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# SUBMISSION

to the

## NSW Department of Planning, Industry and Environment

on the

## North Coast Regional Water Strategy

### 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, with water issues being a recurring concern for most of that time. Therefore, this latest series of proposed regional water strategies have generated a depressing feeling of *Deja vu*. The same glib assurances were given for various Water Sharing plans that these strategies are presumably going to replace. Every one of those previous plans promised to protect environmental flows and water quality, and all we got was scandal after scandal, revealing massive water theft and roting of the system. All the while, the rivers ceased to flow, causing unprecedented fish kills and the decline and demise of entire ecosystems as a result.

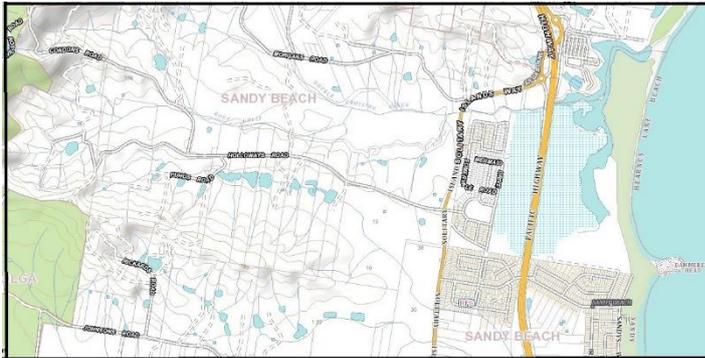
How can we have any faith in these new strategies when “enabling economic prosperity” is high on the list of objectives? If history has told us anything, it is that the moment “economic prosperity” is threatened, the environment will get ‘screwed’ as a first response.

Having said that, there is an acknowledgment, page 13 of the draft plan, that needs to be kept front and foremost when planning to divvy up available water to the various stakeholders. It states: *“The water resources of the North Coast region support extremely high species and habitat diversity, many of which are endemic or threatened. Freshwater flows are critical to the ecosystems of the coast”*. It is crucial for our own long-term survival to keep it that way.

## Discussion

Before attempting to work on any water sharing plan, we need to know exactly how much water is available, and we are curious to know how that figure will be calculated in this instance. This is because, right now, it is our belief that nobody knows how much water is already being taken or diverted from any of the region's catchment areas.

Every week in this region, new dams are being dug for irrigation purposes, every one of which serves to reduce flows in the system. Nobody knows how many dams there are, how



There are 50 farm dams in this Six Maps image at an intensive horticulture hub near Sandy Beach. Growers are now asking to be allowed to increase dam sizes and build dams on 3<sup>rd</sup> order streams.

much water they hold, or how much is being used, because there is no requirement to have approval. There are no metres on most pumps, or even a requirement to record extraction rates. In that respect, we applaud the proposed option 29, the *“Improved data collection on water use and patterns”*. In fact, we believe that work should have been undertaken **prior** to developing the strategy, as advocated in the previous paragraph.

As it is, when drought strikes, many of those water-users will steal water in order to keep crops and livestock alive. As an environment group, the Clarence Environment Centre fields many complaints from the public about pumps running at night, water tankers pulled up and filling at remote waterholes, and even taking water from mains outlets with unmetered stand pipes. Last year we even received reports of Council tankers taking water from pools along the upper Clarence River, for dust suppression on local roads. We also monitor the water authority's “real time” river gauge data, and periodically report suspicious dips in water flows that make the graph look like a saw tooth.

We have not yet ever had a positive outcome from any of those reports, so clearly there is no respect for the regulations or the environment at any level.

So now we have a new draft Strategy on exhibition, which is going to review the long-term average annual extraction limits (LTAAELs), explaining that it will, *“consider the ecological, economic, social and cultural water needs of the region”*, going on to claim, *“the review may result in higher or lower LTAAELs”*.

The subsequent explanation that: *“Higher LTAAELs would support economic growth because more water access licences could be issued for productive use”*, and knowing the government's complete dependence on economic growth, higher rates of water extraction for that purpose is virtually assured under the proposed changes. Looking at the list of options confirms this, **with not a single option calling for reduced extraction!**

## The Draft Strategy

### Population growth

Population growth is identified time and again in the Draft Strategy as something that will increase the demand for water, but nowhere is there a suggestion that capping or reducing population, should be an option. Why is that?

Economic growth, and the need for population growth to achieve it, is completely unsustainable, and the strategy acknowledges that some councils are actually making “targeted efforts to attract population growth”. As it is, water security risk for the tablelands cities of Armidale and Tenterfield, is predicted to rise from “very low” to “very high” within 20 years as a direct result of population growth. Even the coastal city of Grafton will see its water security risk jump from very low to high.

Everyone acknowledges that the world is already over-populated, but the Draft Strategy claims to “seek to maximise opportunities that support expected population growth so why this insane pursuit of economic growth that can only end in disaster?”

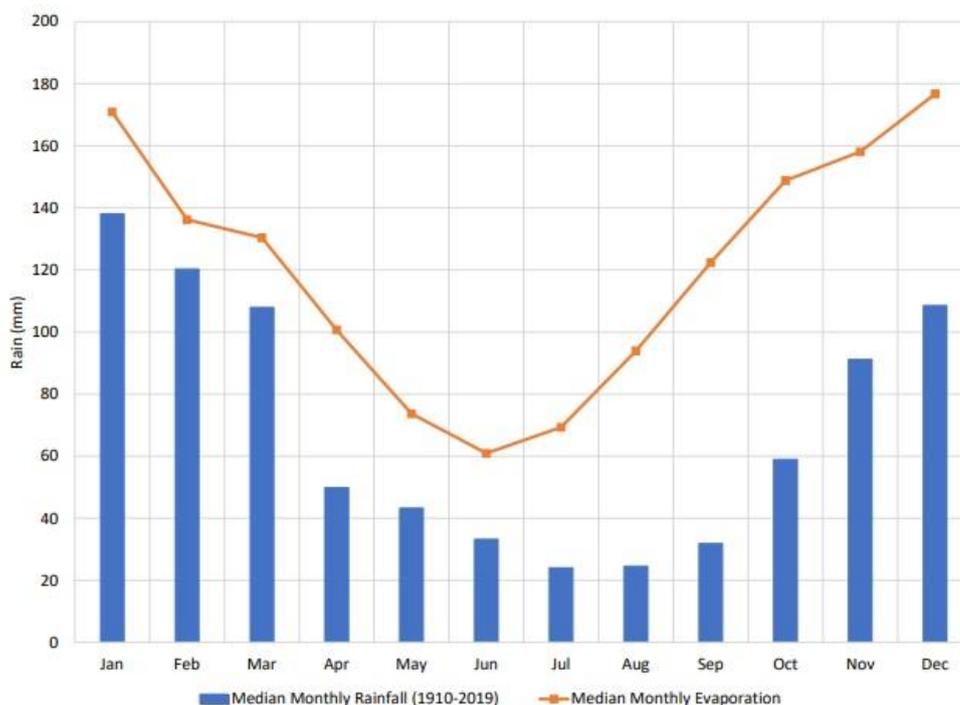
## Climate change

It is gratifying to know that those developing the water strategy, now have a greater range of climate and weather data available for use in modelling, and potentially choosing from the extensive range of options. However, the Draft Strategy accepts that: “Higher temperatures, increased evaporation, increased fire risk, changes to rainfall patterns and associated flows, sea level rise and potentially more intense dry and wet periods could all significantly impact water-dependent ecosystems **that have evolved over millennia to thrive in natural cycles that are now changing**”.

Therefore, with the incredibly rapid, and unprecedented rise in global temperatures that have already occurred this century, and predicted to rise rapidly into the future, we question the value of paleoclimate data over a period of history that has never been this hot.

Reading the Clarence Valley Council’s recently adopted drought management strategy, we are told that average evaporation rates exceed average rainfall (see strategy’s graph below).

Figure 7 shows monthly rainfall totals for Nymboida for an extremely wet year (1950) and dry years (1915 and 2019) compared to the median monthly rainfall from 1910 to 2019, highlighting the large variability in rainfall that can occur from month to month and year to year.



To us, this statement is illogical. However, anyone who owns a backyard swimming pool knows that evaporation rates from open water bodies is significant, and something that will increase as the world heats up.

However, the strategy appears to downplay the impacts of evaporation by concentrating its modelling on evapotranspiration, the process of evaporation via plants. This allows the conclusion that, “*the Inter-decadal Pacific Oscillation (IPO) will affect rainfall more significantly than evaporation*”, whereas, on average, evaporation from open water bodies will greatly exceed input from rainfall run-off. Therefore, this is a real concern when so many of the “long list of options” focus on new dams or increasing the size of existing dams. That concern is amplified by the fact that adjoining regional strategies, not only propose new dams, but are seeking to source water from coastal river systems to help fill them.

The Strategy acknowledges that “*Higher temperatures, increased evaporation, increased fire risk, changes to rainfall patterns and associated flows, sea level rise and potentially more intense dry and wet periods could all significantly impact water-dependent ecosystems that have evolved over millennia to thrive in natural cycles that are now changing*”. **So why threaten those natural flows by cutting them off?**

Currently, the Mid North Coast region is experiencing an enormous surge in intensive horticulture, and with it the construction of farm dams on every available 1<sup>st</sup> and 2<sup>nd</sup> order stream. The subsequent push for irrigators to be allowed to construct dams on 3<sup>rd</sup> order streams, if successful, would be a disaster and see major rivers such as the Orara River dry up completely on a regular basis with each prolonged dry period.

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

The long list of options includes the inter-catchment transfer of water, or more correctly, the extension of inter-catchment transfer, the possible extension of the Coffs Clarence regional water supply to the Bellinger and Nambucca River catchments.

The Strategy does make the point that there is no option to transfer water across the Great Dividing Range, but at the very end that there are options in the Border Rivers and Gwydir Strategies, for dams to be built within the catchments of coastal rivers for transfer of water to inland 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. However today, water is making some people very wealthy, so the pressure has been increased.

These proposals arrive with regular monotony, and one current scheme, still in the early stages, is coupled with the more advanced Mole River dam proposal, which is still in the ‘options for consideration’ stage (Border Rivers Regional Water Strategy).

No doubt when the next stage is commenced, the same mythical figures will be trotted out to justify the plan. One classic myth is the Clarence River's supposed 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.

Furthermore, in the 15 years to 2007, the average was under 2 million, 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.

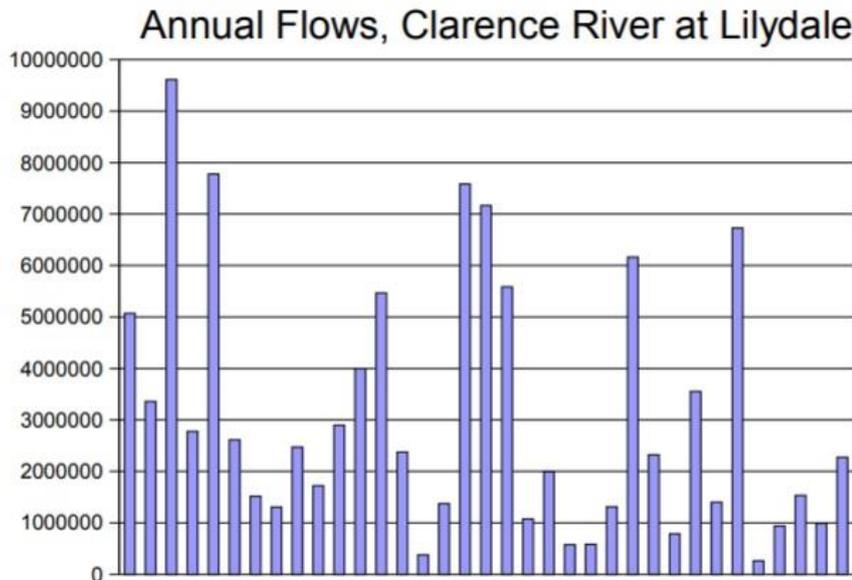


Table 1. Annual flows of the combined river flows in the Clarence River measured at Lilydale between 1970 and 2006

So where did the 5 million megalitre 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 (p 6) made the claim 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, **but we believe we have solved the mystery of the myth!**

As can be seen in the above graph, the Lilydale gauge began measuring flows in 1970, which would have provided 4 years of data by the time the Clarence Valley Interdepartmental Committee on Water Resources put out its report in 1975. **However, it so happened that 1972 delivered the highest flows ever recorded in the Clarence, close to 10 million megalitres, raising the average flow for those 4 years to just over 5 million.**

I'm sure some of those engineers undertaking the subsequent desk-top studies would have realised this anomaly **but, if you are promoting a plan to transfer 1 million megalitres across the range, the figure of 5 million megalitres of available water, looks a lot more acceptable than a mere 2½ million.**

## Water quality

Reading through the list of options, we read the observation that: *“Many councils in the region cannot extract river water when turbidity levels are high, even if flows are sufficient”*.

It is hard to imagine anyone acknowledging this fact, and then failing to recommend a single action to prevent the root causes of that turbidity, yet that is exactly the case with this current strategy.

We all know the main causes, and they must be addressed. Logging disturbance; plantation clear-felling; grazing leases in state forests with unfenced creek and river banks; the same problem on private grazing properties; land clearing; poor or non-existent erosion control in cultivation, particularly the intensive horticultural sector; road and infrastructure construction and maintenance; mining, and much, much more. **We simply have to take these pollution issues seriously!** (see “Water crisis” attachment).

\* \* \*

## Water security

We see water security as an extension of water quality, which can interrupt supply of potable water during periods when turbidity levels are high. The threat to water security occurs when water is rendered undrinkable over a prolonged period, or even permanently. This has occurred all over the world and even here in Australia by mining accidents.

Before jumping to the well-used response that those types of accidents are history, and that today’s robust consent conditions and strict regulations would ensure accidents wouldn’t occur, we point to the Baal Gammon incident in Queensland just 2 years ago.

Our own Clarence Valley Council had condoned mining exploration within the Coffs-Clarence regional water supply catchment for decades before the community raised concerns and demanded action to stop the threat from mining. However, even now, the State Government, through our local member is still glossing over those concerns claiming that this is only exploration, the drilling of a few holes, and causing no problems at all.

The entire coastal population south from Iluka to beyond Kempsey, along with inland cities like Armidale and its satellite towns and villages, are totally dependent on drinking water that originates from the Dorrigo Plateau. The question we ask is: Why is mining exploration, particularly for those minerals that are highly toxic, or involve the use of toxic pollutants during the extraction process, allowed to occur all across the Plateau?

It is gratifying to see that the threat to water from mining does receive mention in the Strategy, something that was completely ignored in the Border Rivers Strategy. Nevertheless, it is disappointing to see that State Government attitude reflected in this Strategy, despite this having the potential, albeit minimal, to wipe out our entire regional water supply.

Our region enjoys the highest rainfall of anywhere in NSW, particularly the Dorrigo Plateau, and this fact alone should have had alarm bells ringing. Flash floods are something that has triggered catastrophic tailings dam failures around the globe. A relatively small tailings dam failure occurred at the Timbarra Gold Mine on Timbarra Creek, a tributary of the upper Clarence in very recent times, despite the “robust” measures supposedly in place to prevent it. **Mining activities should be excluded from all urban drinking water catchments.**

## Assessment of options

The Strategy's stated objectives are to "*deliver and manage water for local communities*", "*Enable economic prosperity*", "*Recognise and protect Aboriginal water rights*", and finally, "*Protect and enhance the environment*", and "*identify least cost policy and infrastructure options*".

There are 35 various options presented to achieve these objectives, some of which, in our opinion, have merit, while others are a recipe for ecological disaster. We have therefore assessed those options as either supportable, unsupportable, or supportable with conditions.

### 1. Expand the Clarence-Coffs Harbour Regional Water Supply Scheme

**Not supported.** The Coffs Clarence Regional water supply has already been proven to have problems. The Shannon Creek dam, the main off-stream storage was highly effective in providing water to the region during the 2019 drought. However, despite 2020 being one of the wettest years on record, and the start to 2021 likewise receiving way above average rainfall, the dam is still only 80% full, owing to turbidity problems in the Nymboida River. With no plans to slow population growth, extending the system to other communities would likely threaten the security of the supply to existing users.

### 2. Portable desalination

**Supported.** There are smaller communities, relatively close to the ocean that could be drought-proofed by portable, or even permanent desalination plants. Sea water is one commodity that is actually increasing! We would not support desalination of bore water or other subsurface water bodies.

### 3. Emergency water supply provided by new pumped hydro storage projects

**Conditional support only.** We believe the long-term economics, of what is an extremely expensive option, has been properly considered.

### 4. Augment Shannon Creek Dam

**Not supported.** See response to #1 above.

### 5. Upgrade major town water treatment facilities

**Supported**

### 6. Repurpose existing assets to provide emergency storage for local industries

**Conditional support only.** We would need to assess these proposals on a case-by-case basis before giving our approval

### 7. Vulnerability of surface water supplies to sea level rise and saline intrusion

**Conditional support.** We do support the investigation of the impact of sea-level rise. However, once again we would need to assess options proposed to mitigate those impacts on a case-by-case basis before giving them a tick of approval. Before leaving this particular option, who is responsible for the statement that: "*Climate change is likely to lead to sea level rise (globally)*"? It does nothing to bolster confidence in the whole process to think that the Strategy's authors aren't sure, or have doubts the sea levels are rising as a result of climate change.

- 8. New industry and rural licence category within major council storages**  
**Not supported.** This is our greatest concern, the objective of “enabling economic prosperity”. With an expanding intensive horticultural industry, and rampant mining exploration, we cannot support any move that could see local cash-strapped councils lured into deals that could threaten water security for communities and the environment.
- 9. Protecting coastal groundwater resources for town water supplies and rural water users**  
**Not supported.** It isn’t clear to us exactly what this means, but presume it means “preserving” groundwater for the exclusive use of town and rural water users. Hardly what we would consider to be “protecting” the water. We fear that once groundwater is tapped, it will eventually be over-extracted and again the environment will most likely be the loser.
- 10. Remove impediments to water reuse projects**  
**Supported:**
- 11. Increase use of recycled wastewater for intensive horticulture**  
**Conditional support only.** Recycled wastewater should only be offered the purchase of wastewater (not provided free) if there is no preferred use available.
- 12. Indirect potable reuse of purified recycled water**  
**Unsupported** We have no faith in Council’s ability to ensure mistakes don’t occur, the risk of serious contamination is too high,
- 13. Direct potable reuse of purified recycled water**  
**Supported.** Dual reticulation should be provided to all Greenfield residential development.
- 14. Increased harvestable rights**  
**Unsupported.** See arguments against increased harvestable rights above. Landowners across the board pay no attention to these rights, and will ‘steal’ water if they need it.
- 15. Increased on-farm water storage Protecting and enhancing natural systems**  
**Unsupported.** This is just another term for increasing harvestable rights.
- 16. Establish sustainable extraction limits for North Coast surface water and groundwater sources**  
**Conditional support only.** We would prefer groundwater not be tapped for water supply purposes, See argument at #9 above
- 17. Convert low-flow water access licences to high-flow water access licences**  
**Conditional support only.** We presume this entails to construction of off-stream storages (Turkey-nest dams) on farms. We believe there would be benefits for aquatic ecosystems, but urge that any such move be supported by strong compliance monitoring to ensure a) the storages are not dams, and: b) there are means of checking that water is not over-extracted. i.e., tamper proof meters on pumps.

**18. Long-term water plans to support healthy coastal waterways**

**Supported.** We fully support the development of a long-term plan, although the claim the process will “*build on the experience and learnings of the NSW inland long-term water plans*”, hardly engenders confidence.

**19. Characterising coastal groundwater resources**

**Supported.** Particularly the metering of all groundwater take.

**20. Protecting ecosystems that depend on coastal groundwater resources**

**Supported.**

**21. Improve stormwater management and estuarine habitats**

**Supported.**

**22. Bringing back riverine and estuarine habitats and threatened species**

**Supported.** This action would need to include actions to eliminate threats to water quality and ecosystem health. Grazing, logging, mining, and any other activity that is significantly contributing to water pollution.

**23. Fish-friendly water extraction**

**Supported.**

**24. Improve fish passage in the North Coast region**

**Supported.** Note: A fish ladder at the Nymboida weir was a consent condition for the Shannon Creek dam over 2 decades ago, the responsibility of North Coast Water and Northpower. Today, council amalgamations and corporatisation, has changed those entities to Clarence Valley Council and Essential Energy, who have procrastinated over the issue ever since. They should not be allowed to avoid their responsibilities at the expense of taxpayers.

**25. Addressing cold water pollution**

**Supported.** We strongly support this initiative, particularly in the case of the Shannon Creek dam where, not only is water being released from the bottom of the dam to comply with environmental flow regulations (i.e., what rainfall runs off the Shannon Creek catchment must be allowed to flow downstream), but releases huge volumes of silt, contributing massively to the pollution of the Orara and Clarence Rivers.



*The water in these images, released from the Shannon Creek dam is so thick with mud that it appears to be almost solid, as it slides downstream, polluting the Orara and Clarence Rivers.*

- 26. Coastal, regional focused water reference groups**  
**Supported.**
- 27. Planning for climate change impacts on coastal groundwater resources**  
**Supported.**
- 28. River Recovery Program for the North Coast: a region-wide program of instream works, riparian vegetation and sediment control Supporting water use and delivery efficiency and water conservation**  
**Supported (guarded).** We strongly support any initiative to prevent sedimentation. However, we believe this must start with the elimination of those activities that are contributing to the erosion across all river catchments (see “Water crisis” attachment).
- 29. Improved data collection on water use and patterns**  
**Supported.** This is essential. Right now, those who have compiled this strategy, and those responsible for delivering water to the community, have no idea how much water is being extracted from the region’s waterways and groundwater resources.
- 30. Active and effective water markets**  
**Unsupported.** We believe turning water into a tradable commodity has been a disaster for the environment, and water-users.
- 31. Apply the NSW Extreme Events Policy to the North Coast region**  
**Unsure?**
- 32. Regional demand management program**  
**Supported (guarded).** We see economic benefits from this initiative, but strongly oppose any consideration of inter-connections across catchments which, unfortunately, appears to be the agenda behind this proposal.
- 33. Regional network efficiency audit**  
**Supported (guarded).** We would expect that all councils already do this and are unsure of the benefits of a regional audit.
- 34. Regional capacity building program and skills hub**  
**Supported.**
- 35. Support for local councils to lift performance standards**  
**Supported.**
- 36. Regional framework to manage restrictions for non-urban water users of town water**  
**Supported.**

We thank the New South Wales Government for this opportunity to comment

Yours sincerely

John Edwards  
Honorary secretary