

Submission to the public exhibition of the draft Far North Coast Regional Water Strategy

from: WATER Northern Rivers

We acknowledge the work done so far by DPIE in developing the Far North Coast Water Strategy. It's a wide-ranging strategy and seeks to address reliable water supply into the future.

We believe the Strategy may be overly reliant on Rous's flawed Future Water 2060 project, especially because that project currently hinges on the contentious Dunoon Dam. This is so significant that our submission focuses on the dam proposal and why it is so flawed.

We recognise that the draft Water Strategy lists a wide range of effective options to meet the region's water needs, and Water NR supports all those options which are scalable, flexible and that avoid environmental and Indigenous Cultural Heritage damage.

We object to the Dunoon Dam as an option for the following reasons:

Dunoon Dam will leave us vulnerable in a warming climate

- Water experts explicitly warn that new dams are high risk investments that make us vulnerable, not resilient, in conditions of drought and climate change. With its narrow focus on Dunoon Dam and groundwater, Rous County Council fails to plan for this.
- Water Services Association of Australia describes new dams as high-risk investments because they depend on rain. They recommend a mix of complementary water strategies. (WSAA, [All Options on the Table](#), August 2020).
- The vulnerability of the Rous 'build more rain-dependent dams' approach is accentuated by the fact that the proposed Dunoon Dam is on the same creek as Rocky Creek dam, but with a significantly smaller catchment than the existing dam.
- Professor Stuart Khan (UNSW) has said a resilient water system would have 30-50% of supply from sources that don't depend on rain, such as Purified Recycled Water and desalination, both of which can be powered by renewable energy. (ABC North Coast Radio, *Breakfast*, 22/10/20)
- The NSW Productivity Greenpaper 2020 recommends water efficiencies, and the uptake of new sources such as purified recycled water. (NSW Treasury, *Productivity Commission Green Paper: continuing the productivity conversation*, 2020. Accessed at <http://productivity.nsw.gov.au/green-paper/water-energy>)
- Rous Future Water 2060 strategy fails to mention system resilience as important, and only seriously examined groundwater and Dunoon Dam. Desalination and purified recycled water were downplayed. (Rous County Council, [Future Water Project 2060](#), 2020.)

Rous County Council have failed to show leadership in contemporary water management, and as a result, the draft Future Water 2060 plan as currently constituted is flawed.

- All options need to be on the table and given serious attention including water efficiency, models for roof and stormwater harvesting (including tanks), and water sources that don't rely on rain such as purified recycled water and desalination.
- With its narrow focus on Dunoon Dam and groundwater, RCC failed to provide leadership in increasing knowledge of innovative water management. As a consequence, there is a lack of familiarity with options showcased by WSAA in All Options on the Table (WSAA) and on the Cooperative Research Centre Water Sensitive Cities website. The narrow focus on Dunoon Dam appears to have stunted water literacy in the region. (WSAA, [All Options on the Table](#), August 2020.) (Cooperative Research Centre for Water Sensitive Cities, [Home Page - CRC for Water sensitive cities](#), 2020)
- One reason put forward for the dam is the growth in housing developments in Ballina Shire. Yet new housing developments are a very poor argument for a dam, since these can build in innovative water systems from the ground up, the cost of which can be borne by developers. It would appear that no-one in RCC or the constituent councils were aware of the Warrnambool model of 100% Roof Water Harvesting. Warrnambool gets 726ml of rain on average. Ballina gets 1800ml. Much of the planned new housing sits on a hill not far from the Emigrant Creek dam and treatment plan. There is no record of an invitation to engineers from this federally-funded demonstration project to visit our region, share their learning, and conduct site visits as a first step in assessing which new housing developments might be candidates for this kind of innovative project.
- We understand there are governance problems between the four local governments and Rous as the bulk water supply utility, but there is nothing to stop Rous from taking a leadership role in making sure we stay abreast of developments in contemporary water management.
- As a consequence of this failure of leadership and governance, Rous Future Water 2060 is a flawed strategy that reflects an outdated, stunted approach to water system planning.

RCC has paid insufficient attention to system-wide water efficiency, which is cheap and recommended.

- Water efficiency is cheap and effective (WSAA, [All Options on the Table](#), August 2020: p 3, Levelised costs chart). It is also recommended by the 2020 NSW Productivity Commission Report.
- Rous County Council has downplayed serious water efficiency measures in its 2020 Integrated Water Cycle Management Development scenarios, generally citing demarcation of responsibilities as a major barrier (Hydrosphere Consulting, *Rous Regional Supply: Future Water Project 2060 Integrated Water Cycle Management Development: Assessment of Augmentation Scenarios*, 2020), without providing a high level of leadership to overcome such hurdles.

- The lack of attention to water efficiency is evident in the fact that during the past 2 years there was a significant amount of time in which RCC did not employ a Demand Management officer. Although the position is now filled, it is part-time, reflecting the low priority that RCC has attached to water efficiency.

Dunoon Dam should not proceed. Numerous studies have noted it involves significant destruction.

- The dam was first proposed in 1993. By 1995 the issue of the large dam's limited catchment was noted, with the suggestion that it could be supplemented by pumping from Terania Creek (Rous Regional Water Supply Strategy Planning Study).
- In 2010, a series of reports on Terrestrial Ecology, Aquatic Ecology, and Cultural Heritage all found serious impacts from a dam in this location on Rocky Creek. Members of a Public Reference Group voiced their concerns.
- In 2013 a Technical Report noted that the dam was constrained by significant environmental and social impacts, high capital cost, and the fact that it was 'highly climate influenced' (p52).
- An Integrated Water Planning report in 2014 noted that although the dam was 'technically viable', it had 'significant environmental and social constraints associated with threatened and endangered terrestrial ecology and culturally significant Aboriginal heritage'.
- Given these extensive reports, there is no real need for further studies. The destructive impacts of the dam have been evident for a decade.

The destruction of Aboriginal Heritage by Dunoon Dam is unacceptable

- The 2011 Cultural Heritage Impact Assessment found that "Aboriginal stakeholders are of the opinion that the sites should remain undisturbed and that no level of disturbance is considered acceptable to them". This report also found this heritage would be destroyed by a dam of any size.
- In 2013, Rous County Council commissioned another Cultural Heritage Impact Assessment (CHIA 2013) to supercede the 2011 CHIA). It appears that very few Wijabal Wia-bal stakeholders have seen the 2011 or the 2013 CHIA, or were aware of their existence (personal communication with Wijabal Wia-bal stakeholders and Elders).
- Rous are now requiring Wijabal Wia-bal to repeat the CHIA process yet again, apparently until they get the result they want.
- Rous's attitude to this very significant cultural heritage contradicts the apparent good work on Indigenous rights contained elsewhere in the draft Far North Coast Water Strategy, and Rous's own work through its Reconciliation Action Plan.
- **When RCC promote the dam as the 'cheapest option' it should be noted that destruction of the Juukan Rock Shelters appeared the 'cheapest option' to Rio Tinto at the time.**

The ecological impacts of Dunoon Dam are unacceptable

Destruction of Big Scrub Rainforest and its threatened species

- There are 62ha. 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 Rainforest remains, much of it in small, dispersed patches. This rainforest is of global significance, containing Gondwanan floral lineages.
- The Channon Gorge contains a very scarce instance of rare and endangered Warm temperate rainforest (EEC). Aerial survey photographs from 1942 show that this survived intact despite extensive clearfelling in The Channon and Dunoon. The Channon Gorge hosts some of the largest water gums ever recorded in NSW (*Nan Nicholson, rainforest botanist*). Construction of the dam wall would almost totally destroy this unique refugium.
- Nine threatened flora species would be severely impacted by Dunoon Dam. (2013 Terrestrial Impact Assessment Report). Loss of flora species is cumulative, relentless and ultimately terminal. When plant representatives of threatened species are destroyed the potential for those plants to re-establish elsewhere is very low.
- 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.
- 17 fauna species (one frog, one mammal, one fruit bat, six microbats and eight birds) listed as threatened under the TSC Act NSW identified. Loss of food resources for the Grey Headed Flying Fox, Rose-crowned Fruit dove and White-eared Monarch. Destruction of dry sclerophyll forests would remove foraging resources for the Glossy-black Cockatoo and Scarlet Robin.
- 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.

Extinction pressure on koalas

- The 2011 *Terrestrial Ecology Impact Assessment* (TEIA), identified 72 ha of koala habitat of Tallowwood and Flooded Gum forest. Of this, one third would be destroyed outright by inundation or by construction of the wall, and the remainder would be fragmented. The report identified koala corridors which would be severed by the Dunoon Dam. The loss of movement

corridors is particularly concerning because koalas need to move frequently and easily to new trees.

- The habitat in this area is unusually rich for koalas because much of the eucalypt forest is on basalt substrate. High nutrient soils produce high quality leaves of the right tree species to support koalas.
 - Koalas are commonly seen and heard in the area of the proposed dam and The Channon is a known hotspot for koalas.
 - North Coast koalas are under extreme extinction pressure. The underlying factor in most koala deaths is diseases such as chlamydia and retrovirus caused by the stress that koalas experience when their habitat is removed.
 - In addition to the decline in koalas due to these pressures, 70% of koalas in North Coast firegrounds were killed in the 2019 summer fires, according to Dr Steve Phillips, principal research scientist at Biolink.
- <https://www.abc.net.au/news/2020-03-07/koalas-losses-post-bushfires-bigger-than-modelled/12033834>
- The destruction of swathes of habitat and critical movement corridors with the construction of the Dunoon Dam will worsen the stress-disease problem and lead to more deaths in a significant local population of koalas.
 - A local group, Whian Whian Landcare, has worked successfully for the past three years planting almost 3000 koala feed trees to rebuild corridors between the proposed dam area and the tracts of forest to the north. The venture has been supported by Lismore City Council Koala Plan of Management, the Saving Our Species program, Landcare, Conservation Volunteers Australia, NRMA and the local landholders. The Dunoon Dam would fracture these important corridors and accelerate the population decline of Northern Rivers koalas.

<https://www.facebook.com/whianwhianlandcaregroup/photos/ms.c.eJxFysEJACAMA8CNJG2ahu6~;mKCI3~ NoABypnXT04oXsA6UHNDkoxB~ ADM8GypYNeQ~-~-bps.a.3700038936723778/3700039556723716/>

Extinction pressure on platypus

- Recent research by Dr Gilad Bino et al has revealed the platypus is facing extinction because of habitat destruction, dams and weirs across its entire distribution. Study co-author Professor Brendan Wintle said it was important that preventative measures were taken now “mitigating or even stopping threats, such as new dams, is likely to be more effective than waiting for the risk of extinction to increase and possible failure” (Bino, Gilad & Kingsford, Richard, *A stitch in time – Synergistic impacts to platypus metapopulation extinction risk*, Biological Conservation, Feb 2020)
 - 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).
- https://waternorthernrivers.org/wp-content/uploads/2020/11/Aquatic_Ecology_Assessment_Final_Report-1.pdf
- 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.

https://waternorthernrivers.org/wp-content/uploads/2020/11/Aquatic_Ecology_Assessment_Final_Report-1.pdf

- There are breeding platypus on Rocky Creek. The Dunoon Dam would hasten the decline of this iconic and loved species.

Extinction Pressure on Native Fish

- The endangered Eastern Freshwater Cod, Oxleyan Pygmy Perch and Purple Spotted Gudgeon had been identified as likely present in Rocky Creek (2011 Rous Aquatic Survey). Other evidence has since determined the presence of the Eastern Cod in the Rocky Creek (Bishop 1998; NSW Fisheries 2004; Rous No-Dam Submissions 2020). The Aquatic Survey erroneously concluded that the surviving population was not significant, having not even observed the species within its extremely limited sampling of sites.
- There is an NSW DPI Eastern Freshwater Cod Recovery Plan to restore this species to the Rocky Creek and Richmond River systems. This plan depends on quality habitat and natural flows (NSW Fisheries 2004) which would be terminated by a dam.
(NSW DPI, [Eastern Freshwater Cod](#), 2020)
- A Dunoon dam would extinguish nearly all of this habitat due to cold water pollution downstream, impoverishing the quality of habitat in the 6kms inundation zone and cutting off migratory access due to a dam wall. Riverine fish species, like the eastern cod, need a complex, interconnected array of microenvironments for spawning, feeding, nursery and resting or refuge to survive. A dam would also result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species’ habitat. (NSW Fisheries, *Eastern (Freshwater) Cod(Maccullochella ikei)Recovery Plan, 2004*).
- Climate change brings more severe drought followed by increased bushfire risk, and future rainfall events are more likely to result in toxic waterways with high fish and invertebrate kills. “There are a number of species we thought were secure in the past but their conservation status is questioned,” Professor Helene Marsh.
- By the above logic another 16 native fish species found in this region are also threatened by a significant and permanent loss of this 17.5 kms of habitat.
- “Offsets” become an exercise in meaningless rationalization when set against these extinction pressures.

91% of submissions on Rous Future Water 2060 were opposed to the Dunoon Dam

There is widespread community concern about the destructiveness of Dunoon Dam and the failure of RCC to plan for water resilience using modern technologies. In total there were 1290 submissions to RCC. The figure of 91% in opposition to the proposal for Dunoon Dam includes all written and online submissions. Over 300 of the written submissions were identified as individual and not pro-forma submissions (source: pdf of presentation to Rous County Councillors 18/11/20). These submissions are

now finally publicly available, and we strongly urge DPIE to consider closely, both the level of informed opposition to the dam as a solution, and the alternative sources suggested in many of the more technical submissions to the Rous Future Water 2060 exhibition. (Rous County Council, *FWP 2060 public submissions*, 2020. https://rous.nsw.gov.au/cp_themes/default/page.asp?p=DOC-TRB-45-30-01)

A social movement is growing that will oppose the dam, and which will grow in strength, as did the opposition to gasfields in the Northern Rivers. There has been a rapid growth in awareness of not only the technical issues involved, but also of the opportunities for truly modern solutions to provide water security. This community awareness should also be harnessed to assist in progressing many of the other options listed on the draft Strategy “long-list”.

There is an opening for the DPIE Water Strategy to provide innovative leadership and guidance to Rous County Council, through prioritising the issues and directions identified in the Productivity Commission Greenpaper rather than following Rous’s highly problematic dam option.

About WATER Northern Rivers:

WATER Northern Rivers is an alliance of citizens and groups who want a complementary mix of modern water options. We are committed to a water system fit for the 21st century, one we can be proud of. We do not support the destructive Dunoon Dam proposed by Rous County Council. For more information: <https://waternorthernrivers.org/about-us/>