or drowned will also be threatened by the loss of connectivity. Small isolated populations forced into inbreeding can undergo genetic decline and ultimately extinction.

The loss of connectivity, like the loss of species, is cumulative and ultimately disastrous. It should be considered as a major impediment to any destructive proposal such as the dam.

e) Mitigation

The mitigations proposed in the TEIA are band aid measures which do little to match the magnitude of the proposed destruction. They are full of vague, meaningless, qualifying phrases like “where possible”, “where appropriate”, “should be adopted” “investigate” and “avoid significant areas” (while clearing the most significant areas).

Offsets are proposed, to substitute the unique rainforest on sandstone in the Gorge with regrowing new rainforest on the slopes above the dam – a different and largely degraded forest on different soil types. Offsets do not work because there is no like-for-like available. In addition, the time elapsing between an existing habitat and a regrown one is not survivable for any of the current fauna. We are at such an advanced state in the downward spiral to extinction of so many species that if an area is identified as similar it should be preserved at all costs in addition to the one proposed for destruction.

One of the more laughable mitigations is that a "qualified fauna ecologist should be within the study area during all clearing work for fauna salvage"! The language betrays the attitude to living animals that will be injured or dead by the time they are "salvaged".

There is no mitigation for something that is priceless. It is something like saying "We are sorry that this project will cause the death of your children but we plan to mitigate your loss, where possible, and help with offsets or substitutes".

3. Indequate catchment for the Dunoon Dam

The existing Rocky Creek Dam (RCD) lies upstream of the proposed Dunoon Dam (DD). RCD holds 14 GL and its catchment is 39km² (email from [redacted]). DD, at 50 GL, would be more than 3 x the size of RCD but its catchment of 19km² is half that of RCD. The two catchments can be seen in the map below.

Rocky Creek dam has no water release mechanism. It cannot contribute to DD at times of low flow, or possibly even moderate flow. According to [redacted], RCD reaches 100% capacity, and hence overflow, 30% of the time. The following link from Rous' website shows RCD levels from 1991 to the present https://rous.nsw.gov.au/cp_themes/default/page.asp?p=DOC-ICT-21-15-86

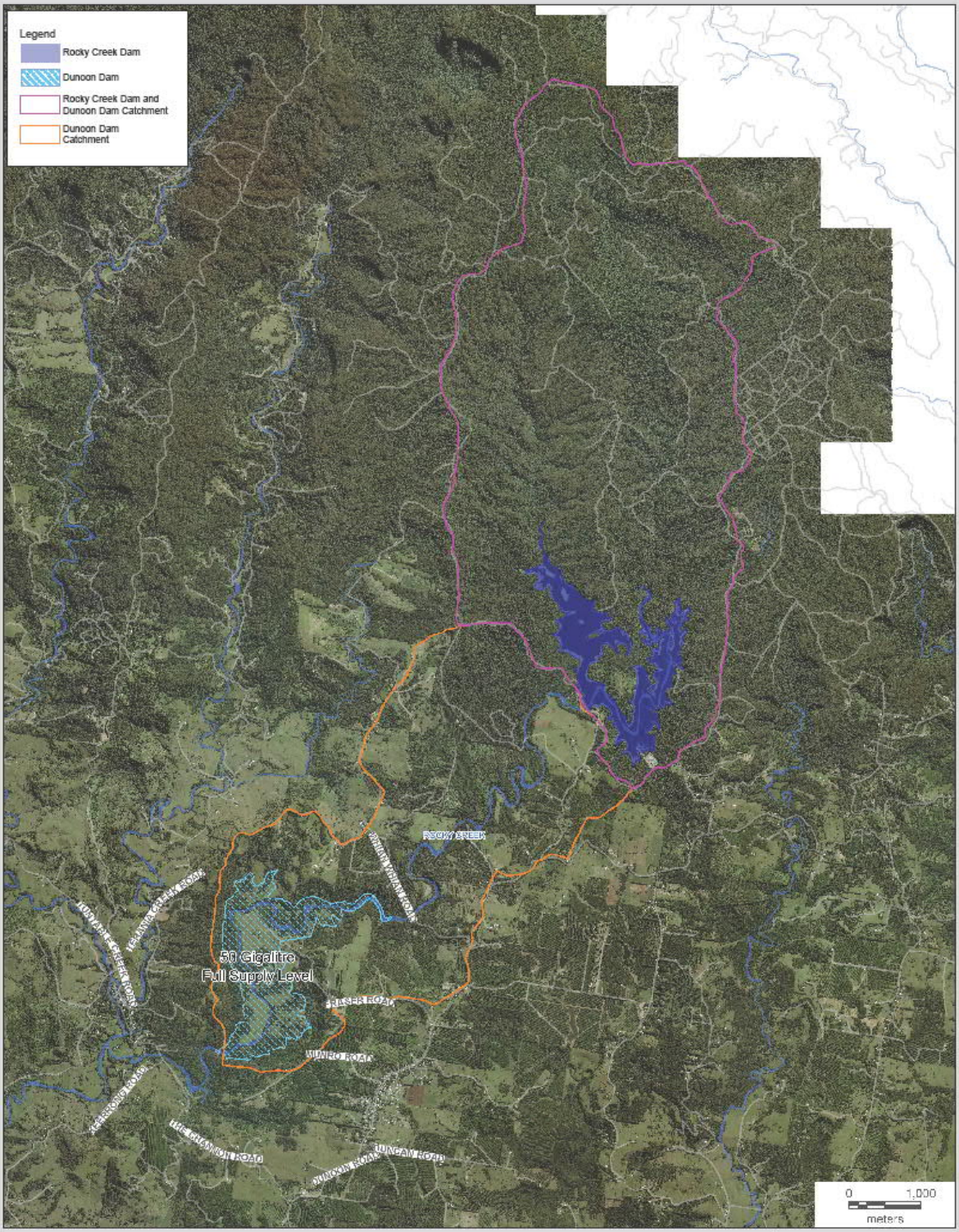
Rous has not been able to provide figures on when and how much water in excess of 100% flows downstream from RCD, ie, how much is available to help fill DD. It is unclear from the answers that I have received whether this information has not been collected or whether it is not being released to the public.

The volume used by Rous water consumers each year is roughly equivalent to the volume of water in RCD. If DD is 3x the volume of RCD then there are roughly 4x RCDs when both dams are full. Assuming no rainfall at all there would be sufficient water in the two dams for 4 years of usage.

Of course it would be unlikely for no rainfall to occur. However, in dry times DD would be reliant on its own small catchment and in dry times water tends to soak into dry soil rather than run off. Intermittent rainfall in a drought may not contribute significant quantities of water to DD. In droughts longer than 4 years, or perhaps even multidecadal droughts, as described in the Draft Regional Water Strategy, the two dams would be insufficient. In fact, in the absence of any other new measures adding resilience to the system, they would be a drought trap.

If it can be assumed that the droughts of the past will be surpassed by the droughts of the future, then the Dunoon Dam is a very risky investment.

In addition to the problem of quantity, there is the problem of water quality for the Dunoon Dam. Most of the catchment is farmland, of which an estimated 21% is macadamia plantation. Agricultural chemicals used on the macadamia farms would presumably run off and need to be accounted for in treatment of the water for potable use.



Dunoon Dam Drinking Water Catchment

THE INFORMATION ON THIS MAP MAY NOT BE ACCURATE.

Disclaimer: The material contained on this map is made available on the understanding that Rous County Council is not hereby engaged in rendering professional advice. While all reasonable care has been taken to ensure the information contained on this map is up to date and accurate, no warranty is given that the information contained on this map is free from error or omission. Any reliance placed on such information shall be at the sole risk of the user.
Please verify the accuracy of the information prior to using it.

Printed Date: 12/11/2020
Prepared By: Nathan Spooner
Projection: MGA Zone 56

ROUS COUNTY COUNCIL
ADMINISTRATION CENTRE
Level 4, 218/232 Molesworth Street
LISMORE NSW 2480
Ph: (02) 6623 3800
Email: council@rous.nsw.gov.au
Web: www.rous.nsw.gov.au

ROUS
COUNTY COUNCIL

Conclusion

The issues of Aboriginal Heritage and Natural Heritage should be sufficient to halt any further works, land acquisition or investigation on the Dunoon Dam.

In addition, the water supply from the inadequate catchment of Dunoon Damwould appear to be very insecure given the projected hotter and drier climate, with greater extremes of drought and flood.

I am confident that full exploration of the long list of options that are independent of rainfall would more than compensate for the loss of the Dunoon Dam from the list.