



# North Queensland Conservation Council

... the voice for the environment in North Queensland

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20 July 2022

To: Hon Tanya Plibersek MP  
Minister for the Environment and Water

## Re: Positive outcomes from enabling water-efficient irrigation in the Lower Burdekin

Dear Ms Plibersek,

We would firstly like to congratulate you on your recent appointment as Minister for the Environment and Water. We are very pleased to see this important portfolio in the hands of a Minister of your standing and experience.

North Queensland Conservation Council (NQCC) is a not-for-profit conservation organisation with a broad mandate to protect the land, waters and atmosphere of North Queensland. We look forward to working with you towards positive, long-term environmental outcomes for our beautiful region.

### BACKGROUND

The Burdekin is a major catchment along the North Queensland coast that supports agricultural activity and delivers nutrients into the Great Barrier Reef World Heritage Area. Agricultural infrastructure and technology in the Lower Burdekin are outdated, causing farmers to use inputs such as water and fertilisers in high quantities. This is expensive for farmers and leads to increasing salinity, rising water tables and challenges for reducing run-off to the GBR lagoon.

Establishing a program to establish water-efficient irrigation in the Lower Burdekin would enable broadscale adoption for more sustainable water use in a changing climate, while demonstrating to the world that Australia is taking concrete action for the health of our Reef. This would offer positive long-term outcomes for water and the environment, while addressing some pressing economic issues facing the Lower Burdekin

NQCC has reviewed proposals for new dams and weirs on the Burdekin River over several years. We advocate for an ecologically sustainable approach to all development – especially that with the potential to have long-term impacts on our environment or water resources.

### IMPROVING WATER QUALITY OUTCOMES FOR THE GBRWHA

Current dam and weir projects proposed for the Burdekin River will add, by their estimation, more than 128,000 ha of irrigated agriculture, adding to the existing 95,600 ha in the Lower Burdekin. This would be occurring at a time when great efforts are being made to reduce the flow of nutrients and other pollutants from land-based agriculture into the GBR<sup>1</sup>.

<sup>1</sup> Hells Gates Dam – 6 0,000 ha; Urannah dam - 25,000 ha; Burdekin Falls Dam Raising – 15,000 (estimated); Big Rocks Weir – 3,000+ ha; Bowen Pipeline – 40,000 ha

Agriculture production in the Burdekin, with its high levels of nutrient, pesticide and irrigation inputs, has been the source of major environmental impacts.

The 2016 Great Barrier Reef Water Science Task Force identified the Burdekin Basin as one of the more serious sources of agricultural pollution into the Great Barrier Reef, ranking the Wet Tropics and Burdekin regions as the priority for reducing nutrient run-off, the Burdekin and Fitzroy regions as the priority for reducing sediment run-off and the Lower Burdekin and Mackay Whitsunday regions as the priority regions for reducing pesticide run-off.

Irrigation outflows maintain groundwater flows into the Bowling Green Bay Wetlands, a Ramsar site, all year. This fundamentally changes the seasonality of this habitat, resulting in choking weed growth in the area, affecting reproduction of commercial and sport fishing species, including barramundi and mangrove jack.



**Fig 1.** Bowling Green Bay (with Cape Bowling Green sand-spit on right)

The Reef 2050 Plan has provided incentives to farmers to invest in efficient irrigation and fertiliser-application practices. This has established best practice models for these practices but, to date, has failed to achieve broadscale application (~40% of area).

The next phase of the Reef 2050 program is currently under consideration. The earlier phases of Reef 2050 had water quality as its focus, identifying farming behaviour as needing change. A program to establish a Modern Water-Efficient Irrigation Precinct in the Lower Burdekin would encourage the same changes, but with a more sustainable, farmer-centric approach, placing productivity, improved livelihoods, and water-efficiency as its articulated target, with public funding for the program justified by the environmental services provided by improved farming practices. It is thus far more likely to resonate with farmers and result in broadscale adoption.

## **MODERN WATER-EFFICIENT IRRIGATION PRECINCT IN THE LOWER BURDEKIN**

Farmers in the Lower Burdekin face a range of immediate issues:

- Rising water table and salinisation of soils. Water tables have risen from 10m to  $\leq 2$ m, due to high levels of irrigation since the Burdekin Falls Dam made this possible in 1988;
- Production costs are rising rapidly for both pumping and fertiliser;
- The Lower Burdekin faces increasing competition as other countries shift towards high tech production systems (e.g. Brazil).



**Fig 2.** Open channel manual irrigation in Lower Burdekin

The establishment of a **Modern Water-Efficient Irrigation Precinct in the Lower Burdekin** would address both the production and environmental issues together. This would entail;

- Installation of tensiometers to measure soil moisture;
- Automation so water is applied according to crop needs, as per growth stage; and
- Changes to the architecture of cane field (where necessary).

This would directly address the above production issues and at the same time result in more sustainable water use and improved water quality in the GBRWHA.

From information provided to NQCC by Canegrowers Burdekin and Sugar Research Australia, the basic investment costs for such systems would be in the order of \$4000 - \$8000 per ha (or \$320 - \$800 million across the 80,000 ha in the Lower Burdekin) and could save 120,000ML. By comparison, the estimated cost of raising Burdekin Falls Dam is \$500 million and would add an estimated 150,000ML of water to the current Burdekin Falls Dam storage, without providing additional productivity or environmental benefits.

In the process of its assessment of issues facing the Burdekin over the last two years NQCC has engaged in dialogue with key stakeholders in the Lower Burdekin to find win-win solutions for the environment and farmers. These include - irrigators: Lower Burdekin Water and the BRIA; cane farmers, through the Canegrowers Burdekin board; and researchers from Sugar Research Australia. These groups are already working towards the above and express great interest in such a program.

These groups, along with various government agencies and researchers including the Australian Institute for Marine Science (AIMS), the Great Barrier Reef Marine Park Authority (GBRMPA) and others,<sup>2</sup> have been brought together in the **Burdekin Water Futures Group** formed by the initiative of the Mayor of the Burdekin Regional Shire, Ms Lyn McLaughlin. This would be the key group to engage with in initiating such a program.

#### **PROPOSED ACTION**

The National Productivity Commission's "National Water Reform 2020" has outlined the issues Australia will face in declining surface water due to climate change in the years ahead. It is difficult to think of a more suitable area than the Lower Burdekin where a shift to a new paradigm of investment in water-efficiency over water-storage could be demonstrated.

Funds under consideration for dam construction in Queensland and the Reef 2050 Program could be redirected to funding the establishment of a Modern Water-Efficient Irrigation Precinct in the Lower Burdekin, initially funding an appropriate core group (such as the Burdekin Water Futures Group) to conduct its own detailed business case.

**We propose that funds currently allocated for water infrastructure in regional Queensland (p. 147 of Budget Paper #2) be made available for a detailed business case on a Modern Water-Efficient Irrigation Precinct in the Lower Burdekin.**

As a first step, we would encourage initial discussion with stakeholders in the Lower Burdekin, such as the Burdekin Water Futures Group. We would also be happy to meet with you to discuss these opportunities further.

Yours sincerely,



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<sup>2</sup> North Queensland Dry Tropics (NQDT)

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Burdekin Bowen Integrated Floodplain Management Advisory Committee. (BBIFMAC)